

Attachment 4

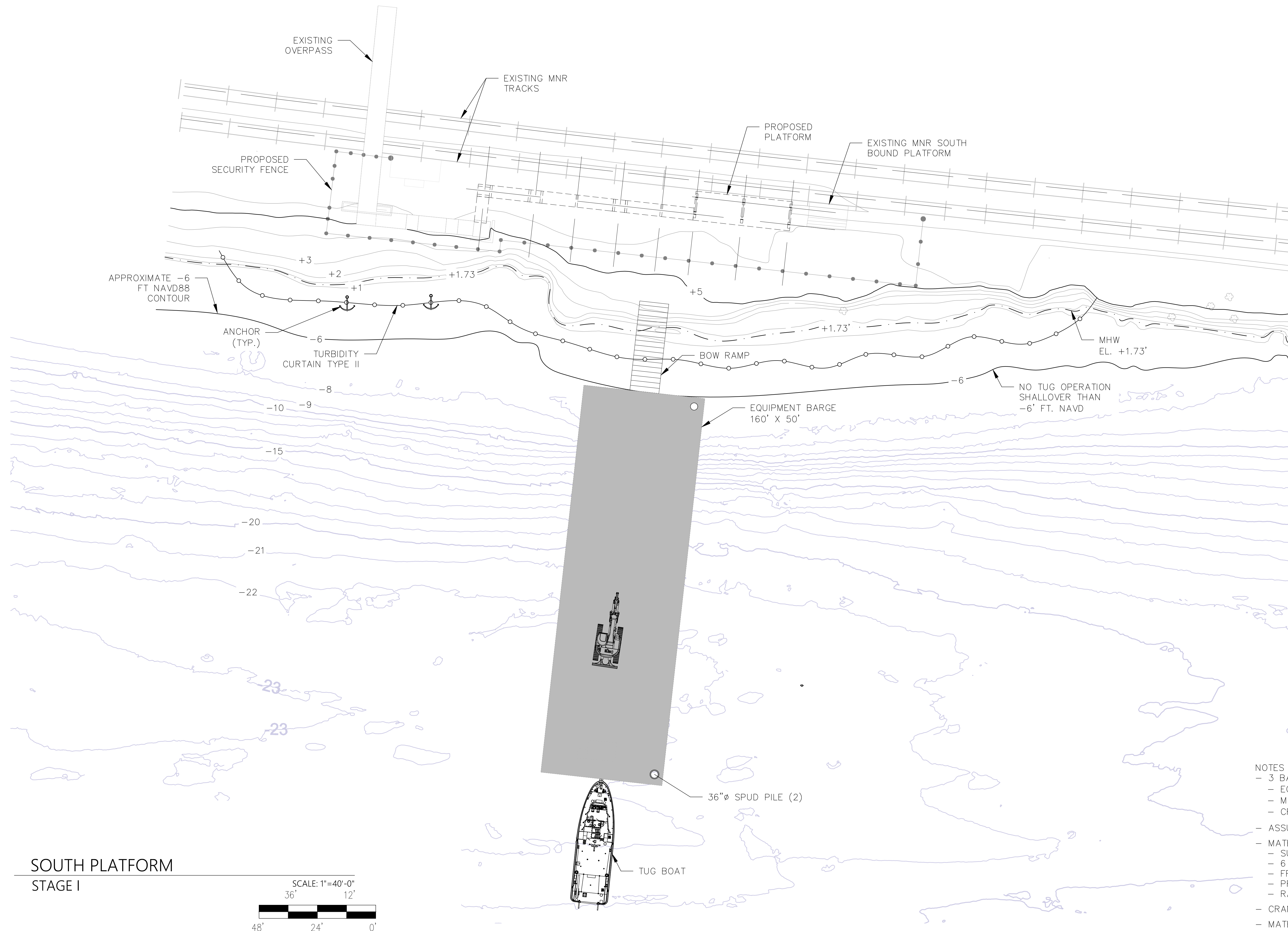
Breakneck Connector and Bridge Project

Engineering Drawings

Attachment 4a

Breakneck Connector and Bridge Project

Southbound Metro-North Railroad Platform Drawings



APPROXIMATE -6 FT NAVD88 CONTOUR

ANCHOR (TYP.)

TURBIDITY CURTAIN TYPE II

BOW RAMP

EQUIPMENT BARGE 160' X 50'

MHW EL. +1.73'

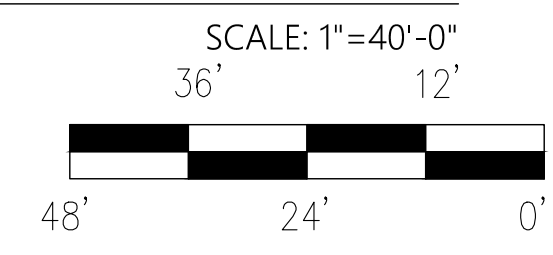
NO TUG OPERATION SHALL OVER THAN -6' FT. NAVD

36"Ø SPUD PILE (2)

TUG BOAT

NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft

**SOUTH PLATFORM
STAGE I**



- NOTES**
- 3 BARGES
 - EQUIPMT. BARGE (30'x90')
 - MATERIAL BARGE (30'x120')
 - CRANE BARGE (50'x160')
 - ASSUME MANITOWOC 2250.
 - MATERIAL BARGE:
 - SUPER SAC PREMIX CONC.
 - 6 YDS CUBE MIXER.
 - FRAC TANK.
 - PRECAST PLATFORM UNITS.
 - RAILINGS FOR PLATFORM.
 - CRANE BARGE - 4 WEEKS ±.
 - MATERIAL CRANE - 7-8 WEEKS.



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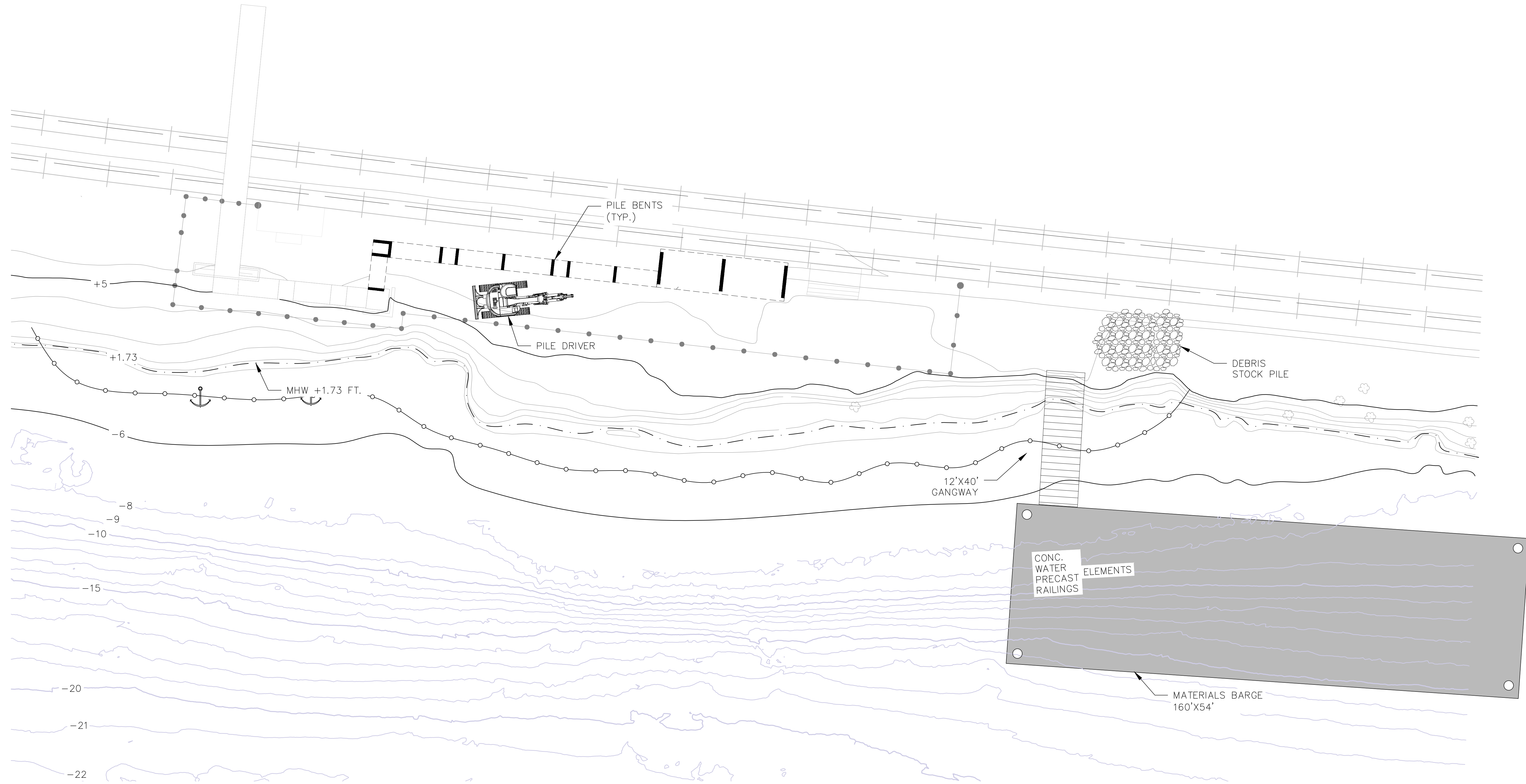
DATE	SUBMISSIONS / REVISIONS
05.11.22	PRELIMINARY REVIEW

PROJECT TITLE: **HHFT - SOUTH MNR PLATFORM**
LOCATED AT
HUDSON HIGHLANDS FJORD TRAIL, INC.
PREPARED FOR
HUDSON RIVER
ROCKLAND COUNTY

OWNER:
1 CIVIC CENTER PLAZA, STE 200
POUGHKEEPSIE, NY 12601
TEL: XXX.XXX.XXXX
FAX: XXX.XXX.XXXX

SHEET TITLE:
SOUTH MNR PLATFORM

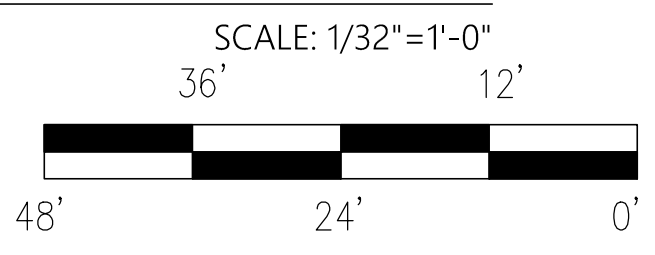
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DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE: AS SHOWN	SHEET NO: 1 OF 6
DRAWING NO:	MR-1.0



3. CLEAR, GRUB SITE / DEMO PLATFORM. ① WEEK.
4. EXCAVATE + DRIVE PILES ② WEEKS.
5. PLACE MATERIAL BARGE.
6. FORM + POUR 4P FOOTING ② WEEKS.

NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft

**BREAKNECK CONNECTOR
STAGE II**



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PROJECT TITLE: **HHFT - SOUTH MNR PLATFORM**

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ROCKLAND COUNTY

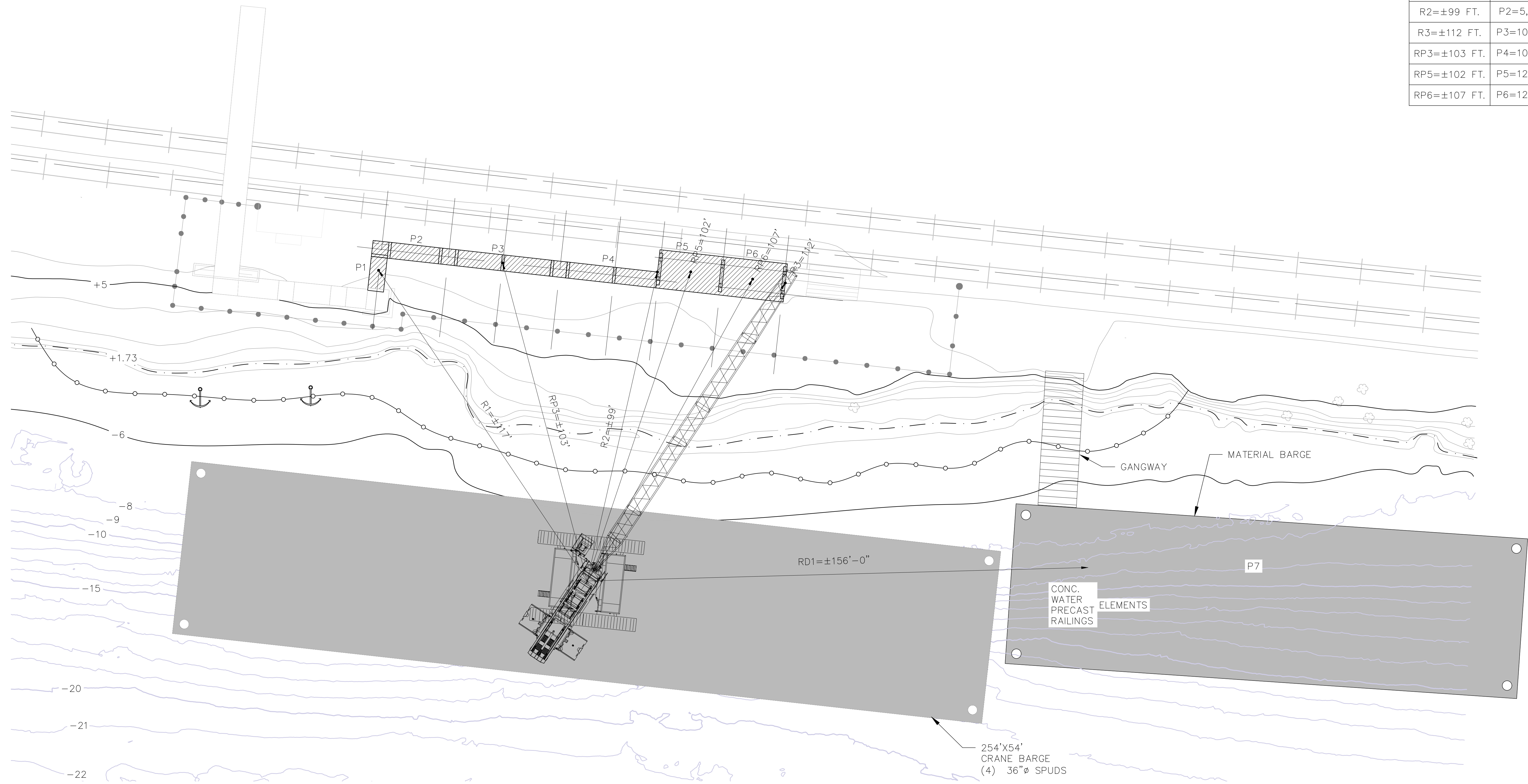
PREPARED FOR
HUDSON HIGHLANDS FJORD TRAIL, INC.

OWNER:
1 CIVIC CENTER PLAZA, STE 200
POUGHKEEPSIE, NY 12601
TEL: XXX.XXX.XXXX
FAX: XXX.XXX.XXXX

SHEET TITLE: **STAGE II
CLEAR, GRUB SITE /
DEMO PLATFORM,
EXCAVATE + DRIVE
PILES, PLACE MAT.
BARGE, FORM + POUR**

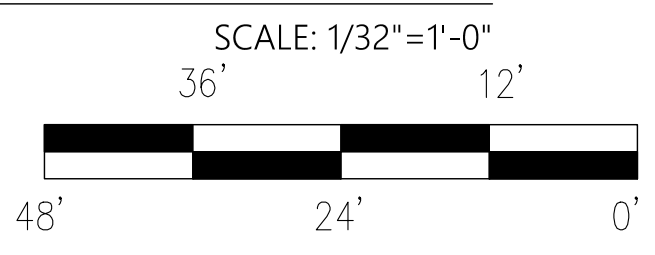
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DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE:	SHEET NO: 2 OF 6
AS SHOWN DRAWING NO:	MR-2.0

LIFT INFORMATION	
R1=±117 FT.	P1=5,000 LBS
R2=±99 FT.	P2=5,000 LBS
R3=±112 FT.	P3=10,000 LBS
RP3=±103 FT.	P4=10,000 LBS
RP5=±102 FT.	P5=12,500 LBS
RP6=±107 FT.	P6=12,500 LBS



NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft

**PRECAST INSTALLATION
STAGE III**



- 7. PLACE CRANE BARGE.
- 8. PICK + PLACE WALLS FOR PLATFORM ② WEEKS.
- 9. PICK + PLACE PRECAST DECK FORM PLATFORM ① WEEK.

DATE	SUBMISSIONS / REVISIONS
05.11.22	PRELIMINARY REVIEW

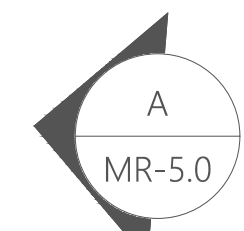
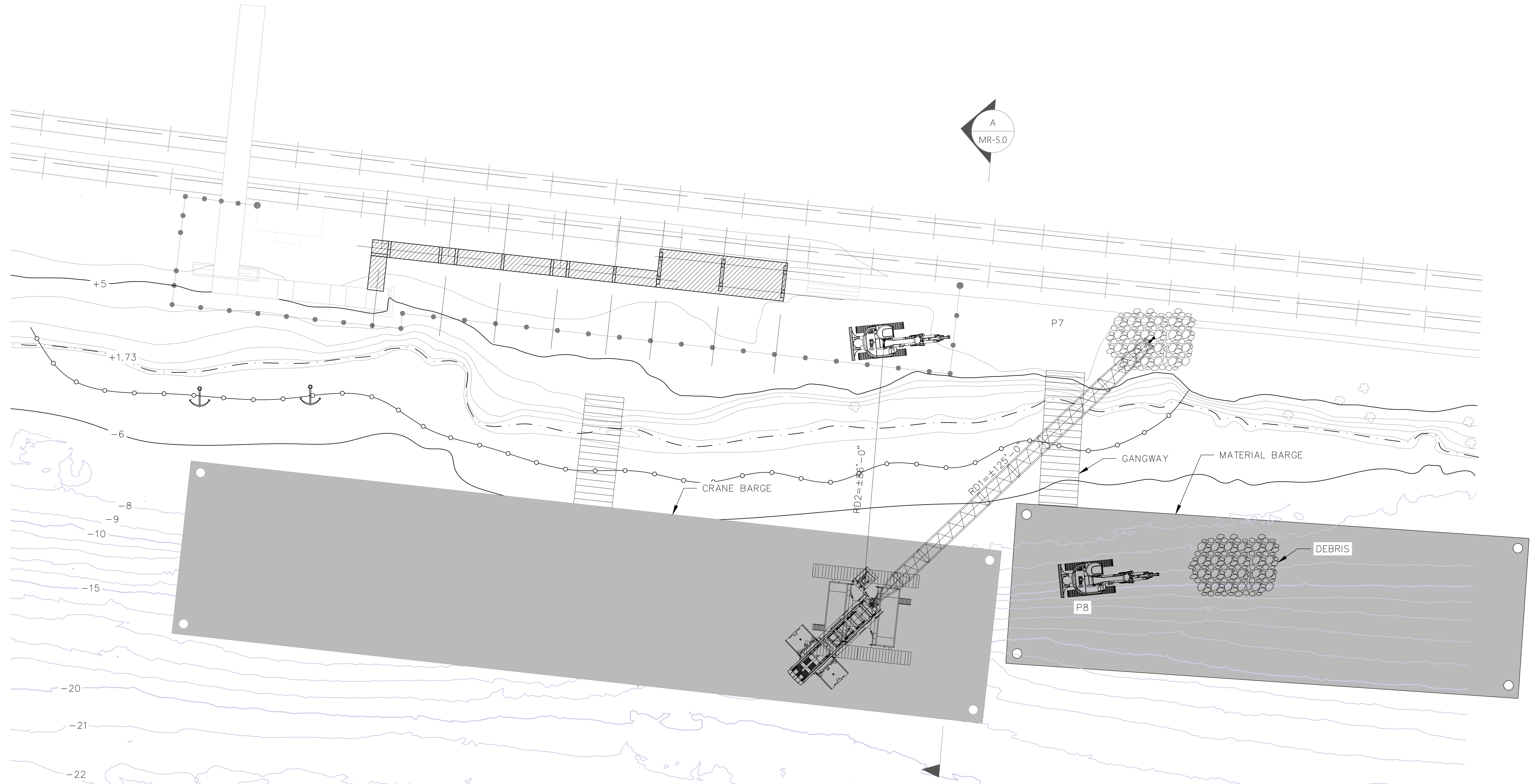
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 LOCATED AT
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 ROCKLAND COUNTY

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 HUDSON HIGHLANDS FJORD TRAIL, INC.

OWNER:
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 FAX: XXX.XXX.XXXX

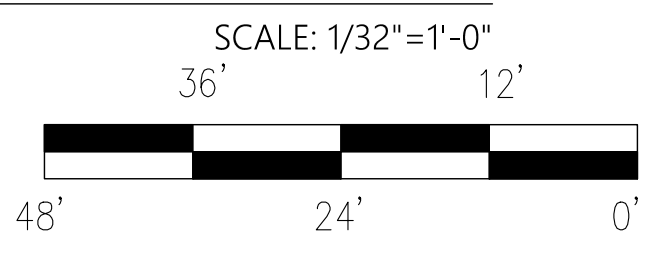
SHEET TITLE:
**STAGE III
 PLACE CRANE BARGE,
 PICK + PLACE WALLS,
 PICK + PLACE PRECAST
 DECK FORM PLATFORM**

ISSUE DATE: 01.20.2023	PROJECT NO:
DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE:	SHEET NO: 3 OF 6
AS SHOWN DRAWING NO:	MR-3.0



NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft

**BRAKNECK CONNECTOR
STAGE IV**



- 10. PICK RAILING (OFFLOAD THE DEMOBILIZE CRANE BARGE) ① WEEK.
- 11. REMOVE DEBRIS + SURPLUS TO MATERIAL BARGE ① WEEK.

LIFT INFORMATION	
RD1=±125 FT.	P7=5,000 LBS
RD2=±86 FT.	P8=80,000 LBS

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05.11.22	PRELIMINARY REVIEW

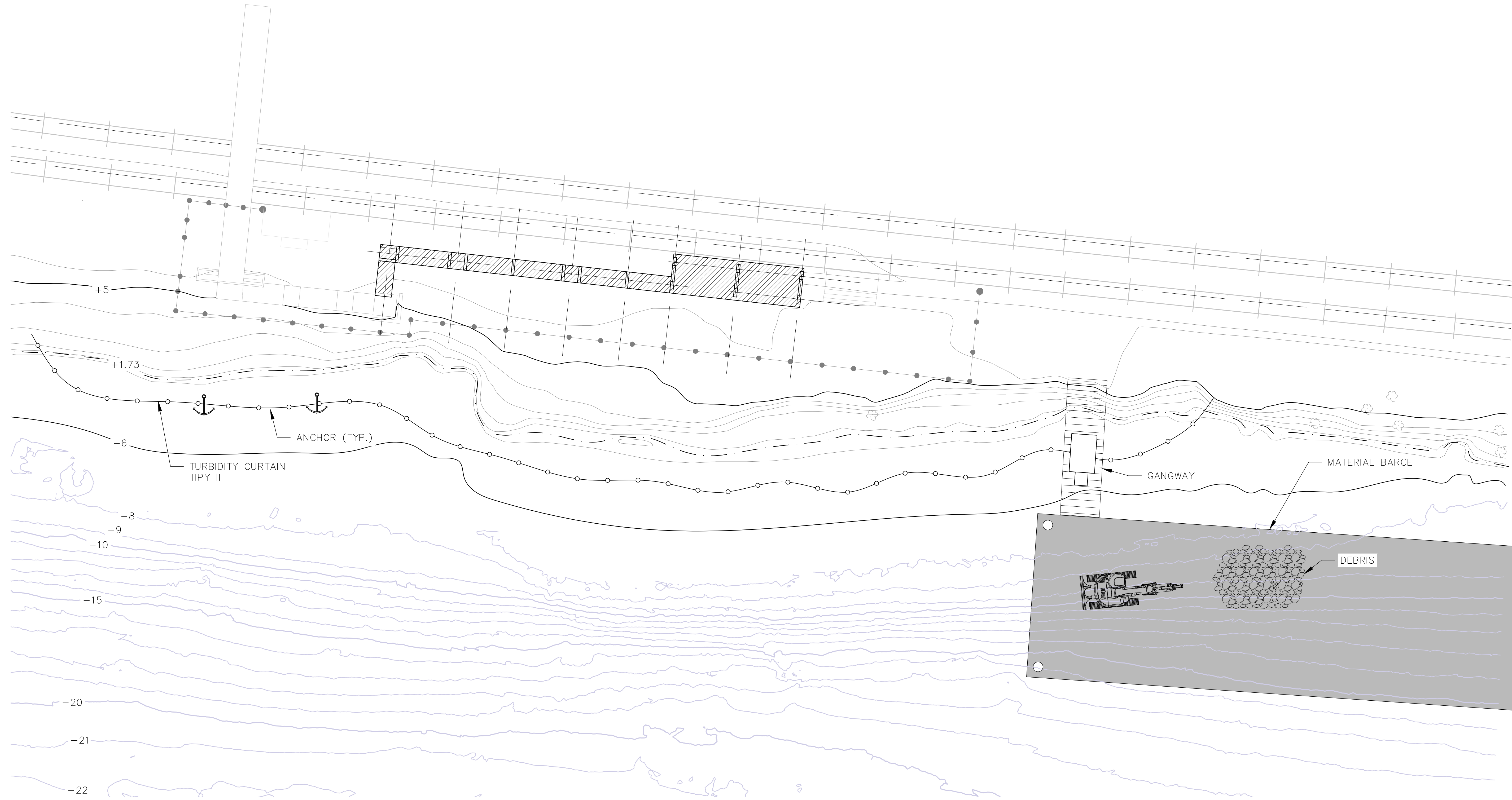
PROJECT TITLE: **HHFT - SOUTH MNR PLATFORM**
 LOCATED AT
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 ROCKLAND COUNTY

PREPARED FOR
 HUDSON HIGHLANDS FJORD TRAIL, INC.

OWNER:
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 POUGHKEEPSIE, NY 12601
 TEL: XXX.XXX.XXXX
 FAX: XXX.XXX.XXXX

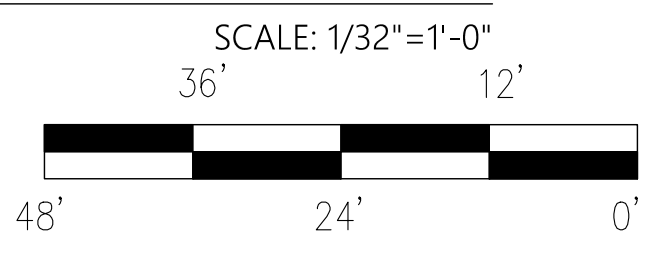
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**STAGE IV
 PICK RAILING,
 REMOVE DEBRIS +
 SURPLUS TO MATERIAL
 BARGE**

ISSUE DATE: 01.20.2023	PROJECT NO:
DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE:	SHEET NO: 4 OF 6
AS SHOWN	DRAWING NO: MR-3.1



**BREAKNECK CONNECTOR
STAGE V**

NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft



- 12. LOAD EQUIPMT. TO MATERIAL BARGE ① WEEK.
- 13. DEMOBILIZE MATERIAL BARGE.

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05.11.22	PRELIMINARY REVIEW

PROJECT TITLE: **HHFT - SOUTH MNR PLATFORM**

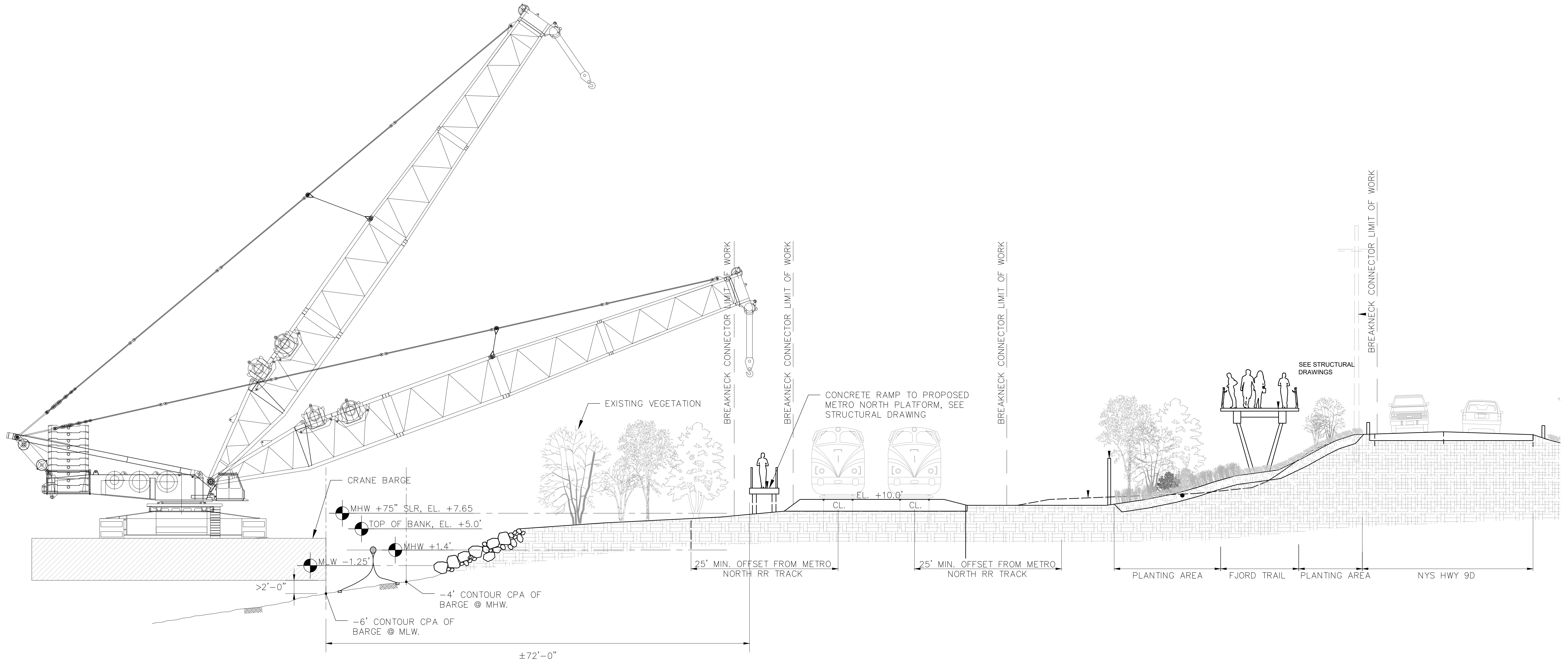
LOCATED AT
 HUDSON RIVER
 ROCKLAND COUNTY

PREPARED FOR
 HUDSON HIGHLANDS FJORD TRAIL, INC.

OWNER:
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 POUGHKEEPSIE, NY 12601
 TEL: XXX.XXX.XXXX
 FAX: XXX.XXX.XXXX

SHEET TITLE:
**STAGE V
 LOAD EQUIPMT. TO
 MAT. BARGE,
 DEMOBILIZE MATERIAL
 BARGE**

ISSUE DATE: 01.20.2023	PROJECT NO:
DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE: AS SHOWN	SHEET NO: 5 OF 6
DRAWING NO:	MR-4.0



NAVD88 EL	WATER DEPTH
-1	0.47 Ft
-3	1.53 Ft
-5	3.53 Ft
-6	4.53 Ft
-8	6.53 Ft

A SECTION A
MR-7.0



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DATE	SUBMISSIONS / REVISIONS
05.11.22	PRELIMINARY REVIEW

PROJECT TITLE: **HHFT - SOUTH MNR PLATFORM**

LOCATED AT
HUDSON RIVER

PREPARED FOR
HUDSON HIGHLANDS FJORD TRAIL, INC.

ROCKLAND COUNTY

OWNER:
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POUGHKEEPSIE, NY 12601
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FAX: XXX.XXX.XXXX

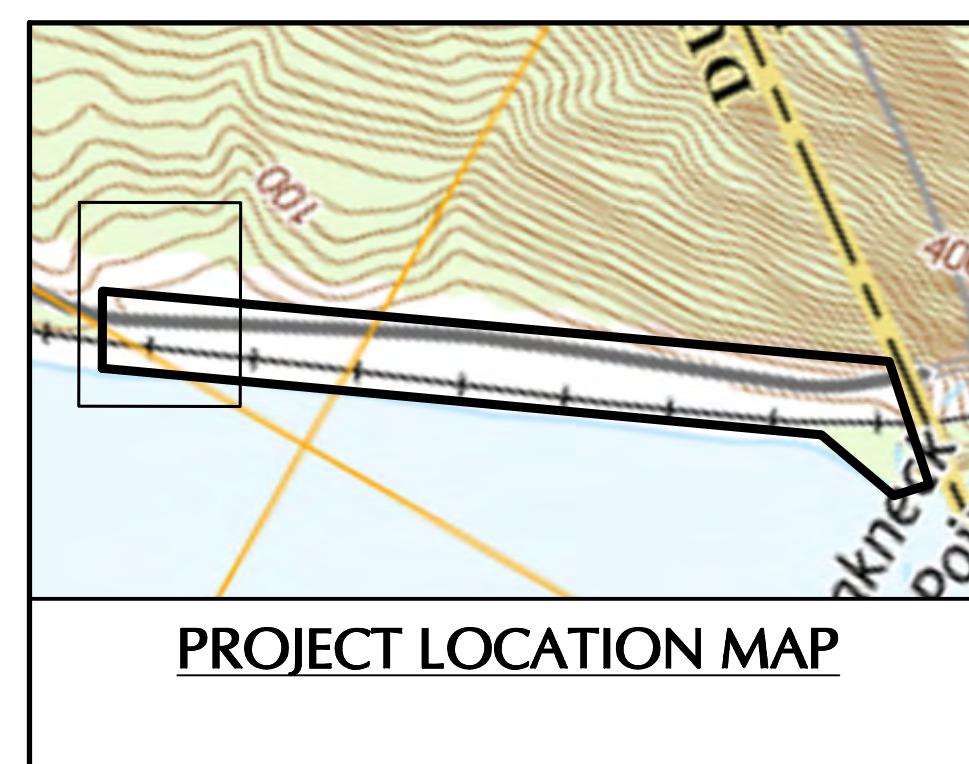
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SECTION A

ISSUE DATE: 01.20.2023	PROJECT NO:
DRAWN BY: R.M.	CHECKED BY: F.M.
SCALE:	SHEET NO: 6 OF 6
AS SHOWN	DRAWING NO: MR-5.0

Attachment 4b

Breakneck Connector and Bridge Project

Delineated Wetland Drawings

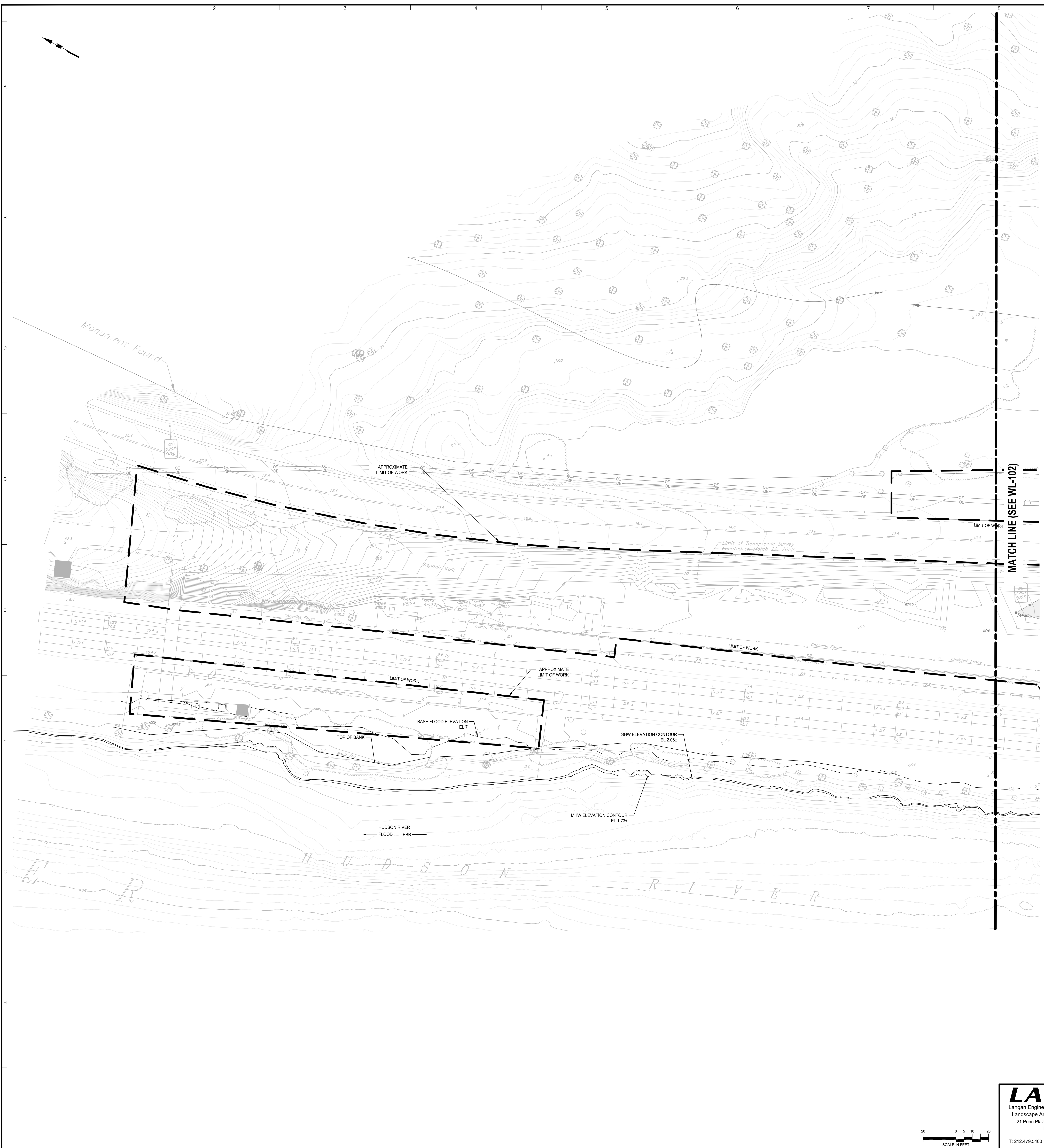


LEGEND:
 DELINEATED WETLAND
 DELINEATED WETLAND DISTURBANCE

GENERAL NOTES

- EXISTING TOPOGRAPHIC, BOUNDARY AND UTILITY INFORMATION AS SHOWN ON THIS DESIGN DOCUMENT IS BASED ON SURVEY TITLED "HUDSON HIGHLANDS FJORD TRAIN (BREAKNECK TUNNEL TO BREAKNECK STATION) PROPERTY LINE & TOPOGRAPHIC SURVEY," PREPARED BY BADEY & WATSON SURVEYING & ENGINEERING, P.C., DATED JUNE 26, 2020, LAST REVISED MAY 25, 2021.
- ALL ELEVATIONS AND GRADES PROVIDED HEREON REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- WETLANDS AND WATERS WERE DELINEATED ONSITE BY STEVE MARINO OF TIM MILLER ASSOC., INC. DURING JUNE 2020, AND LOCATED BY BADLEY & WATSON ON JUNE 17, 2020.

WETLAND IDENTIFICATION	WETLAND AREA (SQUARE FT)
A	5609
B	1229
C	1067
D	481



MATCH LINE (SEE WL-102)



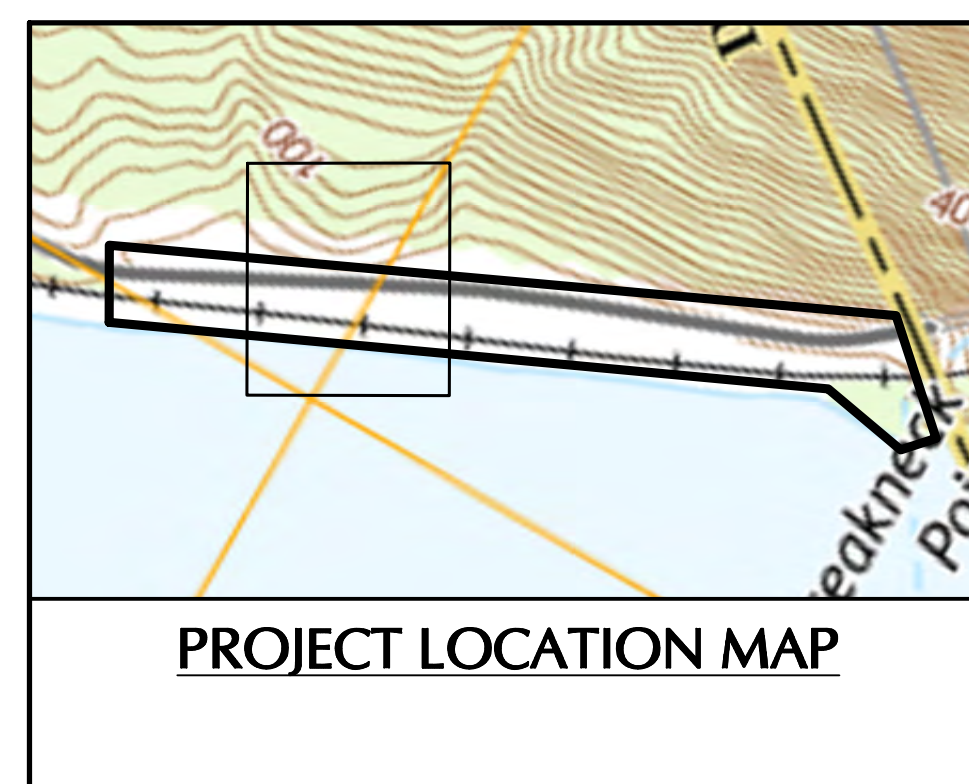
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 Langan Engineering, Environmental, Surveying,
 Landscape Architecture and Geology, D.P.C.
 21 Penn Plaza, 360 West 31st Street, 8th Floor
 New York, NY 10001
 T: 212-479-5400 F: 212-479-5444 www.langan.com

Project: HUDSON HIGHLAND FJORD TRAIL BREAKNECK CONNECTOR
 DUTCHESS NEW YORK

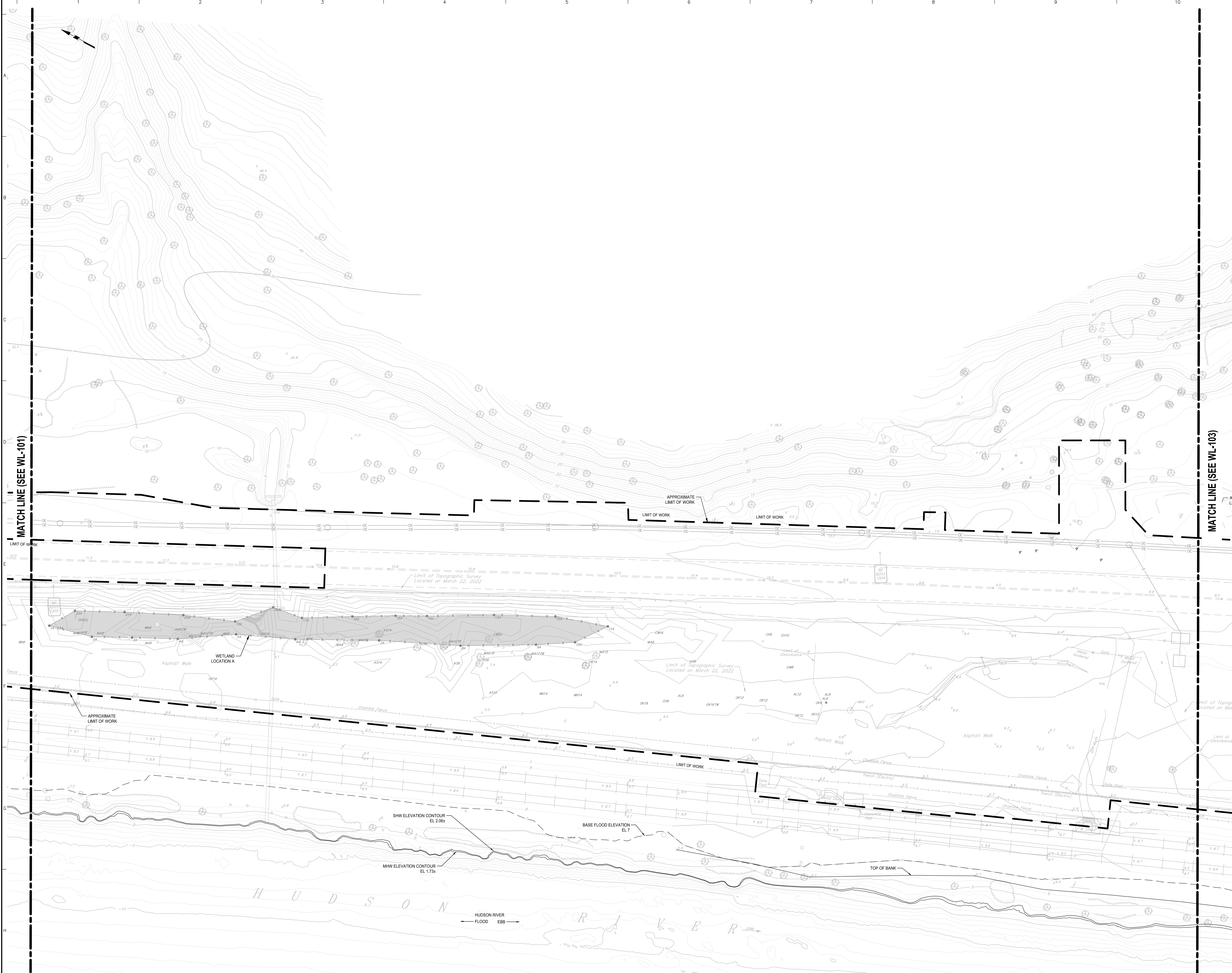
Drawing Title: DELINEATED WETLANDS EXISTING CONDITIONS PLAN

Project No. 170553201
 Date 01/13/2023
 Drawn By ASM
 Checked By SWS
 Drawing No. WL101
 Sheet 1 of 10

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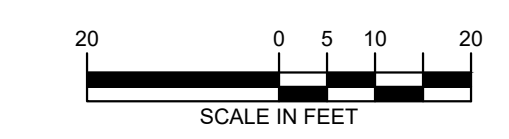


LEGEND:
 DELINEATED WETLAND
 DELINEATED WETLAND DISTURBANCE



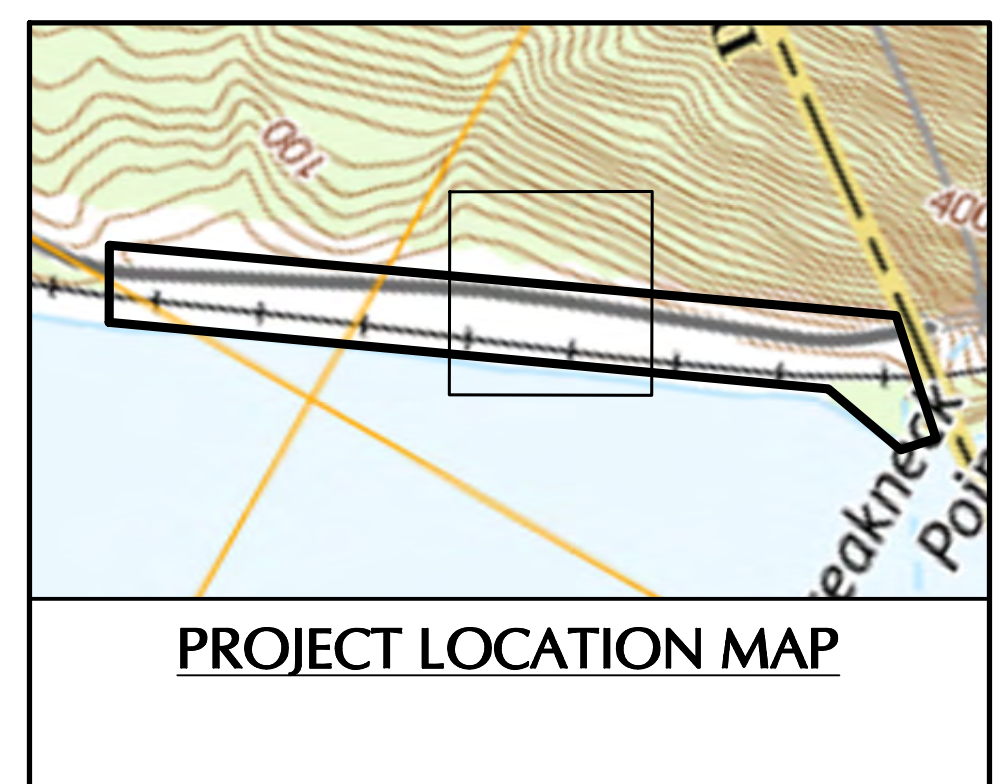
WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 140 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, LAND SURVEYOR OR GEOLOGIST, TO ALTER THIS ITEM IN ANY WAY.

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	Date 01/13/2023	Drawn By ASM	Checked By SWS	Sheet 2 of 10	
	Project DUTCHESS NEW YORK	Project No. 170553201	Date 01/13/2023	Drawn By ASM	Checked By SWS
	Project DUTCHESS NEW YORK	Project No. 170553201	Date 01/13/2023	Drawn By ASM	Checked By SWS

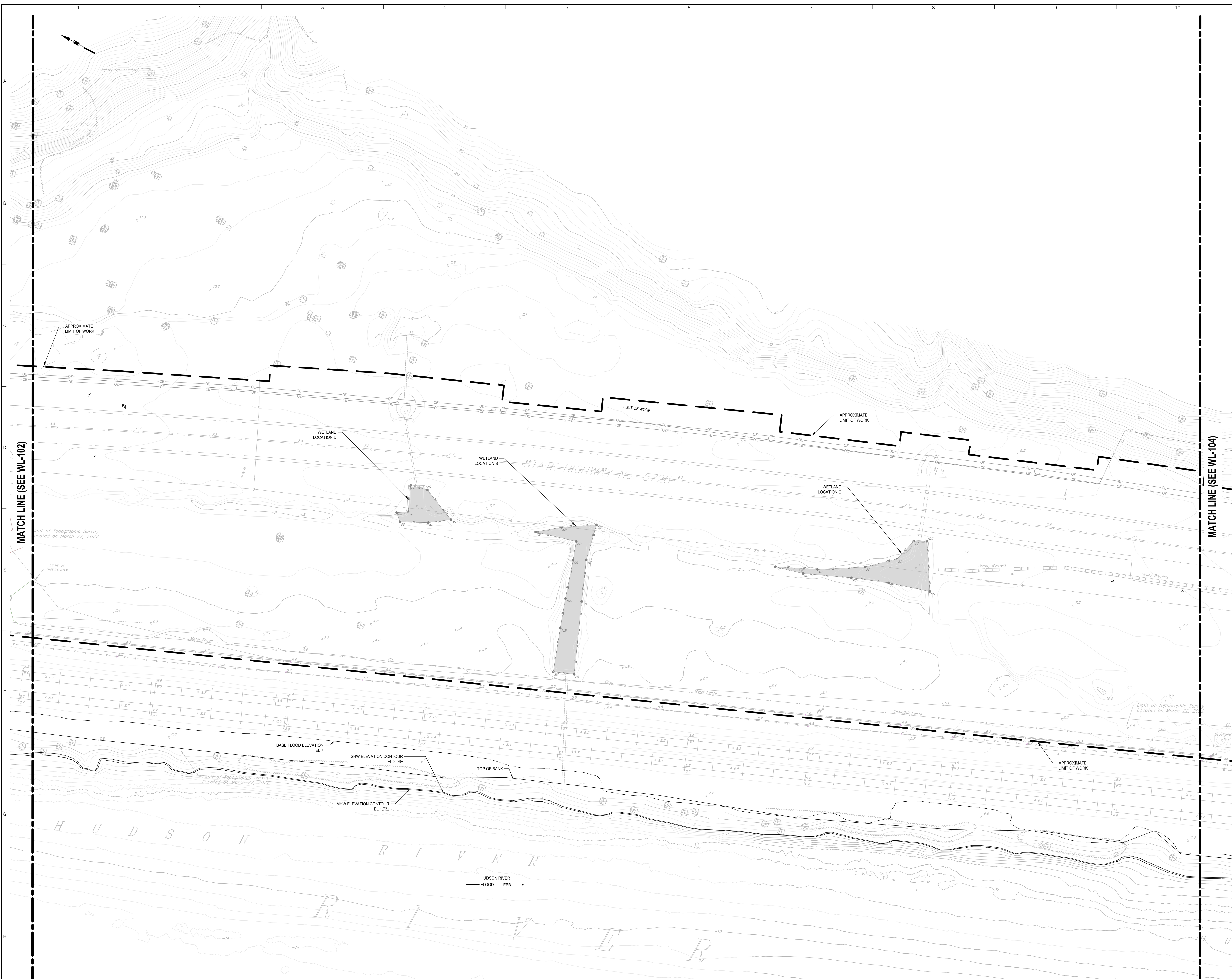


PROJECT NO. 170553201

LANEWAY

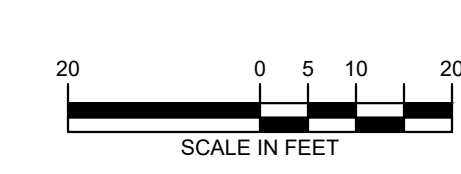


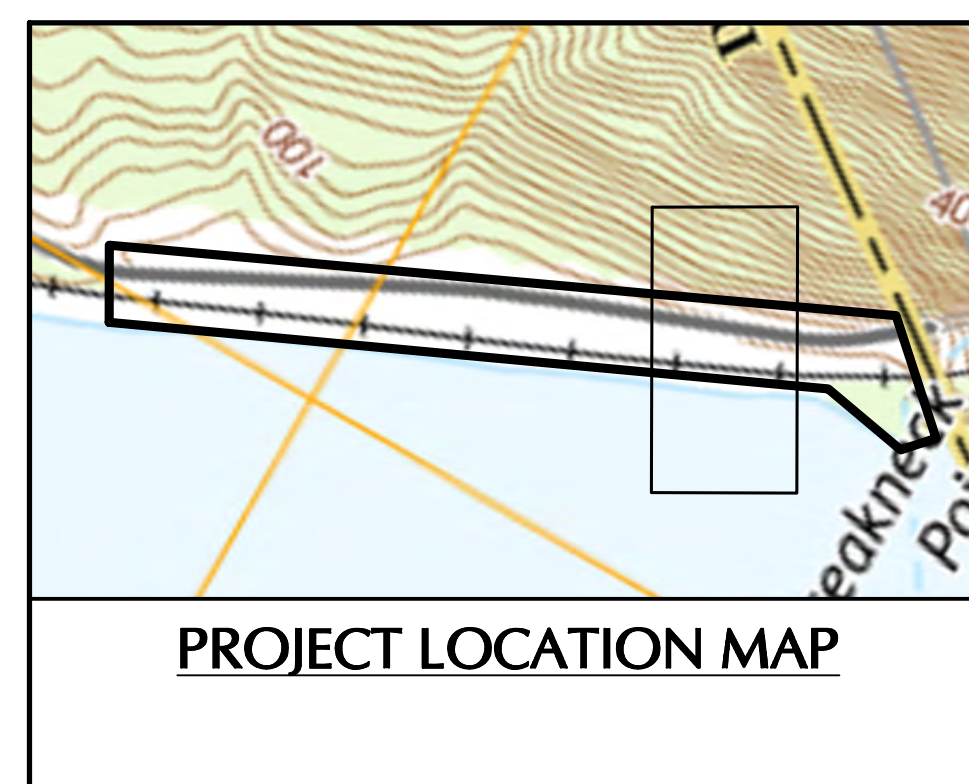
LEGEND:
 DELINEATED WETLAND
 DELINEATED WETLAND DISTURBANCE



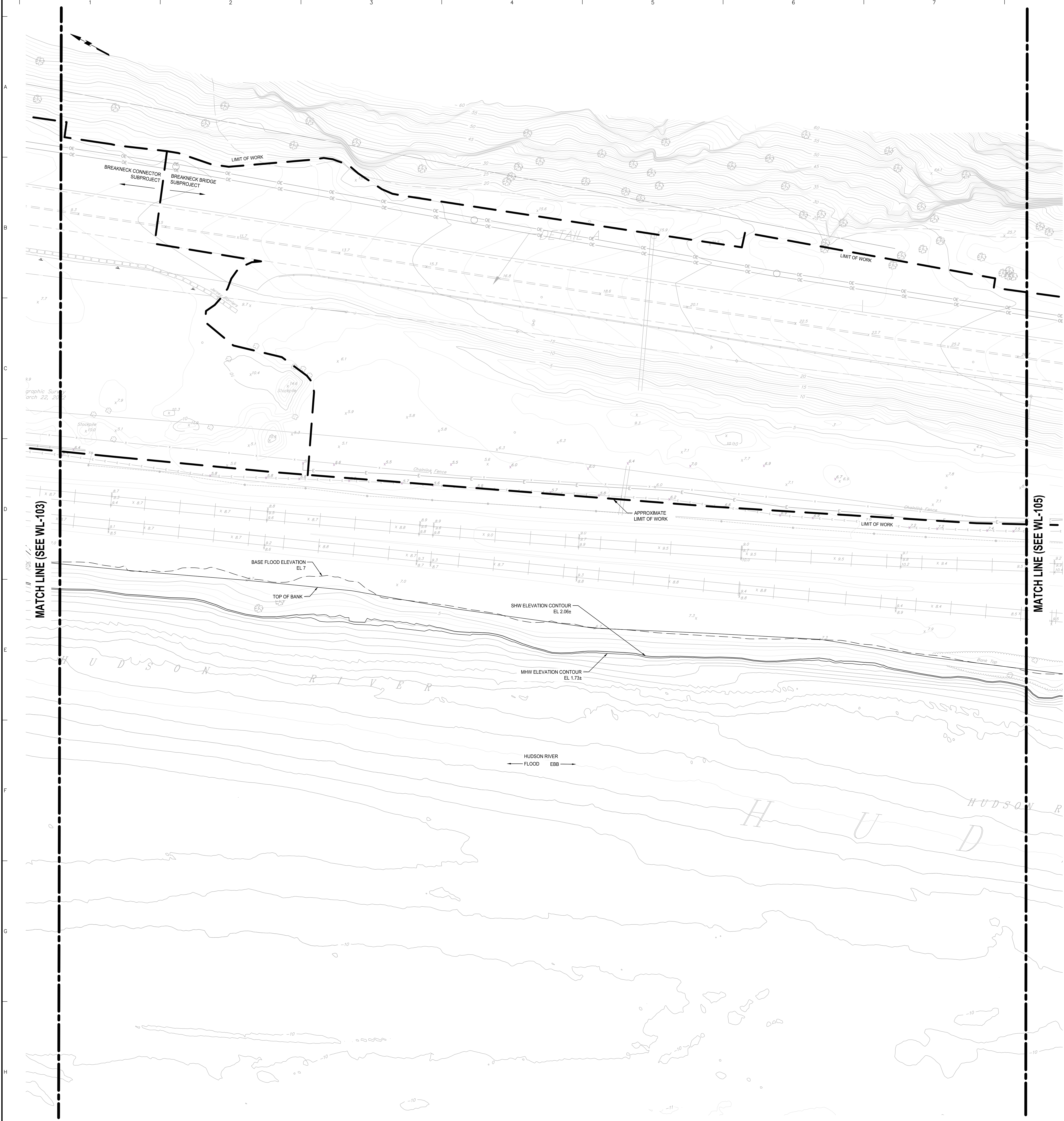
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	Date 01/13/2023	Drawn By ASM	Checked By SWS	Sheet 21 of 10





LEGEND:
 DELINEATED WETLAND
 DELINEATED WETLAND DISTURBANCE



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Project: HUDSON HIGHLAND
 FJORD TRAIL
 BREAKNECK
 CONNECTOR
 DUTCHESS NEW YORK

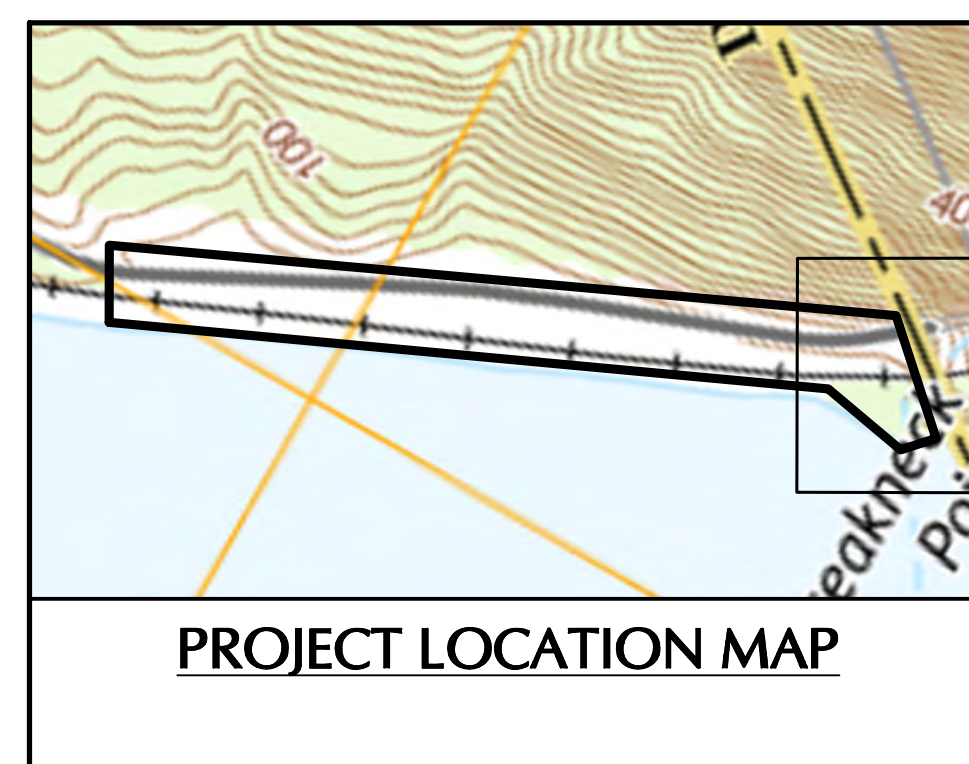
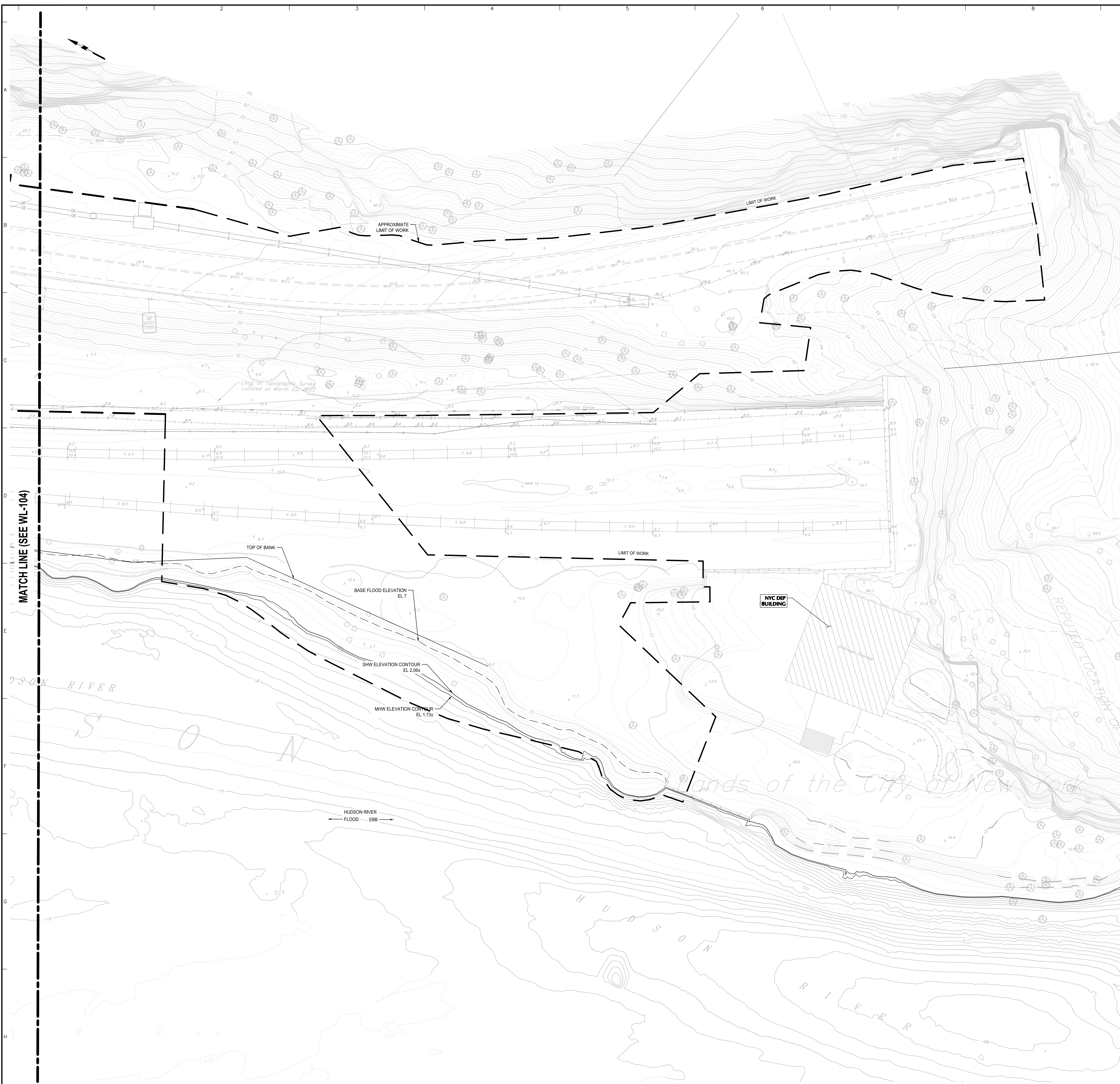
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 WETLANDS
 EXISTING
 CONDITIONS PLAN

Project No. 170553201
 Date 01/13/2023
 Drawn By ASM
 Checked By SWS
 Drawing No. WL104
 Sheet 4 of 10

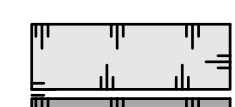

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PROJECT NO. 170553201

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LEGEND:

-  DELINEATED WETLAND
-  DELINEATED WETLAND DISTURBANCE

MATCH LINE (SEE WL-104)

HUDSON RIVER

HUDSON RIVER
FLOOD EBB

TOP OF BANK
BASE FLOOD ELEVATION
EL 7
SHW ELEVATION CONTOUR
EL 2.065
MHW ELEVATION CONTOUR
EL 1.731

NIC DEE BUILDING

Plands of the City of New York

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Project: HUDSON HIGHLAND
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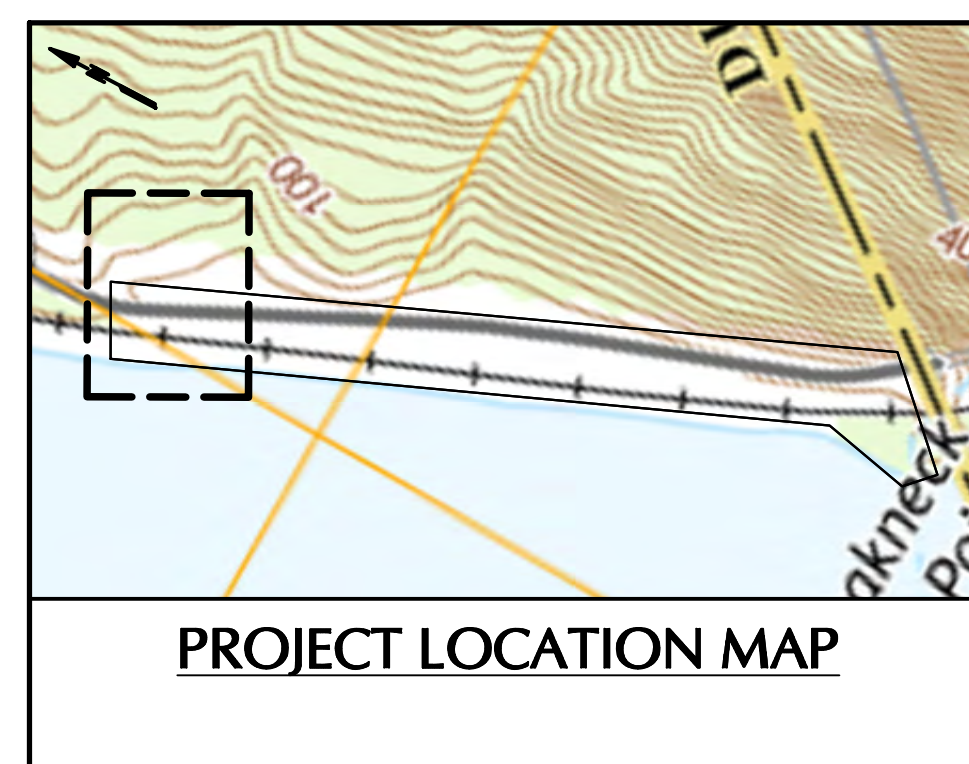
Drawing Title: NYSDEC AND
USACE
JURISDICTIONAL
AREAS PLAN

Project No.	170553201	Drawing No.	WL105
Date	01/13/2023	Checked By	ASM
Drawn By	ASM	Sheet	5 of 10
Checked By	SWS		



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PROJECT NO. 170553201 LANEWAY



LEGEND:

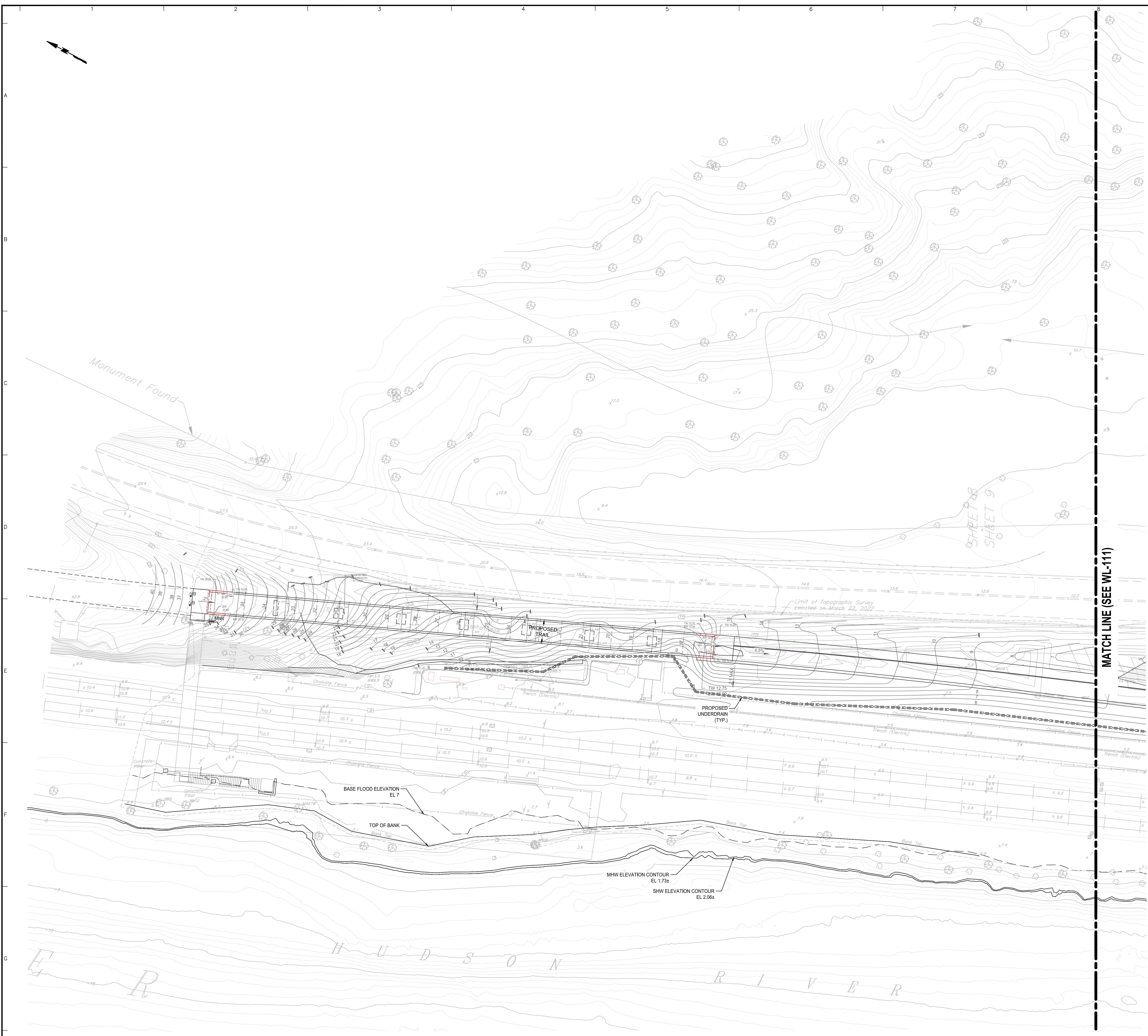
- DELINEATED WETLAND
- DELINEATED WETLAND DISTURBANCE
- PROPOSED GRADE (NAVD88)

GENERAL NOTES

1. EXISTING TOPOGRAPHIC, BOUNDARY AND UTILITY INFORMATION AS SHOWN ON THIS DESIGN DOCUMENT IS BASED ON SURVEY INFORMATION TITLED "HUDSON HIGHLANDS FJORD TRAIN (BREAKNECK TUNNEL TO BREAKNECK STATION) PROPERTY LINE & TOPOGRAPHIC SURVEY," PREPARED BY BADEY & WATSON SURVEYING & ENGINEERING, P.C., DATED JUNE 26, 2020, LAST REVISED MAY 25, 2021.
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WETLAND IDENTIFICATION	WETLAND AREA (SQUARE FT)	PROPOSED AREA OF DISTURBANCE AT WETLAND AREA (SQUARE FT)
A	5609	1358
B	1229	1229
C	1067	1067
D	481	481

	PROPOSED AREA OF DISTURBANCE AT SHORELINE (LINEAR FT)
BELOW TOP OF BANK	195
BELOW MEAN HIGH WATER OR SPRING HIGH TIDE	0

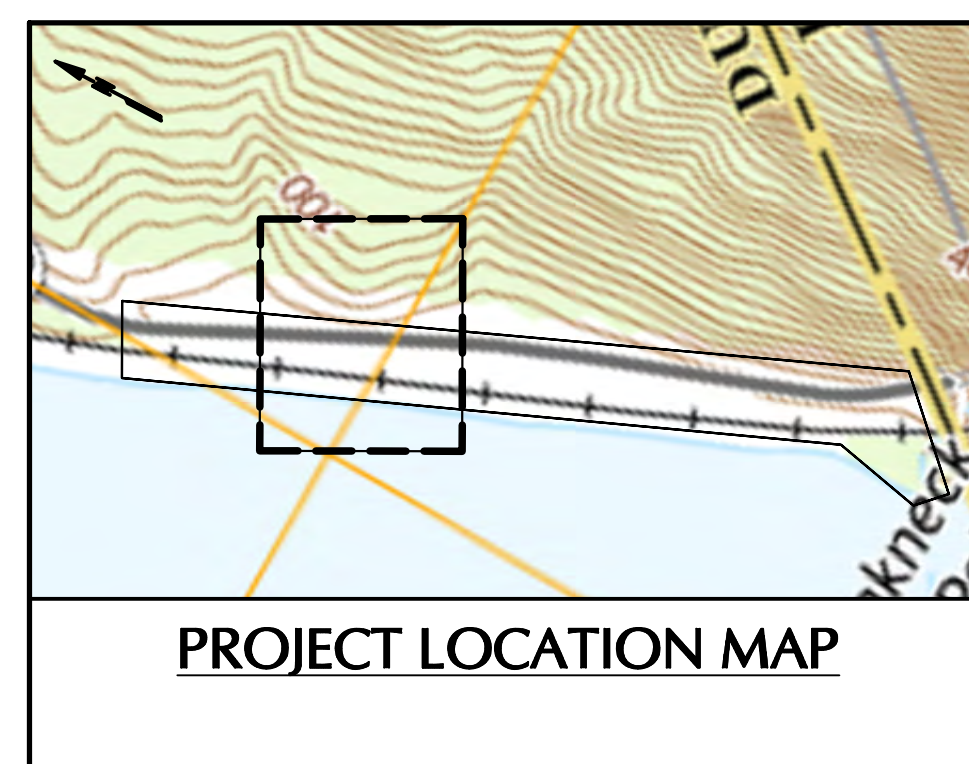


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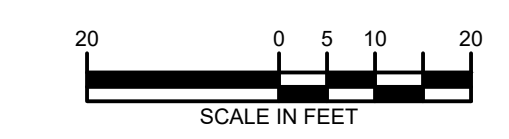
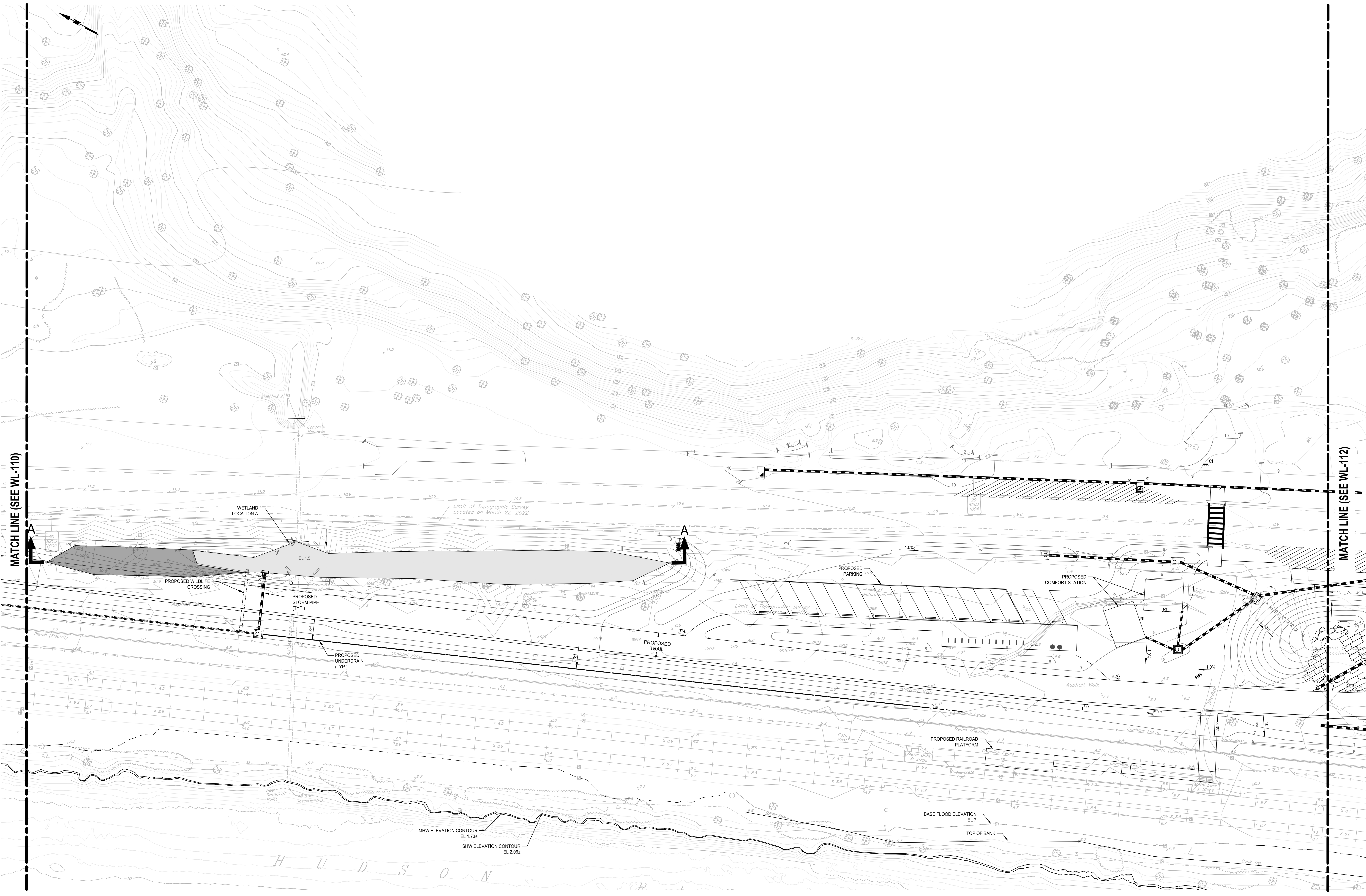
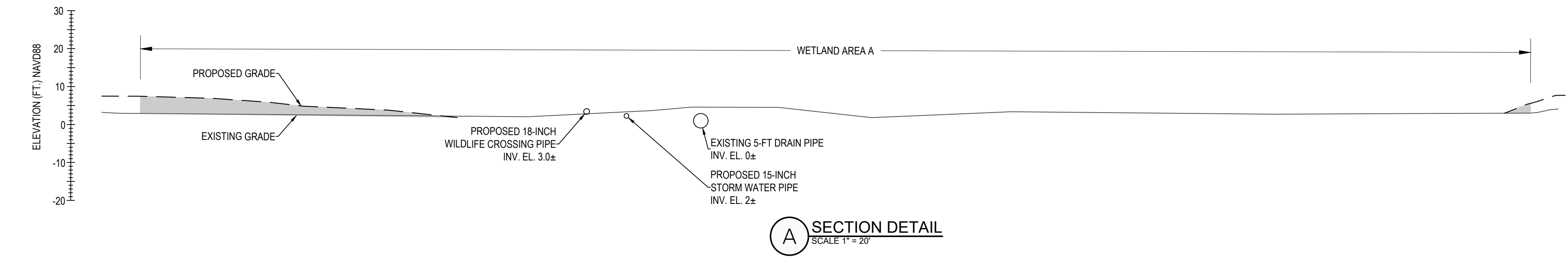
Project: HUDSON HIGHLAND FJORD TRAIL BREAKNECK CONNECTOR
DUTCHESS NEW YORK

Drawing Title: DELINEATED WETLANDS PROPOSED CONDITION PLAN

Project No. 170553201
Date 01/13/2023
Drawn By ASM
Checked By SWS
Drawing No. WL110
Sheet 6 of 10



- LEGEND:**
- DELINEATED WETLAND
 - DELINEATED WETLAND DISTURBANCE
 - PROPOSED GRADE (NAVD88)
 - PROPOSED CUT
 - PROPOSED FILL



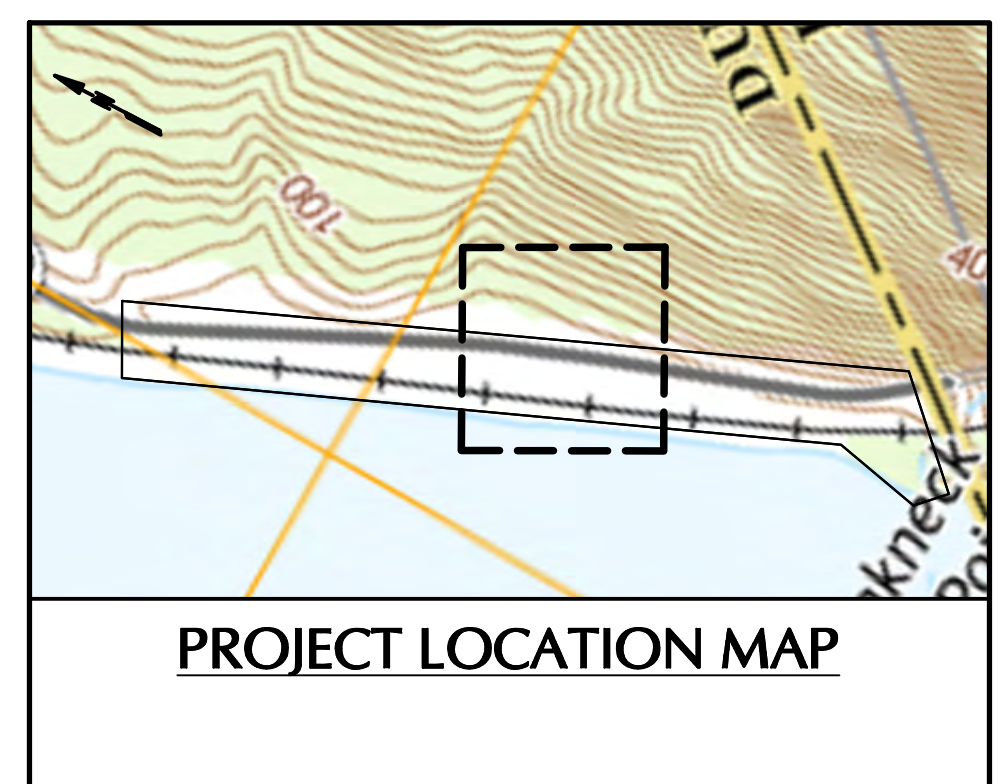
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 21 Penn Plaza, 360 West 31st Street, 8th Floor
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Project: HUDSON HIGHLAND
 FJORD TRAIL
 BREAKNECK
 CONNECTOR
 DUTCHESS NEW YORK

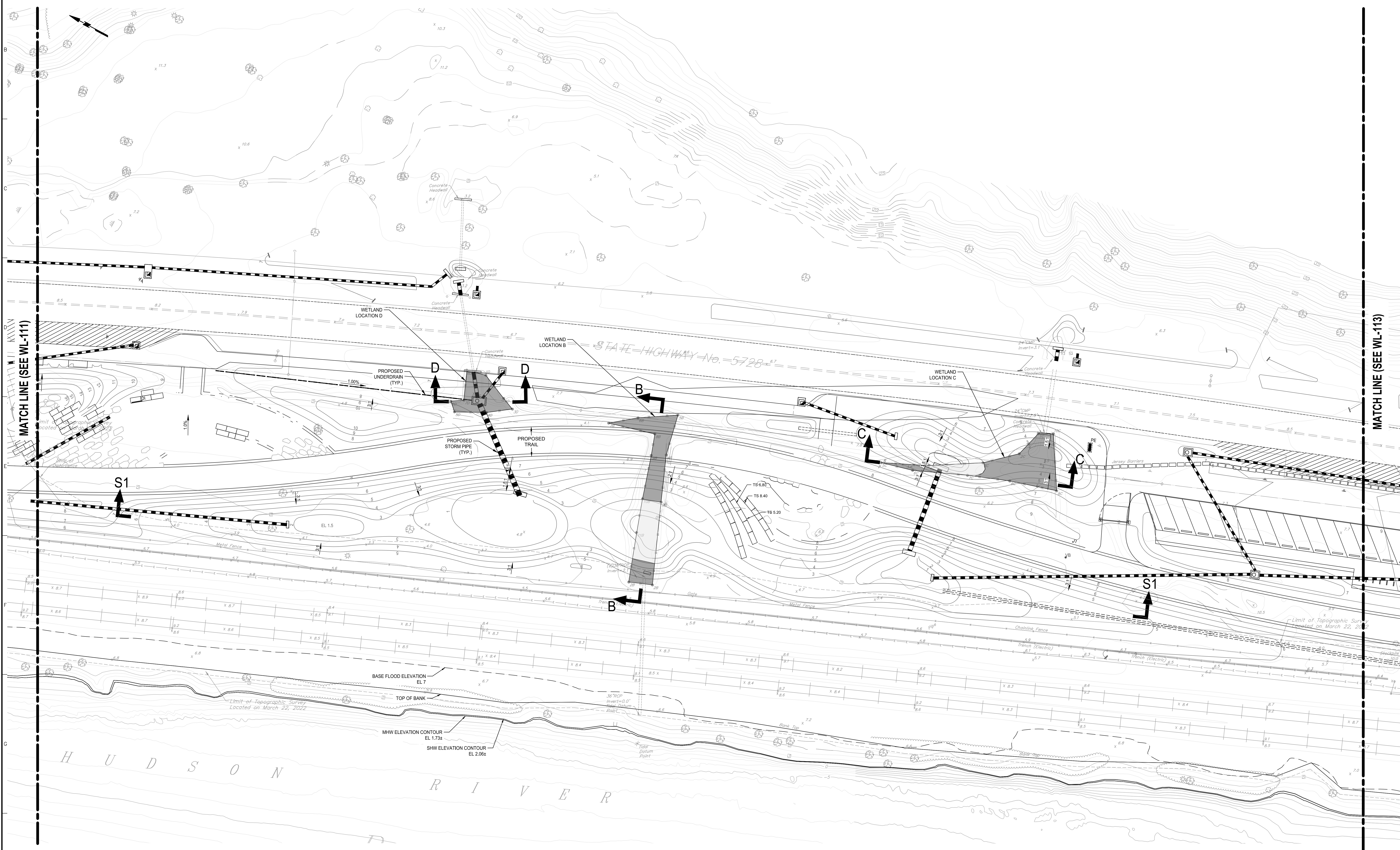
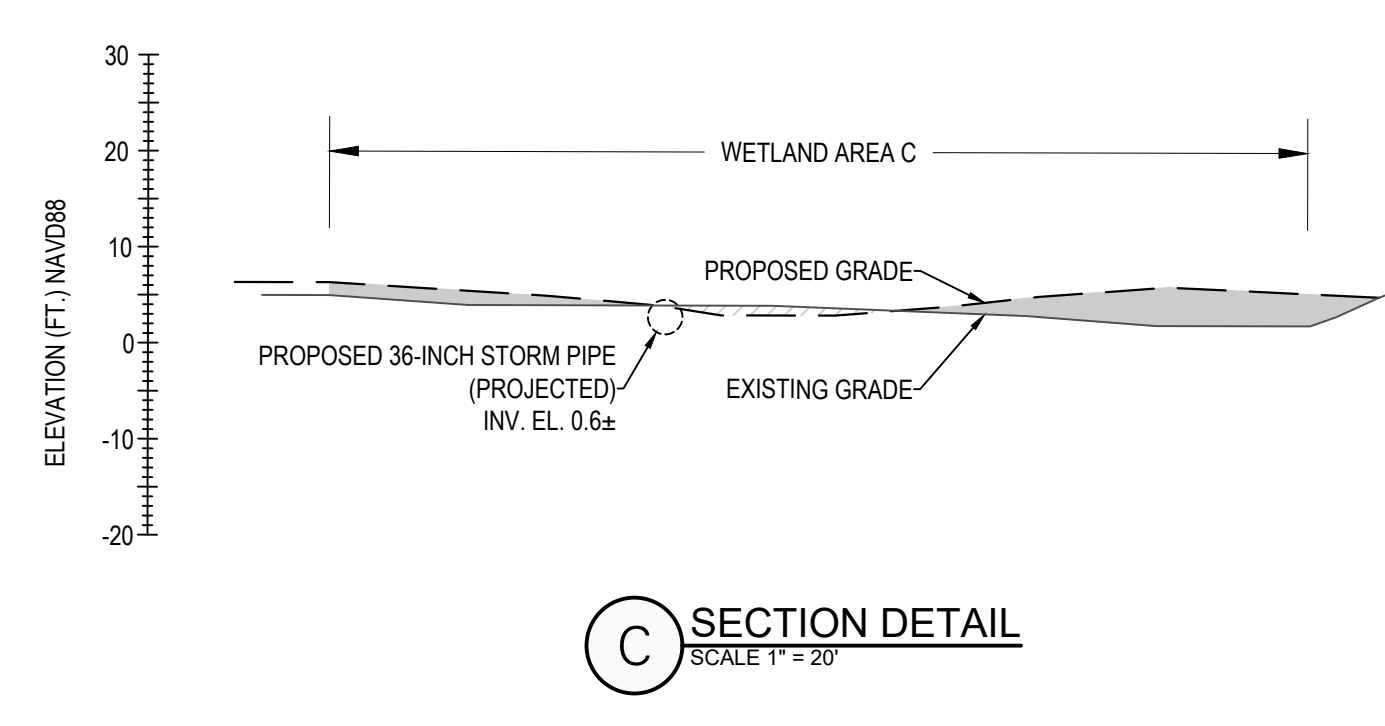
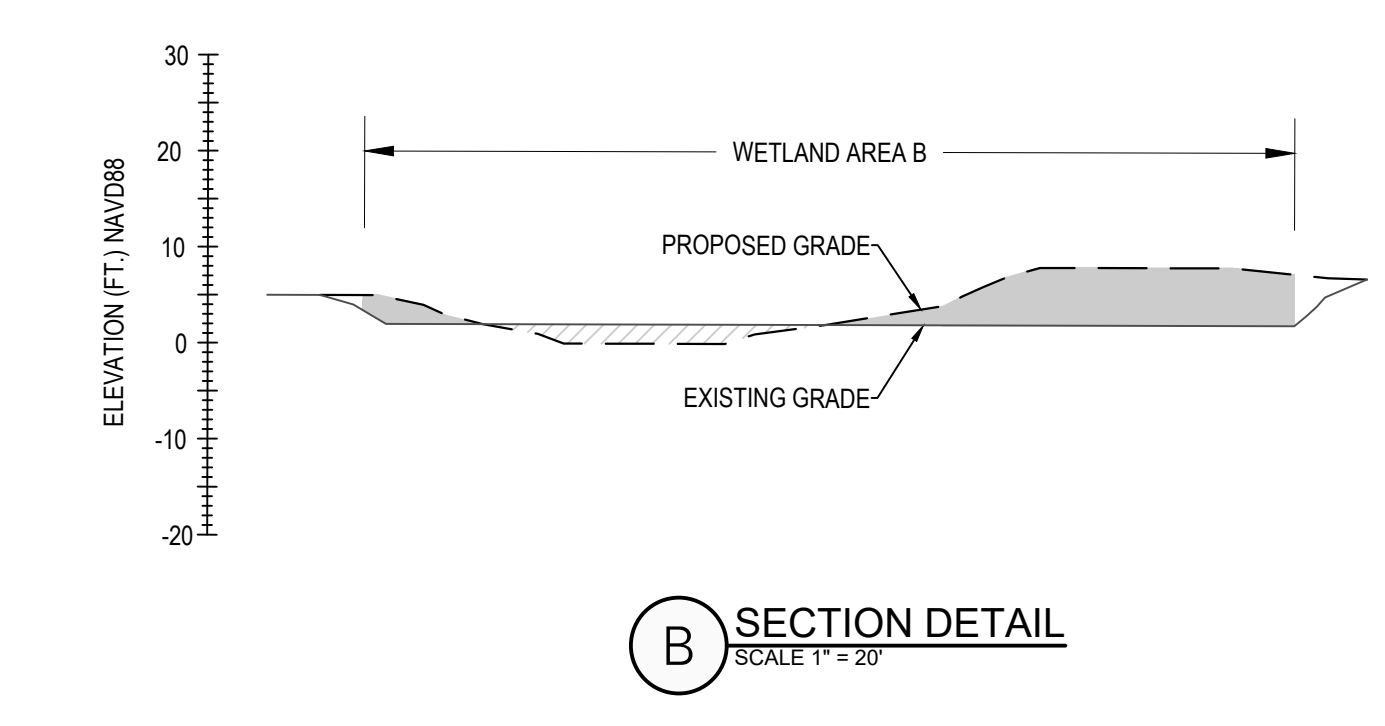
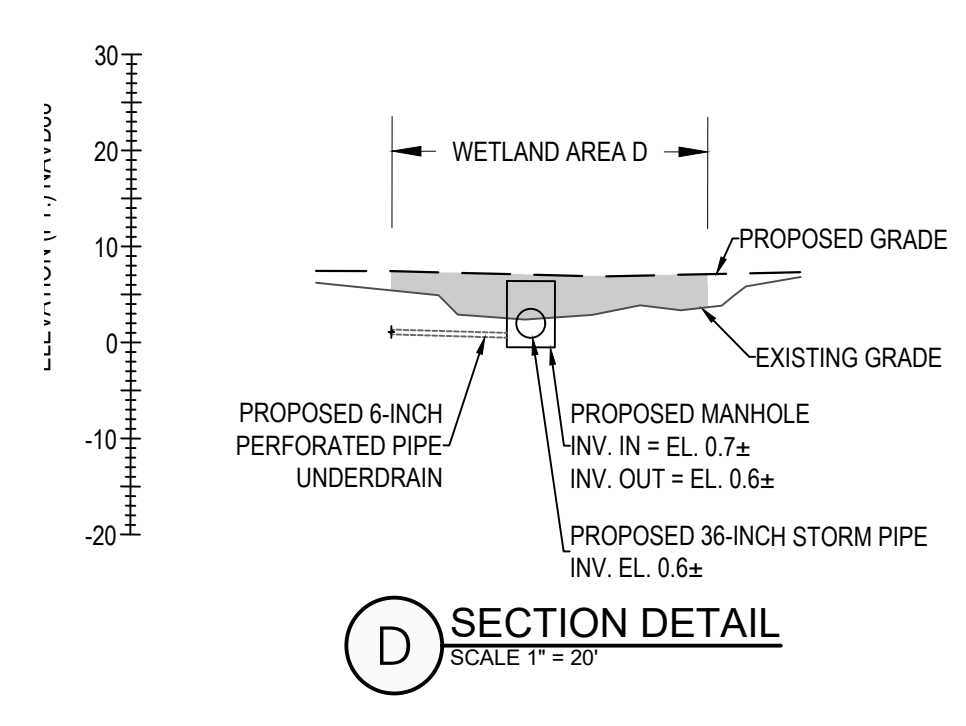
Drawing Title: DELINEATED
 WETLANDS
 PROPOSED
 CONDITION PLAN

Project No. 170553201
 Date 01/13/2023
 Drawn By ASM
 Checked By SWS

Drawing No. WL111
 Sheet 7 of 10

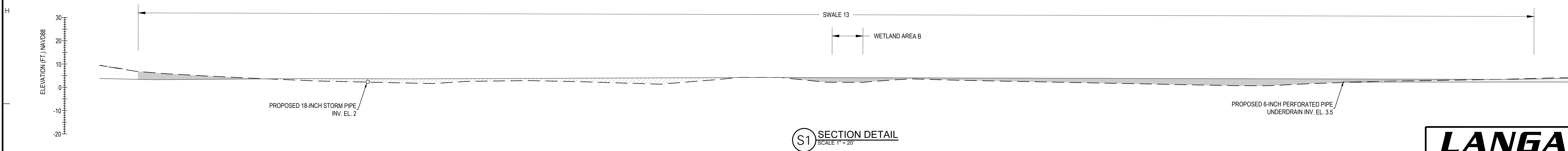


- LEGEND:**
- DELINEATED WETLAND
 - DELINEATED WETLAND DISTURBANCE
 - PROPOSED GRADE (NAVD88)
 - PROPOSED CUT
 - PROPOSED FILL



MATCH LINE (SEE WL-111)

MATCH LINE (SEE WL-113)



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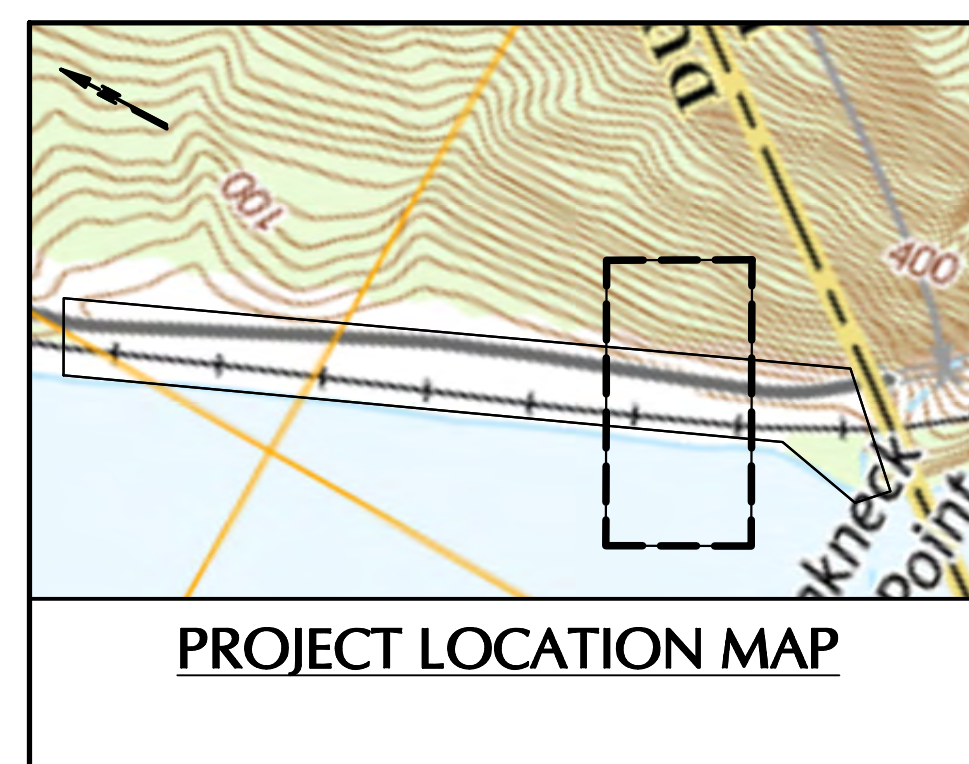
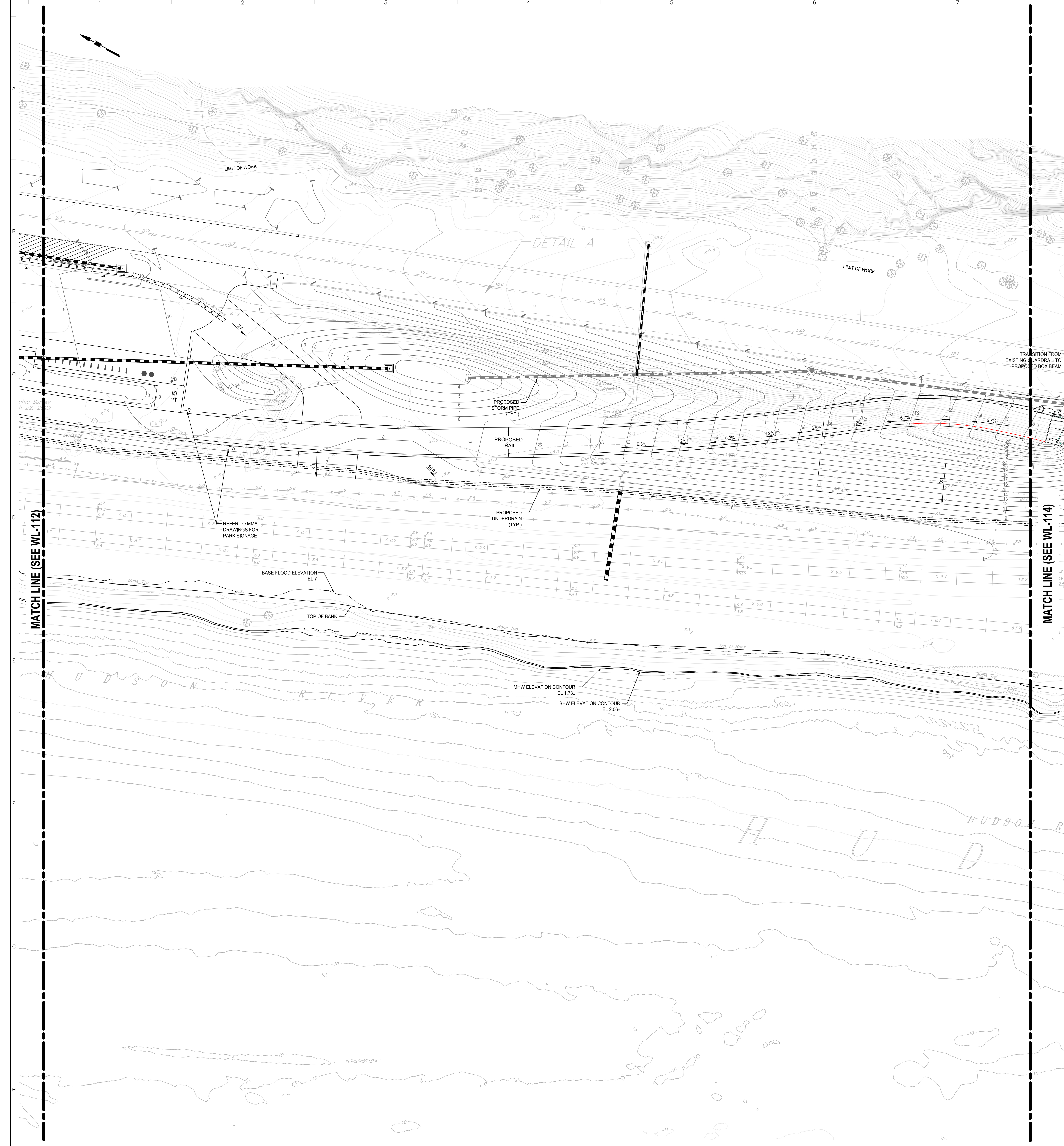
Project **HUDSON HIGHLAND
FJORD TRAIL
BREAKNECK
CONNECTOR**
DUTCHESS NEW YORK

Drawing Title **DELINEATED
WETLANDS
PROPOSED
CONDITION PLAN**

Project No. 170553201
Date 01/13/2023
Drawn By ASM
Checked By SWS
Drawing No. **WL112**
Sheet 8 of 10



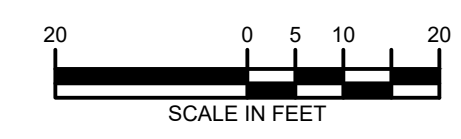
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- LEGEND:**
- DELINEATED WETLAND
 - DELINEATED WETLAND DISTURBANCE
 - PROPOSED GRADE (NAVD88)

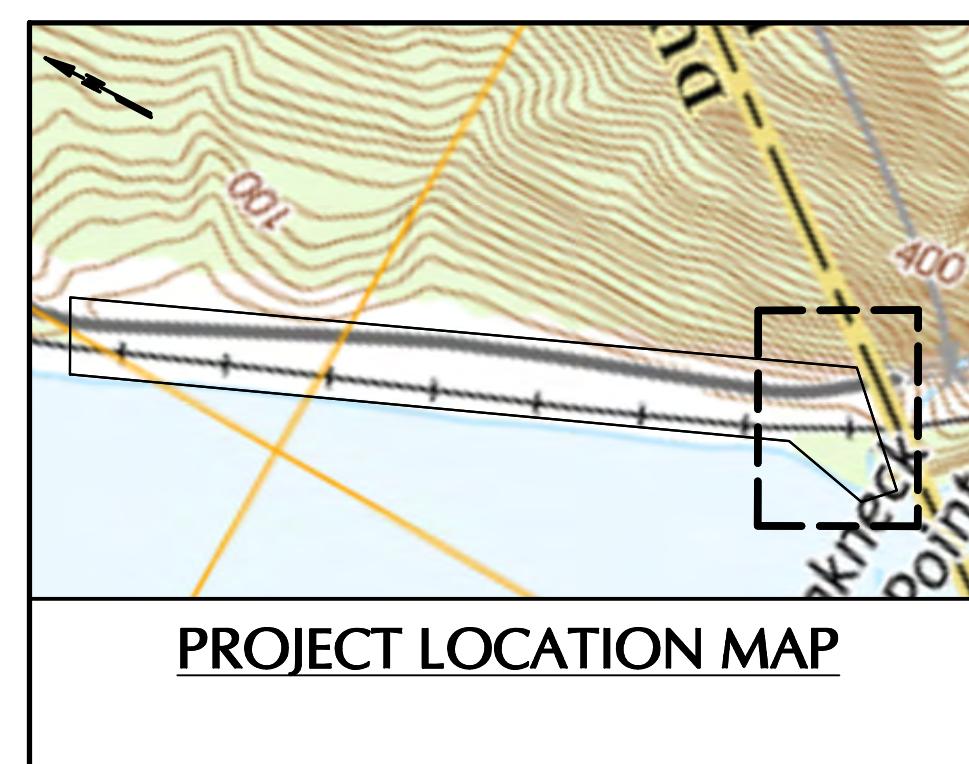
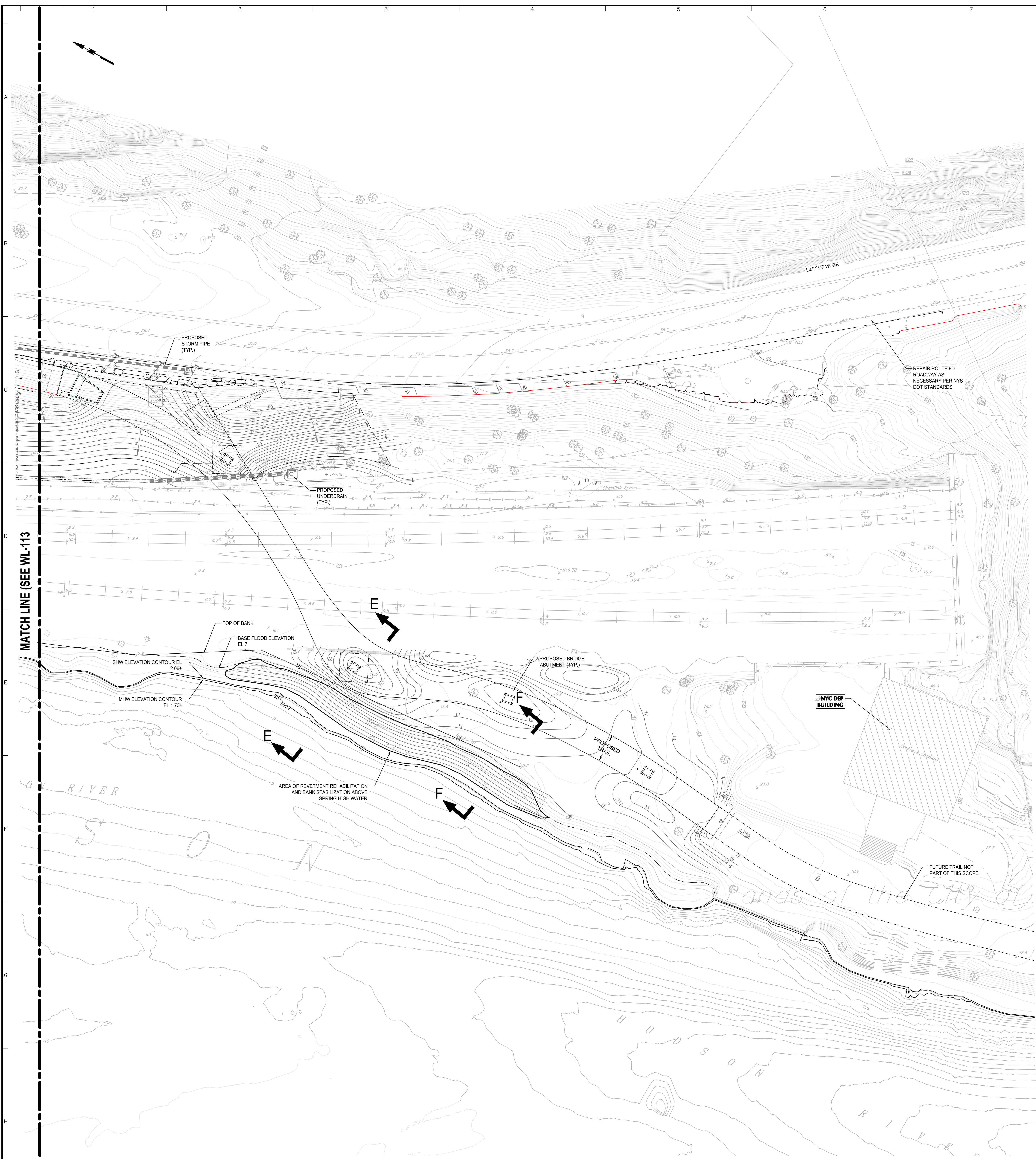
MATCH LINE (SEE WL-112)

MATCH LINE (SEE WL-114)

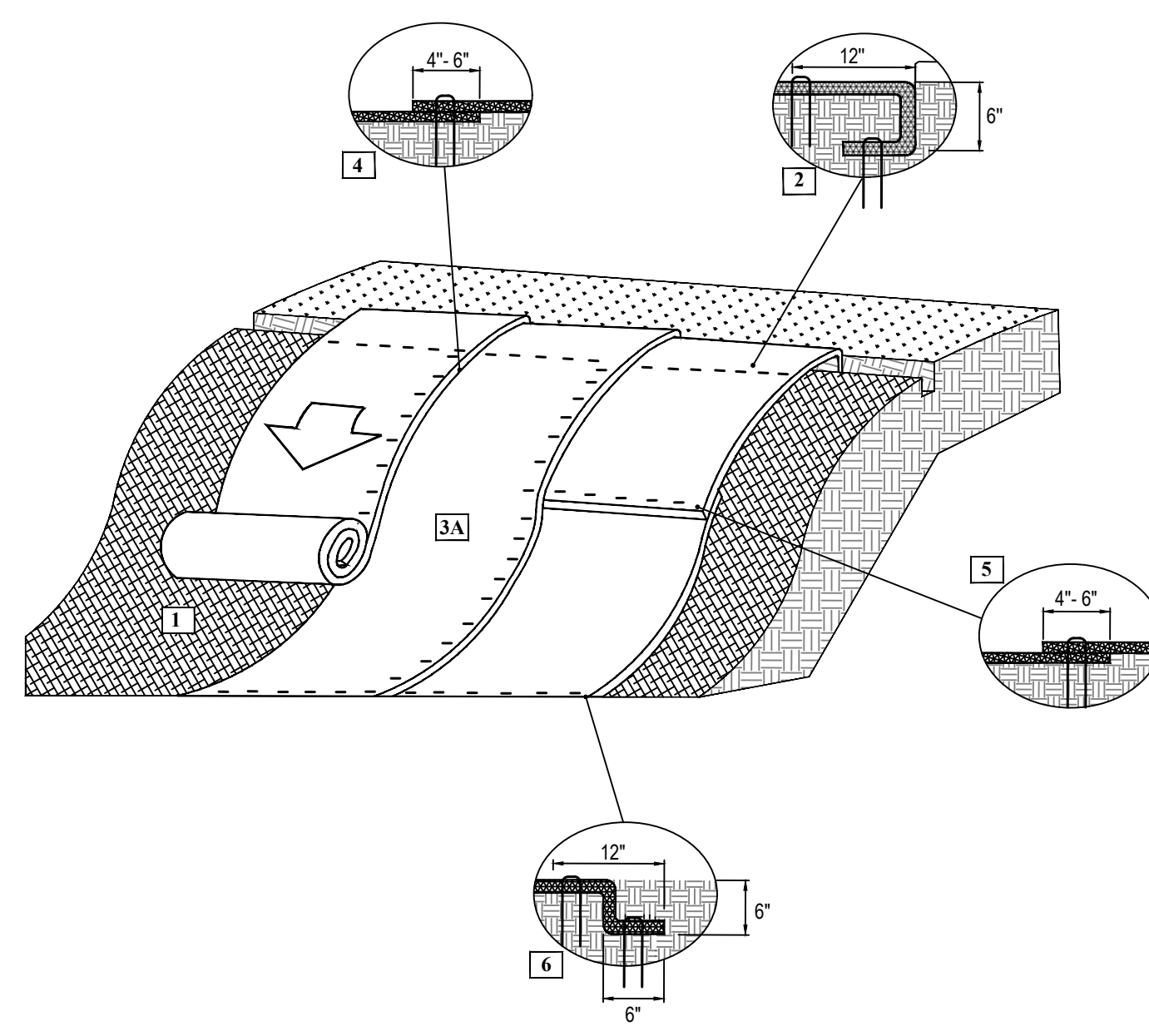
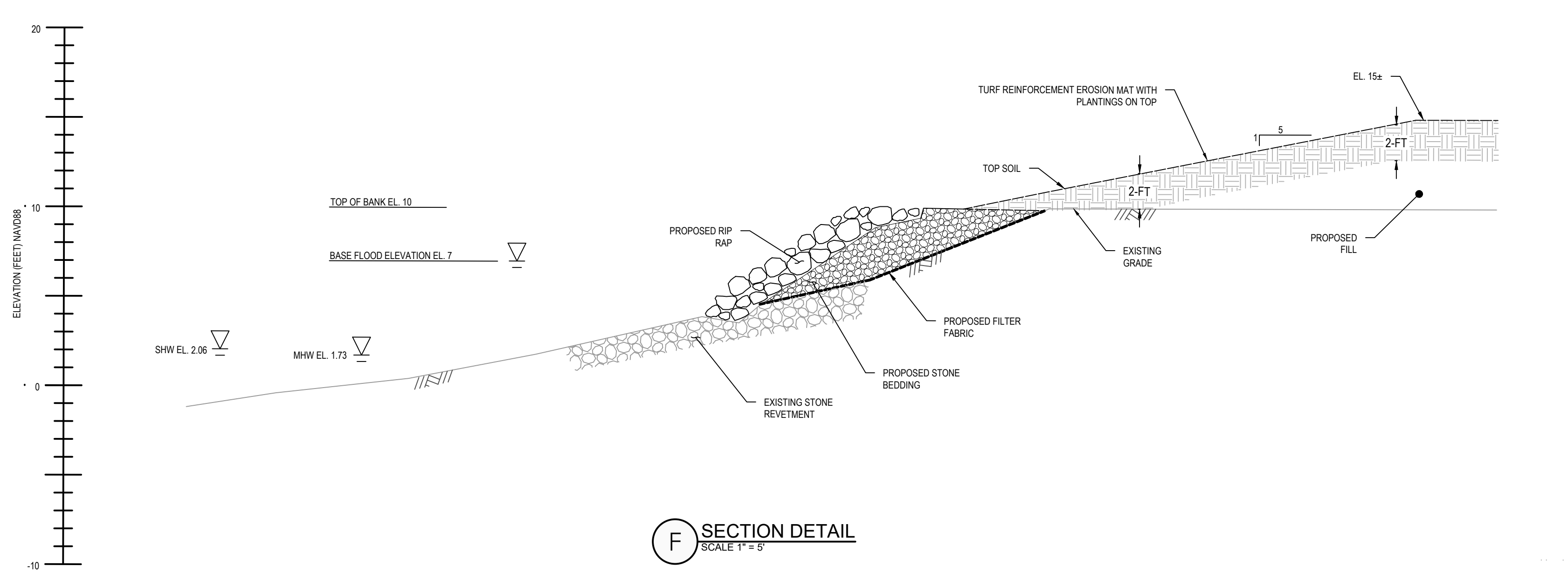
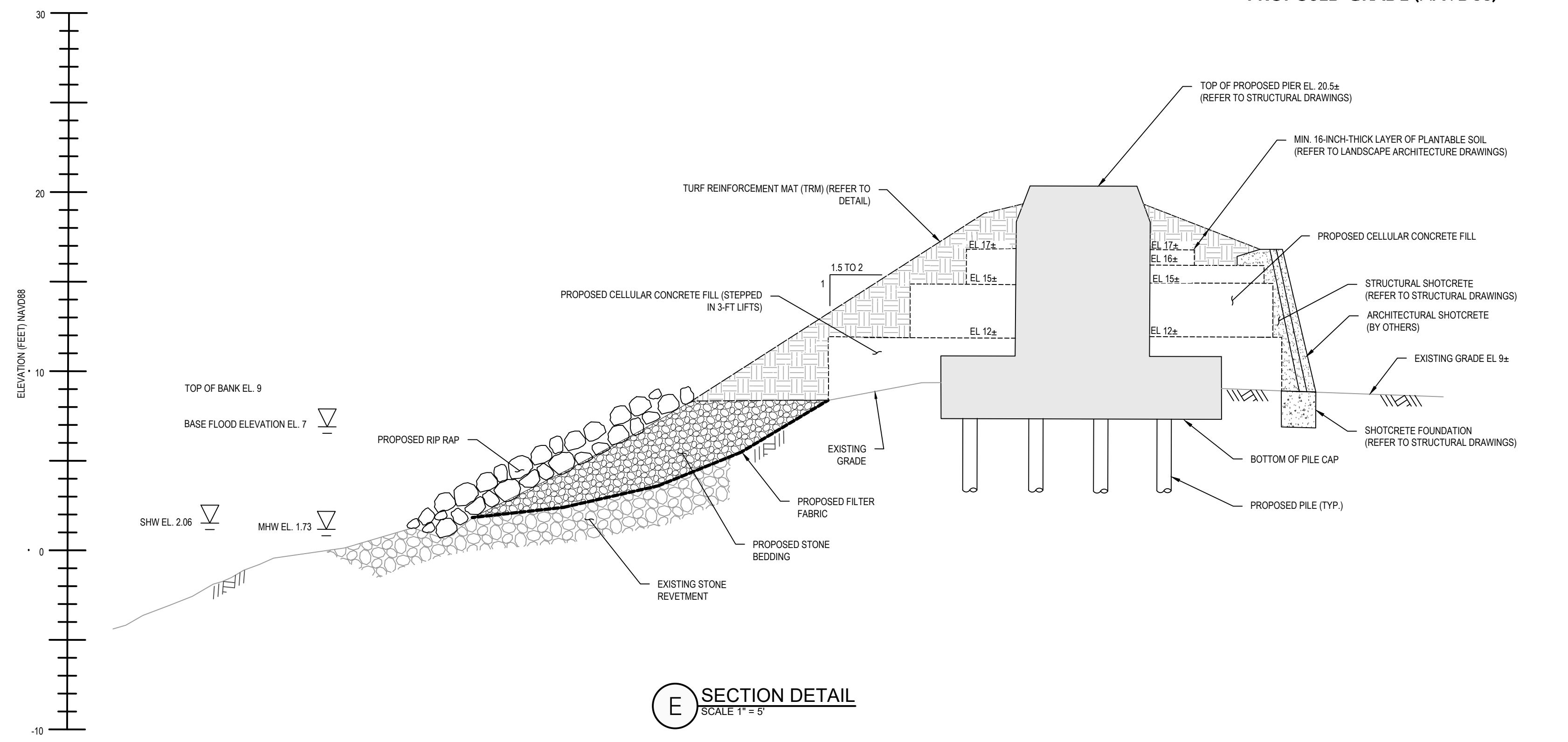


<p>LANGAN Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. 21 Penn Plaza, 360 West 31st Street, 8th Floor New York, NY 10001</p> <p>T: 212-479-5400 F: 212-479-5444 www.langan.com</p>	<p>Project No. 170553201</p> <p>Date 01/13/2023</p> <p>Drawn By ASM</p> <p>Checked By SWS</p>	<p>Drawing Title DELINEATED WETLANDS PROPOSED CONDITION PLAN</p>	<p>Project No. 170553201</p> <p>Drawing No. WL113</p> <p>Sheet 9 of 10</p>
	<p>Project HUDSON HIGHLAND FJORD TRAIL BREAKNECK CONNECTOR</p> <p>DUTCHESS NEW YORK</p>	<p>Project No. 170553201</p> <p>Drawing No. WL113</p>	<p>Project No. 170553201</p> <p>Drawing No. WL113</p>

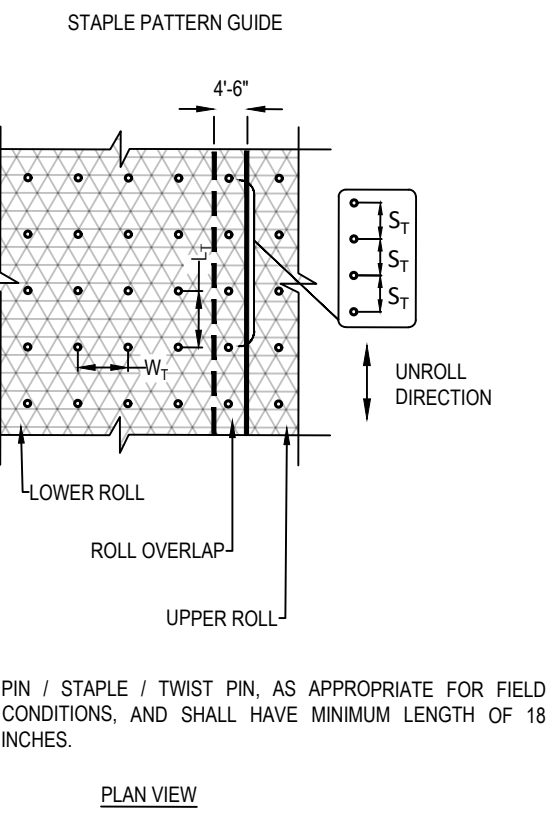
PROJECT NO. 170553201 LANEWAY



- LEGEND:**
- DELIMITED WETLAND
 - DELIMITED WETLAND DISTURBANCE
 - PROPOSED GRADE (NAVD88)



- TURF REINFORCEMENT MAT (TRM) INSTALLATION INSTRUCTIONS**
- PREPARE SOIL BEFORE INSTALLING ROLLED TURF REINFORCEMENT MAT (TRM), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZERS AND SEED. WORKING SURFACE MUST BE FREE OF DEBRIS, ROCKS, CLAY CLODS AND RAKED SMOOTH SUFFICIENT TO ALLOW INTIMATE CONTACT OF THE TRM WITH THE SOIL OVER THE ENTIRETY OF THE INSTALLATION.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE TRM IN A 12" DEEP X 6" WIDE TRENCH. ANCHOR THE TRM WITH A ROW OF STAPLES/FASTENERS SPACED AT S₁ APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING AND FOLD THE ROLL OVER DOWNSLOPE. SECURE TRMS OVER COMPACTED SOIL WITH A ROW OF STAPLES/FASTENERS SPACED AT S₂ APART ACROSS THE WIDTH OF THE TRM.
 - ROLL THE TRMS (A) DOWN ACROSS THE SLOPE. TRMS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL TRMS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/FASTENERS IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
 - THE EDGES OF PARALLEL TRMS MUST BE STAPLED WITH APPROXIMATELY 4" - 6" OVERLAP.
 - CONSECUTIVE TRMS SPICED DOWN THE SLOPE MUST OVERLAP WITH THE UPSTREAM MAT AT TOP OF THE DOWNSTREAM MAT. STAPLE STYLES: THE OVERLAP SHOULD BE 4" - 6".
 - AT THE TERMINAL END, SECURE EACH MAT ACROSS THE WIDTH WITH A ROW OF STAPLES/FASTENERS SPACED AT S₂. TRENCH THE TERMINAL END AS SHOWN IN DETAIL.
 - FASTENERS SHOULD PROVIDE A MINIMUM OF TWENTY POUNDS OF PULLOUT RESISTANCE. THE MINIMUM STAPLE LENGTH OF 18 INCHES SHALL BE USED. INDICATED FASTENERS SHALL NOT BE USED.



STAPLE PATTERN	
DIMENSION	D
W ₁	24"
L ₁	20"
S ₁	18"
NOMINAL FREQUENCY	3.0 STAPLES/SY

- NOTES:**
- THE TRM SHALL BE PLACED AND ANCHORED ON A SMOOTH GRADED, FIRM SURFACE APPROVED BY THE ENGINEER AND SHALL REFER TO TRM INSTALLATION INSTRUCTION AS ILLUSTRATED ON THIS SHEET.
 - DELIVERY, STORAGE, AND HANDLING OF GEOTEXTILE SHALL CONFORM WITH MANUFACTURER'S SPECIFICATION.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE SLOPE DURING CONSTRUCTION OF THE FACE.

- PROPOSED MATERIALS:**
- THE RIPRAP REVETMENT CONSISTS OF TWO LAYERS OF STONE:
 - A. RIPRAP ARMOR LAYER: 18-INCH MEDIAN (13 TO 22-INCH STONE)
 - B. BEDDING LAYER: 2 TO 6-INCH STONE
 - FILTER FABRIC: MIRAFI 140N OR EQUIVALENT.
 - NON-DEGRADABLE EROSION PROTECTION MAT: MACMAT, C350 VMAX, OR EQUIVALENT.



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Project **HUDSON HIGHLAND FJORD TRAIL BREAKNECK CONNECTOR**
DUTCHESS NEW YORK

Drawing Title **REVETMENT REHABILITATION AND BANK STABILIZATION ABOVE SHW**

Project No. **170553201**
Date **01/13/2023**
Drawing No. **WL114**
Drawn By **ASM**
Checked By **SWS**
Sheet 10 of 10