

Quick Zooms

Find Properties

Owner:

Parcel ID:

Address: #

Clear

Condo/Cottage

Colony:

Results Summary

Parcels for Identify

CAMA ID	Address	Village	Owner
165-1-0	120 THEOPHIL	SD	TOWN OF DEN

Detail Information

Zoom To

MapPar	165-1
Key	8723
Fiscal Year	2026
Extension	0
Address	120 THEOPHILUS F SMITH F
Village	SD
Property Type	E
Owner	TOWN OF DENNIS
Co-Owner	DPW/ DISPOSAL AREA
Owner Address	120 THEOPHILUS F SMITH F

About

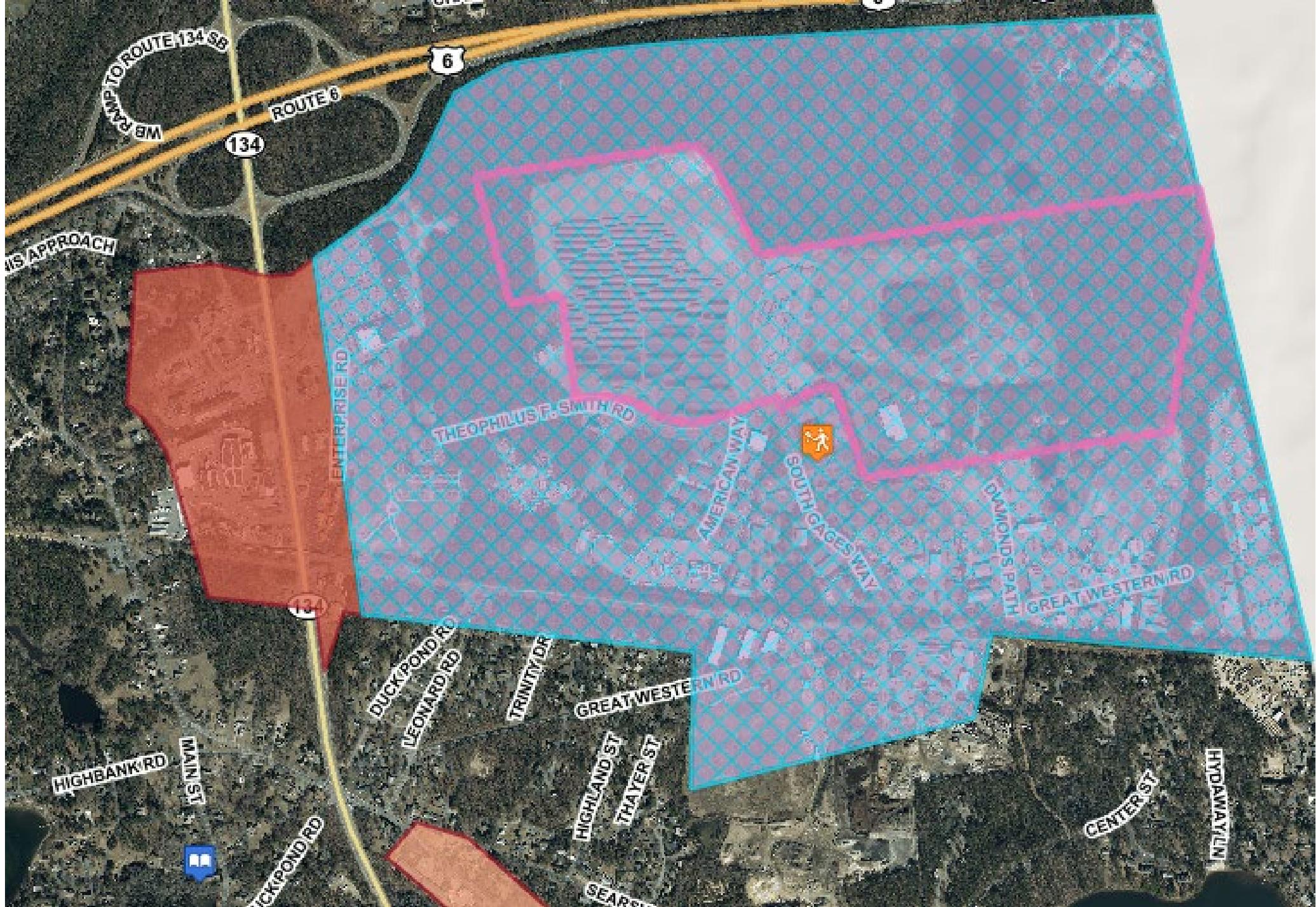
Layers

Find

Home

WATER RESOURCE RECOVERY FACILITY (WRRF)





WB RAMP TO ROUTE 134 SB

ROUTE 6

134

IS APPROACH

ENTERPRISE RD

THEOPHILUS F. SMITH RD

AMERICAN WAY

BOOTH GAGES WAY

GAMMOND'S PATH

GREAT WESTERN RD

HIGHBANK RD

MAIN ST

DUCKPOND RD

DUCKPOND RD

LEONARD RD

TRINITY DR

HIGHLAND ST

THAYER ST

GREAT WESTERN RD

SEARSON RD

CENTER ST

HYDAWAY LN

Quick Zooms

Find Properties

Owner:

Parcel ID:

Address: #

[Clear](#)

Condo/Cottage Colony:

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CAMA ID	Address	Village	Owner
165-1-0	120 THEOPHIL	SD	TOWN OF DEN

Detail Information [Zoom To](#)

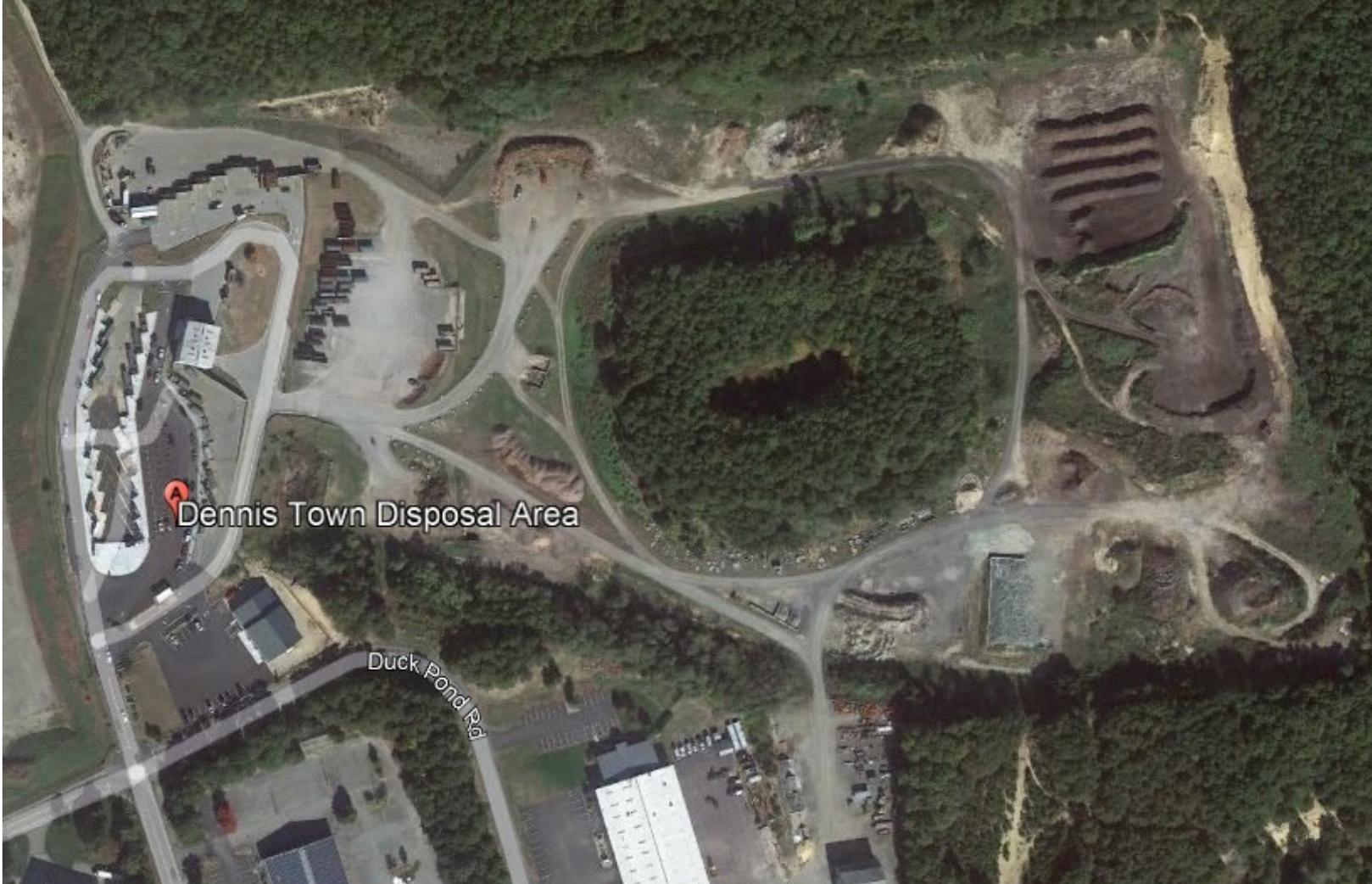
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Property Type	E
Owner	TOWN OF DENNIS
Co-Owner	DPW/ DISPOSAL AREA
Owner Address	120 THEOPHILUS F SMITH F
Owner City	SOUTH DENNIS
Owner State	MA
Owner Zip	02660
Owner Country	
State Class #	9310
State Class Desc	IMP.SELECT/CITY CNCL
Deed Date	07/09/75 00:00:00
Book	2207



- About
- Layers
- Find



Existing Site



Existing Site

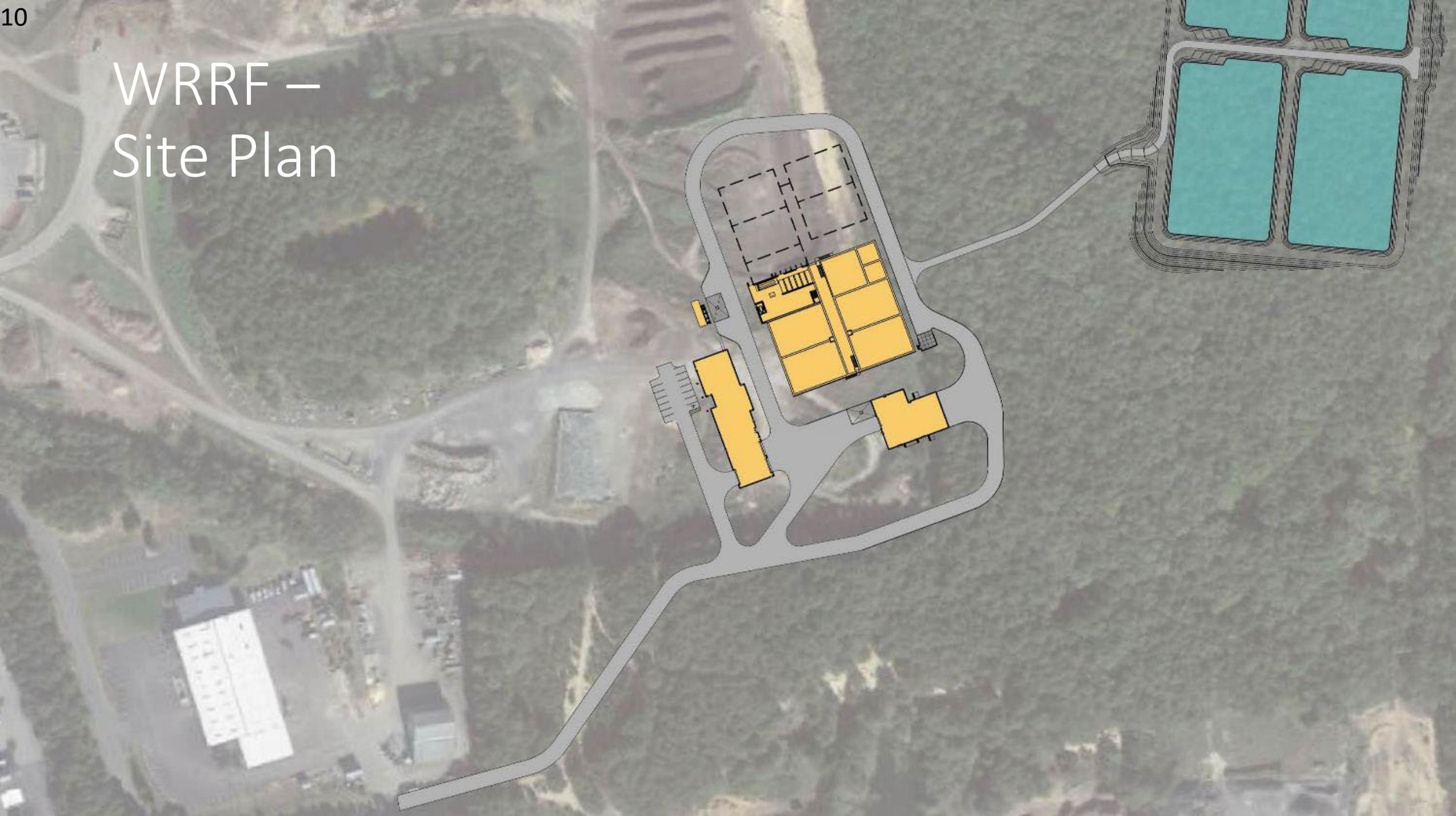




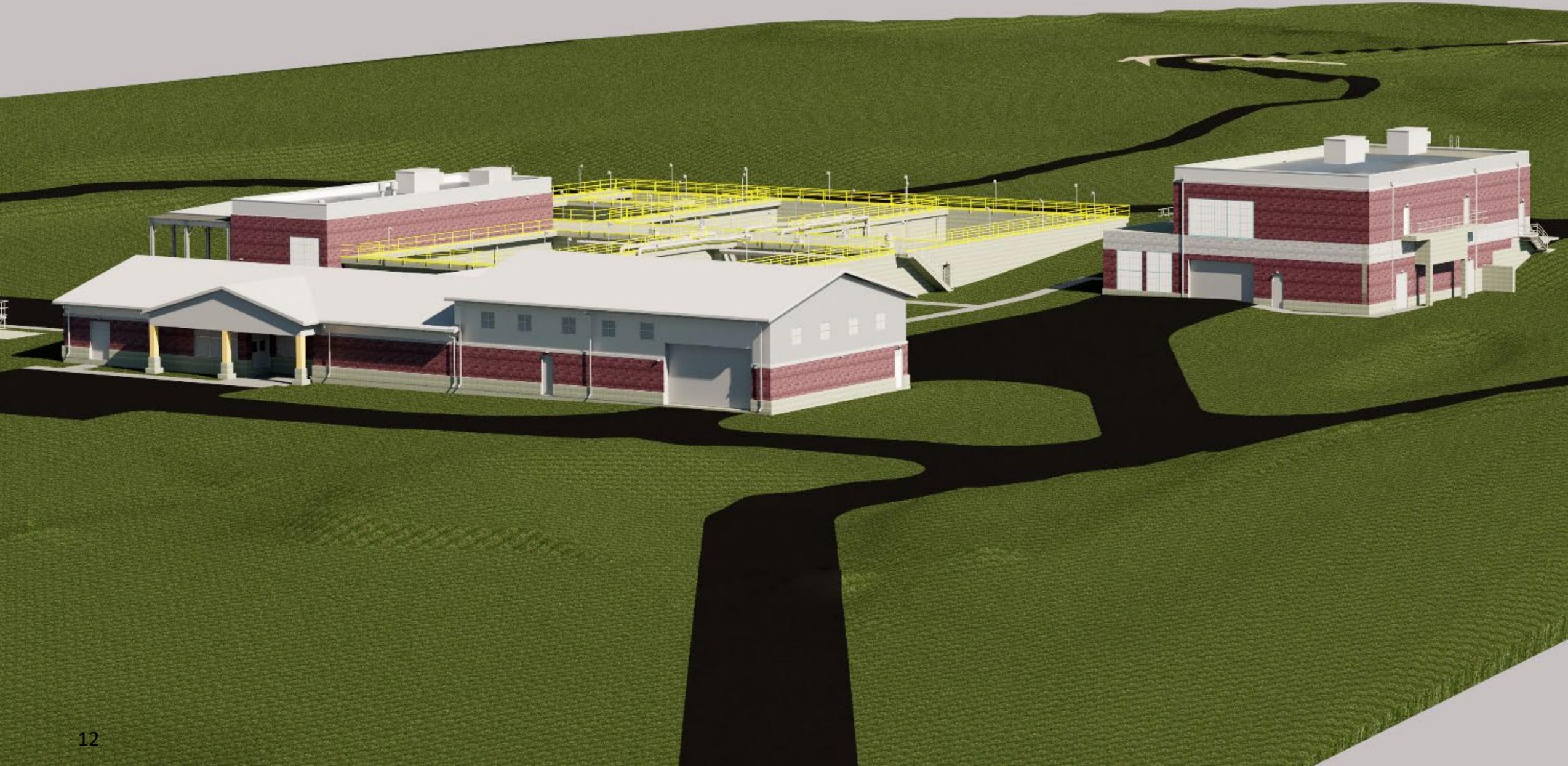


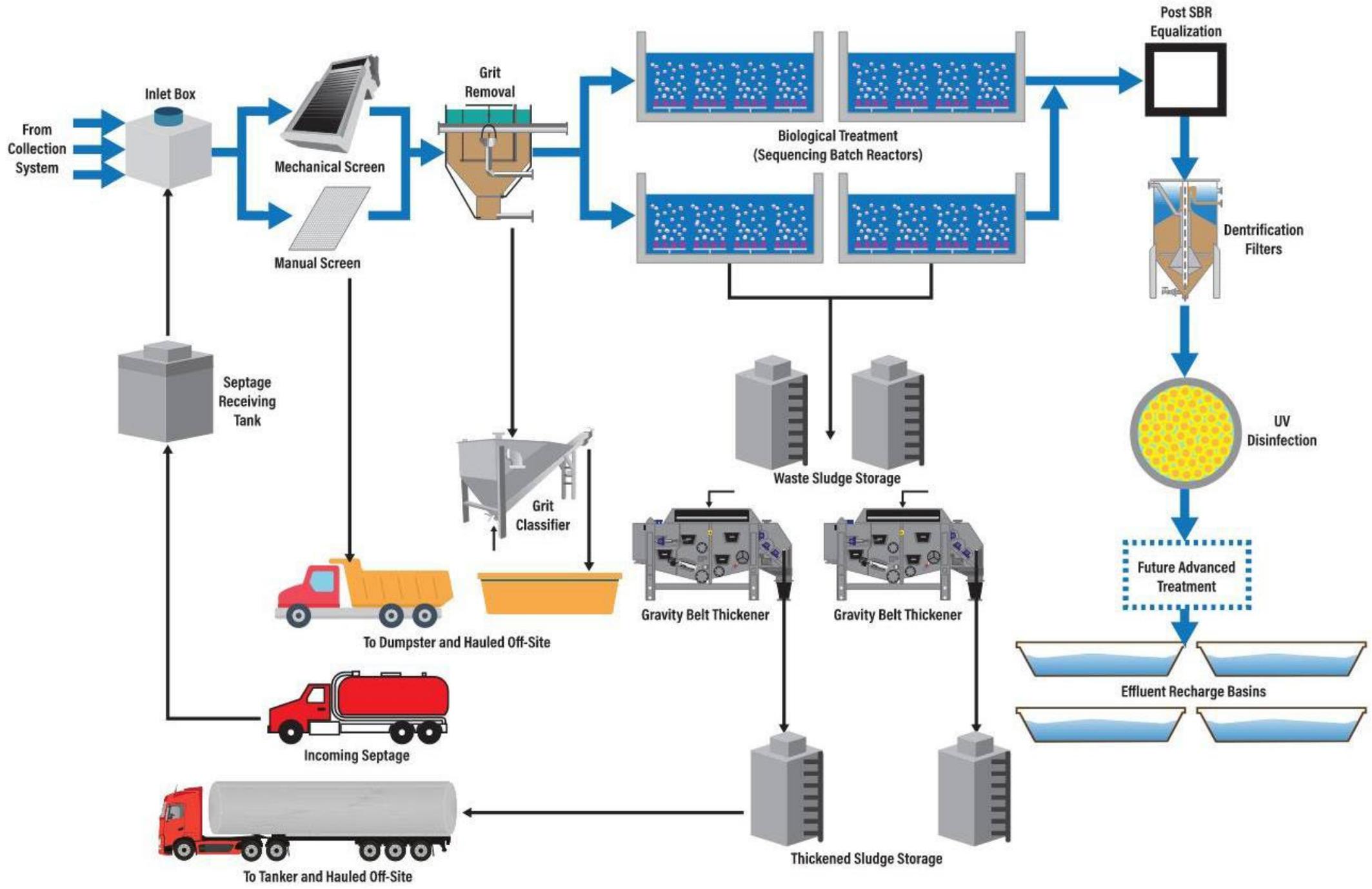


WRRF — Site Plan



WRRF- Preliminary Site Rendering





WATER RESOURCE RECOVERY FACILITY (WRRF) PLANNING BOARD SPECIAL REVIEW STAFF REPORT – May 5, 2025

Special Review for municipal project, similar to Site Plan Review, for recommendations and conditions.

APPLICANT:	Richard V. Peter – Dennis Wastewater Superintendent; William McConnell, P.E. Engineer's Representative - CDM Smith Engineers Matthew Munzing – MWH Constructors, Inc.
PROJECT ADDRESS:	120 Theophilus F. Smith Road, South Dennis, MA 02660
MAP & LOT NUMBER:	165-01
APPLICANT ADDRESS:	192 Turnpike St, South Easton, MA 02375
CASE NUMBER:	SPR-25-1
ZONING:	Industrial
MEETING DATE:	May 5, 2025

PROJECT SUMMARY:

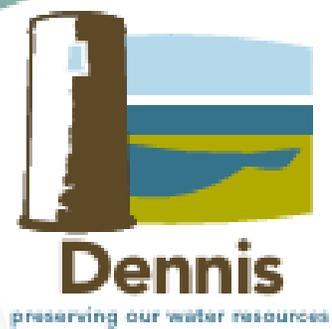
- To construct a municipal Water Resource Recovery Facility (WRRF) at 120 Theophilus Smith Road, on part of the Department of Public Works property, as part of Phase 1 of an 8-Phase plan to treat the wastewater effluent of homes and businesses in Dennis in order to remove contaminants, primarily nitrogen and phosphorus, and make it safe to return the water to the environment.
- A Comprehensive Wastewater Management Plan (CWMP) was approved in 2022.
- The facility will disturb about 8 acres of wooded land on the DPW property.
- The construction of the facility to treat the effluent is part of Phase 1 of the 8-phase plan which also includes the first three parts of the collection and conveyance system to connect various parts of town to the sewer. Each one of the three areas in Phase 1 is being constructed by a different company under a different contract.
 - Construction of the Water Resource Recovery Facility;
 - Collection & Conveyance south of Route 6, west of the WRRF, north of the bike path with a section south of the bike path west of route 134 and either side of Highbank Road.
 - Collection & Conveyance south of Bass River Lane, mostly west of Main Street along the Bass River to Grand Cove; a second section on either side of Route 28 west of Route 134; and a stretch either side of School Street down to West Dennis Beach.
 - Collection & Conveyance between (roughly) Swan Pond and Rte 134; either side of 134 south of Center Street to properties along Rte 28 west of the Swan River and east of Main

History:

- Dennis & Cape Cod face threats to the health of salt-, fresh- and groundwater resources.
- The health of these water resources, and the environment in general, are recognized as crucial to the vitality of the tourist economy of Cape Cod and the quality of life of all citizens.
- The diverse water resources of Cape Cod and Dennis including Nantucket Sound, Cape Cod Bay, smaller embayment's, beaches, rivers, lakes, Great Ponds, freshwater ponds and the Monomoy Lens of the Cape Cod sole source Aquifer, define the region and the Town.
- Any threat to the health of the Cape's water resources is thus a threat to the health of the communities at large.
- As described in the CWMP, excessive levels of nutrients, specifically nitrogen and phosphorus, have resulted in algal blooms in several surface water bodies. In 2009, an algal bloom occurred in Swan Pond resulted in fish kills due to depleted oxygen levels in the pond, an odor that permeated the neighborhood for weeks and obviously impaired waters covered with algae.
- This and similar events on the Cape and Islands were primarily caused by nitrogen originating from onsite wastewater systems
- The Bass River and Herring River also have high nitrogen sensitivity.
- Scargo Lake & other freshwater systems have high levels of phosphorus from similar sources.
- From 2014 to 2021, Dennis developed a Comprehensive Wastewater Management Plan (CWMP). Mainly working through the Wastewater Implementation Committee (WIC), formerly the Comprehensive Wastewater Management Task Force (CWMTF) a program was developed to address wastewater management needs, protect drinking water sources, protect freshwater ponds, and restore saltwater estuaries.
- The issue with PFAS and heavy metals has come to the fore since the work of the CWMP.
- The Draft CWMP/ Expanded Environmental Notification Form (EENF) was submitted in 2017, reviewed and approved by Massachusetts Environmental Policy Act (MEPA) in July of 2017.
- In 2021 the Town issued the Final CWMP which was approved by the State in 2022.

Executive Summary

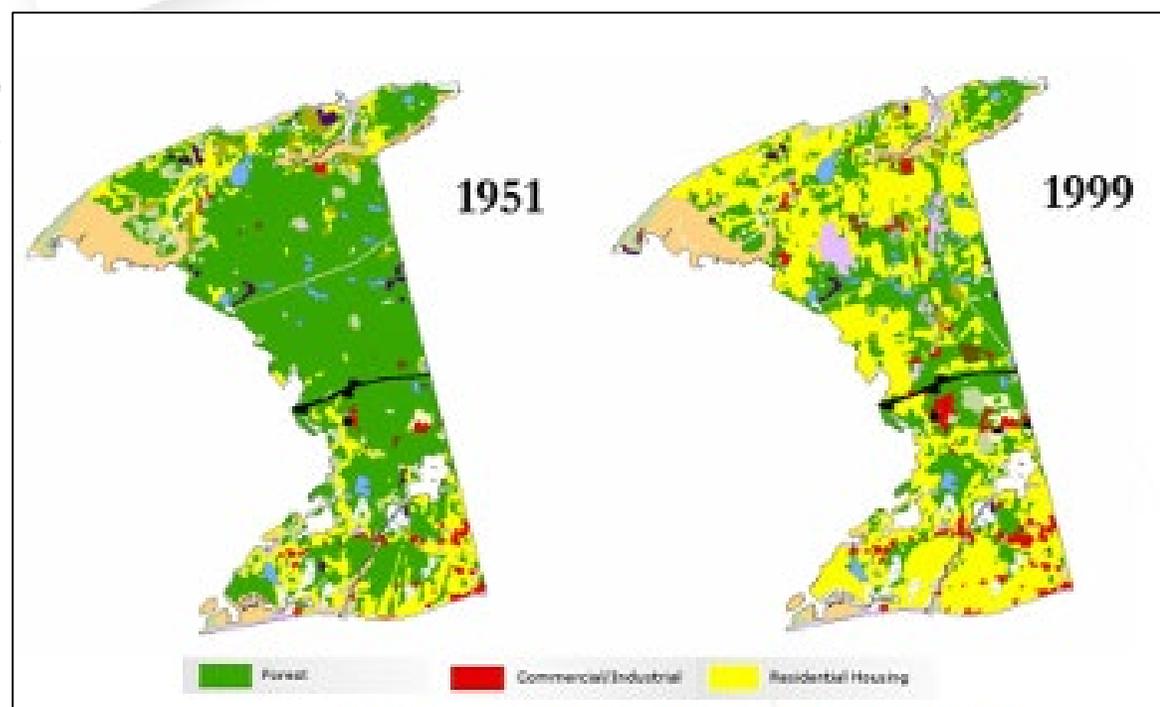
Comprehensive Wastewater Management Plan (CWMP) - 2021



ES.1 Introduction

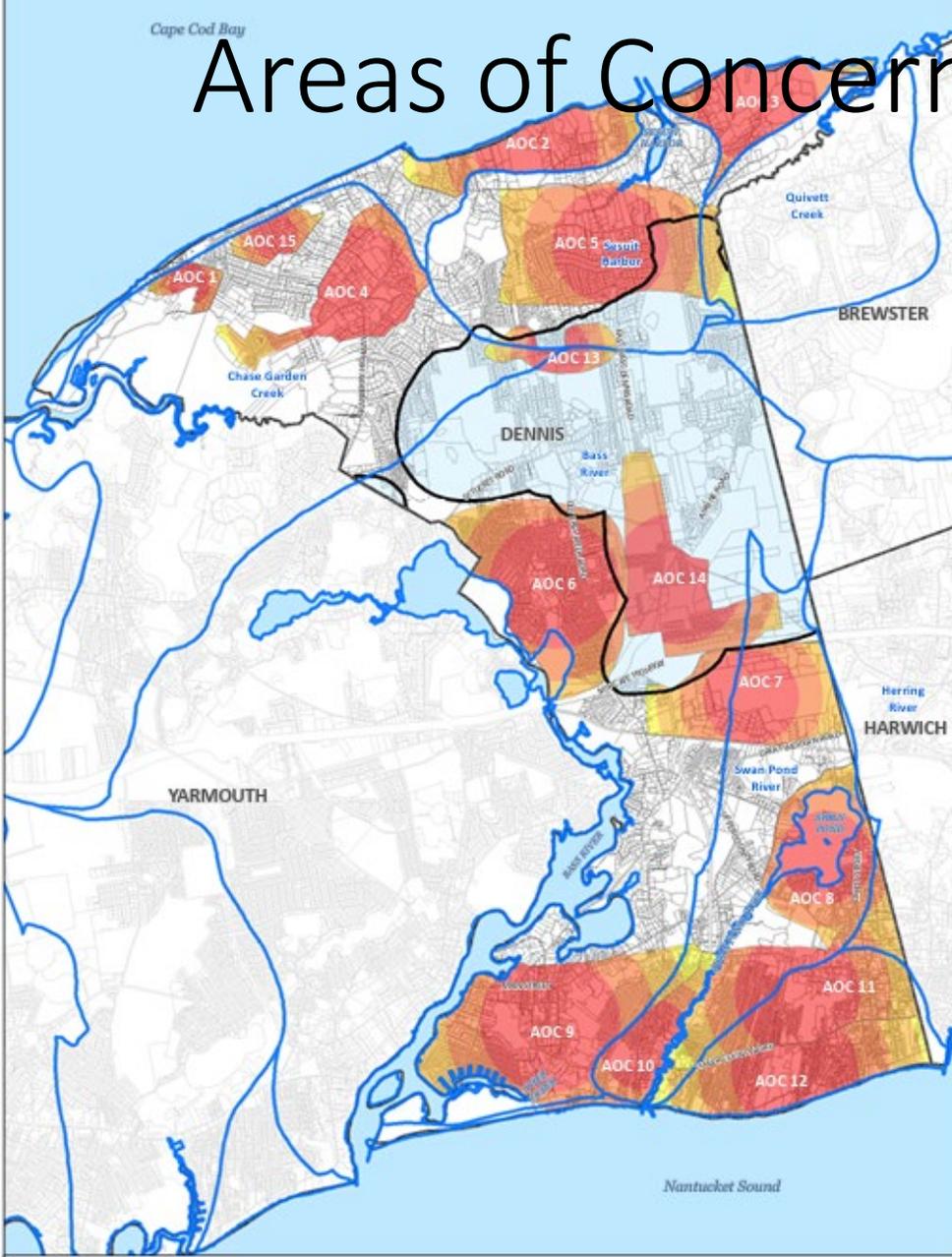
The Town of Dennis has developed a Final Comprehensive Wastewater Management Plan (CWMP) with assistance from residents, Town boards and committee members, Town staff, consultants and local, regional and state stakeholders over the past several years. This plan is presented in herein and the Town is ready to begin implementing it realizing some components may be revised over the next 40 years through adaptive management.

Over the last seven years the Town working mainly through its' Wastewater Implementation Committee (WIC), formerly the Comprehensive Wastewater Management Task Force (CWMTF) developed a program to address wastewater management needs, protect drinking water sources, protect freshwater ponds, and restore valuable saltwater estuaries. Protection and restoration of these valuable water resources is extremely important to maintaining the quality of life and economic health of the town. These efforts and the resultant recommendations are intended to guide the community moving forward as it addresses this complex and costly issue.



ES-1 Population Figures for Dennis (1951 & 1999)

Areas of Concern (AOC)



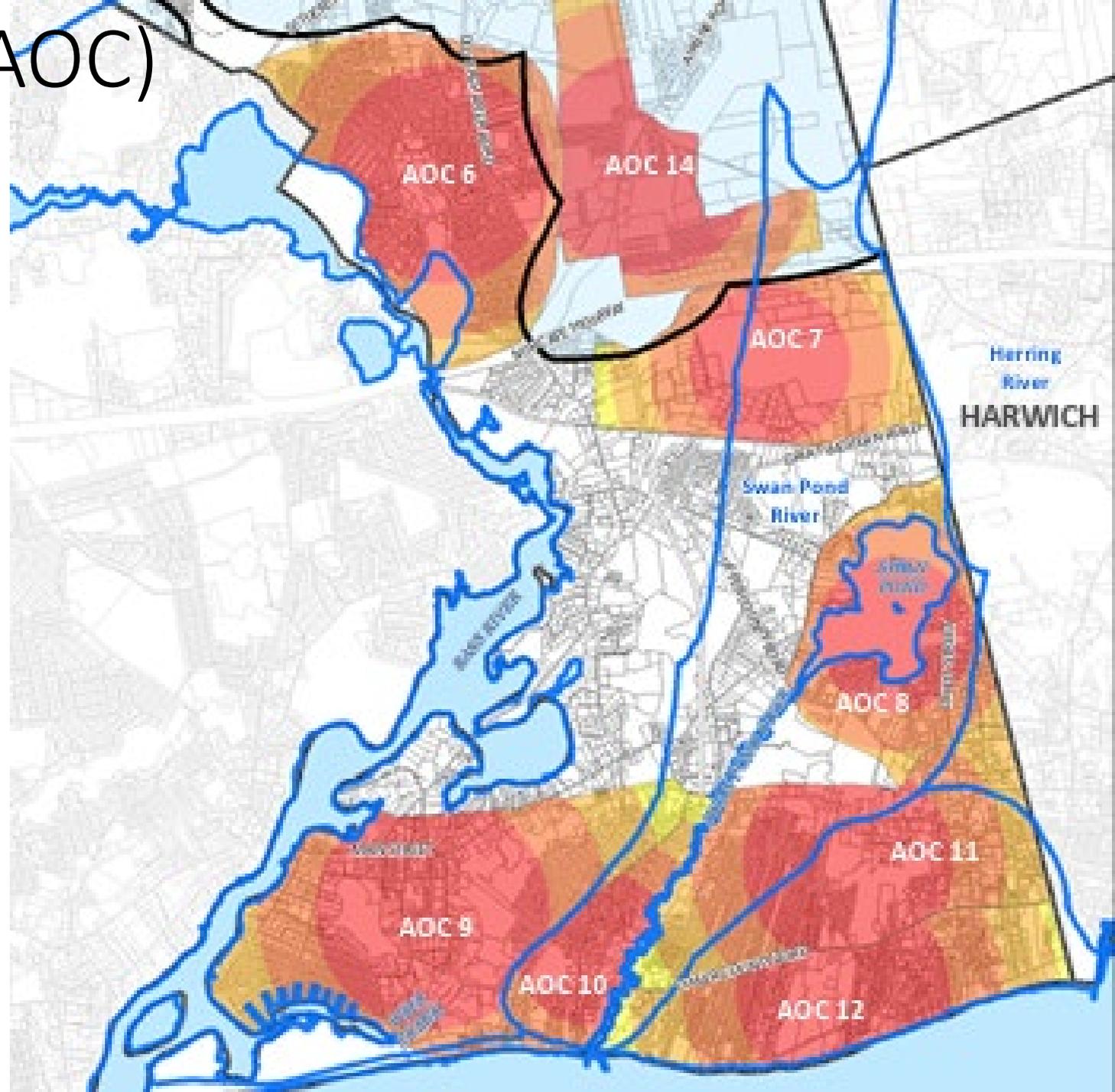
Legend

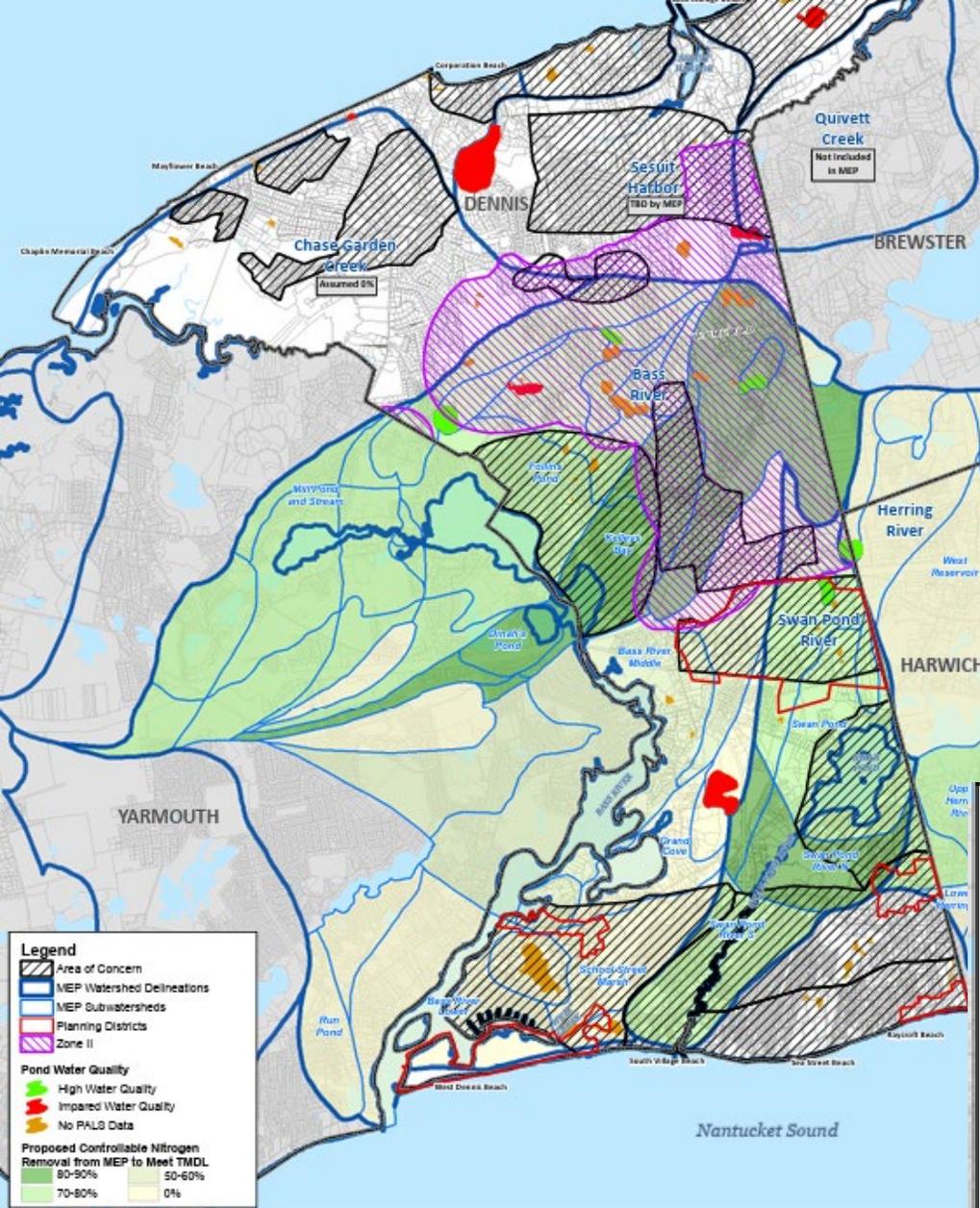
- MEP Watershed Delineations
- Area of Concern
- Zone II

Town of Dennis, MA

2014 Needs Assessment
Update Areas of Concern
Figure 7-9

CDM
Smith

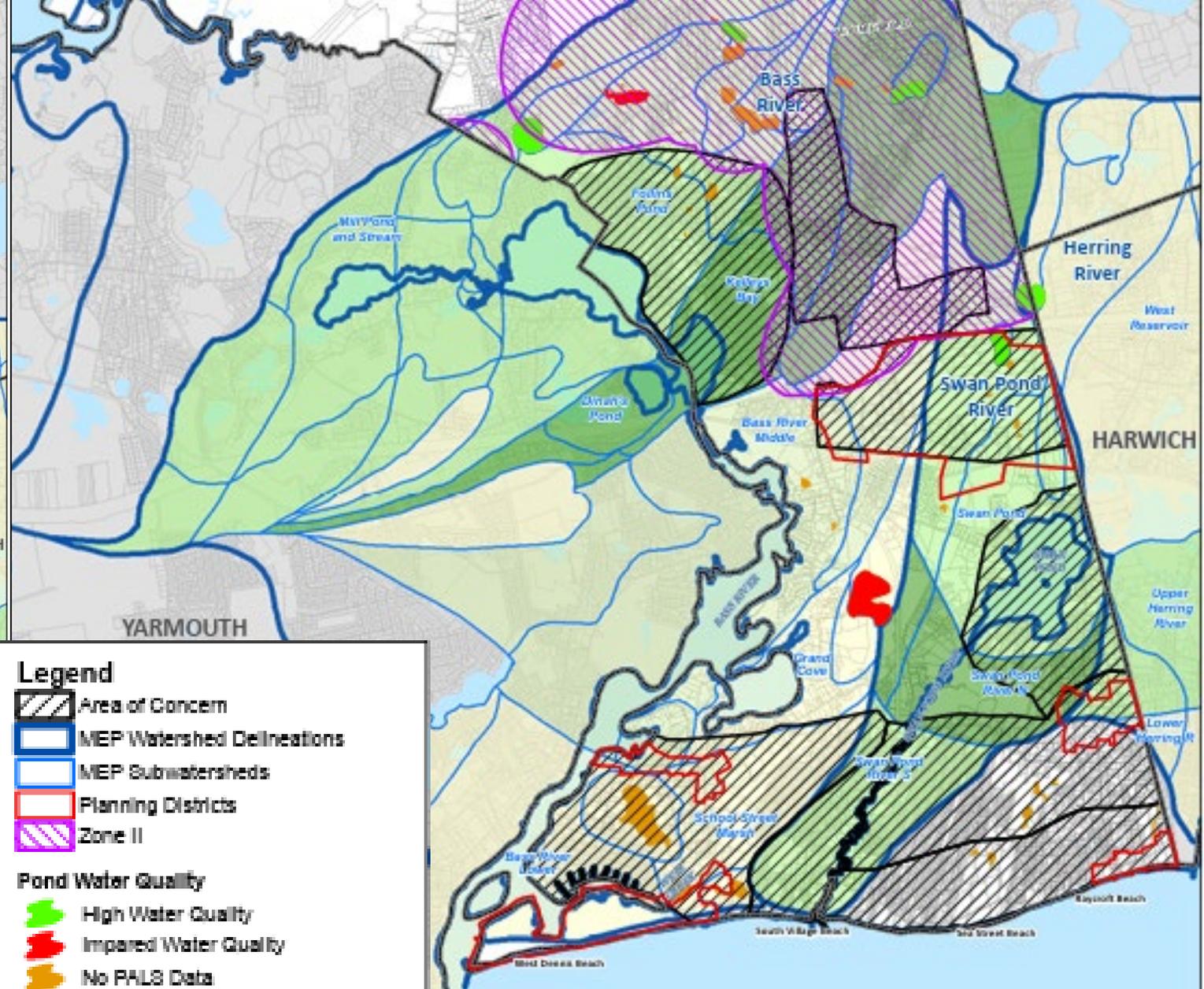




Town of Dennis, MA



Summary of Water Quality Management Need
Figure 7-1



Nantucket Sound



Phase 1.

1. Construction of the Water Resource Recovery Facility;
2. Collection & Conveyance south of Route 6, west of the WRRF, north of the bike path with a section south of the bike path west of route 134 and either side of Highbank Road.
3. Collection & Conveyance south of Bass River Lane, mostly west of Main Street along the Bass River to Grand Cove; a second section on either side of Route 28 west of Route 134; and a stretch either side of School Street down to West Dennis Beach.
4. Collection & Conveyance between (roughly) Swan Pond and Rte 134; either side of 134 south of Center Street to properties along Rte 28 west of the Swan River and east of Main

Dennis Watersheds

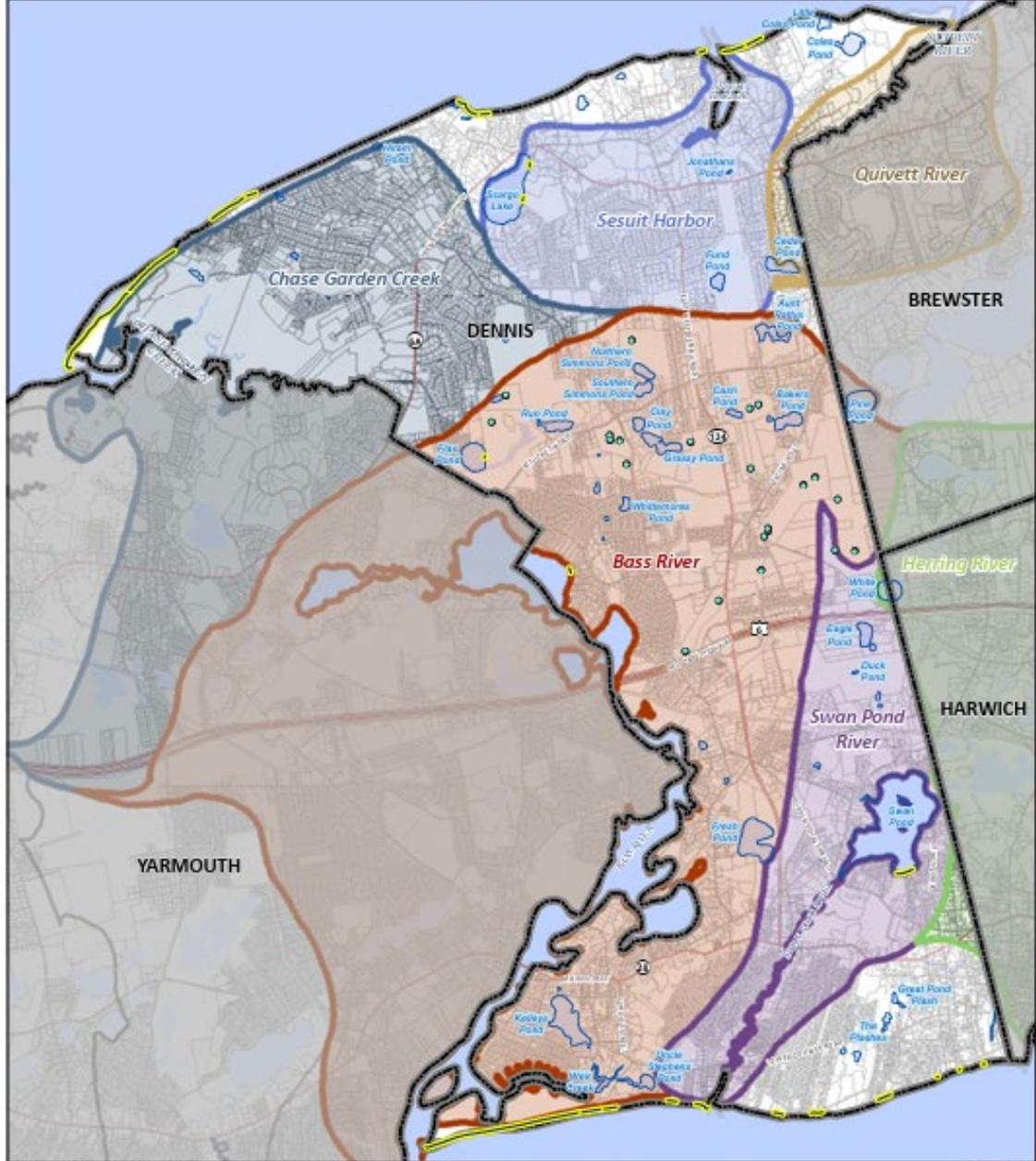


Table ES-1 Decrease in Present Attenuated Loading to Meet Nitrogen Thresholds

MEP Watershed	Total Controllable Load Decrease to Meet Threshold (% change)	MEP Scenario Septic Load Decrease to Meet Threshold (% change)
Bass River	-47.4%	-59.5%
Swan Pond River	-75.5%	-100.0%
Herring River	-23.6%	-38.5%
Chase Garden Creek	+13.8%	+53.1%
Sesuit Harbor	TBD	TBD

MEP Watershed Delineations

- Bass River
- Chase Garden Creek
- Herring River
- Quivett Creek
- Sesuit Harbor
- Swan Pond River

Dennis Water Resources

- Direct Discharge
- Lakes and Ponds
- Beaches
- Water Supply Wells

Town of Dennis, MA
Water Quality Evaluation and Mitigation Alternative Study

November 2021

Figure ES-2
Town of Dennis
Water Resources

1 in = 4,500 ft
0 0.5 1 Miles

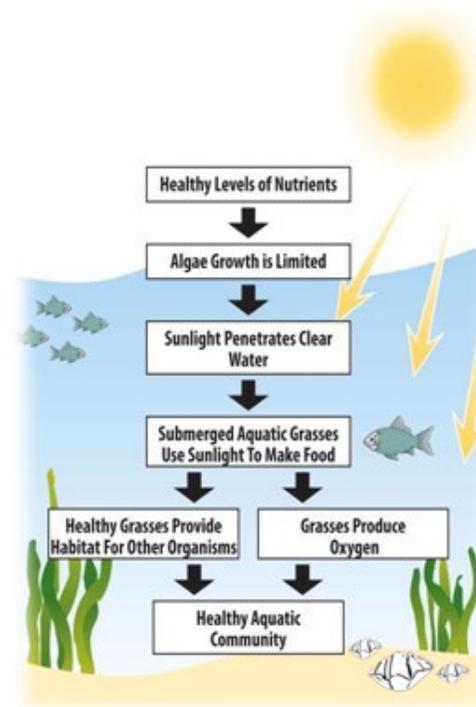
Table ES-2

Dennis Ponds Health Assessment Summary and Recommendations

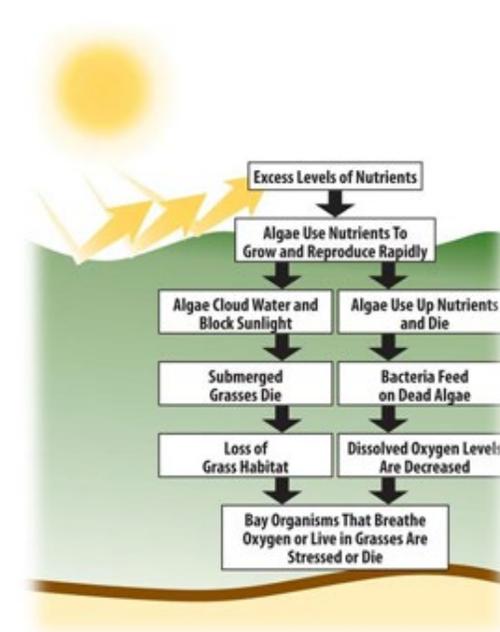
Name	Pond Trophic Status	Monitor	Investigate Road Runoff Contribution	Investigate Potential Contaminant Sources	Shoreline Development
Aunt Pattys Pond	*	X	X		Low-Medium
Bakers Pond	Oligotrophic	X	X		Low
Cash Pond	*	X			Low
Cedar Pond	Eutrophic	X	X	X	Medium-High
Clay Pond		X		X	Low-Medium
Coles Pond	Eutrophic	X			Low-Medium
Duck Pond	*	X	X	X	Medium-High
Eagle Pond	Mesotrophic	X	X	X	Low
Flax Pond	Mesotrophic	X	X	X	Low-Medium
Follins Pond	*	X	X	X	High
Fresh Pond	Eutrophic	X		X	Low
Funn Pond**	*	X		X	Medium
Grassy Pond	*	X			Low
Great Pond Plash	*	X			Low
Hiram Pond	Eutrophic	X	X	X	Medium
Jonathans Pond	*	X		X	Low-Medium
Kelleys Pond	*	X		X	Medium-High
Little Coles Pond	*	X			Low
Northern Simmons Pond	Oligo-mesotrophic	X			Low
Pine Pond	*	X	X	X	Medium
Run Pond	Meso-eutrophic	X		X	Low
Scargo Lake	Meso-eutrophic	X	X	X	Medium
Southern Simmons Pond	*	X		X	Low
Swan Pond	*	X	X	X	High
The Plashes	*	X			Low
Uncle Stephens Pond	*	X		X	Medium
Weir Creek	*	X	X	X	Low-Medium
White Pond	Oligo-mesotrophic	X		X	Low
Whittemores Pond	*	X	X	X	Medium-High

Notes: Eutrophic - Excess levels of nutrients are present and the water body is exhibiting signs of impairment.

Healthy Nitrogen and Phosphorus Levels

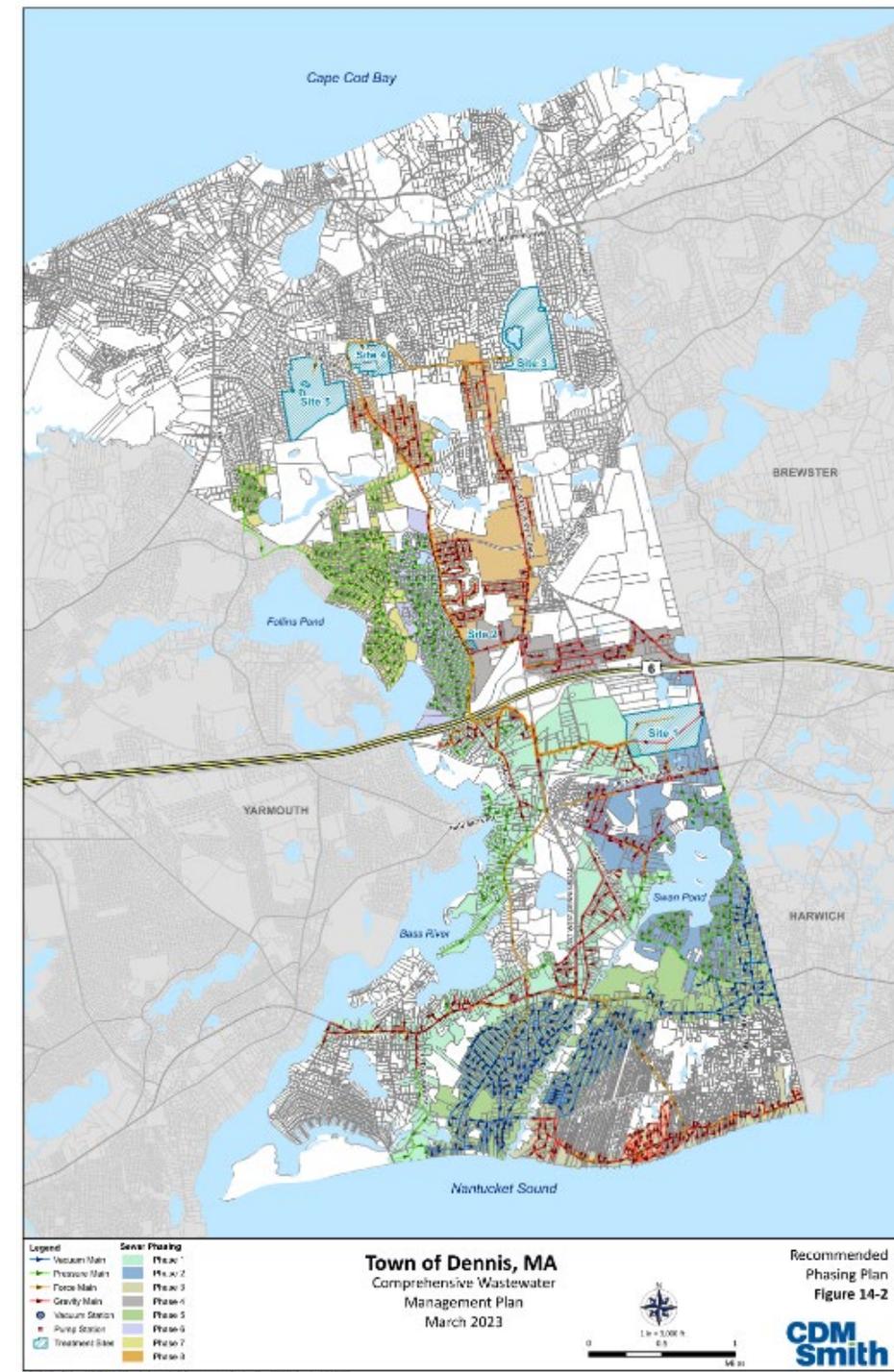


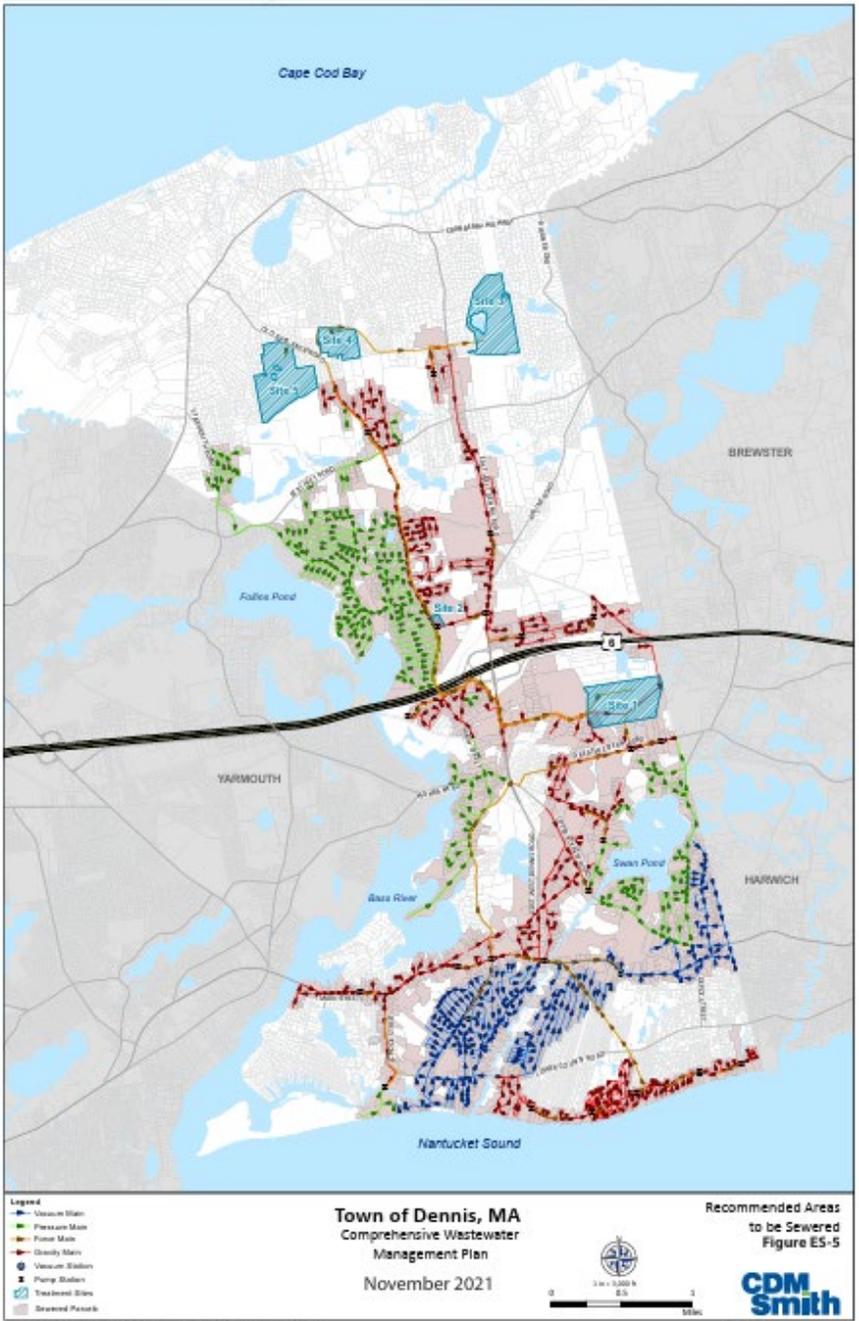
Unhealthy Nitrogen and Phosphorus Levels



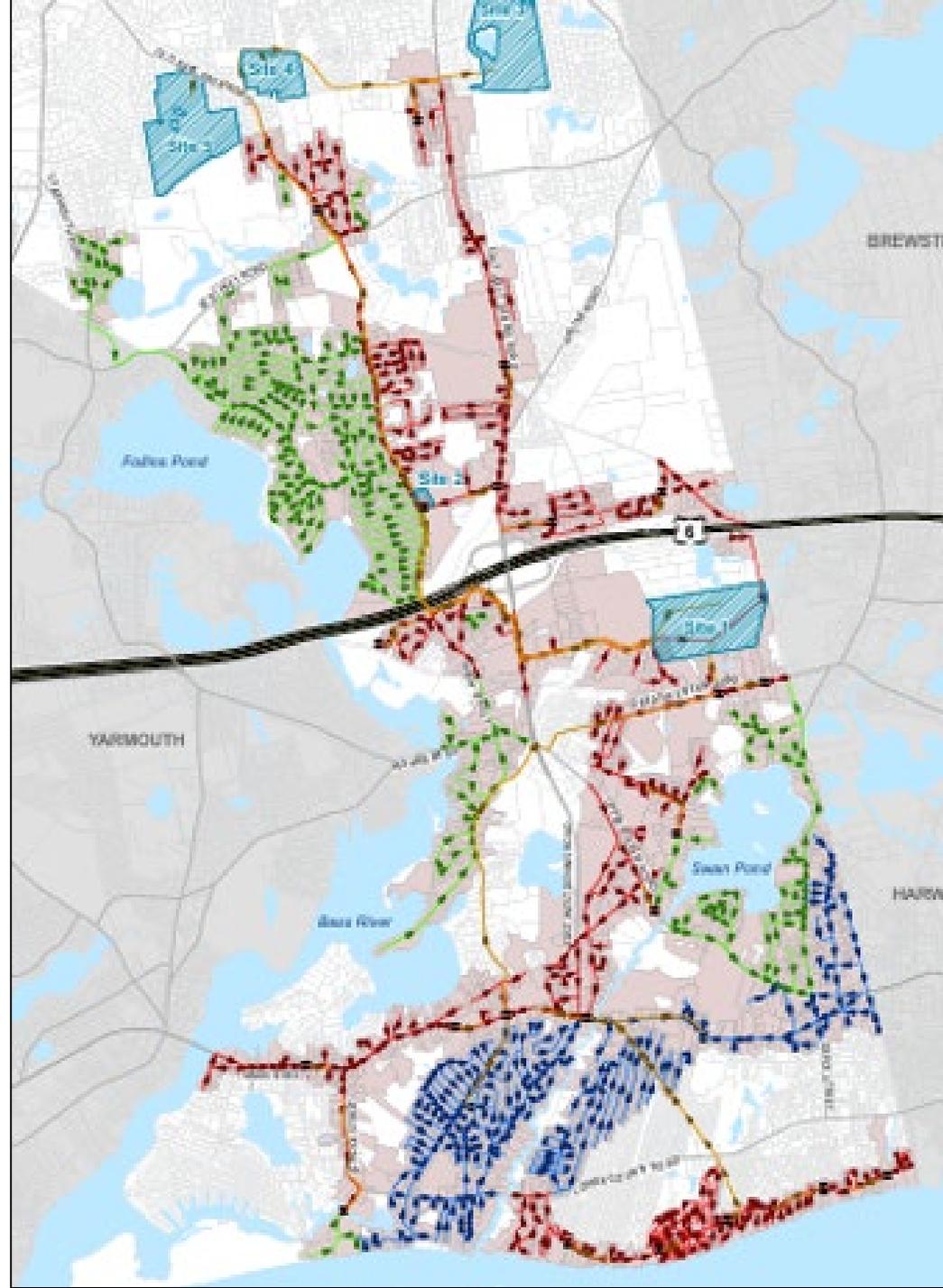
Collection System – Phasing Plan

- Per Approved CWMP
- 8 Phases
- 40-Year Program
- 100 miles of pipelines
- 22 pumping stations



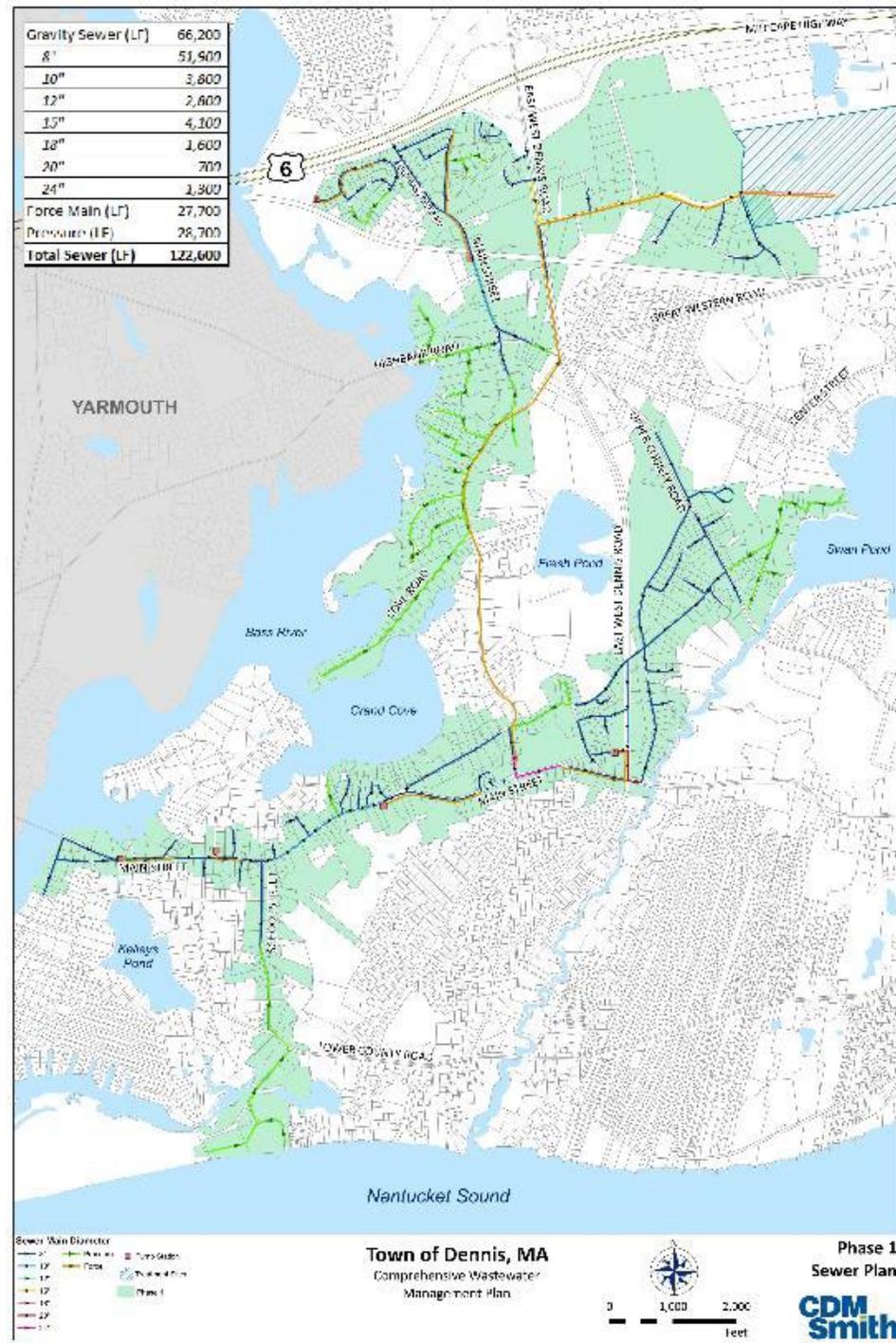


8 Phase 40 Year WRRF Sewer Coverage Plan



Collection System – Phase 1

- 12.5 miles of gravity sewers
- 5.5 miles of pressure sewers
- 7 pumping stations
- 5.2 miles of force main
- 3 construction contracts



Phase 1 Contracts

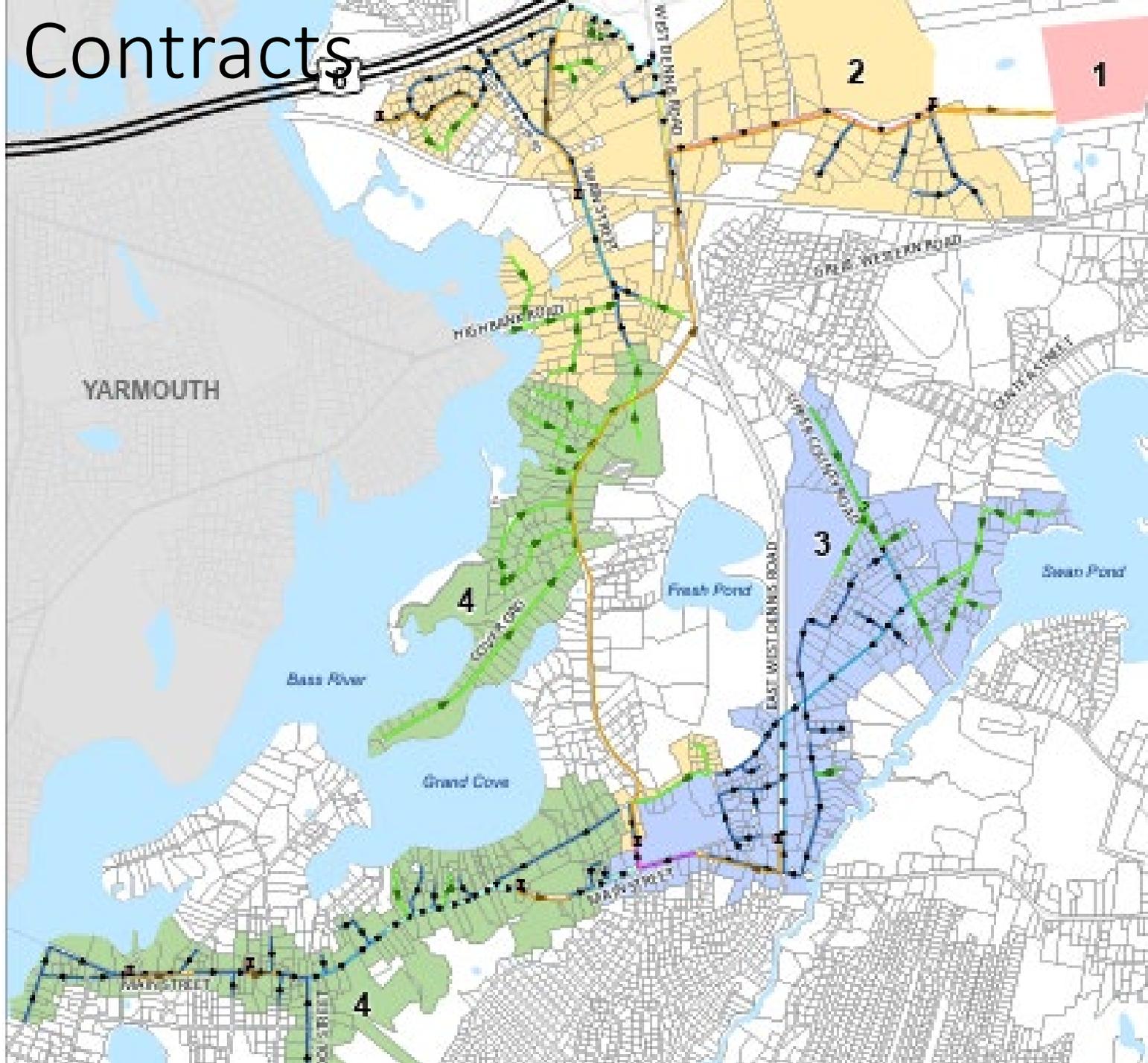


Table ES-4**Details of Phasing Plan Costs by Phases 1-8**

Phase	Collection and Conveyance System	Treatment Facility	Owners Project Manager (OPM)	Effluent Recharge with Conveyance and PRB	Non-Traditional Technologies	Total
1	\$49. Mil	\$52.7 Mil	\$.9 Mil	\$20.7 Mil	\$1.3 Mil	\$124.4 Mil
2	\$30.9 Mil				\$1.3 Mil	\$32.3 Mil
3	\$21.0 Mil				\$1.3 Mil	\$22.3 Mil
4	\$15.3 Mil	\$16.9 Mil	\$.3 Mil	\$18. Mil	\$1.3 Mil	\$51.7 Mil
5	\$34.7 Mil				\$1.3 Mil	\$36.0 Mil
6	\$21.3 Mil				\$1.3 Mil	\$22.6 Mil
7	\$26.9 Mil				\$1.3 Mil	\$28.2 Mil
8	\$25.6 Mil				\$1.3 Mil	\$26.9 Mil
Total (Rounded)	\$224.6 Mil	\$69.5 Mil	\$1.1 Mil	\$38.7 Mil	\$10.4 Mil	\$344.3 Mil

Notes:

1. Costs include 25% construction contingency and 15% for planning, permitting, and engineering.
2. Connection costs not included.
3. Costs are projected to mid-point of construction at the end of 2024, enr: 13,060.
4. Town collection and conveyance systems include additional 10% contingency.
5. Phase 1 - There is a potential to decrease costs for sewer implementation by combining with MassDOT project.
6. Phase 5 - There is a potential to decrease costs for sewer implementation by combining with MassDOT project.
7. Assume OPM services will be 3% of WWTF cost (excluding 25% construction contingency and 15% for engineering, permitting and planning)



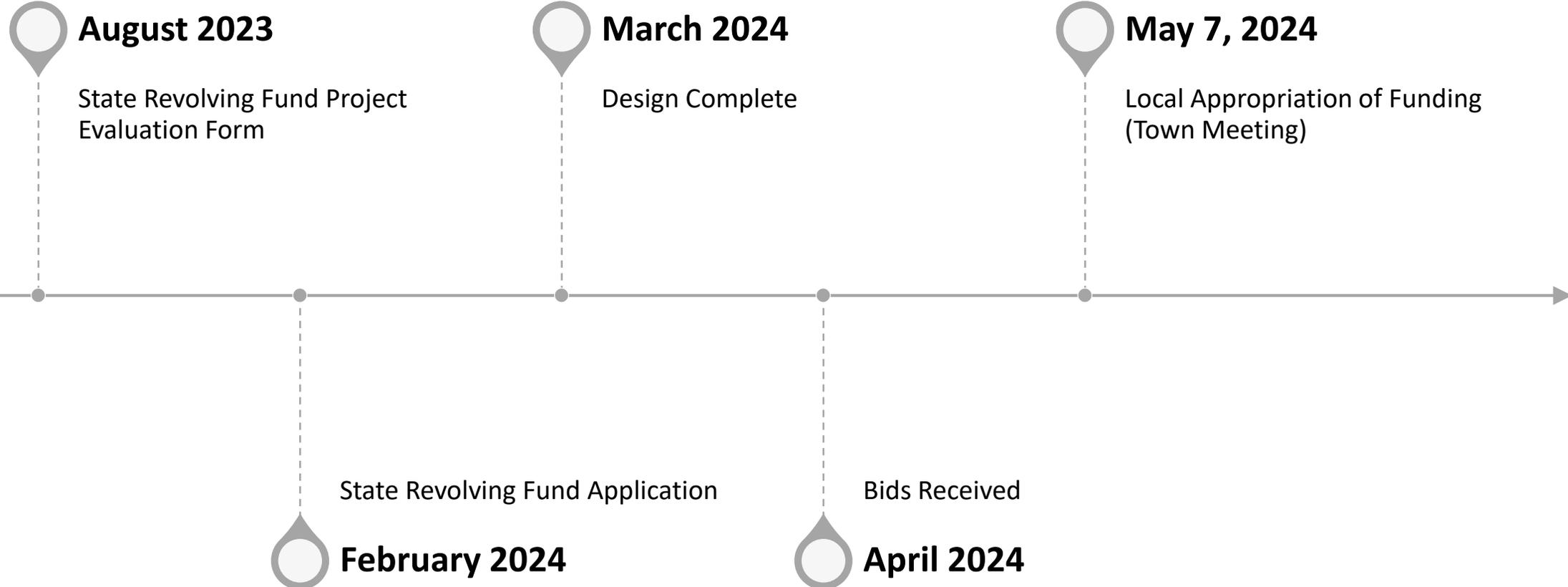
Water Resource Recovery Facility



WRRF Permitting Status

- NHESP – No impact
- MHC – Intensive investigations complete
- Groundwater Discharge Permit – Under DEP review
- MEPA – NPC Submitted
- Mass SRF – PEF Submitted

Phase 1 Schedule Milestones





Next Steps

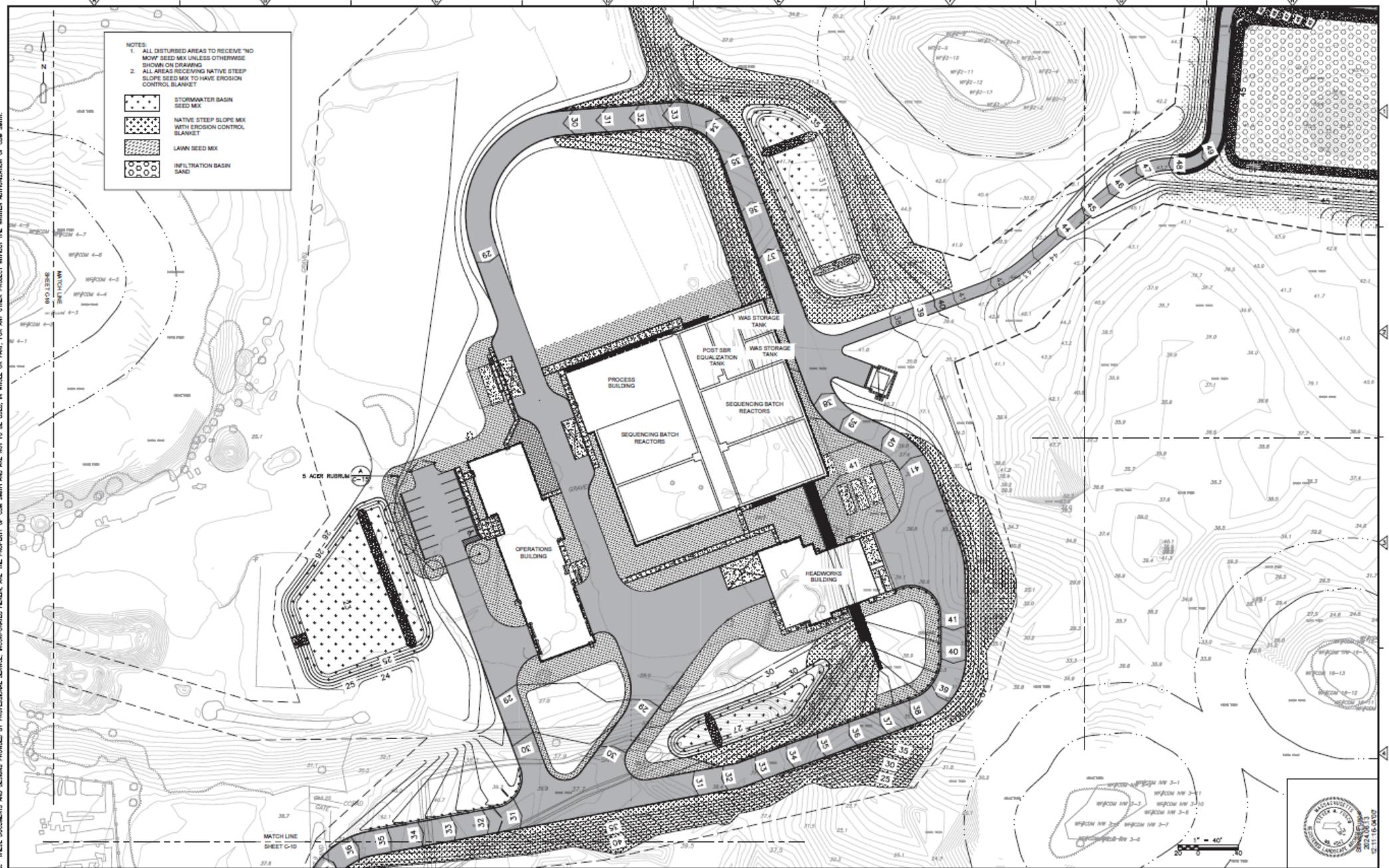
1. Collection System

- Outreach to pumping station location property owners (ongoing)
- Finalizing pumping station site layouts
- Continued development of collection system design

2. WRRF

- Code classifications and fire alarm systems meeting
- Information technology meeting
- Plumbing variance for installation of unisex bathrooms in process buildings?
- Other local permitting approvals?

C:\Users\FJUSCO\Documents\CDM Smith Inc\141004-277823 - Dennis WSRF Design\Project Files\10_GM (03/10 CAD)\CDRPL031.dwg
 03/10 - CDM SMITH ALL RIGHTS RESERVED.
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- ALL AREAS RECEIVING NATIVE STEEP SLOPE SEED MIX TO HAVE EROSION CONTROL BLANKET.

	STORMWATER BASIN SEED MIX
	NATIVE STEEP SLOPE MIX WITH EROSION CONTROL BLANKET
	LAWN SEED MIX
	INFILTRATION BASIN SAND

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY:	S. FUSCO
DRAWN BY:	S. FUSCO
CHECKED BY:	G. HOWE
PROJECT MANAGER:	K. McCONNELL
APPROVED BY:	S. FUSCO
DATE:	JUNE 2024



1000 Corporate Building, Suite A-60
 Providence, RI 02902
 Tel: 401-751-6800

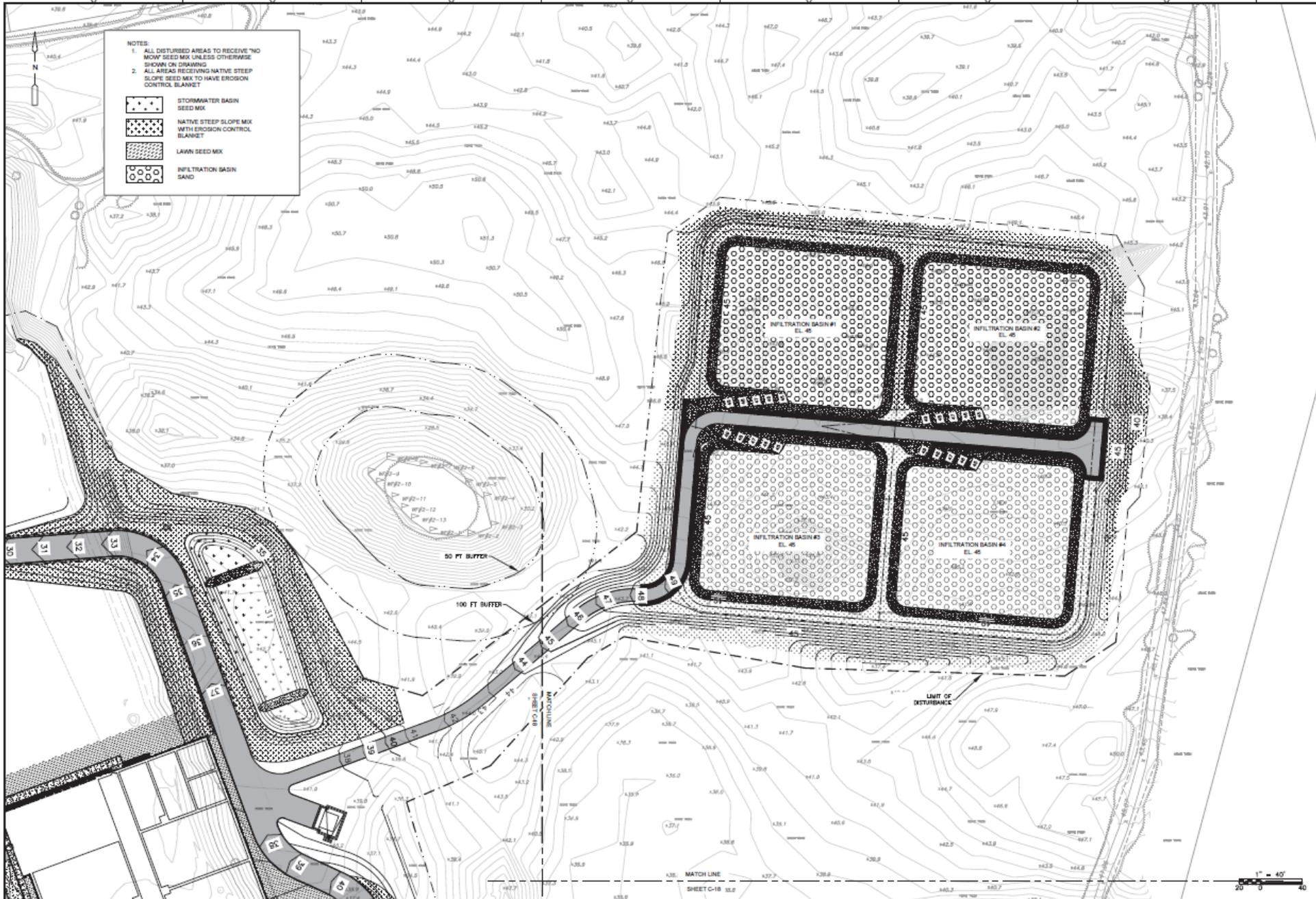
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

SEDING AND PLANTING PLAN I



PROJECT NO. 141004-277823
 FILE NAME: SHEET NO.
 C-19
 SHEET 26 OF 330

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	STORMWATER BASIN SEED MIX
	NATIVE STEEP SLOPE MIX WITH EROSION CONTROL BLANKET
	LAWN SEED MIX
	INFILTRATION BASIN SAND



REV.	DATE	DRWN.	CHKD.	REMARKS

DESIGNED BY: S. FUSCO
 DRAWN BY: S. FUSCO
 CHECKED BY: G. HANSEN
 CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JULY 2024



TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

SEEDING AND PLANTING PLAN II



PROJECT NO. 141004-277823
 FILE NAME: --
 SHEET NO. C-20
 SHEET 28 OF 330

**TOWN OF DENNIS, MASSACHUSETTS
WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES**

WATER RESOURCE RECOVERY FACILITY

Updated Per Add. 1 - 10
MYM 9-12-24

PROJECT NO. CWSRF - 16676/1

SELECT BOARD

CHRISTOPHER LAMBTON
JOHN TERRIO
JAMES W. PLATH
PAUL McCORMICK
CARLYN CAREY

TOWN ADMINISTRATOR

ELIZABETH SULLIVAN

DPW DIRECTOR

MICHAEL LAVIN

TOWN ENGINEER

THOMAS ANDRADE, P.E.

WASTEWATER SUPERINTENDENT

RICHARD V. PETER



JUNE 2024

LOCATION PLAN
NOT TO SCALE



William C. McConnell
2024.06.18 13:06:35-04'00"

**CDM
Smith**

PROVIDENCE, RHODE ISLAND

Water

Environment

Transportation

Energy

Facilities

AREA CLASSIFICATION CODES	
A	NO VENTILATION OR VENTILATED AT LESS THAN 12 AIR CHANGES PER HOUR
B	CONTINUOUSLY VENTILATED AT 12 AIR CHANGES PER HOUR
C	CONTINUOUSLY VENTILATED AT 6 AIR CHANGES PER HOUR
CGD	COMBUSTIBLE GAS DETECTION
D	NO VENTILATION OR VENTILATED AT LESS THAN 6 AIR CHANGES PER HOUR
FAS	FIRE ALARM SYSTEM
FE	PORTABLE FIRE EXTINGUISHER INSTALLED, LOCATED AND MAINTAINED IN ACCORDANCE WITH NFPA 10 (SEE ARCHITECTURAL SHEETS)
H	HYDRANT PROTECTION IN ACCORDANCE WITH 7.2.4 (SEE MECHANICAL SHEETS)
N/A	NOT APPLICABLE
NNV	NOT NORMALLY VENTILATED
NR	NO REQUIREMENT
ODP	OPEN DRIP PROOF
TEFC	TOTALLY ENCLOSED FAN COOLED
TEXP	TOTALLY ENCLOSED EXPLOSION PROOF
VF	VENTILATION FAILURE

MATERIALS ABBREVIATIONS	
316SS	316 STAINLESS STEEL
AL	ALUMINUM
EMT	ELECTRICAL METALLIC TUBING
FRP	FIBERGLASS REINFORCED PLASTIC
GRS	GALVANIZED RIGID STEEL CONDUIT
GS	GALVANIZED STEEL
PS	PAINTED STEEL
PVC-80	SCHEDULE 80 RIGID PVC CONDUIT
RAC	RIGID ALUMINUM CONDUIT

AREA CLASSIFICATION AND MATERIALS TABLE

TAG	BUILDING / SITE	ROOM [NUMBER]	ENVIRONMENTAL DESIGNATION	NEC CLASSIFICATION	NFPA 820 (2024) TABLE REFERENCE	VENTILATION MEASURES IN ACCORDANCE WITH NFPA 820	FIRE PROTECTION MEASURES IN ACCORDANCE WITH NFPA 820	NEMA RATING	ELECTRICAL ENCLOSURE	CONDUIT TYPE	ELECTRICAL FRAMING CHANNEL MATERIAL	HVAC DUCTWORK	PIPING SUPPORTS (ALL TRADES)	GRATING	HANDRAIL/GUARDRAIL	ANCHOR BOLTS (ALL TRADES)	MOUNTING HARDWARE (ALL TRADES)	NOTES	
1	OPERATIONS BUILDING	ELECTRICAL ROOM [A-106]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	GRS	GS	N/A	GS	N/A	N/A	316SS	AL		
2	OPERATIONS BUILDING	LAB [A-112]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	316SS	GS	N/A	N/A	316SS	AL		
3	OPERATIONS BUILDING	SHOP/STORAGE [A-114]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
4	OPERATIONS BUILDING	VEHICLE STORAGE [A-115]	WET	UNCLASSIFIED	N/A	N/A	N/A	4X	316SS	RAC	316SS	GS	GS	N/A	N/A	316SS	316SS		
5	OPERATIONS BUILDING	MECHANICAL ROOM [A-116]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
6	OPERATIONS BUILDING ADMINISTRATION AREAS	VARIOUS [VARIOUS]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	EMT	GS	GS	GS	N/A	N/A	316SS	AL		
7	OPERATIONS BUILDING RESTROOMS, JANITOR CLOSETS, LOCKER ROOMS	VARIOUS [VARIOUS]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	EMT	GS	AL	GS	N/A	N/A	316SS	AL		
8	OPERATIONS BUILDING STORAGE [A-200]	UNCLASSIFIED	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
9	HEADWORKS BUILDING STAIR 'A' [VARIOUS]	WET	CLASS I, DIVISION 1	5.2.2 ROW 2a	A	FE, H, CGD	7	CAST AL	RAC	316SS	N/A	GS	N/A	N/A	N/A	316SS	AL		
10	HEADWORKS BUILDING ELECTRICAL ROOM [C-101]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	GRS	GS	N/A	GS	N/A	N/A	N/A	316SS	AL		
11	HEADWORKS BUILDING MECHANICAL ROOM [C-102]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	N/A	316SS	AL		
12	HEADWORKS BUILDING PUMP ROOM [C-103]	WET / CORROSIVE	UNCLASSIFIED	6.2.2(a) ROW 12a	C	FE, H, FAS	4X	316SS	RAC	316SS	316SS	316SS	N/A	N/A	N/A	316SS	316SS		
13	HEADWORKS BUILDING RESTROOM [C-104]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	EMT	GS	AL	GS	N/A	N/A	N/A	316SS	AL		
14	HEADWORKS BUILDING DUMPSTER ROOM [C-106]	WET	CLASS I, DIVISION 1	5.2.2 ROW 2a	A	FE, H, CGD	7	CAST AL	RAC	316SS	316SS	316SS	GS	N/A	N/A	316SS	316SS		
15	HEADWORKS BUILDING CHEMICAL ROOM [C-106]	WET / CORROSIVE	UNCLASSIFIED	N/A	N/A	N/A	4X	PS	PVC-80	GS	316SS	FRP	N/A	N/A	AL	316SS	316SS		
16	HEADWORKS BUILDING SCREEN ROOM [C-201]	WET	CLASS I, DIVISION 1	5.2.2 ROW 2a	A	FE, H, CGD	7	CAST AL	RAC	316SS	316SS	316SS	FRP COVER PLATE	N/A	N/A	316SS	316SS		
17	HEADWORKS BUILDING GBT ROOM [C-202]	WET / CORROSIVE	UNCLASSIFIED	6.2.2(a) ROW 12a	C	FE, H, FAS	4X	316SS	RAC	316SS	316SS	GS	AL	N/A	N/A	316SS	316SS		
18	HEADWORKS BUILDING VORTEX GRIT CHAMBERS	WET	CLASS I, DIVISION 1	5.2.2 ROW 2a	A	NR	NOT ENCLOSED IN A BUILDING	7	CAST AL	RAC	316SS	N/A	316SS	FRP COVER PLATE	N/A	316SS	316SS		
19	HEADWORKS BUILDING HEADWORKS EFFLUENT DIVERSION STRUCTURE	WET	CLASS I, DIVISION 1	4.2.2 ROW 27a	NNV	NR		7	CAST AL	RAC	316SS	N/A	316SS	N/A	N/A	316SS	316SS		
20	HEADWORKS BUILDING TWAS STORAGE TANKS	WET / CORROSIVE	CLASS I, DIVISION 1	6.2.2(a) ROW 11a	A	FE, H, CGD	7	CAST AL	RAC	316SS	N/A	316SS	N/A	N/A	N/A	316SS	316SS		
21	HEADWORKS BUILDING SEPTAGE STORAGE TANK	WET	CLASS I, DIVISION 1	6.2.2(a) ROW 11a	A	FE, H, CGD	7	CAST AL	RAC	316SS	N/A	316SS	N/A	N/A	N/A	316SS	316SS		
22	PROCESS GALLERY	PROCESS GALLERY [B-103]	WET	UNCLASSIFIED	6.2.2(a) ROW 9b	C	FE, H	4X	316SS	RAC	316SS	AL	GS	AL	N/A	316SS	316SS		
23	SBR TANKS	WET	CLASS I, DIVISION 2	5.2.2 ROW 8, ROW 7c; NO PRIMARY SEDIMENTATION	NR	NOT ENCLOSED, OPEN TO ATMOSPHERE	H	7	CAST AL	RAC	316SS	N/A	316SS	AL	AL	316SS	316SS	CLASSIFIED ENVELOPE: INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL, ENVELOPE 18" ABOVE THE TOP OF THE TANK AND EXTENDING 18" BEYOND THE EXTERIOR WALL, ENVELOPE 18" ABOVE GRADE EXTENDING 10' HORIZONTALLY FROM THE EXTERIOR TANK WALLS	
24	POST-SBR EQUALIZATION TANKS	WET	UNCLASSIFIED	5.2.2 ROW 16; PRECEDED BY PRIMARY SEDIMENTATION	NR		H	4X	316SS	RAC	316SS	N/A	316SS	N/A	AL	316SS	316SS		
25	PROCESS BUILDING	BLOWER/PUMP ROOM [B-100]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
26	PROCESS BUILDING	STAIR 'A' [B-101]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	EMT	GS	GS	GS	N/A	N/A	316SS	AL		
27	PROCESS BUILDING	STAIR 'B' [B-102]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	EMT	GS	GS	GS	N/A	N/A	316SS	AL		
28	PROCESS BUILDING	ELECTRICAL ROOM [B-200]	DRY	UNCLASSIFIED	N/A	N/A	N/A	1	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
29	PROCESS BUILDING	RESTROOM [B-201]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	EMT	GS	AL	GS	N/A	N/A	316SS	AL		
30	PROCESS BUILDING	CORRIDOR 'A' [B-203]	DAMP	UNCLASSIFIED	N/A	N/A	N/A	12	PS	GRS	GS	AL	GS	N/A	N/A	316SS	AL		
31	PROCESS BUILDING	STAIR 'B' [B-102]	WET / CORROSIVE	UNCLASSIFIED	N/A	N/A	N/A	4X	PS	PVC-80	GS	AL	FRP	N/A	N/A	316SS	316SS		
32	PROCESS BUILDING DENITRIFICATION FILTER AREA	WET / OUTDOORS	UNCLASSIFIED	5.2.2 ROW 18	NR		H	4X	316SS	RAC	316SS	N/A	316SS	AL	AL	316SS	316SS		
33	PROCESS BUILDING UV DISINFECTION AREA	WET / OUTDOORS	UNCLASSIFIED	5.2.2 ROW 26	NR		H	4X	316SS	RAC	316SS	N/A	316SS	AL	AL	316SS	316SS		
34	WAS STORAGE TANKS	WET / CORROSIVE	CLASS I, DIVISION 2	6.2.2(a) ROW 11c	NR	NOT ENCLOSED, OPEN TO ATMOSPHERE	NR	7	CAST AL	RAC	316SS	N/A	316SS	AL COVERS (FUTURE)	AL	316SS	316SS	CLASSIFIED ENVELOPE: 18" ABOVE WATER SURFACE AND 10' HORIZONTALLY FROM WETTED WALLS	
35	ODOR CONTROL	WET / CORROSIVE	CLASS I, DIVISION 2	4.2.2 ROW 19a, 18f	NR	NOT ENCLOSED, OPEN TO ATMOSPHERE	FE	7 (WITHIN 3') 4X (BEYOND 3')	316SS	RAC	316SS	FRP (OUTDOORS) 316SS (INDOORS)	316SS	N/A	N/A	N/A	316SS	316SS	CLASSIFIED ENVELOPE: WITHIN 3' OF LEAKAGE SOURCES
36	INFILTRATION BASINS	WET	UNCLASSIFIED	N/A	NR		N/A	4X	316SS	RAC	316SS	N/A	N/A	N/A	N/A	316SS	AL		
37	SANITARY PUMP STATION WET WELL	WET	CLASS I, DIVISION 1	4.2.2 ROW 14a	NNV		NR	7	CAST AL	RAC	316SS	N/A	316SS	N/A	N/A	316SS	316SS		
38	SANITARY PUMP STATION DRY WELL	WET	CLASS I, DIVISION 2	4.2.2 ROW 15b	D		FE	7	CAST AL	RAC	316SS	N/A	316SS	N/A	N/A	316SS	316SS		

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 DRAWN BY: B. CHAISS-BOLIND
 SHEET CHECKED BY: W. MCCONNELL
 CROSS CHECKED BY: B. MCGHEE
 APPROVED BY: W. MCCONNELL
 DATE: JUNE 2024



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 Providence, RI 02903
 Tel: (401) 751-5300

TOWN OF DENNIS, MASSACHUSETTS
 WATER RESOURCE COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

AREA CLASSIFICATION AND MATERIALS TABLE

PROJECT NO: 141004-277823
 FILE NAME: 020/NRFL-01
 SHEET NO: G-5
 SHEET 6 OF 330

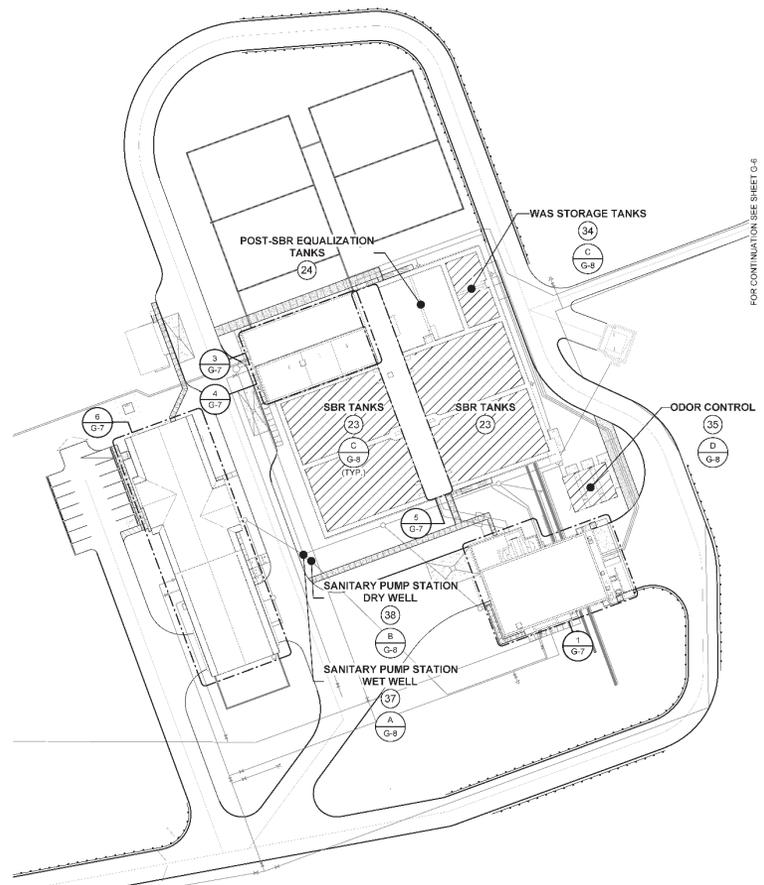




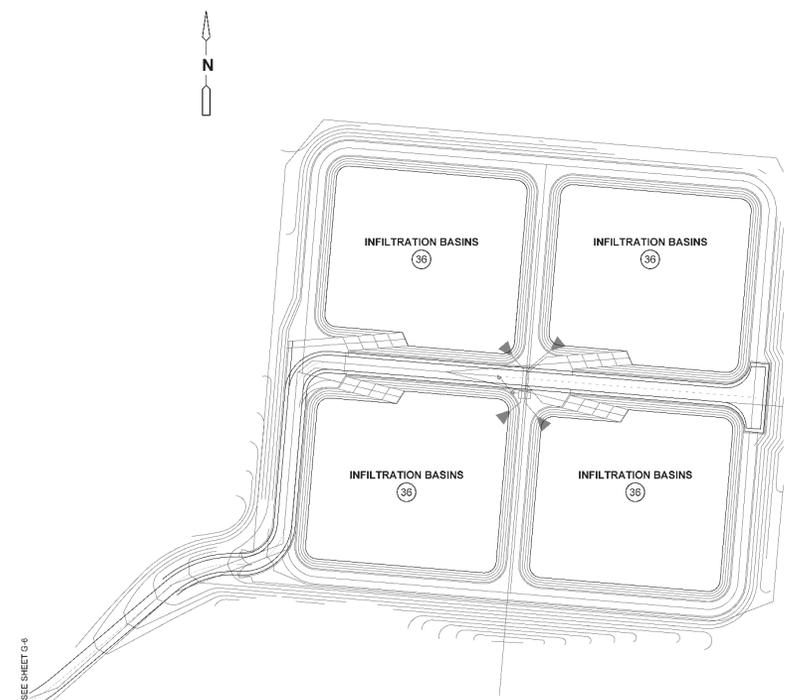


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 Erico N. Rosa 2024.06.13 15:41:24-0400
 Daniel L. Harris 2024.06.13 12:22:48-0400
 Bethany Lynn Molling 2024.06.13 11:36:55-0400
 William J. McConnell 2024.06.18 13:08:37-0400

 CLASS 1, DIVISION 1
 CLASS 1, DIVISION 2
 UNCLASSIFIED
AREA CLASSIFICATION LEGEND
 N.T.S.



AREA CLASSIFICATION SITE I
PLAN
 1" = 50'-0"



AREA CLASSIFICATION SITE II
PLAN
 1" = 50'-0"

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 SHEET CHECKED BY: W. MCCONNELL
 CROSS CHECKED BY: B. MCGHEE
 APPROVED BY: W. MCCONNELL
 DATE: JUNE 2024



3 Davis Square, Building A, Suite A-425
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 Tel: (401) 751-6300

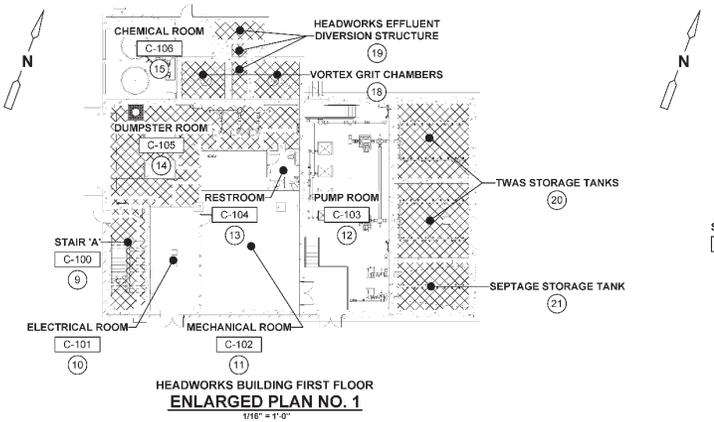
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

AREA CLASSIFICATION
SITE PLAN

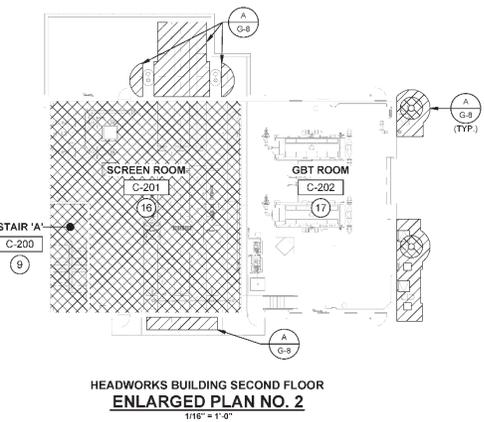


William C. McConnell
 PROJECT NO: 141004-277823
 PROJECT DATE: 2024.06.18 13:09:16-04:00
 FILE NAME: 0201NCPFL-01
 SHEET NO:
G-6
 SHEET 7 OF 330

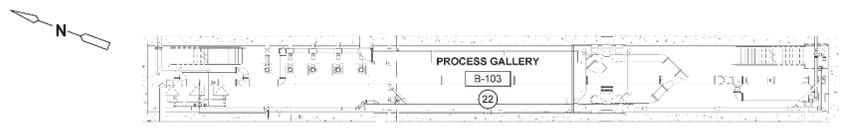
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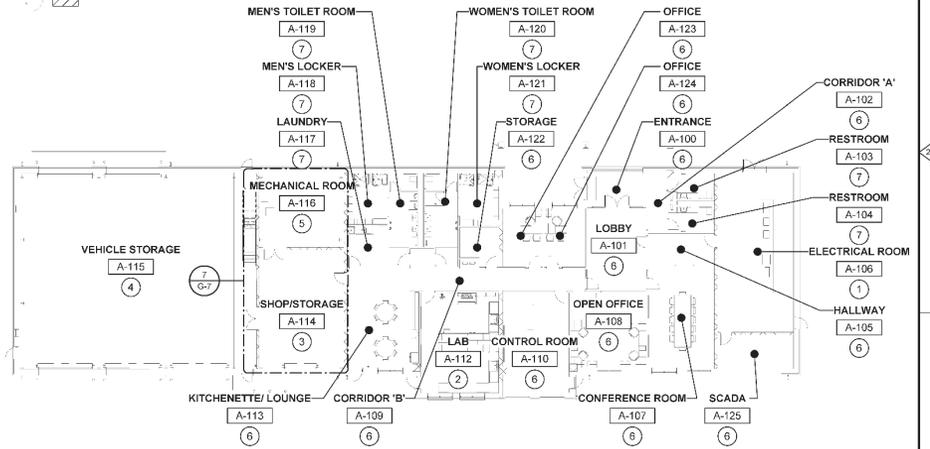
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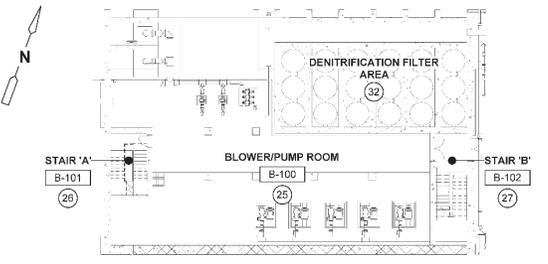
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ENLARGED PLAN NO. 2
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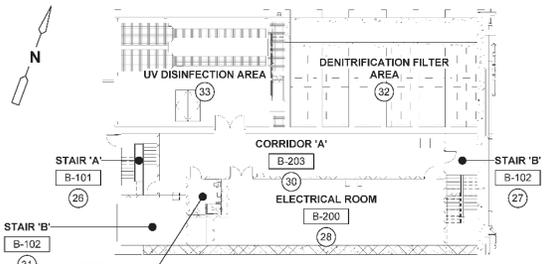
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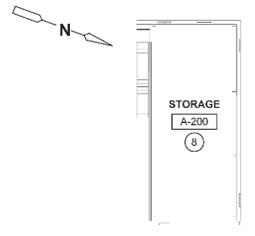
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ENLARGED PLAN NO. 6
1/16" = 1'-0"



PROCESS BUILDING LOWER LEVEL
ENLARGED PLAN NO. 3
1/16" = 1'-0"



PROCESS BUILDING FIRST FLOOR
ENLARGED PLAN NO. 4
1/16" = 1'-0"



OPERATIONS BUILDING MEZZANINE
ENLARGED PLAN NO. 7
1/16" = 1'-0"



REV	NO	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: B. CHAVIS-MOLLING
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 SHEET CHECKED BY: W. MCCONNELL
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 APPROVED BY: W. MCCONNELL
 DATE: JUNE 2024

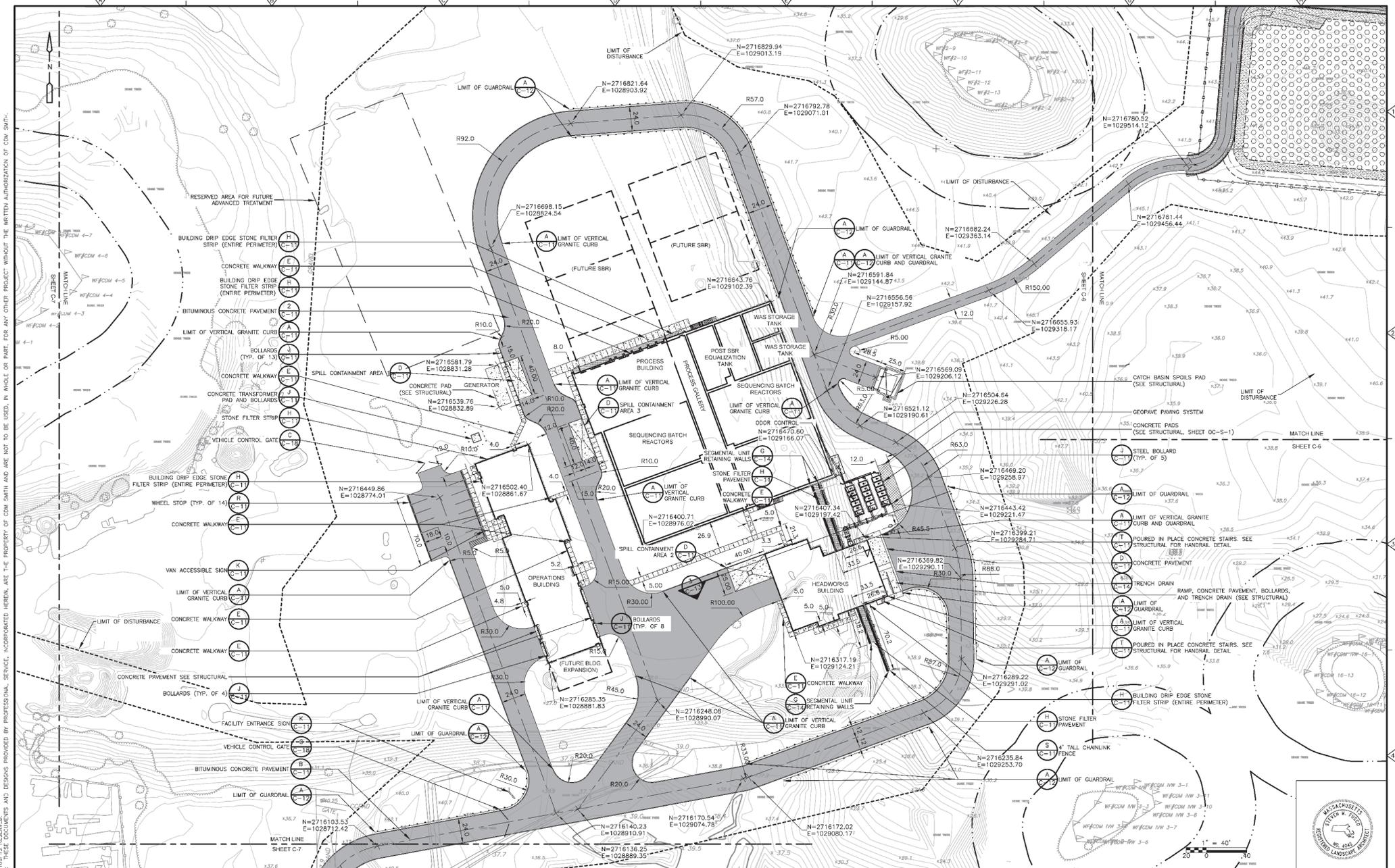
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TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
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AREA CLASSIFICATION
 ENLARGED PLANS

William C. McConnell
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 PROJECT NO: 141004-277253
 FILE NAME: 0201NRFPL-01
 SHEET NO:
 G-7
 SHEET 8 OF 330

XREF: (S)001, C)MS-2436, C)W)001, A)W)00000, A)W)00000, S)W)00000, S)W)00000, C)C)P)001 Images: 0
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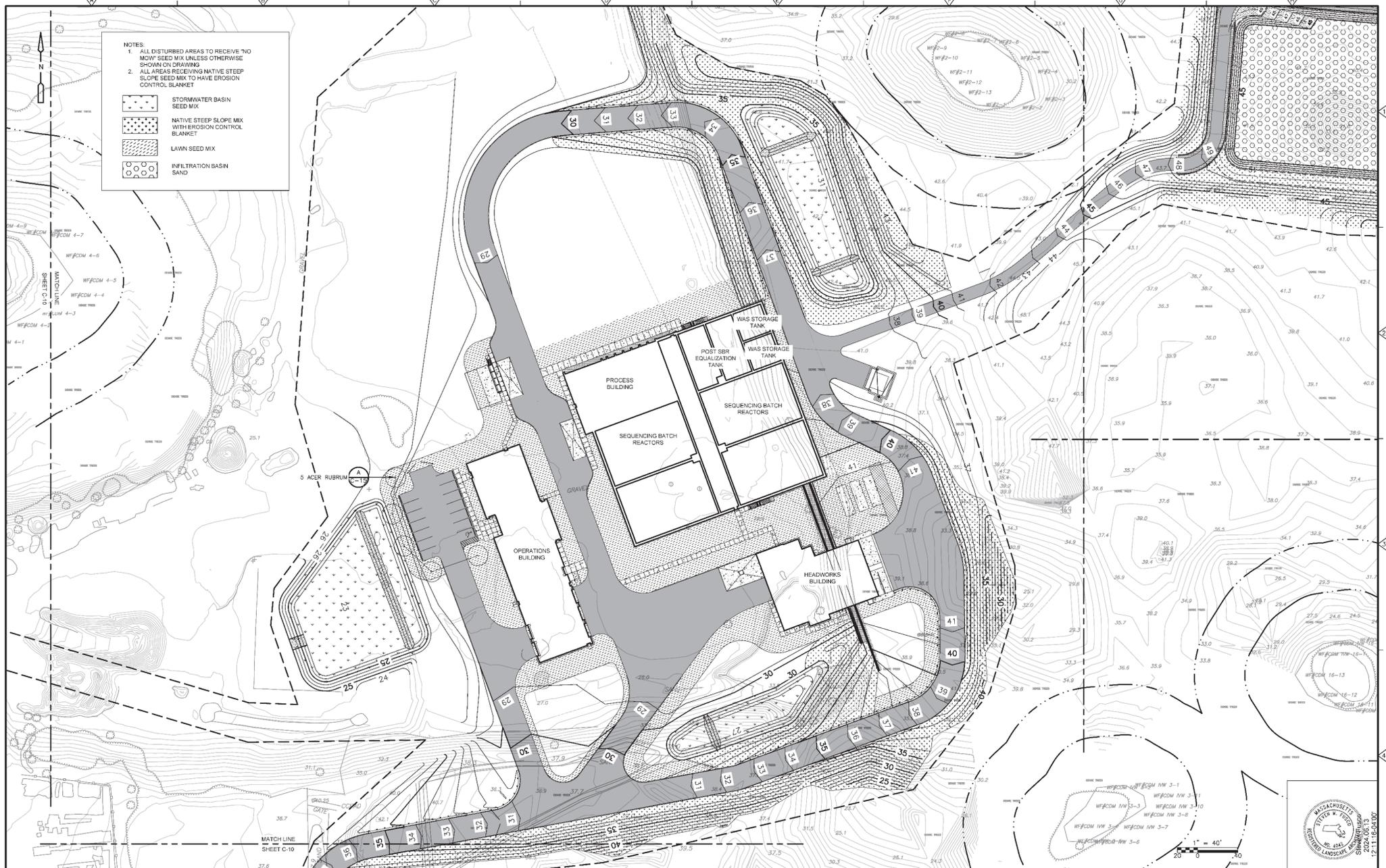
DESIGNED BY: S. FUSCO
 DRAWN BY: S. FUSCO
 SHEET CHECKED BY: G. HOWARD
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024



TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

LAYOUT AND MATERIALS PLAN I

PROJECT NO: 141004-277823
 FILE NAME: C)M)F)001.DWG
 SHEET NO:
 C-5
 SHEET 14 OF 330



- NOTES:
1. ALL DISTURBED AREAS TO RECEIVE "NO MOW" SEED MIX UNLESS OTHERWISE SHOWN ON DRAWING.
 2. ALL AREAS RECEIVING NATIVE STEEP SLOPE SEED MIX TO HAVE EROSION CONTROL BLANKET.
- STORMWATER BASIN SEED MIX
 - NATIVE STEEP SLOPE MIX WITH EROSION CONTROL BLANKET
 - LAWN SEED MIX
 - INFILTRATION BASIN SAND

XREFS: C:\P001_C\0001_C\DWG_2456_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1_SWRF0001R1.dwg
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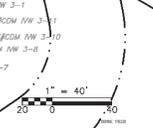
REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: S. FUSCO
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 SHEET CHECKED BY: G. HOWARD
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024



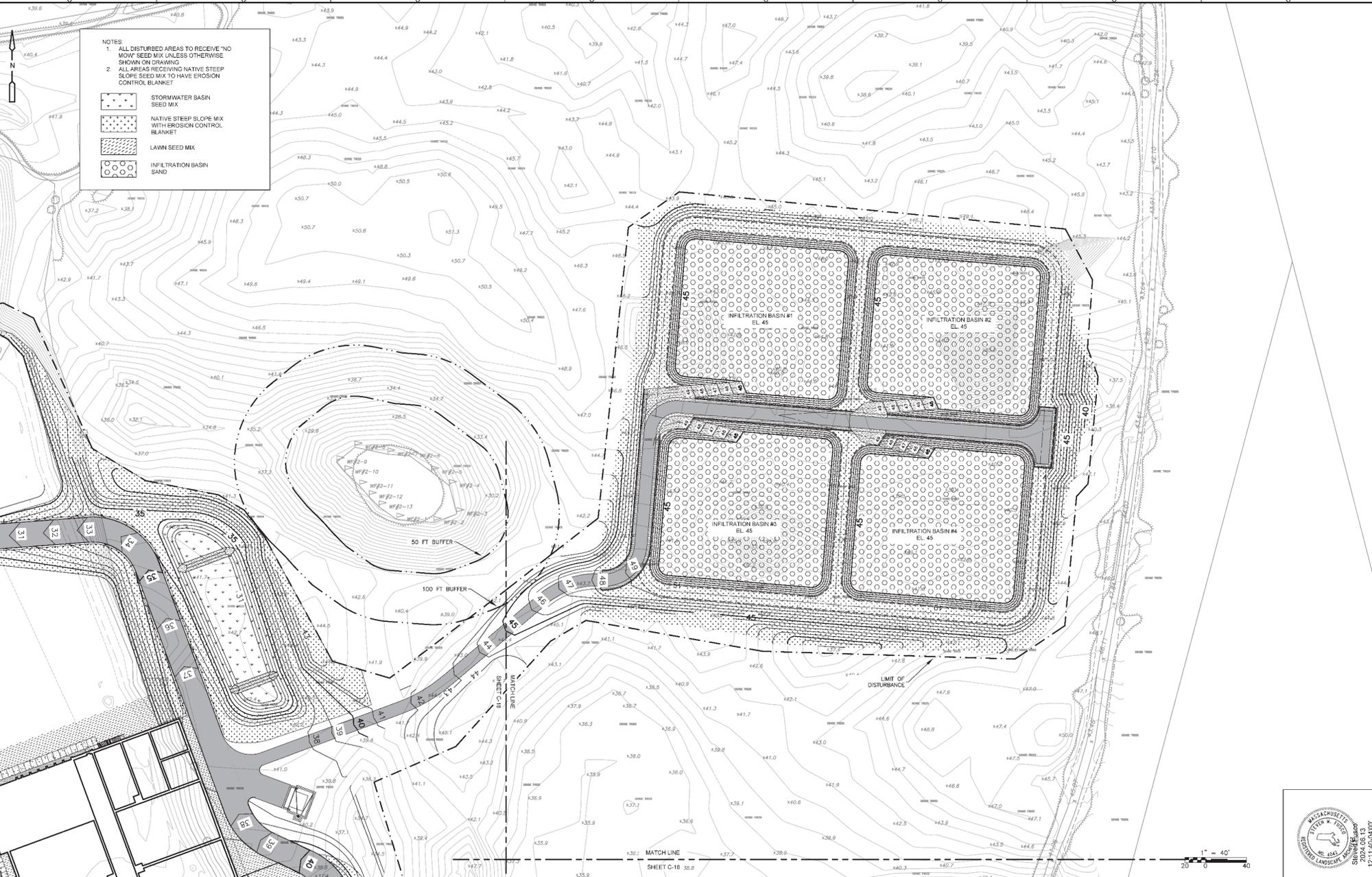
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

SEEDING AND PLANTING PLAN I



PROJECT NO: 141004-277623
 FILE NAME:
 SHEET NO:
C-19
 SHEET 28 OF 330

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NOTES:

- ALL DISTURBED AREAS TO RECEIVE "NO MOW" SEED MIX UNLESS OTHERWISE SHOWN ON DRAWING
- ALL AREAS RECEIVING NATIVE STEEP SLOPE SEED MIX TO HAVE EROSION CONTROL BLANKET

	STORMWATER BASIN SEED MIX
	NATIVE STEEP SLOPE MIX WITH EROSION CONTROL BLANKET
	LAWN SEED MIX
	INFILTRATION BASIN SAND

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: S. FUSCO
 DRAWN BY: S. FUSCO
 SHEET CHECKED BY: D. LOWMID
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024

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 3 Davis Square, Building A Suite A-420
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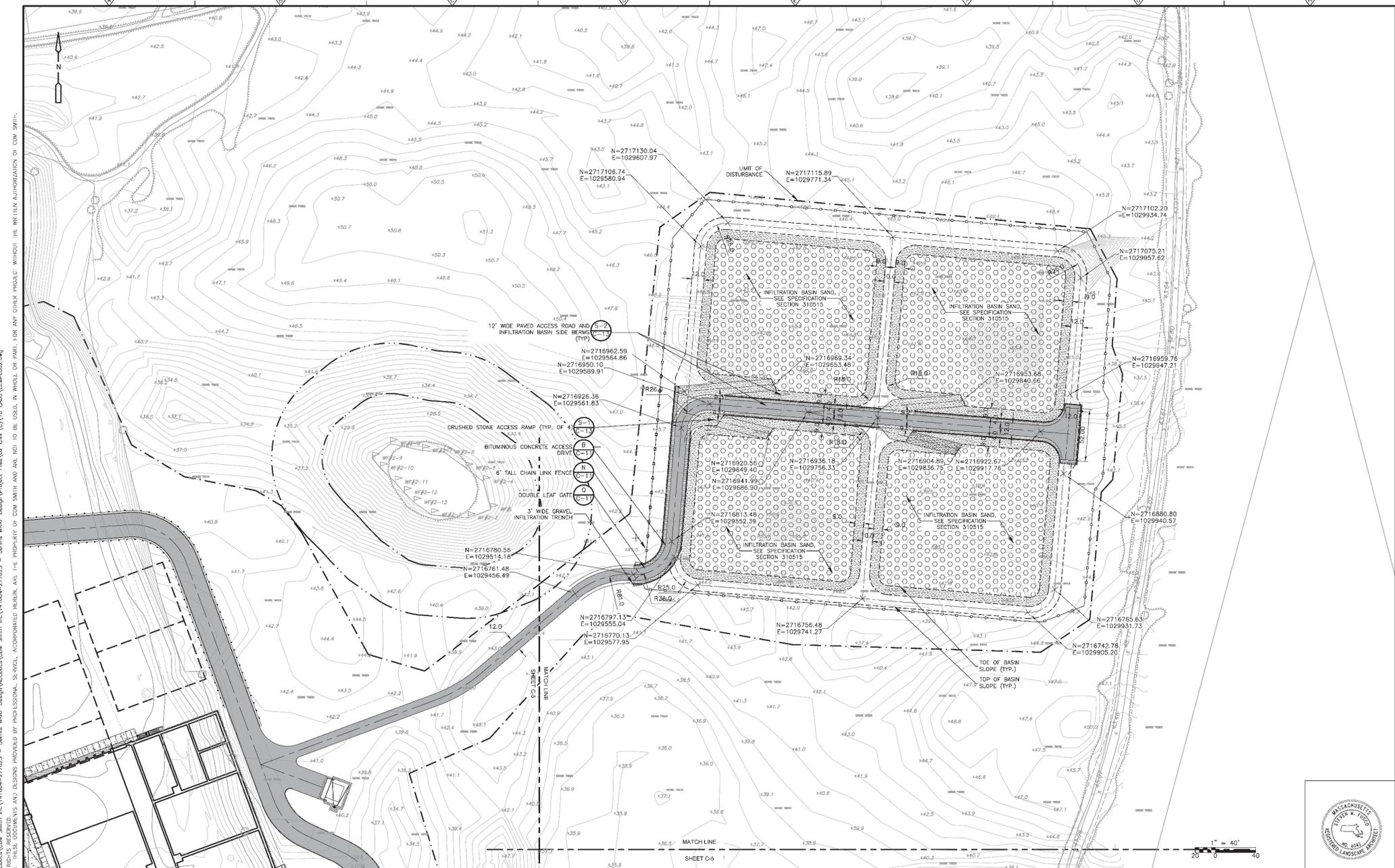
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

SEEDING AND PLANTING PLAN II



PROJECT NO. 141004-27823
 FILE NAME: 11
 SHEET NO.
C-20
 SHEET 29 OF 330





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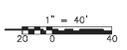
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 DRAWN BY: S. FUSCO
 CHECKED BY: G. HOWARD
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024

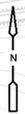


TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

LAYOUT AND MATERIALS PLAN II
 SHEET C-5
 MATCH LINE

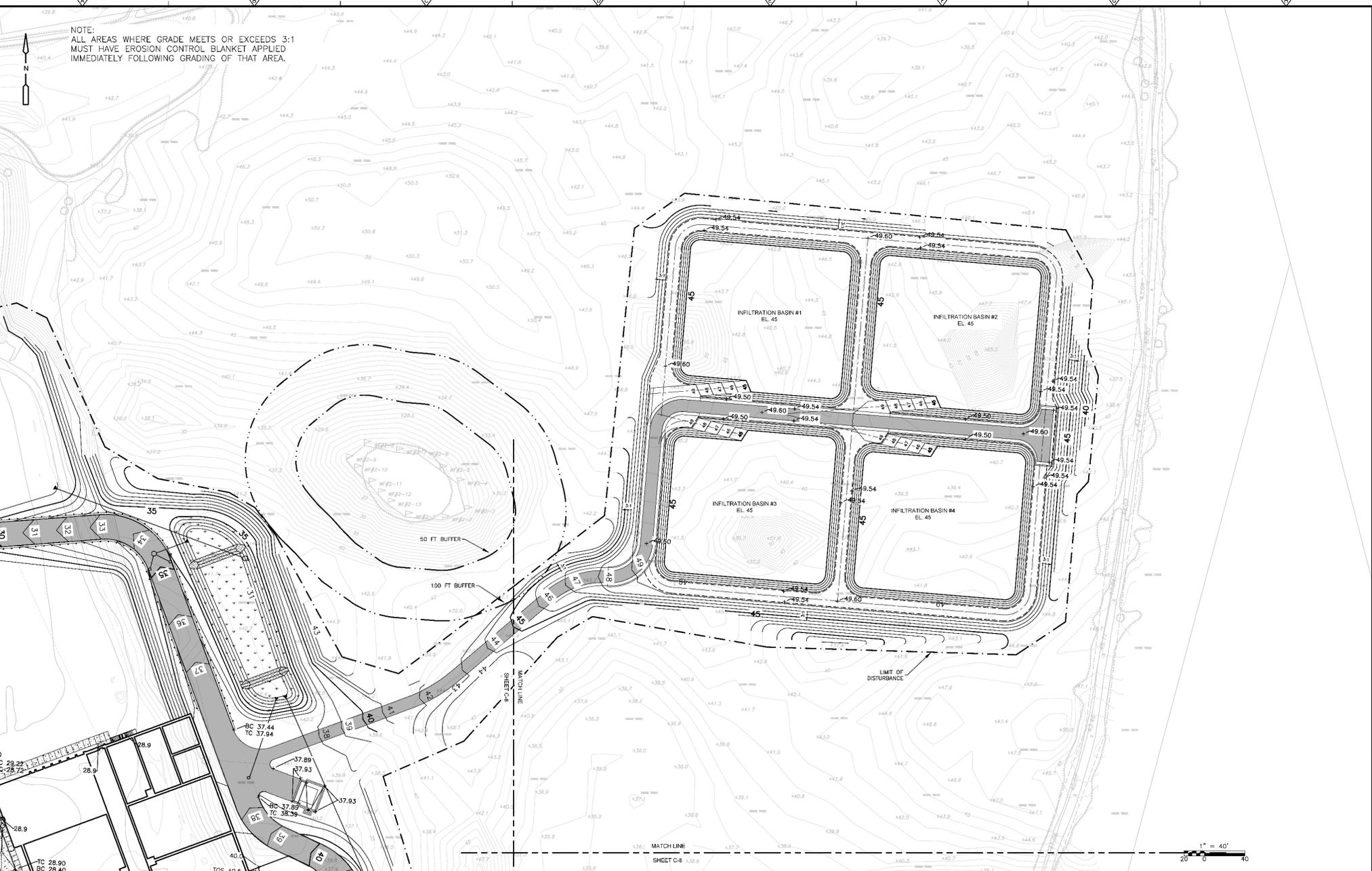
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 FILE NAME:
 SHEET NO:
C-6
 SHEET 15 OF 330





NOTE:
ALL AREAS WHERE GRADE MEETS OR EXCEEDS 3:1
MUST HAVE EROSION CONTROL BLANKET APPLIED
IMMEDIATELY FOLLOWING GRADING OF THAT AREA.

K:\Projects\16676\16676.dwg (S:\Projects\16676\16676.dwg) - Dennis WRF Design\Project Files\16676.dwg (C:\Users\cdsmith\OneDrive\Documents\16676.dwg)
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1				

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 DRAWN BY: S. FUSCO
 SHEET CHECK'D BY: G. HOWARD
 CROSS CHECK'D BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024

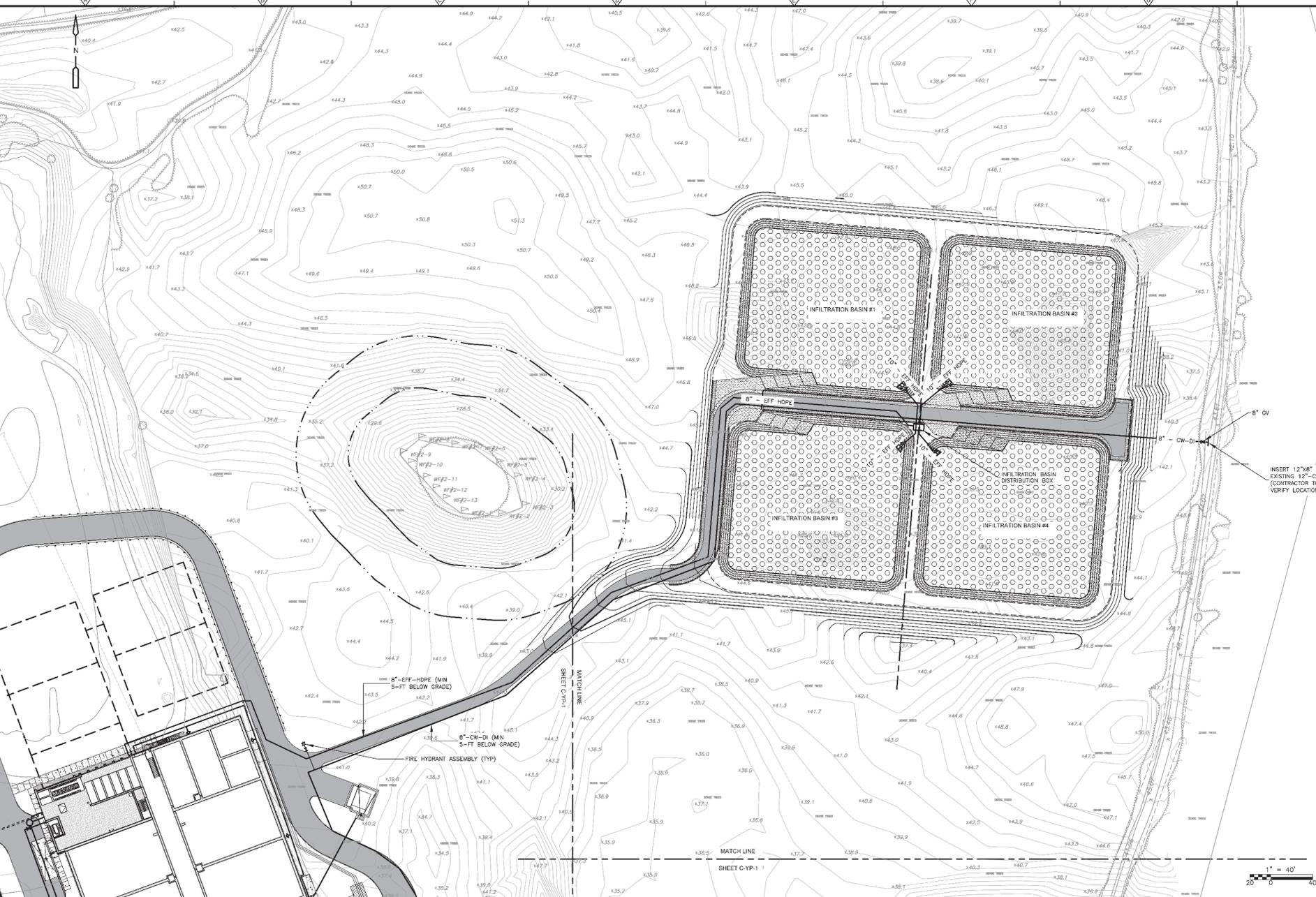


TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

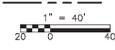
GRADING AND DRAINAGE PLAN II
 SHEET C-9

PROJECT NO. 141004-277823
 FILE NAME: _____
 SHEET NO. C-9

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INSERT 12"x8" TEE ON EXISTING 12"-CW-9" (CONTRACTOR TO FIELD VERIFY LOCATION)



REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: E. SUNDBERG
 DRAWN BY: S. FUGG
 CHECKED BY: G. KOWALSKI
 GROSS C-H'D BY: W. McCONNELL
 APPROVED BY: W. McCONNELL
 DATE: JUNE 2024

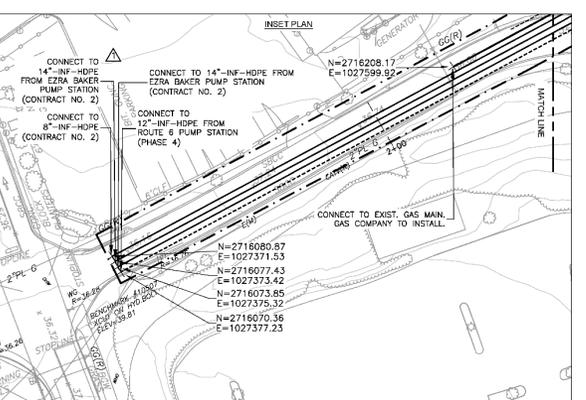
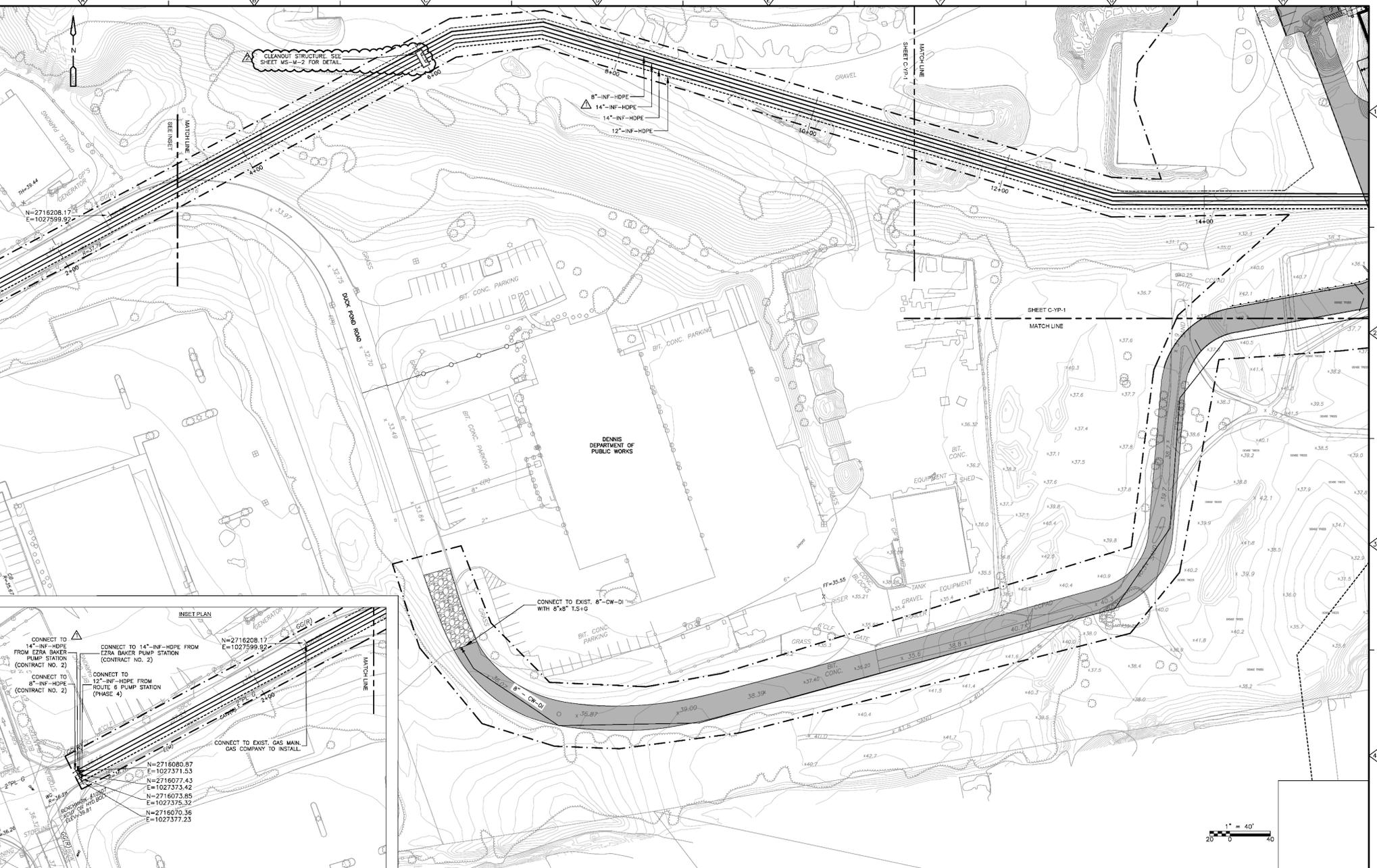


TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITY
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

YARD PIPING PLAN II

PROJECT NO. 141004-277823
 FILE NAME:
 SHEET NO.
C-YP-2
 SHEET 31 OF 330

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REV. NO.	DATE	DRWN	CHKD	REMARKS
2	9/10/24	AW	WV	REVISED PER ADDENDUM NO. 9.
1	8/9/24	AW	WV	REVISED PER ADDENDUM NO. 4.

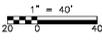
DESIGNED BY: E. SANDBERG
 DRAWN BY: S. FURCO
 SHEET CHECKED BY: C. HOWARD
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: W. MCCONNELL
 DATE: JUNE 2024

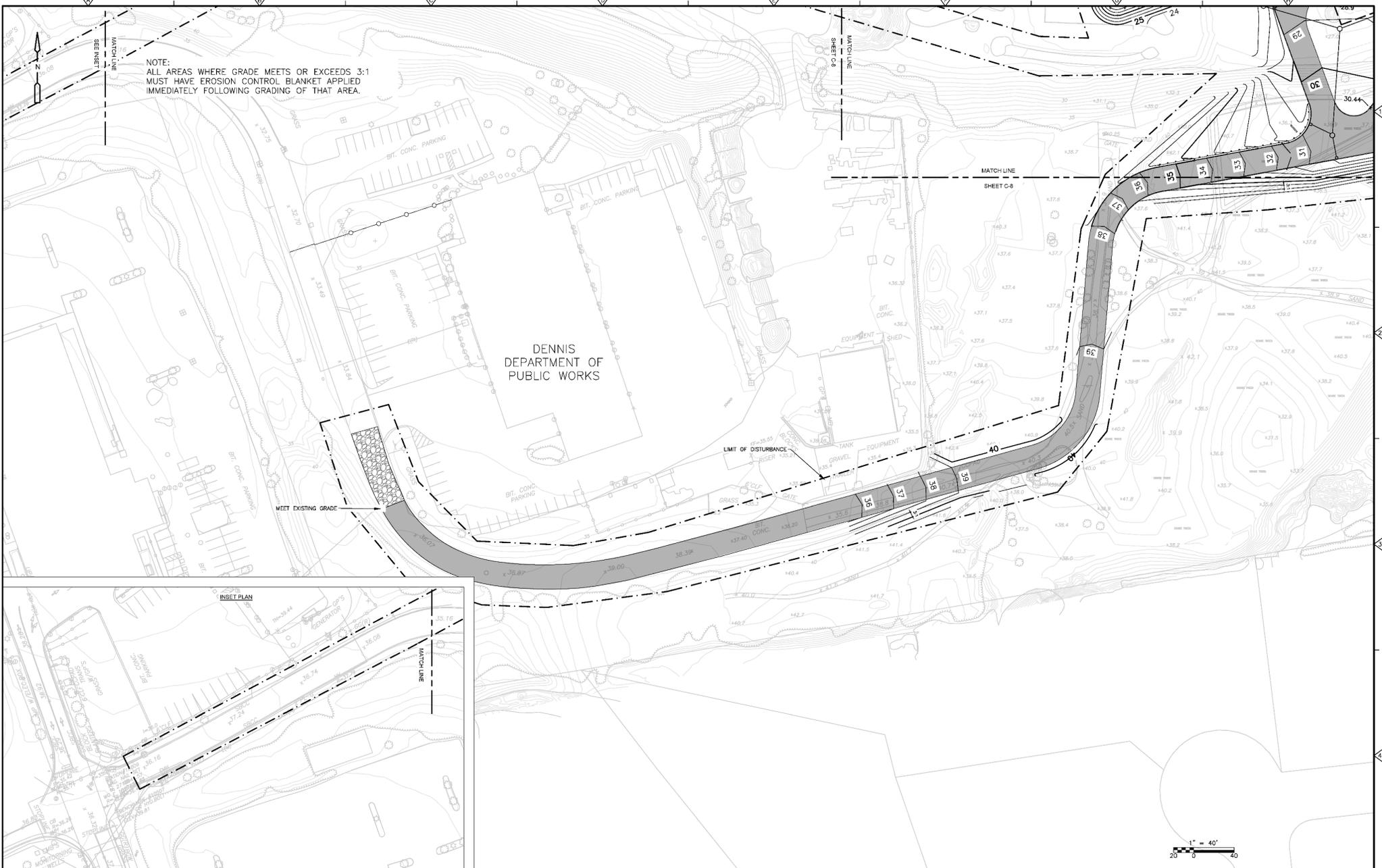
CDM Smith
 37 Court Square, Building A, Suite A-425
 Providence, RI 02903
 Tel: (401) 751-5300

TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

YARD PIPING PLAN III

PROJECT NO. 141004-277823
 FILE NAME: C-YP-3
 SHEET NO. C-YP-3





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NO.	DATE	DRWN	CHKD	REMARKS

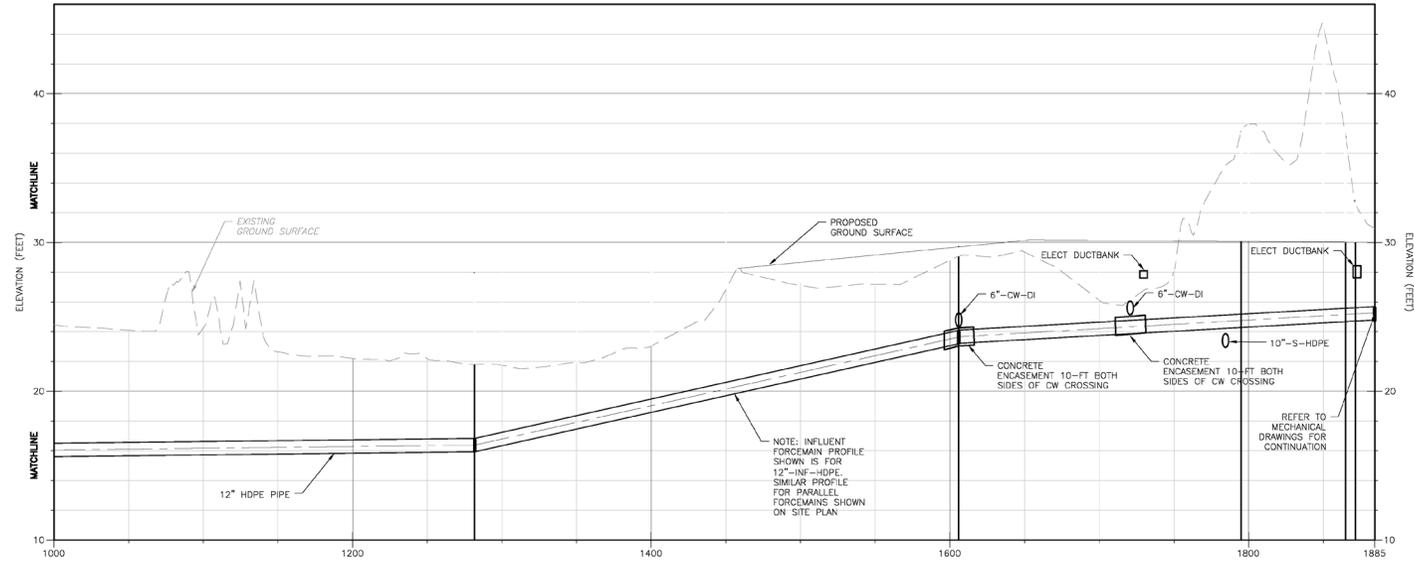
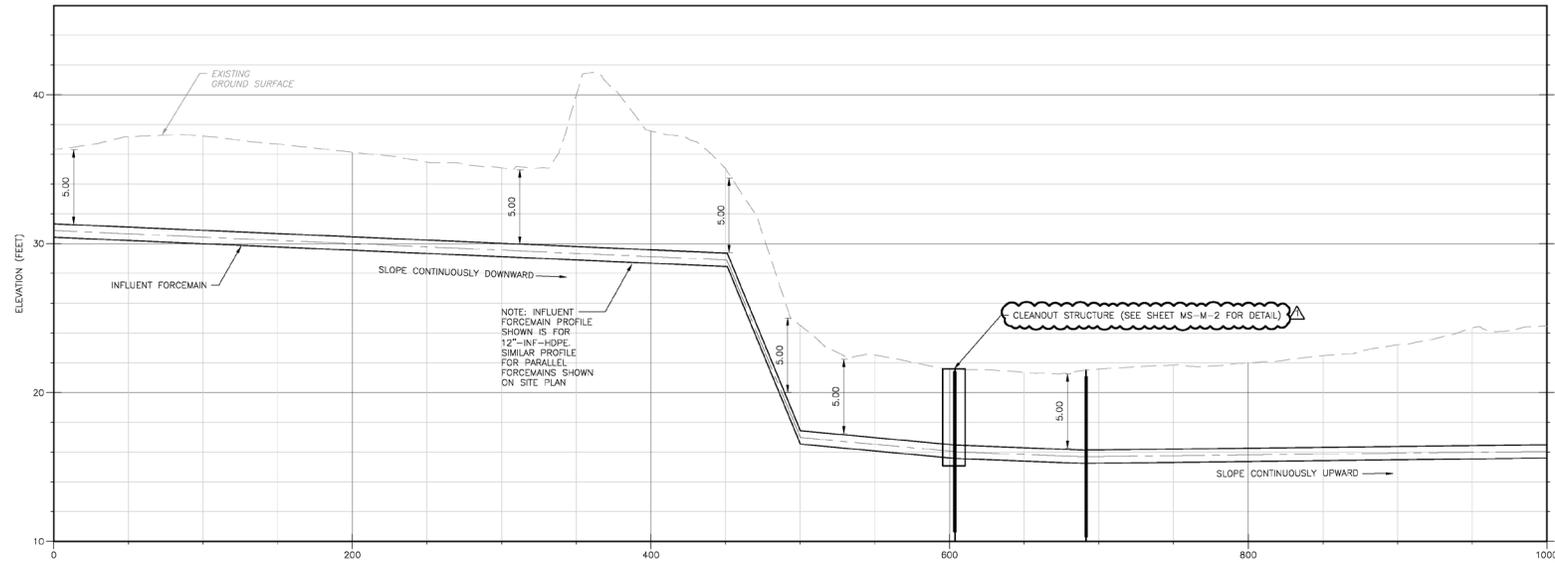
DESIGNED BY: S. FUSCO
 DRAWN BY: S. FUSCO
 SHEET CHECKED BY: G. HOWARD
 CROSS CHECKED BY: W. MCCONNELL
 APPROVED BY: S. FUSCO
 DATE: JUNE 2024



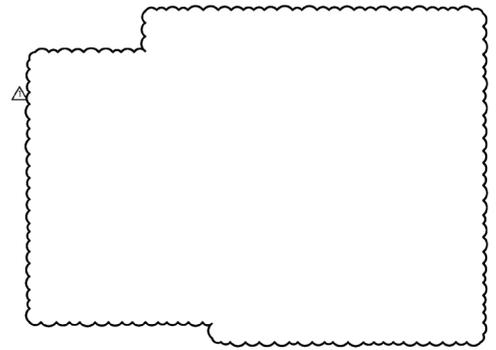
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITY
 WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

GRADING AND DRAINAGE PLAN III

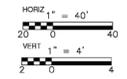
PROJECT NO. 141004-277823
 FILE NAME:
 SHEET NO.
 C-10



PROFILE
SCALE: HORIZ 1"=40'
VERT 1"=4'-0"



- NOTES:**
1. WHEN THE HORIZONTAL SEPARATION BETWEEN THE NEW SEWER AND EXISTING OR RELOCATED WATER MAIN IS LESS THAN 10'-FT, AND THE VERTICAL SEPARATION IS LESS THAN 18-IN, THE NEW SEWER SHALL BE CONSTRUCTED OF RESTRAINED MWDI OR CONCRETE ENCASED PIPE FOR A MINIMUM OF 10'-FT, HORIZONTAL AND 18-IN, VERTICAL.
 2. IF A WATER MAIN CROSSES UNDER THE NEW SEWER, BOTH PIPES SHALL BE DUCTILE IRON OR CONCRETE ENCASED FOR A MINIMUM OF 10'-FT TO EITHER SIDE OF THE RESPECTIVE CENTER LINES. DUCTILE IRON PIPE SHALL BE PAID UNDER THE RESPECTIVE PIPE ITEMS. CONCRETE ENCASEMENT SHALL BE PAID UNDER MISCELLANEOUS CONCRETE ITEM.
 3. WATER MAINS SHALL BE INSTALLED WITH 5 FEET MINIMUM DEPTH OF COVER OVER CROWN OF NEW MAIN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



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REV. NO.	DATE	DRWN	CHKD	REMARKS
1	9/12/24	WM	WM	REVISED PER ADDENDUM NO. 9.

DESIGNED BY: E. SANDERSON
 DRAWN BY: S. LONGSHANE
 SHEET CHECKED BY: W. MCCONNELL
 GROSS CHECKED BY: M. GUIDICE
 APPROVED BY: W. MCCONNELL
 DATE: JUNE 2024

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 3 Davenport Square, Building A, Suite A-425
 Providence, RI 02903
 Tel: (401) 751-0300

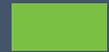
TOWN OF DENNIS, MASSACHUSETTS
 WASTEWATER COLLECTION AND WATER RESOURCE RECOVERY FACILITIES
WATER RESOURCE RECOVERY FACILITY
 PROJECT NO. CWSRF 16676/1

YARD PIPING PROFILES

PROJECT NO. 141004-277853
 FILE NAME: C001YPRP.DWG
 SHEET NO.
C-YP-5



Dennis Wastewater Program



Overview of Implementation Projects for Town Department Heads



Mike Guidice

Ben Mosher

September 7, 2023



Collection System – Typical Pumping Stations



Collection System – Typical Pumping Stations



Dennis Wastewater Implementation Committee

TOWN DEPARTMENTS: The Town's water quality and wastewater planning effort was overseen by the Dennis Wastewater Implementation Committee (WIC), created in 2016. The committee consisted of 10 members; five community volunteers appointed by the Select Board, two members of the Select Board, two members of the Board of Health and one member of the Economic Development Committee. There were six permanent staff assigned to support the Committee. There was a representative from the Town Administrators Office, the Town Engineer, the Health Director, a member of the DPW senior management team, and the Conservation Agent. The Dennis Health Director served as the liaison between town staff and the Committee.

ENGINEERING:

- The following comments have been provided for consideration by the Planning Board as part of the Project Special Review scheduled for May 5, 2025.
- Concept Plans (30% Design) for the Water Resource Recovery Facility were presented by the Design Engineer (CDM Smith) to various Town Departments at a Staff Review Meeting on Sept 7, 2023. Staff comment was provided to the Design Engineer.
- Monthly Design Team meetings, attended by Design Engineer (CDM Smith), Town Consultant (GHD), Dennis Engineering, Public Works and Wastewater were held from 10/2022 through 6/2024 to review project status, and provide comment for use in subsequent levels of design.
- A Town of Dennis Stormwater Management Permit (SWMP) will be required for this project due to the level of site disturbance. Engineering has already reviewed the Stormwater Management Report as part of the project design review and intends to recommend issuance of a SWMP for this project, upon request from the Building Commissioner, as part of the Building Permit.
- The Dennis Engineering Department has provided an extensive level of review and comment to the Design Team throughout the process, and continues to be part of all subsequent phases of the project development and construction. A Pre-Construction meeting, attended by the Design Engineer (CDM Smith), OPM (Apex), General Contractor (MHW), Dennis Engineering, Dennis DPW, Dennis Wastewater, MassDEP, and various sub-contractors was held on February 25, 2025.
- General site preparation per the contract plans and specifications is currently in progress.
- Erosion and sedimentation controls have been established in areas of site preparation. These controls appear to be functioning as intended and are being properly maintained by contractor.

WATER DEPARTMENT:

- The Water District was contacted too late to make comment for this staff report. They have been alerted to the Special Review
- According to the Water District Website: Representatives from the District attended a meeting of the Recharge Site Selection Committee in January 2025. During that meeting, the ranking of sites and locations the town intended to pursue were presented. District representatives had concerns with some missing data. They noted the report highlighted four locations for discharge in order as A, B, C and D, with A identified as meeting the most criteria and being the most favorable, but the Town intends to move forward with Site C.
- Site C, on the corner of Bob Crowell Road and Old Bass River Road, is of major concern to the Water District due to its proximity to the wells at the Main Station and Well 5. The District states the site needs to be intensely studied in order to understand what impacts this discharge may have on water quality, decreased pumping capacity or the possible abandonment of Well 5.

PLANNING:

- Now that the WRRF is being built and a significant section of Town will be served by sewer in the coming years,
- The Local Comprehensive Plan (LCP) is scheduled to be updated. The Planning Board and Department, the LCP consultants and working group, need to review the buildout scenarios and consider how that will affect
 - permit application requests for increased density, and
 - impact land use, open space, traffic, development and community character.
- According to the CWMP in §7.4, the study incorporated several Economic Growth Districts including the Exit 9 Growth District (aka MFHO/GIZ);
 - However, the map showing the first area for collection and conveyance does not include the largest parcels under consideration for the Growth Incentive Zone/Multi-Family Housing/Mixed-Use District south of Theophilus Smith Road.
 - These parcels should be added to the Phase 1 Collection and Conveyance map.
 - Furthermore, the area the Planning Board is looking at for a Mixed-use Growth Incentive “Smart Growth” Zone; because of its proximity to services, infrastructure, transportation and already being disturbed; is also land the WRRF is looking at for recharge of treated effluent.
- According to the CWMP in §8.4 Buildout Water Usage “...The buildout information used for the MEP reports was developed through collaboration and consultation with the Dennis Town Planner. Based on a meeting with the Town Planner in 2014...”. The WRRF should describe the Buildout Scenarios.
- The WRRF is already being constructed. It has been years in the planning. The Planning Board should be kept apprised of the effluent recharge site selection process.
- Given that the Site Selection for Recharge needs more area now and will need much more area over time, the Town should consider alternative, more ecologically sensitive ways to further treat the effluent in a smaller area.
- The WRRF and the Town should consider that the municipality has many goals and interests that are often competing with one another. The highest and best use of land should be considered in light of the multiple interests and goals and not simply the expedient necessity of a single large interest.