



DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NEW ENGLAND DISTRICT  
696 VIRGINIA ROAD  
CONCORD MA 01742-2751

November 24, 2023

Regulatory Division  
File Number: NAE-2023-00449

NH Dept. of Transportation    NHDOT No. 13761F  
Attn: Andrew O'Sullivan  
P.O. Box 483  
Concord, NH 03302  
Sent by email: [Andrew.Osullivan@dot.nh.gov](mailto:Andrew.Osullivan@dot.nh.gov)

Dear Mr. O'Sullivan:

The U.S. Army Corps of Engineers (USACE) has reviewed your application to perform work as described on the enclosed New Hampshire State Permit No. 2022-03264, dated "March 3, 2023". This project is located on the F.E. Everett Turnpike in Merrimack, New Hampshire. The work is shown on the enclosed plans titled Wetlands plans for NHDOT NH Project No. 13761E, F.E. Everett Turnpike Corridor Widening Project (Merrimack) Towns of Nashua-Merrimack-Bedford, in 19 sheets, dated November 4, 2022.

Based on the information that you provided to the New Hampshire Wetlands Bureau, we verify that this work is authorized under General Permit # 2 of the enclosed September 29, 2022 federal permits known as the New Hampshire General Permits (GPs). The GPs are also available at: <https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits>

Please review the enclosed GPs carefully, in particular the general conditions beginning on page 36, and ensure that you and all personnel performing work authorized by the GPs are fully aware of and comply with its terms and conditions. A copy of the GPs and this verification letter shall be available at the work site as required .by General Condition 17. You must perform this work in compliance with the following special condition(s):

1. Compensatory mitigation shall consist of purchasing 0.238 credits for impacts to PFO, PSS and PEM resource areas and 120 stream credits for impacts to R2UB and R4SB resources from the State of New Hampshire Aquatic Resource Mitigation Fund (ARM FUND) in the Merrimack River Service Area. No discharge authorized by this permit may be conducted until the receipt of payment has been received from the New Hampshire Aquatic Resource Mitigation Fund.
2. You must complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated start date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

This authorization expires on September 29, 2027. You must commence or have under contract to commence the work authorized herein by September 29, 2027, and complete the

work by September 29, 2028. If not, you must contact this office to determine the need for further authorization and we recommend you contact us *before* the work authorized herein expires. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction as we must approve any changes before you undertake them. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with the special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

This authorization does not obviate the need to obtain other federal, state or local authorizations required by law, including those listed in the GPs. Applicants are responsible for applying for and obtaining any other approvals.

We continually strive to improve our customer service. To better serve you, we would appreciate your completing our Customer Service Survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey>.

Please contact Michael Hicks of my staff at (978) 318-8157 or [michael.c.hicks@usace.army.mil](mailto:michael.c.hicks@usace.army.mil) if you have any questions.

Sincerely,

For: Frank J. Del Giudice  
Chief, NH & VT Section  
Regulatory Division

Enclosures  
cc:

Jean Brochi, U.S. EPA, Region 1, Boston, MA; [brochi.jean@epa.gov](mailto:brochi.jean@epa.gov)

David Simmons, USFWS, New England Field Office, Concord, NH; [david\\_simmons@fws.gov](mailto:david_simmons@fws.gov)

Darlene Forst, NH DES; [darlene.forst@des.nh.gov](mailto:darlene.forst@des.nh.gov)

Mary Ann Tilton, NHDES; [maryann.tilton@des.nh.gov](mailto:maryann.tilton@des.nh.gov)

Rumi Shrestha, NHDES; [Rumi.Shrestha@des.nh.gov](mailto:Rumi.Shrestha@des.nh.gov)

Brandy Holmes, NHDES; [Brandy.L.Holmes@des.nh.gov](mailto:Brandy.L.Holmes@des.nh.gov)

Wendy A. Johnson, NHDOT; [Wendy.A.Johnson@dot.nh.gov](mailto:Wendy.A.Johnson@dot.nh.gov)

Christine J. Perron, McFarland Johnson; [CPerron@mjinc.com](mailto:CPerron@mjinc.com)



The State of New Hampshire  
**Department of Environmental Services**



**Robert R. Scott, Commissioner**

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**WETLANDS AND NON-SITE SPECIFIC PERMIT 2022-03264**

**NOTE CONDITIONS**

**PERMITTEE:** NH DEPT OF TRANSPORTATION  
7 HAZEN DR  
CONCORD NH 03302

**PROJECT LOCATION:** F. E. EVERETTE TNPK ROW, MERRIMACK  
TAX MAP #ROW, LOT #ROW

**WATERBODY:** DUMPLING BROOK

**APPROVAL DATE:** MARCH 03, 2023

**EXPIRATION DATE:** MARCH 03, 2028

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Based upon review of permit application 2022-03264 in accordance with RSA 482-A and RSA 485-A:17, the New Hampshire Department of Environmental Services (NHDES) hereby issues this Wetlands and Non-Site Specific Permit. To validate this Permit, signatures of the Permittee and the Principal Contractor are required.

**PERMIT DESCRIPTION:**

Dredge and fill a total of 17,611 square feet (SF) of palustrine and riverine wetlands for NHDOT Project 13761E to perform widening of the roadway from two to three lanes in each direction with the addition of a northbound and southbound travel lane. The project also includes stormwater and drainage improvements including replacement of a 36-inch culvert carrying Dumpling Brook under the Turnpike. The proposed project will require 12,251 SF of permanent impacts and 5,360 SF of temporary impacts to palustrine wetlands and 290 linear feet (including 170 LF of temporary impacts) of stream channel associated with the roadway widening and required grading. Compensatory mitigation includes a one-time payment of \$115,392.53 dollars into the Aquatic Resource Mitigation Fund ("ARM") for the Merrimack River Service Area.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING PROJECT-SPECIFIC CONDITIONS:**

1. In accordance with Env-Wt 307.16, all work shall be done in accordance with the Wetlands plans for NHDOT NH Project No. 13761E, F.E. Everett Turnpike Corridor Widening Project (Merrimack) Towns of Nashua-Merrimack-Bedford dated November 4, 2022, as received by the Department on November 23, 2022, and Dumpling Brook Alignment and Profile plans dated January 18-19, 2023 as received by the Department on January 25, 2023.
2. The issuance of this permit is contingent on submittal of a check in the amount of \$115,392.53 to the Aquatic Resource Mitigation Fund by the applicant as calculated per Env-Wt 803.07 and RSA 482-A:30.
3. In accordance with Env-Wt 807.01(b), the payment shall be received by NHDES within 120 days from the approval decision or NHDES will deny the application.
4. In accordance with Env-Wt 527.05(a) In addition to complying with all applicable conditions in Env-Wt 307, the permit shall be contingent on review and approval by the department of final stream diversion and erosion control plans that detail the timing and method of stream flow diversion during construction and show temporary siltation, erosion, and turbidity control measures to be implemented.
5. In accordance with Env-Wt 314.03, (a) The permittee shall notify the department in writing at least one week prior to commencing any work under the permit.

[www.des.nh.gov](http://www.des.nh.gov)

29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095

NHDES Main Line: (603) 271-3503 • Subsurface Fax: (603) 271-6683 • Wetlands Fax: (603) 271-6588

TDD Access: Relay NH 1 (800) 735-2964

6. All work shall be performed in accordance with the approved Soil and Groundwater Management Plan for Merrimack-F.E. Everett Turnpike (FEET) 13761E Nashua-Merrimack-Bedford Project, DES Site #202004008, Project #39601.
7. The Contractor shall be made aware of the potential to encounter rare species and shall follow contract documents requirements detailing the reporting of observations to New Hampshire Fish & Game. All observations of rare, threatened, or endangered species must be immediately reported to the NHFG Department (Melissa Doperalski 603-479-1129 cell or Brendan Clifford 603-944-0885).
8. Work operations shall be completed in accordance with the rare plant transplanting plan for NHDOT Nashua-Merrimack-Bedford 13761E (NHB21-1748) approved by the Natural Heritage Bureau (by email) on February 22, 2023.
9. In accordance with Env-Wt 307.10(g), subject to Env-Wt 307.10(h), in non-tidal waters, no dredging shall occur between October 1 and March 31 for any fish migration or larval settling area of cold-water fish.
10. In accordance with Env-Wt 307.03(c)(2), water quality control measures shall be comprised of wildlife-friendly erosion control materials.
11. In accordance with Env-Wt 527.05(b), The contractor responsible for completion of the work shall use techniques described in Env-Wq 1504.06, Env-Wq 1504.16, Env-Wq 1505.02, Env-Wq 1506, and Env-Wq 1508.
12. In accordance with Env-Wt 307.03(a), no activity shall be conducted in such a way as to cause or contribute to any violation of surface water quality standards specified in RSA 485-A:8 or Env-Wq 1700; ambient groundwater quality standards established under RSA 485-C; limitations on activities in a sanitary protective area established under Env-Dw 302.10 or Env-Dw 305.10; or any provision of RSA 485-A, Env-Wq 1000, RSA 483-B, or Env-Wq 1400 that protects water quality.
13. In accordance with Env-Wt 307.11(g), authorized temporary fill other than swamp mats, construction mats, and corduroy shall be placed on geotextile fabric laid on preconstruction wetland grade.
14. All work shall be conducted and maintained in in compliance with the water quality protection conditions specified in Rule Env-Wt 307.03(a) through (h).
15. In accordance with Env-Wt 307.03(c)(4), water quality control measures shall be capable of minimizing erosion; collecting sediment and suspended and floating materials; and filtering fine sediment.
16. In accordance with Env-Wt 307.03(c)(3), water quality control measures shall be installed prior to start of work and in accordance with the manufacturer's recommended specifications or, if none, the applicable requirements of Env-Wq 1506 or Env-Wq 1508.
17. In accordance with Env-Wt 307.03(c)(5), water quality control measures shall be maintained so as to ensure continued effectiveness in minimizing erosion and retaining sediment on-site during and after construction.
18. In accordance with Env-Wt 307.03(c)(6), water quality control measures shall remain in place until all disturbed surfaces are stabilized to a condition in which soils on the site will not experience accelerated or unnatural erosion by achieving and maintaining a minimum of 85% vegetative cover using an erosion control seed mix, whether applied in a blanket or otherwise, that is certified by its manufacturer as not containing any invasive species; or placing and maintaining a minimum of 3 inches of non-erosive material such as stone.
19. In accordance with Env-Wt 307.03(d), any sediment collected by water quality control measures shall be removed with sufficient frequency to prevent the discharge of sediment; and placed in an upland location in a manner that prevents its erosion into a surface water or wetland.
20. In accordance with Env-Wt 307.03(c)(7), temporary water quality control methods shall be removed upon completion of work when compliance with Env-Wt 307.03(c)(6) is achieved.
21. In accordance with Env-Wt 307.03(h), equipment shall be staged and refueled outside of jurisdictional areas (unless allowed) and in accordance with Env-Wt 307.15.
22. In accordance with Env-Wt 307.05(e), to prevent the use of soil or seed stock containing nuisance or invasive species, the contractor responsible for work shall follow Best Management Practices for the Control of Invasive and Noxious Plant Species (Invasive Plant BMPs).
23. Restoration of all temporary impacts shall meet all of the conditions listed in Rule Env-Wt 307.12(a) through (i).

24. In accordance with Env-Wt 307.12(f), if any temporary impact area that is stabilized with seeding or plantings does not have at least 75% successful establishment of wetlands vegetation after 2 growing seasons, the area shall be replanted or reseeded, as applicable.
25. In accordance with Env-Wt 307.12(i), wetland areas where permanent impacts are not authorized shall be restored to their pre-impact conditions and elevation by replacing the removed soil and vegetation in their pre-construction location and elevation such that post-construction soil layering and vegetation schemes are as close as practicable to pre-construction conditions.
26. In accordance with Env-Wt 307.12(a), within 3 days of final grading or temporary suspension of work in an area that is in or adjacent to surface waters, all exposed soil areas shall be stabilized by seeding and mulching, if during the growing season; or mulching with tackifiers on slopes less than 3:1 or netting and pinning on slopes steeper than 3:1 if not within the growing season.
27. In accordance with Env-Wt 307.12(f), if any temporary impact area that is stabilized with seeding or plantings does not have at least 75% successful establishment of wetlands vegetation after 2 growing seasons, the area shall be replanted or reseeded, as applicable.
28. In accordance with Env-Wt 307.03(g)(1), the person in charge of construction equipment shall inspect such equipment for leaking fuel, oil, and hydraulic fluid each day prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands.
29. In accordance with Env-Wt 307.03(g)(2), the person in charge of construction equipment shall repair any leaks prior to using the equipment in an area where such fluids could reach groundwater, surface waters, or wetlands.
30. In accordance with Env-Wt 307.03(g)(3) and (4), the person in charge of construction equipment shall maintain oil spill kits and diesel fuel spill kits, as applicable to the type(s) and amount(s) of oil and diesel fuel used, on site so as to be readily accessible at all times during construction; and train each equipment operator in the use of the spill kits.
31. In accordance with Env-Wt 307.03(e), all exposed soils and other fills shall be permanently stabilized within 3 days following final grading.
32. In accordance with Env-Wt 307.18(c), within 60 days of completion of construction, the applicant shall submit to the department a report that describes the monitoring conducted and date(s) of inspections, and includes photos showing the extent of jurisdictional impacts, areas of restoration, and progress of any plantings shall be submitted to the department.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING GENERAL CONDITIONS:**

1. Pursuant to RSA 482-A:12, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project.
2. In accordance with Env-Wt 313.01(a)(5), and as required by RSA 482-A:11, II, work shall not infringe on the property rights or unreasonably affect the value or enjoyment of property of abutting owners.
3. In accordance with Env-Wt 314.01, a standard permit shall be signed by the permittee, and the principal contractor who will build or install the project prior to start of construction, and will not be valid until signed.
4. In accordance with Env-Wt 314.03(a), the permittee shall notify the department in writing at least one week prior to commencing any work under this permit.
5. In accordance with Env-Wt 314.08(a), the permittee shall file a completed notice of completion of work and certificate of compliance with the department within 10 working days of completing the work authorized by this permit.
6. In accordance with Env-Wt 314.06, transfer of this permit to a new owner shall require notification to, and approval of, the NHDES.
7. The permit holder shall ensure that work is done in a way that protects water quality per Env-Wt 307.03; protects fisheries and breeding areas per Env-Wt 307.04; protects against invasive species per Env-Wt 307.05; meets dredging activity conditions in Env-Wt 307.10; and meets filling activity conditions in Env-Wt 307.11.

8. This project has been screened for potential impact to known occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.
9. In accordance with Env-Wt 307.06(a) through (c), no activity shall jeopardize the continued existence of a threatened or endangered species, a species proposed for listing as threatened or endangered, or a designated or proposed critical habitat under the Federal Endangered Species Act, 16 U.S.C. §1531 et seq.; State Endangered Species Conservation Act, RSA 212-A; or New Hampshire Native Plant Protection Act, RSA 217-A.
10. In accordance with Env-Wt 307.02, and in accordance with federal requirements, all work in areas under the jurisdiction of the U.S. Army Corps of Engineers (USACE) shall comply with all conditions of the applicable state general permit.

APPROVED:



Karl D. Benedict  
Public Works Supervisor, Wetlands Bureau  
Land Resources Management, Water Division

**THE SIGNATURES BELOW ARE REQUIRED TO VALIDATE THIS PERMIT (Env-Wt 314.01).**

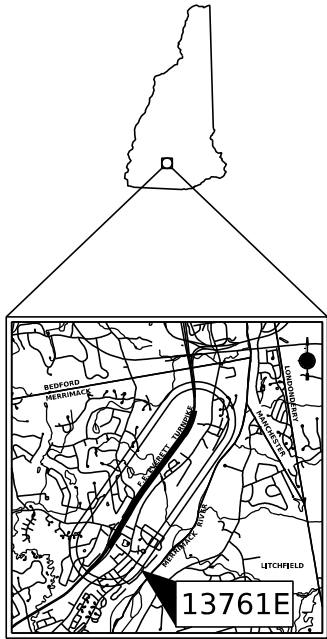
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PERMITTEE SIGNATURE (required)

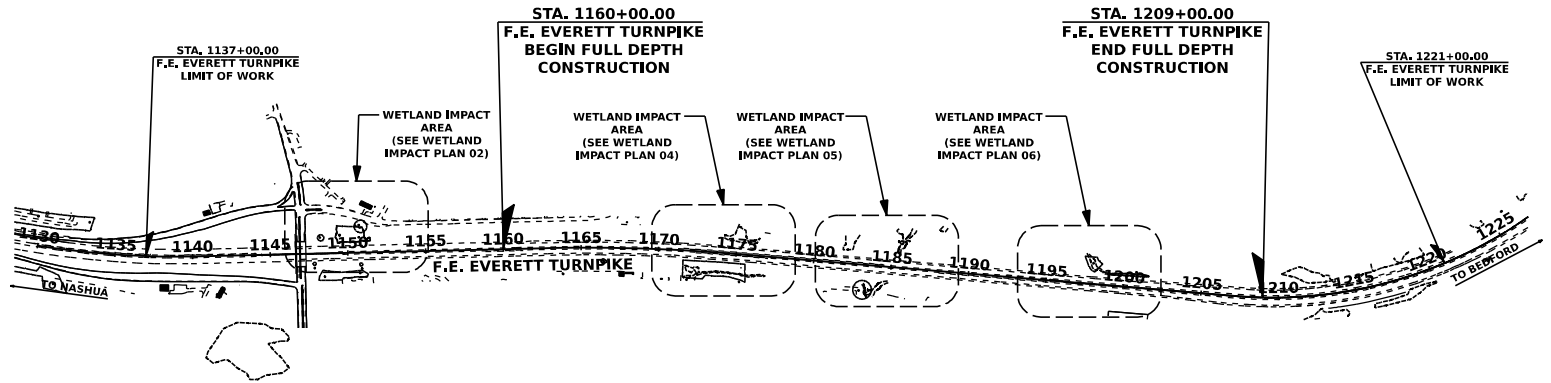
PRINCIPAL CONTRACTOR SIGNATURE (required)

# STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION WETLANDS PLANS

## N.H. PROJECT NO. 13761E F.E. EVERETT TURNPIKE CORRIDOR WIDENING PROJECT



LOCATION MAP  
GRAPHIC SCALE



TOWNS OF NASHUA-MERRIMACK-BEDFORD

COUNTY OF HILLSBOROUGH

SCALE: 1" = 400'

WETLAND  
IMPACT PLANS  
DATE: 11/03/22

**FOR CONSTRUCTION AND ALIGNMENT DETAILS - SEE CONSTRUCTION PLANS**

DRAWN BY: MAL DATE: 10-12-22  
CHECKED BY: CJP DATE: 10-12-22

WETLANDS DELINEATED BY MCFARLAND-JOHNSON, INC. IN SUMMER 2017 AND SUMMER 2022, IN ACCORDANCE WITH THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2.0, JANUARY 2012, US ARMY CORPS OF ENGINEERS.

WETLAND PLANS PREPARED BY



**McFARLAND JOHNSON**  
CONCORD, N.H.

DELINEATION : 2017/2022



HIGHWAY PLANS PREPARED BY



**McFARLAND JOHNSON**  
CONCORD, N.H.

**NHDOT** THE STATE OF  
NEW HAMPSHIRE  
DEPARTMENT OF  
TRANSPORTATION

RECOMMENDED FOR APPROVAL:

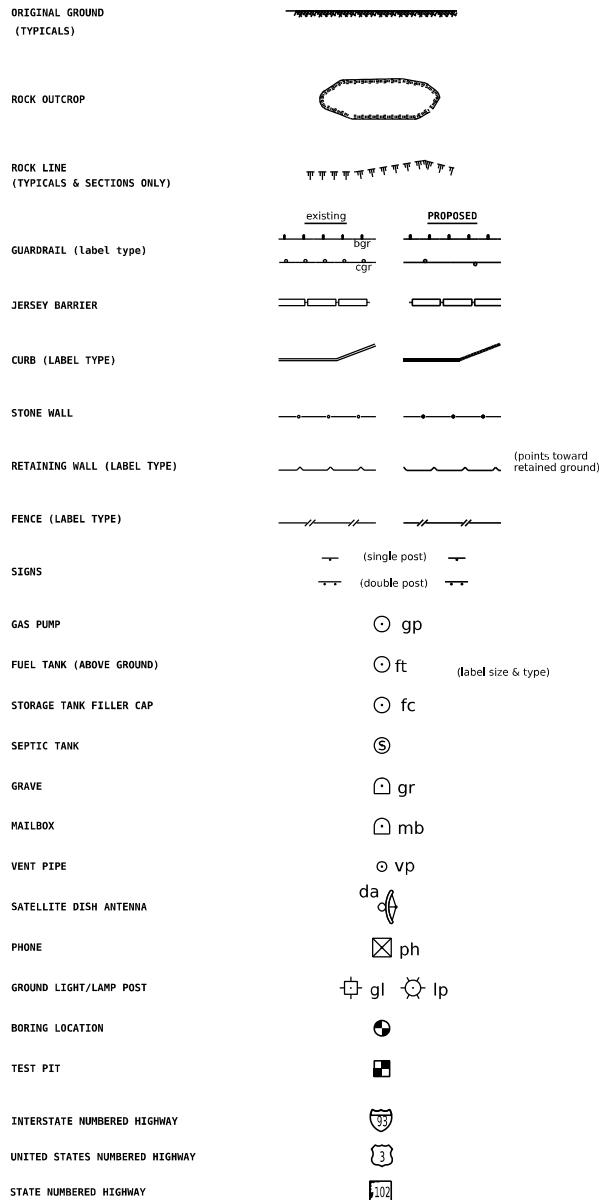
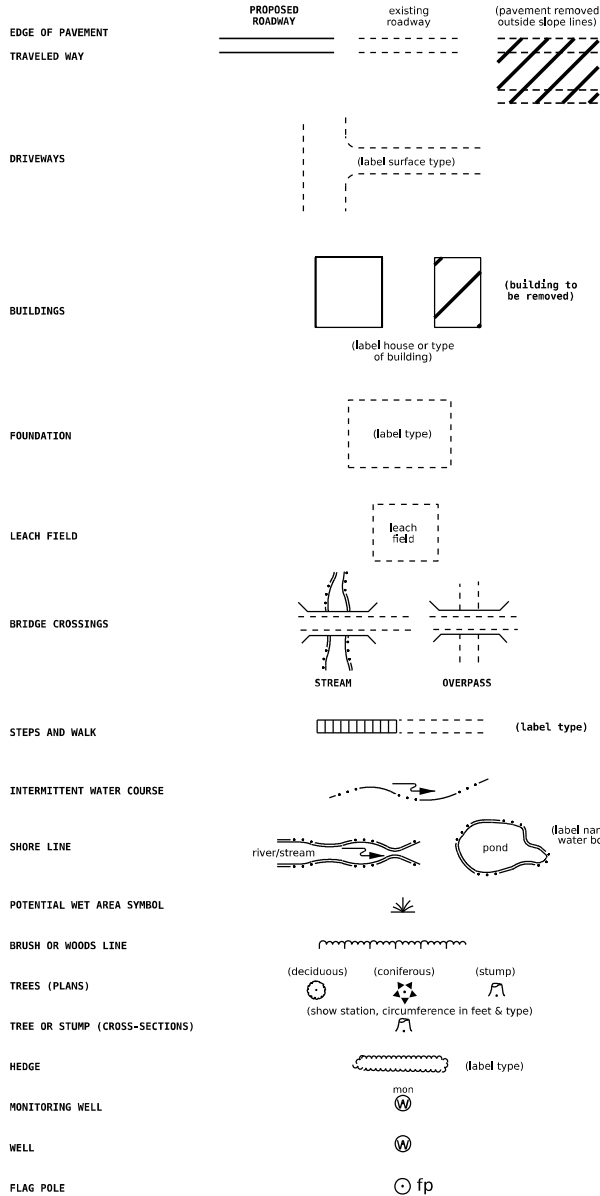
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DIRECTOR OF PROJECT DEVELOPMENT DATE

APPROVED:

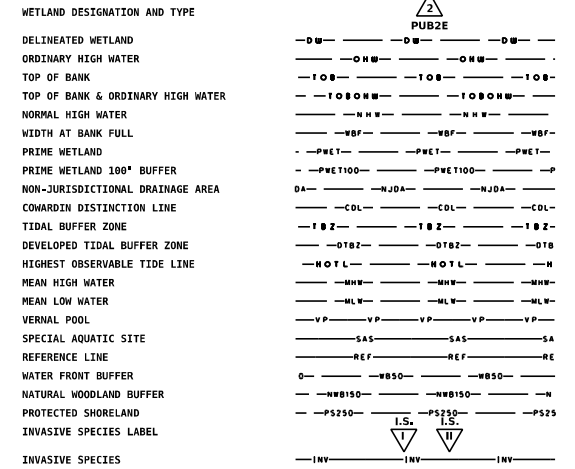
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ASSISTANT COMMISSIONER AND CHIEF ENGINEER DATE

DRAWING NAME	FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13761E-FrnWet [SHT]		13761E	1	19

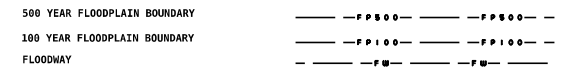
## GENERAL



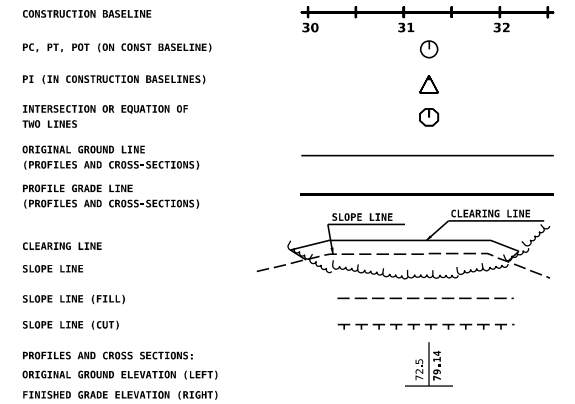
## SHORELAND - WETLAND



## FLOODPLAIN / FLOODWAY



## ENGINEERING



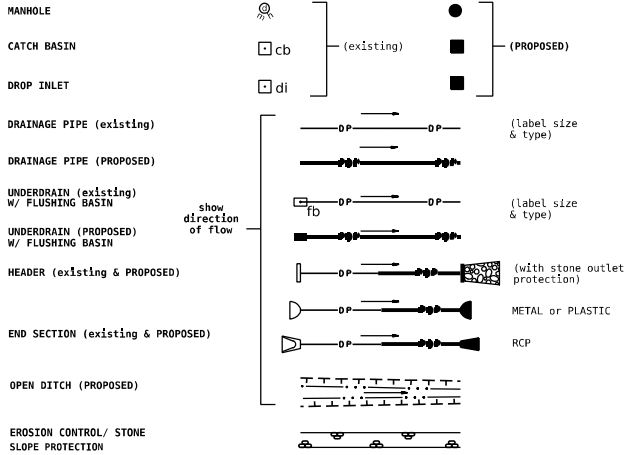
STATE OF NEW HAMPSHIRE  
NASHUA-MERRIMACK-BEDFORD  
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

### STANDARD SYMBOLS

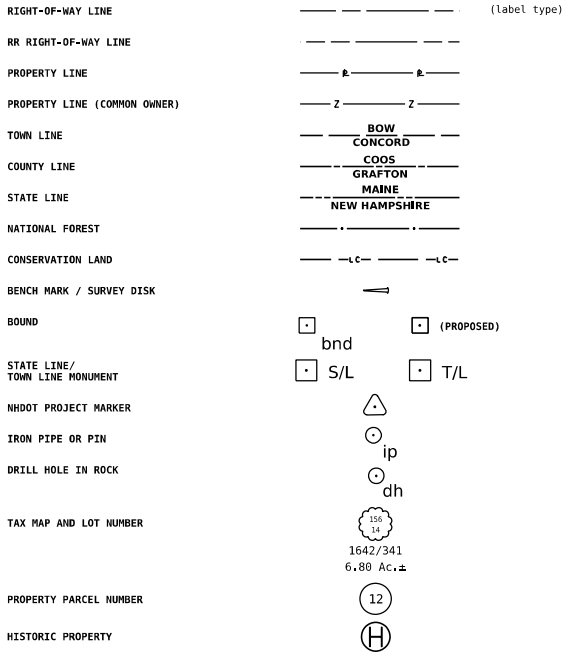
REVISION DATE	DGM	STATE PROJECT NO.	TOTAL SHEETS
Sheet 1 of 2 [SHT]	02-25-2022	13761E-State Dirs SHT	19



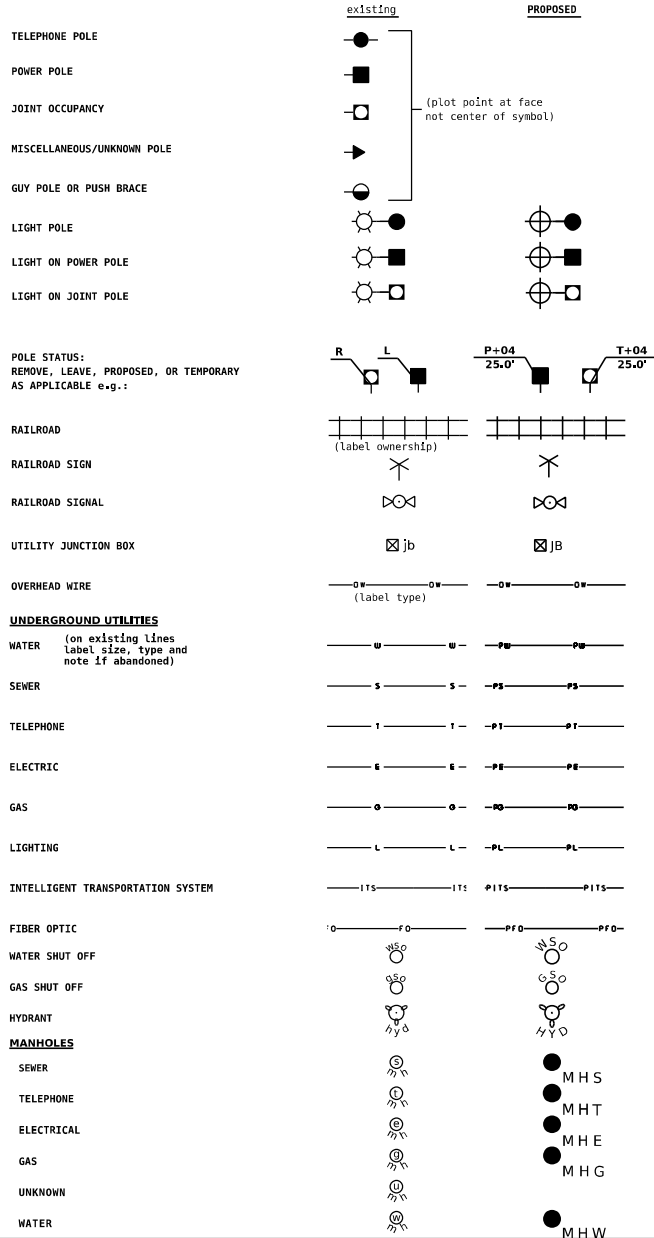
## DRAINAGE



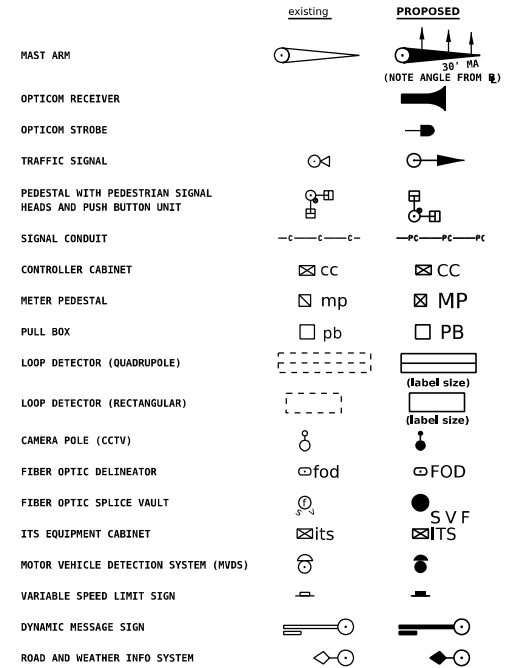
## BOUNDARIES / RIGHT-OF-WAY



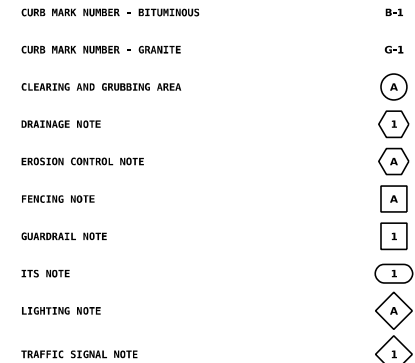
## UTILITIES



## TRAFFIC SIGNALS / ITS



## CONSTRUCTION NOTES



STATE OF NEW HAMPSHIRE  
NASHUA-MERRIMACK-BEDFORD  
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

### STANDARD SYMBOLS

REVISION DATE	DGM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
Sheet 2 of 2 [SHT]	02-25-2022	13761E-State Dits SHT	3	19

REVISIONS AFTER PROPOSAL  
 STATION  
 STATION  
 DATE  
 NUMBER  
 NAME1  
 NAME2  
 NAME3  
 DATE DATE1 DATE2 DATE3  
 DATE  
 DATE  
 DATE  
 DATE  
 DATE  
 AS BUILT DETAILS

WETLAND IMPACT SUMMARY											
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION		
			PERMANENT						PERMANENT		
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)		TEMPORARY		BANK LEFT	BANK RIGHT	CHANNEL
			SF	LF	SF	LF	SF	LF	LF	LF	LF
1	PSS1E	A			3633		688				
2	PFO1E	B			1551						
3	PFO1E	C			4650		270				
4	PFO1E	D			470		215				
6	R2UB2	E					3465	146			
6	R2UB2	F			143	13				13	
6	R2UB2	G			1507	80	597	19		80	
8	PEM1E	H			91		95				
5	R4SBAJ	J			206	27	30	5		27	
TOTAL					12,251	120	5,360	170		120	

PERMANENT IMPACTS: 12,251 SF  
 TEMPORARY IMPACTS: 5,360 SF

TOTAL IMPACTS: 17,611 SF

WETLAND CLASSIFICATION CODES	
PSS1E	PALUSTRINE, SCRUB-SHRUB, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
PFO1E	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS, SEASONALLY FLOODED/SATURATED
R4SBAJ	RIVERINE, INTERMITTENT, STREAMBED, SAND, INTERMITTENTLY FLOODED
R2UB2	RIVERINE, LOWER PERENNIAL, UNCONSOLIDATED BOTTOM, SAND
PEM1E	PALUSTRINE, EMERGENT, PERSISTENT, SEASONALLY FLOODED/SATURATED
PFO1/4	PALUSTRINE, FORESTED, BROAD-LEAVED DECIDUOUS/NEEDLE-LEAVED EVERGREEN



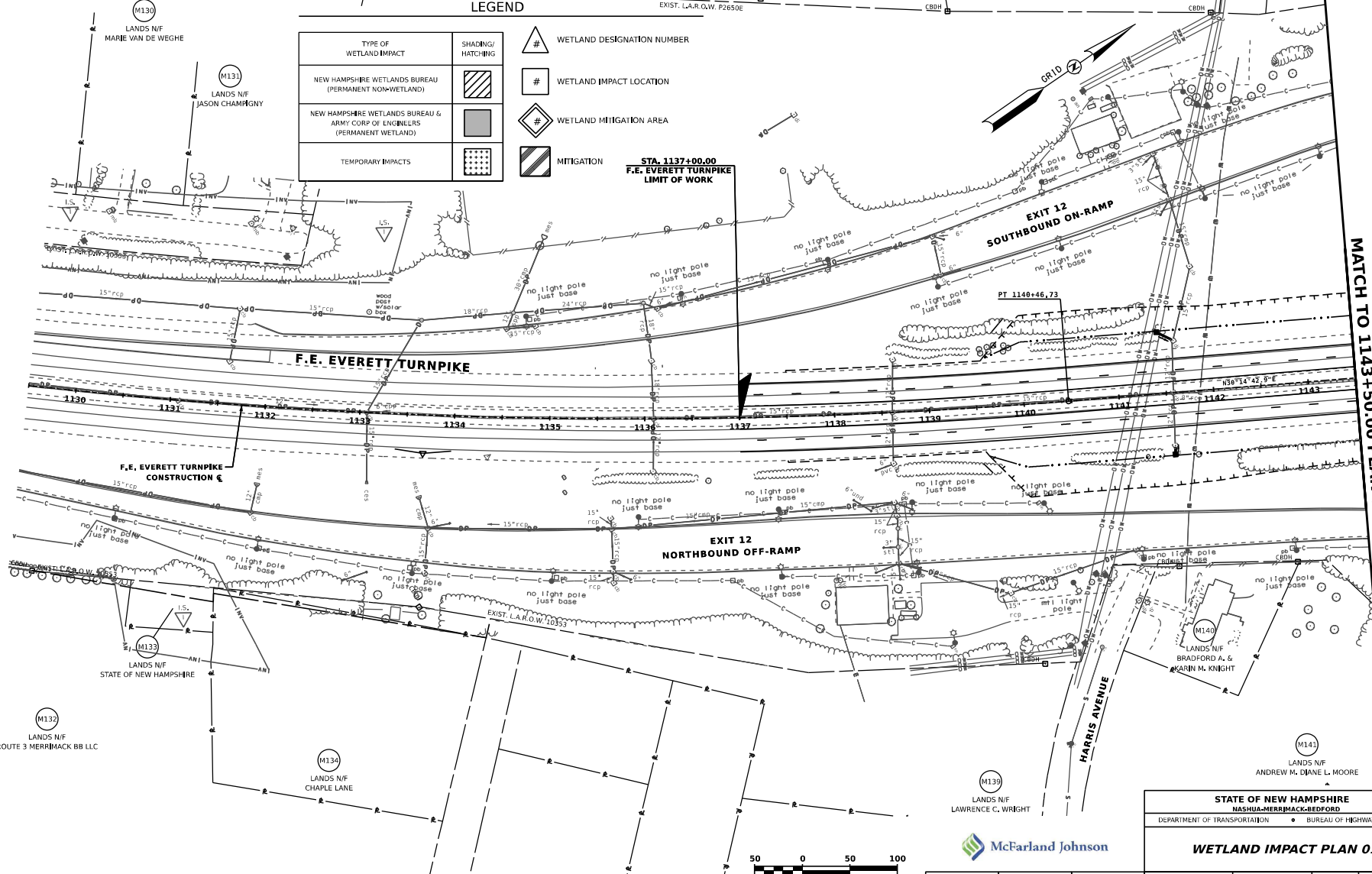
STATE OF NEW HAMPSHIRE			
NASHUA-MERRIMACK-BEDFORD			
DEPARTMENT OF TRANSPORTATION		BUREAU OF ENVIRONMENT	
WETLAND IMPACT SUMMARY SHEET			
SGM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
13761E-Wet_Sum SHT	13761E	4	19

REVISIONS AFTER PROPOSAL	STATION	DESCRIPTION
DATE	NUMBER	DATE
DATE	DATE	DATE

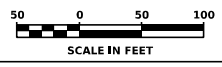
(M130) LANDS N/F MARIE VAN DE WEGHE	(M135) LANDS N/F PAULINE K. & DAVID P. PARENT	(M136) LANDS N/F THOMAS M. CONTI	(M137) LANDS N/F JOSEPH N. & CHERYL M. STRUBE	(M138) LANDS N/F HAROLD W. & BARBARA A. WATSON
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**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	#	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)			WETLAND MITIGATION AREA
TEMPORARY IMPACTS			MITIGATION



MATCH TO 1143+50.00 PLAN 02



DATE REVISION	NO PROJECT NO.	MODEL	ICON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589,00	WORK 11001	1301ANR01.01	13761E	5	19

**STATE OF NEW HAMPSHIRE**  
**NASHUA-MERRIMACK-BEDFORD**  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND IMPACT PLAN 01**

**McFarland Johnson**

(M139)  
LANDS N/F  
LAWRENCE C. WRIGHT

(M141)  
LANDS N/F  
ANDREW M. DIANE L. MOORE

(M132)  
LANDS N/F  
ROUTE 3 MERRIMACK BB LLC

(M134)  
LANDS N/F  
CHAPLE LANE

(M140)  
LANDS N/F  
BRADFORD A. &  
KAREN M. KNIGHT

NO. / DATE	REVISIONS AFTER PROPOSAL
1 /	

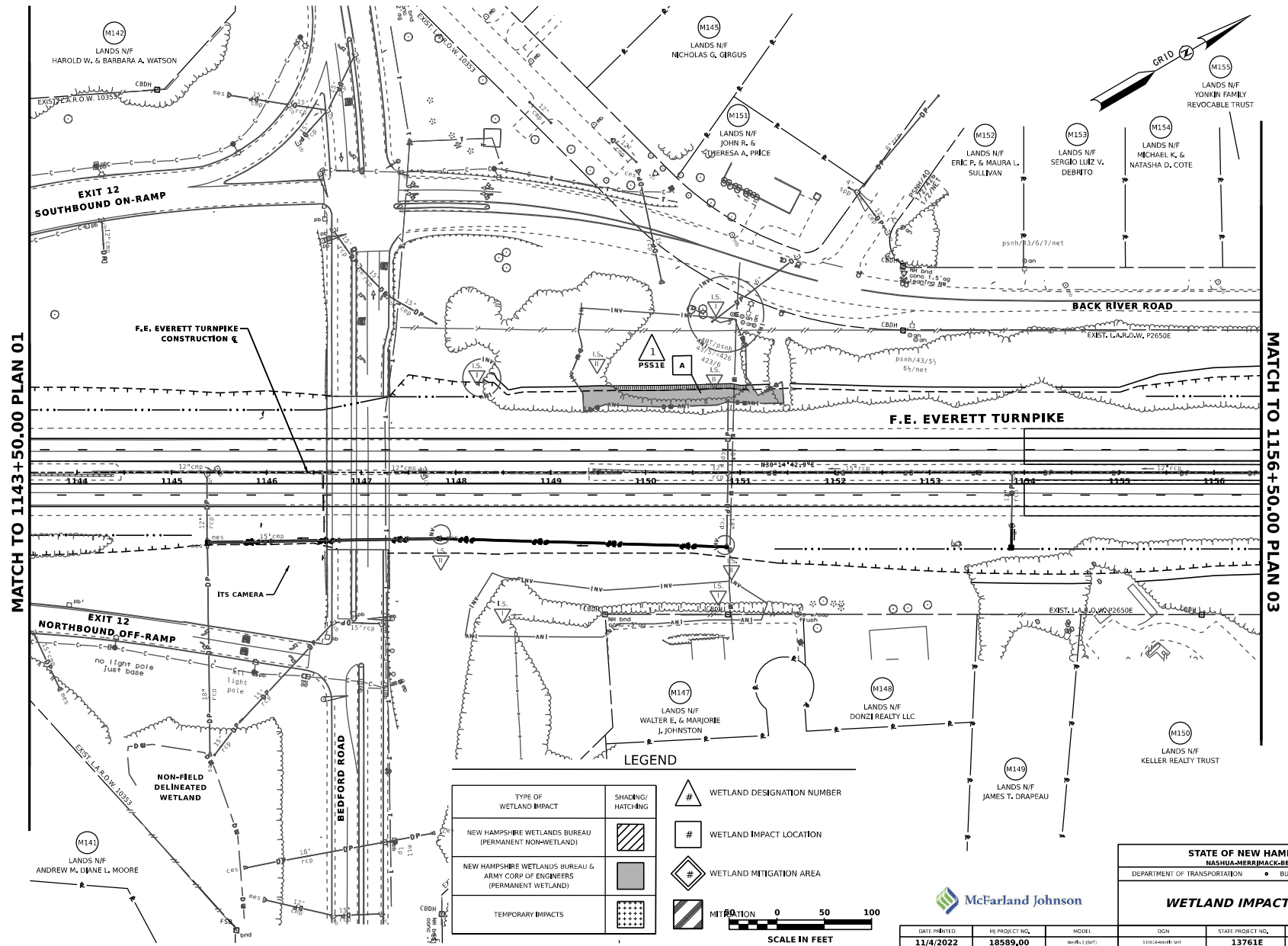
DATE	STATION	DESCRIPTION

DATE	NUMBER	DATE

DATE	NEW DESIGN

DATE	SHEET CHECKED

DATE	AS BUILT DETAILS



**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	▲	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		◆	WETLAND MITIGATION AREA
TEMPORARY IMPACTS			MITIGATION



**STATE OF NEW HAMPSHIRE**  
**NASHUA-MERRIMACK-BEDFORD**  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND IMPACT PLAN 02**

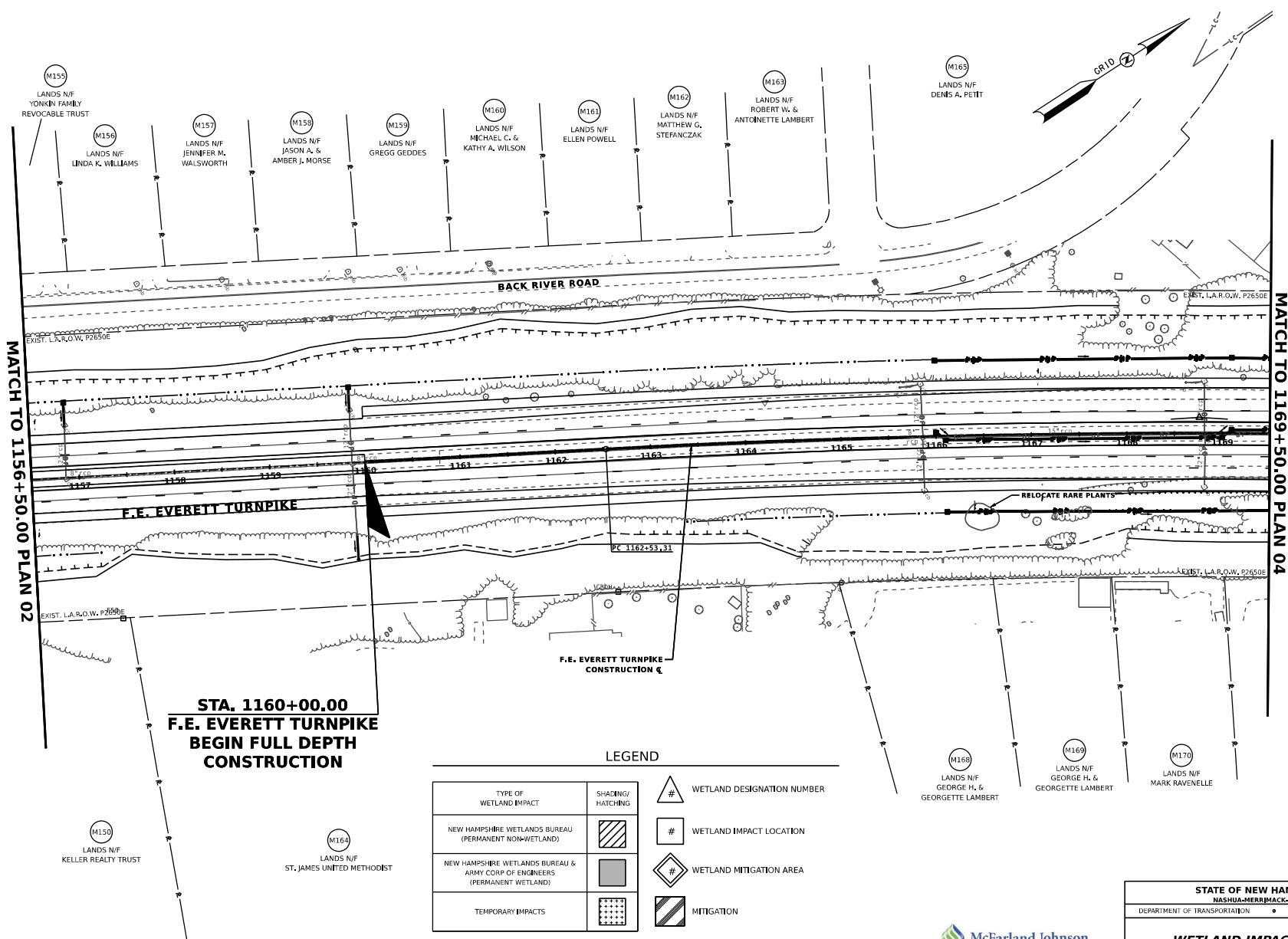
DATE REVISIONED	NO. PROJECT NO.	MODEL	SCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589.00	WORK 2 (2021)	130144401101	13761E	6	19

**MCFARLAND JOHNSON**

MATCH TO 1143+50.00 PLAN 01

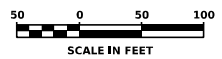
MATCH TO 1156+50.00 PLAN 03

NO.	DATE	DESCRIPTION
1		REVISIONS AFTER PROPOSAL
2		STATION
3		STATION
4		DATE
5		NUMBER
6		DATE
7		DATE
8		DATE



**STA. 1160+00.00  
F.E. EVERETT TURNPIKE  
BEGIN FULL DEPTH  
CONSTRUCTION**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	LEGEND
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)		WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		WETLAND IMPACT LOCATION
TEMPORARY IMPACTS		WETLAND MITIGATION AREA
		MITIGATION



DATE PRINTED	W PROJECT NO.	MODEL	SCN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589,00	W04-11071	130144001.DWG	13761E	7	19

STATE OF NEW HAMPSHIRE  
 NASHUA-MERRIMACK-BEDFORD  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND IMPACT PLAN 03**

MATCH TO 1156+50.00 PLAN 02

MATCH TO 1169+50.00 PLAN 04

M165  
LANDS N/F  
DENIS A. PETIT

M163  
LANDS N/F  
ROBERT W. &  
ANTONETTE LAMBERT

M162  
LANDS N/F  
MATTHEW G.  
STEFANCAZAK

M161  
LANDS N/F  
ELLEN POWELL

M160  
LANDS N/F  
MICHAEL C. &  
KATHY A. WILSON

M159  
LANDS N/F  
GREGG GEDDES

M158  
LANDS N/F  
JASON A. &  
AMBER J. MORSE

M157  
LANDS N/F  
JENNIFER M.  
WALSWORTH

M156  
LANDS N/F  
LINDA K. WILLIAMS

M155  
LANDS N/F  
YONKIN FAMILY  
REVOCABLE TRUST

M170  
LANDS N/F  
MARK RAVENELLE

M169  
LANDS N/F  
GEORGE H. &  
GEORGETTE LAMBERT

M168  
LANDS N/F  
GEORGE H. &  
GEORGETTE LAMBERT

M164  
LANDS N/F  
ST. JAMES UNITED METHODIST

M150  
LANDS N/F  
KELLER REALTY TRUST



NO. PROCESSED	DATE
NEW DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE
NO. PROCESSED	DATE
NEW DESIGN	DATE
SHEET CHECKED	DATE
AS BUILT DETAILS	DATE

REVISIONS AFTER PROPOSAL

NO.	DATE	DESCRIPTION

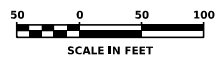
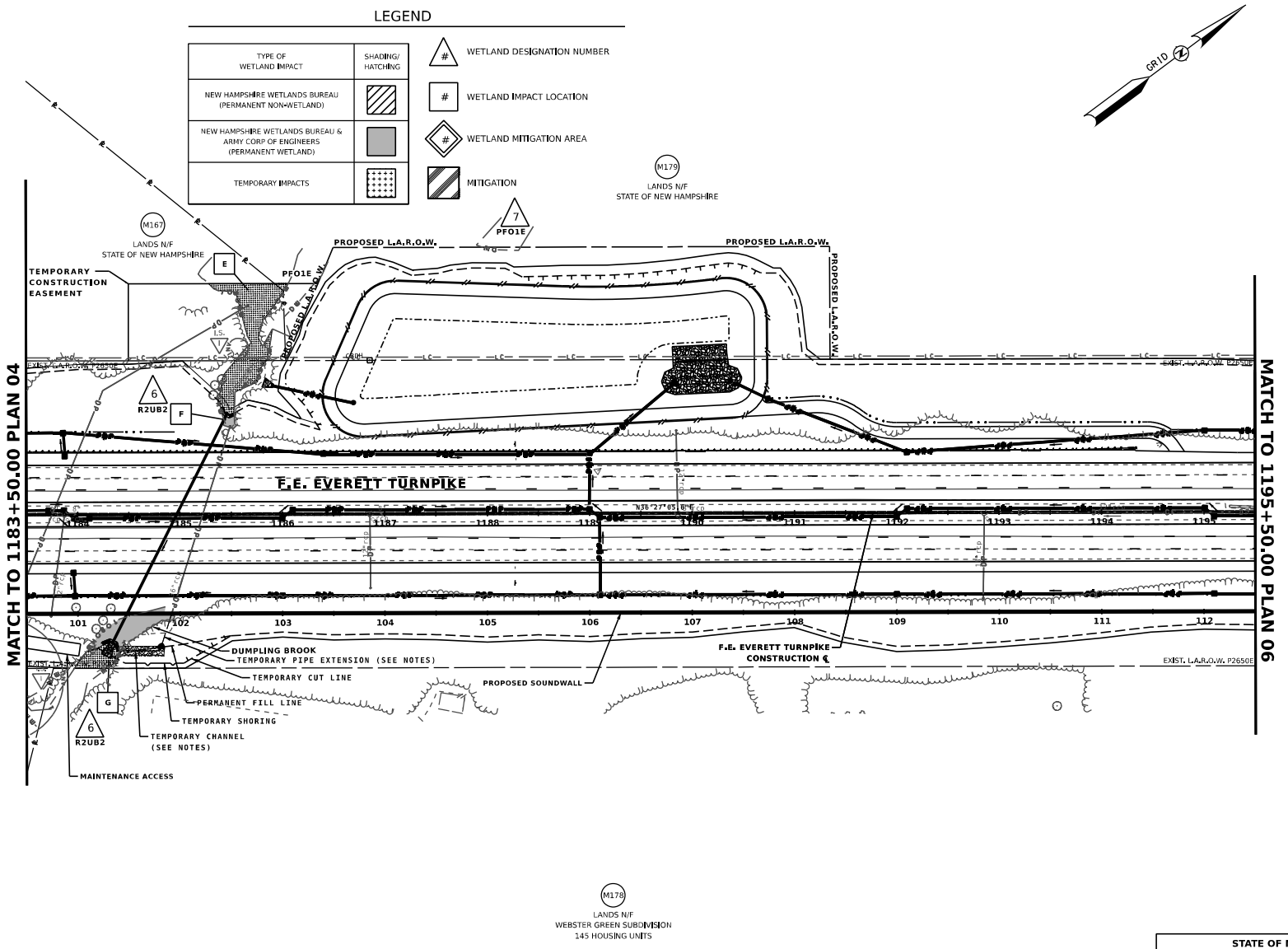
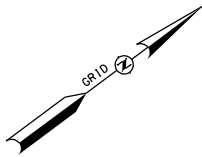
STATION	DATE	DESCRIPTION

NO.	DATE	DESCRIPTION

LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	
TEMPORARY IMPACTS	

- WETLAND DESIGNATION NUMBER
- WETLAND IMPACT LOCATION
- WETLAND MITIGATION AREA
- MITIGATION



DATE PRINTED 11/4/2022	W PROJECT NO. 18589,00	MODEL W&A (10/21)	ICON 13761E (1/1)	STATE PROJECT NO. 13761E	SHEET NO. 9	TOTAL SHEETS 19
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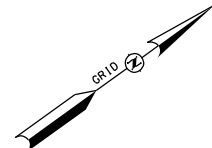
STATE OF NEW HAMPSHIRE  
 NASHUA-MERRIMACK-BEDFORD  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND IMPACT PLAN 05**

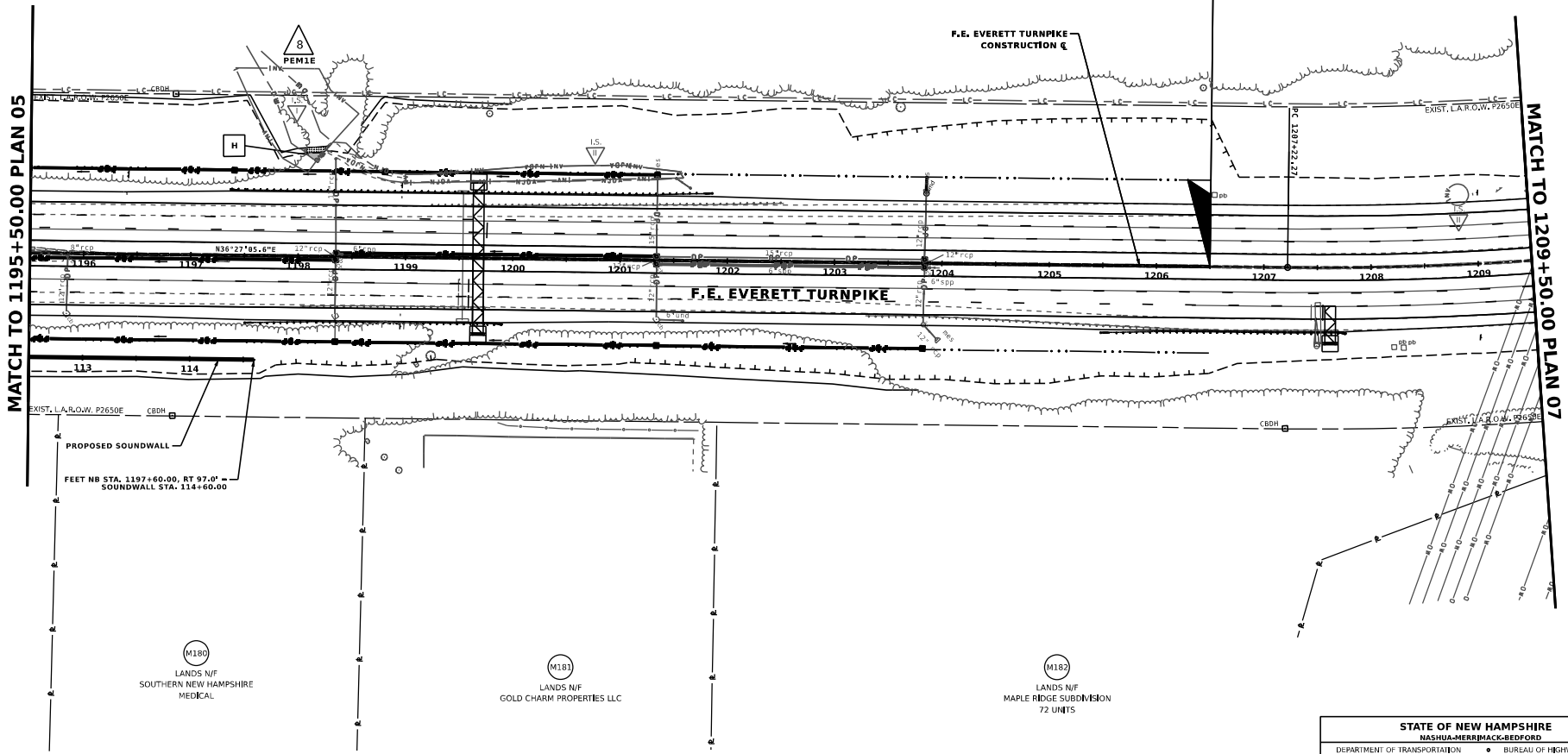
**LEGEND**

TYPE OF WETLAND IMPACT	SHADING/HATCHING	#	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NON-WETLAND)	[Diagonal Hatching]	#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)	[Solid Grey]	#	WETLAND MITIGATION AREA
TEMPORARY IMPACTS	[Grid Pattern]	[Diagonal Hatching]	MITIGATION

(M179)  
LANDS N/F  
STATE OF NEW HAMPSHIRE



**STA. 1206+50.00  
F.E. EVERETT TURNPIKE  
END FULL DEPTH  
CONSTRUCTION**



NO. OF REVISIONS	DATE	DESCRIPTION



DATE PRINTED	PROJECT NO.	MODEL
11/4/2022	18589,00	WORKING SET

**STATE OF NEW HAMPSHIRE**  
NASHUA-MERRIMACK-BEDFORD  
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**WETLAND IMPACT PLAN 06**

DATE PRINTED	PROJECT NO.	MODEL	SCN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589,00	WORKING SET	1301A4400.DWG	13761E	10	19





## EROSION CONTROL STRATEGIES

1. ENVIRONMENTAL COMMITMENTS:
  - 1.1. THESE GUIDELINES DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH ANY CONTRACT PROVISIONS, OR APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
  - 1.2. THIS PROJECT WILL BE SUBJECT TO THE US EPA'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER CONSTRUCTION GENERAL PERMIT AS ADMINISTERED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA). THIS PROJECT IS SUBJECT TO REQUIREMENTS IN THE MOST RECENT CONSTRUCTION GENERAL PERMIT (CGP).
  - 1.3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NHDES WETLAND PERMIT, THE US ARMY CORPS OF ENGINEERS PERMIT, WATER QUALITY CERTIFICATION AND THE SPECIAL ATTENTION ITEMS INCLUDED IN THE CONTRACT DOCUMENTS.
  - 1.4. STORM WATER EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE NEW HAMPSHIRE STORMWATER MANUAL, VOLUME 3, EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION (DECEMBER 2008) (BMP MANUAL) AVAILABLE FROM THE NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES (NHDES).
  - 1.5. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17, AND ALL, PUBLISHED NHDES ALTERATION OF TERRAIN ENV-WQ 1500 REQUIREMENTS ( [HTTP://DES.NH.GOV/ORGANIZATION/COMMISSIONER/LEGAL/RULES/INDEX.HTM](http://des.nh.gov/organization/commissioner/legal/rules/index.htm) )
  - 1.6. THE CONTRACTOR IS DIRECTED TO REVIEW AND COMPLY WITH SECTION 107-1.0 OF THE CONTRACT AS IT REFERS TO SPILLAGE, AND ALSO WITH REGARDS TO EROSION, POLLUTION, AND TURBIDITY PRECAUTIONS.
2. STANDARD EROSION CONTROL SEQUENCING APPLICABLE TO ALL CONSTRUCTION PROJECTS:
  - 2.1. PERIMETER CONTROLS SHALL BE INSTALLED PRIOR TO EARTH DISTURBING ACTIVITIES. PERIMETER CONTROLS AND STABILIZED CONSTRUCTION EXITS SHALL BE INSTALLED AS SHOWN IN THE BMP MANUAL AND AS DIRECTED BY THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARER.
  - 2.2. EROSION, SEDIMENTATION CONTROL MEASURES AND INFILTRATION BASINS SHALL BE CLEANED, REPLACED AND AUGMENTED AS NECESSARY TO PREVENT SEDIMENTATION BEYOND PROJECT LIMITS THROUGHOUT THE PROJECT DURATION.
  - 2.3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED IN ACCORDANCE WITH THE CONSTRUCTION GENERAL PERMIT AND SECTION 645 OF THE NHDOT SPECIFICATIONS FOR ROAD AND BRIDGES CONSTRUCTION.
  - 2.4. 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% VEGETATED GROWTH HAS BEEN ESTABLISHED;
    - (C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH AS STONE OR RIP-RAP HAS BEEN INSTALLED;
    - (D) TEMPORARY SOLE STABILIZATION CONFORMING TO TABLE 1 HAS BEEN PROPERLY INSTALLED.
  - 2.5. ALL STOCKPILES SHALL BE CONTAINED WITH A PERIMETER CONTROL. IF THE STOCKPILE IS TO REMAIN UNDISTURBED FOR MORE THAN 14 DAYS, MULCHING WILL BE REQUIRED.
  - 2.6. A WATER TRUCK SHALL BE AVAILABLE TO CONTROL EXCESSIVE DUST AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR.
  - 2.7. TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL REMAIN UNTIL THE AREA HAS BEEN PERMANENTLY STABILIZED.
  - 2.8. CONSTRUCTION PERFORMED ANY TIME BETWEEN NOVEMBER 30<sup>TH</sup> AND MAY 1<sup>ST</sup> OF ANY YEAR SHALL BE CONSIDERED WINTER CONSTRUCTION AND SHALL CONFORM TO THE FOLLOWING REQUIREMENTS.
    - (A) ALL PROPOSED VEGETATED AREAS WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>TH</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>TH</sup>, SHALL BE STABILIZED IN ACCORDANCE WITH TABLE 1.
    - (B) ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15<sup>TH</sup>, OR WHICH ARE DISTURBED AFTER OCTOBER 15<sup>TH</sup>, SHALL BE STABILIZED TEMPORARILY WITH STONE IN ACCORDANCE WITH TABLE 1.
    - (C) AFTER NOVEMBER 30<sup>TH</sup> INCOMPLETE ROAD SURFACES, WHERE WORK HAS STOPPED FOR THE SEASON, SHALL BE PROTECTED IN ACCORDANCE WITH TABLE 1.
    - (D) WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE PROJECT IS WITHOUT STABILIZATION AT ONE TIME, UNLESS A WINTER CONSTRUCTION PLAN HAS BEEN APPROVED BY NHDES THAT MEETS THE REQUIREMENTS OF ENV-WQ 1505.02 AND ENV-WQ 1505.05.
    - (E) A SWPPP AMENDMENT SHALL BE SUBMITTED TO THE DEPARTMENT, FOR APPROVAL, ADDRESSING COLD WEATHER STABILIZATION (ENV-WQ 1505.05) AND INCLUDING THE REQUIREMENTS OF NO LESS THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF WORK SCHEDULED AFTER NOVEMBER 30<sup>TH</sup>.
11. ADDITIONAL EROSION AND SEDIMENT CONTROL GENERAL PRACTICES:
  - 11.1. USE TEMPORARY MULCHING, PERMANENT MULCHING, TEMPORARY VEGETATIVE COVER, AND PERMANENT VEGETATIVE COVER TO REDUCE THE NEED FOR DUST CONTROL. USE MECHANICAL SWEEPERS ON PAVED SURFACES WHERE NECESSARY TO PREVENT DUST BULLDOZ. APPLY WATER, OR OTHER DUST INHIBITING AGENTS OR TRAFFICERS, AS APPROVED BY THE NHDES.
  - 11.2. ALL STOCKPILES SHALL BE CONTAINED WITH TEMPORARY PERIMETER CONTROLS. INACTIVE SOIL STOCKPILES SHOULD BE PROTECTED WITH SOIL STABILIZATION MEASURES (TEMPORARY EROSION CONTROL SEED MIX AND MULCH, SOIL BINDER) OR COVERED WITH ANCHORED TARPS.
  - 11.3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED IN ACCORDANCE WITH SECTION 645 OF NHDOT SPECIFICATIONS, WEEKLY AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 IN. OF RAIN PER 24-HOUR PERIOD. EROSION AND SEDIMENT CONTROL MEASURES WILL ALSO BE INSPECTED IN ACCORDANCE WITH THE GUIDANCE MEMO FROM THE NHDES CONTAINED WITHIN THE CONTRACT PROGRAM AND THE EPA CONSTRUCTION GENERAL PERMIT.
  - 11.4. THE CONTRACTOR SHOULD UTILIZE STORM DRAIN INLET PROTECTION TO PREVENT SEDIMENT FROM ENTERING A STORM DRAINAGE SYSTEM PRIOR TO THE PERMANENT STABILIZATION OF THE CONTRIBUTING DISTURBED AREA.
  - 11.5. PERMANENT STABILIZATION MEASURES WILL BE CONSTRUCTED AND MAINTAINED IN LOCATIONS AS SHOWN ON THE CONSTRUCTION PLANS TO STABILIZE AREAS. VEGETATIVE STABILIZATION SHALL NOT BE CONSIDERED PERMANENTLY STABILIZED UNTIL VEGETATIVE GROWTH COVERS AT LEAST 85% OF THE DISTURBED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL FOR ONE YEAR AFTER PROJECT COMPLETION.
  - 11.6. CATCH BASINS: CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT ENTER ANY EXISTING CATCH BASINS DURING CONSTRUCTION. THE CONTRACTOR SHALL PLACE TEMPORARY STONE INLET PROTECTION OVER INLETS IN AREAS OF SOIL DISTURBANCE THAT ARE SUBJECT TO SEDIMENT CONTAMINATION.
  - 11.7. TEMPORARY AND PERMANENT DITCHES SHALL BE CONSTRUCTED, STABILIZED AND MAINTAINED IN A MANNER THAT WILL MINIMIZE SCOUR. TEMPORARY AND PERMANENT DITCHES SHALL BE DIRECTED TO DRAIN TO SEDIMENT BASINS OR STORM WATER COLLECTION AREAS.
  - 11.8. WINTER EXCAVATION AND EARTHWORK ACTIVITIES NEED TO BE LIMITED IN EXTENT AND DURATION, TO MINIMIZE POTENTIAL EROSION AND SEDIMENTATION IMPACTS. THE AREA OF EXPOSED SOIL SHALL BE LIMITED TO ONE ACRE, OR THAT WHICH CAN BE STABILIZED AT THE END OF EACH DAY UNLESS A WINTER CONSTRUCTION PLAN, DEVELOPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, IS REVIEWED AND APPROVED BY THE DEPARTMENT.
  - 11.9. CHANNEL PROTECTION MEASURES SHALL BE SUPPLEMENTED WITH PERIMETER CONTROL MEASURES WHEN THE DITCH LINES OCCUR AT THE BOTTOM OF LONG FILL SLOPES. THE PERIMETER CONTROLS SHALL BE INSTALLED ON THE FILL SLOPE TO MINIMIZE THE POTENTIAL FOR FILL SLOPE SEDIMENT DEPOSITS IN THE DITCH LINE.

### BEST MANAGEMENT PRACTICES (BMP) BASED ON AMOUNT OF OPEN CONSTRUCTION AREA

12. STRATEGIES SPECIFIC TO OPEN AREAS LESS THAN 5 ACRES:
  - 12.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17 AND ENV-WQ 1500; ALTERATION OF TERRAIN FOR CONSTRUCTION AND USE ALL CONVENTIONAL BMP STRATEGIES.
  - 12.2. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING.
  - 12.3. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT ALONE.
  - 12.4. AREAS WHERE HAIL ROADS ARE CONSTRUCTED AND STORMWATER CANNOT BE TREATED THE DEPARTMENT WILL CONSIDER INFILTRATION.
  - 12.5. FOR HAIL ROADS ADJACENT TO SENSITIVE ENVIRONMENTAL AREAS OR STEEPER THAN 5%, THE DEPARTMENT WILL CONSIDER USING EROSION STONE, CRUSHED GRAVEL, OR CRUSHED STONE BASE TO HELP MINIMIZE EROSION ISSUES.
  - 12.6. ALL AREAS THAT CAN BE STABILIZED SHALL BE STABILIZED PRIOR TO OPENING UP NEW TERRITORY.
  - 12.7. DETENTION BASINS SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE A 2 YEAR STORM EVENT.
13. STRATEGIES SPECIFIC TO OPEN AREAS BETWEEN 5 AND 10 ACRES:
  - 13.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES WILL BE UTILIZED.
  - 13.2. DETENTION BASINS WILL BE CONSTRUCTED TO ACCOMMODATE THE 2-YEAR 24-HOUR STORM EVENT AND CONTROL A 10-YEAR 24-HOUR STORM EVENT.
  - 13.3. SLOPES STEEPER THAN 3:1 WILL RECEIVE TURF ESTABLISHMENT WITH MATTING OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS. OTHER ALTERNATIVE MEASURES, SUCH AS BONDED FIBER MATRIXES (BFMS) OR FLEXIBLE GROWTH MEDIUMS (FGMS) MAY BE UTILIZED, IF MEETING THE NHDES APPROVALS AND REGULATIONS.
  - 13.4. SLOPES 3:1 OR FLATTER WILL RECEIVE TURF ESTABLISHMENT OR OTHER TEMPORARY SOIL STABILIZATION MEASURES DETAILED IN TABLE 1. THE CONTRACTOR MAY ALSO CONSIDER A SOIL BINDER IN ACCORDANCE WITH THE NHDES APPROVALS OR REGULATIONS.
14. STRATEGIES SPECIFIC TO OPEN AREAS OVER 10 ACRES:
  - 14.1. THE CONTRACTOR SHALL COMPLY WITH RSA 485-A:17 AND ENV-WQ 1500 ALTERATION OF TERRAIN AND SHALL USE CONVENTIONAL BMP STRATEGIES AND ALL TREATMENT OPTIONS USED FOR UNDER 5 ACRES AND BETWEEN 5 AND 10 ACRES WILL BE UTILIZED.
  - 14.2. THE DEPARTMENT ANTICIPATES THAT SOIL BINDERS WILL BE NEEDED ON ALL SLOPES STEEPER THAN 3:1, IN ORDER TO MINIMIZE EROSION AND REDUCE THE AMOUNT OF SEDIMENT IN THE STORMWATER TREATMENT BASINS.
  - 14.3. THE CONTRACTOR WILL BE REQUIRED TO HAVE AN APPROVED DESIGN IN ACCORDANCE WITH ENV-WQ 1506.12 FOR AN ACTIVE FLOCCULANT TREATMENT SYSTEM TO TREAT AND RELEASE WATER CAPTURED IN STORM WATER BASINS. THE CONTRACTOR SHALL ALSO RETAIN THE SERVICES OF AN ENVIRONMENTAL CONSULTANT WHO HAS DEMONSTRATED EXPERIENCE IN THE DESIGN OF FLOCCULANT TREATMENT SYSTEMS. THE CONSULTANT WILL ALSO BE RESPONSIBLE FOR THE IMPLEMENTATION AND MONITORING OF THE SYSTEM.

**TABLE 1  
GUIDANCE ON SELECTING TEMPORARY SOIL STABILIZATION MEASURES**

APPLICATION AREAS	DRY MULCH METHODS				HYDRAULICALLY APPLIED MULCHES				ROLLED EROSION CONTROL BLANKETS			
	HRT	WC	SG	CB	HM	SMH	BPM	FRM	SNSB	DNSB	DNSCB	DWCB
<b>SLOPES</b>												
STEEPER THAN 2:1	NO	NO	YES	NO	NO	NO	NO	YES	NO	NO	NO	YES
2:1 SLOPE	YES	YES	YES	YES	NO	NO	YES	YES	NO	YES	YES	YES
3:1 SLOPE	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	NO
4:1 SLOPE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	NO
WINTER STABILIZATION	4T/AC	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES
<b>CHANNELS</b>												
LOW FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES
HIGH FLOW CHANNELS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE	ABBREV.	STABILIZATION MEASURE
HRT	MUD MULCH & TACK	HM	HYDRAULIC MULCH	SNSB	SINGLE NET STRAW BLANKET
WC	WOOD CHIPS	SMH	STABILIZED MULCH MATRIX	DNSB	DOUBLE NET STRAW BLANKET
SG	STUMP GRINDINGS	BPM	BONDED FIBER MATRIX	DNSCB	2 NET STRAW-COCOON BLANKET
CB	COMPOST BLANKET	FRM	FIBER REINFORCED MEDIUM	DWCB	2 NET COCOON BLANKET

- NOTES:**
1. ALL SLOPE STABILIZATION OPTIONS ASSUME A SLOPE LENGTH 1/10 TIMES THE HORIZONTAL DISTANCE COMPONENT OF THE SLOPE, IN FEET.
  2. PRODUCTS CONTAINING POLYACRYLAMIDE (PAM) SHALL NOT BE APPLIED DIRECTLY TO OR WITHIN 100 FEET OF ANY SURFACE WATER BODIES PRIOR TO THE NH DEPARTMENT OF ENVIRONMENTAL SERVICES.
  3. ALL EROSION CONTROL BLANKETS SHALL BE MADE WITH WILDLIFE FRIENDLY BIODEGRADABLE NETTING.

### GENERAL CONSTRUCTION PLANNING AND SELECTION OF STRATEGIES TO CONTROL EROSION AND SEDIMENT ON HIGHWAY CONSTRUCTION PROJECTS

3. PLAN ACTIVITIES TO ACCOUNT FOR SENSITIVE SITE CONDITIONS:
  - 3.1. CLEARLY FLAG AREAS TO BE PROTECTED IN THE FIELD AND PROVIDE CONSTRUCTION BARRIERS TO PREVENT TRAFFICKING OUTSIDE OF WORK AREAS.
  - 3.2. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS.
  - 3.3. PROTECT AND MAXIMIZE EXISTING NATIVE VEGETATION AND NATURAL FLOW BUFFERS BETWEEN CONSTRUCTION ACTIVITY AND SENSITIVE AREAS.
  - 3.4. WHEN WORK IS PERFORMED IN AND NEAR WATER COURSES, STREAM FLOW DIVERSION METHODS SHALL BE IMPLEMENTED PRIOR TO ANY EXCAVATION OR FILLING.
  - 3.5. WHEN WORK IS PERFORMED WITHIN 50 FEET OF SURFACE WATERS (WETLAND, OPEN WATER OR FLOWING WATER), PERIMETER CONTROL SHALL BE ENHANCED CONSISTENT WITH SECTION 2.1.2.1. OF THE 2012 NPDES CONSTRUCTION GENERAL PERMIT.
4. MINIMIZE THE AMOUNT OF EXPOSED SOIL:
  - 4.1. CONSTRUCTION SHALL BE SEQUENCED TO LIMIT THE DURATION AND AREA OF EXPOSED SOILS. MINIMIZE THE AREA OF EXPOSED SOIL AT ANY ONE TIME. PHASING SHALL BE USED TO REDUCE THE AMOUNT AND DURATION OF SOIL EXPOSED TO THE ELEMENTS AND VEHICLE TRACKING.
  - 4.2. UTILIZE TEMPORARY MULCHING OR PROVIDE ALTERNATE TEMPORARY STABILIZATION ON EXPOSED SOILS IN ACCORDANCE WITH TABLE 1.
  - 4.3. THE MAXIMUM AMOUNT OF DISTURBED EARTH SHALL NOT EXCEED A TOTAL OF 5 ACRES FROM MAY 1 THROUGH NOVEMBER 30<sup>TH</sup>, OR EXCEED ONE ACRE DURING WINTER MONTHS, UNLESS THE CONTRACTOR DEMONSTRATES TO THE DEPARTMENT THAT THE ADDITIONAL AREA OF DISTURBANCE IS NECESSARY TO MEET THE CONTRACTOR'S CRITICAL PATH METHOD SCHEDULE (CPM), AND THE CONTRACTOR HAS ADEQUATE RESOURCES AVAILABLE TO ENSURE THAT ENVIRONMENTAL COMMITMENTS WILL BE MET.
5. CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT:
  - 5.1. DIVERT OFF-SITE RUNOFF OR CLEAN WATER AWAY FROM THE CONSTRUCTION ACTIVITY TO REDUCE THE VOLUME THAT NEEDS TO BE TREATED ON-SITE.
  - 5.2. DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM DISTURBED AREAS, SLOPES, AND AROUND ACTIVE WORK AREAS AND TO A STABILIZED OUTLET LOCATION.
  - 5.3. CONSTRUCT IMPERMEABLE BARRIERS AS NECESSARY TO COLLECT OR DIVERT CONCENTRATED FLOWS FROM WORK OR DISTURBED AREAS.
  - 5.4. STABILIZE, TO APPROPRIATE ANTICIPATED VELOCITIES, CONVEYANCE CHANNELS OR PUMPING SYSTEMS NEEDED TO CONVEY CONSTRUCTION STORMWATER TO BASINS AND DISCHARGE LOCATIONS PRIOR TO USE.
  - 5.5. DIVERT OFF-SITE WATER THROUGH THE PROJECT IN AN APPROPRIATE MANNER SO NOT TO DISTURB THE UPSTREAM OR DOWNSTREAM SOILS, VEGETATION OR HYDROLOGY BEYOND THE PERMITTED AREA.
6. PROTECT SLOPES:
  - 6.1. INTERCEPT AND DIVERT STORM RUNOFF FROM UPSLOPE DRAINAGE AREAS AWAY FROM UNPROTECTED AND NEWLY ESTABLISHED AREAS AND SLOPES TO A STABILIZED OUTLET OR CONVEYANCE.
  - 6.2. CONSIDER HOW GROUNDWATER SEEPAGE ON CUT SLOPES MAY IMPACT SOLE STABILITY AND INCORPORATE APPROPRIATE MEASURES TO MINIMIZE EROSION.
  - 6.3. CONVEY STORMWATER DOWN THE SLOPE IN A STABILIZED CHANNEL OR SLOPE DRAIN.
  - 6.4. THE OUTER FACE OF THE FILL SLOPE SHOULD BE IN A LOOSE RUFFLED CONDITION PRIOR TO TURF ESTABLISHMENT. TOPSOIL OR HUMUS LAYERS SHALL BE TRACKED UP AND DOWN THE SLOPE, DISKED, HARROWED, DRAGGED WITH A CHAIN OR MAT, MACHINE-HARROWED, OR HAND-WORKED TO PRODUCE A RUFFLED SURFACE.
7. ESTABLISH STABILIZED CONSTRUCTION EXITS:
  - 7.1. INSTALL AND MAINTAIN CONSTRUCTION EXITS, ANYWHERE TRAFFIC LEAVES A CONSTRUCTION SITE ONTO A PUBLIC RIGHT-OF-WAY.
  - 7.2. SWEEP ALL CONSTRUCTION RELATED DERRIS AND SOIL FROM THE ADJACENT PAVED ROADWAYS AS NECESSARY.
8. PROTECT STORM DRAIN INLETS:
  - 8.1. DIVERT SEDIMENT LAMEN WATER AWAY FROM INLET STRUCTURES TO THE EXTENT POSSIBLE.
  - 8.2. INSTALL SEDIMENT BARRIERS AND SEDIMENT TRAPS AT INLETS TO PREVENT SEDIMENT FROM ENTERING THE DRAINAGE SYSTEM.
  - 8.3. CLEAN CATCH BASINS, DRAINAGE PIPES, AND CULVERTS IF SIGNIFICANT SEDIMENT IS DEPOSITED.
  - 8.4. DROP INLET SEDIMENT BARRIERS SHOULD BE USED AS THE PRIMARY MEANS OF SEDIMENT CONTROL AND SHOULD ONLY BE USED TO PROVIDE AN ADDITIONAL LEVEL OF PROTECTION TO STRUCTURES AND DOWN-GRADIENT SENSITIVE RECEPTORS.
9. SOIL STABILIZATION:
  - 9.1. WITHIN THREE DAYS OF THE LAST ACTIVITY IN AN AREA, ALL EXPOSED SOIL AREAS, WHERE CONSTRUCTION ACTIVITIES ARE COMPLETE, SHALL BE STABILIZED.
  - 9.2. IN ALL AREAS, TEMPORARY SOIL STABILIZATION MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE STABILIZATION REQUIREMENTS (SECTION 2.2) OF THE 2012 CGP. (SEE TABLE 1 FOR GUIDANCE ON THE SELECTION OF TEMPORARY SOIL STABILIZATION MEASURES.)
  - 9.3. EROSION CONTROL SEED MIX SHALL BE SOWN IN ALL INACTIVE CONSTRUCTION AREAS THAT WILL NOT BE PERMANENTLY SEEDDED WITHIN TWO WEEKS OF DISTURBANCE AND PRIOR TO SEPTEMBER 15, OF ANY GIVEN YEAR. IN ORDER TO ACHIEVE VEGETATIVE STABILIZATION PRIOR TO THE END OF THE GROWING SEASON.
  - 9.4. SOIL TRAFFICERS MAY BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND REAPPLIED AS NECESSARY TO MINIMIZE SOIL AND MULCH LOSS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
10. RETAIN SEDIMENT ON-SITE AND CONTROL DENATURING PRACTICES:
  - 10.1. TEMPORARY SEDIMENT BASINS (CGP-SECTION 2.1.3.2) OR SEDIMENT TRAPS (ENV-WQ 1506.10) SHALL BE SIZED TO RETAIN, ON-SITE, THE VOLUME OF A 2-YEAR 24-HOUR STORM EVENT FOR ANY AREA OF DISTURBANCE OR 3,600 CUBIC FEET OF STORMWATER RUNOFF PER ACRE OF DISTURBANCE, WHICHEVER IS GREATER. TEMPORARY SEDIMENT BASINS USED TO TREAT STORMWATER RUNOFF FROM AREAS GREATER THAN 3-ACRES OF DISTURBANCE SHALL BE SIZED TO ALSO CONTROL STORMWATER RUNOFF FROM A 10-YEAR 24 HOUR STORM EVENT. ON-SITE RETENTION OF THE 10-YEAR 24-HOUR EVENT IS NOT REQUIRED.
  - 10.2. CONSTRUCT AND STABILIZE DENATURING INFILTRATION BASINS PRIOR TO ANY EXCAVATION THAT WILL REQUIRE DENATURING.
  - 10.3. TEMPORARY SEDIMENT BASINS OR TRAPS SHALL BE PLACED AND STABILIZED AT LOCATIONS WHERE CONCENTRATED FLOW (CHANNELS AND PIPES) DISCHARGE TO THE SURROUNDING ENVIRONMENT FROM AREAS OF UNSTABILIZED EARTH DISTURBING ACTIVITIES.

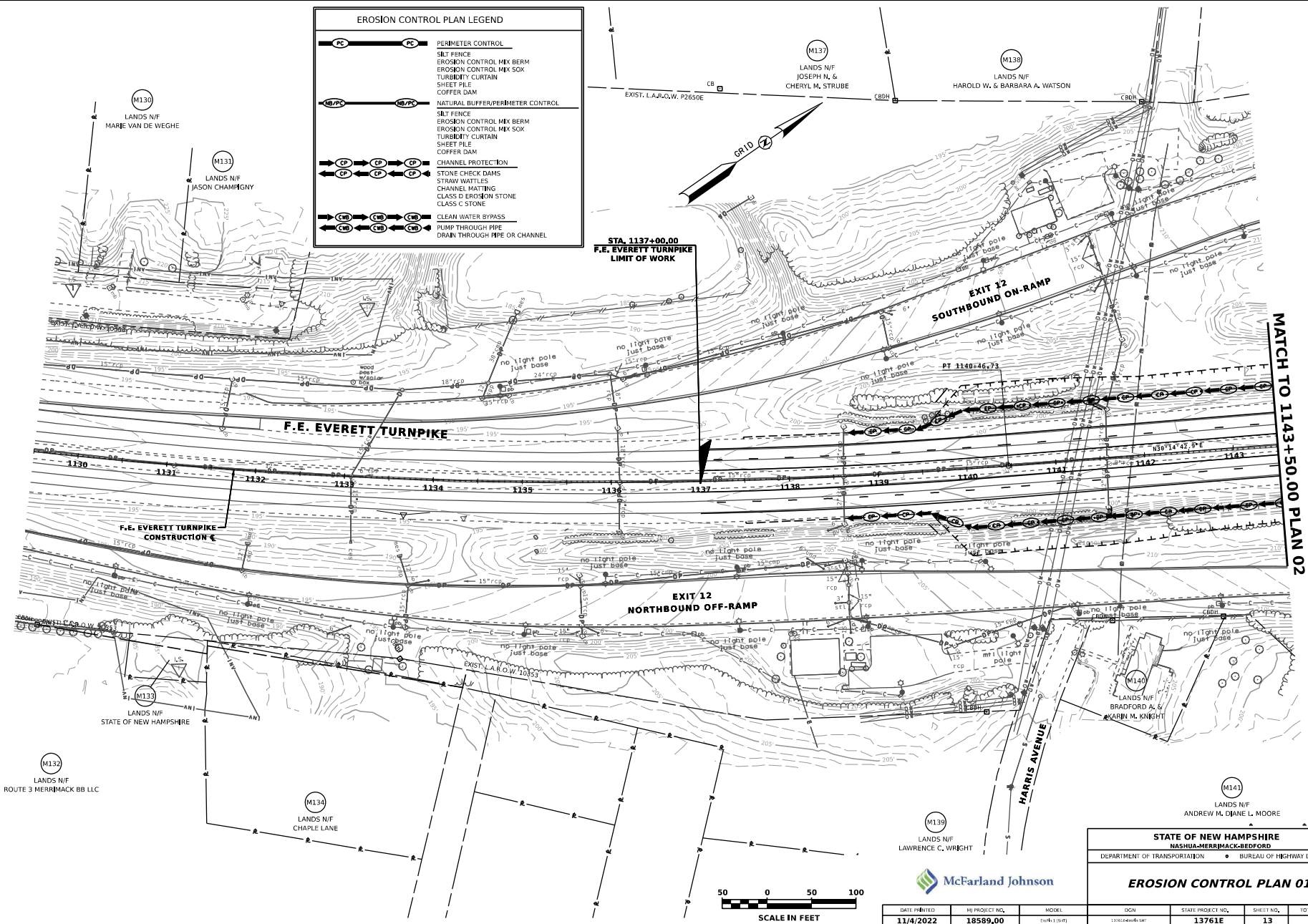
**STATE OF NEW HAMPSHIRE**  
 NASHUA-MERRIMACK-BEDFORD  
 DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

## EROSION CONTROL STRATEGIES

REVISION DATE	CGM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
erosstrat [SHT]	02-25-2022	13761E-State Ditch SHT	13761E	12 / 19

REVIEWS AFTER PROPOSAL	DATE	DATE	DATE	DATE
	NUMBER	NUMBER	NUMBER	NUMBER
	STATION	STATION	STATION	STATION
	DESCRIPTION	DESCRIPTION	DESCRIPTION	DESCRIPTION

EROSION CONTROL PLAN LEGEND	
	PERIMETER CONTROL
	SILT FENCE
	EROSION CONTROL MIX BERM
	EROSION CONTROL MIX SOX
	TURBIDITY CURTAIN
	SHEET PILE
	COFFER DAM
	NATURAL BUFFER/PERIMETER CONTROL
	CHANNEL PROTECTION
	STONE CHECK DAMS
	STRAW WATTLES
	CHANNEL MATTING
	CLASS D EROSION STONE
	CLASS C STONE
	CLEAN WATER BYPASS
	PUMP THROUGH PIPE
	DRAIN THROUGH PIPE OR CHANNEL



<b>STATE OF NEW HAMPSHIRE</b>			
NASHUA-MERRIMACK-BEDFORD			
DEPARTMENT OF TRANSPORTATION		BUREAU OF HIGHWAY DESIGN	
<b>EROSION CONTROL PLAN 01</b>			
DATE REVISION	NO PROJECT NO.	MODEL	SCN
11/4/2022	18589,00	2004-11-09	13761E
STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS	
13761E	13	19	



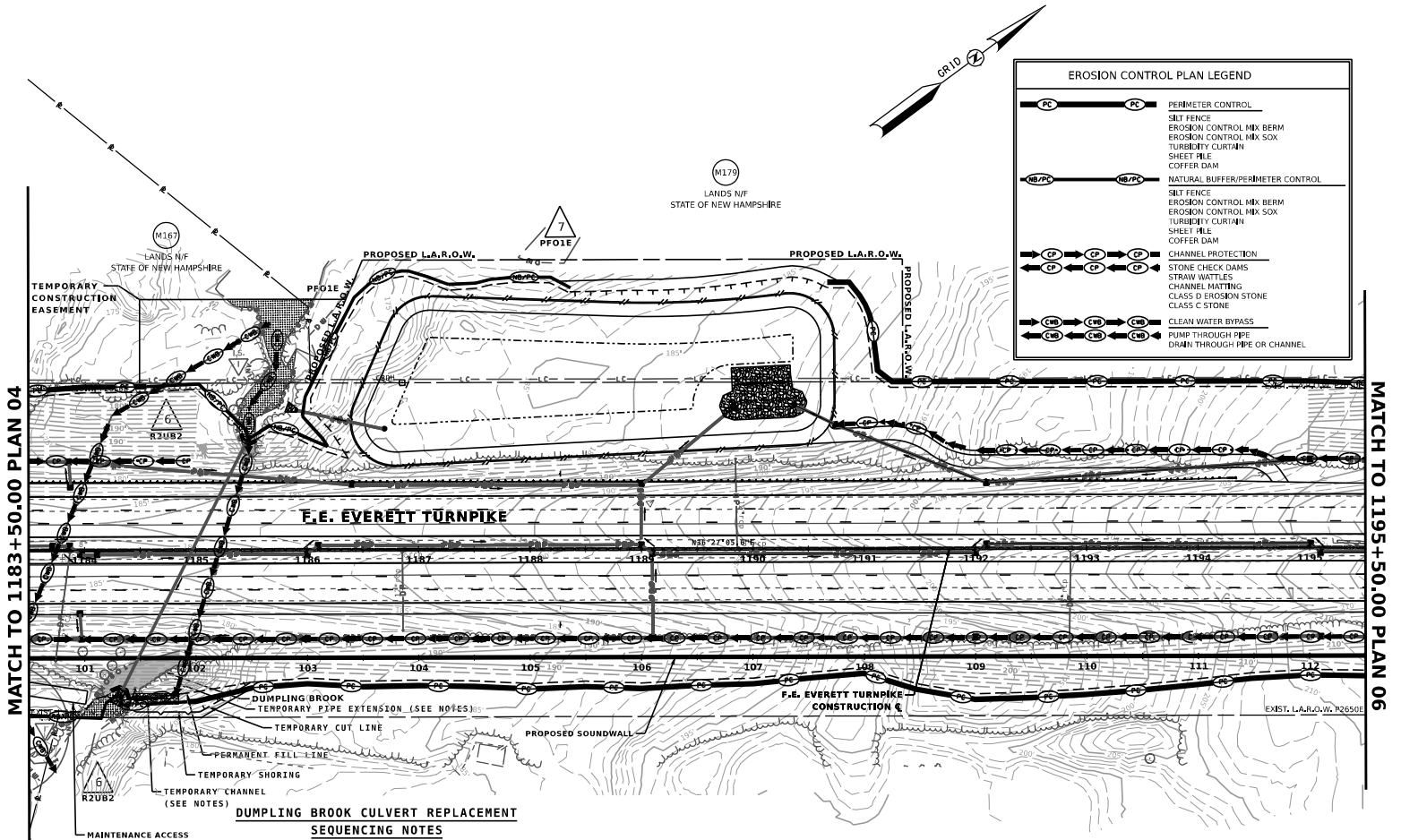




REVISIONS AFTER PROPOSAL	DESCRIPTION
STATION	
STATION	
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DATE	DATE
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DATE	DATE

SDR PROCESSED
NEW DESIGN
SHEET CHECKED
AS BUILT DETAILS



**EROSION CONTROL PLAN LEGEND**

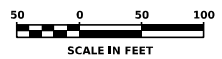
- PERIMETER CONTROL
- SILT FENCE
- EROSION CONTROL MIX BERM
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM
- NATURAL BUFFER/PERIMETER CONTROL
- SILT FENCE
- EROSION CONTROL MIX BERM
- TURBIDITY CURTAIN
- SHEET PILE
- COFFER DAM
- CHANNEL PROTECTION
- STONE CHECK DAMS
- STRAW WATTLES
- CHANNEL MATTING
- CLASS D EROSION STONE
- CLASS C STONE
- CLEAN WATER BYPASS
- PUMP THROUGH PIPE
- DRAIN THROUGH PIPE OR CHANNEL

MATCH TO 1183+50.00 PLAN 04

MATCH TO 1195+50.00 PLAN 06

**DUMPLING BROOK CULVERT REPLACEMENT SEQUENCING NOTES**

1. TEMPORARILY DIVERT ALL DUMPLING BROOK FLOW INTO EXISTING 24" CULVERT BY INSTALLING WATER DIVERSION AT UPSTREAM END OF EXISTING 36" CULVERT. (1 MONTH)
2. EXTEND EXISTING 36" CULVERT AND CONSTRUCT TEMPORARY CHANNEL AROUND WORK AREA WITHIN EXISTING RIGHT-OF-WAY. PLACE NATURAL STREAMBED MATERIAL IN TEMPORARY CHANNEL.
3. REMOVE TEMPORARY WATER DIVERSION AND RESTORE DUMPLING BROOK FLOW INTO EXISTING 36" CULVERT.
4. CONSTRUCT NEW 42" CULVERT UP TO EXISTING 36" CULVERT HEADWALL. (3 PHASES)
5. TEMPORARILY DIVERT ALL DUMPLING BROOK FLOW INTO EXISTING 24" CULVERT BY INSTALLING WATER DIVERSION UPSTREAM OF 42" CULVERT HEADWALL. (1 MONTH)
6. COMPLETE CONSTRUCTION OF NEW 42" CULVERT AND HEADWALL.
7. REMOVE TEMPORARY WATER DIVERSION AND RESTORE DUMPLING BROOK FLOW INTO NEW 42" CULVERT.
8. FILL AND ABANDON EXISTING 24" AND 36" CULVERTS.



DATE PRINTED	WI PROJECT NO.	MODEL	CON	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589,00	2024-10-01	131614484.MXD	13761E	17	19

<b>STATE OF NEW HAMPSHIRE</b>	
NASHUA-MERRIMACK-BEDFORD	
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**EROSION CONTROL PLAN 05**



M179  
LANDS N/F  
WEBSTER GREEN SUBDIVISION  
145 HOUSING UNITS

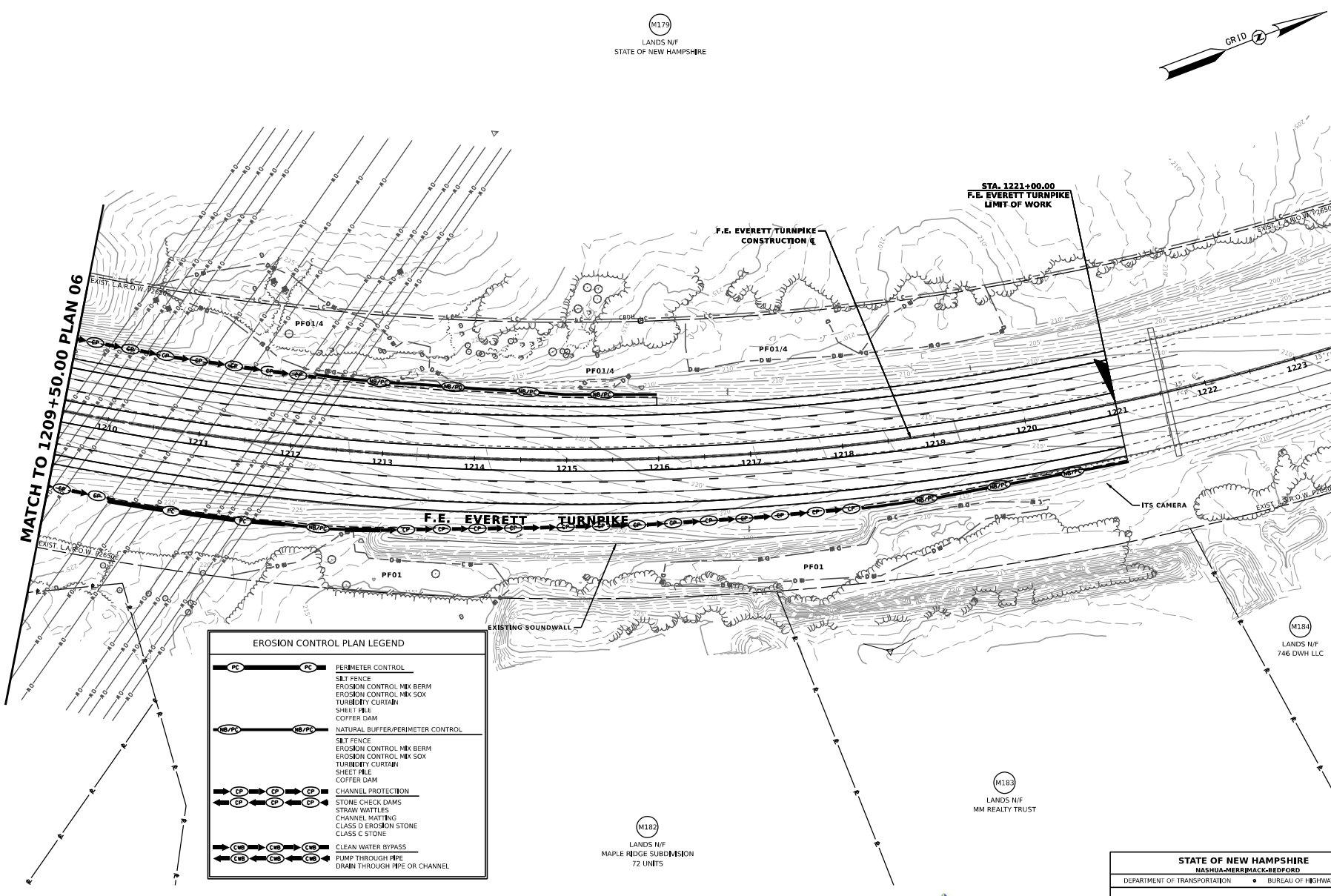
M187  
LANDS N/F  
STATE OF NEW HAMPSHIRE





REVISIONS AFTER PROPOSAL	DESCRIPTION

DATE	DATE
NUMBER	STATION
DATE	DATE
DATE	DATE
DATE	DATE



**EROSION CONTROL PLAN LEGEND**

<b>PC</b>	<b>PC</b>	<b>PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
<b>MB/PC</b>	<b>MB/PC</b>	<b>NATURAL BUFFER/PERIMETER CONTROL</b> SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
<b>CP</b>	<b>CP</b>	<b>CHANNEL PROTECTION</b> STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
<b>CBM</b>	<b>CBM</b>	<b>CLEAN WATER BYPASS</b> PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL



M183  
LANDS N/F  
MM REALTY TRUST

STATE OF NEW HAMPSHIRE  
NASHUA-MERRIMACK-BEDFORD  
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN

**EROSION CONTROL PLAN 07**

DATE PRINTED	PI PROJECT NO.	MODEL	DCM	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
11/4/2022	18589,00	2024-12-09	1316(44)407.001	13761E	19	19

SCR PROCESSED
NEW DESIGN
SHEET CHECKED
AS BUILT DETAILS



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of Engineers**®  
New England District

**WORK-START NOTIFICATION FORM**  
(Minimum Notice: Two weeks before work begins)

\*\*\*\*\*

EMAIL TO: Michael Hicks [michael.c.hicks@usace.army.mil](mailto:michael.c.hicks@usace.army.mil)  
and [cenae-r@usace.army.mil](mailto:cenae-r@usace.army.mil); or

MAIL TO: Michael Hicks  
Regulatory Division  
U.S. Army Corps of Engineers, New England District  
696 Virginia Road  
Concord, Massachusetts 01742-2751

\*\*\*\*\*

Corps of Engineers Permit No. NAE-2023-00449 was issued to the New Hampshire Department of Transportation. This work is located on the FE Everett Turnpike in Merrimack, New Hampshire and authorized the placement of 17,611 square feet of fill in wetlands and streams associated with the widening of the turnpike.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

**PLEASE PRINT OR TYPE**

**Name of Person/Firm:** \_\_\_\_\_

**Business Address:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Phone & email:** ( ) \_\_\_\_\_ ( ) \_\_\_\_\_

**Proposed Work Dates:**      **Start:** \_\_\_\_\_      **Finish:** \_\_\_\_\_

**Permittee/Agent Signature:** \_\_\_\_\_      **Date:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_      **Title:** \_\_\_\_\_

**Date Permit Issued:** \_\_\_\_\_      **Date Permit Expires:** \_\_\_\_\_

\*\*\*\*\*

**FOR USE BY THE CORPS OF ENGINEERS**

**PM:** \_\_\_\_\_      **Submittals Required:** \_\_\_\_\_

**Inspection Recommendation:** \_\_\_\_\_



**US Army Corps  
of Engineers**®  
New England District

**COMPLIANCE CERTIFICATION FORM**  
(Minimum Notice: Permittee must sign and return notification  
within one month of the completion of work.)

**Permit Number:** NAE-2023-00449

**Project Manager:** Michael Hicks

**Name of Permittee:** New Hampshire Department of Transportation

**Permit Issuance Date:** See Authorization Letter

Please sign this certification and return it to our office upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

\*\*\*\*\*  
\* E-MAIL TO: [cenae-r@usace.army.mil](mailto:cenae-r@usace.army.mil); or \*  
\* \* \* \* \*  
\* MAIL TO: Permits and Enforcement Branch C \*  
\* U.S. Army Corps of Engineers, New England District \*  
\* Regulatory Division \*  
\* 696 Virginia Road \*  
\* Concord, Massachusetts 01742-2751 \*  
\*\*\*\*\*

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

**I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.**

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date of Work Completion

( ) \_\_\_\_\_  
Telephone Number

( ) \_\_\_\_\_  
Telephone Number