

**COUNTY OF WESTCHESTER  
NEW YORK**

**DIVISION OF ENGINEERING**

**ADDENDUM NO. 7**

**CONTRACT NO. 20-517**

**REHABILITATION OF GLEN ISLAND APPROACH BRIDGE  
OVER NEW ROCHELLE HARBOR (BIN 3348880)  
NEW ROCHELLE, NEW YORK**

The attention of the bidder is directed to the following changes, additions, and/or substitutions affecting the above referenced contract.

**I. RE: THE PLANS**

**REMOVE** Drawing GP-01 (Sheet No. 11 of 212) and **REPLACE** with the attached Drawing E GP-01 (Sheet No. 11 of 212) labelled Revision No. 1.

**REMOVE** Drawing GP-02 (Sheet No. 12 of 212) and **REPLACE** with the attached Drawing GP-02 (Sheet No. 12 of 212) labelled Revision No. 1.

**REMOVE** Drawing MST-02 (Sheet No. 30 of 212) and **REPLACE** with the attached Drawing MST-02 (Sheet No. 30 of 212) labelled Revision No. 1.

**REMOVE** Drawing S-02 (Sheet No. 43 of 212) and **REPLACE** with the attached Drawing S-02 (Sheet No. 43 of 212) labelled Revision No. 3.

**REMOVE** Drawing S-04 (Sheet No. 45 of 212) and **REPLACE** with the attached Drawing S-04 (Sheet No. 45 of 212) labelled Revision No. 1.

**REMOVE** Drawing S-63 (Sheet No. 104 of 212) and **REPLACE** with the attached Drawing S-63 (Sheet No. 104 of 212) labelled Revision No. 1.

**REMOVE** Drawing S-87 (Sheet No. 128 of 212) and **REPLACE** with the attached Drawing E S-87 (Sheet No. 128 of 212) labelled Revision No. 1.

**REMOVE** Drawing H-01 (Sheet No. 143 of 212) and **REPLACE** with the attached Drawing H-01 (Sheet No. 143 of 212) labelled Revision No. 1.

**REMOVE** Drawing E-01 (Sheet No. 163 of 212) and **REPLACE** with the attached Drawing E-01 (Sheet No. 163 of 212) labelled Revision No. 1

**REMOVE** Drawing E-03 (Sheet No. 165 of 212) and **REPLACE** with the attached Drawing E-03 (Sheet No. 165 of 212) labelled Revision No. 1

**REMOVE** Drawing E-05 (Sheet No. 167 of 212) and **REPLACE** with the attached Drawing E-05 (Sheet No. 167 of 212) labelled Revision No. 1

**REMOVE** Drawing E-06 (Sheet No. 168 of 212) and **REPLACE** with the attached Drawing E-06 (Sheet No. 168 of 212) labelled Revision No. 1

**REMOVE** Drawing E-09 (Sheet No. 171 of 212) thru Drawing E-11 (Sheet No. 173 of 212) and **REPLACE** with the attached Drawing E-09 (Sheet No. 171 of 212) thru Drawing E-11 (Sheet No. 173 of 212) labelled Revision No. 1.

**REMOVE** Drawing E-12 (Sheet No. 174 of 212) and **REPLACE** with the attached Drawing E-12 (Sheet No. 174 of 212) labelled Revision No. 2

**REMOVE** Drawing E-18 (Sheet No. 180 of 212) and **REPLACE** with the attached Drawing E-18 (Sheet No. 180 of 212) labelled Revision No. 1

**REMOVE** Drawing E-19 (Sheet No. 181 of 212) and **REPLACE** with the attached Drawing E-19 (Sheet No. 181 of 212) labelled Revision No. 1

**REMOVE** Drawing E-34 (Sheet No. 196 of 212) thru Drawing E-39 (Sheet No. 201 of 212) and **REPLACE** with the attached Drawing E-34 (Sheet No. 196 of 212) thru Drawing E-39 (Sheet No. 201 of 212) labelled Revision No. 2.

## **II. RE: THE SPECIFICATIONS**

**REMOVE** the specification for Item 683.090700WE Movable Bridge Standby Generator and **REPLACE** with the attached specification for Item 683.090700WE Movable Bridge Standby Generator labelled Addendum No. 7 – Cont. No. 20-517.

**INSERT** the attached New York State Department of Environmental Conservation permits for:

- Tidal Wetlands - Under Article 25 (Permit ID 3-5510-00258/00018)
- Water Quality Certification - Under Section 401 - Clean Water Act Permit ID 3-5510-00258/00019
- Excavation & Fill in Navigable Waters - Under Article 15, Title 5 Permit ID 3-5510-00258/00020

in the Technical Appendices section of the proposal book.

## **III. RE: REQUESTS FOR INFORMATION**

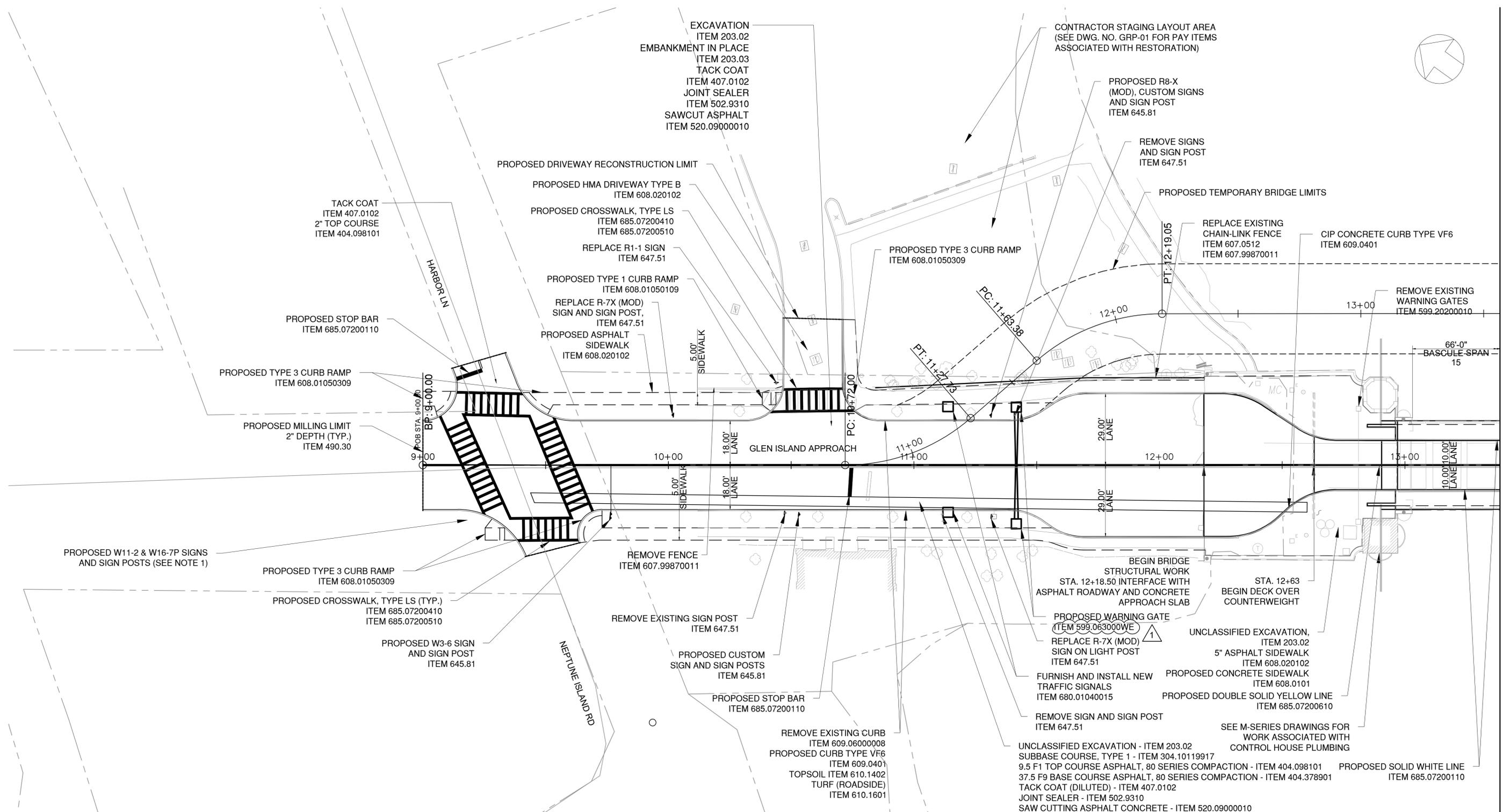
See the attached summary of questions.

ALL PROVISIONS OF THE CONTRACT NOT AFFECTED BY THE FOREGOING SHALL  
REMAIN IN FULL FORCE AND EFFECT.

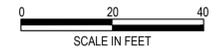
COUNTY OF WESTCHESTER  
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION

By: Hugh J. Greechan Jr., P.E.  
Commissioner

Dated: Wednesday, May 1, 2024  
WHITE PLAINS, NEW YORK



NOTES:  
 1. SEE DWG. NO. SDS-01 FOR ADDITIONAL INFORMATION REGARDING SIGN PANELS AND CORRESPONDING PAY ITEMS.



CONSULTANT SEAL  
 CONSULTANT INFORMATION  
**H&H**  
 1501 BROADWAY, SUITE 601  
 NEW YORK, NY 10036  
 (212) 944-1150

IN CHARGE OF C. JENNE, PE  
 CHECKED BY K. HO, PE  
 MADE BY E. MOHLER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	NMH	DD	PAY ITEM NUMBER

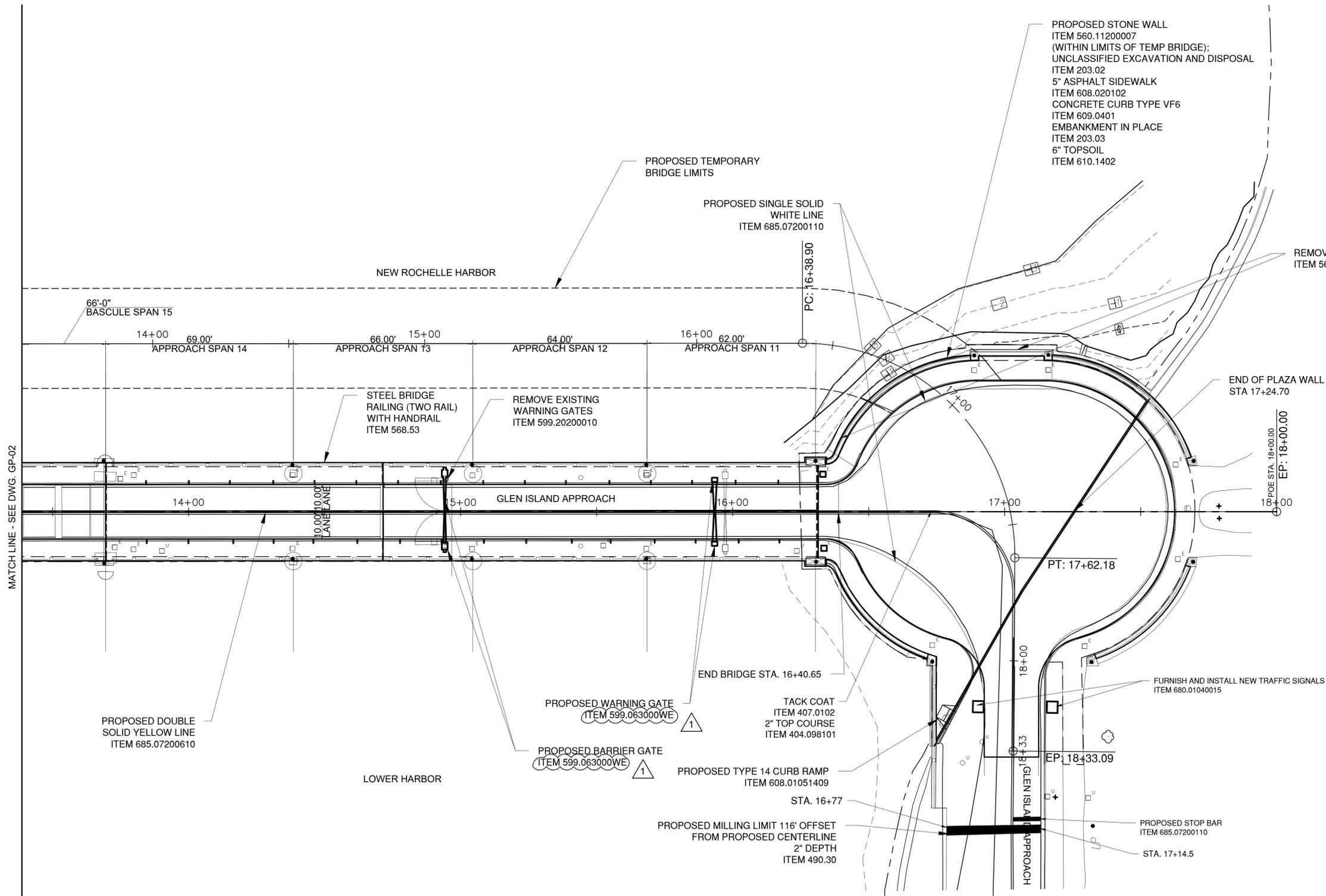
RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

WESTCHESTER COUNTY, NEW YORK  
 DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 CIVIL  
**GENERAL PLAN (1 OF 2)**

CONTRACT NUMBER 20-517	SHEET NUMBER GP-01
SHEET NO. 11 OF 1212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO. 5-04-G-446-0	REV. NO. 1



REMOVE AND RESET STONE WALL  
ITEM 560.1320007 (IN-KIND)

PROPOSED STONE WALL  
ITEM 560.1120007  
(WITHIN LIMITS OF TEMP BRIDGE);  
UNCLASSIFIED EXCAVATION AND DISPOSAL  
ITEM 203.02  
5" ASPHALT SIDEWALK  
ITEM 608.020102  
CONCRETE CURB TYPE VF6  
ITEM 609.0401  
EMBANKMENT IN PLACE  
ITEM 203.03  
6" TOPSOIL  
ITEM 610.1402

PROPOSED SINGLE SOLID  
WHITE LINE  
ITEM 685.07200110

PROPOSED TEMPORARY  
BRIDGE LIMITS

NEW ROCHELLE HARBOR

END OF PLAZA WALL  
STA 17+24.70

STEEL BRIDGE  
RAILING (TWO RAIL)  
WITH HANDRAIL  
ITEM 568.53

REMOVE EXISTING  
WARNING GATES  
ITEM 599.20200010

66'-0" BASCULE SPAN 15  
14+00 69.00' APPROACH SPAN 14

66.00' 15+00 APPROACH SPAN 13

64.00' APPROACH SPAN 12

62.00' 16+00 APPROACH SPAN 11

GLEN ISLAND APPROACH

PT: 17+62.18

END BRIDGE STA. 16+40.65

FURNISH AND INSTALL NEW TRAFFIC SIGNALS  
ITEM 680.01040015

PROPOSED DOUBLE  
SOLID YELLOW LINE  
ITEM 685.07200610

PROPOSED WARNING GATE  
(ITEM 599.063000WE)

TACK COAT  
ITEM 407.0102  
2" TOP COURSE  
ITEM 404.098101

PROPOSED BARRIER GATE  
(ITEM 599.063000WE)

PROPOSED TYPE 14 CURB RAMP  
ITEM 608.01051409  
STA. 16+77

LOWER HARBOR

PROPOSED MILLING LIMIT 116' OFFSET  
FROM PROPOSED CENTERLINE  
2" DEPTH  
ITEM 490.30

PROPOSED STOP BAR  
ITEM 685.07200110  
STA. 17+14.5



SCALE IN FEET



CONSULTANT INFORMATION



IN CHARGE OF C. JENNE, PE  
CHECKED BY K. HO, PE  
MADE BY E. MOHLER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	NMH	DD	PAY ITEM NUMBER

RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

WESTCHESTER COUNTY, NEW YORK  
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
DIVISION OF ENGINEERING  
Rehabilitation of Glen Island Approach Bridge  
over New Rochelle Harbor, City of New Rochelle  
CIVIL  
**GENERAL PLAN (2 OF 2)**

CONTRACT NUMBER 20-517	SHEET NUMBER GP-02
SHEET NO. 12 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO. 5-04-G-447-0	REV. NO. 1

*START STATION	*END STATION	OFFSET SIDE	LENGTH (FT)	REMOVE GATES 599.20200010 (LS)	CURB REMOVAL 609.06000008 (LF)	REMOVE FENCE 607.99870011 (LF)	REMOVE AND RESET WALL 560.13200007 (LF)
STA. 10+30.00	STA. 10+45.00	32' LEFT	15.0			15.0	
STA. 10+83.00	STA. 12+18.00	32' LEFT	135.0			135.0	
STA. 16+30.00	STA. 17+15.00	10' TO 56' LEFT	100.0				100.0
STA. 12+77.50		-26' TO 21' LEFT TO RIGHT	47.0	1.0			
STA. 14+94.00		-16' TO 15' LEFT TO RIGHT	31.0				
HARBOR LANE	TEMP ACCESS	NEPTUNE ISLAND	40.0			40.0	
NW PROJECT LIMITS	SE PROJECT LIMITS	18' TO 29' BOTH SIDES	735.0		735.0		

\*NOTE: SEE GENERAL PLANS FOR REFERENCED BASELINE STATIONING CORRESPONDING TO LIMIT(S) OF REMOVAL(S).

*START STATION	*END STATION	STAGE # BRIDGE SIDE	LENGTH	TRANSITION BRIDGE RAILING 568.70 (LF)	TYPE III BARRICADE 619.04 (EA)	TEMPORARY PAVEMENT STRIPES 619.0901 (LF)	DRUMS 619.07010001 (EA)	TEMPORARY BARRIER CAT 6 (PIN REQUIRED) 619.1716 (LF)	TEMPORARY BARRIER CAT 4 (PIN PERMITTED) 619.1714 (LF)	2" TEMP TOP COURSE 404.418901 (T)	4" TEMP BINDER COURSE 404.438901 (T)
STA. T 17+00.00	STA. T 18+00.00	1, 2, 3 NORTH	100.0	100.0							
STA. T 09+50.00	STA. T 11+50.00	1, 2, 3 NORTH	200.0					200.0		71.0	142.0
STA. T 16+50.00	STA. T 18+50.00	1, 2, 3 SOUTH	200.0					200.0		67.0	134.0
OPTIONAL	A.O.B.E.	2 NORTH	50.0						50.0		
OPTIONAL	A.O.B.E.	2 SOUTH	50.0						50.0		
STA. T 11+00.00		2 APPROACH SIDE	N/A		3.0						
STA. T 18+00.00		2 PLAZA SIDE	N/A		3.0						
STA. T 09+00.00	STA. T 12+75.00	2 NORTH	375.0								
STA. T 10+00.00	STA. T 18+50.00	2 PROJECT LIMITS	850.0					3400.0			

\*NOTES:  
1. SEE WZTC PLANS FOR REFERENCED BASELINE STATIONING CORRESPONDING TO TRAFFIC CONTROL DEVICE(S).  
2. ALL COSTS SHALL BE PAID FOR UNDER ITEM '619.01 - BASIC WORK ZONE TRAFFIC CONTROL', UNLESS OTHERWISE NOTED IN THE TABLE ABOVE.

*START STATION	*END STATION	OFFSET SIDE	DESCRIPTION	6" TOPSOIL 610.1402 (CY)	TURF (ROADSIDE) 610.1601 (SY)	TURF (LAWNS) 610.1602 (SY)	SODDING 610.18 (SY)	PLATANUS x ACERIFOLIA / LONDON PLANETREE 611.0161 (EA)	LIQUIDAMBAR STYRACIFLUA / AMERICAN SWEETGUM 611.0171 (EA)	QUERCUS COCCINEA / SCARLET OAK 611.0171 (EA)	CRUSHED GRAVEL 6" 623.11 (CY)
SEE TR-01 FOR ADDITIONAL INFO		PA	2 1/2" CALIPER B&B, 28" DIA.					3			
SEE TR-01 FOR ADDITIONAL INFO		LS	3" CALIPER B&B, 32" DIA.					3			
SEE TR-01 FOR ADDITIONAL INFO		QC	3" CALIPER B&B, 32" DIA.							3	
STA. 09+47.00	STA. 11+60.00	VARIES LEFT	ROADSIDE TURF RESTORATION	5.9	105.6						
STA. 09+73.50	STA. 11+60.00	VARIES RIGHT	ROADSIDE TURF RESTORATION	7.6	135.6						
STA. 10+12.00	STA. 12+36.00	VARIES LEFT	NEPTUNE ISLAND LAWN RESTORATION	62.9		1131.2	1131.2				
STA. 10+12.00	HARBOR LANE	TEMP PARKING	HARBOR LANE / NEW ROCHELLE	129.0		773.0	773.0				129
		TEMP ACCESS		79.0		472.0	472.0				79
STA. T 16+95.00	STA. T 18+05.00	SW QUADRANT @ PLAZA	TEMP SWLK @ GI PLAZA CONN.	33.0							

\*NOTES:  
1. SEE GENERAL PLANS FOR REFERENCED BASELINE STATIONING CORRESPONDING TO LANDSCAPING FEATURE(S).  
2. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION OF EXISTING TREES PRIOR TO BEGINNING WORK. ARBORIST SHALL BE CONSULTED IF NEEDED.

*START STATION	*END STATION	OFFSET SIDE	LENGTH (FT)	WIDTH (FT)	DEPTH (FT)	T&C EXCAVATION 206.0201 (CY)	BEDDING MATERIAL 620.0801 (CY)	CLSM 204.01 (CY)	TEMPORARY STEEL SHEETING 552.13 (SF)	WATERTIGHT SANITARY MANHOLE FRAME AND COVER 655.05020008 (EA)	SAN SEWER LATERALS 660.93000008 (EA)	48" SAN SEWER MANHOLE 664.40480006 (LF)	SAN SEWER CLEANOUTS 660.97020011 (LS)	6" DIP & FITTINGS 664.01060004 (LF)
STA. 09+60.00		13' RIGHT	5.0	5.0	10.0	9.3			200	1.0	1.0	5.0		
STA. 12+56.00		18' RIGHT	1.0	1.0	2.0	0.1			8		1.0		1.0	
STA. 09+60.00	STA. 12+56.00	10' RIGHT	296.0	4.0	4.0	131.6	58.5	73.1	2400				2.0	296.0
STA. 12+56.00	STA. 12+82.00	~20' TO CNTRL HOUSE CONN	26.0	4.0	3.0	8.1	5.2	2.9	180			5.0		26.0

\*NOTES:  
1. SEE GENERAL PLANS FOR REFERENCED BASELINE STATIONING CORRESPONDING TO SEWER UTILITY LIMIT(S).  
2. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING WORK.  
3. SEE 'CURB AND SIDEWALK' AND 'PAVEMENT REPAIRS' TABLE FOR RESTORATION ITEMS.

*START STATION	*END STATION	OFFSET SIDE	LENGTH (FT)	SCUPPER TYPE A 576.01 (EA)	PROPOSED BARRIER GATE 599.0630000WE (LS)	PROPOSED WARNING GATE 599.0630000WE (LS)	6' CHAIN-LINK FENCING 607.0512 (LF)	RESET EXISTING DRAINAGE FRAMES 604.07210110 (EA)	TRAFFIC SIGNALS 680.01040015 (LS)	CLEAN DRAINAGE STRUCTURES 621.04 (EA)	NON-PERFORATED PVC PIPE, 4" 605.16010008 (LF)
STA. 09+02.50		17' LEFT	N/A					1.0		1.0	
STA. 09+15.50		33' LEFT	N/A					1.0		1.0	
STA. 09+16.00		16.5' RIGHT	N/A					1.0		1.0	
STA. 09+35.50		37.5' LEFT	N/A					1.0		1.0	
STA. 11+14.00		24' LT & RT	N/A					1.0			
STA. 11+42.00		24' LT & RT	N/A					1.0			
STA. 14+68.00		10' LEFT	N/A	1.0							
STA. 14+68.00		10' RIGHT	N/A	1.0							
STA. 14+94.00		13' LEFT AND RIGHT	N/A		1.0						
STA. 15+93.50		12' LEFT AND RIGHT	N/A			1.0					
STA. 16+27.00		10' LEFT	N/A	1.0							
STA. 16+27.00		10' RIGHT	N/A	1.0							
STA. 16+74.50		44' LEFT	N/A					1.0		1.0	
STA. 16+74.50		44' RIGHT	N/A					1.0		1.0	
STA. 17+50.00		30' LEFT	N/A					1.0		1.0	
STA. 17+50.00		30' RIGHT	N/A					1.0		1.0	
STA. 16+27.00	STA. 16+73.50	10' TO 44' LEFT	46.5								46.5
STA. 16+27.00	STA. 16+73.50	10' TO 44' RIGHT	46.5								46.5
STA. 10+30.00	STA. 10+45.00	32' LEFT	15.0					15.0			
STA. 10+83.00	STA. 12+18.00	32' LEFT	135.0					135.0			
HARBOR LANE	TEMP ACCESS	NEPTUNE ISLAND	40.0					40.0			

\*NOTE: SEE GENERAL PLANS FOR REFERENCED BASELINE STATIONING CORRESPONDING TO LIMIT(S) OF LINEAR FEATURE(S).

*START STATION	*END STATION	OFFSET SIDE	LENGTH (FT)	PROPOSED STONE WALL - ITEM 560.11200007 (LF)	REINFORCED PRECAST CONCRETE PARKING BLOCKS - ITEM 609.40000015 (EA)
16+50	16+90	40' - 60' LEFT	40'	40'	
NEPTUNE LOT RESTORATION		LEFT			20

\*NOTE: SEE GENERAL PLANS AND GRADING PLAN FOR REFERENCED BASELINE STATIONING CORRESPONDING TO LIMITS OF WALL AND PARKING LOT.



CONSULTANT INFORMATION



IN CHARGE OF C. JENNE, PE  
CHECKED BY K. HO, PE  
MADE BY E. MOHLER

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JD	NH	CHANGED ITEM 599.06300008 TO 599.0630000WE

RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

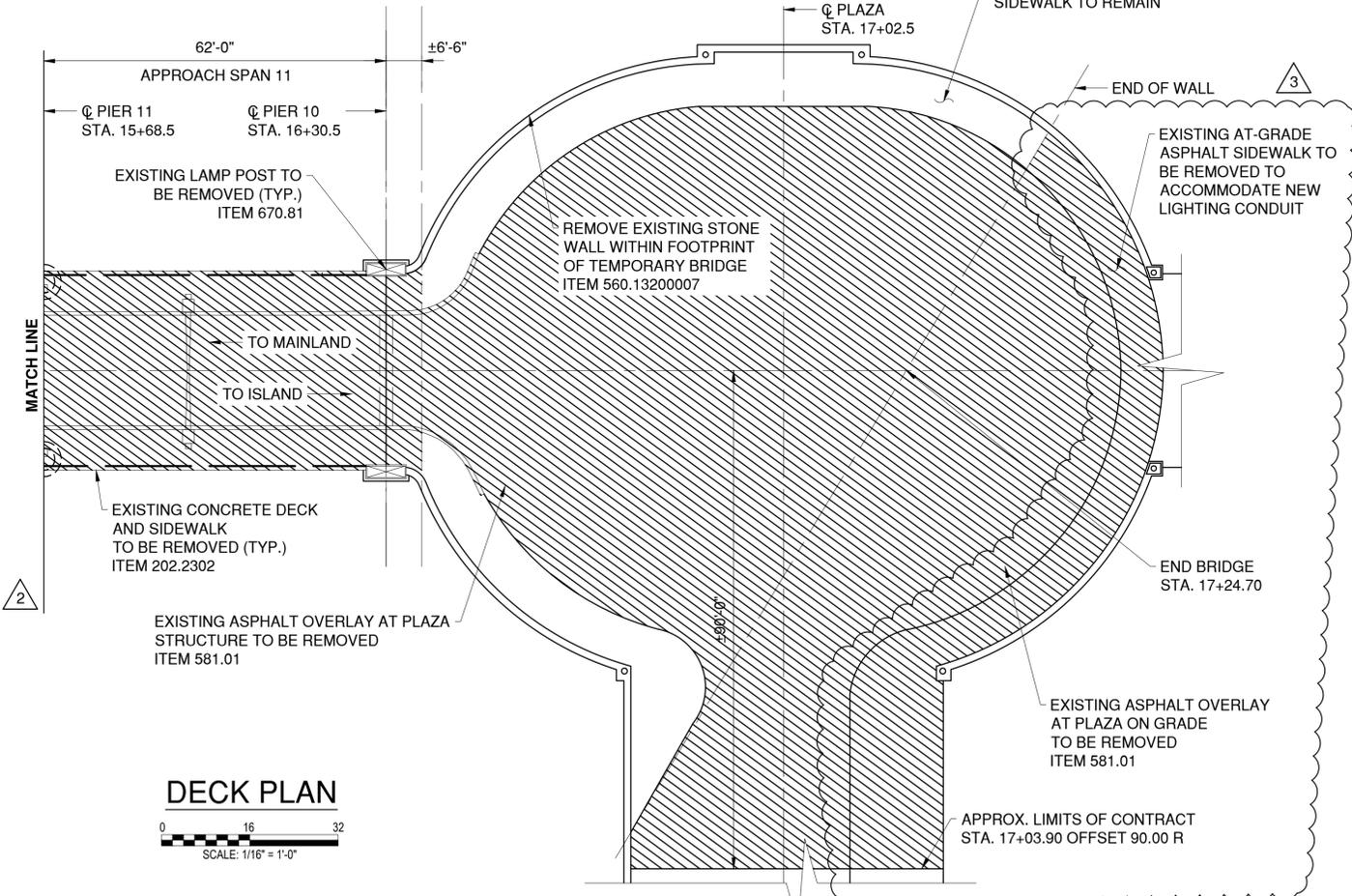
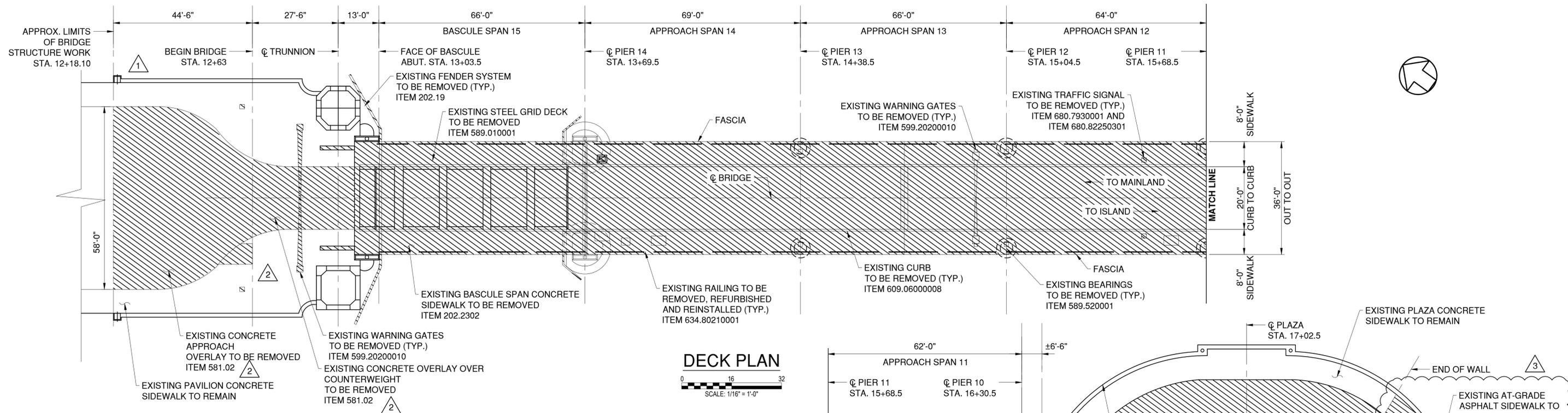
CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____

WESTCHESTER COUNTY, NEW YORK  
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
over New Rochelle Harbor, City of New Rochelle  
CIVIL

MISCELLANEOUS TABLES - 2 OF 2

CONTRACT NUMBER	SHEET NUMBER
20-517	MST-02
SHEET NO. 30 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-R-465-0	1



**DEMOLITION NOTES:**

1. THE INFORMATION PRESENTED ON THE DEMOLITION PLANS IS FOR INFORMATION PURPOSES. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BIDS TO ASCERTAIN THE EXTENT OF WORK.
2. LOCATION OF ALL EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY DEMOLITION WORK. EXISTING UTILITIES TO BE RELOCATED SHALL BE DONE PRIOR TO ANY REMOVAL ACTIVITY. ALL PRECAUTIONS SHALL BE TAKEN TO PROTECT ALL UTILITIES TO REMAIN IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY OWNERS.
3. ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE LEGALLY DISPOSED OF OFF-SITE.
4. EXTREME CARE SHALL BE TAKEN DURING REMOVAL OR OTHER DEMOLITION OPERATIONS AS TO NOT DAMAGE ANY OF THE EXISTING STRUCTURE WHICH IS TO REMAIN. DAMAGES, IF ANY, SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT NO ADDITIONAL COST TO THE COUNTY.
5. ANY AND ALL TEMPORARY DISTURBANCES TO THE EXISTING SITE CONDITIONS REQUIRED IN ORDER TO PERFORM DEMOLITION ACTIVITIES SHALL BE RESTORED TO ORIGINAL CONDITION AS DIRECTED BY AND TO THE SATISFACTION OF THE ENGINEER.
6. CLEAN AND PUMP OUT ALL DEBRIS, SLUDGE, WATER, AND WASTE IN THE COUNTERWEIGHT PIT. REFER TO PLUMBING DRAWINGS AND SPECIFICATIONS.

APPROXIMATE DEMOLITION QUANTITIES			
REMOVAL ITEM	UNIT	QUANTITY	
ITEM 202.2202: APPROACH SPAN CONCRETE DECK, SIDEWALKS	SF	1069	
ITEM 202.2302: APPROACH SPAN CONCRETE DECK, SIDEWALKS	SF	9615	
ITEM 205.97200011: COUNTERWEIGHT PIT CLEANUP & DISPOSAL	LS	1	
ITEM 560.13200007: STONE MASONRY WALL	LF	100	
ITEM 581.01: PLAZA OVERLAY	SF	11285	
ITEM 581.02: APPROACH SLAB AND DECK OVER COUNTERWEIGHT	SF	3537	
ITEM 589.010001: STEEL GRID DECK, FLOOR BEAMS, STRINGERS	LB	267020	
ITEM 589.520001: GIRDER BEARINGS	EA	10	
ITEM 599.20200010: WARNING GATES	LS	1	
ITEM 609.06000008: CURB REMOVAL	LF	1419	
ITEM 634.80210001: PEDESTRIAN RAILING	LF	654	
ITEM 680.7930001: SIGNAL HEAD REMOVAL	EA	4	
ITEM 680.82250301: SIGNAL POLE REMOVAL	EA	4	
ITEM 670.81: LAMP POST REMOVAL	EA	20	

**LEGEND**

DENOTES REMOVAL

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY J. WARNCKE, PE  
 MADE BY N. HYSON, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/12/24	NH	DD	SIDEWALK DEMO FOR SEWER
2	4/24/24	NH	DD	OVERLAY DEMO CLARIFIED
3	4/30/24	NH	DD	PLAZA SIDEWALK DEMO

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR: \_\_\_\_\_ PROJECT COORDINATOR: \_\_\_\_\_

NAME: \_\_\_\_\_ NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_  
 TITLE: \_\_\_\_\_ TITLE: \_\_\_\_\_

CONSULTANT SEAL:

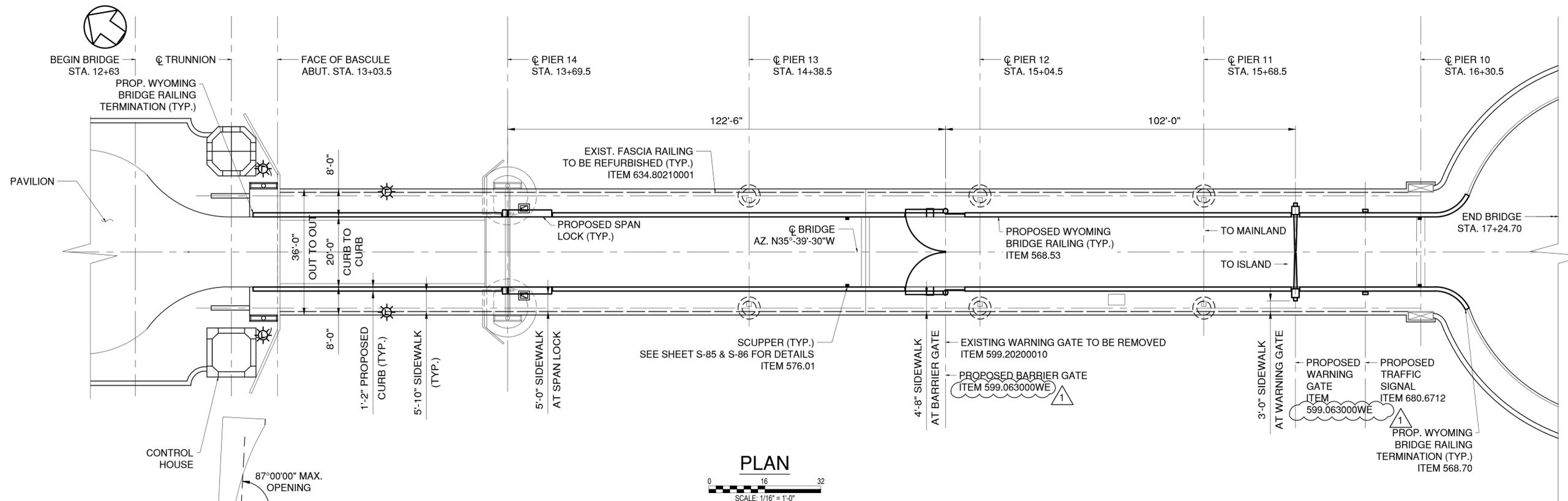
CONSULTANT INFORMATION: H&H 1501 BROADWAY, SUITE 601 NEW YORK, NY 10036 (212) 944-1150

WESTCHESTER COUNTY, NEW YORK  
 DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 DIVISION OF ENGINEERING

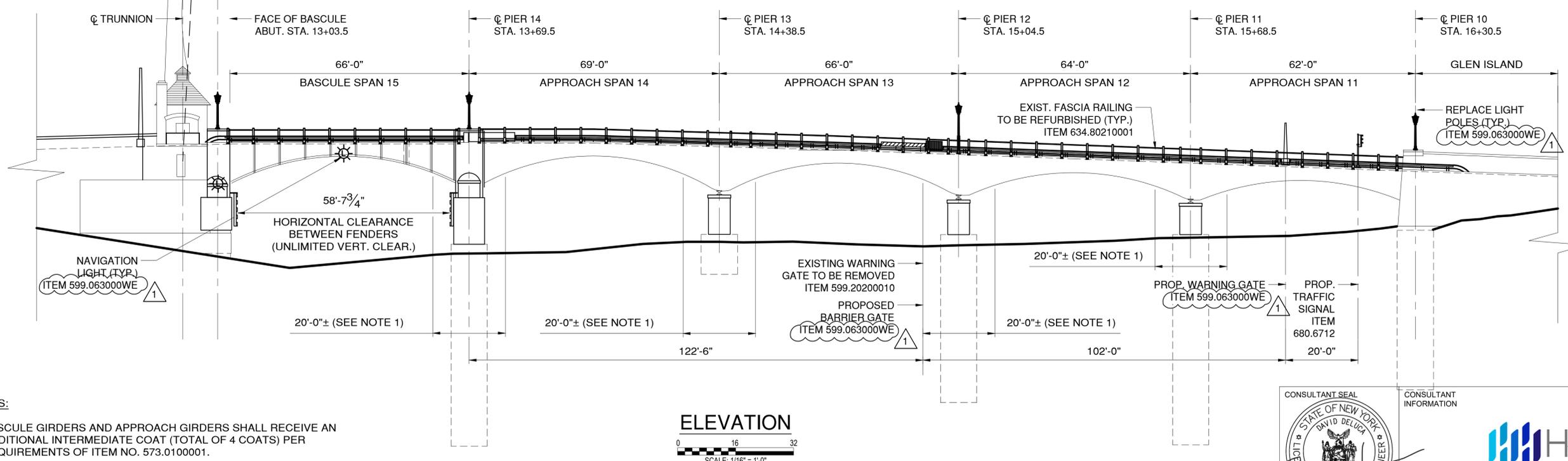
Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 STRUCTURAL

**DEMOLITION PLAN - BRIDGE**

CONTRACT NUMBER: 20-517 SHEET NUMBER: S-02  
 SHEET NO. 43 OF 212  
 SCALE: AS SHOWN DATE: 03/08/2024  
 DPW FILE NO. 5-04-R-478-0 REV. NO. 3



**PLAN**  
SCALE: 1/16" = 1'-0"



**ELEVATION**  
SCALE: 1/16" = 1'-0"

- NOTES:**
- BASCULE GIRDERS AND APPROACH GIRDERS SHALL RECEIVE AN ADDITIONAL INTERMEDIATE COAT (TOTAL OF 4 COATS) PER REQUIREMENTS OF ITEM NO. 573.0100001.
  - ANCHOR SPAN IN OPEN POSITION DURING MACHINERY AND ELECTRICAL WORK.

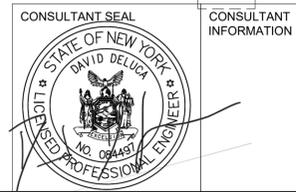
IN CHARGE OF D. DELUCA, PE  
 CHECKED BY J. WARNCKE, PE  
 MADE BY S. VERA-FOX, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	NMH	DD	PAY ITEM NUMBER

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____



**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

STRUCTURAL

**PROPOSED BRIDGE PLAN & ELEVATION**

CONTRACT NUMBER 20-517	SHEET NUMBER S-04
SHEET NO. 45 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-R-480-0	1



# TEMPORARY STRUCTURE NOTES

## GENERAL NOTES:

- ALL DEMOLITION OF EXISTING SUPERSTRUCTURES SHALL BE INCLUDED UNDER ITEMS 202.2202, 202.2302, 589.010001, AND 589.520001. DEMOLITION OF EXISTING SUBSTRUCTURE SHALL BE INCLUDED UNDER ITEM 202.19. FOR DEMOLITION LIMITS DURING EACH STAGE SEE SHEET S-02.
- ALL WORK FOR THE TEMPORARY STRUCTURES AND BRIDGES SHOWN, INCLUDING BUT NOT LIMITED TO ALL SUPERSTRUCTURE AND SUBSTRUCTURE ELEMENTS, MACHINERY, ELECTRICAL, CONTROL SYSTEMS, OPERATION AND MAINTENANCE SHALL BE INCLUDED UNDER ITEM 619.0501 ON A LUMP SUM BASIS.
- ALL WORK FOR TEMPORARY STRUCTURES SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS FOR CONSTRUCTION STAGING AND WZTC FOR THE PROJECT.
- THE TEMPORARY STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH THE THE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (17TH EDITION) FOR A DESIGN LOAD OF HS-20, IN COMBINATION WITH AASHTO STANDARD SPECIFICATIONS FOR MOVABLE HIGHWAY BRIDGES (1988). ALTERNATELY, THE TEMPORARY STRUCTURE MAY BE DESIGNED IN CONFORMANCE WITH THE CURRENT NYSDOT LOAD AND RESISTANCE FACTOR DESIGN (LRF) BRIDGE DESIGN SPECIFICATIONS FOR A DESIGN LIVE LOAD OF HL-93. THE CONTRACTOR SHALL ALSO DESIGN FOR ANY ANTICIPATED CONSTRUCTION LOADINGS.
- FABRICATION OF THE TEMPORARY BRIDGE, INCLUDING ANY FRACTURE CRITICAL MEMBERS, SHALL BE IN ACCORDANCE WITH THE NYSDOT STEEL CONSTRUCTION MANUAL (4TH EDITION, 2018).
- THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE PERMANENT BRIDGE DURING CONSTRUCTION AND DEMOLITION OF TEMPORARY STRUCTURES. ANY DAMAGE TO THE PERMANENT STRUCTURES IS TO BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE COUNTY.
- ALL TEMPORARY STRUCTURES AND BRIDGES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK RETAINED BY THE CONTRACTOR AND THE DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. THE COST OF THE DESIGN SHALL BE PAID FOR UNDER ITEM 619.0501.
- TEMPORARY FENDERS SHALL BE INSTALLED TO PROTECT THE TEMPORARY BRIDGE FROM VESSEL IMPACT. THE FENDERS SHALL BE INDEPENDENT OF THE PIVOT AND REST PIERS. THE FENDERS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW YORK AND SHALL BE PAID FOR UNDER ITEM 619.0501.
- FENDERS AND NAVIGATION LIGHTS FOR THE TEMPORARY BRIDGE SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE USCG.
- ALL BARRIERS AND RAILINGS USED ON THE TEMPORARY STRUCTURES SHALL HAVE A MINIMUM SERVICE LEVEL OF TL-2.
- THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND ABANDONED FOUNDATIONS IN OR NEAR THE NEW ROCHELLE HARBOR THAT MAY INTERFERE WITH THE LOCATION OF TEMPORARY FOUNDATIONS PRIOR TO COMMENCING WORK AND CONSTRUCTION OPERATIONS. SPECIAL CARE SHALL BE TAKEN TO AVOID ANY DAMAGE TO EXISTING UTILITIES. REMOVAL OF ANY EXISTING STRUCTURE FOUNDATIONS OR UTILITY RELOCATION REQUIRED TO ACCOMMODATE THE CONTRACTOR'S PROPOSED TEMPORARY STRUCTURES SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER AND SHALL BE INCLUDED IN THE COST OF THE CORRESPONDING TEMPORARY STRUCTURE ITEMS.
- THE CONTRACTOR SHALL MONITOR ALL TEMPORARY STRUCTURES AND FOUNDATIONS FOR SETTLEMENT TO ENSURE THE TEMPORARY STRUCTURE'S STABILITY UNDER SERVICE CONDITIONS. PROVISIONS SHALL BE MADE TO ALLOW FOR ADJUSTMENT OF THE TEMPORARY ROADWAY ELEVATION.
- THE TEMPORARY FILL TYPE RETAINING WALLS USED ALONG THE TEMPORARY EMBANKMENT STRUCTURES SHALL BE DESIGNED SO THAT THE LATERAL LOAD IS NOT TRANSFERRED TO THE TEMPORARY ABUTMENT WALL DURING THE SERVICE PERIOD OF THE TEMPORARY STRUCTURE UNDER THE SERVICE LIMIT STATE. FOR THIS PURPOSE, WIRE MESH MECHANICALLY STABILIZED EARTH SYSTEMS ARE RECOMMENDED.
- THE MAXIMUM LONGITUDINAL GRADE FOR ALL TEMPORARY PEDESTRIAN SIDEWALKS SHALL NOT EXCEED 7% AND THE CROSS SLOPE SHALL NOT EXCEED 1.5%. THE SIDEWALK SURFACES SHALL BE IN ACCORDANCE WITH CHAPTER 18 OF THE NYSDOT HIGHWAY DESIGN MANUAL.
- CONTRACTOR SHALL SUBMIT DETAILS OF THE TEMPORARY SUBSTRUCTURES TO THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION FOR REVIEW.
- THE FLOATING DOCKS ADJACENT TO THE PROJECT SITE ARE OWNED BY HUGUENOT YACHT CLUB AND ANY MOVEMENT/RELOCATION SHALL BE COORDINATED WITH THE HUGUENOT COMMODORE. ANY COSTS ASSOCIATED WITH CONFLICTS BETWEEN THE TEMPORARY BRIDGE OR CONTRACTOR CONSTRUCTION OPERATIONS AND THE FLOATING DOCKS SHALL BE PAID FOR UNDER ITEM 619.0501. THE CONTRACTOR IS RESPONSIBLE FOR REIMBURSING ANY BUSINESSES IN THE NEW ROCHELLE HARBOR WHOSE BUSINESS OPERATIONS ARE DISRUPTED BY THE CONTRACTOR'S MEANS AND METHODS.

## TEMPORARY BRIDGE NOTES (DWGS. S-88 THRU S-91):

THE NOTES BELOW ARE IN ADDITION TO THE TEMPORARY STRUCTURE GENERAL NOTES AND APPLY TO TEMPORARY BRIDGES IN-SERVICE DURING CONSTRUCTION.

- THE TEMPORARY BRIDGES SHALL PROVIDE FOR SAFE ACCOMMODATION OF THE NUMBER OF TRAFFIC LANES SHOWN ON THE PLANS BY USE OF A CONTINUOUS ROADWAY. LANE STRIPING IS INCLUDED UNDER ITEM 619.0501.
- THE BARRIERS OR RAILING ON THE TEMPORARY BRIDGES SHALL BE CONTINUOUS FOR THE FULL LENGTH OF THE TEMPORARY BRIDGE AND SHALL BE PINNED OR ANCHORED TO THE TEMPORARY STRUCTURE.
- THE TEMPORARY BRIDGE VERTICAL CLEARANCE OVER THE NAVIGATION CHANNEL, NEW ROCHELLE HARBOR, SHALL MEET THE MINIMUM SHOWN IN THE PLANS.
- SEE THE USCG PERMIT FOR ADDITIONAL NAVIGATION REQUIREMENTS.
- THE PIER LOCATIONS AND STRUCTURE TYPES FOR THE TEMPORARY BRIDGES SHALL MEET THE PROJECT LOAD CARRYING CRITERIA, GEOMETRIC REQUIREMENTS AND ACCOMMODATE THE CONTRACTOR'S CONSTRUCTION MEANS AND METHOD.
- SEE SHEET E-03 FOR ADDITIONAL TEMPORARY MOVABLE BRIDGE ELECTRICAL REQUIREMENTS.

## TEMPORARY BRIDGE OPERATION NOTES:

- TEMPORARY BRIDGE SHALL BE MANNED BY A QUALIFIED OPERATOR EMPLOYED BY THE CONTRACTOR FOR THE DURATION THAT THE TEMPORARY BRIDGE IS IN SERVICE. OPENINGS SHALL BE AS PRESCRIBED BY THE USCG. SEE USCG PERMIT FOR MORE INFORMATION. THE COST OF OPERATION SHALL BE INCLUDED IN ITEM 619.0501.
- FOR ANY TEMPORARY CHANGE TO THE OPERATING SCHEDULE OF A DRAWBRIDGE, LASTING LESS THAN OR EQUAL TO 180 DAYS, THE REQUEST SHOULD BE SUBMITTED TO THE USCG DISTRICT 1 BRIDGE DEPARTMENT AS EARLY AS POSSIBLE, PREFERABLY 90 DAYS BEFORE THE START DATE OF THE ACTION. THE REQUEST SHOULD INCLUDE SCOPE OF WORK, MAP SHOWING LOCATION OF THE BRIDGE, SCHEDULE, DRAWINGS SHOWING ANY EQUIPMENT IN THE WATERWAY, AND LIST OF MARINERS THAT HAVE BEEN NOTIFIED OF THIS DEVIATION.
- THE CONTRACTOR SHALL SUBMIT AN OPERATION & MAINTENANCE MANUAL FOR THE TEMPORARY BRIDGE. THE MANUAL SHALL ADDRESS THE ITEMS LISTED BELOW:  
OPERATION:  
  - OPERATING TIME - PROVIDE SCHEDULE AND STAFFING PLAN THAT CLEARLY ILLUSTRATES THAT THE BRIDGE OPENING OPERATION WILL ADHERE TO THE 'GREEN TO GREEN' REQUIREMENTS NOTED ON SHEET E-03.
  - PROVISIONS FOR BRIDGE POWER
  - COMPLETE STEP BY STEP PROTOCOL TO BE FOLLOWED FOR EACH OPENING. (IF THERE ARE SCENARIOS WHERE THE EXISTING BRIDGE NEEDS TO BE OPENED, THAT SHOULD BE DESCRIBED AS WELL)
  - NAVIGATION LIGHT PROTOCOL FOR EACH STAGE CONSIDERING EXISTING BRIDGE AND TEMPORARY BRIDGE SIMULTANEOUS OPERATION AND COORDINATION BETWEEN EXISTING BRIDGE AND TEMPORARY BRIDGE NAVIGATION LIGHTS.
  - PERSONNEL REQUIREMENTS FOR OPENING
  - COMMUNICATIONS - AIR HORN AND MARINE RADIO FOR COMMUNICATION WITH MARINE VESSELS ARE REQUIRED AT A MINIMUM
  - OPERATIONAL LIMITS - NOTE ANY OPERATIONAL LIMITS DUE TO EXTREME TEMPERATURES OR PRESENCE OF ICE ANYWHERE IN THE SYSTEM (HYDRAULIC FLUID FLOW, MOVEMENT RESTRICTION, ETC)
  - ALTERNATE METHOD OF OPERATION - IN THE EVENT OF PRIMARY DRIVE SYSTEM FAILURE
  - KEY PERSONNEL CONTACT LIST - NOTE WHO WILL CONTACT USCG AND CONTROL CENTER FOR EACH MARINE OPENING
 MAINTENANCE:  
  - LUBRICATION SCHEDULE FOR KEY COMPONENTS
  - INSPECTION SCHEDULE FOR KEY COMPONENTS
  - TROUBLESHOOTING GUIDE
  - SPILL PREVENTION AND CONTAINMENT PLAN

## GEOTECHNICAL NOTES:

- CONTRACTOR PRIOR TO INSTALLATION OF ANY DEEP FOUNDATION ELEMENT, SHALL PERFORM 1 GEOTECHNICAL BORING PER PROPOSED SUBSTRUCTURE TO ILLUSTRATE SUBSURFACE CONDITIONS AND CONFIRM THEIR DESIGN ASSUMPTIONS. IN LINE WITH NYSDOT GDM STANDARDS, EACH BORING SHALL BE TERMINATED UPON THE CONTRACTOR RETRIEVING 20FT OF NX ROCK CORES WITH A RECOVERY IN EXCESS OF 85%. OVERBURDEN DRILLING SHALL BE PAID UNDER ITEM NO. 648.06 AND ROCK CORE DRILLING PAID UNDER 648.15. MOBILIZATION FOR BORINGS ON LAND SHALL BE PAID UNDER ITEM NO. 648.17, AND MOBILIZATION FOR WATER BORINGS UNDER ITEM NO. 648.19.
- ALL TEMPORARY FOUNDATIONS SHALL BE REMOVED TO A MINIMUM 2 (TWO) FEET BELOW FINISHED GRADE/MUDLINE OR DEEPER AS STIPULATED IN THE PROJECT PERMITS.

## GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING:

THE CONTRACTOR SHALL DEVELOP, IMPLEMENT, AND MAINTAIN A GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING PLAN TO MONITOR VIBRATIONS, ACCELERATIONS, VERTICAL SETTLEMENT, AND LATERAL MOVEMENT OF TEMPORARY SUPPORT STRUCTURES AND ADJACENT GROUND, AND EXISTING STRUCTURES AND INFRASTRUCTURE DURING CONSTRUCTION, INCLUDING ANCILLARY STRUCTURES AND INFRASTRUCTURE WITHIN THE ZONE OF INFLUENCE OF CONSTRUCTION.

THE GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING PLAN SHALL ALSO INCLUDE, WHEN NECESSARY, DETAILS OF DESIGN VERIFICATION GEOTECHNICAL INSTRUMENTATION SUCH AS SETTLEMENT MONITORING FOR EMBANKMENT CONSTRUCTION, GROUNDWATER MONITORING FOR DEWATERING OPERATIONS, AND MONITORING OF OTHER GEOTECHNICAL OPERATIONS PROPOSED BY THE CONTRACTOR.

WHEREVER VIBRATION-PRODUCING ACTIVITIES ARE LOCATED WITHIN 100 FEET OF A STRUCTURE, BUILDING, OR UTILITY, THE CONTRACTOR SHALL PERFORM VIBRATION MONITORING IN ACCORDANCE WITH NYSDOT SPECIAL SPECIFICATION 634.99020017 TO ADDRESS THE POTENTIAL IMPACTS TO NEARBY RECEPTORS DUE TO CONSTRUCTION OR DEMOLITION ACTIVITIES ASSOCIATED WITH THIS PROJECT. THE TERM " RECEPTOR" INCLUDES BUILDINGS, UTILITIES, NEWLY CONSTRUCTED ELEMENTS, AND EXISTING STRUCTURES, FOR WHICH CONSTRUCTION IMPACTS OR WORK ABOVE RECOMMENDED LIMITS MAY BE DETRIMENTAL.

THE CONTRACTOR SHALL PROVIDE WEEKLY CONSTRUCTION INSTRUMENTATION MONITORING REPORTS TO THE EOR. MONITORING REPORTS SHALL BE INTERPRETIVE IN NATURE, AND SHALL ENUMERATE ANY CORRECTIONS APPLIED TO THE DATA INCLUDING, BUT NOT LIMITED TO ANY NOTIFICATION MEASURES TAKEN REGARDING DATA. THE WEEKLY REPORTS SHALL INCLUDE CLEAR AND EXPLICIT STATEMENTS OF READINGS EXCEEDING ANY PRE-DETERMINED THRESHOLD VALUES. THE CONTRACTOR SHALL MAINTAIN THE INSTRUMENTATION AND MONITOR THE MEASUREMENTS DURING AND AFTER CONSTRUCTION UP TO FINAL ACCEPTANCE.

## GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING (CONTINUED):

THE GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING PLAN SHALL BE SIGNED AND STAMPED BY THE LEAD GEOTECHNICAL ENGINEER, AND AS A MINIMUM SHALL INCLUDE:

- IDENTIFICATION OF RECEPTORS, INCLUDING STRUCTURES AND/OR UTILITIES LOCATED WITHIN 100 FEET OF VIBRATION-PRODUCING ACTIVITIES THAT REQUIRE VIBRATION MONITORING;
- THE TYPES AND QUANTITIES OF INSTRUMENTS TO BE USED FOR MONITORING, AND THE PROPOSED LOCATION OF THE INSTRUMENTS;
- ALERT AND ACTION LEVEL VIBRATION LIMITS FOR MONITORED STRUCTURES AND/OR UTILITIES, AND NOTIFICATION PROTOCOL FOR INSTANCES WHERE THE LIMITS ARE EXCEEDED;
- THE FREQUENCY AND DURATION OF INSTRUMENT READINGS; AND
- WHEN NECESSARY, GEOTECHNICAL INSTRUMENTATION FOR DESIGN VERIFICATION INCLUDING THE TYPES, QUANTITIES, LOCATIONS, AND FREQUENCY OF READINGS FOR PROPOSED INSTRUMENTATION.

THE CONTRACTOR SHALL INSTALL AND TAKE READINGS ON VIBRATION MONITORING INSTRUMENTS AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION ACTIVITIES WITHIN THE 100-FOOT ZONE OF INFLUENCE TO ESTABLISH BASELINE READINGS.

THE GEOTECHNICAL INSTRUMENTATION SHALL BE USED TO DEMONSTRATE AT PROJECT ACCEPTANCE THAT MEASURED GEOTECHNICAL PERFORMANCE IS IN LINE WITH PREDICTED PERFORMANCE.

THE GEOTECHNICAL INSTRUMENTATION AND CONSTRUCTION MONITORING PLAN SHALL BE SUBMITTED TO THE EOR NO LATER THAN 30 DAYS BEFORE THE START OF CONSTRUCTION THAT INITIATES THE NEED FOR MONITORING.

1

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY J. WARNCKE, PE  
 MADE BY N. HYSOY, PE

1	4/30/24	NH	DD	FLOATING DOCK NOTE ADDED
REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION

RECORD DRAWING CERTIFICATION			
<input type="checkbox"/> AS BUILT - CHANGES AS NOTED		<input type="checkbox"/> AS BUILT - NO CHANGES	
CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____



CONSULTANT SEAL  
STATE OF NEW YORK  
DAVID DELUCA  
NO. 04881  
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT INFORMATION



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WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING		CONTRACT NUMBER 20-517	SHEET NUMBER S-87
Rehabilitation of Glen Island Approach Bridge over New Rochelle Harbor, City of New Rochelle		SHEET NO. 128 OF 212	
STRUCTURAL		SCALE: AS SHOWN DATE: 03/08/2024	
<b>TEMPORARY BRIDGE NOTES</b>		DPW FILE NO. 5-04-S-563-0	REV. NO. 1



## GENERAL ELECTRICAL NOTES

- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYS DOT) STANDARD SPECIFICATIONS, THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC), THE REGULATIONS OF UNDERWRITER'S LABORATORIES (UL), AND THE ELECTRICAL REQUIREMENTS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) STANDARD SPECIFICATIONS.
- ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES AND SHALL BE SCHEDULED CONSISTENT WITH THE OVERALL CONSTRUCTION STAGING SEQUENCE.
- ALL ELECTRICAL COMPONENTS AND MATERIAL SHOWN ON THE CONTRACT DRAWINGS ARE NEW UNLESS OTHERWISE NOTED (UON).
- ALL NEW CONDUIT AND FITTINGS SHALL BE 3/4" MINIMUM POLYVINYL CHLORIDE (PVC) COATED HOT DIPPED RIGID GALVANIZED STEEL (RGS), UON, AND SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION, AND INSTALLATION CONTAINED IN THE SPECIFICATIONS.
- ALL CONDUITS AND FITTINGS USED IN ONE CONTINUOUS RUN SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. ALL ABOVE GROUND OUTDOOR CONDUITS SHALL BE PVC-RGS, UON. ALL UNDERGROUND OR EMBEDDED IN BARRIERS/CONCRETE CONDUITS SHALL BE PVC-SCHEDULE 80, UON.
- WIREWAYS, WHERE SHOWN IN THE PLANS SHALL BE NEMA 4X TYPE 316 STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES. SIZES AS REQUIRED TO MEET NEC.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REQUIRED BOXES, CONDUIT FITTINGS, ELBOWS, AND HARDWARE FOR A COMPLETE INSTALLATION, WHETHER OR NOT THEY ARE EXPLICITLY SHOWN OR INDICATED ON THE CONTRACT DRAWINGS.
- NEW ELECTRICAL CONDUCTORS SHALL BE MINIMUM SIZE NO. 12 AWG TYPE XHHW-2, EXCEPT FOR INTERNAL WIRING IN CONTROL CABINETS AND CONTROL DESK IN WHICH NO. 12 AWG MAY NOT FIT. IN THE CASE OF CONTROL CABINETS AND CONTROL DESK WIRING, THE MINIMUM SIZE SHALL BE MINIMUM SIZE NO. 14 AWG SWITCHBOARD WIRE (TYPE SIS). ALL WIRES AND CABLES SHALL MEET ALL THE ADDITIONAL REQUIREMENTS FOR MATERIAL, CONSTRUCTION AND INSTALLATION CONTAINED IN THE RELEVANT SPECIFICATIONS.
- ALL SWITCHES, RELAYS, CONTACTORS AND STARTERS ARE SHOWN ON THE DRAWINGS AS DE-ENERGIZED, WITH THE SPAN FULLY CLOSED, LOCKS DRIVEN AND OPEN FOR TRAFFIC.
- ALL NEW CONDUCTORS INSTALLED IN CONDUIT SHALL BE INSTALLED WITH GROUND CONDUCTORS. GROUND CONDUCTORS SHALL BE PROVIDED IN ALL NEW FLEXIBLE CABLES. MINIMUM SIZE GROUND CONDUCTOR SHALL BE NO. 12 AWG. ALL CABINETS, TERMINAL AND JUNCTION BOXES SHALL BE GROUNDED IN ACCORDANCE WITH THE NEC.
- ALL CONDUCTORS SHALL BE CONNECTED TO TERMINAL BLOCKS OR DEVICES, SPLICES SHALL NOT BE PERMITTED WITHIN EQUIPMENT ENCLOSURES, BOXES (OTHER THAN TERMINAL BOXES), OR CONDUIT FITTINGS.
- CONTRACTOR SHALL PERFORM ALL WORK WITH DUE RESPECT FOR LIFE AND PROPERTY IN THE VICINITY OF THE WORK AREA. CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR PROTECTION OF SAME FROM ANY HARM OR DAMAGE DURING THE ENTIRE CONSTRUCTION PERIOD. ANY HARM OR DAMAGE SHALL BE RECTIFIED TO THE ENTIRE SATISFACTION OF THE COUNTY OF WESTCHESTER AT NO ADDITIONAL COST.
- THE ELECTRICAL EQUIPMENT AND RACEWAY LAYOUTS SHOWN IN THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW A CONCEPTUAL LAYOUT. CONTRACTOR TO ADJUST AS MAY BE REQUIRED. SCALES ARE APPROXIMATE. ACTUAL CONDITIONS SHALL BE VERIFIED IN THE FIELD. WHILE MAJOR EQUIPMENT IS SHOWN, NOT EVERY DETAIL OR EXACT LOCATION OF ALL EQUIPMENT AND/OR CONDUIT MAY BE SHOWN. SIZES OF EQUIPMENT MAY VARY, DEPENDING ON THE MANUFACTURER SELECTED. THE CONTRACTOR SHALL FOLLOW THESE LAYOUTS AS CLOSELY AS POSSIBLE, REALIZING THAT ACTUAL INSTALLATIONS MAY VARY SLIGHTLY DUE TO THE FIELD CONDITIONS AND STRUCTURAL/MECHANICAL COORDINATION. THE CONTRACTOR SHALL VERIFY ALL THE DIMENSIONS RELATED TO ELECTRICAL EQUIPMENT INSTALLATION PRIOR TO PERFORMING THE ACTUAL INSTALLATION. ANY DEVIATIONS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL ANY DEVIATIONS IN PROPOSED CABLE AND CONDUIT ROUTINGS.
- THESE PLANS AND SPECIFICATIONS DO NOT NECESSARILY SHOW ALL ASPECTS OF THE REQUIRED INSTALLATION. PERFORM ALL WORK NECESSARY, TO PROVIDE FULLY OPERATIONAL SYSTEMS THAT ARE IN COMPLIANCE WITH ALL STATED CONTRACT REQUIREMENTS, WHETHER SHOWN ON THE PLANS OR NOT. PRESENTATION OF INCOMPLETE INFORMATION OR OMISSIONS OF DETAILS FOR ITEMS WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMISSIONS AND DETAILS OF WORK, AT NO EXTRA COST.
- ANY APPARATUS, DEVICE, CIRCUIT, APPLIANCE, MATERIAL, OR LABOR NOT HEREIN SPECIFICALLY MENTIONED OR INCLUDED, BUT THAT MAY BE FOUND NECESSARY TO COMPLETE OR PERFECT THE INSTALLATION AND EQUIPMENT IN A MANNER ACCEPTABLE TO THE ENGINEER, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AS IF SPECIFICALLY INCLUDED IN THESE DRAWINGS.
- ALL TEMPORARY WORKS AND SUPPORTS REQUIRED TO COMPLETE WORK SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE OTHER WORK ITEMS.
- THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE REMOVAL AND INSTALLATION OF ELECTRICAL COMPONENTS, HANGERS, SUPPORTS, ETC. ALL PATCHING SHALL BE DONE SO AS TO LEAVE THE AREA IN ITS ORIGINAL CONDITION AS A MINIMUM OR AS OTHERWISE REQUIRED BY THE ENGINEER.
- CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS IN THE VICINITY OF THE WORK. THE CONTRACTOR SHALL CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE JOB SITE AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT. AT THE COMPLETION OF THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING THE SITE IN A CLEAN, ORDERLY STATE.

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

## GENERAL ELECTRICAL NOTES (CONT'D)

- EXISTING ELECTRICAL CABLE, WIRES, CONDUITS HANGERS, SUPPORTS, CLAMPS, ETC., THAT ARE BEING REPLACED SHALL NOT BE REUSED. ALL SUCH PARTS SHALL BE PROPERLY DISPOSED OF.
- THE CONTRACTOR SHALL REMOVE AND RE-EXECUTE ALL UNSATISFACTORY WORK AT NO ADDITIONAL COST TO THE COUNTY OF WESTCHESTER.
- ALL STRUCTURAL, MECHANICAL AND ARCHITECTURAL BACKGROUND INFORMATION SHOWN IN THE ELECTRICAL PLANS IS FOR REFERENCE ONLY.
- CONDUIT PENETRATIONS THROUGH WALLS AND FLOORS OF BUILDINGS SHALL BE SEALED WITH AN APPROVED FIRE-STOP SEALANT.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ENGRAVED BRASS TAGS AT BOTH ENDS OF ALL RACEWAY RUNS IDENTIFYING THEM WITH FINAL CONDUIT DESIGNATIONS WHICH SHALL COINCIDE WITH THOSE IN THE CONTRACTOR'S FINAL AS-BUILT DRAWINGS. PAYMENT FOR THESE TAGS SHALL BE UNDER THE VARIOUS PAY ITEMS TO WHICH THE RACEWAYS PERTAIN.
- ENCLOSURES WHERE SHOWN IN THE PLANS SHALL BE NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA) 4X TYPE 316 STAINLESS STEEL WITH CONTINUOUS HINGES AND LATCHES, UON.
- PRIOR TO THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL SUBMIT A COMPREHENSIVE STAGING PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THESE PLANS WHICH SHALL CLEARLY DEFINE SPECIFIC MILESTONE DATES TO THE CONSTRUCTION MANAGER FOR APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR ALL OTHER CONSTRUCTION THAT MAY AFFECT OPERATIONS OR SCHEDULE.
- THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING ACTUAL INSTALLATIONS. ANY DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION OR CONSTRUCTION DEVIATIONS REGARDING THE STRUCTURE, SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- UPON COMPLETION OF THE ELECTRICAL INSTALLATION, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR ACCEPTANCE. PRIOR TO TESTING, THE CONTRACTOR SHALL SUBMIT A COMPLETE TESTING PROCEDURE FOR APPROVAL. THE SYSTEM SHALL BE TESTED STEP BY STEP FOR SHORT CIRCUITS, GROUNDS, PROPER OPERATION AND INTERLOCKS IN THE PRESENCE OF THE ENGINEER. ALL FINDINGS SHALL BE RECORDED AND DEFICIENCIES CORRECTED. SEE SPECIFICATIONS FOR ADDITIONAL TESTING REQUIREMENTS.
- IN ANY CASE OF DISCREPANCIES IN NOTED DETAILS, CATALOG NUMBERS, AND DESCRIPTIONS, OR WHERE MULTIPLE INTERPRETATIONS OF THE PLANS MAY BE REASONABLY MADE, SUBMIT A WRITTEN INQUIRY TO THE ENGINEER, WHO WILL MAKE DETERMINATION IN WRITING. ANY DEVIATION FROM THE PLANS AND SPECIFICATIONS OR INTERPRETATIONS MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL BY THE ENGINEER SHALL BE AT THE CONTRACTOR'S OWN RISK AND EXPENSE. IN THE CASE OF DISCREPANCY BETWEEN SPECIFICATIONS AND PLANS, THE MORE STRINGENT SHALL GOVERN.
- EXISTING DIMENSIONS AND DETAILS SHOWN IN THE PLANS ARE BASED ON INFORMATION TAKEN FROM EXISTING PLANS, FIELD MEASUREMENTS, AND FIELD INSPECTIONS. ALL EXISTING DIMENSIONS AND DETAILS THAT AFFECT THE WORK CALLED FOR IN THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO START OF WORK. IN THE EVENT THAT EXISTING CONDITIONS OR DETAILS VARY FROM THOSE SHOWN ON THESE DRAWINGS, THE CONTRACTOR MUST MAKE THE NECESSARY DRAWINGS SHOWING THE EXISTING CONDITIONS AND SUBMIT TO THE WCDPW FOR REVIEW AND RESOLUTION.
- FIELD VERIFY ALL DIMENSIONS RELATING TO ELECTRICAL EQUIPMENT INSTALLATIONS PRIOR TO PERFORMING THE ACTUAL INSTALLATION AS THE CONSTRUCTION PROGRESSES. IMMEDIATELY REPORT ANY DISCREPANCIES OR DEVIATIONS NOTED AS PART OF THE FIELD VERIFICATION TO THE ENGINEER. AFTER HAVING NOTED AND REPORTED THE DISCREPANCIES/DEVIATIONS, WORK ON ITEMS THAT MAY BE AFFECTED BY THE DISCREPANCIES WILL BE AT THE CONTRACTOR'S RISK AND EXPENSE UNTIL DIRECTION IS PROVIDED BY THE ENGINEER.
- THE CONTRACTOR SHALL COMPLY WITH THE COUNTY OF WESTCHESTER'S REQUIREMENTS FOR SECURITY AND ACCESS. BUILDING ACCESS AND STORAGE AREAS FOR NECESSARY CONSTRUCTION MATERIALS AND EQUIPMENT SHALL BE COORDINATED WITH THE WCDPW.
- ALL EQUIPMENT NOTED AS PROPOSED SHALL BE FURNISHED BY THE CONTRACTOR.

## JUNCTION BOX, PULL BOX, CABINET AND FITTING NOTES

- FURNISH AND INSTALL JUNCTION AND PULL BOXES, REDUCERS, AND OTHER FITTINGS AS REQUIRED BY THESE SPECIFICATIONS OR WHERE REQUIRED BY THE NEC, OR WHERE REQUIRED TO FACILITATE PULLING, WHETHER SHOWN ON PLANS OR NOT. IF FIELD CONDITIONS DO NOT ALLOW DUE TO SPACE RESTRICTION FOR A JUNCTION BOX OR PULL BOX, SEEK ENGINEER'S PERMISSION TO USE CONDULET FOR SPlicing. DO NOT USE CONDULET WITHOUT ENGINEER'S PRIOR APPROVAL.
- CONDUIT TOP ENTRY IS NOT PERMITTED FOR OUTDOOR CABINETS THAT CONTAIN ELECTRICAL EQUIPMENT. ALL WET AND OUTDOOR LOCATION CONDUIT FITTINGS AND HUBS SHALL BE WATERTIGHT TYPE.

## MOUNTING METHOD NOTES

- WHERE MOUNTING ITEMS SUCH THAT DISSIMILAR METALS MAY BE IN CONTACT WITH EACH OTHER, PROVIDE NEOPRENE SPACERS OR GASKETS TO PREVENT CONTACT. THIS REQUIREMENT WILL NOT BE REQUIRED SPECIFICALLY FOR THE CASE OF CONTACT BETWEEN CARBON STEEL AND STAINLESS STEEL.

## ELECTRICAL SCOPE OF WORK

- FINAL TESTING OF THE ELECTRICAL EQUIPMENT IN THE SHOP (PRIOR TO DELIVERY) SHALL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS.
- DURING SHIPMENT OF ALL MATERIALS TO THE WORK SITE, SUPPORTS AND PROTECTIVE MEASURES NECESSARY TO ENSURE SHIPMENT WITHOUT DAMAGE TO THE ELECTRICAL EQUIPMENT SHALL BE INCLUDED WITH THIS WORK. DAMAGE TO ELECTRICAL EQUIPMENT DURING SHIPPING AND HANDLING SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST. COMPONENTS DAMAGED BEYOND REPAIR, TO THE COUNTY OF WESTCHESTER SATISFACTION, SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST.
- SITE ACCEPTANCE TESTING SHALL BE CONDUCTED AFTER COMPLETE INSTALLATION OF ALL WORK INCLUDING SPAN BALANCE. THE CONTRACTOR SHALL PROVIDE WRITTEN VERIFICATION THAT THEY HAVE PERFORMED THIS FINAL INSPECTION AND INDICATE TESTING RESULTS.
- DETAILED PROGRESS REPORTS AND PROJECTED DELIVERY SCHEDULES SHALL BE PROVIDED THROUGHOUT THE PROJECT. UPDATED SCHEDULES SHALL BE PROVIDED TO THE COUNTY OF WESTCHESTER NO LESS FREQUENTLY THAN BI-WEEKLY.
- ACCOMMODATION AND PROVISION OF ACCESS TO THE SHOP WORK BY THE COUNTY OF WESTCHESTER STAFF AND INSPECTORS SHALL BE GRANTED AT THE REQUEST OF THE COUNTY OF WESTCHESTER.
- THE CONTRACTOR SHALL MAINTAIN A COMPLETE AND FUNCTIONAL CHANNEL NAVIGATION LIGHTING SYSTEM THROUGHOUT THE DURATION OF THE CONSTRUCTION PERIOD.
- REMOVE AND DISPOSE OF EXISTING EQUIPMENT AS SHOWN ON PLANS.
- PROVIDE TEMPORARY NAVIGATION LIGHTING AS REQUIRED.
- FURNISH AND INSTALL NEW PLC CABINET.
- FURNISH AND INSTALL (2) NEW FLUX VECTOR DRIVE MAIN MOTORS, (2) NEW DYNAMIC BREAKING RESISTORS, AND (1) NEMA D ACROSS THE LINE STARTED AUX MOTOR AND AUX MOTOR CHAIN DRIVE INTERLOCK LIMIT SWITCHES.
- FURNISH AND INSTALL AUXILIARY DRIVE HAND CRANK LIMIT SWITCHES.
- FURNISH AND INSTALL NEW MOTOR CONTROL CENTER (MCC).
- FURNISH AND INSTALL NEW MAIN DISTRIBUTION PANEL (MDP).
- FURNISH AND INSTALL NEW CONTROL DESK.
- FURNISH AND INSTALL NEW CCTV SYSTEM.
- FURNISH AND INSTALL NEW GENERATOR WITH RADIATOR MOUNTED LOAD BANK.
- FURNISH AND INSTALL NEW GENERATOR TAP BOX WITH INTEGRATED MTS.
- FURNISH AND INSTALL NEW MOVABLE/FIXED DROOP CABLE CABINET AND DROOP CABLE, MATCH EXISTING CABINET, DROOP CABLE, AND CABLE SUPPORT.
- FURNISH AND INSTALL NEW ROTARY CAM LIMIT SWITCH WITH DIGITAL ENCODER.
- FURNISH AND INSTALL PROXIMITY SWITCHES FOR OVER-TRAVEL, FULLY SEATED, AND (2) SPAN LOCK PULLED (ONE FOR EACH SPAN LOCK), AND (2) SPAN LOCK DRIVEN (ONE FOR EACH SPAN LOCK).
- FURNISH AND INSTALL (2) NEW SPAN LOCKS.
- FURNISH AND INSTALL NEW LAMP POSTS ALONG BRIDGE STRUCTURE AND IN PLAZA, AND NEW ASSOCIATED ROADWAY LIGHTING CONTROL PANEL.
- FURNISH AND INSTALL NEW WARNING GATES.
- FURNISH AND INSTALL NEW BARRIER GATES ON FAR SIDE.
- FURNISH AND INSTALL NEW SUBMARINE CABLE TERMINATIONS CABINETS AND SUBMARINE CABLE IN HDPE DUCT.
- FURNISH AND INSTALL NEW NAVIGATION LIGHTING.
- FURNISH AND INSTALL (4) TRAFFIC SIGNALS.
- FURNISH AND INSTALL NEW BASCULE PIT SUMP PUMPS, AND CONTROLLER.
- FURNISH AND INSTALL SINGLE-MODE FIBER OPTIC CABLE BETWEEN THE FAR SIDE SUBMARINE CABLE TERMINAL CABINET AND THE ADMINISTRATION BUILDING.
- FURNISH AND INSTALL NEW LIGHTING AS SHOWN IN THE DRAWINGS.
- MODIFY EXISTING POWER DISTRIBUTION SYSTEM TO ACCOMMODATE NEW MISC. EQUIPMENT (e.g. HVAC, COUNTER RECEP., EXHAUST FAN, ETC.)



CONSULTANT SEAL  
CONSULTANT INFORMATION



1	4/30/24	JA	TK	UPDATE FOR CLARITY	RECORD DRAWING CERTIFICATION		WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING Rehabilitation of Glen Island Approach Bridge over New Rochelle Harbor, City of New Rochelle ELECTRICAL <b>GENERAL NOTES 1</b>	CONTRACT NUMBER 20-517	SHEET NUMBER E-01
					<input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES			SHEET NO. 163 OF 212	
					CONTRACTOR PROJECT COORDINATOR NAME _____ NAME _____ SIGNATURE _____ SIGNATURE _____ TITLE _____ DATE _____ TITLE _____ DATE _____		SCALE: AS SHOWN DATE: 03/08/2024		
REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION			DPW FILE NO.	REV. NO. 1	
							5-04-E-598-0		

## SUBMITTALS

1. MANUFACTURERS DATA AND/OR SHOP DRAWING DATA SHALL BE SUBMITTED FOR ALL MANUFACTURED AND PURCHASED ITEMS OF NEW PARTS AND COMPONENTS.
2. SUBMITTALS FOR EACH MANUFACTURED ITEM SHALL BE MANUFACTURER'S DESCRIPTIVE LITERATURE, DRAWINGS, DIAGRAMS, PERFORMANCE AND CHARACTERISTIC CURVES, CATALOG CUTS AND SHALL INCLUDE THE MANUFACTURER'S NAME, TRADENAME, CATALOG MODEL OR NUMBER, NAMEPLATE DATA, SIZE, CERTIFIED LAYOUT DIMENSIONS, CAPACITY, SPECIFICATION REFERENCE AND ALL OTHER INFORMATION NECESSARY TO ESTABLISH CONTRACT COMPLIANCE.
3. FULLY DETAILED SHOP DRAWINGS AND ASSEMBLY DRAWINGS SHALL BE PROVIDED. THESE DRAWINGS SHALL BE SUBMITTED TO THE COUNTY OF WESTCHESTER FOR REVIEW AND APPROVAL. COMMENCEMENT OF WORK IN THE ABSENCE OF APPROVED SHOP DRAWINGS SHALL BE AT THE CONTRACTOR'S RISK.

## QUALIFICATIONS, PERSONNEL AND FACILITIES

1. FOR THE FABRICATION, INSTALLATION, ALIGNING, CLEANING, TESTING AND ALL OTHER WORK REQUIRED BY THE SCOPE OF WORK, THE FABRICATOR SHALL USE ADEQUATE NUMBERS OF SKILLED, TRAINED AND EXPERIENCED ELECTRICIANS AND SERVICE PERSONNEL WHO ARE THOROUGHLY FAMILIAR WITH THE REQUIREMENTS AND METHODS SPECIFIED FOR THE PROPER EXECUTION OF WORK.
2. ELECTRICIANS AND SERVICE PERSONNEL SHALL BE PROPERLY EQUIPPED WITH ALL NECESSARY INSTRUMENTS TO ASSURE THAT RELATED COMPONENTS HAVE BEEN PROVIDED WITHIN ACCEPTABLE TOLERANCES AND TO MAKE ALL NECESSARY ADJUSTMENTS FOR ATTAINING THE SPECIFIED RATINGS.

## CODES AND STANDARDS

1. WORK UNDER NEW ITEMS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE LATEST EDITION OF CODES AND STANDARDS ISSUED BY, BUT NOT LIMITED TO, THE FOLLOWING ORGANIZATIONS AND PUBLICATIONS WHOSE ABBREVIATIONS SHALL BE AS SHOWN:
  - 1.1. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC
  - 1.2. AMERICAN IRON AND STEEL INSTITUTE - AISI
  - 1.3. ASSOCIATION FOR IRON AND STEEL TECHNOLOGY - AIST
  - 1.4. AMERICAN WELDING SOCIETY - AWS
  - 1.5. ILLUMINATING ENGINEERING SOCIETY - IES
  - 1.6. AMERICAN NATIONAL STANDARDS INSTITUTE - ANSI
  - 1.7. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS - AASHTO
  - 1.8. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM
  - 1.9. INTERNATIONAL BUILDING CODE - IBC
  - 1.10. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS - IEEE
  - 1.11. INSULATED CABLE ENGINEERS ASSOCIATION - ICEA
  - 1.12. INSULATED POWER CABLE ENGINEERS ASSOCIATION - IPCEA
  - 1.13. NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION - NECA
  - 1.14. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA
  - 1.15. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION - NETA
  - 1.16. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA
    - 1.16.1. NFPA 70: NATIONAL ELECTRICAL CODE - NEC
    - 1.16.2. NFPA 70E: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE
    - 1.16.3. NFPA 79: ELECTRICAL STANDARD FOR INDUSTRIAL MACHINERY
    - 1.16.4. NFPA 101: LIFE SAFETY CODE
    - 1.16.5. NFPA 780: STANDARD FOR INSTALLATION OF LIGHTNING PROTECTION SYSTEMS
  - 1.17. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION - OSHA
  - 1.18. UNDERWRITER'S LABORATORY - UL
  - 1.19. ALL OTHER APPLICABLE LOCAL RULES AND ORDINANCES
2. THE WORK SHALL MEET THE REQUIREMENTS OF ALL OTHER CODES AND STANDARDS AS SPECIFIED IN THE CONTRACT DOCUMENTS. WHERE CODES AND STANDARDS ARE MENTIONED FOR ANY ITEM, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO THEM, IT IS NOT INTENDED THAT ANY OTHER CODES AND STANDARDS BE OMITTED IF NOT MENTIONED.
3. THE FOLLOWING IS A LIST OF THE CONTRACT DOCUMENT SPECIFICATIONS:
  - 3.1. 599.063000WE MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM
  - 3.2. 683.090700WE MOVABLE BRIDGE STANDBY GENERATOR
  - 3.3. 599.142500WE MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS
  - 3.4. 599.142600WE MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION
  - 3.5. 599.064000WE MOVABLE BRIDGE ELECTRICAL TESTING
  - 3.6. 680.79300001 REMOVE TRAFFIC SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD
  - 3.7. 680.82250301 REMOVE STEEL EMBEDDED TRAFFIC SIGNAL POLE
  - 3.8. 670.60 PHOTOELECTRIC CONTROLS
  - 3.9. 670.81 REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY
  - 3.10. 680.621630 TRAFFIC SIGNAL POLE - MAST ARM
  - 3.11. 680.6712 TRAFFIC SIGNAL POLE - POST TOP MOUNT
  - 3.12. 680.810101 TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED
  - 3.13. 680.810103 TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED
  - 3.14. 680.810105 TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED
  - 3.15. 680.810107 TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH
  - 3.16. 680.810308 INSTALL BALL LED TRAFFIC SIGNAL MODULE
  - 3.17. 680.8111 TRAFFIC SIGNAL BRACKET ASSEMBLY
  - 3.18. 680.8220 FLASHING BEACON SIGN ASSEMBLY
  - 3.19. 680.10000007 INSTALL TRAFFIC SIGNAL POLE, ALL SIZES

## MOVABLE BRIDGE PROJECT COORDINATOR

1. ALL OF THE FOLLOWING MOVABLE BRIDGE PROJECT COORDINATOR REQUIREMENTS SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND BE PAID FOR UNDER VARIOUS PAY ITEMS LISTED IN PARAGRAPH 8 BELOW, AS IS RELEVANT.
2. THE CONTRACTOR SHALL SUPPLY A SINGLE PERSON RESPONSIBLE FOR ALL DUTIES DEFINED BELOW, WHO SHALL BE DESIGNATED AS THE MOVABLE BRIDGE PROJECT COORDINATOR.
3. THE CONTRACTOR SHALL HIRE A MOVABLE BRIDGE PROJECT COORDINATOR (MBPC) WHO SHALL BE A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER. A RESUME OF THE INDIVIDUAL'S EXPERIENCE AND WRITTEN EVIDENCE OF COMMITMENT TO THE CONTRACT SHALL BE SUBMITTED PRIOR TO AWARD OF CONTRACT. THE MBPC SHALL HAVE PRIOR PROFESSIONAL EXPERIENCE IN COORDINATING A MINIMUM OF TWO RECENT STRUCTURAL-MECHANICAL-ELECTRICAL PROJECTS FOR MOVABLE BRIDGES. THE PROJECT SIZE SHALL BE MAJOR REHABILITATION OF STRUCTURAL ELEMENTS AND COMPLETE REPLACEMENT OF DRIVE MACHINERY AND ELECTRICAL CONTROL SYSTEMS, WITH A CONSTRUCTION COST OF AT LEAST \$8 MILLION FOR EACH QUALIFYING PROJECT. SHOULD AN ACCEPTABLE INDIVIDUAL NOT BE FOUND WITHIN THE CONTRACTOR'S PERMANENT STAFF, CONSIDERATION WILL BE GIVEN TO AN INDIVIDUAL HIRED ESPECIALLY FOR THIS POSITION. UNDER ALL CIRCUMSTANCES, PRIOR MOVABLE EXPERIENCE IS MANDATORY, AS DESCRIBED ABOVE. WRITTEN EVIDENCE OF THE WILLINGNESS OF THE MBPC TO COMMIT FULLY THROUGHOUT THE DURATION OF THE PROJECT SHALL BE OFFERED TO THE ENGINEER AS PART OF THE QUALIFICATION FOR THE INDIVIDUAL. THE MBPC SHALL NOT BE CHANGED WITHOUT PRIOR APPROVAL OF THE ENGINEER AND UNTIL A SUCCESSOR HAS BEEN APPROVED BY THE ENGINEER.
4. THE MBPC SHALL HAVE THE RESPONSIBILITY OF COORDINATING ALL CONSTRUCTION WORK ON THE MOVABLE BRIDGE PORTIONS OF THE PROJECT, FROM SHOP DRAWING PREPARATION AND REVIEW THROUGH FIELD WORK AND FINAL ACCEPTANCE. THE MBPC SHALL BE TASKED WITH MAINTAINING THE SCHEDULE OF THE MOVABLE BRIDGE WORK BY ENSURING THE CONTRACTOR AND ALL SUBCONTRACTORS PERFORM THEIR WORK IN A TIMELY AND ORGANIZED MANNER, AND AT ALL TIMES ARE WORKING TOWARD THE COMMON GOAL OF FINISHING THE PROJECT IN A WORKMANLIKE MANNER AND IN ACCORDANCE WITH THE APPROVED SCHEDULE AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. THE MBPC SHALL PARTICIPATE IN THE DEVELOPMENT OF THE CRITICAL PATH METHOD (CPM) SCHEDULING, TO ASSURE ADEQUATE PLANNING AND EXECUTION OF THE MOVABLE BRIDGE WORK. THE SCHEDULE SHALL ALLOW ADEQUATE TIME TO REVIEW THE INDIVIDUAL SUBMITTALS.
6. THE MBPC SHALL ALSO REVIEW AND CONFIRM ACCURATE INFORMATION TO BE USED FOR OPERATING AND MAINTENANCE MANUAL CONTENT AS WELL AS INFORMATION FOR OPERATING AND MAINTENANCE TRAINING.
7. THE MBPC SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL STRUCTURAL, MECHANICAL, AND ELECTRICAL CONSTRUCTION WORK ON THE TEMPORARY MOVABLE BRIDGE PORTIONS OF THE PROJECT, FROM SHOP DRAWING PREPARATION AND REVIEW THROUGH FIELD WORK, ACCEPTANCE, OPERATION, AND DECOMMISSIONING. THE MBPC SHALL BE TASKED WITH MAINTAINING THE SCHEDULE OF THE TEMPORARY MOVABLE BRIDGE WORK BY ENSURING THE CONTRACTOR AND ALL SUBCONTRACTORS PERFORM THEIR WORK IN A TIMELY AND ORGANIZED MANNER, AND AT ALL TIMES ARE WORKING IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE APPROVED SCHEDULE AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
8. THE MBPC SHALL BE RESPONSIBLE FOR COORDINATION OF ALL WORK INCLUDED IN BUT NOT LIMITED TO THE FOLLOWING PAY ITEMS, AS WELL AS ANY STRUCTURAL WORK PERFORMED ON THE MOVABLE BRIDGE:
 

PAY ITEM	PAY ITEM DESCRIPTION
8.1. 599.061201WE	REHABILITATE SPAN DRIVE MACHINERY
8.2. 599.061202WE	REFURBISH TRUNNION
8.3. 599.061205WE	REPLACE SPAN LOCKS AND MISCELLANEOUS REPAIRS
8.4. 599.061301WE	BRIDGE BALANCE
8.5. 599.063000WE	MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM
8.6. 599.064000WE	MOVABLE BRIDGE ELECTRICAL TESTING
8.7. 619.0501	TEMPORARY STRUCTURES AND APPROACHES NO 1
8.8. 683.090700WE	MOVABLE BRIDGE STANDBY GENERATOR
8.9.	THIS LINE IS INTENTIONALLY LEFT BLANK
8.10. 599.142600WE	MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCT INSTALLATION
8.11. 670.81	REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY
8.12. 680.10000007	INSTALL TRAFFIC SIGNAL POLE, ALL SIZES
9. THE COORDINATION FUNCTIONS AND RESPONSIBILITIES OF THE MBPC SHALL INCLUDE BUT NOT BE LIMITED TO:
  - 9.1. COORDINATION OF SHOP DRAWINGS AS REQUIRED FROM ALL SUPPLIERS, FABRICATORS AND SUBCONTRACTORS.
  - 9.2. EXCHANGE OF NECESSARY DATA RELATED TO THE MOVABLE BRIDGE PORTION OF THE PROJECT BETWEEN SUBCONTRACTORS.
  - 9.3. SUBSTITUTION OF ALTERNATE BRANDS OF COMPONENTS, SUBSTANTIATION OF EQUIVALENCY, AND COORDINATION OF APPROVALS TO ALL REVISIONS NECESSITATED BY THE SUBSTITUTION.
  - 9.4. SUBMITTALS OF SHOP DRAWINGS, CATALOG CUTS, MANUFACTURER'S LITERATURE, AND ALL OPERATING AND MAINTENANCE MANUAL CONTENT IN A TIMELY MANNER.
  - 9.5. CERTIFYING THAT ALL MATERIALS, CONSTRUCTION METHODS AND PERFORMANCE OF WORK ARE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
  - 9.6. EXPEDITING DELIVERIES AND SHOP TESTING OF TIME CRITICAL MATERIALS AND EQUIPMENT.
  - 9.7. COORDINATING ALL STRUCTURAL, MECHANICAL, AND ELECTRICAL FIELD WORK, INCLUDING TEMPORARY MOVABLE BRIDGE, TEMPORARY CHANNEL CLOSURES, TEMPORARY SUPPORTS, BRACINGS, JACKING, INSTALLATIONS, AND REMOVALS.
10. THE MBPC SHALL ATTEND ALL MEETINGS INVOLVING THE MOVABLE BRIDGE CONSTRUCTION PROJECT AND ATTENDED BY ANY COMBINATION OF CONTRACTOR, SUBCONTRACTOR, MATERIAL SUPPLIERS, AND THE ENGINEER. THE MBPC SHALL BE THE INDIVIDUAL TO WHOM ALL QUESTIONS RELATING TO THE CONSTRUCTION OF THE MOVABLE BRIDGE SHALL BE ADDRESSED.

## TEMPORARY BRIDGE REQUIREMENTS

1. ALL OF THE FOLLOWING TEMPORARY BRIDGE REQUIREMENTS SHALL BE PAID FOR UNDER PAY ITEM 619.0501.
2. DESIGN, CONSTRUCT, COMMISSION, OPERATE, INSPECT AND MAINTAIN THE TEMPORARY MOVABLE SPAN IN ACCORDANCE WITH THE AASHTO STANDARD SPECIFICATION FOR MOVABLE HIGHWAY BRIDGES 1988 AND AASHTO MOVABLE BRIDGE INSPECTION, EVALUATION AND MAINTENANCE MANUAL. SPAN LOCKS ARE NOT REQUIRED FOR NON-COUNTERWEIGHTED TEMPORARY MOVABLE SPAN. TRAFFIC GATES ARE REQUIRED ON BOTH SIDES OF THE MOVABLE SPAN AND BARRIER GATE(S) ARE REQUIRED UNLESS THE SPAN OR OTHER LARGE MASS ELEMENT OBSTRUCTS A VEHICLE FROM DRIVING OFF THE APPROACH SPAN.
3. MOVABLE BRIDGE PROJECT COORDINATOR PROVIDED UNDER THE ELECTRICAL SPEC AND PAY ITEM SHALL BE REQUIRED TO COORDINATE THE REQUIREMENTS OF THE TEMPORARY BRIDGE AND ITS OPERATION AND MAINTENANCE.
4. AASHTO MOVABLE BRIDGE INSPECTION, EVALUATION AND MAINTENANCE MANUAL SHALL APPLY TO THE OPERATION, INSPECTION, AND MAINTENANCE OF THE TEMPORARY MOVABLE SPAN. IN PARTICULAR THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFE OPERATION DEFINED IN PART 1 AND MAINTENANCE DEFINED IN PART 4 OF THIS MANUAL. SPECIAL ATTENTION SHALL BE GIVEN TO COMPLETE INSPECTION OF THE OPERATING ROPES. AT 5 YEARS OF SERVICE A THOROUGH INSPECTION OF THE COMPLETE LENGTHS OF OPERATING ROPES SHALL BE PERFORMED. THE ENGINEER WILL INSPECT THE MOVABLE SPAN ONCE PER YEAR IN ACCORDANCE WITH PARTS 2 AND 3 AND PROVIDE MAINTENANCE AND REPAIR RECOMMENDATIONS TO THE CONTRACTOR TO BE IMPLEMENTED WITHIN THE STATED TIME PERIOD.
5. THE TEMPORARY BRIDGE CONTROL SYSTEM SHALL HAVE FULL INTERLOCKING AS DESCRIBED BY AASHTO.
6. SUBMIT THE TEMPORARY MOVABLE SPAN OPERATION AND MAINTENANCE MANUAL FOR REVIEW BY THE ENGINEER.
7. SUBMIT PURPOSED START-UP PROCEDURE/CHECKLIST FOR REVIEW BY THE ENGINEER.
8. COMMISSIONING OF THE TEMPORARY BRIDGE FOR OPERATION SHALL ONLY BE ACCEPTED AFTER DEMONSTRATING 10 CONSECUTIVE DAYS WITH A MINIMUM OF 5 OPENING PER DAY, WITHOUT ANY FAILURES OR WARNINGS/ALARMS. THE 10 DAY PERIOD SHALL START OVER AFTER ISSUES CAUSING FAILURES/ALARMS ARE ADDRESSED.
9. BARGE MOUNTED CRANE FOR EMERGENCY OPERATION NOT PERMITTED UNLESS UNDER SPECIAL REQUEST DUE TO A MAJOR FAILURE SUCH AS A BROKEN OPERATING ROPE.
10. THE TEMPORARY MOVABLE SPAN WHEN OPEN FOR MARINE VESSELS NAVIGATION SHALL PROVIDE AN OPEN CHANNEL OF 58'-7 3/4" WIDE AND UNLIMITED VERTICAL CLEARANCE.
11. MAXIMUM OF 17 MINUTES FOR NORMAL COMPLETE CYCLE OF OPERATION, AND 45-MINUTES FOR EMERGENCY COMPLETE CYCLE OF OPERATION, ROADWAY TRAFFIC INTERRUPTION TIME WITHOUT PASSAGE OF MARINE VESSEL THROUGH OPEN CHANNEL. NORMAL COMPLETE CYCLE OF OPERATION IS DEFINED AS THE TIME FROM TRAFFIC LIGHTS TURNING FROM GREEN TO RED AND BACK TO GREEN. OPERATION INCLUDES; LOWERING GATES, OPEN AND CLOSE THE MOVABLE SPAN TO AND FROM ITS FULL OPEN POSITION FOR AN OPEN CHANNEL AND BACK TO SEATED, RAISING THE GATES, AND OTHER ANCILLARY EQUIPMENT OPERATION. EMERGENCY OPERATION IS THE SAME AS NORMAL OPERATION EXCEPT PERFORMED IF A NORMAL DRIVE FAILURE OCCURS.
12. THE SERVICE LIFE OF THE TEMPORARY MOVABLE SPAN SHALL BE A MINIMUM OF 5 YEARS. PROVIDE; ONE SPARE SET OF BRAKE SHOES AND LINERS FOR EACH SIZE BRAKE, ONE SPARE TRAFFIC GATE ARM, GEAR REDUCER OIL OF EQUAL VOLUME TO ITS RESERVOIR CAPACITY. AFTER 5 YEARS OF SERVICE ONE SET OF OPERATING ROPES.
13. THE MAX OPERATING WIND SPEED AS DEFINED BY AASHTO, 10 PSF WIND LOAD ON THE MOVABLE SPAN AND 20 PSF WIND ON THE OPEN SPAN WHILE STATIONARY.
14. THE USE OF A TEMPORARY SUBMARINE CABLE OR AERIAL CABLE IS PROHIBITED, FOR BOTH POWER AND CONTROL. THE TEMPORARY SYSTEM SHOULD DETAIL TEMPORARY POWER ARRANGEMENT FROM THE EXISTING SWITCHGEAR HOUSE AND THE POWER HOUSE ACROSS THE CHANNEL. CONTRACTOR IS REQUIRED TO FIELD VERIFY AND SUBMIT FOR REVIEW AND APPROVAL THE POWER DISTRIBUTION SCHEME FOR THE FAR SIDE OF THE BRIDGE BASED ON THE CONTRACTORS TEMPORARY BRIDGE FAR SIDE POWER REQUIREMENTS. TEMPORARY SERVICE FROM CON EDISON ON EITHER OR BOTH SIDES IS ACCEPTABLE, IF DESIRED.
15. A WIRELESS COMMUNICATION SYSTEM SHALL BE USED TO CONTROL AND RECEIVE FEEDBACK FROM THE FAR DEVICES FOR THE TEMPORARY BRIDGE SUCH AS THE FAR BARRIER GATES, WARNING GATES, AND TRAFFIC SIGNALS.
16. DROOP CABLE SYSTEMS AND NAVIGATION LIGHTING SYSTEMS WILL ALSO NEED TO BE DETAILED BY THE CONTRACTOR NYS LICENSED ELECTRICAL ENGINEER REPRESENTATIVE.
17. THE EXISTING 150KVA SERVICE ALLOWS ONLY ONE BRIDGE TO OPERATE AT TIME. COORDINATION BETWEEN OPERATION OF EXISTING BRIDGE AND TEMPORARY BRIDGE IS REQUIRED UNLESS AN ALTERNATE TEMPORARY UTILITY SERVICE IS OBTAINED THROUGH CONEDISON.
18. THE CONTRACTOR SHALL HIRE A NYS LICENSED ELECTRICAL ENGINEER TO DEVELOP AND SIGN AND SEAL THE TEMPORARY BRIDGE OPERATING SYSTEM.
19. A TEMPORARY BRIDGE FROM A TEMPORARY BRIDGE VENDOR MAY ONLY COME WITH A CONTROL DESK AND AN MCC. CONTRACTOR SHALL HAVE TO FURNISH AND INSTALL, INCLUDING BUT NOT LIMITED TO; ALL STARTERS, ALL WIRING, NAVIGATION LIGHTING, ROADWAY LIGHTING, EMERGENCY GENERATOR HOOKUP, WIRELESS COMMUNICATION SYSTEM FOR CONTROL BETWEEN NEAR AND FAR SIDES, DROOP CABLING, ALL CONDUIT AND TERMINAL BOXES, ETC.



CONSULTANT INFORMATION

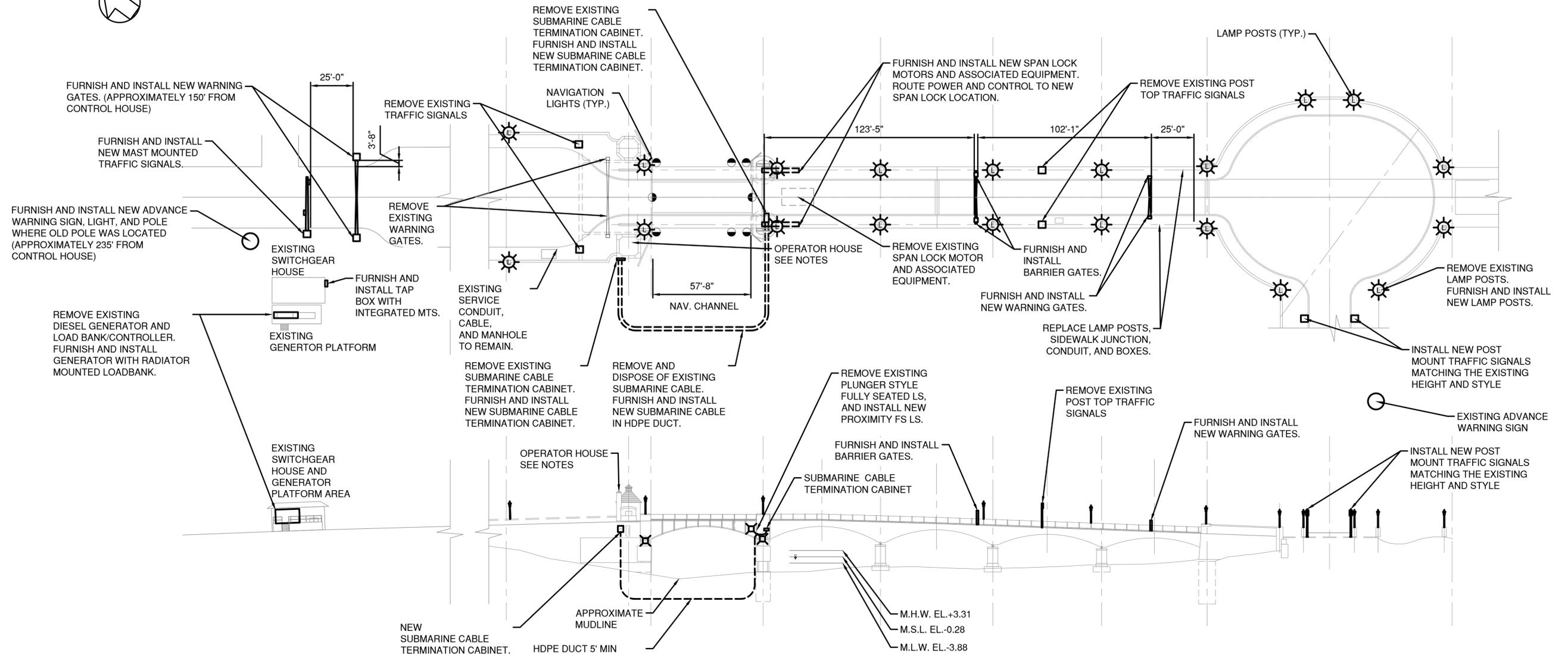


REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	SCOPE REVISED
2	4/30/24	JA	TK	SCOPE REVISED

IN CHARGE OF <u>D. DELUCA, PE</u> CHECKED BY <u>A. NOBLE, PE</u> MADE BY <u>J. AMBROS, PE</u>		RECORD DRAWING CERTIFICATION <input type="checkbox"/> AS BUILT - CHANGES AS NOTED <input type="checkbox"/> AS BUILT - NO CHANGES		CONTRACTOR NAME _____ SIGNATURE _____ TITLE _____ DATE _____		PROJECT COORDINATOR NAME _____ SIGNATURE _____ TITLE _____ DATE _____	
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WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING		CONTRACT NUMBER 20-517	SHEET NUMBER E-03
SHEET NO. 165 OF 212			
SCALE: AS SHOWN DATE: 03/08/2024			
DPW FILE NO.		REV. NO.	
5-04-E-600-0		2	

### GENERAL NOTES 3



**NOTES:**

- OPERATOR HOUSE - CONTROL ROOM LEVEL:  
REMOVE EXISTING CONTROL DESK (SEE DRAWING E-07 FOR DETAILS).  
FURNISH AND INSTALL NEW CONTROL DESK, MARINE RADIO, AND CCTV MONITORS (SEE DRAWING E-11 FOR DETAILS).
- OPERATOR HOUSE - ELECTRICAL ROOM AND MACHINERY ROOM:  
REMOVE EXISTING RELAY CABINET, MOTOR CONTROL CENTER (MCC), SURGE PROTECTOR, SUMP PUMP CONTROL PANEL, SPAN MOTOR DRIVES (2) AND BRAKING RESISTORS (2), SPAN MOTORS (2), MACHINERY BRAKES (2), AUXILIARY CHAIN DRIVE LIMIT SWITCHES (SEE DRAWING E-07 FOR DETAILS).  
FURNISH AND INSTALL NEW PLC CABINET WITH PLC AND RELAYS, MOTOR CONTROL CENTER (MCC) AND SPD, SUMP PUMP CONTROL PANEL, MAIN DISTRIBUTION PANEL (MDP), ROADWAY LIGHTING CONTROL PANEL, FLUX VECTOR DRIVE CABINETS AND ASSOCIATED INTERNAL EQUIPMENT, DYNAMIC BRAKING RESISTORS (2), SPAN MOTORS (2) AND ASSOCIATED EQUIPMENT, MACHINERY BRAKES (2), AUXILIARY MOTOR AND CHAIN DRIVE INTERLOCK LIMIT SWITCHES, AUXILIARY MOTOR (SEE DRAWING E-12 FOR DETAILS).
- OPERATOR HOUSE - MACHINERY AREA AND PIT:  
REMOVE EXISTING ROTARY CAM LIMIT SWITCHES AND SELSYN, DROOP CABLE AND ASSOCIATED TERMINAL CABINETS (2), SUMP PUMPS (2), OVER-TRAVEL LIMIT SWITCH (SEE DRAWING E-07 FOR DETAILS).  
FURNISH AND INSTALL NEW ROTARY CAM LIMIT SWITCH AND DIGITAL ENCODER, PROXIMITY STYLE OVER-TRAVEL LIMIT SWITCH, MOVABLE/FIXED DROOP CABLE CABINETS (MATCH EXISTING SIZE), DROOP CABLE AND CABLE SUPPORTS (MATCH EXISTING), SUMP PUMPS (1-5HP, 1-7.5HP) AND ASSOCIATED FLOAT SWITCHES, SERVICE LIGHTS (3) (SEE DRAWING E-11 FOR DETAILS).

**GENERAL PLAN AND ELEVATION**

SCALE: 1/32"=1'-0"



CONSULTANT INFORMATION



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	UPDATE FOR CLARITY

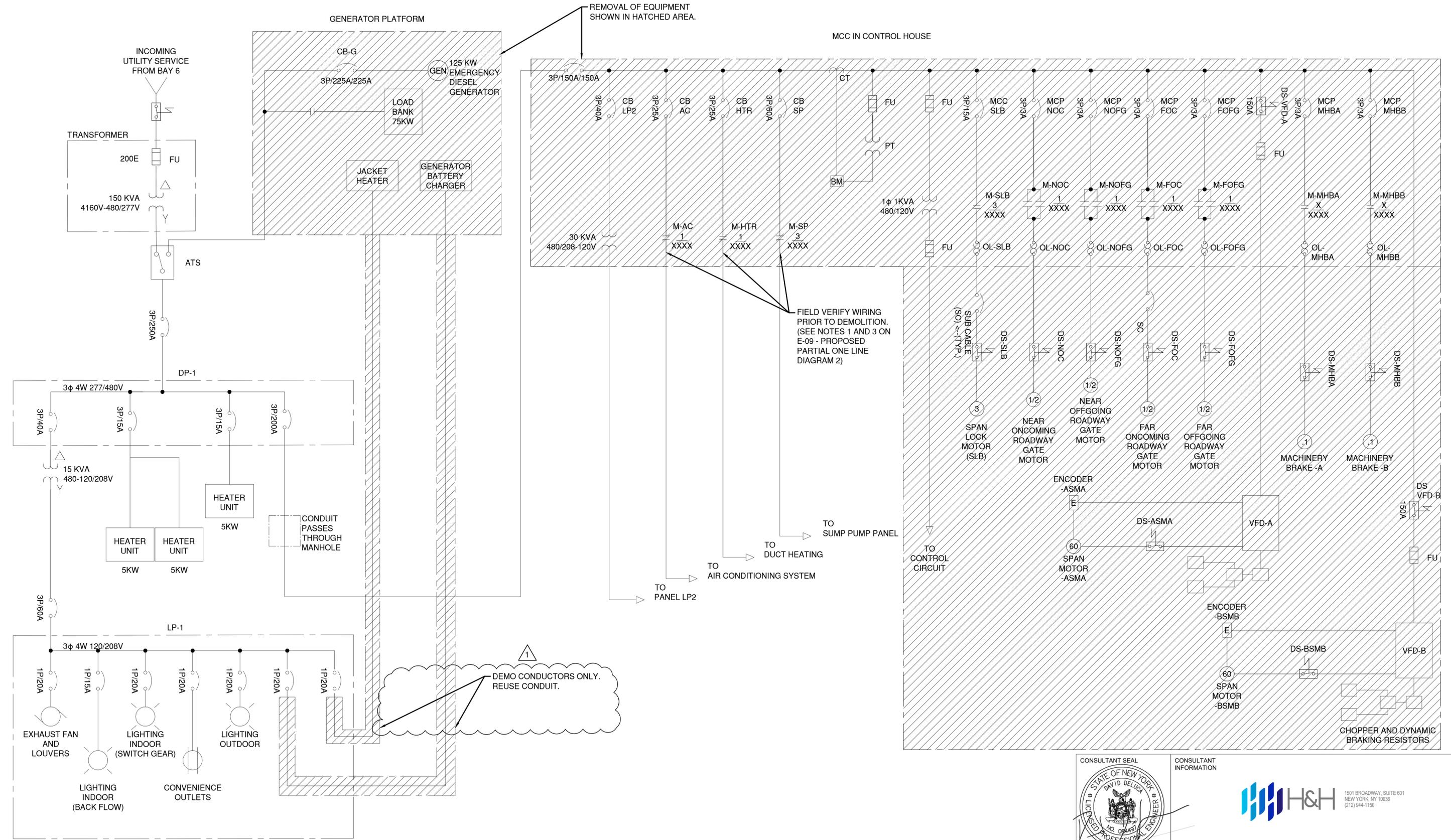
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CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING		CONTRACT NUMBER 20-517	SHEET NUMBER E-05
Rehabilitation of Glen Island Approach Bridge over New Rochelle Harbor, City of New Rochelle		SHEET NO. 167 OF 212	
ELECTRICAL		SCALE: AS SHOWN	
GENERAL PLAN AND ELEVATION		DATE: 03/08/2024	REV. NO. 1
		DPW FILE NO. 5-04-E-602-0	

REMOVAL OF EQUIPMENT SHOWN IN HATCHED AREA.

MCC IN CONTROL HOUSE

GENERATOR PLATFORM



CONSULTANT INFORMATION



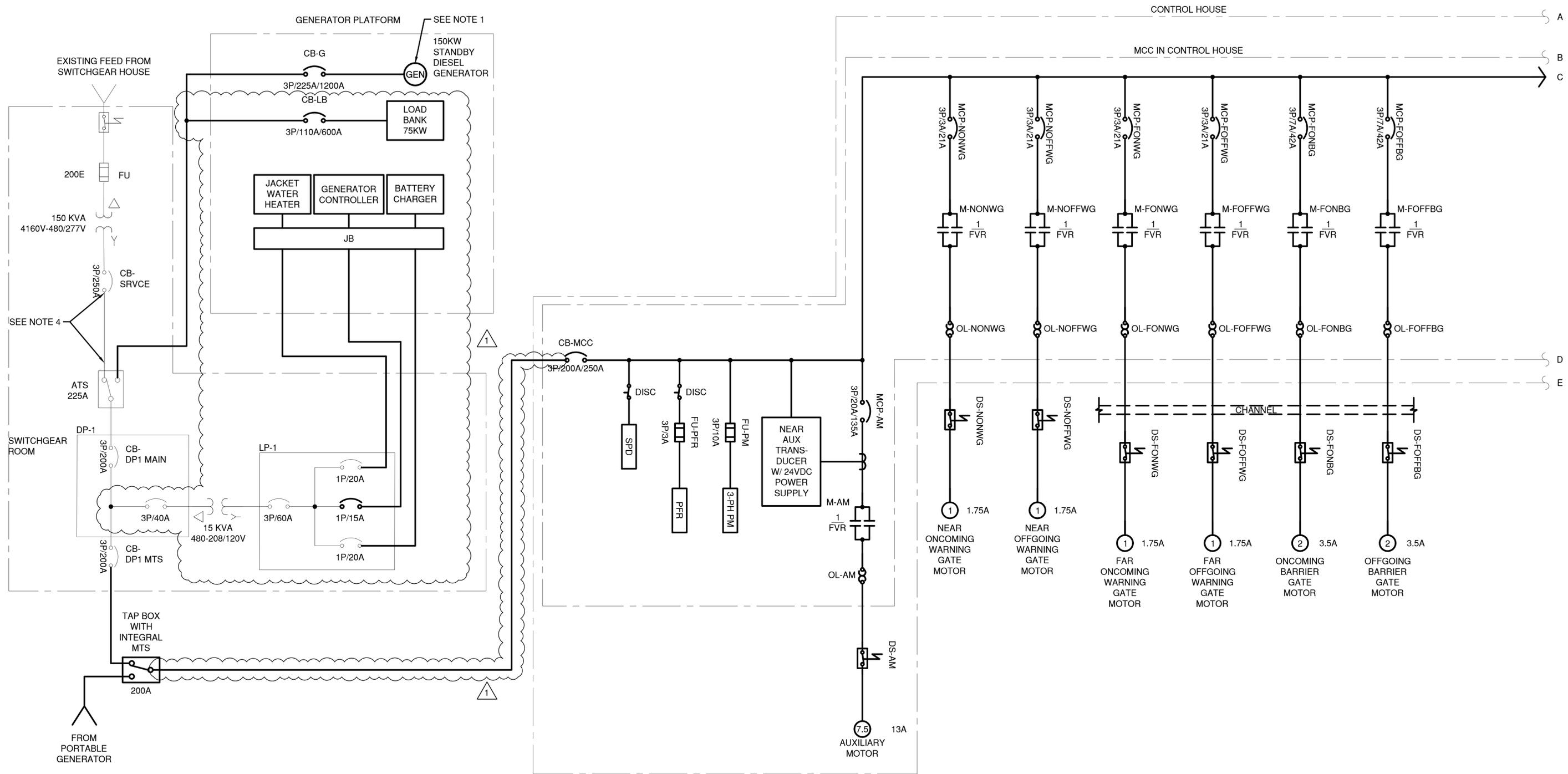
IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	PAY ITEM ADDED

RECORD DRAWING CERTIFICATION			
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NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
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DATE _____	DATE _____	DATE _____	DATE _____

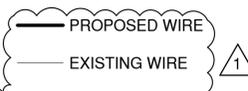
WESTCHESTER COUNTY, NEW YORK  
 DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 ELECTRICAL  
**EXISTING PARTIAL ONE LINE DIAGRAM**

CONTRACT NUMBER 20-517	SHEET NUMBER E-06
SHEET NO. 168 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-603-0	1



**NOTES:**

1. RECONNECT TO EXISTING LP1 PANELBOARD FOR ALL GENERATOR AUXILIARY POWER NEEDS INCLUDING BUT NOT LIMITED TO: JACKET HEATER, CONTROL PANEL POWER, BATTERY CHARGER, ETC.
2. MOTOR CIRCUIT PROTECTION (MCP) SETTINGS SHOWN ARE MAXIMUM NEC PERMISSIBLE SHORT CIRCUIT PROTECTION VALUES SUCH TO ALLOW FOR MOTOR STARTING BASED ON THE PARTICULAR MOTOR FLA AND THE MCP USED FOR DESIGN. CONTRACTOR SHALL FOLLOW MCP MANUFACTURER INSTALLATION INSTRUCTIONS AND SUCCESSIVELY LOWER THE SETTING TO SELECT THE LOWEST SETTING POSSIBLE.
3. ALL NECESSARY CARDS REQUIRED TO CONNECT DEVICE TO PLC SHALL BE PROVIDED WHETHER SPECIFICALLY SHOWN ON PLANS OR NOT, AT NO ADDITIONAL COST.
4. CONTRACTOR SHALL ADJUST CB-SERVICE CIRCUIT BREAKER TRIP SETTING TO 225A. IF UNABLE TO ADJUST THE CIRCUIT BREAKER, THEN THE CONTRACTOR SHALL REPLACE THE EXISTING CIRCUIT BREAKER WITH A CIRCUIT BREAKER THAT CAN BE SET TO 225A.
5. FOR EXISTING AND PROPOSED CONDUITS, REFER TO SHEETS E-34 THROUGH E-37.



CONSULTANT SEAL

CONSULTANT INFORMATION

1501 BROADWAY, SUITE 601  
NEW YORK, NY 10036  
(212) 944-1150

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	SCOPE REVISED

RECORD DRAWING CERTIFICATION			
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NAME _____	NAME _____		
SIGNATURE _____	SIGNATURE _____		
TITLE _____	TITLE _____	DATE _____	DATE _____

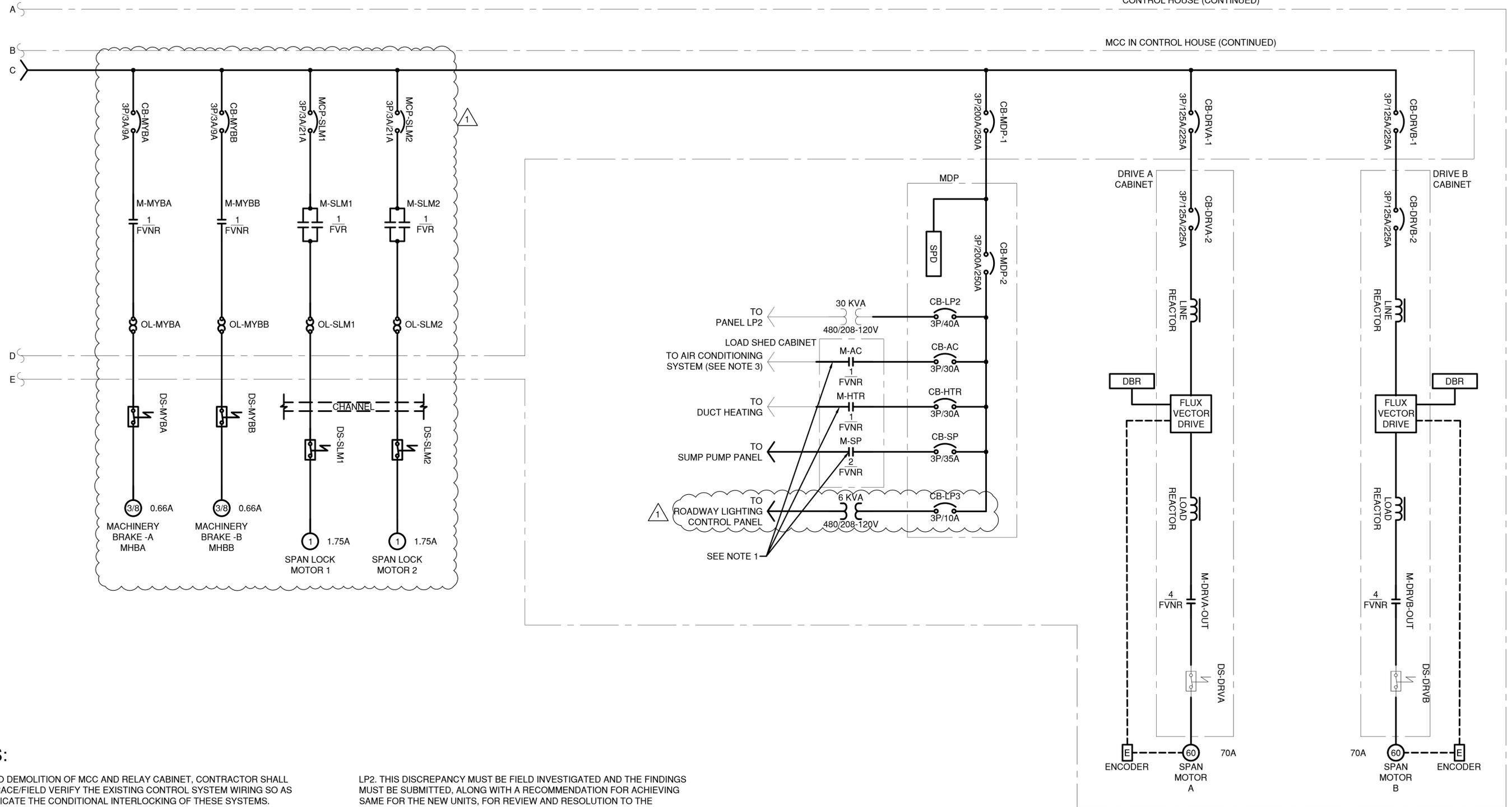
**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

ELECTRICAL

**PROPOSED PARTIAL ONE LINE DIAGRAM 1**

CONTRACT NUMBER 20-517	SHEET NUMBER E-09
SHEET NO. 171 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-606-0	1



**NOTES:**

1. PRIOR TO DEMOLITION OF MCC AND RELAY CABINET, CONTRACTOR SHALL FIELD TRACE/FIELD VERIFY THE EXISTING CONTROL SYSTEM WIRING SO AS TO REPLICATE THE CONDITIONAL INTERLOCKING OF THESE SYSTEMS. CONTRACTOR SHALL SUBMIT FOR REVIEW AND COMMENT FINDINGS. SHED LOADING CONTRACTORS SHALL BE MECHANICALLY HELD STYLE AS REQUIRED.
2. THE SPAN MOTORS ARE ARRANGED IN AN A OR B ARRANGEMENT. ONLY ONE MAIN MOTOR OPERATES AT A TIME.
3. CONTRACTOR SHALL FIELD VERIFY THE EXISTING AIR CONDITIONING LOAD SHEDDING AND FIELD WIRING ARRANGEMENT AND MODIFY IT SO THE NEW AC UNITS CAN BE REPLACED WITHIN THE EXISTING INFRASTRUCTURE AND LOAD SHEDDING SCHEME. THERE IS AN EXISTING LOAD SHEDDING CONTRACTOR FOR THE AC UNIT IN THE EXISTING MCC AND IS WIRED TO 480V. THE EXISTING AC UNIT IS 208V AND POWERED THROUGH EXISTING PANEL

LP2. THIS DISCREPANCY MUST BE FIELD INVESTIGATED AND THE FINDINGS MUST BE SUBMITTED, ALONG WITH A RECOMMENDATION FOR ACHIEVING SAME FOR THE NEW UNITS, FOR REVIEW AND RESOLUTION TO THE ENGINEER. THE CONTRACTOR SHALL ULTIMATELY BE REQUIRED TO ARRANGE THE NEW AC UNITS TO LOAD SHED UPON BRIDGE OPERATION SIMILAR TO HOW THE EXISTING INTERLOCKING OPERATES AND SHALL INCLUDE ALL COSTS TO DO SO (INCLUDING BUT NOT LIMITED TO FIELD INVESTIGATION) WITHIN THEIR BID PRICE.

4. FOR EXISTING AND PROPOSED CONDUITS, REFER TO SHEETS E-34 THROUGH E-37.



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	REVISED SCOPE

RECORD DRAWING CERTIFICATION			
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CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
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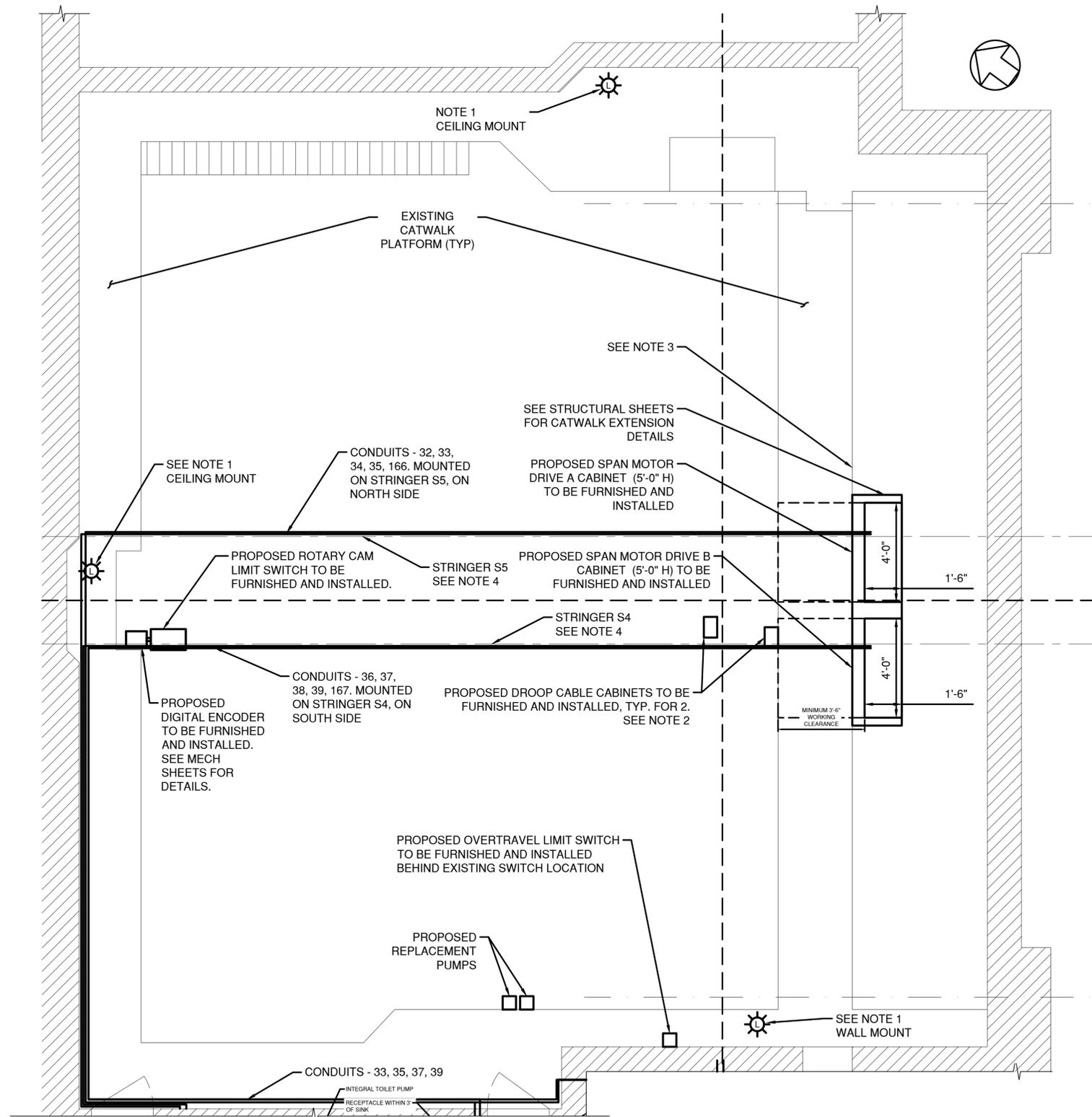


CONSULTANT INFORMATION



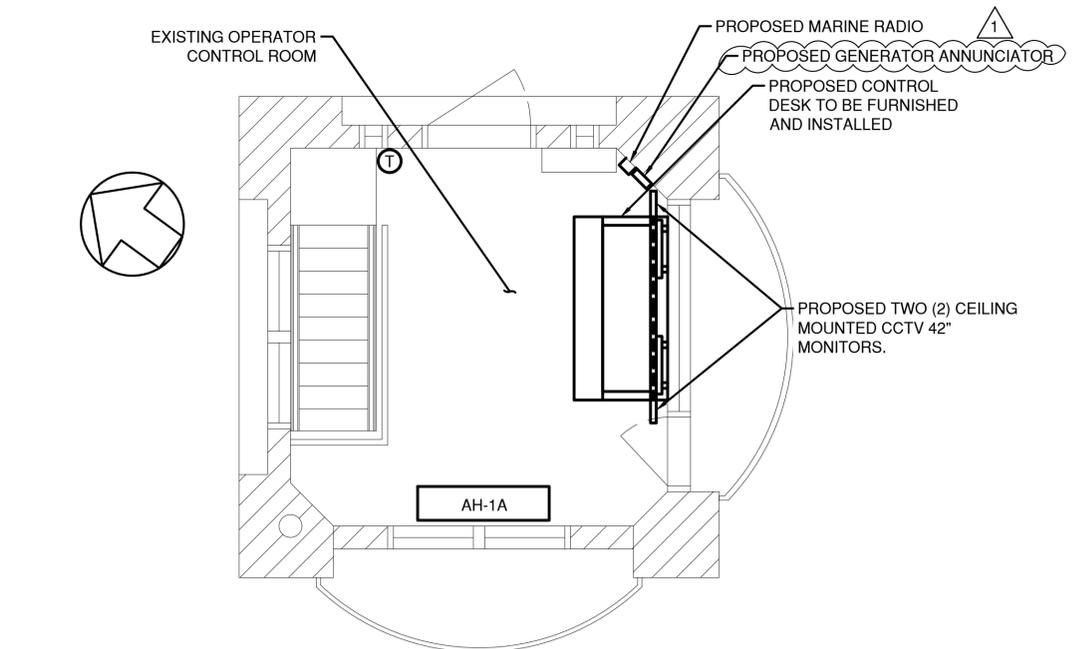
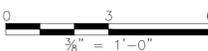
**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 ELECTRICAL  
**PROPOSED PARTIAL ONE LINE DIAGRAM 2**

CONTRACT NUMBER 20-517	SHEET NUMBER E-10
SHEET NO. 172 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-607-0	1



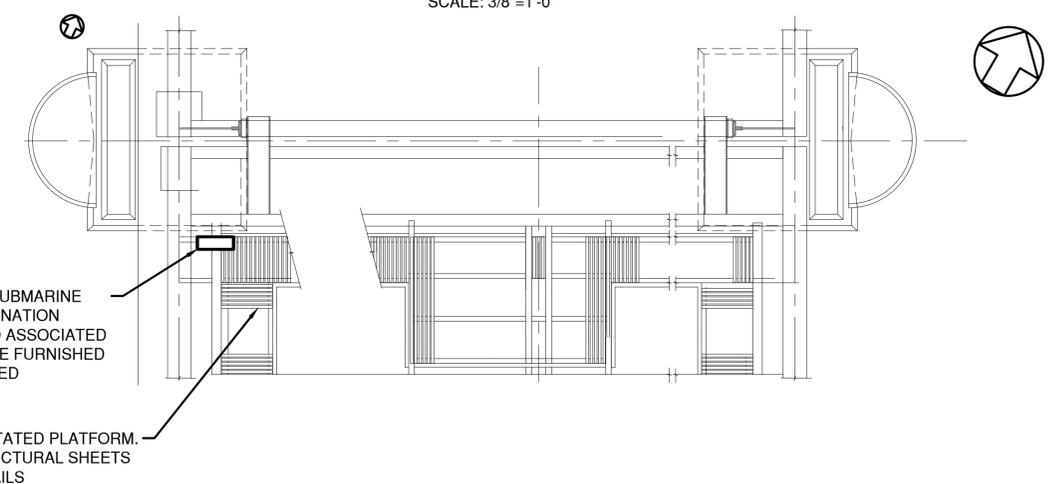
**PROPOSED CATWALK PLATFORM EQUIPMENT LAYOUT PLAN**

SCALE: 3/8"=1'-0"



**PROPOSED OPERATOR CONTROL ROOM PLAN**

SCALE: 3/8"=1'-0"



**PROPOSED SPAN LOCK PLATFORM POSITION PLAN**

SCALE: 1/4"=1'-0"

**NOTES**

- FURNISH AND INSTALL A VAPORTITE GLOBE LED SERVICE LIGHT WHERE INDICATED. FURNISH AND INSTALL CONDUIT AND WIRING TO CONNECT NEW FIXTURE TO NEAREST LIGHTING CIRCUIT.
- FURNISH AND INSTALL MULTI-CONDUCTOR FLEXIBLE DROOP CABLES WITH STRAIN RELIEF SUPPORT GRIPS AND EYE BOLTS SIMILAR TO EXISTING. DROOP CABLES SHALL ENTER TERMINAL CABINETS THROUGH OZ GEDNEY TYPE GPE FITTINGS. DROOP CABLES SHALL BE MANUFACTURED BY DRAKA OR SIMILAR APPROVED BY ENGINEER. TERMINAL CABINETS SHALL BE NEMA 4X 316 SS AND SIZED TO MATCH EXISTING. CONTRACTOR TO SUBMIT MOUNTING FOR REVIEW AND APPROVAL.
- CONTRACTOR TO REROUTE AND MOUNT SWITCHES AND RECEPTACLES IN THE AREA OF THE PLATFORM MODIFICATION AS NECESSARY TO FACILITATE THE PLATFORM MODIFICATION
- SEE DRAWINGS S-27 FOR DRIVE CABINET PLATFORM DETAILS AND S-66 FOR DECK OVER COUNTER WEIGHT STRINGERS DETAILS.
- WIRE HVAC POWER WITH DS. AND CONTROL WIRING BETWEEN UNITS, PANEL, AND ITS THERMOSTAT (TSTAT). REFER TO HVAC DRAWINGS FOR COORDINATION AND REQUIREMENTS.
- SEE DRAWINGS:  
H-03 FOR PROPOSED HVAC.  
M-01 TO M-08 FOR PROPOSED MACHINERY.
- P-01 TO P-04 FOR PROPOSED PLUMBING.  
A-05 TO A-8 FOR PROPOSED ARCHITECTURAL DETAILS
- WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 599.142500WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING
- REQUIRED CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, FIRE ALARM SYSTEM, AND HVAC NOT SHOWN.

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	UPDATE FOR CLARITY

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

CONSULTANT SEAL  
DAVID DELUCA  
NO. 06481  
REGISTERED PROFESSIONAL ENGINEER

1501 BROADWAY, SUITE 601  
NEW YORK, NY 10036  
(212) 944-1150

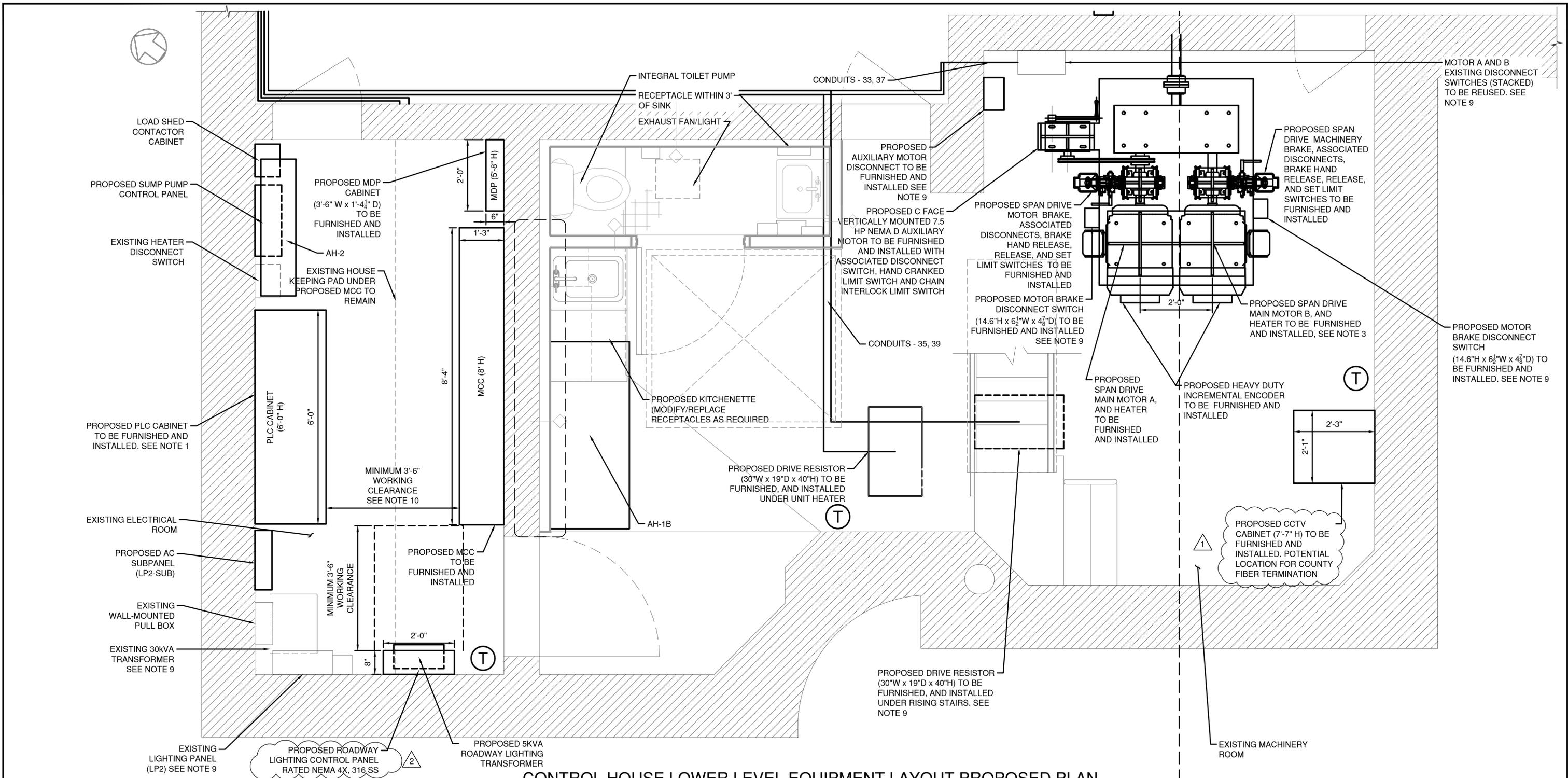
**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

ELECTRICAL

**PROPOSED EQUIPMENT LAYOUT PLAN 1**

CONTRACT NUMBER 20-517	SHEET NUMBER E-11
SHEET NO. 173 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-608-0	1



**NOTES**

- CONTRACTOR SHALL REMOVE ANY DEBRIS/PIPING/ETC. FROM THE WALL THAT INHIBITS THE PLACEMENT OF THE PLC CABINET. CONTRACTOR SHALL MODIFY ANY CONDUIT ROUTING NECESSARY TO MAKE SPACE FOR THE PLC CABINET AS NECESSARY.
- CONTRACTOR SHALL ALTER CONCRETE HOUSE KEEPING PAD AS REQUIRED.
- MOTOR FRAME SIZE SHALL FIT WITHIN THIS DIMENSION FOR MOTORS MOUNTED IN PARALLEL. FIELD VERIFY MOTORS GEOMETRY FOR MOUNTING ON EXISTING SUPPORTS USING THE SAME MOUNTING HOLES.
- FIELD VERIFY BRAKES GEOMETRY FOR MOUNTING ON EXISTING SUPPORTS USING THE SAME MOUNTING HOLES.
- REFER TO MACHINERY DRAWING FOR MOTORS AND BRAKES COORDINATION WITH COUPLING AND MOUNTING REQUIREMENTS.
- WIRE HVAC POWER WITH DS. AND CONTROL WIRING BETWEEN UNITS, PANEL, AND ITS THERMOSTAT (TSTAT). REFER TO HVAC DRAWINGS FOR COORDINATION AND REQUIREMENTS. SEE DRAWING H-03 FOR PROPOSED HVAC. SEE DRAWINGS M-01 TO M-08 FOR PROPOSED MACHINERY.

**CONTROL HOUSE LOWER LEVEL EQUIPMENT LAYOUT PROPOSED PLAN**

SCALE: 3/4"=1'-0"

- SEE DRAWINGS P-01 TO P-04 FOR PROPOSED PLUMBING.
- SEE DRAWINGS A-05 TO A-8 FOR PROPOSED ARCHITECTURAL DETAILS
- WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING
- NOT TO BE SERVICED WHILE ENERGIZED DUE TO WORKING CLEARANCE.
- WORKING CLEARANCE AS PER NEC 110.26(A)(1)(c).
- REQUIRED CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, FIRE ALARM SYSTEM, HVAC, TOILET PUMP, RESTROOM EXHAUST FAN/LIGHT, AND RECEPTACLES NOT SHOWN.



CONSULTANT INFORMATION



REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	SCOPE REVISED
2	4/30/24	JA	TK	UPDATE FOR CLARITY

RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED  
AS BUILT - NO CHANGES

CONTRACTOR PROJECT COORDINATOR

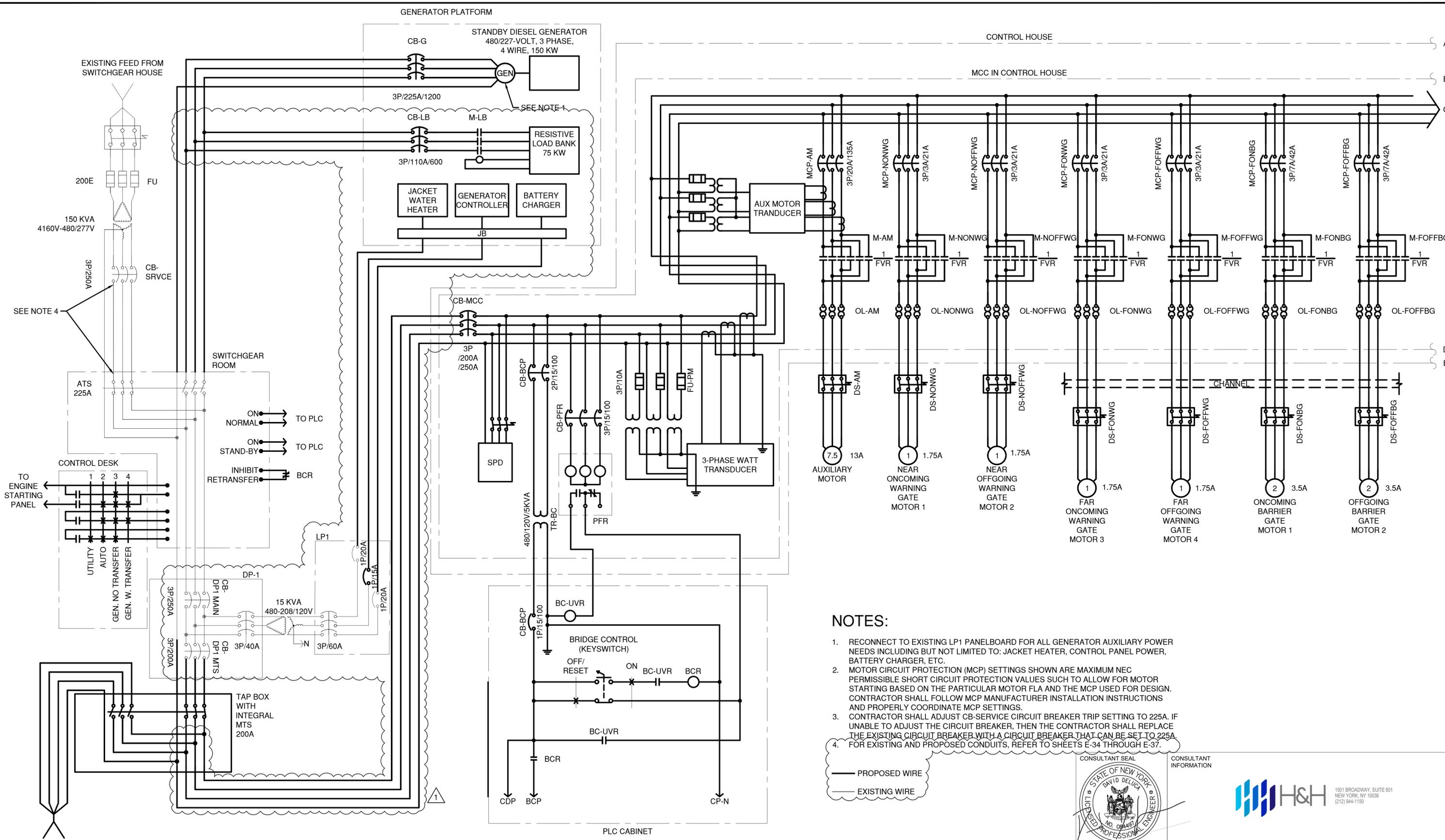
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TITLE \_\_\_\_\_ DATE \_\_\_\_\_ TITLE \_\_\_\_\_ DATE \_\_\_\_\_

WESTCHESTER COUNTY, NEW YORK  
DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
over New Rochelle Harbor, City of New Rochelle  
ELECTRICAL

CONTRACT NUMBER 20-517 SHEET NUMBER E-12  
SHEET NO. 174 OF 212  
SCALE: AS SHOWN DATE: 03/08/2024  
DPW FILE NO. 5-04-E-609-0 REV. NO. 2

IN CHARGE OF D. DELUCA, PE  
CHECKED BY A. NOBLE, PE  
MADE BY J. AMBROS, PE



**NOTES:**

1. RECONNECT TO EXISTING LP1 PANELBOARD FOR ALL GENERATOR AUXILIARY POWER NEEDS INCLUDING BUT NOT LIMITED TO: JACKET HEATER, CONTROL PANEL POWER, BATTERY CHARGER, ETC.
2. MOTOR CIRCUIT PROTECTION (MCP) SETTINGS SHOWN ARE MAXIMUM NEC PERMISSIBLE SHORT CIRCUIT PROTECTION VALUES SUCH AS TO ALLOW FOR MOTOR STARTING BASED ON THE PARTICULAR MOTOR FLA AND THE MCP USED FOR DESIGN. CONTRACTOR SHALL FOLLOW MCP MANUFACTURER INSTALLATION INSTRUCTIONS AND PROPERLY COORDINATE MCP SETTINGS.
3. CONTRACTOR SHALL ADJUST CB-SERVICE CIRCUIT BREAKER TRIP SETTING TO 225A. IF UNABLE TO ADJUST THE CIRCUIT BREAKER, THEN THE CONTRACTOR SHALL REPLACE THE EXISTING CIRCUIT BREAKER WITH A CIRCUIT BREAKER THAT CAN BE SET TO 225A.
4. FOR EXISTING AND PROPOSED CONDUITS, REFER TO SHEETS E-34 THROUGH E-37.

— PROPOSED WIRE  
 — EXISTING WIRE



CONSULTANT INFORMATION



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

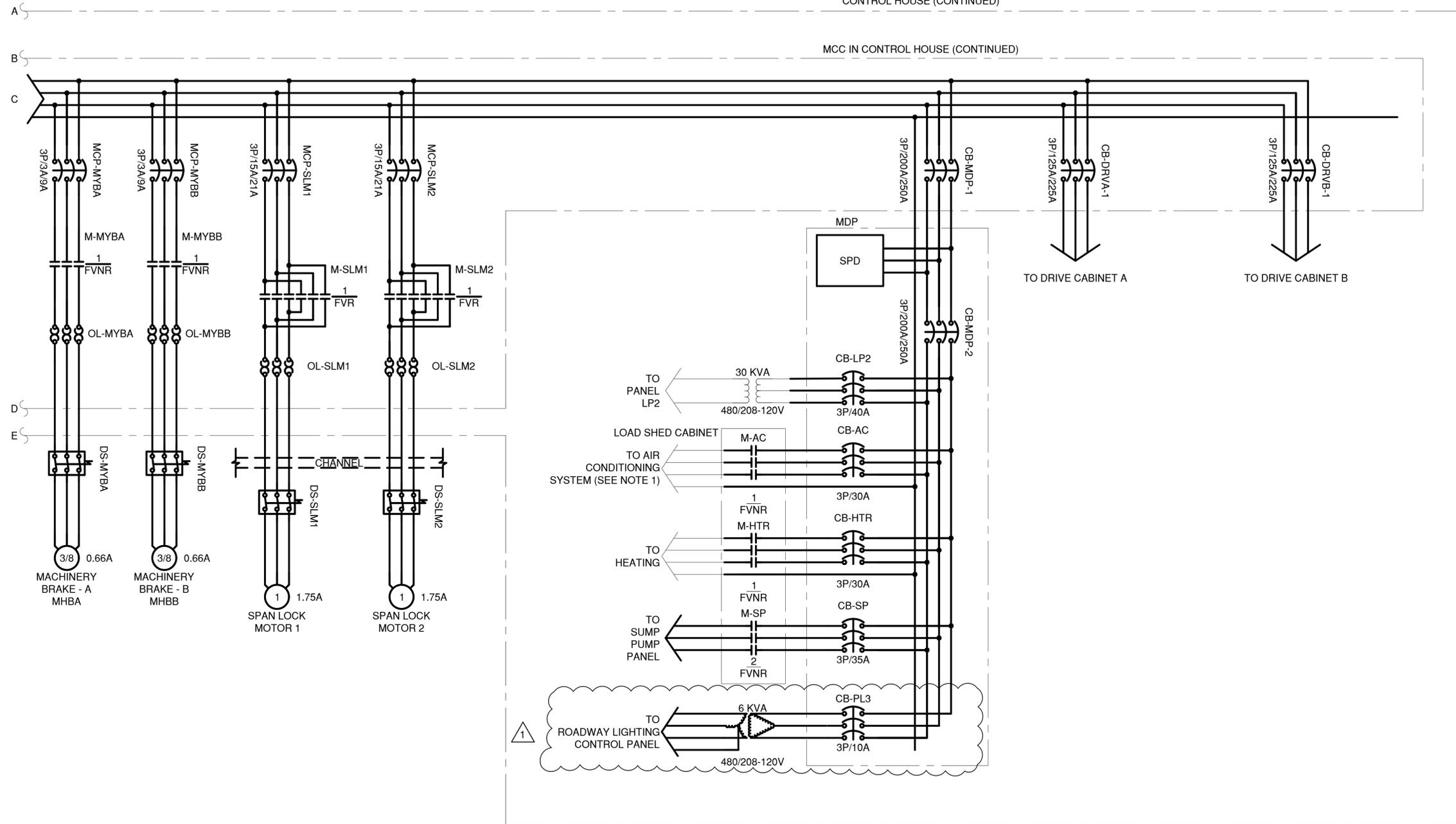
REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	UPDATE FOR CLARITY

RECORD DRAWING CERTIFICATION			
CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

WESTCHESTER COUNTY, NEW YORK DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION DIVISION OF ENGINEERING		CONTRACT NUMBER 20-517	SHEET NUMBER E-18
Rehabilitation of Glen Island Approach Bridge over New Rochelle Harbor, City of New Rochelle		SHEET NO. 180 OF 212	
ELECTRICAL		SCALE: AS SHOWN DATE: 03/08/2024	
PROPOSED PARTIAL THREE LINE DIAGRAM 1		DPW FILE NO. 5-04-E-615-0	REV. NO. 1

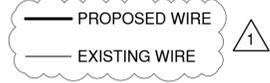
CONTROL HOUSE (CONTINUED)

MCC IN CONTROL HOUSE (CONTINUED)



NOTES:

- CONTRACTOR SHALL FIELD VERIFY THE EXISTING AIR CONDITIONING LOAD SHEDDING AND FIELD WIRING ARRANGEMENT AND MODIFY IT SO THE NEW AC UNITS CAN BE REPLACED WITHIN THE EXISTING INFRASTRUCTURE AND LOAD SHEDDING SCHEME. THERE IS AN EXISTING LOAD SHEDDING CONTACTOR FOR THE AC UNIT IN THE EXISTING MCC AND IS WIRED TO 480V. THE EXISTING AC UNIT IS 208V AND POWERED THROUGH EXISTING PANEL LP2. THIS DISCREPANCY MUST BE FIELD INVESTIGATED AND THE FINDINGS MUST BE SUBMITTED, ALONG WITH A RECOMMENDATION FOR ACHIEVING SAME FOR THE NEW UNITS, FOR REVIEW AND RESOLUTION TO THE ENGINEER. THE CONTRACTOR SHALL ULTIMATELY BE REQUIRED TO ARRANGE THE NEW AC UNITS TO LOAD SHED UPON BRIDGE OPERATION SIMILAR TO HOW THE EXISTING INTERLOCKING OPERATES AND SHALL INCLUDE ALL COSTS TO DO SO (INCLUDING BUT NOT LIMITED TO FIELD INVESTIGATION) WITHIN THEIR BID PRICE.
- FOR EXISTING AND PROPOSED CONDUITS, REFER TO SHEETS E-34 THROUGH E-37.



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/30/24	JA	TK	UPDATE FOR CLARITY

RECORD DRAWING CERTIFICATION

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

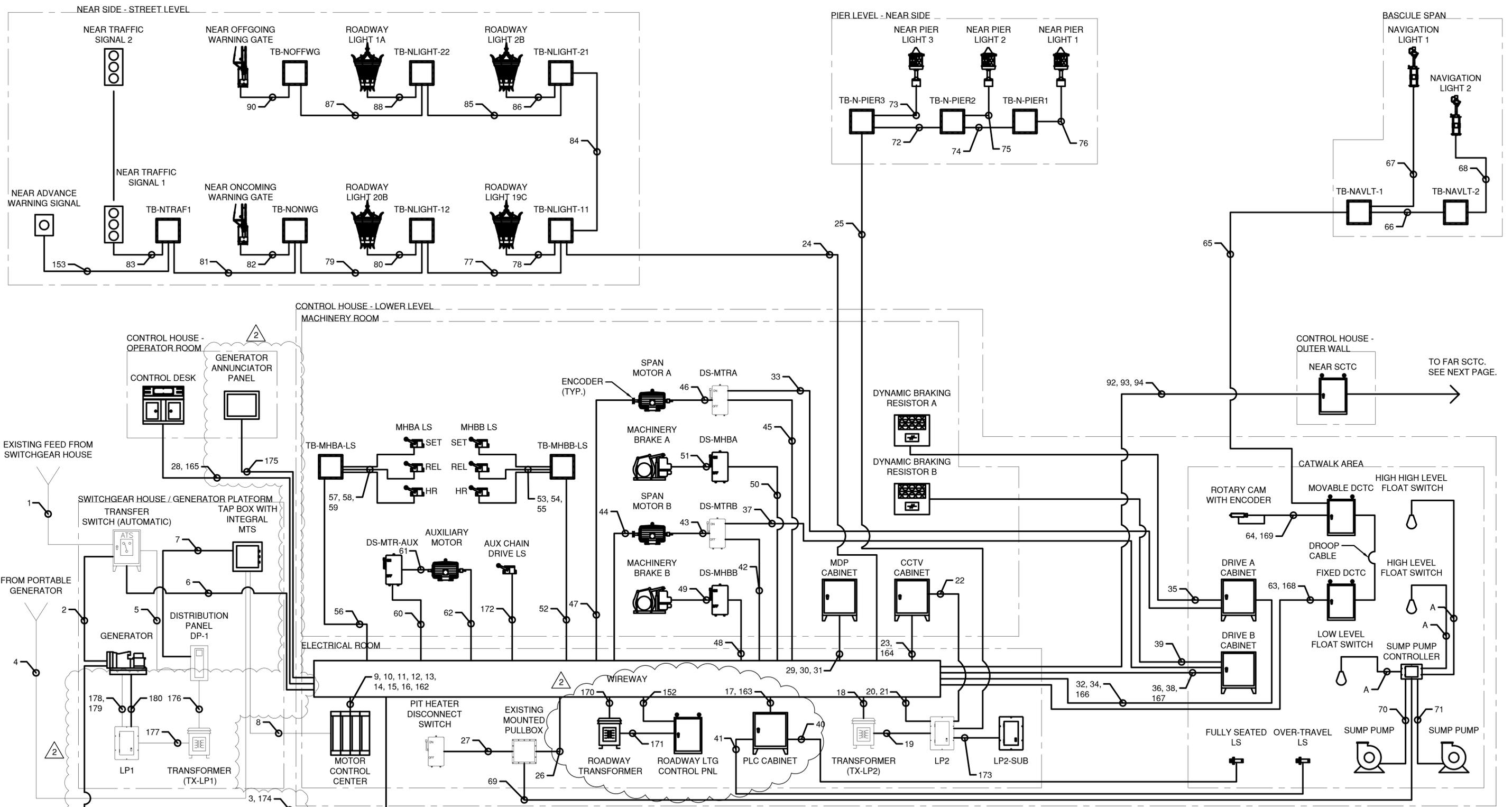


CONSULTANT INFORMATION



WESTCHESTER COUNTY, NEW YORK  
 DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 ELECTRICAL  
**PROPOSED PARTIAL THREE LINE DIAGRAM 2**

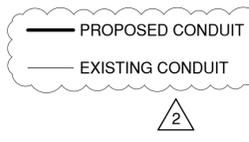
CONTRACT NUMBER 20-517	SHEET NUMBER E-19
SHEET NO. 181 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-616-0	1



**NOTES:**

- THE BRIDGE HOUSE LIGHTING/RECEPTACLES, INTERCOM, AND CCTV ARE NOT SHOWN ON THIS SCHEMATIC. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL CONDUIT AND CONDUCTORS OF SUFFICIENT NUMBER AND SIZE, INCLUDING TWENTY PERCENT SPARE CONTROL WIRING, AS MAY BE REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE FINAL WIRING DIAGRAMS ON THEIR APPROVED SHOP DRAWINGS.
- THE SCHEMATIC CONDUIT DIAGRAMS DO NOT PURPORT TO SHOW ALL PULL AND TERMINAL BOXES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL BOXES REQUIRED TO CONFORM WITH THE SPECIFIED NEC REQUIREMENTS GOVERNING THE ALLOWABLE NUMBER OF CONDUIT BETWEEN BOXES AND CABINETS. ALL PULL AND TERMINAL BOXES SHALL BE SIZED PER NEC SECTION 314.28. CONTRACTOR SHALL SUBMIT SIZING CALCULATIONS FOR REVIEW PRIOR TO INSTALLATION. ALL EXTERIOR BOXES LOCATED OUTSIDE OF THE BRIDGE HOUSE OR MACHINERY AREAS SHALL HAVE A UNIVERSAL BREATHER/DRAIN FITTING INSTALLED.
- WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 683.090700WE - MOVABLE BRIDGE STANDBY GENERATOR, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING, 680.79300001 - REMOVE TRAFFIC SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD, 680.82250301 - REMOVE STEEL EMBEDDED TRAFFIC SIGNAL POLE, 670.60 -

- PHOTOELECTRIC CONTROLS, 670.81 - REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY, 680.621630 - TRAFFIC SIGNAL POLE - MAST ARM, 680.6712 - TRAFFIC SIGNAL POLE - POST TOP MOUNT, 680.810101 - TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED, 680.810103 - TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED, 680.810105 - TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED, 680.810107 - TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH, 680.810308 - INSTALL BALL LED TRAFFIC SIGNAL MODULE, 680.8111 - TRAFFIC SIGNAL BRACKET ASSEMBLY, 680.8220 - FLASHING BEACON SIGN ASSEMBLY, 680.10000007 - INSTALL TRAFFIC SIGNAL POLE, ALL SIZES
- REQUIRED CABLE AND CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARM SYSTEM, HVAC, TOILET PUMP, CONDENSATE PUMP, RESTROOM EXHAUST FAN/LIGHT, HOT WATER HEATER, AND RECEPTACLES NOT SHOWN. CONTRACTOR SHALL SUPPLY AT NO ADDITIONAL COST. THE CONTRACTOR SHALL MODIFY THE EXISTING POWER DISTRIBUTION AS REQUIRED TO SERVICE THESE LOADS.



CONSULTANT INFORMATION



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	PAY ITEM ADDED
2	4/30/24	JA	TK	SCOPE REVISED

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR: \_\_\_\_\_ PROJECT COORDINATOR: \_\_\_\_\_

NAME: \_\_\_\_\_ NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_  
 TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_ TITLE: \_\_\_\_\_ DATE: \_\_\_\_\_

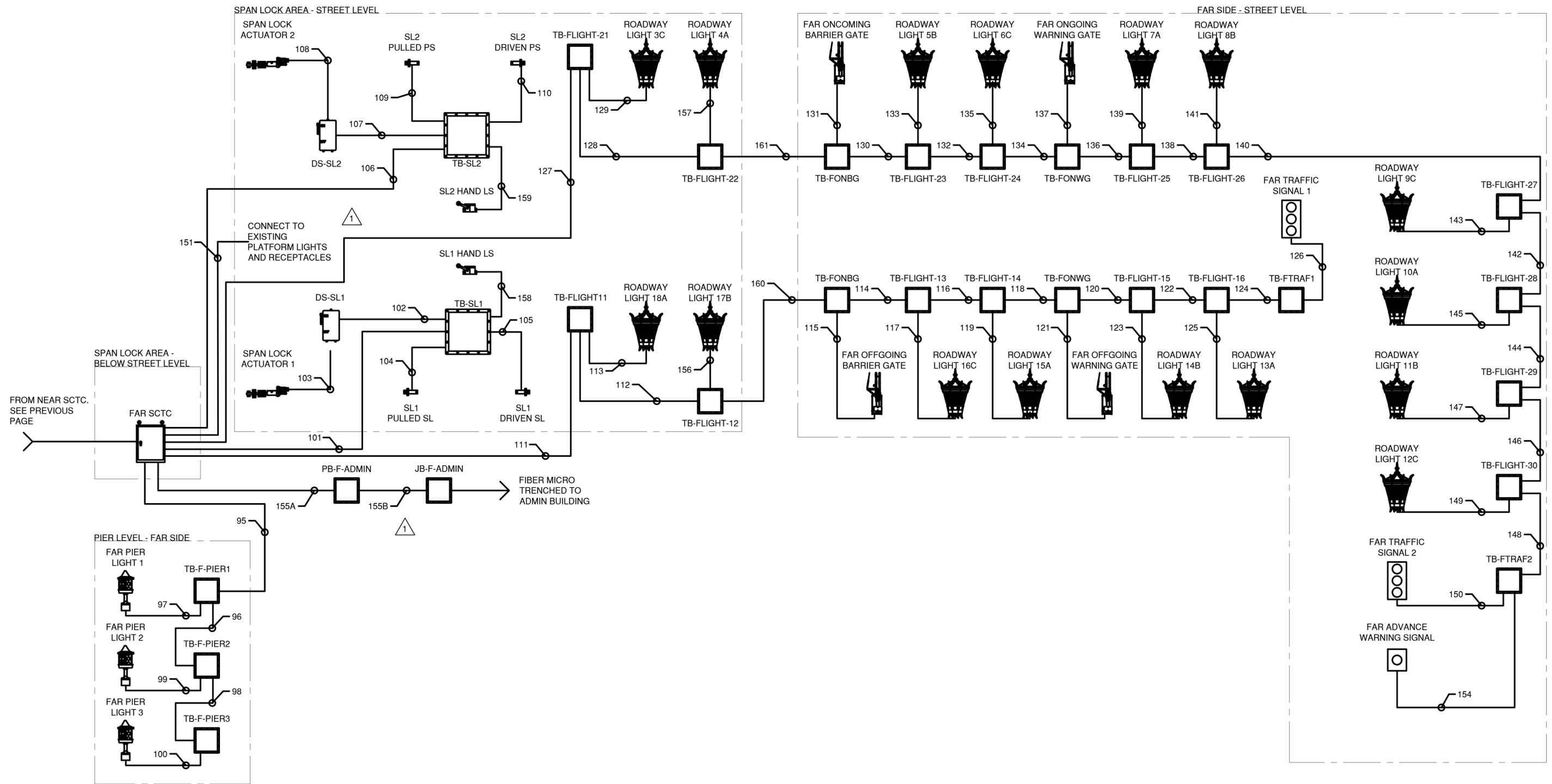
**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

ELECTRICAL

**PROPOSED CONDUIT BLOCK DIAGRAM 1**

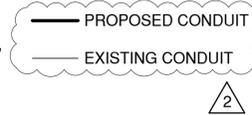
CONTRACT NUMBER 20-517	SHEET NUMBER E-34
SHEET NO. 196 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-631-0	2



**NOTES:**

- THE BRIDGE HOUSE LIGHTING/RECEPTACLES, INTERCOM, AND CCTV ARE NOT SHOWN ON THIS SCHEMATIC. THE CONTRACTOR SHALL PROVIDE ALL ADDITIONAL CONDUIT AND CONDUCTORS OF SUFFICIENT NUMBER AND SIZE, INCLUDING TWENTY PERCENT SPARE CONTROL WIRING, AS MAY BE REQUIRED FOR THE INSTALLATION IN ACCORDANCE WITH THE FINAL WIRING DIAGRAMS ON THEIR APPROVED SHOP DRAWINGS.
- THE SCHEMATIC CONDUIT DIAGRAMS DO NOT PURPORT TO SHOW ALL PULL AND TERMINAL BOXES THAT MAY BE REQUIRED. THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL BOXES REQUIRED TO CONFORM WITH THE SPECIFIED NEC REQUIREMENTS GOVERNING THE ALLOWABLE NUMBER OF CONDUIT BETWEEN BOXES AND CABINETS. ALL PULL AND TERMINAL BOXES SHALL BE SIZED PER NEC SECTION 314.28. CONTRACTOR SHALL SUBMIT SIZING CALCULATIONS FOR REVIEW PRIOR TO INSTALLATION. ALL EXTERIOR BOXES LOCATED OUTSIDE OF THE BRIDGE HOUSE OR MACHINERY AREAS SHALL HAVE A UNIVERSAL BREATHER/DRAIN FITTING INSTALLED.
- WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 683.090700WE - MOVABLE BRIDGE STANDBY GENERATOR, 599.142500WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING, 680.79300001 - REMOVE TRAFFIC SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD, 680.82250301 - REMOVE STEEL EMBEDDED TRAFFIC SIGNAL POLE, 670.60 -

- PHOTOELECTRIC CONTROLS, 670.81 - REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY, 680.621630 - TRAFFIC SIGNAL POLE - MAST ARM, 680.6712 - TRAFFIC SIGNAL POLE - POST TOP MOUNT, 680.810101 - TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED, 680.810103 - TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED, 680.810105 - TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED, 680.810107 - TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH, 680.810308 - INSTALL BALL LED TRAFFIC SIGNAL MODULE, 680.8111 - TRAFFIC SIGNAL BRACKET ASSEMBLY, 680.8220 - FLASHING BEACON SIGN ASSEMBLY, 680.10000007 - INSTALL TRAFFIC SIGNAL POLE, ALL SIZES
- REQUIRED CABLE AND CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARM SYSTEM, HVAC, TOILET PUMP, CONDENSATE PUMP, RESTROOM EXHAUST FAN/LIGHT, HOT WATER HEATER, AND RECEPTACLES NOT SHOWN. CONTRACTOR SHALL SUPPLY AT NO ADDITIONAL COST. THE CONTRACTOR SHALL MODIFY THE EXISTING POWER DISTRIBUTION AS REQUIRED TO SERVICE THESE LOADS.



IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	UPDATE FOR CLARITY
2	4/30/24	JA	TK	UPDATE FOR CLARITY

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____



CONSULTANT INFORMATION



**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 ELECTRICAL  
**PROPOSED CONDUIT BLOCK DIAGRAM 2**

CONTRACT NUMBER	SHEET NUMBER
20-517	E-35

SHEET NO. 197 OF 212  
 SCALE: AS SHOWN  
 DATE: 03/08/2024  
 DPW FILE NO. \_\_\_\_\_  
 REV. NO. 2

COND NO	FROM EQUIPMENT	TO EQUIPMENT	COND SIZE	NO. AND SIZE OF CONDUCTORS	GND	SPARE
1	SERVICE DISCONNECT SWITCH	AUTOMATIC TRASNFER SWITCH (ATS)	EXISTING			
2	GENERATOR	AUTOMATIC TRASNFER SWITCH (ATS)	2-1/2"	4#4/0	#2	-
3	GENERATOR	ELECTRICAL ROOM WIREWAY	3/4"	2#12	#12	2#12
4	PORTABLE GENERATOR HOOK UP	TAPBOX WITH INTEGRAL MANUAL TRANSFER SWITCH (MTS)	CABLES FROM PORTABLE GENERATOR			
5	AUTOMATIC TRASNFER SWITCH (ATS)	DISTRIBUTION PANEL DP-1	EXISTING	4#4/0	#2	-
6	AUTOMATIC TRASNFER SWITCH (ATS)	ELECTRICAL ROOM WIREWAY	1"	13#12	#12	2#12
7	DISTRIBUTION PANEL DP-1	MANUAL TRANSFER SWITCH (MTS)	2-1/2"	4#4/0	#2	-
8	MANUAL TRANSFER SWITCH (MTS)	MOTOR CONTROL CENTER (MCC)	NOTE 3	4#4/0	#2	-
9	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	2"	4#3/0	#4	-
10	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	1"	3#4	#10	-
11	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	1"	3#4	#10	-
12	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	3/4"	9#12	#12	-
13	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	3/4"	9#12	#12	-
14	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	3/4"	9#12	#12	-
15	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	3/4"	6#12	#12	-
16	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	2"	53#12	#12	6#12
17	PLC CABINET	ELECTRICAL ROOM WIREWAY	3"	121#12	#12	12#12
18	TRANSFORMER TX-LP2	ELECTRICAL ROOM WIREWAY	3/4"	4#10	#12	-
19	TRANSFORMER TX-LP2	PANTLBOARD LP2	1-1/2"	4#1	#6	-
20	PANTLBOARD LP2	ELECTRICAL ROOM WIREWAY	1"	12#12	#12	-
21	PANTLBOARD LP2	ELECTRICAL ROOM WIREWAY	1"	14#12	#12	-
22	PANTLBOARD LP2	CCTV CABINET	3/4"	2#12	#12	-
23	CCTV CABINET	ELECTRICAL ROOM WIREWAY	3/4"	2#12	#12	-
24	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-NLIGHT-11)	ELECTRICAL ROOM WIREWAY	2"	46#12	#12	4#12
25	PANTLBOARD LP2	NEAR SIDE PIER LIGHT TERMINAL BOX 3 (TB-N-PIER3)	3/4"	2#12	#12	-
26	EXISTING MOUNTED PULLBOX IN ELECTRICAL ROOM	ELECTRICAL ROOM WIREWAY	EXISTING	4#12, 3#8	#10	-
27	EXISTING MOUNTED PULLBOX IN ELECTRICAL ROOM	PIT HEATER DISCONNECT SWITCH	3/4"	4#12	#12	-
28	CONTROL DESK	ELECTRICAL ROOM WIREWAY	1-1/2"	39#12	#12	4#12
29	MAIN DISTRIBUTION PANEL (MDP)	ELECTRICAL ROOM WIREWAY	2"	4#3/0	#4	-
30	MAIN DISTRIBUTION PANEL (MDP)	ELECTRICAL ROOM WIREWAY	1"	11#10	#10	-
31	MAIN DISTRIBUTION PANEL (MDP)	ELECTRICAL ROOM WIREWAY	3/4"	6#12, 3#10	#10	-
32	DRIVE CABINET A	ELECTRICAL ROOM WIREWAY	1"	3#4	#8	-
33	DRIVE CABINET A	ELECTRICAL ROOM WIREWAY	1"	3#4	#8	-
34	DRIVE CABINET A	ELECTRICAL ROOM WIREWAY	1"	12#12	#12	2#12
35	DRIVE CABINET A	DYNAMIC BRAKING RESISTOR A	HIGH TEMP SIZED PER MANUFACTURER, 2#12			
36	DRIVE CABINET B	ELECTRICAL ROOM WIREWAY	1"	3#4	#8	-
37	DRIVE CABINET B	ELECTRICAL ROOM WIREWAY	1"	3#4	#8	-
38	DRIVE CABINET B	ELECTRICAL ROOM WIREWAY	1"	12#12	#12	2#12
39	DRIVE CABINET B	DYNAMIC BRAKING RESISTOR B	HIGH TEMP SIZED PER MANUFACTURER, 2#12			
40	PLC CABINET	FULLY SEATED LIMIT SWITCH (LS-SP-FS)	3/4"	4#12	#12	2#12
41	PLC CABINET	OVER-TRAVEL LIMIT SWITCH (LS-SP-OT)	3/4"	4#12	#12	2#12
42	SPAN MOTOR B DISCONNECT SWITCH (DS-MTRB)	ELECTRICAL ROOM WIREWAY	1"	6#12	#8	2#12
43	SPAN MOTOR B DISCONNECT SWITCH (DS-MTRB)	SPAN MOTOR B	1-1/2"	3#4, 4#12	#8	2#12
44	SPAN MOTOR B ENCODER	ELECTRICAL ROOM WIREWAY	1"	3#16TSP	#12	-
45	SPAN MOTOR A DISCONNECT SWITCH (DS-MTRA)	ELECTRICAL ROOM WIREWAY	1"	6#12	#8	2#12
46	SPAN MOTOR A DISCONNECT SWITCH (DS-MTRA)	SPAN MOTOR A	1-1/2"	3#4, 4#12	#8	2#12
47	SPAN MOTOR A ENCODER	ELECTRICAL ROOM WIREWAY	1"	3#16TSP	#12	-
48	MACHINERY BRAKE B DISCONNECT SWITCH (DS-MHBB)	ELECTRICAL ROOM WIREWAY	3/4"	7#12	#12	2#12
49	MACHINERY BRAKE B	MACHINERY BRAKE B DISCONNECT SWITCH (DS-MHBB)	3/4"	5#12	#12	2#12
50	MACHINERY BRAKE A DISCONNECT SWITCH (DS-MHBA)	ELECTRICAL ROOM WIREWAY	3/4"	7#12	#12	2#12
51	MACHINERY BRAKE A	MACHINERY BRAKE A DISCONNECT SWITCH (DS-MHBA)	3/4"	5#12	#12	2#12
52	MACHINERY BRAKE B LIMIT SWITCH TERMINAL BOX (TB-MHBB-LS)	ELECTRICAL ROOM WIREWAY	3/4"	4#12	#12	2#12
53	MACHINERY BRAKE B LIMIT SWITCH TERMINAL BOX (TB-MHBB-LS)	MACHINERY BRAKE A SET LIMIT SWITCH (LS-MYBA1)	3/4"	4#12	#12	-
54	MACHINERY BRAKE B LIMIT SWITCH TERMINAL BOX (TB-MHBB-LS)	MACHINERY BRAKE A HAND RELEASE LIMIT SWITCH (LS-MYBA3)	3/4"	4#12	#12	-
55	MACHINERY BRAKE B LIMIT SWITCH TERMINAL BOX (TB-MHBB-LS)	MACHINERY BRAKE A RELEASE LIMIT SWITCH (LS-MYBA2)	3/4"	4#12	#12	-
56	MACHINERY BRAKE A LIMIT SWITCH TERMINAL BOX (TB-MHBA-LS)	ELECTRICAL ROOM WIREWAY	3/4"	4#12	#12	2#12

COND NO	FROM EQUIPMENT	TO EQUIPMENT	COND SIZE	NO. AND SIZE OF CONDUCTORS	GND	SPARE
57	MACHINERY BRAKE A LIMIT SWITCH TERMINAL BOX (TB-MHBA-LS)	MACHINERY BRAKE B SET LIMIT SWITCH (LS-MYBB1)	3/4"	4#12	#12	-
58	MACHINERY BRAKE A LIMIT SWITCH TERMINAL BOX (TB-MHBA-LS)	MACHINERY BRAKE B HAND RELEASE LIMIT SWITCH (LS-MYBB3)	3/4"	4#12	#12	-
59	MACHINERY BRAKE A LIMIT SWITCH TERMINAL BOX (TB-MHBA-LS)	MACHINERY BRAKE B RELEASE LIMIT SWITCH (LS-MYBB2)	3/4"	4#12	#12	-
60	AUXILIARY MOTOR DISCONNECT SWITCH (DS-MTR-AUX)	ELECTRICAL ROOM WIREWAY	3/4"	9#12	#12	2#12
61	AUXILIARY MOTOR DISCONNECT SWITCH (DS-MTR-AUX)	AUXILIARY MOTOR	3/4"	7#12	#12	2#12
62	AUXILIARY MOTOR	ELECTRICAL ROOM WIREWAY	3/4"	4#12	#12	2#12
63	FIXED DROOP CABLE TERMINAL CABINET	ELECTRICAL ROOM WIREWAY	1"	13#12	#12	2#12
64	MOVABLE DROOP CABLE TERMINAL CABINET	SPAN ROTARY CAM LIMIT SWITCH W/ENCODER	1"	10#12	#12	2#12
65	MOVABLE DROOP CABLE TERMINAL CABINET	NAVIGATION LIGHT TERMINAL BOX 1 (TB-NAVLT-1)	3/4"	3#12	#12	2#12
66	NAVIGATION LIGHT TERMINAL BOX 1 (TB-NAVLT-1)	NAVIGATION LIGHT TERMINAL BOX 2 (TB-NAVLT-2)	3/4"	3#12	#12	2#12
67	NAVIGATION LIGHT TERMINAL BOX 1 (TB-NAVLT-1)	NAVIGATION LIGHT 1	3/4"	3#12	#12	-
68	NAVIGATION LIGHT TERMINAL BOX 2 (TB-NAVLT-2)	NAVIGATION LIGHT 2	3/4"	3#12	#12	-
69	EXISTING MOUNTED PULLBOX IN ELECTRICAL ROOM	SUMP PUMP CONTROL PANEL	3/4"	3#8	#10	-
70	SUMP PUMP CONTROL PANEL	SUMP PUMP 1	3/4"	3#12	#12	-
71	SUMP PUMP CONTROL PANEL	SUMP PUMP 2	3/4"	3#12	#12	-
72	NEAR SIDE PIER LIGHT TERMINAL BOX 3 (TB-N-PIER3)	NEAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-N-PIER2)	3/4"	2#12	#12	2#12
73	NEAR SIDE PIER LIGHT TERMINAL BOX 3 (TB-N-PIER3)	NEAR SIDE PIER LIGHT 3	3/4"	2#12	#12	-
74	NEAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-N-PIER2)	NEAR SIDE PIER LIGHT TERMINAL BOX 1 (TB-N-PIER1)	3/4"	2#12	#12	2#12
75	NEAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-N-PIER2)	NEAR SIDE PIER LIGHT 2	3/4"	2#12	#12	-
76	NEAR SIDE PIER LIGHT TERMINAL BOX 1 (TB-N-PIER1)	NEAR SIDE PIER LIGHT 1	3/4"	2#12	#12	-
77	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-NLIGHT-11)	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 12 (TB-NLIGHT-12)	2"	30#12	#12	3#12
78	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-NLIGHT-11)	NEAR SIDE ROADWAY LIGHT 19C	3/4"	2#12	#12	-
79	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 12 (TB-NLIGHT-12)	NEAR SIDE ONCOMING WARNING GATE TERMINAL BOX (TB-NONWG)	2"	24#12	#12	3#12
80	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 12 (TB-NLIGHT-12)	NEAR SIDE ROADWAY LIGHT 20B	3/4"	2#12	#12	-
81	NEAR SIDE ONCOMING WARNING GATE TERMINAL BOX (TB-NONWG)	NEAR SIDE TRAFFIC SIGNAL 1 TERMINAL BOX (TB-NTRAF1)	2"	6#12	#12	2#12
82	NEAR SIDE ONCOMING WARNING GATE TERMINAL BOX (TB-NONWG)	NEAR SIDE ONCOMING WARNING GATE	1-1/2"	18#12	#12	2#12
83	NEAR SIDE TRAFFIC SIGNAL 1 TERMINAL BOX (TB-NTRAF1)	NEAR SIDE TRAFFIC SIGNAL 1	3/4"	4#12	#12	2#12
84	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-NLIGHT-11)	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-NLIGHT-21)	2"	28#12	#12	3#12
85	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-NLIGHT-21)	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 22 (TB-NLIGHT-22)	2"	28#12	#12	3#12
86	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-NLIGHT-21)	NEAR SIDE ROADWAY LIGHT 2B	3/4"	2#12	#12	-
87	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 22 (TB-NLIGHT-22)	NEAR SIDE OFFGOING WARNING GATE TERMINAL BOX (TB-NOFFWG)	2"	22#12	#12	3#12
88	NEAR SIDE ROADWAY LIGHT TERMINAL BOX 22 (TB-NLIGHT-22)	NEAR SIDE ROADWAY LIGHT 1A	3/4"	2#12	#12	-
89	NEAR SIDE OFFGOING WARNING GATE TERMINAL BOX (TB-NOFFWG)	NEAR SIDE TRAFFIC SIGNAL 2 TERMINAL BOX (TB-NTRAF2)	3/4"	4#12	#12	2#12
90	NEAR SIDE OFFGOING WARNING GATE TERMINAL BOX (TB-NOFFWG)	NEAR SIDE OFFGOING WARNING GATE	1-1/2"	18#12	#12	2#12
91	NEAR SIDE TRAFFIC SIGNAL 2 TERMINAL BOX (TB-NTRAF2)	NEAR SIDE TRAFFIC SIGNAL 2	3/4"	4#12	#12	2#12
92	NEAR SUBMARINE CABLE TERMINAL CABINET	ELECTRICAL ROOM WIREWAY	2"	64#12	#12	7#12
93	NEAR SUBMARINE CABLE TERMINAL CABINET	ELECTRICAL ROOM WIREWAY	2"	64#12	#12	7#12
94	NEAR SUBMARINE CABLE TERMINAL CABINET	ELECTRICAL ROOM WIREWAY	3/4"	4#12, 1 FIBER A, 1 FIBER B	#6	2#12
95	FAR SUBMARINE CABLE TERMINAL CABINET	FAR SIDE PIER LIGHT TERMINAL BOX 1 (TB-F-PIER1)	3/4"	2#12	#12	2#12
96	FAR SIDE PIER LIGHT TERMINAL BOX 1 (TB-F-PIER1)	FAR SIDE PIER LIGHT 1	3/4"	2#12	#12	-
97	FAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-F-PIER2)	FAR SIDE PIER LIGHT TERMINAL BOX 1 (TB-F-PIER1)	3/4"	2#12	#12	2#12
98	FAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-F-PIER2)	FAR SIDE PIER LIGHT 2	3/4"	2#12	#12	-
99	FAR SIDE PIER LIGHT TERMINAL BOX 3 (TB-F-PIER3)	FAR SIDE PIER LIGHT TERMINAL BOX 2 (TB-F-PIER2)	3/4"	2#12	#12	2#12
100	FAR SIDE PIER LIGHT TERMINAL BOX 3 (TB-F-PIER3)	FAR SIDE PIER LIGHT 3	3/4"	2#12	#12	-
101	FAR SUBMARINE CABLE TERMINAL CABINET	SPAN LOCK 1 TERMINAL BOX (TB-SL1)	1"	15#12	#12	2#12
102	SPAN LOCK 1 TERMINAL BOX (TB-SL1)	SPAN LOCK 1 DISCONNECT SWITCH (DS-SL1)	1"	9#12	#12	2#12
103	SPAN LOCK 1 DISCONNECT SWITCH (DS-SL1)	SPAN LOCK 1	2"	7#12	#12	2#12

**NOTES:**

- PLEASE NOTE THAT THE CONTRACTOR IS BIDDING ON A LUMP SUM BID ITEM FOR ALL CONDUIT AND CABLE FOR A MOVABLE BRIDGE. THE CONTRACTOR IS REQUIRED TO SUPPLY ALL CABLE AND CONDUIT FOR A COMPLETE SYSTEM WHETHER SHOWN ON THE CONTRACT DRAWINGS OR NOT. THE CABLE AND CONDUIT SHOWN ON THESE SET OF PLANS IS TO SUPPLY AN ORDER OF MAGNITUDE OF THE TOTAL REQUIRED. CONTRACTOR SHALL BE REQUIRED TO INCLUDE IN THEIR BID THE COST FOR ALL CABLE AND CONDUIT FOR THE SYSTEM. NO CHANGE ORDERS SHALL BE ALLOWED FOR ADDITIONAL CABLE AND CONDUIT, WHICH IS FOR THE ORIGINAL SYSTEM INTENT SHOWN ON THESE DRAWINGS.
- REQUIRED CABLE AND CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARM SYSTEM, HVAC, TOILET PUMP, CONDENSATE PUMP, RESTROOM EXHAUST FAN/LIGHT, HOT WATER HEATER, AND RECEPTACLES NOT SHOWN. CONTRACTOR SHALL SUPPLY AT NO ADDITIONAL COST. THE CONTRACTOR SHALL MODIFY THE EXISTING POWER DISTRIBUTION AS REQUIRED TO SERVICE THESE LOADS.

- CONTRACTOR WILL BE RESPONSIBLE TO LOCATE THE EXISTING CONDUIT, RUN A NEW CONDUIT FROM DP-1, AND INSTALL THE NEW TAP BOX WITH INTEGRAL MTS. THE EXISTING CONDUIT IS TO BE INTERCEPTED TO THE NEAREST COUPLING AND NEW CONDUIT INSTALLED UP TO THE NEW TAP BOX.
- FIBER A IS SINGLE-MODE FIBER BUNDLE, FIBER B IS MULTI-MODE FIBER BUNDLE.
- "EXISTING" IN COND SIZE COLUMN IS FOR EXISTING CONDUIT ONLY. EXISTING WIRE IS LEFT BLANK.

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	UPDATE FOR CLARITY
2	4/30/24	JA	TK	SCOPE REVISED

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____



CONSULTANT INFORMATION



**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

ELECTRICAL

**PROPOSED CONDUIT AND CABLE SCHEDULE 1**

CONTRACT NUMBER 20-517	SHEET NUMBER E-36
SHEET NO. 198 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-633-0	2

COND NO	FROM EQUIPMENT	TO EQUIPMENT	COND SIZE	NO. AND SIZE OF CONDUCTORS	GND	SPARE
104	SPAN LOCK 1 TERMINAL BOX (TB-SL1)	SPAN LOCK 1 PULLED LIMIT SWITCH (LS-SL1-P)	3/4"	2#12	#12	-
105	SPAN LOCK 1 TERMINAL BOX (TB-SL1)	SPAN LOCK 1 DRIVEN LIMIT SWITCH (LS-SL1-D)	3/4"	2#12	#12	-
106	FAR SUBMARINE CABLE TERMINAL CABINET	SPAN LOCK 2 TERMINAL BOX (TB-SL2)	1"	15#12	#12	2#12
107	SPAN LOCK 2 TERMINAL BOX (TB-SL2)	SPAN LOCK 2 DISCONNECT SWITCH (DS-SL2)	1"	9#12	#12	2#12
108	SPAN LOCK 2 DISCONNECT SWITCH (DS-SL2)	SPAN LOCK 2	3/4"	7#12	#12	2#12
109	SPAN LOCK 2 TERMINAL BOX (TB-SL2)	SPAN LOCK 2 PULLED LIMIT SWITCH (LS-SL2-P)	3/4"	2#12	#12	-
110	SPAN LOCK 2 TERMINAL BOX (TB-SL2)	SPAN LOCK 2 DRIVEN LIMIT SWITCH (LS-SL2-D)	3/4"	2#12	#12	-
111	FAR SUBMARINE CABLE TERMINAL CABINET	FAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-FLIGHT-11)	2"	46#12	#10	5#12
112	FAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-FLIGHT-11)	FAR SIDE OFFGOING BARRIER GATE TERINAL BOX (TB-FOFFBG)	2"	46#12	#10	5#12
113	FAR SIDE ROADWAY LIGHT TERMINAL BOX 11 (TB-FLIGHT-11)	FAR SIDE ROADWAY LIGHT 18A	3/4"	2#12	#12	-
114	FAR SIDE OFFGOING BARRIER GATE TERINAL BOX (TB-FOFFBG)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 13 (TB-FLIGHT-13)	2"	26#12	#10	3#12
115	FAR SIDE OFFGOING BARRIER GATE TERINAL BOX (TB-FOFFBG)	FAR SIDE OFFGOING BARRIER GATE	1-1/2"	20#12	#10	2#12
116	FAR SIDE ROADWAY LIGHT TERMINAL BOX 13 (TB-FLIGHT-13)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 14 (TB-FLIGHT-14)	2"	26#12	#10	3#12
117	FAR SIDE ROADWAY LIGHT TERMINAL BOX 13 (TB-FLIGHT-13)	FAR SIDE ROADWAY LIGHT 16C	3/4"	2#12	#12	-
118	FAR SIDE ROADWAY LIGHT TERMINAL BOX 14 (TB-FLIGHT-14)	FAR SIDE OFFGOING WARNING GATE TERINAL BOX (TB-FOFFWG)	2"	26#12	#10	3#12
119	FAR SIDE ROADWAY LIGHT TERMINAL BOX 14 (TB-FLIGHT-14)	FAR SIDE ROADWAY LIGHT 15A	3/4"	2#12	#12	-
120	FAR SIDE OFFGOING WARNING GATE TERINAL BOX (TB-FOFFWG)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 15 (TB-FLIGHT-15)	2"	8#12	#12	2#12
121	FAR SIDE OFFGOING WARNING GATE TERINAL BOX (TB-FOFFWG)	FAR SIDE OFFGOING WARNING GATE	1-1/2"	18#12	#10	2#12
122	FAR SIDE ROADWAY LIGHT TERMINAL BOX 15 (TB-FLIGHT-15)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 16 (TB-FLIGHT-16)	2"	8#12	#12	2#12
123	FAR SIDE ROADWAY LIGHT TERMINAL BOX 15 (TB-FLIGHT-15)	FAR SIDE ROADWAY LIGHT 14B	3/4"	2#12	#12	-
124	FAR SIDE ROADWAY LIGHT TERMINAL BOX 16 (TB-FLIGHT-16)	FAR SIDE TRAFFIC SIGNAL 1 TERMINAL BOX (TB-FTRAF1)	3/4"	4#12	#12	2#12
125	FAR SIDE ROADWAY LIGHT TERMINAL BOX 16 (TB-FLIGHT-16)	FAR SIDE ROADWAY LIGHT 13A	3/4"	2#12	#12	-
126	FAR SIDE TRAFFIC SIGNAL 1 TERMINAL BOX (TB-FTRAF1)	FAR SIDE TRAFFIC SIGNAL 1	3/4"	4#12	#12	2#12
127	FAR SUBMARINE CABLE TERMINAL CABINET	FAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-FLIGHT-21)	2"	48#12	#10	5#12
128	FAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-FLIGHT-21)	FAR SIDE ONCOMING BARRIER GATE TERINAL BOX (TB-FONBG)	2"	48#12	#10	5#12
129	FAR SIDE ROADWAY LIGHT TERMINAL BOX 21 (TB-FLIGHT-21)	FAR SIDE ROADWAY LIGHT 3C	3/4"	2#12	#12	-
130	FAR SIDE ONCOMING BARRIER GATE TERINAL BOX (TB-FONBG)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 23 (TB-FLIGHT-23)	2"	28#12	#10	3#12
131	FAR SIDE ONCOMING BARRIER GATE TERINAL BOX (TB-FONBG)	FAR SIDE ONCOMING BARRIER GATE	1-1/2"	20#12	#10	2#12
132	FAR SIDE ROADWAY LIGHT TERMINAL BOX 23 (TB-FLIGHT-23)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 24 (TB-FLIGHT-24)	2"	28#12	#10	3#12
133	FAR SIDE ROADWAY LIGHT TERMINAL BOX 23 (TB-FLIGHT-23)	FAR SIDE ROADWAY LIGHT 5B	3/4"	2#12	#12	-
134	FAR SIDE ROADWAY LIGHT TERMINAL BOX 24 (TB-FLIGHT-24)	FAR SIDE ONCOMING WARNING GATE TERINAL BOX (TB-FONWG)	2"	28#12	#10	3#12
135	FAR SIDE ROADWAY LIGHT TERMINAL BOX 24 (TB-FLIGHT-24)	FAR SIDE ROADWAY LIGHT 6C	3/4"	2#12	#12	-
136	FAR SIDE ONCOMING WARNING GATE TERINAL BOX (TB-FONWG)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 25 (TB-FLIGHT-25)	2"	10#12	#12	2#12
137	FAR SIDE ONCOMING WARNING GATE TERINAL BOX (TB-FONWG)	FAR SIDE ONCOMING WARNING GATE	1-1/2"	18#12	#10	2#12
138	FAR SIDE ROADWAY LIGHT TERMINAL BOX 25 (TB-FLIGHT-25)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 26 (TB-FLIGHT-26)	2"	10#12	#12	2#12
139	FAR SIDE ROADWAY LIGHT TERMINAL BOX 25 (TB-FLIGHT-25)	FAR SIDE ROADWAY LIGHT 7A	3/4"	2#12	#12	-
140	FAR SIDE ROADWAY LIGHT TERMINAL BOX 26 (TB-FLIGHT-26)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 27 (TB-FLIGHT-27)	2"	10#12	#12	2#12

COND NO	FROM EQUIPMENT	TO EQUIPMENT	COND SIZE	NO. AND SIZE OF CONDUCTORS	GND	SPARE
141	FAR SIDE ROADWAY LIGHT TERMINAL BOX 26 (TB-FLIGHT-26)	FAR SIDE ROADWAY LIGHT 8B	3/4"	2#12	#12	-
142	FAR SIDE ROADWAY LIGHT TERMINAL BOX 27 (TB-FLIGHT-27)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 28 (TB-FLIGHT-28)	2"	10#12	#12	2#12
143	FAR SIDE ROADWAY LIGHT TERMINAL BOX 27 (TB-FLIGHT-27)	FAR SIDE ROADWAY LIGHT 9C	3/4"	2#12	#12	-
144	FAR SIDE ROADWAY LIGHT TERMINAL BOX 28 (TB-FLIGHT-28)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 29 (TB-FLIGHT-29)	2"	10#12	#12	2#12
145	FAR SIDE ROADWAY LIGHT TERMINAL BOX 28 (TB-FLIGHT-28)	FAR SIDE ROADWAY LIGHT 10A	3/4"	2#12	#12	-
146	FAR SIDE ROADWAY LIGHT TERMINAL BOX 29 (TB-FLIGHT-29)	FAR SIDE ROADWAY LIGHT TERMINAL BOX 30 (TB-FLIGHT-30)	2"	10#12	#12	2#12
147	FAR SIDE ROADWAY LIGHT TERMINAL BOX 29 (TB-FLIGHT-29)	FAR SIDE ROADWAY LIGHT 11B	3/4"	2#12	#12	-
148	FAR SIDE ROADWAY LIGHT TERMINAL BOX 30 (TB-FLIGHT-30)	FAR SIDE TRAFFIC SIGNAL 2 TERMINAL BOX (TB-FTRAF2)	2"	6#12	#12	2#12
149	FAR SIDE ROADWAY LIGHT TERMINAL BOX 309 (TB-FLIGHT-30)	FAR SIDE ROADWAY LIGHT 12C	3/4"	2#12	#12	-
150	FAR SIDE TRAFFIC SIGNAL 2 TERMINAL BOX (TB-FTRAF2)	FAR SIDE TRAFFIC SIGNAL 2	3/4"	4#12	#12	2#12
151	FAR SUBMARINE CABLE TERMINAL CABINET	SPAN LOCK PLATFORM LIGHTS AND RECEPTACLE	3/4"	2#12	#12	-
152	ROADWAY LIGHTING PANEL	ELECTRICAL ROOM WIREWAY	3/4"	9#12	#12	-
153	NEAR SIDE TRAFFIC SIGNAL 1 TERMINAL BOX (TB-NTRAF1)	NEAR SIDE ADVANCE WARNING SIGNAL	2"	2#12	#12	-
154	FAR SIDE ROADWAY LIGHT TERMINAL BOX 30 (TB-FLIGHT-30)	FAR SIDE ADVANCE WARNING SIGNAL	2"	2#12	#12	-
155A	FAR SUBMARINE CABLE TERMINAL CABINET	ADMIN BULDING FIBER JUNCTION BOX (PB-F-ADMIN)	3/4"	1 FIBER A	-	-
155B	ADMIN BULDING FIBER JUNCTION BOX (PB-F-ADMIN)	ADMIN BULDING FIBER JUNCTION BOX (JB-F-ADMIN)	NOTE 3	1 FIBER A	-	-
156	FAR SIDE ROADWAY LIGHT TERMINAL BOX 12 (TB-FLIGHT-12)	FAR SIDE ROADWAY LIGHT 17B	3/4"	2#12	#12	-
157	FAR SIDE ROADWAY LIGHT TERMINAL BOX 22 (TB-FLIGHT-22)	FAR SIDE ROADWAY LIGHT 4A	3/4"	2#12	#12	-
158	SPAN LOCK 1 TERMINAL BOX (TB-SL1)	SPAN LOCK 1 HAND CRANK LIMIT SWITCH (LS-SL1-HCI)	3/4"	2#12	#12	-
159	SPAN LOCK 2 TERMINAL BOX (TB-SL2)	SPAN LOCK 2 HAND CRANK LIMIT SWITCH (LS-SL2-HCI)	3/4"	2#12	#12	-
160	FAR SIDE ROADWAY LIGHT TERMINAL BOX 12 (TB-FLIGHT-12)	FAR SIDE OFFGOING BARRIER GATE TERINAL BOX (TB-FOFFBG)	2"	46#12	#12	3#12
161	FAR SIDE ROADWAY LIGHT TERMINAL BOX 22 (TB-FLIGHT-22)	FAR SIDE ONCOMING BARRIER GATE TERINAL BOX (TB-FONBG)	2"	48#12	#12	5#12
162	MOTOR CONTROL CENTER (MCC)	ELECTRICAL ROOM WIREWAY	1"	1#16TSP, 1 CAT6E	#12	-
163	PLC CABINET	ELECTRICAL ROOM WIREWAY	1"	1#16TSP, 1 CAT6E	#10	-
164	CCTV CABINET	ELECTRICAL ROOM WIREWAY	1-1/2"	9 CAT6E, 1 FIBER B	#12	-
165	CONTROL DESK	ELECTRICAL ROOM WIREWAY	1-1/2"	6 CAT6E	#12	-
166	DRIVE CABINET A	ELECTRICAL ROOM WIREWAY	2"	3#16TSP, 2 CAT6E	#12	-
167	DRIVE CABINET B	ELECTRICAL ROOM WIREWAY	2"	3#16TSP, 2 CAT6E	#12	-
168	FIXED DROOP CABLE TERMINAL CABINET	ELECTRICAL ROOM WIREWAY	3/4"	1 CAT6E	#10	-
169	MOVABLE DROOP CABLE TERMINAL CABINET	SPAN ROTARY CAM LIMIT SWITCH W/RESOLVER	3/4"	1 CAT6E	#12	-
170	ROADWAY LIGHTING TRASNFORMER	ELECTRICAL ROOM WIREWAY	3/4"	4#12	#12	-
171	ROADWAY LIGHTING TRASNFORMER	ROADWAY LIGHTING PANEL	3/4"	4#12	#12	-
172	AUX MOTOR CHAIN DRIVE ENGAGED LIMIT SWITCH	ELECTRICAL ROOM WIREWAY	3/4"	2#12	#12	-
173	PANELBOARD LP2	AC SUBPANEL	3/4"	3#6	#10	-
174	GENERATOR	ELECTRICAL ROOM WIREWAY	3/4"	TSP ANNUNCIATOR CABLE AS REQUIRED BY MANUFACTURER		
175	GENERATOR ANNUNCIATOR PANEL	ELECTRICAL ROOM WIREWAY	3/4"	TSP ANNUNCIATOR CABLE AS REQUIRED BY MANUFACTURER		
176	DISTRIBUTION PANEL DP-1	TRANSFORMER TX-LP1	EXISTING			
177	TRANSFORMER TX-LP1	PANELBOARD LP1	EXISTING			
178	PANELBOARD LP1	GENERATOR JACKET WATER HEATER	EXISTING	2#12	#12	-
179	PANELBOARD LP1	GENERATOR BATTERY CHARGER	EXISTING	2#12	#12	-
180	PANELBOARD LP1	GENERATOR CONTROLLER	3/4"	2#12	#12	-
A	SUMP PUMP CONTROL PANEL	FLOAT SWITCH (X3)		MANUFACTURER'S FLEXIBLE CABLE		

**NOTES:**

- PLEASE NOTE THAT THE CONTRACTOR IS BIDDING ON A LUMP SUM BID ITEM FOR ALL CONDUIT AND CABLE FOR A MOVABLE BRIDGE. THE CONTRACTOR IS REQUIRED TO SUPPLY ALL CABLE AND CONDUIT FOR A COMPLETE SYSTEM WHETHER SHOWN ON THE CONTRACT DRAWINGS OR NOT. THE CABLE AND CONDUIT SHOWN ON THESE SET OF PLANS IS TO SUPPLY AN ORDER OF MAGNITUDE OF THE TOTAL REQUIRED. CONTRACTOR SHALL BE REQUIRED TO INCLUDE IN THEIR BID THE COST FOR ALL CABLE AND CONDUIT FOR THE SYSTEM. NO CHANGE ORDERS SHALL BE ALLOWED FOR ADDITIONAL CABLE AND CONDUIT, WHICH IS FOR THE THE ORIGINAL SYSTEM INTENT SHOWN ON THESE DRAWINGS.
- REQUIRED CABLE AND CONDUIT FOR INDOOR LIGHTING, EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARM SYSTEM, HVAC, TOILET PUMP, CONDENSATE PUMP, RESTROOM EXHAUST FAN/LIGHT, HOT WATER HEATER, AND RECEPTACLES NOT SHOWN. CONTRACTOR SHALL SUPPLY AT NO ADDITIONAL COST. THE CONTRACTOR SHALL MODIFY THE EXISTING POWER DISTRIBUTION AS REQUIRED TO SERVICE THESE LOADS.

- SEE NOTES ON SHEET E-50.
- FIBER A IS SINGLE-MODE FIBER BUNDLE, FIBER B IS MULTI-MODE FIBER BUNDLE
- "EXISTING" IN COND SIZE COLUMN IS FOR EXISTING CONDUIT ONLY. EXISTING WIRE IS LEFT BLANK.

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	UPDATE FOR CLARITY
2	4/30/24	JA	TK	SCOPE REVISED

**RECORD DRAWING CERTIFICATION**

- AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

**CONTRACTOR**

NAME \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_  
 TITLE \_\_\_\_\_ DATE \_\_\_\_\_

**PROJECT COORDINATOR**

NAME \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_  
 TITLE \_\_\_\_\_ DATE \_\_\_\_\_

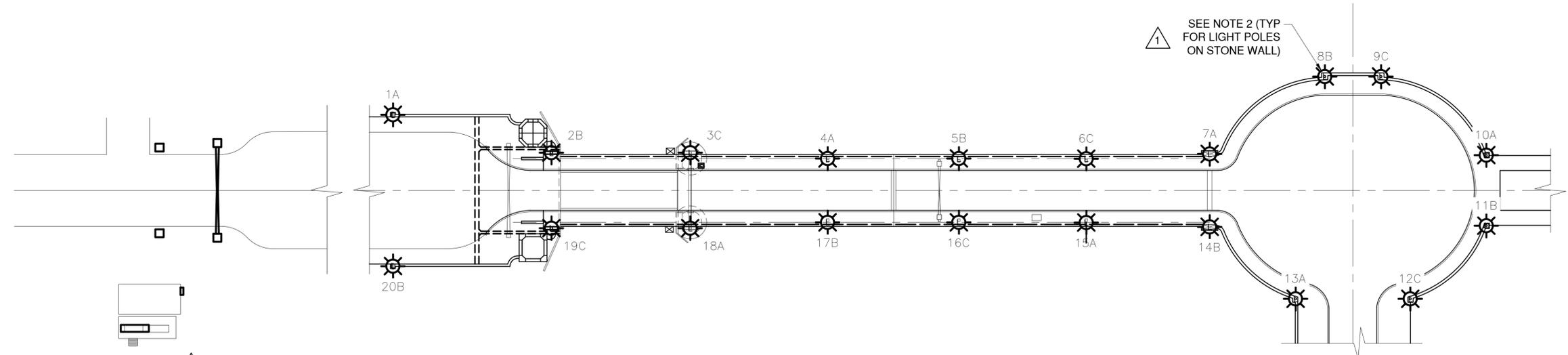
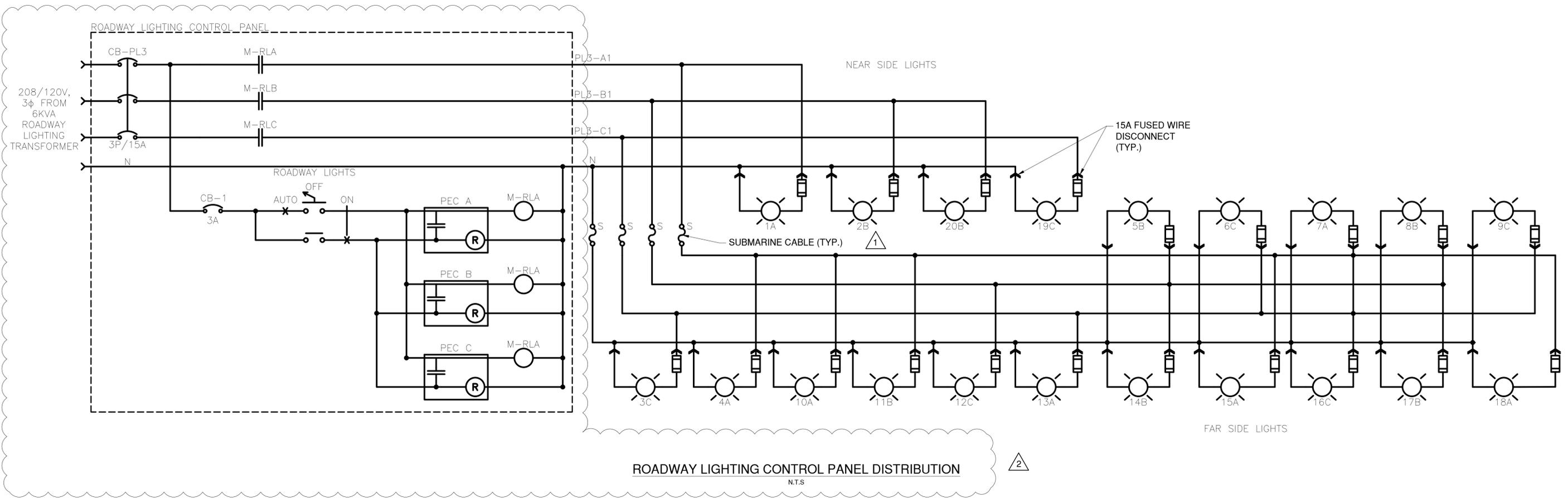


CONSULTANT INFORMATION



**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING  
 Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle  
 ELECTRICAL  
**PROPOSED CONDUIT AND CABLE SCHEDULE 2**

CONTRACT NUMBER 20-517	SHEET NUMBER E-37
SHEET NO. 199 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-634-0	2



- NOTES:**
1. WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 599.142500WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING, 680.79300001 - REMOVE TRAFFIC SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD, 680.82250301 - REMOVE STEEL EMBEDDED TRAFFIC SIGNAL POLE, 670.60 - PHOTOELECTRIC CONTROLS, 670.81 - REMOVE AND DISPOSE OF LAMPPOST ASSEMBLY, 680.621630 - TRAFFIC SIGNAL POLE - MAST ARM, 680.6712 - TRAFFIC SIGNAL POLE - POST TOP MOUNT, 680.810101 - TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED, 680.810103 - TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED, 680.810105 - TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED, 680.810107 - TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH, 680.810308 - INSTALL BALL LED TRAFFIC SIGNAL MODULE, 680.8111 - TRAFFIC SIGNAL BRACKET ASSEMBLY, 680.8220 - FLASHING BEACON SIGN ASSEMBLY, 680.10000007 - INSTALL TRAFFIC SIGNAL POLE, ALL SIZES
  2. CONTRACTOR SHALL UTILIZE EXISTING CONDUITS EMBEDDED IN STONEWALL. FURNISH AND INSTALL NEW CONDUCTORS, AND NEW JUNCTION BOXES LEADING UP TO THE LIGHTS.

**ROADWAY LIGHTING PLAN**  
N.T.S.

CONSULTANT SEAL  
  
 CONSULTANT INFORMATION  
  
 1501 BROADWAY, SUITE 601  
 NEW YORK, NY 10036  
 (212) 944-1150

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	SCOPE REVISED, CLARITY
2	4/30/24	JA	TK	UPDATE FOR CLARITY

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

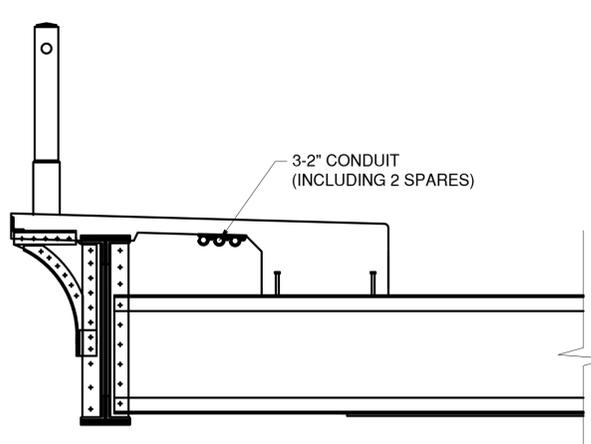
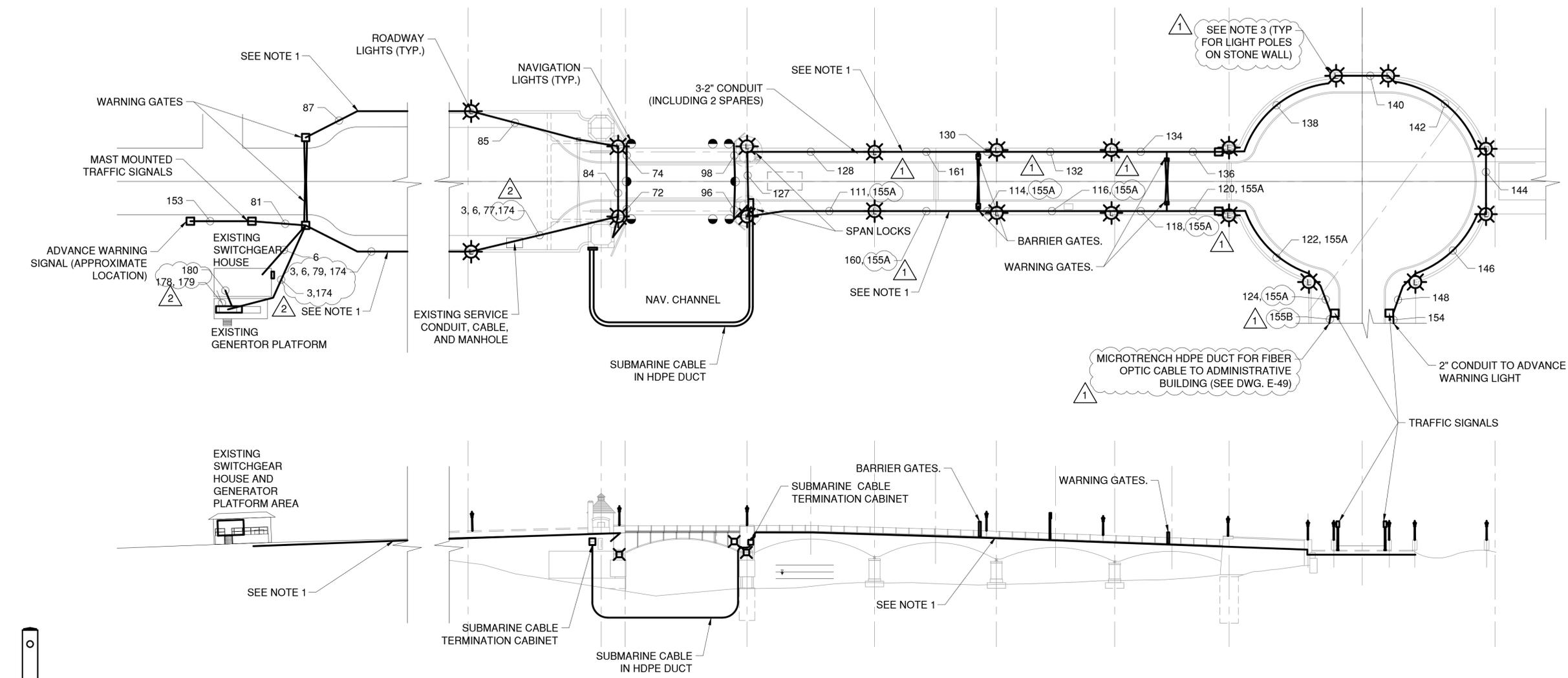
**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

**ELECTRICAL**

**PROP'D ROADWAY LIGHTING LAYOUT & CONTROL**

CONTRACT NUMBER 20-517	SHEET NUMBER E-38
SHEET NO. 200 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-635-0	2



**NOTES:**

1. CONTRACTOR SHALL FURNISH AND INSTALL WITHIN THE SIDEWALK, 24"x24"x18" NEMA 4X HOT-DIP GALVANIZED CAST IRON TYPE ER (FLUSH MOUNT) JUNCTION BOX EVERY 200 FEET OR AS REQUIRED TO FACILITATE THE PULLING TO THE VARIOUS DEVICES AND BE COMPLIANT WITH THE NEC.
2. WORK ON THIS SHEET TO BE PAID UNDER ITEMS 599.063000WE - MOVABLE BRIDGE ELECTRICAL AND CONTROL SYSTEM, 683.090700WE - MOVABLE BRIDGE STANDBY GENERATOR, 599.142500WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS, 599.142600WE - MOVABLE BRIDGE SUBMARINE CABLE AND HDPE DUCTS INSTALLATION, 599.064000WE - MOVABLE BRIDGE ELECTRICAL TESTING, 680.79300001 - REMOVE TRAFFIC SIGNAL HEAD OR PEDESTRIAN SIGNAL HEAD, 680.82250301 - REMOVE STEEL EMBEDDED TRAFFIC SIGNAL POLE, 670.60 - PHOTOELECTRIC CONTROLS, 670.81 - REMOVE AND DISPOSE OF LAMPOST ASSEMBLY, 680.621630 - TRAFFIC SIGNAL POLE - MAST ARM, 680.6712 - TRAFFIC SIGNAL POLE - POST TOP MOUNT, 680.810101 - TRAFFIC SIGNAL MODULE - 12 INCH RED BALL, LED, 680.810103 - TRAFFIC SIGNAL MODULE - 12 INCH YELLOW BALL, LED, 680.810105 - TRAFFIC SIGNAL MODULE - 12 INCH GREEN BALL, LED, 680.810107 - TRAFFIC SIGNAL SECTION - TYPE I, 12 INCH, 680.810308 - INSTALL BALL LED TRAFFIC SIGNAL MODULE, 680.8111 - TRAFFIC SIGNAL BRACKET ASSEMBLY, 680.8220 - FLASHING BEACON SIGN ASSEMBLY, 680.10000007 - INSTALL TRAFFIC SIGNAL POLE, ALL SIZES
3. CONTRACTOR SHALL UTILIZE EXISTING CONDUITS EMBEDDED IN STONEMALL. FURNISH AND INSTALL NEW CONDUCTORS, AND NEW JUNCTION BOXES LEADING UP TO THE LIGHTS.

CONSULTANT SEAL

CONSULTANT INFORMATION

1501 BROADWAY, SUITE 601  
NEW YORK, NY 10036  
(212) 944-1150

IN CHARGE OF D. DELUCA, PE  
 CHECKED BY A. NOBLE, PE  
 MADE BY J. AMBROS, PE

REVISION NUMBER	DATE	MADE BY	APP'D BY	REVISION
1	4/24/24	JA	TK	SCOPE REVISED, CLARIFY
2	4/30/24	JA	TK	SCOPE REVISED, CLARIFY

**RECORD DRAWING CERTIFICATION**

AS BUILT - CHANGES AS NOTED  
 AS BUILT - NO CHANGES

CONTRACTOR		PROJECT COORDINATOR	
NAME _____	NAME _____	NAME _____	NAME _____
SIGNATURE _____	SIGNATURE _____	SIGNATURE _____	SIGNATURE _____
TITLE _____	TITLE _____	TITLE _____	TITLE _____
DATE _____	DATE _____	DATE _____	DATE _____

**WESTCHESTER COUNTY, NEW YORK**  
**DEPARTMENT OF PUBLIC WORKS AND TRANSPORTATION**  
 DIVISION OF ENGINEERING

Rehabilitation of Glen Island Approach Bridge  
 over New Rochelle Harbor, City of New Rochelle

ELECTRICAL

**PROPOSED ROADWAY CONDUIT LAYOUT**

CONTRACT NUMBER 20-517	SHEET NUMBER E-39
SHEET NO. 201 OF 212	
SCALE: AS SHOWN	
DATE: 03/08/2024	
DPW FILE NO.	REV. NO.
5-04-E-636-0	2

## 683.090700WE MOVABLE BRIDGE STANDBY GENERATOR

### DESCRIPTION

This Section includes packaged diesel engine-generator sets rated for 150KW, 188kVA, 0.8 power factor, 277/480 volts, wye connected, three phase, 4 wire, 60 hertz. The generator's rating shall be based manufacturer's previously published stand-by rating as defined by ISO 8528.

Provide stand-by rated power supply with the following features:

- Diesel engine.
- High ambient cooling system.
- Unit-mounted control and monitoring.
- Unit mounted utility grade protection.
- Performance requirements for sensitive loads.
- Permanent radiator mounted Load bank.
- Sound (level II)attenuated generator enclosure.
- Double wall secondary containment sub-base fuel tank.
- Connection box for Portable generators.

Related Sections include the following:

599.063000WE Movable Bridge Electrical and Control System.

599.064000WE Movable Bridge Testing.

### DEFINITIONS

**Operational Bandwidth:** The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

**Standby Rating:** In accordance with ISO 8528. Power output rating equal to the power the generator set delivers continuously under normally varying load factors for the duration of a power outage. The manufacturer as part of this specification shall define a minimum operating duration without maintenance without affecting the expected life of the generator or warranty.

**Operational Bandwidth:** The total variation from the lowest to the highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

**Power Output Rating:** Gross electrical power output of diesel engine generator set minus total power requirements of cooling fans, pumps and other accessories.

**Steady-State Voltage Modulation:** The uniform cyclical variation of voltage within the operational bandwidth, expressed in hertz.

### SUBMITTALS

**Product Data:** For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

Thermal damage curve for generator.

Time-current characteristic curves for generator protective device.

Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.

Vibration Isolation Base Details: Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.

Wiring Diagrams: Power, signal, and control wiring.

Manufacturer: Submit detail shop drawing for each engine-generator set, detailing batteries, battery racks, enclosure, panel, heater, etc.

Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

Detailed description of equipment anchorage locations and *vibration isolators*.

Provide octave-band sound levels in addition to the overall or 'dba' rating.

Prototype test documents for generators indicating conformance to the specifications.

Source quality-control test reports.

Certified summary of Factory unit test report.

Certified Summary of Performance Tests: Certify compliance with specified requirement to meet generator set performance criteria.

Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.

Report of sound generation shall include dbA measurements at a distance of 23 feet from perimeter surfaces of the enclosure.

Report of exhaust emissions showing compliance with applicable regulations.

Certified Torsional Vibration Compatibility: Comply with NFPA 110.

Field quality-control test reports.

Load bank & generator batteries must be tested with the generator at the enclosure factory test.

Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals, two CD copies of all manuals, test reports submittal information as well as those items listed below. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Fuses: One for every 10 of each type and rating, but no fewer than one of each.

Indicator Lamps: Two for every six of each type used, but no fewer than two of each.

Filters: One set each of lubricating oil, fuel, and combustion-air filters.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

### **QUALITY ASSURANCE**

**Technician Qualifications:** The manufacturer's authorized representatives who are factory trained and qualified to perform start-up, commissioning and maintenance of the equipment shall be utilized at all times. Local technicians employed by independent distributors shall be allowed as long as there is at least one representative directly employed by the generator manufacturer on site at all times during the start-up, testing and commissioning process.

The equipment must be supplied by the engine manufacturer's local authorized distribution office having the authority to perform start-up and warranty repair in the geographical area of the project site. Proposals for equipment supplied by 3<sup>rd</sup> party dealers or distributors outside of the geographical area of the project site will not be allowed. Vendors of equipment who rely on 3<sup>rd</sup> parties to perform any warranty repair do not meet the intent of this specification.

**Maintenance Proximity:** The distributor must maintain a fully stocked and staffed office, parts and maintenance facility within 30 miles of the project site to assure not more than two hours' normal travel time from distributor's place of business to the project site.

**Manufacturer's Responsibility:** Preparation of data for vibration isolators and seismic restraints of engine skid mounts, housing including Shop Drawings, as specified in section 2.9 and based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

**Manufacturer's Qualifications:** Maintain, within 30 miles of project site, a manufacturer direct service center capable of providing training, parts, and emergency maintenance repairs. To be considered a manufacturer, the generator manufacturer must be the manufacturer of the engine, alternator and major components of the generator set. Manufacturers who purchase engines from the original engine manufacturer for use as a vendor component are considered "assemblers" and do not meet the minimum requirements of this specification.

**Source Limitations:** Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

**Electrical Components, Devices, and Accessories:** Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Comply with ASME B15.1.

Comply with NFPA 37.

Comply with NFPA 70.

Comply with NFPA 99.

Comply with NFPA 110 requirements for level 1 emergency power supply system.

Comply with UL 1446 & 2200.

**Engine Exhaust Emissions:** Comply with applicable state and local government requirements for the latest EPA Tiered emissions requirements.

**Noise Emission:** The sound level shall be 72 dbA or less at 23 feet from perimeter surfaces.

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### **PROJECT CONDITIONS**

Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:

Notify Construction Manager no fewer than Five (5) days in advance of proposed interruption of electrical service.

Do not proceed with interruption of electrical service without Owner's written permission.

Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

Ambient Temperature: 5 to 50 deg C

Relative Humidity: 0 to 95 percent.

Altitude: Sea level to 1000 feet

### **DELIVERY, STORAGE AND HANDLING**

The equipment shall be shipped FOB project jobsite via direct dedicated carrier on an air ride truck to job site.

Deliver diesel engine generators and system components to their final locations in protective wrappings, containers, and other protection that will exclude dirt and moisture and prevent damage from construction operations. Remove protection only after equipment is safe from such hazards.

The Supplier shall prepare and crate all equipment covered by this specification in such a manner as to protect it against damage in transit. The Supplier shall incur all responsibility and expense for repair of damage due to improper preparation, crating, or damage while in transport. Each shipping unit shall be braced adequately and rigidly both internally and externally to prevent damage during transit or in the process of erection.

All equipment shall have provisions for lifting and skidding. All lifting points shall be clearly marked.

### **COORDINATION**

Specify the size and location of concrete bases for packaged engine generators. Supply a plan detailing the location of the anchor bolts and inserts.

Compatibility with Existing Equipment:

Work under this item requires connection of new/rehabilitated items to existing components to remain. The Contractor shall perform field visits and verifications necessary to ensure that the materials and methods being proposed will be completely compatible with the existing equipment to remain, and that all original system functions will be returned to operation at the completion of the Contract work.

It is noted that, in certain cases, it may not be possible to locate new components which fully integrate and provide compatible operation with existing equipment/components to remain. In this case, the

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Contractor may propose alternate methods including replacement/alteration of existing system components that are not shown to be replaced or modified in the Contract Documents. The Contractor shall make a submittal to the Engineer, who shall have the sole discretion regarding approval of the alternate methods. Where approved by the Engineer, the alternate methods shall be considered to be for the Contractor's benefit, and the Contractor shall not receive additional payment for the changes in work performed. Any costs associated with ensuring integration of the proposed work/equipment to existing systems, such that the existing systems are restored to original functionality, shall be borne by the Contractor and included in the bid price of this item.

### **WARRANTY**

Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

Warranty Period 2 years commencing from the date of start-up or 18 months from shipment (whichever occurs first).

Extended warranties shall be made available to the owner for consideration and purchase up to the expiration date of the original warranty.

### **MAINTENANCE SERVICE**

Initial Maintenance Service: Beginning at substantial completion, provide 1st year full maintenance by skilled employees of manufacturer's direct service organization. The 1<sup>st</sup> year maintenance shall include one (1) major maintenance visit including oil change and fluid samples. In addition to the major maintenance visit, include quarterly visits to determine the overall condition of the generators and perform exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment. All maintenance during the warranty period shall be performed by direct employees of the engine/generator manufacturer.

### **PRODUCTS**

#### **MANUFACTURERS**

Acceptable Manufacturers: The project has been based on the features, dimensions and performance characteristics of equipment manufactured by Cummins Power Generation. Classifying a manufacturer as "Acceptable" only denotes a general acceptance of the manufacturing brand and does not guarantee acceptance of a specific product or model. Subject to compliance with the project requirements, the following manufacturers equipment will be reviewed:

Cummins Power Generation (basis of design).  
MTU.  
Caterpillar.

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### **ENGINE-GENERATOR SET**

Factory-assembled and tested, engine-generator set.

Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.

Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.

#### Capacities and Characteristics:

Power Output Rating: The equipment rating will be based on the generator's ability to provide sufficient power during sustained utility power failures. The generator's nameplate shall bear the manufacturer's stand-by rating. The rating used for this project must be based on ratings routinely published by the manufacturer for the proposed equipment. Special one-time ratings or letters offering higher than commonly published ratings for this specific project (as opposed to commonly available literature) will not be accepted and may result in rejection of the complete bid package. Each generator set shall be rated for a minimum of 150KW, 480/277 volts, 3-phase, 4-wire, 0.8 power factor, at 1000 feet altitude and shall be capable of operating at the stand-by rating for the duration of the power outage. The total allowable instantaneous voltage dip will be a maximum of 20%. The maximum instantaneous frequency dip will be 10%.

Output Connections: Three-phase, four wire, NEMA two bolt lugs or breakers as per the project drawings.

Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of components.

#### Generator-Set Performance:

Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.

Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.

Steady-State Voltage Operational Bandwidth: .5 percent of rated output voltage from no load to full load.

Transient Voltage Performance: Not more than 30 percent variation for 100 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 4 seconds.

Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.

Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

Transient Frequency Performance: Less than 20% variation for 100 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within 5 seconds.

Output Waveform: At no load, harmonic content measured line to neutral shall not exceed 2 percent total with no slot ripple. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.

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Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components.

Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.

Provide permanent magnet excitation for power source to voltage regulator.

Start Time: The emergency power system including automatic transfer switches is intended to comply with NFPA 110, Type 10, system requirements.

### ENGINE

Fuel: Ultra-Low Sulfur Diesel Fuel.

Rated Engine Speed: 1800 rpm.

Lubrication System: The following items are mounted on engine or skid:

Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.

Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.

Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

Engine Fuel System:

Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.

Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source. Provide primary fuel filters located ahead of the engine fuel pump to filter fuel prior to introduction to the engine fuel system.

Filters shall be heavy duty, high capacity fuel pre-filter/water separators (25 microns) as manufactured by Fleetguard. Each filter set shall be equipped with water in fuel sensors wired to the local generator controller to initiate an alarm if water is present. Provide replaceable secondary fuel oil filters.

Coolant Jacket Heater: Electric-immersion type heater, factory installed in coolant jacket system sized to comply with NFPA 110 requirements for Level 1 equipment for heater capacity. Provide hand-operated isolation ball valves to facilitate service or jacket heater replacement without draining cooling system.

Governor Adjustable isochronous, with speed sensing.

Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.

Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

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Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.

Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.

Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

Coolant Hose: Coolant hoses shall be stainless steel braided not hydraulic hoses.

Minimum Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.

End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

Muffler/Silencer: Critical grade type (or as required to meet the acoustical requirements of the project specified elsewhere), sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. Minimum sound attenuation of 25 dba at 500 Hz. Sound level measured at a distance of 23 feet from exhaust discharge after installation is complete shall be 72 dba or less or as required to meet the acoustical requirements of outdoor enclosures if specified.

Crankcase Ventilation device: An air box crankcase ventilation vapor recovery system shall be provided. A drain valve shall be provided to expel residue. Provide gauges to measure pressure in assemblies.

Air-Intake Filter Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

Starting System: 24-V electric, with negative ground.

Components: Provide a minimum of 1 full sized engine starter. The starter shall be sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.

For engines with multiple starting motors, starters shall be independently wired to the starting batteries such that failure of cables or connections on one motor does not impact any other motor.

Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.

Cranking Cycle: Minimum of three (3) cranking cycle duration of 15 seconds each.

Batteries: Provide lead acid starting batteries. Each set shall have adequate capacity to start the engine within ambient temperature range specified in Part 1 "Project Conditions" Article and provide specified cranking cycle at least six (6) times without recharging.

Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.

Battery Racks: Factory fabricated with acid-resistant finish. Include accessories required to support and fasten batteries in place.

Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation rated for continuous operation.

Battery Chargers: For each battery string, provide a current-limiting, automatic-equalizing and float-charging type charger Unit shall comply with UL 1236 and include the following features:

Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then

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be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.

Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.

Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.

Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.

Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.

Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

### **CONTROL AND MONITORING**

Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set.

Mounting method shall isolate the control panel from generator-set vibration. When required to be operated in a current or future parallel configuration, the controller shall be specifically designed to facilitate automatic synchronizing and paralleling of generator-to-utility or generator-to-generator to a common bus. The operator panel shall include:

Off/manual/auto mode control switch - The not in auto lamp will flash when the control is in the manual or off mode. In the auto mode, the generator set can be started using the exercise push-button or with a start signal from a remote device, such as automatic transfer switches or electrical distribution PLC based control system.

Exercise control switch and indicating LED - When the mode control switch is in the auto position the exercise control switch is used to complete a pre-programmed exercise sequence. All exercise functions are disabled when an emergency start command is received by the control. An LED lamp adjacent to the switch will light to indicate the generator set is in exercise mode.

Fault acknowledge/reset switch - The control includes a fault acknowledge function to allow the operator to reset the fault condition. If the fault condition is not corrected, the fault will reappear, but will not be logged as a separate event. Multiple faults can be logged and displayed at one time.

Emergency Stop control switch.

Provisions for set up and adjustment functions via raise/lower switches on the operator panel. Functions that can be adjusted by the operator include:

Time delay start (0-300 seconds)

Time delay stop (0-600 seconds)

Alternator voltage (+5%)

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Alternator frequency (+3 Hz)

The operator panel can be configured to require an access code prior to adjusting these values. A second access code is used to protect the control from unauthorized service level adjustments. Voltage and frequency adjustments are disabled during operation in parallel with a system bus to prevent inadvertent misadjustment of the paralleling load sharing functions.

Analog AC metering panel that simultaneously displays 3-phase line-to-line AC volts and current, kW, power factor and frequency. The meter panel is composed of a series of LEDs configured in bar graphs for each function. The LEDs are color coded with green indicating normal range values, amber for warning levels and red for shutdown conditions. Scales for each function are in % of nominal rated values.

Graphical display capable of displaying up to 9 lines of data with approximately 27 characters per line.

The graphical display is accompanied by a set of six tactile-feel membrane switches that are used by the operator to navigate through control menus and to make control adjustments. Display is configurable for multiple languages. It is configurable for units of measurement. The display incorporates three levels of operation and adjustability. All data on the control can be viewed by scrolling through screens with the navigation keys. The top three lines of the display are allocated to mode and status messages that continuously display the operating mode of the control system, as well as any faults or warning conditions that may be present on the controller. If more than one fault or warning message is present, the messages will scroll to allow the operator to view all active messages in the system.

Generator set data including:

Generator set rating in kVA, complete generator set model number and serial number, engine model and serial number and alternator model and serial number. The control also displays the part number of the control and the software version present in the control.

Number of start attempts and number of start attempts since reset. Number of times generator set has run and number of times since reset. Duration of generator set running time and duration of running time since last reset. Generator set kWh produced and kWh produced since last reset.

Record of adjustment and setting changes made on the control, identifies whether adjustment was made via the operator panel or with a service tool. If a service tool is used, the control provides a record of the serial number of the tool used.

Record of the most recent fault conditions with time stamp, along with the number of times each fault has occurred. At least 20 events are stored in the control memory.

Data indicating the total operating hours at percent of load in 10% increments and since reset.

Generator set AC data including:

Generator set output frequency, voltage and current - All phases (line-to-line and line-to-neutral for voltage. Accuracy 1%.

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Generator set power output - displays generator set kW and kVA output (average phase, individual phase and direction of flow) and power factor with leading/lagging indication. Accuracy 5%.

Generator set kWh energy output - Total kWh produced and total produced since last reset with time stamp of time of last reset.

Digital synchroscope - Bus voltage and frequency, generator set bus voltage and frequency, the phase angle displacement and a signal indicating "ready to close". A breaker control switch is included on this panel for convenient operation of the equipment without switching between viewing screens.

### Engine data including:

Engine starting battery voltage, engine lube oil pressure and engine coolant temperature.

Engine coolant pressure, engine fuel rail temperature and pressure, engine fuel input and output temperature, intake manifold temperature and pressure, ambient air pressure, crankcase blowby flow and aftercooler inlet coolant temperature.

The fuel consumed by the engine calculated by the control based on fuel flow into the engine and returned by the engine, and the temperature of the two flow streams. Data provided includes overall average fuel consumed and consumption since reset.

### Power transfer and control data:

Utility (mains) source data - Displays line-to-line and line-to-neutral voltage of utility (mains) source, frequency and estimated amps, and kW and kVA supplied by utility (mains) source.

System status information - Provides graphical system status display showing availability of sources and positions of each contactor or associated generator main breaker.

System control - Allows operator to view status of system and manually control operation of the system. Provides manual adjustment capability for time delay start, stop, transfer and retransfer, as well as time delays for program transition (when used) and power transfer overlap time.

### General functions include:

System control voltage - The control operates on 24 VDC from the generator set starting batteries. Control functions are fully operational over a voltage range of 8 VDC to 36 VDC.

Emergency start mode - Accepts a ground signal from remote devices or a network signal to automatically start the generator set and immediately accelerate to rated speed and voltage.

Smart starting system that is designed to quickly start the engine, minimize black smoke, minimize voltage and frequency overshoot, and oscillations on starting by careful simultaneous control of the engine fuel system and alternator excitation system.

Non-emergency start mode - The control is provided with a separate remote start input or a network signal to start the generator set via the programmable idle control. Using the non-emergency mode, the generator set takes longer to start, but there is less wear on the engine. In this start mode, the gen-

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erator set will start, operate at idle speed for a predefined time period or until the engine reaches operating temperature (whichever time is shorter), and then ramp to rated speed and voltage. Time delay is adjustable from 0-300 seconds and default is 10 seconds. The control also monitors and records the source of start signals, when that information is available. The control automatically exits idle mode if an emergency remote start signal is received at the control.

Data logging - The control maintains a record of manual control operations, warning and shutdown conditions and other events. It uses the control "on" time as the time-stamp means when a real time clock is not included with the control. The control also stores critical engine and alternator data before and after a fault occurs.

Fault simulation mode - Will accept commands to allow a technician to verify the proper operation of critical protective functions of the control by simulating failure modes or by forcing the control to operate outside of its normal operating ranges. Also provides a complete list of faults and settings for the protective functions of the specific generator set it is communicating with.

Built in test - The control system automatically tests itself, and all the sensors, actuators and harnesses in the control system, on a startup signal. The test can also be initiated either locally or remotely.

Engine control including:

Engine starting - The control operates a factory-supplied fuel valve that enables engine starting.

Cycle cranking - Configurable for number of starting cycles (1 to 7) and duration of crank and rest periods. Control includes starter protection algorithms to prevent the operator from specifying a starting sequence that might be damaging. Default setting is for (3) start cycles composed of 15 seconds of cranking and 15 seconds of rest.

Programmable idle speed control - In this mode the generator set would start and run to idle speed. It would operate at that speed for a programmed time period, then ramp to rated speed. When the control gets a signal to stop, it will ramp to idle, operate for the programmed period at idle and then shut down. During idle mode, engine protective functions are adjusted for the lower engine speed and alternator function is disabled.

Time delay start and stop (cool down) - Configurable for time delay of 0-300 seconds prior to starting after receiving a remote start signal in normal operation modes and for time delay of 0-600 seconds prior to ramp-to-idle or shutdown after signal to stop in normal operation modes. The generator set control will monitor the load during operation of the generator set, and if the total load on the set is less than 10% of rated it will reduce the operation time for the time delay stop in order to prevent extended operation of the engine at very light load levels. Default for both time delay periods is 0 seconds.

Isochronous governing - Controls engine speed within + 0.25% for any steady state load from no load to full load. Frequency drift will not exceed + 0.5% for a 33 °C (60 °F) change in ambient temperature over an 8 hour period.

Droop governing - Control can be adjusted to droop from 0 to 10% from no load to full load.

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Temperature dynamics - Modifies the engine fuel system control parameters as a function of engine temperature. Allows engine to be more responsive when warm and more stable when operating at lower temperature levels.

Idle mode - Engine governing can be regulated at an idle speed for a programmed period on start or stop of the engine. When the engine is operating at idle speed, the alternator excitation is automatically switched off.

Alternator control including:

Digital output voltage regulation - Regulate output voltage to within 0.5% for any loads between no load and full load. Voltage drift will not exceed + 0.5% for a 33 °C (60 °F) change in temperature in an 8 hour period. On engine starting, or sudden load acceptance, voltage is controlled to a maximum of 5% overshoot over nominal level.

Torque-matched V/Hz overload control - The voltage roll-off set point and rate of decay (i.e., the slope of the V/Hz curve) is adjustable in the control. This function is automatically disabled when the control is in a synchronizing mode.

Fault current regulation - Regulate the output current on any phase to a maximum of 3 times rated current under fault conditions for both single phase and three phase faults. In conjunction with a permanent magnet generator, it will provide 3 times rated current on all phases for motor starting and short circuit coordination purposes.

Protective functions including:

On a warning condition, the control will indicate a fault by lighting the warning LED on the control panel and displaying the fault name and code on the operator display panel. The nature of the fault and time of occurrence are logged in the control.

On a shutdown condition, the control will light the shutdown LED on the control panel, display the fault name and code, initiate shutdown and lock out the generator set. The shutdown sequence of the generator set includes programmable cool down at idle for fault conditions that do not endanger the engine. The control maintains a data log of all fault conditions as they occur and time stamps them with the controller run time and engine operating hour data.

The control system shall include a “fault bypass” mode that forces the system to function regardless of the status of protective functions. In this mode, the only protective functions that are operational are over speed, loss of both speed sensors, moving the control switch to the off position or pressing the emergency stop switch. The control maintains a record of the time that the mode is enabled and of all warning or shutdown conditions that have occurred while in the “fault bypass” mode.

System protective functions including:

Configurable alarm and status inputs - Accepts alarm or status inputs (contact closed to ground) to indicate customer- specified conditions. The control is programmable for warning, shutdown or status indication.

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Emergency stop - Annunciated whenever the local or remote emergency stop signal is received. Alarm panel distinguishes between local or remote operation.

Over current warning - Output current on any phase at more than 110% of rating for more than 60 seconds.

Over current shutdown (51V) - Output current on any phase is more than 110%, less than 175% of rating and approaching thermal damage point of alternator. Control includes algorithms to protect alternator from repeated over current conditions over a short period of time.

High AC voltage shutdown (59) - Output voltage on any phase exceeds preset values. Time to trip is inversely proportional to amount above threshold.

Low AC voltage shutdown (27) - Voltage on any phase has dropped below a preset value.

Under frequency shutdown (81u) - Generator set output frequency cannot be maintained.

Over frequency shutdown/warning (81o) - Generator set is operating at a potentially damaging frequency level.

Engine protection functions including:

Over speed shutdown - Default setting is 115% of nominal.

Low lube oil pressure shutdown - Level is preset to match the capabilities of each engine. Control includes time delays to prevent nuisance shutdown signals.

Low lube oil pressure warning - Level is preset to match the capabilities of each engine. Control includes time delays to prevent nuisance shutdown signals.

High coolant temperature shutdown.

High coolant temperature warning.

Low coolant temperature warning - Indicates that engine temperature may not be high enough for a 10 second start or proper load pickup.

Low and high battery voltage warning - Indicates battery charging system failure by continuously monitoring battery voltage and indicating a problem when voltage is outside a preset acceptance band.

Weak battery warning - The control system will test the battery bank each time the generator set is signaled to start and indicate a warning if the generator set battery indicates impending failure.

Fail to start (overcrank) shutdown.

Fail to crank shutdown - Control has signaled starter to crank engine but engine does not rotate.

Low fuel day tank and low fuel main tank warning (when used).

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Cranking lockout - The control will not allow the starter to attempt to engage or to crank the engine when the engine is rotating.

Sensor failure indication - All analog sensors are provided with sensor failure logic to indicate if the sensor or interconnecting wiring has failed. Separate indication is provided for fail high or low.

Certifications – The controller meet or exceed the requirements of the following codes and standards and shall bear the labeling as necessary:

NFPA110: For Level 1 systems.

UL508: Listed and suitable for use on UL 2200 Listed generator sets.

UL6200 Controls for Power Generation

CSA C282-M: 1999 compliance

CSA 22.2 No. 14 M91: Industrial Controls

ISO 8528-4: 1993 compliance, Controls and Switchgear

NFPA99: Standard for Health Care Facilities

CE Mark

IEC 801.2, 3, 4, 5

ISO9001, Control systems and generator sets are designed and manufactured in ISO9001 certified facilities.

Environmental capability:

The control is designed for proper operation without recalibration in ambient temperatures from -40 °C to +70°C (-40 °F to +158 °F) and for storage from -40 °C to +80°C (-40 °F to +176 °F). Control will operate with humidity up to 95%, non-condensing and at altitudes up to 5000 m (13,000 ft).

The operator control panel has a single membrane surface which is impervious to the effects of dust, moisture, oil and exhaust fumes. The panel uses sealed membrane or oil- tight switches to provide long reliable service life in harsh environments.

The control system is specifically designed for resistance to RFI/EMI and to resist the effects of vibration to provide a long reliable life when mounted on a generator set. The control includes transient voltage surge suppression to provide compliance to referenced standards.

The control is mounted on a vibration-isolated structure attached to the generator set skid and includes all generator set wiring factory-installed.

The control shall include Modbus RTU communications as standard via RS-485 half duplex or ModBus TCP/IP. The ModBus interface shall be available for communications to the BMS or EPMS

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as directed. Include a minimum of 2 man-days per generator to facilitate the interface with the BMS system.

Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

Connection to Data Link: A separate terminal block, factory wired to Form C dry contacts, for alarm and status indication is reserved for connections for data-link transmission of indications to remote data terminals.

Include provisions for monitoring the start signal integrity from emergency/life safety (NEC Article 700) automatic transfer switches in conformance with the 2017 (or newer) version of NFPA 70 (NEC).

Remote Alarm Annunciator - Comply with NFPA 99/110. Each generator will be supplied with a remote annunciator meeting the requirements of NFPA 110 and NFPA 99.

Remote Emergency-Stop Switch: For outdoor generators, the remote emergency stop switches shall be located either on the exterior of the generator enclosure or at the nearest building entrance adjacent to the generators.

### **GENERATOR OVERCURRENT AND FAULT PROTECTION**

Refer to the project one-line for circuit breaker requirements. Circuit breakers shall be insulated case, electronic-trip type; 100 percent rated complying with UL 489 or as indicated on the project drawings.

Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.

Trip Settings: Selected to coordinate with generator thermal damage curve.

Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.

All breakers feeding emergency/life safety loads shall be supplied with auxiliary contacts to indicate position status when required by NFPA 70.

Mounting: Adjacent to or integrated with control and monitoring panel.

Output circuit breakers shall have a minimum short circuit rating of 42,000 AIC or as required per the short circuit study. Coordinate short circuit rating and set point of each breaker in the presence of a factory trained representative.

In addition to the main line breakers indicated, provide one (1) load bank breaker sized to coordinate with the permanent load bank.

Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. Protector shall perform the following functions:

Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.

Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off.

Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.

Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground-fault. Integrate ground-fault alarm indication with other generator-set alarm indications.

### **GENERATOR, EXCITER, AND VOLTAGE REGULATOR**

The generator set shall be capable of supplying a minimum of 516 skVA (with a power factor low enough for engine to support the load) and recover to at least 90% of nominal voltage per the requirements of NEMA MG1-32 to support starting of motor and other surge loads, and shall recover to 100% of nominal. The generator set shall not shut down due to undervoltage or any other AC fault condition for at least 10 seconds while the machine is providing 3 times rated current.

Comply with NEMA MG 1.

Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

Alternator: The alternator shall have all insulation system components meeting NEMA MG1 standard temperature limits for Class H insulation system. Actual temperature rise measured by resistance method at full load shall not exceed 105 degrees C based on a 40 C ambient temperature to provide additional allowance for internal hot spots.

Stator-Winding Leads: Brought out to terminal box.

Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

Enclosure: Weatherproof.

Instrument Transformers: Mounted within generator enclosure if required.

Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified. The generator set shall include an automatic microprocessor-based voltage regulation system that is matched and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from mis-operation due to load induced voltage waveform distortion and provide a pulse width modulated output to the alternator exciter. The voltage regulation system shall be equipped with three phase RMS sensing and shall control buildup of AC generator voltage to provide a linear rise and limit overshoot. The voltage regulation system shall be based on a full wave rectified input, pulse-width modulated (PWM) output design. The system shall include a torque matching characteristic, which shall reduce output voltage in proportion to frequency below an adjustable frequency threshold. The voltage regulator shall include adjustments for gain, damping, and frequency roll off. Adjustments shall be broad range, and made via digital raise-lower switches, with an alphanumeric LED readout to indicate setting level. Rotary potentiometers for system adjustments are not acceptable.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

Strip Heater: Provide thermostatically controlled heaters arranged to maintain stator windings above dew point.

Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

Subtransient Reactance: 11 percent, maximum.

For units above 600 volts, provide two (2) RTD's in each phase of the alternator stator windings. The temperature of each phase is to be displayed through the local generator control panel. The temperature of each phase shall be available over the ModBus communications signal from the generator co

### **LOAD BANK**

Description: Permanent, outdoor radiator mounted air-cooled, resistive unit capable of providing a balanced 3-phase, delta-connected load to generator set at 50 percent of the generators stand-by rating unity power factor. Unit shall be capable of selective control of load down to 5KW. Contractor to note that no external to the custom generator enclosure load banks shall be acceptable.

Resistive Load Elements: Corrosion-resistant chromium alloy with ceramic and steel supports. Elements shall be double insulated and designed for repetitive on-off cycling. Elements shall be mounted in removable aluminized-steel heater cases.

Load-Bank Heat Dissipation: Airflow and coil operating current shall be such that, at maximum load, with ambient temperature at the upper end of specified range, load-bank elements operate at not more than 50 percent of maximum continuous temperature rating of resistance elements.

Load Element Switching: local controlled contactors switch groups of load elements. Contactor coils are rated 120 V. Contactors shall be located in a separate NEMA 250, Type 4x enclosure within generator enclosure.

Protective Devices: Power input circuits to load banks shall be fused, and fuses shall be selected to coordinate with generator circuit breaker. Fuse blocks shall be located in contactor enclosure. Cooling airflow and over temperature sensors shall automatically shut down and lock out load bank until manually reset. Safety interlocks on access panels and doors shall disconnect load power, control, and heater circuits. Short-circuit devices shall be non-interchangeable fuses with 200,000-A interrupting capacity.

Control Panel: Remote mounted with a control power switch and pilot light, and switches controlling groups of load elements. The control panel shall monitor the generator output and be capable of maintaining a minimum load on the generator at all times during normal operation. Automatic loading shall be accomplished with a minimum of five (5) steps.

Control Sequence: Control panel may be preset for adjustable single-step loading of generator during automatic exercising.

### **OUTDOOR GENERATOR-SET ENCLOSURE**

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

A skin tight custom sound attenuated enclosure shall be provided to house the generator and radiator mounted load bank (note: no externally mounted load banks shall be acceptable). The enclosure is to be in compliance with the National Electrical Code (NEC) and the National Fire Protection Association (NFPA) as applicable. Refer to project drawings for additional enclosure requirements. Enclosure and tank will be as manufactured by Cummins Power Generation or engineer pre-approved custom manufacturer. No substitutions will be accepted.

### Design Outline:

Rigidity wind set equal to 180 MPH

Enclosure will consist of a roof, underframe, side walls, end walls and built with semi-monocoque construction.

The system shall include a cooling and combustion air inlet silencer section, an equipment enclosure section, and a cooling air discharge silencer section.

Roof and walls shall each be of one-piece, semi-monocoque construction. All framing members shall be steel. Skin material shall be min. thickness 0.040" pre-painted aluminum. Skin panels shall be interlocked to framing members on 24" centers maximum. Pop rivets and bolts are not acceptable fasteners to attach exterior skin to framing. Roof assembly shall be cambered to aid in rain runoff.

Insulation in walls and roof shall be semi-rigid, thermo-acoustic with thickness as required to meet the noise criteria specified and with a flame spread of 10, fuel contributed 0 and smoke developed 0. Lining shall be perforated 18 gauge .040, mill-finish aluminum. Self-adhesive foam and loose or bat-type insulating materials will not be accepted. The enclosure shall be acoustically rated for 72 dbA @ 23 feet with both generators in operation.

Lifting provisions shall be provided at or near the enclosure base, with capacity and number suitable for rigging the entire assembly.

Single and/or double access doors shall be provided. Doors shall consist of an extruded aluminum frame with skin material matching enclosure. Doors shall be fully gasketed to form a weather tight perimeter seal. Hinges shall be forged aluminum with stainless steel pins, handles shall be stainless steel and lockable, and lock mechanism shall be three-point, with panic hardware (if necessary for walk-in enclosures) to allow opening from inside even when locked. All door opening include an overhead rain gutter for channeling rainwater away from the enclosure.

Air handling shall be as follows: Air will enter the enclosure from the bottom through one or more intake hoods. Optional motor operated damper(s) shall be provided, wired to open at engine startup. Radiator discharge will be through a gravity operated damper and into a vertical discharge plenum through the top as dictated by airflow. The system shall not exceed 0.5" w.g. total external static pressure to endure adequate airflow for cooling and combustion.

Enclosure manufacturer shall internally or externally mount, pipe, and optionally insulate low profile exhaust silencer while maintaining the weatherproof integrity of the system. The exhaust outlet shall be terminated within the discharge plenum.

### GENERATOR ENCLOSURE ELECTRICAL PACKAGE (PER GENERATOR):

An electrical package shall be installed by the enclosure manufacturer prior to shipment as follows:

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

(3) 20 Ampere, 120 Volt, 1 phase circuit breakers (sub-panel) or as indicated on the project drawings.

Internal LED fixtures

1 - light switch

(1) Duplex GFI receptacle.

The sub-base tank alarms shall be completely wired.

All external wiring shall be done in PVC-RGS conduit.

Electrical connections for coolant heater, battery charger and day tank pumps (if specified) shall be provided as required.

### **DOUBLE WALL SECONDARY CONTAINMENT SUB-BASE FUEL TANK:**

Each generator enclosure shall include a 48 hour (usable) sub-base fuel tank dedicated to the associated generator. Each fuel storage and delivery system shall be designed as follows:

The sub-base fuel system shall be listed UL 142 and shall carry a UL label.

The above-ground steel secondary containment rectangular tank for use as a sub-base for diesel generators is manufactured and intended to be installed in accordance with the Flammable and Combustion Engine and Gas Turbines-NFPA 37, AND Emergency and Standby Power Systems-NFPA 110.

Construction: (UL-142) secondary containment with 110% basin.

Primary Tank shall be rectangular in shape and constructed in clam shell fashion to ensure maximum structural integrity and allow the use of a full throat fillet weld.

Primary Tank shall have a Steel Channel Support System.

Reinforced steel box channel for generator support, with specified load rating for each generator set. Full height gussets at either end of channel and at generator set mounting holes shall be utilized.

Normal venting shall be sized in accordance with the American Petroleum Institute Standard No 2000, Venting Atmospheric and low Pressure Storage Tank not less than 1-1/4" ( 3 cm.) nominal inside diameter. An atmospheric mushroom cap shall be furnished and the installing contractor shall pipe above the highest fill point as a minimum.

The emergency vent opening shall be sized to accommodate the total capacity of both normal and emergency venting and shall be not less than that derived from NFPA 30, table 2-8, and base on the wetted surface area of the tank. The wetted area of the tank shall be calculated basis of 100 percent of the primary tank. A zinc plated emergency pressure relief vent cap shall be furnished for the primary tank. The vent shall be spring-pressure operated with an opening is 0.5/psig and full opening pressure of 2.5 psig. Limits shall be stamp marked on top each vent. The emergency relief vent shall be sized to accommodate the total venting capacity of both normal and emergency vents.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

There shall be an NPT opening within the primary tank with a raised fill pipe and lockable manual fill cap. The fill piping shall be routed to the exterior of the enclosure and shall include 5 gallon spill containment, level indicator and remote fill alarm panel.

The fuel tank shall be installed beneath the floor mounted within a combined rupture basin/floor/underframe. The interstitial space between the tank and basin shall be monitored (through electronic means) to indicate a rupture condition.

### **CONNECTION FOR PORTABLE GENERATORS**

Provide a portable generator docking station to facilitate temporary connection of a portable generator for the emergency/ life safety building loads if the permanent emergency generator is unavailable due to maintenance or extended repair. Breaker configuration shall be as indicated on the project drawings.

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

UL (Underwriters Laboratories, Inc.) Standards

Comply with NFPA 70.

Manufacturers: Subject to compliance with requirements, provide products by the following:

Axis Controls

TRYPSTAR

Foxfab

Enclosures:

Outdoor wall mounted cabinet.

Temporary cabling from a portable generator shall enter through the front face of the lower section through an access door in the switchgear enclosure.

Tap box shall include rear access through the interior of the switchgear enclosure.

NEMA 4X stainless construction.

Phase, Neutral, and Ground Buses:

Material: Tin-plated copper.

Equipment Ground Bus: Bonded to box.

Isolated Ground Bus: insulated from box.

Ground Bus: 25% of phase size.

Neutral Bus: Neutral bus rated 100 percent of phase bus.

Round edges on bus.

Provided labeling as necessary indicating system bonding requirements.

Input connections for the portable generator shall be Cam style mounted on 45-degree plate inside locking door. Cam connections shall be color coated for 480/277 volts AC.

Output connections shall be mechanical lugs.

Voltage shall be 480/277 V, 3 phase, 4 -wire. Amperage shall be 400 amps.

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### Additional Options:

- Phase rotation indicator.
- 120/240 volt, 30 amp twist lock receptacle for portable generator.
- Portable generator start signal termination.
- Anti-condensation heater.
- Integral Manual Transfer Switch
- “Floating Neutral” Requirement Nameplate

### FINISHES

Outdoor Enclosures and Components: Final finish over corrosion-resistant pretreatment and compatible primer to be Onan green. Three (3) samples of min 6”X6” to be submitted for review and approval.

### EXECUTION

#### GENERAL

The cost of removal of existing items, as shown on plans, or if items are replaced as called out in this specification, shall be included in the bid price of this item.

#### EXAMINATION

Vendors shall examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.

Vendors shall examine roughing-in of piping systems and electrical connections. Assist in verifying actual locations of connections before packaged engine-generator installation.

#### INSTALLATION (by electrical contractor)

The pre-purchased equipment will be installed by contractors selected by the County. Generator vendor is to include coordination with site installation contractors.

Contractors will comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.

Contractors will install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

Contractors will secure sets to anchor bolts installed to steel. Coordinate installation with structural drawings & approved shop drawings.

Contractors will install electrical devices furnished by equipment manufacturers but not specified to be factory mounted. Generator vendor to include a list of all interconnecting conduit, wire and mechanical piping that cannot be pre-installed by the enclosure vendor.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

### CONNECTIONS (by electrical and mechanical contractors)

All piping, wiring, connections required shall be in accordance with manufacturer installation & approved shop drawings. Refer to contract drawings & specifications for general arrangement of piping and specialties.

Connect fuel piping adjacent to packaged engine generator to allow service and maintenance.

Connect engine exhaust pipe to engine with flexible connector.

Connect fuel piping to engines with a gate valve and union and flexible connector.

Ground equipment according to NEC.

Connect wiring according to approved shop drawings

### FACTORY TESTING OF EMERGENCY GENERATORS

Prior to shipment to the enclosure manufacturer, the generator sets shall be tested at the generator assembly plant to verify proper operation of all alarms and shutdown circuits as well as a full load test. These tests may be performed in the presence of the Engineer and or Owner's representative if requested. Expenses for the owner and engineer's travel and accommodation to the tests at the generator assembly plant will be paid for by the owner if witnessing is requested.

The test shall also demonstrate compliance with the set performance criteria as specified herein.

Provide all resistive and reactive load banks and power cables to achieve full rated load at 0.80 power factor for the duration of the tests.

All test instruments shall be standard meters with certified calibration within the last 12 months.

Provide labor to connect all load banks, test instrumentation and conduct the testing.

ALARMS – Demonstrate, at a minimum, proper operation of all functions and alarms for each generator as outlined in this specification.

LOAD TEST - Each generator shall undergo load testing verify voltage and frequency regulation as well as generator set capability. Record the following parameters for inclusion in the factory acceptance report. Test results will be reported on the Standard Performance Specification Forms of the National Electrical Manufacturer's Association.

Output voltage, current, frequency, kilowatts, power factor.

Engine parameters: Oil pressure, water temperature, etc.

Ambient conditions.

Minimum duration shall be 2 hours at .8 PF.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

Provide the Engineer/Owner certified test results for approval prior to delivering any equipment to the site.

The manufacturer of the generator set will provide an insulation resistance test per NEMA Standard MG-1, section numbers 12.02 and 12.03. Test results will be reported on the standard forms for generators of the National Electrical Manufacturers Association. The manufacturer will certify all test reports and curve sheets and five copies of each will be submitted and approved by the Engineer prior to shipment from the factory.

### **FIELD QUALITY CONTROL TEST**

Manufacturer's Field Service: Engage field service representatives who are direct employees of the engine manufacturer to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Assist owner's testing agency with all testing and report results in writing.

#### **Tests and Inspections:**

Repeat the factory test procedure as outlined in section 3.5 above at unity PF, except that the duration of the full load heat run shall be extended to 4 hours. Fuel for site testing shall be supplied by the contractor. Supplemental load banks will be supplied by the generator vendor.

NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.

Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.

Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.

Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.

Verify acceptance of charge for each element of the battery after discharge.

Verify that measurements are within manufacturer's specifications.

Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.

System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.

Exhaust Emissions Test: Comply with applicable government criteria.

## **683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

Noise Level Tests: Equipment not meeting the acoustical performance and documentation as outlined in the specifications above shall be field tested to substantiate acoustical performance. Site measurements shall include the dba and A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge. Sound levels shall be taken at 7 meters from each side of the unit and at the facility property lines and compare measurement levels with required values.

Integrated System Testing: Supplier shall provide on-site support for the duration of equipment integrated system testing. A minimum of three man days shall be included in the Bid. Support shall be dedicated to this project and assigned to work continuously until successful integrated system testing completion.

Alarm Demonstration Tests: Demonstrate all monitored pre-alarms, alarms, power metering and statuses associated with the generator at the generator control panel, ATS and Electrical Power Monitoring (EMPS) system displays.

If the equipment fails to meet Specification requirements during the site acceptance tests, the Supplier shall correct the cause of the failure and repeat the tests to the satisfaction of the Owner.

Take oil and coolant sample following completion of site test and perform laboratory evaluation to determine presence of unwanted metals and liquids. Submit report to Owner.

The Site Acceptance Testing Report shall be submitted to the Engineer and Commissioning Agent in hard copy and soft copy for approval. The approved Site Acceptance Testing Report will be submitted to the Owner as a part of the Closeout Documents.

Coordinate tests with tests for transfer switches and/or PLC controlled circuit breakers and run them concurrently.

Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

Remove and replace malfunctioning units and retest as specified above.

Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

Infrared Scanning: After Substantial Completion, but not more than 60 days after final acceptance, the contractor will perform an infrared scan of each power wiring termination and each bus connection. Remove all access panels so terminations and connections are accessible to portable scanner.

Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.

Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.

**683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

Cleaning: Upon completion of installation, inspect system components for paint splatters, spots, dirt, debris, scratches, mars of finish and cleanliness. Furnish Contractor a list of items to be corrected and instruct Contractor on cleaning methods and materials to be used. At the end of the cleaning, check if the equipment matches the original finish.

**DEMONSTRATION AND TRAINING**

Engage a factory-authorized service representative who is a direct employee of the manufacturer to train owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Provide a minimum of 8 hours of classroom and field time for training. Provide a video of the training session along with any printed materials used during testing.

**MEASUREMENT AND PAYMENT**

Payment will be made on a lump sum basis.

The lump sum price bid for Standby generator will include the cost of all materials, labor, equipment, plant, operation and maintenance manuals, testing, testing equipment and equipment necessary for a complete installation, ready for operation as well as the removal and lawful disposal of the existing equipment being replaced/removed.

The Contractor will submit to the Engineer a detailed breakdown of his costs, not to exceed the bid price for this item, within 30 working days of award of the contract. The cost breakdown, once approved by the Engineer, will serve as a method of measurement of work completed so that partial payments may be made to the Contractor by the Owner. The cost breakdown will include separate prices for the following items:

Providing and storing of all materials and products, including those with long lead-time, at the bridge site or at a facility approved by the Engineer.

Final acceptance field-testing, bridge operator and maintenance personnel training, operation and maintenance manuals and as-built Plans.

10 percent retainage of bid price until final bridge acceptance, and Engineer-approval of operation and maintenance manuals and as-built Plans.

This breakdown will be evaluated by the Engineer and an equitable basis of payment will be established. Payments to the Contractor will not be made until the cost breakdown is submitted and approved by the Engineer. Progress payments for work satisfactorily completed will be made in accordance with the Standard Special Provisions.

The Department will make payment for the Items as follows:

<b><u>Pay Item</u></b>	<b><u>Pay Unit</u></b>
683.090700WE Movable Bridge Standby Generator	LS

**683.090700WE MOVABLE BRIDGE STANDBY GENERATOR**

**END OF SECTION**

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3  
21 South Putt Corners Road, New Paltz, NY 12561-1620  
P: (845) 256-3054 | F: (845) 255-4659  
www.dec.ny.gov



Department of  
Environmental  
Conservation

## **IMPORTANT NOTICE TO ALL PERMITTEES**

The permit you requested is enclosed. Please read it carefully and note the conditions that are included in it. The permit is valid for only that activity expressly authorized therein; work beyond the scope of the permit may be considered a violation of law and be subject to appropriate enforcement action. Granting of this permit does not relieve the permittee of the responsibility of obtaining any other permission, consent or approval from any other federal, state, or local government which may be required.

Please note the expiration date of the permit. Applications for permit extension should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address.

The DEC permit number & program ID number noted on page 1 under "Permit Authorization" of the permit are important and should be retained for your records. These numbers should be referenced on all correspondence related to the permit, and on any future applications for permits associated with this facility/project area.

A permit notice sign is enclosed, you must post it at the work site with appropriate weather protection, as well as a copy of the permit per General Condition 1.

When a permit is issued with substantive conditions, the permittee has the right to request an adjudicatory proceeding pursuant to Uniform Procedures Regulations Section 621.11(g). You may request a hearing by writing to the regional permit administrator within 30 calendar days of the date of the mailing of the permit. The permittee must also submit a copy of the request for adjudicatory proceeding to the Chief Administrative Law Judge, New York State Department of Environmental Conservation, Office of Hearings and Mediation Services, 625 Broadway, Albany, New York 12233-1550. The adjudicatory proceeding will commence within 60 calendar days of the chief administrative law judge's receipt of the request.

If you have any questions on the extent of work authorized or your obligations under the permit, please contact the staff person indicated below or the Division of Environmental Permits at the above address.

Rebecca S. Crist *RSC*  
Division of Environmental Permits,  
Region 3  
Telephone (845) 256-3014



Department of  
Environmental  
Conservation



**PERMIT**  
**Under the Environmental Conservation Law (ECL)**

**Permittee and Facility Information**

**Permit Issued To:**  
WESTCHESTER COUNTY  
148 MARTINE AVE  
WHITE PLAINS, NY 10601-4704  
(914) 995-2000

**Facility:**  
GLEN ISLAND PARK  
299 WEYMAN AVE  
NEW ROCHELLE, NY

**Facility Location:** in NEW ROCHELLE in WESTCHESTER COUNTY

**Facility Principal Reference Point:** NYTM-E: 602.417 NYTM-N: 4526.699  
Latitude: 40°53'05.9" Longitude: 73°47'03.7"

**Authorized Activity:** This permit authorizes disturbance to tidal wetlands categorized as littoral zone and excavation & fill in the navigable waters of Long Island Sound associated with the rehabilitation of the existing bridge from Neptune Island to Glen Island. A temporary bridge will be installed to maintain access. Work includes replacement of the bridge deck and the cross-braces and girders, and repair of the supports and abutments. An existing submarine cable will be replaced in the same trench.

**Permit Authorizations**

**Tidal Wetlands - Under Article 25**

Permit ID 3-5510-00258/00018

New Permit

Effective Date: 4/29/2024

Expiration Date: 12/31/2029

**Water Quality Certification - Under Section 401 - Clean Water Act**

Permit ID 3-5510-00258/00019

New Permit

Effective Date: 4/29/2024

Expiration Date: 12/31/2029

**Excavation & Fill in Navigable Waters - Under Article 15, Title 5**

Permit ID 3-5510-00258/00020

New Permit

Effective Date: 4/29/2024

Expiration Date: 12/31/2029

**NYSDEC Approval**

**By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.**

Permit Administrator: REBECCA S CRIST, Deputy Regional Permit Administrator

Address: NYSDEC Region 3 Headquarters  
21 S Putt Corners Rd  
New Paltz, NY 12561

Authorized Signature: \_\_\_\_\_

*Rebecca S. Crist*

Date 04 / 29 / 2024



## Distribution List

Lora Schilling, HVEA P.C.  
Brian Orzel, Army Corps of Engineers  
Donna Morelli, NYSDOS Coastal Management  
City of New Rochelle  
Angela Schimizzi, NYSDEC Div Marine Resources R3

## Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### **NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: TIDAL WETLANDS; WATER QUALITY CERTIFICATION; EXCAVATION & FILL IN NAVIGABLE WATERS**

- 1. Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by the applicant, titled "Rehabilitation Of Glen Island, Approach Bridge Over New Rochelle Harbor (Bin 3348880)", dated 11/08/2023, specifically Sheets 1, 13-15, 28, 33-38, 41-42, 44-48, 70-71, 119-120, 129-131, 147, 149-150, 167, 202-203, and X.
- 2. Notice of Intent to Commence Work** The permittee shall submit a Notice of Intent to Commence Work to Allison Joers, [Allison.Joers@dec.ny.gov](mailto:Allison.Joers@dec.ny.gov), at least 48 hours in advance of the time of commencement and shall also notify them promptly in writing of the completion of work.
- 3. Post Permit Sign** The permit sign enclosed with this permit shall be posted in a conspicuous location on the worksite and adequately protected from the weather.
- 4. Prior Approval of Changes** If the permittee desires to make any minor changes to the scope of work shown in the approved plans referenced in Natural Resource Permit Condition #1, or seeks minor changes to timeframes or deadlines in any conditions of this permit, the permittee shall submit a request via email to Allison Joers ([Allison.Joers@dec.ny.gov](mailto:Allison.Joers@dec.ny.gov)), Division of Marine Resources, to make such proposed changes. The proposed changes shall not be implemented unless authorized in writing by the Department. Issuance of such approval without modification of the permit is at the Department's discretion.



**5. Submittal of Final Plans** At least 30 days prior to the commencement of work, the final temporary bridge and submarine cable plans, including installation and removal methods, type, material, number, and diameter of all piles to be installed, dimensions and number of concrete mattresses, equipment to be used, and concrete washout/stockpile locations must be submitted via email to Allie Joers, Division of Marine Resources, ([Allison.Joers@dec.ny.gov](mailto:Allison.Joers@dec.ny.gov)) for review. Written approval by the Department must be received prior to the start of construction and following approval these shall be part of the Approved Plans per Natural Resource Condition #1.

**6. Work Prohibition Period** Construction activities involving benthic disturbance are prohibited from January 16th through September 30th of any given year.

**7. Filter Fabric Curtain Around Work Area** A filter fabric curtain weighted across the bottom and suspended on floats shall be positioned as depicted on the plans before commencing the project. The curtain shall remain in place until project termination.

**8. Install and Maintain Erosion Controls** The erosion control measures specified in the referenced plans must be put in place before any disturbance of the ground occurs and is to be maintained in a functional condition over the life of construction and revegetation phase.

**9. Concrete Leachate** During construction, no wet or fresh concrete or leachate shall be allowed to escape into any wetlands or waters of New York State, nor shall washings from ready-mixed concrete trucks, mixers, or other devices be allowed to enter any wetland or waters. Only watertight or waterproof forms shall be used. Wet concrete shall not be poured to displace water within the forms.

**10. Storage of Equipment, Materials** The storage of construction equipment and materials shall be confined to the upland area landward of the seawall.

**11. No Equipment in the Water** Heavy equipment operation in the water is prohibited. With backhoes and similar heavy equipment, the bucket may enter the water.

**12. Work During Low Tide** Work below Mean High Water must take place only during periods of low tides.

**13. Clean Fill Only** All fill shall consist of clean soil, sand and/or gravel that is free of the following substances: asphalt, slag, flyash, broken concrete, demolition debris, garbage, household refuse, tires, woody materials including tree or landscape debris, and metal objects. The introduction of materials toxic to aquatic life is expressly prohibited.

**14. Pile Removal** Piles must be fully removed or cut at least 6 inches below the mudline.

**15. Use Pressure Treated Wood** Where treated wood lumber is to be used in the construction of in-water structures, only pressure treated wood with a preservative and treatment process approved (stamped or otherwise marked as certified) by the American Wood Preservative Association can be used. Wood treated with CCA (Chromated Copper Arsenate) or ACQ (Alkaline Copper Quat) can be used in all aquatic environments. Wood treated with Pentachlorophenol can only be used in freshwater applications.

**16. Disposal of Material** Any demolition debris, excess construction materials, and/or excess excavated materials shall be immediately and completely disposed of on an approved upland site more than 100 feet from any regulated waterbody or wetland. These materials shall be suitably stabilized so



as not to re-enter any water body, wetland, or wetland adjacent area; and must be disposed of in accordance with all local, state, and federal statutes, regulations, or ordinances.

**17. Removal of Temporary Fill** Temporary geotextile and heavy stone fill for tidal wetland protection shall be fully removed at project completion.

**18. Restore Pre-Construction Conditions** The area of the submarine cable shall be graded to restore the pre-construction elevation and contours.

**19. Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

**20. No Interference With Navigation** There shall be no unreasonable interference with navigation by the work herein authorized.

**21. State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

**22. State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

**23. State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.



## WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS

**1. Water Quality Certification** The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.

## GENERAL CONDITIONS - Apply to ALL Authorized Permits:

**1. Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

**2. Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

**3. Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator  
NYSDEC Region 3 Headquarters  
21 S Putt Corners Rd  
New Paltz, NY12561

**4. Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Excavation & Fill in Navigable Waters, Tidal Wetlands, Water Quality Certification.



**5. Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. materially false or inaccurate statements in the permit application or supporting papers;
- b. failure by the permittee to comply with any terms or conditions of the permit;
- c. exceeding the scope of the project as described in the permit application;
- d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

**6. Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

## NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### **Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

### **Item B: Permittee's Contractors to Comply with Permit**

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

### **Item C: Permittee Responsible for Obtaining Other Required Permits**

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.



**Item D: No Right to Trespass or Interfere with Riparian Rights**

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

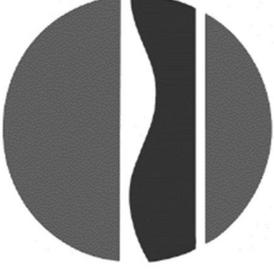
**Item E: SEQR Unlisted Action, No Significant Impact** Under the State Environmental Quality Review Act (SEQR), the project associated with this permit is classified as an Unlisted Action with No Lead Agency designated as the lead agency. It has been determined that the project will not have a significant effect on the environment.



New York State  
Department of Environmental Conservation



# NOTICE



The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Department condition on it, contact the DEC at 845-256-3054 or [dep.r3@dec.ny.gov](mailto:dep.r3@dec.ny.gov). Please refer to the permit number shown when contacting the DEC.

Permittee: Westchester County

Permit No. 3-5510-00258/00018-20

Effective Date: 04/29/2024

Expiration Date: 12/31/2029

**NOTE:** This notice is **NOT** a permit.

## SUMMARY OF QUESTIONS

Question #	RFI #	Contractor	Question	Response
147	017	RCC	On Drawing S-22 lateral bracing is called out as "WT5x19.5 (TYP.)" but on sheet S-09 lateral bracing is called out at "WT7x54.5 (TYP.)" Please advise which is correct.	See response to Question 136 in Addendum No. 5
148	018	RCC	We are requesting a bid date postponement of 3 weeks due to the following: a. We currently have several outstanding Requests for Information (RFIs) that are critical to the coordination of subcontractors/vendors and pricing. Resolving these RFIs will directly impact the accuracy and completeness of our bids. b. Our temporary bridge supplier, who has been integral to the project during the design phase, is still finalizing design elements that need to be incorporated into the contractor's footing design. Once this design information is provided, the contractor will require additional time to design temporary footing elements, followed by pricing and coordination with subcontractors and vendors. 3 c. Two RFIs have been submitted regarding the temporary bridge footing boring operations, specifically concerning the "In Water Work Restriction Phase." The responses to these RFIs have indicated that further clarifications may be necessary from the New York State Department of Environmental Conservation (NYS DEC). Obtaining these clarifications will require additional time.	The time constraints and difficulties obtaining information are acknowledged however the bid date will not be postponed further. The NYSDEC permit is included.
149	018	RCC	Refer to sheet G-06, Structural Scope of Work Note 5.2 & 5.3. There are no detailed drawings and/or pay items for localized steel repairs and localized painting of structural steel. If and when encountered, will this specific localized structural steel repair work be paid for under item 800.000000WE MISCELLANEOUS ADDITIONAL WORK?	No localized steel repairs or localized painting not already detailed in the contract drawings are anticipated for the deck over counterweight structure. If and when deficiencies in the deck over counterweight structure are encountered, the Engineer shall be notified and the Contractor will be compensated under 800.000000WE if the unanticipated work is approved.
150	018	RCC	During our own inspection of the project site, it was noted, during high tide, that water splashed onto the existing steel. This will affect the painting of the existing girders, specifically the dry time. Will the owner consider allowing the usage of quicker drying paint so that the risk of high tide and water surges does not disrupt the painting of the bridge steel?	Considering tidal action, a fast-drying paint system meeting the requirements of the Project Specifications may be used.
151	018	RCC	What are the requirements for a temporary shield below the superstructure? a) Will liquids (dust control) be allowed to pass through into the water, or will that water need to be collected? b) Will there be a specific PSF requirement when replacing the concrete deck? c) Any specific requirements concerning the water surges touching the shields in spans 11 & 12?	a) Liquids and dust shall be collected, treated and disposed of in accordance with the project permits and applicable State laws. b) Design of temporary shields shall consider the Contractor's means and methods but in no case shall the design load be less than 100psf, per AASHTO Temporary Works Section 2.3.3.3. c) All temporary works shall be safe and stable throughout the duration of construction. Construction debris shall be prevented from entering the waterway in the event of a storm surge.
152	018	RCC	Please refer to Note 4 on drawing 7 of 212 under the fender system, this note calls for FRP railing for the fender. No details are given for the railing. please provide sizes of members, spacing for vertical posts and connection details.	See Addendum #5.
153	018	RCC	Please confirm that FRP materials are not required for the temporary fender system, only the permanent (per Specification section 594.11000010).	Confirmed.
154	018	RCC	The borings provided in the existing drawing are illegible. Please provide legible boring information.	The pdf quality of the boring logs cannot be improved. All available boring information has been provided.
155	019	Verde Electric Corp	Drawing E-09 shows SERVICE DISCONNECT SWITCH (ONE LINE) labelled DS-NONWG Drawing E-18 shows SERVICE DISCONNECT SWITCH (THREE LINE) the same label DS-NONWG  This is typical for all the Disconnects shown on E-09 and E-18  Are these (2) different switches with the same Label?	SERVICE DISCONNECT SWITCH (ONE LINE)" and "SERVICE DISCONNECT SWITCH (THREE LINE)" will be updated to simply say "DISCONNECT SWITCH (ONE LINE)" and "DISCONNECT SWITCH (THREE LINE)" on the legend sheet. The disconnect switches shown on the one line diagram with the same name as on the three line diagram are the same disconnect switch. The one line diagram shows the general power distribution while the three line shows the more detailed wiring with the 3 phases.

## SUMMARY OF QUESTIONS

Question #	RFI #	Contractor	Question	Response
156	020	RCC	This project will require several channel closures that will be scheduled throughout the year to meet the project duration of 900 cal. days. The best time to schedule these channel closures would be from November to March to avoid/reduce the impact to the local marine community (based on the Bridge Opening Chart provided). However, due to the complexity of the project, the "in Water Work Restrictions" and the design requirements for the temporary bridge operations, we are requesting the owner to consider adding 1-year to the project duration to meet the permit requirements and schedule concerns for all parties. Please advise.	The Work shall be completed as per the contract requirements. No revision to the project duration will be made at this time.
157	020	RCC	There is an exposed cable on the Northeast side of the bascule abutment that also appears on the East side of the Plaza Area. Please advise on the type and location of this cable throughout the channel.	Cable is a medium voltage submarine cable. See response to Question 031 in Addendum No. 3
158	020	RCC	Please provide a bridge pour sequence for the new concrete deck construction.	Please refer to revised drawing S-63 included in Addendum #7.
159	020	RCC	Please clarify if there are any liquidated damages associated with the project completion dates. Please also clarify if there are any substantial and final competition milestones.	N liquidated damages or milestones are included in the project.
160	020	RCC	Please advise on how the contractor will gain access to the underside of the plaza area. Please advise if the contractor will be allowed to inspect this area before the bid.	Access to the plaza area is typically from beneath the bridge. The contractor may contact Esther Rivas at egr3@westchestergov.com to try and arrange another site visit, but no guarantees can be given that the site visit will occur.
161	020	RCC	Please advise if the SIP forms will be allowed in the sidewalk sections.	SIP forms may be used.
162	020	RCC	Note 1 on S-04 states "bascule girders and approach girders shall receive an additional intermediate coat (total of 4 coats) per requirements of Item No. 573.010001". Section 573-3.03 of the NYSDOT Standard Specification states that "all steel surfaces within 6 feet of a bridge joint shall receive an additional full coat of intermediate paint." Please clarify if the intent of the DPW is to have the contractor paint an extra intermediate coat throughout the entire length of the girders or only 6' from joints.	The additional intermediate coat shall be applied 10' each side of the bearings, as shown on S-04.
163	020	RCC	Refer to sheet S-08 and S-09, please clarify if the Existing Counterweight Framing to Remain is to be blasted and painted and paid for under 573.010001.	Much of the counterweight framing is encased in concrete. Exposed counterweight framing shall be cleaned and painted under 573.010001.
164	020	RCC	Drawing 7 of 212 note 4 under Permits states that "No more than 150 CY shall be excavated from the floor...". The dredge quantity for the project based on the section shown on drawing E-44 produces a quantity of approximately 500 cy which is far in excess of the 150 CY stated. Please clarify.	Assuming a 1:1 H:V trench slope and the parameters on E-44, the excavated quantity is less than 150CY. If the Contractor anticipates an excavation quantity greater than that permitted by the applicable environmental permits, he shall contact the permitting agency for instruction. Note that the cable alignment on E-39 is intentionally drawn not to scale and shown exaggerated for clarity.
165	020	RCC	Plan sheet 128 of 212 note 8 calls for the fenders to be "independent of the pivot and rest piers". Due to the schedule and geotechnical provided can note # 8 be deleted or revised to allow the contractors to design a temporary fender system that can be incorporated into the pivot & rest piers?	The Contractor is responsible for final design of the temporary bridge and fender system. With the approval from the temporary bridge manufacturer and calculations demonstrating that a vessel impact will not impede the normal operation of the bascule span, the Contractor may opt to design a temporary fender system integral with the pivot and rest piers.
166	020	RCC	Please provide a unit quantity for the disposal of the contaminated dewatering fluids for item 205.97200011. During the site visit the contractors were not shown the existing pits and we cannot locate any inspection documents that would provide the missing information on the anticipated volume of fluids, silts, sludge, etc. that will have to be disposed of.	The volume of the fluids in the counterweight pit is unknown. Existing sump pump is operational so the fluid present is beneath the level at which the pump is activated.
167	021	Kiewit	Please reference specification 599.061206WE. Acknowledging that the bascule span may not be physically operating every month of the contract, please confirm this item will be paid each month from Notice to Proceed through Substantial completion regardless of the actual quantity of bridge lifts during a given month.	See response to Question 141 in Addendum No. 5
168	021	Kiewit	Please reference specification 599.061206WE, section 3.3. Please confirm that WDPW will provide initial, hands-on training for Contractor's operation and maintenance personnel following NTP and prior to Contractor taking over operation and maintenance.	Confirmed. WCDPW has proposed a week-long O&M training.

## SUMMARY OF QUESTIONS

Question #	RFI #	Contractor	Question	Response
169	021	Kiewit	<p>Please reference General Clauses, Article 54. <i>Time</i> which states "The Contractor shall promptly pay to the County the additional cost of the Engineer and Construction Administrator for inspection services during the overtime Work."</p> <p>Also please reference specification 599.061206WE, section 3.2 which indicates bridge operations will be required on nights and weekends. Please clarify that off-shift bridge operations will not be considered "overtime Work" the contractor should NOT include the cost of the Construction Administrator and Resident Engineer for all night and weekend bridge operations.</p> <p>If bridge operations are considered overtime Work and the Contractor will be required to pay the County the additional cost of the Engineer and Construction Administrator for inspection services during this time, we request this cost be reimburseable under Item 800.000000WE.</p>	<p>The bascule span is required to be opened on signal per 33 CFR 117.802 and specification 599.061206WE. The Construction Administrator and Resident Engineer do not necessarily need to be present for off-shift bridge openings, unless there is construction activity going on concurrently.</p>
170	021	Kiewit	<p>Please reference specification 599.061301WE, Bridge Balance, section 2.2 which indicates that the contractor supply 25,000 pounds of painted steel balance blocks either cast iron or cast steel. Section 3.5 indicates the removal of up to 5,000 pounds of existing lead and replace with steel ballast. The same section states that lead ballast either existing or new to be reused must be encapsulated.</p> <p>1) Please clarify if the new balance blocks can be lead or Cast Steel/Iron                  2) Is the contractor required to remove all existing lead blocks and have them encapsulated regardless of if they will be reused or not.                  3) If the contractor is required to paint the existing lead blocks, please clarify where they will be delivered / installed.                  3) Is the contractor required to have the 5000 pounds of existing lead blocks removed, encapsulated, and then delivered to the county for future use</p>	<p>1) The new balance blocks shall be either cast steel or iron.                  2) Lead blocks are not expected to be in the counterweight. The contractor is only required to remove and safely dispose the lead.                  3) The contractor is not required to paint the existing lead blocks.                  4) The contractor is only required to remove and safely depose up to 5,000 pounds of lead blocks if it exists in the counterweight.</p>
171	021	Kiewit	Please verify the current operational opening angle of the Bascule span.	61 degrees
172	021	Kiewit	Please confirm there are no concrete repairs in the Contract below mean low water.	Confirmed, masonry and concrete repairs below mean low water are not anticipated.
173	021	Kiewit	Will the owner allow a single lane temporary bridge in lieu of a two lane temporary bridge.	Temporary bridge shall have one lane in each direction.
174	021	Kiewit	<p>Please consider adding a Differing Site Conditions clause to the Contract.</p> <p>Alternatively, please confirm: if the Contractor encounters the below conditions during excavation or deep foundation installation and these conditions materially increase or decrease the cost or time required to perform the work, this will be considered Extra Work.</p> <p>(i) latent physical conditions at the site differing materially from those conditions indicated in the Contract Documents ("Type 1 Condition"), or (ii) physical conditions at the Work Site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as occurring in work of the character provided for in this Contract but unknown to the Design-Builder until encountered during performance of the Work ("Type 2 Condition").</p>	<p>Confirmed. If the Contractor encounters conditions during excavation or deep foundation installation that materially increase or decrease the cost or time required to perform the work, this will be considered Extra Work.</p>
175	022	Mass Electric	Spec 683.090700WE Movable Bridge Standby Generator requires a remote alarm annunciator, please provide where the annunciator is to be installed.	The annunciator is to be installed in the operator room.
176	022	Mass Electric	On Drawing E-36 Conduit No. 94 shows "2 FIBER", please clarify what type of fiber and how many strands are to be installed.	See Drawing E-36 included with Addendum #6.
177	022	Mass Electric	On Drawing E-37 Conduit No. 164 shows "1 FIBER", please clarify what type of fiber and how many strands are to be installed.	See Drawing E-37 included with Addendum #6.

## SUMMARY OF QUESTIONS

Question #	RFI #	Contractor	Question	Response
178	022	Mass Electric	Please clarify where to include the price for Bridge Operation and Maintenance of the Temporary Bridge	See Temporary Bridge Operation Notes Note #1 on S-87.
179	022	Mass Electric	Please clarify the hours of operation for the temporary bridge	Temporary bridge shall operate on the same schedule as the permanent bridge. See 33 CFR 117.802.
180	022	Mass Electric	In addenda #4 the response to question 068 states "There are no Buy America(n) clauses in the contract". Please confirm the span drive motors mentioned in the specification ITEM 599.063000WE Bridge Electrical and Control System (pg. 8) are to be designed and manufactured in the United States of America.	Yes, motors shall be manufactured in USA and the manufactures listed in the referenced special provision are acceptable manufacturers. However, the Contractor need not obtain a certification that the motors meet Buy America(n) requirements. This is true for any Electrical item in the Contract, no Buy America Certification is required.
181	022	Mass Electric	Please clarify what does the existing Submarine Cable Terminal Cabinet on the far side provide power for?	The existing far side submarine cable provides power including but not limited to: far side navigation lighting, far side traffic gates, far side traffic signals, far side street lighting, far side advance warning lights, etc.
182	022	Mass Electric	On drawing E-39 shows the proposed roadway conduit layout. Please clarify if the sidewalk is to be removed and replaced for the installation of conduit and flush mounted terminal boxes.	The concrete sidewalk on the plaza shall remain and the conduit affixed to the underside of the slab shall be replaced. The at-grade asphalt sidewalk in the plaza area (south of the abutment wall) shall be removed such that the conduit can be replaced. New asphalt sidewalk shall be installed per GP-02. See revised sheet number S-02 included with Addendum #7.
183	022	Mass Electric	On drawing E-39 shows the proposed roadway conduit layout. Please clarify if the rock walls are to be cut and patched for the installation of conduit and roadway lights.	See Drawing E-39 included with Addendum #6. The Contractor shall reuse the conduit within the stone wall.
184	022	Mass Electric	On drawing E-39 shows the proposed roadway conduit layout. Please clarify if the existing roadway lighting anchor bolts on the rock walls are to be removed and replaced with new for the installation of the roadway lights.	The existing roadway lighting anchor bolts on the rock wall are to be replaced with new ones that are compatible with the new light standards.
185	022	Mass Electric	On drawing E-50 shows the proposed admin building fiber optic cable route. Please advise if there are any provisions for obstructions along the proposed fiber optic cable route.	Obstructions along this route are not anticipated. If obstructions are encountered, work to install the fiber may be considered Extra Work.
186	022	Mass Electric	On drawing E-50 shows the proposed admin building fiber optic cable route. Please clarify the spacing requirements for handholes along the proposed fiber optic cable route.	Contractor shall provide handholes as required to facilitate the pull and stay within fiber optic cable pulling tension requirements.
187	022	Mass Electric	Please provide a panel schedule for the existing LP-1 panel located in the existing switchgear house.	Sheet E-06 shows the loads of LP-1 that have been referenced from existing plans. It is not with 100% certainty these loads are accurate or that no additional loads have been added. The Contractor is required to field verify existing loads on LP1. See revised drawing E-06 included with Addendum #7.
188	022	Mass Electric	Please provide a panel schedule for the roadway lighting panel shown on E-10	The Roadway Lighting panel feeds the roadway lights. The plans will be updated to clarify that the equipment in the electrical room is a control panel and not a lighting panelboard. See Addendum #7.
189	022	Mass Electric	Please provide a conduit and cable schedule for the new generator that requires heaters, chargers, and batteries	See Addendum #7.
190	022	Mass Electric	On drawing E-49 shows the partial grounding riser. Please confirm the new generator requires equipment grounding.	Confirmed, generator requires an equipment grounding.
191	022	Mass Electric	Please provide a location for the Condensate pump listed in the plumbing equipment schedule on drawing P-01	Contractor shall field locate as required.
192	022	Mass Electric	Spec Item 680.1000007 – Install Traffic Signal Pole, All Sizes under materials states "Traffic Signal Poles will be furnished by others". Please confirm the traffic signal poles will not be provided by the contractor.	Traffic signal poles are provided by the Contractor and are covered in specifications 680.621630, 680.6712, 680.810101, 680.810103, 680.810105, 680.810107, 680.810308, 680.8111 of the Contract Documents. Ultimately, the Contractor is responsible to supply complete traffic signal system, roadway lighting system as called out on the plans.

**SUMMARY OF QUESTIONS**

Question #	RFI #	Contractor	Question	Response
193	022	Mass Electric	Please provide a specification for ITEM 619.051 Temporary Structures and Approaches No. 1	See NYSDOT Standard Specifications and additional requirements on S-87.
194	022	Mass Electric	Please provide a specification for ITEM 670.60 Photoelectric Controls	See NYSDOT Standard Specifications.
195	022	Mass Electric	Please provide a specification for ITEM 670.81 Remove and Dispose of Lamppost Assembly	See NYSDOT Standard Specifications.
196	022	Mass Electric	Please provide a specification for ITEM 680.621630 Traffic Signal Pole, Mast Arm, 16 Feet Mounting Height, 30 Feet Arm Length	See NYSDOT Standard Specifications.
197	022	Mass Electric	Please provide a specification for ITEM 680.6712 Traffic Signal Pole-Post Top Mount 12 Feet mounting Height	See NYSDOT Standard Specifications.
198	022	Mass Electric	Please provide a specification for ITEM 680.810101 Traffic Signal Module – 12 Inch, Red Ball, LED	See NYSDOT Standard Specifications.
199	022	Mass Electric	Please provide a specification for ITEM 680.810103 Traffic Signal Module – 12 Inch, Yellow Ball, LED	See NYSDOT Standard Specifications.
200	022	Mass Electric	Please provide a specification for ITEM 680.810105 Traffic Signal Module – 12 Inch, Green Ball, LED	See NYSDOT Standard Specifications.
201	022	Mass Electric	Please provide a specification for ITEM 680.810107 Traffic Signal Section – Type I, 12 Inch	See NYSDOT Standard Specifications.
202	022	Mass Electric	Please provide a specification for ITEM 680.810308 Install Ball/Arroe LED Traffic Signal Module	See NYSDOT Standard Specifications.
203	022	Mass Electric	Please provide a specification for ITEM 680.8111 Traffic Signal Bracket Assembly – 1 Way	See NYSDOT Standard Specifications.
204	022	Mass Electric	Please provide a specification for ITEM 680.8220 Flashing Beacon Sign Assembly	See NYSDOT Standard Specifications.
205	023	Verde Electric Corp	ITEM 599.063000WE PAGE 49 CCTV directs “The Contractor” to provide the appropriate conductors / FIBERS for the Cameras in The Submarine Cable.  Are we to add FIBERS to accommodate the Cameras or is the Fiber Count included in LEGEND shown on E-44?	The Contractor is ultimately responsible for the final submarine cable count based on their approved shop drawings.
206	023	Verde Electric Corp	Engineer Stamped Drawing E-44 provides a LEGEND for The SUBMARINE cable. LEGEND: A.FIBER OPTIC CABLE 12 ST Single Mode and 12 ST MULTI MODE If you add them together the Total Fiber Strands equal 24 ST. This Fiber Count Conflicts with Engineered Stamped Drawing E-48 which specifies (42) Fiber Strands. Please confirm Fiber Count Required.	There is a Fiber Type A and a Fiber Type B for the project as shown in Addendum 6. Fiber A is a single mode fiber that is used to extend the WCDPW network to the administrative building. Outside of the submarine cable it consists of 24 strands. Fiber B is a multimode fiber and it is primarily used for the CCTV cameras. Outside of the submarine cable it has 12 strands. Inside the submarine cable there are 12 strands of single mode fiber and 12 strands of multimode fiber. Sheet E-48 was updated in Addendum #6 to reflect this clarification.
207	024	Verde Electric Corp	ITEM 599.063000WE PAGE 44 under the heading: Cable: Fiber Optic Cable will be 12 strand outdoor heavy duty rated jacket 62.5/125 “multimode” fiber. On the same page under the heading: Fiber Optic Cable The cable shall be OM5 type single mode fiber optic cable. It Shall be 24 strand ... Please confirm the quantity of Strands required and type of cable required.	See response to Question 206.
208	025	RCC	In Addendum #5 Question #092 the response specifies “The Power House across the channel is the anticipated location to arrange temporary power scheme.” Upon review of the Con Ed Utility Plates, we cannot see the location of the Power House. Please provide the location of the Power House.	The power house is approximately at these coordinates: 40°53'17.6"N 73°46'54.9"W. It is not Con Ed related and it is fed from the near side switchgear building via a medium voltage line. The installation is WCDPW and/or Parks Dept power distribution.

**SUMMARY OF QUESTIONS**

Question #	RFI #	Contractor	Question	Response
209	025	RCC	REF: page 32 of ITEM 599.063000WE. Please confirm we are installing PVC Coated Conduit for a Temporary Bridge. Please confirm we are installing RGS (hot-dipped galvanized steel) conduit in earth or encased in conduit.	The temporary bridge conduit system shall be as per the direction the Professional Engineer who designs and signs/seals the temporary bridge power distribution and control system. The conduit system will be required at a minimum to last the duration indicated on the Contract plans. In the event that the conduit system installed for the temporary bridge becomes damaged or does not prove to sufficiently reliable, the Conduit system shall be replaced at no additional cost so to provide a complete and functioning temporary bridge.  It is assumed that the question regarding the installation of conduit in earth or encased in conduit is referring to the temporary bridge. The response is similar as indicated for the PVC coated conduit question.
210	026	Kiewit	Please refer to Drawings GP-01, GP-02, MST-02, S-04, H-01, all of which reference Item 599.06300008. Callouts / Notes:  "PROPOSED WARNING GATE ITEM 599.06300008" "PROPOSED BARRIER GATE ITEM 599.06300008" "NAVIGATION LIGHT (TYP.) ITEM 599.06300008" "REPLACE LIGHT POLES (TYP.) ITEM 599.06300008" "ALL WIRING, CONDUIT, AND RELATED DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF ITEM 599.06300008 BRIDGE ELECTRICAL CONTROL SYSTEM. ELECTRICAL WORK IS PAID AS INCIDENTAL TO HVAC WORK."  Please amend these notes or add item 599.06300008 to the bid form and provide the specification.	Item 599.06300008 shall be Item 599.063000WE. Please see revised drawings included in Addendum #7.
211	026	Kiewit	Please refer to Addendum 1, Special Notice, Contractor's Qualifications Statement, General Contractor Requirements. Please clarify if the bidding entity must have been acting as General Contractor on the 5 examples of bridge rehabilitation or replacement.	Proposers shall have been acting as primary participant (general contractor, JV partner, or major subcontractor) for the 5 projects.
212	026	Kiewit	Please refer to Volume 1, Specification 599.061204WE, Gear Reducers, Section 2.8. which states: "If any indications are found machine the affected area and perform ultrasonic testing in accordance with ASTM A388 to ensure no discontinuities remain."  In the event that the condition of the existing gearing cannot be rehabilitated by machining the existing gears and new gears need to be fabricated, please confirm this would be considered Extra Work.	Confirmed.
213	026	Kiewit	Please reference Addendum 5, Q&A 80. Initial engineering analysis of the approach structure has revealed that the 1590CY of approach ramp embankment will impose significant load on the existing subsurface soils. Considering that this area is composed of man-made fill, there is a potential for global stability failure such as lateral displacement of subsurface soils, undermining the abutment and micropiles poses a significant risk.  Drawing S-88 and Plate No. 4-BN, also issued under Addendum 5 indicates presence of a subsurface seawall along this shoreline (behind the riprap) which may mitigate this risk by counteracting the subsurface lateral load.  Additionally, this buried seawall may obstruct installation of micropiles and therefore needs to be considered in our design layout of this foundation.  Please provide details of the existing seawall construction.	As-built details of the seawall are unfortunately not available. Contractor shall design the temporary bridge such that the seawall is not damaged.
214	027	RCC	In reference to drawing E-34, please provide the location of the MOVABLE DCTC and FIXED DCTC.	The droops cable cabinets are shown on E-11 and are a direct replacement of the existing. They are across from the proposed drive cabinets. Contractor would need to reference the mandatory walk through for details on the existing setup as the plans call for a direct replacement.

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215	027	RCC	In reference to drawing E-34, please provide a specification for the droop cable.	Note 2 on E-11 calls out the requirements for the droop. In summary, the droop cable shall be a Prysmian (Draka) Bridge Traveling (Droop) Cable to match the existing conductors. More information from Prysmian can be found here: <a href="https://na.prysmian.com/sites/na.prysmian.com/files/media/documents/SPL-BRG-0003-0213_Bridge%20Traveling%20%28Droop%29%20Cable_LR.pdf">https://na.prysmian.com/sites/na.prysmian.com/files/media/documents/SPL-BRG-0003-0213_Bridge%20Traveling%20%28Droop%29%20Cable_LR.pdf</a>