Leicester Conservation Commission

Memo

To: Bob Fournier
PO Box 367
Rochdale, MA 01540

From: Conservation Commission

Date: 10/9/2018

Re: Public Record Request
Stiles Reservoir Application

Per your phone message request of 10/8/2018

Engineers | Scientists | Planners

PARECORP.COM

PARE CORPORATION

October 3, 2018

Conservation Agent
Leicester Conservation Commission
3 Washburn Square
Leicester, MA 01524

RE: **MADEP File NO.: 197-0592**
Stiles Reservoir Dam Reconstruction
Request for Extension and Amendment
(Pare Project No. 15119.01)

Dear Members of the Commission:

On behalf of the Stiles Lake Watershed District (SLWD), Pare Corporation (Pare) has prepared this letter to request an extension and to amend the Order of Conditions for the Stiles Reservoir Dam Reconstruction project to allow the owner to address unforeseen conditions encountered during re-impoundment.

The project was initially permitted to enable repairs to be undertaken at the dam, including replacing the low-level outlet, installing a cutoff wall through the embankment section of the dam, constructing a new parapet wall along the length of the embankment to accommodate the spillway design flood elevations, raising the training walls at the primary spillway, repairing cracks within the spillway, and installing internal drainage and instrumentation and address potential flooding along the left abutment during the spillway design flood. These repairs were completed to address structural deficiencies that had resulted in the ordered drawdown of the impoundment by MADCR Office of Dam Safety. This work was completed as designed including the wetland mitigation work identified within the original design documents and permitted under the existing Order of Conditions[i].

Upon reaching normal pool elevations and steady state saturation conditions, it was noted that the phreatic levels within the instrumentation installed at the dam had risen, prompting additional monitoring and investigation. Through this additional monitoring it was noted that a leak had developed at the approach to the spillway located near the right abutment. The leak was located due to the presence of a small intermittent vortex. Pare has developed a repair approach which includes the construction of a cementitious cutoff wall within the spillway approach, backing up an injected hydrophobic grout plug, to address the current leak and limit the potential for the development of additional leaks. The work as details in the enclosed plans will be:

- Completed within the previously permitted limits of disturbance;
- Will result in no loss of wetland or land below water resources;
- Can be implemented during the normal winter drawdown period;
- Will include construction of a temporary ramp to enable access to the spillway approach from the right abutment area;
- Will include a temporary cofferdam at the edge of the drawn down waterline to protect against storm events during the construction process;
- Will require less than 30 yards of excavation within the spillway approach;
- The work requested will likely be completed prior to the June 2019 expiration of the Order of Conditions, however it is requested that the duration be increased by one year to June of 2020 to enable a monitoring period beyond the point of steady state saturation.

10 LINCOLN ROAD, SUITE 210 FOXBORO, MA 02035 8 BLACKSTONE VALLEY PLACE LINCOLN, RI 02865
T 508.543.1755 F 508.543.1881 T 401.334.4100 F 401.334.4108

Pursuant to Wetlands Program Policy 85-4, the abutters have been notified and Pare Corporation is submitting the attached plans which are in addition to the plans submitted under the original application.

Pare requests that this project be added to the October 17th agenda so that, if approved, the work can commence in November once the target winter drawdown elevation is achieved.

Thank you for your consideration of this request. Should you have any questions please feel free to contact me at 508.543.1755 or via email at mbellisle@parecorp.com.

Sincerely,

PARE CORPORATION

J. Matthew Bellisle, P.E.
Senior Vice President

cc: Mr Jay Lussier, SLWD
Mr. William Salomaa, MADCR Office of Dam Safety

[ii] Existing Order of Conditions is recorded at the Worcester County Registry of Deeds in Book 55524, Page 27.

Engineers | Scientists | Planners

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Notification to Abutters under the Massachusetts Wetlands Protection Act

October 2, 2018

Dear Abutter,

In accordance with the second paragraph of Massachusetts General Laws, Chapter 131 Section 40, you are hereby notified of the following:

The applicant, the Stiles Lake Water District (SLWD), has filed an Amendment to the Order of Conditions received for the Stiles Lake Reservoir Dam under the Wetlands Protection Act (General Laws Chapter 131, Section 40) and the Town of Leicester Wetlands Protection Bylaw. The intent of the amendment is to construct an additional cutoff wall at the primary spillway of the Stiles Reservoir Dam located to the west of Parker Street in Leicester to allow for restoring the pool elevation to the level of the spillway crest. The project area includes portions of parcels C2, C3, and C4 on Leicester Assessor's Map 41. In order to safely complete the work, a temporary construction drawdown of Stiles Reservoir is proposed to 6.5 feet below the current ordered drawdown.

Copies of the Amendment may be examined at the office of the Leicester Conservation Commission at the Leicester Town Hall at 3 Washburn Square in Leicester. To schedule an appointment to examine the Notice of Intent or for information on the date, time and place of the public hearing, please contact Barbara Knox of the Leicester Conservation Commission at (508) 892-7007

A downloadable .pdf copy of the Notice of Intent and plans may be obtained by calling the applicant's representative, Lydia Neitlich of Pare Corporation, at (508) 543-1755 between the hours of 8:30 AM and 4:30 PM, Monday through Friday.

Please note that notice of the public hearing, including date, time, and place, will be posted in the Town Hall not less than forty-eight (48) hours in advance. Said notice will be published in a paper of general circulation not less than five (5) days in advance.

You may contact Barbara Knox of the Leicester Conservation Commission at (508) 892-7007, or the Central Regional Office of the Massachusetts Department of Environmental Protection at (508)792-7650, for more information about this application or the Massachusetts Wetlands Protection Act.

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Prepared for The:

STILES LAKE WATER DISTRICT

STILES RESERVOIR DAM SPILLWAY REPAIRS

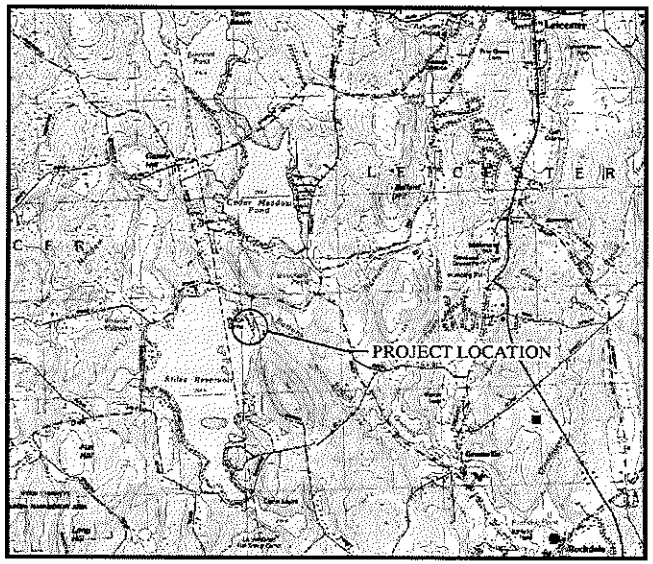
MA00983 / 3-14-151-7

LEICESTER, MASSACHUSETTS

OCTOBER 2018

AMENDMENT No.1

Drawing Index



LOCUS PLAN
SCALE: 1" = 2000'

0.0	COVER SHEET
1.0	GENERAL NOTES AND LEGEND
2.0	EXISTING SITE PLAN
2.1	EXISTING SITE PLAN (LEFT ABUTMENT)
3.0	EROSION CONTROL AND SITE ACCESS PLAN
3.1	PROPOSED SITE PLAN
4.0	LOW LEVEL OUTLET REPLACEMENT 1
4.1	LOW LEVEL OUTLET REPLACEMENT 2
4.2	LOW LEVEL OUTLET REPLACEMENT 3
5.0	ABUTMENT IMPROVEMENTS
5.1	SPILLWAY IMPROVEMENTS
6.0	SEEPAGE MITIGATION
7.0	WETLAND MITIGATION
8.0	CONCRETE REPAIR DETAILS
8.1	MISCELLANEOUS DETAILS
A1.0	GENERAL NOTES AND LEGEND - AMENDMENT No.1
A2.0	EXISTING SITE PLAN - AMENDMENT No.1
A2.1	EXISTING SPILLWAY PLAN - AMENDMENT No.1
A3.0	PROPOSED SPILLWAY PLAN - AMENDMENT No.1

AERIAL PLAN
SCALE: 1" = 400'

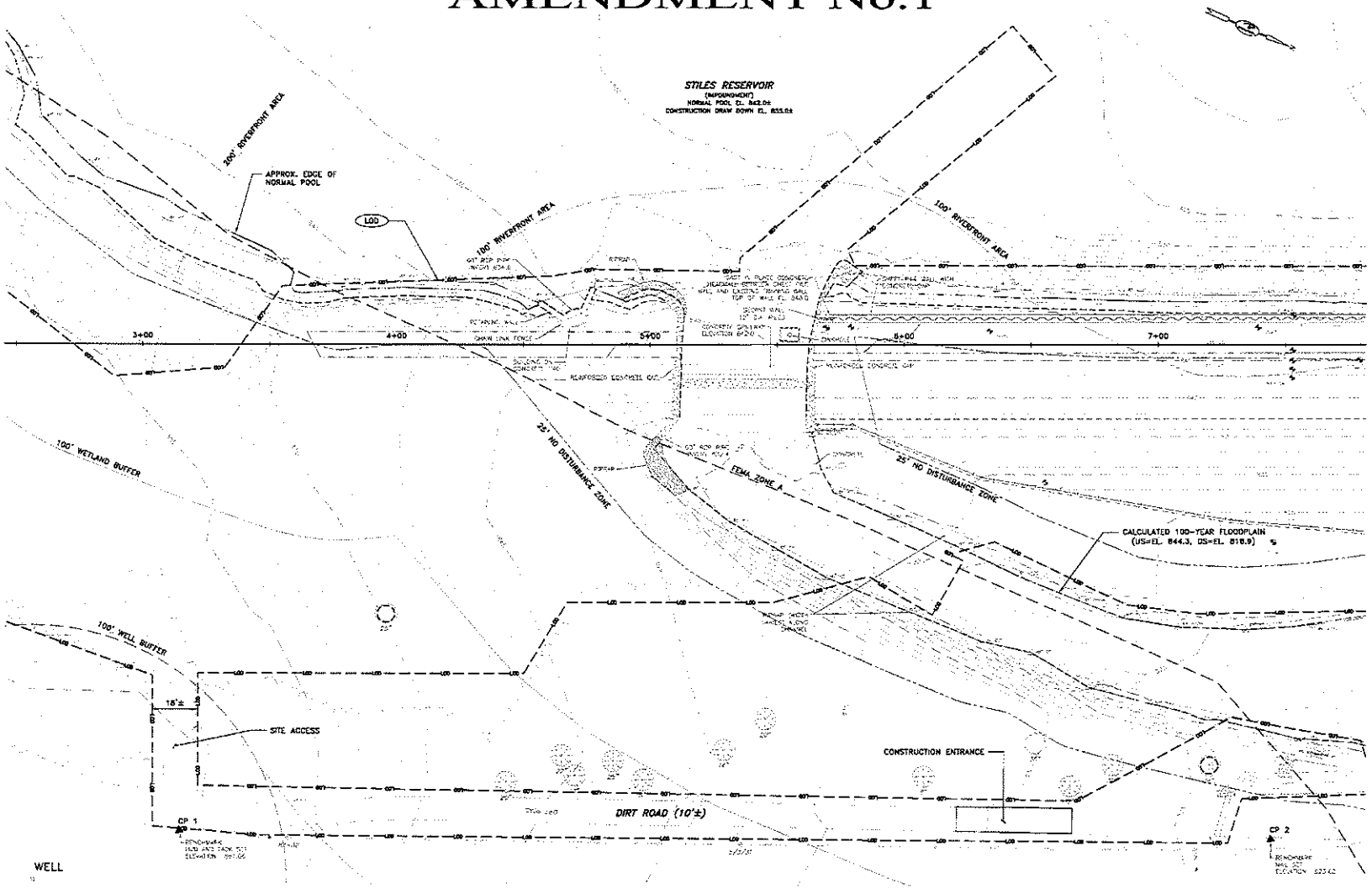
Prepared by:

PARE CORPORATION

Foxboro, Massachusetts

PARE CORPORATION

AMENDMENT No.1



EXISTING SITE PLAN

SCALE: 1"=20'

CONTROL POINTS

HORIZONTAL:

POINT ID	COORDINATES	ELEVATION	DESCRIPTION
▲ CP 1	N: 2903690.94 E: 536708.53	881.06'	HUB AND TACK
▲ CP 2	N: 2904084.87 E: 536536.89	823.63'	NAIL

LEGEND

- BORINGS COMPLETED BY GUILD DRILLING CO., INC. IN AUGUST 1993.
- BORINGS COMPLETED BY GEOTECHNICAL SERVICES, INC. IN MARCH 1995.
- BORINGS COMPLETED BY GZA GEOENVIRONMENTAL, INC. IN MAY 2008.
- BORINGS COMPLETED BY PARE CORPORATION IN DECEMBER 2015.

NOTES:

1. BORING LOCATIONS, OTHER THAN BORINGS COMPLETED BY PARE, WERE TAKEN FROM PLAN ENTITLED "EXISTING SITE PLAN & EXPLORATION PLAN", PREPARED FOR STILES LAKE WATER DISTRICT, PREPARED BY GZA GEOENVIRONMENTAL, INC. ENGINEERS AND SCIENTISTS OF NORWOOD, MA., DATED 7/28/08.

PARE

PARE CORPORATION
ENGINEERS • SCIENTISTS • PLANNERS
10 LINCOLN ROAD, SUITE 210
FOXBORO, MA 02035
508-543-1720

SCALE ADJUSTMENT GUIDE
0" 1"
MAP IS ONE INCH ON ORIGINAL DRAWING.

STILES RESERVOIR DAM
SPILLWAY REPAIRS
MA00983 / 3-14-151-7
LEICESTER, MASSACHUSETTS
STILES LAKE WATER DISTRICT

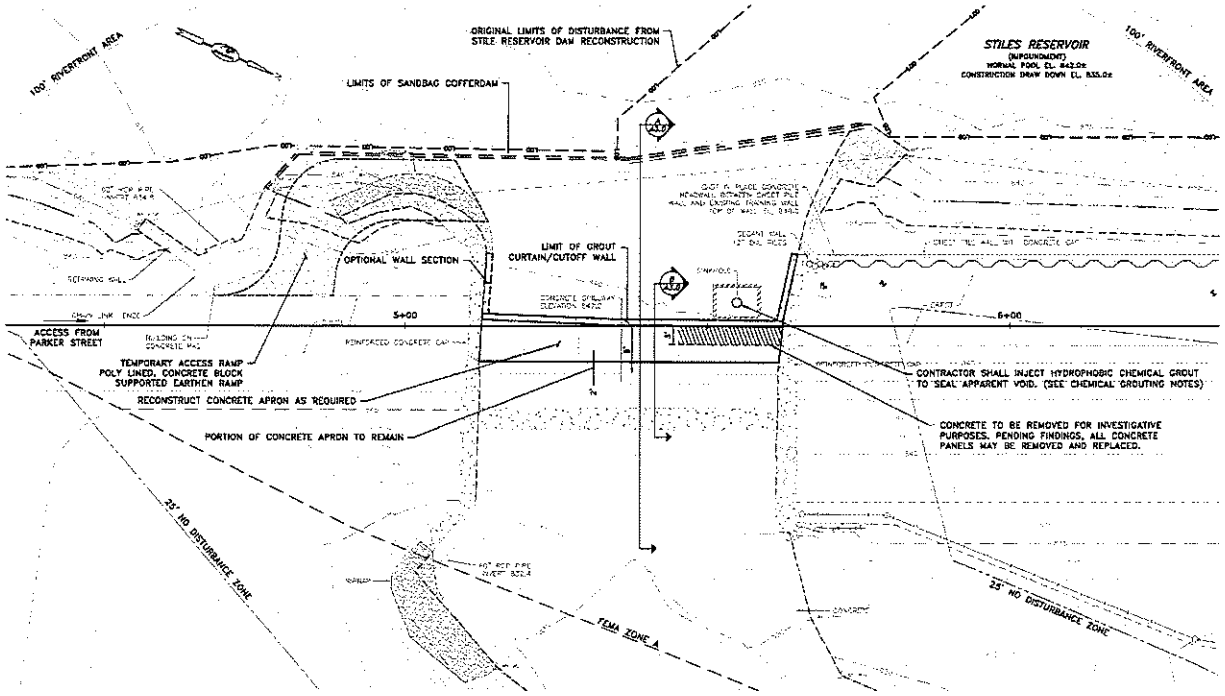
REVISIONS:

PROJECT NO:	15119.00
DATE:	OCTOBER 2018
SCALE:	AS NOTED
DESIGNED BY:	JMB
CHECKED BY:	ARO
DRAWN BY:	LMC
APPROVED BY:	JMB

EXISTING SITE PLAN AMENDMENT No.1

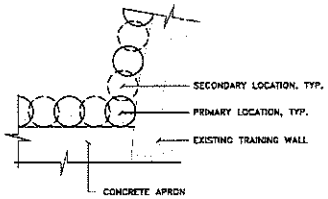
SHEET NO.: A2.0

AMENDMENT No.1



PROPOSED SPILLWAY PLAN

SCALE: 1"=10'

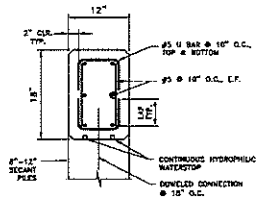


GROUT COLUMNS INSTALLED IN SECANT ARRANGEMENT

NOT TO SCALE

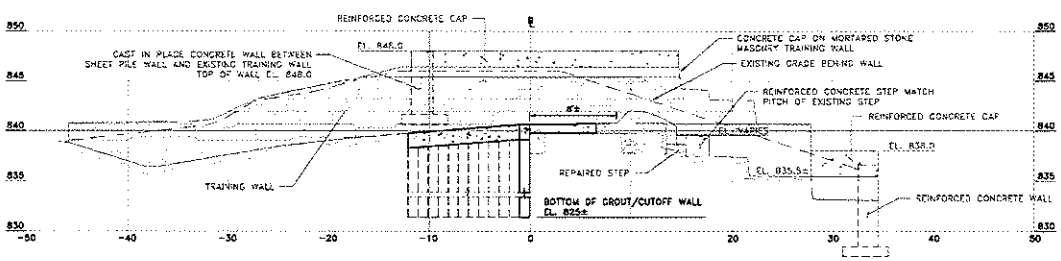
CHEMICAL GROUTING NOTES:

1. GROUT TO BE UTILIZED SHALL BE A POLYURETHANE HYDROPHOBIC TWO-PART GROUT WITH A DESIGNED TIMED RESPONSE.
2. THE INTENT OF THE GROUTING PROGRAM IS TO CONSTRUCT A BARRIER, NOT FILL THE ENTIRE VOID BETWEEN THE SPILLWAY AND THE RELIEF WELL. IT IS DESIRED THAT THE PLUG BE FORMED WITHIN THE CURRENT VOID NO MORE THAN 50 FEET INTO THE EMBANKMENT. THE VOID AREA BETWEEN THE PLUG AND THE TRAINING WALL SHALL BE FILLED WITH EITHER CHEMICAL GROUT OR CEMENTITIOUS GROUT BACKED BY CHEMICAL GROUT.
3. DYE TESTING IN THE FIELD PREVIOUSLY INDICATED APPROXIMATELY 2.5 HOURS BETWEEN DYE INSERTION AND DETECTION AT THE RELIEF WELL DISCHARGE.
4. CONTRACTOR SHALL CONDUCT DYE TESTING UNDER THE ANTICIPATED GROUTING PRESSURES TO VERIFY TRANSPORT TIMES PRIOR TO PLACING ANY GROUT.
5. CONTRACTOR SHALL ENSURE THAT THE RELIEF DRAIN DOES NOT BECOME CLOGGED.
6. DYE TESTING SHALL BE PERFORMED AFTER PLACEMENT OF CHEMICAL GROUT AND PRIOR TO INJECTING CEMENTITIOUS GROUT.



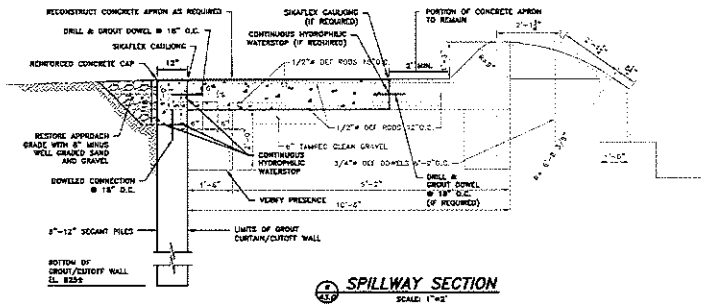
REINFORCED CONCRETE CAP DETAIL

SCALE: 1"=1'



SPILLWAY SECTION

SCALE: 1"=6'



SPILLWAY SECTION

SCALE: 1"=2'

NOTES:

1. CLEAN OUT AND REMOVE EXISTING CAULKING AT CONSTRUCTION JOINTS.
2. RE-CAULK ALL CONSTRUCTION JOINTS WITH SIKAFLEX FLEXIBLE CAULKING.

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SCALE ADJUSTMENT GUIDE
0" 1"
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STILES RESERVOIR DAM
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DESIGNED BY:	JHB
CHECKED BY:	ARD
DRAWN BY:	LMC
APPROVED BY:	JHB

PROPOSED SPILLWAY PLAN AMENDMENT No.1

SHEET NO.: A3.0