

REPLACEMENT OF MB 106.89 OVER CONNECTICUT RIVER OLD SAYBROOK, CONNECTICUT

- 1. THESE PLANS ARE NOT FOR CONSTRUCTION AND ARE INTENDED HOLD AUTHORITY FOR ALL ACTIVITIES CONCERNING THE REGULATED AREA. FOR DETAILED PLANIMETRIC INFORMATION AND PAYMENT, REFER TO THE APPLICABLE CONTRACT DOCUMENTS.
- 2. AMTRAK WILL ONLY SUBMIT REVISIONS TO CTDEEP AND USACE FOR CHANGES TO THE DESIGN THAT WILL AFFECT REGULATED AREAS.
- FOR A DESCRIPTION OF THE WATERCOURSES, WETLANDS, AND WETLAND SOILS SEE RELAVANT SECTIONS OF THE PERMIT APPLICATION.
- 4. THE HORIZONTAL CONTROLS REFERENCE THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND THE CONNECTICUT STATE PLANE COORDINATE SYSTEM. THE VERTICAL DATUM REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- (BMPs) AND SEDIMENT AND EROSION CONTROL MEASURES IN ACCORDANCE WITH THE 2002 EROSION & SEDIMENTATION CONTROL GUIDELINES AND THE 2004 STORMWATER QUALITY MANUAL.

ENVIRONMENTAL AND PERMIT PLANS



CONNECTICUT RIVER

LOCATION PLAN

VICINITY MAP

ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023

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HARDESTY & HANOVER, LLC E N G I N E E R I N G

1501 Broadway New York NY 10036 1501 Broadway New York, NY 10036

REPLACEMENT OF MB 106.89 **OVER CONNECTICUT RIVER**

TITLE SHEET

1 OF 14 Sheet No. 5 TTL-0 $^{\prime}$

Project Code: XXX XXX

SEE IDX-01 FOR LIST OF DRAWINGS

Checked _ Date 5/2/2023

Designed _ Drawn _

No.	Revisions Date By	ntrok		Office of Chief Engineer	ed
51	CJL STATE IMPACT PLAN	CJL-10	102	STAGING PLAN — PHASE ICDE	PH-ICDE-10
50	CJL STATE IMPACT PLAN	CJL-09	101	STAGING PLAN — PHASE ICDE	PH-ICDE-09
49	CJL STATE IMPACT PLAN	CJL-08	100	STAGING PLAN — PHASE ICDE	PH-ICDE-08
48	CJL STATE IMPACT PLAN	CJL-07	99	STAGING PLAN — PHASE ICDE	PH-ICDE-07
47	CJL STATE IMPACT PLAN	CJL-06	98	STAGING PLAN — PHASE ICDE	PH-ICDE-06
46	CJL STATE IMPACT PLAN	CJL-05	97	STAGING PLAN — PHASE ICDE	PH-ICDE-05
45	CJL STATE IMPACT PLAN	CJL-04	96	STAGING PLAN — PHASE ICDE	PH-ICDE-04
44	CJL STATE IMPACT PLAN	CJL-03	95	STAGING PLAN — PHASE ICDE	PH-ICDE-03
43	CJL STATE IMPACT PLAN	CJL-02	94	STAGING PLAN — PHASE ICDE	PH-ICDE-02
42	CJL STATE IMPACT PLAN	CJL-01	93	STAGING PLAN — PHASE ICDE	PH-ICDE-01
41	IMPACT SUMMARY SHEET	SUM-01	92	STAGING PLAN — PHASE IAB	PH-IAB-12
40	BRIDGE ELEVATION PROPOSED CONDITIONS	EL-01	91	STAGING PLAN — PHASE IAB	PH-IAB-11
39	PROPOSED CROSS SECTIONS	XCS-10	90	STAGING PLAN — PHASE IAB	PH-IAB-10
38	PROPOSED CROSS SECTIONS	XCS-09	89	STAGING PLAN — PHASE IAB	PH-IAB-09
37	PROPOSED CROSS SECTIONS	XCS-08	88	STAGING PLAN — PHASE IAB	PH-IAB-08
36	PROPOSED CROSS SECTIONS	XCS-07	87	STAGING PLAN — PHASE IAB	PH-IAB-07
35	PROPOSED CROSS SECTIONS	XCS-06	86	STAGING PLAN — PHASE IAB	PH-IAB-06
34	PROPOSED CROSS SECTIONS	XCS-05	85	STAGING PLAN — PHASE IAB	PH-IAB-05
33	PROPOSED CROSS SECTIONS	XCS-04	84	STAGING PLAN — PHASE IAB	PH-IAB-04
32	PROPOSED CROSS SECTIONS	XCS-03	83	STAGING PLAN — PHASE IAB	PH-IAB-03
31	PROPOSED CROSS SECTIONS	XCS-01	82	STAGING PLAN — PHASE IAB STAGING PLAN — PHASE IAB	PH-IAB-02
30	PROPOSED CROSS SECTIONS	XCS-01	81	STAGING PLAN — PHASE IAB	PH-IAB-01
29	SITE PLAN SITE PLAN	SITE-11 SITE-12	80	ENVIRONMENTAL COMPLIANCE NOTES	PH-02 PH-03
27	SITE PLAN SITE PLAN	SITE-10 SITE-11	78	STAGING PLANS — GENERAL NOTES	PH-01 PH-02
26	SITE PLAN	SITE 10	77 78	FEMA FLOODPLAIN IMPACT PLAN SUGGESTED CONSTRUCTION SEQUENCE	FEMA-12
25	SITE PLAN	SITE OO	76	FEMA FLOODPLAIN IMPACT PLAN	FEMA-11
24	SITE PLAN	SITE 08	75	FEMA FLOODPLAIN IMPACT PLAN	FEMA-10
23	SITE PLAN	SITE-06	74	FEMA FLOODPLAIN IMPACT PLAN	FEMA-09
22	SITE PLAN	SITE OC	73	FEMA FLOODPLAIN IMPACT PLAN	FEMA-08
21	SITE PLAN	SITE-04	72	FEMA FLOODPLAIN IMPACT PLAN	FEMA-07
20	SITE PLAN	SITE -0.4	71	FEMA FLOODPLAIN IMPACT PLAN	FEMA-06
19	SITE PLAN	SITE 07	70	FEMA FLOODPLAIN IMPACT PLAN	FEMA-05
18	SITE PLAN	SITE-01	69	FEMA FLOODPLAIN IMPACT PLAN	FEMA-04
17	KEY PLAN	KEY-01	68	FEMA FLOODPLAIN IMPACT PLAN	FEMA-03
16	EXISTING SITE PLAN	EX-13	67	FEMA FLOODPLAIN IMPACT PLAN	FEMA-02
15	EXISTING SITE PLAN	EX-12	66	FEMA FLOODPLAIN IMPACT PLAN	FEMA-01
14	EXISTING SITE PLAN	EX-11	65	HIGH TIDE LINE IMPACT PLAN	HTL-12
13	EXISTING SITE PLAN	EX-10	64	HIGH TIDE LINE IMPACT PLAN	HTL-11
12	EXISTING SITE PLAN	EX-9	63	HIGH TIDE LINE IMPACT PLAN	HTL-10
11	EXISTING SITE PLAN	EX-8	62	HIGH TIDE LINE IMPACT PLAN	HTL-09
10	EXISTING SITE PLAN	EX-7	61	HIGH TIDE LINE IMPACT PLAN	HTL-08
9	EXISTING SITE PLAN	EX-6	60	HIGH TIDE LINE IMPACT PLAN	HTL-07
8	EXISTING SITE PLAN	EX-5	59	HIGH TIDE LINE IMPACT PLAN	HTL-06
7	EXISTING SITE PLAN	EX-4	58	HIGH TIDE LINE IMPACT PLAN	HTL-05
6	EXISTING SITE PLAN	EX-3	57	HIGH TIDE LINE IMPACT PLAN	HTL-04
5	EXISTING SITE PLAN	EX-2	56	HIGH TIDE LINE IMPACT PLAN	HTL-03
4	EXISTING SITE PLAN	EX-1	55	HIGH TIDE LINE IMPACT PLAN	HTL-02
3	GENERAL CIVIL NOTES AND LEGEND	GEN-01	54	HIGH TIDE LINE IMPACT PLAN	HTL-01
2	INDEX OF DRAWINGS	IDX-01	53	CJL STATE IMPACT PLAN	CJL-12
NO. 1	TITLE SHEET	NO. TTL-01	NO. 52	CJL STATE IMPACT PLAN	NO. CJL-11
SHEET	DESCRIPTION	DRAWING	SHEET	DESCRIPTION	DRAWING
	INDEX OF DRAWINGS			INDEX OF DRAWINGS	
			1		

	INDEX OF DRAWINGS	
SHEET NO.	DESCRIPTION	DRAWING NO.
103	STAGING PLAN — PHASE ICDE	PH-ICDE-11
104	STAGING PLAN — PHASE ICDE	PH-ICDE-12
105	STAGING PLAN — PHASE IV	PH-IV-01
106	STAGING PLAN — PHASE IV	PH-IV-02
107	STAGING PLAN — PHASE IV	PH-IV-03
108	STAGING PLAN — PHASE IV	PH-IV-04
109	STAGING PLAN — PHASE IV	PH-IV-05
110	STAGING PLAN — PHASE IV	PH-IV-06
111	STAGING PLAN — PHASE IV	PH-IV-07
112	STAGING PLAN — PHASE IV	PH-IV-08
113	STAGING PLAN — PHASE IV	PH-IV-09
114	STAGING PLAN — PHASE IV	PH-IV-10
115	STAGING PLAN — PHASE IV	PH-IV-11
116	STAGING PLAN — PHASE IV	PH-IV-12
117	CIVIL DETAILS	DTL-01
118	CIVIL DETAILS	DTL-02
119	CIVIL DETAILS	DTL-03
120	CIVIL DETAILS	DTL-04
121	CIVIL DETAILS	DTL-05
122	CIVIL DETAILS	DTL-06
123	SUBSURFACE PROFILE 1	GEO-01
124	SUBSURFACE PROFILE 2	GEO-02
125	SUBSURFACE PROFILE 3	GEO-03
126	EMBANKMENT CONSTRUCTION SCHEME	GEO-04
127	FOUNDATION PLAN	GEO-05
128	PIER 9 AND EAST ABUTMENT	GEO-06
129	DRILLED SHAFT TYPICAL DETAILS	GEO-07
130	DEMOLITION PLAN	DEM-01
131	BARGE OCCUPANCY ZONES	SC-01
132	BARGE BERTHING 1 — PIER CONSTRUCTION	SC-02
133	BARGE BERTHING 2 — FENDER CONSTRUCTION	SC-03
134	BARGE BERTHING 3 — SUPERSTRUCTURE CONSTRUCTION	SC-04
135	BARGE BERTHING 4 — SUB CABLE CONSTRUCTION	SC-05
136	FERRY LANDING FISHING PIER	FM-01
137	EAGLE LANDING FISHING PIER	FM-02
138	TEMPORARY AERIAL CABLES	AC-01
139	FENDER SYSTEM DETAILS	FEN-01
140	LIEUTENANT RIVER TEMPORARY CROSSING	TB-01

NOTE: SEE ATTACHMENT 14A FOR "3.25 AC MITIGATION SITE" AND "17 SHORE ROAD MITIGATION SITE" PLANS.

ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023

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HARDESTY & HANOVER, LLC

E N G I N E E R I N G

1501 Broadway New York, NY 10036

CONNECTICUT Project Code: XXX XXX REPLACEMENT OF MB 106.89 OVER CONNECTICUT RIVER

2 OF 140 Sheet No.

INDEX OF DRAWINGS Designed CBS Drawn CBS Checked BSH Date 5/2/2023

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DEFINITIONS

EOR = ENGINEER OF RECORD REO = RESIDENT ENGINEER'S OFFICE

HORIZONTAL AND VERTICAL CONTROL DATUM

- 1. THE HORIZONTAL CONTROLS REFERENCE THE NORTH AMERICAN DATUM OF 1983, (NAD83) AND THE CONNECTICUT STATE PLANE COORDINATE SYSTEM.
- 2. THE VERTICAL DATUM REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

SAFETY TRAINING

- 1. ALL CONTRACTOR AND SUBCONTRACTORS ON—SITE PERSONNEL WILL BE REQUIRED TO ATTEND AMTRAK WORKER PROTECTION AND CONTRACTOR SAFETY TRAINING BEFORE ENTERING AMTRAK PROPERTY.
- 2. THE SAFETY TRAINING CONSISTS OF AN ONLINE COURSE HOSTED ON AMTRAK'S WEBSITE AND MUST BE RENEWED ON A YEARLY BASIS.

TRACK OUTAGES

1. CONSTRUCTION ON THIS CONTRACT SHALL MINIMIZE IMPACTS TO RAILROAD OPERATIONS. THE CONTRACTOR SHALL COORDINATE TRACK OUTAGES WITH THE CONSTRUCTION MANAGER.

KEY WATER ELEVATIONS AT PROJECT SITE (NAVD 88)

FEMA 100—YEAR FLO WEST ABUTMEN	OOD PLAIN BASE FLC T, NORTH BANK (ZO	,	E):	11
WEST ABUTMEN	T, SOUTH BANK (ZOI	NE VE) =		15
EAST ABUTMENT EAST ABUTMENT	, NORTH BANK STA	T2 106+4475± T0 T2 107+0900± T0	106+4475± (ZONE VE) = 107+0900± (ZONE AE) = 107+1850± (ZONE AE) = EAST (ZONE AE) =	14 10 12 11
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HYDRAULIC DATA	NAVD88	USACE
MINIMUM CABLE DEPTH	-29.89 FT	-28.0 FT
AUTHORIZED DREDGE DEPTH	-16.89 FT	-15.0 FT
MEAN LOWER LOW WATER (M.L.L.W.)	-1.89 FT (1)	0.0 FT
MEAN LOW WATER (M.L.W.)	-1.71 FT (1)	0.18 FT
MEAN HIGH WATER (M.H.W.)	1.60 FT (1)	3.49 FT
COASTAL JURISDICTION LINE (C.J.L.)	2.9 FT	4.8 FT
HIGH TIDE LINE (H.T.L.)	3.04 FT (2)	4.93 FT
10-YEAR TIDE	5.4 FT (3)	7.3 FT
100-YEAR TIDE	9.3 FT (3)	11.2 FT
DRAINAGE AREA	11,300 SQ MI	11,300 SQ MI
DESIGN FREQUENCY	100-YEAR	100-YEAR
DESIGN DISCHARGE	136,495 CFS (4)	136,495 CFS
DESIGN WATER SURFACE ELEVATION-UPSTREAM	8.41 FT (4)	10.30 FT
DESIGN WATER SURFACE ELEVATION-DOWNSTREAM	8.53 FT (4)	10.42 FT
MAXIMUM SCOUR ELEVATION		
FREQUENCY	500 YR W/ SPRING TIDE	500 YR W/ SPRING TIDE
DISCHARGE	195,553 CFS	195,553 CFS
WORST CASE SCOUR, SUBSTRUCTURE UNIT: DEPTH	WEST ABUTMENT: 24.9 PIER 7: 25.1	WEST ABUTMENT: 24.9 PIER 7: 25.1

- (1) NOAA PUBLISHED DATA FOR TIDAL GAUGE STATION NO. 8462764, LYME HWY. BR. CT. RIVER CT.
- (2) UPDATED TIDAL PROFILES FOR THE NEW ENGLAND COASTLINE
- (3) USACE NORTH ATLANTIC COAST COMPREHENSIVE STUDY (NACCS)
- (4) CONNECTICUT RIVER BRIDGE REPLACEMENT, HYDROLOGIC, HYDRAULIC, AND SCOUR ANALYSIS REPORT, MARCH 2023

*ALL ELEVATIONS SHOWN ARE APPROXIMATE AND CONTAINS AN ACCURACY OF 0.10 $^{\prime}$ ± BASED ON RELATION WITH THE USGS AND NOAA GAUGE BENCHMARKS INTERPOLATION AND FIELD VERIFICATION.

GENERAL NOTES

1. HAUL ROUTES MUST BE KEPT CLEAN AT ALL TIMES.

2. ALL WORK SHALL COMPLY WITH OSHA STANDARDS. 3. THE LOCATION, ELEVATION AND SIZE OF EXISTING UTILITIES SHOWN ON THE CONTRACT DRAWINGS ARE APPROXIMATE

THE FOLLOWING SHALL BE PERFORMED: a. VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES WITHIN THE WORK AREA PRIOR TO CONSTRUCTION.

b. EXERCISE EXTREME CAUTION WHEN WORKING ADJACENT TO EXISTING POWER, COMMUNICATIONS, WATER OR GAS LINES TO PREVENT DAMAGE TO THESE LINES.

c. IMMEDIATELY REPAIR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S OPERATIONS IN A MANNER APPROVED BY THE UTILITY OWNER, AT NO COST TO AMTRAK.

3. ALL AREAS OUTSIDE THE LIMITS OF CONSTRUCTION THAT ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS, SHALL BE IMMEDIATELY RESTORED TO THEIR ORIGINAL CONDITION TO THE SATISFACTION OF THE RESIDENT ENGINEER'S OFFICE (REO) AT NO ADDITIONAL COST TO AMTRAK.

4. VERIFY ALL INDICATED CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING OF MATERIAL, OR PERFORMING ANY WORK. NOTIFY THE REO OF ANY CONDITIONS OR DIMENSIONS THAT WOULD PREVENT OR HAMPER THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS.

5. UPON COMPLETION OF THE WORK, REMOVE ALL DEBRIS, EQUIPMENT AND UNUSED MATERIALS FROM AMTRAK'S PROPERTY AND RESTORE THE "AREA AVAILABLE FOR CONTRACTOR'S USE" TO ITS ORIGINAL CONDITION.

6. THE CONTRACTOR SHALL, THROUGH THE REO, COORDINATE WITH THE RAILROAD FORCE ACCOUNT CONSTRUCTION ACTIVITIES WITHIN THE RAILROAD

7. AREAS THAT WILL REMAIN DISTURBED BUT INACTIVE FOR AT LEAST THIRTY DAYS SHALL RECEIVE TEMPORARY SEEDING OR SOIL PROTECTION WITHIN SEVEN DAYS. AREAS THAT WILL REMAIN DISTURBED BEYOND THE SEEDING SEASON, SHALL RECEIVE LONG-TERM, NON-VEGETATIVE STABILIZATION AND PROTECTION SUFFICIENT TO PROTECT THE SITE THROUGH THE WINTER. IN ALL CASES, STABILIZATION AND PROTECTION MEASURES SHALL BE IMPLEMENTED AS SOON AS POSSIBLE.PERMANENT SEEDING IS RECOMMENDED FROM APRIL 1 THROUGH JUNE 15 AND AUGUST 15 THROUGH OCTOBER 15.

8. EROSION CONTROL MATTING SHALL BE USED ON ALL SEEDED SLOPES OF 2:1 OR STEEPER AND ON ALL SEEDED SLOPES OF 3:1 OR STEEPER THAT EXCEED 15 FEET VERTICALLY

9. FOR CONSTRUCTION AND TRACK MONITORING REQUIREMENTS SEE AMTRAK STANDARD SPECIFICATIONS EP 2031 AND EP 3014, LATEST EDITIONS. 10. THE CONTRACTOR SHALL NOT STORE BELOW THE 500-YEAR FLOOD LEVEL

ANY MATERIALS THAT ARE BUOYANT, HAZARDOUS, FLAMMABLE, EXPLOSIVE, SOLUBLE, EXPANSIVE, RADIOACTIVE, OR ANY OTHER MATERIALS THAT COULD BE INJURIOUS TO HUMAN, ANIMAL OR PLANT LIFE IN THE EVENT OF A FLOOD. OTHER MATERIAL OR EQUIPMENT MAY BE STORED BELOW THE ELEVATION OF THE 500-YEAR FLOOD ELEVATION PROVIDED THAT SUCH MATERIAL OR EQUIPMENT IS NOT SUBJECT TO MAJOR DAMAGE BY FLOODS, AND PROVIDED THAT SUCH MATERIAL OR EQUIPMENT IS FIRMLY ANCHORED RESTRAINED, OR ENCLOSED TO PREVENT IT FROM FLOATING AWAY OR IS REMOVED PRIOR TO FLOODING.

11. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO THE REO FOR APPROVAL, A WRITTEN FLOOD CONTINGENCY PLAN. THE PLAN SHALL INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

a. A DESCRIPTION OF THE MEANS BY WHICH THE CONTRACTOR SHALL REMOVE FROM WITHIN THE FLOODPLAIN, ALL MATERIAL, EQUIPMENT AND PERSONNEL PRIOR TO A PREDICTED MAJOR STORM WITHIN A 24-HOUR PERIOD DURING THE WEEKDAY INCLUDING WEEKENDS AND HOLIDAYS. A SITE MAP SHALL BE PROVIDED TO IDENTIFY THE LOCATION OF WHERE ALL MATERIAL AND EQUIPMENT WILL BE STORED TEMPORARILY OUTSIDE OF THE FLOODPLAIN. THE CONTRACTOR IS RESPONSIBLE FOR MONITORING LOCAL WEATHER CONDITIONS AND WILL SECURE THE WORKSITE BEFORE PREDICTED MAJOR STORMS. A MAJOR STORM SHALL BE DEFINED AS A STORM PREDICTED BY THE NOAA WEATHER SERVICE WITH WARNINGS OF FLOODING, SEVERE THUNDERSTORMS, OR SIMILARLY SEVERE WEATHER CONDITIONS OR EFFECTS.

b. PROVISIONS FOR NOTIFYING WORKERS ENGAGED IN WORK ON OR NEAR THE BRIDGE OR WATERCOURSE OF AN IMPENDING STORM.

c. PROVISIONS FOR REMOVING BUOYANT, HAZARDOUS OR INJURIOUS MATERIALS PRIOR TO MAJOR STORMS.

d. CONTRACTOR'S EMERGENCY CONTACT INFORMATION.

EXISTING

—— LCSTV —— LCSTV ——

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CIVIL LEGEND

PROPOSED

AMTRAK R.O.W LINE EASEMENT LINE PROPERTY LINE FEMA 100 YEAR FLOOD LINE — ELEVATION VARIES LAND CAPABALE OF SUPPORTING TIDAL VEGETATION — ELEVATION 4.1 COASTAL JURISDICTION LINE (CJL) — ELEVATION 2.9' HIGH TIDE LINE (HTL) — ELEVATION 3.04' MEAN HIGH WATER (MHW) — ELEVATION 1.60' MEAN LOW WATER (MLW) — ELEVATION — 1.71' WETLAND DELINEATION TRACK CENTERLINE CHAIN LINK FENCE TEMPORARY CONSTRUCTION FENCE FRA APPROVED TEMPORARY CONSTRUCTION BARRIER TEMPORARY PERIMETER EROSION & SEDIMENTATION CONTROL TEMPORARY TRESTLE STRUCTURE RETAINING WALL CATENARY STRUCTURE SINGLE ARM CANTILEVER CATENARY STRUCTURE SIGN UTILITY POLE SANITARY UTILITY WATER UTILITY BURIED ELECTRIC UTILITY FIBEROPTIC UTILITY TREELINE LIMIT OF FILL F — F	LIMIT OF DISTURBANCE	LOD
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TREELINE LIMIT OF CUT C —— C —— C		
LIMIT OF CUT C C		
		—— c —— c ——
		—— F —— F ——

TRACK STAGING LEGEND

EXISTING TRACK	
RAISE AND SURFACE	
CONSTRUCT NEW	
TRACK TO BE SHIFTED	
REMOVE	

ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023

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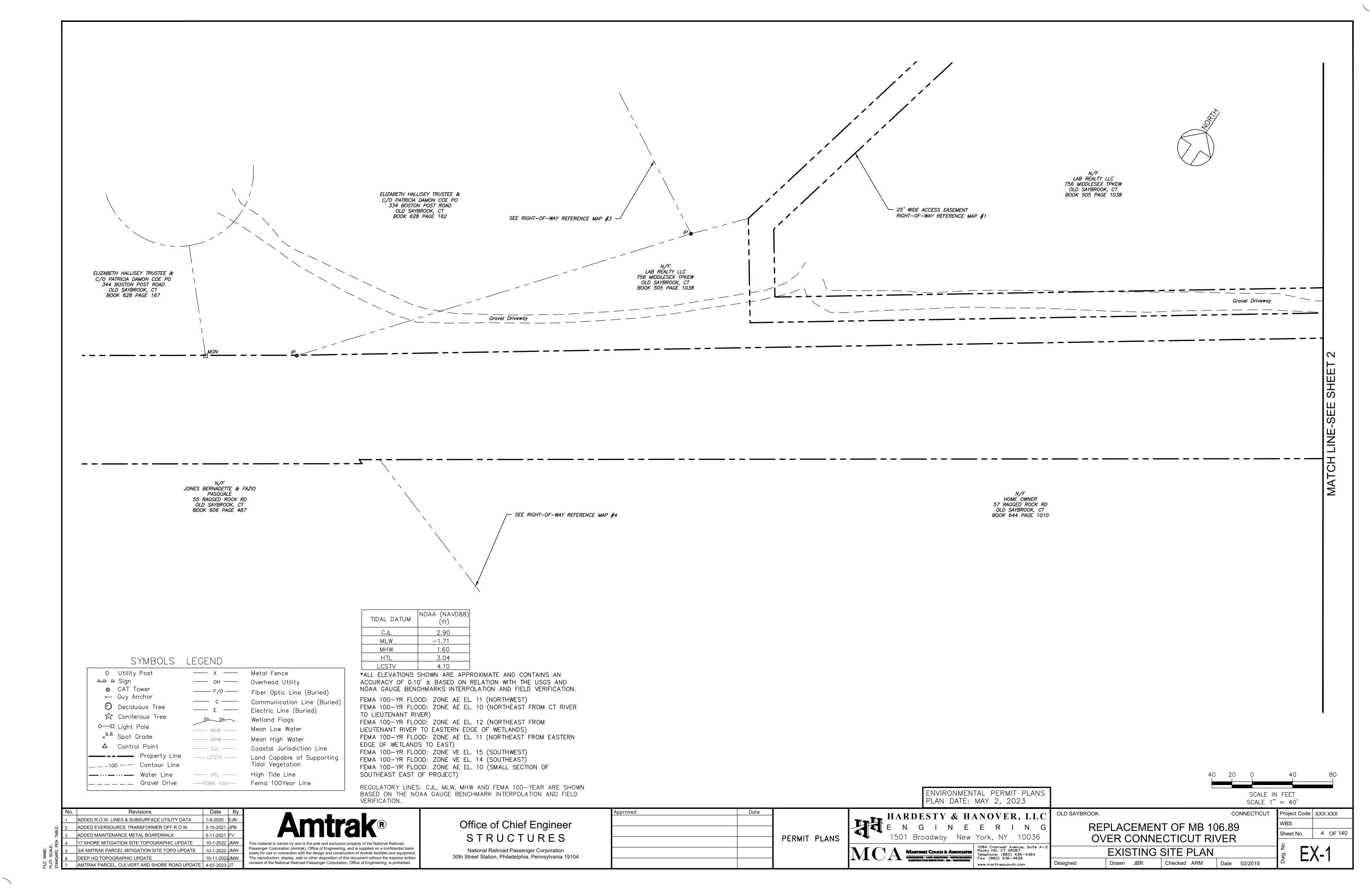
HARDESTY & HANOVER, LLC E N G I N E E R I N G

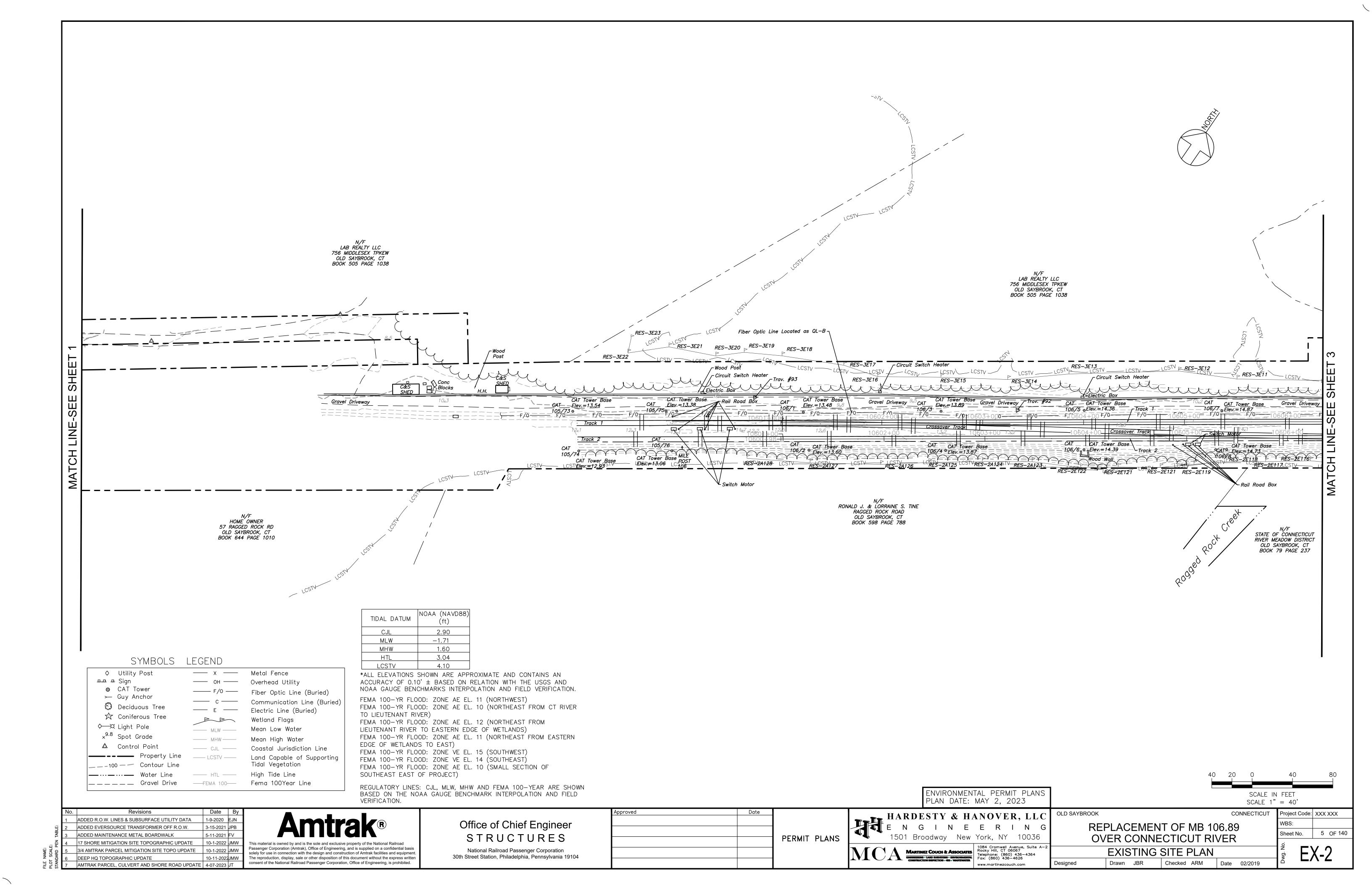
1501 Broadway New York NY 10036 1501 Broadway New York, NY 10036 1700 Market St. Suite 1050 Philadelphia, PA 19103

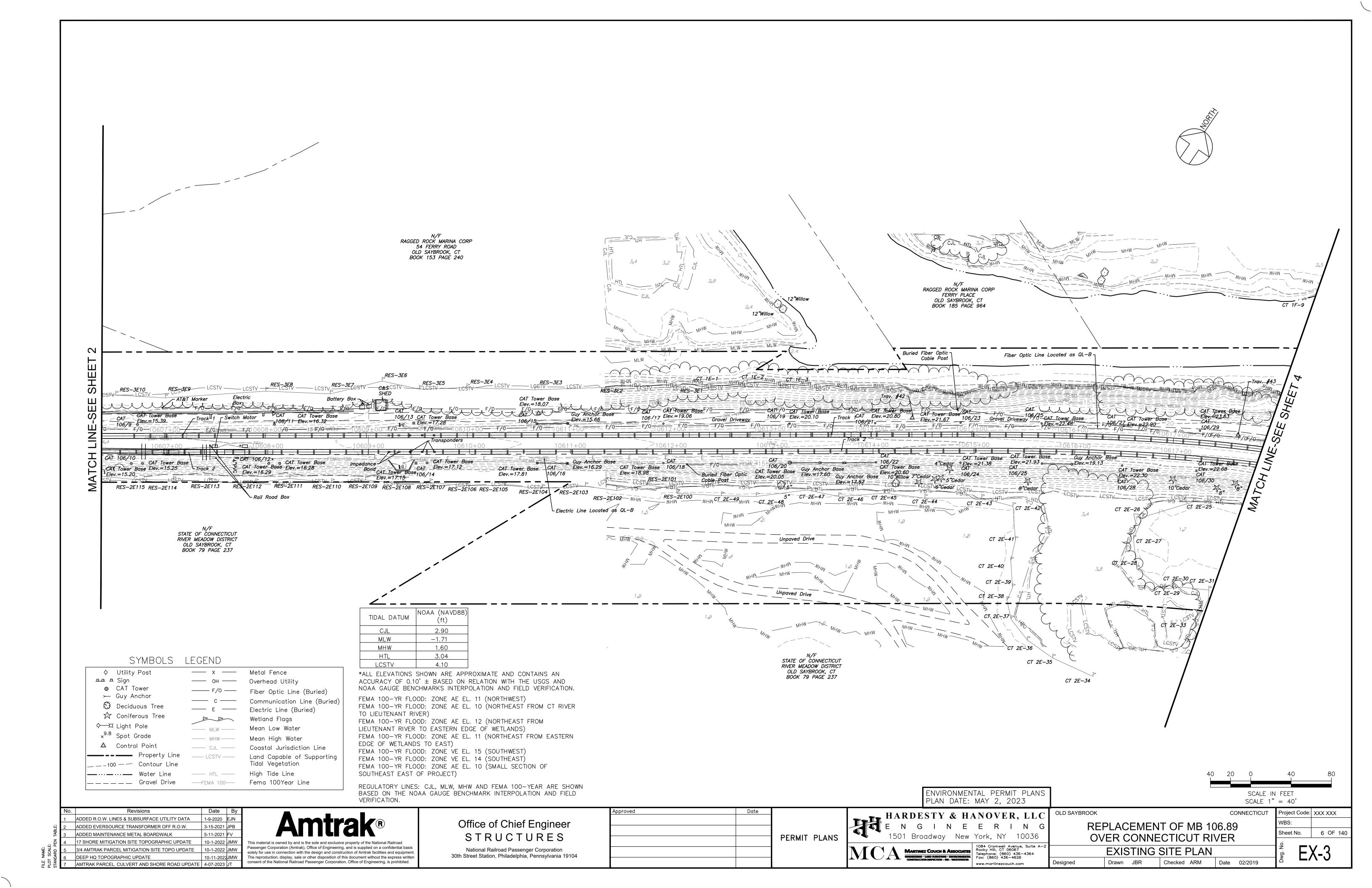
REPLACEMENT OF MB 106.89 **OVER CONNECTICUT RIVER**

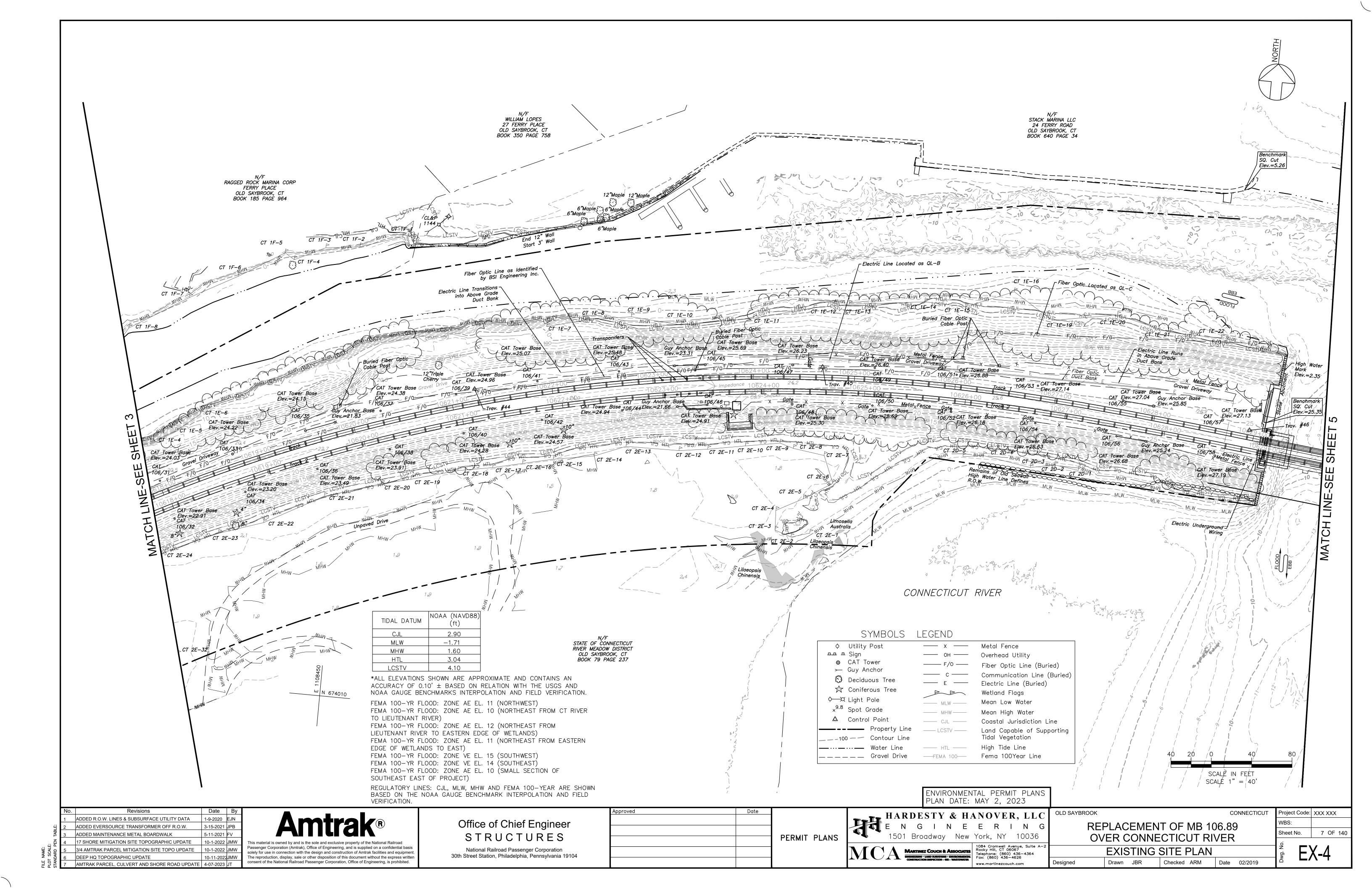
GENERAL CIVIL NOTES & LEGEND Designed CB Drawn CB/MD Checked KM Date 5/2/2023 Project Code: XXX XXX

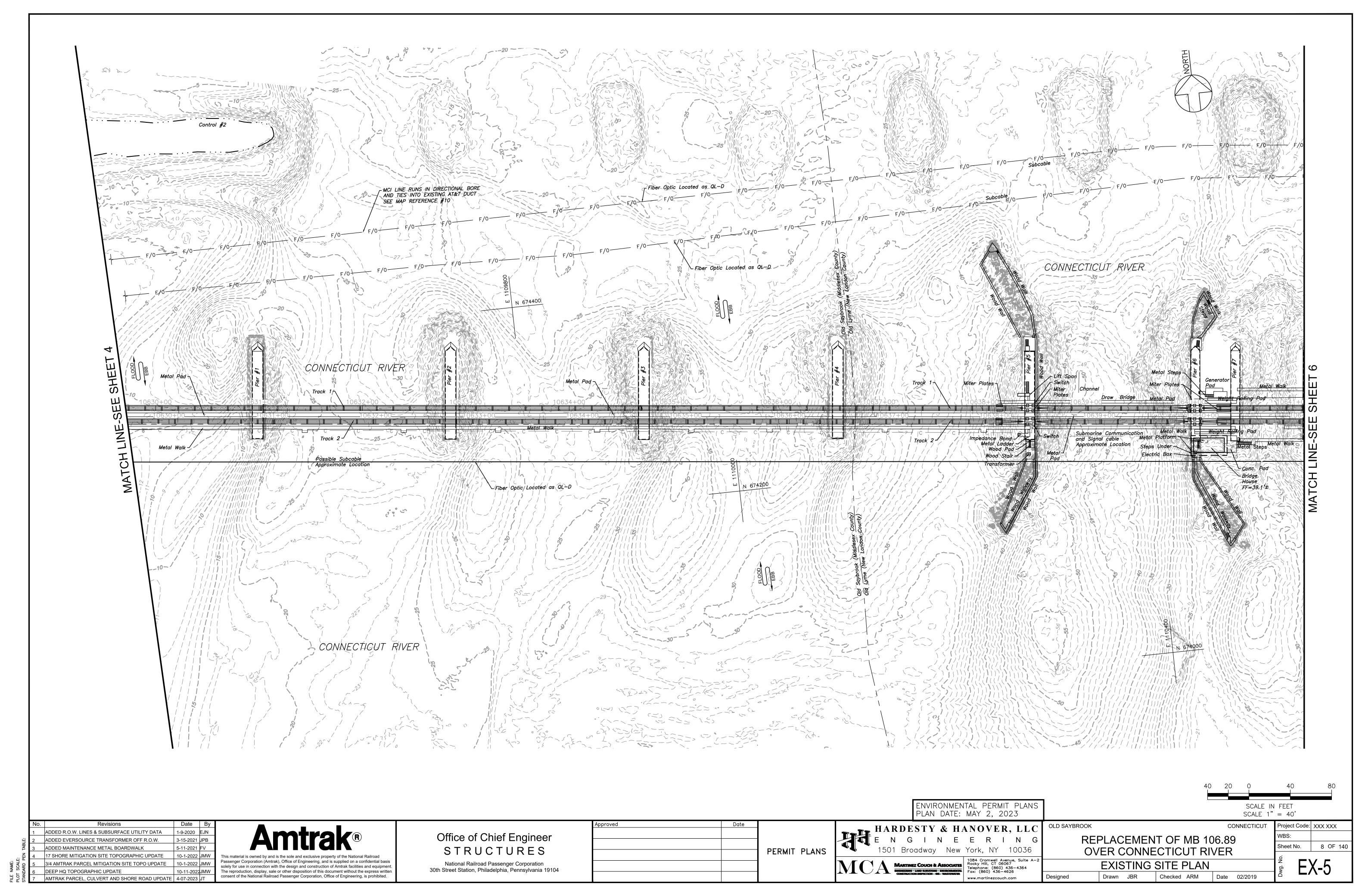
3 OF 140

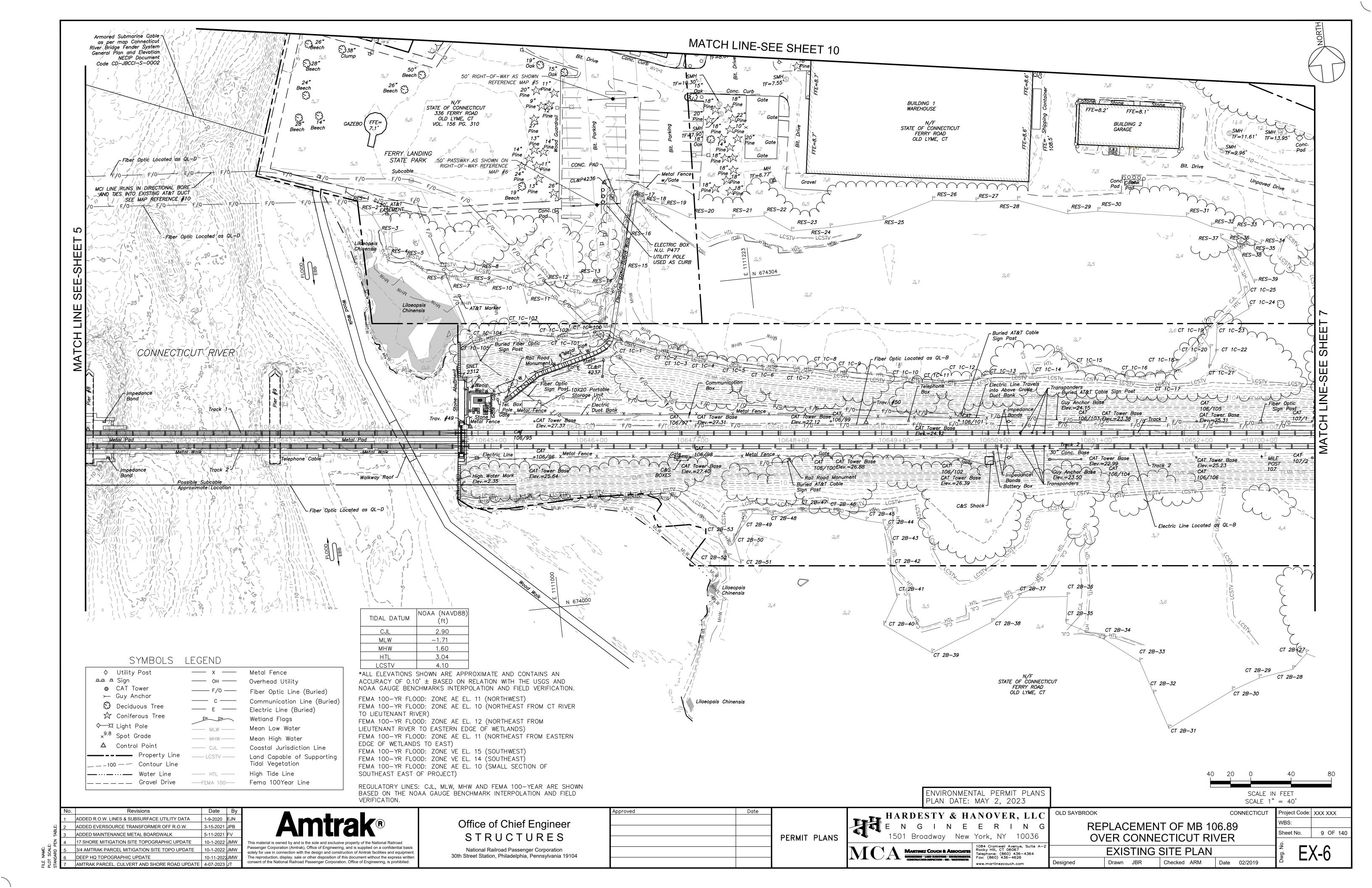


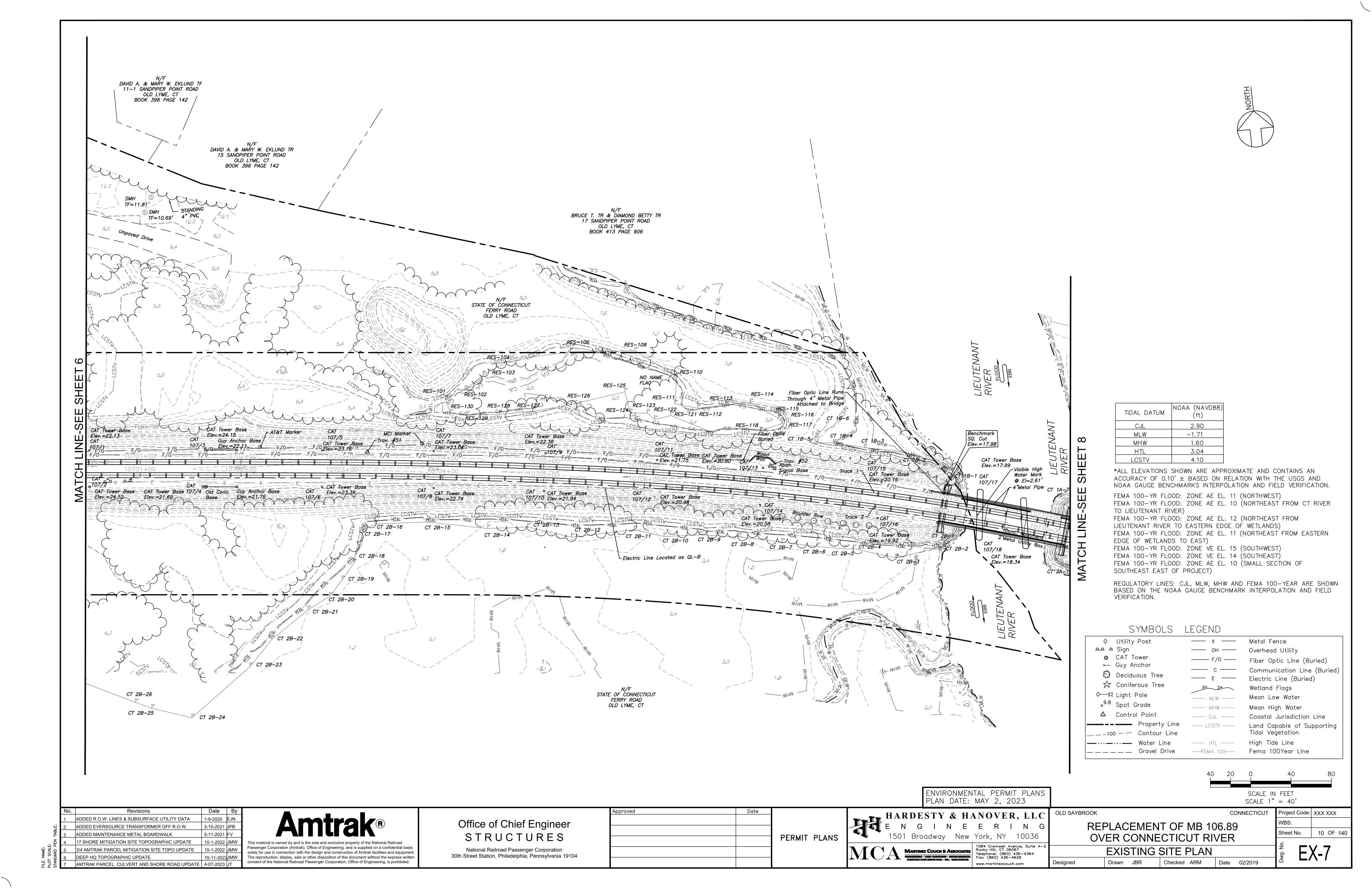


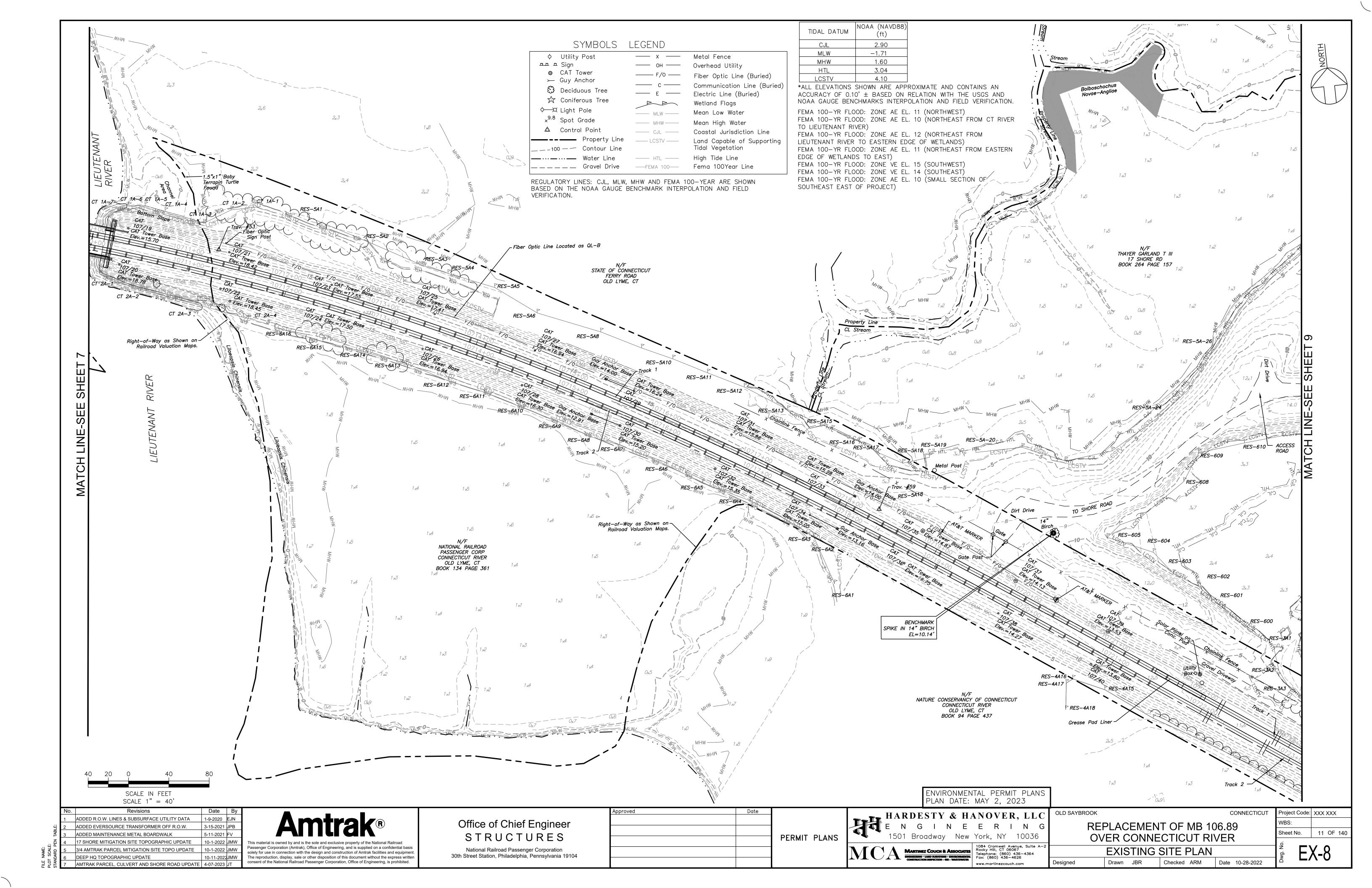


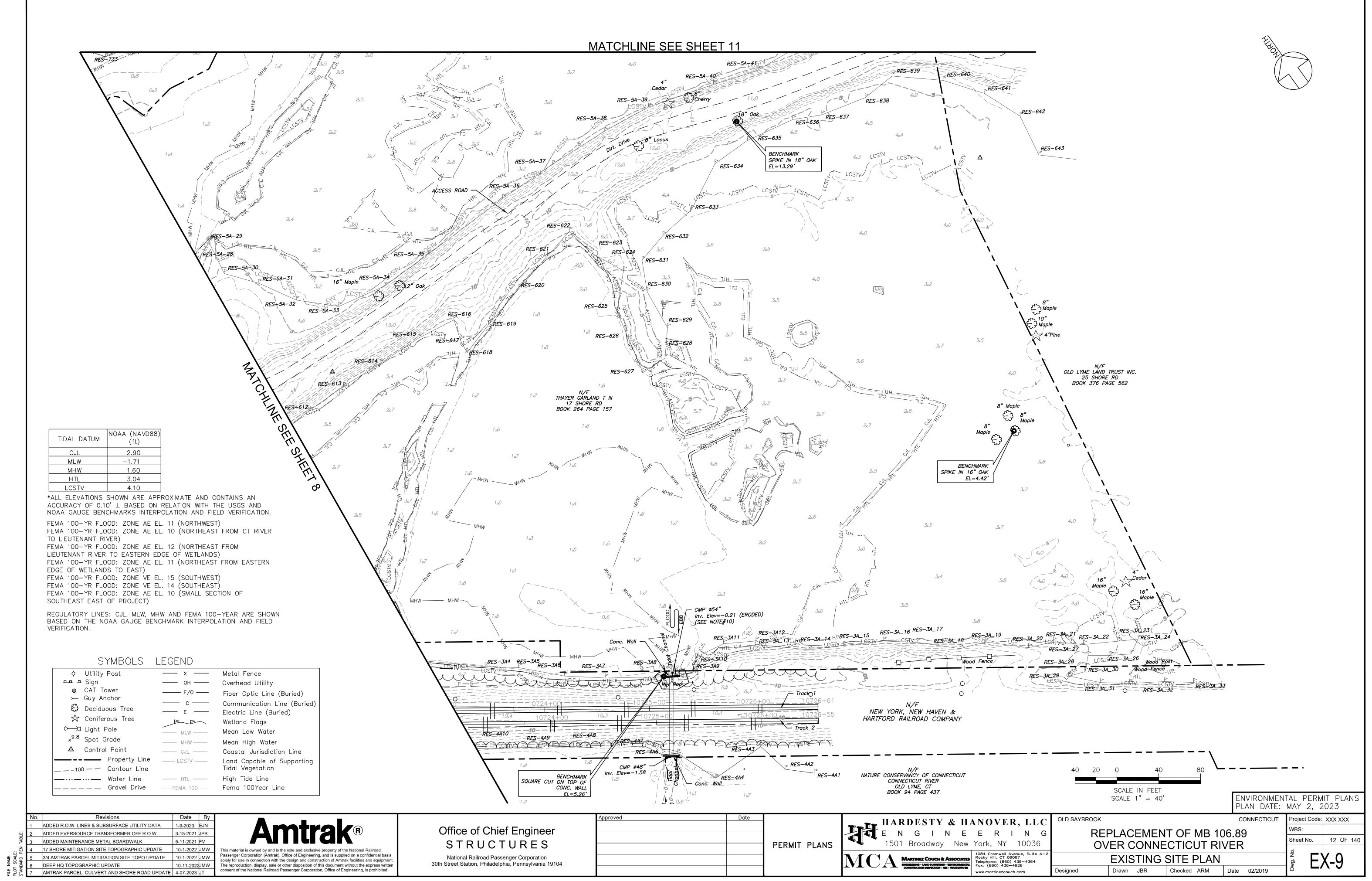


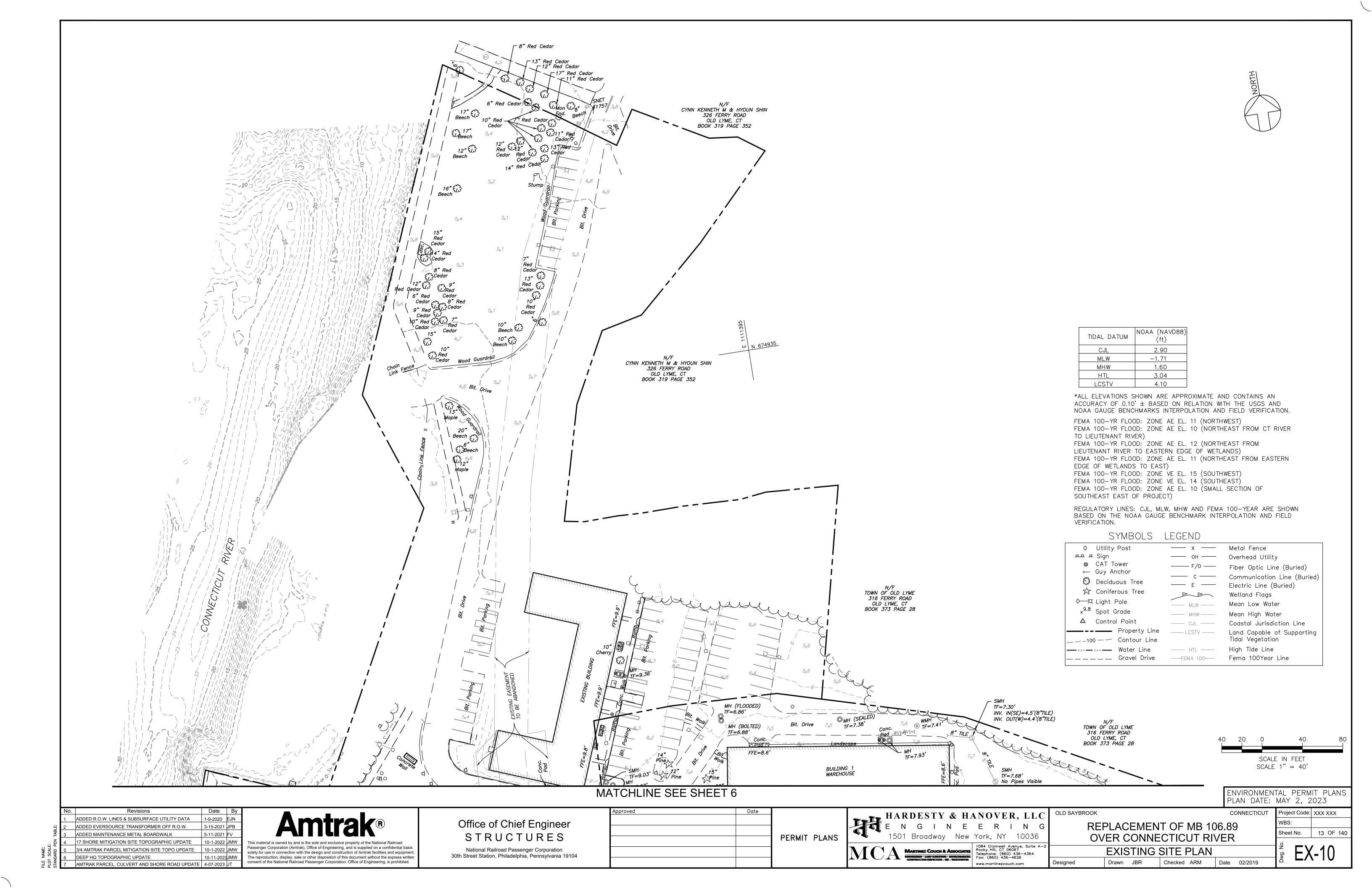




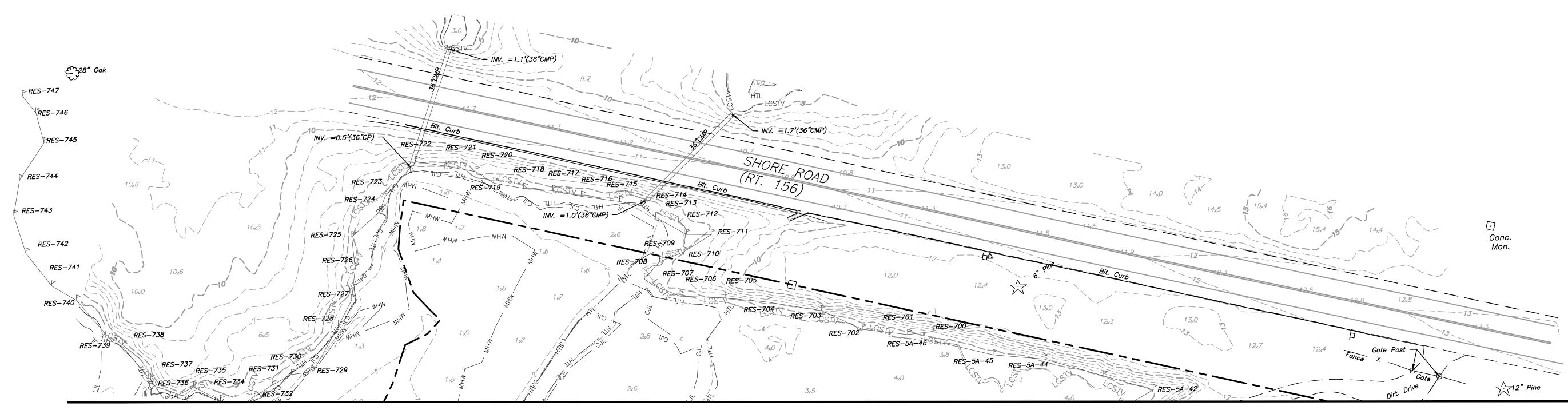












MATCHLINE SEE SHEET 9

SYMBOLS LEGEND

	LEGEND	
φ Utility Post	— x —	Metal Fence
дд д Sign	— он —	Overhead Utility
O CAT Tower	—— F/O ——	Fiber Optic Line (Buried)
→ Guy Anchor	— с—	Communication Line (Buried)
Deciduous Tree	— Е —	Electric Line (Buried)
Coniferous Tree		Wetland Flags
♦ X Light Pole	MLW	Mean Low Water
× ^{9.8} Spot Grade	MHW	Mean High Water
△ Control Point	CJL	Coastal Jurisdiction Line
Property Line	—— LCSTV ——	Land Capable of Supporting
100 — Contour Line		Tidal Vegetation
	HTL	High Tide Line
Gravel Drive	——FEMA 100——	Fema 100Year Line

TIDAL DATUM	NOAA (NAVD88) (ft)
CJL	2.90
MLW	-1.71
MHW	1.60
HTL	3.04
LCSTV	4.10

*ALL ELEVATIONS SHOWN ARE APPROXIMATE AND CONTAINS AN ACCURACY OF 0.10' ± BASED ON RELATION WITH THE USGS AND NOAA GAUGE BENCHMARKS INTERPOLATION AND FIELD VERIFICATION.

FEMA 100-YR FLOOD: ZONE AE EL. 11 (NORTHWEST) FEMA 100-YR FLOOD: ZONE AE EL. 10 (NORTHEAST FROM CT RIVER TO LIEUTENANT RIVER) FEMA 100-YR FLOOD: ZONE AE EL. 12 (NORTHEAST FROM LIEUTENANT RIVER TO EASTERN EDGE OF WETLANDS)

FEMA 100-YR FLOOD: ZONE AE EL. 11 (NORTHEAST FROM EASTERN

EDGE OF WETLANDS TO EAST) FEMA 100-YR FLOOD: ZONE VE EL. 15 (SOUTHWEST) FEMA 100-YR FLOOD: ZONE VE EL. 14 (SOUTHEAST) FEMA 100-YR FLOOD: ZONE AE EL. 10 (SMALL SECTION OF

SOUTHEAST EAST OF PROJECT)

REGULATORY LINES: CJL, MLW, MHW AND FEMA 100-YEAR ARE SHOWN BASED ON THE NOAA GAUGE BENCHMARK INTERPOLATION AND FIELD VERIFICATION.

SCALE IN FEET SCALE 1" = 40"

	NO.	Revisions	Date	Ву
	1	ADDED R.O.W. LINES & SUBSURFACE UTILITY DATA	1-9-2020	EJN
끨	2	ADDED EVERSOURCE TRANSFORMER OFF R.O.W.	3-15-2021	JPB
TABL	3	ADDED MAINTENANCE METAL BOARDWALK	5-11-2021	FV
EN	4	17 SHORE MITIGATION SITE TOPOGRAPHIC UPDATE	10-1-2022	JMW
CALE:	5	3/4 AMTRAK PARCEL MITIGATION SITE TOPO UPDATE	10-1-2022	JMW

AMTRAK PARCEL, CULVERT AND SHORE ROAD UPDATE 4-07-2023 JT

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/ pprovod	Date	
		5-5-4-
		PERMIT PLANS

ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023				
HARDE E N G	STY & HANOVER, LLC I N E E R I N G badway New York, NY 10036			
1501 Bro				
MARTINEZ COUCH & ASSOCIATES ROCKY Hill, CT 06067 Rocky Hill, CT 06067 Telephone: (860) 436–4364 Fax: (860) 436–4626				

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	OVER CONNECTICUT RIVER
;	REPLACEMENT OF MB 106.89
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1	OLD SAYBROOK COI

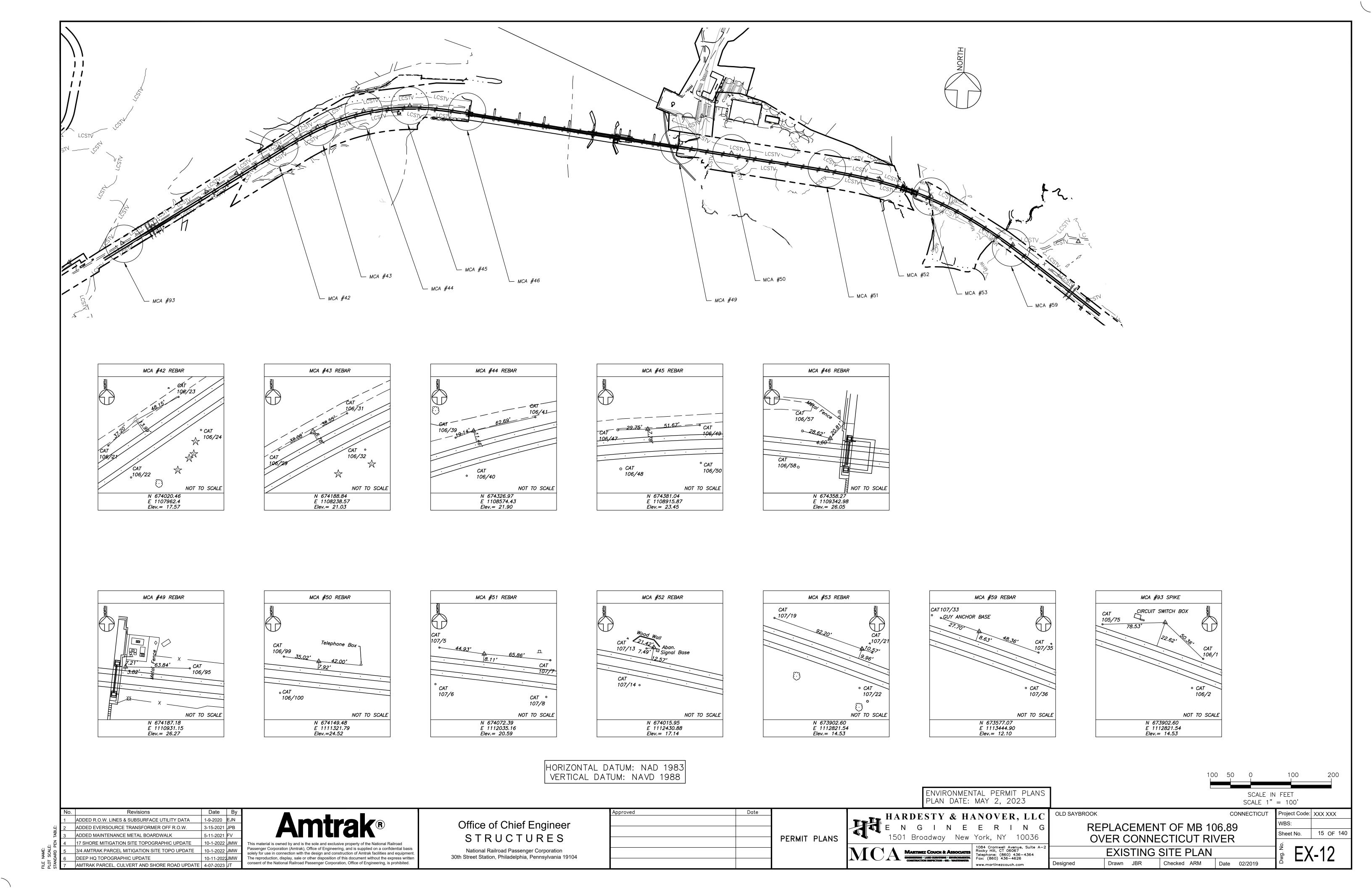
Checked ARM

Drawn JBR

Designed

CONNECTICUT				Project Code:	XXX XXX	
PLACEMENT C	WBS:	T				
VER CONNECTICUT RIVER				Sheet No.	14 OF 140	
VER CONNECT	o.					
EXISTING SIT	ž FX	(-11				
Drawn JBR Che	cked ARM	Date	02/2019		\	

Date 02/2019



MAP REFERENCES:

- 1) "EASEMENT MAP SHOWING ACCESS EASEMENTS ACROSS THE PROPERTIES OF MORTON H. SILBERSTEIN AND COURVILLE DEVELOPMENT, LLC BOSTON POST ROAD OLD SAYBROOK CONNECTICUT", SCALE: 1"=100', BY ANGUS McDONALD/GARY SHARPE & ASSOCIATES, INC., TOWN OF OLD SAYBROOK MAP # 2423 AND DATED OCT. 13, 1998.
- 2) "SURVEY PLAN SHOWING EASEMENT TO BE CONVEYED TO THE CONNECTICUT WATER COMPANY ON PROPERTY OF MORTON H. SILBERSTEIN, M.D. BOSTON POST ROAD OLD SAYBROOK, CONNECTICUT", SCALE: 1'=100', BY ANGUS McDONALD/GARY SHARPE & ASSOCIATES, INC., TOWN OF OLD SAYBROOK MAP # 1783 AND DATED OCTOBER 17, 1986.
- 3) "REVISED PLAN OF DEVELOPMENT ROAMTREE INDUSTRIAL PARK LAND OF MICHAEL HALLISEY & FRANK HEINEMANN BOSTON POST ROAD OLD SAYBROOK, CONNECTICUT", SCALE: 1"=50', BY ANGUS L. McDONALD & ASSOCIATES, INC., TOWN OF OLD SAYBROOK MAP # 1651, DATED APR. 26, 1976 AND LAST REVISED ON SEPT 1, 1977.
- 4) "MAP OF PROPERTY OF RUSSELL F. MULCAHY, DOUGLAS W. MULCAHY AND JANE E. NIHILL FERRY DISTRICT OLD SAYBROOK, CONN", SCALE: 1"=60', BY MERRITT B. CHALKER, SURVEYOR OLD SAYBROOK, CONN., TOWN OF OLD SAYBROOK MAP # 663, DATED OCT. 7, 1957 AND LAST REVISED ON AUG. 8, 1961.
- 5) "TITLE LAND TO BE ACQUIRED BY THE STATE OF CONNECTICUT FROM PRUDENTIAL PRESS INC. FERRY ROAD OLD LYME, CT.", SCALE: 1"=50', SHEET 1 OF 2 BY ROBERT M. BOWKER SR., TOWN OF OLD LYME MAP # 2133 AND DATED APRIL 23, 1985.
- 6) "LAND IN OLD LYME, CONN TO BE CONVEYED TO JAMES AND LOUISE VIVEIROS", SCALE: 1"=100', TOWN OF OLD LYME MAP # 10 AND DATED MARCH, 1951.
- 7) "RESUBDIVISION PLAN PROPERTY OF DAVID A. EKLUND & MARY W. EKLUND FERRY ROAD & SANDPIPER POINT ROAD OLD LYME, CONNECTICUT" SHEET 3 OF 6, SCALE: 1"=60', BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC., TOWN OF OLD LYME MAP # 3727, DATED MARCH 17, 2009 AND LAST REVISED ON
- 8) "PROPERTY SURVEY PLAN PROPERTY OF ROBERT S. VOLLAND & PATRICIA J. VOLLAND 17 SANDPIPER POINT ROAD OLD LYME, CONNECTICUT" SHEET 1 OF 1, SCALE: 1"=40', BY ANGUS McDONALD GARY SHARPE & ASSOCIATES, INC., TOWN OF OLD LYME MAP # 3906, DATED AUGUST 9, 2012 AND LAST REVISED ON OCTOBER 22, 2012.
- 9) "EASEMENT PROPERTY PLAN" D.E.P. MARINE HEADQUARTERS, OLD LYME, CONNECTICUT, EXHIBIT "A" SHEET 3 OF 4, SCALE: 1"=50', BY ANTHONY HENDRIKS, TOWN OF OLD LYME MAP # 2784.
- 10) "NORTHEND ELECTRIFICATION PROJECT AMTRAK, PROJECT # 013041-04 NEW LONDON TO NEW HAVEN", SCALE: 1"=80', BY MCI TELECOMMUNICATIONS CORPORATION LIGHTWAVE SYSTEMS, DATED 12/22/94.

- 1) THIS SURVEY HAS BEEN PREPARED IN ACCORDANCE WITH SECTIONS20-300B-1 THRU 20-300B-20 OF THE REGULATIONS OF CONNECTICUT STATE AGENCIES - "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ENDORSED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS A TOPOGRAPHIC SURVEY WITH THE AREAS OF CONVENTIONAL SURVEY CONFORMING TO HORIZONTAL ACCURACY CLASS A-2, TOPOGRAPHIC ACCURACY CLASS T-2 AND VERTICAL ACCURACY CLASS V-2. CONVENTIONAL T-2 TOPOGRAPHIC SURVEY WAS PERFORMED FOR SPECIFIED RAIL SHOT LOCATIONS, UTILITY LOCATION AND STRUCTURE LOCATION CROSS SECTION SHOTS WERE TAKEN AT 20 INTERVALS AND DO NOT REPRESENT COMPLETE TOPOGRAPHY. SURVEY OF THE BOTTOM OF THE CONNECTICUT RIVER IS THE RESULT OF A HYDROGRAPHIC MULTIBEAM SURVEY PERFORMED ON JULY 9, 2018 BY OCEAN SURVEYS, INC. PHOTO CONTROL OF CLASS A-2 ACCURACY WAS USED TO PROCESS AERIAL SURVEY DATA ALONG THE RIVER. AREAS PERFORMED BY AERIAL SURVEY FORMAT CONFORM TO TOPOGRAPHIC ACCURACY CLASS T-3.
- 2) NORTH ORIENTATION REFERS TO CONNECTICUT GRID SYSTEM NAD 83.
- 3) ELEVATIONS ARE BASED ON NAVD 88.
- 4) THESE TIES WERE DEVELOPED FROM THE BASE CAD DRAWING AND ARE NOT FIELD GENERATED TIES. THE DISTANCES DEPICTED HEREON ARE BASED UPON THE DISTANCE FROM THE INDIVIDUAL CONTROL POINT(S) TO THE CENTER OF THE TIE OBJECT AS MEASURED FROM THE CAD DRAWING ONLY.
- 5) THE TIES DEPICTED HEREON ARE ACTING AS A REFERENCE IN THE RECOVERY OF THE CONTROL POINTS ONLY. THEY ARE NOT INTENDED AS A MEANS TO REPLACE OR RESET ANY OF THE
- 6) SUBMARINE CABLES SHOWN HEREON ARE BASED ON AVAILABLE MAPPING AND FIELD OBSERVATION LOCATION OF CABLES AS DEPICTED ARE APPROXIMATE. NO FIELD EVIDENCE FOUND BY BSI ENGINEERING INC.
- 7) ACCESS TO AND FROM SHORE ROAD CURRENTLY IN USE. NO RIGHTS OR TRANSFER FOUND ON LAND RECORDS. LOCATION DEPICTED BY AERIAL IMAGERY.
- 8) ALL UTILITIES DEPICTED AT "QUALITY LEVEL C" UNLESS LABELED "QLB" OR "QLD".
- 9) REGULATORY LINES: CJL, MLW, MHW AND FEMA 100-YEAR ARE SHOWN BASED ON THE NOAA GAUGE BENCHMARK INTERPOLATION AND FIELD VERIFICATION. ELEVATIONS SHOWN IN TABLE ARE APPROXIMATE AND CONTAINS AN ACCURACY OF 0.10' ± BASED ON RELATION WITH THE USGS AND NOAA GAGE BENCHMARKS INTERPOLATION AND FIELD VERIFICATION.
- 10) BASED ON FIELD MEASUREMENT, THE CULVERT PIPE UNDER THE RAILBED APPEARS TO BE 54" ON THE NORTH SIDE OF THE BANK. DUE TO PIPE EROSION AND POTENTIAL COMPRESSION OF PIPE, ACTUAL PIPE DIAMETER IS DIFFICULT TO CONFIRM. THE PIPE ON THE SOUTH END OF THE CULVERT IS INTACT AND MEASURABLE.

TIDAL DATUM	NOAA (NAVD88) (ft)				
CJL	2.90				
MLW	-1.71				
MHW	1.60				
HTL	3.04				
LCSTV	4.10				

SUBSURFACE UTILITY ENGINEERING NOTES:

- 1) THIS PLAN WAS PREPARED IN CONFORMANCE WITH THE AMERICAN SOCIETY OF CIVIL ENGINEERS STANDARD CI/ASCE 38-02 "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY
- 2) CERTAIN UTILITIES SHOWN HAVE BEEN TRACED ON THE GROUND USING ELECTRONIC DESIGNATION TECHNIQUES. DESIGNATION, OR ELECTRONIC UTILITY LOCATION, IS DEFINED AS THE SURFACE LOCATION OF A UTILITY LINE BASED ON ELECTRONIC GEOPHYSICAL PROSPECTING TECHNIQUES AND IS APPROXIMATE IN RELATION TO THE ACTUAL LOCATION OF THE POSSIBLE UTILITY.
- 3) CERTAIN UTILITIES SHOWN HAVE BEEN TAKEN FROM AVAILABLE RECORD INFORMATION. THESE UTILITIES MAY NOT HAVE BEEN VERIFIED. (SEE NOTE #4 BELOW.)
- 4) ALL EXISTING DESIGNATED UTILITIES NEAR PROPOSED CONSTRUCTION SHOULD BE EXACTLY LOCATED USING NON-DESTRUCTIVE AIR-VACUUM EXCAVATION, IF NOT ALREADY LOCATED BY AIR-VACUUM EXCAVATION (SEE QUALITY LEVEL A ABOVE).
- 5) UNLESS NON-DESTRUCTIVE AIR-VACUUM EXCAVATION IS UTILIZED AT A PARTICULAR LOCATION, MCA AND BSIE DO NOT GUARANTEE THE EXISTENCE OR NON-EXISTANCE OF UTILITY LINES.
- 6) AT LOCATIONS, WHERE BSIE IS DIRECTED TO PERFORM NON-DESTRUCTIVE AIR-VACUUM EXCAVATION, THE TEST HOLE IS ADVANCED UNTIL A CONDITION OF PRACTICAL REFUSAL FOR AIR-VACUUM EXCAVATION IS REACHED OR HOLE IS ADVANCED TO A DEPTH OF 8.0' (EIGHT FEET). PRACTICAL REFUSAL BEING DEFINED AS ENCOUNTERING A UTILITY, BEDROCK, WATER TABLE, LARGE ROCKS/ COBBLES, SUSPECTED HAZARDOUS MATERIALS OR A CONDITION OF HOLE INSTABILITY.
- 7) WHERE BSIE IS DIRECTED TO PERFORM NON-DESTRUCTIVE AIR-VACUUM EXCAVATION TO CONFIRM THE NON-EXISTANCE OF UTILITIES, BSIE WILL ONLY REPORT NON-EXISTANCE OF UTILITIES WITHIN THE VISIBLE LIMITS OF THE EXCAVATION. BSIE IS NOT RESPONSIBLE FOR ENSURING THAT WORK BY OTHERS IS PERFORMED AT THE SAME LOCATION AS THE AIR-VACUUM EXCAVATION HOLE.
- 8) BELOW GROUND STRUCTURES UNLESS OTHERWISE DEPICTED ARE SYMBOLIC ONLY.
- 9) PRIOR TO ANY EXCAVATING, BSIE RECOMMENDS THAT ALL UTILITY OWNERS SHOULD REVIEW THIS DRAWING FOR ACCURACY AND COMPLETENESS.

<u>UTILITY QUALITY LEVEL INFORMATION INDEX (SEE ASCE/CI 38-02):</u>

QUALITY LEVEL D: "QL D". UTILITY INFORMATION PLOTTED ON THE DRAWING BASED SOLELY ON RECORD INFORMATION, INDIVIDUAL RECOLLECTIONS OR THE EXISTENCE OF UTILITY SERVICE. IT SHALL BE NOTED THAT ALL INFORMATION SHOWN (OTHER THAN AT TEST HOLE LOCATIONS, SEE QL A BELOW), INCLUDING BUT NOT LIMITED TO A UTILITIES SIZE, CAPACITY, MATERIAL COMPOSÍTION, CONDITION OR SERVICE STATUS SHALL BE CONSIDERED QL D EVEN THOUGH THE UTILITY MAY BE PLOTTED AND LABELED AS QL C OR QL B.

QUALITY LEVEL C: "QL C". UTILITY INFORMATION OBTAINED AND CATEGORIZED AS QL D, PLOTTED TO CORRELATE WITH SURFACE UTILITY FEATURES WHICH HAVE BEEN FIELD VERIFIED, SURVEY LOCATED AND ACCURATELY TRANSPOSED ONTO THE DESIGN/CONSTRUCTION DOCUMENTS. INCLUDED IN THIS CATEGORY AERIAL UTILITY INFORMATION AND UTILITY DEPICTION'S, WHICH IN THE PROFESSIONAL OPINION OF THE SUBSURFACE UTILITY ENGINEER, REPRESENT THE MOST PROBABLE APPROXIMATE HORIZONTAL LOCATION, TYPE AND/OR EXISTENCE OF A UTILITY.

QUALITY LEVEL B: "QL B". UTILITY INFORMATION DERIVED BY ESTABLISHING THE APPROXIMATE SURFACE HORIZONTAL LOCATION OF A UTILITY USING ELECTRONIC METHODS. SAID INFORMATION IS SUBSEQUENTLY FIELD SURVEY LOCATED AND ACCURATELY REDUCED ONTO THE DESIGN/CONSTRUCTION DOCUMENTS.

QUALITY LEVEL A: "QL A". UTILITY INFORMATION WHICH HAS BEEN VISUALLY VERIFIED, SURVEY LOCATED (BOTH HORIZONTALLY AND VERTICALLY) AND ACCURATELY REDUCED ONTO THE DESIGN/CONSTRUCTION DOCUMENTS. THIS IS TYPICALLY SHOWN AS TEST HOLE OR OTHER DIMENSIONED INFORMATION.

> ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023

ADDED R.O.W. LINES & SUBSURFACE UTILITY DATA 1-9-2020 EJN 3-15-2021 JPB ADDED EVERSOURCE TRANSFORMER OFF R.O.W. ADDED MAINTENANCE METAL BOARDWALK 5-11-2021 FV 10-1-<u>2022</u> JMW 17 SHORE MITIGATION SITE TOPOGRAPHIC UPDATE 3/4 AMTRAK PARCEL MITIGATION SITE TOPO UPDATE 10-11-2022JMW DEEP HQ TOPOGRAPHIC UPDATE

AMTRAK PARCEL, CULVERT AND SHORE ROAD UPDATE 4-07-2023 JT

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Office of Chief Engineer STRUCTURES National Railroad Passenger Corporation

30th Street Station, Philadelphia, Pennsylvania 19104

PERMIT PLANS

HARDESTY & HANOVER, LLC 1501 Broadway New York, NY 10036

Designed

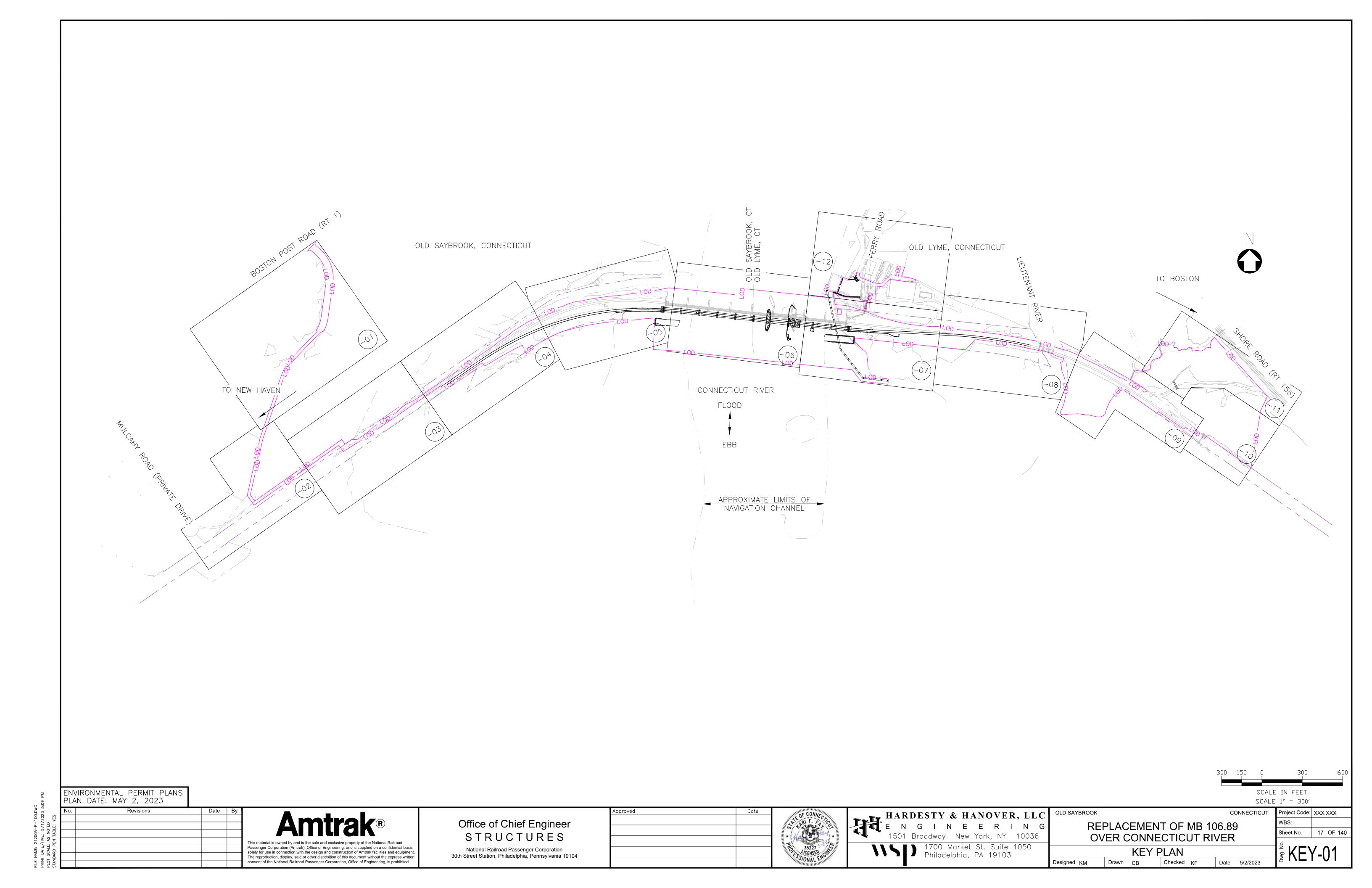
REPLACEMENT OF MB 106.89 **OVER CONNECTICUT RIVER**

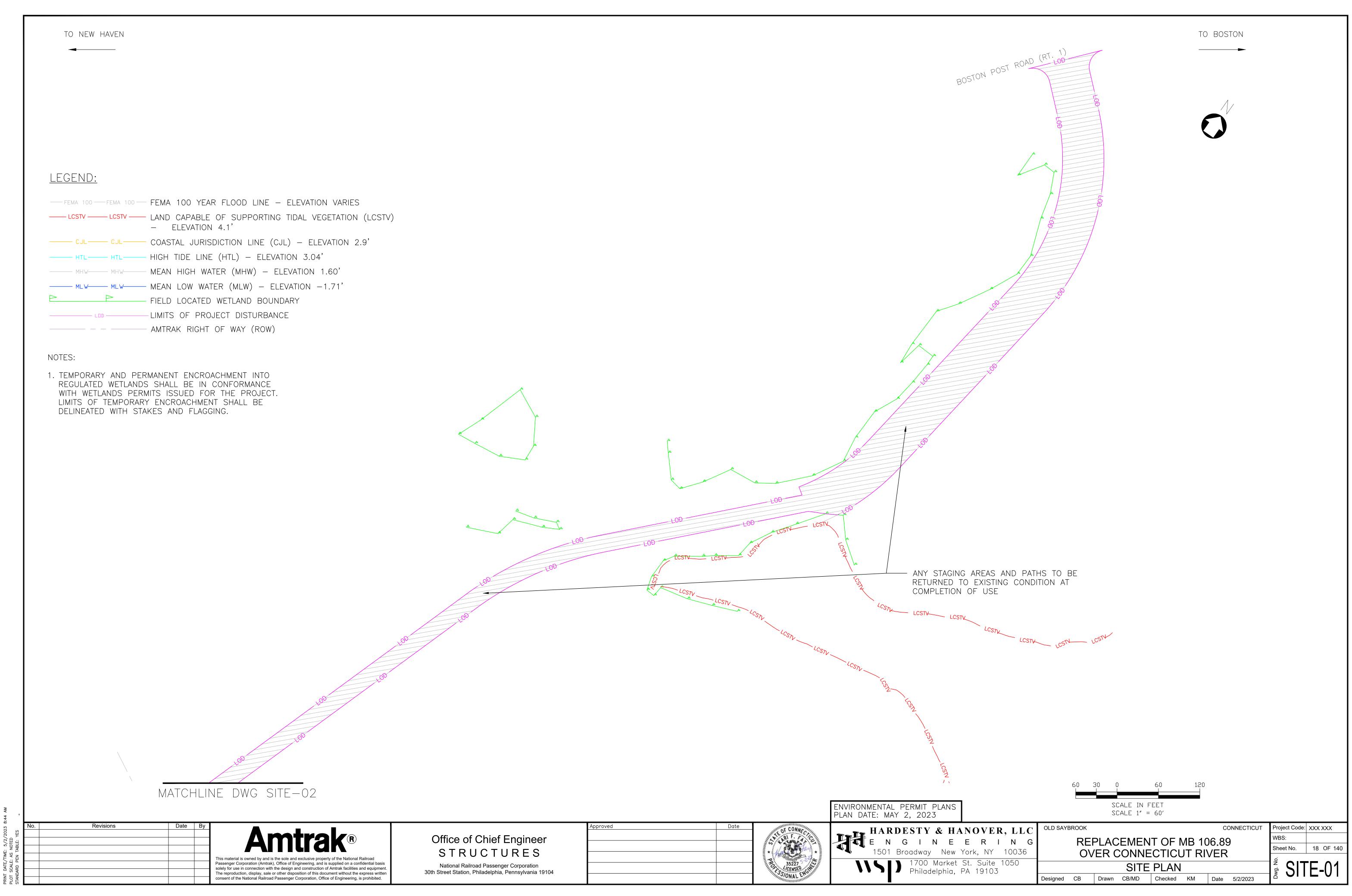
EXISTING SITE PLAN Checked ARM Date 02/2019 Drawn JBR

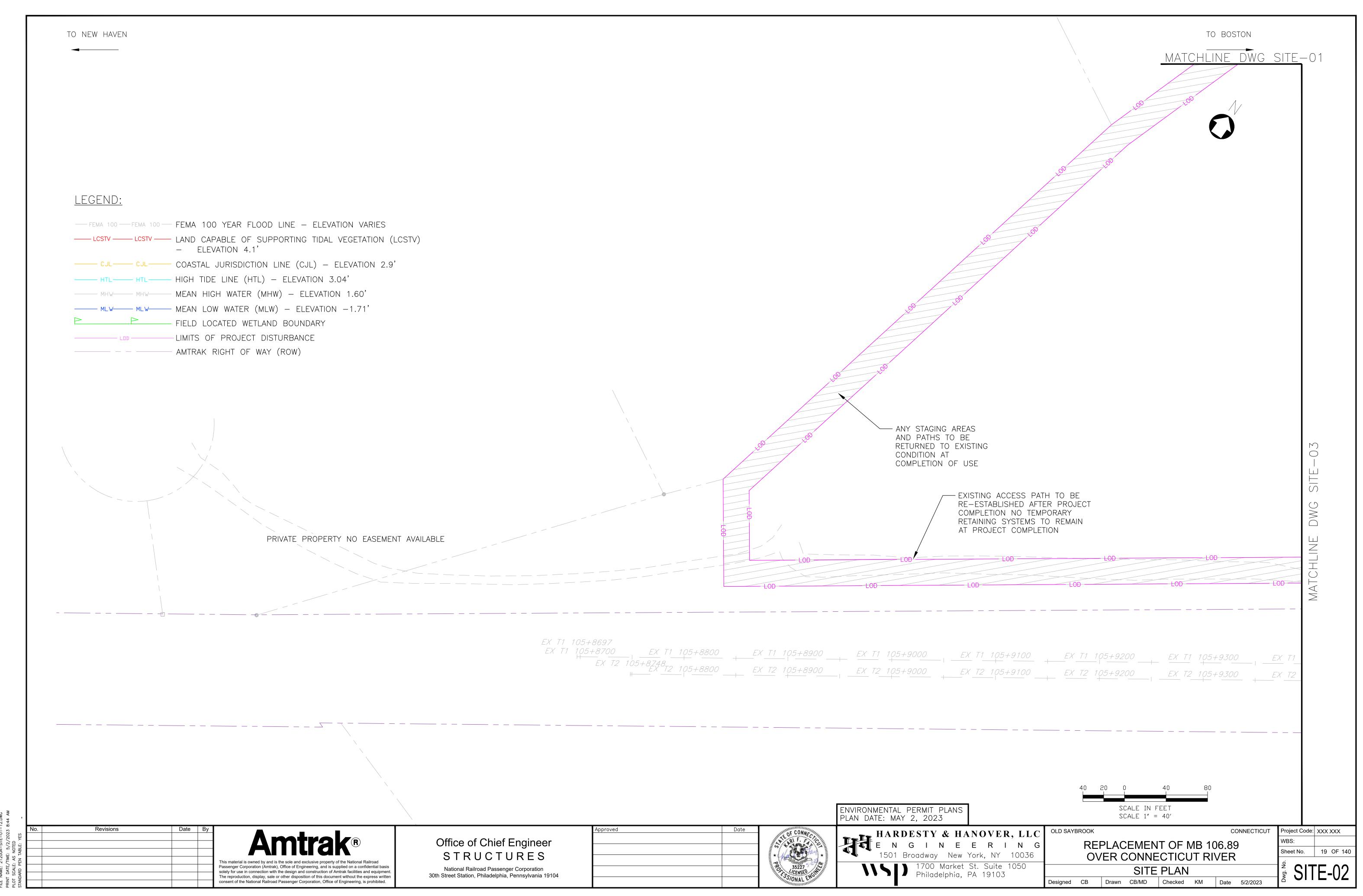
16 OF 140 Sheet No.

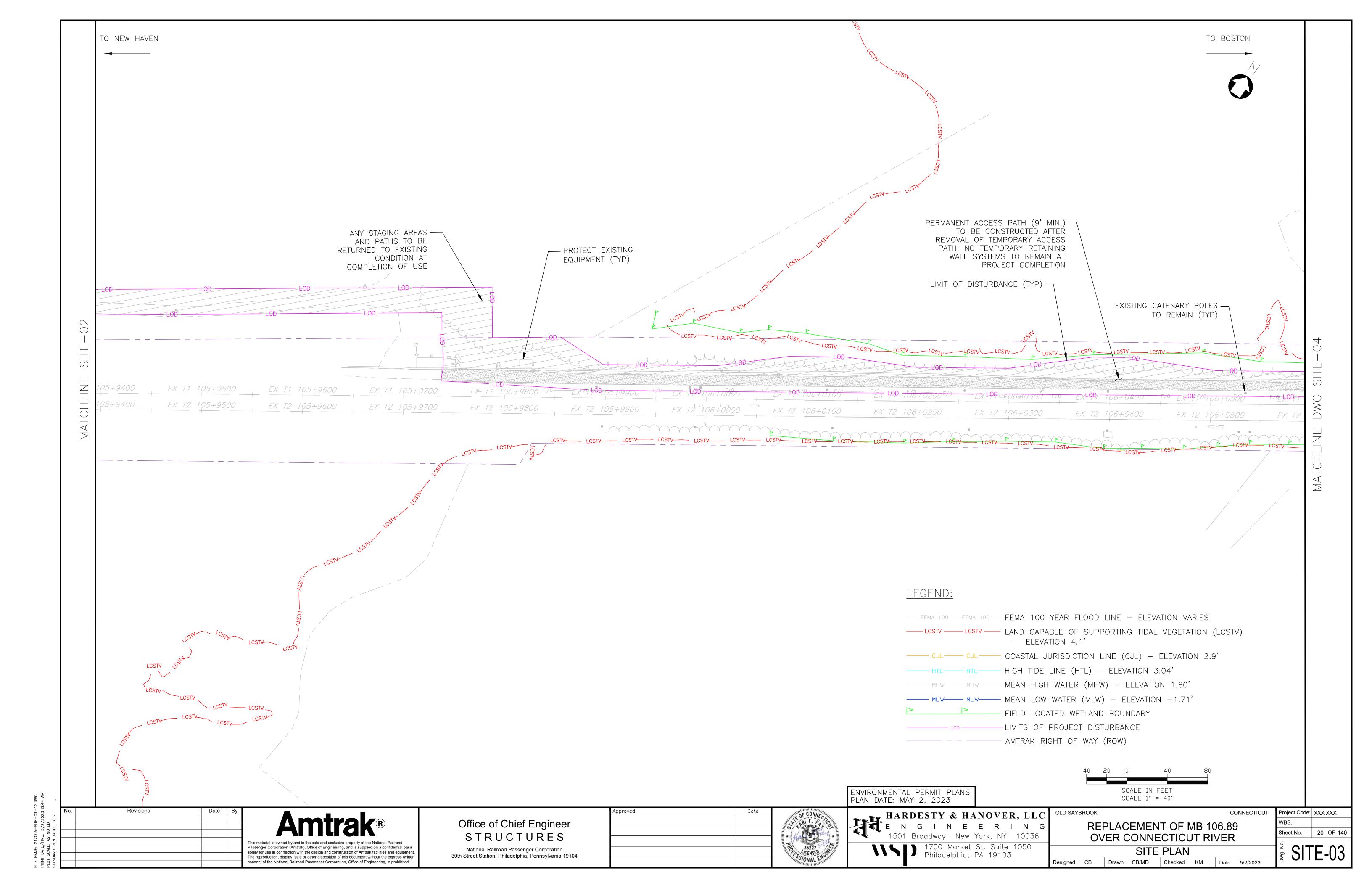
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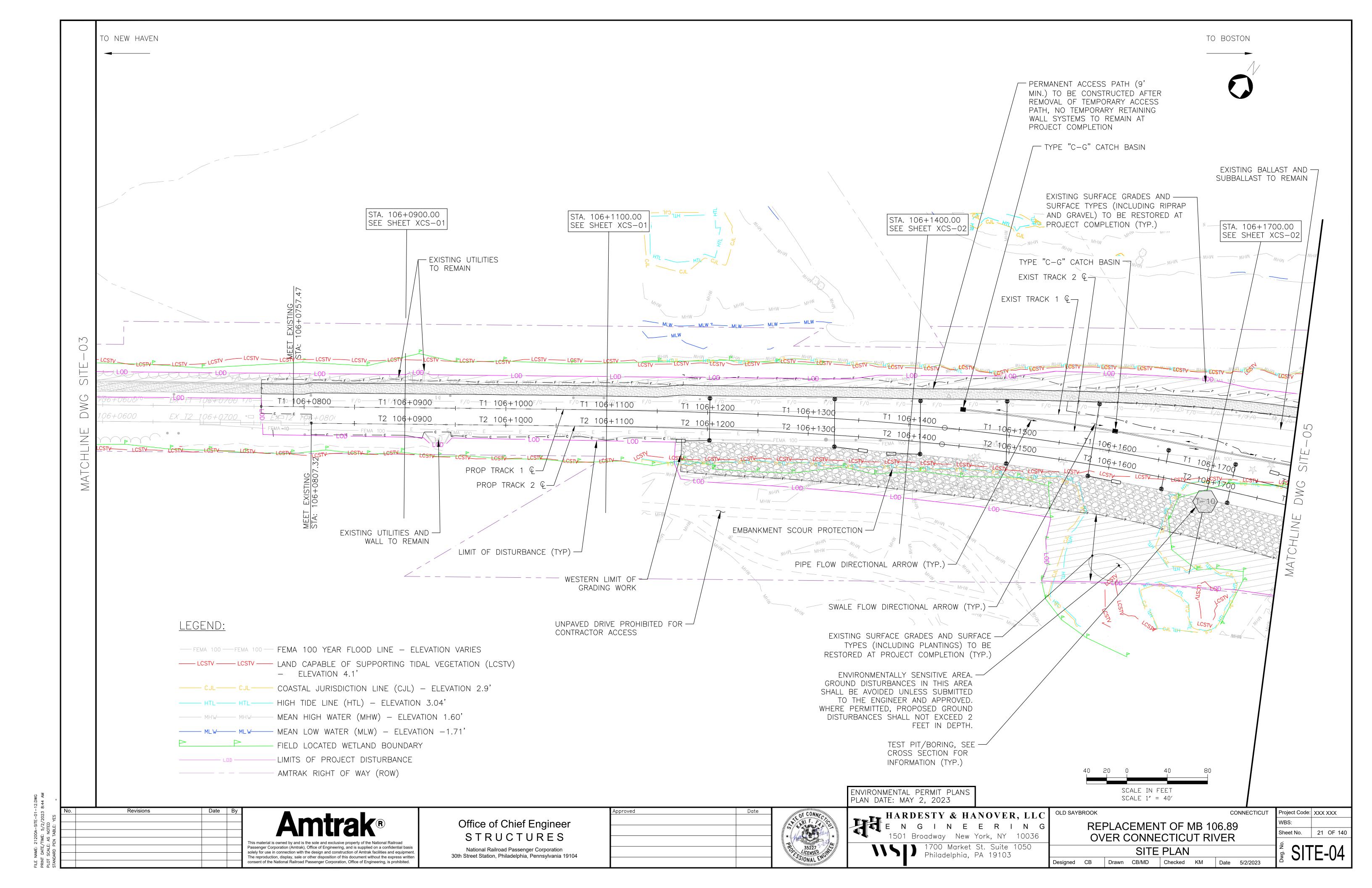
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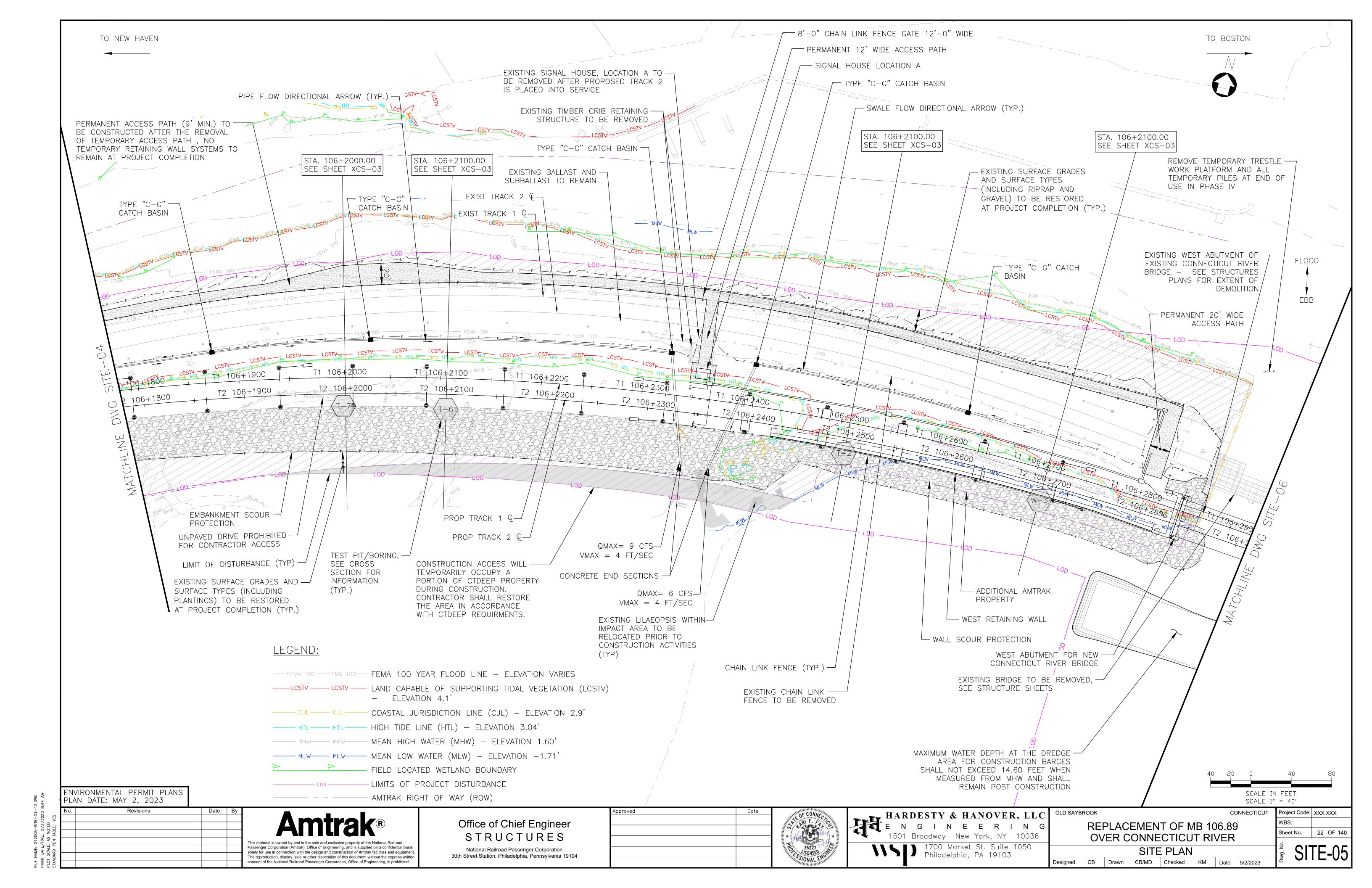


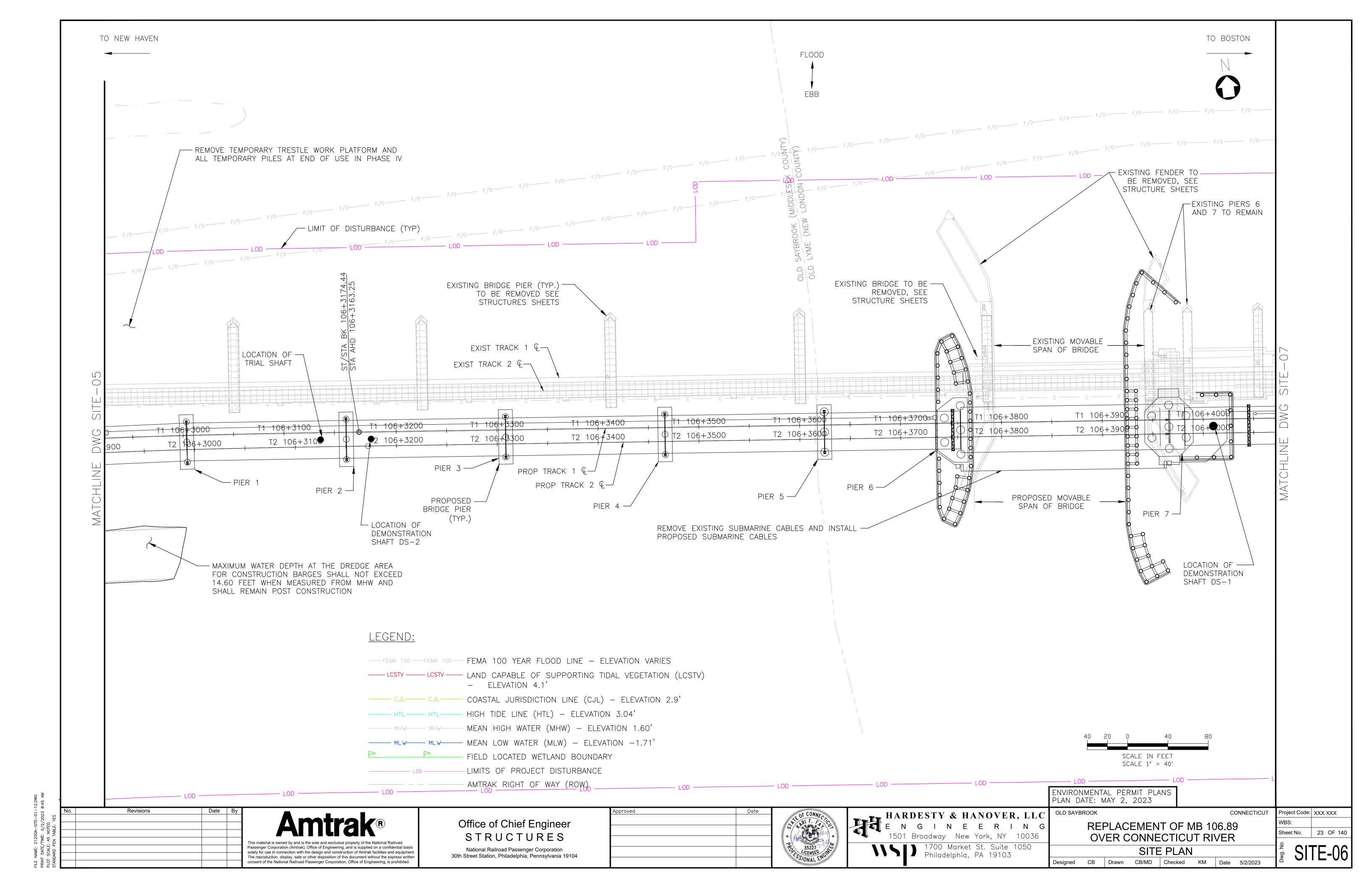


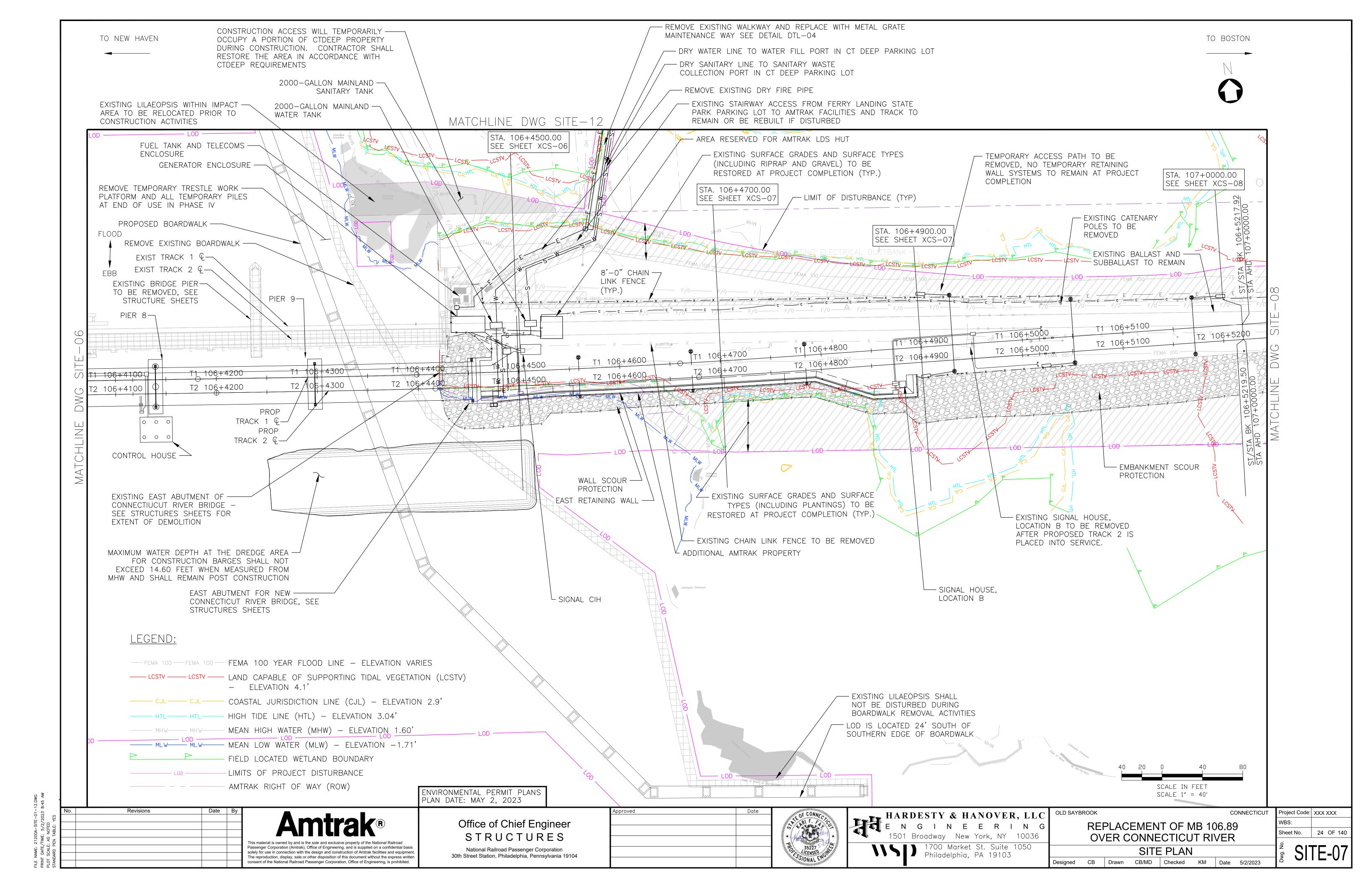


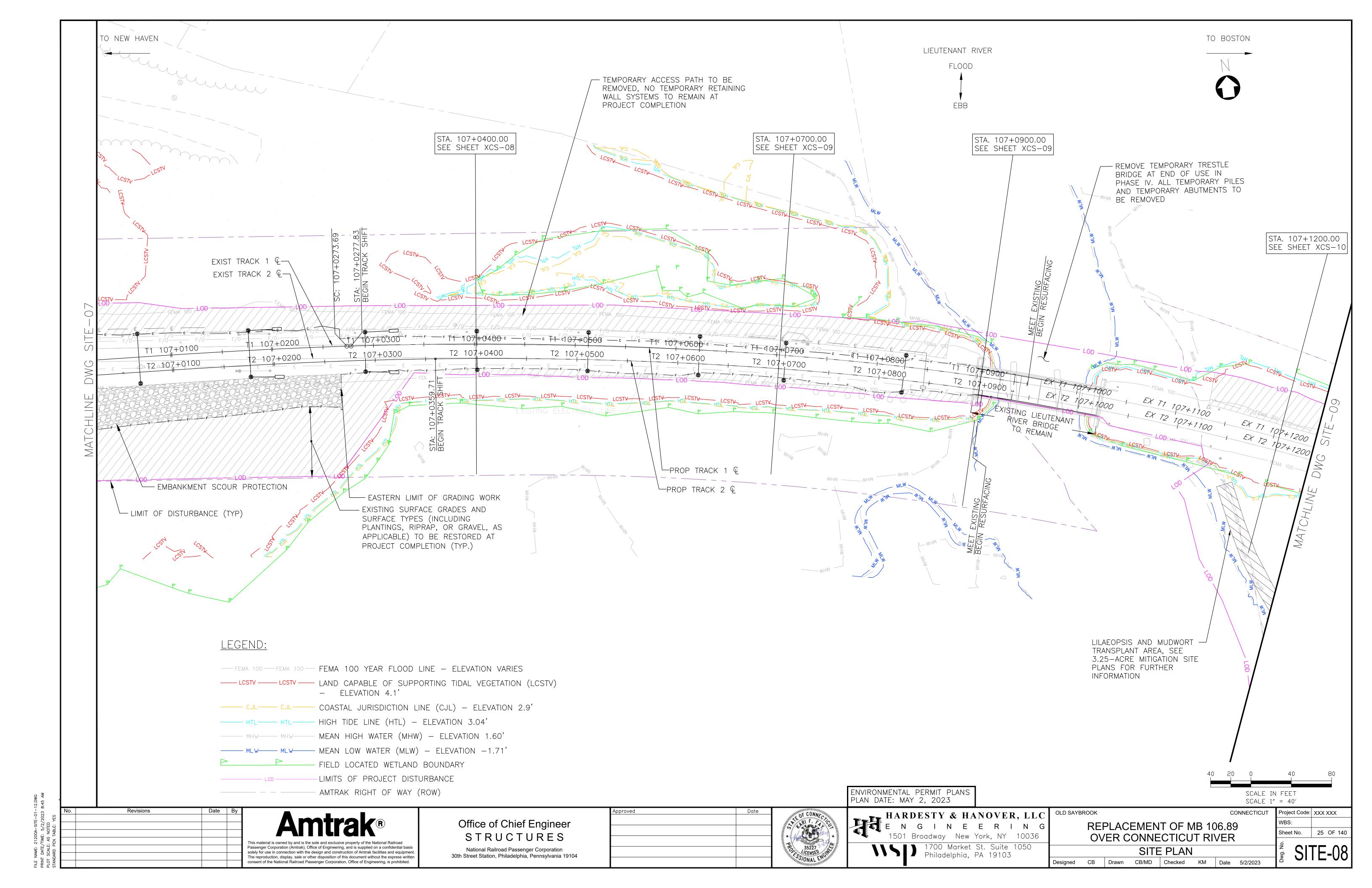


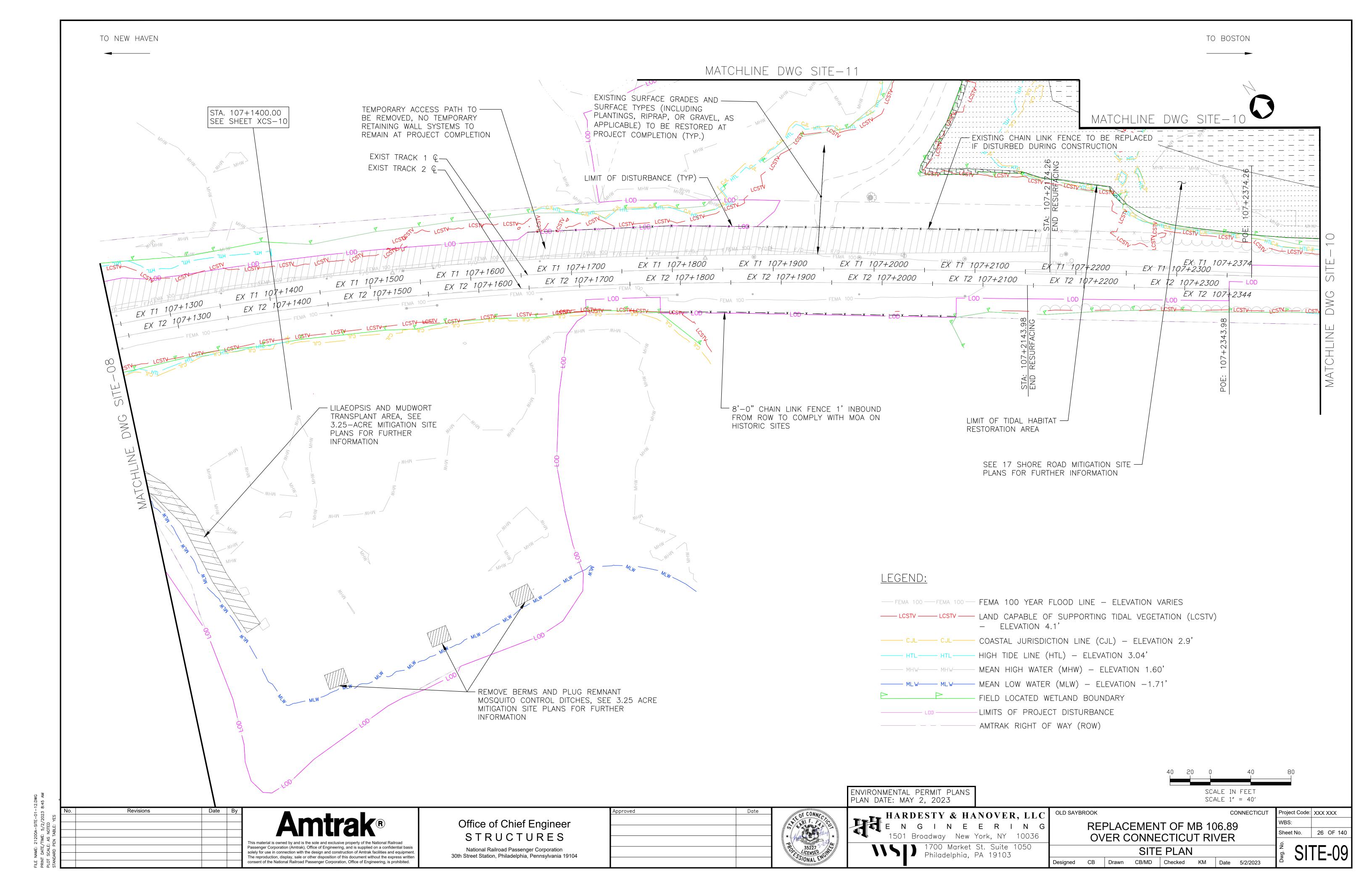


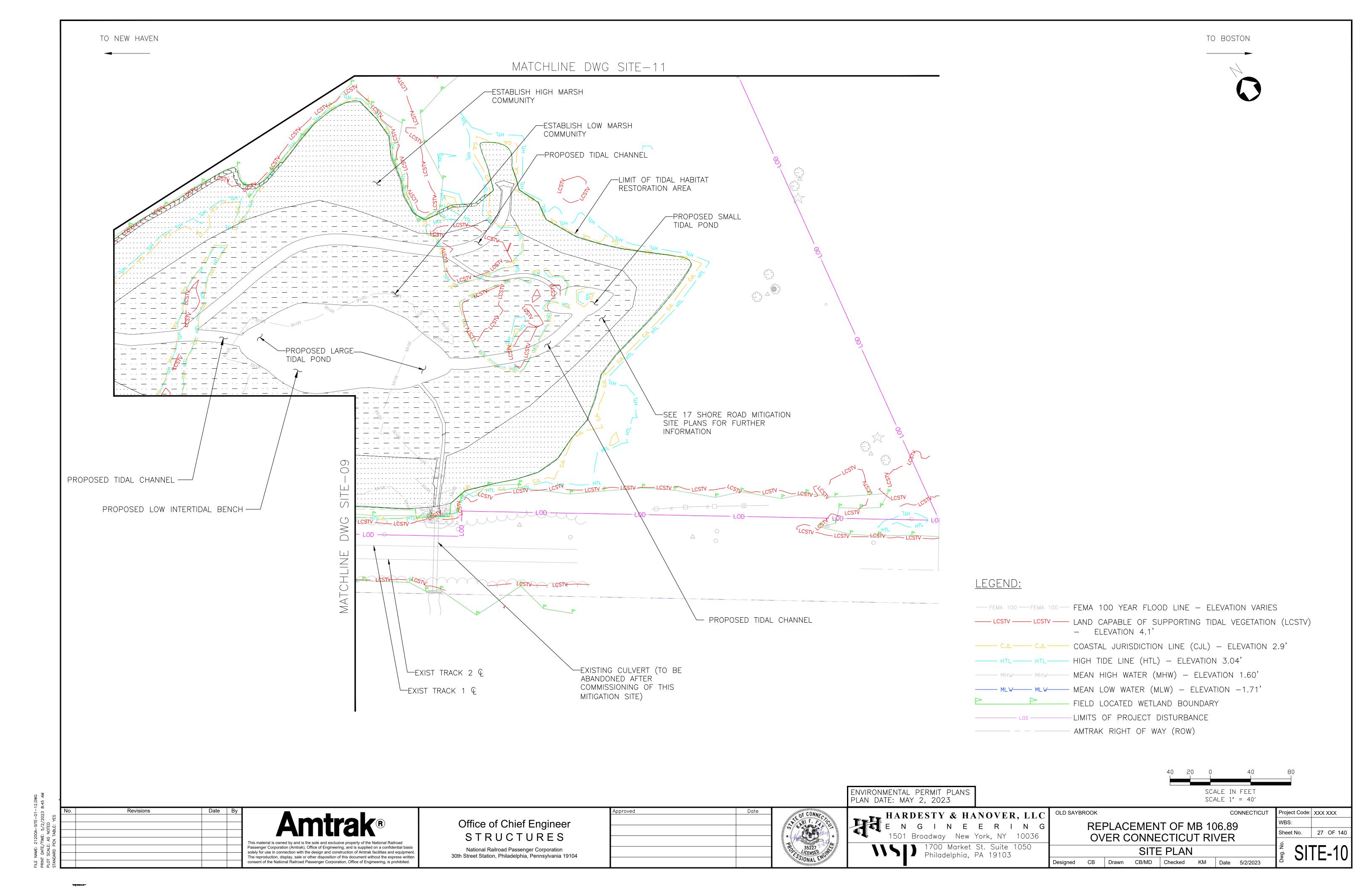


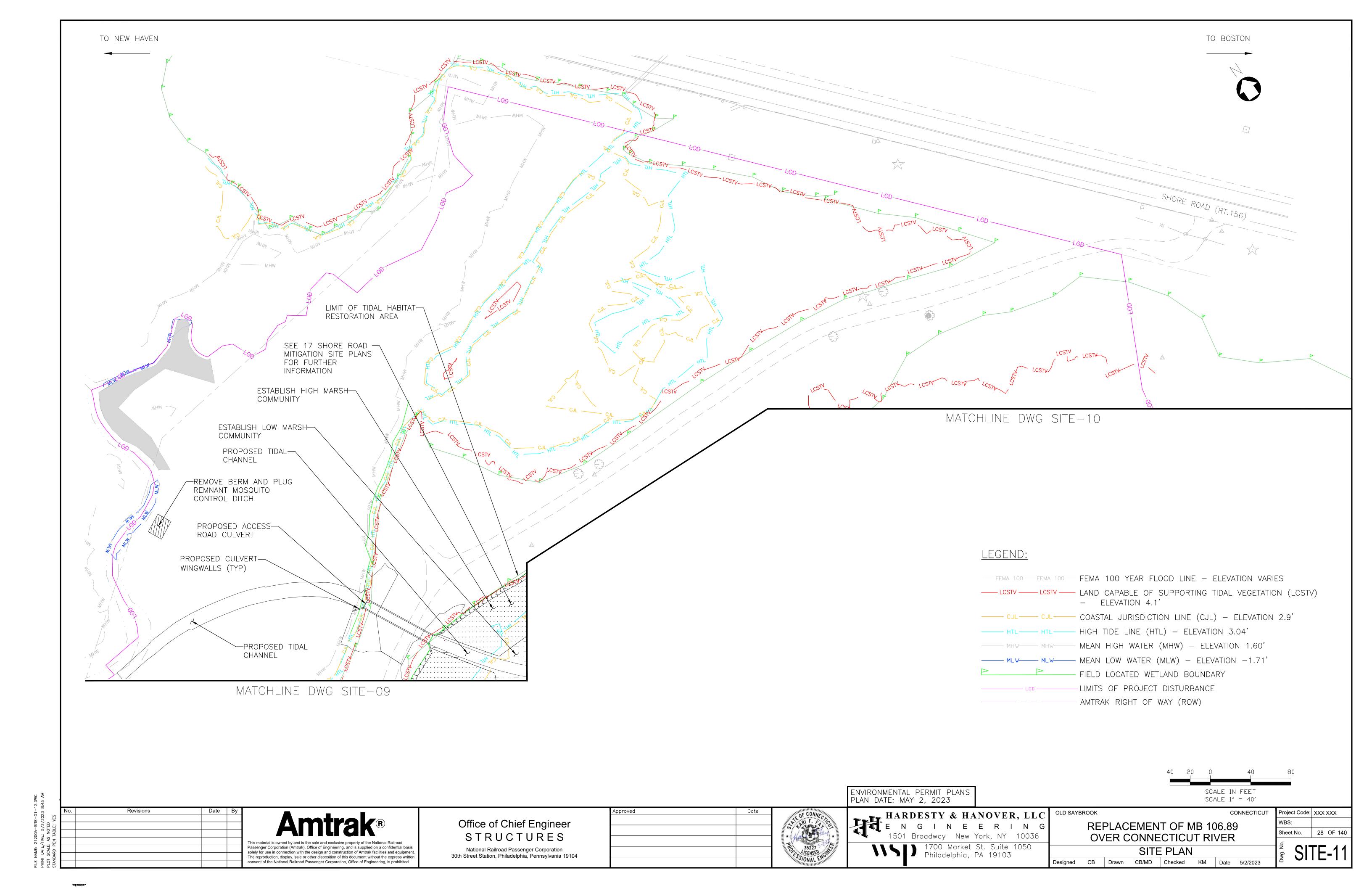


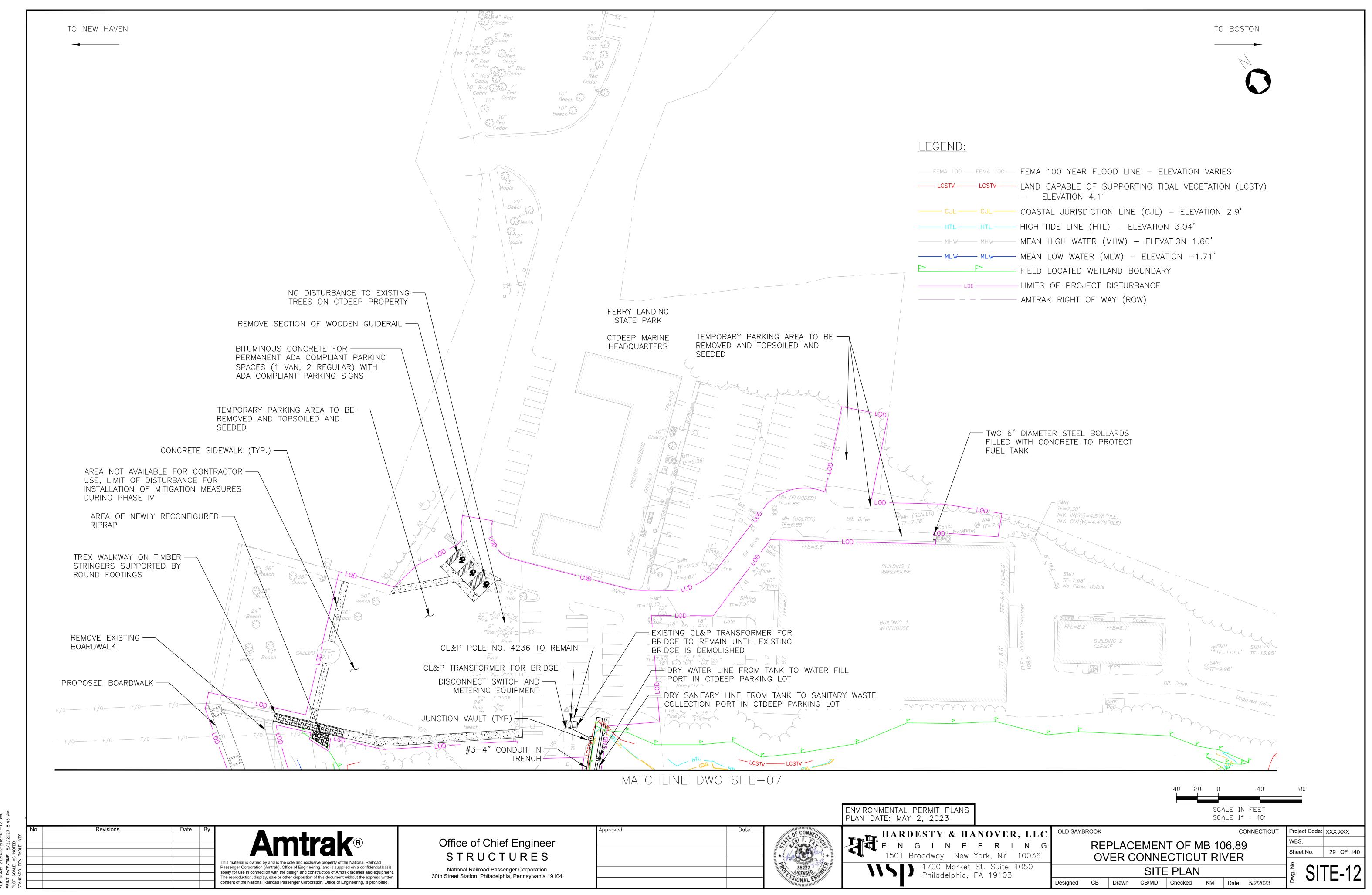


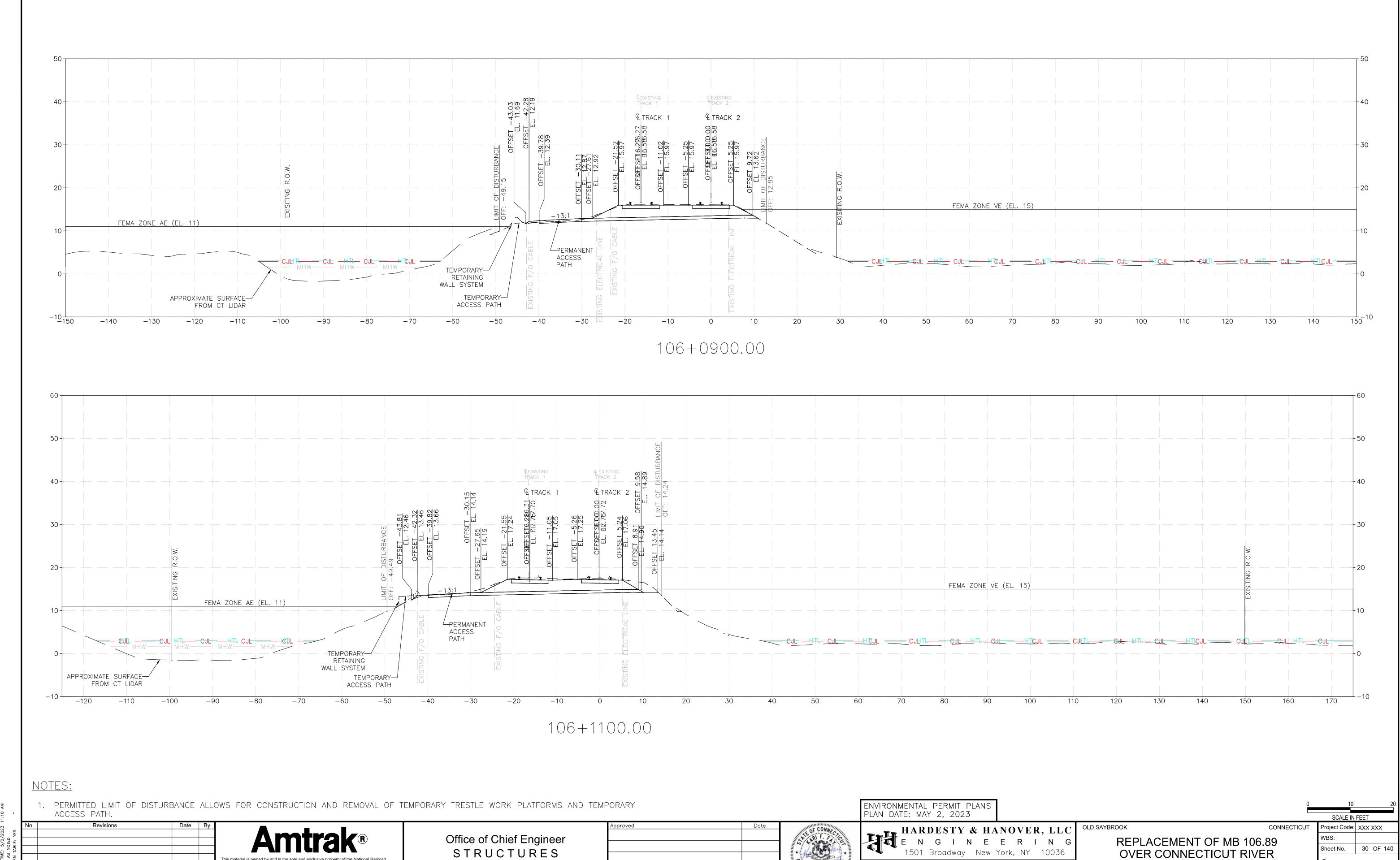












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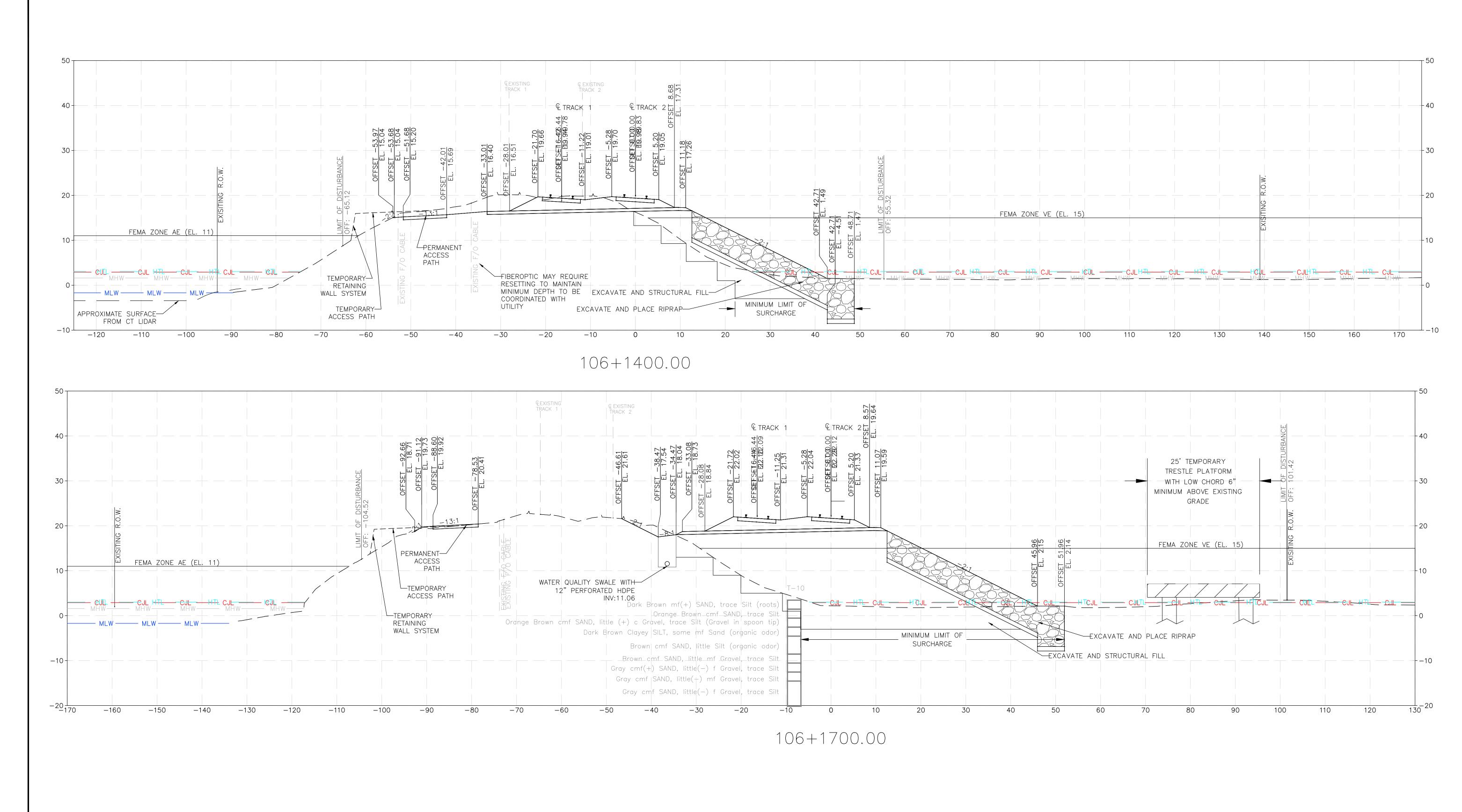
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PROPOSED CROSS SECTIONS

Drawn CB

Checked KF

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NOTES:

- 1. PERMITTED LIMIT OF DISTURBANCE ALLOWS FOR CONSTRUCTION AND REMOVAL OF TEMPORARY TRESTLE WORK PLATFORMS AND TEMPORARY
- ACCESS PATH.
 2. SEE GEO-04 FOR EMBANKMENT CONSTRUCTION SCHEME AND BENCHING REQUIREMENTS.

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STRUCTURES

National Railroad Passenger Corporation
30th Street Station, Philadelphia, Pennsylvania 19104



PLAN DATE: MAY 2, 2023

HARDESTY & HANOVER, LLC

E N G I N E E R I N G

1501 Broadway New York, NY 10036

1700 Market St. Suite 1050
Philadelphia, PA 19103

ENVIRONMENTAL PERMIT PLANS

REPLACEMENT OF MB 106.89
OVER CONNECTICUT RIVER

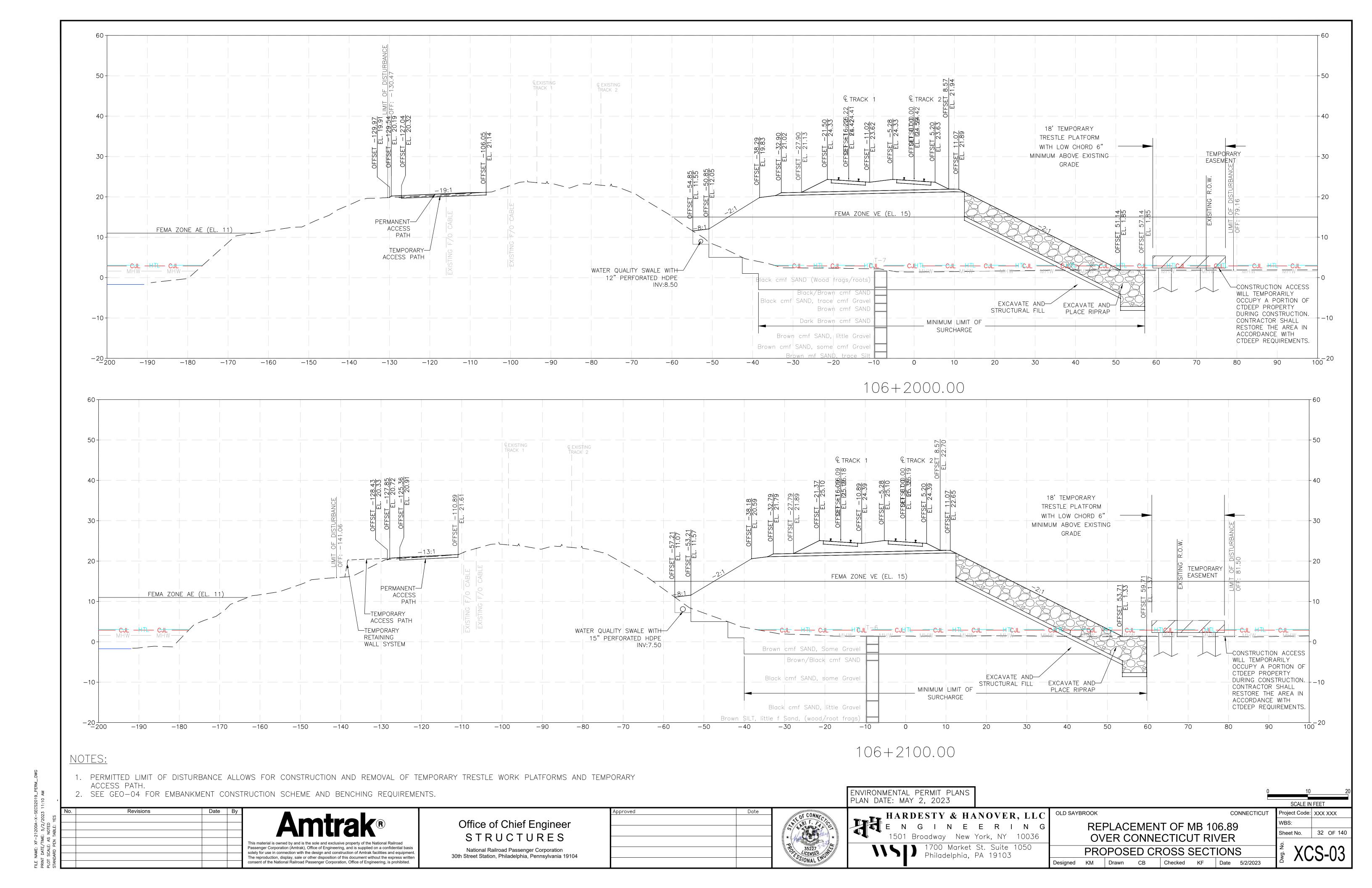
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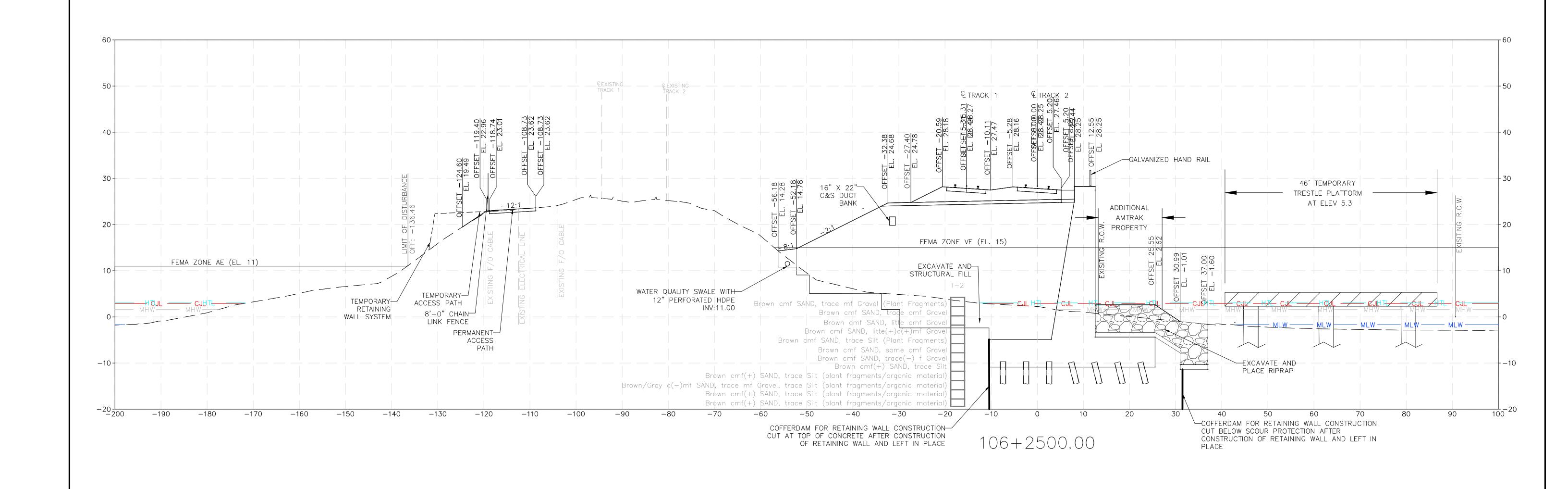
Designed KM Drawn CB Checked KF Date 5/2/2023

SCALE IN FEET

Project Code: XXX XXX

31 OF 140





NOTES:

- 1. PERMITTED LIMIT OF DISTURBANCE ALLOWS FOR CONSTRUCTION AND REMOVAL OF TEMPORARY TRESTLE WORK PLATFORMS AND TEMPORARY

2. SEE GEO-04 FOR EMBANKMENT CONSTRUCTION SCHEME AND BENCHING REQUIREMENTS.

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PLAN DATE: MAY 2, 2023 HARDESTY & HANOVER, LLC

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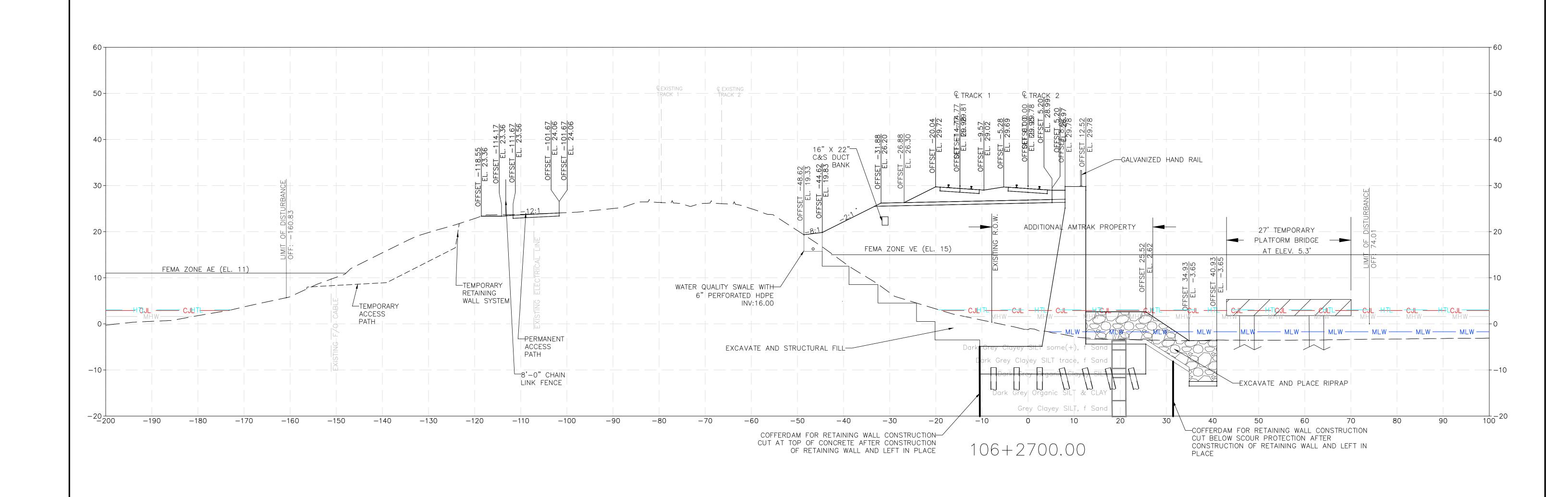
1501 Broadway Nam Y I I N 1501 Broadway New York, NY 10036 1150 Market St. Suite 1050 Philadelphia, PA 19103

ENVIRONMENTAL PERMIT PLANS

REPLACEMENT OF MB 106.89 **OVER CONNECTICUT RIVER** PROPOSED CROSS SECTIONS

CONNECTICUT Project Code: XXX XXX 33 OF 140 Designed KM Drawn CB Checked KF Date 5/2/2023

SCALE IN FEET



NOTES:

1. PERMITTED LIMIT OF DISTURBANCE ALLOWS FOR CONSTRUCTION AND REMOVAL OF TEMPORARY TRESTLE WORK PLATFORMS AND TEMPORARY ACCESS PATH.

2. SEE GEO-04 FOR EMBANKMENT CONSTRUCTION SCHEME AND BENCHING REQUIREMENTS.

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CONNECTICUT REPLACEMENT OF MB 106.89 OVER CONNECTICUT RIVER PROPOSED CROSS SECTIONS Designed KM Drawn CB Checked KF Date 5/2/2023

34 OF 140

SCALE IN FEET Project Code: XXX XXX

NOTE: SECTIONS ACROSS BRIDGE ARE NOT PROVIDED €TRACK 1 TRACK 2 —GALVANIZED HAND RAIL 8'-0" CHAIN NOTE: PROPOSED BOARDWALK NOT SHOWN EXISTING ET DUCT LINK FENCE BANK (DEPTH ADDITIONAL AMTRAK 10"X28" C&S 20' TEMPORARY PROPERTY DUCT BANK TRESTLE PLATFORM AT ELEV. 5.3' **TEMPORARY** EASEMENT FEMA ZONE AE (EL. 10) EXCAVATE AND STRUCTURAL FILL--TEMPORARY ACCESS -TEMPORARY MAXIMUM WATER DEPTH AT THE DREDGE AREA RETAINING FOR CONSTRUCTION BARGES SHALL NOT -CONSTRUCTION ACCESS WILL WALL SYSTEM TEMPORARILY OCCUPY A PORTION
OF CTDEEP PROPERTY DURING
CONSTRUCTION. CONTRACTOR
SHALL RESTORE THE AREA IN EXCEED 14.60 FEET WHEN MEASURED FROM MHW AND SHALL REMAIN POST CONSTRUCTION ACCORDANCE WITH CTDEEP EXCAVATE TO SOUND ROCK FOR TREMIE CONCRETE-EXCAVATE AND PLACE RIPRAP REQUIREMENTS. -150 COFFERDAM FOR RETAINING WALL CONSTRUCTION CUT AT TOP OF CONCRETE AFTER CONSTRUCTION COFFERDAM FOR RETAINING WALL CONSTRUCTION— CUT AT TOP OF CONCRETE AFTER CONSTRUCTION 106 + 4500.00OF RETAINING WALL AND LEFT IN PLACE OF RETAINING WALL AND LEFT IN PLACE

NOTES:

- 1. PERMITTED LIMIT OF DISTURBANCE ALLOWS FOR CONSTRUCTION AND REMOVAL OF TEMPORARY TRESTLE WORK PLATFORMS AND TEMPORARY
- 2. SEE GEO-04 FOR EMBANKMENT CONSTRUCTION SCHEME AND BENCHING REQUIREMENTS.

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PLAN DATE: MAY 2, 2023 HARDESTY & HANOVER, LLC

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ENVIRONMENTAL PERMIT PLANS

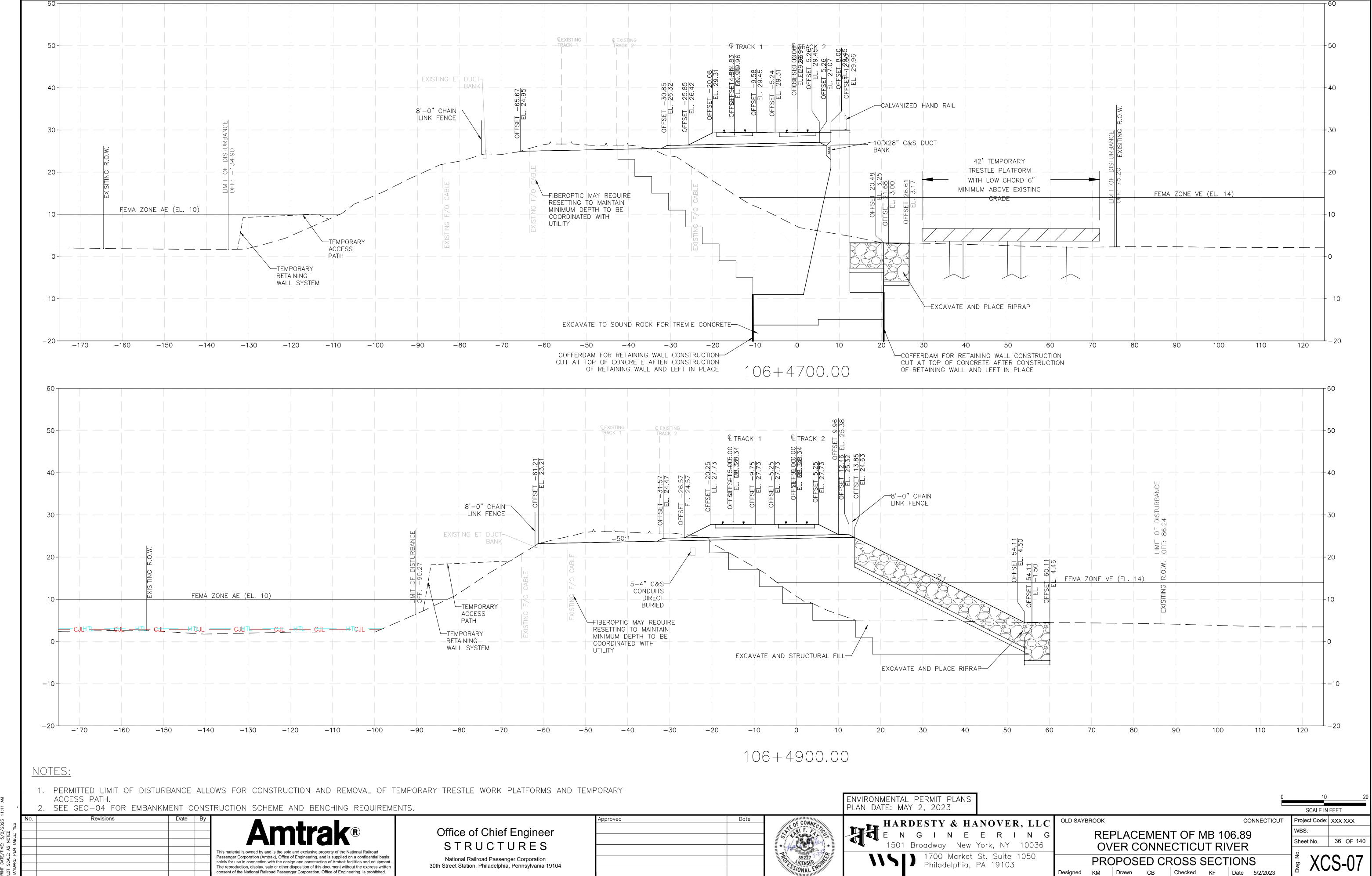
REPLACEMENT OF MB 106.89

OVER CONNECTICUT RIVER PROPOSED CROSS SECTIONS Designed KM Drawn CB Checked KF Date 5/2/2023

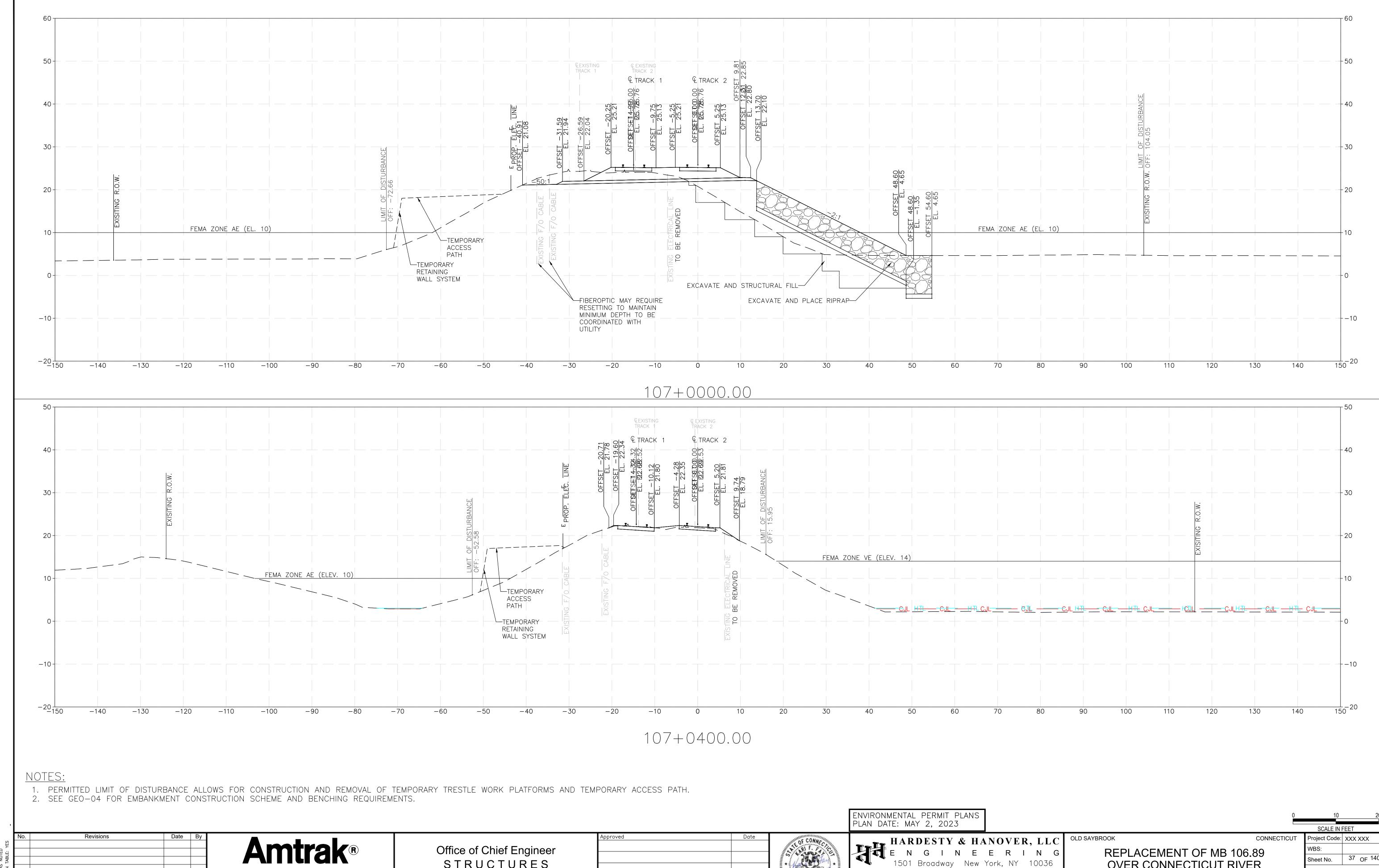
Sheet No. 35 OF 140 XCS-06

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Project Code: XXX XXX



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37 _{OF} 140

REPLACEMENT OF MB 106.89

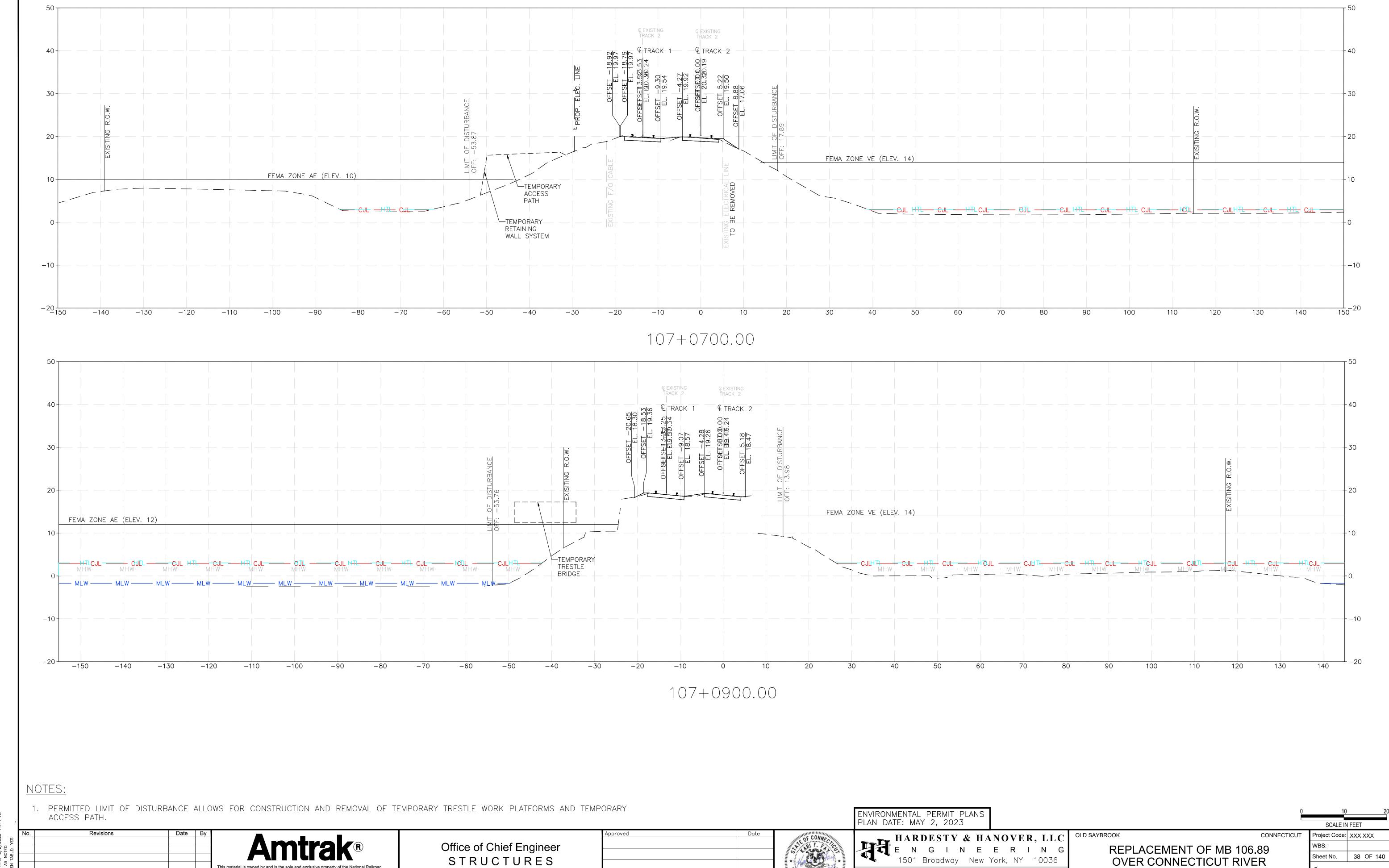
OVER CONNECTICUT RIVER

Designed KM Drawn CB Checked KF Date 5/2/2023

PROPOSED CROSS SECTIONS

1501 Broadway New York, NY 10036

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PROPOSED CROSS SECTIONS

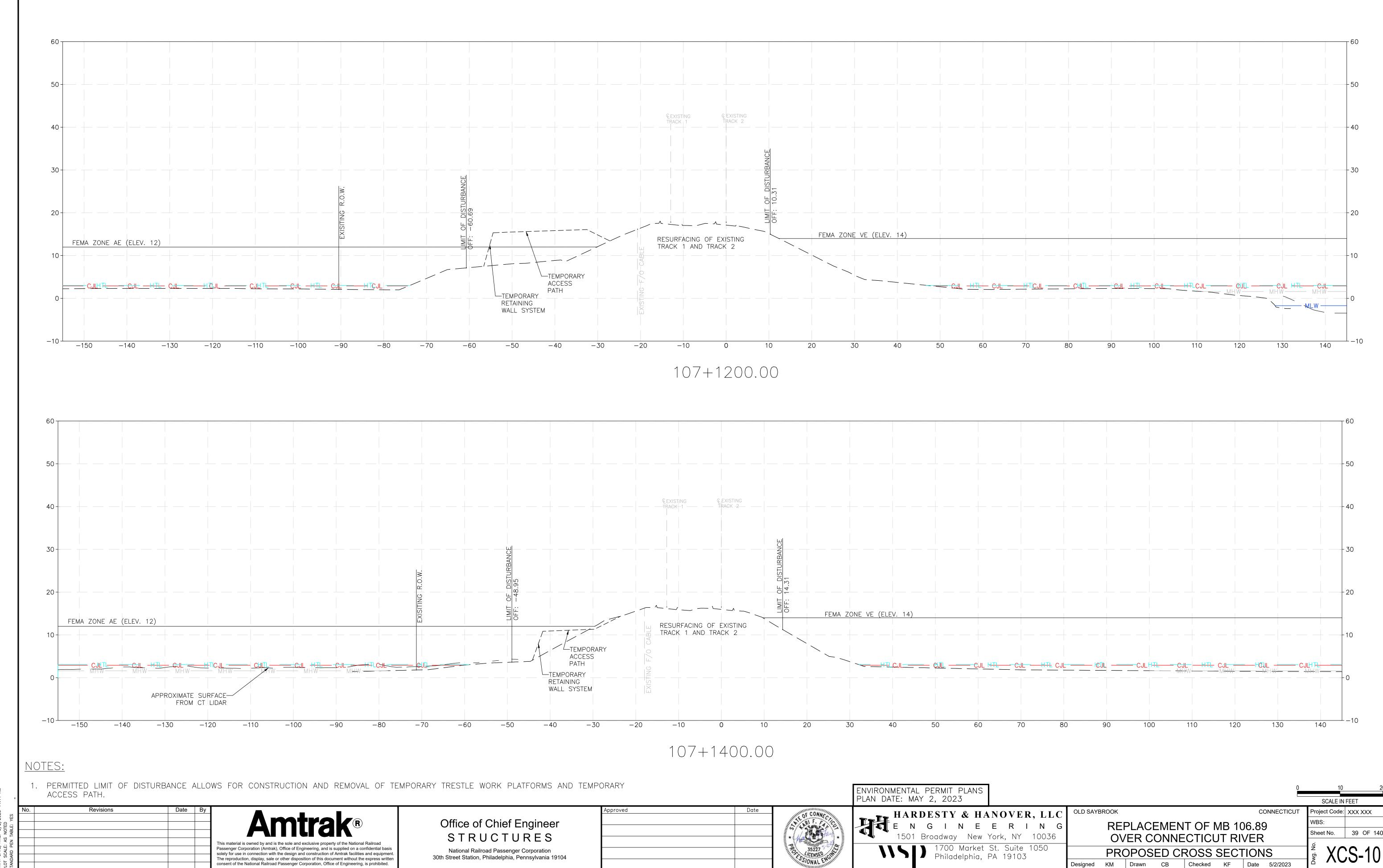
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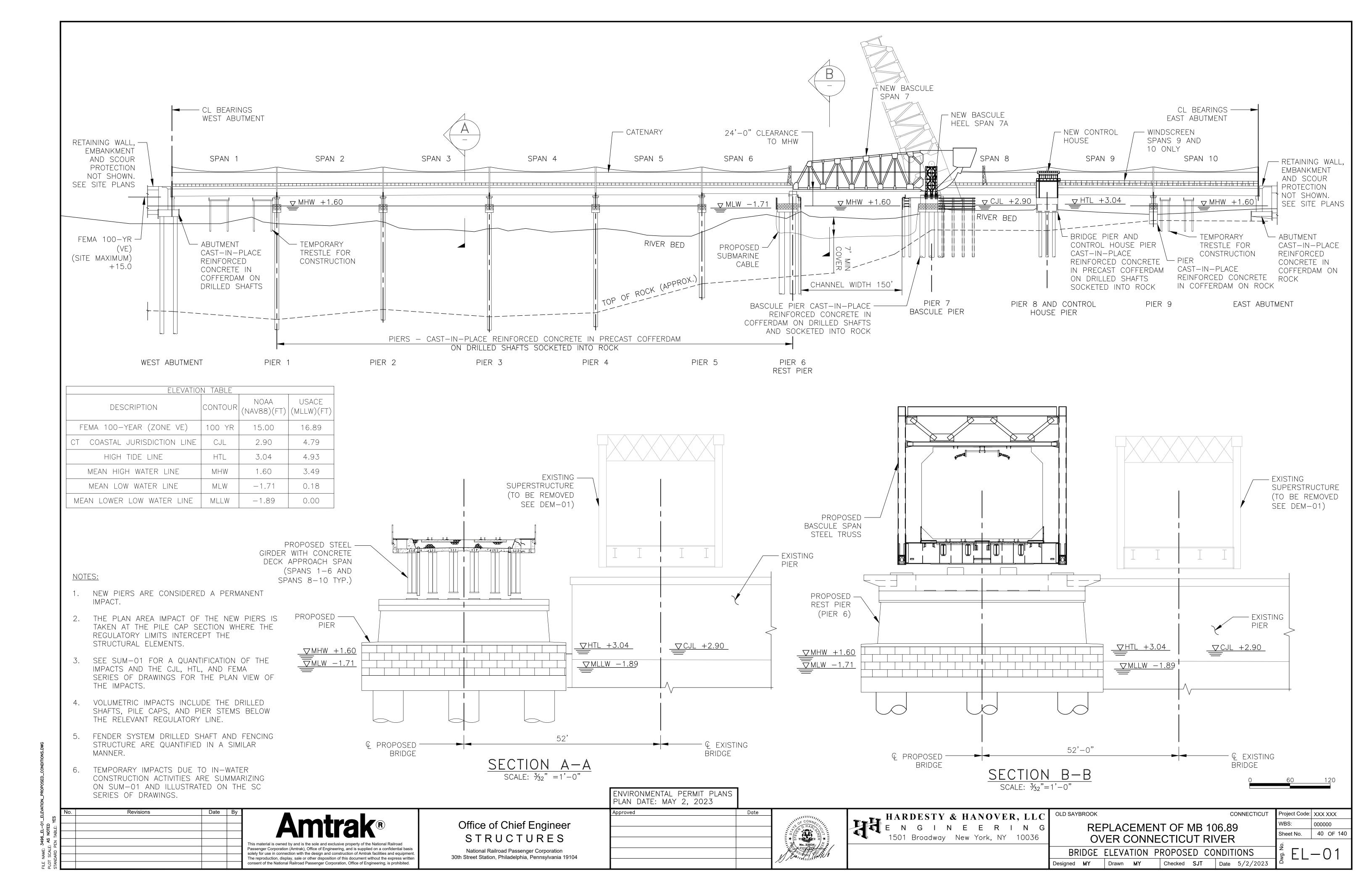
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SUMMARY OF TEMPORARY IMPACTS (SF)							
	STAT	STATE (SEE CJL-## SHEETS)					
SHEET (-##)	VEGETATED TIDAL WETLAND	THE RELATION OF THE PROPERTY O		BELOW HTL			
-01	-01 0 0		0				
-02	0	Ο	0	0			
-03	О	Ο	0	0			
-04	6080	2000	7390	8630			
-05	17200	30340	420	47540			
-06	0	33910 (SEE NOTE 11)	0	33910 (SEE NOTE 11)			
-07	21320	33460	9840	78050			
-08	1060	3950	740	5070			
-09	0	30	980	О			
-10	О	0 0 0		0			
-11	О	0	0	0			
-12	460	460 10 140		3490			
TOTAL	TOTAL 46120 SF 103700 SF 19510 SF (1.06 AC) (2.38 AC) (0.45 AC)		176690 SF (4.06 AC)				

SUMMARY OF PERMANENT IMPACTS (SF)							
	STAT	FEDERAL (SEE HTL-## SHEETS)					
SHEET (-##)	VEGETATED TIDAL WETLAND	BELOW CJL	BELOW HTL				
-01	0	0	0	0			
-02	0	O	0	0			
-03	0	O	0	0			
-04	11760	760 3170 6440		15480			
-05	57170	36540	6960	94710			
-06	0	35990	0	35990			
-07	160	29830	8900	31980			
-08	0	0	0	0			
-09	0	0	0	0			
-10	0	0	0	0			
-11	0	0	0	0			
-12	0	0	0	160			
TOTAL	69090 SF (1.59 AC)	105530 SF (2.42 AC)	22300 SF (0.51 AC)	178320 SF (4.09 AC)			

SUMMARY OF IMPACTS (AC)							
	STATE	FEDERAL					
TEMPORARY	3.89 AC	4.06 AC					
PERMANENT	4.52 AC	4.09 AC					

ENVIRONMENTAL PERMIT PLANS PLAN DATE: MAY 2, 2023

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30th Street Station, Philadelphia, Pennsylvania 19104

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MINISTONAL ENTINE

HARDESTY & HANOVER, LLC E N G I N E E R I N G 1501 Broadway New York, NY 10036 1700 Market St. Suite 1050 Philadelphia, PA 19103

CUT/REMOVAL

REPLACEMENT OF MB 106.89

OVER CONNECTICUT RIVER IMPACT SUMMARY SHEET

Designed CB Drawn CB/MD Checked KM Date 5/2/2023

FILL/INSTALLATION

41 OF 140

Project Code: XXX XXX

REMOVAL OF EXISTING SUBSTRUCTURE =	9820				-9820	
NEW FISHING PIER BOARDWALK =	560	± CY	1610	± CY	1050	± CY
REMOVAL OF FISHING PIER BOARDWALK =	710	± CY	0	± CY	-710	± CY
SUBMARINE CABLES =	3300	± CY	3300	± CY	0	± CY
TOTAL:	79790	± CY	129420	± CY	49630	± CY
	'		,			
VOLUMES BELOW HTL	CUT/REM	OVAL	FILL/INS	STALLATION	NE	Т
EMBANKMENTS AND RIPRAP =	14460	± CY	17250	± CY	2790	± CY
RETAINING WALLS, ABUTMENTS, AND RIPRAP =	13240	± CY	16690	± CY	3450	± CY
BARGE ACCESS FOR TEMPORARY TRESTLE WORK PLATFORM =	6800	± CY	0	± CY	-6800	± CY
NEW SUBSTRUCTURE AND FENDER =	10480	± CY	20010	± CY	9530	± CY

	THAT ARE NOT INCLUDED AS BELOW CJL OR VEGETATED TIDAL WETLAND.
5.	IMPACTS BELOW THE HTL INCLUDE ALL AREAS BELOW THE HTL ELEVATION, SHORE TO SHORE, INCLUDING THOSE DESIGNATED AS VEGETATED TIDAL WETLAND. WHILE NOT BELOW THE HTL, THE SMALL AREAS OF FLAGGED VEGETATED TIDAL WETLANDS LOCATED ABOVE THE HTL WHERE INCLUDED IN THESE IMPACT NUMBERS.

3. IMPACTS BELOW THE CJL INCLUDE AREAS BELOW THE CJL ELEVATION, SHORE TO SHORE, THAT ARE NOT INCLUDED AS VEGETATED TIDAL WETLAND.

4. IMPACTS BELOW THE LAND CAPABLE OF SUPPORTING TIDAL VEGETATION (LCSTV) INCLUDE AREAS BELOW THE LCSTV ELEVATION, SHORE TO SHORE,

6. THE 100-YEAR FLOOD ELEVATION VARIES THROUGHOUT THE SITE. SEE FLOOD INSURANCE RATE MAP (FIRM) PANELS 09007C0361J (EFF. 2/6/2013), 0901C0461J (EFF. 8/5/2013), AND 0901C04652J (EFF. 8/5/2013) FOR ELEVATION VALUES AND LIMITS OF APPLICABILITY.

7. TURBIDITY CURTAINS ARE REQUIRED FOR ALL CONSTRUCTION ACTIVITIES DISTURBING THE RIVER BOTTOM INCLUDING, BUT NOT LIMITED TO, DRILLED SHAFT INSTALLATION, SUBMARINE CABLE REMOVAL AND INSTALLATION, EXISTING PIER REMOVAL, AND EXISTING FENDER REMOVAL.

8. TURBIDITY CURTAINS THAT ARE REQUIRED TO ENVELOPE LARGER WORK AREAS WITH MULTIPLE BARGES ARE ASSUMED TO BE SUPPORTED WITH 10" DIAMETER PIN PILES SPACED AT APPROXIMATELY 10 FEET ON CENTER. PIN PILES FOR TURBIDITY CURTAINS ARE NOT SHOWN. REMOVED PIN PILES ARE A TEMPORARY IMPACT. AREA OF IMPACT FOR EACH PIN PILE IS 0.55 SF.

9. TURBIDITY CURTAINS ARE REQUIRED FOR ANY ACTIVITIES REQUIRING BARGES TO BE SECURED TO THE RIVER BOTTOM WITH SPUD PILES. WHERE A TOTAL ENCLOSURE IS NOT REQUIRED, IT IS ASSUMED THAT TURBIDITY CURTAINS WILL BE SUPPORTED OFF OF THE SIDES OF THE WORK BARGES.

10. SEE DRAWING SC-01 THROUGH SC-04 FOR SUGGESTED BARGE LAYOUTS AND TURBIDITY CURTAIN LIMITS FOR IN-WATER WORK ACTIVITIES.

11. THE MAXIMUM TOTAL TEMPORARY IMPACTS DUE TO TURBIDITY CURTAIN PIN PILES AND BARGE SPUD PILES IS APPROXIMATE 9,500 SF AND IS INCLUDED IN THE VALUES AT LEFT IN THE SHEET -06 IMPACTS. THIS IMPACT ACCOUNTS FOR WORK ASSOCIATED WITH DRILLED SHAFT INSTALLATION, PIER CONSTRUCTION, SPAN INSTALLATION, SUBMARINE CABLE REMOVAL AND INSTALLATION, EXISTING PIER REMOVAL, EXISTING SPAN REMOVAL, AND WORK ASSOCIATED WITH EXISTING AND NEW FISHING PIERS.

	TIDAL DATUM	NOAA				
		(NAVD88)(ft)				
	CJL	2.90				
	MLW	-1.71				
	MHW	1.60				
	ЦТI	7 0 1				

<u>NOTES</u>

*ALL ELEVATIONS SHOWN ARE APPROXIMATE AND CONTAINS AN ACCURACY OF 0.10 $^{'}$ ± BASED ON RELATION WITH THE USGS AND NOAA GAUGE BENCHMARKS INTERPOLATION AND FIELD VERIFICATION.

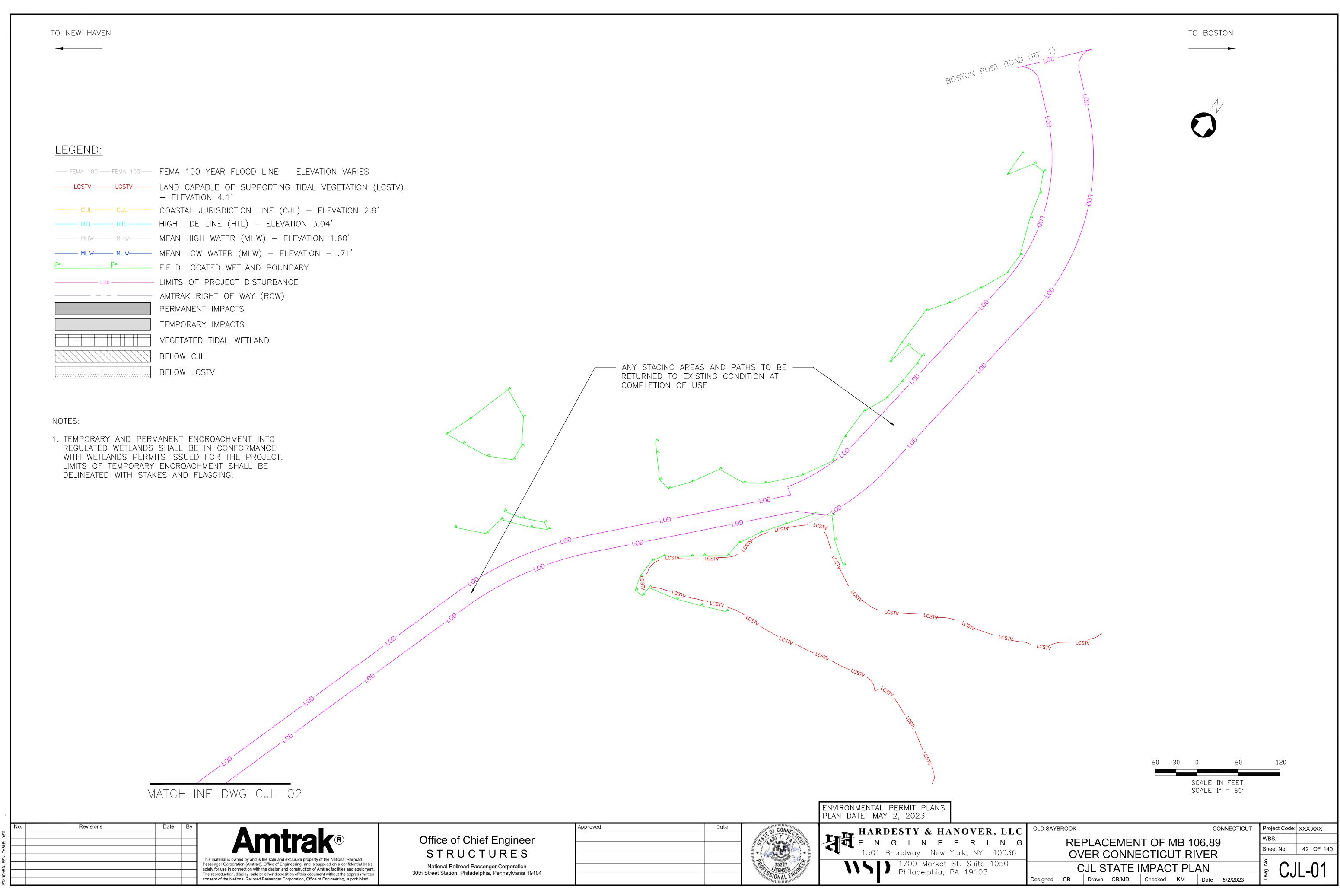
FEMA FLOODPLAIN VOLUMES

1. VERTICAL DATUM IS NAVD 88. REGULATORY ELEVATIONS BASED ON NOAA GAUGE BENCHMARK.

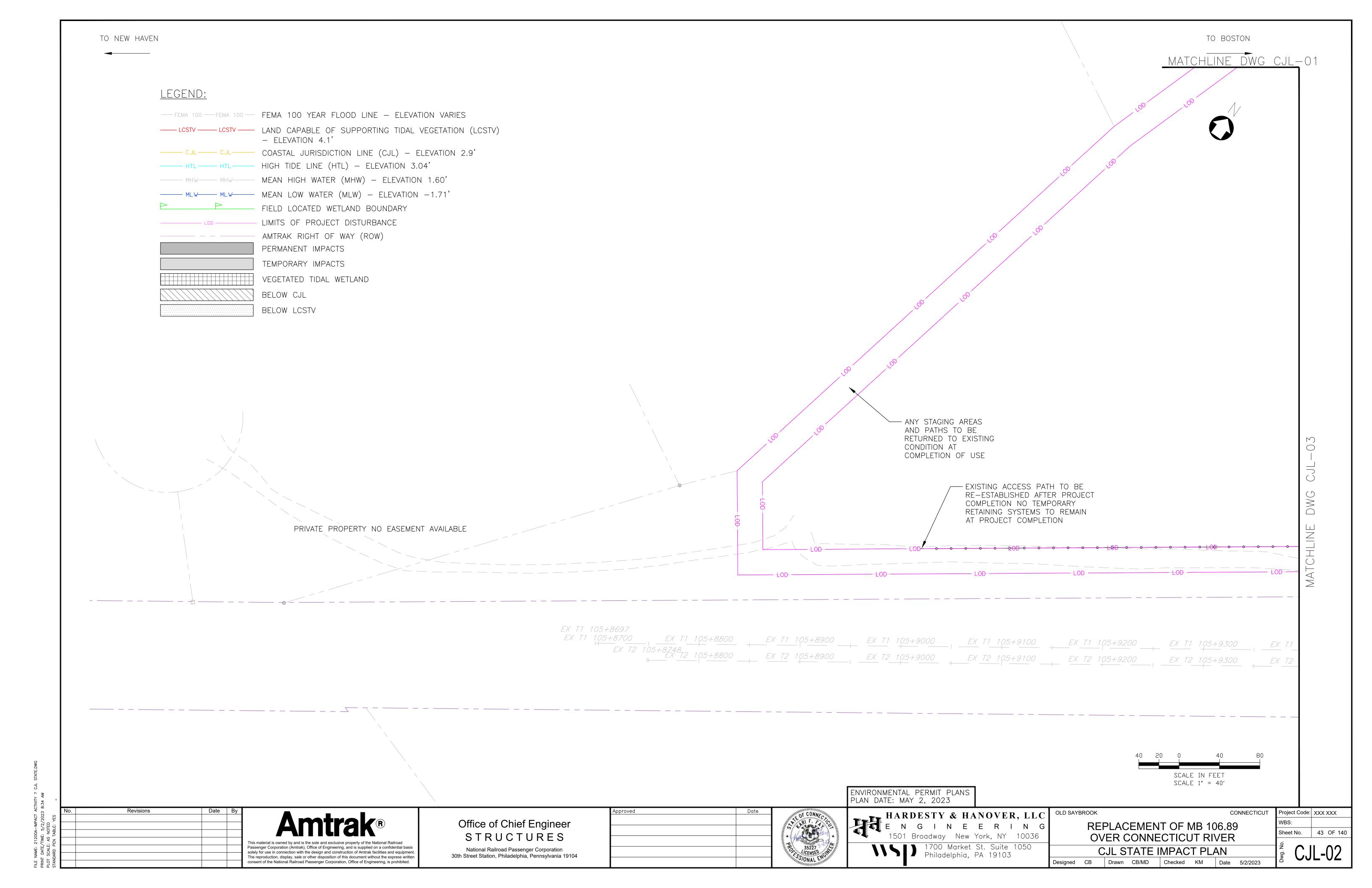
2. IMPACTS BELOW THE VEGETATED TIDAL WETLANDS INCLUDE AREAS FLAGGED IN THE FIELD, SHORE TO SHORE.

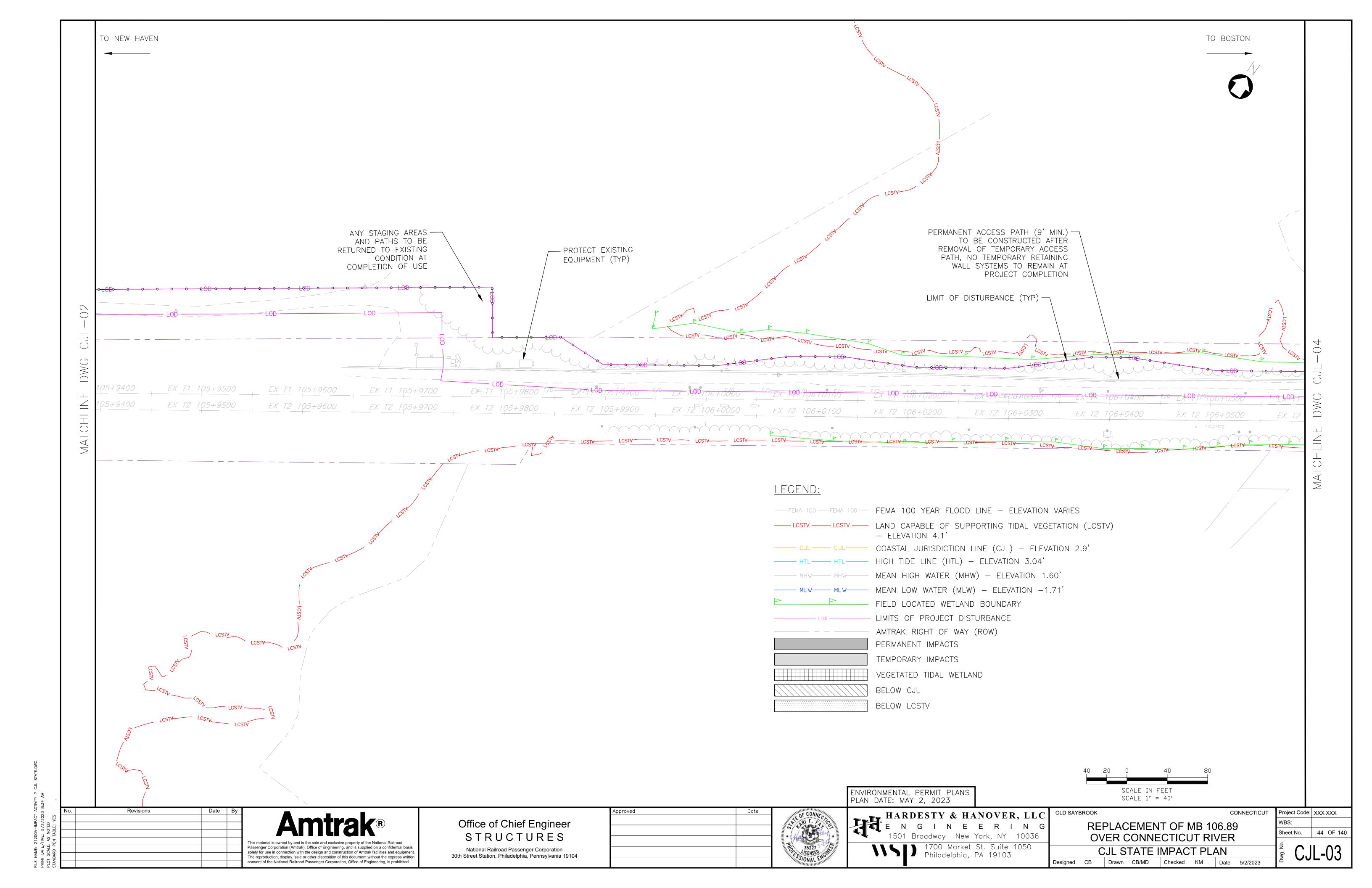
	0117 /0514					
TOTAL:	79790	± CY	129420	± CY	49630	± CY
SUBMARINE CABLES =	3300	± CY	3300	± CY	0	± CY
REMOVAL OF FISHING PIER BOARDWALK =	710	± CY	0	± CY	-710	± CY
NEW FISHING PIER BOARDWALK =	560	± CY	1610	± CY	1050	± CY
REMOVAL OF EXISTING SUBSTRUCTURE =	9820	± CY	0	± CY	-9820	± CY
NEW SUBSTRUCTURE AND FENDER =	10480	± CY	21900	± CY	11420	± CY
BARGE ACCESS FOR TEMPORARY TRESTLE WORK PLATFORM =	6800	± CY	0	± CY	-6800	± CY
RETAINING WALLS, ABUTMENTS, AND RIPRAP =	27620	± CY	43840	± CY	16220	± CY
EMBANKMENTS AND RIPRAP =	20300		36770		302/0	

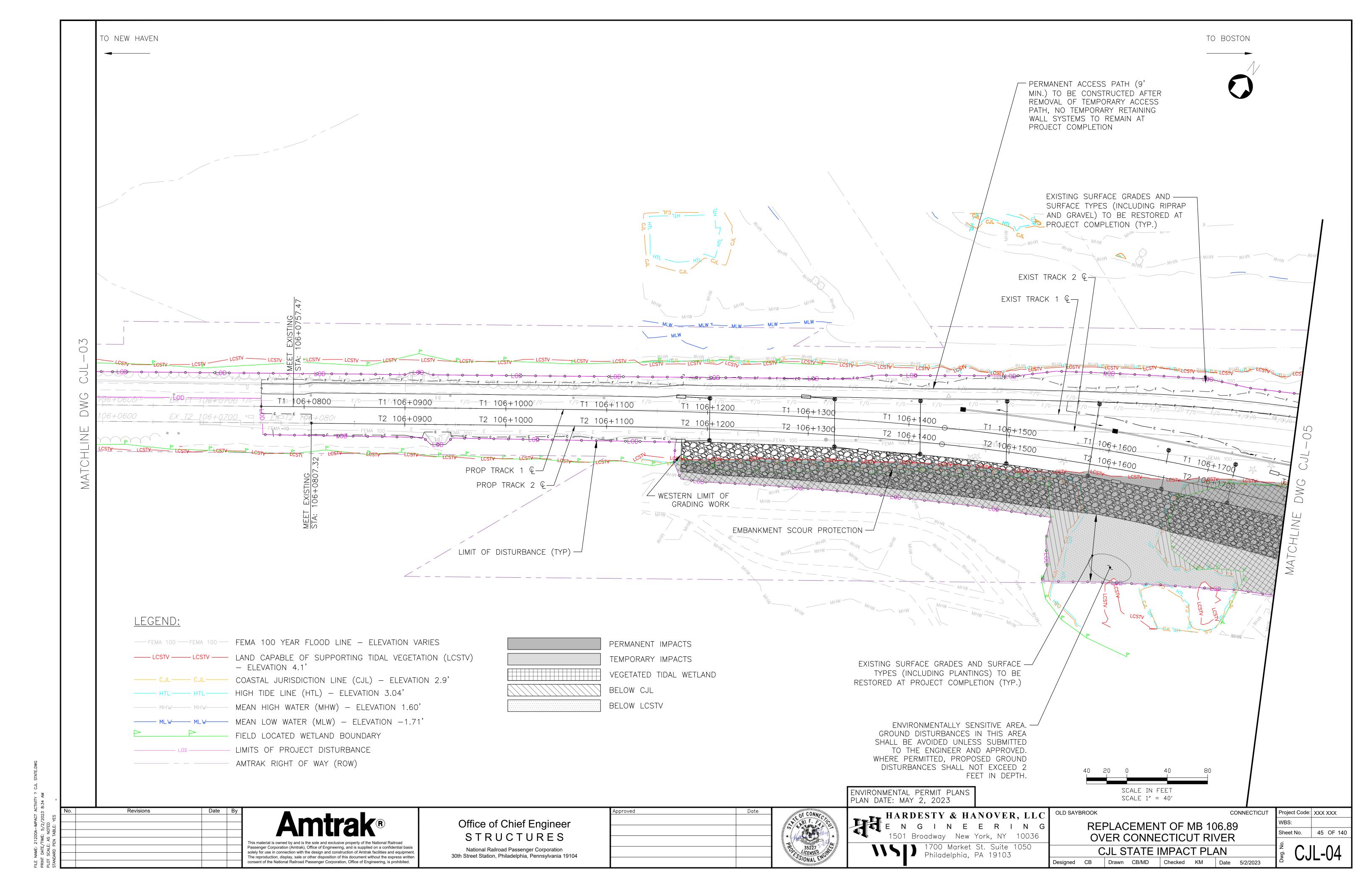
VOLUMES BELOW HTL	CUT/REM	10VAL	FILL/INSTALLATION	NET
EMBANKMENTS AND RIPRAP =	14460	± CY	17250 ± CY	2790 ± CY
RETAINING WALLS, ABUTMENTS, AND RIPRAP =	13240	± CY	16690 ± CY	3450 ± CY
BARGE ACCESS FOR TEMPORARY TRESTLE WORK PLATFORM =	6800	± CY	O ± CY	-6800 ± CY
NEW SUBSTRUCTURE AND FENDER =	10480	± CY	20010 ± CY	9530 ± CY
REMOVAL OF EXISTING SUBSTRUCTURE =	7010	± CY	O ± CY	$-7010 \pm CY$
NEW FISHING PIER BOARDWALK =	560	± CY	590 ± CY	30 ± CY
REMOVAL OF FISHING PIER BOARDWALK =	25	± CY	0 ± CY	$-25 \pm CY$
SUBMARINE CABLES =	3300	± CY	3300 ± CY	0 ± CY
	TOTAL: 55875	± CY	57840 ± CY	1965 ± CY

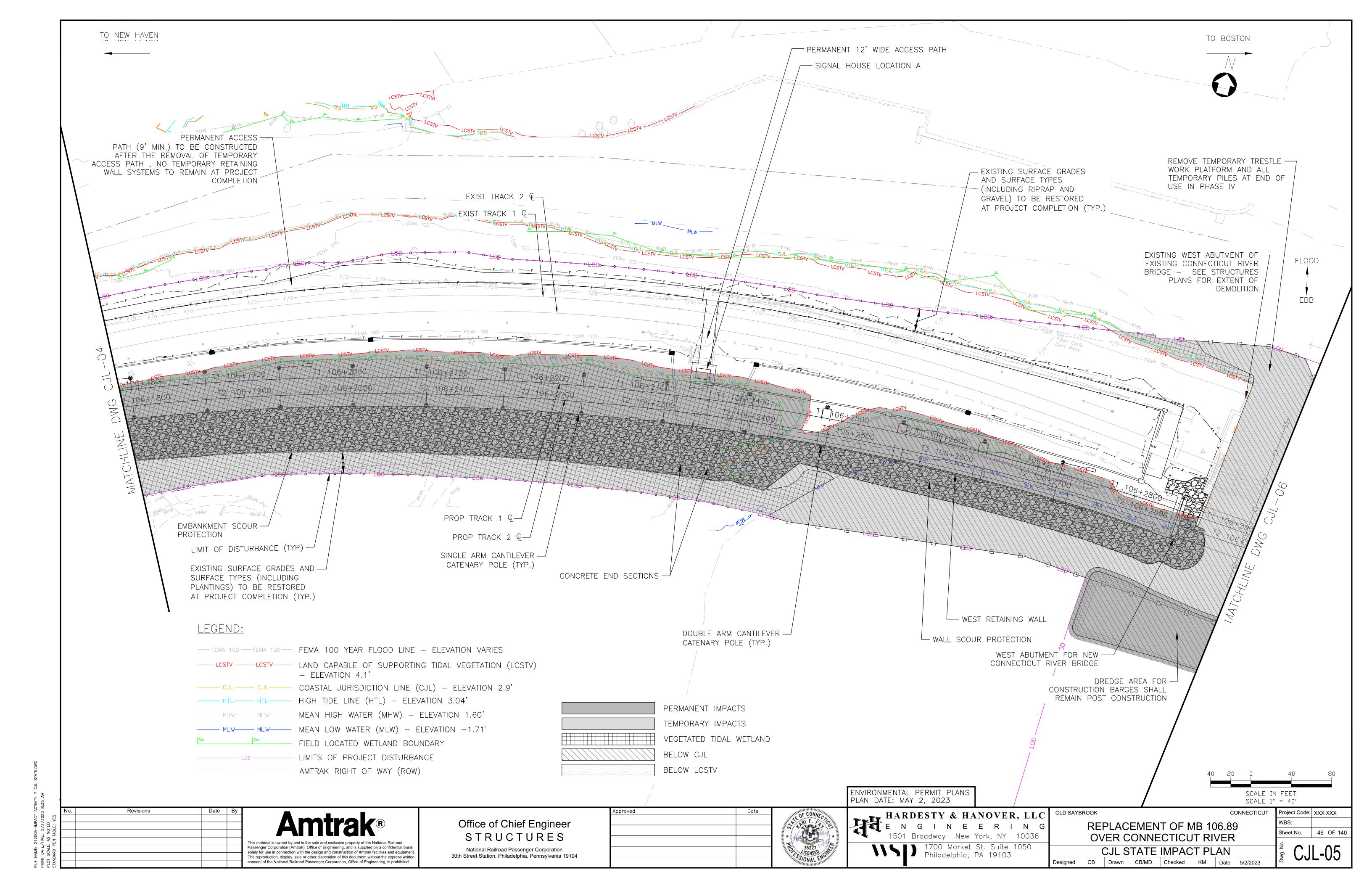


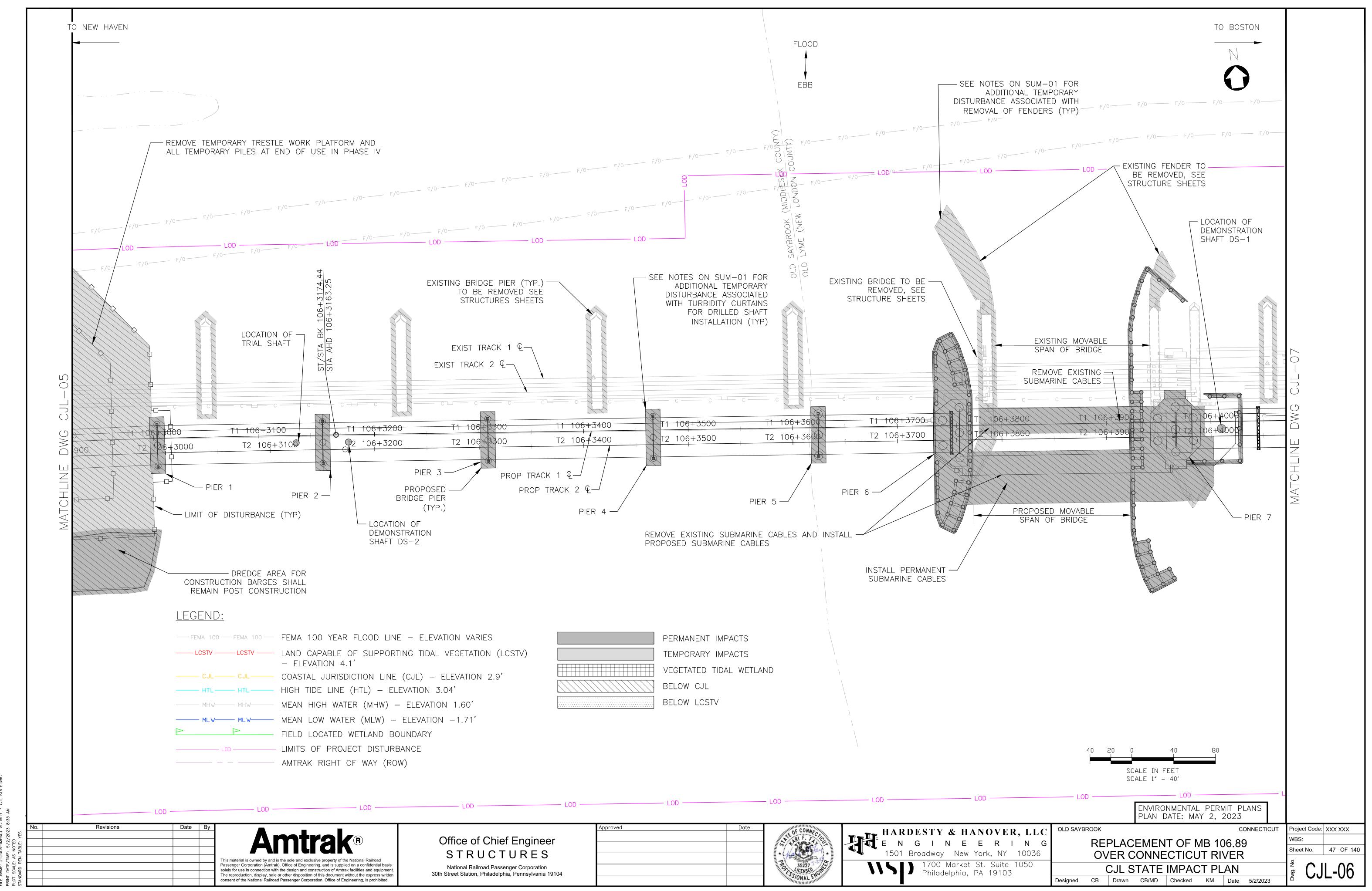
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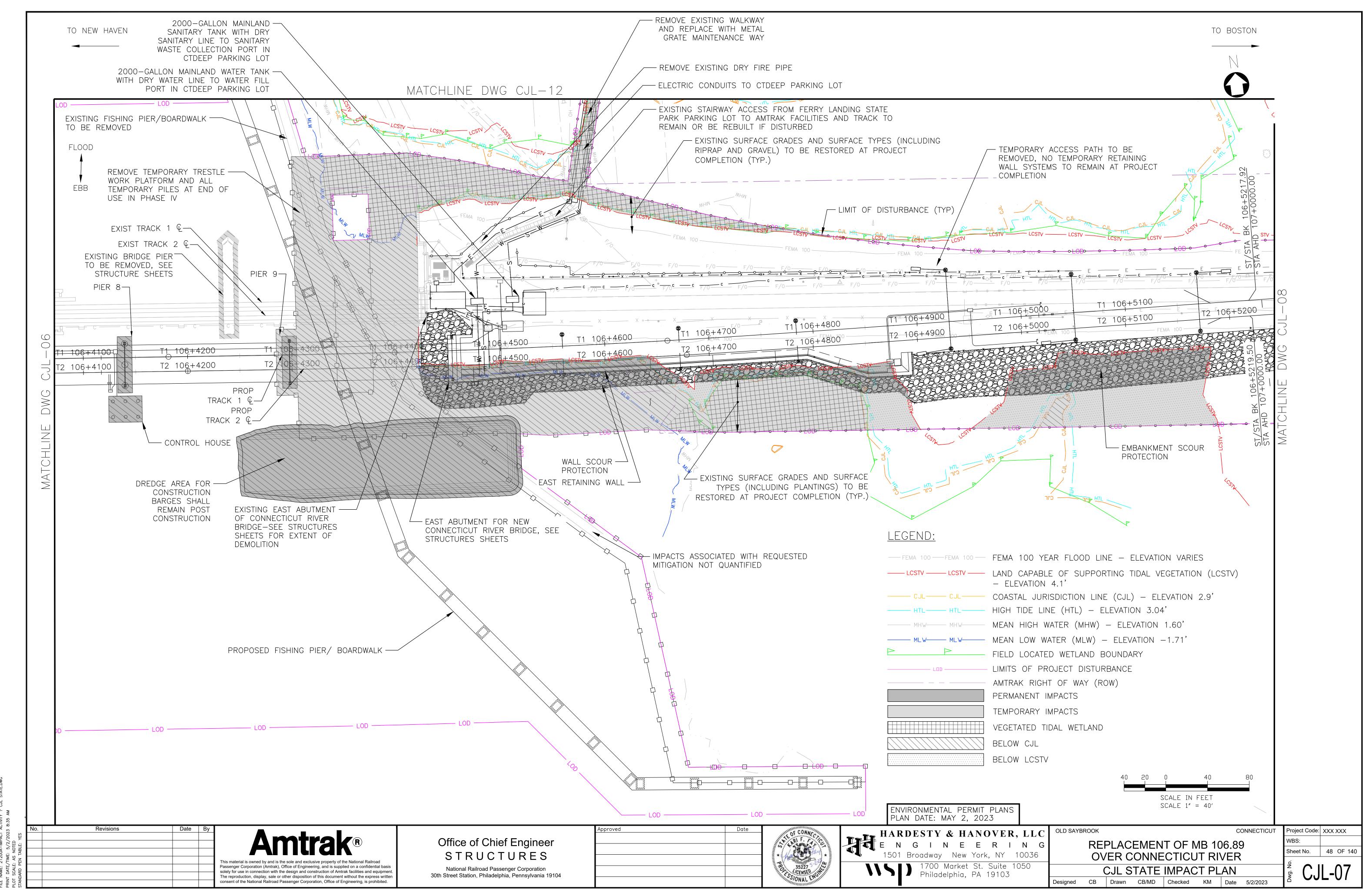




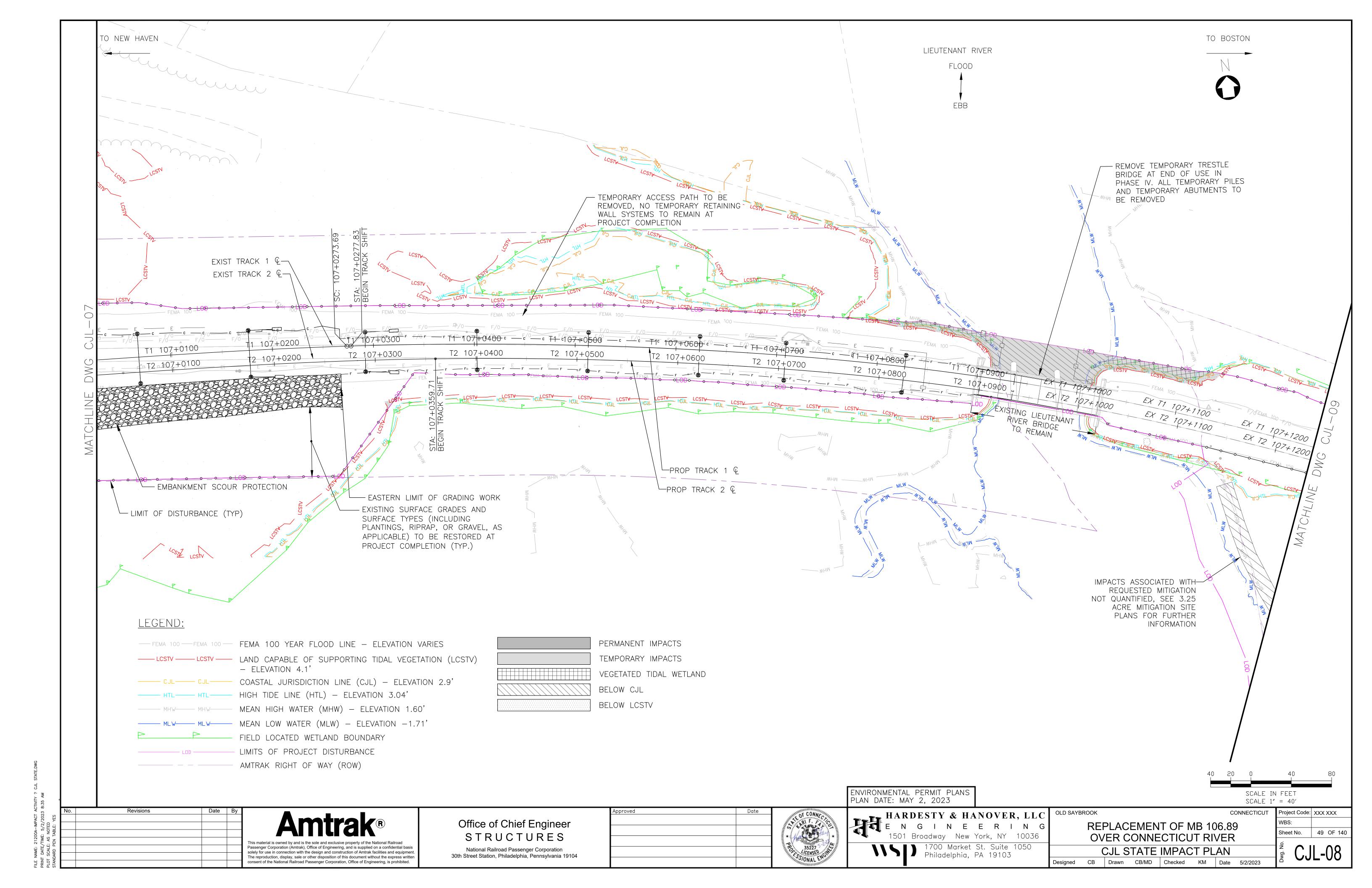


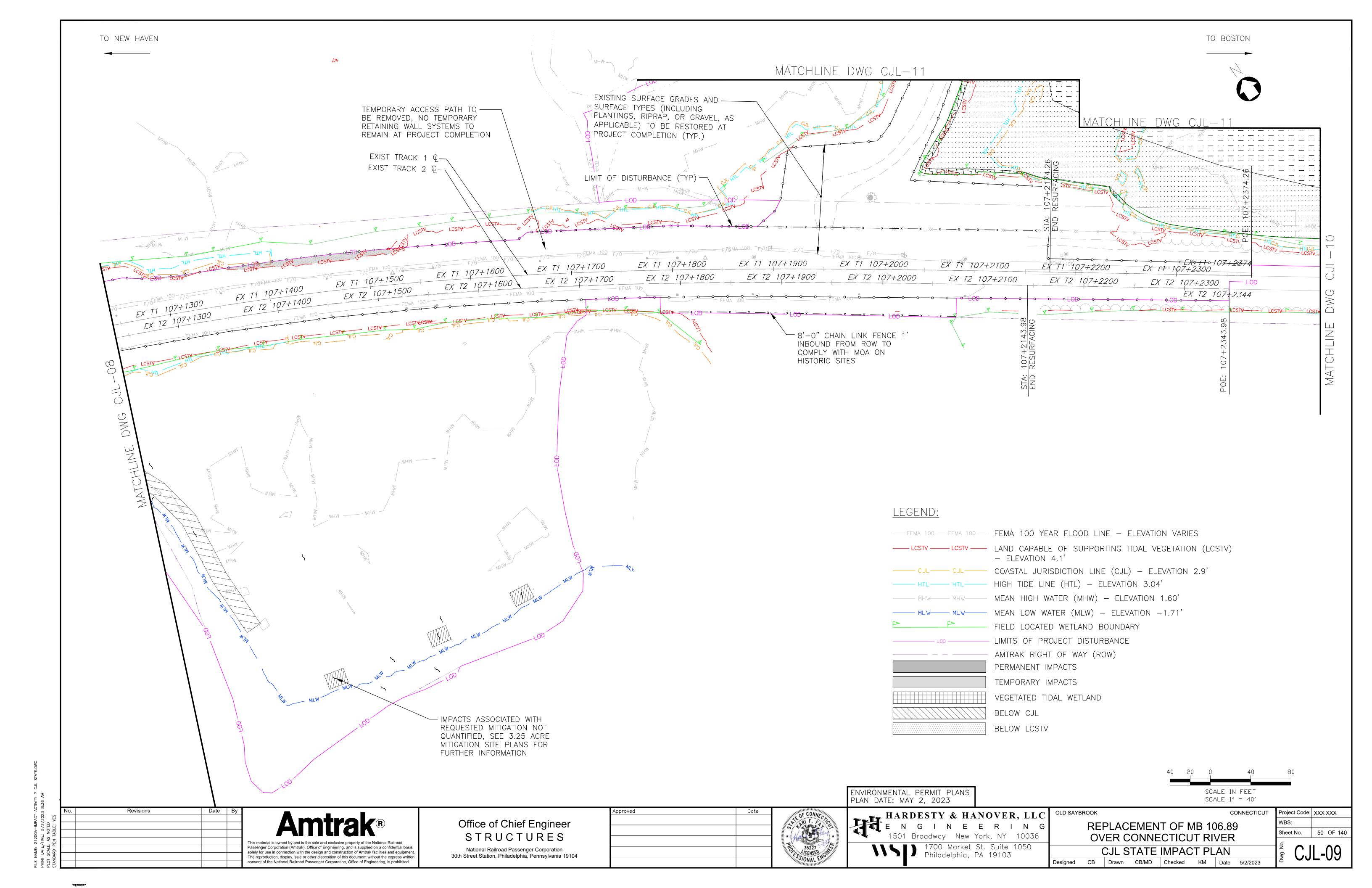


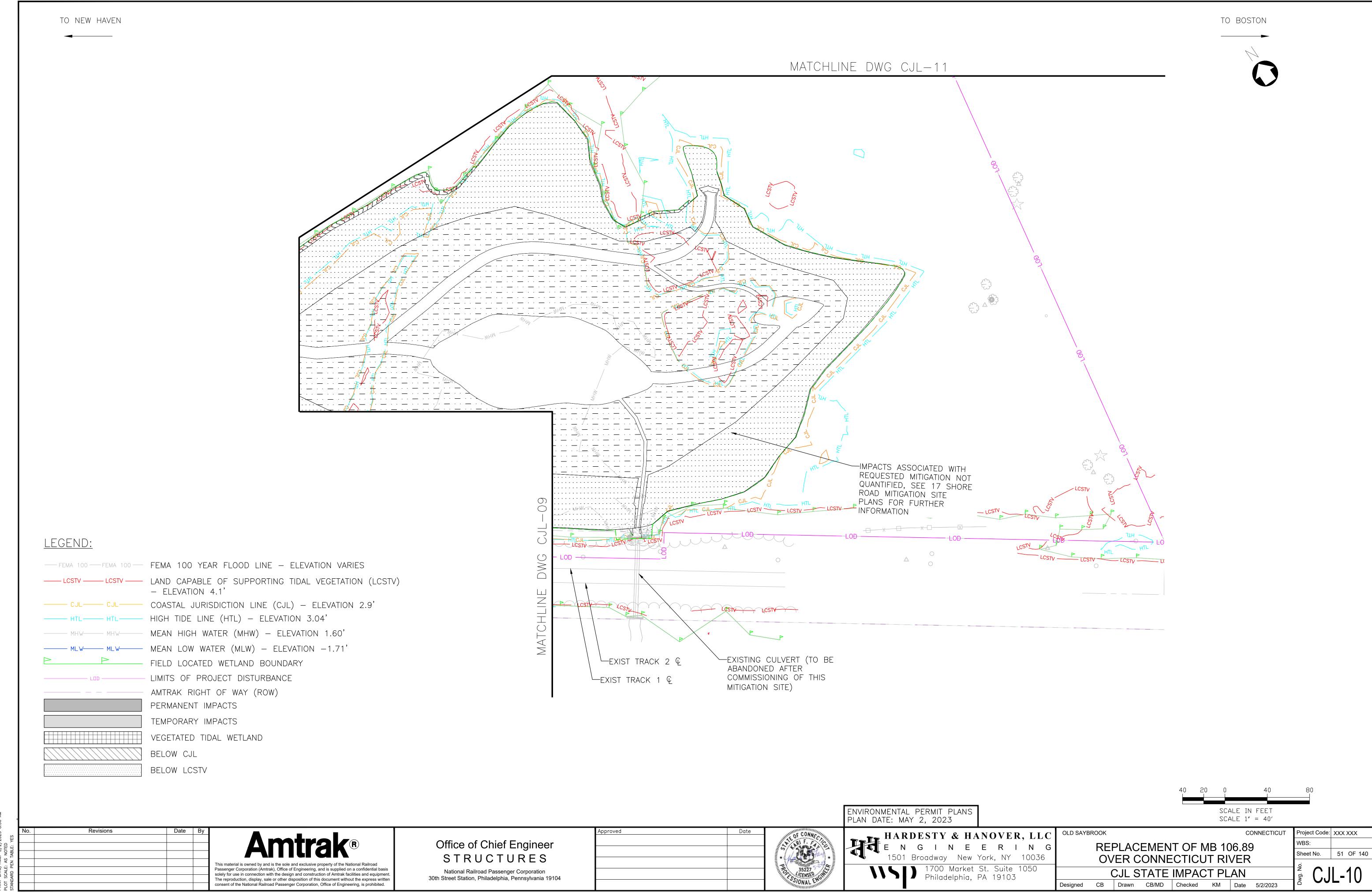


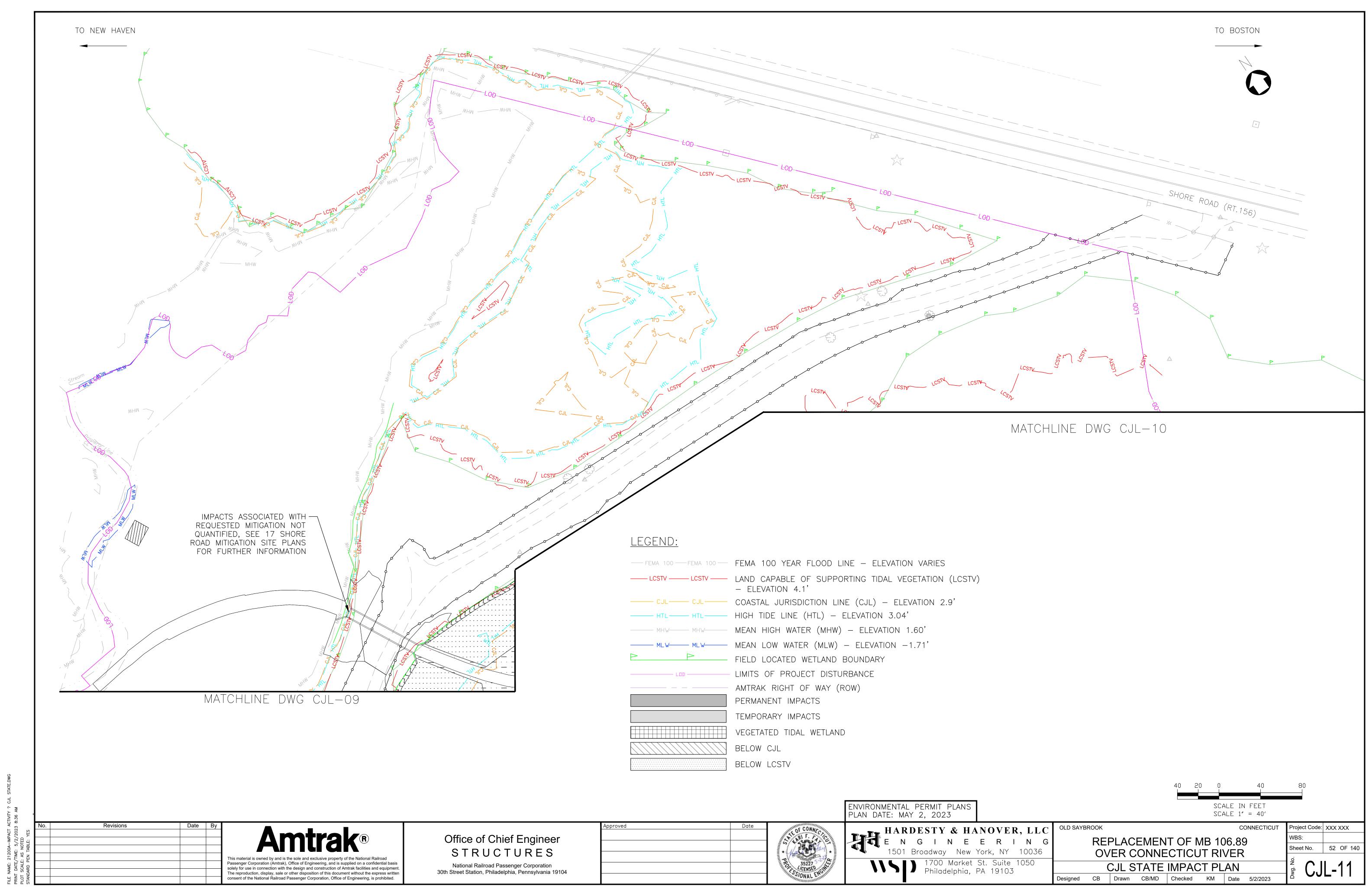


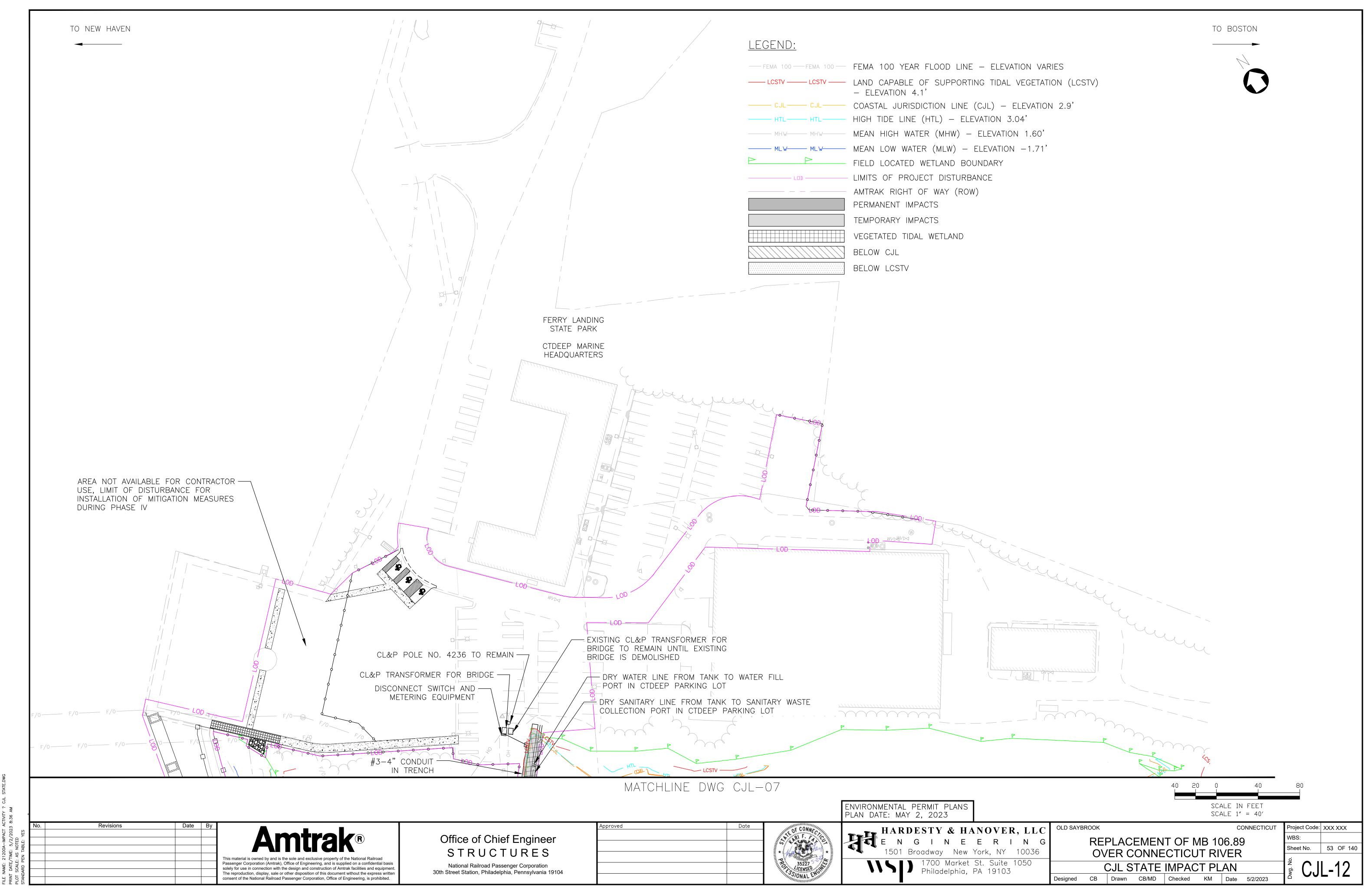
IE: 21200A-IMPACT ACTIVITY ? C.

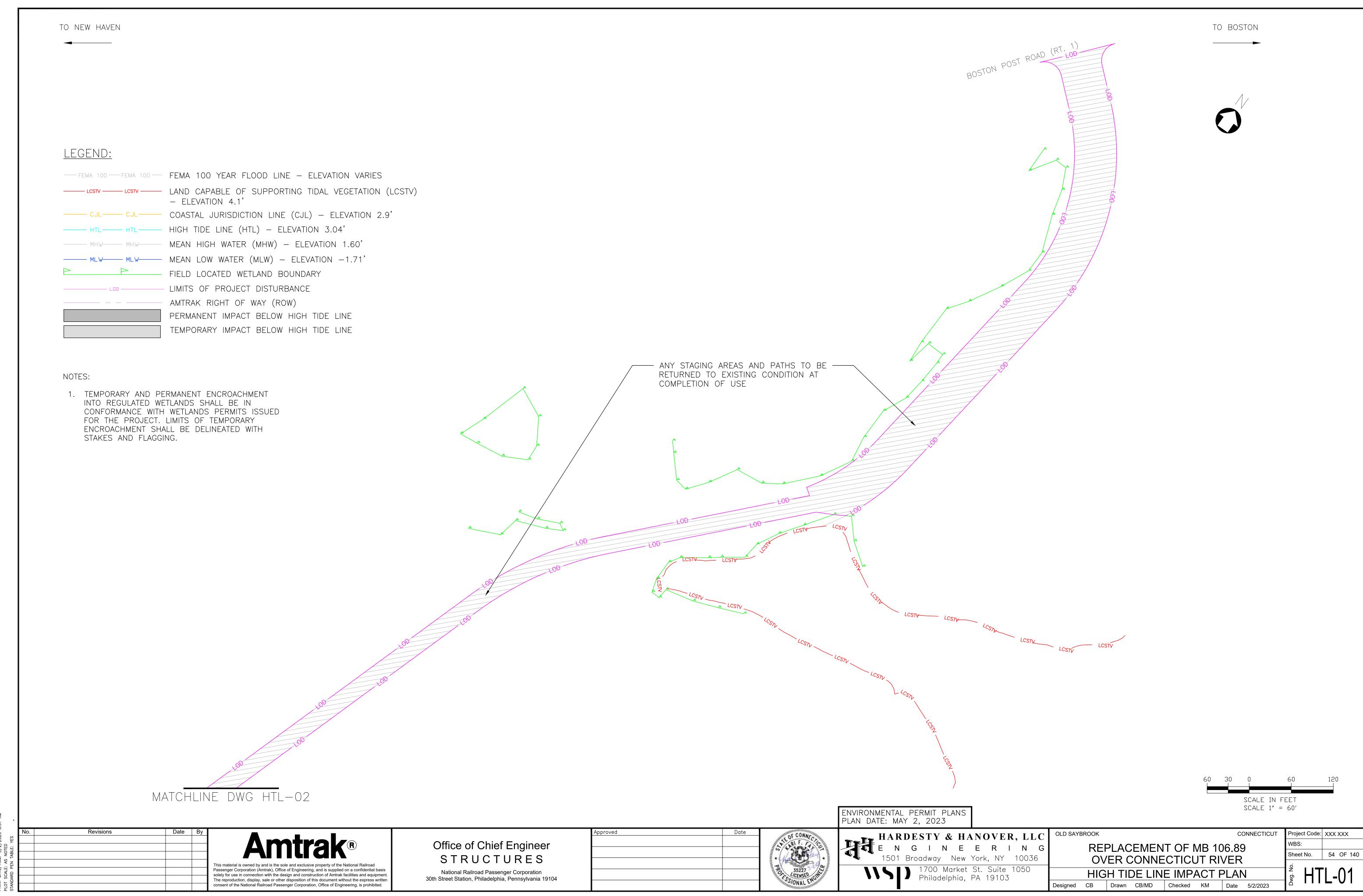




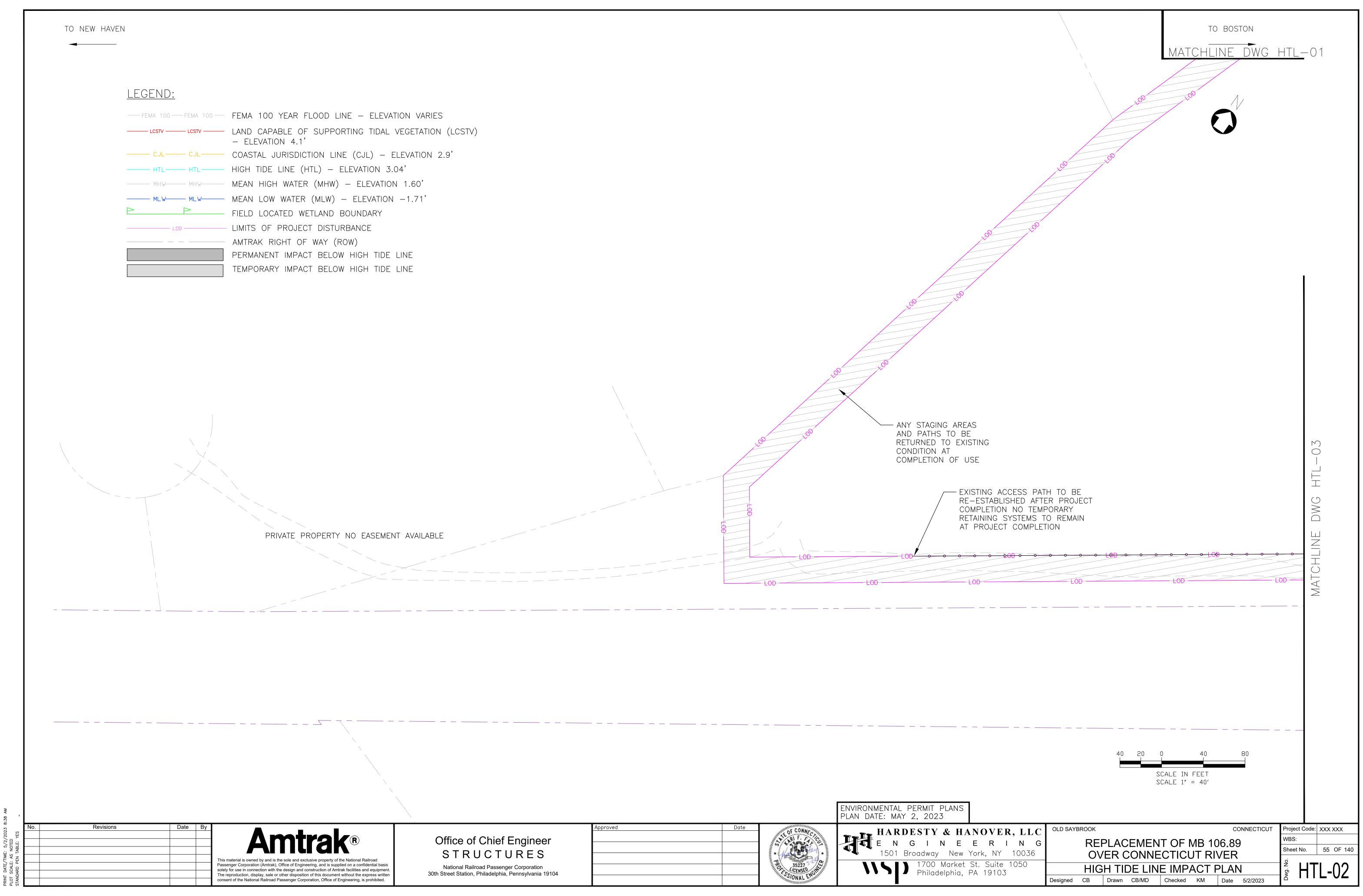


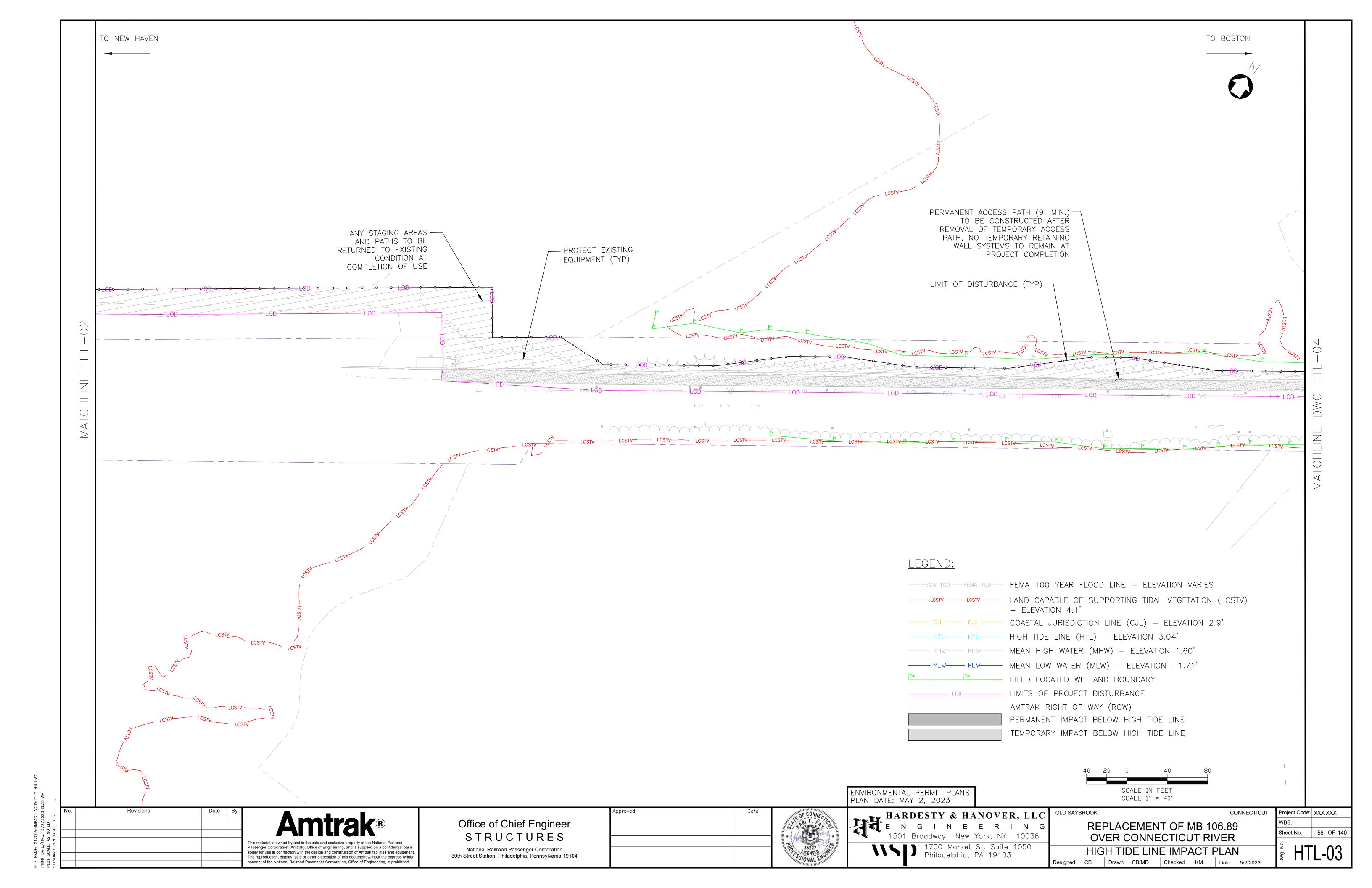


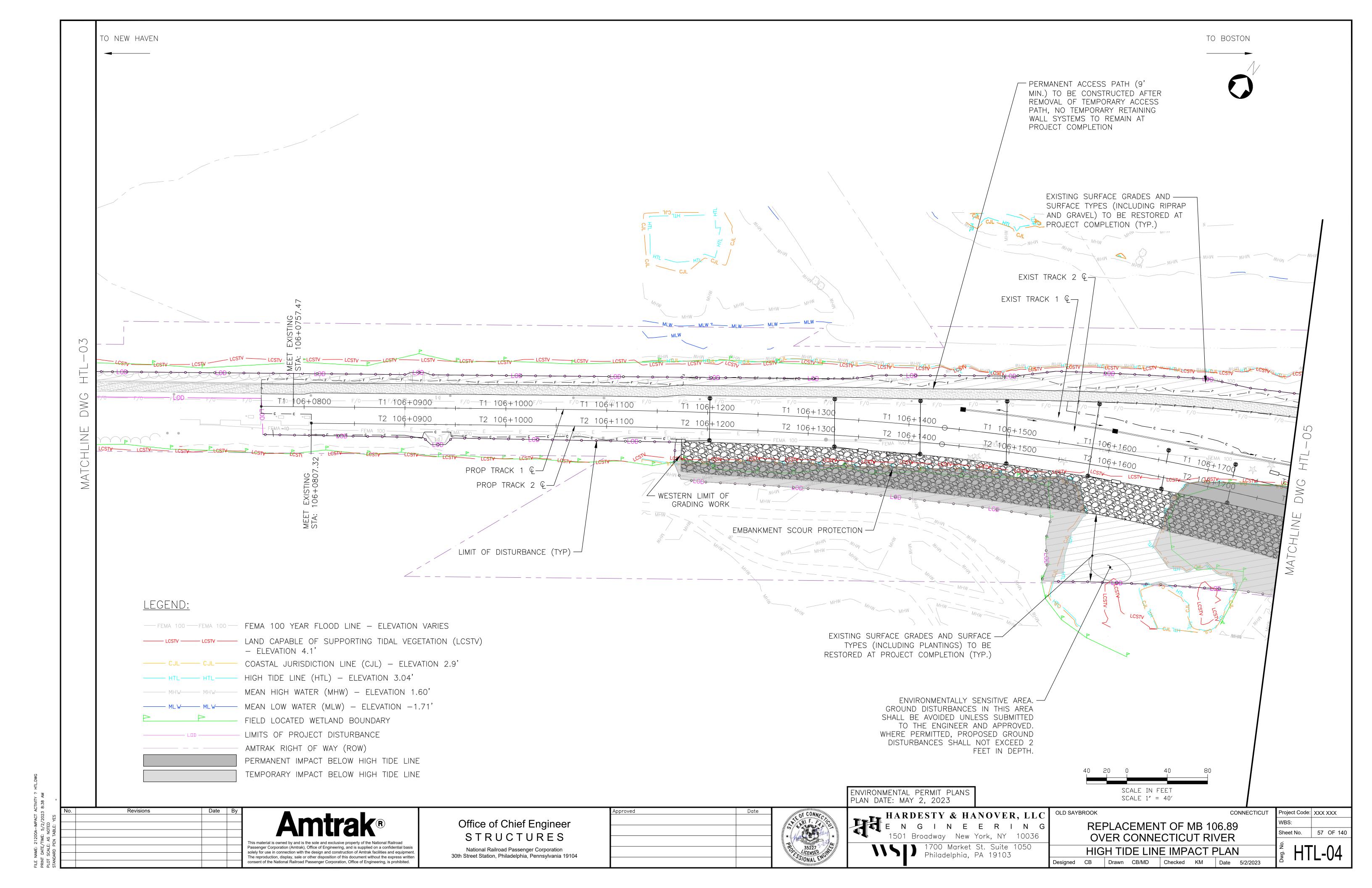


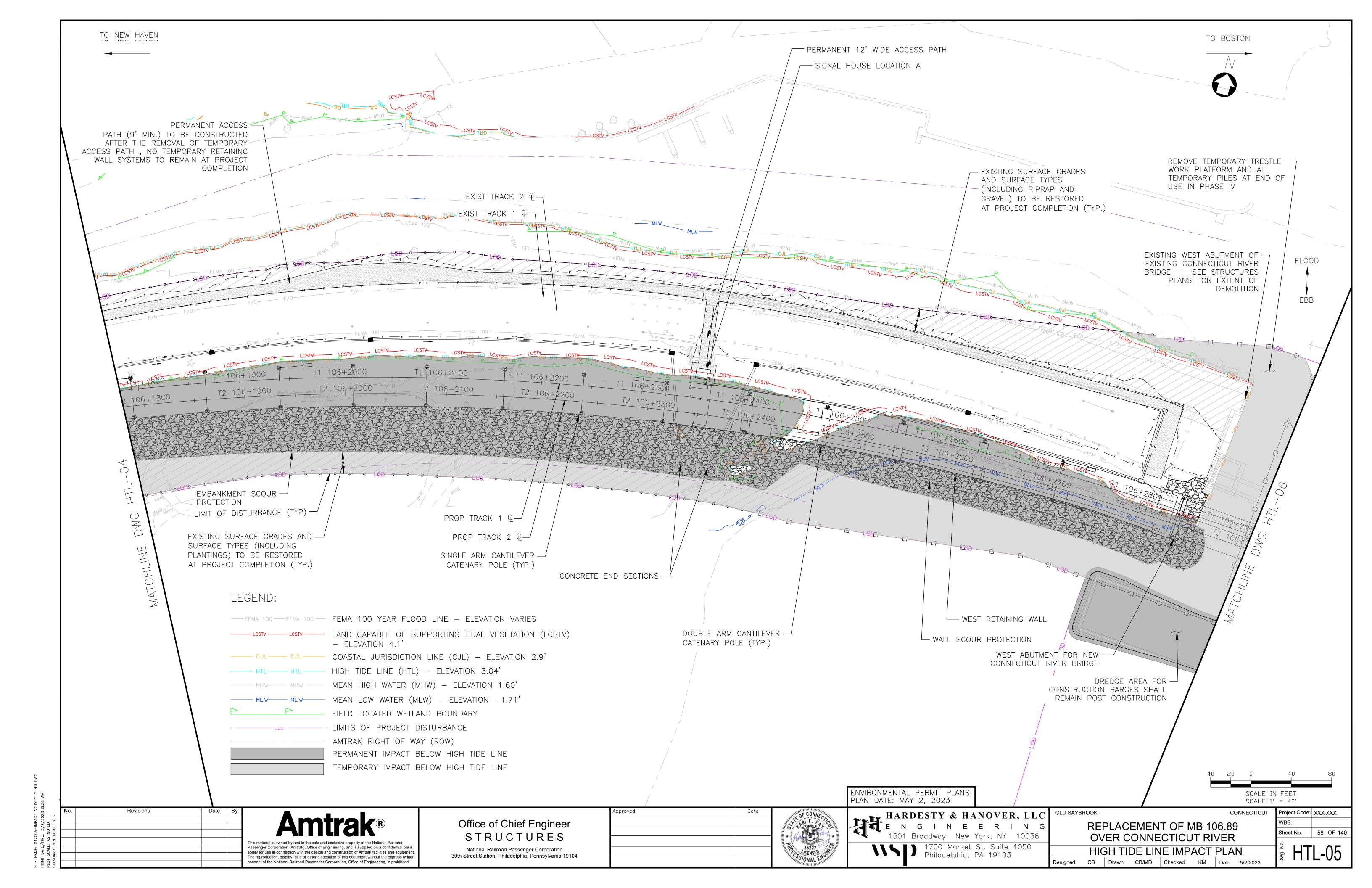


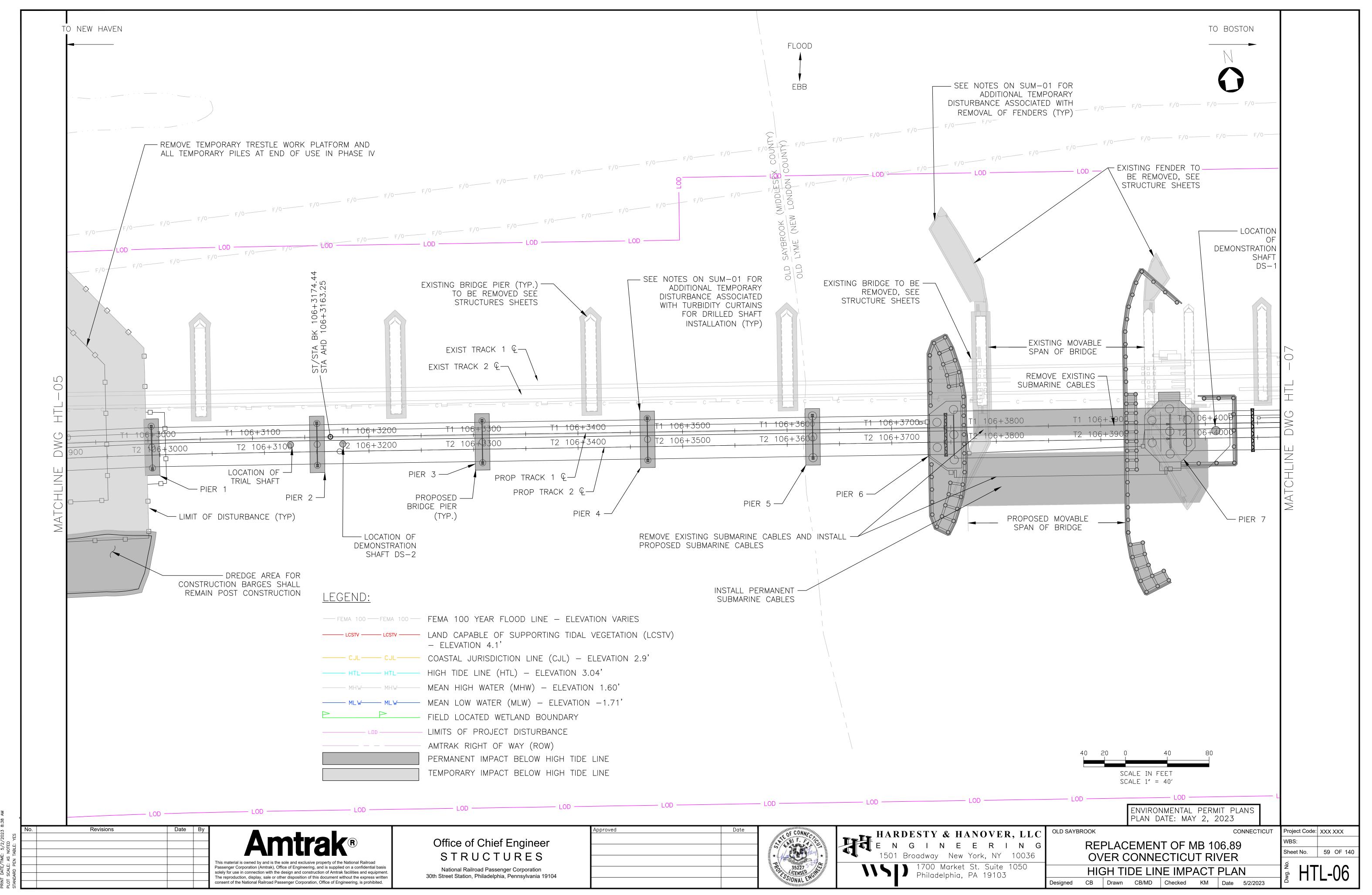
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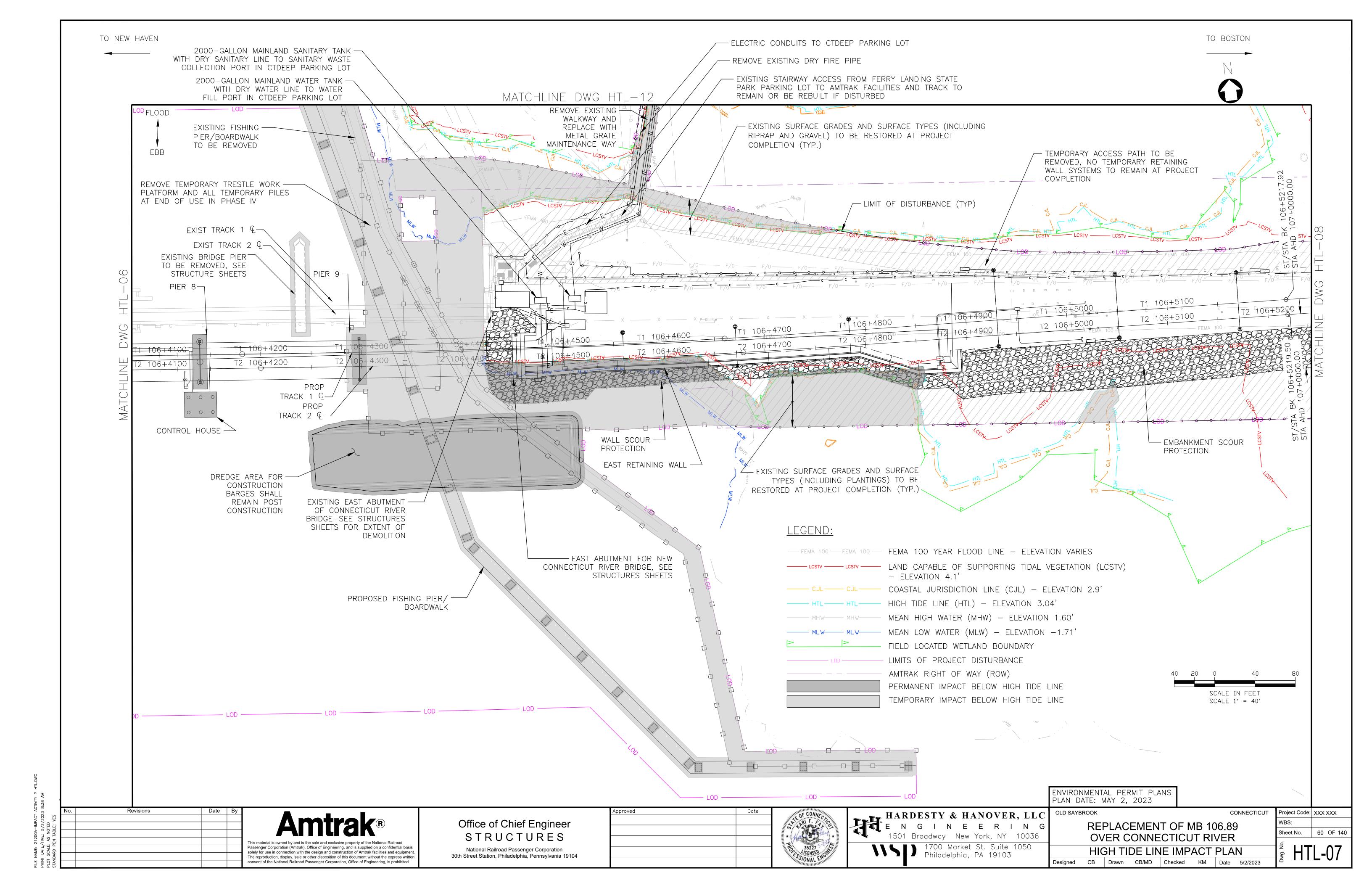


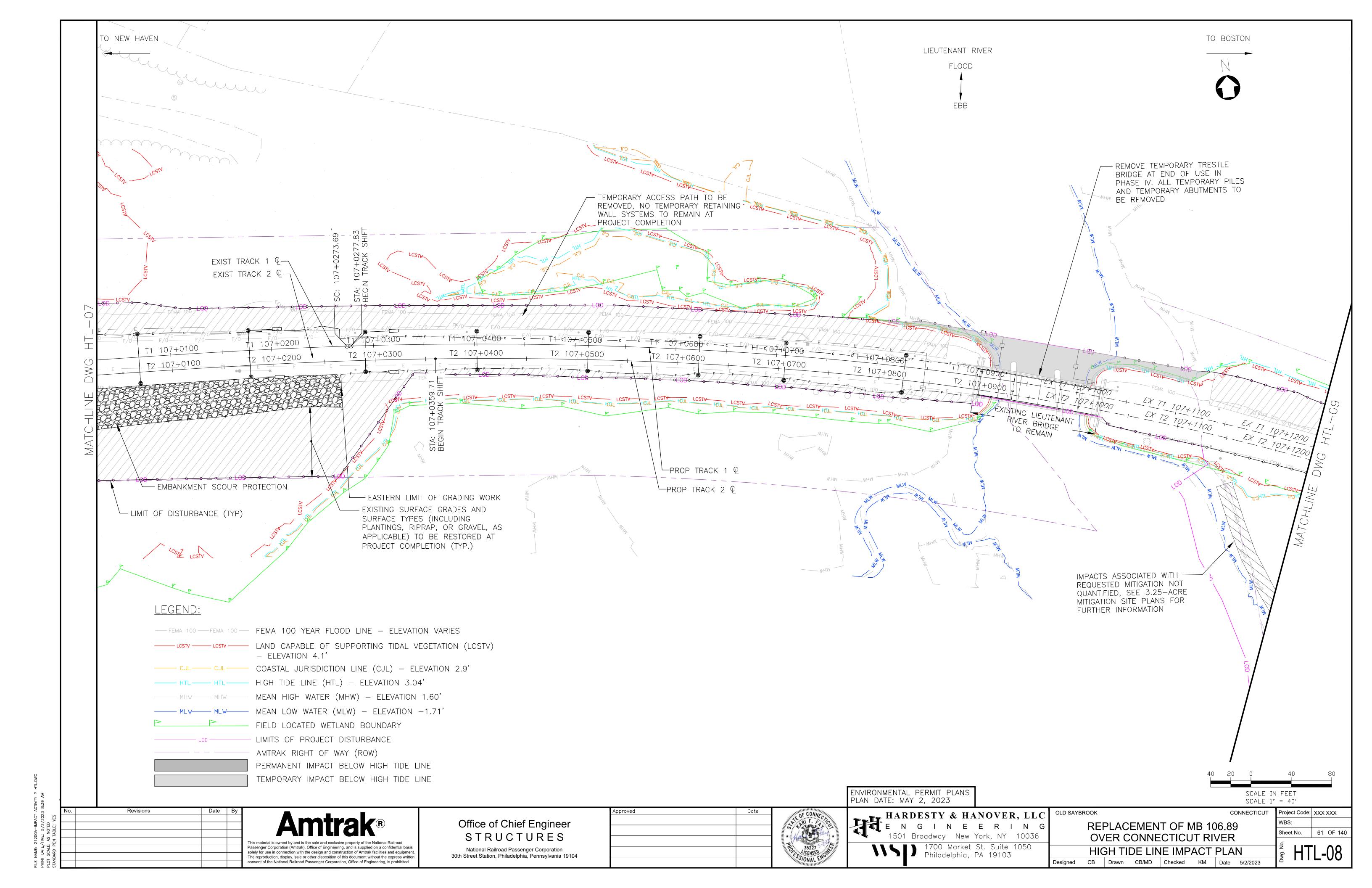


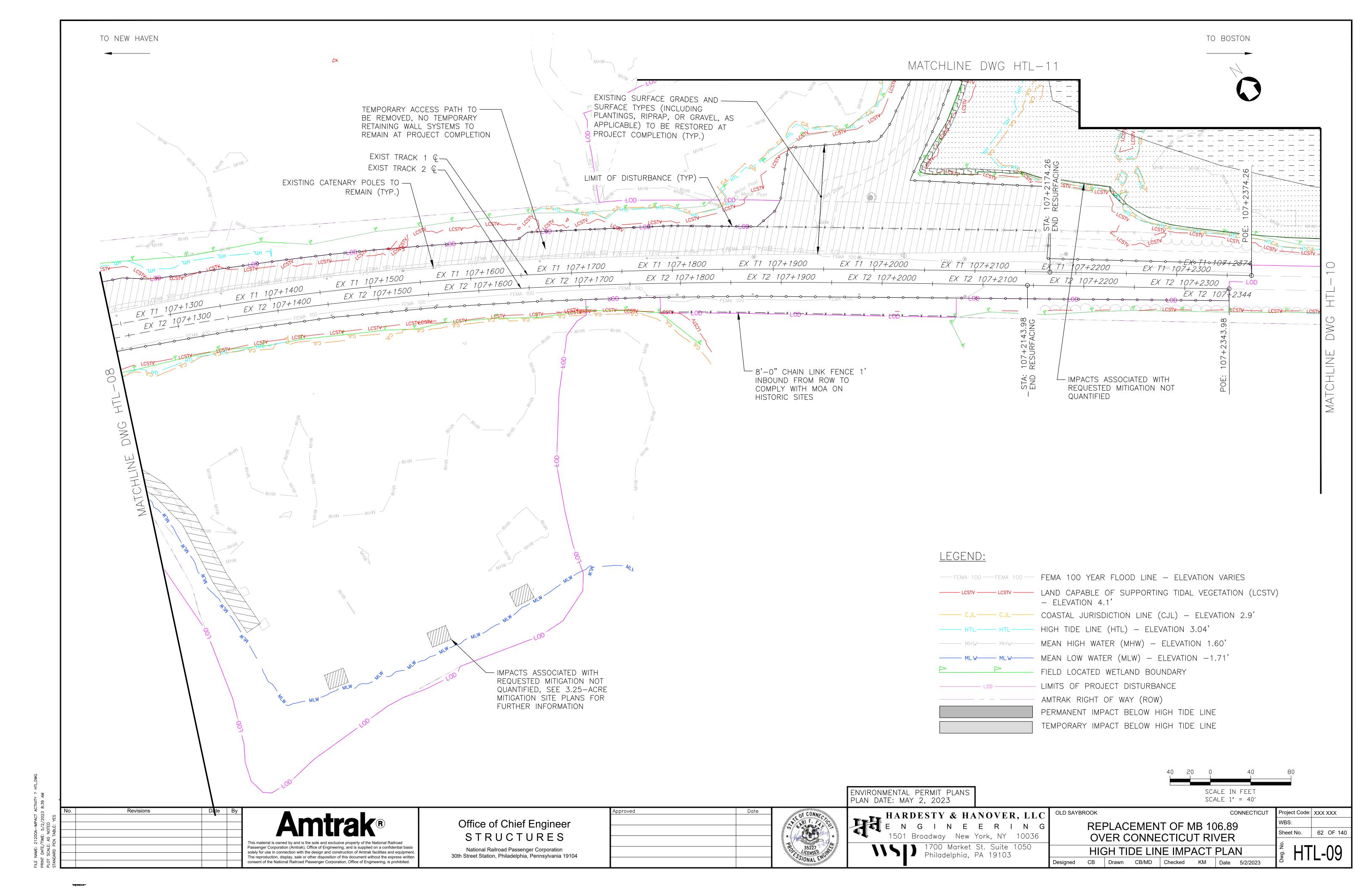


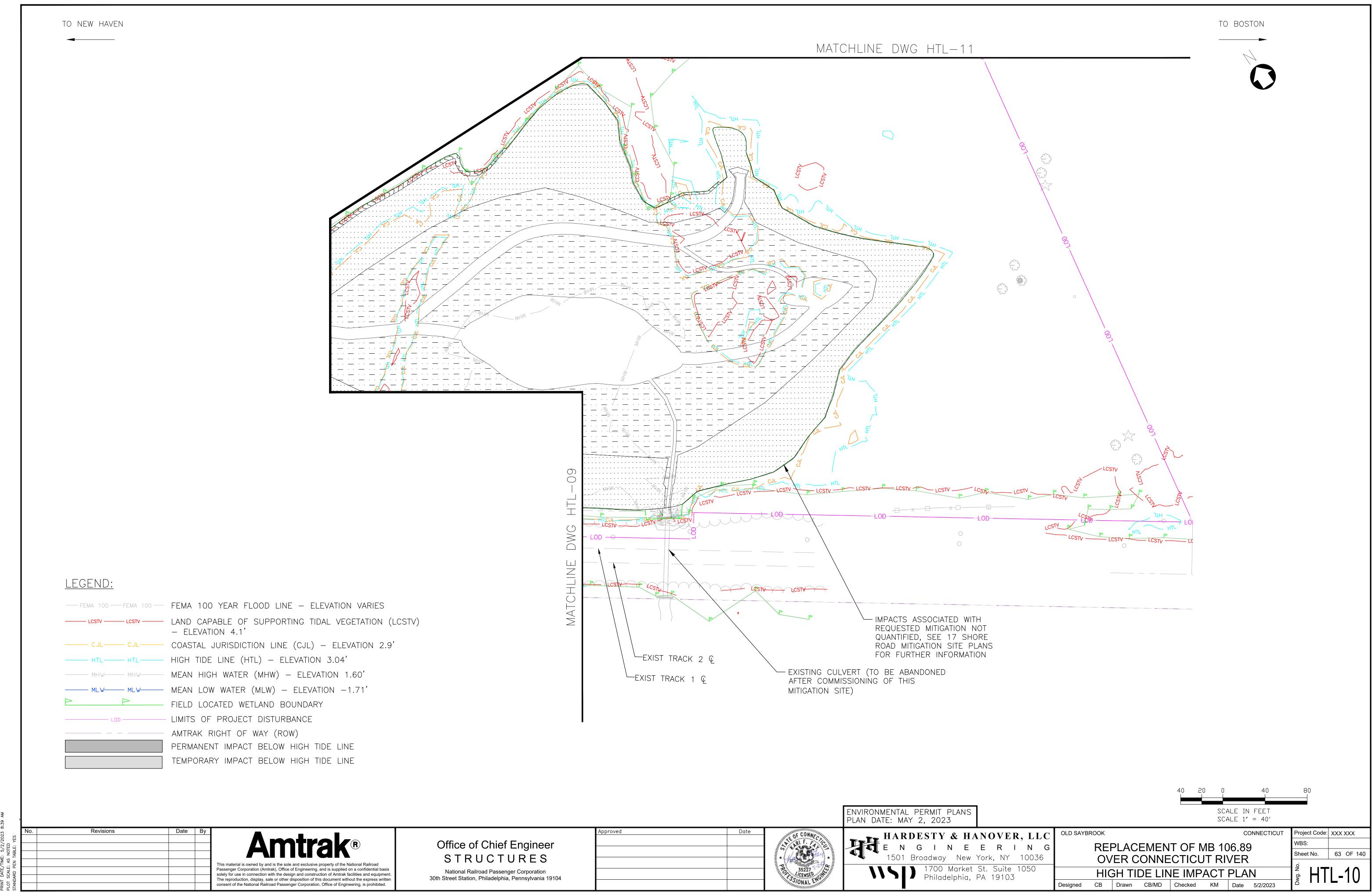


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