

# **Joint Water Board WTP Emergency Upgrades**

**Environmental Partners**

**June 10, 2019**





**CURRENT EMERGENCY PUMPING SITUATION**





**CURRENT EMERGENCY PUMPING SYSTEM**





## Summary of Costs Phase 1 and 2

The following summary table presents a breakdown of the opinion of probable construction costs for the electrical and pump upgrades.

	<b>Work Item Description</b>	<b>Opinion of Probable Construction Cost</b>
	Contractor's General Conditions	\$293,568
	Civil	\$113,721
	Process Mechanical	\$165,306
	Electrical	\$843,778
	Subtotal	\$1,416,374
	Contingency @ 40%	\$566,550
	Engineering Fees: Emergency support, MassDEP coordination and reporting, design, construction services, resident project representative, startup, closeout, emergency connection concept planning	\$396,585
	Emergency Expenditures (rental fees for pumping units, piping, personnel overtime etc.)	\$392,500
	<b>TOTAL</b>	<b>\$2,772,500</b>

The 40% contingency is based on the level of design completed to date. We are making every effort to reduce the costs to the extent feasible.



# Phase 1 Schedule

## Finished Water Pump #4

Milestone/Task Item	Duration	Start Date	Completion Date
Design <sup>1</sup>	2 Weeks	May 24, 2019	June 7, 2019
Package Available to Contractors	3 days	June 7, 2019	June 11, 2019
<b>Emergency Award and Contract Signing<sup>1</sup></b>	<b>4 days</b>	<b>June 11, 2019</b>	<b>June 14, 2019</b>
Submittals fast track	6 days	June 14, 2019	June 19, 2019
Equipment Lead Time	1 week	June 6, 2019	June 13, 2019
Construction	1 1/2 Weeks	June 13, 2019	June 25, 2019
<ul style="list-style-type: none"> <li>Phase 1 – FWP-4 Electrical Improvements</li> </ul>			



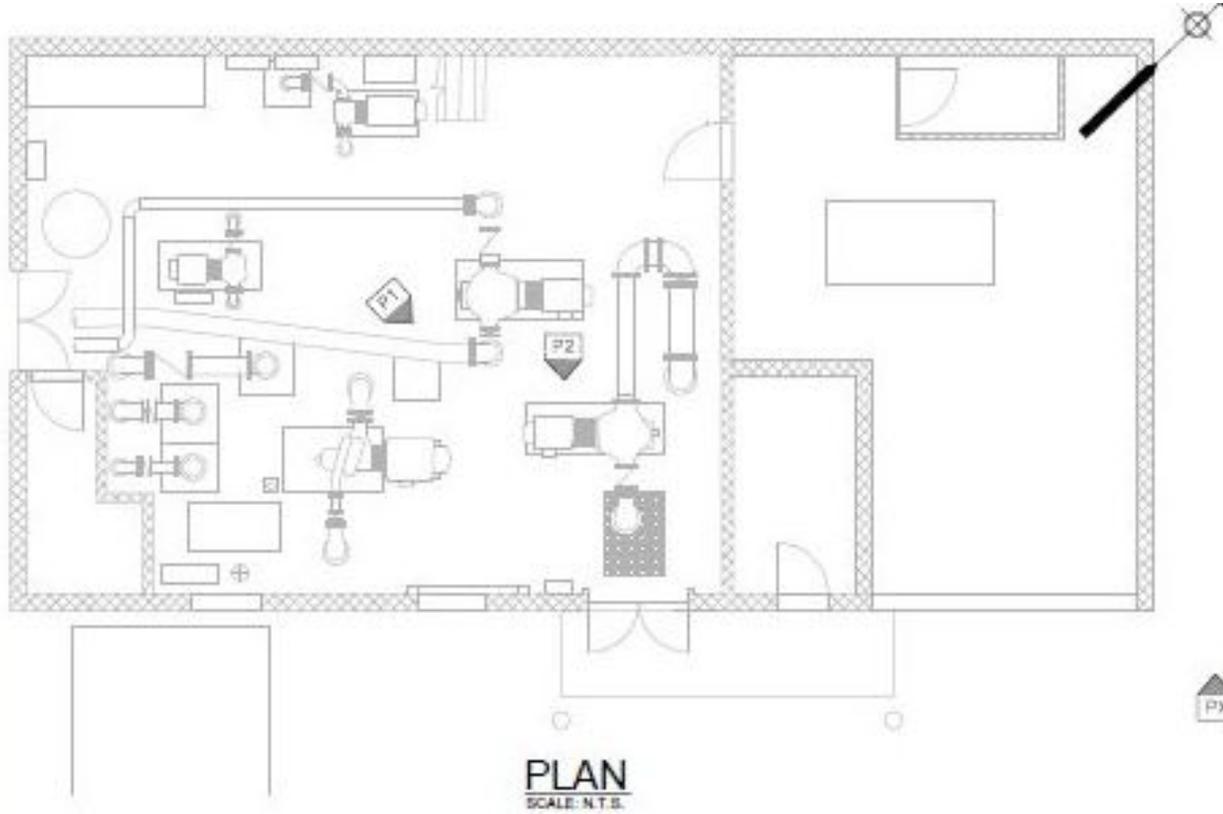


**PHOTO 1**  
SCALE: N.T.S.



**PHOTO 2**  
SCALE: N.T.S.





**LEGEND**  
 ▲ PX PHOTO LOCATION

date	N/A
date	MAY 2019
date	417-1801
designed by	AWCP
drawn by	AWCP
checked by	DNRP
approved by	HTG

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 LONG WHEN PLOTTED AT  
 FULL SCALE ON A 22" X  
 34" DRAWING

**RANDOLPH-HOLBROOK JOINT WTP  
 PHASE 1 EMERGENCY REPAIRS  
 RANDOLPH, MASSACHUSETTS**

GENERAL NOTES AND PHOTOS

Sheet No.  
**G-1**



# Phase 2

## Electrical and Finished Water Pump #3

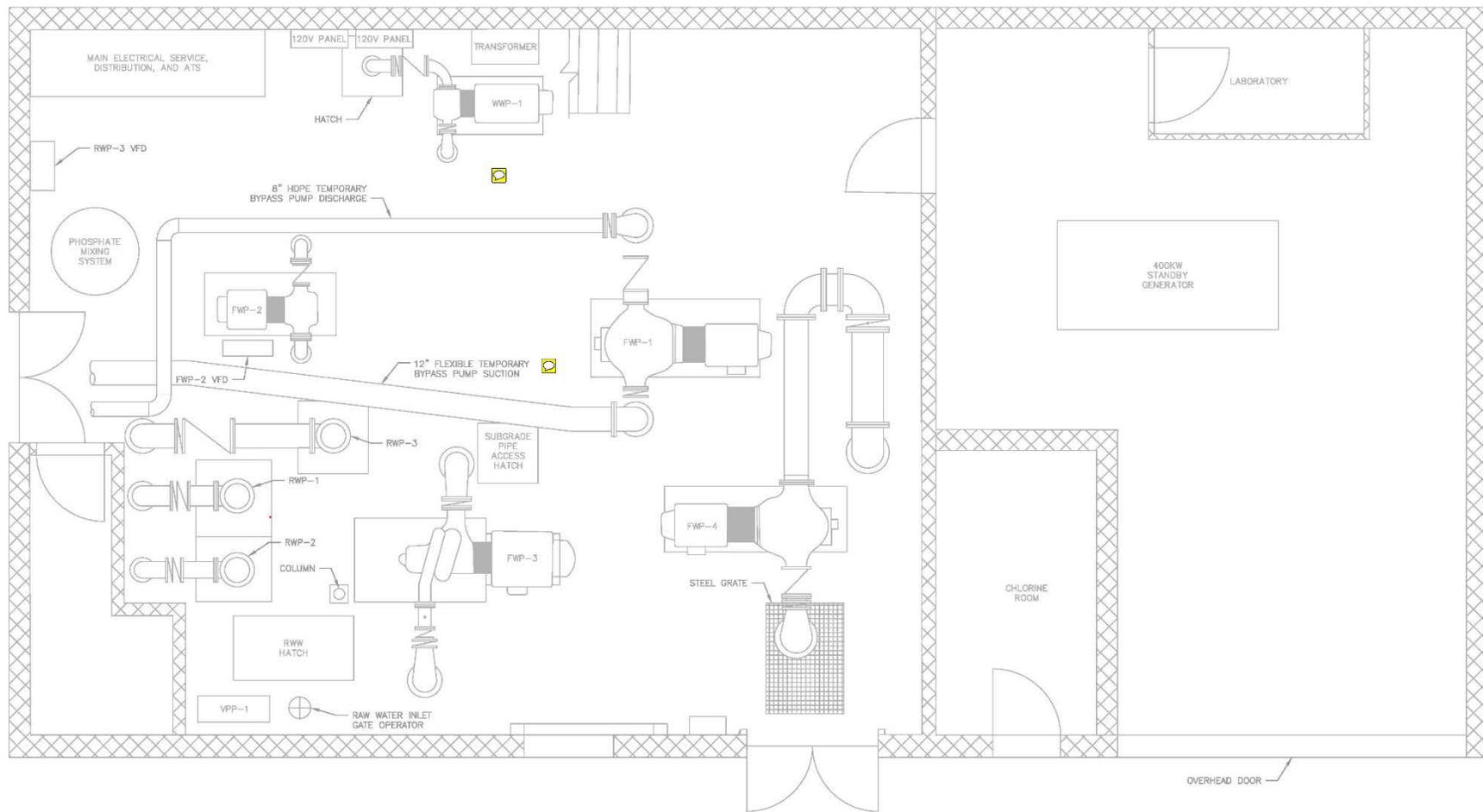
Milestone/Task Item	Duration	Start Date	Completion Date
Design <sup>1</sup>	3 Weeks	May 24, 2019	June 14, 2019
Package Available to Contractors	1.5 Weeks	June 17, 2019	June 26, 2019
<b>Award and Contract Signing<sup>1</sup></b>	<b>1 Week</b>	<b>June 26, 2019</b>	<b>July 3, 2019</b>
Submittals	4 Weeks	July 3, 2019	July 31, 2019
Equipment Lead Time	10 Weeks	July 31, 2019	October 9, 2019
Construction	12 Weeks	July 31, 2019	October 23, 2019
<ul style="list-style-type: none"> <li>Phase 2 – Remove By-Pass Pump from Service United Rental and Town work</li> </ul>			
<ul style="list-style-type: none"> <li>Phase 3 – FWP-3 &amp; Exterior Electrical – Contractor work</li> </ul>			
<ul style="list-style-type: none"> <li>Phase 4 – Interior Electrical – Contractor work</li> </ul>			



**CURRENT EMERGENCY PUMPING**



I:\book\47417-1801 - Unit WTP\Complete\Performance Evaluation\Emergency Response\Design\Phase 1\Mechanical\1-ANSI.dwg Plot Date: May 15, 2018 4:28pm



NOTE: PIPING UNDER SLAB NOT SHOWN.

PLAN  
SCALE: 3/16" = 1'-0"



# Questions



# **Tri-Town Regional Water Treatment Plant**

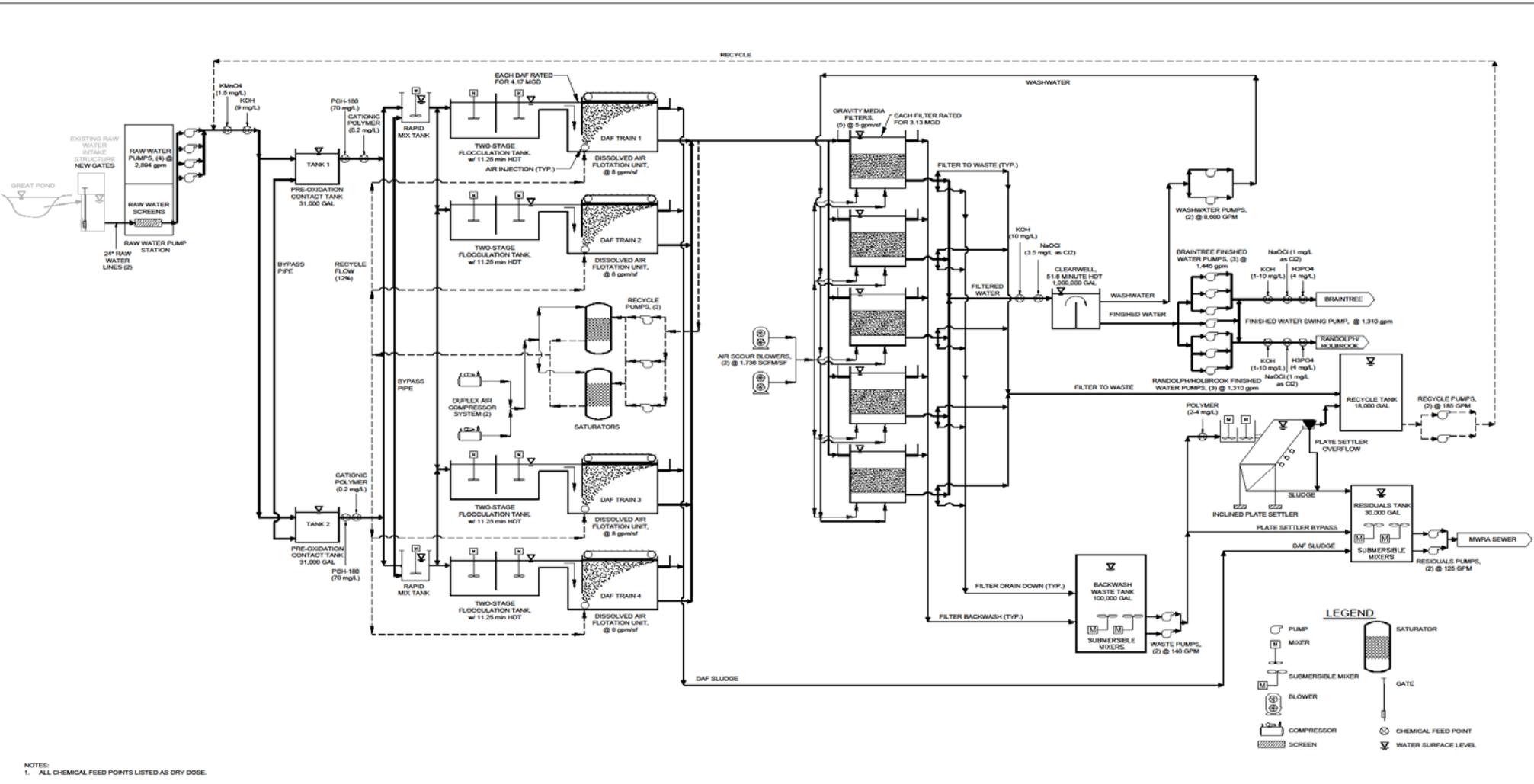
**Environmental Partners**

**Conceptual Design**

**June 10, 2019**



Drawing No. 103-Town Board Resolution 10/20/18 300 GPM Average 107794-1 - Final Engineering Schedule/Reg. Change and/or 02/01/2019 The Design No. 103-Town Board Resolution 10/20/18 300 GPM Average 107794-1



NOTES:  
 1. ALL CHEMICAL FEED POINTS LISTED AS DRY DOSE.



MARK	DATE	DESCRIPTION

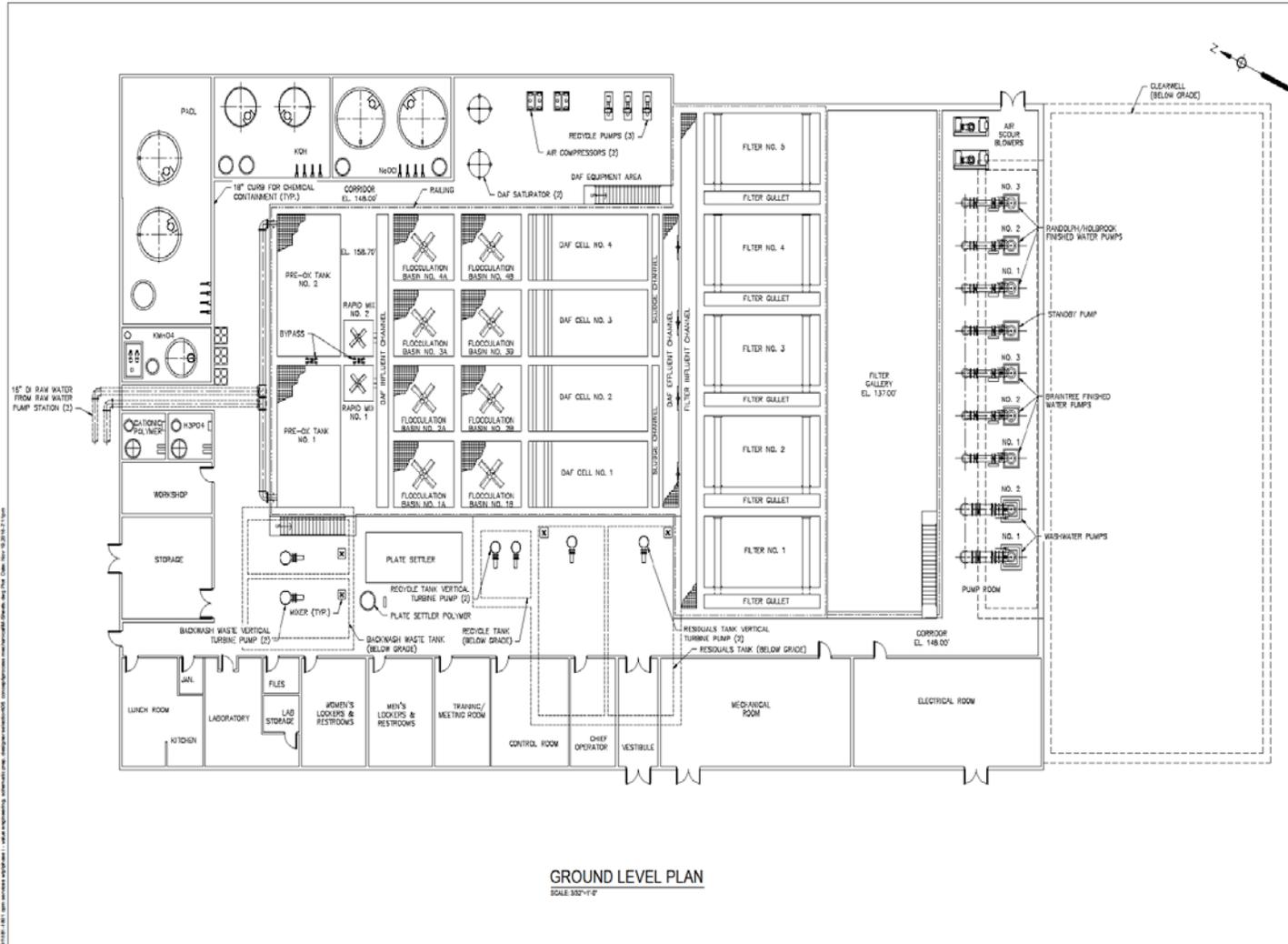
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Date	NOVEMBER 2018
Job No.	181-1801
Designed by	DNRP
Drawn by	AJR
Checked by	DNRP
Approved by	HTG

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 32" X 34" DRAWING

TRI-TOWN WATER TREATMENT PLANT  
 TRI-TOWN BOARD OF WATER COMMISSIONERS, MA  
 PROCESS FLOW DIAGRAM

PRELIMINARY DESIGN  
 Sheet No. **G-1**





MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	NOVEMBER 2018
Job No.	181-1801
Designed by	AA
Drawn by	AA
Checked by	AJR
Approved by	HTG

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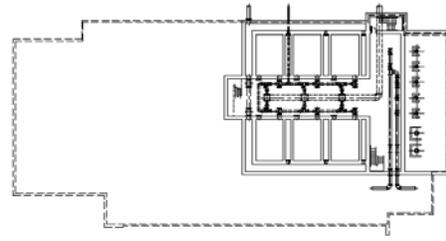
TRI-TOWN WATER TREATMENT PLANT  
TRI-TOWN BOARD OF WATER COMMISSIONERS, MA  
GROUND LEVEL PLAN

PRELIMINARY DESIGN  
Sheet No. **M-1**

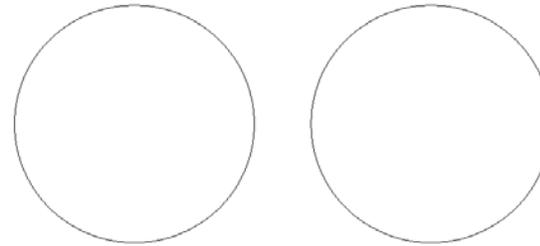




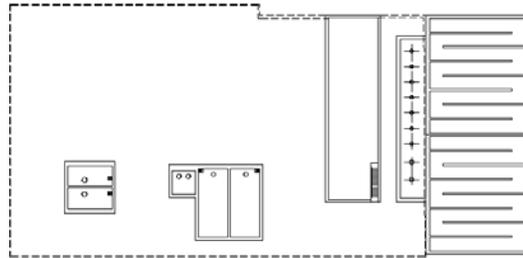
Drawing No. 152714-01 (Rev. 01/18) 152714-01 (Rev. 01/18)



**BELOW GRADE FLOOR PLAN: CDM SMITH**  
SCALE: 1/32"=1'-0"



**CLEARWELL PLAN: CDM SMITH**  
SCALE: 1/32"=1'-0"



**BELOW GRADE FLOOR PLAN: ENVIRONMENTAL PARTNERS**  
SCALE: 1/32"=1'-0"



**CLEARWELL PLAN: ENVIRONMENTAL PARTNERS**  
SCALE: 1/32"=1'-0"

	CDM SMITH PRELIMINARY DESIGN (2010)	ENVIRONMENTAL PARTNERS PRELIMINARY DESIGN (2018)
TOTAL CLEARWELL SQUARE FOOTAGE	29,914	8,820
TOTAL CLEARWELL VOLUME (MG)	4	1



MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	NOVEMBER 2018
Job No.	181-1801
Designed By	A.J.
Drawn by	A.J.
Checked by	AJR
Approved by	HTG

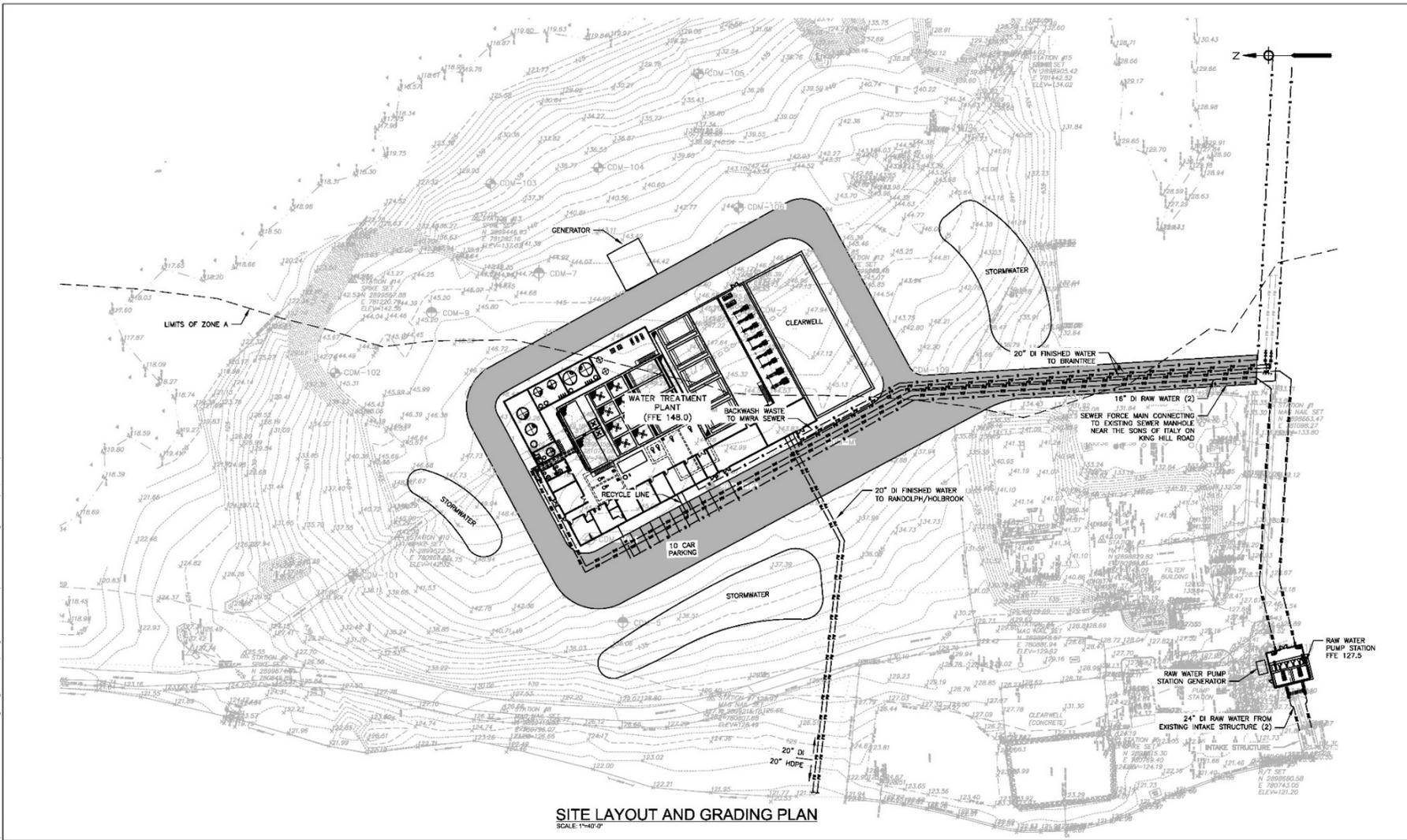
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TRI-TOWN WATER TREATMENT PLANT  
TRI-TOWN BOARD OF WATER COMMISSIONERS, MA  
TRI-TOWN WTP LAYOUT COMPARISON  
BELOW GRADE & CLEARWELL

PRELIMINARY DESIGN  
Sheet No.  
**FIG-3**

## Comparison of Clearwell





**SITE LAYOUT AND GRADING PLAN**  
SCALE: 1"=40'

Drawing File: C:\Users\james.davis\OneDrive\Documents\Projects\Tri-Town Regional Water Treatment Plant\Tri-Town Regional Water Treatment Plant.dwg Date: Apr 23, 2016 10:23:29 AM



MARK	DATE	DESCRIPTION

Scale	AS SHOWN
Date	APRIL 2016
Job No.	181-1801
Designed by	A.J.
Drawn by	A.J.
Checked by	A.J.
Approved by	HTG

TRI-TOWN REGIONAL WATER TREATMENT PLANT  
CONCEPTUAL DESIGN  
TRI-TOWN BOARD OF WATER COMMISSIONERS

CONCEPTUAL SITE PLAN

NOT FOR CONSTRUCTION  
Sheet No.  
**C-1**

Add civil layout



# Probable Construction Cost Estimate

**Table 1 - Tri-Town Regional Water Treatment Plant**

Opinion of Probable Project Cost

Tuesday, November 20, 2018

20-Nov-18

	September 2010 CDM Smith Concept		November 2018 EP Concept
	CDM Smith Updated Estimate October 2018	EP Estimate September 2018	EP Estimate November 2018
Water Treatment Plant Construction Costs			
Construction Labor, Material, Equipment	\$38,195,789	\$48,238,983	\$36,411,881
Construction Permits, Insurance, Bonds, General Field Conditions & Overhead & Profit	\$10,673,899	\$11,551,741	\$7,282,376
Construction Contingency	\$12,217,422	\$9,647,797	\$8,738,851
Escalation to Mid Point of Construction	\$4,984,708	\$7,638,804	\$5,662,775.73
<b>Total WTP Construction</b>	<b>\$66,071,818</b>	<b>\$77,077,325</b>	<b>\$58,095,884</b>
Additional Project Costs			
Engineering: Design of Water Treatment Plant	\$7,267,900	\$8,478,506	\$6,390,547
Owner's Project Manager (includes Const. Serv, RPR)	\$3,303,591	\$3,853,866	\$2,904,794
<b>Total Project</b>	<b>\$76,643,309</b>	<b>\$89,409,697</b>	<b>\$67,391,226</b>
Transmission Mains			
Construction and Design of Randolph/Holbrook Transmission Main	\$2,863,866	\$2,863,866	\$2,863,866
Additional Future Construction Costs			
Demolition of Braintree WTP	\$1,545,164	\$1,545,164	\$1,545,164
Demolition of Randolph/Holbrook WTP	\$1,658,890	\$1,658,890	\$1,658,890



# Questions

