

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<sup>1</sup>.

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.

▼



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 17<sup>th</sup> 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](mailto: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

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<sup>ii</sup> Existing Order of Conditions is recorded at the Worcester County Registry of Deeds in Book 55524, Page 27.



Engineers | Scientists | Planners

PARECORP.COM



## 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.



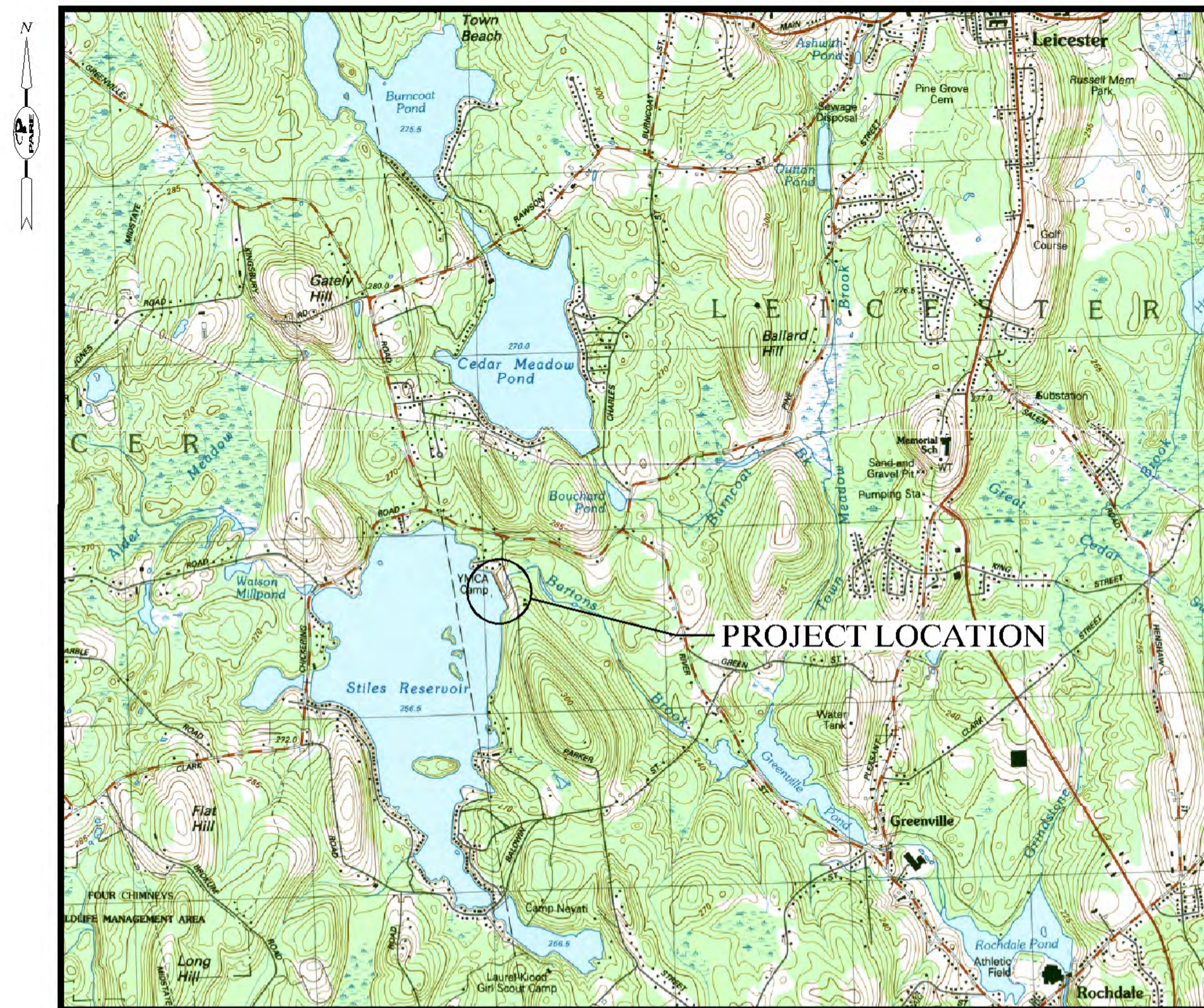


*Prepared for The:*

# 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





# AMENDMENT No.1

## GENERAL NOTES:

- FOR THE PURPOSE OF THIS PROJECT  

OWNER –

STILES LAKE WATER DISTRICT  
P.O. BOX 401  
ROCHDALE, MA 01542

CONTACT –

JAY LUSSIER

ENGINEER –

PARE CORPORATION  
10 LINCOLN ROAD, SUITE 210  
FOXBORO, MA 02035

CONTACT –

ALLEN ORSI, P.E.
- THESE PLANS IN CONJUNCTION WITH THE PROJECT SPECIFICATION CONSTITUTE THE CONTRACT DOCUMENTS.
- ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS STATE BUILDING CODE, THE SPECIFICATIONS INCLUDED IN THIS CONTRACT, AND 302 CMR 10.00 DAM SAFETY. THESE PLANS ARE INCOMPLETE UNLESS ACCOMPANIED BY THE SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS.
- THE PLANS WERE DEVELOPED FROM NOTES TAKEN DURING SITE INSPECTIONS AND SURVEY PERFORMED BY DIPRETE ENGINEERING OF DEDHAM, MA. ON SEPTEMBER 28–29 & OCTOBER 1&7, 2015. WETLANDS WERE FLAGGED BY PARE PERSONNEL ON SEPTEMBER 17, 2015. ANY DISCREPANCIES ON THESE PLANS WITH REGARD TO DIMENSIONS OR CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PORTION OF WORK. BRUSH AND TREE GROWTH HAS CONTINUED SINCE THE DATE OF THE SURVEY; CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING CURRENT EXTENTS AND SIZE OF VEGETATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INCREASED CLEARING REQUIREMENTS RESULTING FROM ADDITIONAL GROWTH.
- BORINGS WERE COMPLETED IN AUGUST OF 1993 BY GUILD DRILLING CO. INC., IN MARCH 1995 BY GEOTECHNICAL SERVICES INC., IN MAY 2008 BY GZA GEOENVIRONMENTAL INC., AND IN 2015 BY PARE CORPORATION. DEPTHS AND THICKNESSES OF THE SUBSURFACE STRATA INDICATED HEREIN ARE GENERALIZED FROM THE AVAILABLE SUBSURFACE DATA. INFORMATION SHOWN FOR THE DAM IS INTERPOLATED AND MAY VARY DUE TO THE NATURE OF GLACIAL DEPOSITS AND FILL MATERIALS.
- INFORMATION INCLUDING BELOW GRADE GEOMETRY (I.E. WALLS, STEPS, ETC.) IS BASED UPON AVAILABLE PLANS TITLED "PLAN OF REPAIRS TO STILES RESERVOIR DAM" DATED JUNE 1957.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS. PLANS SHALL NOT BE SCALED FOR DIMENSIONS.
- CONSTRUCTION SHALL BE MADE FROM APPROVED SHOP DRAWINGS ONLY.
- NOTES, TYPICAL DETAILS, AND SCHEDULES APPLY TO ALL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING SHOP DRAWINGS FOR REVIEW.
- INFORMATION REGARDING THE LOCATION OF SURROUNDING STRUCTURES, UTILITIES, AND THE AS–BUILT CONFIGURATION AND CONDITION OF THE EXISTING DAM AND SPILLWAY IS FURNISHED SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL CONDUCT ITS OWN INDEPENDENT EXAMINATION OF SITE CONDITIONS FOR THE PURPOSE OF BIDDING, FABRICATION, AND CONSTRUCTION ASSOCIATED WITH THE PROJECT. ANY RELIANCE UPON INFORMATION MADE AVAILABLE BY THE OWNER OR THE ENGINEER SHALL BE AT THE CONTRACTOR'S RISK.
- ELEVATIONS REFERENCE THE EXISTING SITE DATUM, PRESUMED TO BE NGVD 1929 AS INDICATED ON AVAILABLE DRAWINGS. HORIZONTAL DATUM REFERENCES NAD 1983. HORIZONTAL CONTROL BASED UPON NOAA'S NATIONAL GEODETIC SURVEY (NGS) NATIONAL SPATIAL REFERENCE SYSTEM (NSRS) OPUS SESSION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL PROJECT DEMOLITION AND EXCESS MATERIAL IN ACCORDANCE WITH MASSACHUSETTS, LOCAL, AND FEDERAL LAWS.
- THE CONTRACTOR SHALL PROTECT ALL ADJACENT STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ALL DAMAGE TO ADJACENT STRUCTURES AND UTILITIES AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL COMPLY WITH ALL CONDITIONS OF ALL PERMITS FOR THE WORK. THE CONTRACTOR SHALL COORDINATE SCHEDULE WITH THE OWNER AND ANTICIPATED PERMIT ISSUE DATES.
- THE CONTRACTOR SHALL FOLLOW ALL OSHA AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS FOR ALL PROJECT COMPONENTS AND ACTIVITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SITE SAFETY PROCEDURES AND PRACTICES REGARDLESS OF THE PRESENCE OF THE OWNER OR ENGINEER.
- ALL CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE LIMITS OF WORK AND TEMPORARY EASEMENTS DEFINED HEREIN.
- WHERE REFERENCE IS MADE TO ANY STANDARD SPECIFICATION, IT SHALL MEAN THE MOST RECENT SPECIFICATION, CODE, STANDARD, OR INTERIM SPECIFICATIONS OF THE ORGANIZATION REFERRED TO AND SHALL BE CONSIDERED A PART OF THESE CONTRACT DOCUMENTS TO THE EXTENT INDICATED. IN CASE OF CONFLICT, THE MORE RIGID REQUIREMENTS AND CODES SHALL GOVERN. THESE CODES INCLUDE, BUT ARE NOT LIMITED TO: AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
- THE CONTRACTOR SHALL STAGE ALL EQUIPMENT IN THE DESIGNATED STAGING AREA. ALL GREASING AND REFUELING ACTIVITIES SHALL OCCUR IN THE STAGING AREA.
- THE CONTRACTOR SHALL MAINTAIN A SECURE SITE AND PROVIDE APPROPRIATE SAFETY MEASURES TO PREVENT ACCIDENTS. THE SAFETY MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FENCES, FLASHING WARNING LIGHTS, AND POLICING IF NECESSARY.
- UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL PROVIDE TWO AS–BUILT PLAN SETS TO THE OWNER DEPICTING ANY FIELD CHANGES OF DIMENSION OR DETAIL, LOCATION OF UNDERGROUND STRUCTURES AND/OR UTILITIES, CONSTRUCTION DEVIATIONS, CHANGES DUE TO FIELD OR CHANGE ORDER, AND DETAILS NOT ON THE ORIGINAL DRAWINGS.
- THE CONTRACTOR SHALL STOCKPILE ALL SUITABLE MATERIAL ENCOUNTERED DURING EXCAVATION AND DEMOLITION ACTIVITY FOR REUSE. THE CONTRACTOR SHALL PROVIDE TARPS, COVERS, AND OTHER MEASURES TO PROTECT STOCKPILES FROM BECOMING SATURATED, FROZEN, OR OTHERWISE UNSUITABLE FOR REUSE.

## DIVERSION NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND REGULATING BASE AND STORM FLOWS.
- ANY NECESSARY COFFERDAMS AND DIVERSIONS SHALL BE DESIGNED BY THE CONTRACTOR AND BEAR THE STAMP OF A PROFESSIONAL ENGINEER REGISTERED IN THE COMMONWEALTH OF MASSACHUSETTS. APPROVAL BY THE OWNER, ENGINEER, AND OFFICE OF DAM SAFETY IS REQUIRED PRIOR TO INSTALLATION. ALL DIVERSIONS SHALL BE INSTALLED AND REMOVED IN THEIR ENTIRETY AT NO ADDITIONAL COST TO THE OWNER. THE COFFERDAM, DIVERSION, AND CONTROL OF WATER PLAN SHALL BE DESIGNED TO ACCOMMODATE A 50–YEAR STORM EVENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOSS AND DAMAGE DUE TO A FAILURE OF ANY COFFERDAMS OR DIVERSION STRUCTURES CONSTRUCTED DURING THE WORK.
- THE CONTRACTOR SHALL REGULATE DISCHARGES AND PHASE CONSTRUCTION SO THAT CONSTRUCTION EQUIPMENT DOES NOT PASS THROUGH FLOWING WATER.
- THE COFFERDAM SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF EMBANKMENT EXCAVATION AT THE DAM AND SHALL REMAIN IN PLACE UNTIL THE EMBANKMENT RECONSTRUCTION IS COMPLETED.
- THE CONTRACTOR SHALL MAINTAIN A STOCKPILE OF MATERIAL ONSITE TO BE UTILIZED TO STABILIZE THE EXCAVATION IN THE EVENT OF HIGH WATER OR OTHER CONDITIONS WHICH MAY COMPROMISE THE COFFERDAM STABILITY. THE STOCKPILE SHALL BE MAINTAINED IN ACCORDANCE WITH A FLOOD EMERGENCY RESPONSE PLAN TO BE DEVELOPED BY THE CONTRACTOR AND SUBJECT TO APPROVAL BY THE ENGINEER, OWNER, AND OFFICE OF DAM SAFETY.




















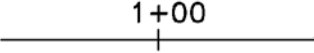
## EROSION AND SEDIMENT CONTROL NOTES:

- THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT.
- THE CONTRACTOR SHALL PREVENT SEDIMENT FROM ENTERING THE IMPOUNDMENT, DOWNSTREAM CHANNELS, OR RESOURCE AREAS.
- NO WORK OR DISCHARGES, OTHER THAN THAT SHOWN, SHALL BE PERFORMED WITHIN THE WETLANDS AREA WITHOUT FIRST RECEIVING PROPER PERMITS FROM THE REGULATORY AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESTORING, AND REPAIRING ALL DAMAGE AS A RESULT OF UNAUTHORIZED WORK OR DISCHARGES TO THE WETLAND AREA AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TURBIDITY BARRIERS AS INDICATED IN THE CONTRACT DOCUMENTS. TURBIDITY BARRIERS SHALL BE ANCHORED SECURELY AS NECESSARY TO INSURE COLLECTION OF SEDIMENT AND ENABLE THE WORK TO BE PERFORMED.
- STOCKPILES SHALL BE A MINIMUM OF 1–FOOT FROM THE EDGE OF ANY SLOPE TO LIMIT RUNOFF DOWN THE SLOPES.
- THE EROSION CONTROL BARRIERS SHALL CONSIST OF STRAW BALES BACKED BY SILT FENCE.
- EROSION CONTROL BARRIERS SHALL BE MODIFIED OR EXPANDED AS FIELD CONDITIONS WARRANT.
- ALL EROSION CONTROL BARRIERS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND AFTER EACH STORM EVENT OF 0.5 INCH OR GREATER.
- ANY DAMAGED AREAS SHALL BE REPAIRED WITHIN 24 HOURS OF DISCOVERY.
- DEWATERING BASINS SHALL CONSIST OF STRAW BALE ENCLOSURES, TANKS, PERMEABLE BLADDERS, OR OTHER APPROPRIATE METHOD. DEWATERING WASTE WATERS SHALL BE PUMPED TO THE DEWATERING BASINS AND TREATED PRIOR TO DISCHARGE.
- DISCHARGE OF TURBID WATER TO THE IMPOUNDMENT, CHANNEL, OR ANY WETLAND IS PROHIBITED.
- UPON COMPLETION OF GRADING, ALL EXPOSED SURFACES NOT OTHERWISE TO BE TREATED SHALL BE COVERED WITH A MINIMUM OF 6” OF LOAM AND SEEDED. MULCH SHALL BE APPLIED AS NECESSARY TO PROVIDE TEMPORARY STABILIZATION UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.

## CONSTRUCTION SEQUENCE:

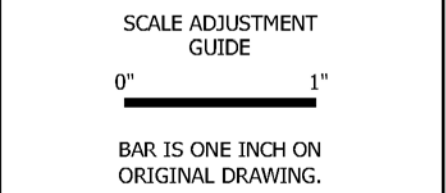
THE FOLLOWING SEQUENCE IS INTENDED TO BE GENERAL IN NATURE AND SHALL NOT BE CONSIDERED DIRECTION BY THE ENGINEER OR THE OWNER. ALTHOUGH IT IS LIKELY THAT SOME OF THE WORK ITEMS WILL OVERLAP, CONSTRUCTION SEQUENCES FOR THE VARIOUS PROJECT COMPONENTS ARE DESCRIBED SEPARATELY AND MAY NOT NECESSARILY PROCEED IN CONSECUTIVE ORDER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.

## LEGEND

EXISTING		PROPOSED
	BUILDING	
	1’ CONTOUR	
	5’ CONTOUR	
	EDGE OF WATER	
	STONE MASONRY WALL	
	CONCRETE WALL	
	TREELINE	
	TREES	
	STRAW BALES	
	SILT FENCE	
	COFFERDAM	
	TURBIDITY BARRIER	
	LIMIT OF DISTURBANCE	
	25 FOOT NO DISTURBANCE ZONE	
	100 FOOT WETLAND BUFFER ZONE	
	100 FOOT RIVERFRONT AREA	
	200 FOOT RIVERFRONT AREA	
	100 FOOT WELL BUFFER	
	WETLAND FLAGS	
	FEMA ZONE A (MASSGIS)	
	BORING LOCATION	
	TEST PIT LOCATION	
	BASELINE AND STATIONING	

## ABBREVIATIONS

	LIMIT OF DISTURBANCE
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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		

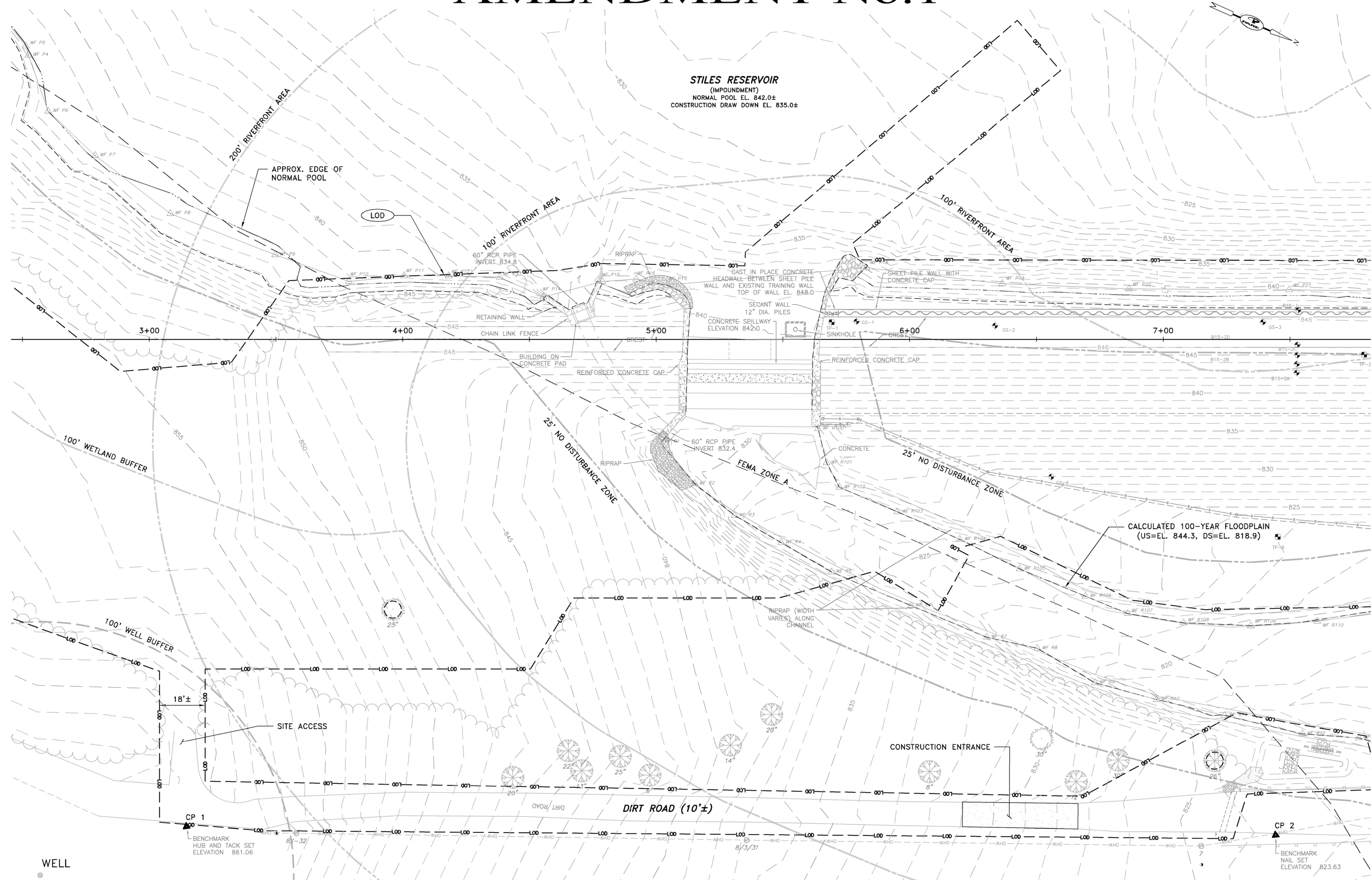
GENERAL NOTES  
AND LEGEND  
AMENDMENT No.1

SHEET NO.:

A1.0



# AMENDMENT No.1



## CONTROL POINTS

### HORIZONTAL:

POINT ID	COORDINATES	ELEVATION	DESCRIPTION
▲ CP 1	N: 2903690.94 E: 536708.53	861.06'	HUB AND TACK
▲ CP 2	N: 2904084.87 E: 536536.89	823.63'	NAIL

## EXISTING SITE PLAN

SCALE: 1"=20'

## LEGEND

- B-# BORINGS COMPLETED BY GUILD DRILLING CO., INC. IN AUGUST 1993.
- GS-# BORINGS COMPLETED BY GEOTECHNICAL SERVICES, INC. IN MARCH 1995.
- GZ-# BORINGS COMPLETED BY GZA GEOENVIRONMENTAL, INC. IN MAY 2008.
- B15-# BORINGS COMPLETED BY PARE CORPORATION IN DECEMBER 2015.

## NOTES:

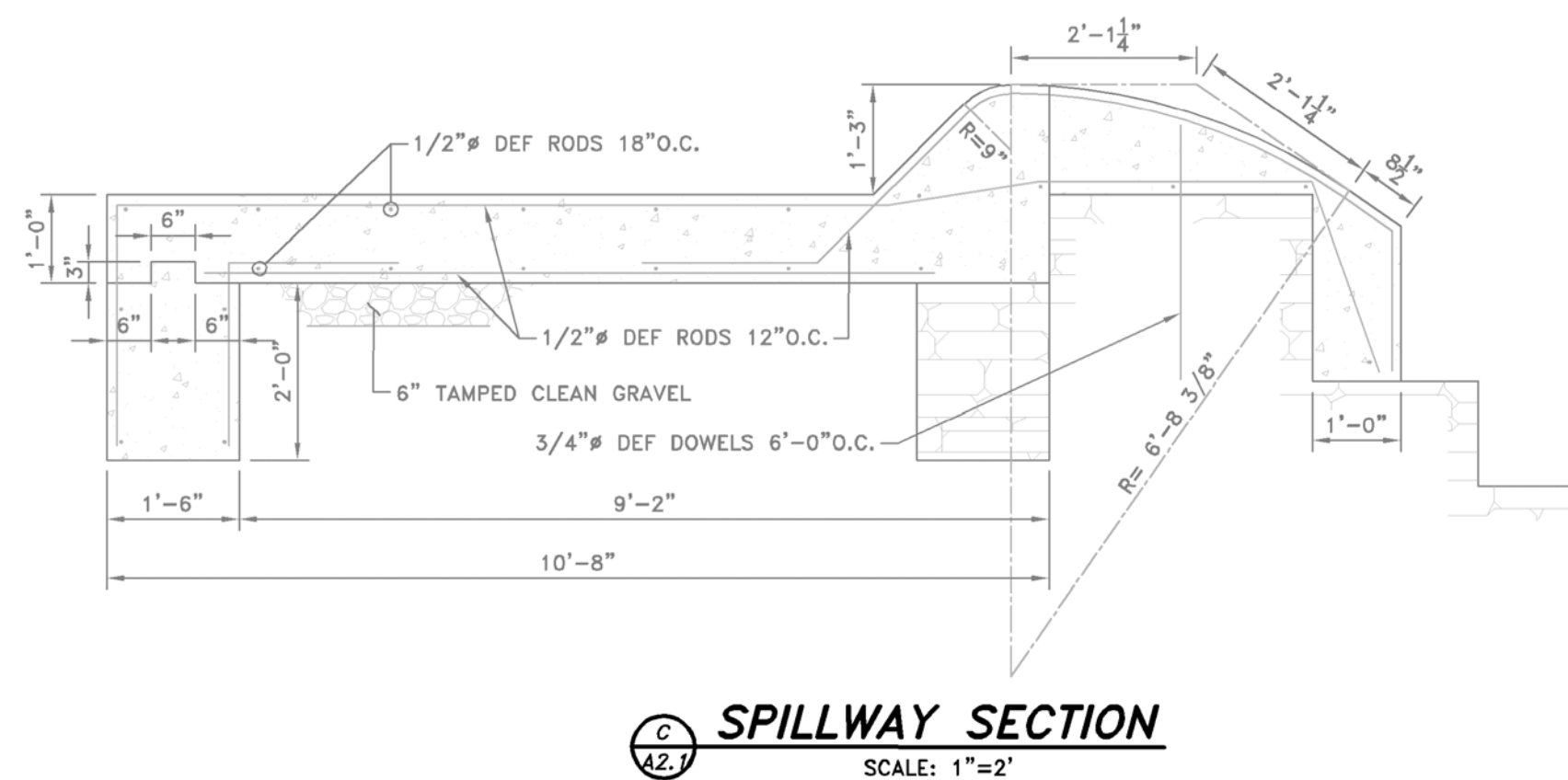
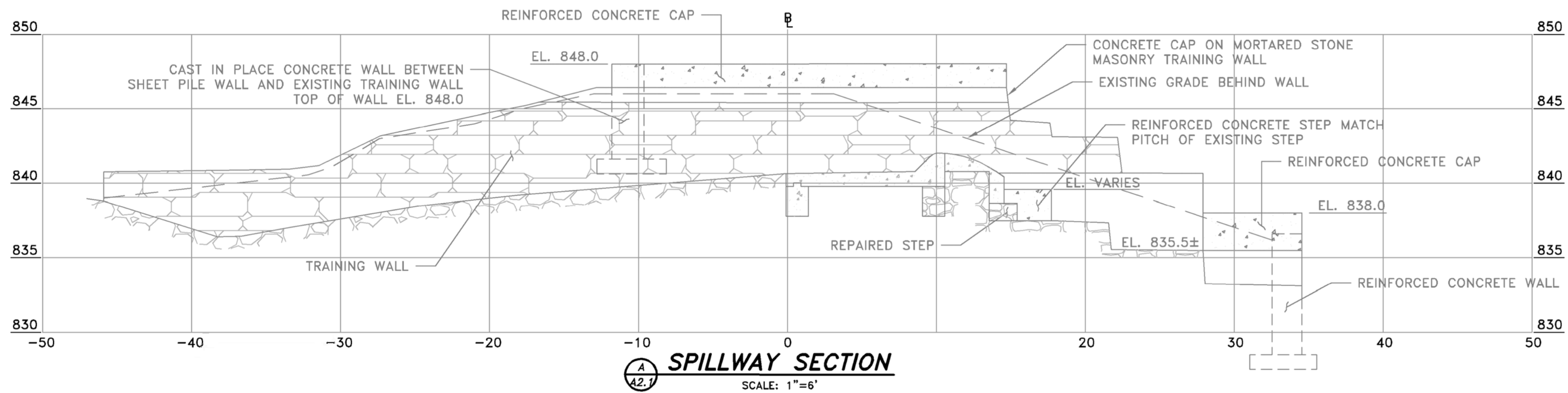
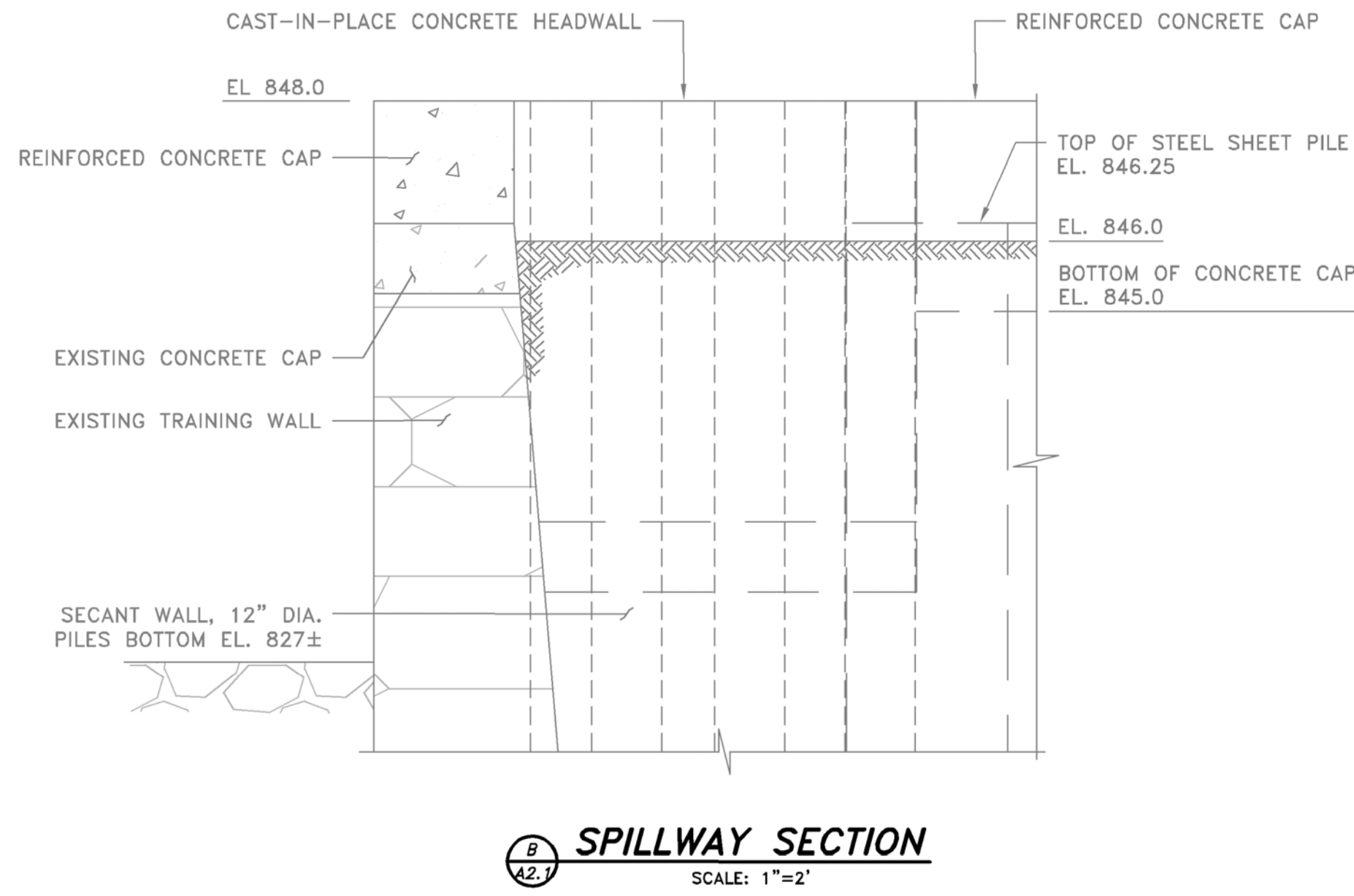
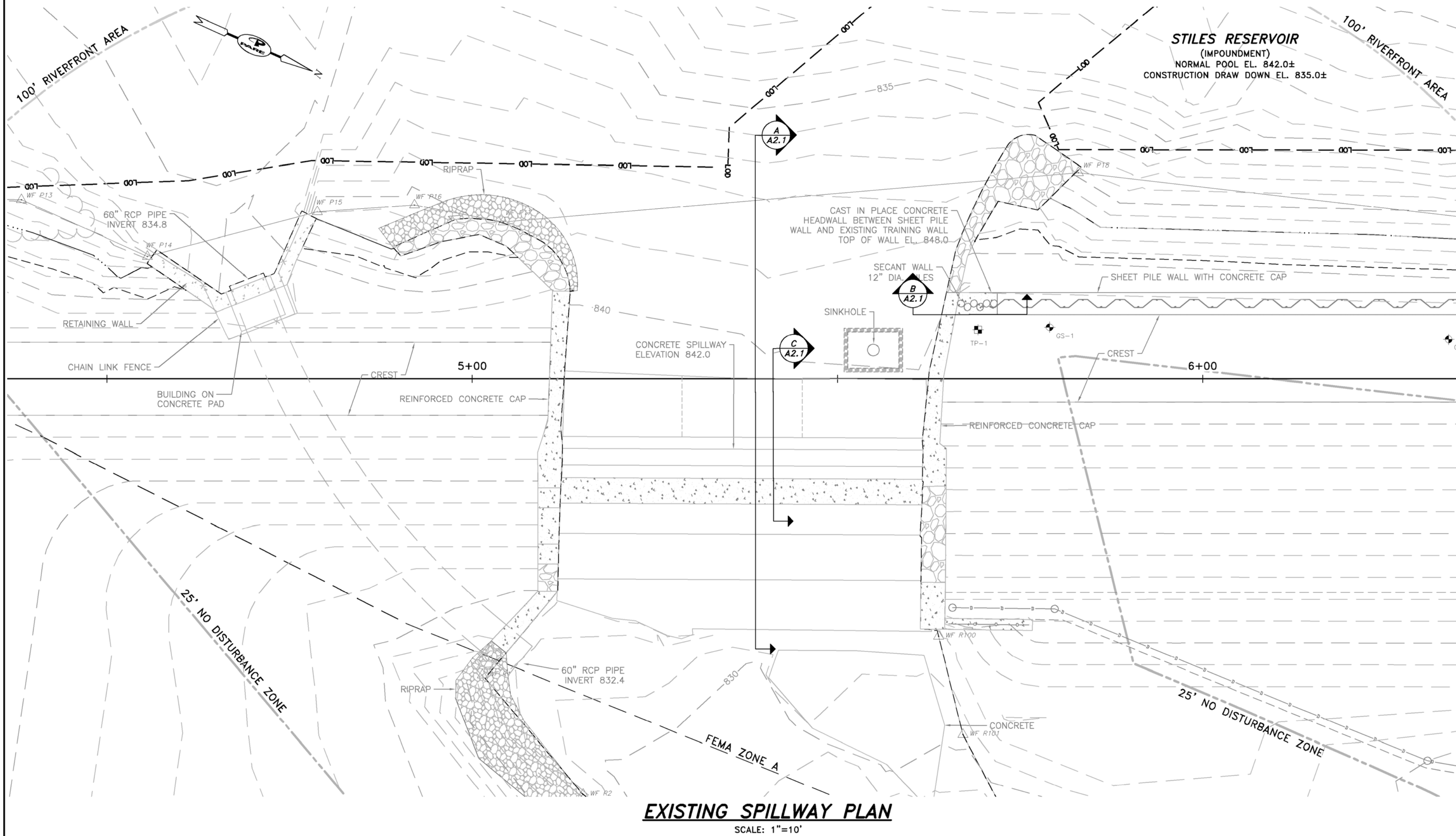
- BORING LOCATIONS, OTHER THAN BORINGS COMPLETED BY PARE, WERE TAKEN FROM PLAN ENTITLED "EXISTING SITE PLAN & EXPLORATION PLAN", PREPARED FOR STILES LAKE WATER DISTRICT, PREPARED BY GZA GEOENVIRONMENTAL, INC. ENGINEERS AND SCIENTISTS OF NORWOOD, MA., DATED 7/28/08.

## REVISIONS:


PROJECT NO.:	15119.00
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SCALE:	AS NOTED
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CHECKED BY:	ARO
DRAWN BY:	LMC
APPROVED BY:	JMB

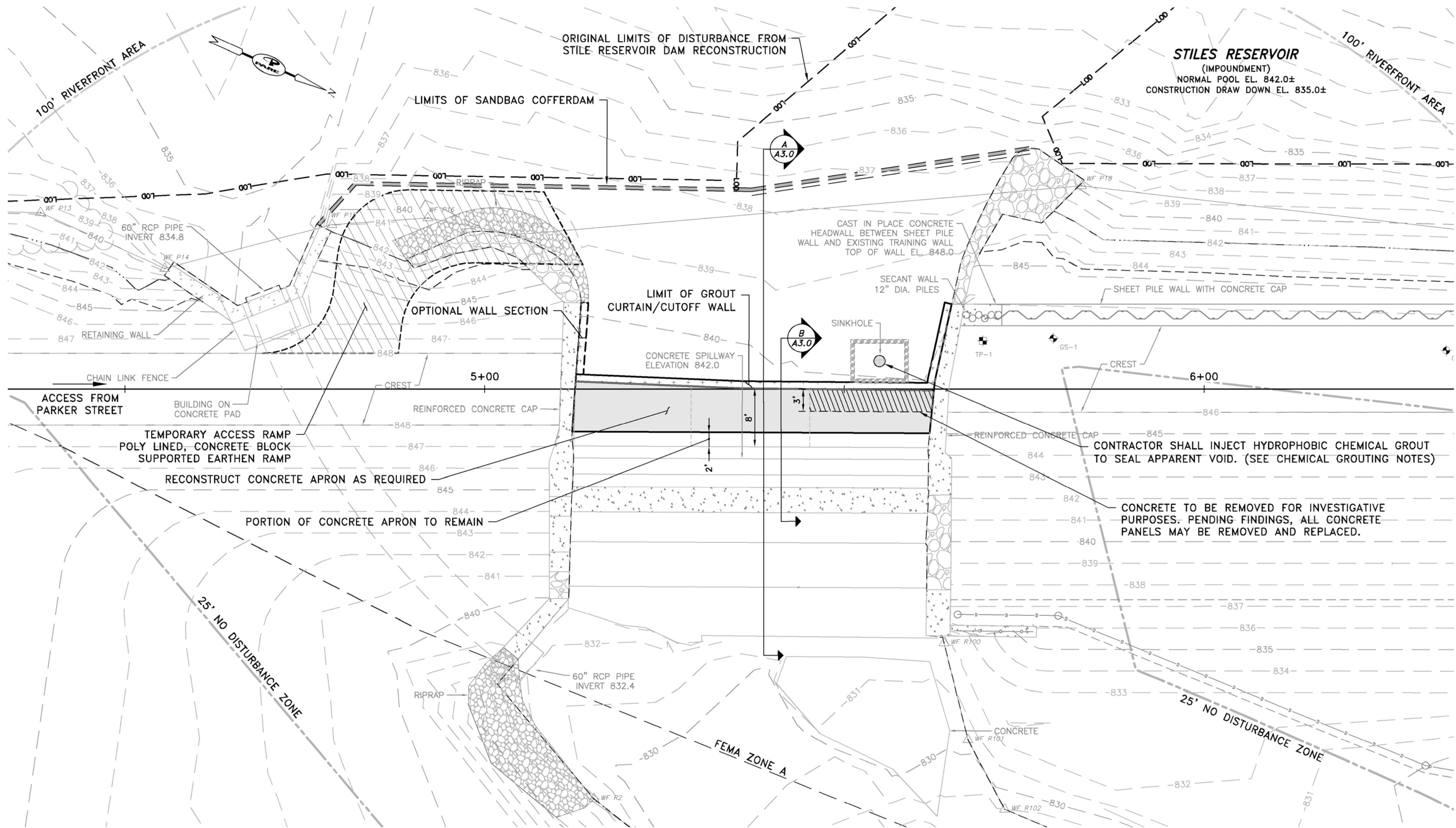


# AMENDMENT No.1



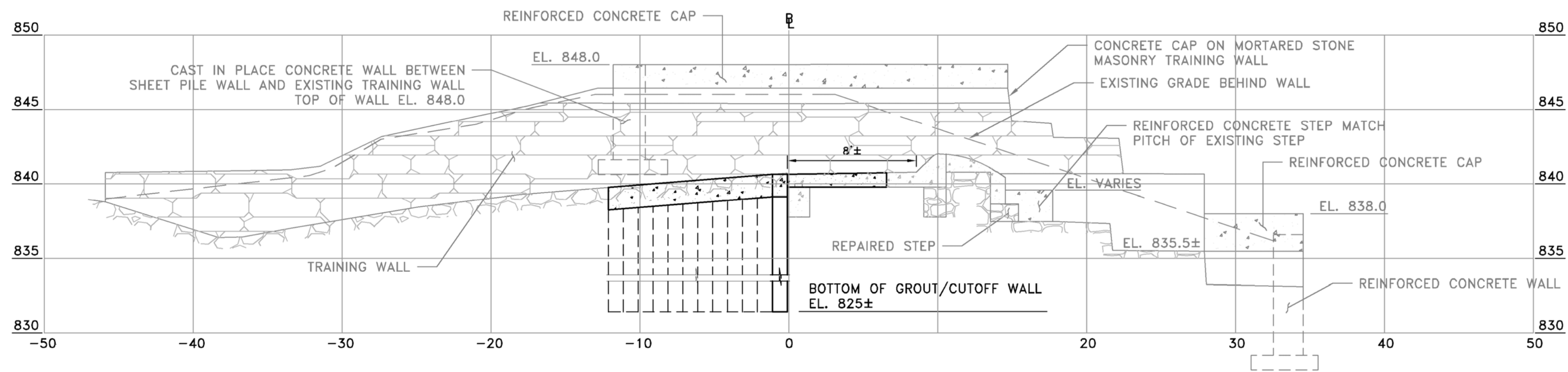


# AMENDMENT No.1



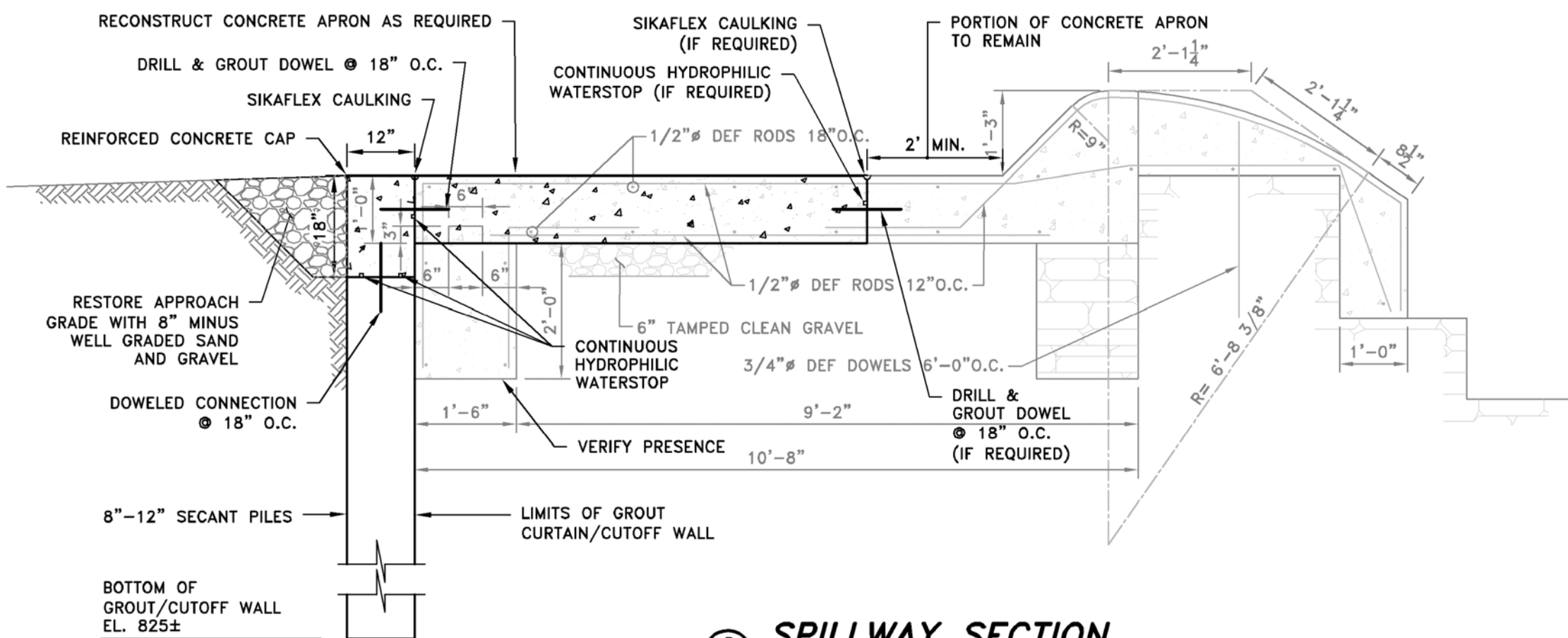
**PROPOSED SPILLWAY PLAN**

SCALE: 1"=10'



**SPILLWAY SECTION**

SCALE: 1"=6'

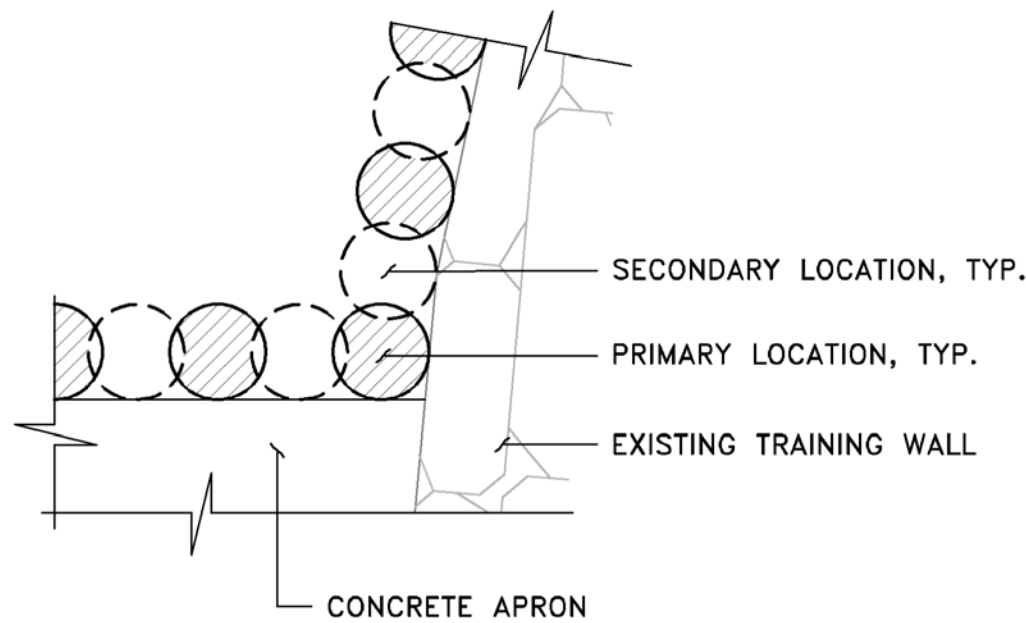


**REINFORCED CONCRETE CAP DETAIL**

SCALE: 1"=2'

## NOTES:

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

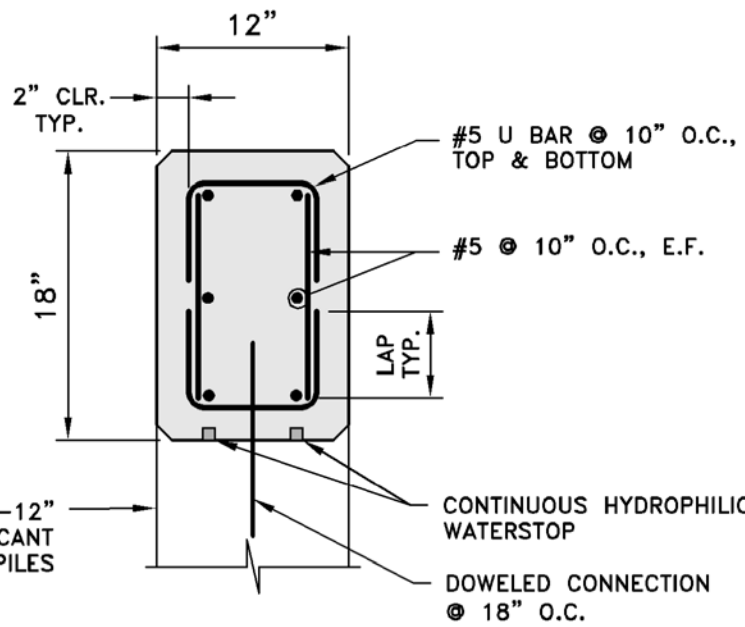


**GROUT COLUMNS INSTALLED IN  
SECANT ARRANGEMENT**

NOT TO SCALE

## CHEMICAL GROUTING NOTES:

- GROUT TO BE UTILIZED SHALL BE A POLYURETHANE HYDROPHOBIC TWO-PART GROUT WITH A DESIGNED TIMED RESPONSE.
- 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.
- DYE TESTING IN THE FIELD PREVIOUSLY INDICATED APPROXIMATELY 2.5 HOURS BETWEEN DYE INSERTION AND DETECTION AT THE RELIEF WELL DISCHARGE.
- CONTRACTOR SHALL CONDUCT DYE TESTING UNDER THE ANTICIPATED GROUTING PRESSURES TO VERIFY TRANSPORT TIMES PRIOR TO PLACING ANY GROUT.
- CONTRACTOR SHALL ENSURE THAT THE RELIEF DRAIN DOES NOT BECOME CLOGGED.
- DYE TESTING SHALL BE PERFORMED AFTER PLACEMENT OF CHEMICAL GROUT AND PRIOR TO INJECTING CEMENTITIOUS GROUT.



## REVISIONS:

NO.	DESCRIPTION	DATE

PROJECT NO.:	15119.00
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SCALE:	AS NOTED
DESIGNED BY:	JMB
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DRAWN BY:	LMC
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