US Army Corps
of Engineers ®
New England District

Route 9 Entrance Bridge Abutment Repairs

Otter Brook Lake,
Keene, New Hampshire

Wetlands Permit, Site Plan and Technical Drawings

APPENDIX A

Wetlands Permit

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

October 16, 2025

USACE
NICHOLAS WARNER
696 VIRGINIA ROAD
CONCORD MA 01742

Re: Approved Standard Dredge and Fill Wetlands Permit Application (RSA 482-A)
NHDES File Number: 2025-01458
Subject Property: 480 Branch Road, Keene, Tax Map/Block/Lot(s):

Dear Applicant:

On October 16, 2025, the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau approved the above-referenced Standard Dredge and Fill Wetlands Permit Application. Enclosed please find Wetlands Permit # 2025-01458 to Impact approximately 200 square feet/50 linear feet (or less) around a concrete abutment within Otter Brook for placement of sandbags to create a dry work area to perform repair of the concrete abutments and wingwalls at the Old Route 9 Entrance Bridge, located within the park area of Otter Brook Lake Dam. Construction includes the removal of deteriorated sections of the existing parge coat from the abutments and wingwalls, followed by concrete patching and restoration. The permittee shall notify the department in writing at least one week prior to commencing any work under this permit and shall file a notice of completion of work and certificate of compliance with the department within 10 working days of completion of the work authorized by this permit.

This permit is not valid unless signed by the permittee and the principal contractor, if any, who will build or install the project. Prior to start of construction, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project**.** It shall remain posted until the project is completed. Transfer of this permit to a new owner shall require notification to, and approval of, the NHDES. **This permit does not convey any property right, nor does it preclude the need to meet any other applicable state, federal, or municipal legal requirements.**

In accordance with RSA 482-A:10, RSA 21-O:14, and Rules Ec-Wet 100-200, **any person aggrieved by this decision may file a Notice of Appeal directly with the NH Wetlands Council (Council) within 30 days of the decision date, October 16, 2025.** Every ground claiming the decision is unlawful or unreasonable must be fully set forth in the Notice of Appeal. Only the grounds set forth in the Notice of Appeal are considered by the Council. Information about the Council, including Council Rules, is available at https://www.nhec.nh.gov/wetlands-council/about. For appeal related issues, contact the Council Appeals Clerk at (603) 271-3650.

This approval is based on the following findings:
1. This project is classified as a minimum impact project pursuant to Env-Wt 903.01(e)(3), as it involves the repair of a tier 3 stream crossing.

If you have any questions, please contact me at Karl.Benedict@des.nh.gov or (603) 271-4194.

Sincerely,

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

Copied: Property Owner
Agent
Municipal Clerk/Conservation Commission

The State of New Hampshire
Department of Environmental Services

Robert R. Scott, Commissioner

WETLANDS PERMIT 2025-01458

NOTE CONDITIONS

PERMITTEE:	**USACE** **NICHOLAS WARNER** **696 VIRGINIA ROAD** **CONCORD MA 01742**
PROJECT LOCATION:	**480 BRANCH ROAD, KEENE** **Tax Map/Block/Lot(s):**
WATERBODY:	**OTTER BROOK**
APPROVAL DATE:	**OCTOBER 16, 2025** **EXPIRATION DATE: OCTOBER 16, 2030**

The New Hampshire Department of Environmental Services' (NHDES) review of permit application 2025-01458 has found that it is consistent with RSA 482-A. NHDES hereby issues this Wetlands Permit authorizing the impacts described provided the Conditions imposed are met. To validate this Permit, the Permittee and the Principal Contractor are required to sign below.

PERMIT DESCRIPTION:
Impact approximately 200 square feet/50 linear feet (or less) around a concrete abutment within Otter Brook for placement of sandbags to create a dry work area to perform repair of the concrete abutments and wingwalls at the Old Route 9 Entrance Bridge, located within the park area of Otter Brook Lake Dam. Construction includes the removal of deteriorated sections of the existing parge coat from the abutments and wingwalls, followed by concrete patching and restoration.

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

1. The permit shall be contingent on review and approval by NHDES of final stream diversion plans that detail the timing and method of stream flow diversion during construction and show temporary siltation, turbidity control and perimeter control measures to be implemented.
2. In accordance with Env-Wt 307.16, all work shall be done in accordance with the annotated plans received by the NH Department of Environmental Services (NHDES) on September 17, 2025.
3. The permittee must notify NHDES in writing at least one week before starting work using the NH Online Forms System - Wetlands Initiation of Construction Notification Form (Version 3).
4. In accordance with Env-Wt 526.02(b), flooding or dewatering must not permanently destroy native hydrophytic vegetation or aquatic habitats for finfish, crustacea, or wildlife.
5. Per Env-Wt 307.03(b), all work must minimize erosion, sediment transfer, and turbidity using methods from Env-Wq 1505.02, 1505.04, 1506, and 1508; the applicable BMP manual (unless it offers less protection than Env-Wq 1500); or a combination of both.
6. As required by Env-Wt 307.03(g)(1), construction equipment must be inspected daily for fuel, oil, or hydraulic leaks before entering or operating near jurisdictional areas.
7. Per Env-Wt 307.03(a), no activity may cause or contribute to violations of surface water quality standards (RSA 485-A:8, Env-Wq 1700), groundwater quality standards (RSA 485-C), sanitary protective area limits (Env-Dw 302.10 or 305.10), or any provision of RSA 485-A, Env-Wq 1000, RSA 483-B, or Env-Wq 1400.

8. Under Env-Wt 307.03(c)(4), water quality controls must minimize erosion, capture sediment and floating materials, and filter fine sediment.
9. Per Env-Wt 307.03(c)(3), water quality controls must be installed before work begins and follow manufacturer specifications or, if unavailable, the requirements of Env-Wq 1506 or 1508.
10. In accordance with Env-Wt 307.03(c)(5), water quality controls must be maintained to ensure continued effectiveness during and after construction.
11. As required by Env-Wt 307.03(d), sediment collected by water quality controls must be removed frequently to prevent discharge and placed upland to avoid erosion into surface waters or wetlands.
12. Per Env-Wt 307.03(h), equipment must be staged and refueled outside jurisdictional areas (unless otherwise allowed) and in accordance with Env-Wt 307.15.
13. Within 10 working days of completing the authorized work, the permittee must submit the Wetlands Completion of Construction Notice and Certificate of Compliance Form (Version 2.7) via the NH Online Forms System.

ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:

1. This permit does not preclude the need to meet any other applicable state, federal, or municipal legal requirements.
2. The permit holder is responsible for reading, and ensuring compliance with, the applicable general conditions established in Env-Wt 307.
3. This permit does not in any way authorize 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.
4. This approval does not convey any property right. The permittee is responsible for ensuring that they have the legal authority to access the subject lands and conduct the impacts described.

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).

_____ _____

PERMITTEE SIGNATURE (required) PRINCIPAL CONTRACTOR SIGNATURE (required)

APPENDIX B

Site Plan

OLD ROUTE 9
CONSTRUCTION
ACCESS ROAD
BRIDGE
OLD ROUTE 9
CONTRACTOR
LAYDOWN AREA

9
Franklin Pierce Hwy
9
ROUTE 9
USACE CONTROLLED
ACCESS GATE
OLD ROUTE 9
CONSTRUCTION
ACCESS ROAD
Otter Brook
Otter Brook Disc
Golf Course
BRIDGE
OLD ROUTE 9
CONTRACTOR
LAYDOWN AREA
ter Brook

Appendix C

Technical Drawings

G3 NORTH ABUTMENT ELEVATION VIEW
SCALE: N.T.S

REPAIR NOTES

1. ALL AREAS SHOWN ARE NOT TO SCALE. APPROXIMATE AREAS ARE SHOWN ON EACH PHOTOGRAPH OF THE AREAS REQUIRING CONCRETE REPAIR. CONTRACTOR SHALL DETERMINE REQUIRED AREAS OF REPAIR BASED ON VISUAL OBSERVATIONS AND SOUNDING. CONTRACTOR SHALL SQUARE ALL CORNERS OF REPAIR AREAS.
2. REMOVE ALL EXISTING SEALANT FROM JOINT AND CLEAN CONCRETE SURFACES. INSERT BACKER ROD AND APPLY SEALANT MEETING WITH THE REQUIREMENTS OF ASTM C920, TYPE M, GRADE NS, CLASS 25. SEALANT APPLICATION TO STRICTLY FOLLOW THE MANUFACTURER'S INSTRUCTIONS.
3. WHEN REPAIRS EXTEND TO THE TOP OF THE WALL OR ABUTMENT, THE FULL HORIZONTAL WIDTH OF THE TOP SURFACE SHALL BE REMOVED AND PATCHED TO THE DEPTH MATCHING THE DEPTH OF THE VERTICAL REPAIR COMPONENT OF THE WALL OR ABUTMENT, EXCEPT WHEN THE REPAIR IS UNDER THE BRIDGE BEARINGS.
4. REMOVE PARGE COAT FROM ALL EXPOSED SURFACES OF EXISTING ABUTMENT AND WINGWALLS DOWN TO GRADE AND LOW WATER MARK. AFTER REMOVAL, KNOCK OFF ALL SURFACE PROJECTIONS GREATER THAN 1/4" AND LIGHTLY GRIND ALL SURFACES TO ACHIEVE UNIFORM APPEARANCE.
5. ALL REENTRANT CORNERS SHALL HAVE A 2 FOOT LONG SECTION OF #3 REINFORCING PLACED DIAGONAL TO THE REENTRANT CORNER. THE REENTRANT REINFORCING SHALL HAVE A MINIMUM CONCRETE COVER OF ONE INCH IN ALL DIRECTIONS.
6. OPTION WORK: PRESSURE WASH ALL SURFACES TO REMOVE DELETERIOUS DEBRIS AND OPEN SURFACE PORES TO ACCEPT SEALER. APPLY TWO COATS OF PENETRATING SEALER. STRICTLY FOLLOW PENETRATING SEALER MANUFACTURER'S INSTRUCTIONS FOR CONCRETE SURFACE PREPARATION, AND MEANS AND METHODS OF APPLICATION.

REPAIR LEGEND

1 AREAS SHALL HAVE CONCRETE REMOVED 2 INCHES DEEP MINIMUM AND REPAIRED IN ACCORDANCE WITH DETAIL J2 ON SHEET S-501.

2 AREAS SHALL HAVE CONCRETE REMOVED 4 INCHES DEEP MINIMUM AND REPAIRED IN ACCORDANCE WITH DETAIL B2 ON SHEET S-501.

A3 NORTH ABUTMENT WEST WINGWALL ELEVATION VIEW
SCALE: N.T.S

A13 NORTH ABUTMENT EAST WINGWALL ELEVATION VIEW
SCALE: N.T.S

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: L. BEVERAGE
DRAWN BY: L. BEVERAGE
CHECKED BY: B. PAUL
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE:
SCALE: N.T.S.
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: CBE-XXX-XX-XXX
SHEET 1 OF 3

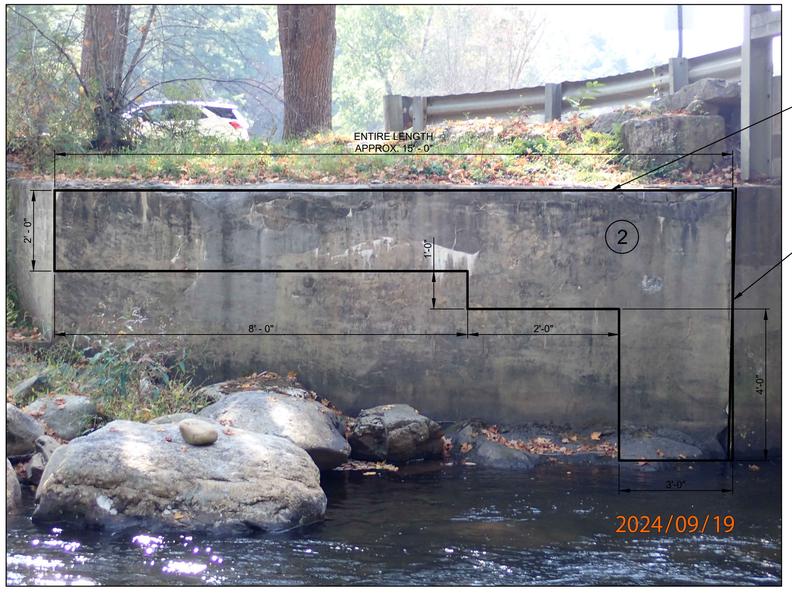
U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

ROUTE 9 ENTRANCE BRIDGE
CONCRETE REPAIRS
OTTER BROOK LAKE
KEENE, NEW HAMPSHIRE

ELEVATION VIEWS - NORTH ABUTMENT

SHEET ID
S-201

G3 SOUTH ABUTMENT ELEVATION VIEW
SCALE: N.T.S



A3 SOUTH ABUTMENT EAST WINGWALL ELEVATION VIEW
SCALE: N.T.S

WATERLINE NOTE: CONTRACTOR SHALL ENSURE EXISTING WATERLINE IS NOT DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH THE GOVERNMENT TO ENSURE WATER LINE IS DEACTIVATED DURING DEMOLITION AND CONSTRUCTION.

A13 SOUTH ABUTMENT WEST WINGWALL ELEVATION VIEW
SCALE: N.T.S

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

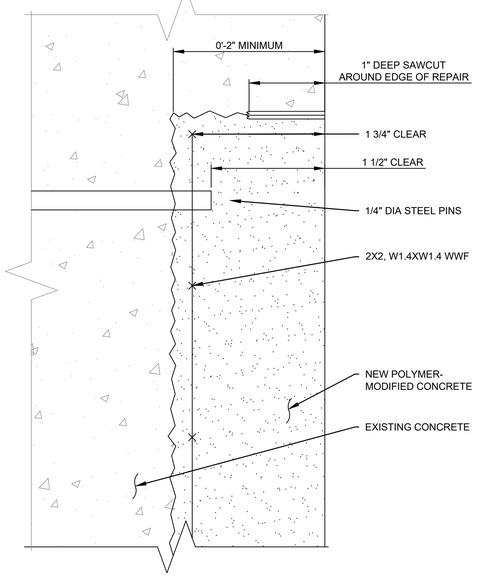
DESIGNED BY: L. BEVERAGE
DRAWN BY: L. BEVERAGE
CHECKED BY: B. PAUL
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE:
SCALE: N.T.S.
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: OBE-XXX-XX-XXX
SHEET 2 OF 3

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

ROUTE 9 ENTRANCE BRIDGE
CONCRETE REPAIRS
OTTER BROOK LAKE
KEENE, NEW HAMPSHIRE

ELEVATION VIEWS - SOUTH ABUTMENT

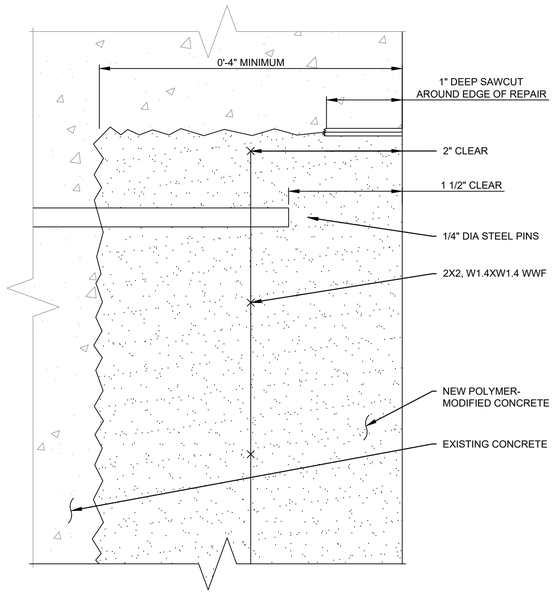
SHEET ID
S-202



J2 TYPICAL REPAIR PATCH MINIMUM 2" DEEP
SCALE: N.T.S

TYPICAL REPAIR PATCH MINIMUM 2" DEEP

1. SAWCUT PERIMETER OF REPAIR A MINIMUM OF 1 INCH DEEP.
2. REMOVE ALL CONCRETE TO A MINIMUM DEPTH OF 2 INCHES.
3. AS-BUILT PLANS FOR THIS BRIDGE ARE NOT AVAILABLE AT THIS TIME, SO THE LOCATION OF EXISTING REINFORCING STEEL IN THE ABUTMENTS IS NOT CURRENTLY KNOWN. FOR ALL REINFORCING STEEL THAT IS EXPOSED GREATER THAN 50% OF ITS CIRCUMFERENCE, THE CONCRETE SHALL BE UNDERCUT BY A MINIMUM OF 1 INCH.
4. PLACE STEEL PINS AT MAXIMUM OF 12 INCHES ON CENTER. PINS SHALL HAVE A MINIMUM EMBEDDED DEPTH OF 6" INTO SOUND CONCRETE. PINS SHALL HAVE A MINIMUM DIAMETER OF 1/4 IN. PINS SHALL MEET SAME MATERIAL REQUIREMENTS AS STEEL REINFORCING. PINS SHALL BE SECURED IN PLACE WITH EPOXY IN ACCORDANCE WITH SPECIFICATION SECTION 03 01 00.
5. FASTEN 2X2, W1.4XW1.4, WELDED WIRE FABRIC (WWF) TO STEEL PINS. ONLY USE WWF WHEN THE REPAIR AREA EXCEEDS 1.0 SQUARE FEET. PROVIDE MINIMUM CONCRETE COVER OF 1 3/4 IN FOR THE WWF.
6. WHEN EXISTING REINFORCING IS EXPOSED DURING CONCRETE REMOVAL OR REPAIR, CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD TO DETERMINE IF REPLACEMENT OF REINFORCEMENT IS NECESSARY. ENGINEER OF RECORD SHALL DETERMINE WHETHER TO REPLACE OR SPLICE EXISTING REINFORCEMENT. IF SPLICING THE REINFORCEMENT, PROVIDE A NEW BAR HAVING SECTION GREATER THAN THE MAXIMUM SECTION AREA LOSS (#3 MINIMUM).
7. FOR ANY REPLACEMENTS TO THE EXISTING REINFORCEMENT, PROVIDE A LAP SPLICE AS INDICATED IN THE “BAR SPLICE CHART”.
8. REMOVE ALL LOOSE CONCRETE AND LEACHATES FROM THE EXISTING CONCRETE SURFACE PRIOR TO CONCRETE PREPARATION AND PLACEMENT. PREPARE SURFACE TO ICRI CSP 6.
9. ENSURE REPAIR AREA IS SATURATED SURFACE DRY.
10. APPLY CORROSION INHIBITOR/BONDING AGENT TO EXPOSED PINS, WWF, EXISTING REINFORCEMENT, AND CONCRETE SUBSTRATE.
11. INSTALL FORMS.
12. PLACE POLYMER-MODIFIED CONCRETE.
13. REFER TO DRAWINGS S-201 AND S-202 FOR REPAIR LOCATIONS.



B2 TYPICAL REPAIR PATCH MINIMUM 4" DEEP
SCALE: N.T.S

TYPICAL REPAIR PATCH MINIMUM 4" DEEP

1. SAWCUT PERIMETER OF REPAIR A MINIMUM OF 1 INCH DEEP.
2. REMOVE ALL CONCRETE TO A MINIMUM DEPTH OF 4 INCHES.
3. AS-BUILT PLANS FOR THIS BRIDGE ARE NOT AVAILABLE AT THIS TIME, SO THE LOCATION OF EXISTING REINFORCING STEEL IN THE ABUTMENTS IS NOT CURRENTLY KNOWN. FOR ALL REINFORCING STEEL THAT IS EXPOSED GREATER THAN 50% OF ITS CIRCUMFERENCE, THE CONCRETE SHALL BE UNDERCUT BY A MINIMUM OF 1 INCH.
4. PLACE STEEL PINS AT MAXIMUM OF 12 INCHES ON CENTER. PINS SHALL HAVE A MINIMUM EMBEDDED DEPTH OF 6" INTO SOUND CONCRETE. PINS SHALL HAVE A MINIMUM DIAMETER OF 1/4". PINS SHALL MEET SAME MATERIAL REQUIREMENTS AS STEEL REINFORCING. PINS SHALL BE SECURED IN PLACE WITH EPOXY IN ACCORDANCE WITH SPECIFICATION SECTION 03 01 00.
5. FASTEN 2X2, W1.4XW1.4, WELDED WIRE FABRIC (WWF) TO STEEL PINS. ONLY USE WWF WHEN THE REPAIR AREA EXCEEDS 1.0 SQUARE FEET. PROVIDE MINIMUM CONCRETE COVER OF 2 IN FOR THE WWF.
6. WHEN EXISTING REINFORCING IS EXPOSED DURING CONCRETE REMOVAL OR REPAIR, CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD TO DETERMINE IF REPLACEMENT OF REINFORCEMENT IS NECESSARY. ENGINEER OF RECORD SHALL DETERMINE WHETHER TO REPLACE OR SPLICE EXISTING REINFORCEMENT. IF SPLICING THE REINFORCEMENT, PROVIDE A NEW BAR HAVING SECTION GREATER THAN THE MAXIMUM SECTION AREA LOSS (#3 MINIMUM).
7. FOR ANY REPLACEMENTS TO THE EXISTING REINFORCEMENT, PROVIDE A LAP SPLICE AS INDICATED IN THE “BAR SPLICE CHART”.
8. REMOVE ALL LOOSE CONCRETE AND LEACHATES FROM THE EXISTING CONCRETE SURFACE PRIOR TO CONCRETE PREPARATION AND PLACEMENT. PREPARE SURFACE TO ICRI CSP 6.
9. ENSURE REPAIR AREA IS SATURATED SURFACE DRY.
10. APPLY CORROSION INHIBITOR/BONDING AGENT TO EXPOSED PINS, WWF, EXISTING REINFORCEMENT, AND CONCRETE SUBSTRATE.
11. INSTALL FORMS.
12. PLACE POLYMER-MODIFIED CONCRETE.
13. REFER TO DRAWINGS S-201 AND S-202 FOR REPAIR LOCATIONS.

BAR SPLICE CHART

BAR SIZE	LAP SPLICE LENGTH
#3	1'-0"
#4	1'-3"
#5	1'-7"
#6	1'-11"
#7	2'-3"
#8	2'-6"

US Army Corps of Engineers®

MARK	DESCRIPTION	DATE

DESIGNED BY: L. BEVERAGE
DRAWN BY: L. BEVERAGE
CHECKED BY: B. PAUL
SUBMITTED BY:
SIZE: ANSI D
ISSUE DATE:
SOLICITATION NO.:
CONTRACT NO.:
DRAWING CODE: OBLXXX-XX-XXX
SCALE: N.T.S.
SHEET 3 OF 3

U.S. ARMY CORPS OF ENGINEERS
NEW ENGLAND DISTRICT
696 VIRGINIA ROAD
CONCORD, MA 01742-2751

ROUTE 9 ENTRANCE BRIDGE
CONCRETE REPAIRS
OTTER BROOK LAKE
KEENE, NEW HAMPSHIRE

CONCRETE REPAIR DETAILS

SHEET ID
S-501