



## **Appendix 3-B: Justification for Centerline and Allowed Deviation Zone Excursions**

**CONTAINS REDACTED INFORMATION IN CASE 10-T-0139**

**Champlain Hudson Power Express**

**Case 10-T-0139**

**Segment 19B EM&CP**

**Justification for Centerline and Allowed  
Deviation Zone Excursions**

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## 1 Scope and Purpose

Champlain Hudson Power Express's (CHPE's) Article VII Certificate established an Approved Facility Route, as depicted on Appendix B to the Joint Proposal, as well as an Allowed Deviation Zone (ADZ) defined in Certificate Condition 156. For the Hudson River, the ADZ shall be anywhere within the river where the water depth exceeds 20 feet at mean low water (MLW). Within the ADZ, the Certificate as written allows movement of the line away from the Approved Facility Route in any direction, so long as that movement does not bring the Facility within certain designated zones outlined in CC 156(b); however, deviations from the Approved Facility Route either (1) in waters under 20 feet in depth or (2) which bring the Facility within certain designated zones enumerated in CC 156(b)(1), and 156(b)(2),(3), and (4) must be further explained and justified in the Environmental Management & Construction Plan (EM&CP) consistent with the requirements of Certificate Condition 157 for the Public Service Commission (Commission or PSC) to approve them as part of the EM&CP process.

As set forth in CC 156(b), the ADZ in the Hudson River is limited in the following circumstances:

- **New York State Department of Environmental Conservation (NYSDEC) Exclusion Zones** [CC 156(b)(1)]: The ADZ is limited to 150 feet on either side of the Approved Facility Route centerline where the high voltage direct current (HVDC) transmission system enters any of the Exclusion Zones identified on the maps contained in Appendix B to the Joint Proposal. The Certificate Holders' rights to enter into such Exclusion Zones are as follows:
  - The EM&CP must include an analysis demonstrating that there are no reasonable and feasible underwater alternatives outside of Exclusion Zones that would allow for burial to the target depth of 6 feet below present bottom; and
  - Written consent from NYSDEC must be received.
- **Cultural Resources** [CC 156(b)(2)]: Deviations greater than 150 feet from the Approved Facility Route centerline may not come within 160 feet of cultural resources identified by Lake Champlain Maritime Museum (LCMM)/CHPE in cultural resource investigations of the Hudson River segment identified in Appendix B to the Joint Proposal without the following:
  - An analysis in the EM&CP demonstrating that there are no reasonable and feasible underwater alternatives; and
  - Written consent from the New York State Office of Parks, Recreation and Historic Preservation (OPRHP)/State Historic Preservation Office (SHPO) must be received.

- **New York State Department of State (NYSDOS) Significant Coastal Fish & Wildlife Habitats (SCFWH)** [CC 156(b)(3)]: Deviations greater than 150 feet from the Approved Facility Route centerline may not result in the HVDC transmission system being located or relocated within any designated SCFWH without the following:
  - An analysis in the EM&CP demonstrating that there are no reasonable and feasible alternatives that would allow for burial to the target depth of cover of 6 feet;
  - Written consent from the NYSDEC; and
  - A written statement from the New York State Department of State (NYSDOS) stating that the deviation would not result in coastal effects that differ significantly from the coastal effects reviewed by NYSDOS in the Certificate Holders' original federal Coastal Consistency Certification or written concurrence from NYSDOS for changes requiring an amendment to the Certificate Holders' Coastal Consistency Certification.
- **Critical Infrastructure** [CC 156(b)(4)]: Deviations may not result in significant increase in adverse effects to critical infrastructure (CI) or other infrastructure.

The depth of lowering in the Hudson River is designed at seven (7) feet, except at all co-located infrastructure crossings where the cable is surface laid over the existing asset or where "geologic or topographic features prevent burial at such depth." This designed depth exceeds that required in CC 95(a) for the Hudson River and is based upon determinations made by the U.S. Army Corps of Engineers (USACE) during federal permitting. Within the federal Maintained Federal Navigation Channel in the Hudson River, and based upon USACE approvals, the installation must achieve a minimum 9-foot of separation between the cables and the bottom of the authorized federal navigational channel depth of -32 feet. Per CC 157, deviations from the target burial depth<sup>1</sup> and location of the HVDC transmission system are allowed for appropriate environmental or engineering reasons as part of EM&CP approval so long as an explanation of the proposed deviations with supporting documentation is provided in the EM&CP.

In the Hudson River, adjustments to the Approved Facility Route centerline, some of which fall outside of the approved ADZ, are necessary to achieve safe and effective installation of the submarine cable. This document describes the changes in the Hudson River route and offers the appropriate environmental or engineering reasons and/or further analysis required in CCs 156 and 157 to enable Commission approval of these excursions from the approved ADZ.

CHPE is presenting these deviations with appropriate engineering and environmental reasons (such as avoidance of impacts to identified sensitive resources, design/construction

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<sup>1</sup> This Segment includes some deviations from target burial depths within the Maintained Federal Navigation Channel, for which a Certificate Amendment has been sought by the Certificate Holders (see *Petition of CHPE LLC and CHPE Properties, Inc. For an Amendment to Certificate of Environmental Compatibility and Public Need* filed Feb. 9, 2024, DMM Item 1546)("Navigation Channel Amendment"). Discussion of those deviations are included in the Navigation Channel Amendment and, as such, are summarized in Section 3 of this memorandum, but not fully discussed herein.

constraints, avoidance of co-located infrastructure conflicts, and the like) provided herein below.



## **2 Deviations from Approved Facility Route >150 feet Proximate to Resources Specified in CC 156(b)**

This section describes deviations of over 150 feet from the centerline as currently approved by the Commission which may cause the HVDC transmission system to cross into Exclusion Zones (CC 156(b)(1)); SCFWH (CC 156(b)(3)), or within 160 feet of cultural resources identified by the Lake Champlain Maritime Museum (LCMM)(CC 156(b)(2)). No deviations over 150 feet from the centerline are proposed that would result in significant increase in adverse effects to CI or other infrastructure (CC 156(b)(4)).

The proposed departures from the Approved Facility Route centerline are justified by appropriate environmental and engineering reasons (as identified in more detail by location), and include maintaining a safe distance from Aids to Navigation (ATON), and minimizing burial within the Maintained Federal Navigation Channel (MFNC). These departures from the Approved Facility Route centerline do not create a conflict with the Certificate, and do not change the overall character or location of the Facility. For these reasons, approval of these changes is warranted under CC 156(b) and CC 157.

Table 1 below provides an overview of the route deviations for 29 locations within the Hudson River.

Section 2.1 provides the legend for all figures, and a figure and description of each of the proposed deviations within the Cementon-Stony Point Hudson Marine Segment. Section 2.2 provides the legend, and a figure and description of each of the proposed deviations within the Congers-Harlem Hudson Marine Segment.

Attachment A provides additional figures for deviations over 150 feet from the centerline where the proposed line will transverse a DEC exclusion zone (Section 1.1 of Attachment A) or a SCFHW zone (Section 1.2 of Attachment A).

Table 1: Route Deviations Overview

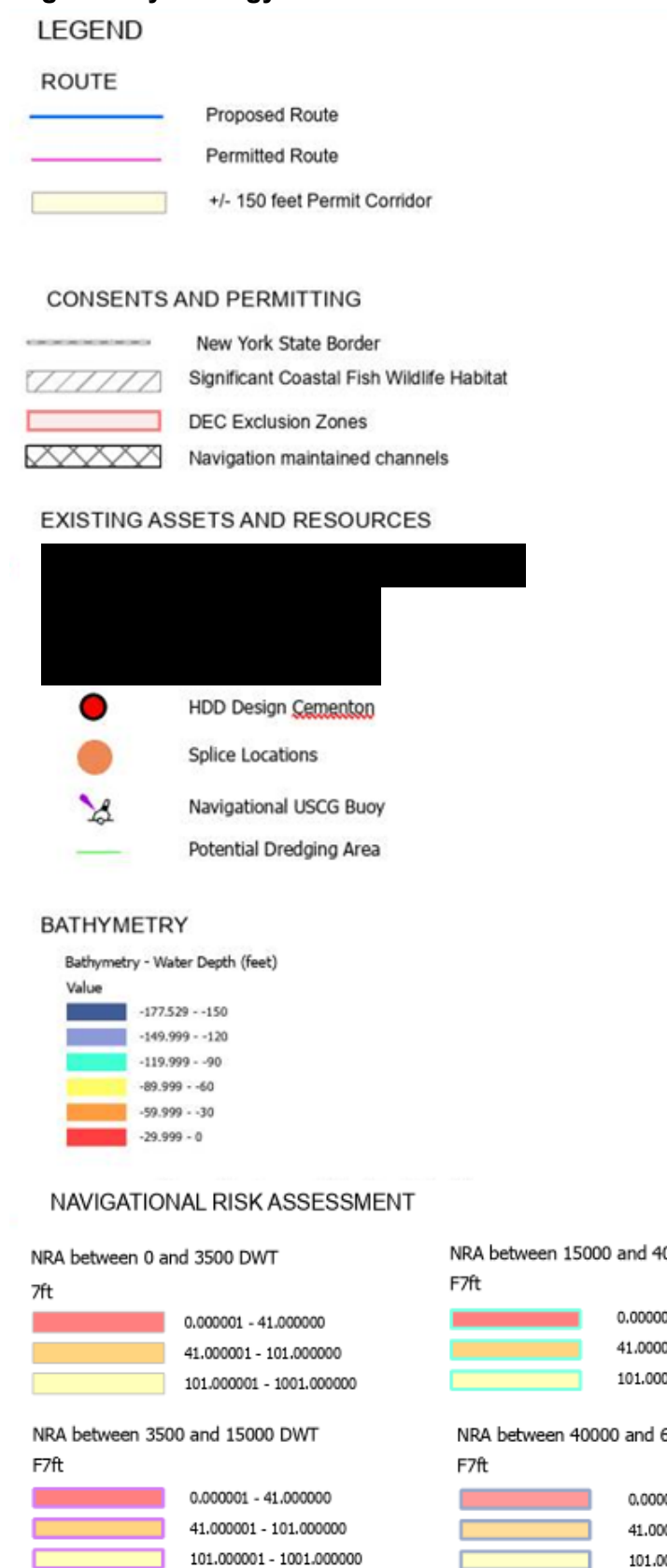
ID	Location	MP-start	MP-end	Nearest River Mile	Length (Miles)	Reason		Unlimited ADZ Applies (i.e., Water Depth >20 FT at MLW)	Limited ADZ Applies					Target Burial Depth Deviation <sup>1</sup>	Justification Required in EM&CP	Written Consent Required From			
						Engineering	Environmental		>150 FT from Approved Centerline	CC 156(b)(1) New Exclusion Zone Entry	CC 156(b)(2) <160 FT from Cultural Resource	CC 156(b)(3) Within SCFWH	CC 156(b)(4) Adverse CI Effects			NYSDEC	NYSHPO	NYSDOS	
UH #1	Smith Landing	1.23	1.52	106	0.29	•		Yes	Yes	No	[REDACTED]	No	No	No	Yes				
UH #2	Malden	3.64	3.69	104	0.05	•		Yes	Yes	No		No	No	No	No	Yes			
UH #3	Clermont	3.91	4.04	103	0.13	•		Yes	Yes	No		No	No	No	No	Yes			
UH #4	Saugerties	4.73	5.21	102	0.48	•		Yes	Yes	Yes		Located Within	No	No	No	Yes	(b)(1) (b)(3)		•
UH #5	Cruger Island	8.12	8.37	99	0.25	•		Yes	Yes	No		No	No	No	No	Yes			
UH #6	Bard College	8.45	9.12	98	0.67	•		Yes	Yes	No		No	No	No	No	Yes			
UH #7	Barrytown	10.15	11.17	96	1.02	•		Yes	Yes	No		No	No	No	No	Yes			
UH #8	Kingston	13.59	15.51	92	1.92	•		Yes	Yes	No		No	No	No	No	Yes			
UH #9	Port Ewen	17.21	17.56	91	0.35	•	•	Yes	Yes	No		Relocated Within	No	No	No	Yes	(b)(3)		•
UH#10	Big Rock Point/Esopus	18.56	18.85	89	0.29	•	•	Yes	Yes	Yes		Relocated Within	Eliminates	No	Yes	(b)(1) (b)(3)		•	
UH #11	Ulster Park	19.63	19.77	88	0.14	•	•	Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•	
UH #12	Norrie Point	23.03	23.26	84	0.23	•		Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•	
UH#13	FDR Historic Site	27.47	28.46	79	0.99	•		Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1)(b)(3)		•	
UH#14	Poughkeepsie	29.95	31.20	77	1.25	•	•	Yes	Yes	No		Relocated Within	Eliminates	No	Yes	(b)(3)		•	
UH #15	Hudson River Lighted Buoy 60	31.34	31.58	76	0.24	•		Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•	
UH #16	Hudson River Shoal Lighted Buoy B	33.83	34.31	74	0.48	•		Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•	
UH#17	New Hamburg / Castle Point	40.26	45.03	65	4.77	•	•	Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•	
UH#18-I	U.S. Military Academy West Point	54.22	54.56	53	0.34	•	•	Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•	
UH#18-II		54.71	54.87	53	0.16		•	Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•	
UH#19	West Point Anchorage	56.058	56.406	52	0.348	•	•	Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•	
UH#20	Hudson River Lighted Buoy 33	58.99	59.56	49	0.57	•	•	Yes	Yes	Yes	Relocated Within	No	No	Yes	(b)(1) (b)(3)		•		

ID	Location	MP-start	MP-end	Nearest River Mile	Length (Miles)	Reason		Unlimited ADZ Applies (i.e., Water Depth >20 FT at MLW)	Limited ADZ Applies					Target Burial Depth Deviation <sup>1</sup>	Justification Required in EM&CP	Written Consent Required From		
						Engineering	Environmental		>150 FT from Approved Centerline	CC 156(b)(1)	CC 156(b)(2)	CC 156(b)(3)	CC 156(b)(4)			NYSDEC	NYSHPO	NYSDOS
										New Exclusion Zone Entry	<160 FT from Cultural Resource	Within SCFWH	Adverse CI Effects					
UH #21	Fort Montgomery/Fort Montgomery	59.89	62.47	48	2.58	•	•	Yes	Yes	Yes	[REDACTED]	Relocated Within	No	No	Yes	(b)(1) (b)(3)	[REDACTED]	•
UH #22	Jones Point	63.85	63.95	44	0.10	•		Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•
		64.03	64.13	44	0.10	•		Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•
UH#23	Indian Point Nuclear Generating Station	64.68	65.70	43	1.02	•	•	Yes	Yes	Yes		Relocated Within	No	No	Yes	(b)(1) (b)(3)		•
LH #1	Congers/Nyack	0.60	7.15	28	6.55	•	•	Yes	Yes	No		No	No	No	Yes			
LH #2	Irvington	8.21	10.53	25	2.32	•	•	Yes	Yes	No		No	No	No	Yes			
LH #3	Greystone	13.73	15.74	21	2.01	•		Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•
LH #4	Yonkers	16.38	17.79	19	1.41	•	•	Yes	Yes	No		Relocated Within	No	No	Yes	(b)(3)		•
LH #5	Riverdale	19.15	21.36	16	2.21	•	•	Yes	Yes	No	Relocated Within	No	No	Yes	(b)(3)	•		

<sup>1</sup> Where the term “burial depth” is used, it is understood and taken to mean “depth of lowering”.

## 2.1 Cementon-Stony Point Hudson Marine Segment

### Legend / Symbology:



ID:	UH #1		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	1.23	1.52	0.29
Image: Smith Landing		River Mile: 106	
[REDACTED]			
Description:			
<p>The proposed route would be moved to the east of the 150' ADZ for approximately 0.29 mile to reduce the distance of the route within the Maintained Federal Navigation Channel. To the north of this deviation, the proposed route is within the Maintained Federal Navigation Channel to avoid [REDACTED] impacts to the west and navigational aids to the east. The remainder of the deviation is on the east side of the Maintained Federal Navigation Channel.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH. The deviation would increase the distance from [REDACTED]; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (reduction of burial in a Maintained Federal Navigation Channel).</p>			

Figure A UH #1 Smith Landing

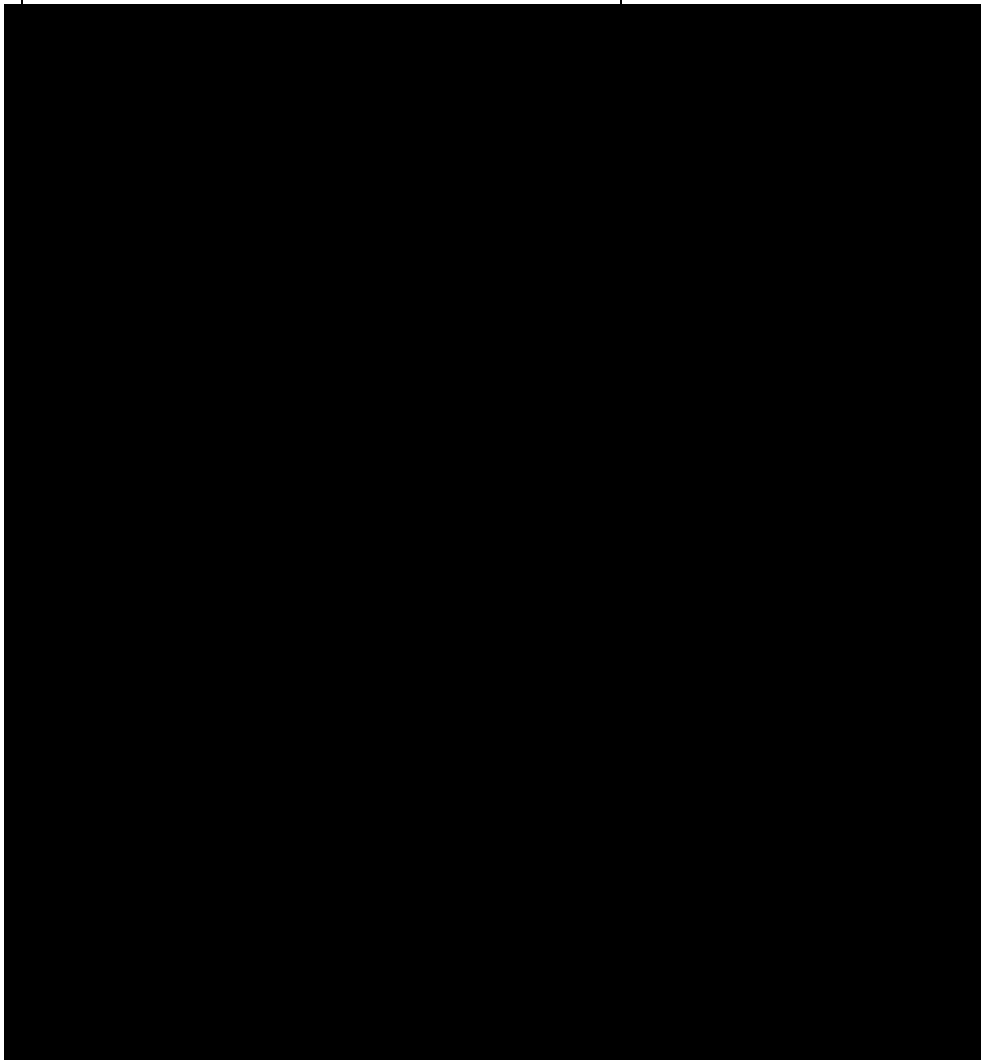
<b>ID:</b>	<b>UH #2</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	3.64	3.69	0.05
Image: Malden		River Mile: 104	
<p><b>Description:</b></p> <p>The proposed route would be moved to the east of the 150' ADZ for approximately 0.05 mile to avoid traversing within the Maintained Federal Navigation Channel.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (avoidance of burial in a Maintained Federal Navigation Channel).</p>			

Figure B UH #2 Malden

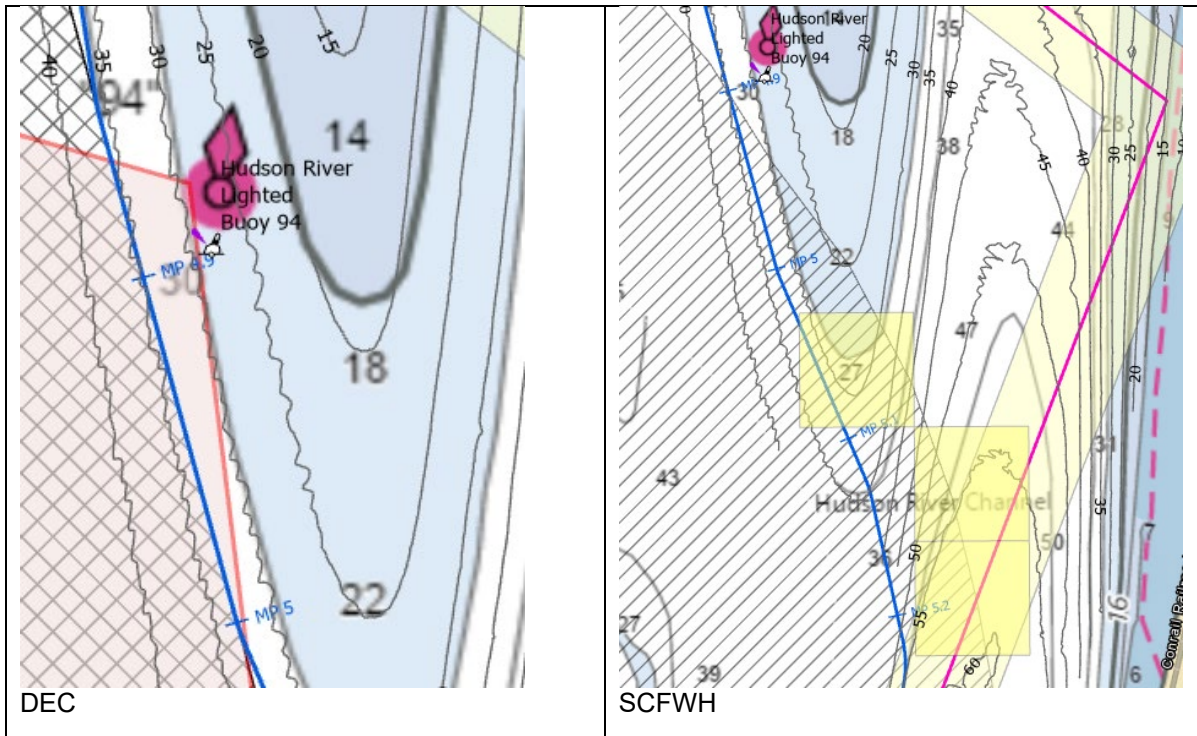
<b>ID:</b>	<b>UH #3</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	3.91	4.04	0.13
Image: Clermont		River Mile: 103	
<p><b>Description:</b></p> <p>The proposed route would be moved to the east of the 150' ADZ for approximately 0.13 mile to avoid traversing the Maintained Federal Navigation Channel.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (avoidance of burial in a Maintained Federal Navigation Channel).</p>			

Figure C UH #3 Clermont

<b>ID:</b>	<b>UH #4</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	4.73	5.21	0.48
Image: Saugerties		River Mile: 102	







Description:

The proposed route would be moved to deeper waters west of the 150' ADZ, avoiding the shallow waters (< 15 feet) and steep slopes along the eastern bank of the Hudson River, where installation of the cable would be technically infeasible.

The permitted route is within the SCFWH; the proposed route would remain within the SCFWH but the length of the route through the SCFWH would be shorter. The permitted route is within a DEC Exclusion Zone; the proposed route would remain within the DEC Exclusion Zone but the length of the route through the DEC Exclusion Zone would be shorter.

This deviation is justified by engineering reasons (avoidance of shallow waters and steep slopes). In addition, the proposed route would provide the minimum safety distance requested by the USCG from Aids to Navigation (ATON)(Buoy 94) and would be outside of the Maintained Federal Navigation Channel.

The proposed route is also minimizing the crossing length through NRA boxes.

Figure D UH #4 Saugerties

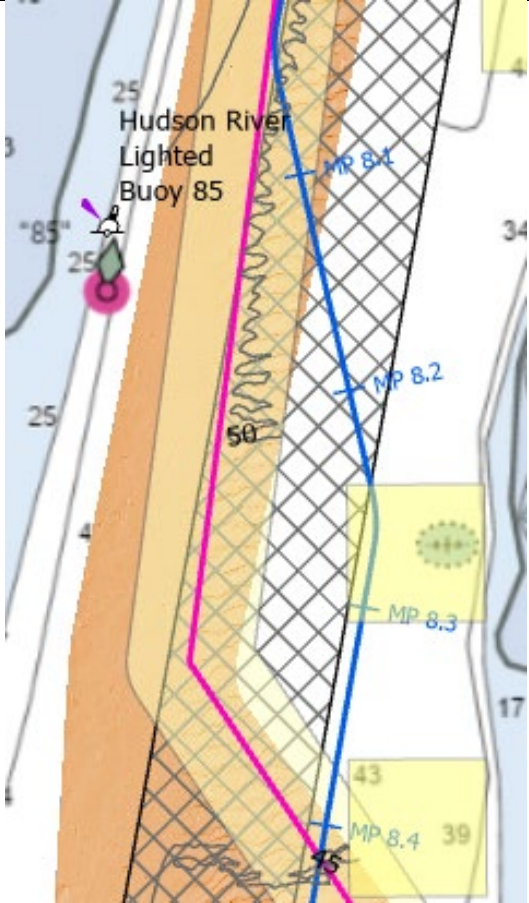
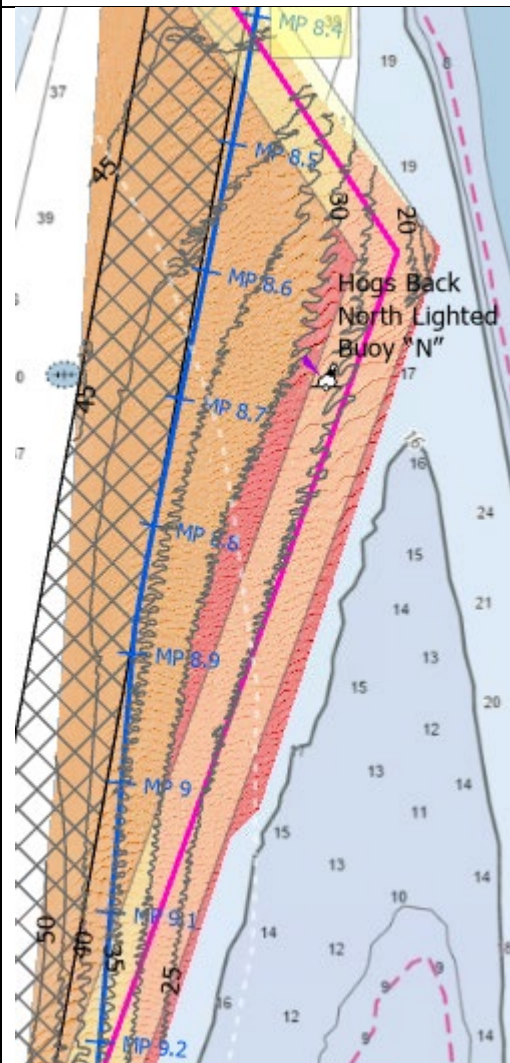
<b>ID:</b>	<b>UH #5</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	8.12	8.37	0.25
Image: Cruger Island		River Mile: 99	
			
Description:			
<p>The proposed route would be moved to the east of the 150' ADZ for approximately 0.25 mile to provide the minimum safety distance requested by the USCG for ATON (Buoy 85), and to reduce the distance within the Maintained Federal Navigation Channel. Similar to the permitted route, the proposed route would need to cross the maintained Federal Navigation Channel in order to parallel it on the east side.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (minimizing distance of burial in a Maintained Federal Navigation Channel and maintaining a minimum safety distance of ATON).</p>			

Figure E UH #5 Cruger Island

<b>ID:</b>	<b>UH #6</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	8.45	9.12	0.67
Image: Bard College		River Mile: 98	



**Description:**

The proposed route would be moved to the west of the 150' ADZ for approximately 0.67 miles to provide the minimum safety distance requested by the USCG for ATON (Buoy N), paralleling the east side of the Maintained Federal Navigation Channel.

In addition, routing west of the permitted route would avoid shallow areas north of Buoy N, where the presence of a sandwaves sedimentary structure would reduce the cable burial confidence, potentially requiring the need to install concrete mattresses.

The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.

This deviation is justified by engineering reasons (maintaining a minimum safety distance of USCG Buoy N, and avoidance of a sand waves sedimentary structure).

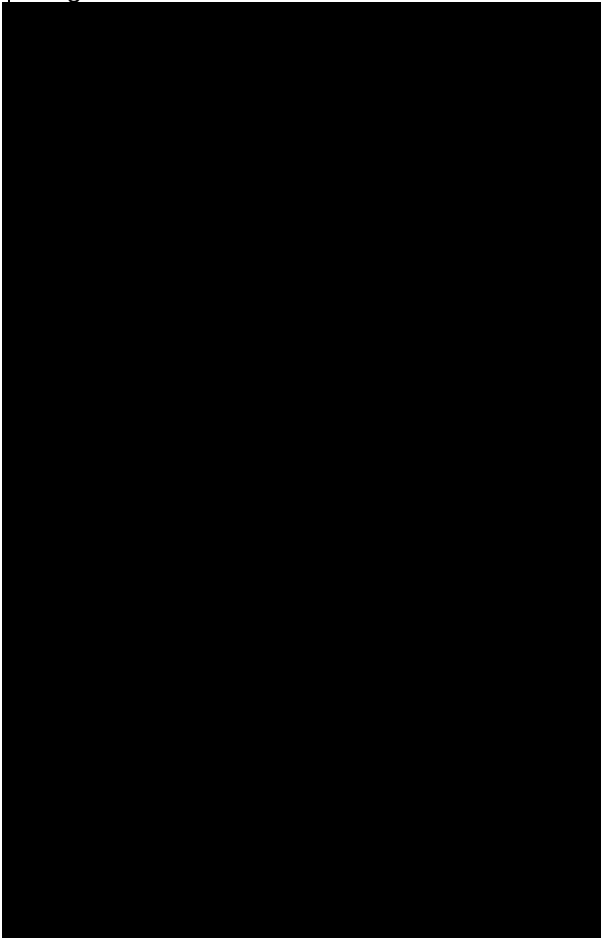
**Figure F UH #6 Bard College**

ID:	UH #7		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	10.15	11.17	1.02
Image: Barrytown		River Mile: 96 - 97	
[REDACTED]			
Description:			
<p>The proposed route would be moved to deeper waters to the west of the 150' ADZ, avoiding shallow waters, where installation of the cable would be technically infeasible. The permitted route is located in shallow water which creates unsafe navigation during installation of the cable.</p> <p>The deviation would also provide the minimum safety distance requested by the USCG for ATON (Buoy 82), but would traverse within the Maintained Federal Navigation Channel.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (avoidance of shallow waters). In addition, the proposed route would provide the minimum safety distance requested by the USCG for ATON.</p>			

Figure G UH #7 Barrytown

<b>ID:</b>	<b>UH #8</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	13.59	15.51	1.92
Image: Kingston		River Mile: 92 - 93	
[REDACTED]			
Description:			
<p>The proposed route would be moved to deeper waters to the west of the 150' ADZ, avoiding shallow waters, where installation of the cable would be technically infeasible. The permitted route is located in shallow water which creates unsafe navigation during installation of the cable.</p> <p>The deviation would also provide the minimum safety distance requested by the USCG for ATONs (Buoy 76, Buoy 78), but would traverse within the Maintained Federal Navigation Channel.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (avoidance of shallow waters). In addition, the proposed route would provide the minimum safety distance requested by the USCG for ATON.</p>			

Figure H UH #8 Kingston

<b>ID:</b>	<b>UH #9</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	17.21	17.56	0.35
Image: Port Ewen		River Mile: 91	
			



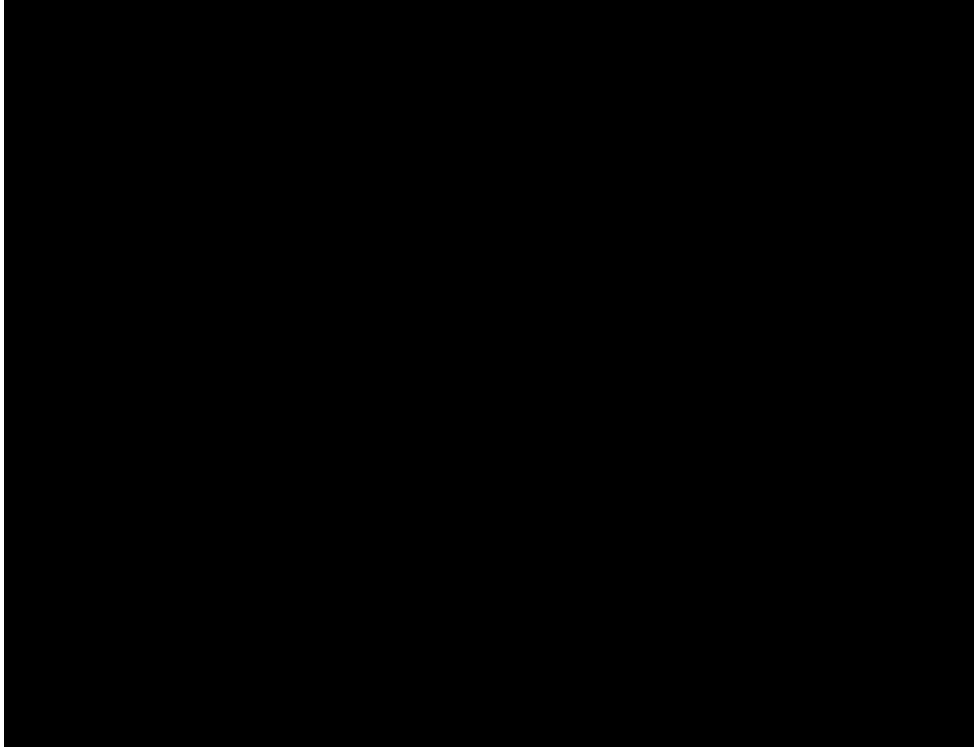
Description:

The proposed route would be moved to the east of the 150' ADZ to avoid [REDACTED] and to provide for deeper water depths for the installation (greater than 20 ft.).

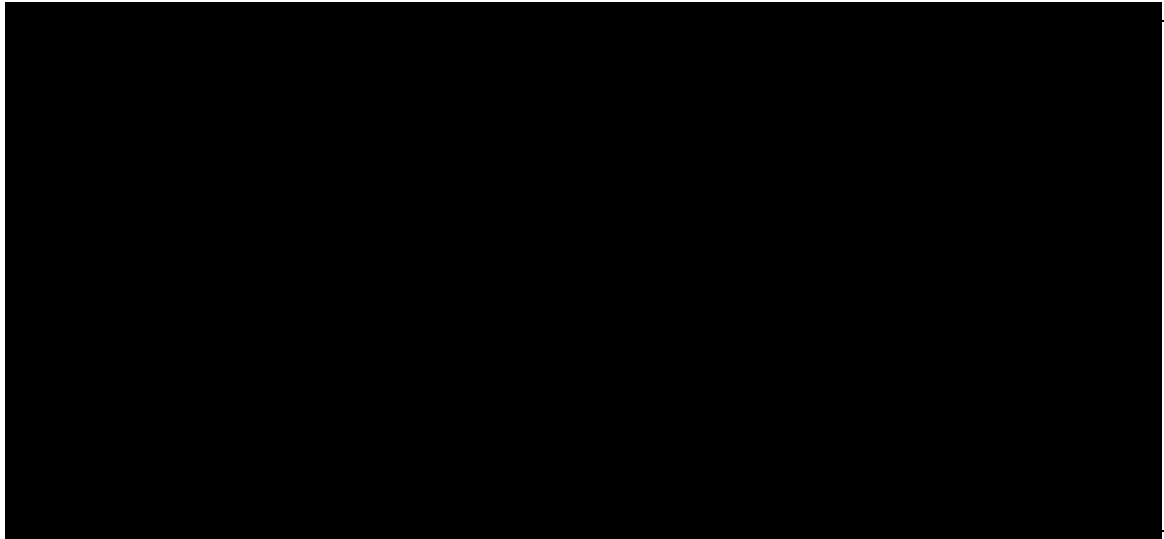
Adherence to the permitted route would result in installation within multiple [REDACTED], which CHPE has sought to avoid to the extent practical. Advanced surveys have also confirmed that the route as permitted would be in shallow waters less than 20 ft. Installation at these depths would be technically infeasible. The permitted route is within the Kingston-Poughkeepsie Deepwater SCFWH. The proposed route would remain with the Kingston-Poughkeepsie Deepwater SCFWH but the length of the route through the SCFWH would be shorter.

This deviation is justified by engineering reasons (avoidance of shallow water installation) and environmental reasons (avoidance of [REDACTED] impacts; reduced impacts to SCFWH).

Figure I UH #9 Port Ewen

<b>ID:</b>	<b>UH #10</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	18.56	18.85	0.29
Image: Big Rock Point / Esopus		River Mile: 89	
			





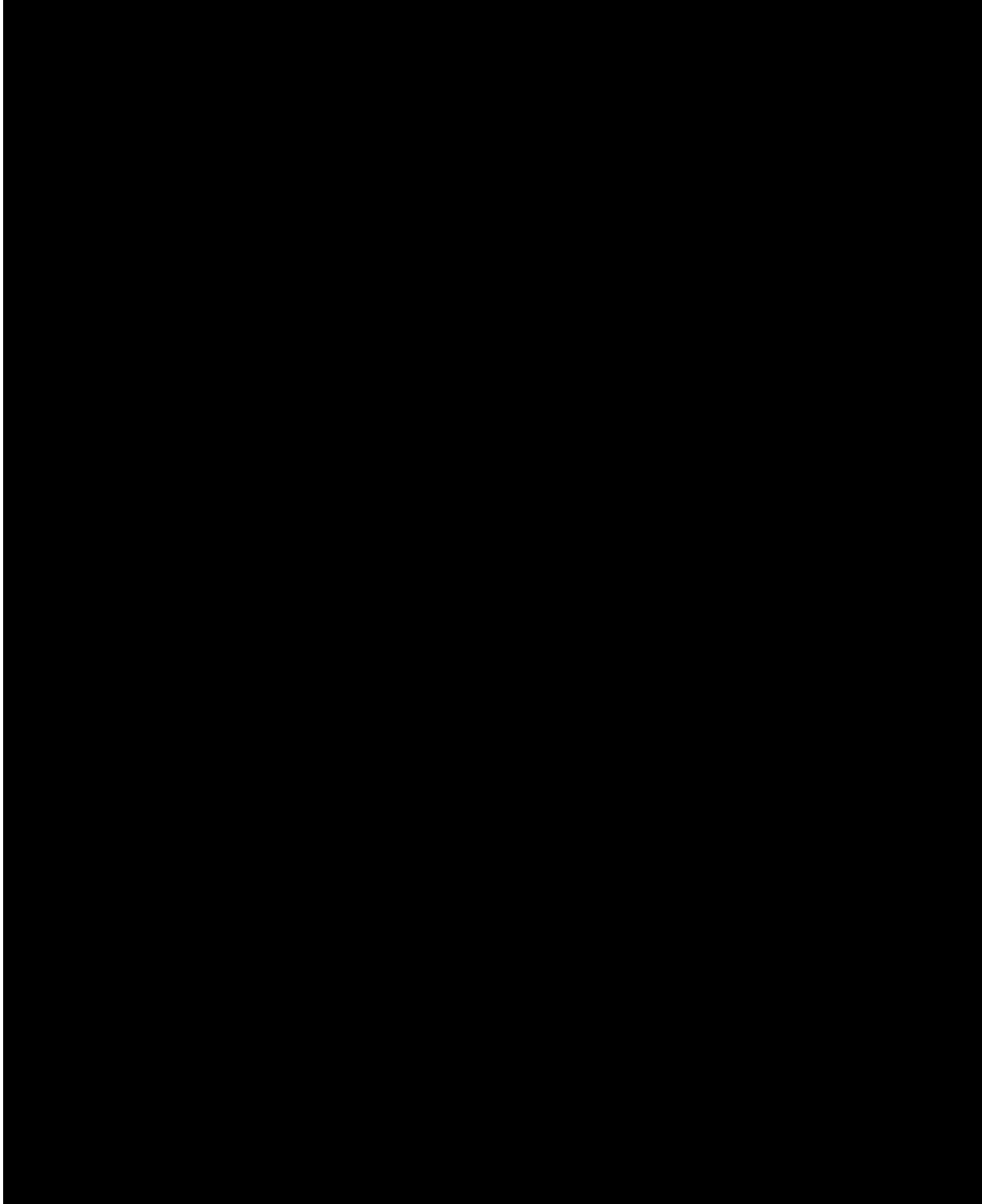
The proposed route would be moved to the east of the 150' ADZ to avoid crossing the [REDACTED]

Adherence to the original route would result in installation of the cable over the [REDACTED], which reportedly would be complicated. Members of the [REDACTED] organization have requested that the cable system not cross [REDACTED] due to concerns about potential adverse impacts to [REDACTED]

The permitted route is within the SCFWH; the proposed route would remain within the SCFWH. The proposed route would enter the DEC Exclusion Zone to avoid the [REDACTED]. This deviation is justified by engineering reasons (avoidance of [REDACTED]) and environmental reasons (potential [REDACTED]).

**Figure J UH #10 Big Rock Point / Esopus**

<b>ID:</b>	<b>UH #11</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	19.63	19.77	0.14
Image: Ulster Park		River Mile: 88	



Description:

The proposed route would be moved to deeper waters to the east of the 150' ADZ, avoiding shallow waters, where installation of the cable would be technically infeasible. A portion of the permitted route in this segment is located in shallow water which creates unsafe navigation during installation of the cable. The proposed route would then be moved west of the 150' ADZ to avoid [REDACTED] impacts.

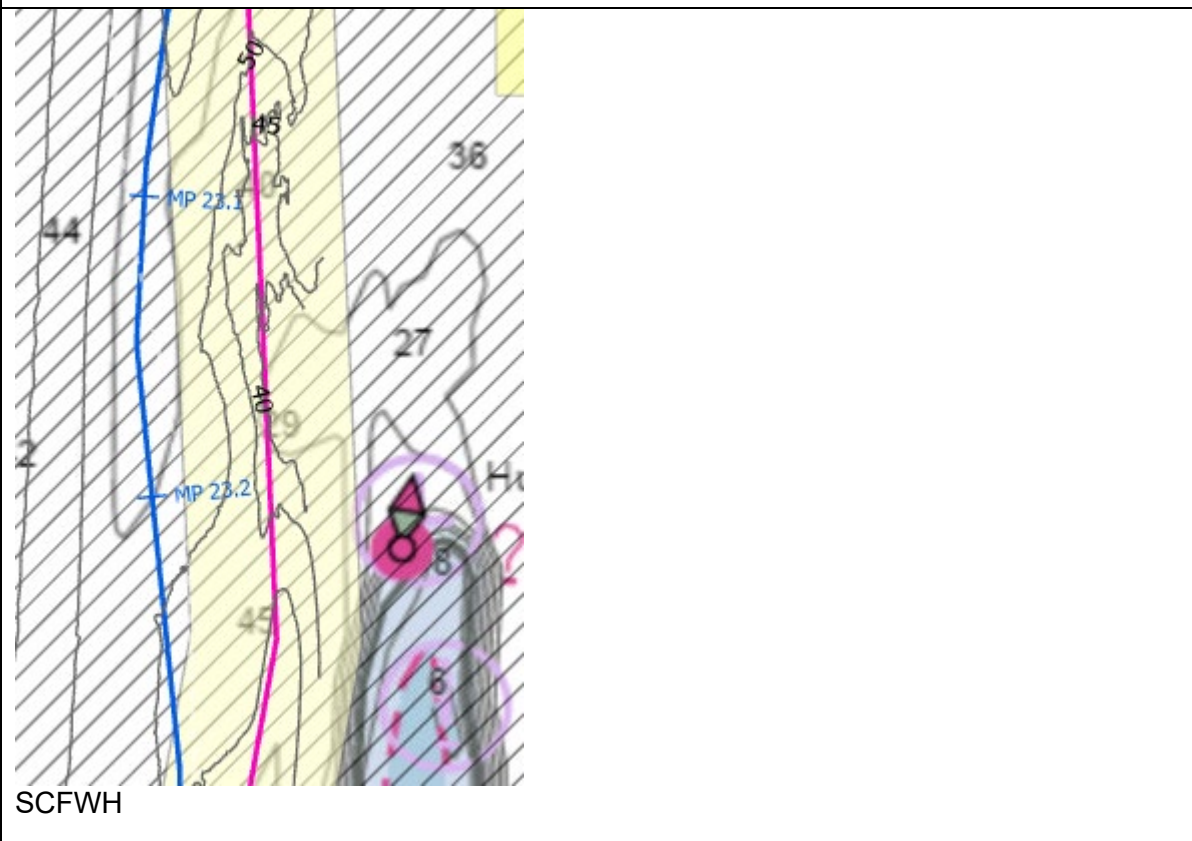
The deviation would also provide the minimum safety distance requested by the USCG for ATON (Buoy 67).

The permitted route is within the SCFWH; the proposed route would remain within the SCFWH. The proposed route would enter the DEC Exclusion Zone. The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.

This deviation is justified by engineering reasons (avoidance of shallow waters) and environmental reasons (avoidance of [REDACTED]). In addition, the proposed route would provide the minimum safety distance requested by the USCG for ATON.

Figure K UH #11 Ulster Park

<b>ID:</b>	<b>UH #12</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	23.03	23.26	0.23
Image: Norrie Point		River Mile: 84	



Description:

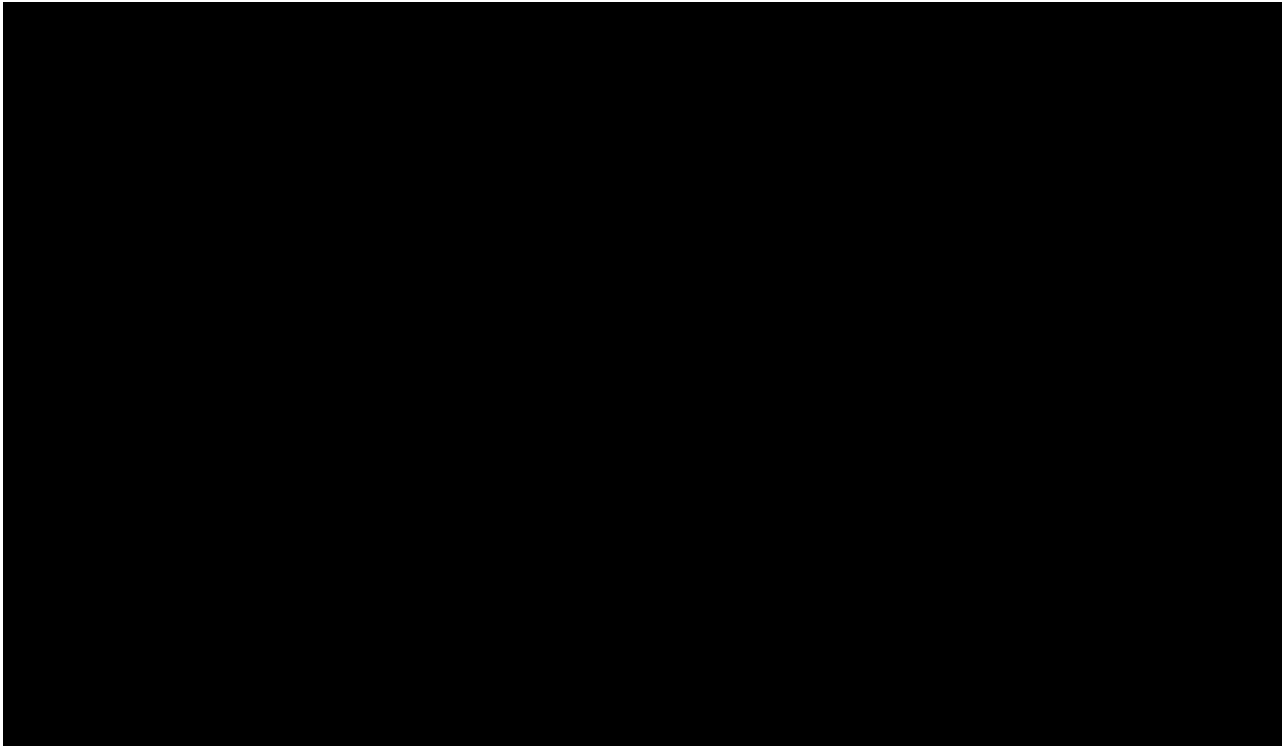
The proposed route would be moved to the west of the 150' ADZ, to avoid rock outcrops. Installation of the cable on rock outcrops is technically infeasible. The cable cannot be buried and installation of a concrete mattress on the cable would induce high risk for cable integrity.

The permitted route is within the SCFWH; the proposed route would remain within the SCFWH. The deviation would not cross into Exclusion Zones; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.

This deviation is justified by engineering reasons (avoidance of rock outcrops and damage to the cable).

**Figure L UH #12 Norrie Point**

<b>ID:</b>	<b>UH #13</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	27.47	28.46	0.99
Image: FDR Historic Site		River Mile: 79 - 80	
[REDACTED]			



Description:

The proposed route would be moved to the west of the 150' ADZ to avoid steep slopes and to provide for deeper water depths for the installation (greater than 20 ft.).

Installation of the cable on extreme riverbed slopes could affect the integrity of the cable, and the stability of the cable's position, as the cable could be subject to sliding and lateral movement. It would also be in proximity to land, which will complicate the installation process and potentially not allow for the burial operation. The outer edge of a NYSDEC exclusion zone would be traversed, but this cannot be avoided because the NYSDEC exclusion zone extends over the entire deepwater river width. The permitted route is within the SCFWH; the proposed route would remain within the SCFWH.

The proposed route would be within [REDACTED] [REDACTED] in two locations, but would avoid impacting [REDACTED].

This deviation is justified by engineering reasons (avoidance of extreme riverbed slopes and need to stay further from land for submarine installation).

Figure M UH #13 FDR Historic Site

<b>ID:</b>	<b>UH #14</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	29.95	31.20	1.25
Image: Poughkeepsie		River Mile: 77	
[REDACTED]			
Description:			
<p>The proposed route would be moved to the west of the 150' ADZ to avoid crossing the [REDACTED].</p> <p>Adherence to the permitted route would result in installation of the cable over the [REDACTED] which reportedly would be complicated. Members of the [REDACTED] organization have requested that the cable system not cross [REDACTED] due to concerns about potential adverse impacts to [REDACTED].</p> <p>Relocation of the permitted route would also extend the distance of the route from [REDACTED], and areas of navigational risk (e.g., areas of potentially higher risks for anchor strikes within the 100 to 1,000 year range as identified in the Navigation Risk Assessment). The permitted route is within the Kingston-Poughkeepsie Deepwater SCFWH. The proposed route would remain with the SCFWH but the length of the route through the SCFWH would be slightly reduced.</p> <p>This deviation is justified by engineering reasons (avoidance of installation over [REDACTED] and environmental reasons (potential [REDACTED]; reduction in navigational risk; avoidance of [REDACTED] impacts).</p>			

Figure N UH#14 Poughkeepsie



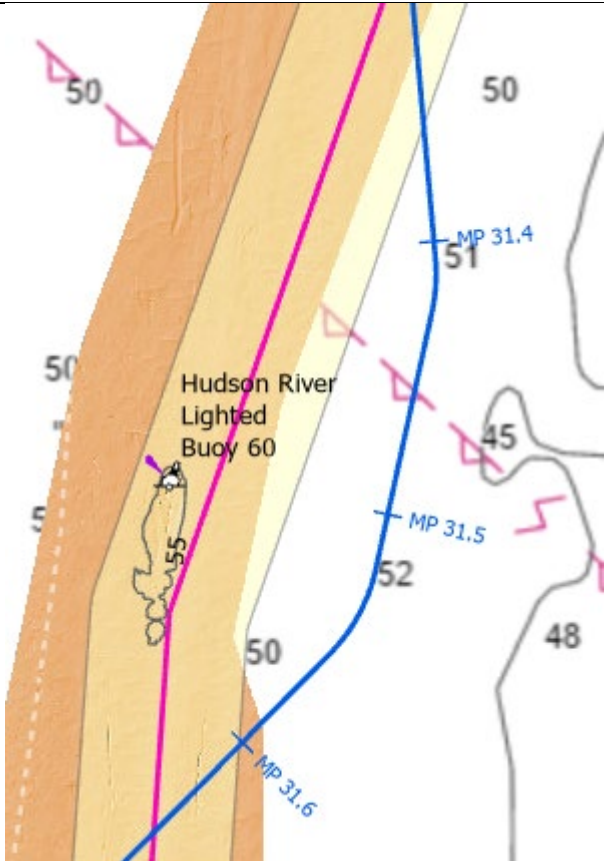
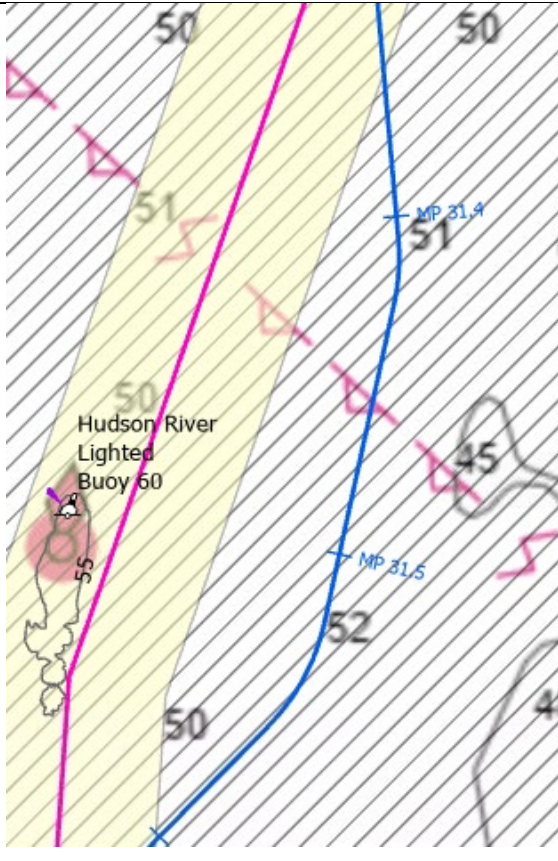
<b>ID:</b>	<b>UH #15</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	31.34	31.58	0.24
Image: Hudson River Lighted Buoy 60		River Mile: 76	
			
Description:			
<p>The proposed route would be moved to the east of the 150' ADZ for approximately 0.24 mile to provide the minimum safety distance requested by the USCG for ATON (Buoy 60).</p> <p>The permitted route is within the SCFWH; the proposed route would remain within the SCFWH. The deviation would not cross into Exclusion Zones; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p> <p>This deviation is justified by engineering reasons (maintaining a minimum safety distance of ATON).</p>			

Figure O UH #15 Hudson River Lighted Buoy 60

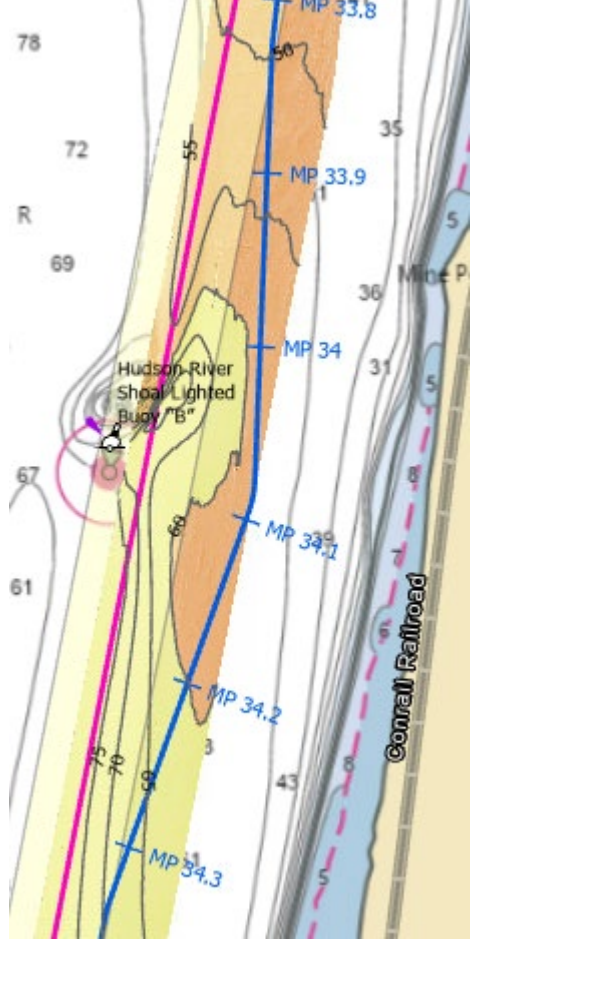
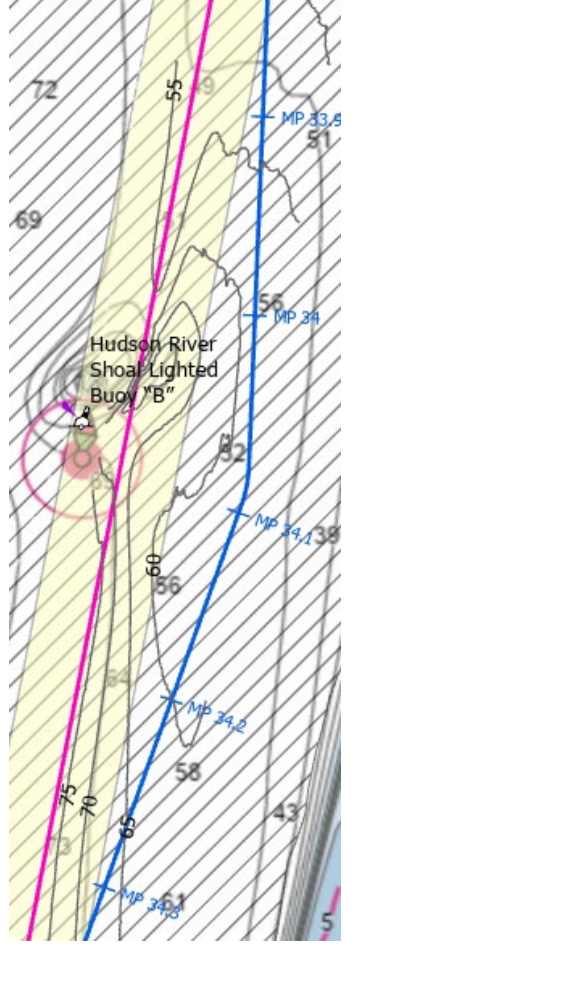
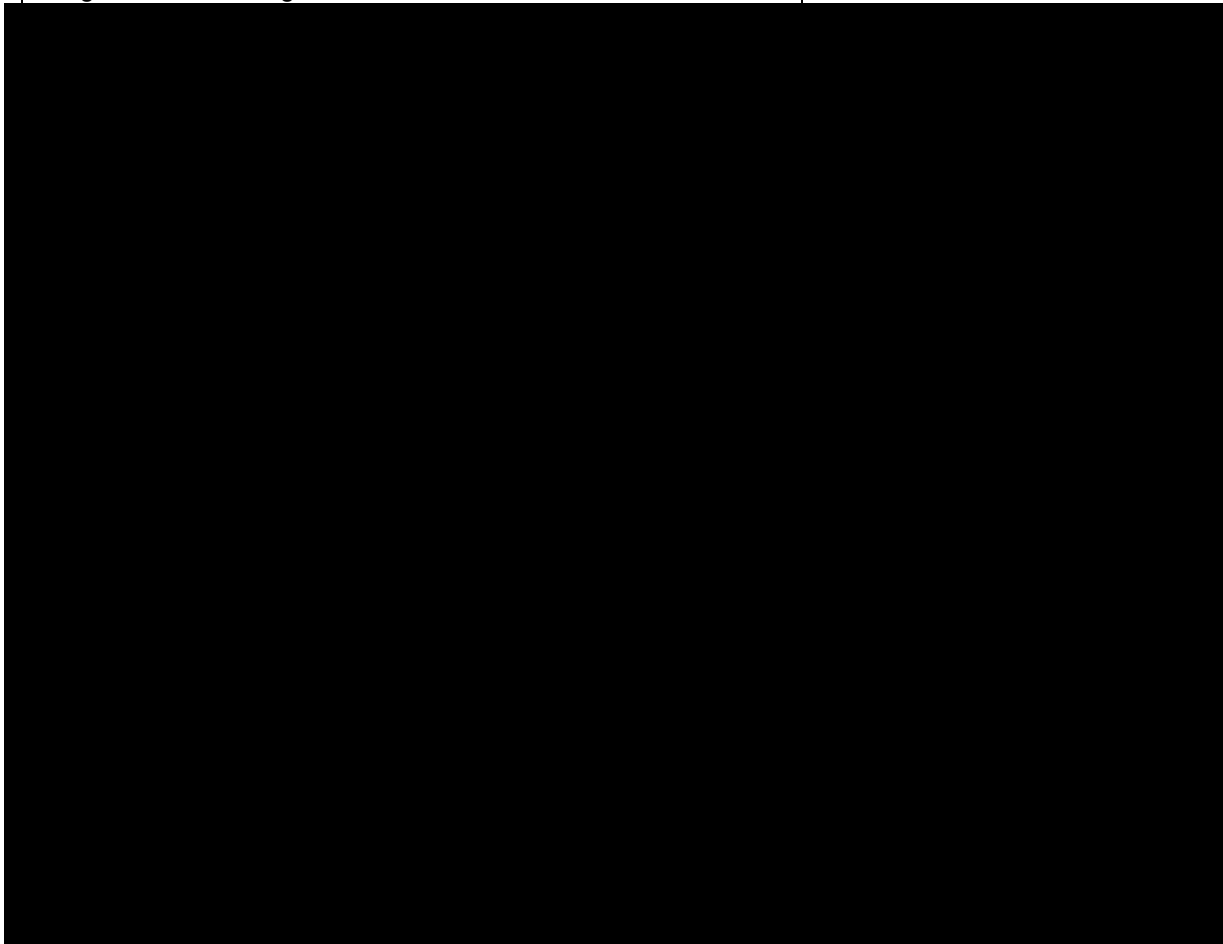
ID:	UH #16		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	33.83	34.31	0.48
Image: Hudson River Shoal Lighted Buoy B		River Mile: 74	
			
Description:			
<p>The proposed route would be moved to deeper waters to the east of the 150' ADZ, avoiding shallow waters. The permitted route is located along a shoal, where installation of the cable would be technically infeasible.</p>			
<p>The deviation would also provide the minimum safety distance requested by the USCG for ATON (Lighted Buoy B).</p>			
<p>The permitted route is within the SCFWH; the proposed route would remain within the SCFWH. The deviation would not cross into Exclusion Zones; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure.</p>			
<p>This deviation is justified by engineering reasons (avoidance of shallow waters). In addition, the proposed route would provide the minimum safety distance requested by the USCG for ATON.</p>			

Figure P UH #16 Hudson River Shoal Lighted Buoy B

<b>ID:</b>	<b>UH #17</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	40.26	45.03	4.77
Image: New Hamburg / Castle Point		River Mile: 63 - 67	



Description:

The proposed route would be moved to the west of the 150' ADZ to avoid steep slopes and rock outcrops as well as [REDACTED].

To avoid steep slopes and rock outcrops near MP 40.3, the proposed route will need to cross the river to the west of the permitted route. This deviation increases the installability of the system by avoiding steep slopes and rock outcrops and also reduces the need for remedial matting.


Adherence to the permitted route would have caused incursion into multiple [REDACTED] target locations. The proposed route would extend along the west side of the river for a relatively long length to avoid crossing the NYSDEC exclusion zone. Also, the length of the cable within the Kingston-Poughkeepsie Deepwater SCFWH has been reduced significantly.

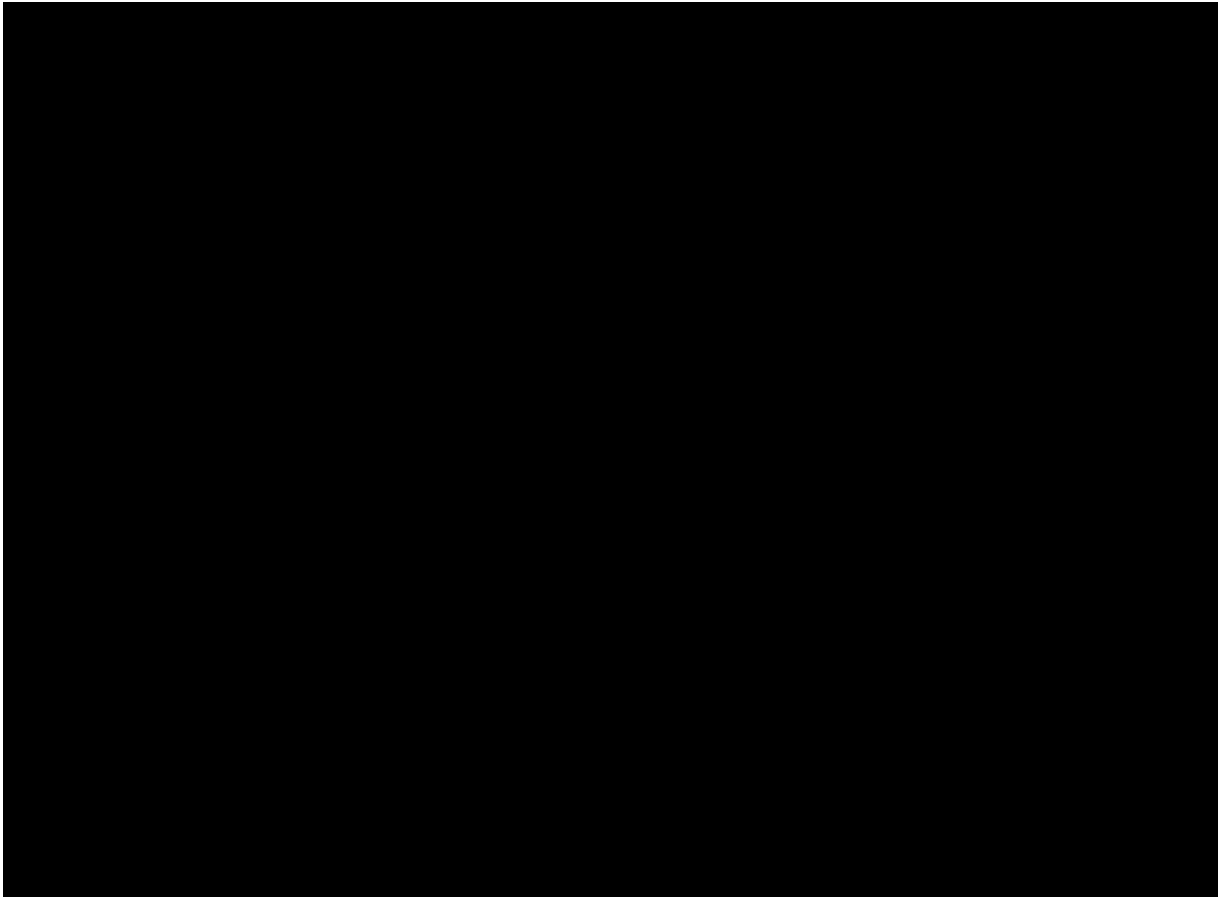
This deviation is justified by engineering reasons (avoidance of steep slopes and outcrops) and environmental reasons (avoidance of [REDACTED] impacts; decrease in impacts to SCFWH).

Rock outcrops and steep slopes near New Hamburg force the route divert to the West side of the river.

Due to the DEC Zone, which should preferably not be crossed the route remains separated from the corridor for about 5 miles.

Figure Q UH #17 New Hamburg / Castle Point

<b>ID:</b>	<b>UH #18-I</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	54.22	54.56	0.34
Image: U.S. Military Academy West Point		River Mile: 53	
			



Description:

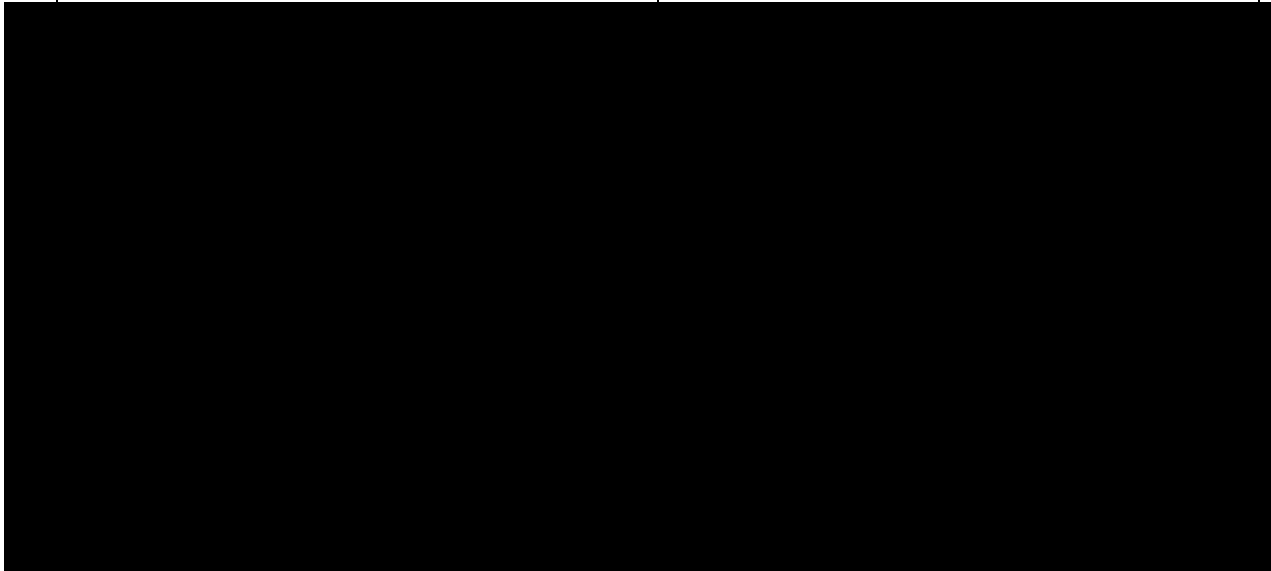
The proposed route would be moved to the west of the 150' ADZ to avoid [REDACTED].

The proposed route would be moved outside of the [REDACTED] avoidance area, which is located within the ADZ of the permitted route corridor. Avoidance of the site requires an incursion into the NYSDEC exclusion zone. The permitted route is within the SCFWH; the proposed route would remain within the SCFWH.

This deviation is justified by environmental reasons (avoidance of [REDACTED] impacts).

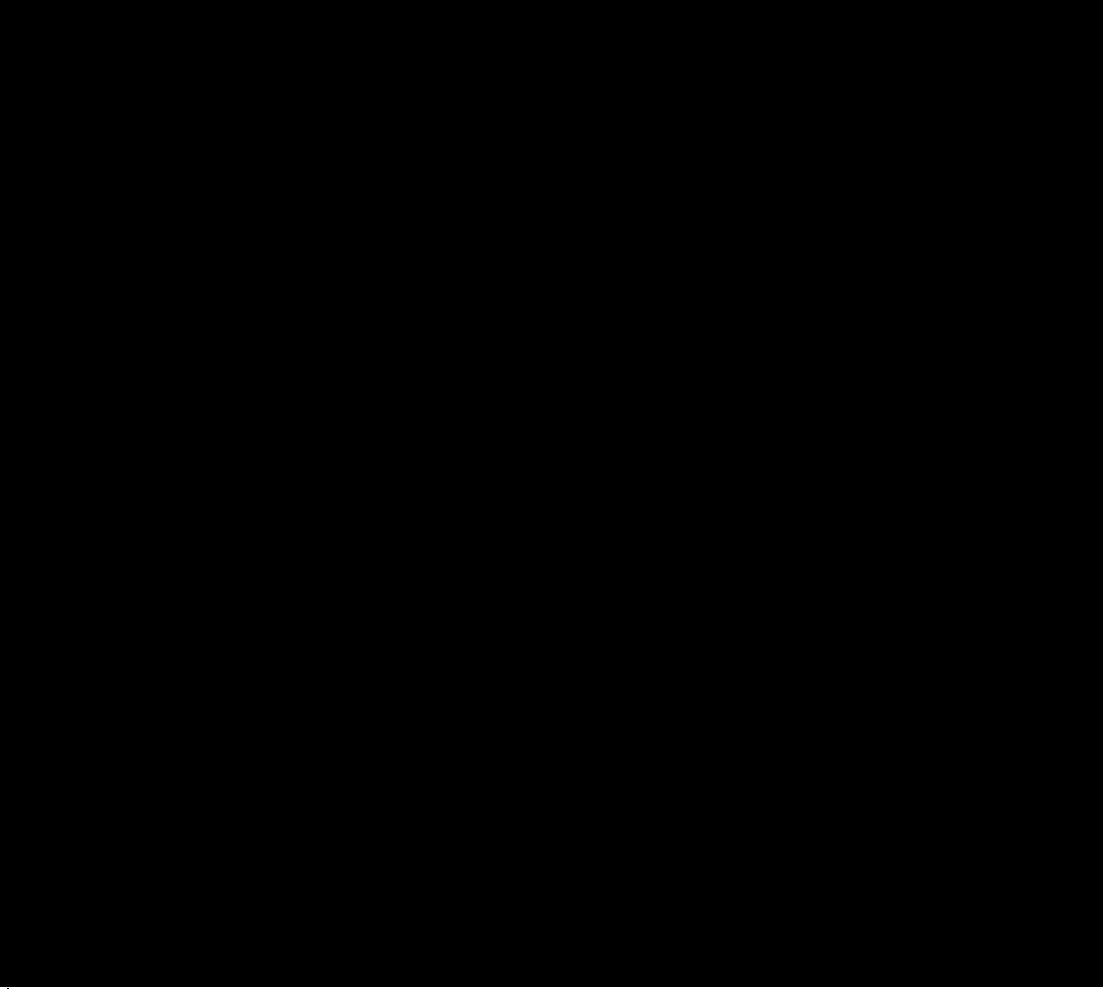
Figure R UH #18-I U.S. Military Academy West Point

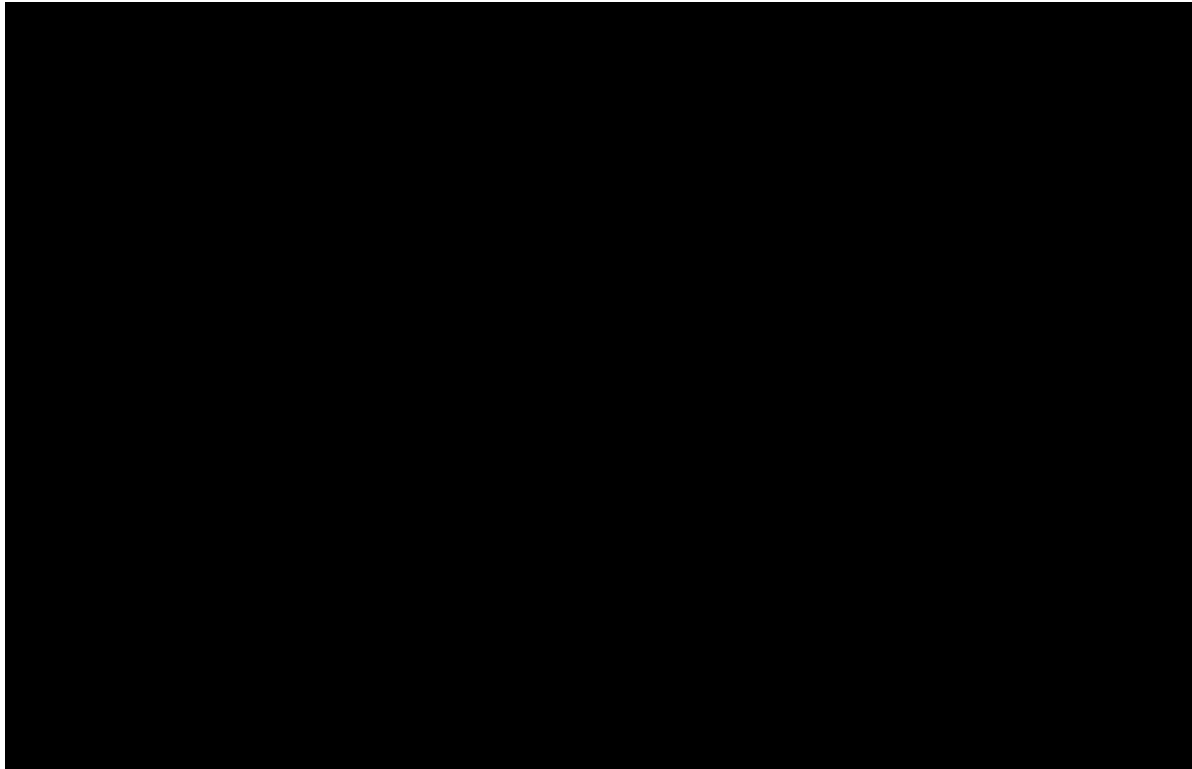
<b>ID:</b>	<b>UH #18-II</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	54.71	54.87	0.16
Image: U.S. Military Academy West Point		River Mile: 53	



Description:
<p>The proposed route would be moved to the west of the 150' ADZ to avoid [REDACTED].</p> <p>The proposed route would be moved outside of the [REDACTED] avoidance area, which is located within the ADZ of the permitted route corridor. The permitted route is within the SCFWH; the proposed route would remain within the SCFWH.</p> <p>This deviation is justified by environmental reasons (avoidance of [REDACTED] impacts).</p>

**Figure S UH #18-II U.S. Military Academy West Point**

<b>ID:</b>	<b>UH #19</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	56.05	56.39	0.34
Image: West Point Anchorage		River Mile: 52	
			



Description:

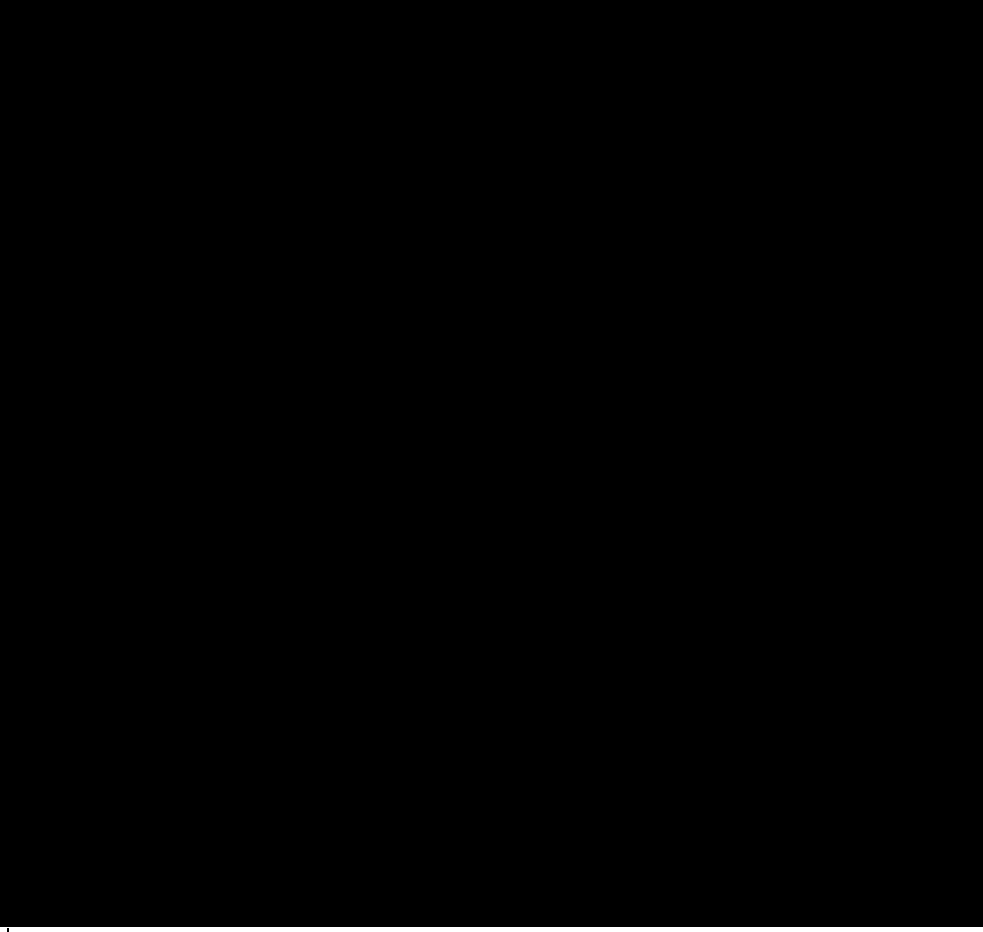
The proposed route would be moved to the west of the 150' ADZ to avoid navigation risk.

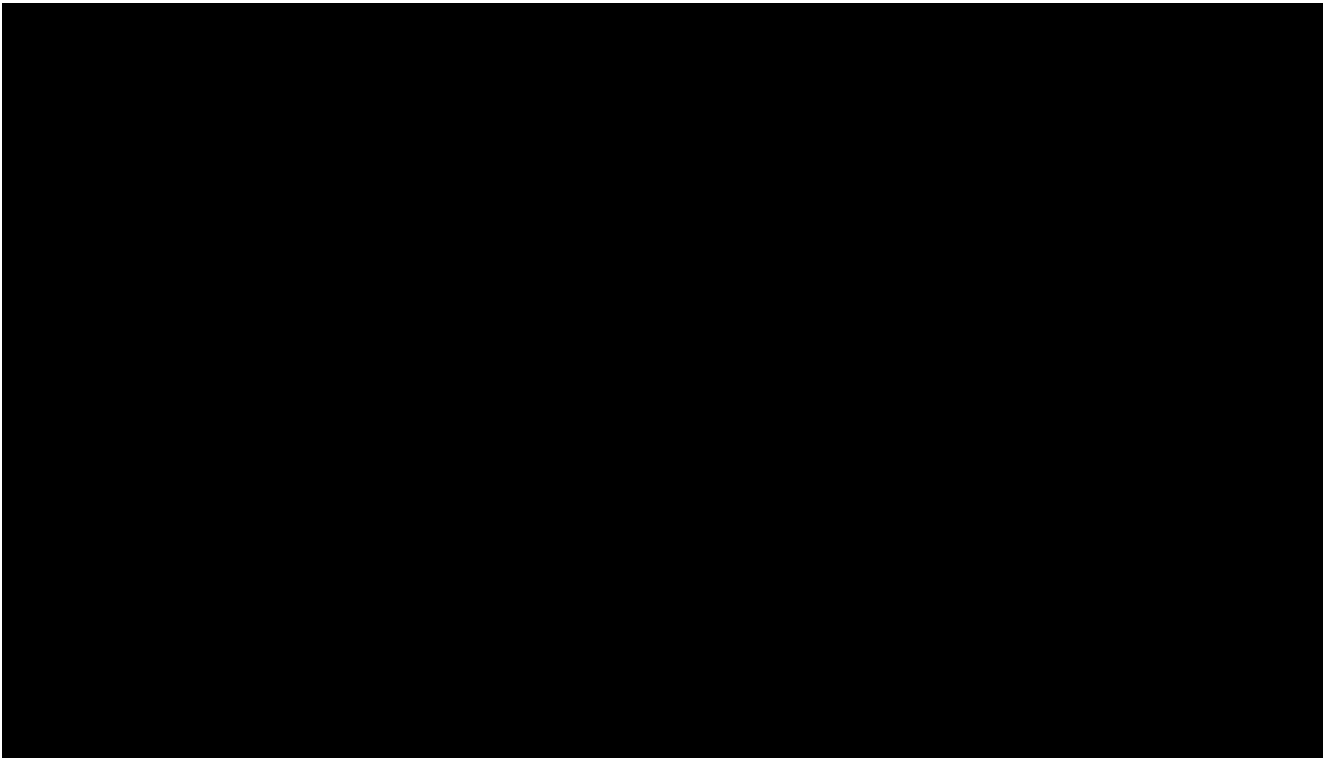
The Navigation Risk Assessment identified certain areas as high risk where the likely occurrence of an anchor strike would be once every 0-41 years. The proposed deviation would avoid two identified high risk areas (shown in red) where there is an enhanced probability of an anchor strike. Avoidance of these areas requires an incursion into the NYSDEC exclusion zone. The permitted route is within the SCFWH; the proposed route would remain within the SCFWH.

This deviation is justified by environmental reasons (reduction in navigational risk).

**Figure T UH #19 West Point Anchorage**



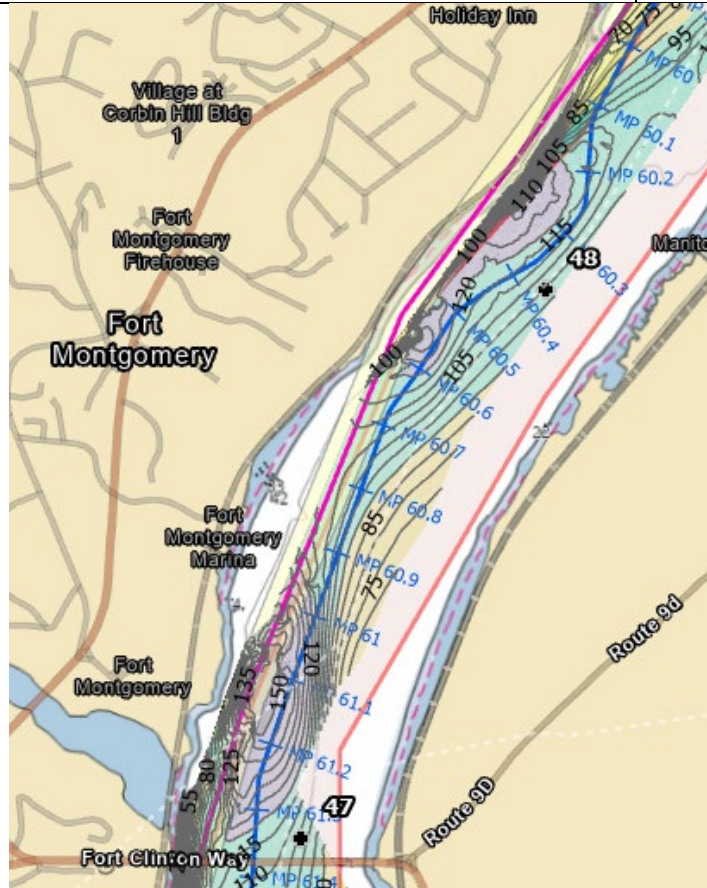
<b>ID:</b>	<b>UH #20</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	58.99	59.56	0.57
Image: Hudson River Lighted Buoy 33		River Mile: 49	
			

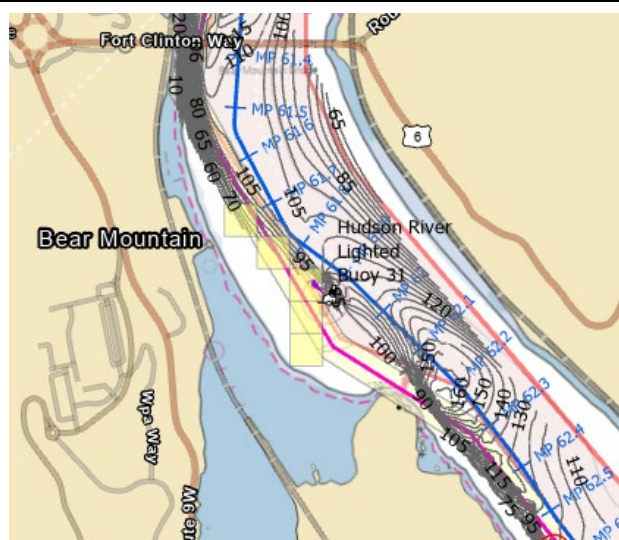
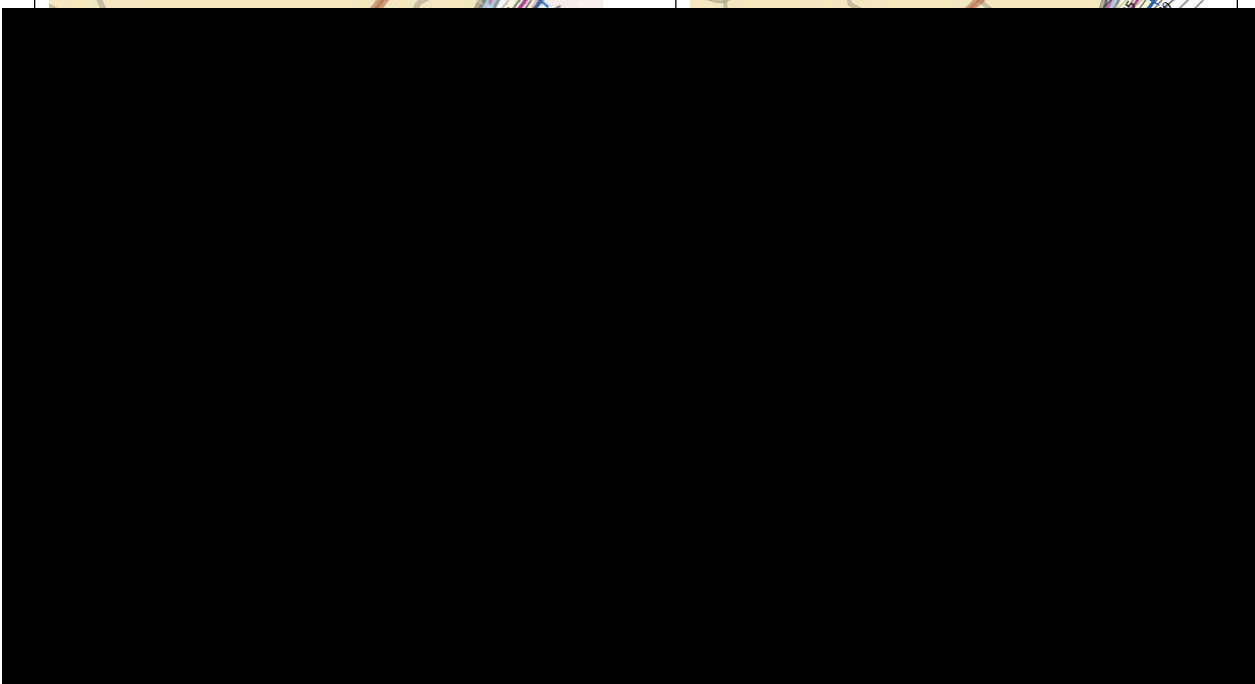


Description:
<p>The proposed route would be moved to deeper waters to the east of the 150' ADZ, avoiding shallow waters. The permitted route is located along a shoal, where installation of the cable would be technically infeasible.</p>
<p>The deviation would also provide the minimum safety distance requested by the USCG for ATON (Lighted Buoy 33).</p>
<p>The deviation would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure. The proposed route would remain within the SCFWH and DEC Exclusion Zone but the length of the route through the SCFWH and DEC Exclusion Zone would be slightly reduced.</p>
<p>This deviation is justified by engineering reasons (avoidance of shallow waters). In addition, the proposed route would provide the minimum safety distance requested by the USCG for ATON.</p>

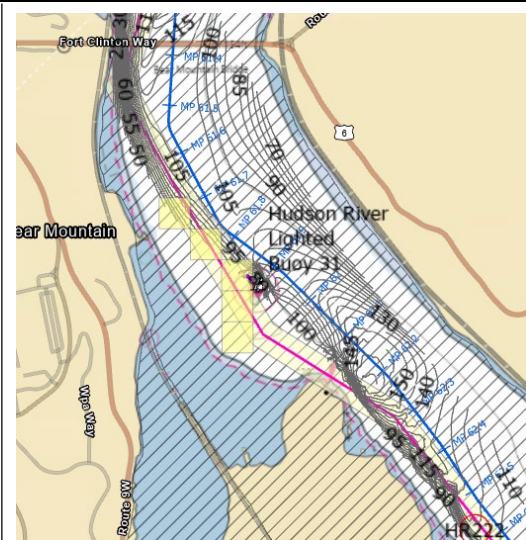
**Figure U UH #20 Hudson Rover Lighted Buoy 33**

<b>ID:</b>	<b>UH #21</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	59.89	62.47	2.58
Image: Fort Montgomery/Fort Clinton		River Mile: 48 - 46	





DEC



SCFWH

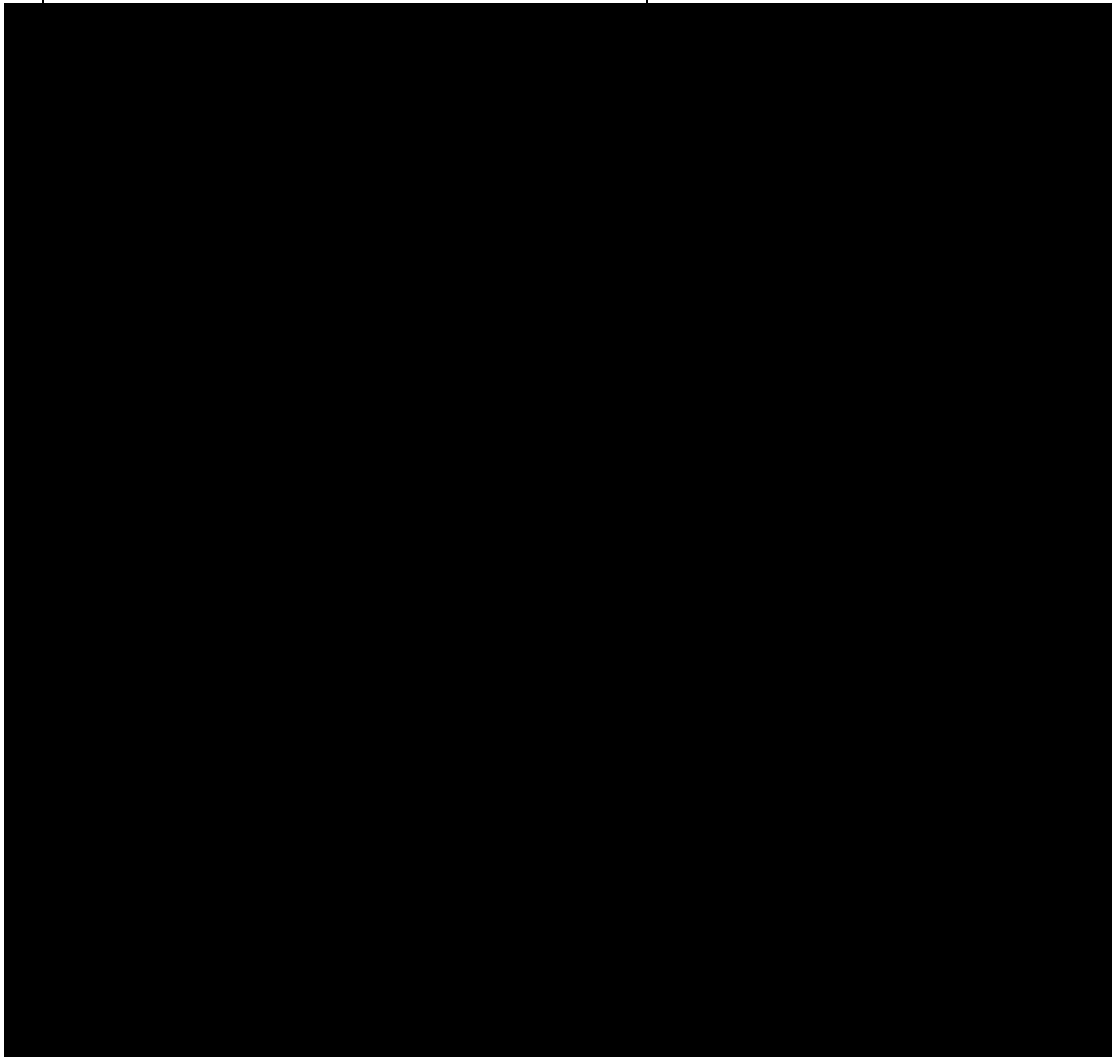
Description:

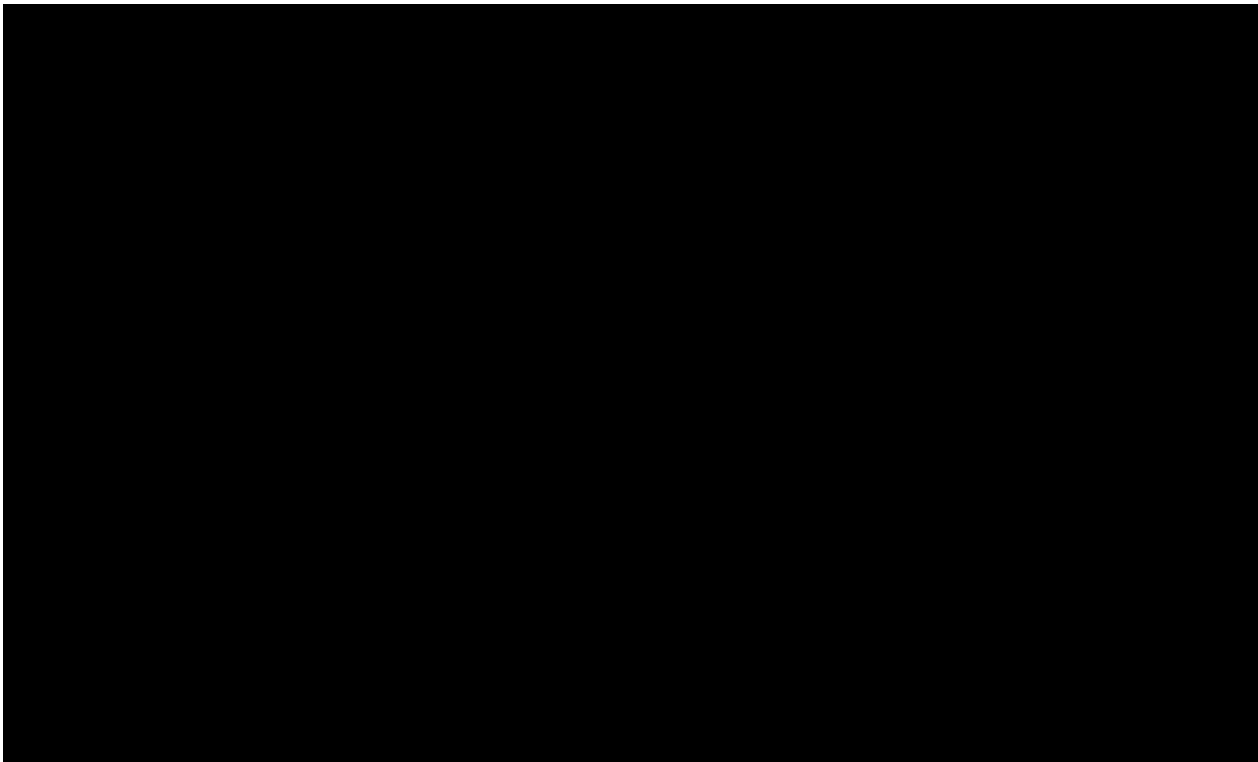
Fort Montgomery/Fort Clinton – Northern end:

The proposed route would be moved to the west of the 150' ADZ to allow for installation in the river. Contrary to what is shown on earlier mapping, the route as permitted would be located on land. The river embankment in this area is extremely steep and rocky, which makes it impossible to install a cable close to the shore. Installation in the water in non-shallow waters requires an incursion into the Hudson Highlands SCFWH and the NYSDEC exclusion zone.

This deviation is justified by engineering reasons (installation in water

<b>ID:</b>	<b>UH #22</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	63.85	63.85	0.10
	64.03	64.13	0.10
Image: Jones Point	River Mile: 44		





Description:

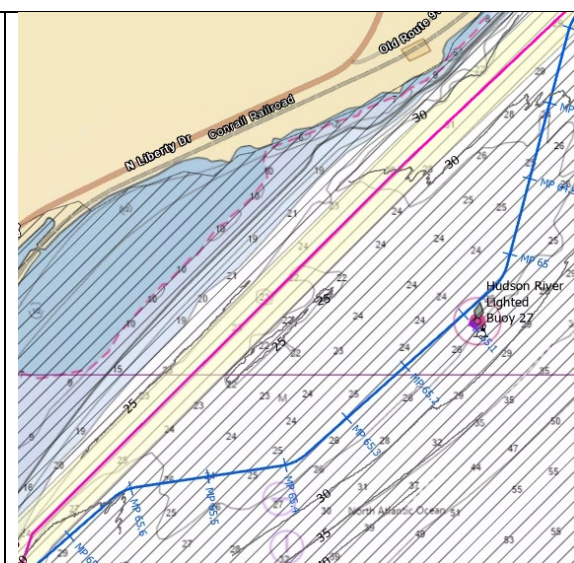
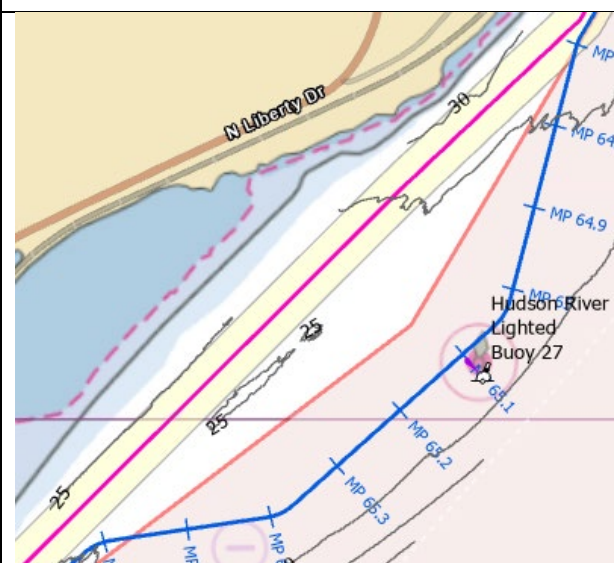
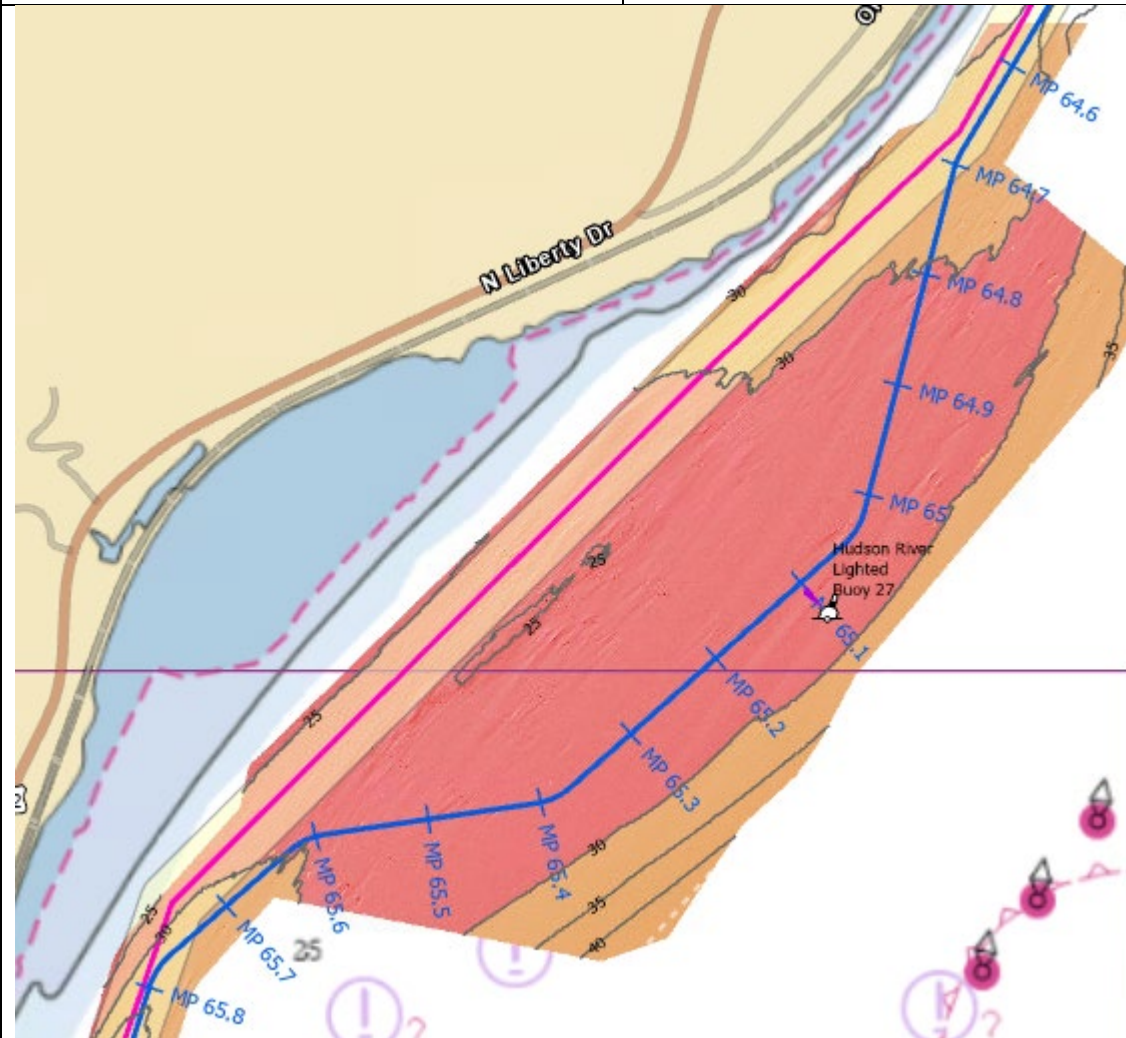
The proposed route would be moved to the east of the 150' ADZ to avoid boulders and rock outcrops, and [REDACTED]. Installation of the cable on rock outcrops is technically infeasible. The cable cannot be buried and installation of a concrete mattress on the cable would induce high risk for cable integrity. The proposed route also avoids crossing the [REDACTED]

The deviation would not cross into Exclusion Zones or designated SCFWH. The proposed route would be within the [REDACTED] in one location but would avoid impacting [REDACTED]

This deviation is justified by engineering reasons (avoidance of rock outcrops and damage to the cable), and environmental reasons (avoidance of [REDACTED])

Figure W UH #22 Jones Point

<b>ID:</b>	<b>UH #23</b>		
Location	MP Start	MP End	Length (Miles)
Cementon-Stony Point Hudson Marine Segment	64.68	65.70	1.02
Image: Indian Point Nuclear Generating Station		River Mile: 43	



Description:

The proposed route would be moved to the east of the 150' ADZ to avoid rock outcrops, and shallow waters.

Along the permitted route, rock outcrops and shallow water would make installation of the cable impossible and unsafe in the permitted corridor. The proposed corridor would improve burial efficiency and avoid the risk of extra mattress installations. The proposed route would remain in water depths of more than 20 ft. Avoidance of the rock outcrops at a depth of 20 feet or greater would result in the route crossing the NYSDEC exclusion zone. The permitted route is within the Hudson Highlands SCFWH. The proposed route would remain within the SCFWH as the SCFWH covers the river from bank to bank in this location.

This deviation is justified by engineering reasons (avoidance of rock outcrops) and environmental reasons (installation in shallow waters).

**Figure X UH #23 Indian Point Nuclear Generating Station**



## 2.2 Congers-Harlem Hudson Marine Segment

### Legend / Symbology:



<b>ID:</b>	<b>LH #1</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	0.6	7.15	6.55
Image: Congers		River Mile: 33	
[REDACTED]			
Description:			
<p>The proposed route would be moved to the east of the 150' ADZ to avoid rock outcrops, boulders, and shallow waters.</p> <p>Along the permitted route, rock outcrops and shallow water would make installation of the cable impossible and unsafe in the permitted corridor. The proposed corridor would improve burial efficiency and avoid the risk of extra mattress installations. The proposed route would remain in water depths of more than 20 ft.</p> <p>The deviation would not cross into Exclusion Zones or designated SCFWH; would not be within 160 feet of a cultural resource; and would not result in adverse impacts to CI or other infrastructure. The proposed route remains a safe distance from ATON and is outside of a Maintained Federal Navigation Channel.</p> <p>This deviation is justified by engineering reasons (avoidance of rock outcrops) and environmental reasons (installation in shallow waters).</p>			

Figure Y LH #1 Congers

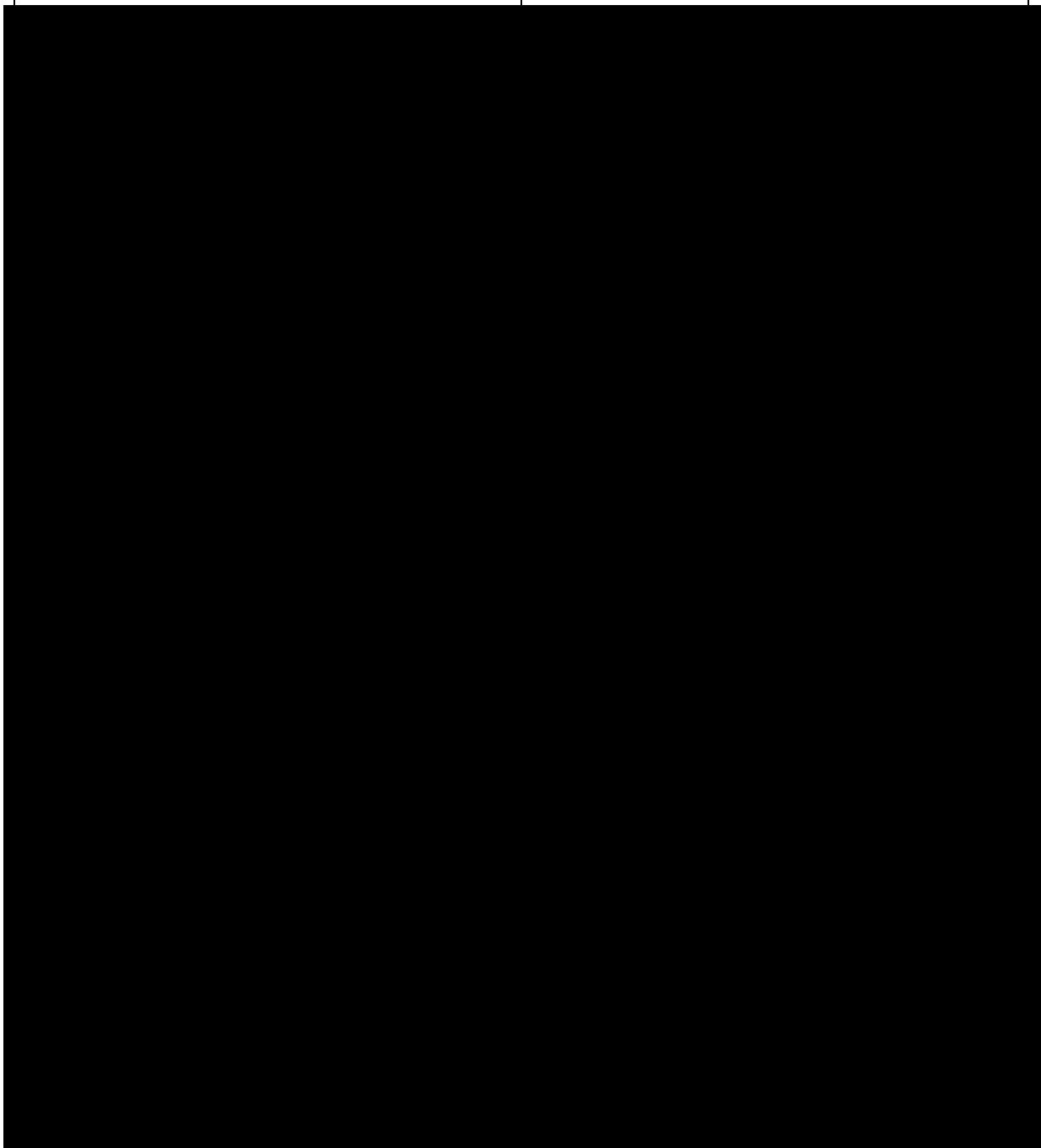
<b>ID:</b>	<b>LH #2</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	0.6	7.15	6.55
Image: Nyack		River Mile: 28 32-	
[REDACTED]			
Description:			
<p>The proposed route would continue to the east of the 150' ADZ to avoid rock outcrops, boulders, and shallow waters.</p> <p>Along the permitted route, rock outcrops and shallow water would make installation of the cable impossible and unsafe in the permitted corridor. The proposed corridor would improve burial efficiency and avoid the risk of extra mattress installations. The proposed route would remain in water depths of more than 20 ft.</p>			

The deviation would not cross into Exclusion Zones or designated SCFWH. The proposed route would be within the [REDACTED] [REDACTED] but would avoid impacting [REDACTED]

This deviation is justified by engineering reasons (avoidance of rock outcrops) and environmental reasons (installation in shallow waters).

**Figure Z LH #2 Nyack**

<b>ID:</b>	<b>LH #3</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	8.21	10.53	2.32
Image: Irvington		River Mile: 25 - 26	



Description:

The proposed route would be moved to the east of the permitted corridor due to riverbed anomalies, debris and potential rock outcrops, which would hinder or prevent burial, and to [REDACTED]. This routing would avoid the need for increased remedial mattress installation. The deviation would not cross into Exclusion Zones or designated SCFWH.

The proposed route would avoid [REDACTED] which are located within the ADZ of the permitted route corridor.

This deviation is justified by engineering reasons (avoidance of obstacles to installation) and environmental reasons (avoidance of [REDACTED])

Figure AA LH #3 Irvington

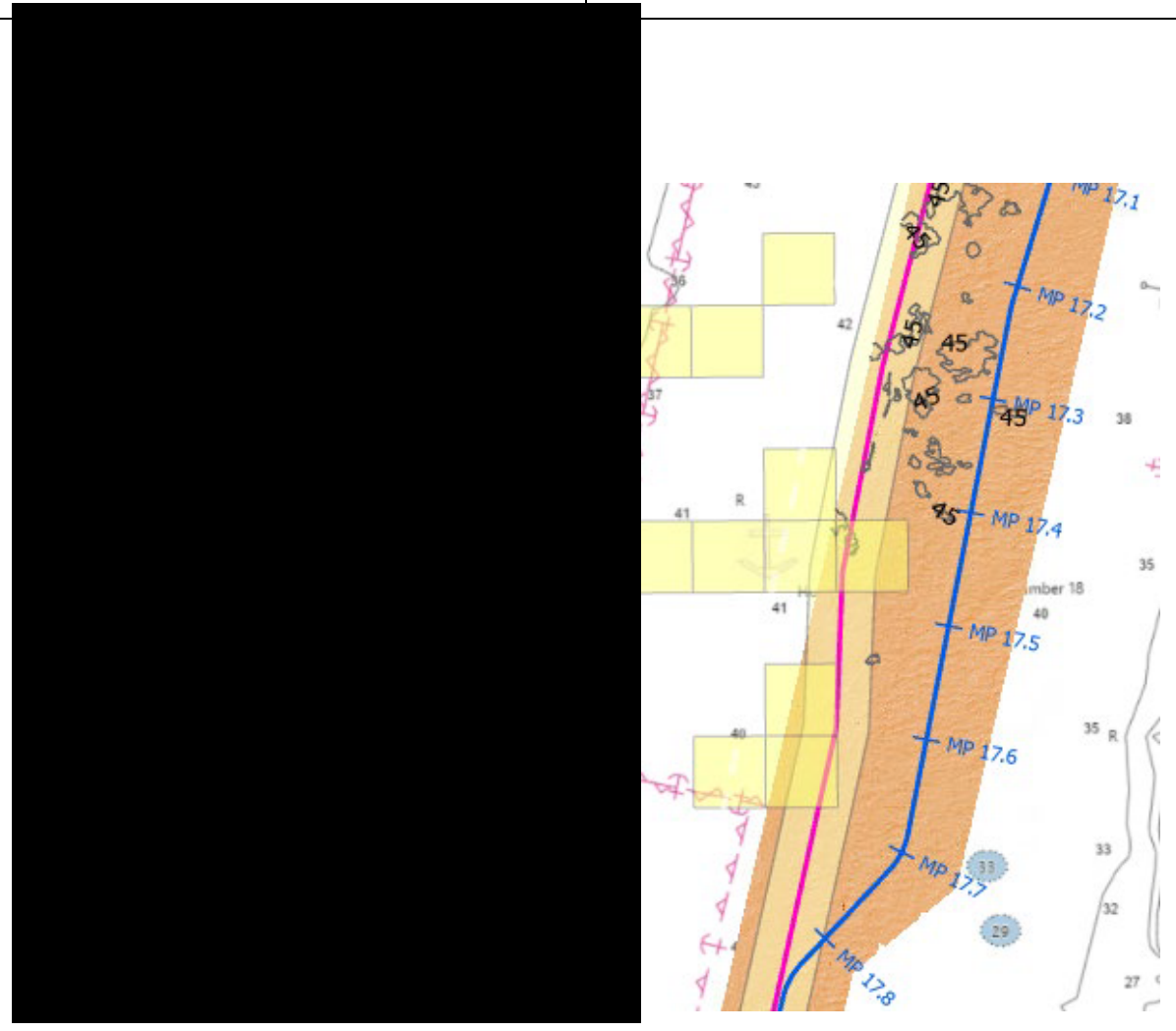
<b>ID:</b>	<b>LH #4</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	13.73	15.74	2.01
Image: Greystone		River Mile: 20 - 22	
[REDACTED]			
Description:			
<p>The proposed route would be moved to the east of the 150' ADZ to avoid installation obstacles.</p> <p>The proposed route would be moved to the east of the permitted corridor due to riverbed anomalies, debris and potential rock outcrops, which would hinder or prevent burial. This routing would avoid the need for increased remedial mattress installation. The length of the crossing of the Lower Hudson Reach SCFWH remains the same. The proposed route would be within the 160' avoidance area of [REDACTED] in one location, but would avoid impacting [REDACTED]</p> <p>This deviation is justified by engineering reasons (avoidance of obstacles to installation).</p>			

Figure BB LH #4 Greystone

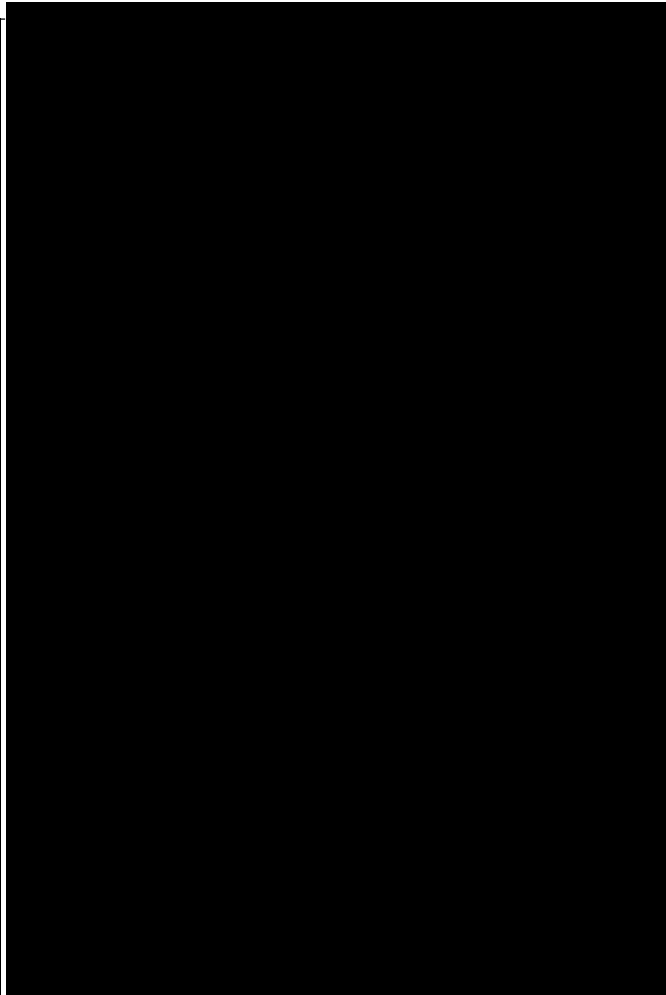
<b>ID:</b>	<b>LH #5</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	16.38	17.79	1.41

Image: Yonkers

River Mile: 18 - 19







Description:

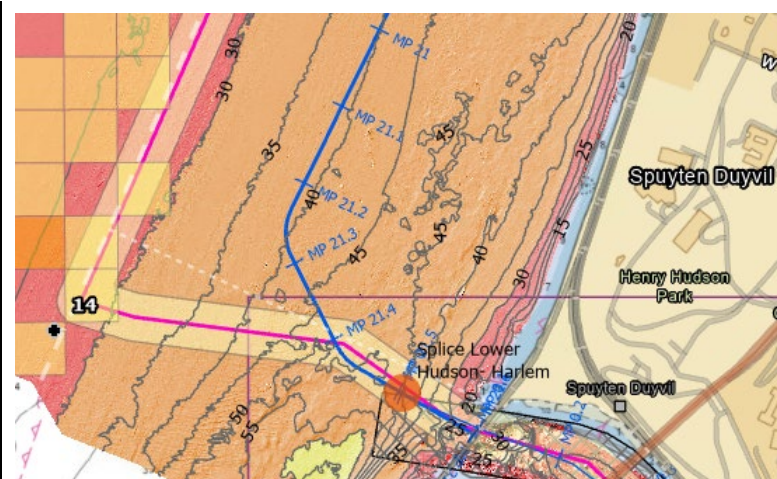
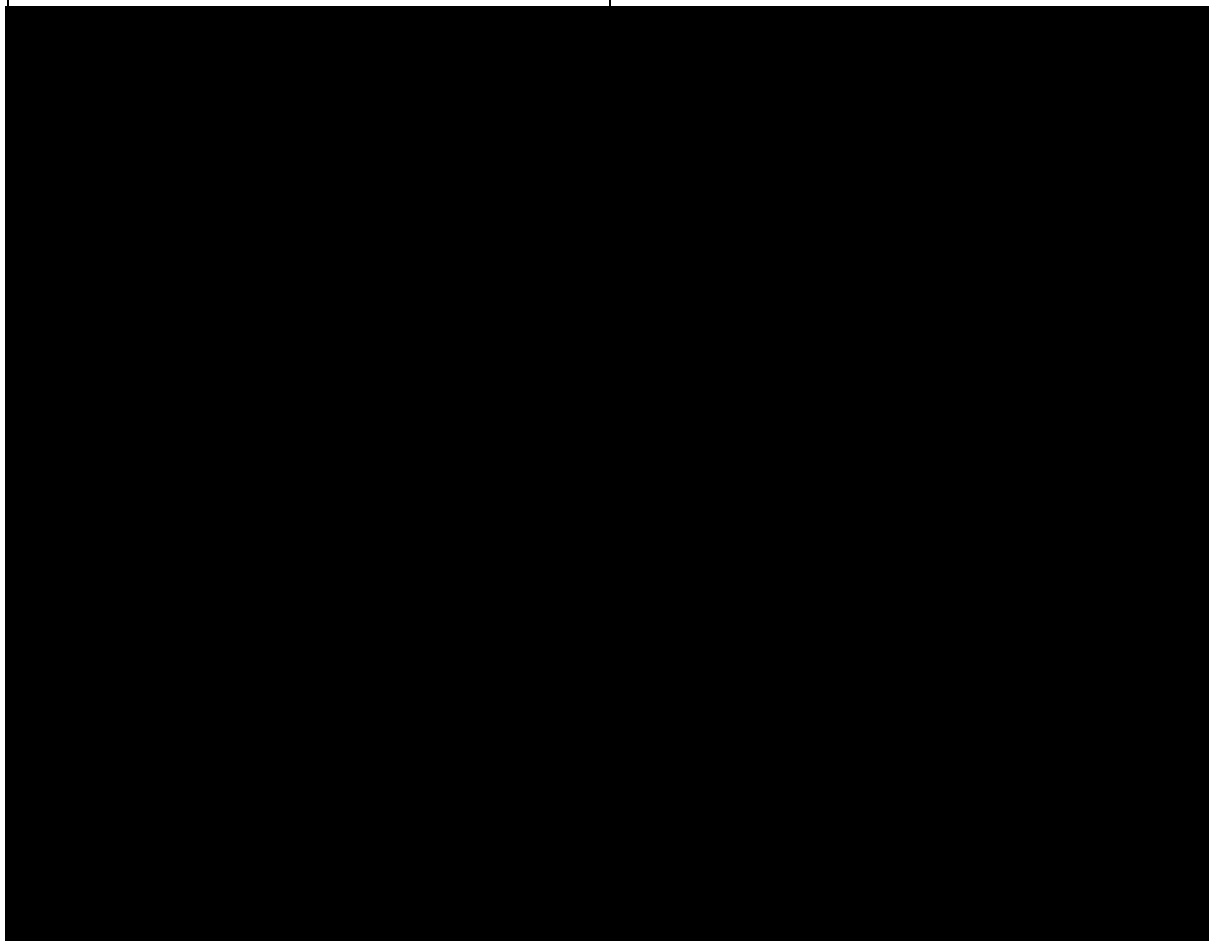
The proposed route would be moved to the east of the 150' ADZ to avoid navigation risks and [REDACTED].

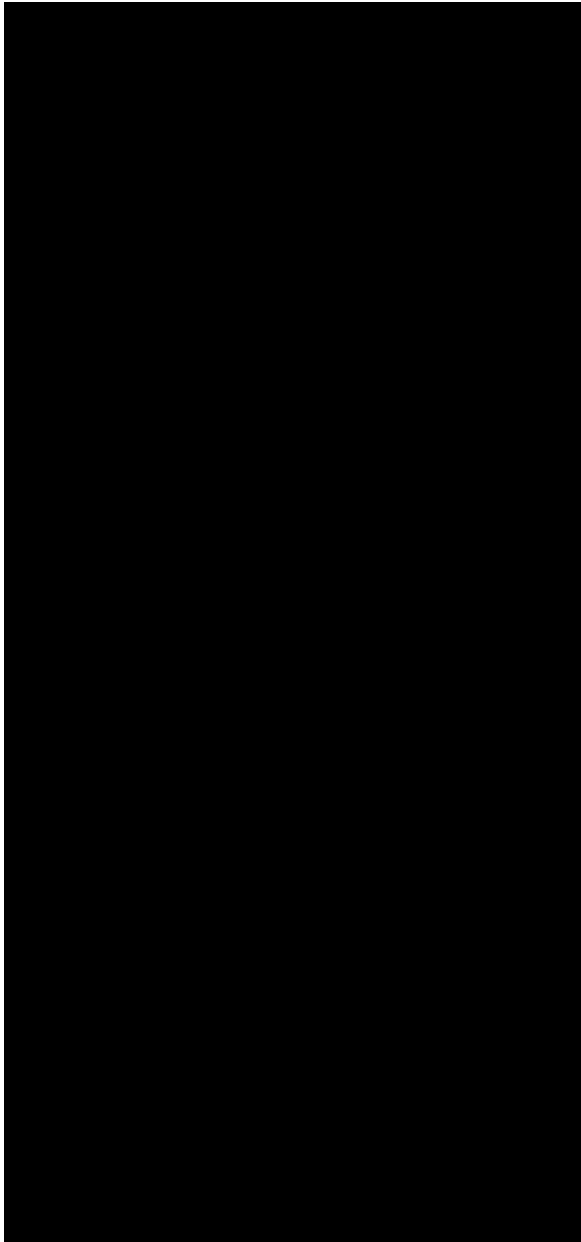
The proposed route would be moved to the east of the permitted corridor to avoid the Hudson River Anchorage Area Number 18. This shift would also avoid navigation risk areas, which indicate medium risk. This shift would also avoid a [REDACTED] zone. The permitted route is within the SCFWH; the proposed route would remain within the SCFWH.

This deviation is justified by environmental reasons (avoidance of [REDACTED] impacts; reduction in navigation risk).

Figure CC LH #5 Yonkers

<b>ID:</b>	<b>LH #6</b>		
Location	MP Start	MP End	Length (Miles)
Congers-Harlem Hudson Marine Segment	19.15	21.36	2.21
Image: Riverdale	River Mile: 14 - 17		





Description:

The proposed route would be moved to the east of the 150' ADZ to facilitate construction and avoid navigation risks.

The hard corner turn from the Hudson River to the Harlem River on the permitted route would not allow for installation via simultaneous lay and burial techniques. The proposed route would avoid multiple areas of navigation risk. The permitted route is within the Lower Hudson Reach SCFWH. The proposed route would remain within the SCFWH but the length of the route through the SCFWH would be reduced.

This deviation is justified by engineering reasons (allows for use of permitted technology) and environmental reasons (reduction in navigation risk; decrease in impacts to SCFWH).

Figure DD LH #6 Riverdale

### 3 Deviations from Approved Facility Depth $\geq 15$ feet below the Federally-authorized Depth of the Federal Navigation Channel (CC 95(a)(i))

Pursuant to a Petition to Amend the Certificate filed February 9, 2024, the Certificate Holders have requested a deviation from the design depth for those portions of the Facility buried within the Hudson River's Maintained Federal Navigation Channel to set the minimum separation distance at nine (9) feet below maintained channel depth, consistent with Certificate Holders' federal permits. This requested Amendment is grounded in both environmental and engineering reasons, is necessary to ensure the Facility can feasibly be installed and placed in service on schedule, and would modify the Certificate to comport to the USACE permit issued to CHPE (Permit NAN-2009-01089), which states:

"Within the Hudson River, except for the maintained portions of the Federal navigation channel, the top-of-cable burial depth shall be a minimum of 7-feet below the existing bottom, subject to deeper burial depth requirements based on the results of the Navigation Risk Assessment required in Special Condition B. **Within the maintained portions of the Federal navigation channel in the Hudson River, the required minimum top-of-cable burial depth is 9-feet below the authorized channel depth.**" (USACE Permit, Project Description at page 2, item ii) [*emphasis added*].

The Petition for Amendment is pending as of the time of this EM&CP submission. Should action on that Petition require any change to the EM&CP, it will be addressed accordingly.

## 4 List of References

<b>Ref.</b>	<b>Distributor</b>	<b>Document Title</b>	<b>Document Number</b>
[01]	NKT	Route Position List_C – CHPE-RPL-Rev10	1AA0595332

## Attachment A. Route Deviations Transversing DEC-zone and SCFWH-zone

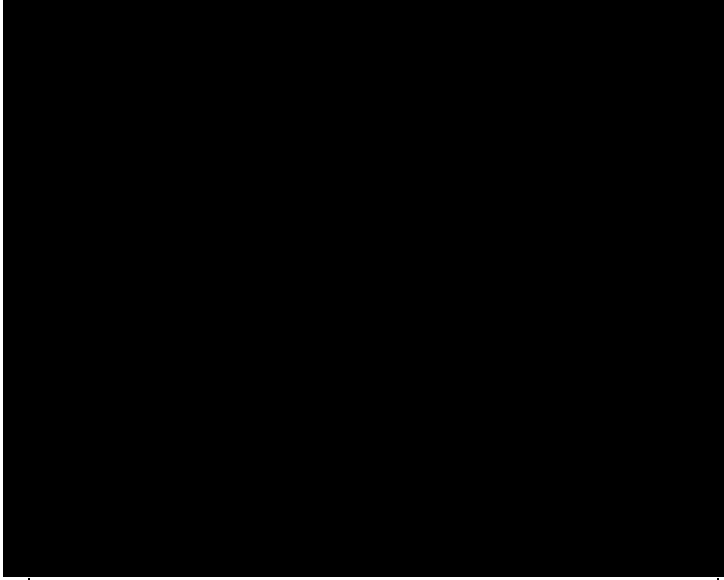
### 1.1 Route Traversing a DEC-zone Outside Corridor


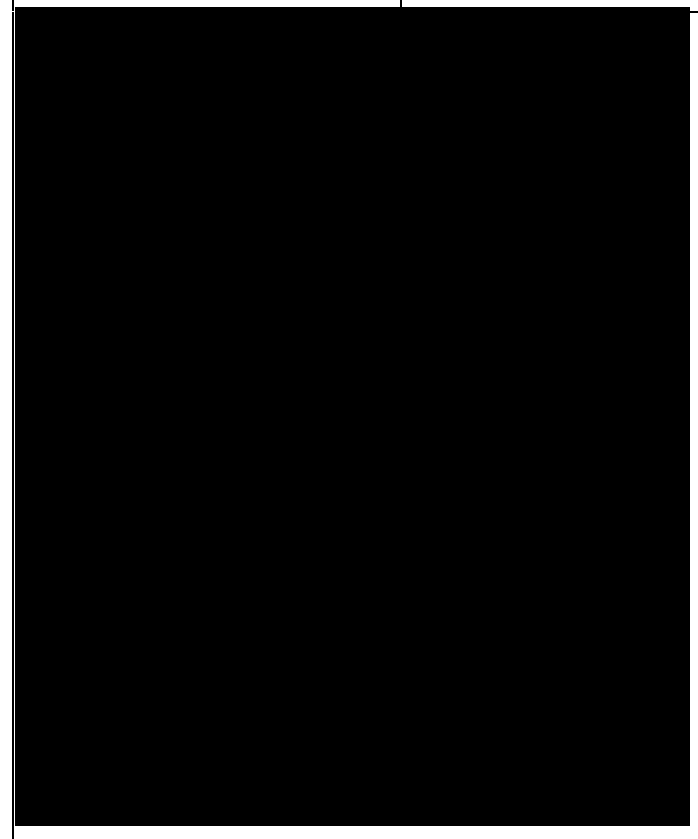
This paragraph is a summary of all proposed route sections that are traversing a DEC zone outside the permitted corridor.

ID:	Name:	MP-start	MP-end	Length [mi]
UH #4	Saugerties	4.86	5.01	0.15
UH #10	Big Rock Point/Esopus	18.68	18.8	0.12
UH #11	Ulster Park	19.63	19.7	0.07
UH #13	FDR Home Pond	27.73	28.46	0.73
UH #18-I	U.S. Military Academy West Point	54.03	54.22	0.19
UH #19	Westpoint Anchorage	56.05	56.39	0.34
UH #20	Hudson River Lighted Buoy 33	58.99	59.56	0.57
UH #21	Fort Montgomery / Fort Clinton	59.89	62.47	2.58
UH #22	Jones Point	63.85	63.95	0.10
		64.03	64.13	0.10
UH #23	Indian Point Nuclear Generating Station	64.65	65.53	0.88
Total length inside DEC zone and outside permitted corridor:				5.98 mile

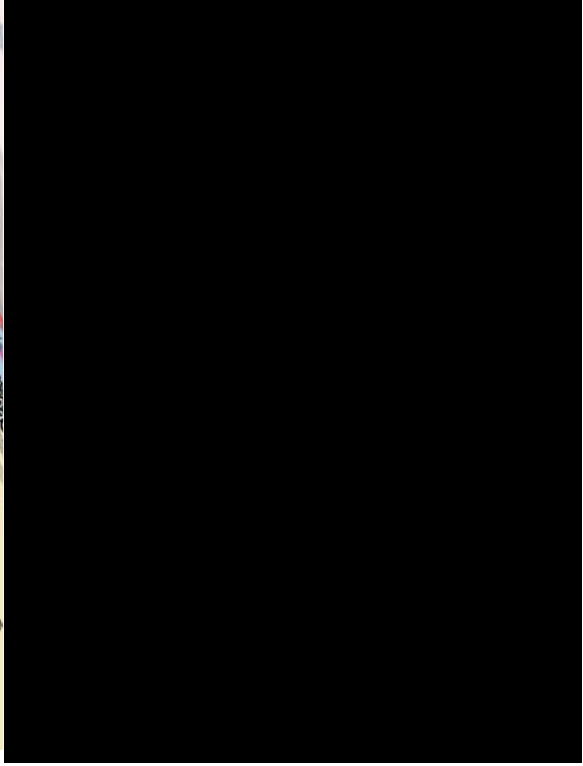
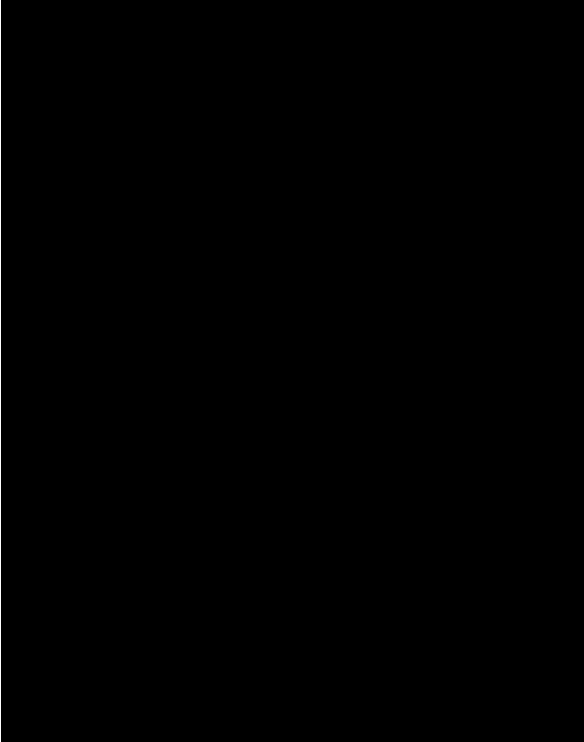


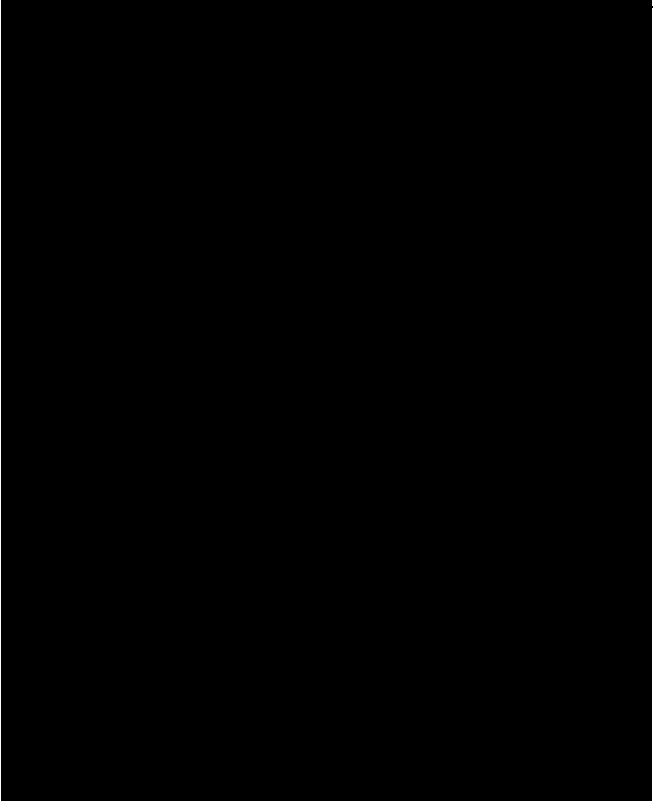
UH #10	Big Rock Point/Esopus
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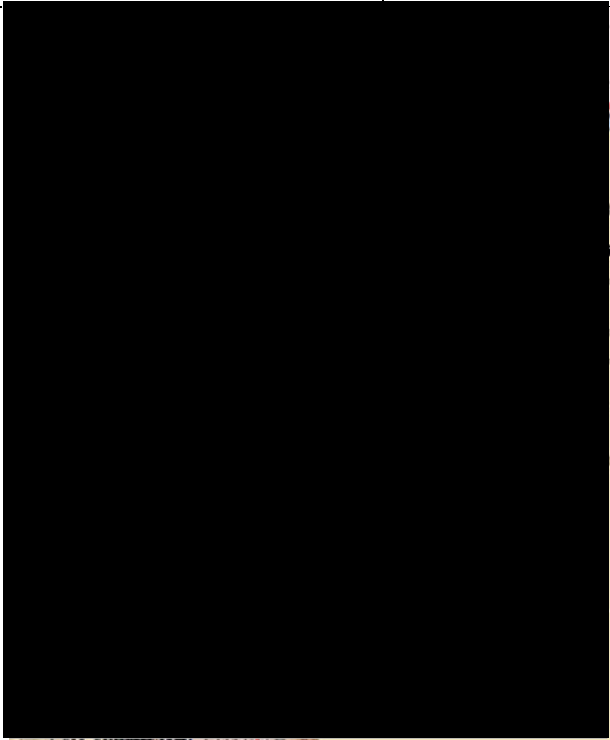
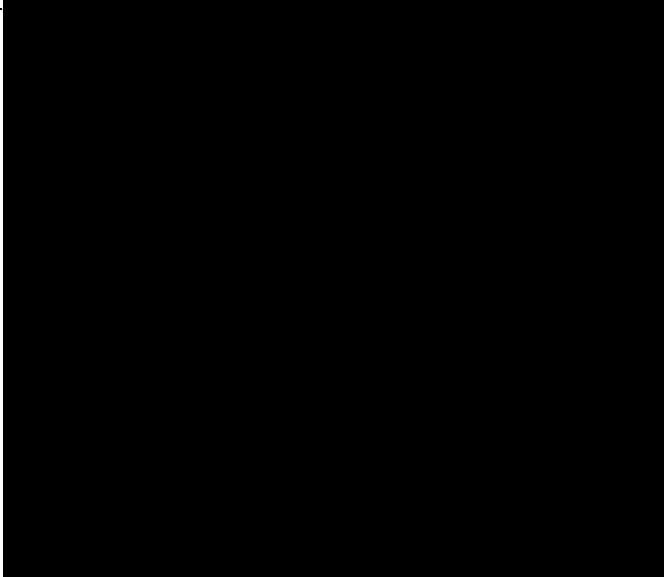


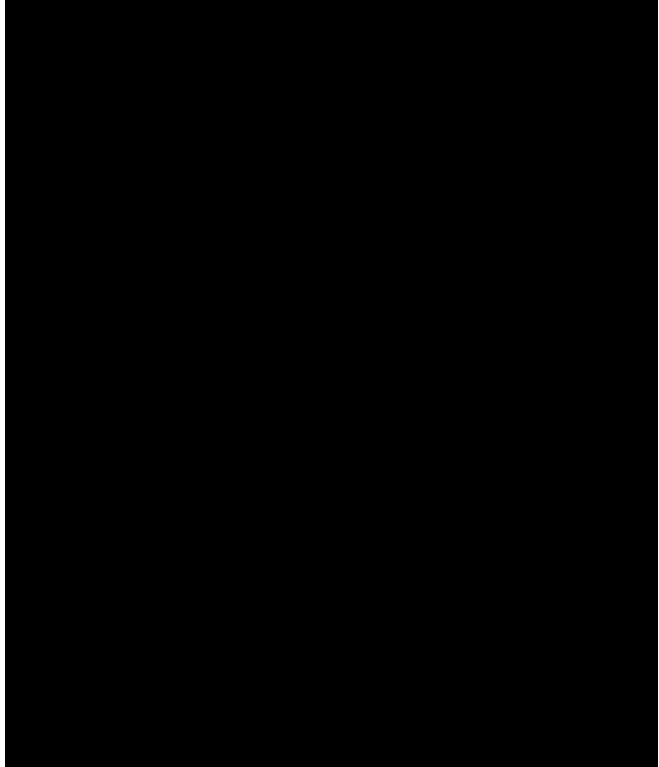
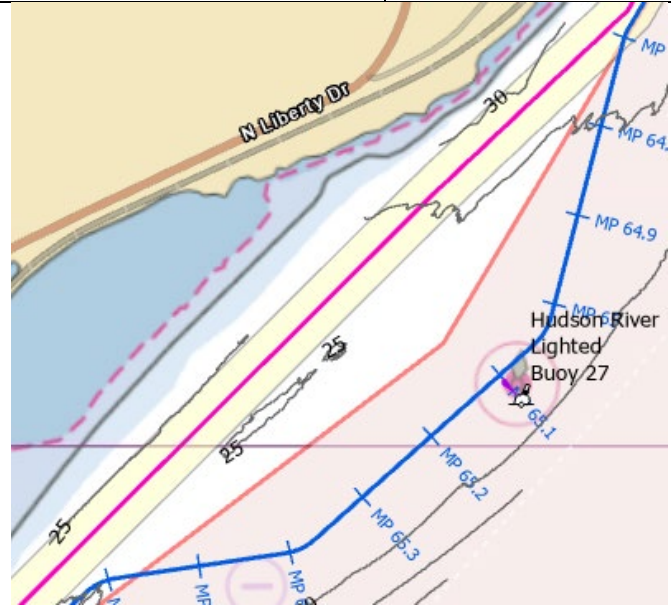
UH #11	Ulster Park
	
UH #13	FDR Historic Site
	



UH #18-I	U.S. Military Academy West Point	
		
UH #19	Westpoint Anchorage	
		

UH #20	Hudson River Lighted Buoy 33
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UH #21 – Northern end	Fort Montgomery/Fort Clinton
	
UH #21 – Southern end	Fort Montgomery/Fort Clinton
	

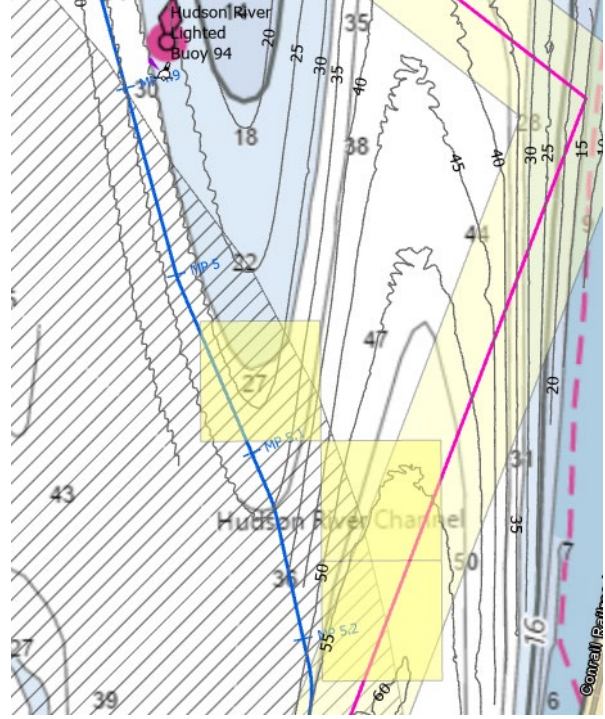
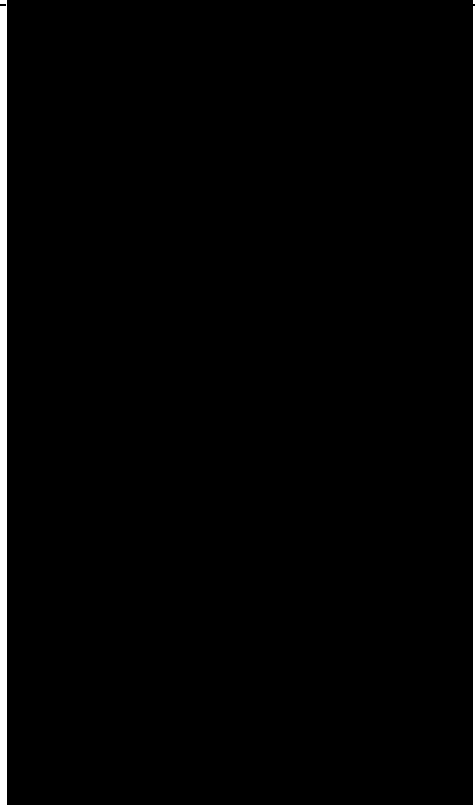
UH #22	Jones Point
	
UH #23	Indian Point Nuclear Generating Station
	

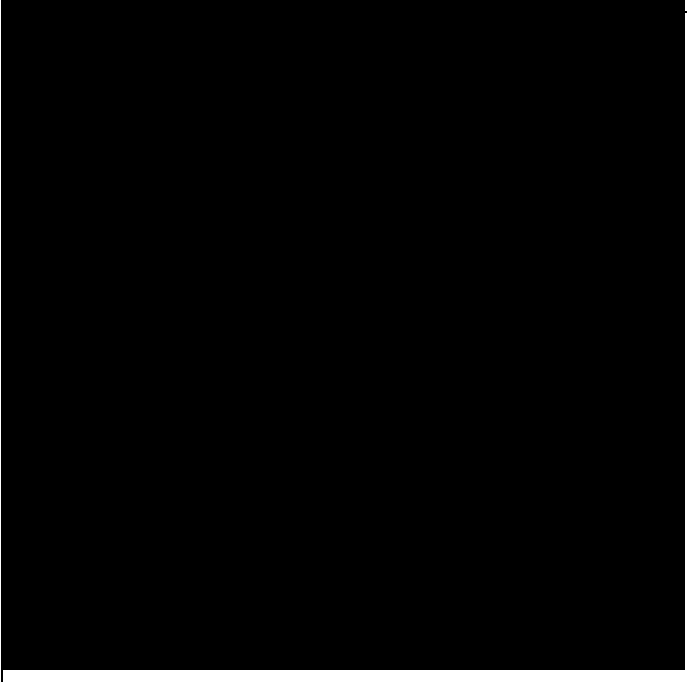
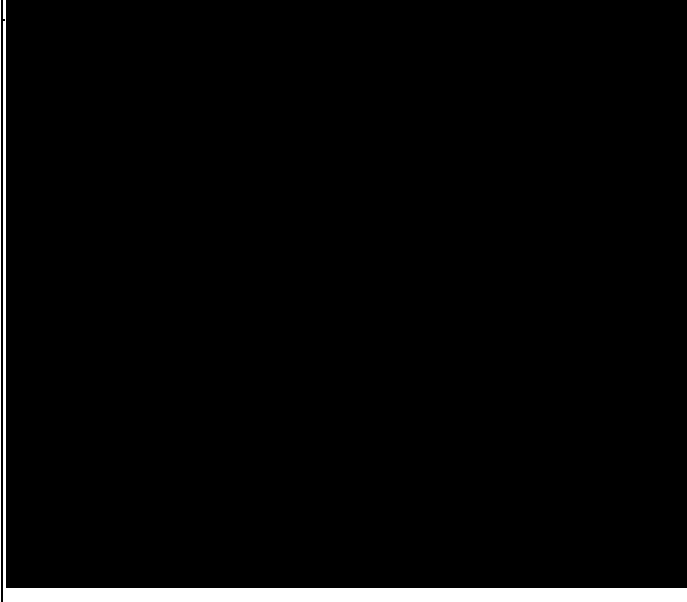
## 1.2 Route Traversing a SCFWH-zone Outside Corridor

This paragraph is a summary of all proposed route sections that are traversing a DEC zone outside the permitted corridor.

ID:	Name:	MP-start	MP-end	Length [mi]
UH #4	Saugerties	4.9	5.21	0.31
UH #9	Port Ewen	17.21	17.56	0.35
UH #10	Big Rock Point/Esopus	18.56	18.85	0.29
UH #11	Ulster Park	19.63	19.77	0.14
UH #12	Norrie Point	23.03	23.26	0.23
UH #13	FDR Historic Site	27.47	28.46	0.99
UH #14	Poughkeepsie	29.95	31.2	1.25
UH #15	Hudson River Lighted Buoy 60	31.34	31.58	0.24
UH #16	Hudson River Shoal Lighted Buoy B	33.83	34.31	0.48
UH #17	New Hamburg / Castle Point	40.26	40.92	0.66
UH #18-I	U.S. Military Academy West Point	54.22	54.56	0.34
UH #18-II		54.71	54.87	0.16
UH #19	Westpoint Anchorage	56.05	56.39	0.34
UH #21	Hudson River Lighted Buoy 33	58.99	59.56	0.57
UH #21	Fort Montgomery / Fort Clinton	59.89	62.47	2.58
UH #22	Jones Point	63.85	63.95	0.1
		64.03	64.13	0.1
UH #23	Indian Point Nuclear Generating Station	64.68	65.7	1.02


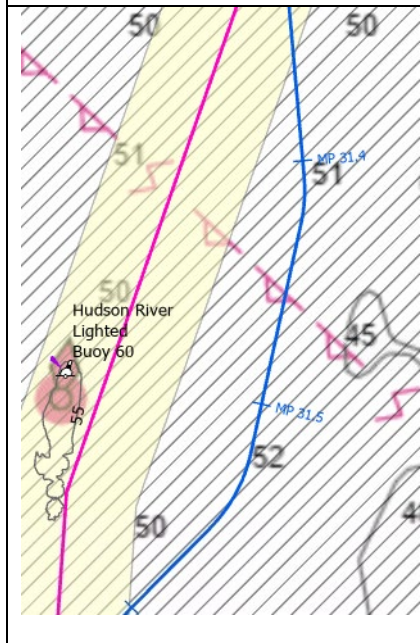
LH #3	Greystone	15.29	15.74	0.45
LH #4	Yonkers	16.38	17.79	1.41
LH #5	Riverdale	19.15	21.36	2.21
Total length inside SCFWH zone and outside permitted corridor:				14.22 mile

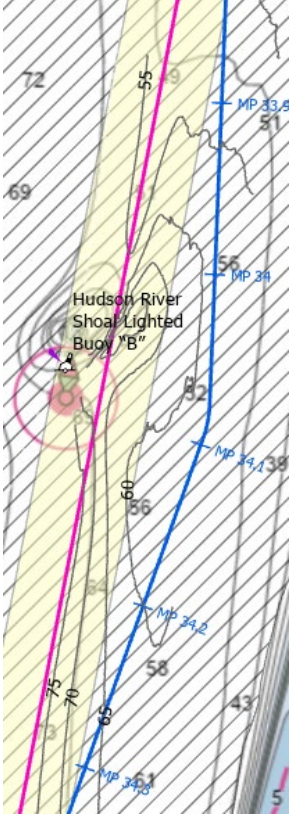
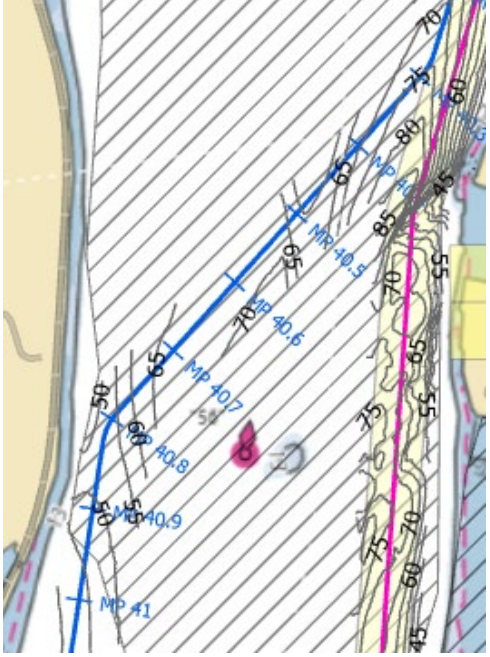
UH #4	Saugerties	
		
UH #9	Port Ewen	
		


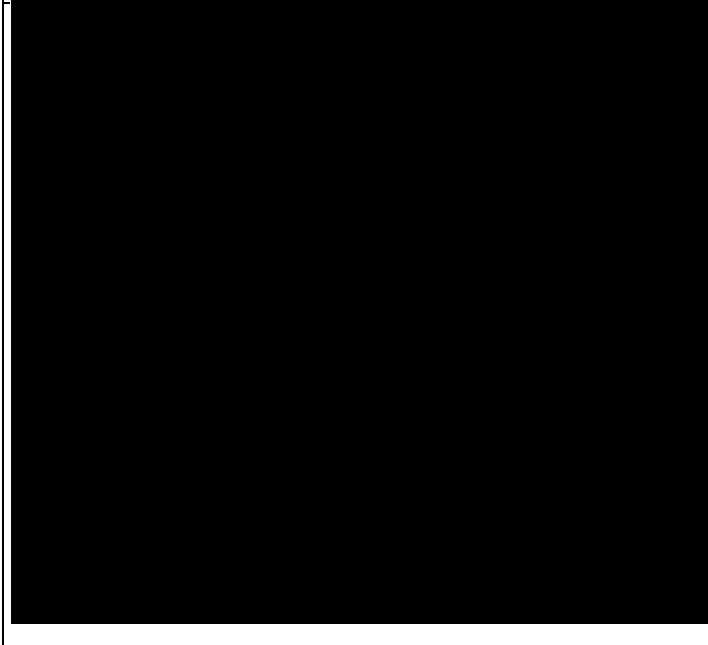
UH #10	Big Rock Point/Esopus
	
UH #11	Ulster Park
	

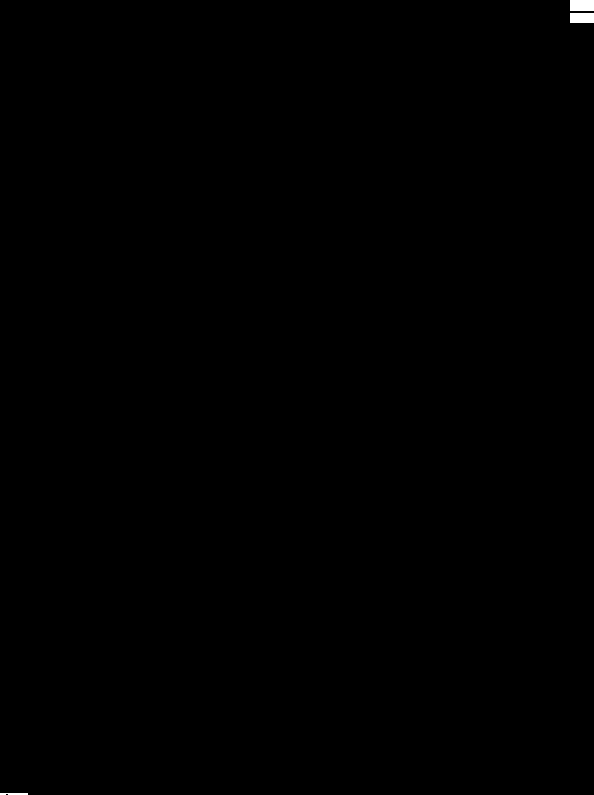
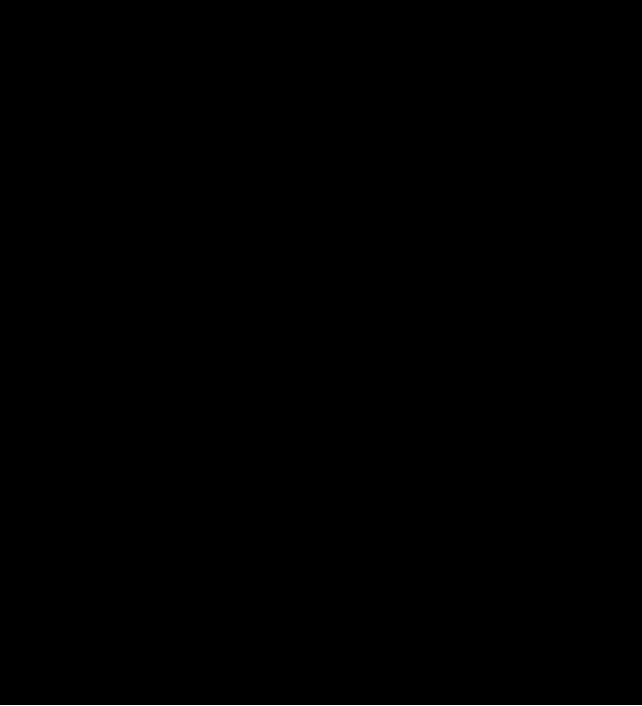


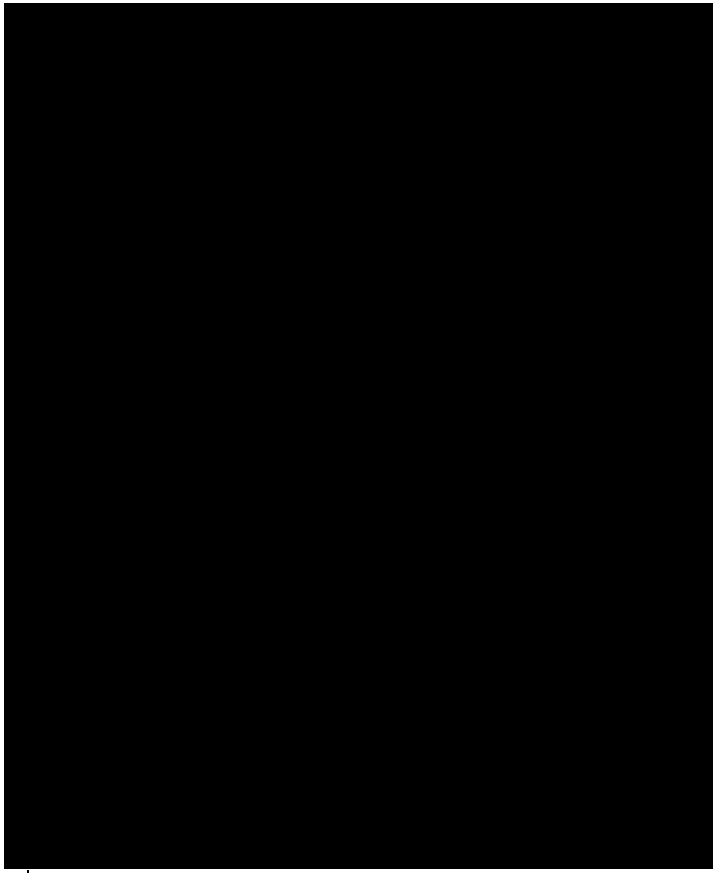
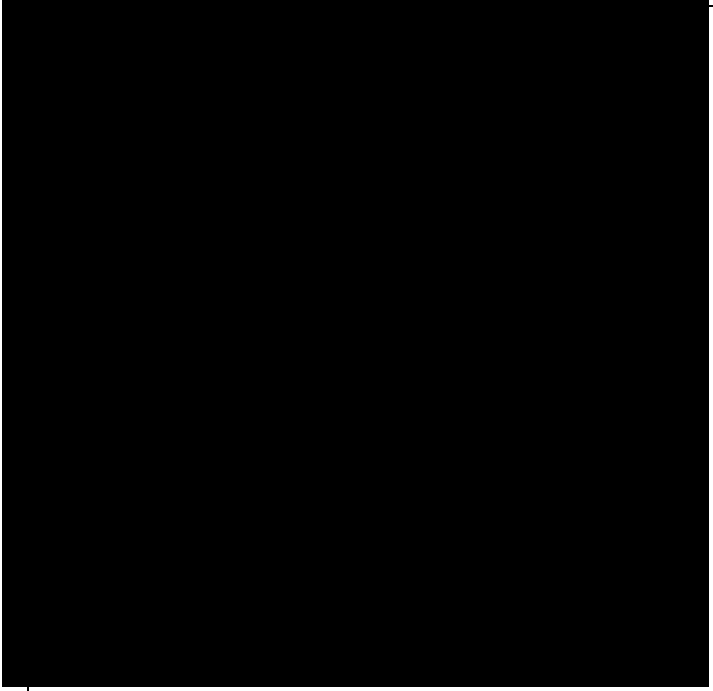
UH #12	Norrie Point
 <p>The map shows a yellow highlighted area with a blue line and a pink line. The blue line is labeled 'MP 23.1' and 'MP 23.2'. The pink line is labeled '40' and '45'. Other labels include '44', '36', '27', 'H1', and '8'. The map is overlaid on a grid of diagonal lines.</p>	
UH #13	FDR Historic Site
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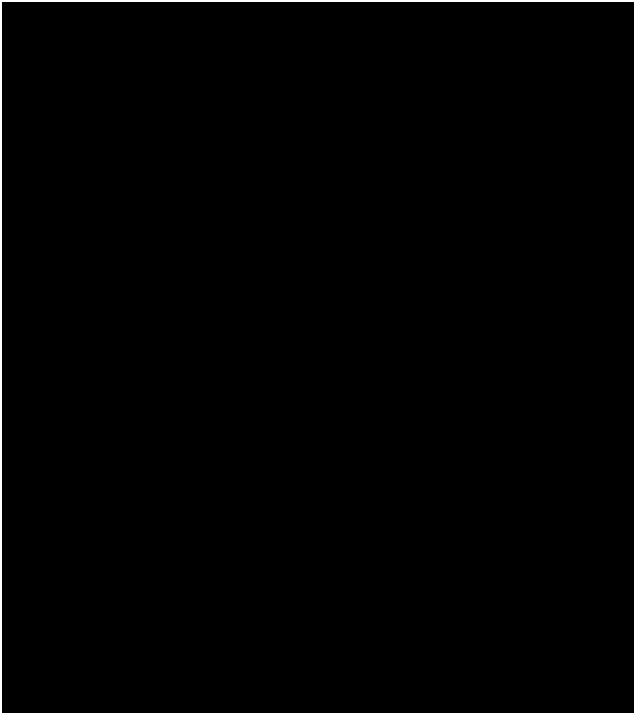
UH #14	Poughkeepsie	
		
UH #15	Hudson River Lighted Buoy 60	
		

UH #16	Hudson River Shoal Lighted Buoy B
	
UH #17	New Hamburg / Castle Point
	
UH #18-I	U.S. Military Academy West Point

		
UH #18-II	U.S. Military Academy West Point	
		

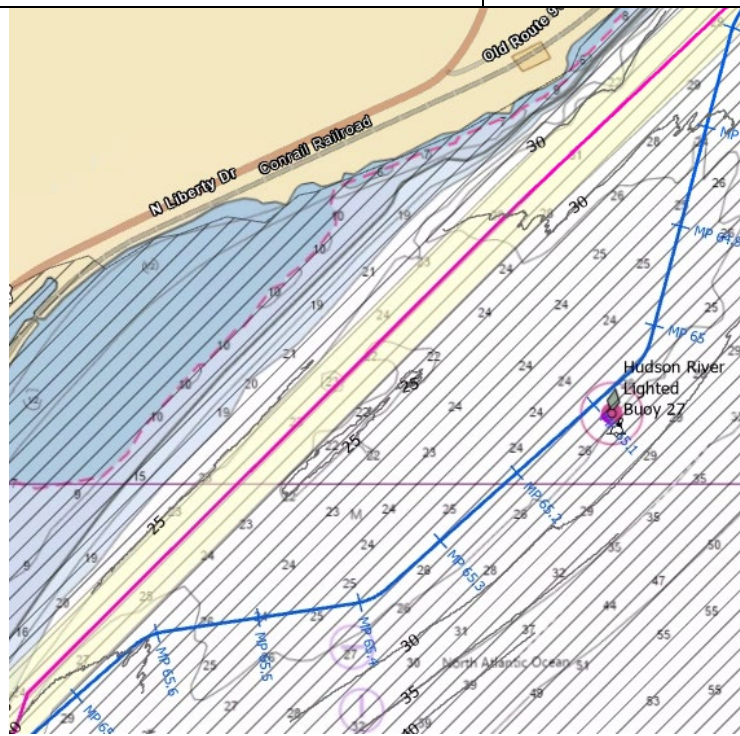
UH#19	Westpoint Anchorage	
		
UH #20	Hudson River Lighted Buoy 33	
		
UH #21 – Northern end	Fort Montgomery/Fort Clinton	


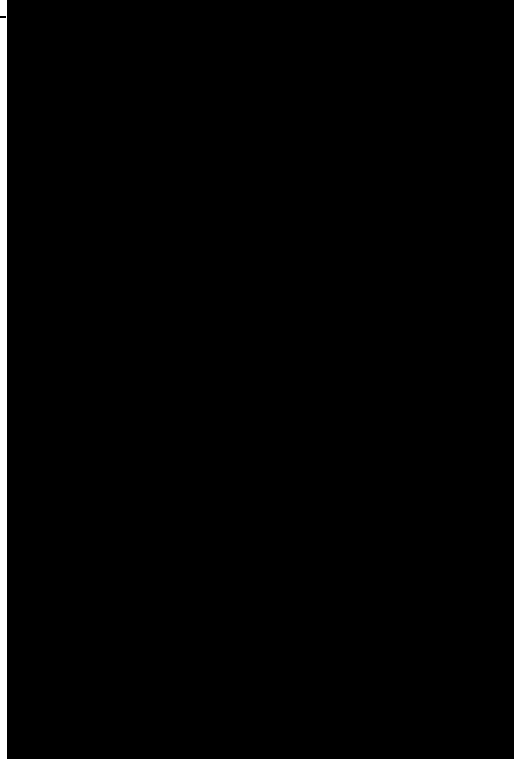
	
UH #21 – Southern end	Fort Montgomery/Fort Clinton
	
UH #22	Jones Point



UH #23

Indian Point Nuclear Generating Station



LH #3	Greystone	
		
LH #4	Yonkers	
		



LH #5	Riverdale	
