

December 22, 2015

Ms. Purvi P. Patel, EIT  
Massachusetts Environmental Policy Act (MEPA) Office  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114

RE: Proposed Nagog Pond Water Treatment Plant, Acton, Massachusetts  
Environmental Notification Form – Supplemental Submittal  
EEA No: 15446

Dear Ms. Patel:

During the recent MEPA consultation session held on site last Friday, December 18, 2015 the applicant (Town of Concord, Public Works, Water/Sewer Division) notified the group in attendance of several minor project changes. In addition, supplemental information was requested based on comments and questions made during the meeting. A summary of the project changes and clarifications:

1. All activities associated with the proposed solar photovoltaic (PV) system, including clearing of land, have been moved outside the 100 foot wetland buffer. As such, the applicant has retracting its request for a waiver as all work associated with the proposed PV system is now outside the jurisdiction of the Conservation Commission. An updated plan showing the revised location of the PV system is attached (refer to Sheet C-9S).
2. The proposed building has been shifted such that it is no closer to the wetland boundary than the existing building (70 feet). As such, the applicant has retracting its request for a waiver of the wetland by-law setback requirements. The footprint and floorplan of the WTP building has not changed. The location of the building has pivoted slightly on the northeast corner of the structure. Updated plans showing the new building location is attached (refer to Sheet C-9 and C-9S).
3. The proposed method of replacing the existing 16-inch intake line to Nagog Pond has been finalized and includes dewatering a section of Nagog Pond. The existing coffer dam which is partially submerged will be reconstituted and amended with the placement of a temporary coffer dam consisting of an impermeable barrier/liner and super sand sacks. Once the temporary coffer dam is in place, the existing Nagog Pond dam outlet structure will be utilized to dewater the lower section of the pond so that replacement of the intake pipe can be accomplished in the dry.

The area of the pond to be dewatered is shown on sheet C-5 (attached) and consists of approximately 707,019 square feet. This area also represents a volume of approximately 19.65 million gallons of water if the pond was full prior to dewatering. The target release rate of water to Nagog Brook is between 300 gallons per minute (gpm) and 700 gpm. If these release rates are achieved, the time for drawdown will be between 20 and 45 days. It is anticipated that construction activities associated with the intake, including draining

the reservoir, will begin in September and be completed in December. The goal is to complete construction of the intake line before the new Water Treatment Plant is placed into service, anticipated to be in the summer of 2018.

The existing 16-inch intake pipe will be removed and the new 16-inch intake pipe installed in the same location within the coffer dam area. All excavation work will be accomplished such that there will be no net increase in soils/sediments removed/added to the pond bottom. All existing sediments/soils will remain and no new soils will be added. During the excavation process sediments will be stockpiled adjacent to the pipe trench and re-used to backfill the pipe.

The Contractor will be required to maintain several dewatering pumps to transfer water from isolated low spots in the dewatered area. Water will either be pumped to another isolated low spot not affecting the construction zone or pumped to the dam outlet zone for release downstream. Any water which is pumped will be monitored visually for the transport of solids/sediment. If solids/sediments are detected, then they will be allowed to settle within the dewatering area before being discharged to Nagog Brook.

The remaining section of the intake pipe will be installed using a barge. The HDPE pipe will be fused and the concrete collars installed. The pipe will be filled with air and dragged/floated out to the location to be installed. The pipe will then be filled with water and submerged. Divers will be used to connect the intake screen and attached the intake line to the support tower. The support tower will be deployed using a barge. Locations will be determined using GPS equipment.

The following information is enclosed in support of the proposed project modifications and as requested during the meeting:

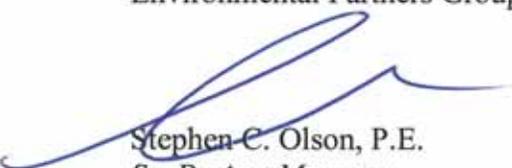
- Updated ENF pages (2, 9, 10, and 11)
- Updated Project Plans (C-5, C-6, C-8, C-9, C-9S)
- Nagog Pond Underwater Intake Pipe Inspection Report (April 11, 2012)
- Nagog Pond Watershed and Solar Feasibility Study, Draft Report (July 17, 2013)

In addition to the enclosed information, an electronic copy of the Nagog Pond Watershed and Solar Feasibility Study has been forwarded to the Town of Acton. Since the file is too large to email, we forwarded a "pdf" of the draft report to the Town of Acton so that they can upload it onto their document sharing website. The Town's DocuShare link to the study is: <http://doc.acton-ma.gov/dsweb/View/Collection-7230>. However, it is our understanding that the file has not yet been uploaded.

The revised plan Sheet C-9 includes a table of existing and proposed site features including clearing, pervious, and impervious areas. There are no proposed changes being made to the stormwater and drainage systems previously submitted. Based on the limited site changes proposed, it is anticipated that there will be negligible differences in stormwater management. As indicated by the previous stormwater analysis, it is expected that the peak stormwater discharge rates will be lower compared with existing conditions. An updated Stormwater Report has not been completed.

If you should have any questions or require additional information, please do not hesitate to contact me at (617) 657-0255. I can also be reached via e-mail at [sco@envpartners.com](mailto:sco@envpartners.com).

Very Truly Yours,  
Environmental Partners Group, Inc.



Stephen C. Olson, P.E.  
*Sr. Project Manager*

Encl:

- Attachment A - Updated ENF pages (2, 9, 10, and 11)
- Attachment B - Updated Project Plans (C-5, C-6, C-8, C-9, C-9S)
- Attachment C - Nagog Pond Underwater Intake Pipe Inspection Report (April 11, 2012)
- Attachment D - Nagog Pond Watershed and Solar Feasibility Study, Draft Report (July 17, 2013)

- CC:
- Christopher Whelan, Town Manager
  - Richard Reine, Public Works Director
  - Alan Cathcart, Concord Water/Sewer Division, Superintendent
  - Concord Public Works Commission
  - Town of Acton, Conservation Commission
  - Town of Acton, Planning Department
  - Town of Acton, Board of Selectmen

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*Attachment A*  
*Attachment A - Updated ENF pages (2, 9, 10, and 11)*

<b>Summary of Project Size &amp; Environmental Impacts</b>	<b>Existing</b>	<b>Change</b>	<b>Total</b>
<b>LAND</b>			
Total site acreage	59.793		
New acres of land altered		1.592	
Acres of impervious area	.399	.240	.639
Square feet of new bordering vegetated wetlands alteration		0	
Square feet of new other wetland alteration		5,814	
Acres of new non-water dependent use of tidelands or waterways		0	
<b>STRUCTURES</b>			
Gross square footage	3,014	10,372	13,386
Number of housing units	0	0	0
Maximum height (feet)	17	13.5	30.5
<b>TRANSPORTATION</b>			
Vehicle trips per day	1.5	.1667	1.667
Parking spaces	3	2	5
<b>WASTEWATER</b>			
Water Use (Gallons per day)	0	20	20
Water withdrawal (GPD)	.75 MGD (3 months/year)	0 MGD	.75 MGD (continuously)
Wastewater generation/treatment (GPD)	0	20	20
Length of water mains (miles)	0	0	0
Length of sewer mains (miles)	0	0	0
<p>Has this project been filed with MEPA before?  <input checked="" type="checkbox"/> Yes (EEA # _____)    <input type="checkbox"/> No</p>			
<p>Has any project on this site been filed with MEPA before?  <input checked="" type="checkbox"/> Yes (EEA # _____)    <input type="checkbox"/> No</p>			

## WETLANDS, WATERWAYS, AND TIDELANDS SECTION

### I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))?  Yes \_\_\_ No; if yes, specify, in quantitative terms:

Alteration of 1,000 or more sf of salt marsh or outstanding resource waters: The intake pipe installation will require approximately 712,543 SF of temporary alteration and 290 SF of permanent alteration to the land under water (Nagog Pond).

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**?  Yes \_\_\_ No; if yes, specify which permit:

Refer to Appendix I for a list of local and state permits required.

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

### II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)?  Yes \_\_\_ No; if yes, has a Notice of Intent been filed?  Yes \_\_\_ No; if yes, list the date and MassDEP file number: November 18, 2015, CE-085-1188; if yes, has a local Order of Conditions been issued? \_\_\_ Yes  No; Was the Order of Conditions appealed? \_\_\_ Yes  No. Will the project require a Variance from the Wetlands regulations? \_\_\_ Yes  No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Replacement of the existing intake pipe will require the installation of approximately 2,540 linear feet of new 16" HDPE pipe along the bottom of the pond. A section of the pond will be temporarily dewatered using a cofferdam. In this temporary dewatered area the existing 16" cast iron pipe will be removed and the new 16" HDPE pipe installed in the existing pipe trench by means of excavation. This will result in a temporary disturbed area of approximately 5,524 square feet. The remaining length of the pipe will be floated out to position and sunk into place. Concrete collars will be installed every 10 feet on center. The total footprint of the area to be permanently disturbed based on the concrete collars is 290 square feet. The area to be temporarily disturbed by draining a section of the pond is 707,019 square feet.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

<u>Coastal Wetlands</u>	<u>Area (square feet) or Length (linear feet)</u>	<u>Temporary or Permanent Impact?</u>
Land Under the Ocean	_____	_____
Designated Port Areas	_____	_____
Coastal Beaches	_____	_____
Coastal Dunes	_____	_____
Barrier Beaches	_____	_____
Coastal Banks	_____	_____
Rocky Intertidal Shores	_____	_____
Salt Marshes	_____	_____
Land Under Salt Ponds	_____	_____
Land Containing Shellfish	_____	_____
Fish Runs	_____	_____
Land Subject to Coastal Storm Flowage	_____	_____

Inland Wetlands

Bank (If)	_____	_____
Bordering Vegetated Wetlands	_____	_____
Isolated Vegetated Wetlands	_____	_____
Land under Water	<u>712,543 SF / 290 SF</u>	<u>temporary / permanent</u>
Isolated Land Subject to Flooding	_____	_____
Bordering Land Subject to Flooding	_____	_____
Riverfront Area	_____	_____

D. Is any part of the project:

1. proposed as a **limited project**? \_\_\_ Yes X No; if yes, what is the area (in sf)? \_\_\_\_\_
2. the construction or alteration of a **dam**? \_\_\_ Yes X No; if yes, describe: \_\_\_\_\_
3. fill or structure in a **velocity zone** or **regulatory floodway**? \_\_\_ Yes X No
4. dredging or disposal of dredged material? \_\_\_ Yes X No; if yes, describe the volume of dredged material and the proposed disposal site: \_\_\_\_\_
5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? \_\_\_ Yes X No
6. subject to a wetlands restriction order? \_\_\_ Yes X No; if yes, identify the area (in sf): \_\_\_\_\_
7. located in buffer zones? X Yes \_\_\_ No; if yes, how much (in sf) 8,189

E. Will the project:

1. be subject to a local wetlands ordinance or bylaw? X Yes \_\_\_ No
2. alter any federally-protected wetlands not regulated under state law? \_\_\_ Yes X No; if yes, what is the area (sf)? \_\_\_\_\_

**III. Waterways and Tidelands Impacts and Permits**

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? X Yes \_\_\_ No; if yes, is there a current Chapter 91 License or Permit affecting the project site? \_\_\_ Yes X No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

B. Does the project require a new or modified license or permit under M.G.L.c.91? X Yes \_\_\_ No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current 0 Change 0 Total 0  
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

5,524 SF will be excavated for the placement of the new intake pipe and then put back in place. There will be 290 SF of concrete collars permanently resting on the pond floor.

C. For non-water-dependent use projects, indicate the following:

Area of filled tidelands on the site: \_\_\_\_\_

Area of filled tidelands covered by buildings: \_\_\_\_\_

For portions of site on filled tidelands, list ground floor uses and area of each use:

\_\_\_\_\_ Does the project include new non-water-dependent uses located over flowed tidelands?

Yes \_\_\_ No \_\_\_

Height of building on filled tidelands \_\_\_\_\_

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? \_\_\_ Yes X No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? \_\_\_ Yes X No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? \_\_\_ Yes X No;  
(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? \_\_\_ Yes X No; if yes, answer the following questions:

What type of dredging? Improvement \_\_\_ Maintenance \_\_\_ Both \_\_\_

What is the proposed dredge volume, in cubic yards (cys) \_\_\_\_\_

What is the proposed dredge footprint \_\_\_ length (ft) \_\_\_ width (ft) \_\_\_ depth (ft);

Will dredging impact the following resource areas?

Intertidal Yes \_\_\_ No \_\_\_; if yes, \_\_\_ sq ft

Outstanding Resource Waters Yes \_\_\_ No \_\_\_; if yes, \_\_\_ sq ft

Other resource area (i.e. shellfish beds, eel grass beds) Yes \_\_\_ No \_\_\_; if yes \_\_\_ sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

#### Sediment Characterization

Existing gradation analysis results? \_\_\_ Yes \_\_\_ No; if yes, provide results.

Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? \_\_\_ Yes \_\_\_ No; if yes, provide results.

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.

All dredged material will be reused within the pond excavation or used as fill for other portions of this project.

Beach Nourishment \_\_\_

Unconfined Ocean Disposal \_\_\_

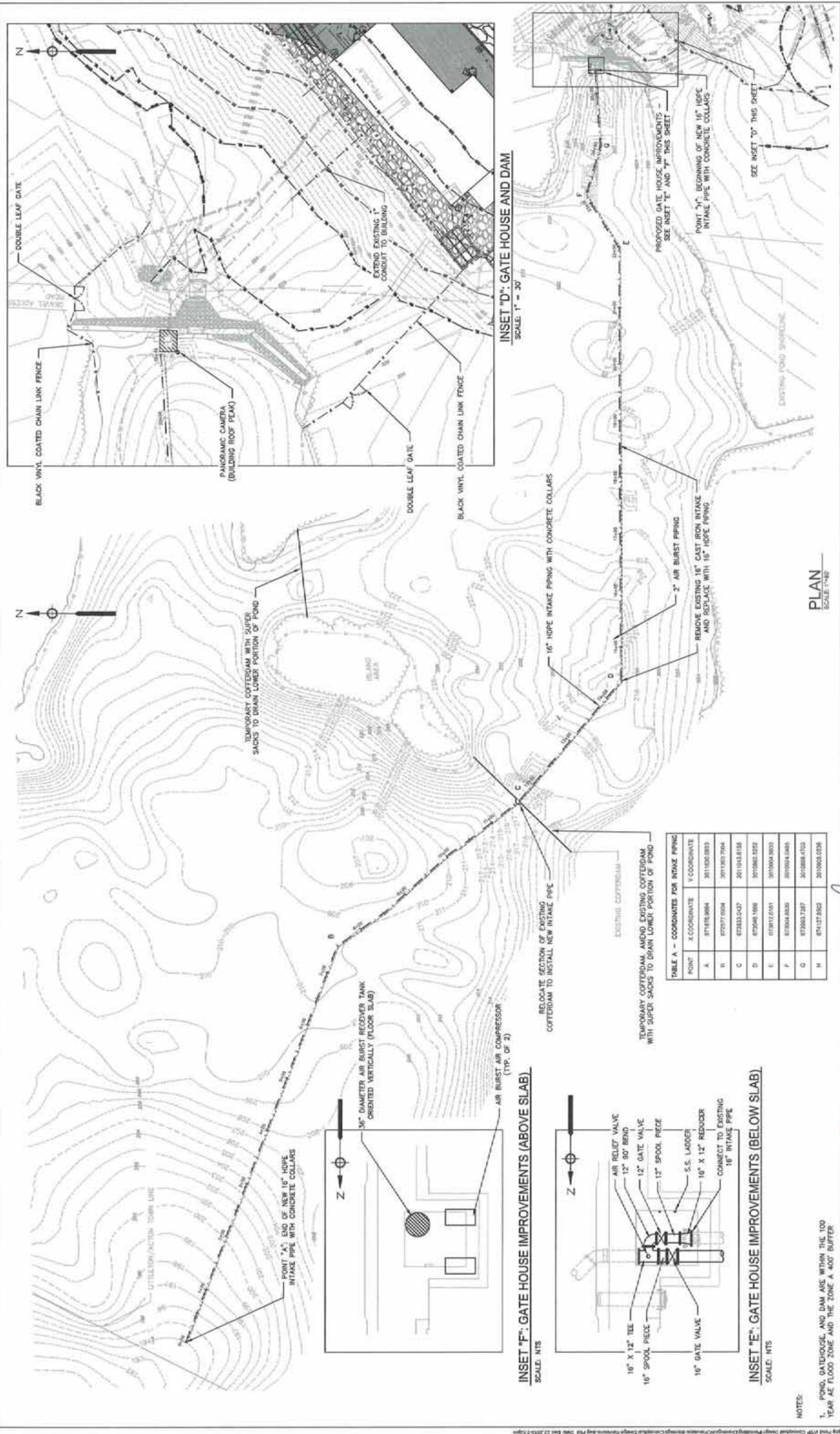
Confined Disposal:

Confined Aquatic Disposal (CAD) \_\_\_

Confined Disposal Facility (CDF) \_\_\_

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*Attachment B*  
*Updated Project Plans (C-5, C-6, C-8, C-9, C-9S)*



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**Dimarini & Wolfe**  
ARCHITECTS • URBAN DESIGNERS  
BOSTON, MASSACHUSETTS

FOR PERMITTING  
Sheet No. **C-5**

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**NAGOG POND WATER TREATMENT PLANT**  
TOWN OF CONCORD, MASSACHUSETTS

**INTAKE LAYOUT PLAN**

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Scale	Date	Job No.	Designed by	Drawn by	Checked by	Approved by
1" = 80'	NOVEMBER 2019	200-15017	ZPK/DWR/P	LCU	DWRP	SCD

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

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MARK	DATE	DESCRIPTION
△	10/20/15	MOI HEARING REVISIONS

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**INSET "F": GATE HOUSE IMPROVEMENTS (ABOVE SLAB)**  
SCALE: NTS

**INSET "E": GATE HOUSE IMPROVEMENTS (BELOW SLAB)**  
SCALE: NTS

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**INSET "D": GATE HOUSE AND DAM**  
SCALE: 1" = 30'

**PLAN**  
SCALE: 1" = 80'

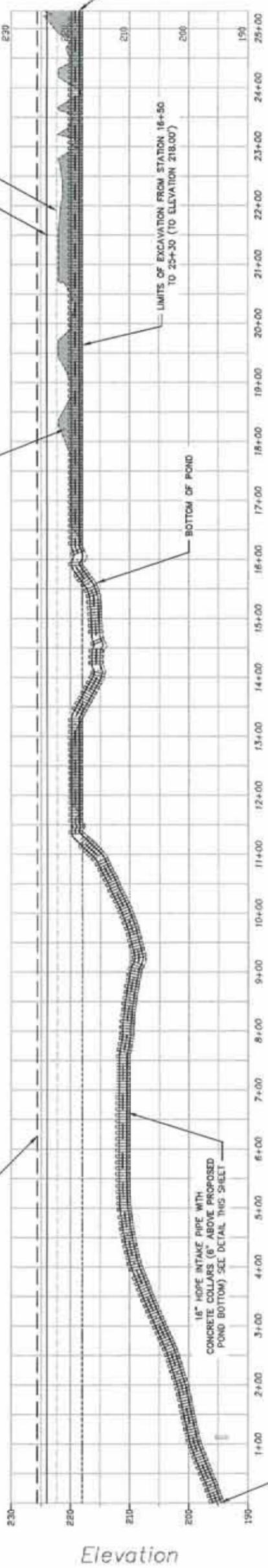
**NOTES:**

- POND, GATEHOUSE, AND DAM ARE WITHIN THE 100 YEAR AE FLOOD ZONE AND THE ZONE A 400' BUFFER

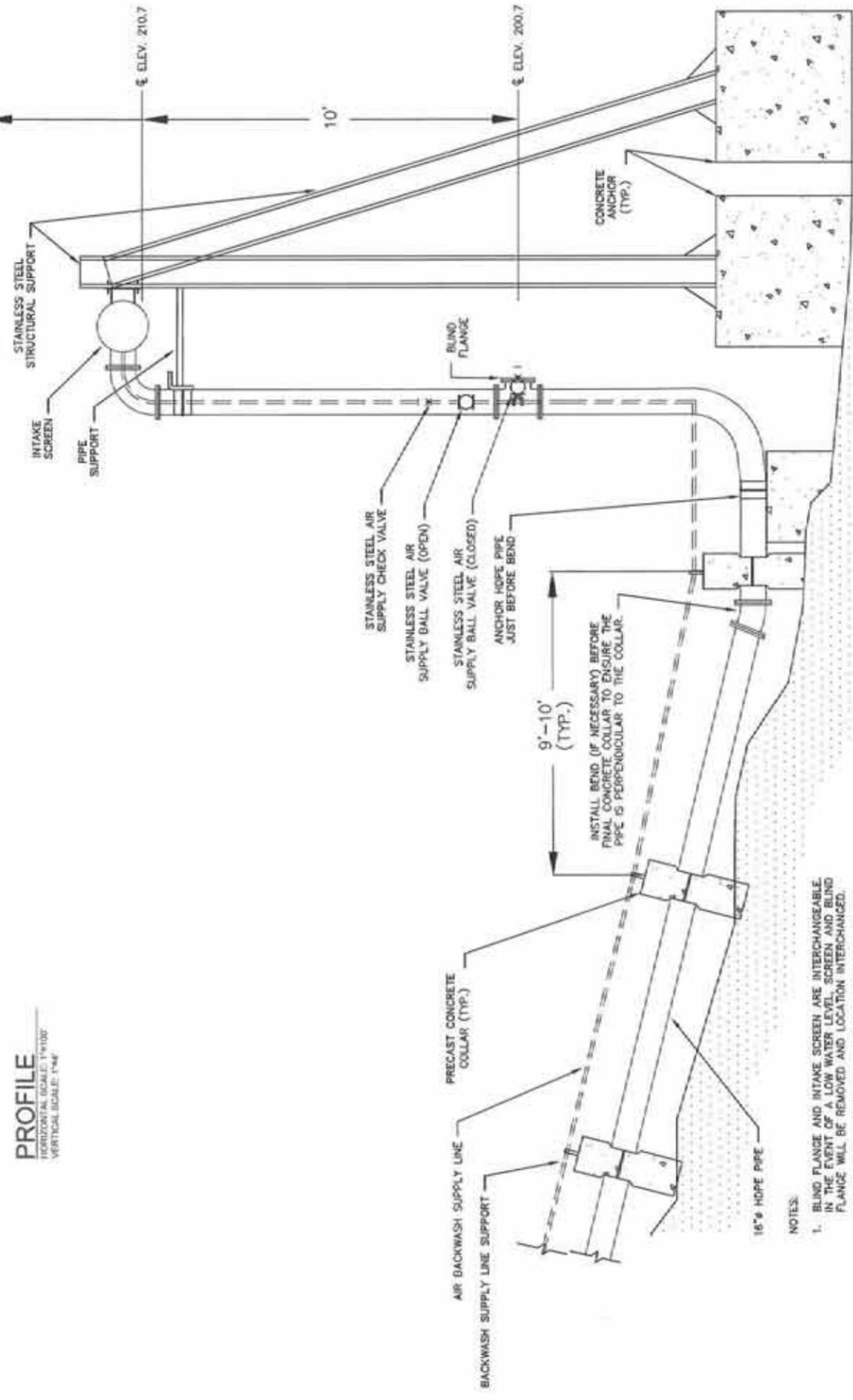
AREAS TO BE EXCAVATED - 4' WIDE TRENCH (TYP.)

WATER LEVEL EL. 223.84 AS OF NOVEMBER 5, 2015  
 HISTORIC LOW WATER LEVEL EL. 222.6 (1985-1987)

WATER LEVEL EL. 225.60 AS OF MAY 7TH, 2015

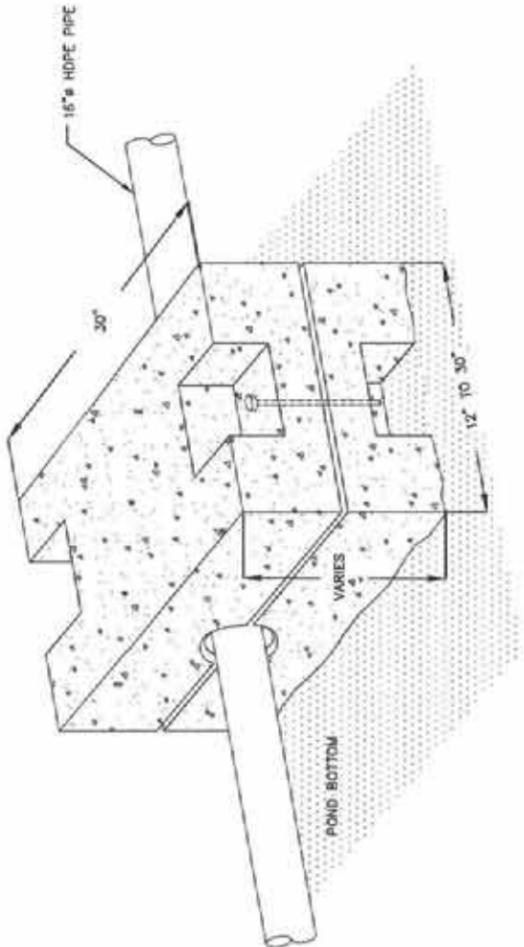


**PROFILE**  
 HORIZONTAL SCALE: 1"=100'  
 VERTICAL SCALE: 1"=4'



- NOTES:
- BLIND FLANGE AND INTAKE SCREEN ARE INTERCHANGEABLE IN THE EVENT OF A LOW WATER LEVEL. SCREEN AND BLIND FLANGE WILL BE REMOVED AND LOCATION INTERCHANGED.
  - ALL SUBMERGED HARDWARE SHALL BE STAINLESS STEEL.

**INTAKE SCREEN DETAIL**  
 SCALE: N.T.S.



**PROPOSED PRECAST CONCRETE COLLAR**  
 SCALE: N.T.S.

- NOTES:
- FLEXIBLE COUPLINGS OR EXPANSION LOOPS SHALL BE PROVIDED ALONG HOPE PIPE ALIGNMENT.
  - PROVIDE FLEXIBLE CONNECTOR AT HOPE CONNECTION TO INTAKE SCREENS.
  - AIR BURST PIPING SHALL BE SUPPORTED FROM CONCRETE COLLARS.



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 ARCHITECTS • URBAN DESIGNERS  
 BOSTON, MASSACHUSETTS

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 LIN ASSOCIATES, INC.  
 CONSULTING ENGINEERS

NO.	DATE	DESCRIPTION
1	11/02/15	NOI HEARING REVISIONS
2		
3		
4		
5		

NO.	DATE	DESCRIPTION
1	NOVEMBER 2015	
2	2015-10-01	
3	2/23/2016	
4		
5		

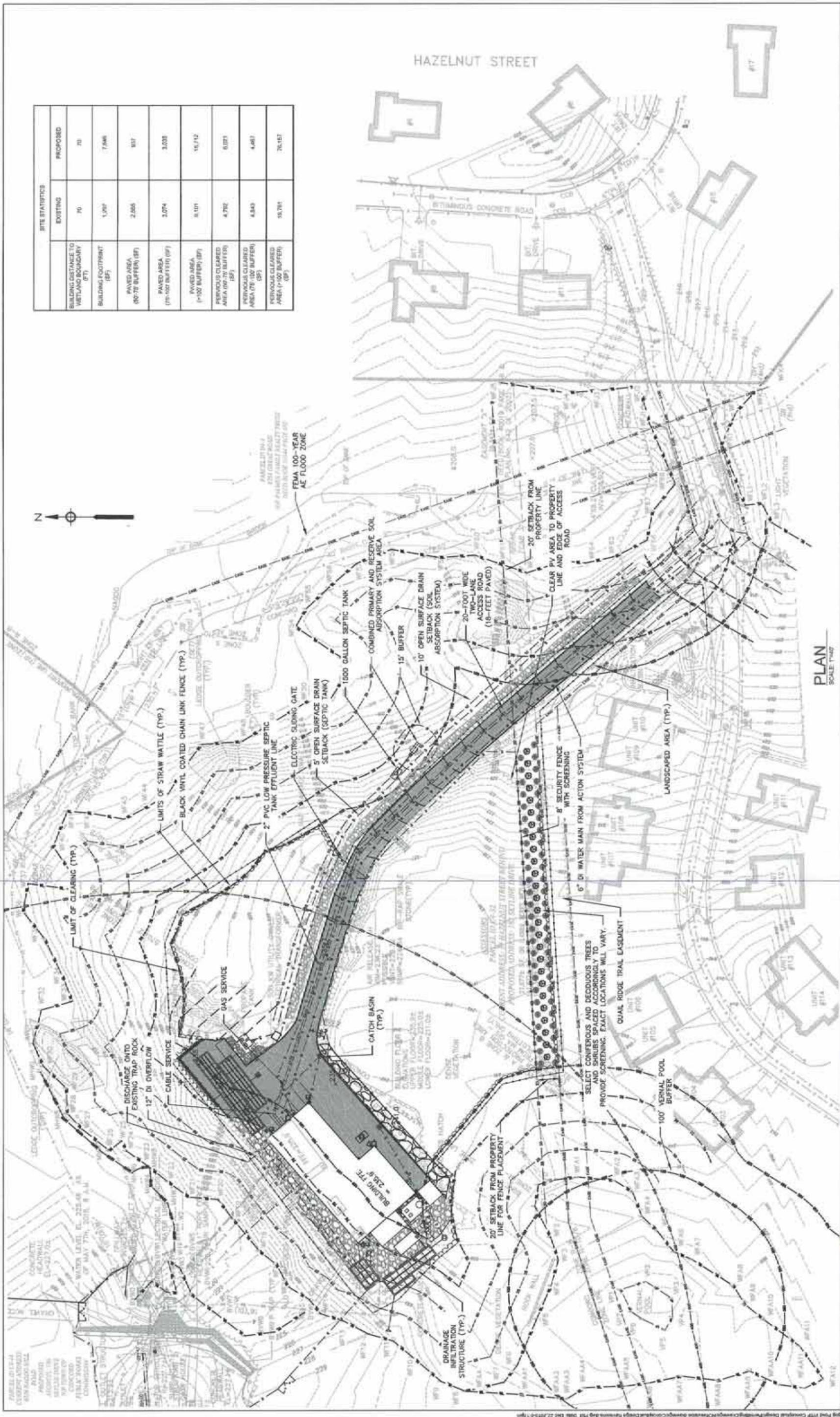
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NAGOG POND WATER TREATMENT PLANT  
 TOWN OF CONCORD, MASSACHUSETTS  
 INTAKE LAYOUT PROFILE AND DETAILS

FOR PERMITTING  
 Sheet No. **C-6**

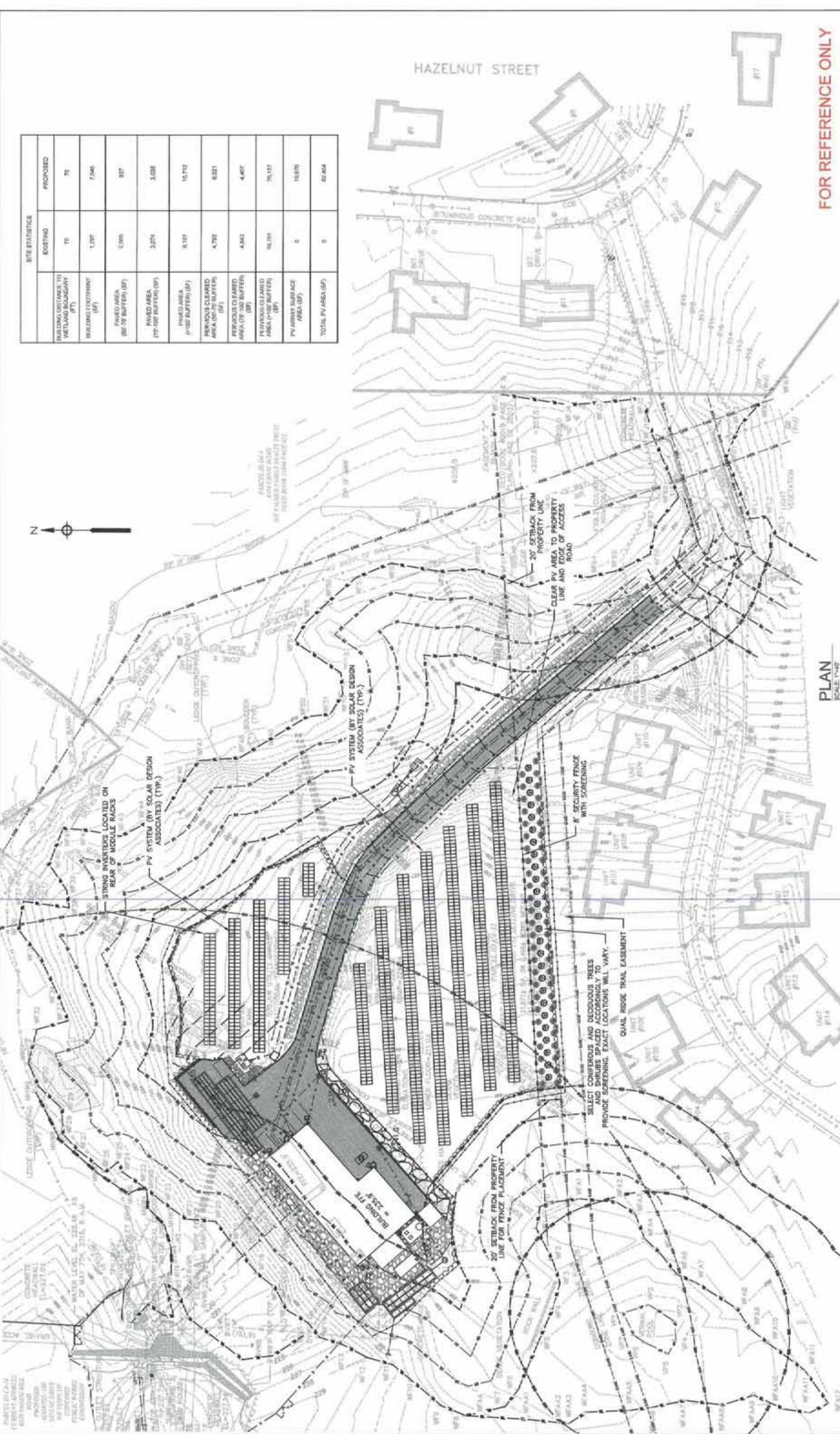


SITE STATISTICS		
	EXISTING	PROPOSED
BUILDING DISTANCE TO VETLAND BOUNDARY (FT)	70	70
BUILDING FOOTPRINT (SF)	1,297	7,646
PAVED AREA (90'-75' BUFFER) (SF)	2,065	937
PAVED AREA (75'-100' BUFFER) (SF)	2,074	3,028
PAVED AREA (100'-100' BUFFER) (SF)	8,101	16,712
PERVIOUSLY CLEARED AREA (75'-100' BUFFER) (SF)	4,792	6,021
PERVIOUSLY CLEARED AREA (75'-100' BUFFER) (SF)	4,843	4,487
PERVIOUSLY CLEARED AREA (100'-100' BUFFER) (SF)	18,781	76,157



PLAN  
SCALE 1"=40'

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<b>NAGOG POND WATER TREATMENT PLANT</b> <b>TOWN OF CONCORD, MASSACHUSETTS</b> <b>WATER TREATMENT PLANT</b> <b>LAYOUT PLAN - 40 SCALE</b>			
THIS LINE IS ONE INCH LONG WHEN PRINTED AT FULL SCALE ON A 22" X 34" DRAWING.			
Scale: 1" = 40' Date: NOVEMBER 2015 Job No.: 200-1501 Designed by: LEU Drawn by: LEU Checked by: DMRP Approved by: 600	12/22/15 NO. HEARINGS REVISIONS		
MARK		DATE	DESCRIPTION



HAZELNUT STREET

FOR REFERENCE ONLY

SITE STATISTICS	
EXISTING	PROPOSED
BUILDING DISTANCE TO NE PLANNING BOUNDARY (SF)	70
BUILDING FOOTPRINT (SF)	1,287
PAVED AREA (10'-10' BUFFER) (SF)	2,268
PAVED AREA (10'-100' BUFFER) (SF)	3,074
PAVED AREA (10'-100' BUFFER) (SF)	8,101
PERVIOUS CLEARED AREA (10'-20' BUFFER) (SF)	4,722
PERVIOUS CLEARED AREA (10'-100' BUFFER) (SF)	4,343
PERVIOUS CLEARED AREA (10'-100' BUFFER) (SF)	10,399
PV ARRAY SURFACE AREA (SF)	0
TOTAL PV AREA (SF)	0
	62,464

FOR PERMITTING  
Sheet No. **C-9S**

NAGOG POND WATER TREATMENT PLANT  
TOWN OF CONCORD, MASSACHUSETTS  
WATER TREATMENT PLANT  
SUPPLEMENTAL SOLAR LAYOUT PLAN - 40 SCALE

Scale: 1" = 40'  
Date: DECEMBER 2019  
Job No.: 200-1501  
Designed by: LEU  
Drawn by: LEU  
Checked by: DWRP  
Approved by: SCD

MARK	DATE	DESCRIPTION



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BOSTON, MASSACHUSETTS

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PLAN  
SCALE 1"=40'

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

