



Massachusetts Department of Environmental Protection

Bureau of Resource Protection - Wetlands

WPA Form 3 - Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:1993245
City/Town:MONTAGUE

A.General Information

1. Project Location:

a. Street Address	1 MIGRATORY WAY	c. Zip Code	01376
b. City/Town	MONTAGUE	e. Longitude	72.34324W
d. Latitude	42.35323N	g.Parcel/Lot #	08-0-31
f. Map/Plat #	TUNERS FALLS		

2. Applicant:

Individual Organization

a. First Name		b.Last Name	
c. Organization	US GEOLOGICAL SURVEY		
d. Mailing Address	1 MIGRATORY WAY		
e. City/Town	MONTAGUE	f. State	MA
g. Zip Code			01376
h. Phone Number		i. Fax	
		j. Email	

3.Property Owner:

more than one owner

a. First Name		b. Last Name	
c. Organization	CONTE ANADRAMOUS FISH RESEARCH LABORATORY (CAFRL)		
d. Mailing Address	1 MIGRATORY WAY		
e. City/Town	MONTAGUE	f.State	MA
g. Zip Code			01376
h. Phone Number	405-778-1865	i. Fax	
		j.Email	Bradley.Stumph@chloeta.com

4.Representative:

a. First Name	BRADLEY	b. Last Name	STUMPH
c. Organization	CHLOETA		
d. Mailing Address	701 CEDAR LAKE BLVD		
e. City/Town	OKLAHOMA CITY	f. State	OK
g. Zip Code			73114
h.Phone Number	405-778-1865	i.Fax	
		j.Email	Bradley.Stumph@chloeta.com

5.Total WPA Fee Paid (Automatically inserted from NOI Wetland Fee Transmittal Form):

a.Total Fee Paid	500.00	b.State Fee Paid	237.50	c.City/Town Fee Paid	262.50
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6.General Project Description:

APPROXIMATELY 4,500' - 5,000' OF SMALL DIAMETER FORCE MAIN WILL BE INSTALLED TO CONNECT CAFRL TO THE MUNICIPAL WASTEWATER SYSTEM. THE NEW LINE WILL BE INSTALLED USING HORIZONTAL DIRECTIONAL DRILLING (HDD) TECHNIQUES WITH EXCAVATION AND TRENCHING LIMITED TO ENTRY AND EXIT POINTS AS NEEDED. A PUMP STATION WILL BE INSTALLED AT THE CAFRL FACILITY.

7a.Project Type:

- | | |
|---|--|
| 1. <input type="checkbox"/> Single Family Home | 2. <input type="checkbox"/> Residential Subdivision |
| 3. <input type="checkbox"/> Limited Project Driveway Crossing | 4. <input type="checkbox"/> Commercial/Industrial |
| 5. <input type="checkbox"/> Dock/Pier | 6. <input checked="" type="checkbox"/> Utilities |
| 7. <input type="checkbox"/> Coastal Engineering Structure | 8. <input type="checkbox"/> Agriculture (eg., cranberries, forestry) |
| 9. <input type="checkbox"/> Transportation | 10. <input type="checkbox"/> Other |



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7b. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. Yes No If yes, describe which limited project applies to this project:
2. Limited Project 310 CMR 10.53(3)(D) - CONSTRUCTION OF UNDERGROUND SEWER LINE

8. Property recorded at the Registry of Deeds for:

a. County: FRANKLIN **b. Certificate:** **c. Book:** **d. Page:**

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. Buffer Zone & Resource Area Impacts (temporary & permanent):

This is a Buffer Zone only project - Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.

2. Inland Resource Areas: (See 310 CMR 10.54 - 10.58, if not applicable, go to Section B.3. Coastal Resource Areas)

Resource Area Size of Proposed Alteration Proposed Replacement (if any)

a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input checked="" type="checkbox"/> Bordering Vegetated Wetland	0	0
	1. square feet	2. square feet
c. <input type="checkbox"/> Land under Waterbodies and Waterways	1. Square feet	2. square feet
	3. cubic yards dredged	
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced

f. Riverfront Area

1. Name of Waterway (if any)
2. Width of Riverfront Area (check one)
 - 25 ft. - Designated Densely Developed Areas only
 - 100 ft. - New agricultural projects only
 - 200 ft. - All other projects
3. Total area of Riverfront Area on the site of the proposed project
square feet

4. Proposed Alteration of the Riverfront Area:

- a. total square feet b. square feet within 100 ft. c. square feet between 100 ft.



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and 200 ft.

5. Has an alternatives analysis been done and is it attached to this NOI? Yes No

6. Was the lot where the activity is proposed created prior to August 1, 1996? Yes No

3.Coastal Resource Areas: (See 310 CMR 10.25 - 10.35)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Designated Port Areas	Indicate size under	Land under the ocean below,
b. <input type="checkbox"/> Land Under the Ocean	1. square feet	
	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes, below	
d. <input type="checkbox"/> Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	1. square feet	2. cubic yards dune nourishment
f. <input type="checkbox"/> Coastal Banks	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	1. square feet	
h. <input type="checkbox"/> Salt Marshes	1. square feet	2. sq ft restoration, rehab, crea.
i. <input type="checkbox"/> Land Under Salt Ponds	1. square feet	
	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged	
l. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	1. square feet	

4.Restoration/Enhancement

Restoration/Replacement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please entered the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5.Projects Involves Stream Crossings



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Project Involves Streams Crossings

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage of Endangered Species program (NHESP)?

a. Yes No

If yes, include proof of mailing or hand delivery of NOI to:
Natural Heritage and Endangered Species
Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

b. Date of map:FROM MAP VIEWER

If yes, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18)...

c. Submit Supplemental Information for Endangered Species Review * (Check boxes as they apply)

1. Percentage/acreage of property to be altered:

(a) within Wetland Resource Area

percentage/acreage

(b) outside Resource Area

percentage/acreage

2. Assessor's Map or right-of-way plan of site

3. Project plans for entire project site, including wetland resource areas and areas outside of wetland jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

a. Project description (including description of impacts outside of wetland resource area & buffer zone)

b. Photographs representative of the site

c. MESA filing fee (fee information available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html>)

Make check payable to "Natural Heritage & Endangered Species Fund" and **mail to NHESP** at above address

Projects altering 10 or more acres of land, also submit:

d. Vegetation cover type map of site

e. Project plans showing Priority & Estimated Habitat boundaries

d. OR Check One of the following

1. Project is exempt from MESA review. Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, <http://www.mass.gov/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14>; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. Separate MESA review ongoing.

a. NHESP Tracking Number



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b. Date submitted to NHESP

3. Separate MESA review completed.

Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review...

2. For coastal projects only, is any portion of the proposed project located below the mean high waterline or in a fish run?

a. Not applicable - project is in inland resource area only

b. Yes No

If yes, include proof of mailing or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 S. Rodney French Blvd
New Bedford, MA 02744

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

If yes, it may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office.

For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional office.

3. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. Yes No

If yes, provide name of ACEC (see instructions to WPA Form 3 or DEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC Name

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. Yes No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L.c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L.c. 130, § 105)?

a. Yes No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. Yes, Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol.2, Chapter 3)

2. A portion of the site constitutes redevelopment

3. Proprietary BMPs are included in the Stormwater Management System

b. No, Explain why the project is exempt:

1. Single Family Home



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- 2. Emergency Road Repair
- 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department by regular mail delivery.

- 1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
- 2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.
- 3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s). Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
- 4. List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title: b. Plan Prepared By: c. Plan Signed/Stamped By: c. Revised Final Date: e. Scale:

NEW FORCE MAIN
SEWER AT THE
SILVIO O. CONTE
FISH RESEARCH
LABORATORY FINAL
CONSTRUCTION
DOCUMENTS

JESSE M. LINDSAY

October 4, 2024

- 5. If there is more than one property owner, please attach a list of these property owners not listed on this form.
- 6. Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
- 7. Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
- 8. Attach NOI Wetland Fee Transmittal Form.
- 9. Attach Stormwater Report, if needed.
-



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E. Fees

- 1. Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

_____	_____
2. Municipal Check Number	3. Check date
_____	_____
4. State Check Number	5. Check date
_____	_____
6. Payer name on check: First Name	7. Payer name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

_____	_____
1. Signature of Applicant	2. Date
_____	_____
3. Signature of Property Owner(if different)	4. Date
Bradley Stumph	2/26/2026
_____	_____
5. Signature of Representative (if any)	6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a copy of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in Section C, Items 1-3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 3 - Notice of Wetland Fee Transmittal
Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 MassDEP File #:
 eDEP Transaction #:1993245
 City/Town:MONTAGUE

A. Applicant Information

1. Applicant:

a. First Name		b. Last Name	
c. Organization	US GEOLOGICAL SURVEY		
d. Mailing Address	1 MIGRATORY WAY		
e. City/Town	MONTAGUE	f. State	MA
		g. Zip Code	01376
h. Phone Number		i. Fax	
		j. Email	

2. Property Owner:(if different)

a. First Name		b. Last Name	
c. Organization	CONTE ANADRAMOUS FISH RESEARCH LABORATORY (CAFRL)		
d. Mailing Address	1 MIGRATORY WAY		
e. City/Town	MONTAGUE	f.State	MA
		g. Zip Code	01376
h. Phone Number	4057781865	i. Fax	
		j.Email	Bradley.Stumph@chloeta.com

3. Project Location:

a. Street Address	1 MIGRATORY WAY	b. City/Town	MONTAGUE
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Are you exempted from Fee? (YOU HAVE SELECTED 'NO')

Note: Fee will be exempted if you are one of the following:

- City/Town/County/District
- Municipal Housing Authority
- Indian Tribe Housing Authority
- MBTA

State agencies are only exempt if the fee is less than \$100

B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
E.) INLAND LIMITED PROJECTS MINUS ROAD CROSSINGS AND AGRICULTURE;	1	500.00		500.00

City/Town share of filing fee	State share of filing fee	Total Project Fee
\$262.50	\$237.50	\$500.00

CONSULTANTS:



STAMP:



PROJECT:



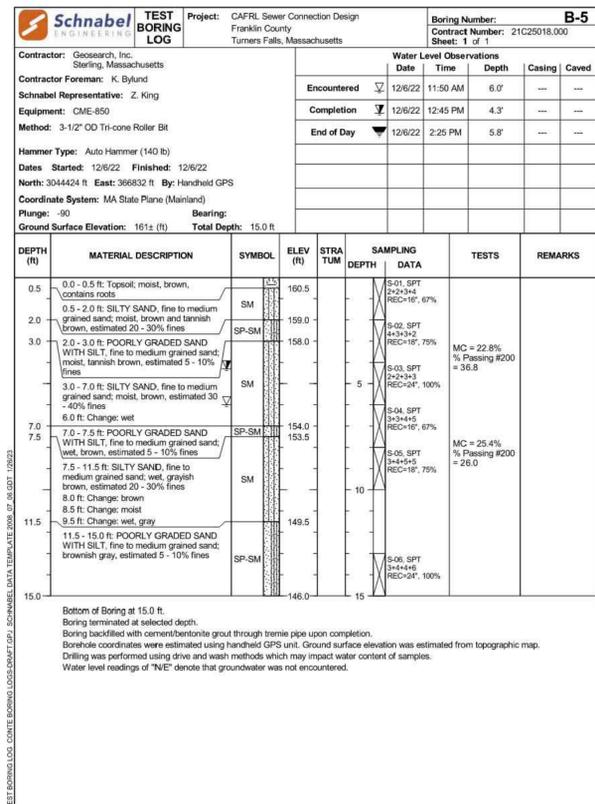
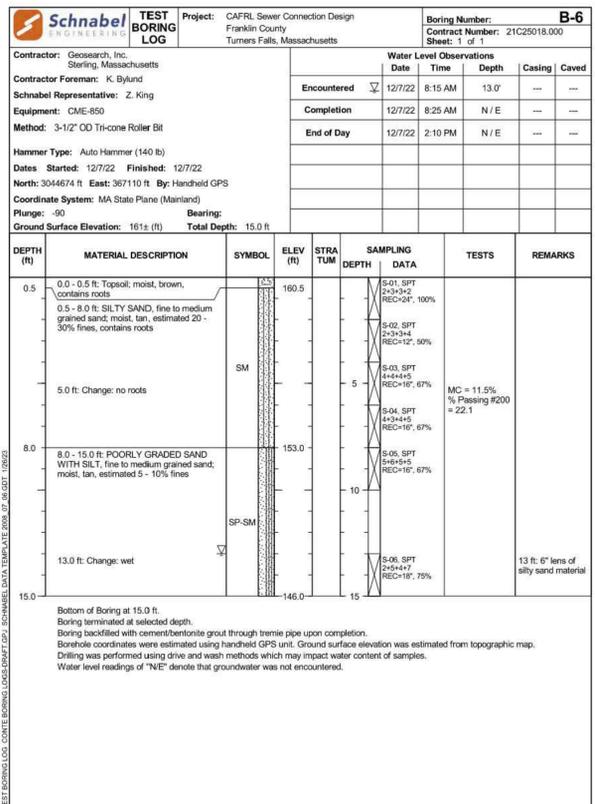
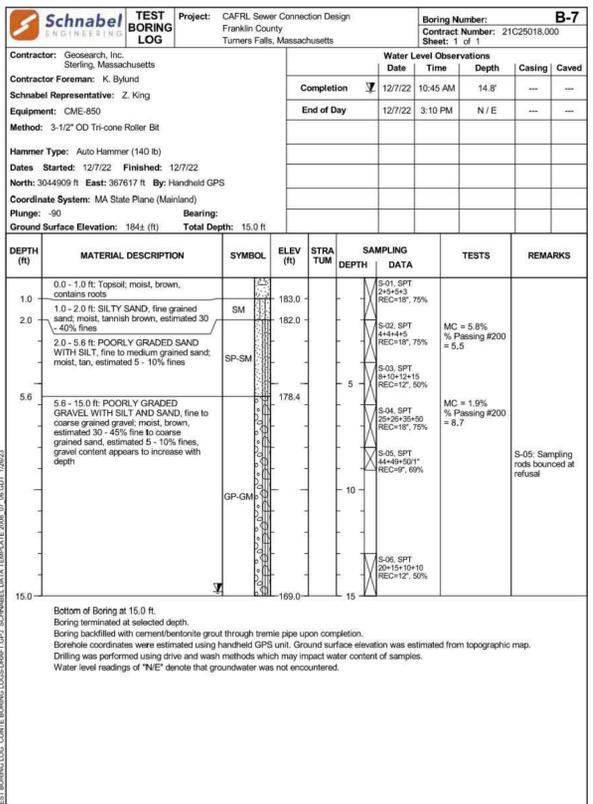
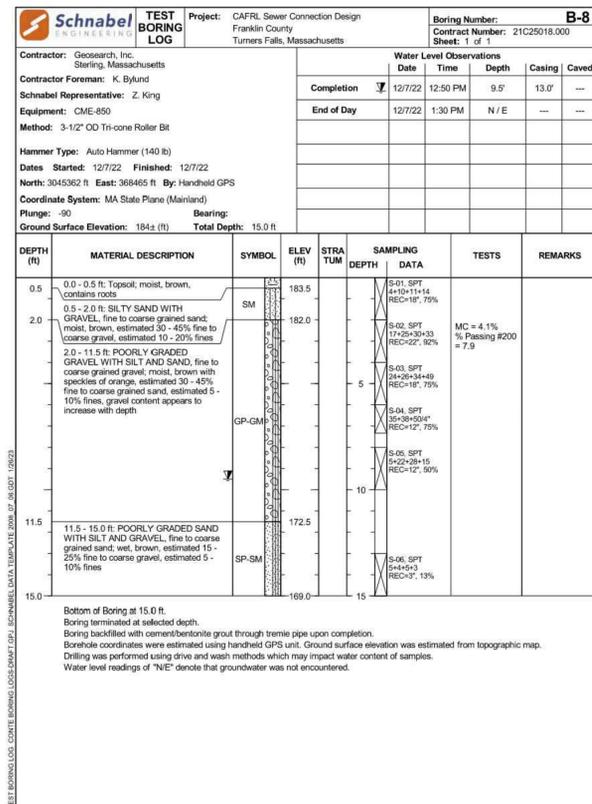
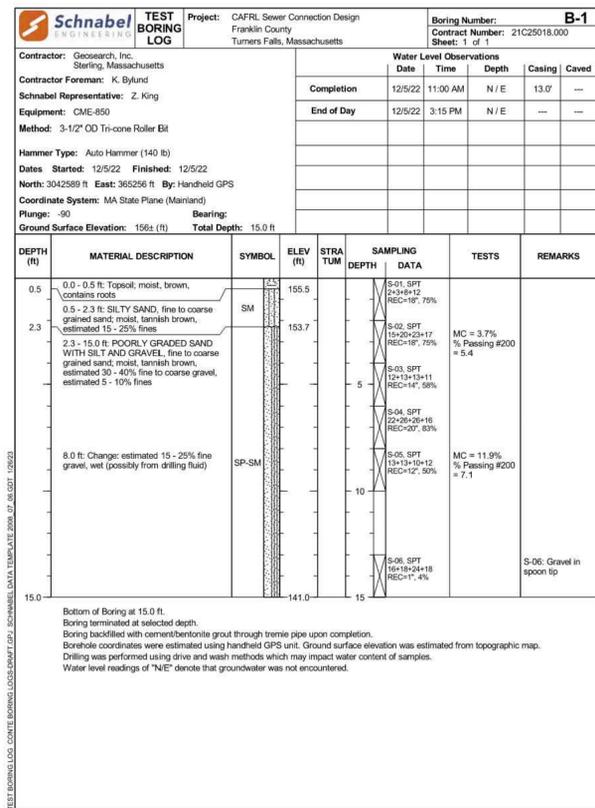
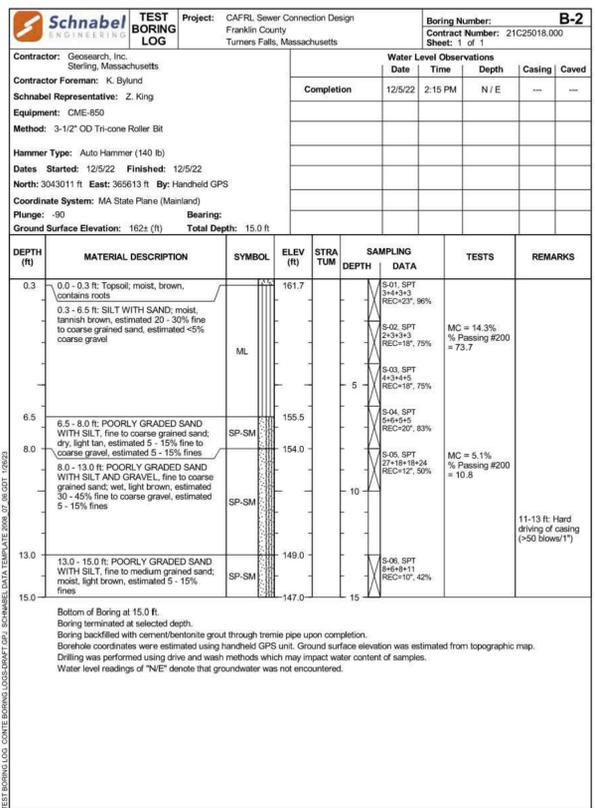
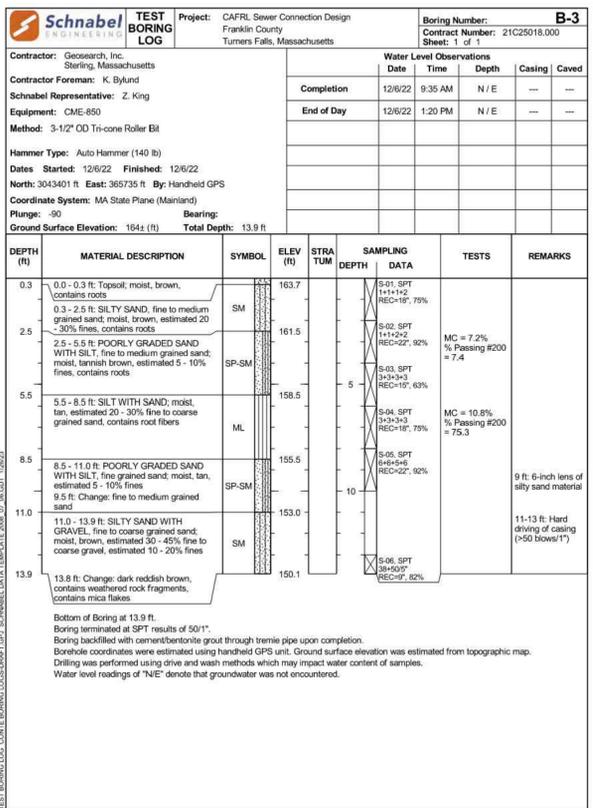
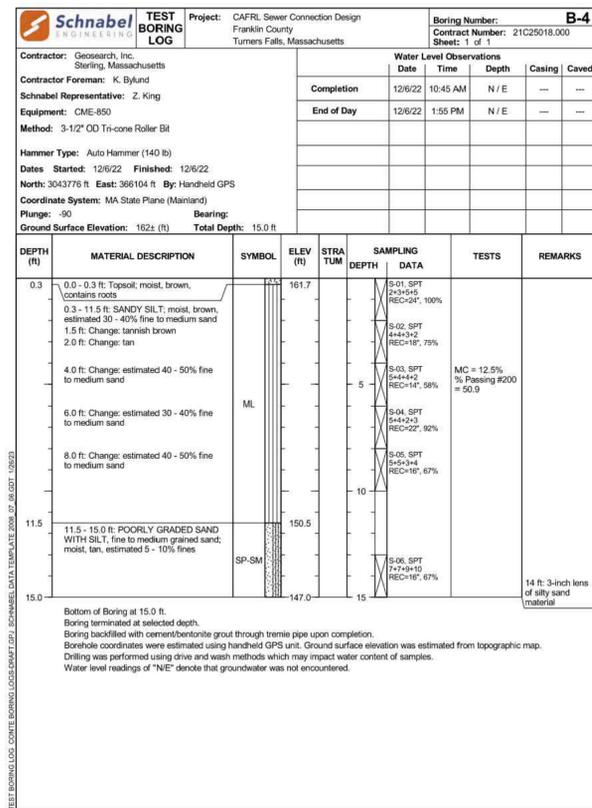
**NEW FORCE MAIN SEWER
SILVIO O. CONTE FISH
RESEARCH LABORATORY
ONE MIGRATORY WAY
TURNERS FALLS, MA 01376**

MARK	DATE	DESCRIPTION
-	-	FCD
ISSUE: FINAL CONSTRUCTION DOCUMENTS		
PROJECT NO: 18905.003		
DATE: 10-04-2024		
DRAWN BY: HH		
CHECKED BY: JML		

SHEET TITLE

BORING LOGS

C001



CONSULTANTS:



STAMP:



PROJECT:



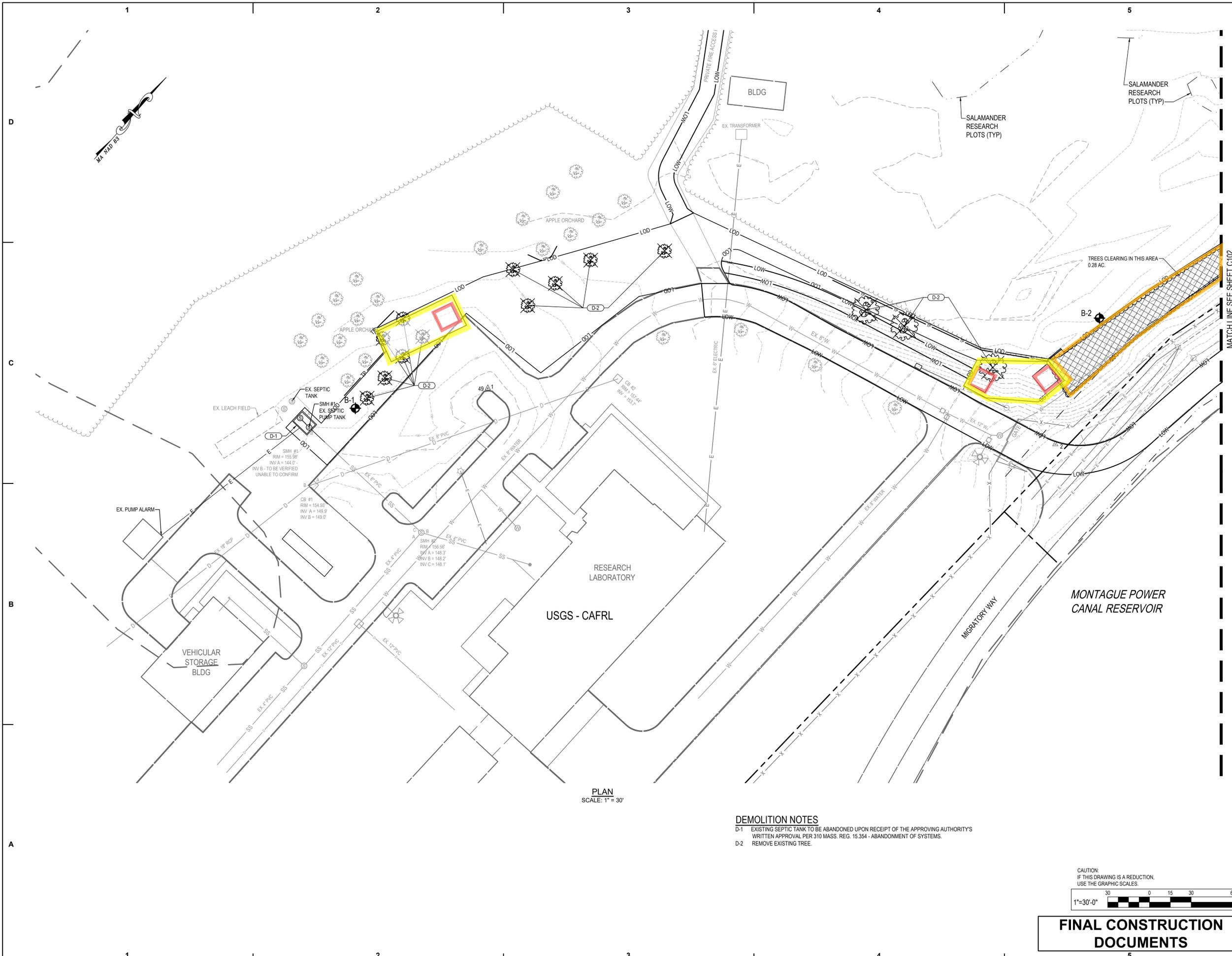
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SHEET TITLE

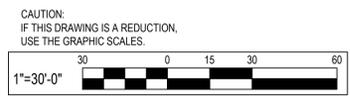
EXISTING CONDITIONS AND
 DEMOLITION PLAN

C101

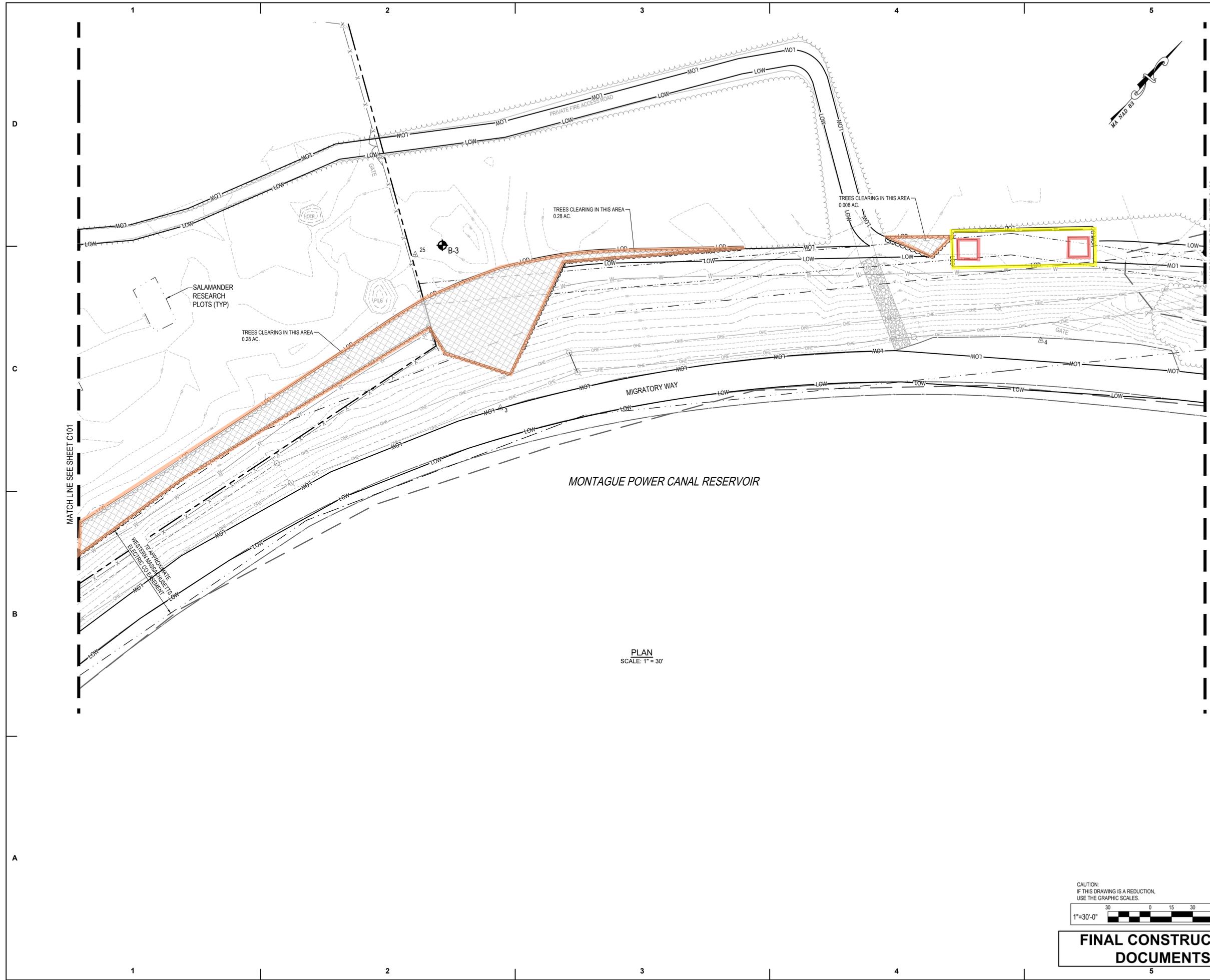


PLAN
 SCALE: 1" = 30'

DEMOLITION NOTES
 D-1 EXISTING SEPTIC TANK TO BE ABANDONED UPON RECEIPT OF THE APPROVING AUTHORITY'S WRITTEN APPROVAL PER 310 MASS. REG. 15.354 - ABANDONMENT OF SYSTEMS.
 D-2 REMOVE EXISTING TREE.



FINAL CONSTRUCTION DOCUMENTS



EBL
ENGINEERS
ESTABLISHED 1972
Mechanical - Electrical - Fire Protection
8005 Harford Road
Baltimore, Maryland 21234-5701
Tel: (410) 668-8000
E-mail: ebl@eblengineers.com

CONSULTANTS:

300 East Joppa Road Suite 200
Baltimore, MD 21286
410.512.4500 www.transystems.com

GANNETT FLEMING | **TRANSYSTEMS**

STAMP:

PROJECT:

USGS
science for a changing world

**NEW FORCE MAIN SEWER
SILVIO O. CONTE FISH
RESEARCH LABORATORY
ONE MIGRATORY WAY
TURNERS FALLS, MA 01376**

		FCD
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CHECKED BY:		JML

SHEET TITLE

EXISTING CONDITIONS AND
DEMOLITION PLAN

C102

CAUTION:
IF THIS DRAWING IS A REDUCTION,
USE THE GRAPHIC SCALES.

1"=30'-0"

**FINAL CONSTRUCTION
DOCUMENTS**



ESTABLISHED 1972

Mechanical - Electrical - Fire Protection

8005 Harford Road
Baltimore, Maryland 21234-5701
Tel: (410) 668-8000
E-mail: ebl@eblengineers.com

CONSULTANTS:



STAMP:



PROJECT:



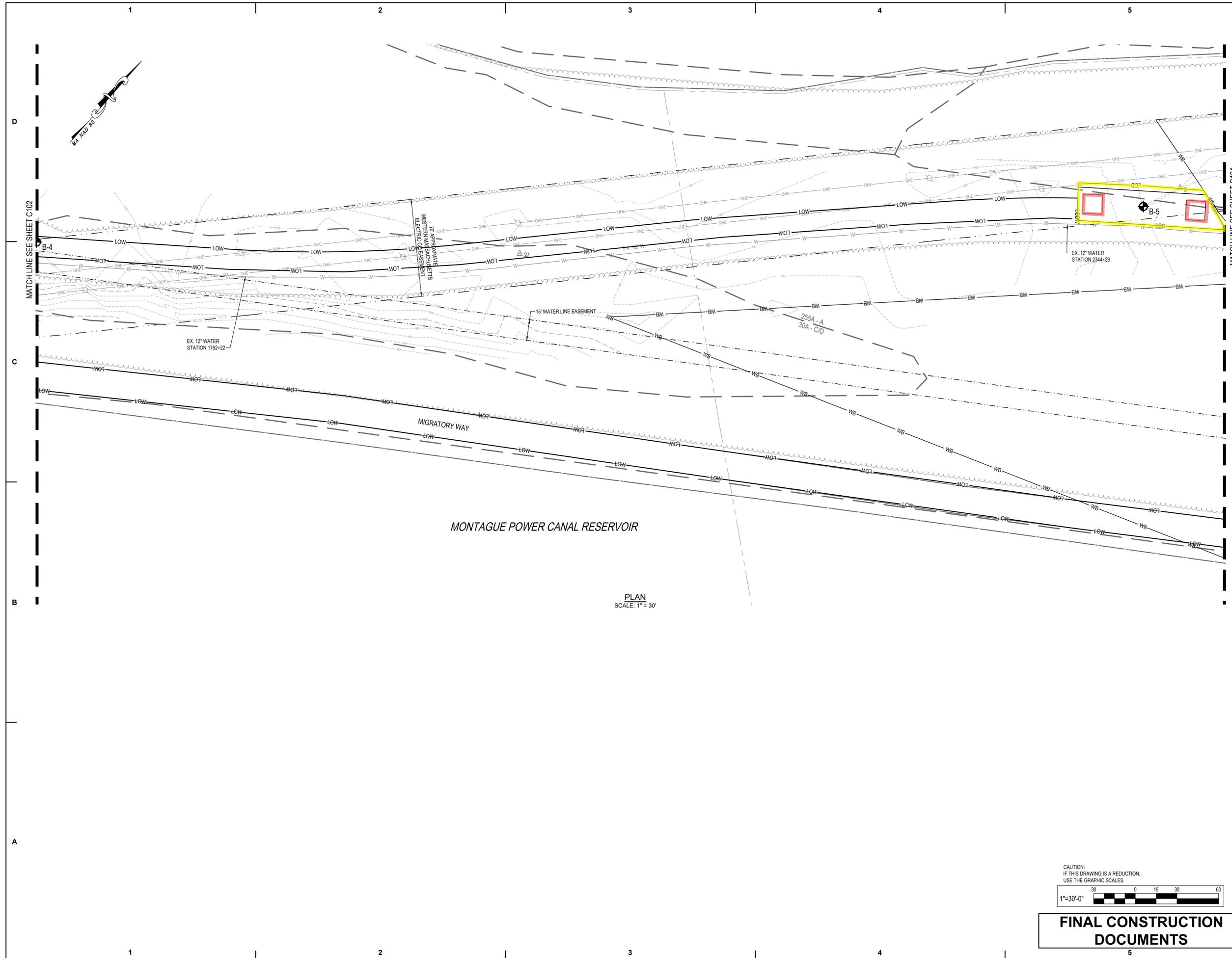
NEW FORCE MAIN SEWER
SILVIO O. CONTE FISH
RESEARCH LABORATORY
ONE MIGRATORY WAY
TURNERS FALLS, MA 01376

MARK	DATE	DESCRIPTION
-	-	FCD
ISSUE: FINAL CONSTRUCTION DOCUMENTS		
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CHECKED BY:		JML

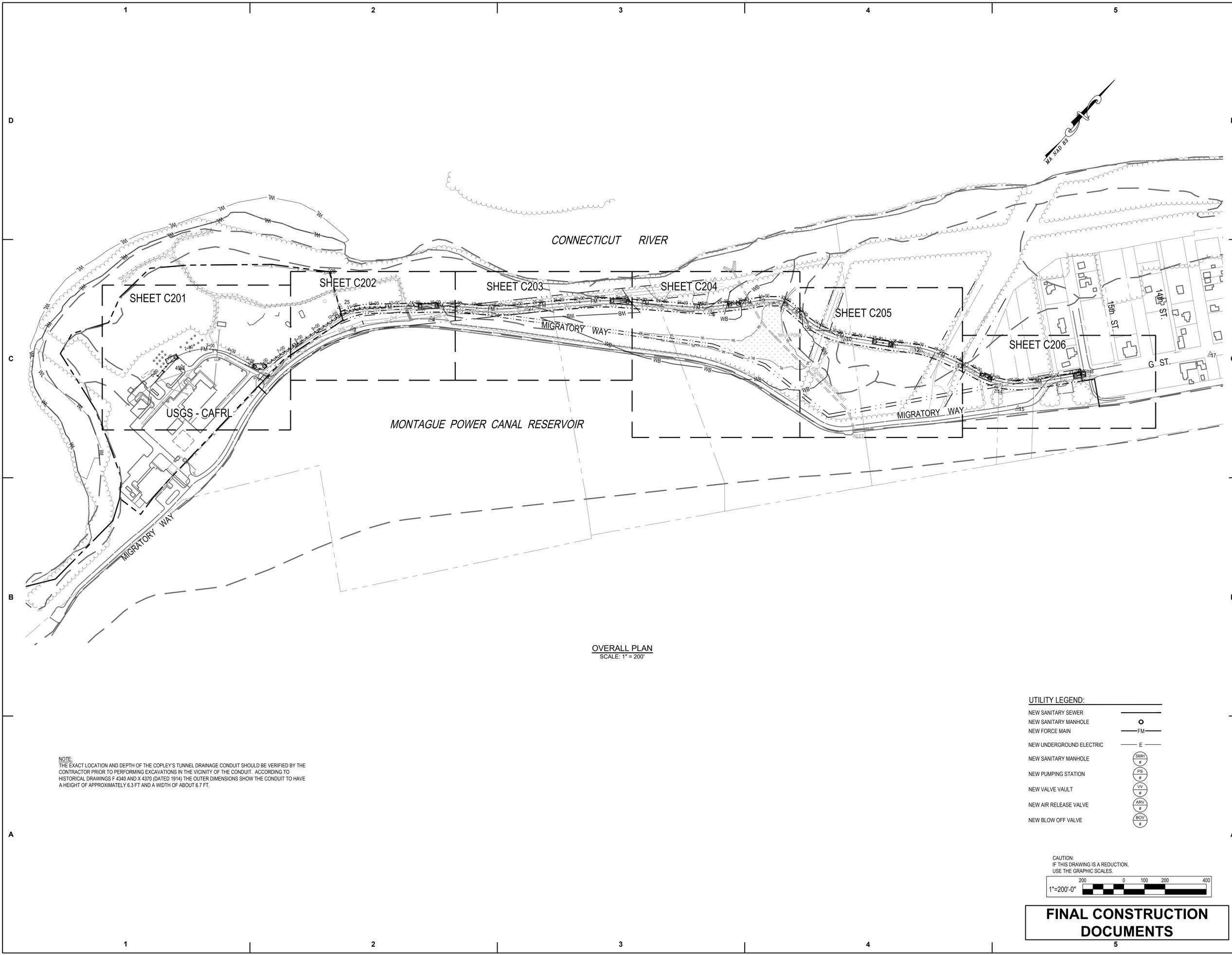
SHEET TITLE

EXISTING CONDITIONS AND
DEMOLITION PLAN

C103



MARK	DATE	DESCRIPTION
-	-	FCD
ISSUE: FINAL CONSTRUCTION DOCUMENTS		
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DRAWN BY:	HH	
CHECKED BY:	JML	

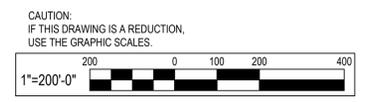


OVERALL PLAN
 SCALE: 1" = 200'

NOTE:
 THE EXACT LOCATION AND DEPTH OF THE COPLEY'S TUNNEL DRAINAGE CONDUIT SHOULD BE VERIFIED BY THE CONTRACTOR PRIOR TO PERFORMING EXCAVATIONS IN THE VICINITY OF THE CONDUIT. ACCORDING TO HISTORICAL DRAWINGS F 4340 AND X 4370 (DATED 1914) THE OUTER DIMENSIONS SHOW THE CONDUIT TO HAVE A HEIGHT OF APPROXIMATELY 6.3 FT AND A WIDTH OF ABOUT 6.7 FT.

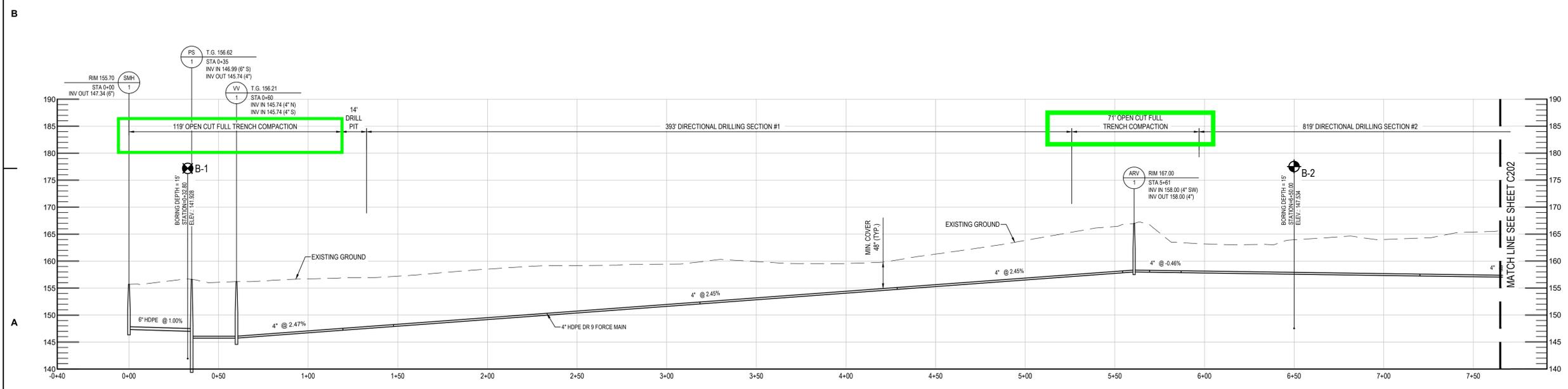
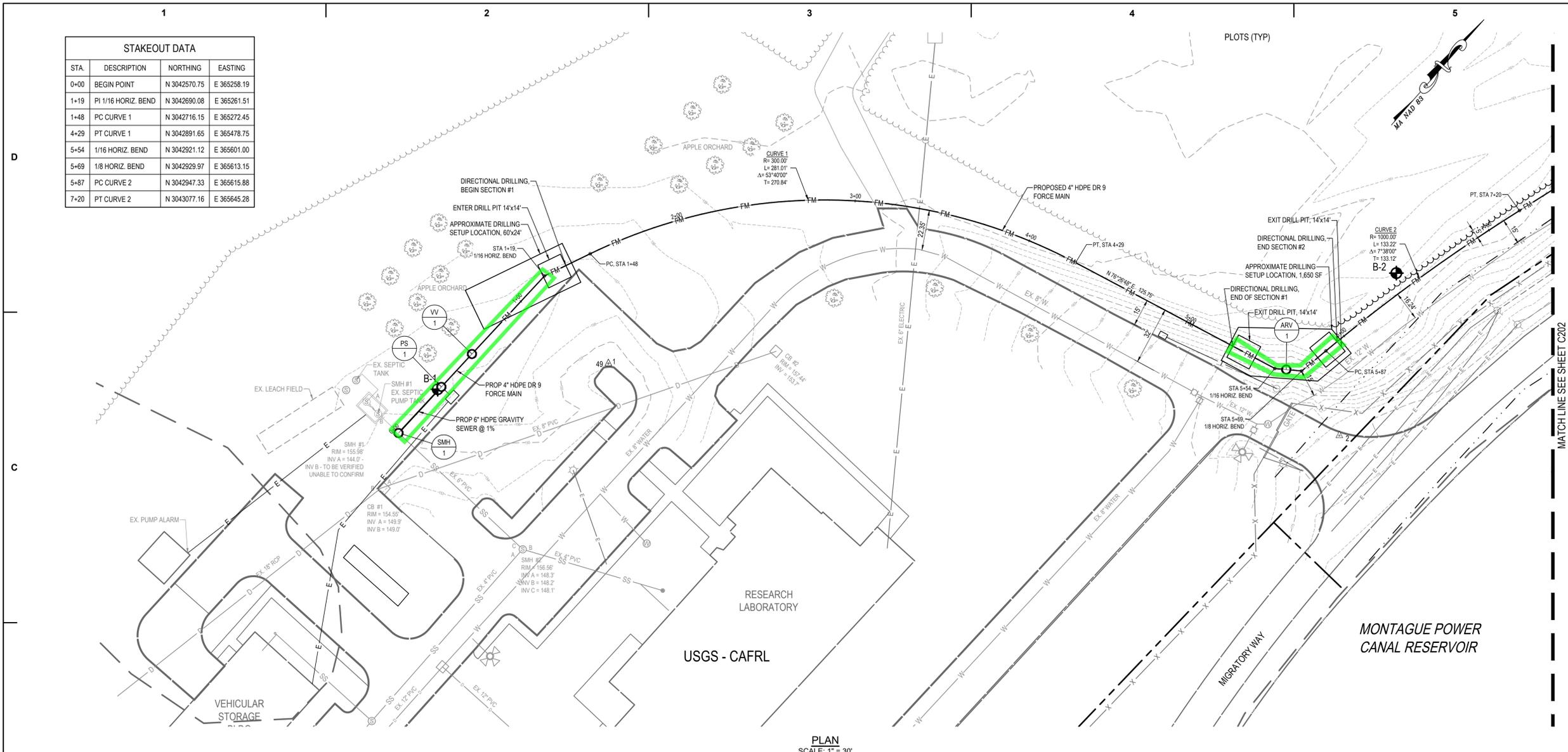
UTILITY LEGEND:

NEW SANITARY SEWER	—
NEW SANITARY MANHOLE	○
NEW FORCE MAIN	— FM —
NEW UNDERGROUND ELECTRIC	— E —
NEW SANITARY MANHOLE	○ SMH #
NEW PUMPING STATION	○ PS #
NEW VALVE VAULT	○ VV #
NEW AIR RELEASE VALVE	○ ARV #
NEW BLOW OFF VALVE	○ BOV #



**FINAL CONSTRUCTION
 DOCUMENTS**

STAKEOUT DATA			
STA.	DESCRIPTION	NORTHING	EASTING
0+00	BEGIN POINT	N 3042570.75	E 365258.19
1+19	PI 1/16 HORIZ. BEND	N 3042690.08	E 365261.51
1+48	PC CURVE 1	N 3042716.15	E 365272.45
4+29	PT CURVE 1	N 3042891.65	E 365478.75
5+54	1/16 HORIZ. BEND	N 3042921.12	E 365601.00
5+69	1/8 HORIZ. BEND	N 3042929.97	E 365613.15
5+87	PC CURVE 2	N 3042947.33	E 365615.88
7+20	PT CURVE 2	N 3043077.16	E 365645.28



EBL ENGINEERS
 ESTABLISHED 1972
 Mechanical - Electrical - Fire Protection
 8005 Harford Road
 Baltimore, Maryland 21234-5701
 Tel: (410) 668-8000
 E-mail: ebl@eblengineers.com

CONSULTANTS:

GANNETT FLEMING | TRANSYSTEMS

300 East Joppa Road, Suite 200
 Baltimore, MD 21286
 410.512.4500 www.transystems.com

STAMP:

JESSE M. LINDSAY
 CIVIL ENGINEER
 No. 47938
 PROFESSIONAL ENGINEER
 01-17-24

PROJECT:

USGS
science for a changing world

NEW FORCE MAIN SEWER
 SILVIO O. CONTE FISH
 RESEARCH LABORATORY
 ONE MIGRATORY WAY
 TURNERS FALLS, MA 01376

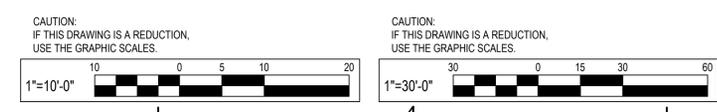
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-	-	FCD

ISSUE: FINAL CONSTRUCTION DOCUMENTS
 PROJECT NO: 18905.003
 DATE: 10-04-2024
 DRAWN BY: HH
 CHECKED BY: JML

SHEET TITLE

SITE LAYOUT PLAN

C201



CONSULTANTS:



STAMP:



PROJECT:



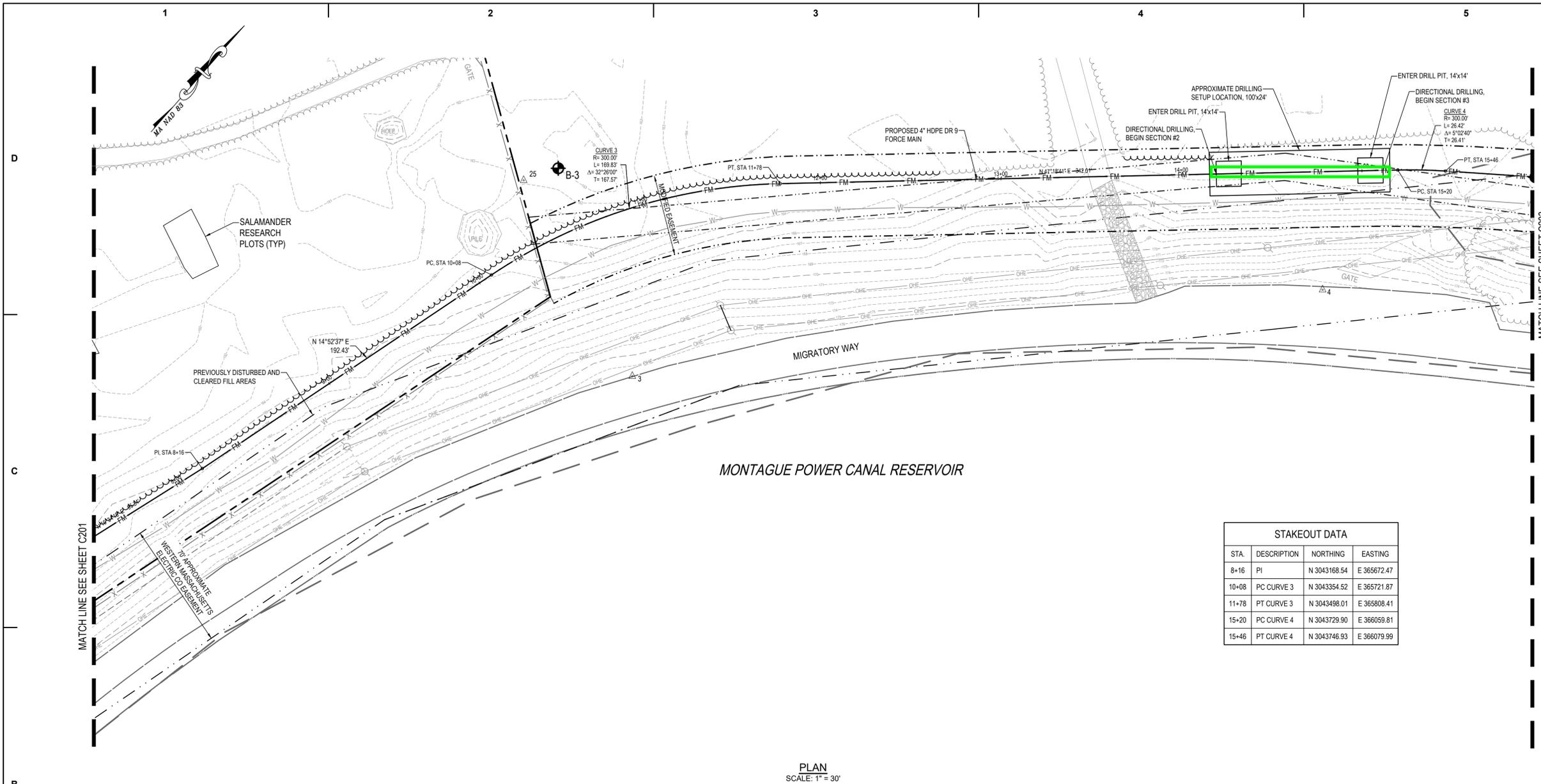
**NEW FORCE MAIN SEWER
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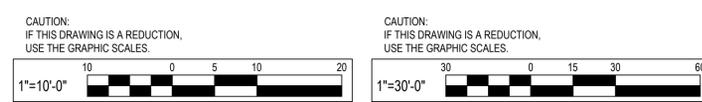
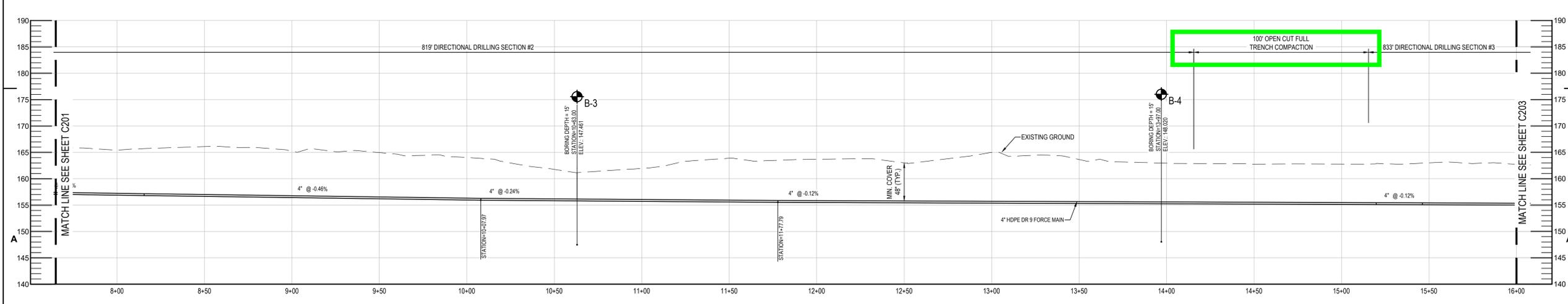
SHEET TITLE

SITE LAYOUT PLAN

C202



STAKEOUT DATA			
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10+08	PC CURVE 3	N 3043354.52	E 365721.87
11+78	PT CURVE 3	N 3043498.01	E 365808.41
15+20	PC CURVE 4	N 3043729.90	E 366059.81
15+46	PT CURVE 4	N 3043746.93	E 366079.99



FINAL CONSTRUCTION DOCUMENTS

CONSULTANTS:



STAMP:



PROJECT:



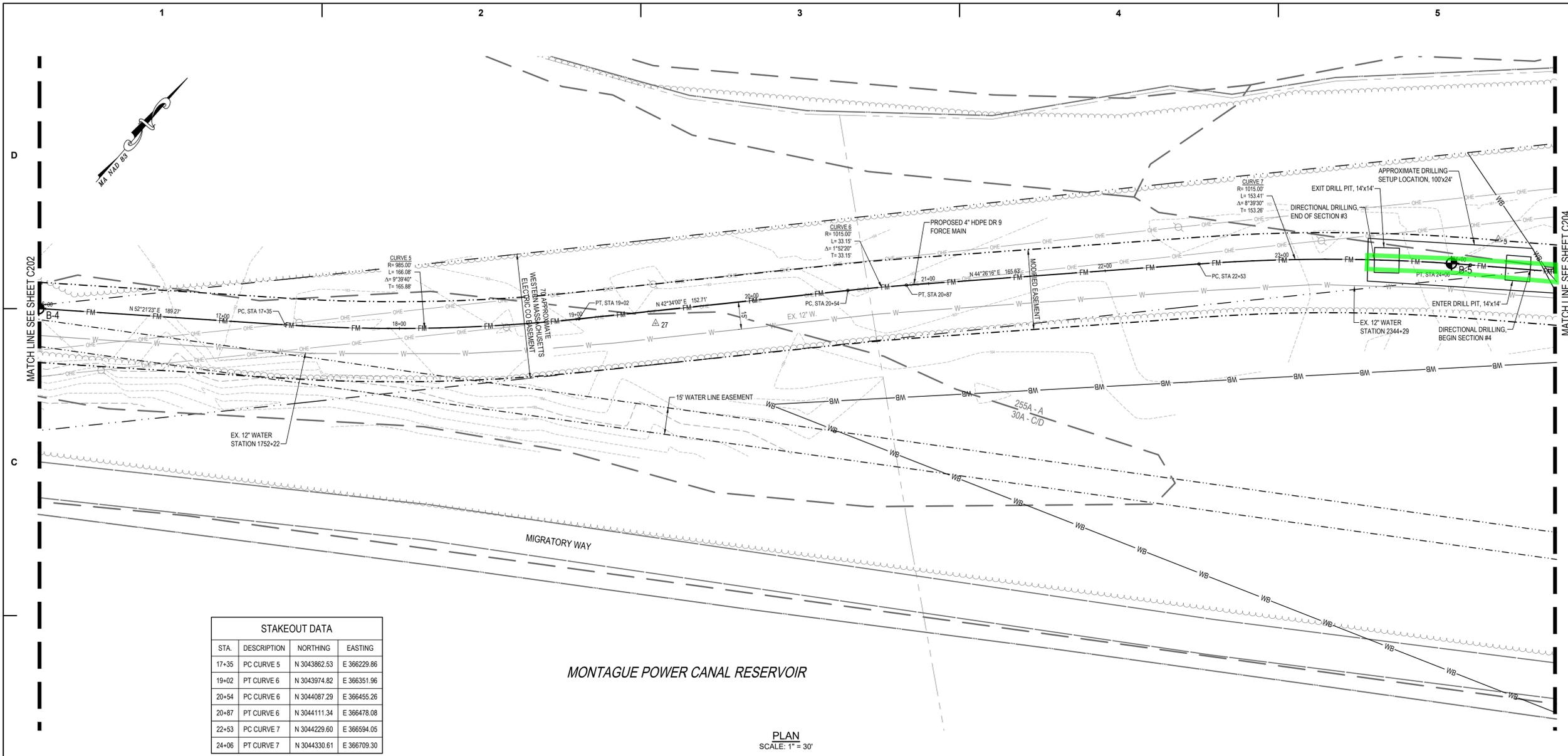
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SHEET TITLE

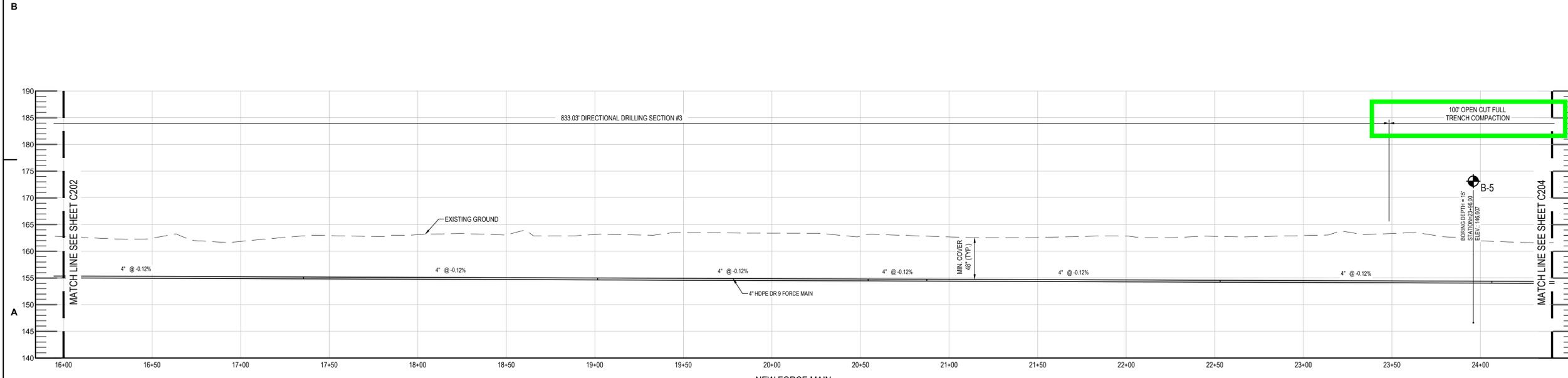
SITE LAYOUT PLAN

C203



STAKEOUT DATA			
STA.	DESCRIPTION	NORTHING	EASTING
17+35	PC CURVE 5	N 3043862.53	E 366229.86
19+02	PT CURVE 6	N 3043974.82	E 366351.96
20+54	PC CURVE 6	N 3044087.29	E 366455.26
20+87	PT CURVE 6	N 3044111.34	E 366478.08
22+53	PC CURVE 7	N 3044229.60	E 366594.05
24+06	PT CURVE 7	N 3044330.61	E 366709.30

PLAN
 SCALE: 1" = 30'



NEW FORCE MAIN
 SCALE: HORIZ. 1"=30' VERT. 1"=10'

CAUTION:
 IF THIS DRAWING IS A REDUCTION,
 USE THE GRAPHIC SCALES.



CAUTION:
 IF THIS DRAWING IS A REDUCTION,
 USE THE GRAPHIC SCALES.



**FINAL CONSTRUCTION
 DOCUMENTS**

CONSULTANTS:



STAMP:



PROJECT:



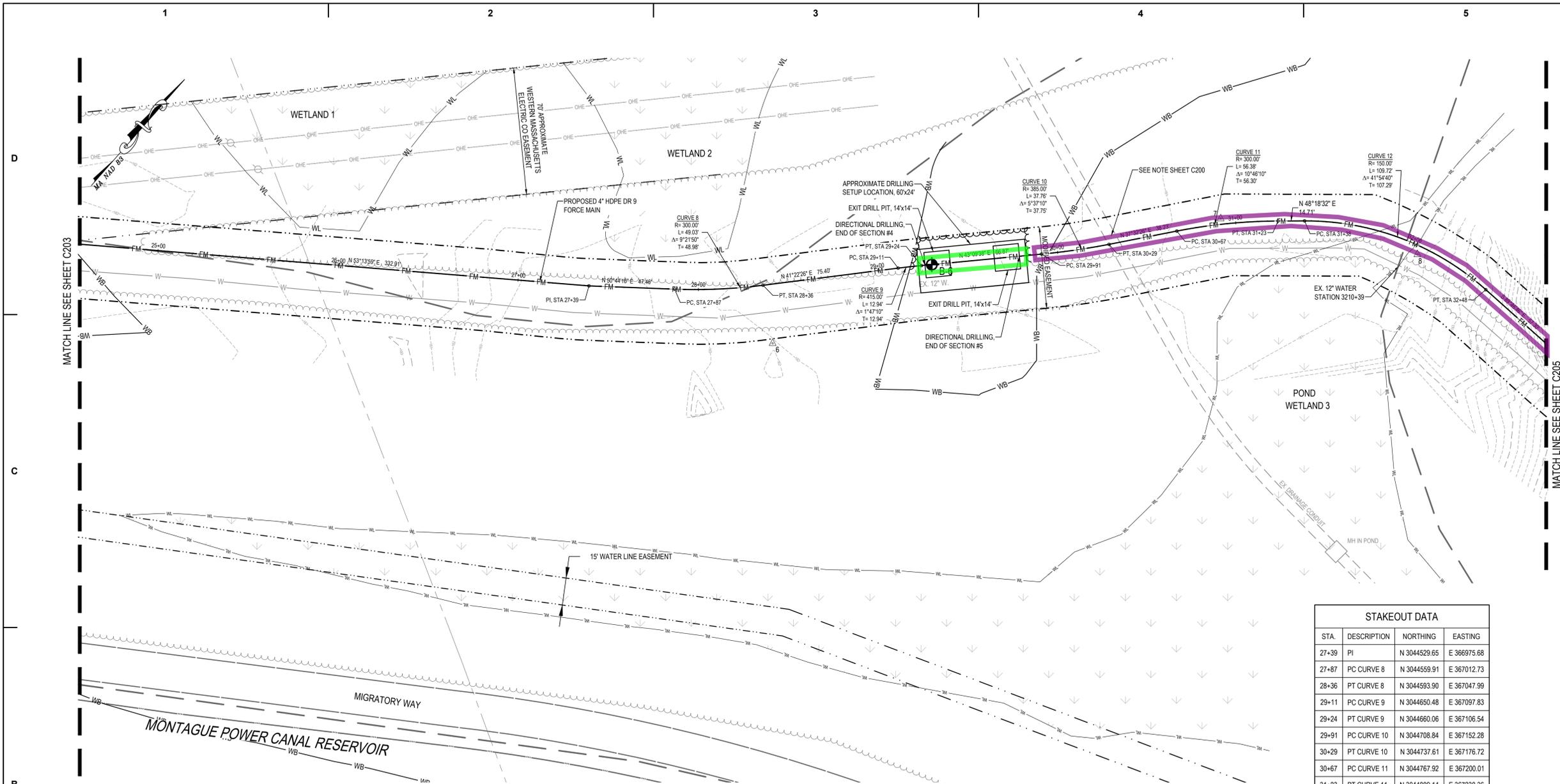
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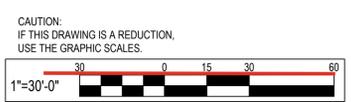
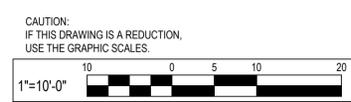
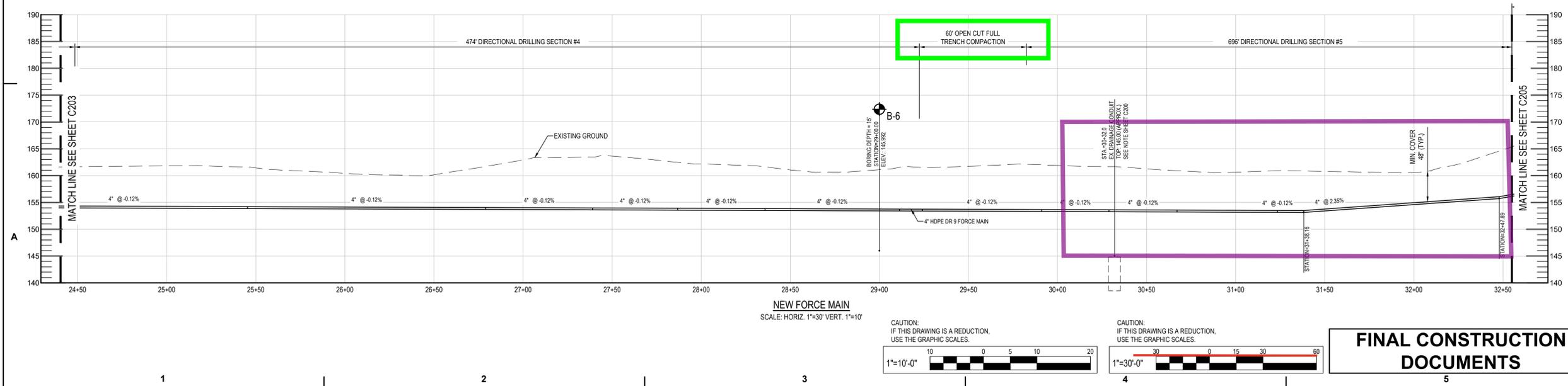
SHEET TITLE

SITE LAYOUT PLAN

C204



STA.	DESCRIPTION	NORTHING	EASTING
27+39	PI	N 3044529.65	E 366975.68
27+87	PC CURVE 8	N 3044559.91	E 367012.73
28+36	PT CURVE 8	N 3044593.90	E 367047.99
29+11	PC CURVE 9	N 3044650.48	E 367097.83
29+24	PT CURVE 9	N 3044660.06	E 367106.54
29+91	PC CURVE 10	N 3044708.84	E 367152.28
30+29	PT CURVE 10	N 3044737.61	E 367176.72
30+67	PC CURVE 11	N 3044767.92	E 367200.01
31+23	PT CURVE 11	N 3044809.14	E 367238.36
31+38	PC CURVE 12	N 3044818.93	E 367249.34
32+48	PT CURVE 12	N 3044856.91	E 367349.68



FINAL CONSTRUCTION DOCUMENTS

CONSULTANTS:



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PROJECT:



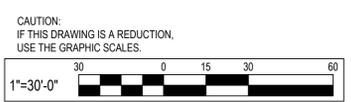
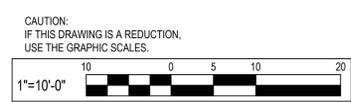
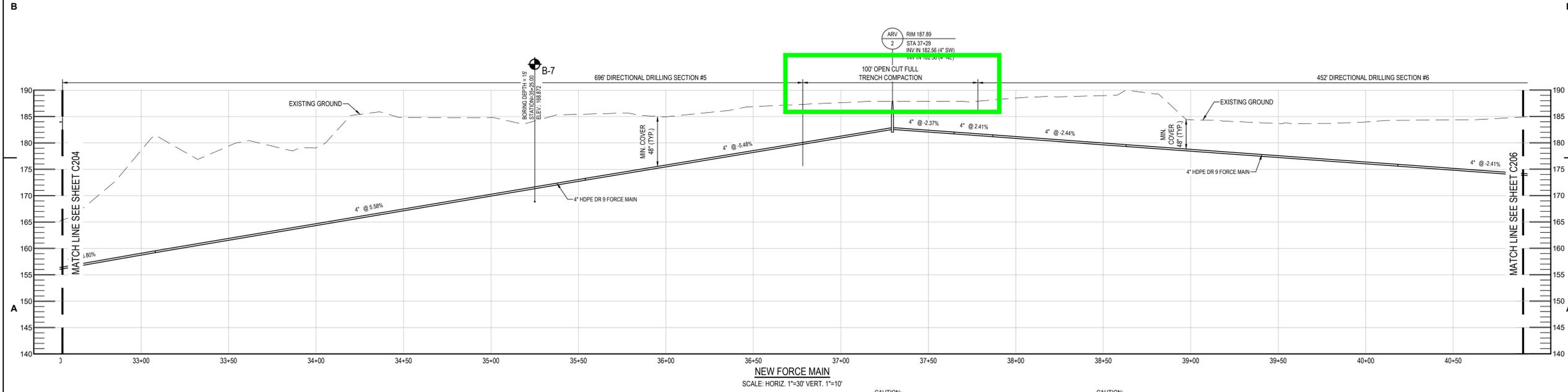
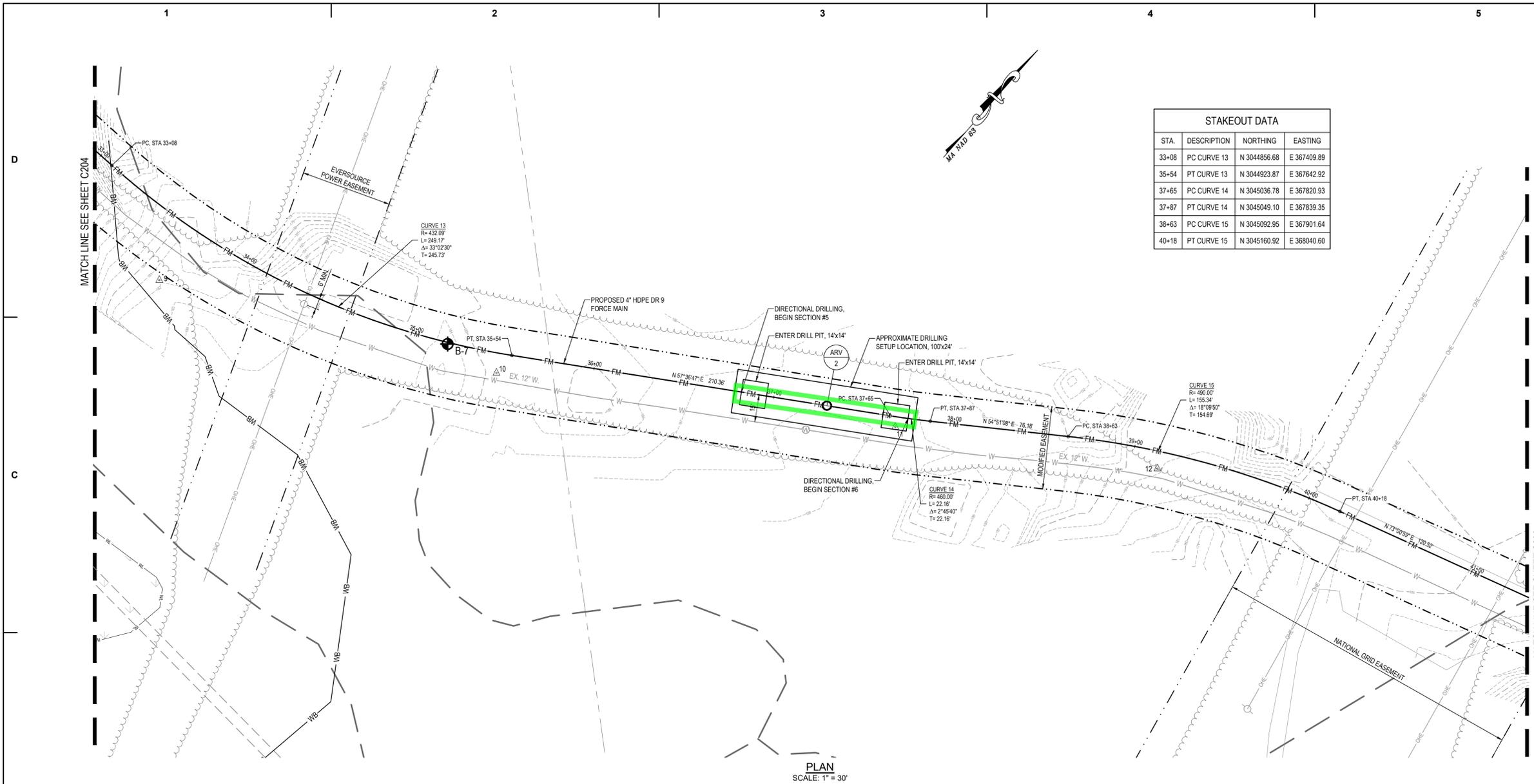
**NEW FORCE MAIN SEWER
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 TURNERS FALLS, MA 01376**

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SHEET TITLE

SITE LAYOUT PLAN

C205



FINAL CONSTRUCTION DOCUMENTS

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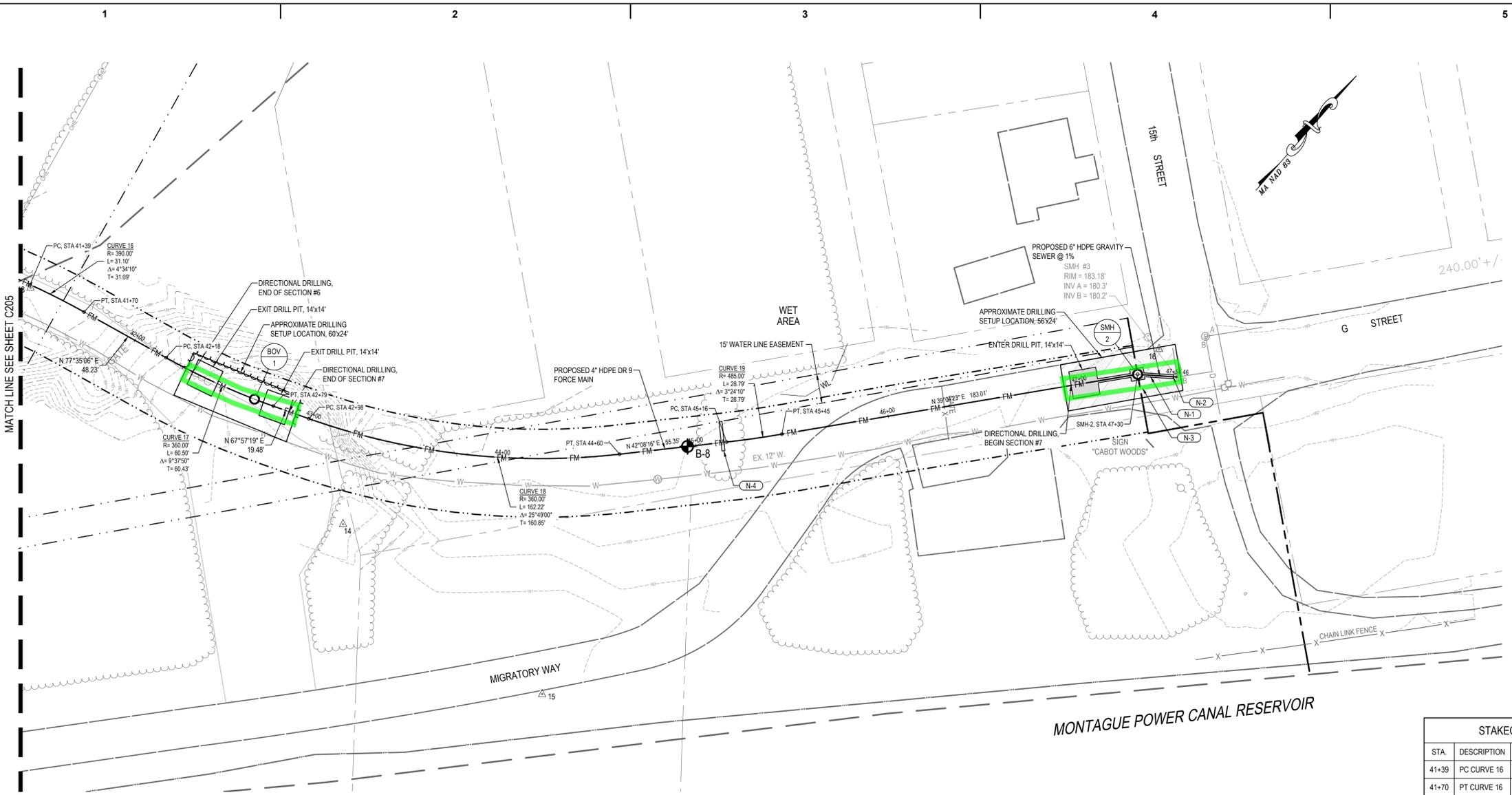
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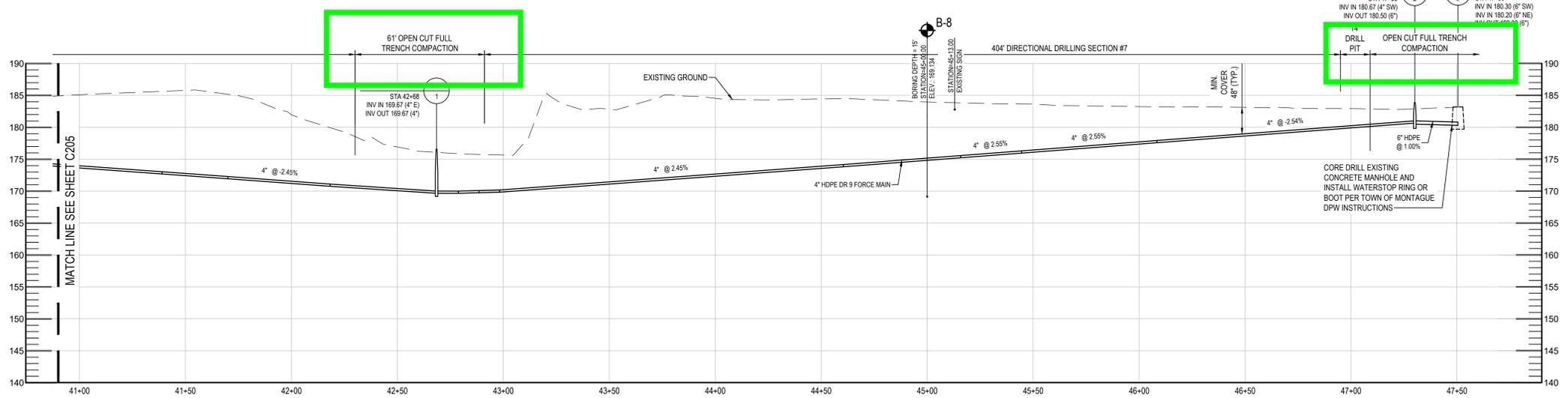
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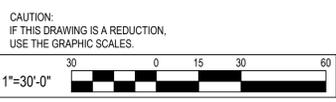
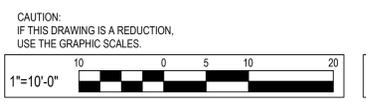
PLAN
 SCALE: 1" = 30'

STAKEOUT DATA			
STA.	DESCRIPTION	NORTHING	EASTING
41+39	PC CURVE 16	N 3045196.13	E 368155.87
41+70	PT CURVE 16	N 3045204.02	E 368185.94
42+18	PC CURVE 17	N 3045214.39	E 368233.04
42+79	PT CURVE 17	N 3045232.29	E 368290.76
42+98	PC CURVE 18	N 3045239.60	E 368308.81
44+60	PT CURVE 18	N 3045331.75	E 368440.65
45+16	PC CURVE 19	N 3045372.79	E 368477.78
45+45	PT CURVE 19	N 3045394.70	E 368496.45
47+30	SMH-2	N 3045538.72	E 368613.39

- CONSTRUCTION NOTES**
- N-1 PROPOSED FULL DEPTH BITUMINOUS PAVING.
 - N-2 CORE DRILL EXISTING CONCRETE MANHOLE AND INSTALL WATERSTOP RING OR BOOT PER TOWN OF MONTAGUE DPW INSTRUCTIONS
 - N-3 EXISTING BITUMINOUS PAVEMENT REPAIR.
 - N-4 EXISTING SIGN, CONCRETE FOOTINGS DEPTH TO BE VERIFIED PRIOR TO BEGINNING OF CONSTRUCTION



NEW FORCE MAIN
 SCALE: HORIZ. 1"=30' VERT. 1"=10'



FINAL CONSTRUCTION DOCUMENTS

SHEET TITLE

SITE LAYOUT PLAN

C206

CONSULTANTS:



STAMP:



PROJECT:



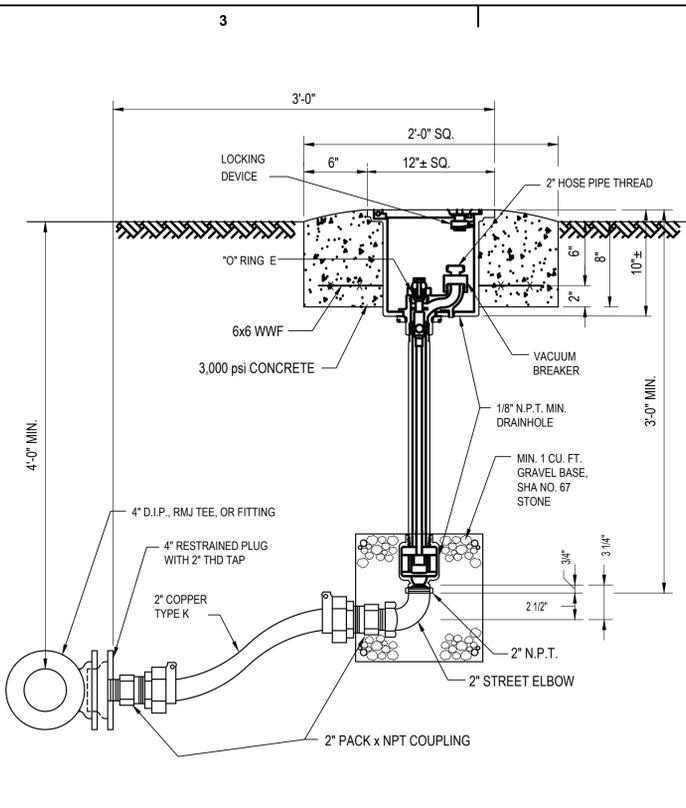
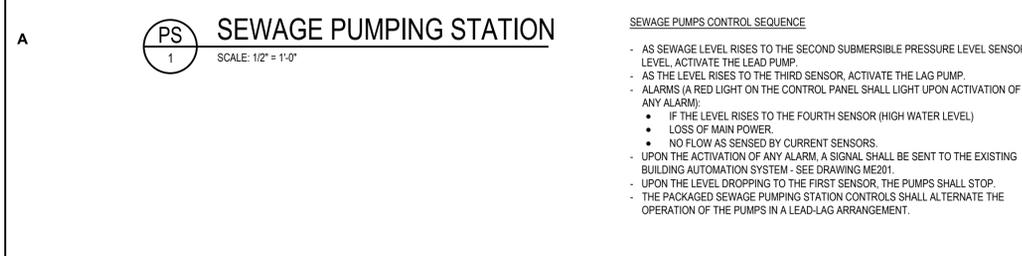
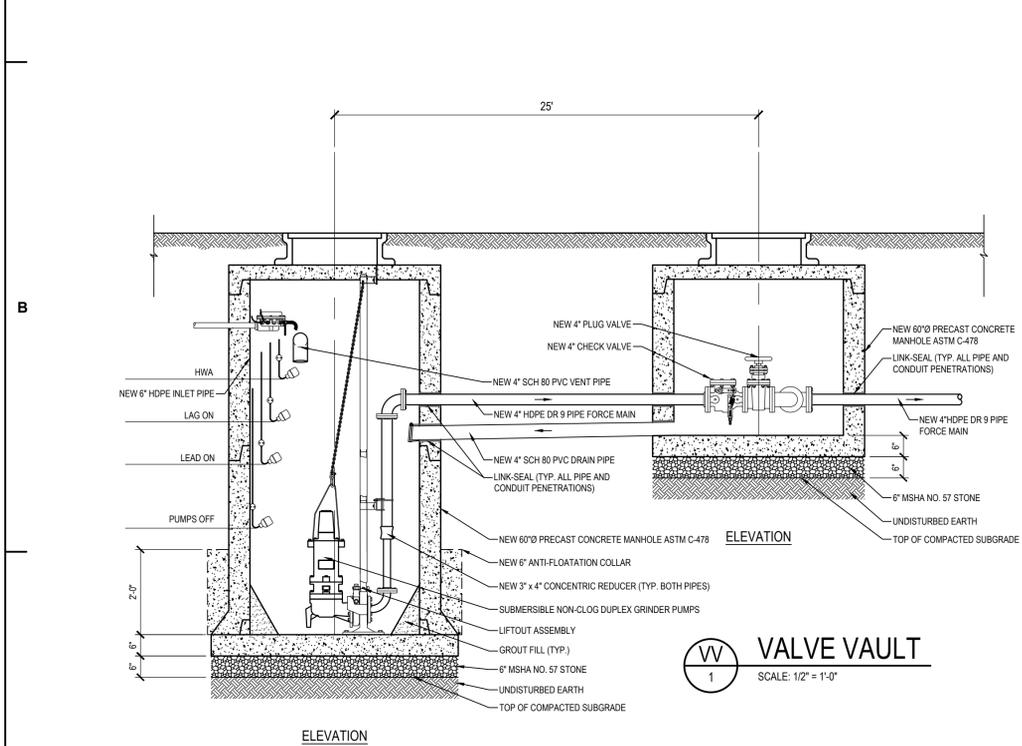
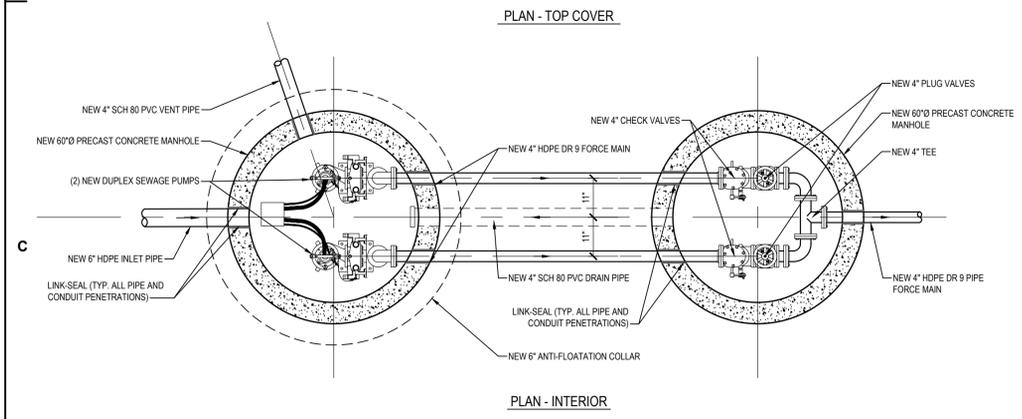
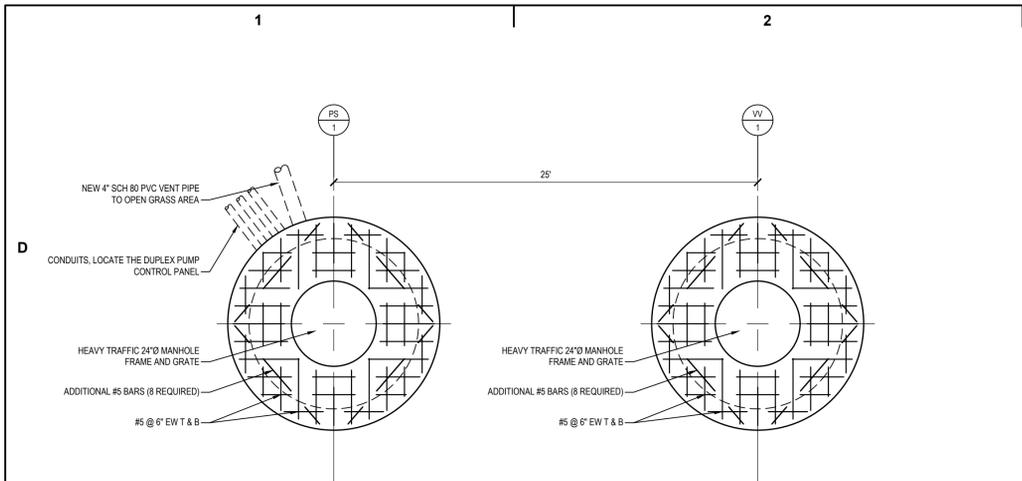
**NEW FORCE MAIN SEWER
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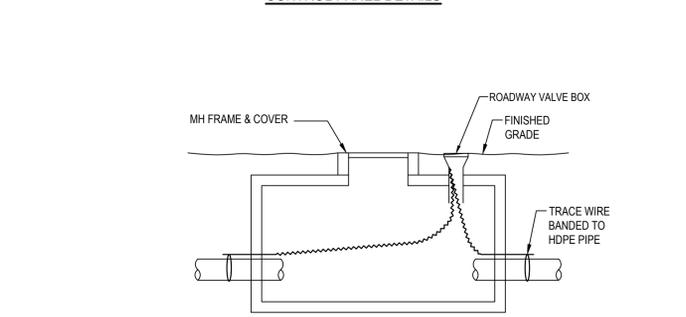
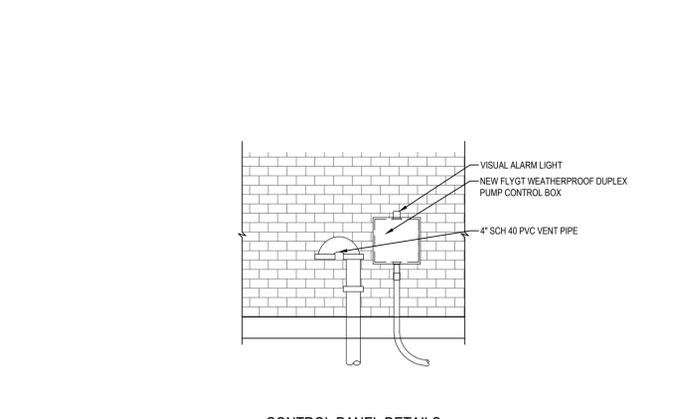
SHEET TITLE

SITE DETAILS

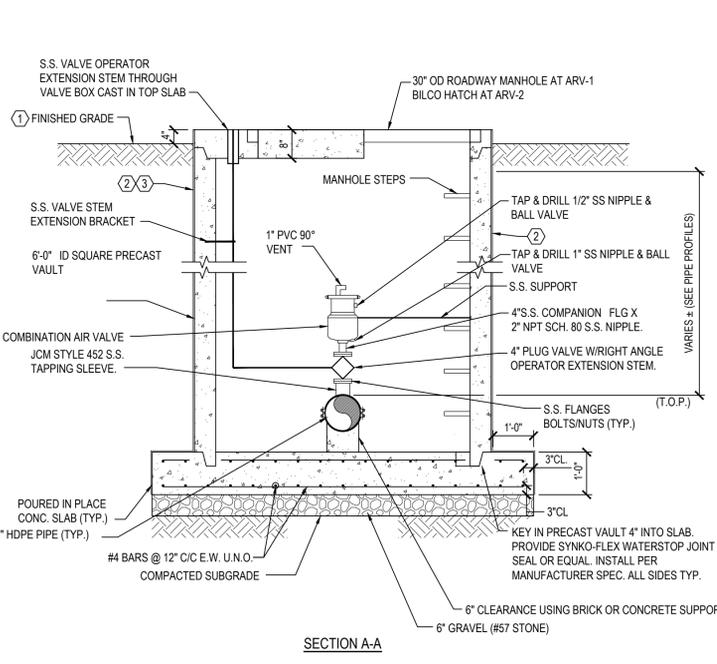
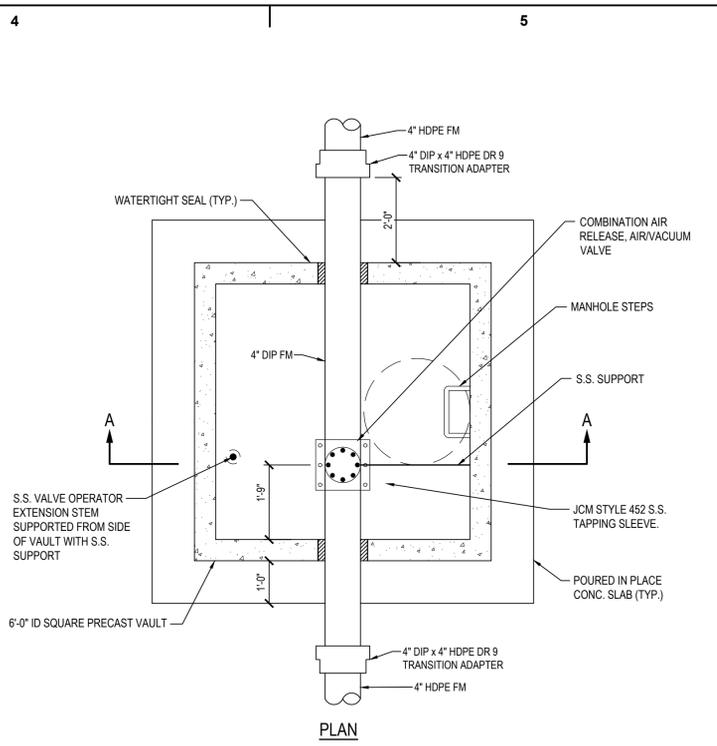
C208



BOV
 1
BLOW OFF VALVE ASSEMBLY
 SCALE: 1/2" = 1'-0"



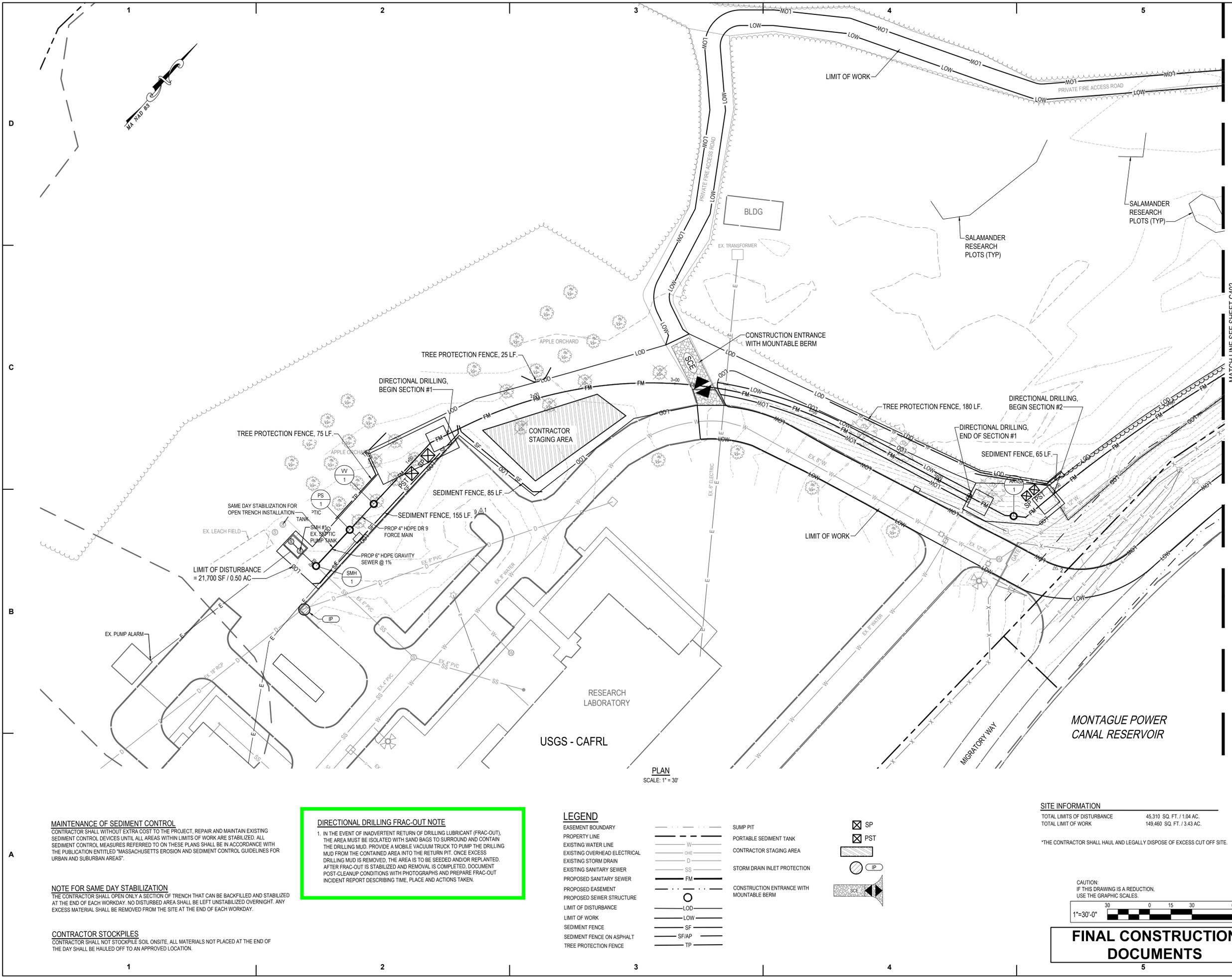
1
 C208
TRACE WIRE IN ARV VAULT DETAIL
 SCALE: 1/2" = 1'-0"



ARV
 1
SEWAGE AIR AND VACUUM RELEASE VAULT
 SCALE: 1/2" = 1'-0"

- GENERAL STRUCTURE NOTES**
- VAULTS OUTSIDE OF R.O.W. SHALL HAVE TOP SLABS PLACED 4-INCHES ABOVE FINISHED GRADE.
 - APPLY DAMP PROOFING TO OUTSIDE OF ALL STRUCTURES.
 - PRECAST VAULTS SHALL BE REINFORCED CONCRETE PER ASTM C913.
 - EPOXY COAT INTERIOR OF VAULT
 - FILTER CLOTH AND GROUT SHALL BE ADDED.

FINAL CONSTRUCTION DOCUMENTS



PLAN
SCALE: 1" = 30'

MAINTENANCE OF SEDIMENT CONTROL
CONTRACTOR SHALL WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF WORK ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE PUBLICATION ENTITLED "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS".

NOTE FOR SAME DAY STABILIZATION
THE CONTRACTOR SHALL OPEN ONLY A SECTION OF TRENCH THAT CAN BE BACKFILLED AND STABILIZED AT THE END OF EACH WORKDAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT. ANY EXCESS MATERIAL SHALL BE REMOVED FROM THE SITE AT THE END OF EACH WORKDAY.

CONTRACTOR STOCKPILES
CONTRACTOR SHALL NOT STOCKPILE SOIL ON-SITE. ALL MATERIALS NOT PLACED AT THE END OF THE DAY SHALL BE HAULED OFF TO AN APPROVED LOCATION.

DIRECTIONAL DRILLING FRAC-OUT NOTE

1. IN THE EVENT OF INADVERTENT RETURN OF DRILLING LUBRICANT (FRAC-OUT), THE AREA MUST BE ISOLATED WITH SAND BAGS TO SURROUND AND CONTAIN THE DRILLING MUD. PROVIDE A MOBILE VACUUM TRUCK TO PUMP THE DRILLING MUD FROM THE CONTAINED AREA INTO THE RETURN PIT. ONCE EXCESS DRILLING MUD IS REMOVED, THE AREA IS TO BE SEEDED AND/OR REPLANTED. AFTER FRAC-OUT IS STABILIZED AND REMOVAL IS COMPLETED, DOCUMENT POST-CLEANUP CONDITIONS WITH PHOTOGRAPHS AND PREPARE FRAC-OUT INCIDENT REPORT DESCRIBING TIME, PLACE AND ACTIONS TAKEN.

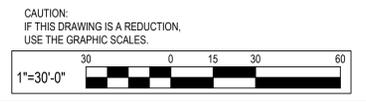
LEGEND

---	EASEMENT BOUNDARY	□ SP	SUMP PIT
---	PROPERTY LINE	□ PST	PORTABLE SEDIMENT TANK
W	EXISTING WATER LINE	▨	CONTRACTOR STAGING AREA
OHE	EXISTING OVERHEAD ELECTRICAL	○ IP	STORM DRAIN INLET PROTECTION
D	EXISTING STORM DRAIN	○	CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM
SS	EXISTING SANITARY SEWER		
FM	PROPOSED SANITARY SEWER		
---	PROPOSED EASEMENT		
---	PROPOSED SEWER STRUCTURE		
LOD	LIMIT OF DISTURBANCE		
LOW	LIMIT OF WORK		
SF	SEDIMENT FENCE		
SF/AP	SEDIMENT FENCE ON ASPHALT		
TP	TREE PROTECTION FENCE		

SITE INFORMATION

TOTAL LIMITS OF DISTURBANCE	45,310 SQ. FT. / 1.04 AC.
TOTAL LIMIT OF WORK	149,460 SQ. FT. / 3.43 AC.

*THE CONTRACTOR SHALL HAUL AND LEGALLY DISPOSE OF EXCESS CUT OFF SITE.



FINAL CONSTRUCTION DOCUMENTS

EBL ENGINEERS
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Mechanical - Electrical - Fire Protection
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CONSULTANTS:

300 East Joppa Road Suite 200
Baltimore, MD 21286
410.512.4500 www.transystems.com

GANNETT FLEMING | **TRANSYSTEMS**

STAMP:

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USGS
science for a changing world

**NEW FORCE MAIN SEWER
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ISSUE: FINAL CONSTRUCTION DOCUMENTS
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SHEET TITLE

EROSION AND SEDIMENT CONTROL PLAN

C401

CONSULTANTS:



STAMP:



PROJECT:



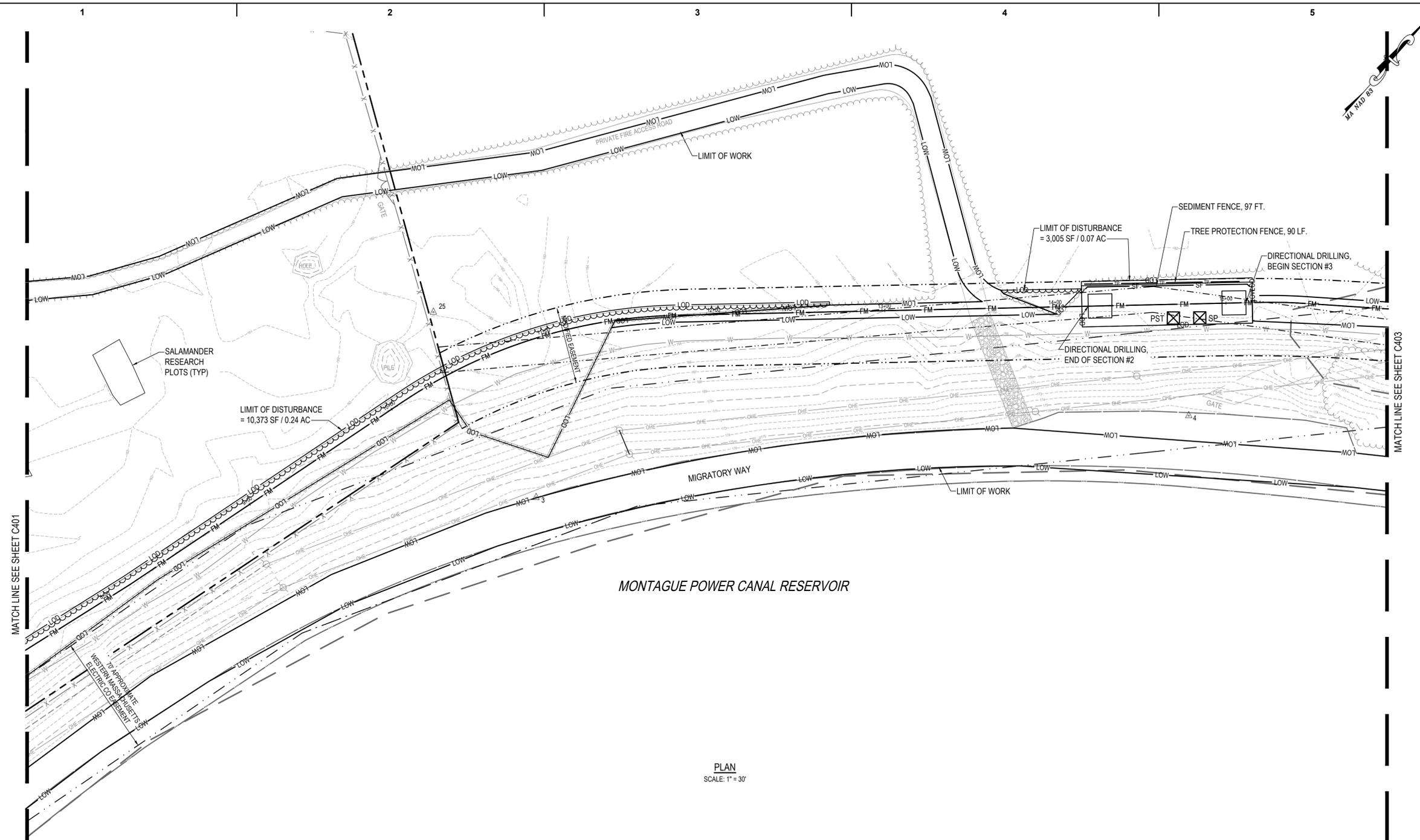
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SHEET TITLE

**EROSION AND SEDIMENT CONTROL
 PLAN**

C402



MATCH LINE SEE SHEET C401

MATCH LINE SEE SHEET C403

MONTAGUE POWER CANAL RESERVOIR

PLAN
 SCALE: 1" = 30'

MAINTENANCE OF SEDIMENT CONTROL
 CONTRACTOR SHALL WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF WORK ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH THE PUBLICATION ENTITLED "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS".

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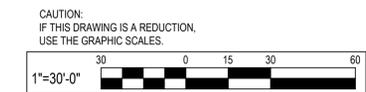
LEGEND

EASEMENT BOUNDARY	---
PROPERTY LINE	---
EXISTING WATER LINE	W
EXISTING OVERHEAD ELECTRICAL	OHE
EXISTING STORM DRAIN	D
EXISTING SANITARY SEWER	SS
PROPOSED SANITARY SEWER	FM
PROPOSED EASEMENT	---
PROPOSED SEWER STRUCTURE	○
LIMIT OF DISTURBANCE	-LOD-
LIMIT OF WORK	-LOW-
SEDIMENT FENCE	SF
SEDIMENT FENCE ON ASPHALT	SF/AP
TREE PROTECTION FENCE	TP
SUMP PIT	⊗ SP
PORTABLE SEDIMENT TANK	⊗ PST
CONTRACTOR STAGING AREA	▨
STORM DRAIN INLET PROTECTION	○ IP
CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM	▬

SITE INFORMATION

TOTAL LIMITS OF DISTURBANCE	45,310 SQ. FT. / 1.04 AC.
TOTAL LIMIT OF WORK	149,460 SQ. FT. / 3.43 AC.

*THE CONTRACTOR SHALL HAUL AND LEGALLY DISPOSE OF EXCESS CUT OFF SITE.



**FINAL CONSTRUCTION
 DOCUMENTS**

CONSULTANTS:



STAMP:



PROJECT:



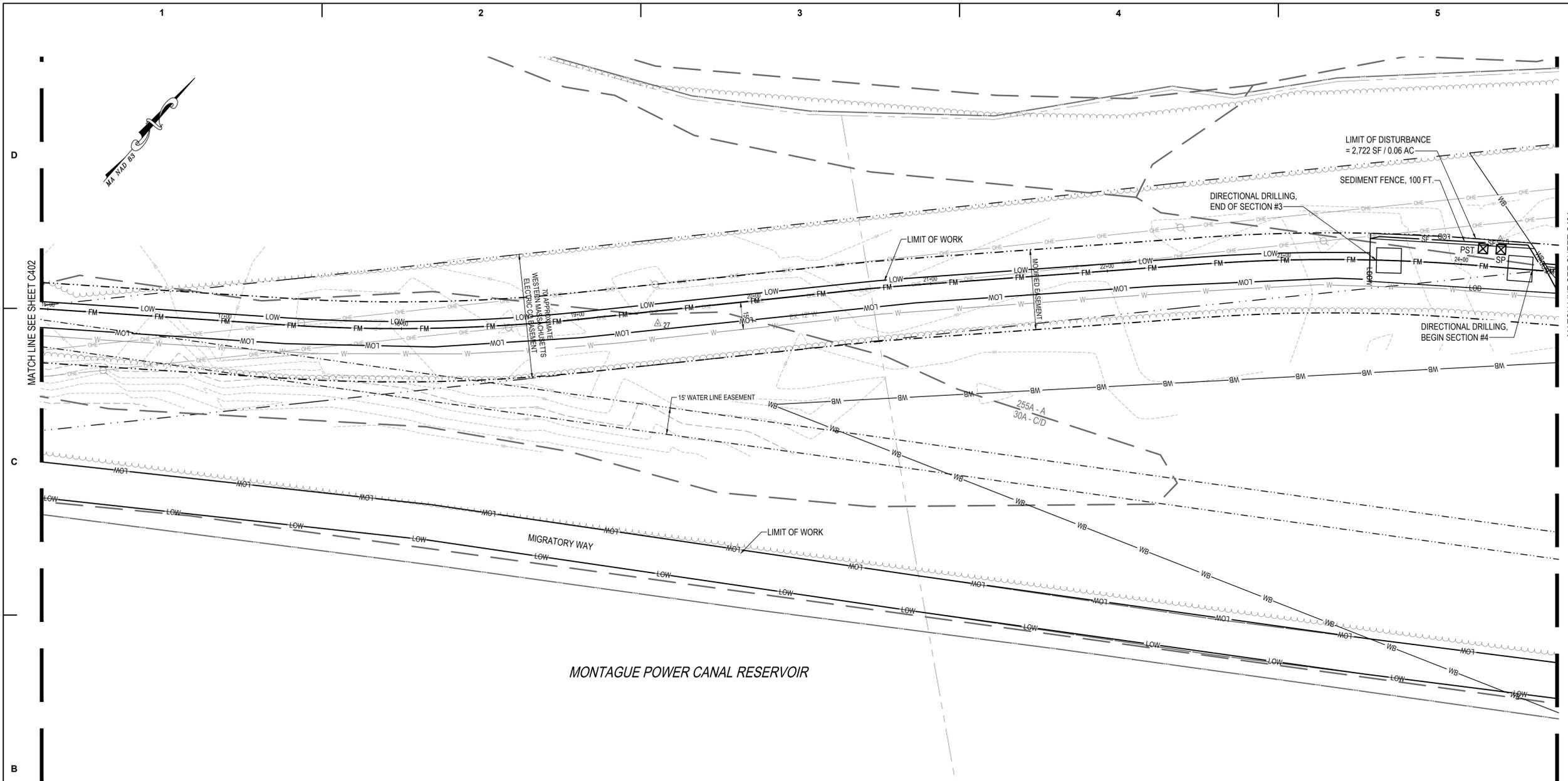
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SHEET TITLE

**EROSION AND SEDIMENT CONTROL
 PLAN**

C403



PLAN
 SCALE: 1" = 30'

MAINTENANCE OF SEDIMENT CONTROL

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LEGEND

- EASEMENT BOUNDARY
- PROPERTY LINE
- EXISTING WATER LINE
- EXISTING OVERHEAD ELECTRICAL
- EXISTING STORM DRAIN
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED EASEMENT
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- PORTABLE SEDIMENT TANK
- CONTRACTOR STAGING AREA
- STORM DRAIN INLET PROTECTION
- CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM

SITE INFORMATION

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 TOTAL LIMIT OF WORK 149,460 SQ. FT. / 3.43 AC.

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**FINAL CONSTRUCTION
 DOCUMENTS**

CONSULTANTS:



STAMP:



PROJECT:



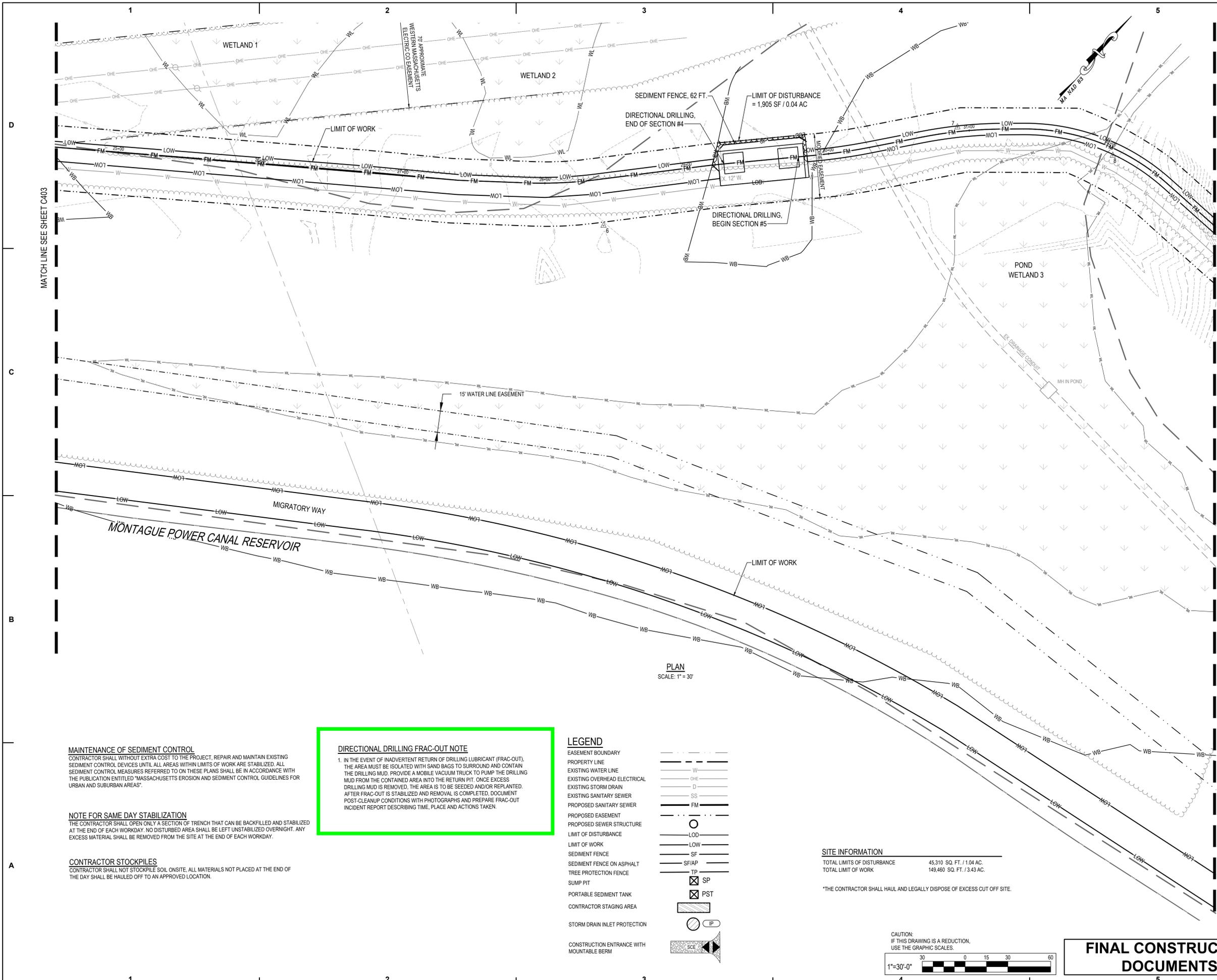
**NEW FORCE MAIN SEWER
 SILVIO O. CONTE FISH
 RESEARCH LABORATORY
 ONE MIGRATORY WAY
 TURNERS FALLS, MA 01376**

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SHEET TITLE

**EROSION AND SEDIMENT CONTROL
 PLAN**

C404



PLAN
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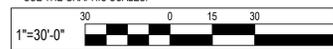
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CAUTION:
 IF THIS DRAWING IS A REDUCTION,
 USE THE GRAPHIC SCALES.



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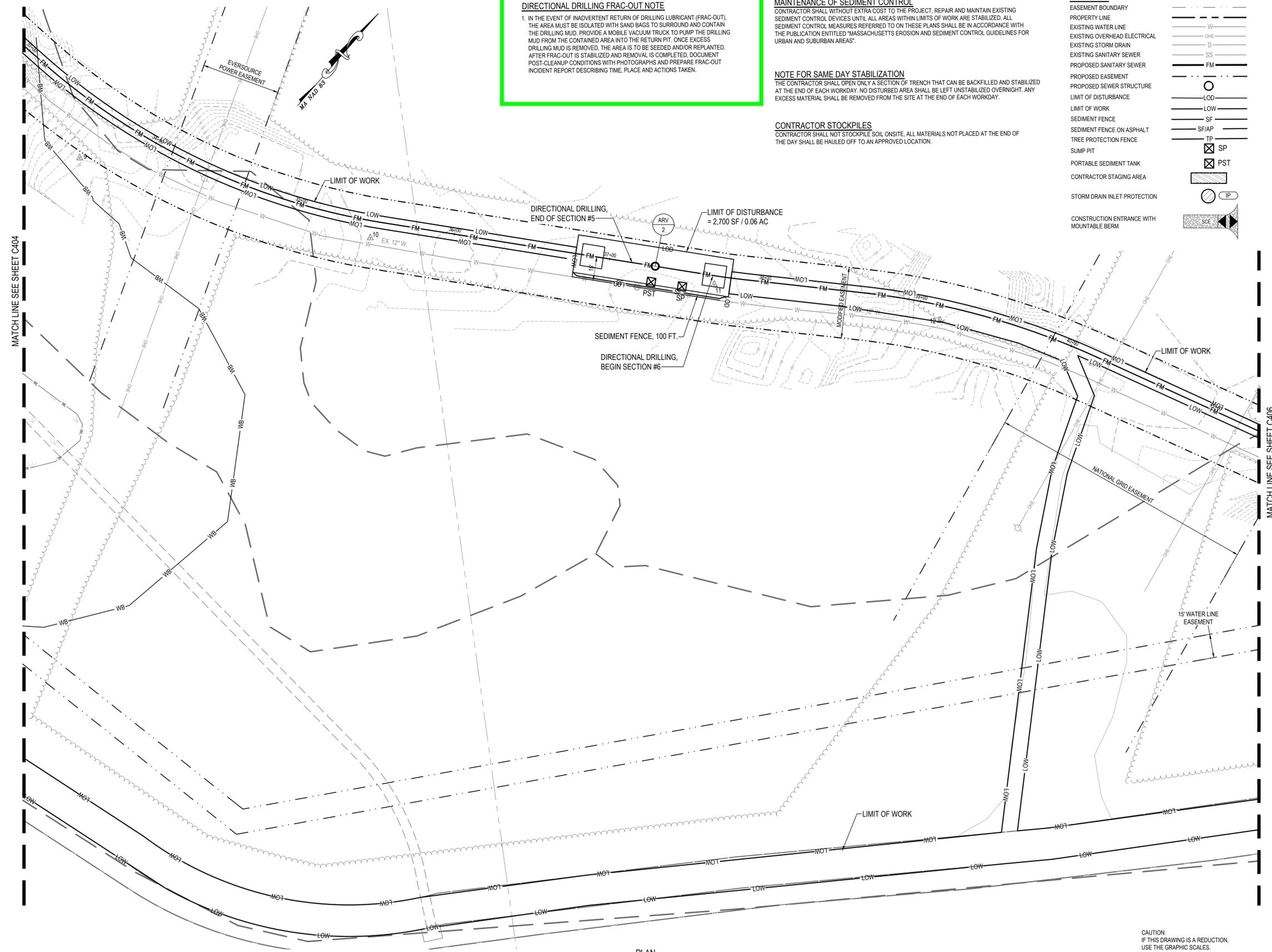
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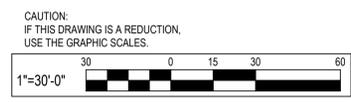


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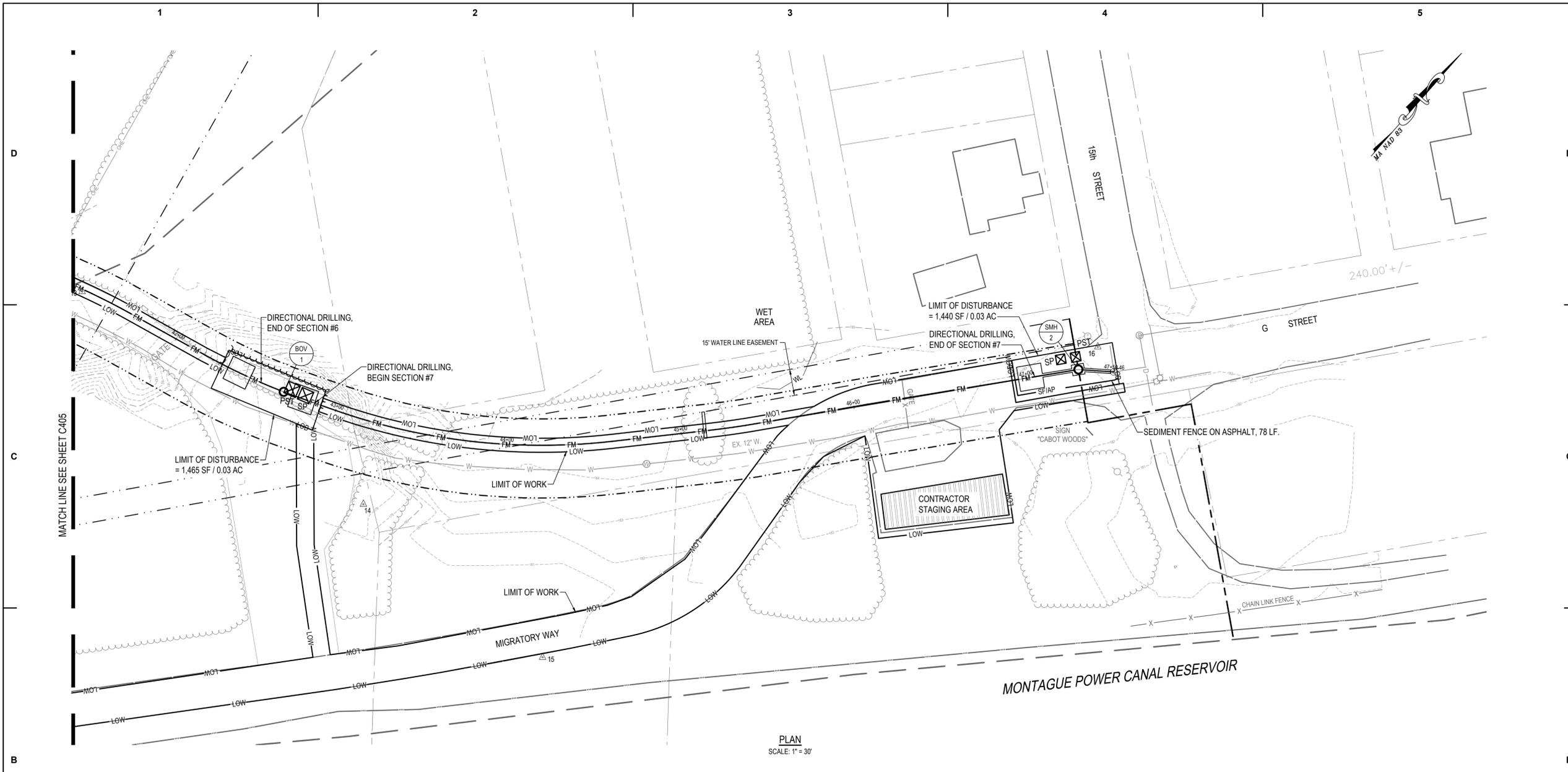
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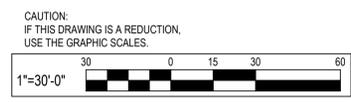
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EXISTING STORM DRAIN	D
EXISTING SANITARY SEWER	SS
PROPOSED SANITARY SEWER	FM
PROPOSED EASEMENT	---
PROPOSED SEWER STRUCTURE	○
LIMIT OF DISTURBANCE	LOD
LIMIT OF WORK	LOW
SEDIMENT FENCE	SF
SEDIMENT FENCE ON ASPHALT	SF/AP
TREE PROTECTION FENCE	TP
SUMP PIT	SP
PORTABLE SEDIMENT TANK	PST
CONTRACTOR STAGING AREA	CSA
STORM DRAIN INLET PROTECTION	IP
CONSTRUCTION ENTRANCE WITH MOUNTABLE BERM	SCE

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MAINTENANCE PLAN

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE TOWN OF MONTAGUE DEPARTMENT OF PUBLIC WORKS PRIOR TO THE START OF ANY CONSTRUCTION (413) 863-2054.
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS.
3. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
4. SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 1/2 FOOT DEEP AT THE FENCE. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATION PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
6. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
7. ADDITIONAL SEDIMENT CONTROL MUST PROVIDED, IF DEEMED NECESSARY BY THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION.
8. ALL CONSTRUCTION VEHICLES ARE TO BE CLEANED OF DUST, DIRT AND/OR DEBRIS AT THE STABILIZED CONSTRUCTION ENTRANCE, PRIOR TO LEAVING THE SITE.
9. CONTRACTOR TO SWEEP PAVED ROADS ADJACENT TO STABILIZED CONSTRUCTION ENTRANCE DAILY, AND PROVIDE WATERING FOR DUST CONTROL.
10. THE APPROPRIATE OFFICIAL FROM TOWN OF MONTAGUE, MASSACHUSETTS SHOULD CONDUCT REGULAR (WEEKLY OR BI-WEEKLY) INSPECTIONS OF THE SITE AND CONTROL MEASURES TO ENSURE PROPER FUNCTIONING. ORDERS SHOULD BE ISSUED IF ANY CONSERVATION PRACTICE IS OBSERVED TO BE MALFUNCTIONING OR INCORRECTLY BUILT.

DUST CONTROL

DEFINITION :
CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE :
TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES :
THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS :

1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12' APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS - SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHOD :

1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVERING WITH LESS EROSION SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

REFERENCES :

1. AGRICULTURAL HANDBOOK 345. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USE IN PREDICTING SOIL LOSS.
2. AGRICULTURE INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA-ARS.

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCES OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE CALENDAR DAYS FOR THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND SEVEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

1. PERMANENT SEEDING:

A. SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.

OCCURRENCE OF ACID SULFATE SOILS (GRAYISH BLACK COLOR) WILL REQUIRE COVERING WITH A MINIMUM OF 12 INCHES OF CLEAN SOIL WITH 6 INCHES MINIMUM CAPPING OF TOP SOIL. NO STOCKPILING OF MATERIAL IS ALLOWED. IF NEEDED, SOIL TESTS SHOULD BE DONE BEFORE AND AFTER A 6-WEEK INCUBATION PERIOD TO ALLOW OXIDATION OF SULFATES.

THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

- a. SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
- b. SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
- c. THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (> 30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
- d. SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
- e. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- f. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS FROM THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.

B. SEEDING PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3-5 INCHES. THE TOP LAYER SHALL BE LOOSENEED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. LIME TO ATTAIN A PH OF AT LEAST 5.5. APPLY A 0-10-10 ANALYSIS FERTILIZER AT THE RATE OF 600 POUNDS PER ACRE. INCORPORATE BOTH INTO THE TOP 2-3 INCHES OF SOIL. (30 POUNDS OF SLOW RELEASE NITROGEN SHOULD BE APPLIED AFTER EMERGENCE OF GRASS IN THE LATE SPRING.)

C. SEEDING: SEEDING OPERATIONS SHOULD BE PERFORMED AS AN EARLY SPRING SEEDING (APRIL 1 - MAY 15) WITH THE USE OF COLD TREATED SEED. A LATE FALL EARLY WINTER DORMANT SEEDING (NOVEMBER 1 - DECEMBER 15) CAN ALSO BE MADE, HOWEVER THE SEEDING RATE WILL NEED TO BE INCREASED BY 50%. SEEDING SHOULD BE PERFORMED BY ONE OF THE FOLLOWING METHODS:

- a. DRILL SEEDINGS (DE-AWNE) OR DE-BEARDED SEED SHOULD BE USED UNLESS THE DRILL IS EQUIPPED WITH SPECIAL FEATURES TO ACCEPT AWNEED SEED.
- b. BROADCAST SEEDING WITH SUBSEQUENT ROLLING, CULTIPACKING OR TRACKING THE SEEDING WITH SMALL TRACK CONSTRUCTION EQUIPMENT, TRACKING SHOULD BE ORIENTED UP AND DOWN THE SLOPE.
- c. HYDROSEEDING WITH SUBSEQUENT TRACKING. IF WOOD FIBER MULCH IS USED, IT SHOULD BE APPLIED AS A SEPARATE OPERATION AFTER SEEDING AND TRACKING TO ASSURE GOOD SEED TO SOIL CONTACT.

REFER TO THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS FOR SEEDING MIXTURES.

D. MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING.

MULCH SHALL BE UNROTATED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 0.5 TONS PER ACRE. ANCHOR THE MULCH WITH EROSION CONTROL NETTING OR FABRIC ON SLOPING AREAS.

2. TEMPORARY SEEDING:

LIME: APPLY UNIFORMLY 2 TONS OF GROUND LIMESTONE PER ACRE (100 POUNDS PER 1,000 SQUARE FEET) OR ACCORDING TO SOIL TEST.
 FERTILIZER: APPLY UNIFORMLY 10-10-10 ANALYSIS FERTILIZER AT THE RATE OF 400 POUNDS PER ACRE (14 POUNDS PER 1,000 SQUARE FEET) OR AS INDICATED BY SOIL TEST. 40% OF THE NITROGEN SHOULD BE IN ORGANIC FORM. WORK IN LIME AND FERTILIZER TO A DEPTH OF 4 INCHES USING ANY SUITABLE EQUIPMENT.
 SEED: REFER TO THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS FOR SEEDING MIXTURES AND DATES.
 MULCH: SAME AS 1 D ABOVE.

3. NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 9 INCHES. REFER TO THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS FOR FILL AND COMPACTION REQUIREMENTS.

4. PERMANENT SOD:

INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE.

PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE SECURED TO SURFACE SOIL WITH WOOD PEGS, WIRE STAPLES, OR SPLIT SHINGLES (6 TO 10 INCHES LONG BY 1/2 WIDE). SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.

6. TOPSOIL SHALL BE APPLIED AS PER THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS.

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

A. SOIL PREPARATION

1. TEMPORARY STABILIZATION
 - a. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENEED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
 - c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
2. PERMANENT STABILIZATION
 - a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
 - i. SOIL PH BETWEEN 6.0 AND 7.0.
 - ii. SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM).
 - iii. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
 - v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
 - c. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENEED TO A DEPTH OF 3 TO 5 INCHES.
 - d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
 - e. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RAKE LAWN AREAS TO SMOOTH THE SURFACE. REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.
2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-NRCS.
3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.

5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
 - a. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
 - b. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - c. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
6. TOPSOIL APPLICATION
 - a. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING TOPSOIL.
 - b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 - c. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

STANDARD STABILIZATION NOTE
 FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 a) THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 b) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED AT THE END OF EACH DAY UNLESS RUNOFF IS DIRECTED TO A MASSACHUSETTS APPROVED SEDIMENT CONTROL DEVICE

NOTE TO CONTRACTOR: SEDIMENT AND EROSION CONTROL SHALL BE STRICTLY ENFORCED.

FINAL CONSTRUCTION DOCUMENTS



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CONSULTANTS:



STAMP:



PROJECT:



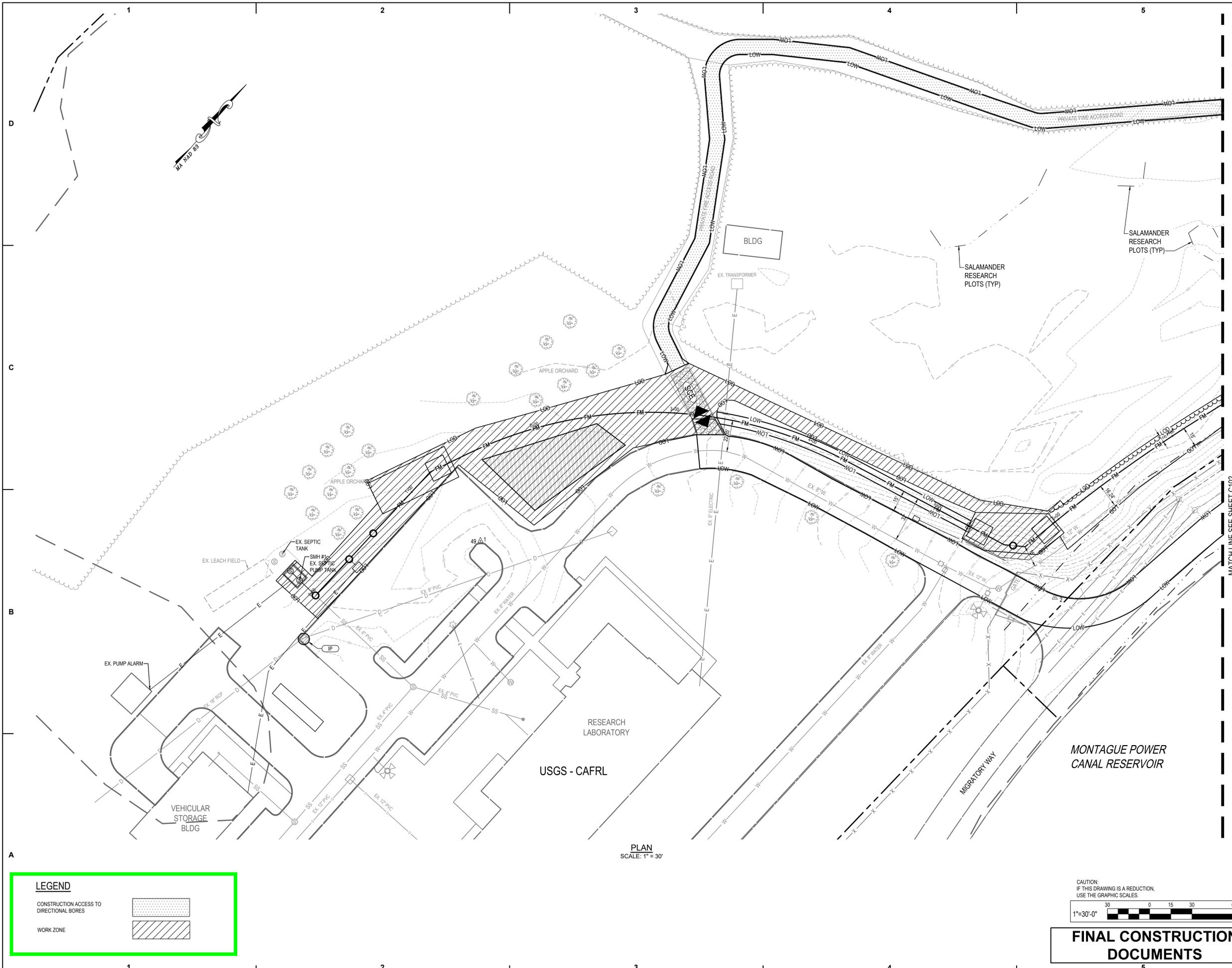
**NEW FORCE MAIN SEWER
 SILVIO O. CONTE FISH
 RESEARCH LABORATORY
 ONE MIGRATORY WAY
 TURNERS FALLS, MA 01376**

MARK	DATE	DESCRIPTION
-	-	-
		FCD
ISSUE: FINAL CONSTRUCTION DOCUMENTS		
PROJECT NO:	18905.003	
DATE:	10-04-2024	
DRAWN BY:	HH	
CHECKED BY:	JML	

SHEET TITLE

EROSION AND SEDIMENT CONTROL NOTES

C502



LEGEND

CONSTRUCTION ACCESS TO DIRECTIONAL BORES 

WORK ZONE 

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PROJECT:

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**NEW FORCE MAIN SEWER
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DATE: 10-04-2024
DRAWN BY: HH
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SHEET TITLE

ACCESS AND MAINTENANCE OF TRAFFIC PLAN

C601

MATCH LINE SEE SHEET C102

CONSULTANTS:



STAMP:



PROJECT:



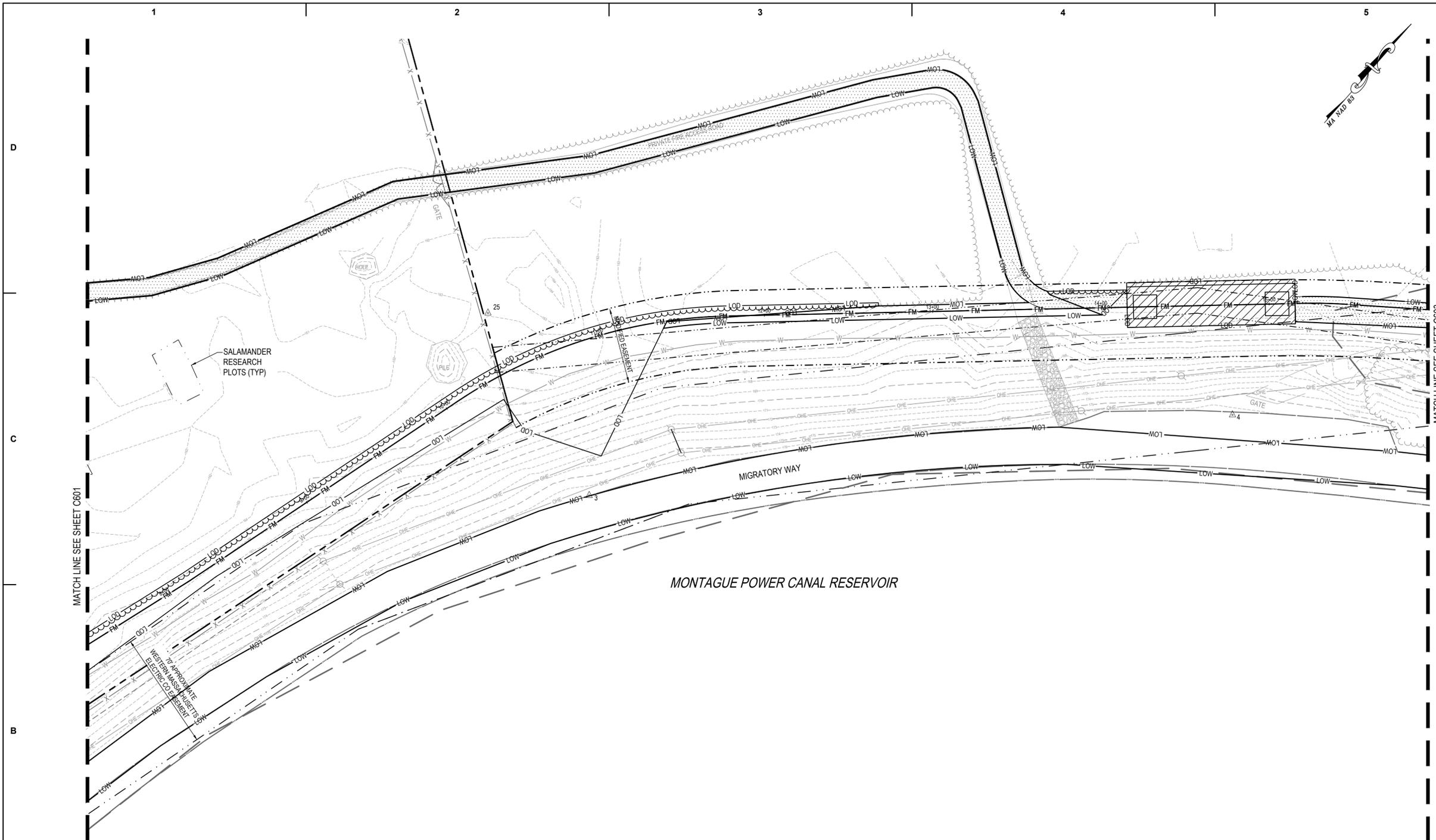
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SHEET TITLE

ACCESS AND MAINTENANCE OF
 TRAFFIC PLAN

C602



LEGEND

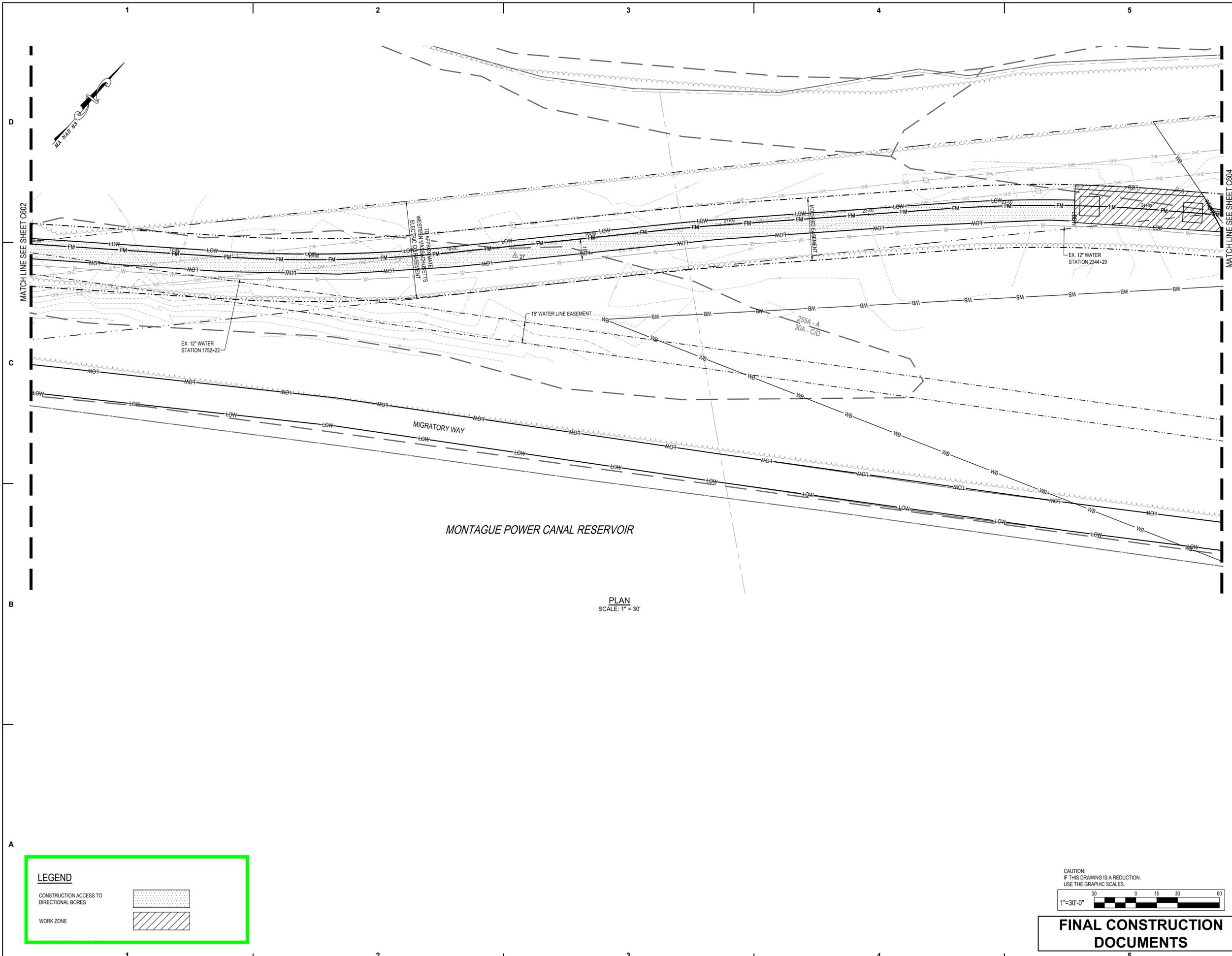
CONSTRUCTION ACCESS TO DIRECTIONAL BORES

WORK ZONE

PLAN
 SCALE: 1" = 30'

CAUTION:
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 USE THE GRAPHIC SCALES.

FINAL CONSTRUCTION DOCUMENTS



MATCH LINE SEE SHEET C602

MATCH LINE SEE SHEET C604

MONTAGUE POWER CANAL RESERVOIR

MIGRATORY WAY

PLAN
SCALE: 1" = 30'

LEGEND

CONSTRUCTION ACCESS TO DIRECTIONAL BORES

WORK ZONE

CAUTION:
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1"=30'-0"

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STAMP:

PROJECT:

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SILVIO O. CONTE FISH
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TURNERS FALLS, MA 01376**

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CHECKED BY:		JML							

SHEET TITLE

ACCESS AND MAINTENANCE OF
TRAFFIC PLAN

C603

CONSULTANTS:



STAMP:



PROJECT:



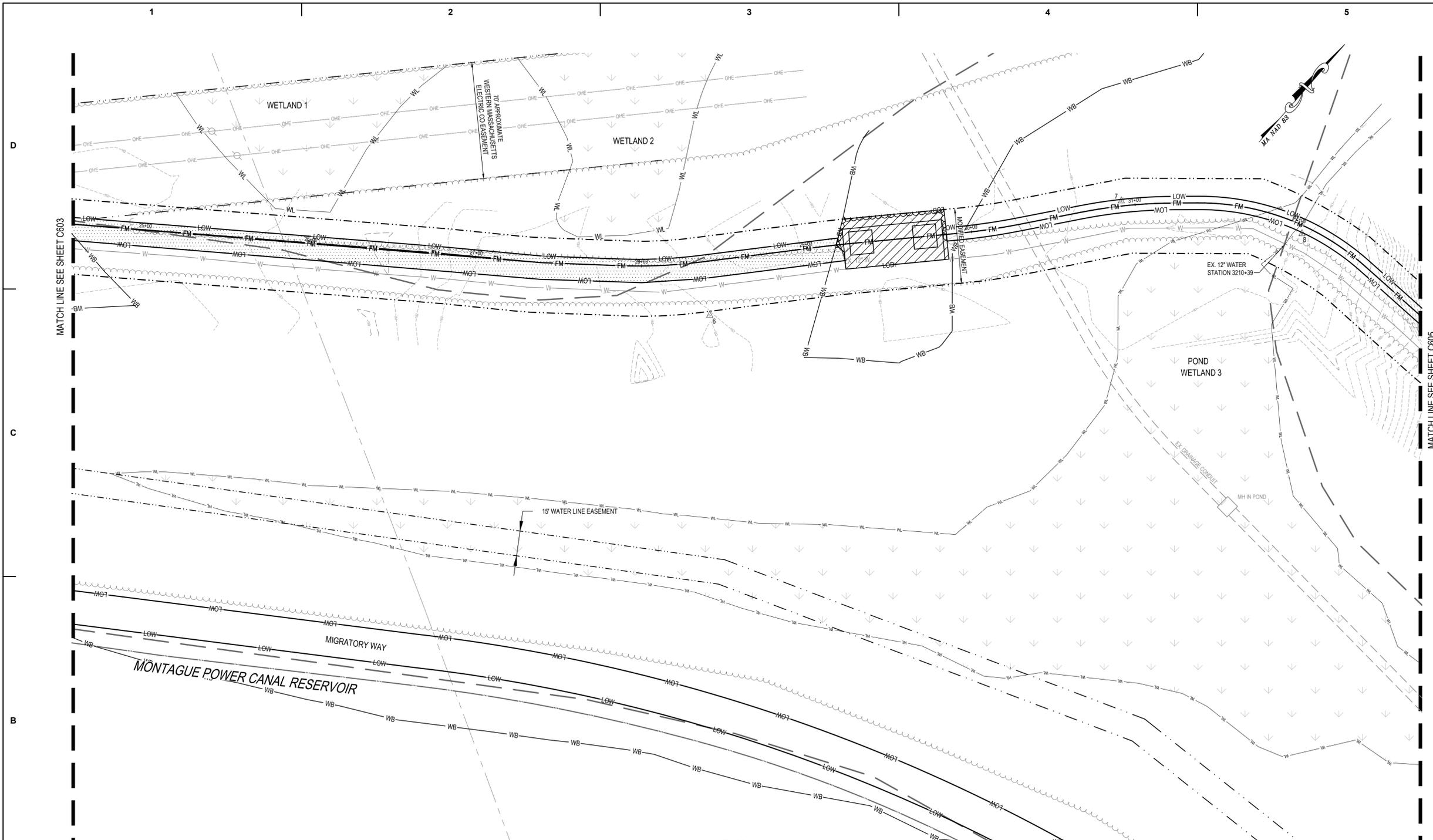
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SHEET TITLE

ACCESS AND MAINTENANCE OF
 TRAFFIC PLAN

C604



PLAN
 SCALE: 1" = 30'

LEGEND

CONSTRUCTION ACCESS TO DIRECTIONAL BORES

WORK ZONE

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FINAL CONSTRUCTION DOCUMENTS

CONSULTANTS:



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PROJECT:



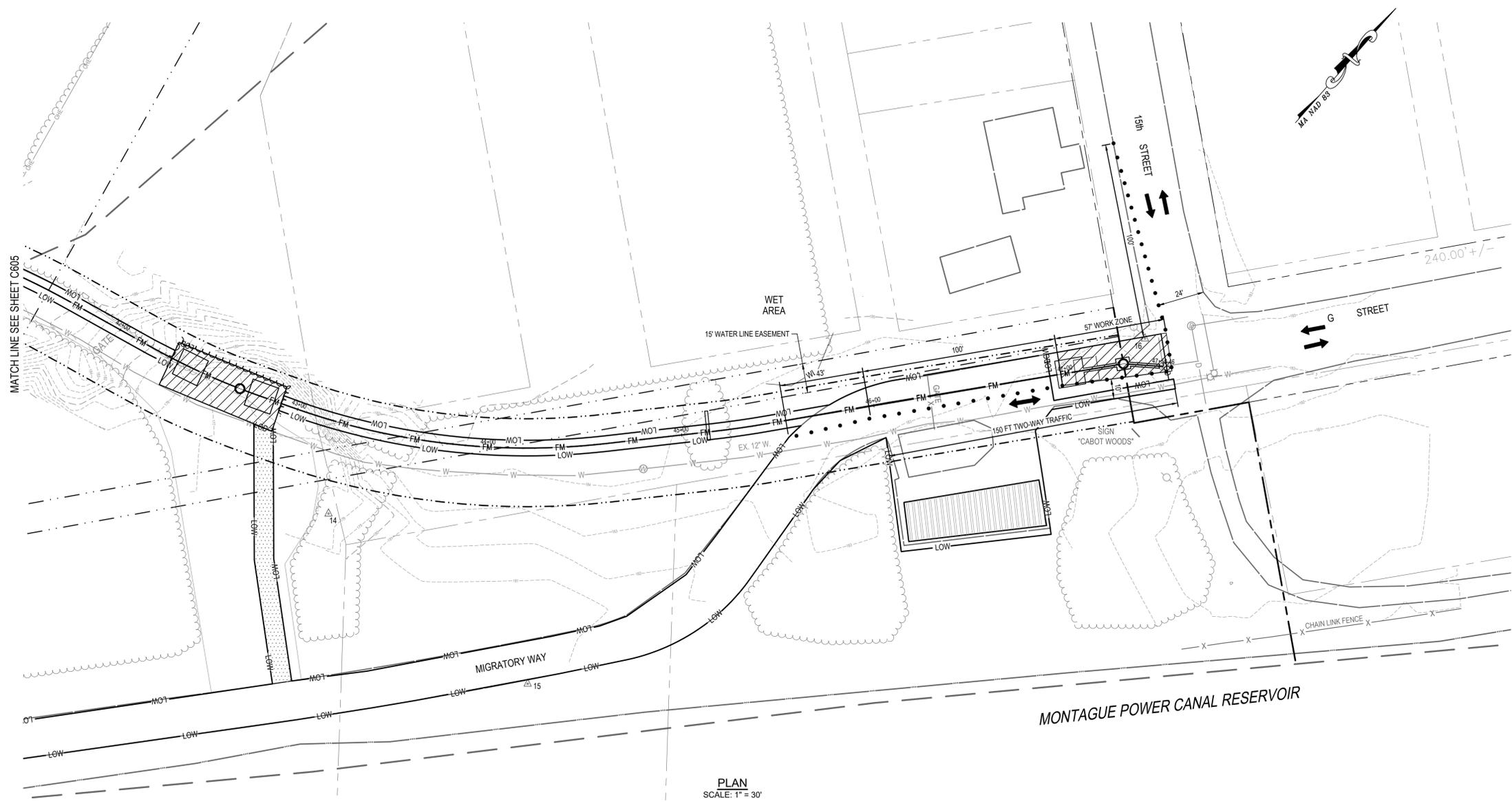
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SHEET TITLE

ACCESS AND MAINTENANCE OF
 TRAFFIC PLAN

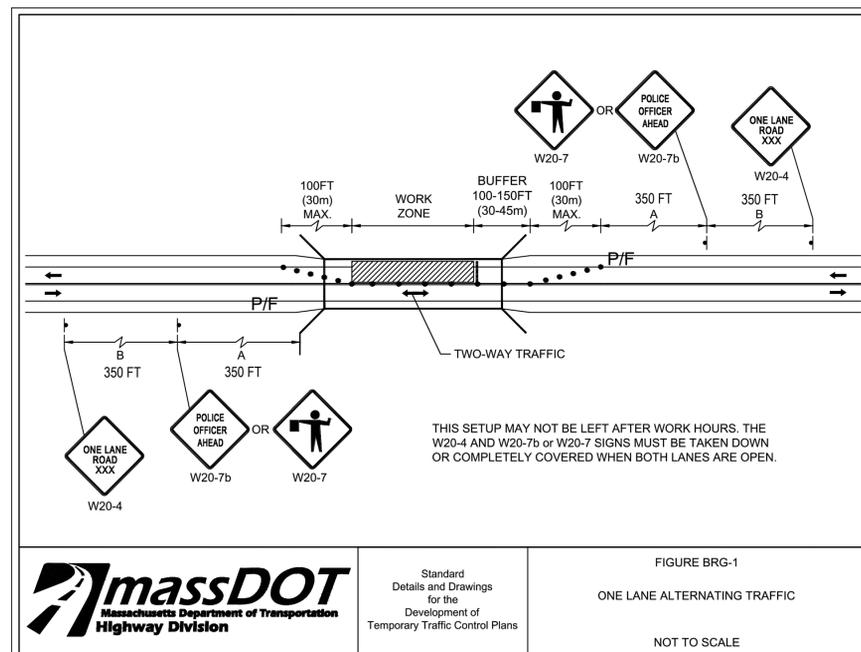
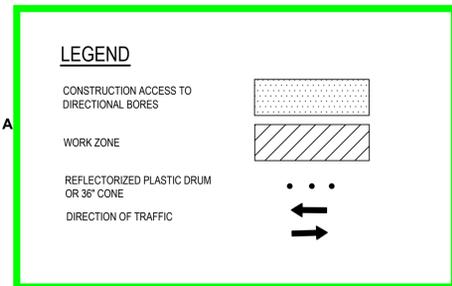
C606



PLAN
 SCALE: 1" = 30'

NOTES:

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
- ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE ROAD OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350 "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
- CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
- THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
- MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.



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FINAL CONSTRUCTION DOCUMENTS



Standard Details and Drawings for the Development of Temporary Traffic Control Plans
 FIGURE BRG-1
 ONE LANE ALTERNATING TRAFFIC
 NOT TO SCALE

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE - 20A., 125V., - MOUNTING HEIGHT 18" UNLESS NOTED OTHERWISE
	GFI RECEPTACLE - 20A., 125V., - MOUNTING HEIGHT 18" UNLESS NOTED OTHERWISE
	JUNCTION BOX - CEILING, WALL MOUNTED - SIZE PER NEC OR AS INDICATED
	ENCLOSED CIRCUIT BREAKER
	PUSHBUTTON STATION - WITH AUXILIARY AS INDICATED OR REQUIRED, NUMBER OF DOTS INDICATE NUMBER OF BUTTONS OR PILOT LIGHTS
	PANELBOARD - TYPE AS NOTED - MOUNTING HEIGHT 6'-6" TO TOP
	SPECIAL CABINET - TYPE AS NOTED
	GROUP MOUNTED EQUIPMENT - TYPE AS NOTED
	CONDUIT - IN OR UNDER FLOOR
	HOMERUN TO PANEL - NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS AND NUMBER OF CROSSLINES INDICATES NUMBER OF #12 PHASE & NEUTRAL CONDUCTORS - WHERE NO CROSSLINES APPEAR #2#12 CONDUCTORS ARE IMPLIED, GROUND WIRE IS NOT SHOWN BUT REQUIRED, PROVIDE #12 GROUND WIRE UNLESS OTHERWISE INDICATED.
	DUCTBANK - NUMBER OF DUCTS AS INDICATED
	CONDUIT - EXISTING
	CONDUIT - TURNING UP OR DOWN AS REQUIRED
	CONDUIT SEAL
	CONDUIT TERMINATED IN BUSHING
	DISCONNECT SWITCH - FUSED, NON-FUSED - TYPE AND RATING AS INDICATED
	MOTOR - HORSEPOWER AS NOTED
	GENERATOR - SIZE AND TYPE AS NOTED
	TRANSFORMER - DRY TYPE - RATING AS INDICATED

CONVENTIONS

SECTION CUT	
	SECTION LETTER
	SHEET NUMBER WHERE SECTION IS SHOWN
	SHEET NUMBER WHERE SECTION IS CUT
DETAIL	
	DETAIL NUMBER
	SHEET NUMBER WHERE DETAIL IS SHOWN
	SHEET NUMBER WHERE DETAIL IS TAKEN

MECHANICAL LEGEND

SYMBOL	ABBREV	DESCRIPTION
	G	GAS
	FPR	FUEL PRESSURE REGULATOR
		FLEXIBLE PIPE CONNECTOR
		SHUT OFF VALVE (SEE SPECIFICATION FOR TYPE)

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BKR	BREAKER
C	CONDUIT
CAB	CABINET
CAT	CATALOG
CB	CIRCUIT BREAKER
CLF	CURRENT LIMITING FUSE
CT	CURRENT TRANSFORMER
CU	COPPER
CX	CONNECT TO EXISTING
DISC	DISCONNECT
DN	DOWN
DWG	DRAWING
EC	EMPTY CONDUIT
EMT	ELECTRICAL METALLIC TUBING
EX	EXISTING
F	FUSED OR FUSIBLE
FDR	FEEDER
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE
FR	FRAME
FUT	FUTURE
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GRD	GROUND
HD	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HZ	HERTZ
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLTS
KVA	KILO-VOLTS-AMPERES
KW	KILOWATTS
KWH	KILOWATT HOURS
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPERES
MAX	MAXIMUM
MG	MOTOR GENERATOR
MH	MANHOLE
M.H.	MOUNTING HEIGHT
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MTD	MOUNTED
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-USED
NIC	NOT IN CONTRACT
NO.#	NUMBER
PB	PUSH BUTTON
PF	POWER FACTOR
RX	REMOVE EXISTING
SEC	SECONDARY
SF	SQUARE FOOT
SN	SOLID NEUTRAL
SPD	SURGE PROTECTIVE DEVICE
SPECS	SPECIFICATIONS
SQ	SQUARE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
V	VOLTS
W	WATTS
W/	WITH
WP	WEATHERPROOF
XP	EXPLOSION PROOF

GENERAL NOTES: (APPLY TO ALL ELECTRICAL DRAWINGS)

- ALL WIRE SIZES SHOWN ARE FOR COPPER CONDUCTORS.
- DO NOT ROUTE CONDUIT EXPOSED ON BUILDING EXTERIOR. CONDUIT SHALL ENTER BUILDING AT CLOSEST POINT OF USAGE SERVING EXTERIOR EQUIPMENT UNLESS OTHERWISE INDICATED.
- ELECTRICAL CONTRACTOR SHALL CONFIRM THAT THE SHORT CIRCUIT CURRENT RATING (SCCR) FOR ALL MECHANICAL AND ELECTRICAL EQUIPMENT IS SUITABLE FOR THE AVAILABLE FAULT CURRENT AT THE EQUIPMENT. SERVED BY THE BRANCH CIRCUIT OR FEEDER, THE ELECTRICAL CONTRACTOR SHALL PROVIDE FAULT CURRENT CALCULATIONS IF SHORT CIRCUIT RATINGS ARE NOT IDENTIFIED ON THE DRAWINGS AND SPECIFICATIONS AND MAKE ALL NECESSARY CHANGES TO THE EQUIPMENT SUCH THAT THE EQUIPMENT SCCR IS EQUAL TO OR EXCEEDS THE CALCULATED AVAILABLE FAULT CURRENT, WITHOUT ADDITIONAL COST.
- AMPACITY FOR CONDUCTORS 100 AMPS AND LESS SHALL BE BASED ON THE 60 DEGREE C AMPACITY RATING AS DEFINED BY THE NATIONAL ELECTRICAL CODE. CONDUCTORS FOR AMPACITIES GREATER THAN 100 AMPS SHALL BE BASED ON THE 75 DEGREE C RATING AS DEFINED BY THE NATIONAL ELECTRICAL CODE.
- FOR CONSTRUCTION IN OCCUPIED FACILITIES, PHASE OUTAGES TO MINIMIZE DISRUPTION, COORDINATE OUTAGES WITH THE OWNER A MINIMUM OF TEN DAYS PRIOR TO THE OUTAGE, UNLESS OTHERWISE NOTED.
- ELECTRICAL EQUIPMENT SUITABLE FOR EXTERIOR USE SHALL BE NEMA 3R RATED UNLESS OTHERWISE INDICATED.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES IN FORCE AT THE TIME OF CONSTRUCTION.
- PROVIDE EQUIPMENT REQUIRING AIR CIRCULATION WITH THE CLEARANCE REQUIRED BY THE MANUFACTURER UNLESS OTHERWISE INDICATED.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ELECTRICAL EQUIPMENT INSTALLATION WITH OTHER TRADES.
- FOR PARALLEL CONDUCTORS, DO NOT RUN ALL OF THE SAME PHASES IN A SINGLE CONDUIT. EACH PARALLELED CONDUIT SHALL CONSIST OF ALL THREE PHASE WIRES, NEUTRAL AND GROUND, AS APPLICABLE.
- THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING WORK PRIOR TO FABRICATION AND INSTALLATION OF NEW MATERIAL.
- THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR AREAS THAT ARE EXISTING TO REMAIN. IF THE CONTRACTOR DAMAGES ANY OF THOSE AREAS DURING THE COURSE OF CONSTRUCTION, REPAIR IN-KIND WITHOUT CHARGE TO THE OWNER.
- A SEPARATE GROUND AND NEUTRAL WIRE SHALL BE RUN WITH EACH FEEDER AND BRANCH CIRCUIT. GROUND WIRE SHALL BE SIZED AS REQUIRED BY THE NATIONAL ELECTRICAL CODE, UNLESS OTHERWISE INDICATED.
- WHERE CIRCUIT BREAKERS ARE ADDED TO EXISTING PANELBOARDS, CIRCUIT BREAKERS SHALL MATCH THE PANELBOARD'S AIC RATING.
- PROVIDE AN UNGROUNDED CONDUCTOR (NEUTRAL) TO ALL LIGHTING CONTROL SWITCH LOCATIONS, TERMINATE WIRE FOR FUTURE USE IF NOT USED FOR THE CURRENT PROJECT.
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL DEVICES WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
- ALL INTERIOR AND EXTERIOR PENETRATIONS CREATED BY REMOVAL OR CREATED BY INSTALLATION SHALL BE SEALED AND/OR REPAIRED TO MATCH ADJACENT CONSTRUCTION AND FIRE RATINGS.
- GENERATOR CONTROL WIRING SHALL BE CONTINUOUSLY MONITORED FOR LOSS OF INTEGRITY OF THE REMOTE START CIRCUIT. LOSS OF INTEGRITY OF THE REMOTE START CIRCUIT(S) SHALL INITIATE A VISUAL AND AUDIBLE ANNUNCIATION OF THE GENERATOR MALFUNCTION AT THE GENERATOR LOCAL & REMOTE ANNUNCIATOR(S) AND START THE GENERATOR ENGINE.
- CONTRACTOR SHALL USE GROUND PENETRATING RADAR TO LOCATE ALL UNDERGROUND UTILITIES BEFORE DIGGING.



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MARK	DATE	DESCRIPTION

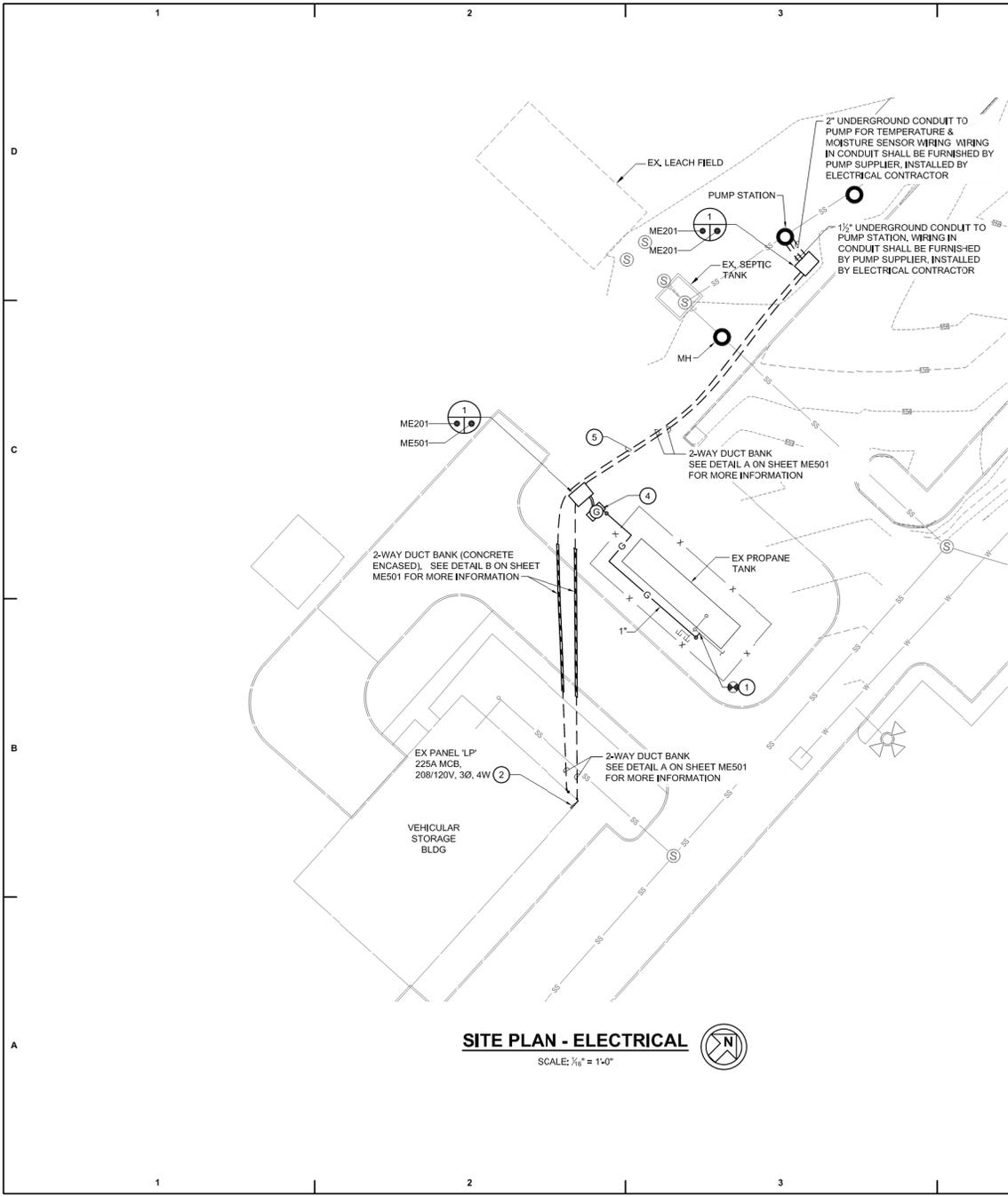
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CHECKED BY: RIS

SHEET TITLE

**MECHANICAL & ELECTRICAL
LEGENDS, ABBREVIATIONS,
GENERAL NOTES & DETAILS**

**FINAL CONSTRUCTION
DOCUMENTS**

ME001

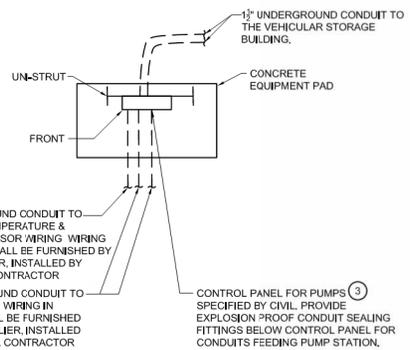


SITE PLAN - ELECTRICAL
SCALE: 1/16" = 1'-0"



DRAWING NOTES: (APPLY TO THIS DRAWING ONLY)

- 1 CONNECT NEW 1" PROPANE TO EXISTING PROPANE SUPPLY PIPING. EXTEND NEW 1" PROPANE INSIDE THE FENCE AROUND PROPANE TANK TO NEW EMERGENCY GENERATOR. PROVIDE PRESSURE REDUCING VALVE PER MANUFACTURER'S AND PROPANE SUPPLIER'S RECOMMENDATIONS. COORDINATE ALL WORK INCLUDING ANY REQUIRED SHUTDOWNS WITH THE CURRENT PROPANE SUPPLIER AND THE USGS.
- 2 PROVIDE A 3P-100A CIRCUIT BREAKER IN EXISTING PANEL LP TO CONNECT WITH PANEL GP. SEE ONE-LINE DIAGRAM ON DRAWING ME501 FOR WIRING AND CONDUIT SIZE.
- 3 PUMP CONTROL PANEL SEE WITH CIVIL DRAWING FOR MORE INFORMATION. MOUNTED ON UN-STRUT 36" ABOVE FINISHED GRADE. SEE DETAIL ON THIS DRAWING. REFER TO ONE-LINE DIAGRAM ON DRAWING ME501 FOR MORE INFORMATION.
- 4 25KW / 31KVA, 208/120V, 3Ø PROPANE POWERED GENERATOR. SEE ONE-LINE DIAGRAM ON DRAWING ME501.
- 5 EXTEND A 16 GAUGE (CONFIRM SIZE WITH BAS MANUFACTURER) SIGNAL WIRE FROM THE SEWAGE PUMP CONTROL PANEL VIA THE NEW DUCTBANK TO THE VEHICULAR STORAGE BUILDING AND CONNECT TO THE EXISTING WEBCTRL 500 SERVER VERSION 6.1 (BUILD 6.1.002.20150502-63003 FINAL) BUILDING AUTOMATION SYSTEM. PROVIDE A NEW ALARM POINT TO SIGNAL PUMP FAILURE.



CONTROL PANEL MOUNTED DETAIL
NOT TO SCALE

CAUTION:
IF THIS PLAN IS A REDUCTION, GRAPHIC SCALES MUST BE USED.



FINAL CONSTRUCTION DOCUMENTS

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Baltimore, Maryland 21234-5701
Tel: (410) 666-6000
Email: ebl@eblengr.com

CONSULTANTS:

STAMP:

PROJECT:

**NEW FORCE MAIN SEWER
SILVIO O. CONTE FISH
RESEARCH LABORATORY
1 MIGRATORY WAY
TURNERS FALLS, MA 01376**

MARK	DATE	DESCRIPTION
ISSUE: FINAL CONSTRUCTION DOCUMENTS		
PROJECT NO: 18905.003		
DATE: 10-04-2024		
DRAWN BY: P.J.H.		
CHECKED BY: R.H.S.		

SHEET TITLE
SITE PLAN - ELECTRICAL AND MECHANICAL

ME201

RE: USGS S.O. Conte Start of Study Notification

From Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>

Date Thu 12/18/2025 3:32 PM

To Bradley Stumph <Bradley.Stumph@chloeta.com>

Cc Lillie Keener <lillie.keener@chloeta.com>; Leesha Howard-McCauley <Leesha.Howard-McCauley@chloeta.com>; Sizemore, Jordan D <jsizemore@usgs.gov>; Gahagan, Ben (FWE) <ben.gahagan@mass.gov>; Ritz, Thornton A (FWE) <Thornton.A.Ritz@mass.gov>; Richards, Todd (FWE) <todd.richards@mass.gov>; Cheeseman, Melany (FWE) <Melany.Cheeseman@mass.gov>

 2 attachments (3 MB)

180291.029_USGS_MASS_NHESP_EMAIL_GUIDANCE_20250609.pdf; Project Area_AERIAL MAP.PNG;

*RE: USGS Conte Lab (West of Migratory Way)
Direction Drilling*

Hi Bradley,

Thanks for letting me know you were in touch with Melany. I agree with Melany that the direction drilling would not require review under the MA Endangered Species Act in this context. However, if the project runs into challenges and results in an inadvertent release of drill fluid, or you need to dig down to the drill path, that may raise some rare species concerns. The bypass channel to the west of the drilling is known habitat for both state- and federally- listed species, and the power canal is used a migratory habitat for shad. There is a critical spawning area adjacent to the work in the bypass channel.

For the fishes, working outside spawning and early life-stage period would be advised ([TR#47-TOY Manuscript-TEXT-4-14-2011.pub](#), Appendix B has occurrence and TOY information; shad, sturgeon and eels are at the top of my mind). I've copied my colleague at DMF and DFW-fisheries who can also help with questions and chime in if I'm overlooked a key species.

For the rare plants, drill fluid or erosion moving into the bypass channel, or efforts to control it in the water would raise concerns. If you can do the project outside the growing season, at least some of the concerns can be managed.

Happy to chat further after the holidays, Misty-Anne

Misty-Anne R. Marold

Senior Endangered Species Review Biologist

Massachusetts Division of Fisheries & Wildlife
Natural Heritage & Endangered Species Program
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6356 | f: (508) 389-7890
Email: misty-anne.marold@mass.gov
mass.gov/nhesp | facebook.com/masswildlife

**Due to volume and staffing, regulatory filings are anticipated to take the full 30-day period allotted by the regulations under the MESA and WPA. Pending review deadlines and recent decisions can be found on our website here: <https://www.mass.gov/service-details/recent-mesa-decisions-permits-and-applications> (updated weekly). Thank you.*

From: Bradley Stumph <Bradley.Stumph@chloeta.com>
Sent: Thursday, December 18, 2025 1:09 PM
To: Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>
Cc: Lillie Keener <lillie.keener@chloeta.com>; Leesha Howard-McCauley <Leesha.Howard-McCauley@chloeta.com>; Sizemore, Jordan D <jsizemore@usgs.gov>
Subject: Re: USGS S.O. Conte Start of Study Notification

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Hello Misty-Anne,

We were previously in contact with your colleague Melany Cheeseman for this project. I have attached our email communication and a project map for coordination.

Thanks,
Brad

CHLOETA | Work That Matters

Bradley Stumph
Natural Resource Specialist III

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E: Bradley.Stumph@chloeta.com

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From: Leddick, Jesse (FWE) <jesse.lednick@mass.gov>
Sent: Wednesday, December 17, 2025 7:14 AM
To: Sizemore, Jordan D <jsizemore@usgs.gov>
Cc: Marold, Misty-Anne (FWE) <misty-anne.marold@mass.gov>; Lillie Keener <lillie.keener@chloeta.com>; Leesha Howard-McCauley <Leesha.Howard-McCauley@chloeta.com>; Bradley Stumph <Bradley.Stumph@chloeta.com>
Subject: RE: USGS S.O. Conte Start of Study Notification

Hi Jordan,

My colleague Misty-Anne Marold, cc'd here, will be our point of contact for this project. Please include her on your email list, and remove me. Thank you!!

Jesse Leddick
Assistant Director, Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
Phone: (508) 389-6376 | e: Jesse.Leddick@mass.gov
mass.gov/masswildlife | facebook.com/masswildlife

From: Sizemore, Jordan D <jsizemore@usgs.gov>
Sent: Friday, December 12, 2025 7:47 AM
To: Leddick, Jesse (FWE) <jesse.leddick@mass.gov>; Gonsalves, Sean (DEP) <Sean.Gonsalves@mass.gov>
Cc: Lillie Keener <lillie.keener@chloeta.com>; Leesha Howard-McCauley <leesha.howard-mccauley@chloeta.com>; Bradley Stumph <bradley.stumph@chloeta.com>
Subject: USGS S.O. Conte Start of Study Notification

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Dear Consulting Partners,

The U.S. Geological Survey (USGS) is initiating environmental and permitting coordination for the proposed Conte Sewer Connection Project located at the Silvio O. Conte Anadromous Fish Research Laboratory in Turners Falls, Massachusetts. The project seeks to improve water quality compliance and operational reliability by connecting existing laboratory infrastructure to the local municipal wastewater conveyance system.

The USGS has initiated preparation of an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA) to evaluate the proposed action and reasonable alternatives. As part of this effort, the project team is coordinating with federal, state, and local permitting and regulatory agencies. You have been identified as potential consulting party and or stakeholder that we would like to ensure you are notified. Please see the attached Start of Study Letter for additional information.

We look forward to keeping you all informed as this analysis moves forward. Please feel free to use the contact information below to reach out to myself if there are any questions or concerns.

Thank you

V/r

*Jordan D. Sizemore, REM
Environmental Protection Specialist
Environmental Management Branch
U.S. Geological Survey
360-929-0783
jsizemore@usgs.gov*

[CDEPC Program SharePoint Site](#)