

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

Charles D. Baker
Governor

Karyn E. Polito
Lieutenant Governor

Kathleen A. Theoharides
Secretary

Martin Suuberg
Commissioner

21 OCT 2020

Town of Concord Water & Sewer Division
c/o Ziad Kary, Environmental Partners Group
1900 Crown Colony Drive, Suite 402
Quincy, MA 02169

RE: Issuance of Chapter 91 Waterways License and Permit №: 15081
180 Skyline Drive, Nagog Pond, Acton, Middlesex County

Dear Mr. Kary:

The Department of Environmental Protection hereby issues the above Waterways License and Permit, enclosed, authorizing the Licensee to perform certain activities pursuant to M.G.L. c. 91, the Public Waterfront Act, and the Waterways Regulations at 310 CMR 9.00. Any change in use or alteration of any structure or fill not authorized by this License shall render this License void.

Recording of the License

This License must be recorded at the applicable county Registry of Deeds or, if registered land, with the Land Registration Office within sixty (60) days from the date of license issuance. Failure to record this License within sixty (60) days of the date of issuance will render this License void pursuant to 310 CMR 9.18.

A Waterways License Recording Form has been enclosed for your use in notifying the Department of the recording information for this License. Failure to notify the Department of the recording of this License is a violation of 310 CMR 9.00 and is subject to enforcement action by the Department.

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

TTY# MassRelay Service 1-800-439-2370

MassDEP Website: www.mass.gov/dep

Printed on Recycled Paper

CERTIFICATE OF COMPLIANCE

Pursuant to 310 CMR 9.19, once the licensed project is complete, the Licensee must file an application for a Certificate of Compliance (Form BRP WW05), within sixty (60) days of completion but in no event later than five (5) years from the License's issuance date. A license for any project for which such a request is not filed and certificate issued may be revoked pursuant to 310 CMR 9.26.

Please contact Alice Doyle of the Waterways Regulation Program at alice.doyle@mass.gov or (617) 654-6624 if you have any questions.

Sincerely,



Daniel J. Padien
Program Chief
Waterways Regulation Program

Cc: John S. Mangiaratti, Town Manager, Town of Acton
Matthew Selby, Town of Acton Planning Board
Dean A. Charter, Town of Acton Board of Selectmen
Tom Tidman, Town of Acton Conservation Commission
Alan Cathcart, Town of Concord Water & Sewer Division

Encl: Waterways License №: 15081
Waterways License Recording Form

Program Coordinator
Department of Environmental Protection
Waterways Regulation Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108
dep.waterways@mass.gov

RE: NOTIFICATION OF RECORDING CHAPTER 91 WATERWAYS LICENSE No: 15081
180 Skyline Drive, Nagog Pond, Acton, Middlesex County

Dear Waterways Regulation Program:

This is to notify you that the above referenced Waterways License was recorded with the appropriate Registry of Deeds/Land Court for this project location and to provide your office with the following recording information.

Date Recorded: _____

Name of County Registry of Deeds/ Land Court: _____

Book Number _____, Page Number(s) _____ and

Plan Book Number _____, Page Number(s) _____

I will apply for a Certificate of Compliance with your office when the authorized work or change in use is completed.

Sincerely,

Chapter 91 Waterways Licensee

LICENSE VOID IF NOT RECORDED WITHIN 60 DAYS OF ISSUANCE

The Commonwealth of Massachusetts



No. 15081

Whereas, The Town of Concord Water & Sewer Division

of -- Concord-- in the County of -- Middlesex -- and Commonwealth aforesaid -- has applied to the Department of Environmental Protection for a license and permit to -- replace and improve existing water intake infrastructure as further detailed below -----

and has submitted plans of the same; and whereas due notice of said application, and of the time and place fixed for a hearing thereon, has been given, as required by law, to the -- Municipal Official -- of the -- Town of Acton -----

Now, said Department, having heard all parties desiring to be heard, and having fully considered said application, hereby, subject to the approval of the Governor, authorizes and licenses the said -----

Town of Concord Water & Sewer Division -- subject to the provisions of the ninety-first chapter of the General Laws, and of all laws which are or may be in force applicable thereto, to -- remove a portion of an 1,800-linear foot 16-inch diameter cast iron water intake pipe and install a 2,400-linear foot 20-inch diameter polyethylene water intake pipe secured in place with concrete collars, install an intake support structure and concrete foundation at the waterward end of the pipeline; dredge and backfill along the project footprint, the dredging required is for removal of portions of the existing pipeline, and will require a trench approximately 4 feet wide by 5 feet deep, resulting in approximately 4,840 square feet or 900 cubic yards of dredging, the dredged material will be stockpiled and reused as backfill for the new pipeline, and additional fill will be required at several locations along the pipe in order to maintain a continuous positive slope from

the intake structure to the gatehouse; concrete pipe collars and the concrete footing for the intake screen support structure contribute to the fill area, resulting in approximately 2,000 square feet of fill -----

in the waters of -- Nagog Pond (a Great Pond) -- at 180 Skyline Drive -- in the -- Town of Acton -- and in accordance with the locations shown and details indicated on the accompanying License Plans W19-5496 dated August 19, 2020 signed and sealed by Zaid E. Elkary, P.E. # 49479, on August 19, 2020.

Specific Legislative Authorization for the existing structure is Chapter 201 of the Massachusetts Acts of 1884. The authorized fill and/or structures shall be maintained in accordance with the terms and conditions of said Authorization, or as modified herein.

The structures and fill authorized hereby shall be limited to the following use: infrastructure facility for water withdrawal.

This License is valid for an unlimited term pursuant to 310 CMR 9.15(1)(c). The Dredge Permit incorporated within this License is valid for a term of five (5) years from the date of issuance.

This License/Permit is subject to the following Special Conditions and Standard Conditions.

SPECIAL WATERWAYS LICENSE CONDITIONS

1. The work authorized herein shall be completed within five (5) years of the date of License issuance. Said construction period may be extended by the Department for one or more one year periods without public notice, provided that the Licensee submits to the Department no later than thirty (30) days prior to the expiration of said construction period a written request to extend the period and provides an adequate justification for said extension.
2. The work authorized by this license shall be performed in strict conformance with all applicable requirements and authorizations of 401 Water Quality Certification No. X273001 issued by the Department on November 5, 2019, or as otherwise amended thereto.
3. The Licensee shall allow agents of the Department to enter the project site to verify compliance with the conditions of this License.

4. All fill and structures authorized herein shall be constructed to meet the Engineering and Construction Standards pursuant to 310 CMR 9.37.
5. The Licensee shall request in writing that the Department issue a Certificate of Compliance within sixty (60) days completion of the licensed project, but in no event later than five (5) year from the date of license issuance, or any extension thereof, in accordance with 310 CMR 9.19(1). The request shall be accompanied by a certification by a registered professional engineer licensed to do business in the Commonwealth that the project was completed in accordance with the plans, specifications, and conditions of this License.
6. The Licensee shall maintain all structures in accordance with the terms and conditions specified herein or this License may expire, pursuant to 310 CMR 9.25(1)(c).
7. Any structural alteration or change in use, or any other modification, from that explicitly authorized herein and contained on said License Plans, shall require prior review of the Department to determine whether additional licensing is required pursuant to M.G.L. Chapter 91 and the Waterways Regulations at 310 CMR 9.00.

SPECIAL WATERWAYS DREDGE PERMIT CONDITIONS

1. The work authorized by this permit shall be performed in strict conformance with all applicable requirements and authorizations of 401 Water Quality Certification No. X273001 issued by the Department on November 5, 2019, or as otherwise amended thereto.
2. After completion of the dredging authorized herein, no maintenance dredging is permitted.

Please see Pages 4 & 5 for the Standard Waterways License and Permit Conditions

Duplicate of said plan, License No. 15081 is on file in the office of said Department, and original of said plan accompanies this License to be issued pursuant hereto and is to be referred to as a part hereof.

STANDARD WATERWAYS LICENSE CONDITIONS

1. Acceptance of this Waterways License shall constitute an agreement by the Licensee to conform to all terms and conditions stated herein.
 2. This License is granted upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Licensee prior to the commencement of any activity or use authorized pursuant to this License.
 3. Any change in use or any substantial structural alteration of any structure or fill authorized herein shall require the issuance by the Department of a new License in accordance with the provisions and procedures established in Chapter 91 of the Massachusetts General Laws. Any unauthorized Substantial Change in Use or unauthorized Substantial Structural Alteration of any structure or fill authorized herein shall render this License void.
 4. This License shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This License may be revoked after the Department has given written notice of the alleged noncompliance to the Licensee and those persons who have filed a written request for such notice with the Department and afforded them a reasonable opportunity to correct said noncompliance. Failure to correct said noncompliance after the issuance of a written notice by the Department shall render this License void and the Commonwealth may proceed to remove or cause removal of any structure or fill authorized herein at the expense of the Licensee, its successors and assigns as an unauthorized and unlawful structure and/or fill.
 5. The structures and/or fill authorized herein shall be maintained in good repair and in accordance with the terms and conditions stated herein and the details indicated on the accompanying License Plans.
 6. Nothing in this License shall be construed as authorizing encroachment in, on or over property not owned or controlled by the Licensee, except with the written consent of the owner or owners thereof. The Licensee stated that The Town of Concord Water & Sewer Division was the property owner at the time the application was submitted.
 7. This License is granted subject to all applicable Federal, State, County, and Municipal Laws, Ordinances and Regulations including but not limited to a valid final Order of Conditions pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, § 40.
 8. This License is granted upon the express condition that the use of the structures and/or fill authorized hereby shall be in strict conformance with all applicable requirements and authorizations of the MassDEP.
 9. This License authorizes structure(s) and/or fill on:
 - Private Tidelands - In accordance with the public easement that exists by law on Private Tidelands, the Licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and any natural derivatives thereof.
 - Commonwealth Tidelands - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.
 - a Great Pond of the Commonwealth - The Licensee shall not restrict the public's right to use and to pass freely upon lands lying seaward of the high water mark for any lawful purpose.
 - Navigable River or Stream - The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, in the waterway.
- No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this License.
10. Unless otherwise expressly provided by this License, the Licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

STANDARD WATERWAYS PERMIT CONDITIONS


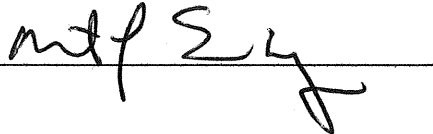
1. Acceptance of this Waterways Permit shall constitute an agreement by the Permittee to conform to all terms and conditions stated herein.
2. Any modification from that explicitly authorized herein and contained on the Waterways Permit Plans shall require prior review of the Department to determine whether additional authorization is required pursuant to M.G.L. Chapter 91, the Public Waterfront Act, and the Waterways Regulations at 310 CMR 9.00.
3. The Permittee shall inform the Department in writing at least three (3) days before commencing any authorized dredging or dredge material disposal.
4. This Waterways Permit is issued upon the express condition that any and all other applicable authorizations necessitated due to the provisions hereof shall be secured by the Permittee prior to the commencement of any activity hereby authorized.
5. This Waterways Permit shall be revocable by the Department for noncompliance with the terms and conditions set forth herein. This Permit may be revoked after the Department has given written notice of the alleged noncompliance to the Permittee, or his agent, and those persons who have filed a written request, with the Department, for such notice and have afforded the Permittee a reasonable opportunity to correct said noncompliance. Failure to correct noncompliance after the issuance of a written notice by the Department shall render this Permit void.
6. This Waterways Permit is issued subject to all applicable federal, state, county, and municipal laws, ordinances, bylaws, and regulations, including but not limited to, a valid Order of Conditions issued pursuant to the Wetlands Protection Act, M.G.L. Chapter 131, §40 and a valid Water Quality Certification issued pursuant 314 CMR 9.00.
7. This Waterways Permit is issued upon the express condition that dredging, transportation, and disposal of dredge material shall be in strict conformance with all applicable requirements and authorizations of the Department. Any subsequent maintenance dredging and transportation and disposal of dredge material during the term of this Waterways Permit shall be in strict conformance with all applicable requirements and authorizations of the Department.
8. Unless otherwise authorized in accordance with a Special Condition of this Waterways Permit, no maintenance dredging beyond the time authorized herein is permitted.
9. The dredging under this Permit shall be conducted as to cause no unnecessary obstruction of the free passage of vessels.
10. In conducting the dredging authorized, care shall be taken to cause no shoaling. If, however, any shoaling is caused, the Permittee shall, at his expense, remove the shoal areas. The Permittee shall pay all costs of supervision, and if at any time the Department deems necessary a survey or surveys of the area dredged, the Permittee shall pay all costs associated with such work.
11. Nothing in this Permit shall be construed as to impair the legal rights of any persons or authorize dredging on land not owned by the Permittee without consent of the owner(s) of such property.
12. The Permittee shall assume and pay all claims and demands arising in any manner from the work authorized herein and shall save harmless and indemnify the Commonwealth of Massachusetts, its officers, employees, and agents from all claims, audits, damages, costs and expenses incurred by reason thereof.
13. Whosoever violates any provisions of this Permit shall be subject to a fine of twenty-five thousand dollars and zero cents (\$25,000.00) per day for each day such violation occurs or continues, or by imprisonment for not more than one year, or both such fine and imprisonment; or shall be subject to civil penalty not to exceed twenty-five thousand dollars and zero cents (\$25,000.00) for each day such violation occurs or continues.

~~The amount of tidewater displaced by the work hereby authorized has been ascertained by said Department, and compensation thereof has been made by the said - Town of Concord Water & Sewer Division -- by paying into the treasury of the Commonwealth -- (N/A) -- for each cubic yard so displaced, being the amount hereby assessed by said Department -- (N/A).~~

Nothing in this License shall be so construed as to impair the legal rights of any person.

This License shall be void unless the same and the accompanying plan are recorded within 60 days from the date hereof, in the Registry of Deeds for the -- County of - Middlesex.

In witness whereas, said Department of Environmental Protection have hereunto set their hands this 21st day of October in the year 2020.


Program Chief  *Department of Environmental Protection*
Commissioner 

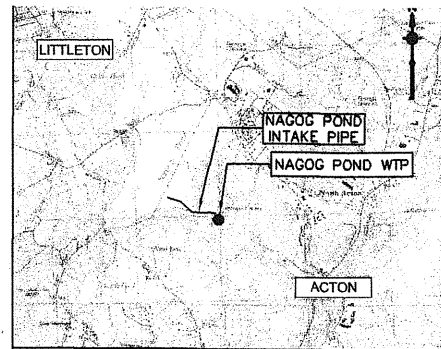
THE COMMONWEALTH OF MASSACHUSETTS

This License is approved in consideration of the payment into the treasury of the Commonwealth by the said - Town of Concord Water and Sewer Division -- the further sum of -- (exempt pursuant to 310 CMR 9.16(4)(a)) -- the amount determined by the Governor as a just and equitable charge for rights and privileges hereby granted in the land of the Commonwealth.

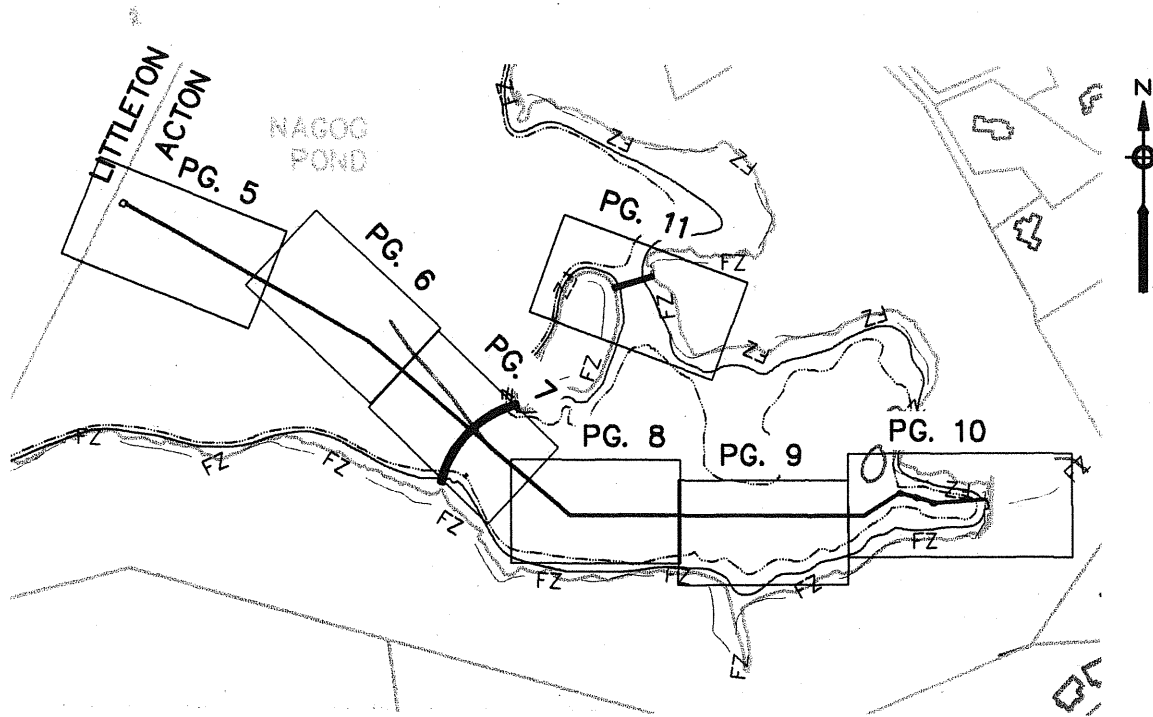
BOSTON,

Approved by the Governor.


Governor



LOCUS MAP



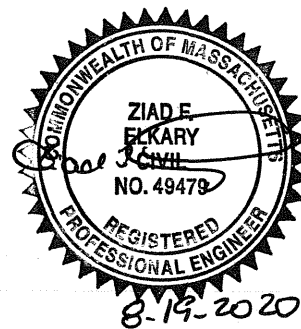
PROPOSED RAW WATER INTAKE PLAN



SCALE IN FEET
 SCALE: 1"=500'

VERTICAL DATUM- NAVD 1988

PLAN ACCOMPANYING PETITION OF:
 TOWN OF CONCORD, MASSACHUSETTS
 RAW WATER INTAKE
 NAGOG POND
 TOWN OF ACTON, MASSACHUSETTS



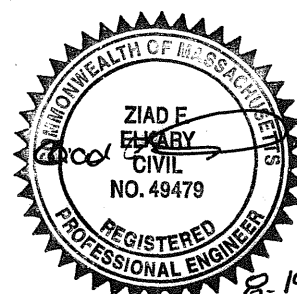
LICENSE PLAN NO. 15081
 Approved by Department of Environmental Protection
 of Massachusetts 21 OCT 2020

[Signature]

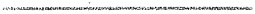



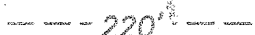
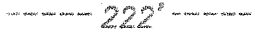


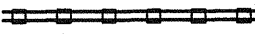


GENERAL NOTES

1. USGS BATHYMETRY WAS OBTAINED FROM LEVIN, A.B., ARCHFIELD, S.A., AND MASSEY, A.J., 2011, REFINEMENT AND EVALUATION OF THE MASSACHUSETTS FIRM-YIELD ESTIMATOR MODEL VERSION 2.0: U.S. GEOLOGICAL SURVEY POINTS WERE OBTAINED FROM SARA LEVIN IN AN EMAIL CORRESPONDENCE. BATHYMETRY WAS CONFIRMED BY ENVIRONMENTAL PARTNERS GROUP.
2. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
3. HORIZONTAL DATUM IS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983.
4. PROPERTY LINE, STREET LINE, AND OWNER INFORMATION WAS COMPILED FROM RECORDS ON FILE AT THE MIDDLESEX NORTH REGISTRY OF DEEDS, THE TOWN OF ACTON ASSESSORS DEPARTMENT, AND THE TOWN OF LITTLETON ASSESSORS DEPARTMENT.
5. MEAN ANNUAL HIGH WATER MARK (MHW) FLAGS WERE DELINEATED BY PINEBROOK CONSULTING IN MAY 2015, AUGUST 2015, OCTOBER 2015, AND NOVEMBER 2015 AND WERE SURVEYED BY ENVIRONMENTAL PARTNERS GROUP AND MERRILL CORPORATION.
6. THE MEAN HIGH WATER MARK IS BASED ON THE 2015 AVERAGE POND SURFACE ELEVATION.
7. THE HISTORIC MEAN LOW WATER MARK IS BASED ON 1966-1967 AVERAGE POND SURFACE ELEVATION.
8. THE SUBJECT PROPERTY IS LOCATED IN ZONE X AND ZONE AE EL. 208 THROUGH 213 OF THE FLOOD INSURANCE RATE MAP, AS SHOWN ON COMMUNITY PANEL No. 250176 0234f, WHICH BEARS AN EFFECTIVE DATE OF JULY 7, 2014, AND IS PARTIALLY WITHIN A SPECIAL FLOOD HAZARD AREA.
9. NORTH DIRECTION SHOWN IS APPROXIMATE.
10. EXISTING PIPE ALIGNMENT IS BASED ON UNDERWATER INVESTIGATIONS PERFORMED BY ENVIRONMENTAL PARTNERS.
11. THE CONTRACTOR MAY INSTALL THE NEW HDPE ALONG A MORE DIRECT ROUTE BETWEEN THE INTAKE LOCATION AND THE GATEHOUSE, AS LONG AS THE HDPE PIPE REMAINS AT A CONSTANT UPWARD SLOPE TOWARD THE GATEHOUSE. THE CONTRACTOR MAY REMOVE LESS OF THE EXISTING CI PIPE THAN IS SHOWN IN THESE PLANS.
12. THE INTAKE BURST PIPING ALIGNMENT IS SUBJECT TO CHANGE, AS THE LOCATION OF THE AIR BURST SYSTEM HAS NOT BEEN FINALIZED AT THIS STAGE.
13. THE EXISTING 16" CI INTAKE PIPE AND ITS SUPPORTS SHALL BE REMOVED AND LEGALLY DISPOSED BETWEEN STATION 0+00 AND STATION 11+25. THE EXISTING 16" CI INTAKE PIPE THROUGH THE EXISTING STONE COFFERDAM SHALL BE LEFT IN PLACE BETWEEN STATION 11+25 AND STATION 11+75 IF REUSED OR ABANDONED IN PLACE.

LICENSE PLAN NO. **15081**
Approved by Department of Environmental Protection
Date: **21 OCT 2020**



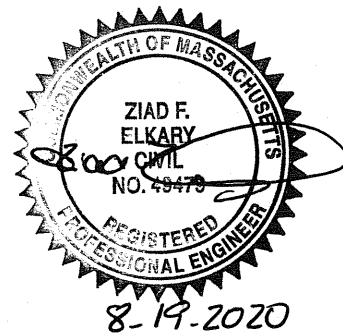
LEGEND

	PROPERTY LINE
	MHW
	HMLW
	TREELINE
	MAJOR CONTOUR
	MINOR CONTOUR
	FLOOD ZONE
	EXISTING GRADE
	PROPOSED INTAKE WITH CONCRETE COLLARS
	DREDGING LIMITS
	FILL LIMITS

ABBREVIATIONS

CI	CAST IRON
HDPE	HIGH-DENSITY POLYETHYLENE
MHW	MEAN HIGH WATER
HMLW	HISTORIC MEAN LOW WATER
TYP.	TYPICAL
SS	STAINLESS STEEL
ID	INSIDE DIAMETER
PG	PAGE

LICENSE PLAN NO. **15081**
 Approved by Department of Environmental Protection
 Date: **21 OCT 2020**

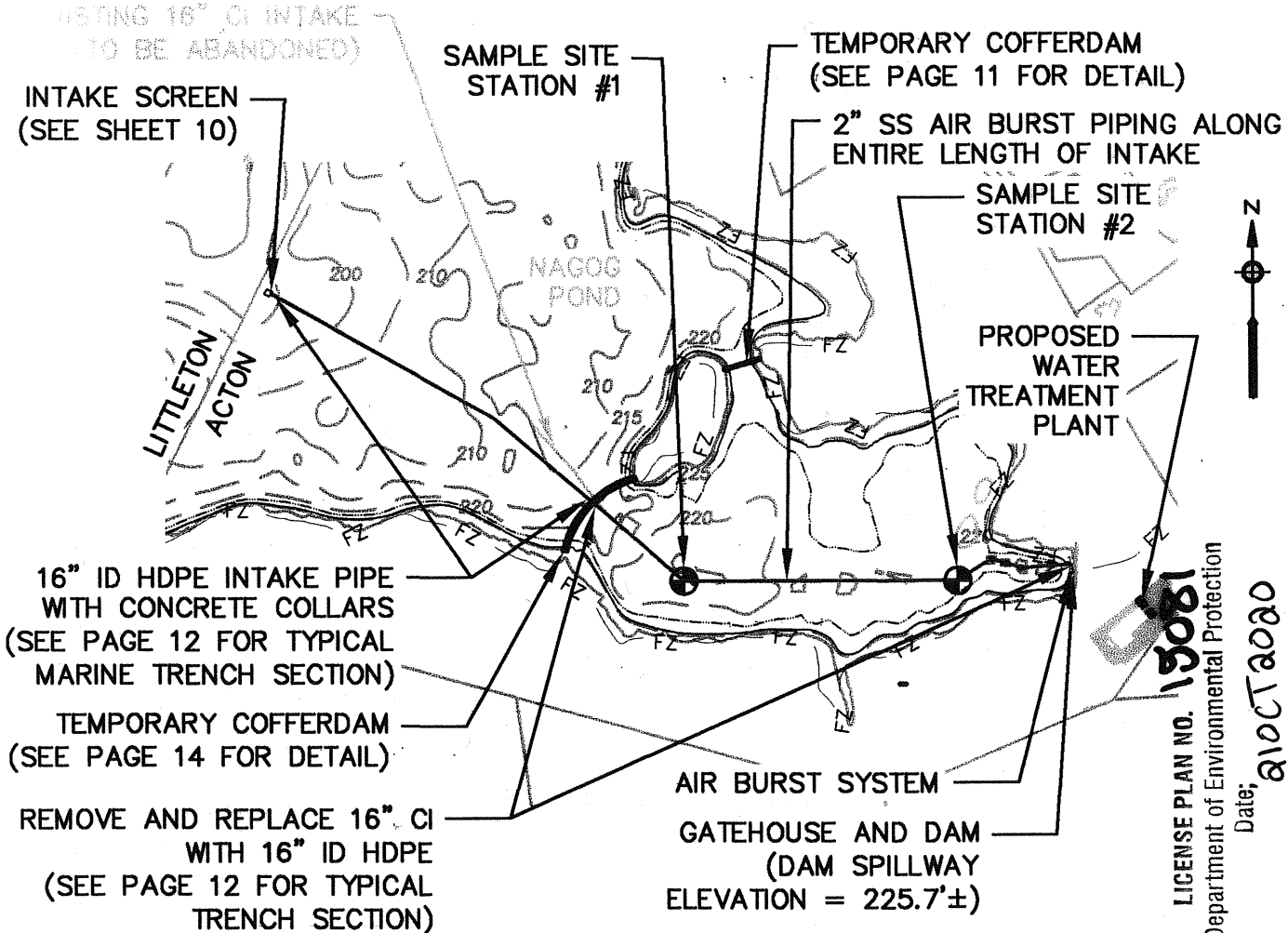


DREDGING DIMENSIONS
 LENGTH = 1,210 ft
 WIDTH = 4 ft
 DEPTH = 5 ft
 AREA = 4,840 sf
 VOLUME = 900 cy

STRUCTURES FOOTPRINT
 NUMBER OF COLLARS = 281
 AREA PER COLLAR = 3 sf
 TOTAL COLLAR AREA = 850 sf
 INTAKE STRUCT. SUPPORT AREA = 225 sf
 TOTAL STRUCT. FILL AREA = 1,075 sf



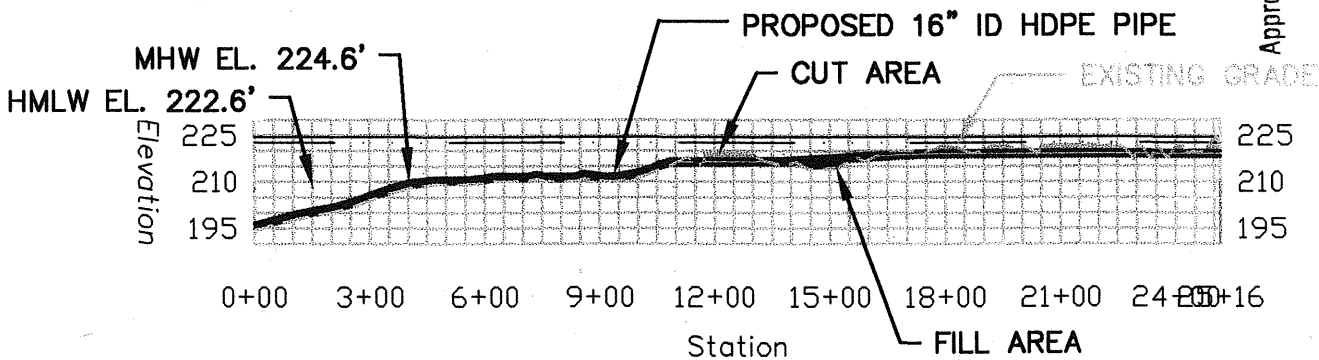
8-19-2020



LICENSE PLAN NO. 15081
 Approved by Department of Environmental Protection
 Date: 01 OCT 2020

PROPOSED RAW WATER INTAKE - PLAN VIEW

SCALE: 1"=500'



PROPOSED RAW WATER INTAKE - PROFILE VIEW

VERTICAL SCALE: 1"=62'-6"
 HORIZONTAL SCALE: 1"=500'



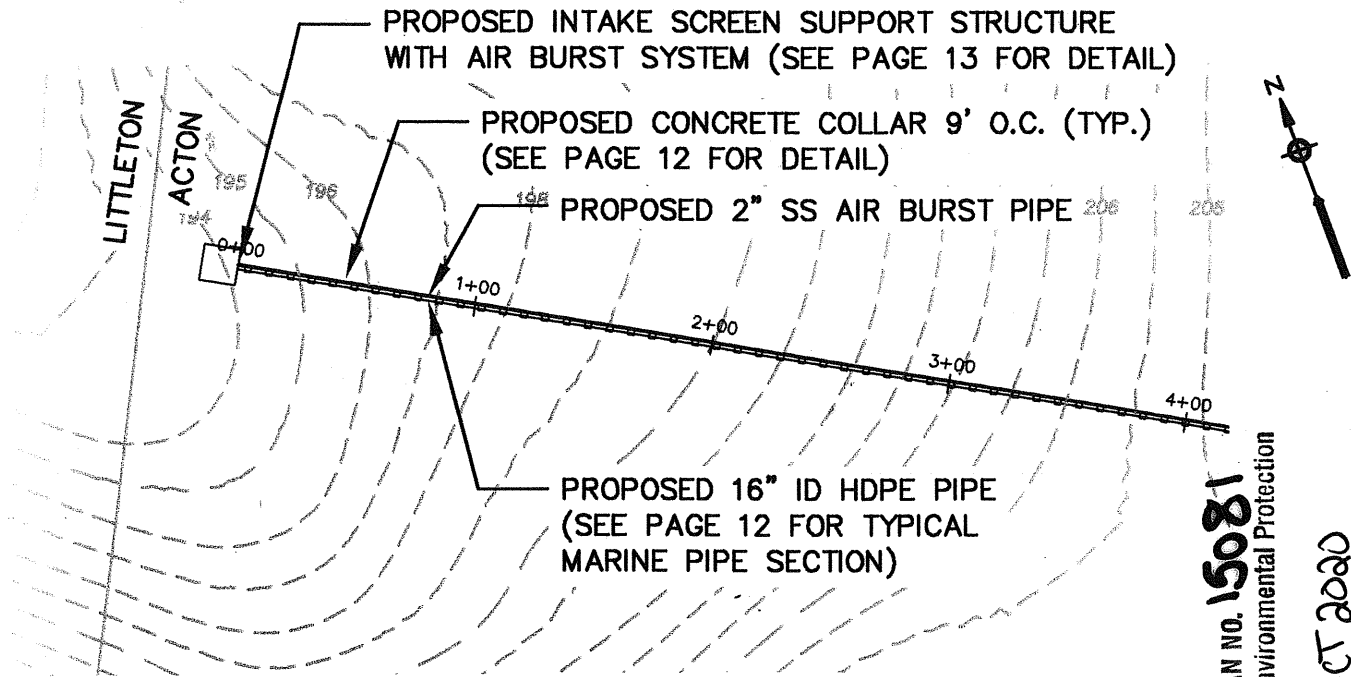
SCALE IN FEET
 SCALE: 1"=500'

DREDGING DIMENSIONS
NO DREDGING

STRUCTURES FOOTPRINT
 NUMBER OF COLLARS = 47
 AREA PER COLLAR = 3 sf
 TOTAL COLLAR AREA = 141 sf
 INTAKE SCREEN SUPPORT STRUC. = 225 sf
 TOTAL AREA = 366 sf



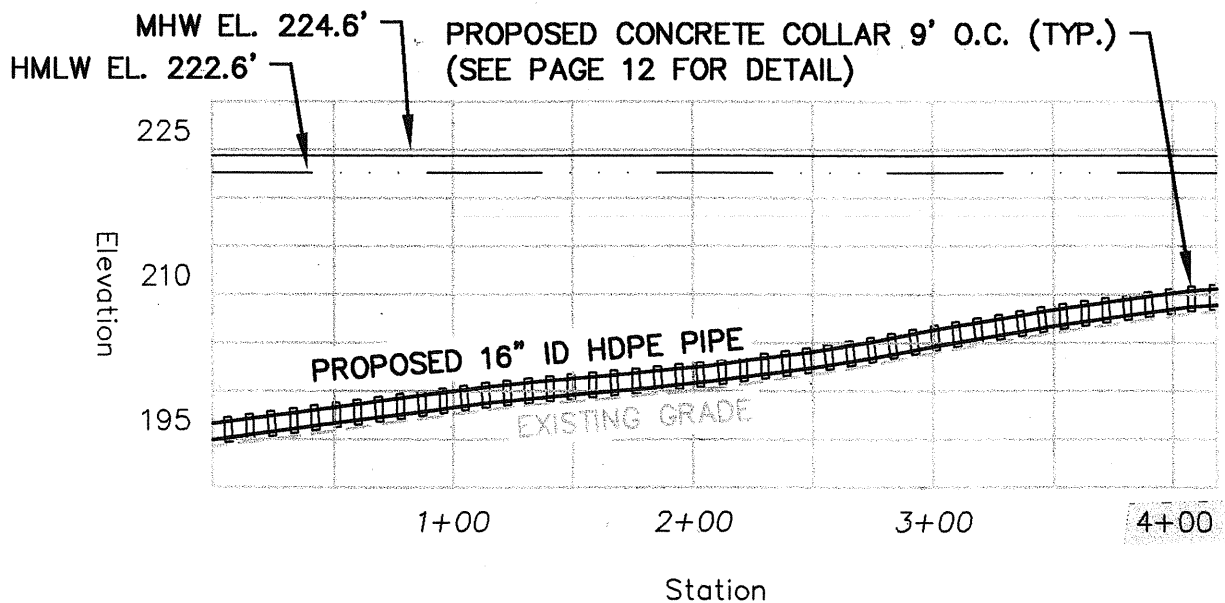
8-19-2020



STRUCTURES AND FILL I - PLAN VIEW

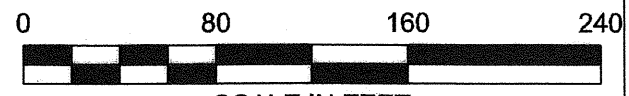
SCALE: 1"=80'

LICENSE PLAN NO. 15081
 Approved by Department of Environmental Protection
 Date: 21 OCT 2020



STRUCTURES AND FILL I - PROFILE VIEW

VERTICAL SCALE: 1"=20'
 HORIZONTAL SCALE: 1"=80'



SCALE IN FEET
 SCALE: 1"=80'

**DREDGING DIMENSIONS
NO DREDGING**

**STRUCTURES FOOTPRINT
NUMBER OF COLLARS = 47
AREA PER COLLAR = 3 sf
TOTAL AREA = 141 sf**



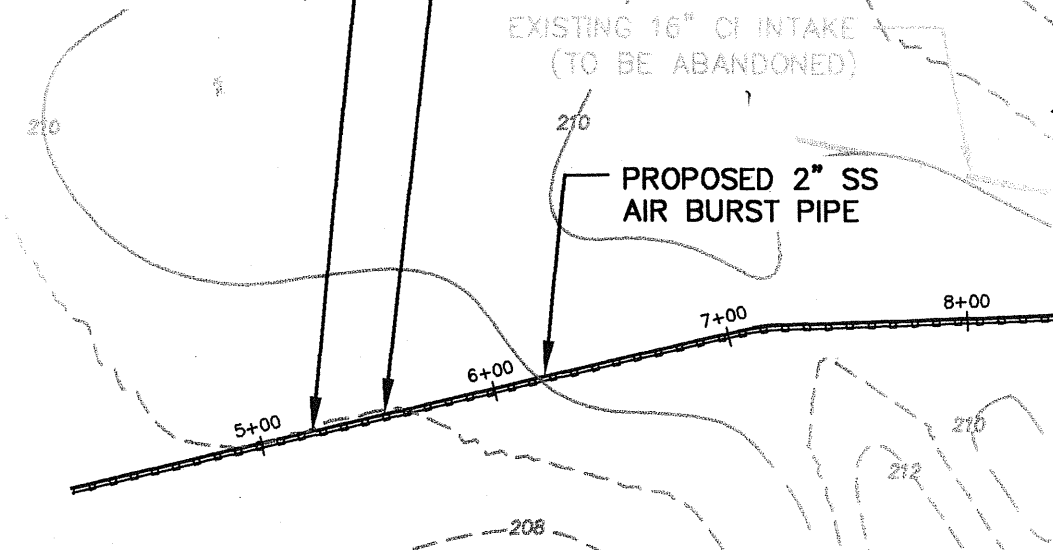
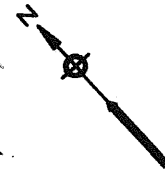
8-19-2020

PROPOSED 16" ID HDPE PIPE (SEE PAGE 12 FOR TYPICAL MARINE PIPE SECTION)

PROPOSED CONCRETE COLLAR 9' O.C. (TYP.) (SEE PAGE 12 FOR DETAILS)

EXISTING 16" CI INTAKE (TO BE ABANDONED)

PROPOSED 2" SS AIR BURST PIPE



STRUCTURES AND FILL II - PLAN VIEW

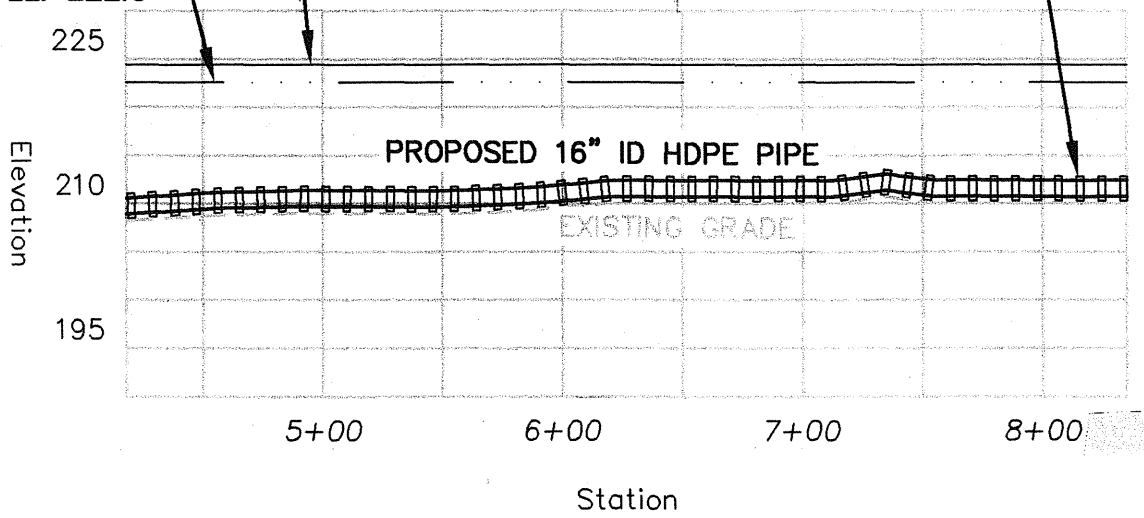
SCALE: 1"=80'

LICENSE PLAN NO. 15081
 Approved by Department of Environmental Protection
 Date:

21 OCT 2020

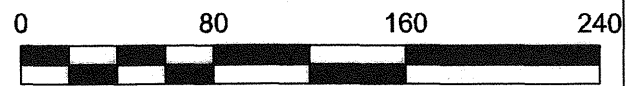
MHW EL. 224.6'
HMLW EL. 222.6'

PROPOSED CONCRETE COLLAR 9' O.C. (TYP.) (SEE PAGE 12 FOR DETAIL)



STRUCTURES AND FILL II - PROFILE VIEW

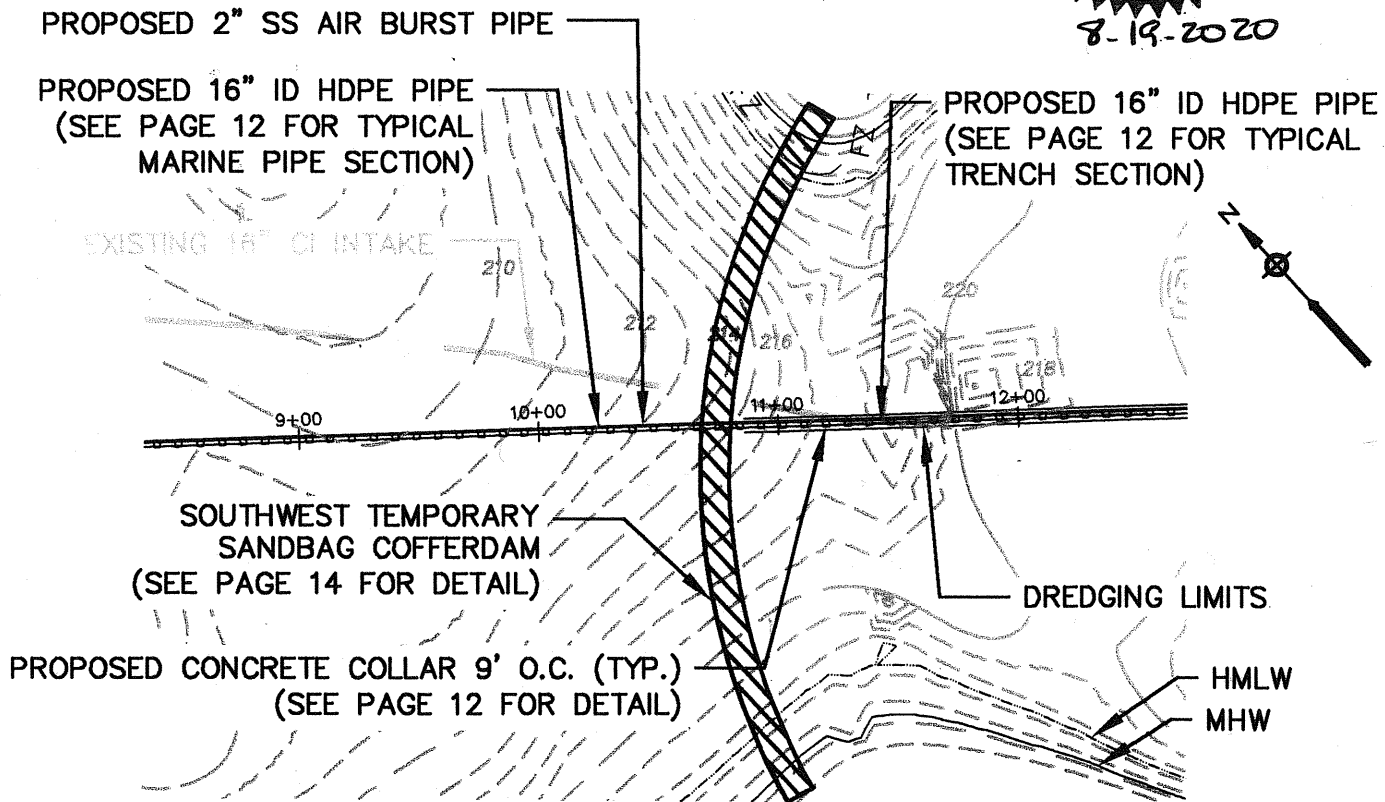
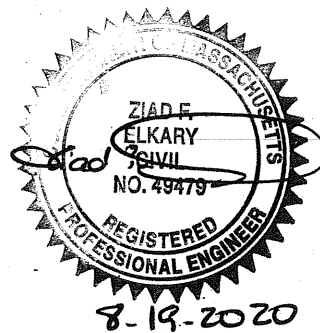
VERTICAL SCALE: 1"=20'
HORIZONTAL SCALE: 1"=80'



SCALE IN FEET
SCALE: 1"=80'

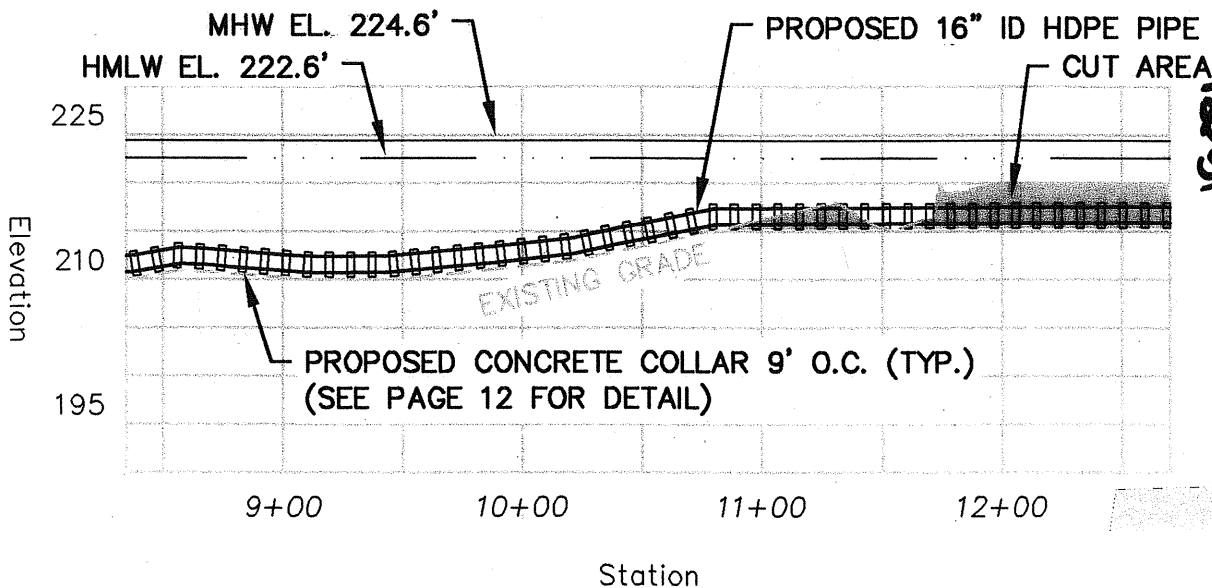
DREDGING DIMENSIONS
 LENGTH = 185 ft
 WIDTH = 4 ft
 DEPTH = 5 ft
 AREA = 740 sf
 VOLUME = 137 cy

STRUCTURES FOOTPRINT
 NUMBER OF COLLARS = 49
 AREA PER COLLAR = 3 sf
 TOTAL AREA = 147 sf



STRUCTURES AND FILL III - PLAN VIEW

SCALE: 1"=80'



LICENSE PLAN NO. 19081
 Approved by Department of Environmental Protection
 Date: 21 OCT 2020

STRUCTURES AND FILL III - PROFILE VIEW

VERTICAL SCALE: 1"=20'
 HORIZONTAL SCALE: 1"=80'



SCALE IN FEET
 SCALE: 1"=80'

DREDGING DIMENSIONS

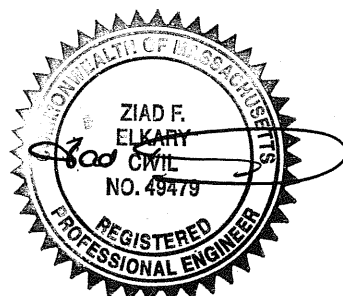
LENGTH = 226 ft
 WIDTH = 4 ft
 DEPTH = 5 ft
 AREA = 904 sf
 VOLUME = 167 cy

FILL DIMENSIONS

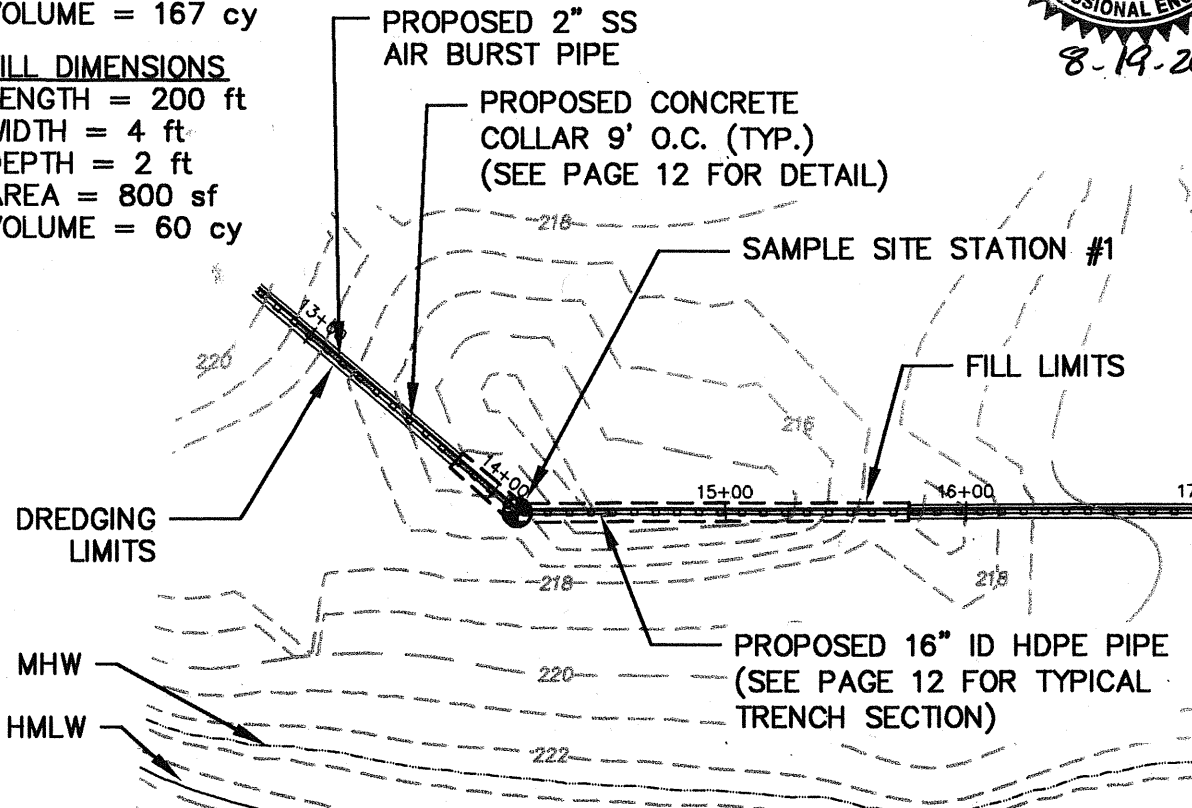
LENGTH = 200 ft
 WIDTH = 4 ft
 DEPTH = 2 ft
 AREA = 800 sf
 VOLUME = 60 cy

STRUCTURES FOOTPRINT

NUMBER OF COLLARS = 47
 AREA PER COLLAR = 3 sf
 TOTAL AREA = 141 sf

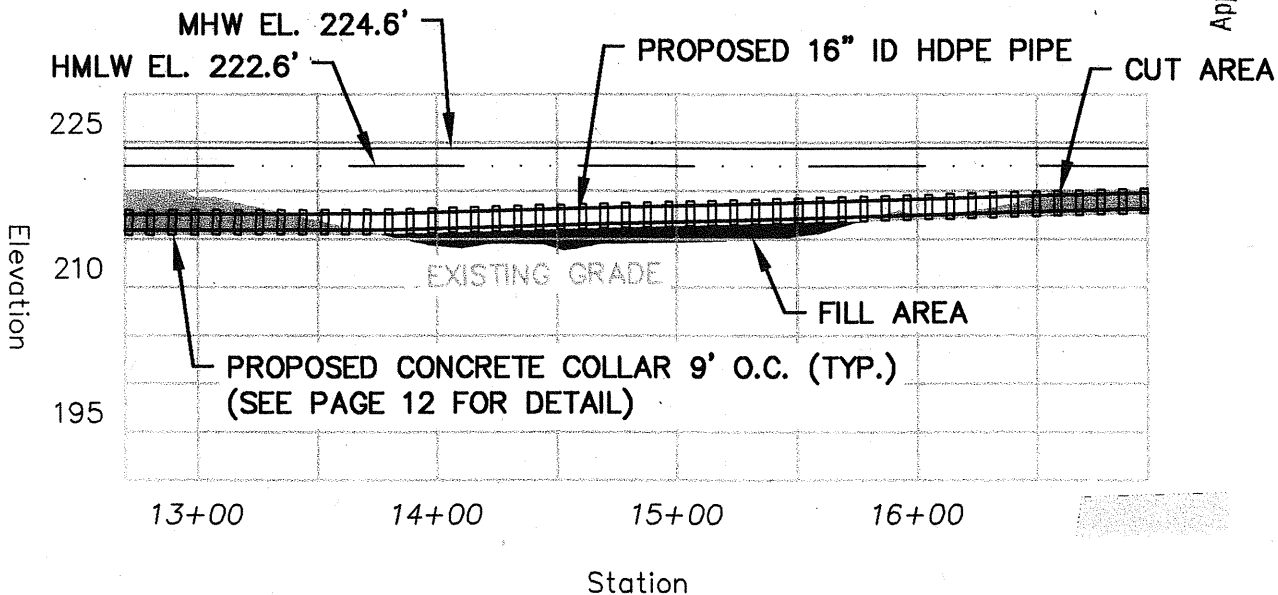


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STRUCTURES AND FILL IV - PLAN VIEW

SCALE: 1"=80'



STRUCTURES AND FILL IV - PROFILE VIEW

VERTICAL SCALE: 1"=20'
 HORIZONTAL SCALE: 1"=80'



SCALE IN FEET
 SCALE: 1"=80'

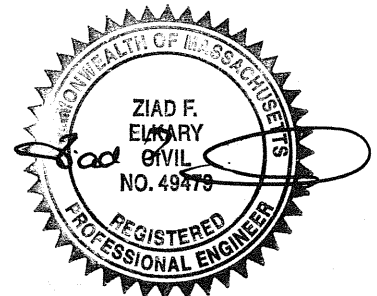
LICENSE PLAN NO. 15021
 Approved by Department of Environmental Protection
 Date: 21 OCT 2020

DREDGING DIMENSIONS

LENGTH = 441 ft
 WIDTH = 4 ft
 DEPTH = 5 ft
 AREA = 1,764 sf
 VOLUME = 327 cy

STRUCTURES FOOTPRINT

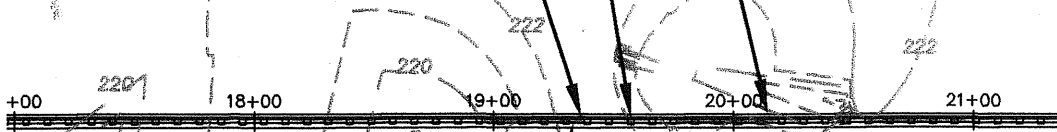
NUMBER OF COLLARS = 49
 AREA PER COLLAR = 3 sf
 TOTAL AREA = 147 sf



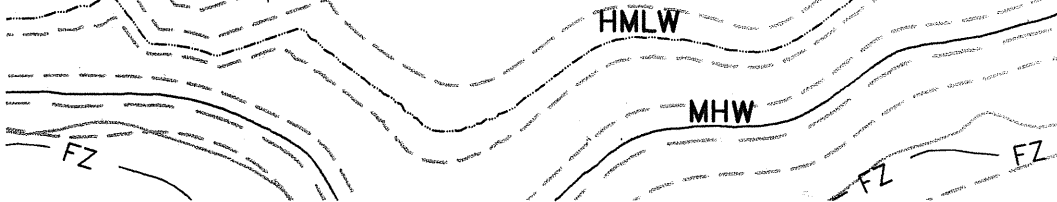
8-19-2020

PROPOSED CONCRETE COLLARS 9' O.C. (TYP.)
 (SEE PAGE 12 FOR DETAIL)

PROPOSED 2" SS AIR BURST PIPE



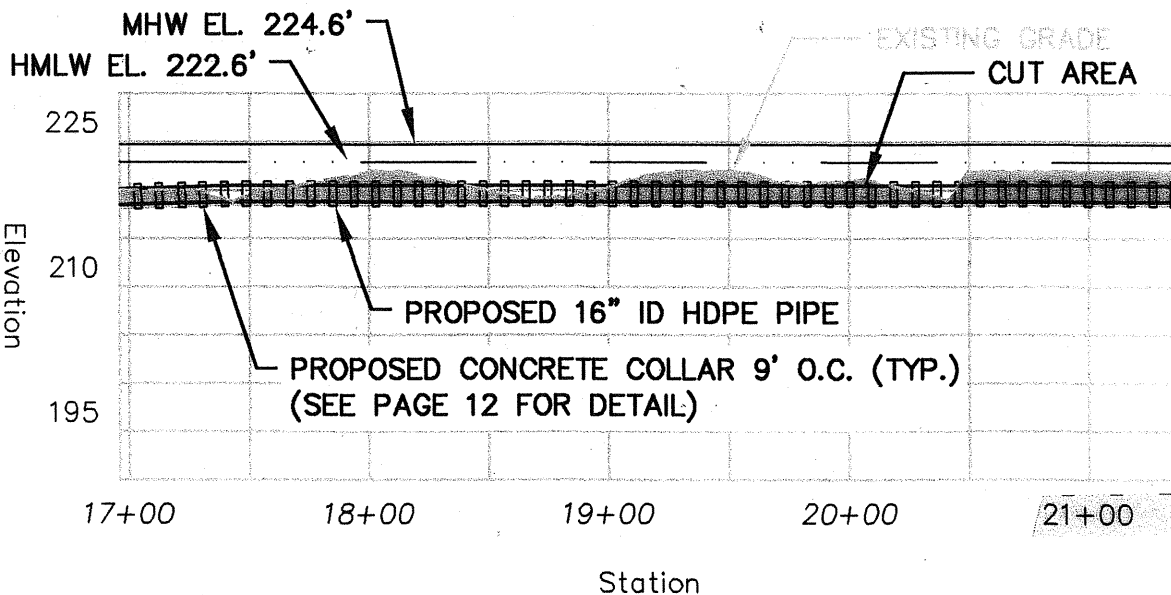
PROPOSED 16" ID HDPE PIPE
 (SEE PAGE 12 FOR TYPICAL TRENCH SECTION)



STRUCTURES AND FILL V - PLAN VIEW

SCALE: 1"=80'

LICENSE PLAN NO. 15081
 Approved by Department of Environmental Protection
 Date: 2 OCT 2020



STRUCTURES AND FILL V - PROFILE VIEW

VERTICAL SCALE: 1"=20'
 HORIZONTAL SCALE: 1"=80'

DREDGING DIMENSIONS

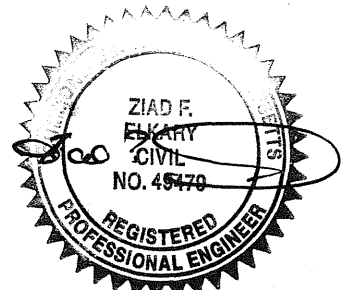
LENGTH = 351 ft
 WIDTH = 4 ft
 DEPTH = 5 ft
 AREA = 1,404 sf
 VOLUME = 260 cy

FILL DIMENSIONS

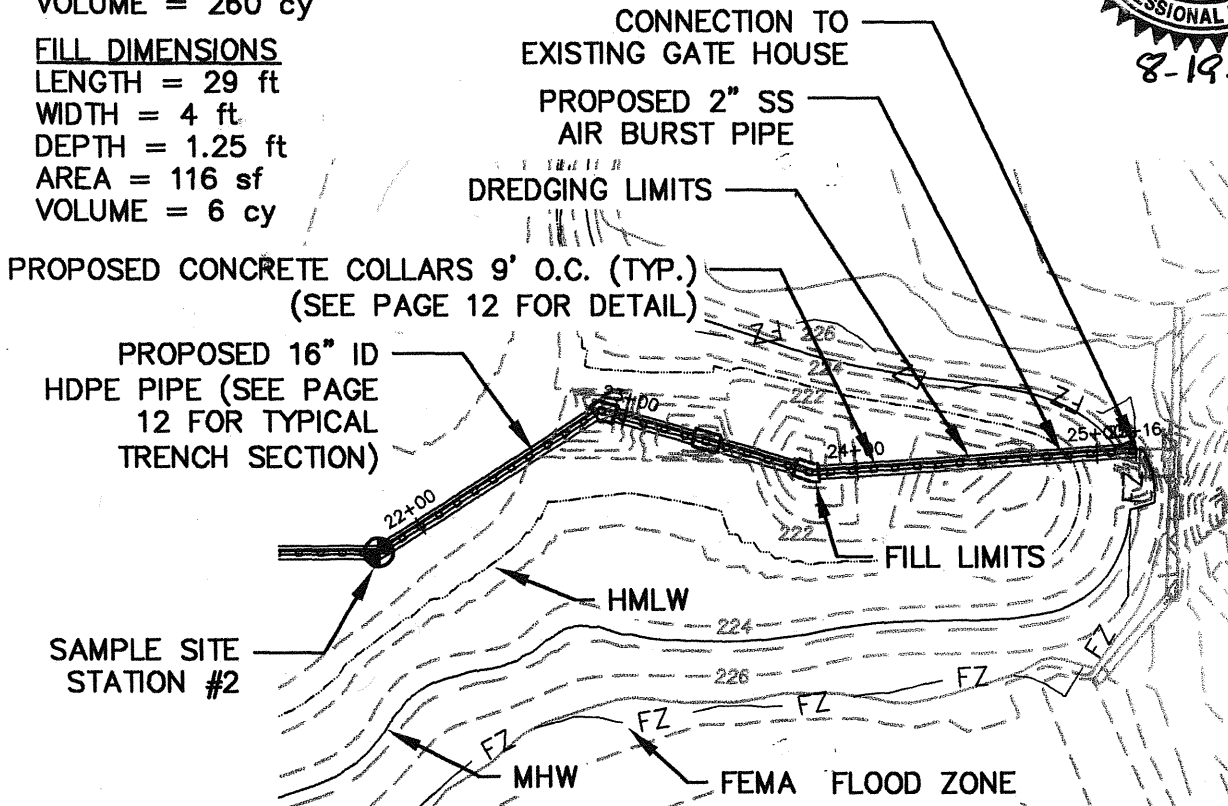
LENGTH = 29 ft
 WIDTH = 4 ft
 DEPTH = 1.25 ft
 AREA = 116 sf
 VOLUME = 6 cy

STRUCTURES FOOTPRINT

NUMBER OF COLLARS = 42
 AREA PER COLLAR = 3 sf
 TOTAL AREA = 126 sf



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STRUCTURES AND FILL VI - PLAN VIEW

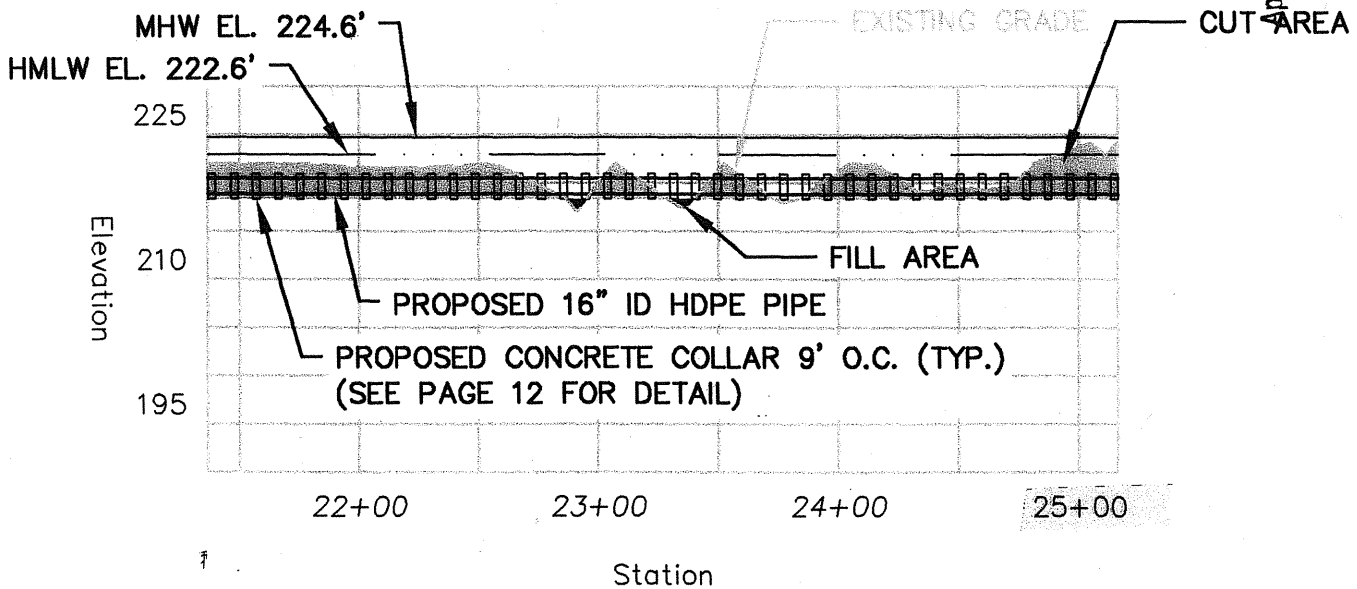
SCALE: 1"=80'

LICENSE PLAN NO. 15081

Approved by Department of Environmental Protection

Date:

21 OCT 2020



STRUCTURES AND FILL VI - PROFILE VIEW

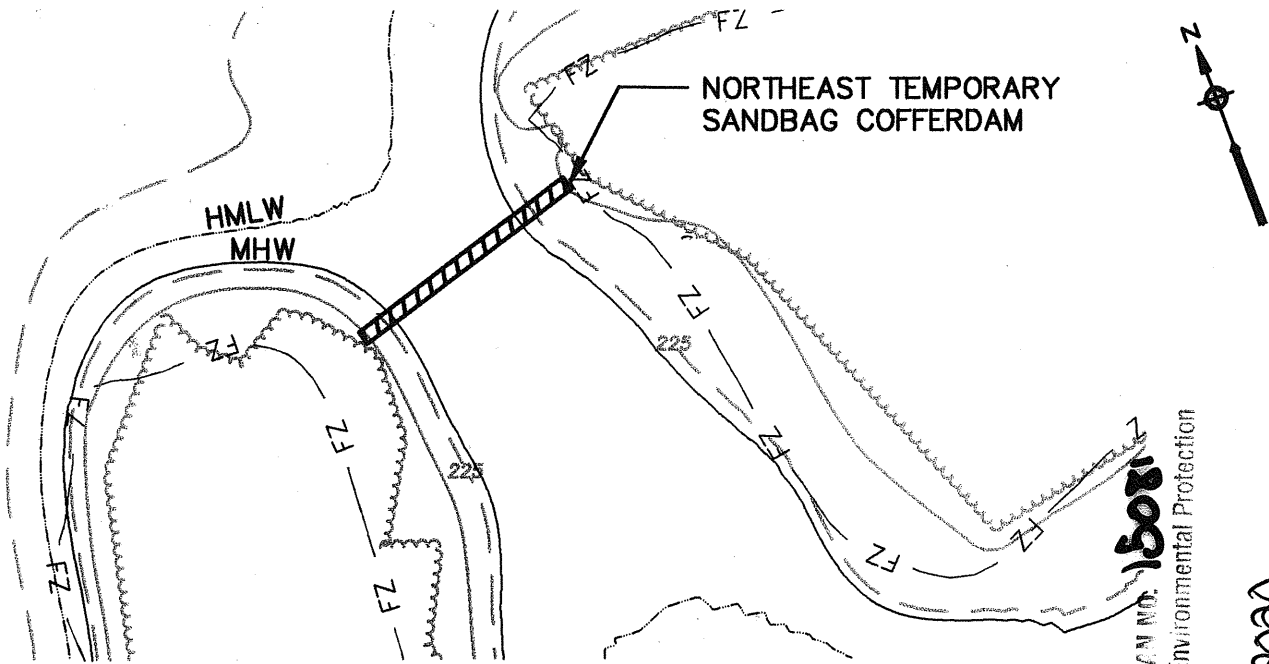
VERTICAL SCALE: 1"=20'
 HORIZONTAL SCALE: 1"=80'



SCALE IN FEET
 SCALE: 1"=80'

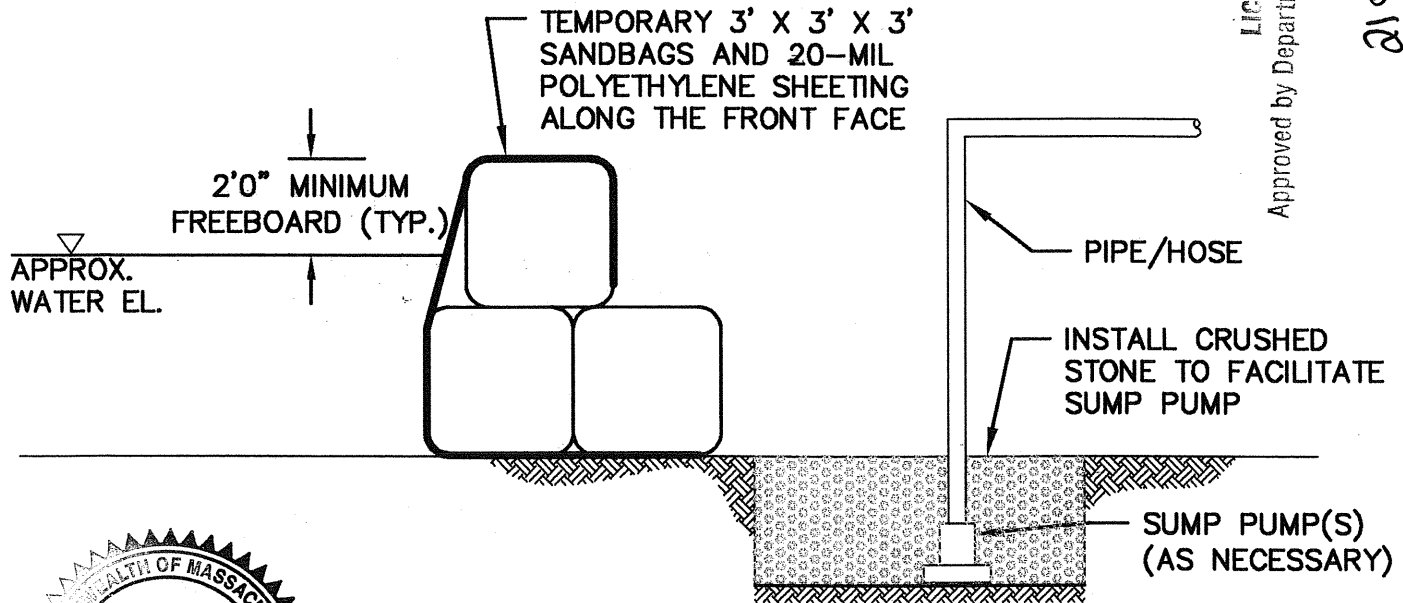
DREDGING DIMENSIONS
NO DREDGING

STRUCTURES FOOTPRINT
NO STRUCTURES

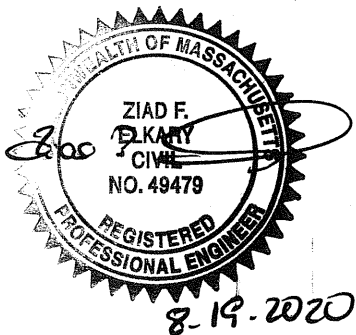


STRUCTURES AND FILL VII

SCALE: 1"=80'



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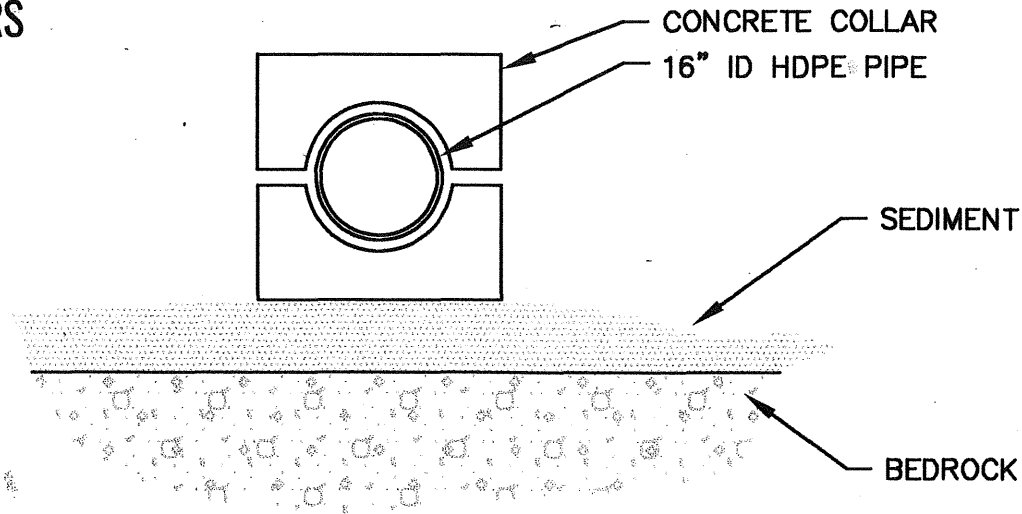
**NORTHEAST TEMPORARY
SANDBAG COFFERDAM DETAIL**

SCALE: N.T.S.



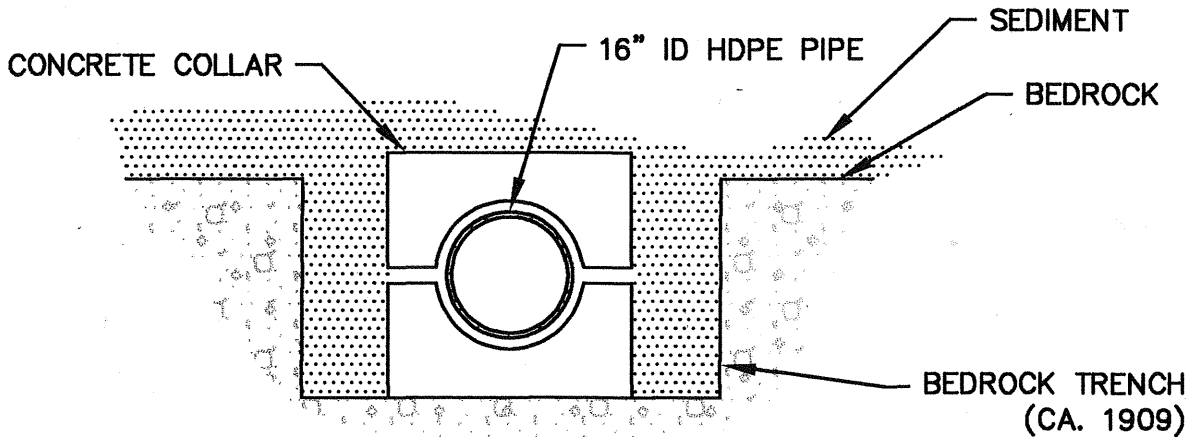
SCALE IN FEET
SCALE: 1"=80'

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Date; 01052020



TYPICAL MARINE PIPE SECTION

SCALE: N.T.S.

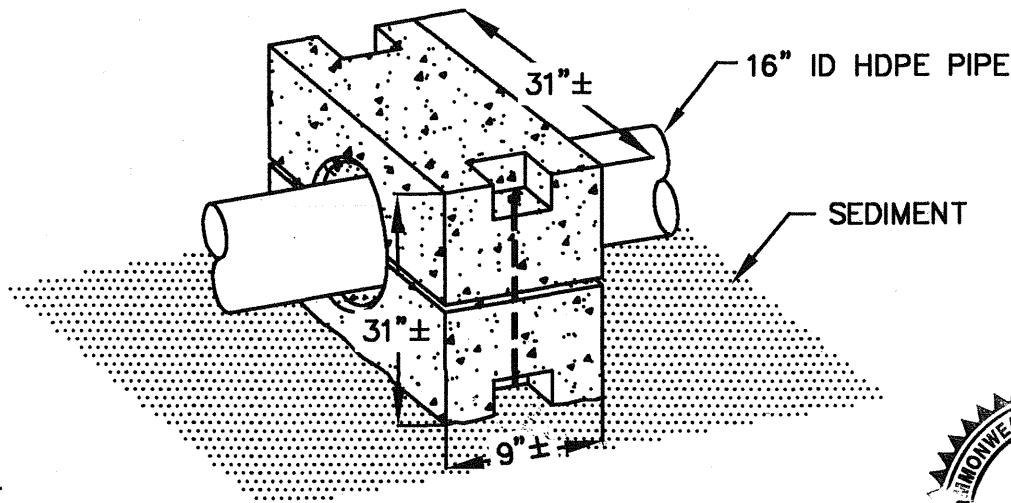


NOTE:

1. TRENCH DIMENSIONS VARY.

TYPICAL TRENCH SECTION

SCALE: N.T.S.

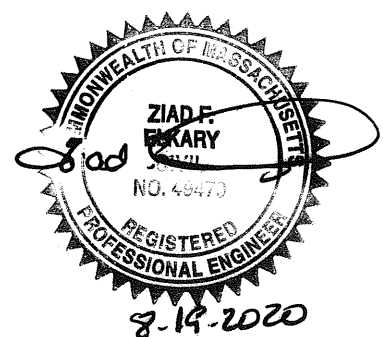


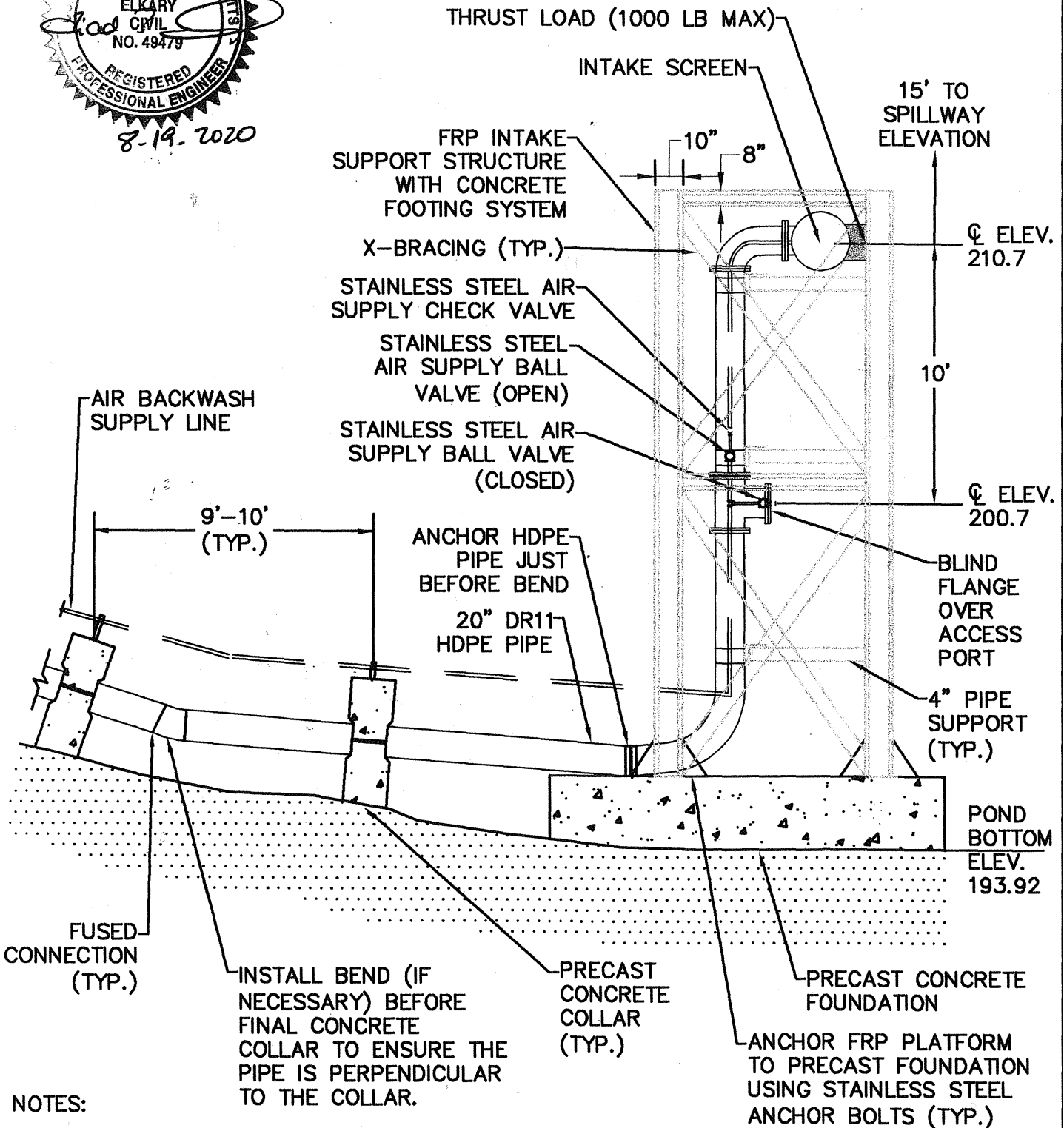
NOTE:

1. COLLAR DIMENSIONS ARE APPROXIMATE.

CONCRETE COLLAR DETAIL

SCALE: N.T.S.



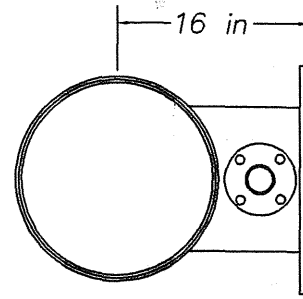
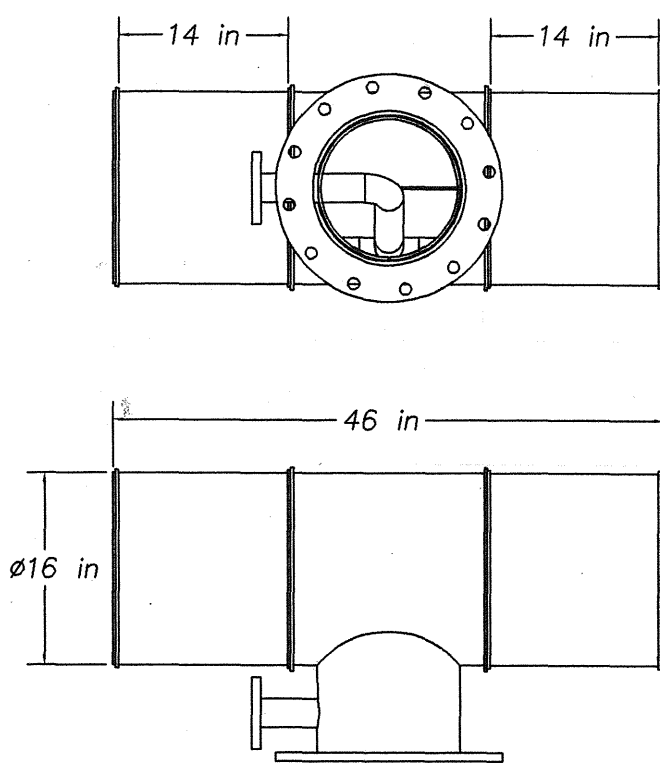


NOTES:

1. ALL SUBMERGED HARDWARE SHALL BE STAINLESS STEEL.

INTAKE SUPPORT STRUCTURE DETAIL

SCALE: N.T.S.

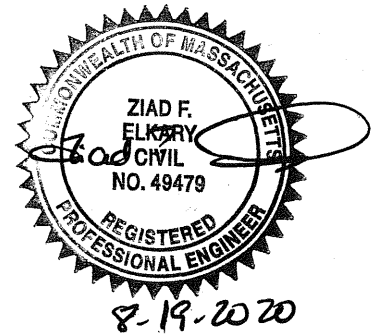
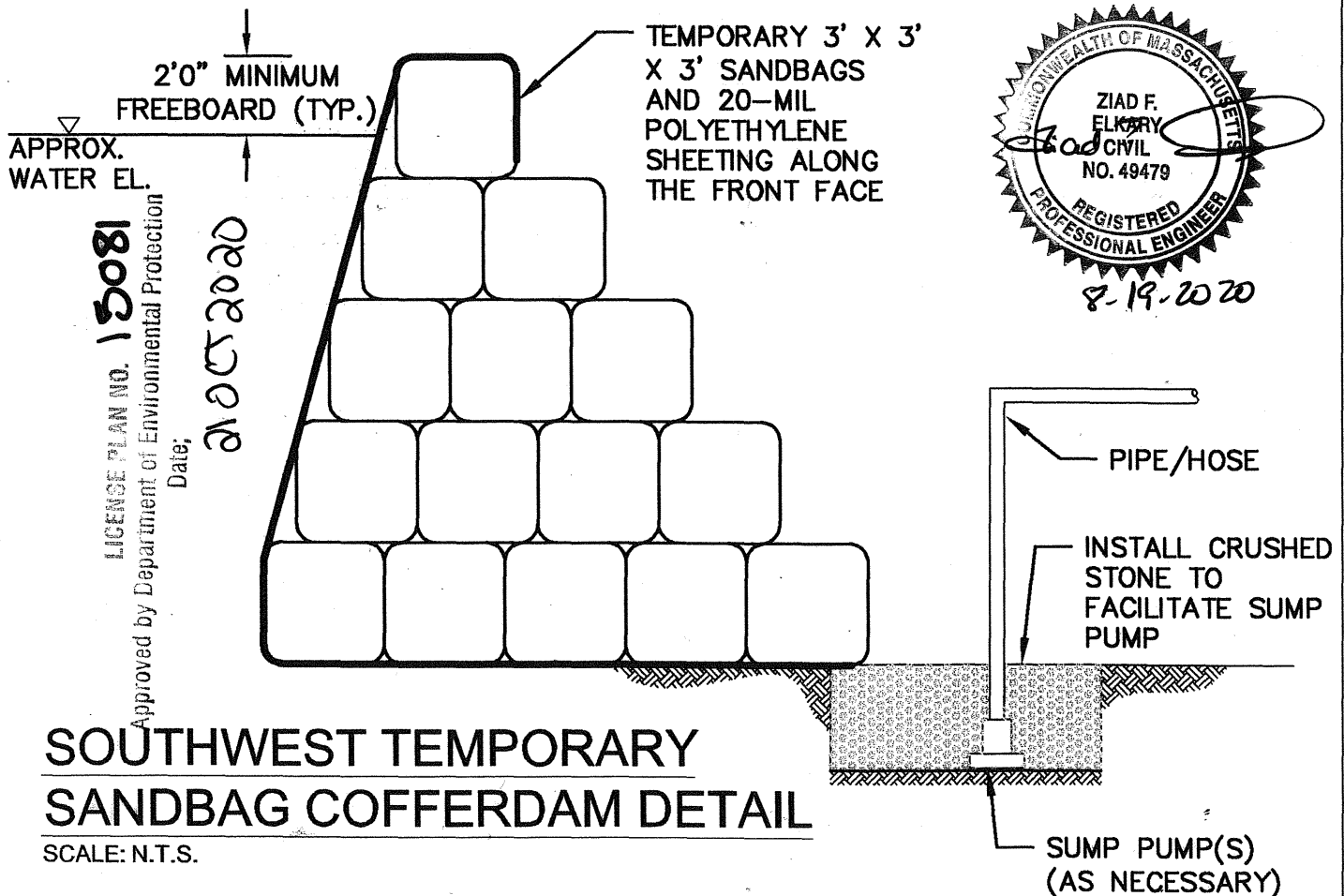


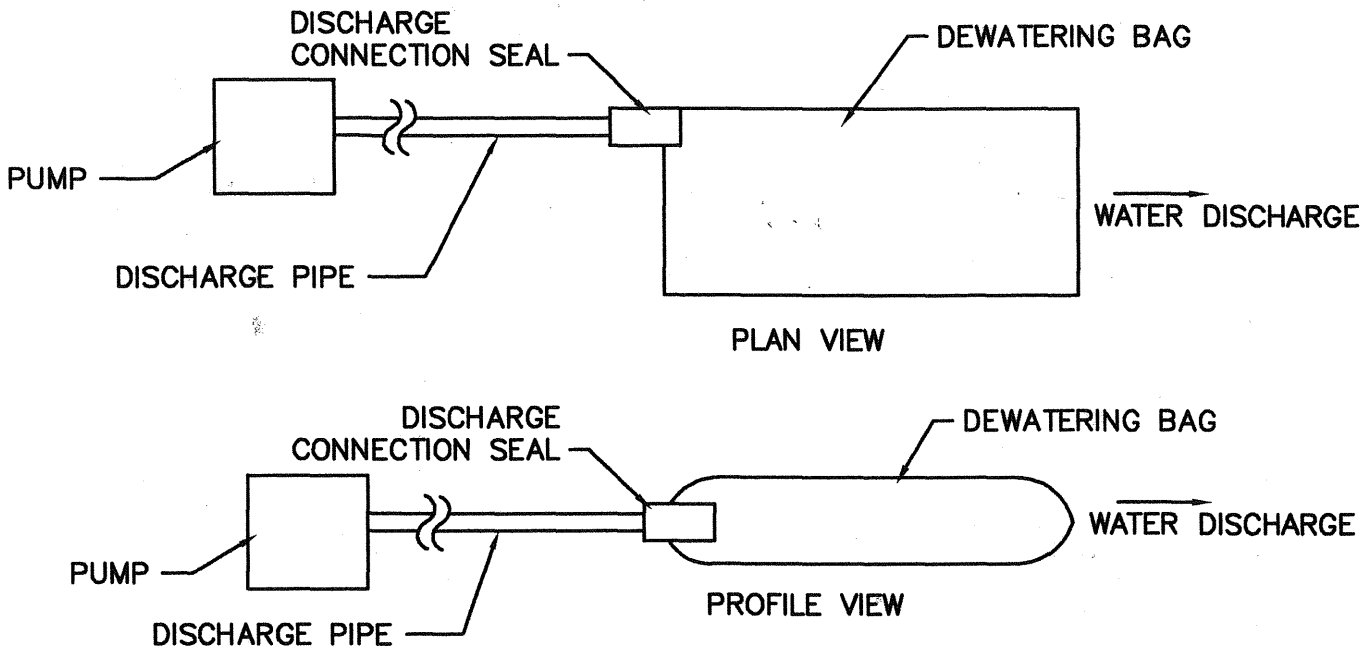
NOTES:

1. MATERIAL = 304 SS
2. UNIT CAPACITY = 1.5 MGD
3. MAX SLOT VELOCITY = 0.50 FPS
5. OUTLET SIZE 12 IN
6. AIRBURST SIZE = 12 IN
7. SLOT WIDTH = 0.125 IN

INTAKE SCREEN DETAIL

SCALE: N.T.S.





NOTES:

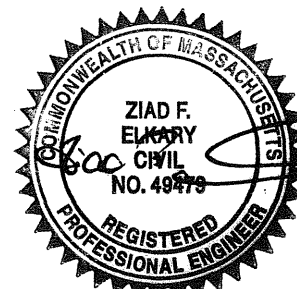
1. CONTRACTOR SHALL USE STONE AROUND THE SUCTION END TO MINIMIZE DISCHARGE OF TRENCH MATERIALS. THE DISCHARGE WATER SHALL PASS THROUGH FILTER FABRIC.
2. DEWATERING BAG SIZE AND QUANTITY SHALL BE AS NEEDED TO ADEQUATELY FILTER ALL PUMP EFFLUENT FROM DEWATERING ACTIVITIES. CONTRACTOR SHALL PROVIDE A REDUNDANT BAG ON SITE AT ALL TIMES.
3. EACH BAG SHALL HANDLE A 2", 3", OR 4" DISCHARGE HOSE.
4. DISCHARGE HOSES CAN BE PLACED ALONG ANY EDGE BY MAKING A SMALL INCISION INTO THE FABRIC, INSERTING THE HOSE, AND THEN CLAMPING THE FABRIC TO THE HOSE VIA WIRE, TIES, CLAMP, ROPE OR SIMILAR TO CREATE A GOOD SEAL.
5. CONTRACTOR SHALL AVOID DISCHARGING MULTIPLE PIPES INTO ONE BAG.

DEWATERING BAG DETAIL

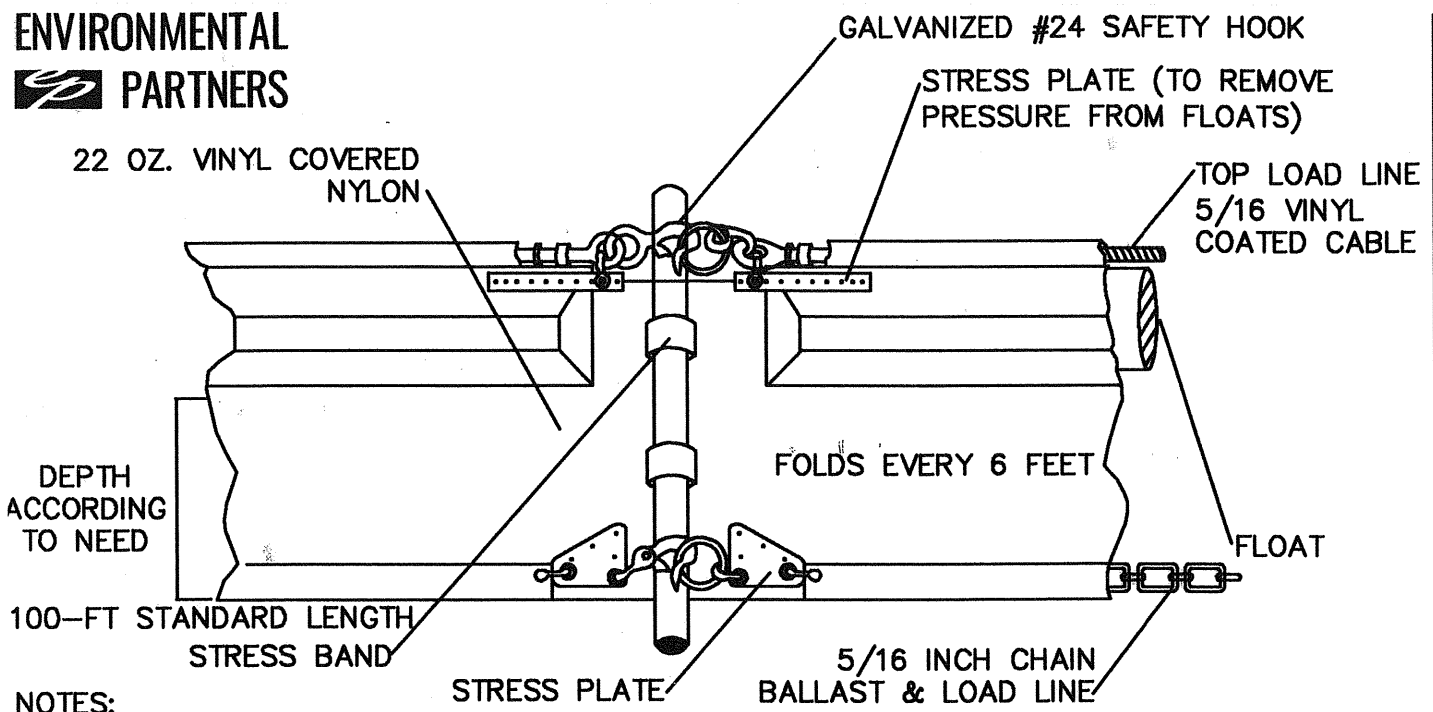
SCALE: N.T.S.

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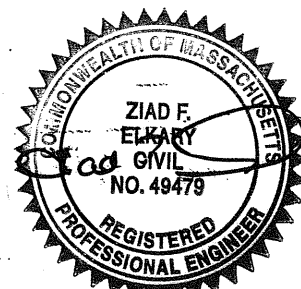


NOTES:

1. THE TURBIDITY CURTAIN AND ANCHOR SYSTEM SHALL BE ADEQUATE FOR A MINIMUM FLOW VELOCITY OF 2 FEET PER SECOND.
2. THE TURBIDITY CURTAIN SHALL EXTEND THE ENTIRE DEPTH OF THE WATER COURSE.
3. TURBIDITY CURTAIN EXTERNAL ANCHORING SHALL BE ACCOMPLISHED WITH THE USE OF BOTTOM ANCHORS. BOTTOM ANCHORS MUST BE SUFFICIENT TO HOLD THE CURTAIN IN THE SAME POSITION RELATIVE TO THE BOTTOM OF THE WATERCOURSE WITHOUT INTERFERING WITH THE ACTION OF THE CURTAIN.
4. THE MINIMUM PHYSICAL PROPERTY REQUIREMENTS FOR THE CURTAIN FABRIC SHALL BE AS FOLLOWS:
 THICKNESS = 45 MILS
 WEIGHT = 22 OZ./SQ.YD.
 GRAB TENSILE STRENGTH = 300 LBS.
 UV INHIBITOR IS REQUIRED
5. THE CONTRACTOR SHALL ATTEMPT TO MINIMIZE THE NUMBER OF JOINTS IN THE SILT CURTAIN. A MINIMUM CONTINUOUS SPAN OF 50-FT BETWEEN JOINTS SHALL BE MAINTAINED.
6. THE ENDS OF THE CURTAIN, BOTH FLOATING AND WEIGHTED LOWER, SHOULD EXTEND WELL UP INTO THE EDGE OF WATER, ESPECIALLY IF HIGH WATER CONDITIONS ARE EXPECTED. THE ENDS SHOULD BE SECURED FIRMLY TO THE EDGE OF WATER TO FULLY ENCLOSE THE AREA WHERE SEDIMENT MAY ENTER THE WATER.
7. ALL BARRIER HARDWARE AND FITTINGS SHALL BE GALVANIZED UNLESS OTHERWISE NOTED.
8. THE TURBIDITY CURTAIN SHALL BE MAINTAINED IN PLACE AFTER CONSTRUCTION IS COMPLETED, UNTIL ENGINEER PROVIDES DIRECTION TO REMOVE THE CURTAIN.
9. THE TURBIDITY CURTAIN SHALL COMPLETELY ENCLOSE ANY CONSTRUCTION ACTIVITY WITHIN THE POND AS SPECIFIED.

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TURBIDITY CURTAIN DETAIL

SCALE: N.T.S.