Lockport-Batavia Line 112
Rebuild Project

Exhibit 5

Design Drawings

TABLE OF CONTENTS

LIST OF FIGURES

EXHIBIT 5: DESIGN DRAWINGS

5.1 INTRODUCTION

National Grid proposes to rebuild a portion of its 115kV Line 112 (Line 112) that presently extends approximately 20.5 miles between the Lockport Substation and Structure 211. The rebuilt Line 112 will include the relocation of its existing centerline in select locations which will add nearly 1.2 miles between the Lockport Substation and Structure 211, making the final length of the rebuilt route approximately 21.7 miles. A detailed description of the Project and its location is contained in Exhibit 2 of this Application (Location of Facilities).

The Project design standards and drawings are provided herein.

5.2 STRUCTURE DESIGN STANDARDS

National Grid will design the Project transmission facilities in accordance with applicable national and state codes and regulations, in addition to the Applicant's own standards. The primary governing code is the current National Electric Safety Code ("NESC 2017"), which specifies both the minimum structural loads for determining the required structural capacity and appropriate clearances to energized parts and wires. Typical clearance requirements defined by NESC include clearance to ground, adjacent transmission facilities, railroads, buildings, and other objects.

The current NESC, as well as other National Grid structure criteria, will determine the structural loading of the Project transmission line. The minimum structural load criteria will include:

- NESC
    - Heavy Loading: ½-inch radial ice at 0° F with a 40 mph wind;
    - Extreme Wind Loading: 90 mph wind at 60° F;
    - Extreme Ice with Concurrent Wind Loading: 1 inch radial ice at 15°F with a 40 mph wind; and
- National Grid Heavy Ice: 1½ inches radial ice at 30°F with a 28 mph wind.

A detailed description of the proposed rebuilt transmission structures is included in Exhibit E-1 - Description of Proposed Transmission Facilities of the Application.

National Grid will use several types of structures for the Project. Figure 5-1, Sheets 1-35, is a set of cross-section diagrams of the Project ROW that show the typical configuration of the

structures (including width and height) in each segment. The material of construction, color and finish of the proposed structure types is steel with a galvanized finish for all steel pole structures. Figure 5-2 depicts a typical concrete foundation design. Figure 5-3 shows the details for direct-embedded steel poles structures. Figure 5-4 includes drawings for all typical transmission structures proposed, showing the structure type, material of construction, support arm configuration, insulators, and reference to wire type supported by the structures. Figure 5-5 depicts a profile of the centerline of the Project ROW at an exaggerated vertical scale.

EXHIBIT 5 - DESIGN DRAWINGS

FIGURES

Figure 5-1 Proposed Right-of-Way Cross Section Drawings (Sheets 1-35)

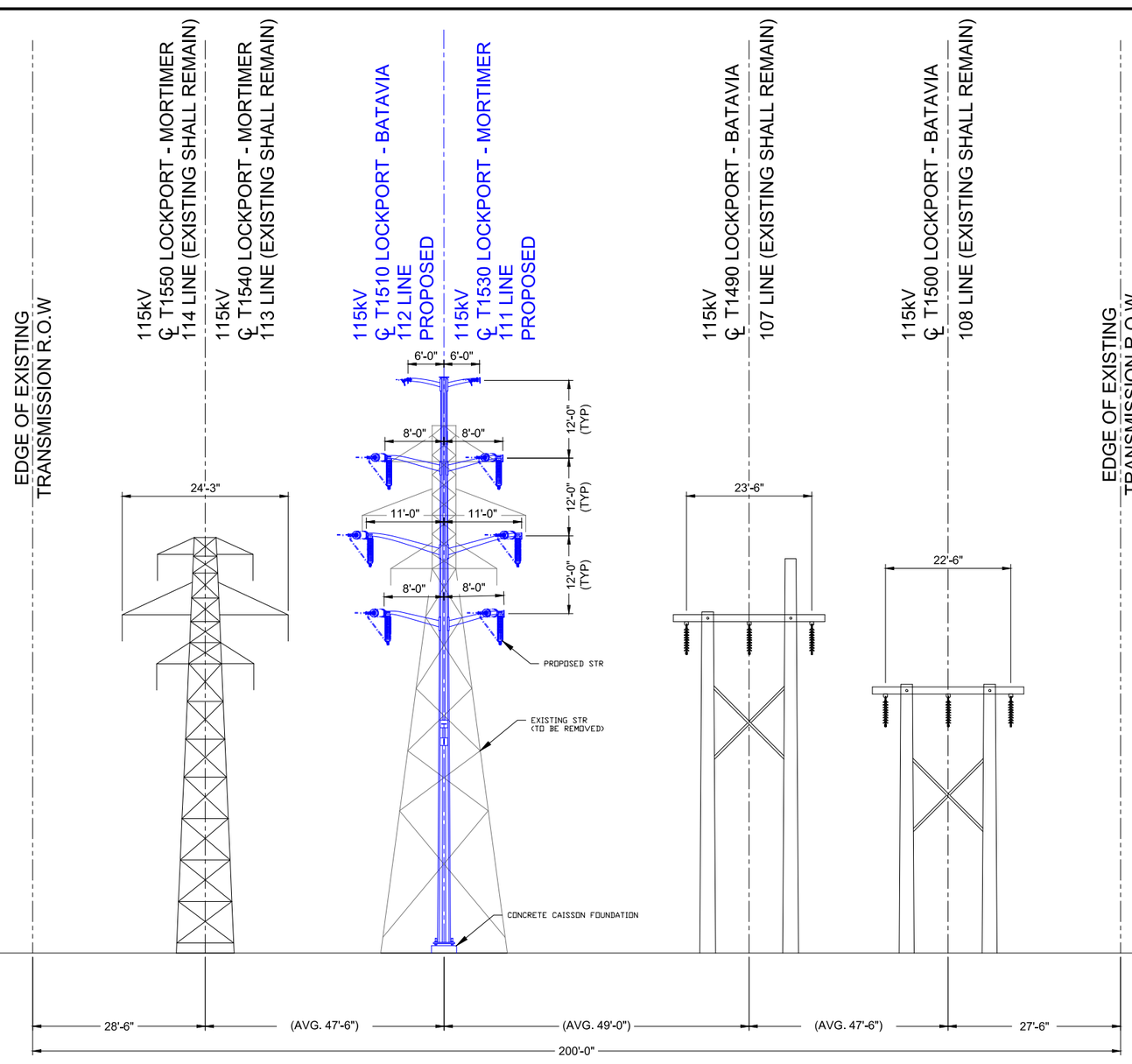
100786-C-X-01

LINE DATA TABLE					
112 & 111					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT MONOPOLE DEADEND W/ARMS	80'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW (1) 3/8-7 EHS SW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. STRUCTURE 2 IS INSIDE OF NATIONAL GRID OWNED PROPERTY. THE EXISTING R.O.W LINE APPLIES TO STRUCTURE 3 AND 4.
3. THE LINE CROSSES THE ERIE CANAL IN THE SPAN BETWEEN STRUCTURE 2 AND 3.
4. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 2 TO 4
MILE 0.15 TO 0.34
SEGMENT 1

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

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1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.R.	1
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REVIEWED BY:	FD	08/14/2020
APPROVED BY:	AG	08/28/2020
SCALE		NTS
SHEET		01 OF 35
INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 0.15 TO 0.34
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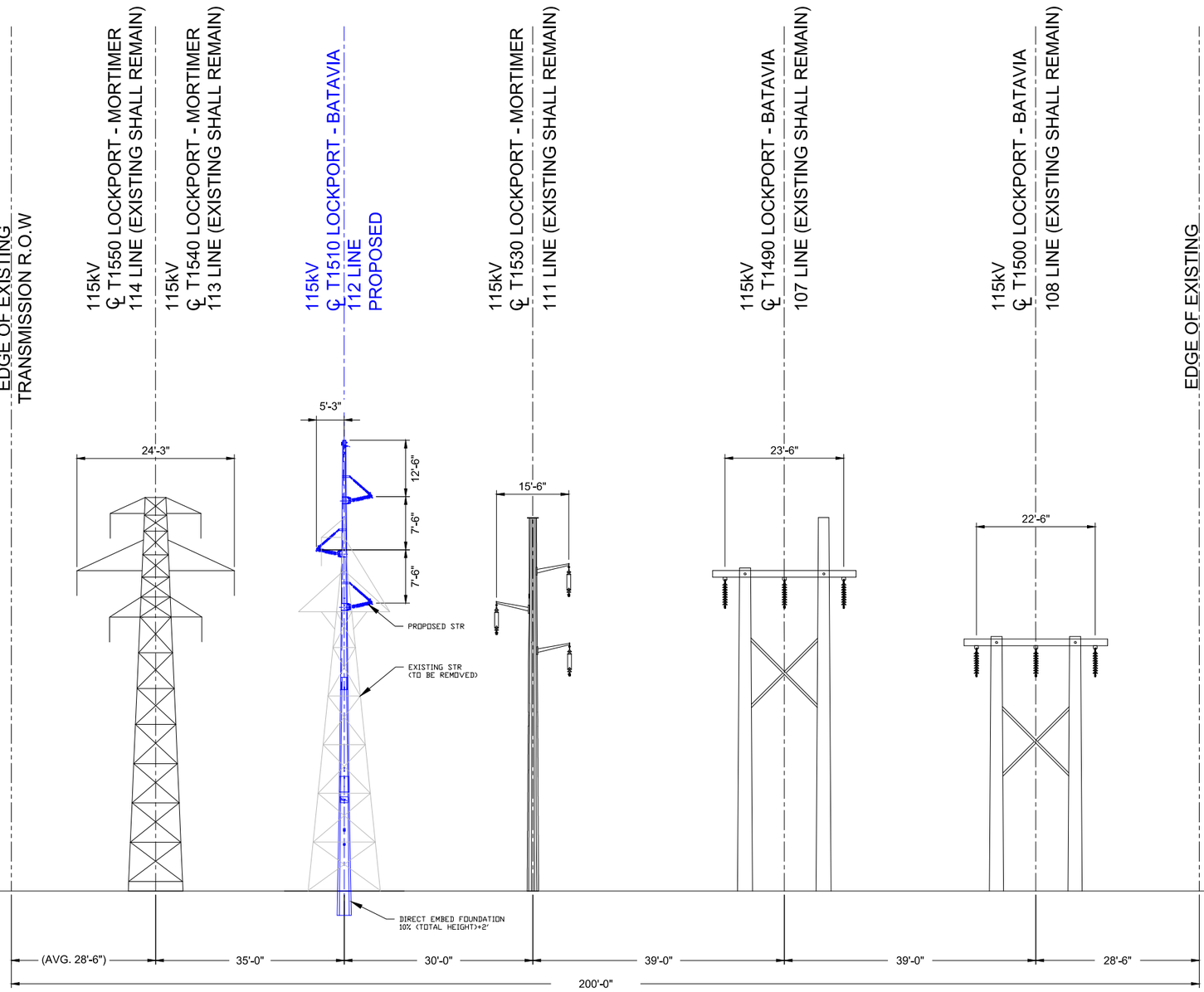
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	85'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



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2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 5 TO 6
MILE 0.44 TO 0.54
SEGMENT 1

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1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. FR.
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PREPARED BY	NDL	07/31/2020
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INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 0.44 TO 0.54
PERMITTING USE ONLY

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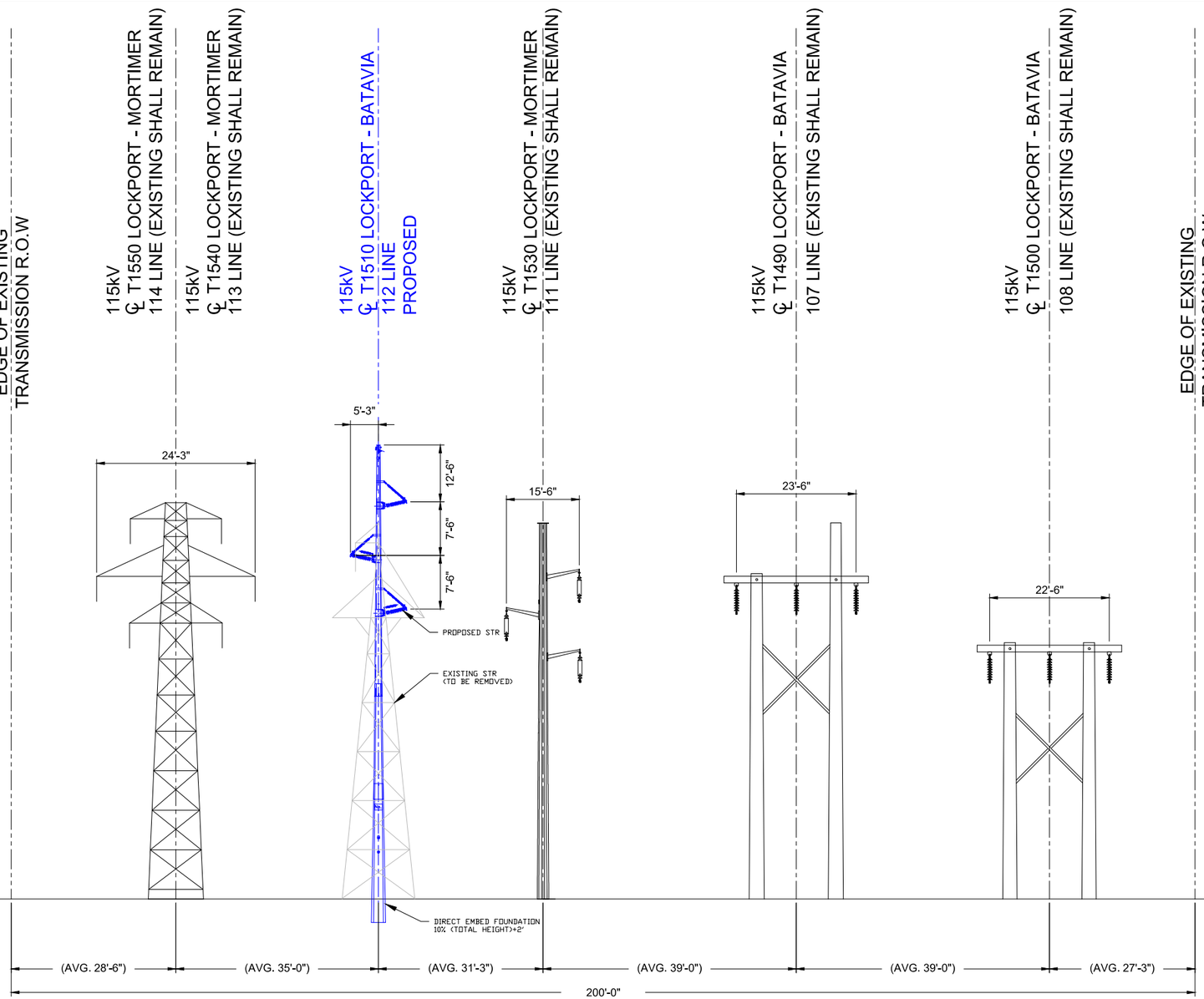
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

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NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 7 TO 13
MILE 0.64 TO 1.26
SEGMENT 2

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 0.64 TO 1.26
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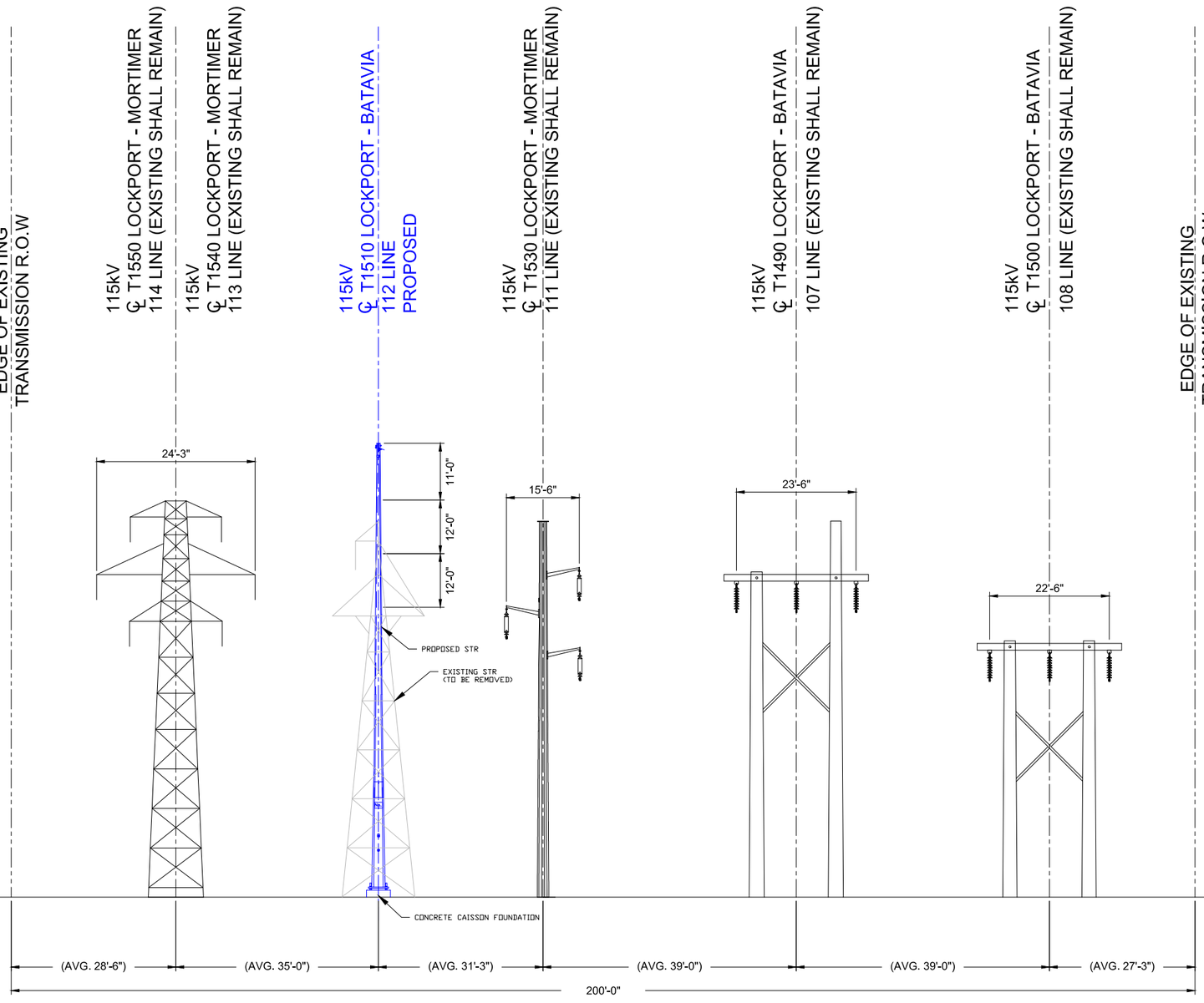
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



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NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 14
MILE 1.31
SEGMENT 2

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 1.31
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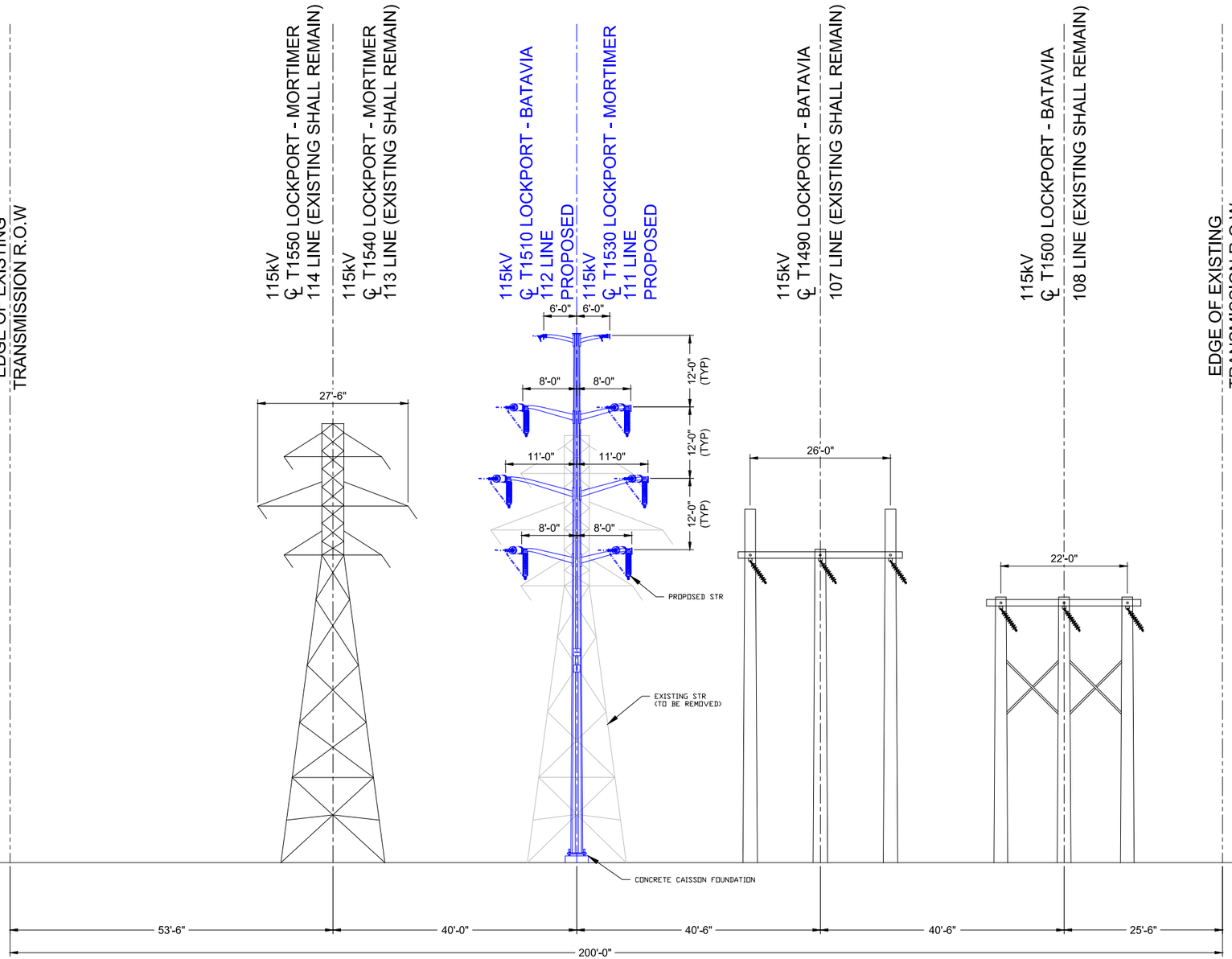
LINE DATA TABLE					
112 & 111					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT MONOPOLE DEADEND W/ARMS	90'-100'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW (1) 3/8-7 EHS SW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT 3-POLE DEADEND	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT 3-POLE DEADEND	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115



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NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 15
MILE 1.36
SEGMENT 2

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SCALE		NTS
SHEET	05	OF 35
INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 1.36
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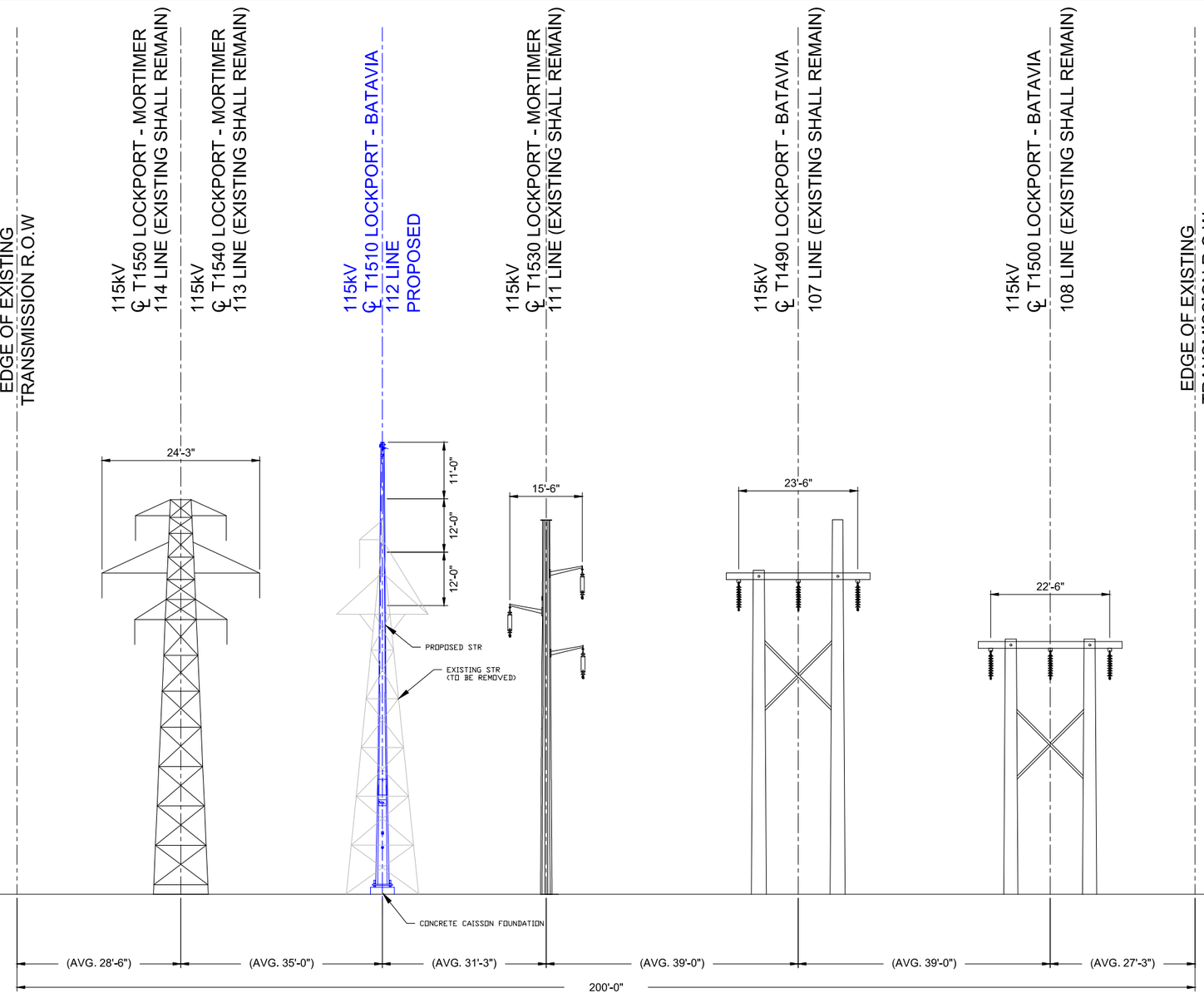
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



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NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 16
MILE 1.41
SEGMENT 2

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SCALE		NTS	
SHEET		06 OF 35	
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 1.41
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LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
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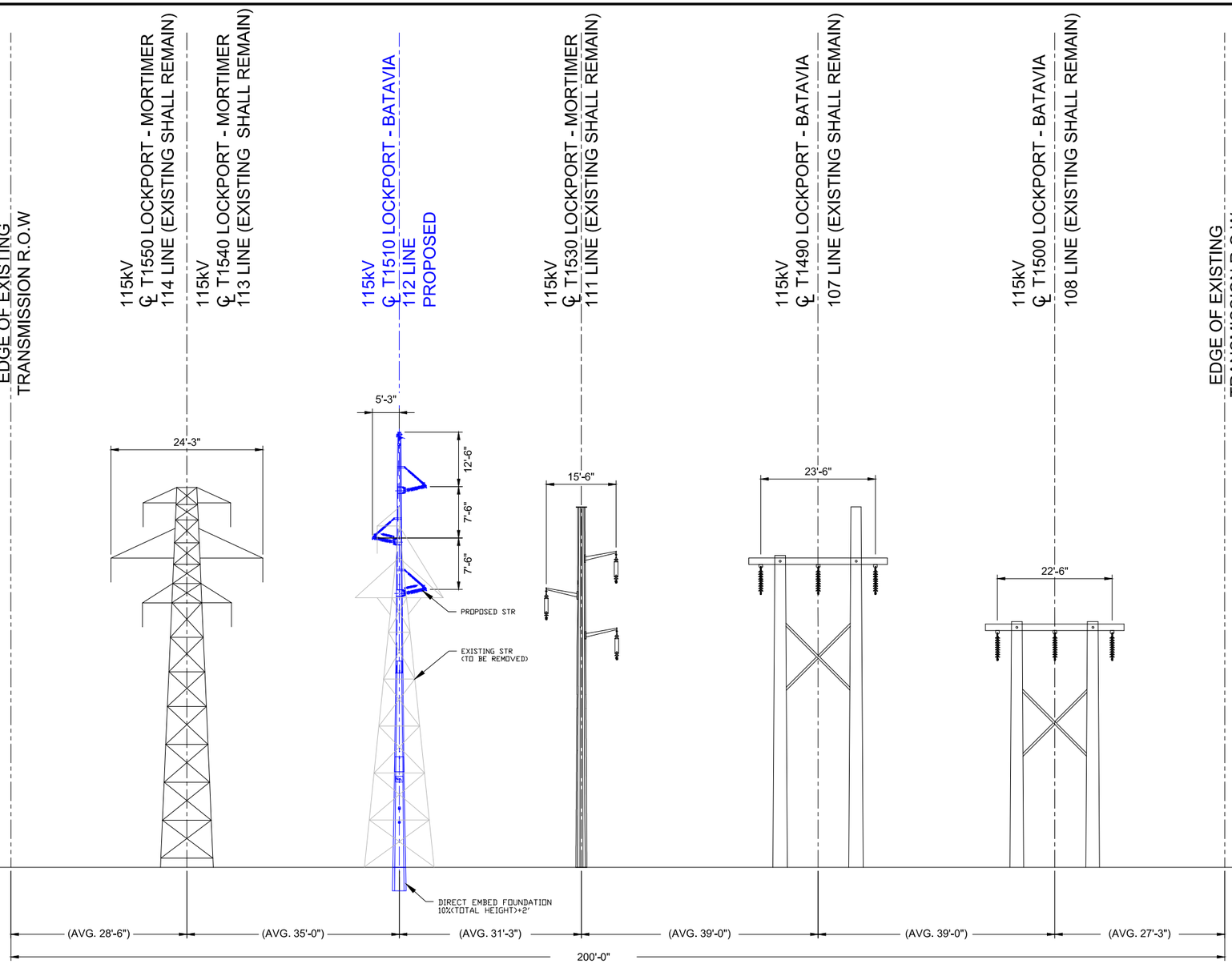
LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



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NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 17 TO 35
MILE 1.47 TO 3.25
SEGMENT 2

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3			
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VERSION 1

PREPARED BY	NDL	07/31/2020
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APPROVED BY	AG	08/28/2020
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SHEET	07	OF 35
INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 1.47 TO 3.25
PERMITTING USE ONLY

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100786-C-X-07

100786-C-X-08

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

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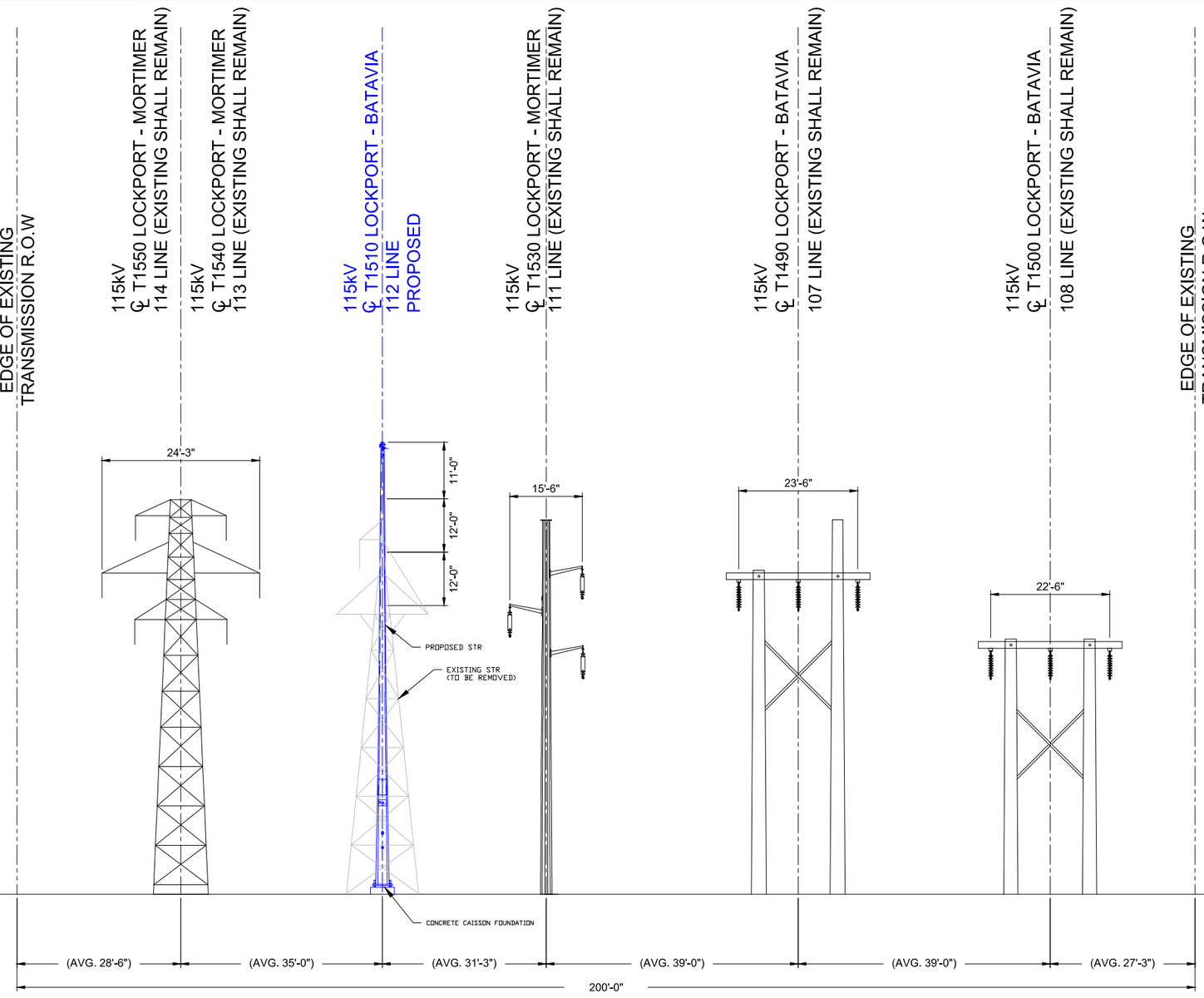
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 36
MILE 3.35
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN/PROPOSED	VERSION
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. FR.	1
2				
3				
4				
5				
6				

nationalgrid

PREPARED BY	NDL	07/31/2020	
REVIEWED BY	FD	08/14/2020	
APPROVED BY	AG	08/28/2020	
SCALE		NTS	
SHEET		08 OF 35	
INDEX		TBD	

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 3.35
PERMITTING USE ONLY

INCHES ON ORIGINAL

100786-C-X-08

PRINTED 6/1/2021 12:54 PM

100786-C-X-09

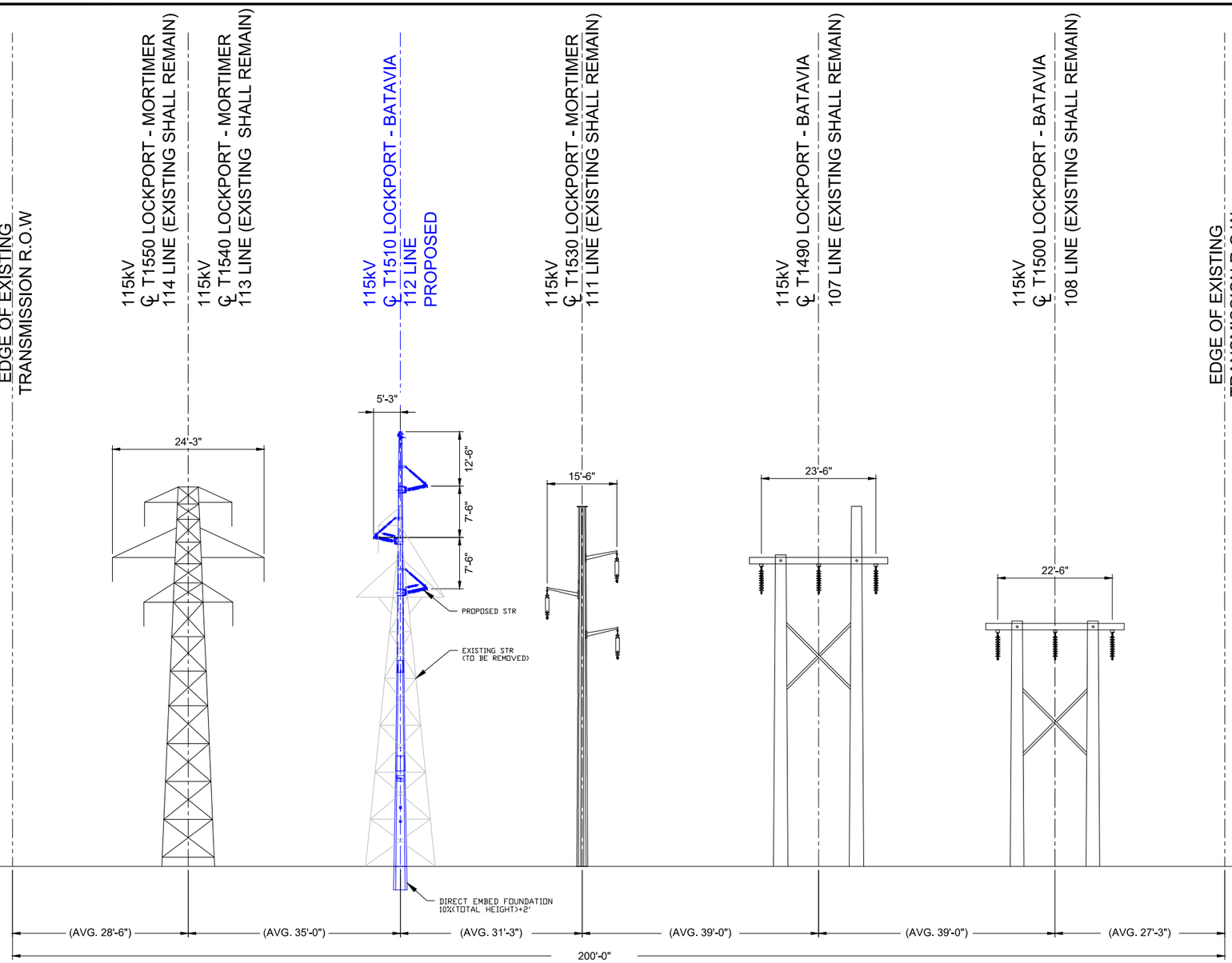
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 37 TO 55
MILE 3.46 TO 5.18
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.DL./J.C./B.A./T.R.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
SHEET	09	OF 35
INDEX		TBD

nationalgrid

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 3.46 TO 5.18
PERMITTING USE ONLY

PRINTED 6/1/2021 12:55 PM

INCHES ON ORIGINAL

100786-C-X-10

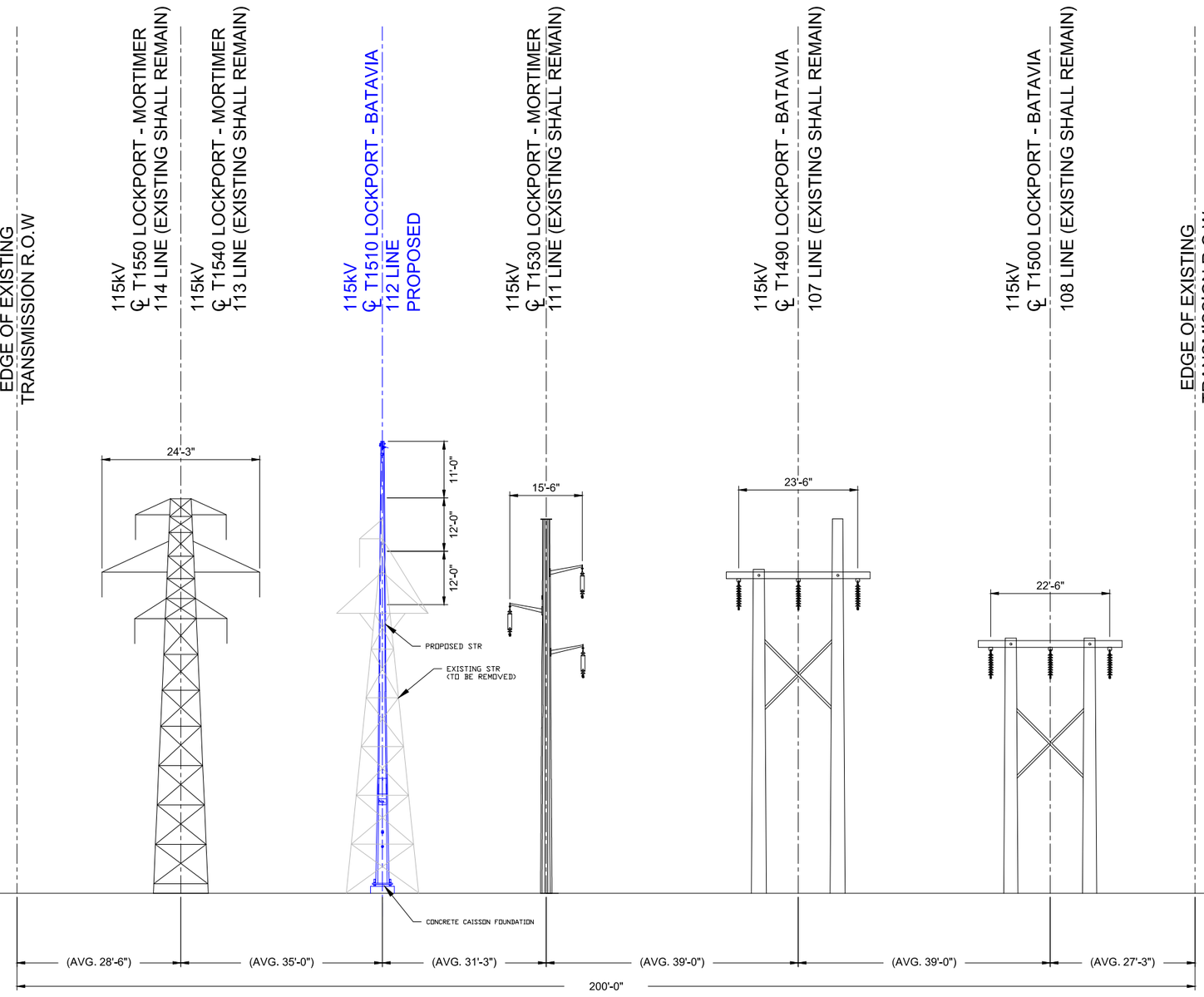
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 56
MILE 5.28
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN/PROCESS	VERSION
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.I. P.S.	1
2				
3				
4				
5				
6				

nationalgrid

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
SHEET	10	OF 35
INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 5.28
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-11

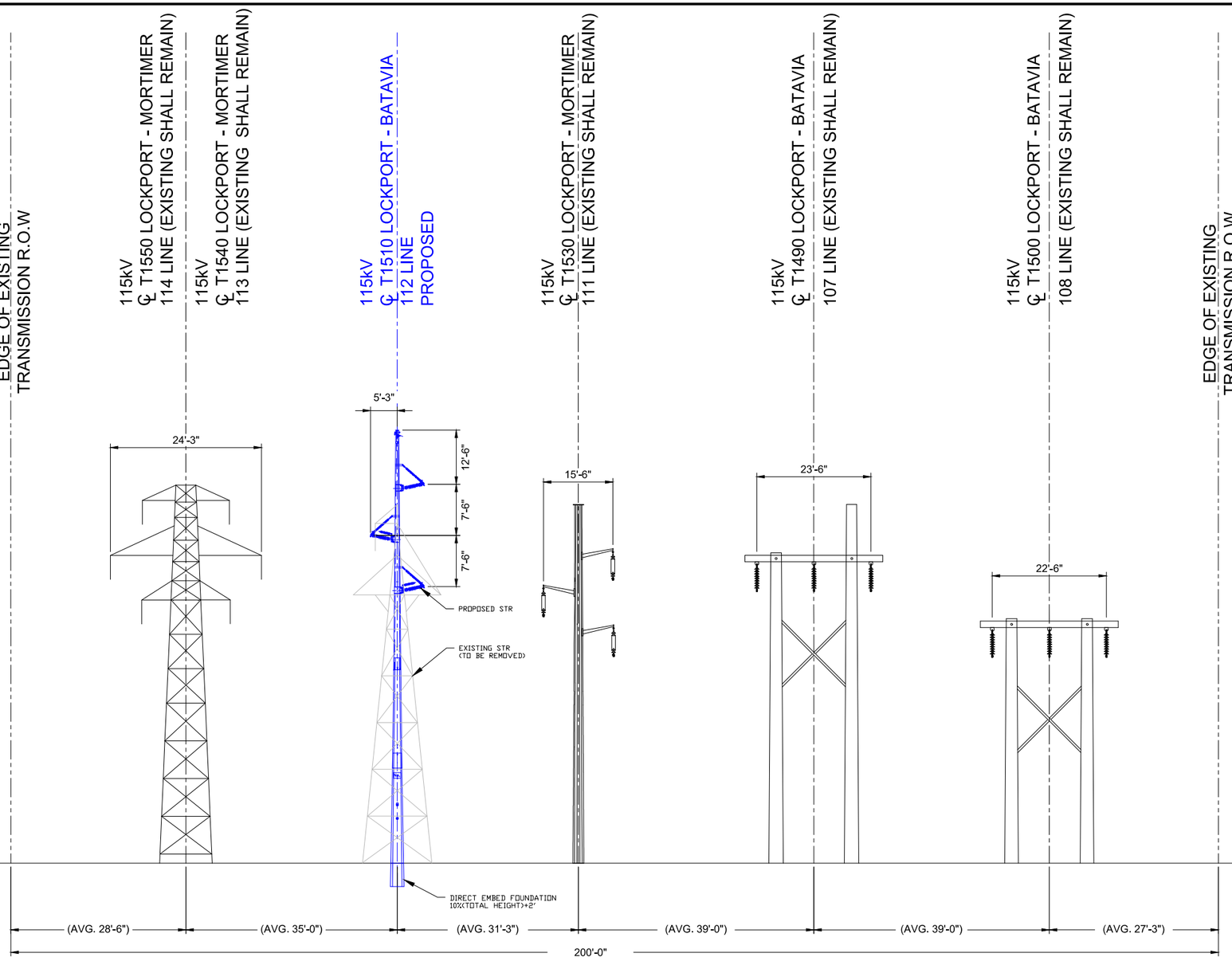
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 57 TO 66
MILE 5.39 TO 6.32
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN BY
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. F.S.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
SHEET	11	OF 35
INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 5.39 TO 6.32
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-11

100786-C-X-12

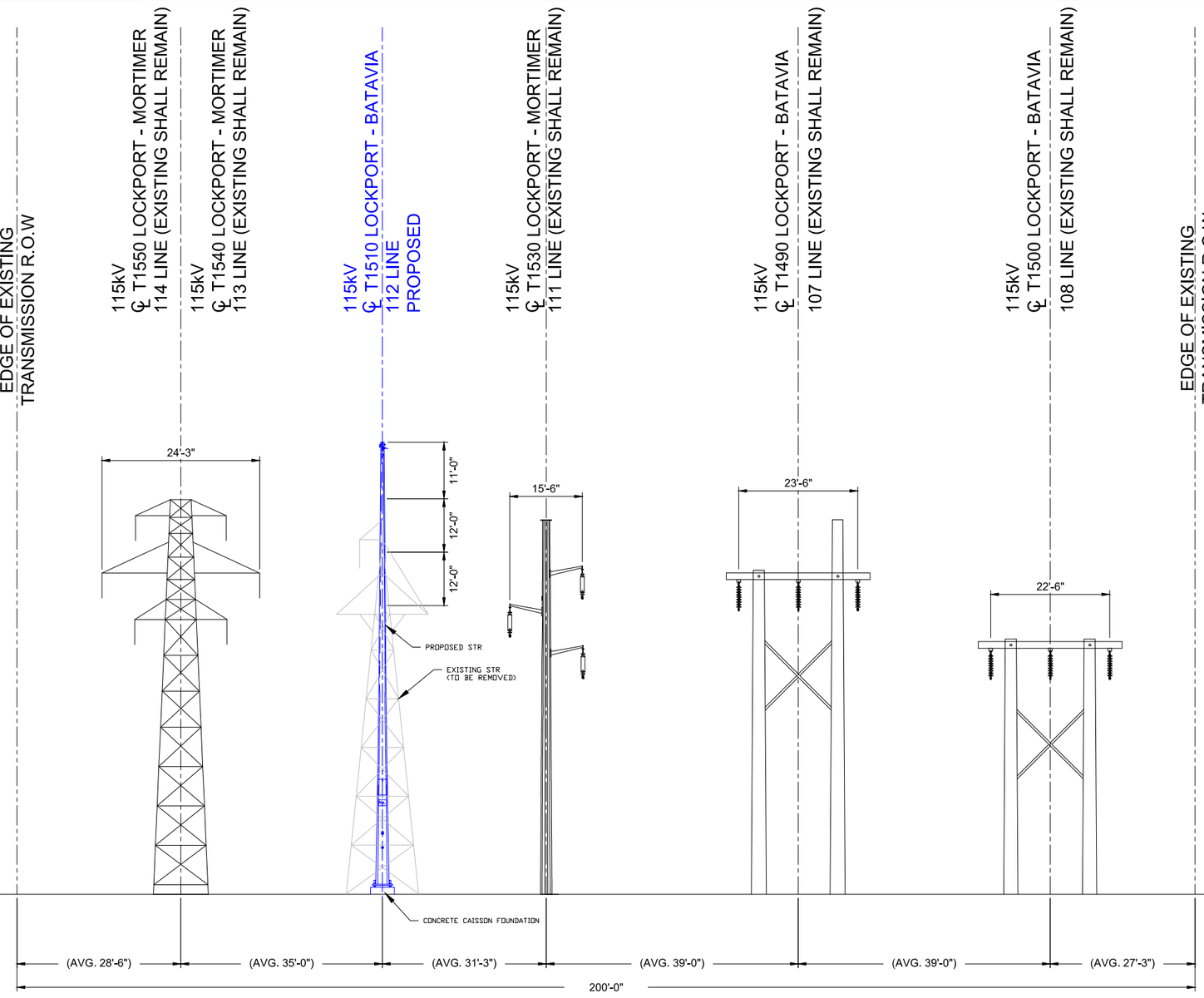
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75' - 85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER DEADEND	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 67
MILE 6.43
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.J.F.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY:	NDL	07/31/2020
REVIEWED BY:	FD	08/14/2020
APPROVED BY:	AG	08/28/2020
SCALE		NTS
SHEET	12	OF 35
INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 6.43
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-12

100786-C-X-13

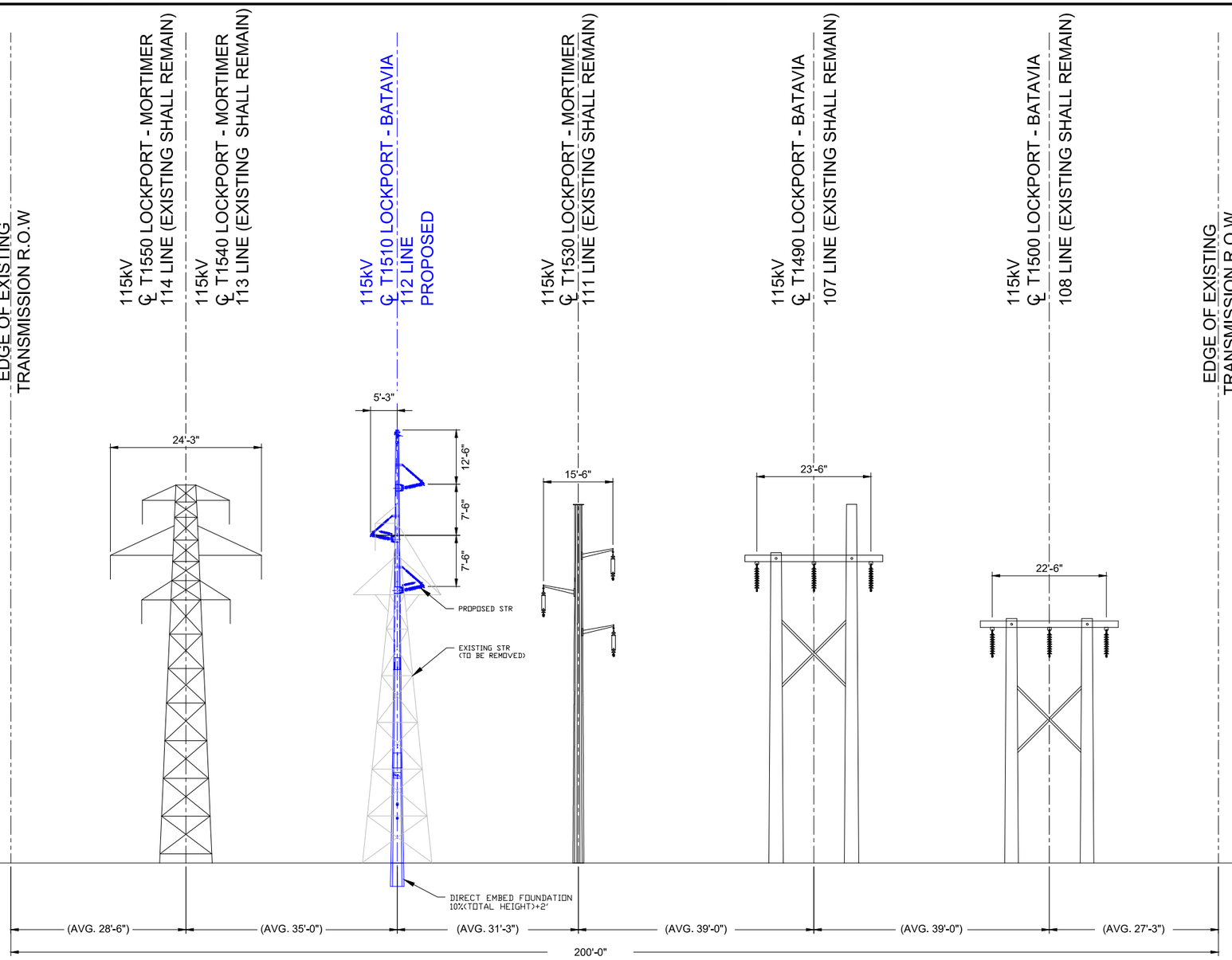
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 68 TO 80
MILE 6.53 TO 7.77
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.DL./J.C./B.A./T.R.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
SHEET	13	OF 35
INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 6.53 TO 7.77
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-13

100786-C-X-14

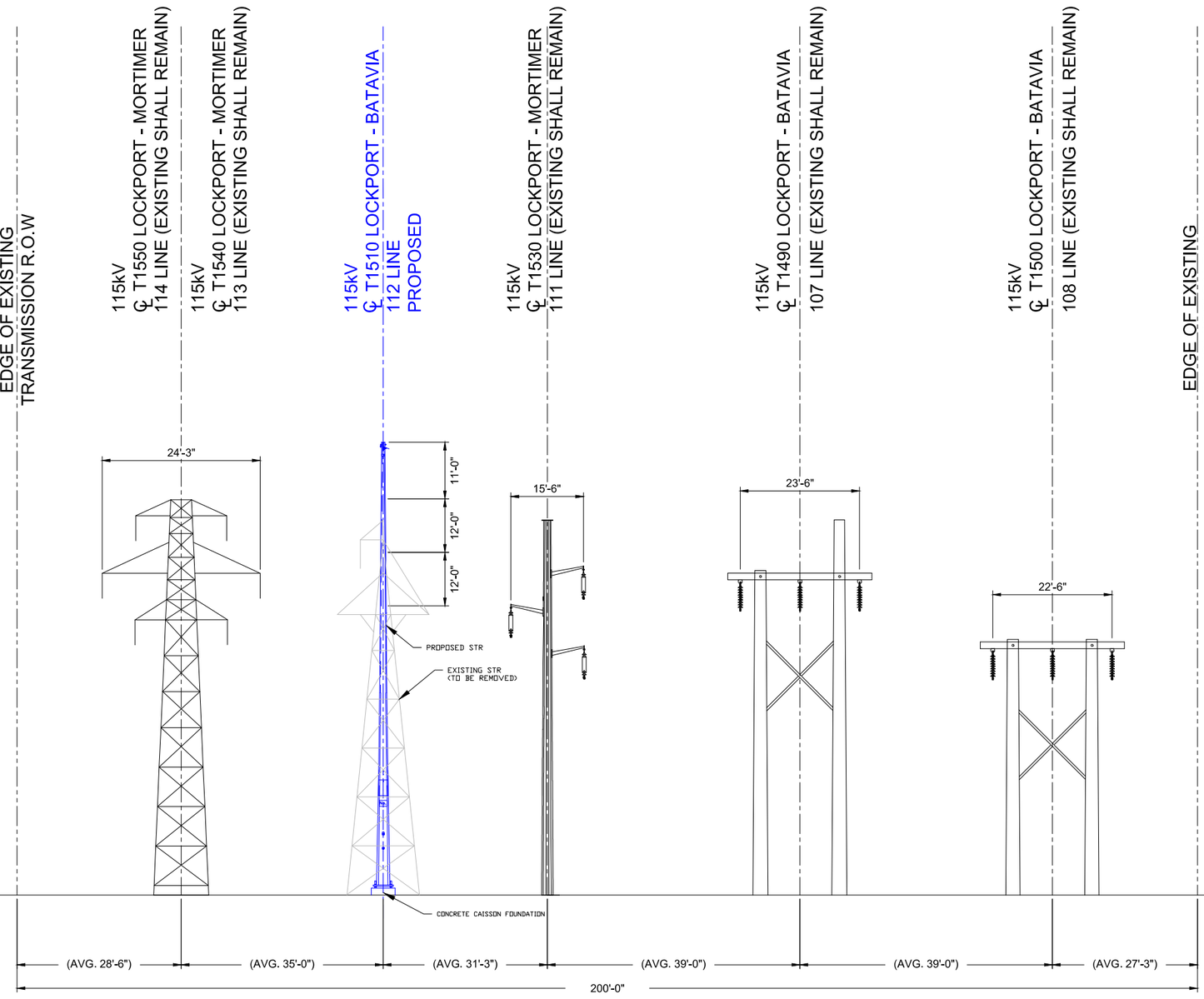
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE DE	75' - 85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

Line Data Table				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. TWO NYSEG 345kV LINES CROSS OVER PERPENDICULAR TO THE 112 LINE BETWEEN STRUCTURE 81 TO 81-1

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 81 TO 81-1
MILE 7.85 TO 7.92
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.F.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY:	NDL	07/31/2020
REVIEWED BY:	FD	08/14/2020
APPROVED BY:	AG	08/28/2020
SCALE		NTS
SHEET	14	OF 35
INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 7.85 TO 7.92
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-15

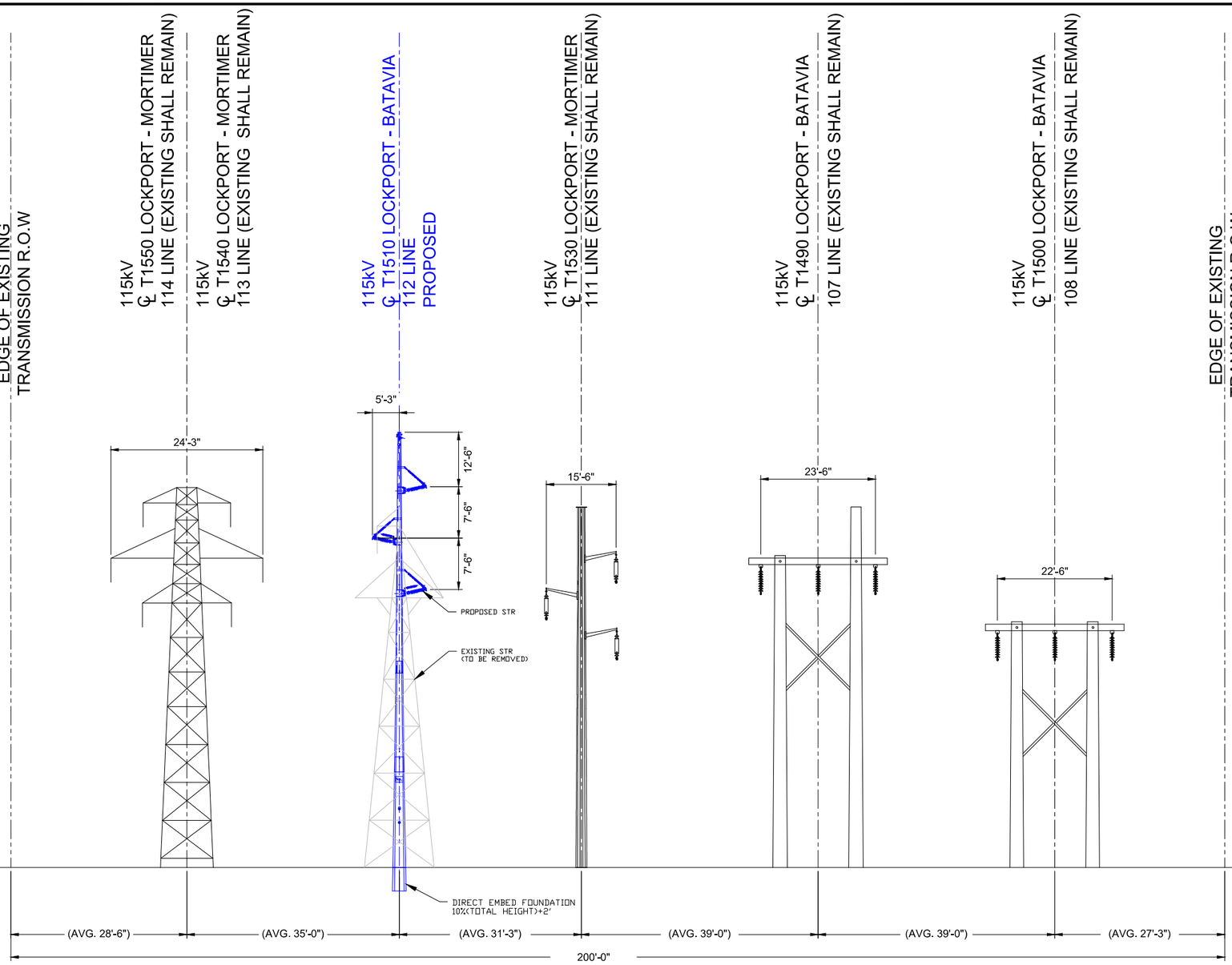
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 82 TO 91
MILE 7.98 TO 8.86
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN BY
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. F.S.
2			
3			
4			
5			
6			

VERSION: 1

PREPARED BY:	NDL	07/31/2020
REVIEWED BY:	FD	08/14/2020
APPROVED BY:	AG	08/28/2020
SCALE:		NTS
SHEET:	15	OF 35
INDEX:		TBD

nationalgrid

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 7.98 TO 8.86
PERMITTING USE ONLY

PRINTED 6/1/2021 12:59 PM

INCHES ON ORIGINAL

100786-C-X-15

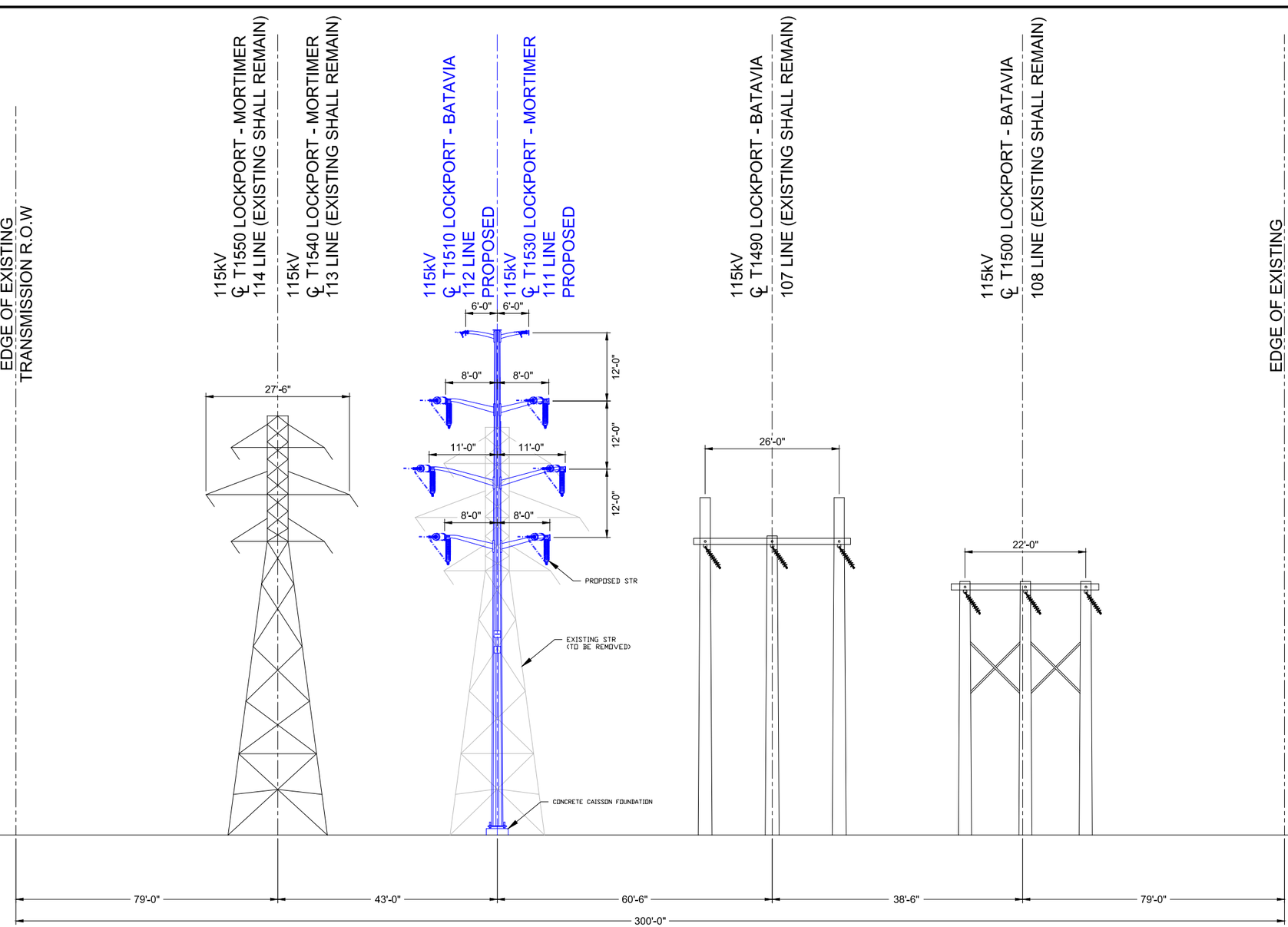
100786-C-X-16

LINE DATA TABLE					
112 & 111					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT MONOPOLE DEADEND W/ARMS	70'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW (1) 3/8-7 EHS SW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME DEADEND	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
DOUBLE CKT TOWER DEADEND	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kv)
SINGLE CKT H-FRAME DEADEND	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 92
MILE 8.92
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VERSION			
VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.F.
2			
3			
4			
5			
6			

1

nationalgrid

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE	NTS	
SHEET	16 OF 35	
INDEX	TBD	

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 8.92
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-17

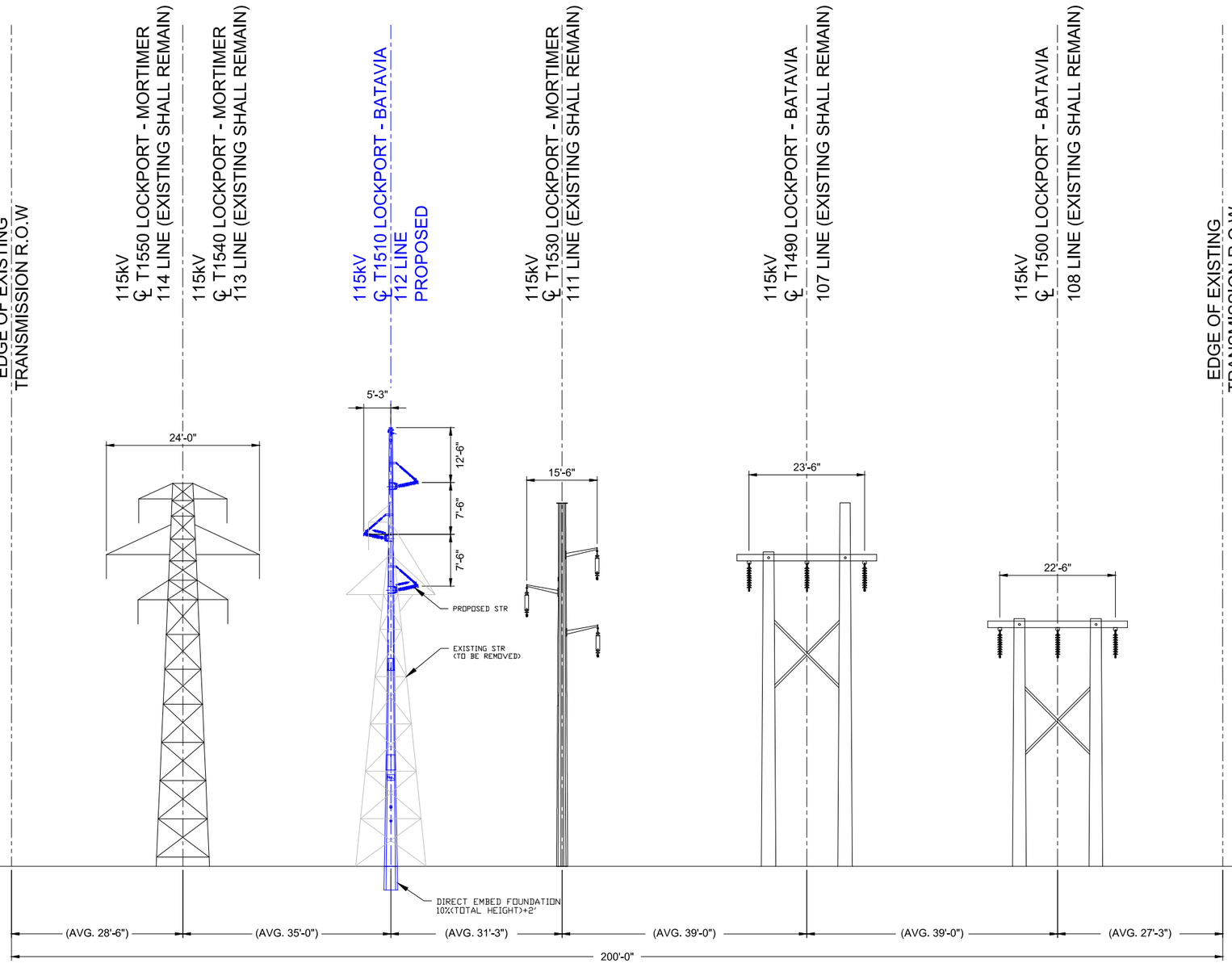
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. T1490 LOCKPORT-BATAVIA 107 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
4. T1500 LOCKPORT-BATAVIA 108 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
5. LINE 112 CROSSES UNDER THE 113/114 LINE IN THE SPAN OF STRUCTURE 117 TO 118.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 93 TO 116-1
MILE 8.97 TO 11.23
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.P.S.
2			
3			
4			
5			
6			

VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
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INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 8.97 TO 11.23
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-17

100786-C-X-18

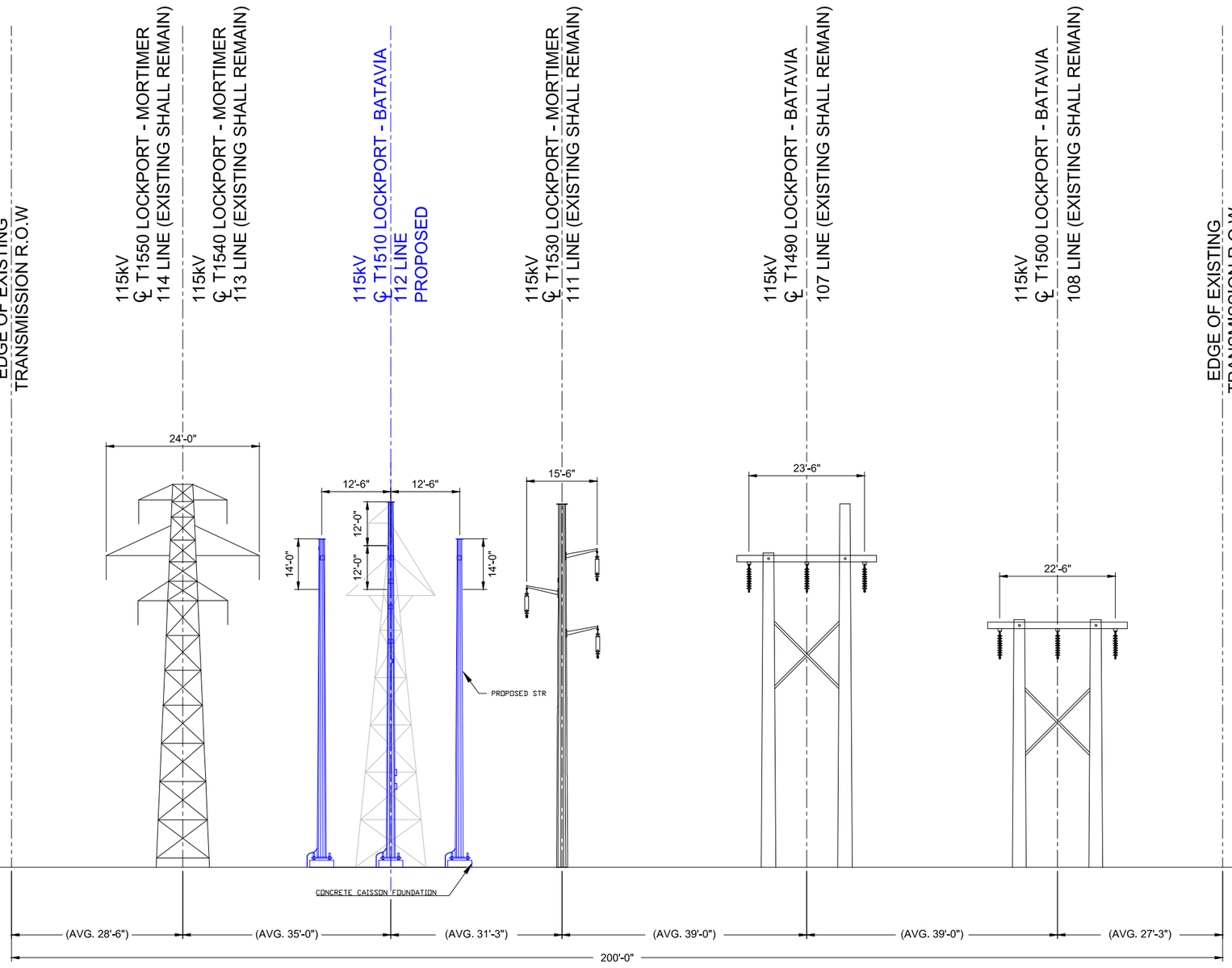
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT 3-POLE DEADEND	50'-60'-50'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. T1490 LOCKPORT-BATAVIA 107 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
4. T1500 LOCKPORT-BATAVIA 108 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
5. LINE 112 CROSSES UNDER THE 113/114 LINE IN THE SPAN OF STRUCTURE 117 TO 118.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 117
MILE 11.30
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.DL J.C B.A.I.R.
2			
3			
4			
5			
6			

VERSION 1

nationalgrid

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE	NTS	
SHEET	18 OF 35	
INDEX	TBD	

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 11.30
PERMITTING USE ONLY

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INCHES ON ORIGINAL

100786-C-X-18

100786-C-X-19

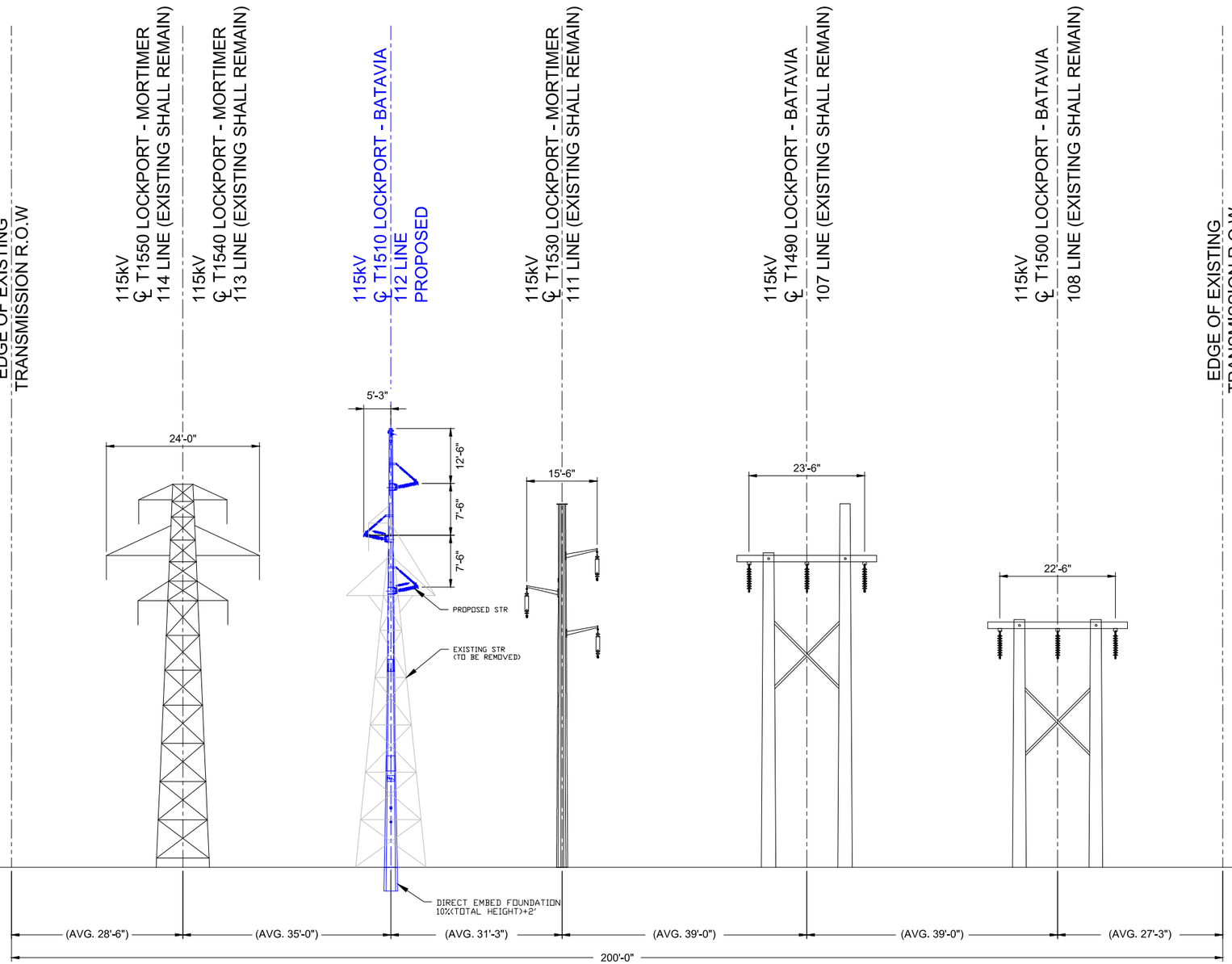
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT BLP TANGENT	75'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
107				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	795 KCMIL 36/1 ACSR "COOT"	(1) 3/8-7 EHS SW	115

LINE DATA TABLE				
114 & 113				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
DOUBLE CKT TOWER SUSPENSION	STEEL	397.5 KCMIL 30/7 ACSR "LARK"	(2) 3/8-7 EHS SW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115

LINE DATA TABLE				
111				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUSPENSION	STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 3/8-7 EHS SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. T1490 LOCKPORT-BATAVIA 107 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
4. T1500 LOCKPORT-BATAVIA 108 LINE CROSSES PERPENDICULARLY UNDER THE 112 LINE IN THE SPAN OF STRUCTURE 116 TO 116-1.
5. LINE 112 CROSSES UNDER THE 113/114 LINE IN THE SPAN OF STRUCTURE 117 TO 118.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 118 TO 119
MILE 11.34 TO 11.39
SEGMENT 2

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN	VERSION
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L.	1
2			J.C.	
3			B.A.	
4			T.R.	
5				
6				

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
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nationalgrid

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 11.34 TO 11.39
PERMITTING USE ONLY

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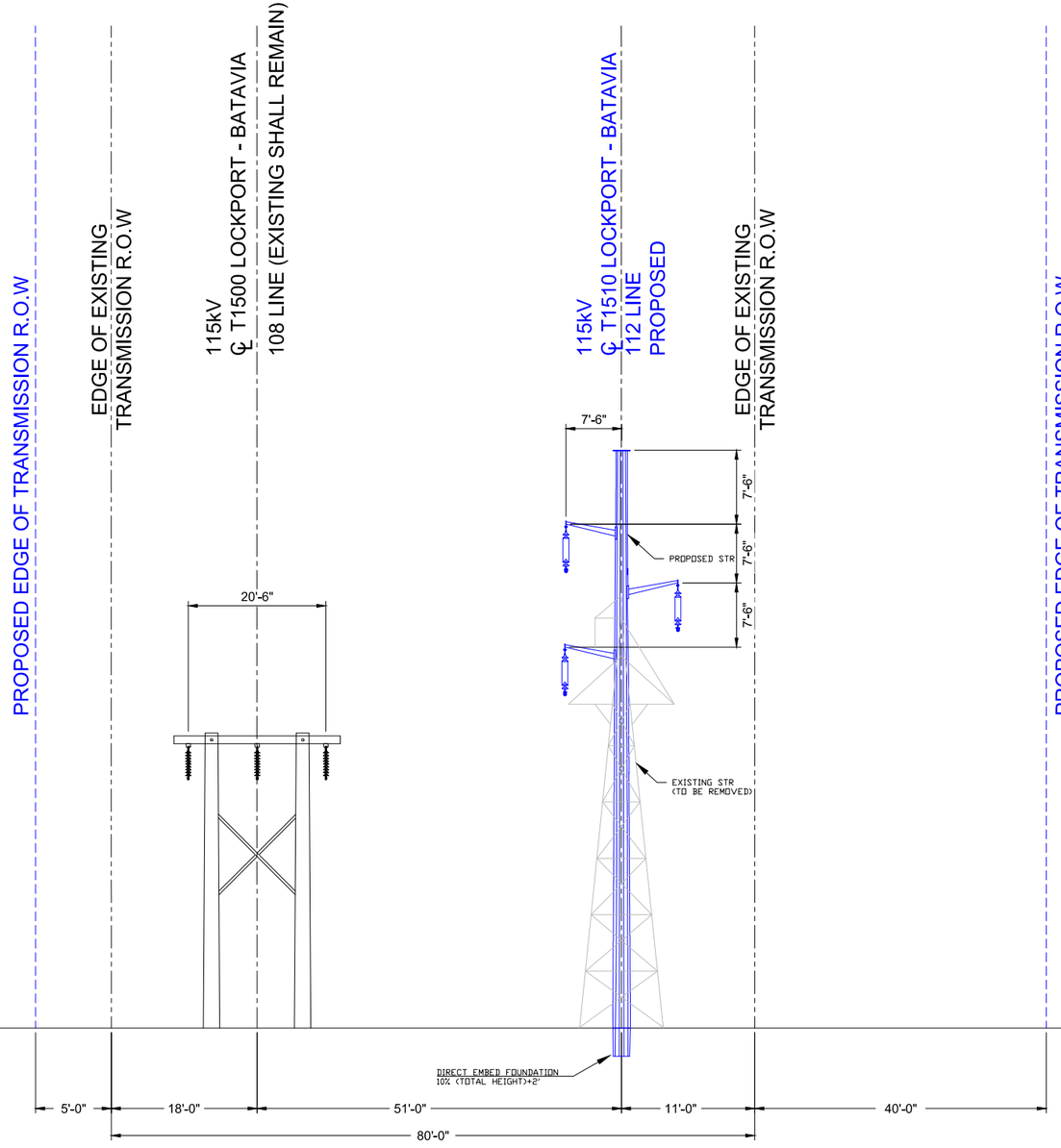
INCHES ON ORIGINAL

100786-C-X-19

100786-C-X-20

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75' - 95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115

LINE DATA TABLE				
108				
EXISTING STRUCTURE TYPE	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUSPENSION	WOOD	250 KCMIL 19 STRANDS COPPER	NO SW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. LINE 108 DIVERGES AWAY FROM R.O.W AND HEADS SOUTH NEAR STRUCTURE 124

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 120 TO 124
MILE 11.47 TO 11.82
SEGMENT 3

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VERSION	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.P.C.
2			
3			
4			
5			
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VERSION 1

nationalgrid

PREPARED BY	NDL	07/31/2020	
REVIEWED BY	FD	08/14/2020	
APPROVED BY	AG	08/28/2020	
SCALE		NTS	
SHEET	20	OF	35
INDEX		TBD	

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 11.47 TO 11.82
PERMITTING USE ONLY

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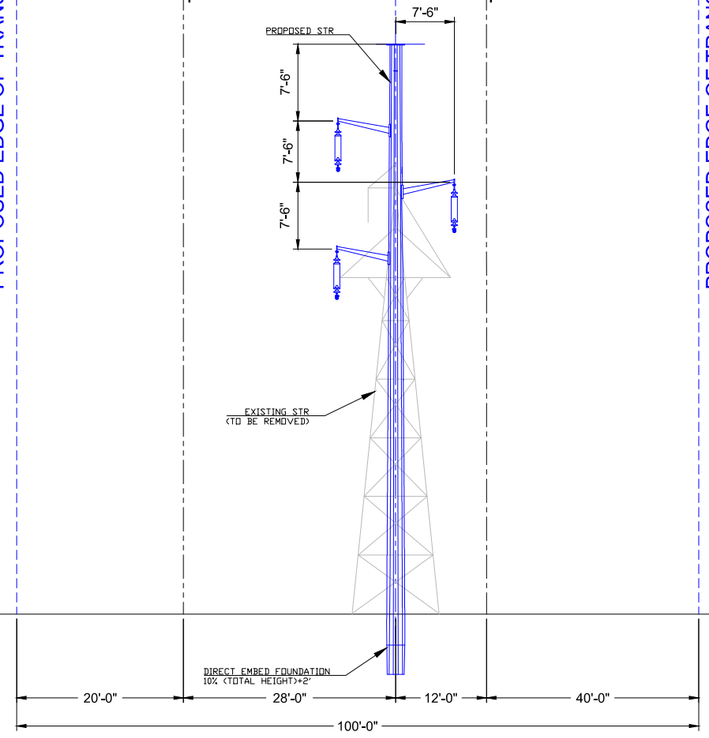
INCHES ON ORIGINAL

100786-C-X-21

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	85'-95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. LINE 108 DIVERGES AWAY FROM R.O.W AND HEADS SOUTH NEAR STRUCTURE 124

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 125 TO 140
MILE 11.93 TO 13.49
SEGMENT 3

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED	VERSION
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.R.	1
2				
3				
4				
5				
6				

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PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
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INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 11.93 TO 13.49
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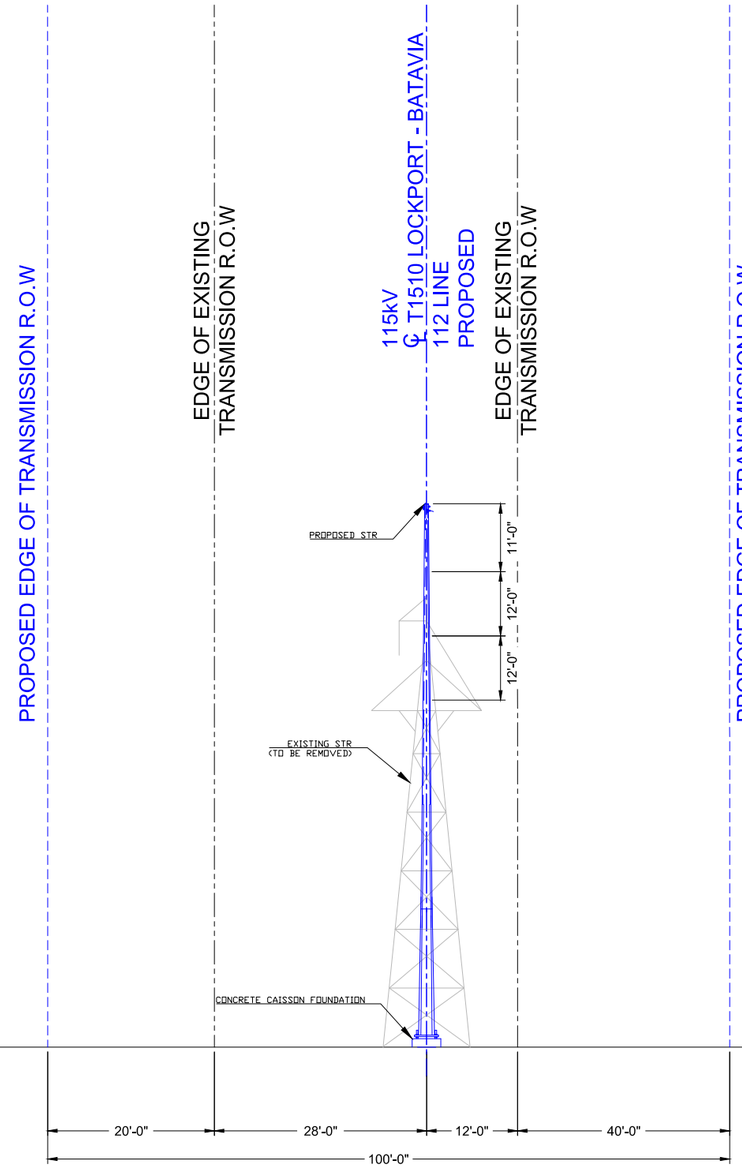
100786-C-X-21

100786-C-X-22

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	85'-90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 141
MILE 13.58
SEGMENT 3

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VSR	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B./A.I.R.
2			
3			
4			
5			
6			

VERSION 1

nationalgrid

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE	NTS	
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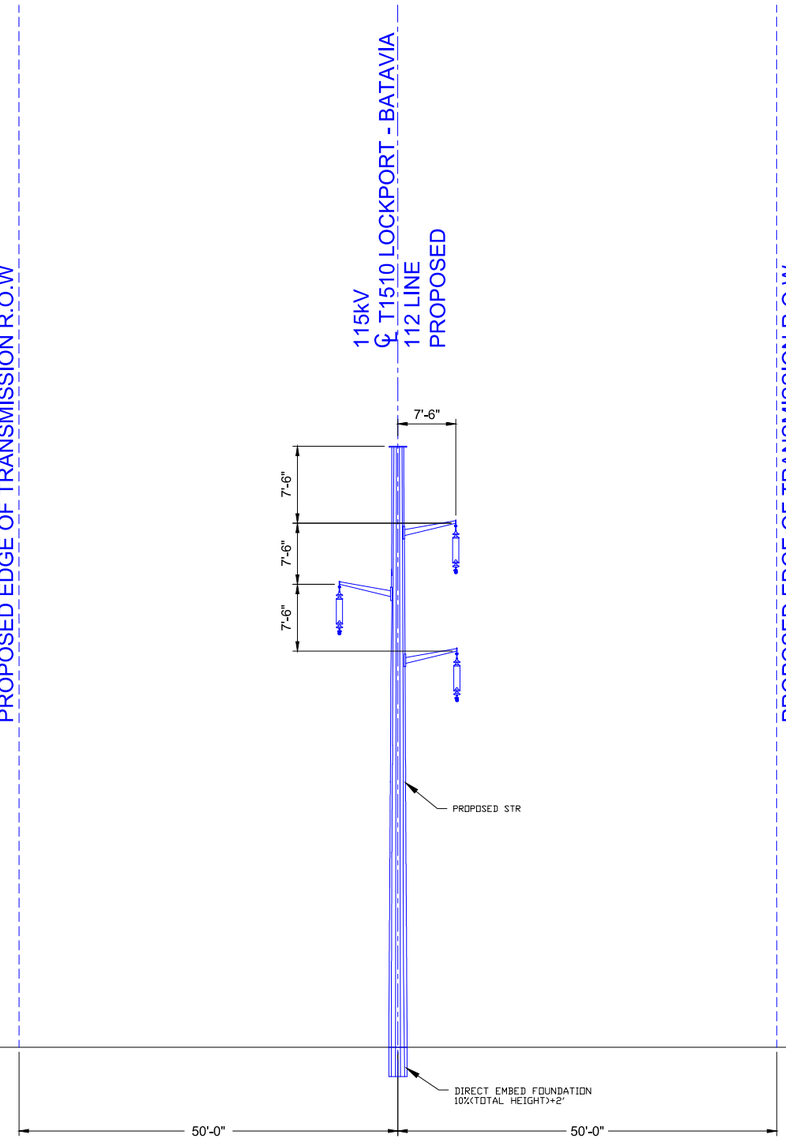
TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 13.58
PERMITTING USE ONLY

INCHES ON ORIGINAL

100786-C-X-22

100786-C-X-23

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75' - 90'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 142
MILE 13.68
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DESIGNED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. F.S.
2			
3			
4			
5			
6			

VERSION: 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE		NTS
SHEET	23	OF 35
INDEX		TBD

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 13.68
PERMITTING USE ONLY

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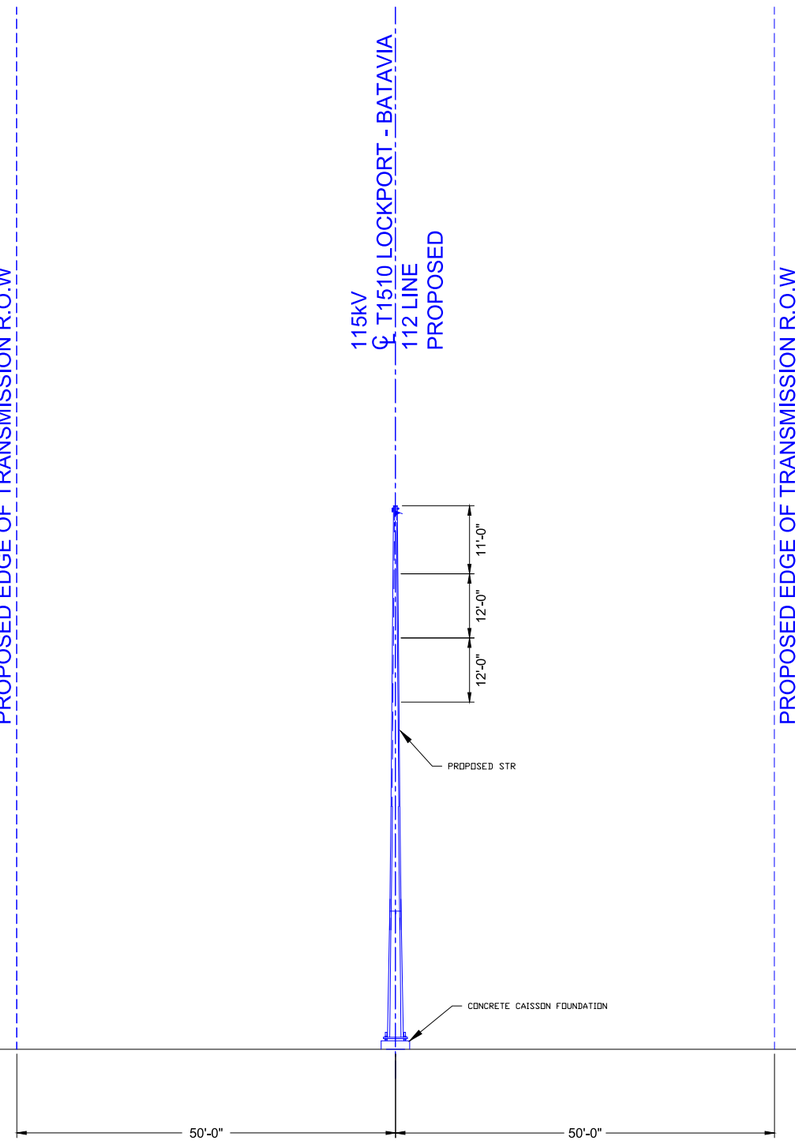
100786-C-X-24

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	75'-85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 143
MILE 13.78
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DESIGNED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. R.
2			
3			
4			
5			
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VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE	NTS	
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 13.78
PERMITTING USE ONLY

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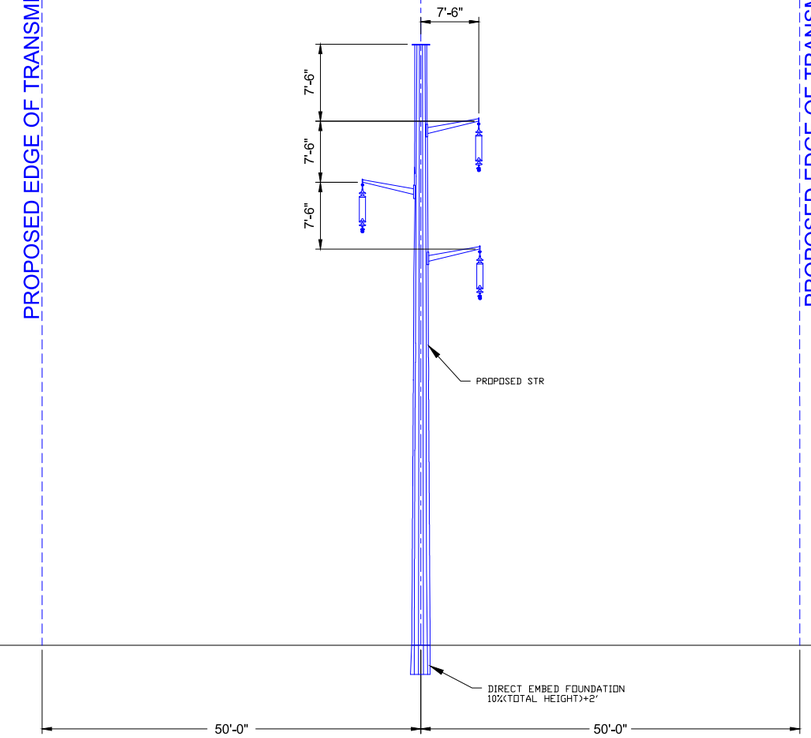
INCHES ON ORIGINAL

100786-C-X-25

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	85'-110'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 144 TO 152
MILE 13.90 TO 14.85
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VSR	DATE	VERSION DESCRIPTION	PRIMED	DEVELOPED	PURPOSE
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L.	J.C.	B.A.T.R.
2					
3					
4					
5					
6					

VERSION 1

nationalgrid

PREPARED BY:	NDL	07/31/2020
REVIEWED BY:	FD	08/14/2020
APPROVED BY:	AG	08/28/2020
SCALE		NTS
SHEET	25	OF 35
INDEX		TBD

TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 13.90 TO 14.85
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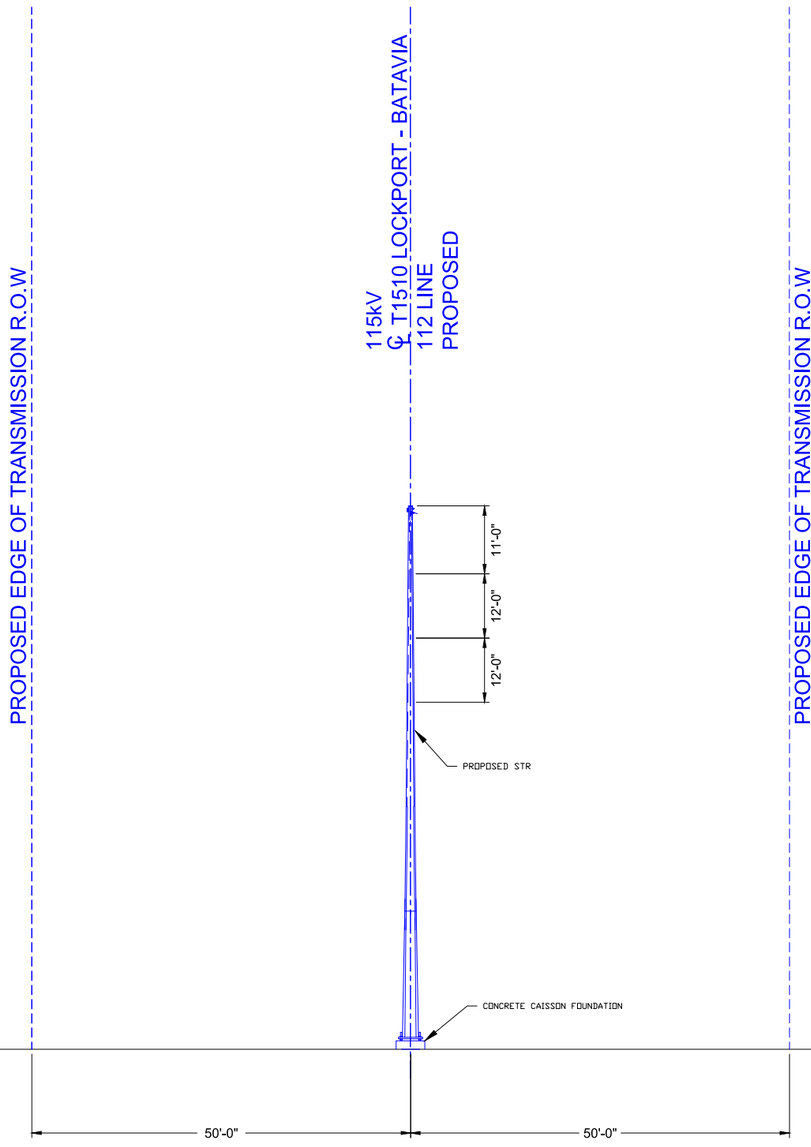
100786-C-X-25

100786-C-X-26

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	75'-85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 153
MILE 14.94
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DESIGNED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. R.
2			
3			
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5			
6			

VERSION: 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
SCALE	NTS	
SHEET	26	OF 35
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 14.94
PERMITTING USE ONLY

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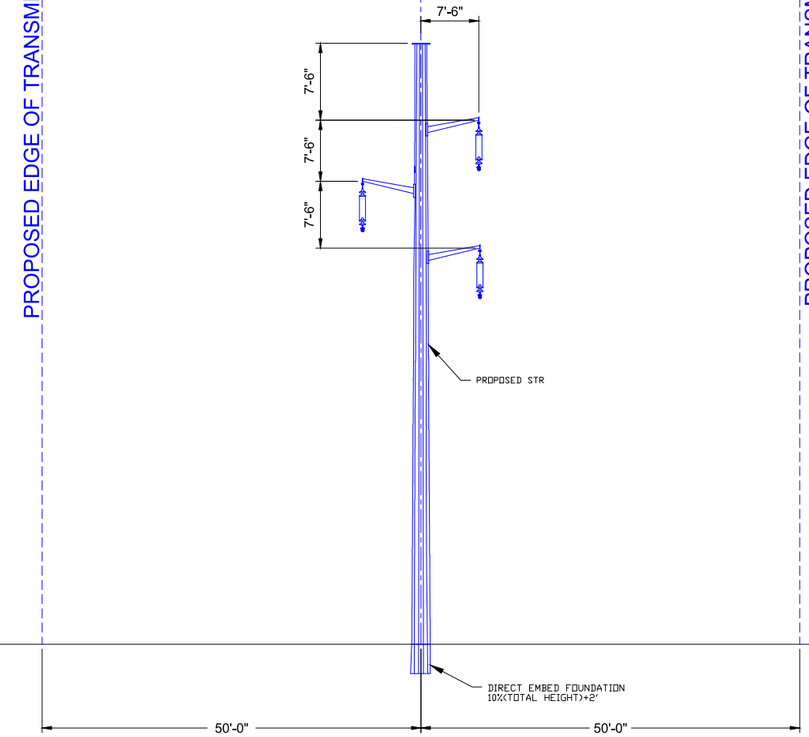
INCHES ON ORIGINAL

100786-C-X-27

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	80' - 95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 154 TO 155
MILE 15.07 TO 15.20
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DEVELOPED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A. I.R.
2			
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VERSION: 1

PREPARED BY	NDL	07/31/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 15.07 TO 15.20
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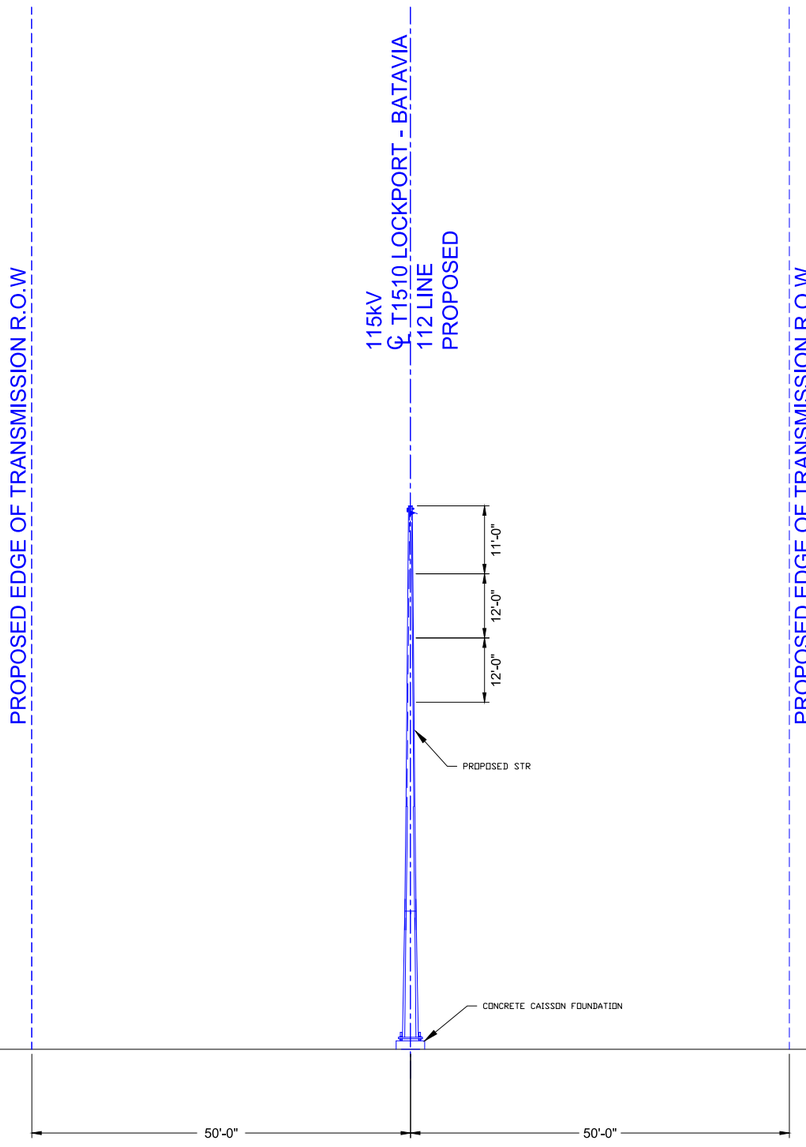
100786-C-X-28

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	75'-85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 156
MILE 15.32
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

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1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A.T. F.S.
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VERSION: 1

PREPARED BY	NDL	07/31/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 15.32
PERMITTING USE ONLY

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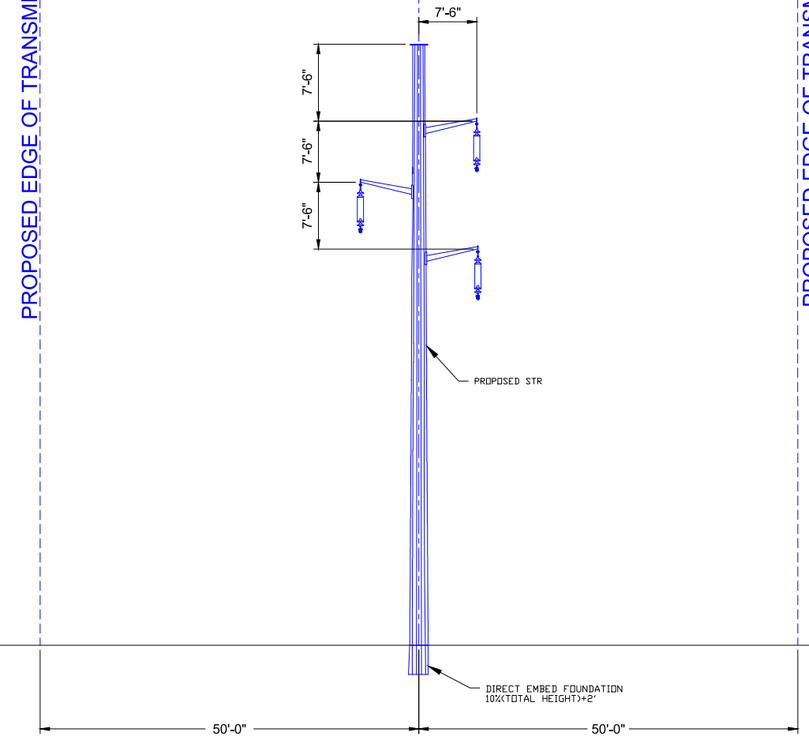
INCHES ON ORIGINAL

100786-C-X-29

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75-95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
2. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 157 TO 159
MILE 15.43 TO 15.67
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VSR	DATE	VERSION DESCRIPTION	PREPARED/DEVELOPED
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. J.C. B.A. I.R.
2			
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VERSION 1

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PREPARED BY	NDL	07/31/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 15.43 TO 15.67
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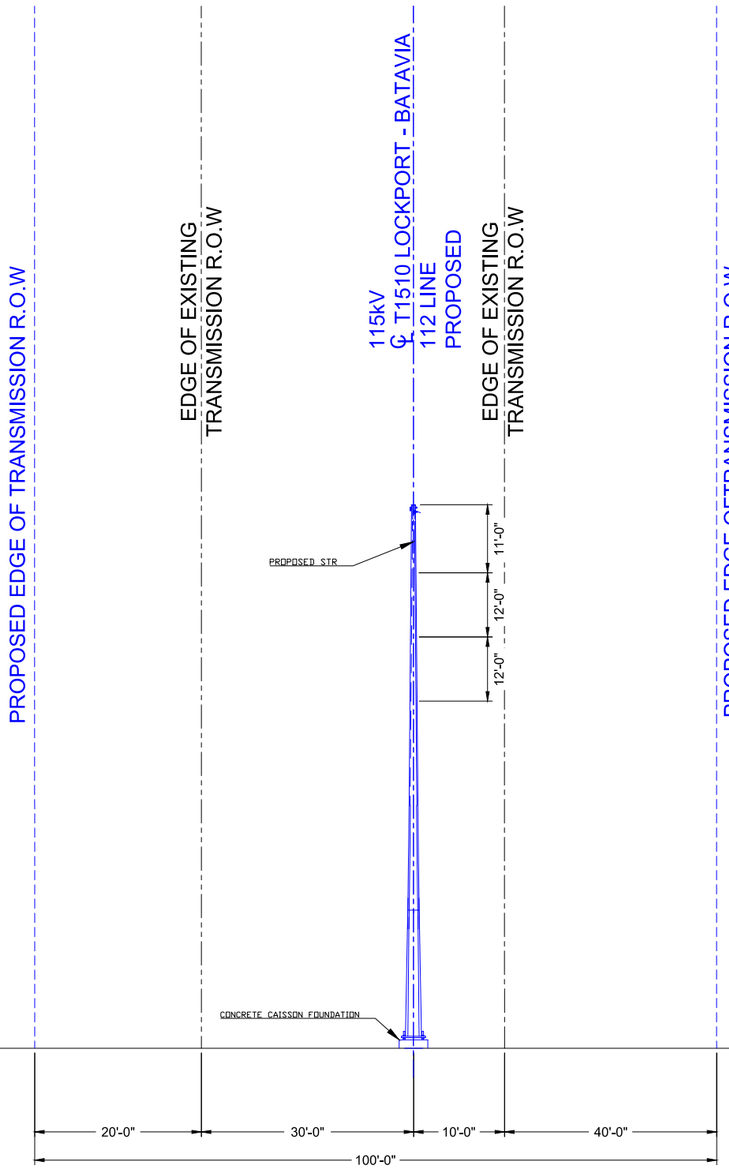
100786-C-X-30

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	75'-85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE.
3. THIS PORTION OF THE LINE IS PART OF THE TONAWANDA STATE WILDLIFE MANAGEMENT AREA (TSWMA) RE-ROUTE.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 159-1
MILE 15.78
SEGMENT 4

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN BY	CHECKED BY	APPROVED BY
1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L.	J.C.	B.A.T.
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VERSION 1

PREPARED BY	NDL	07/31/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 15.78
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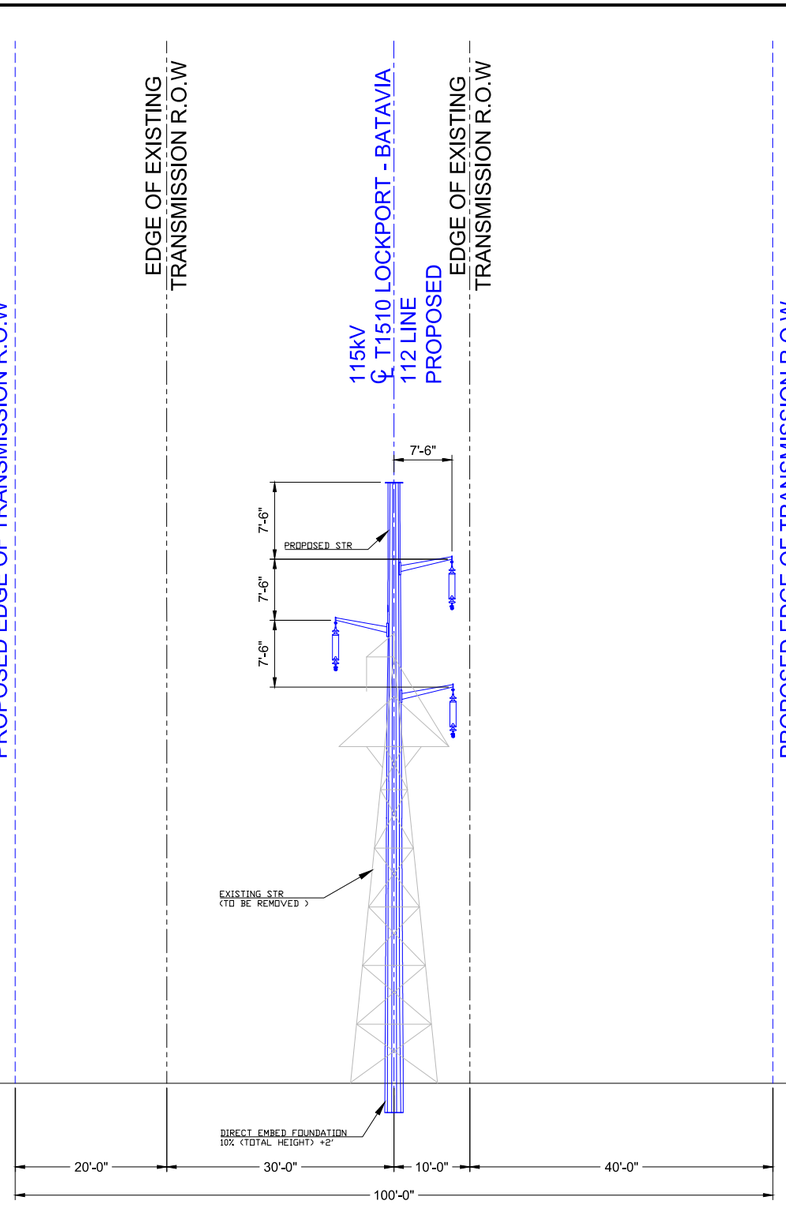
LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75' - 95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 160 TO 170
MILE 15.84 TO 16.87
SEGMENT 5

ISSUED FOR
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JUNE 7, 2021

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1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L./J.C.B/A.I.P.S.
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VERSION 1

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 15.84 TO 16.87
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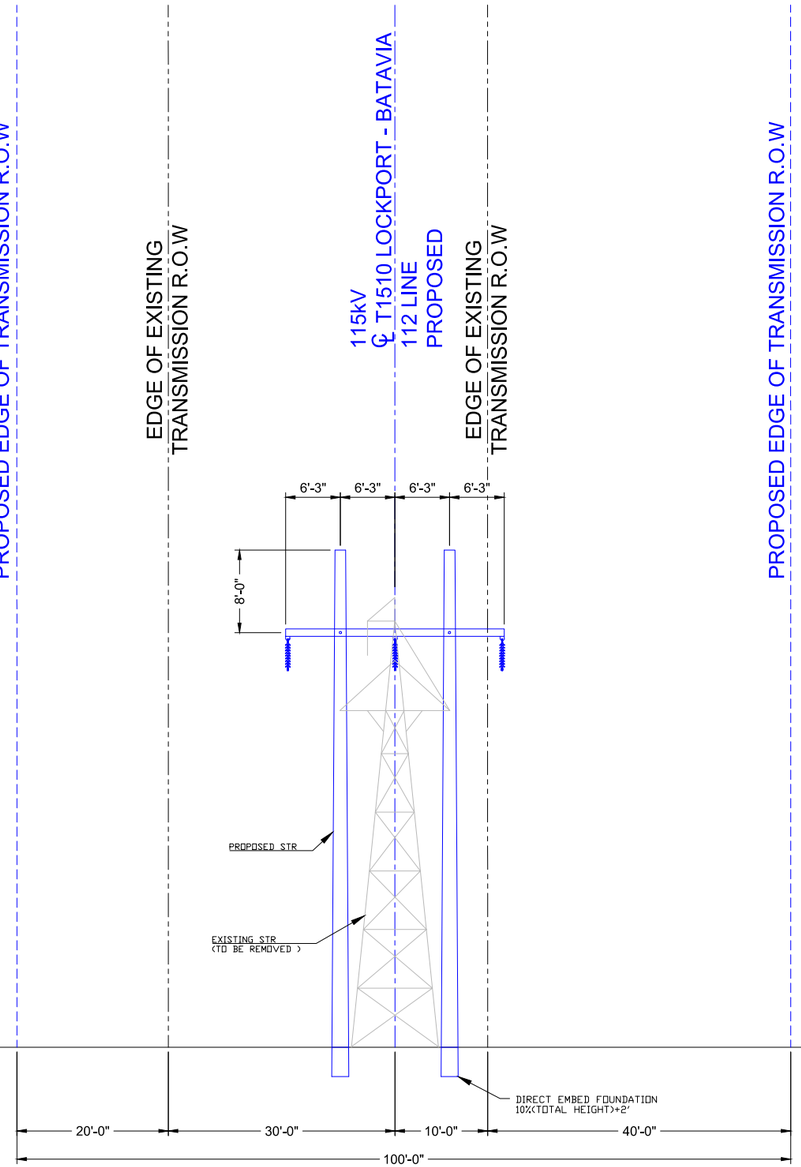
100786-C-X-32

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT H-FRAME SUS.	70'-80'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. THE SPAN FROM STRUCTURE 171-172 CROSSES PERPENDICULARLY UNDER TWO NYPA 345KV LINES.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 171 TO 172
MILE 16.97 TO 17.07
SEGMENT 5

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN/APPROVED
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VERSION 1

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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 16.97 TO 17.07
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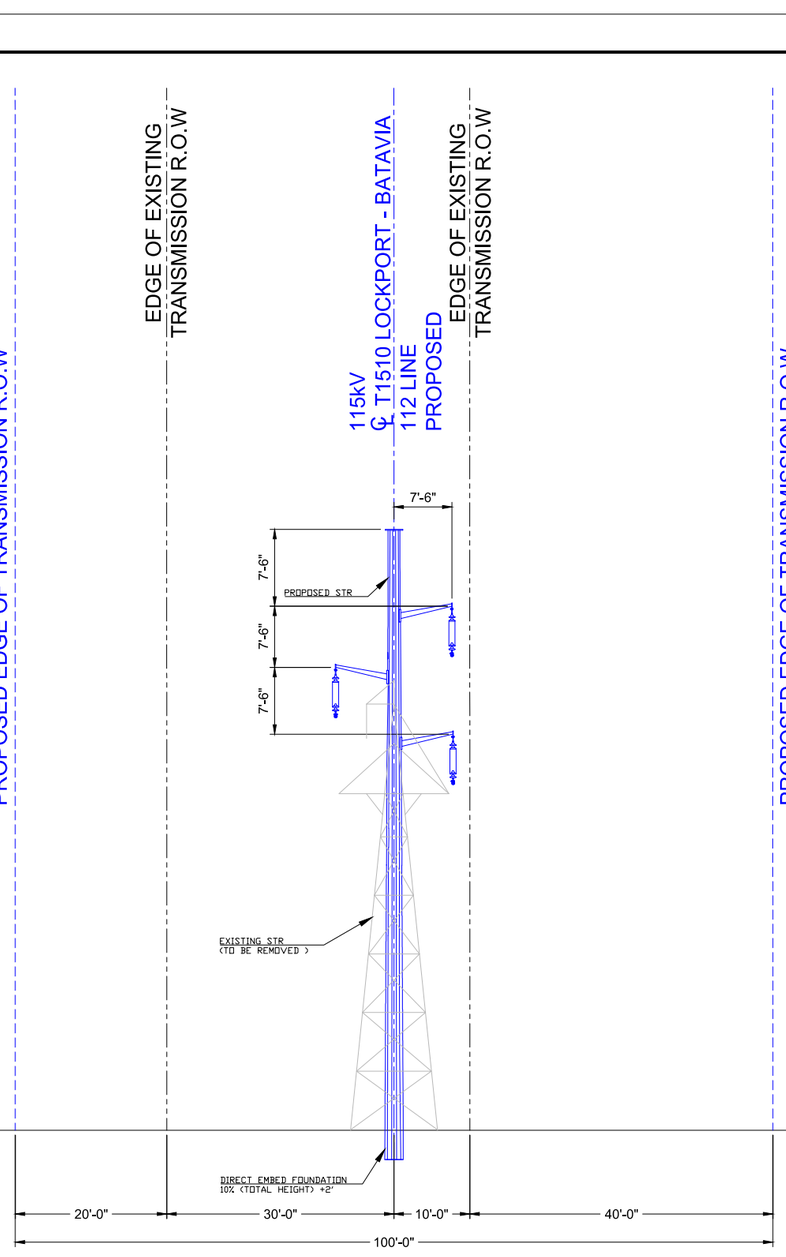
100786-C-X-33

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75' - 95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. THE EXISTING TRANSMISSION R.O.W EDGE INCREASES TO 70 FEET AT STRUCTURE 200.
4. SEGMENT 6 (STRUCTURES 173-1/2 TO 184-1/2) IS PART OF THE GENESEE COUNTY ECONOMIC DEVELOPMENT CORPORATION (GCEDC) STAMP PROJECT AND WILL NOT BE INCLUDED IN THIS ARTICLE VII APPLICATION.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
SEGMENT 5 (STRUCTURE 173)
MILE 17.15
SEGMENT 7 (STRUCTURE 185 TO 199)
MILE 19.19 TO 20.49

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

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1	3/10/2021	ISSUED FOR ARTICLE VII	N.D.L. / J.C. / B.A.T.R.S.
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VERSION: 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 17.15 & 19.19 TO 20.49
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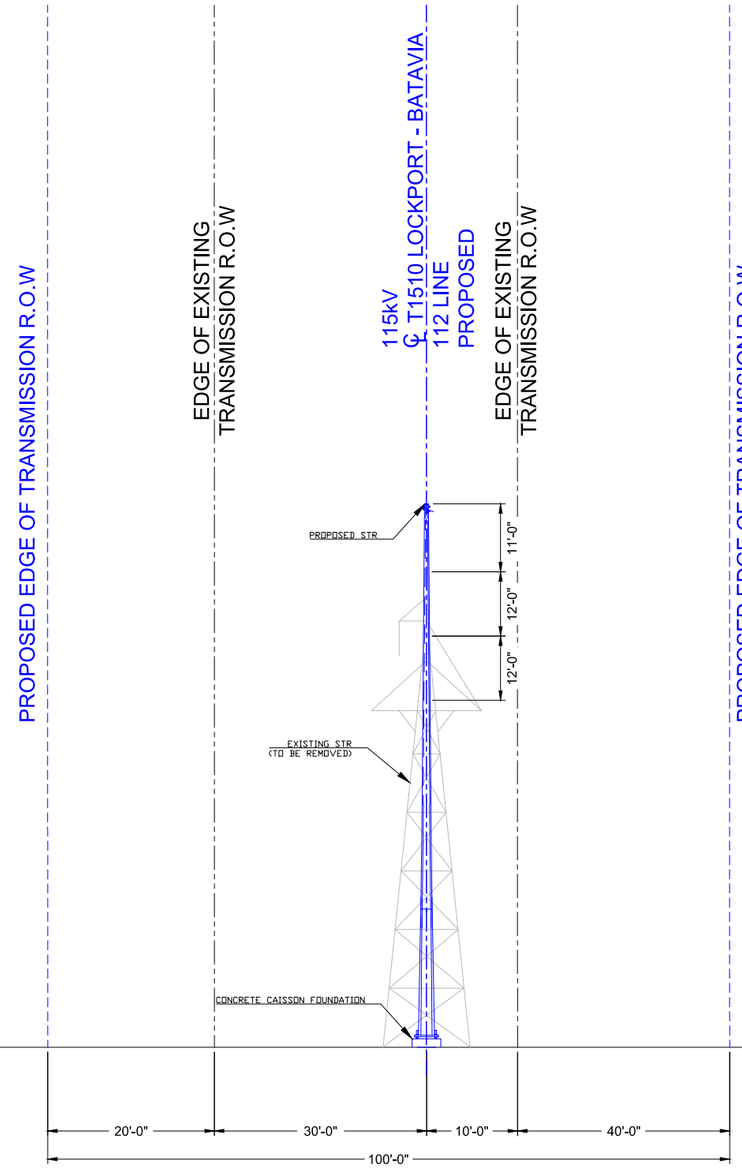
100786-C-X-34

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL ABOVE GROUND HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE DEADEND	75'-85'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.
3. THE EXISTING TRANSMISSION R.O.W EDGE INCREASE TO 70 FEET AT STRUCTURE 200.
4. SEGMENT 6 (STRUCTURES 173-1/2 TO 184-1/2) IS PART OF THE GENESEE COUNTY ECONOMIC DEVELOPMENT CORPORATION (GCEDC) STAMP PROJECT AND WILL NOT BE INCLUDED IN THIS ARTICLE VII APPLICATION.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURE 200
MILE 20.56
SEGMENT 7

ISSUED FOR
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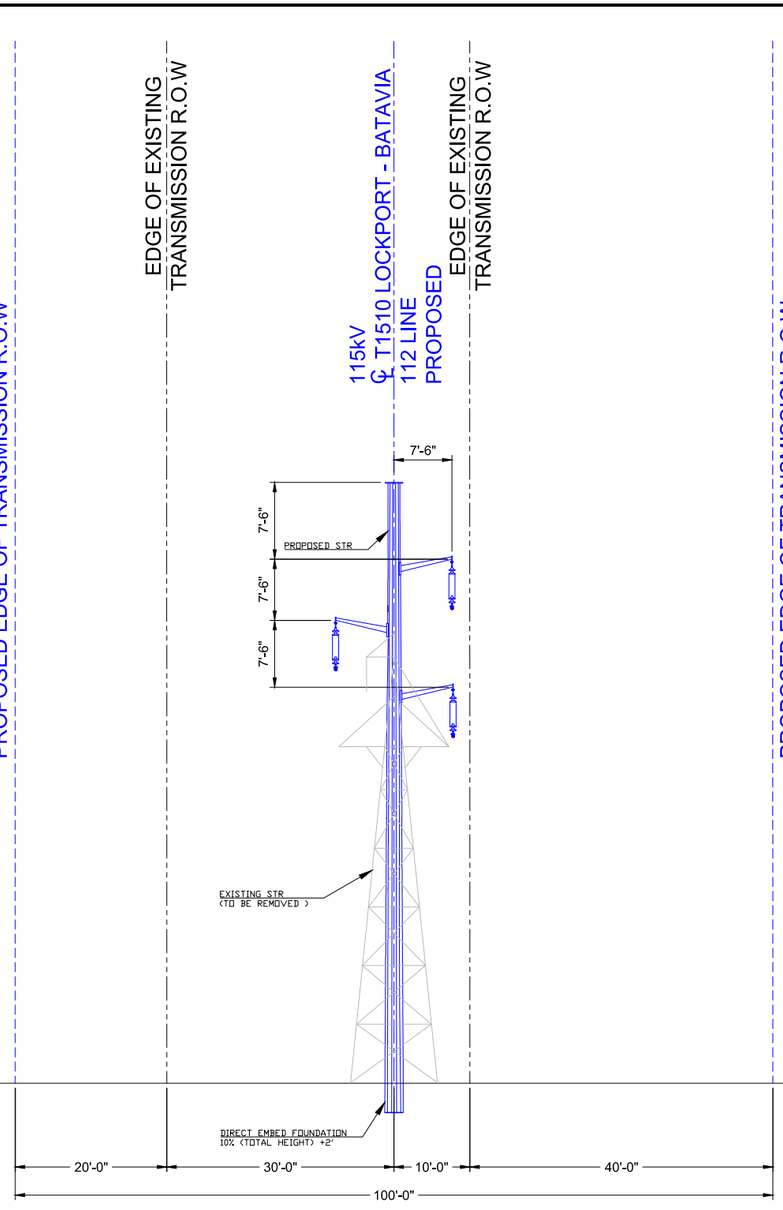
TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 20.56
PERMITTING USE ONLY

INCHES ON ORIGINAL

100786-C-X-35

LINE DATA TABLE					
112					
PROPOSED STRUCTURE TYPE	TOTAL HEIGHT RANGE (FT)	MATERIAL	CONDUCTOR TYPE	SW/OPGW TYPE	VOLTAGE (kV)
SINGLE CKT MONOPOLE W/ARMS SUS.	75' - 95'	GALVANIZED STEEL	795 KCMIL 26/7 ACSR "DRAKE"	(1) 1/2" EQUIVALENT OPGW	115



NOTE(S):

1. EXISTING R.O.W IS REPRESENTATIVE FOR THE SECTION AS A WHOLE.
2. PROPOSED STRUCTURE IS OUTLINED IN BLUE. EXISTING STRUCTURE IS TO BE COMPLETELY REMOVED.

NIAGARA MOHAWK POWER CORP.
PROPOSED CROSS-SECTION CONFIGURATION
FACING LOCKPORT SUBSTATION
STRUCTURES 201 TO 211
MILE 20.67 TO 21.68
SEGMENT 7

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED/DRAWN BY	CHECKED BY	APPROVED BY
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3					
4					
5					
6					

VERSION 1

PREPARED BY	NDL	07/31/2020
REVIEWED BY	FD	08/14/2020
APPROVED BY	AG	08/28/2020
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TYPICAL CROSS-SECTION DRAWING
T1510 LOCKPORT - BATAVIA 112 LINE REBUILD PROJECT
PROPOSED CROSS-SECTION
MILE 20.67 TO 21.68
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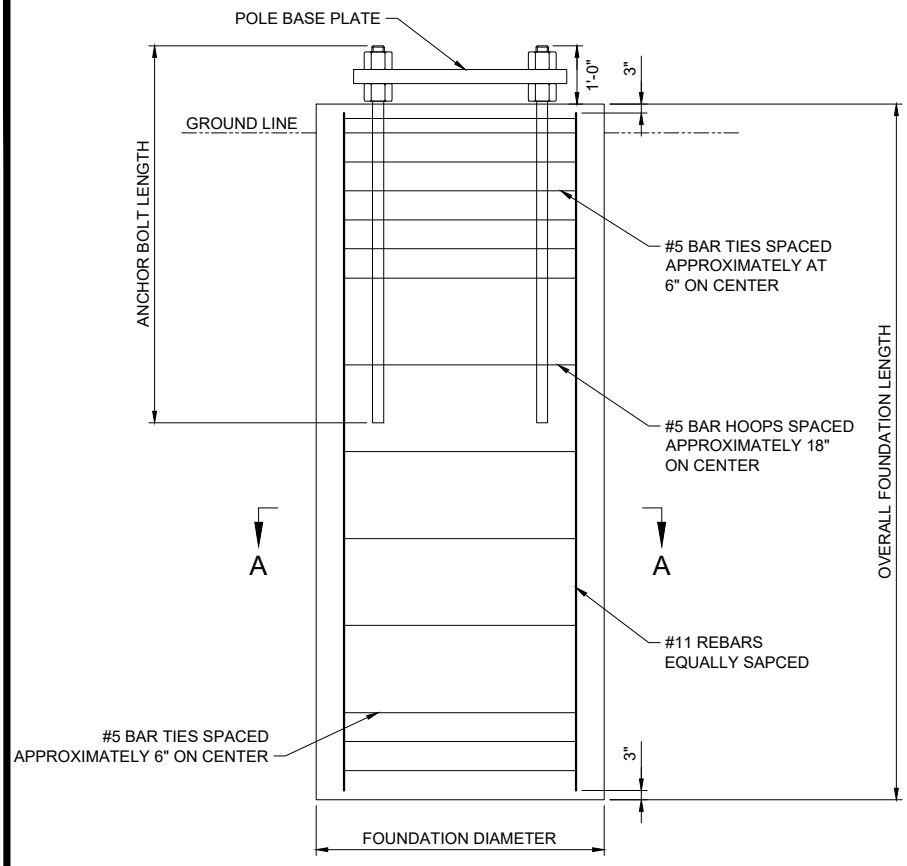
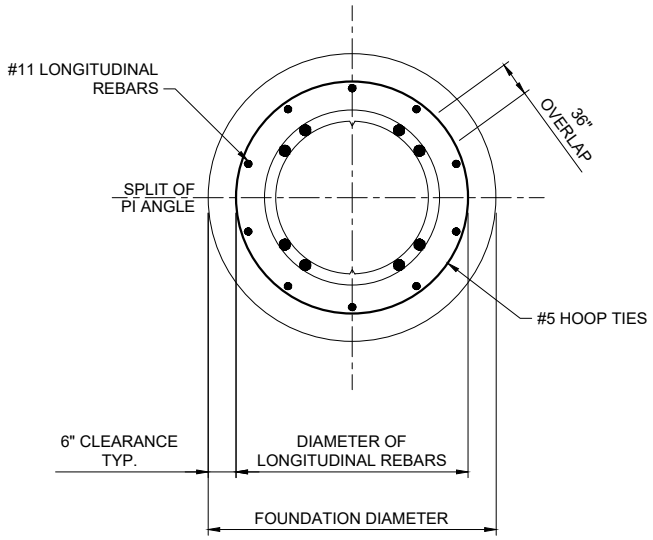
Figure 5-2 Concrete Caisson Foundation (1 Sheet)

VER	DATE	VERSION DESCRIPTION	PREPARED	REVIEWED	APPROVED	VERSION
1	09/25/2020	ISSUED FOR ARTICLE VII	NDL	JCB	AIR	1
2						
3						
4						



FRONT VIEW



SECTION A-A

NOTE(S):

1. 28 DAY STRENGTH CONCRETE 4500 PSI MIN.
2. REINFORCING BAR MUST MEET ASTM A615 REQUIREMENTS-GRADE 60.
3. THE PERMANENT INSTALLATION OF A SMOOTH OR CORRUGATED CAN BE USED TO HOLD THE HOLE OPEN DURING CONSTRUCTION WOULD BE DETERMINED IN FINAL DESIGN BETWEEN ENGINEERING AND CONTRACTOR.

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

TYPICAL REINFORCED CONCRETE CAISSON FOUNDATION FOR GALVANIZED STEEL POLE

PREPARED BY	NDL	09/18/2020
REVIEWED BY	FDM	09/25/2020
APPROVED BY		
SCALE	N.T.S.	
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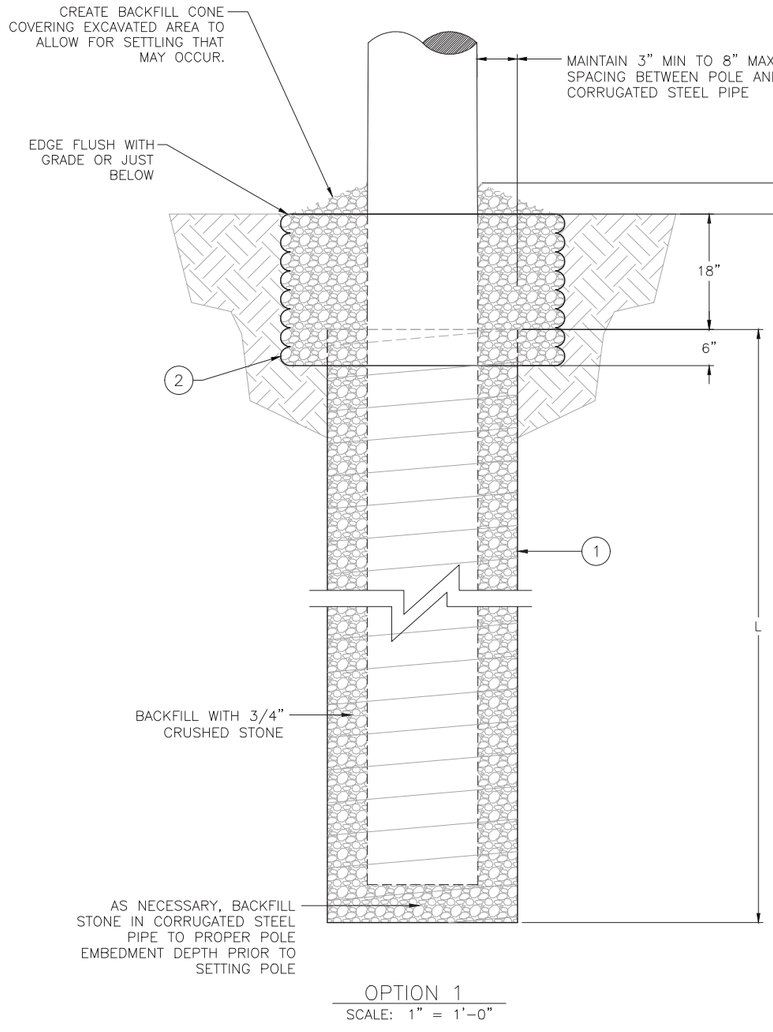
FND.RC.ST

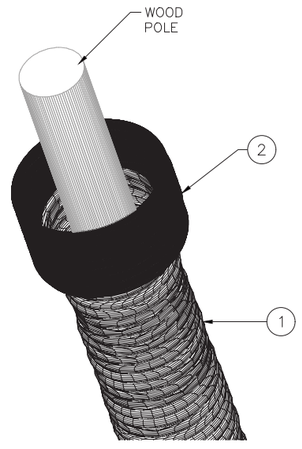
Figure 5-3 Details for Direct Bury Steel Poles (1 Sheet)

MATERIAL LIST					
	QUANTITY			PS ITEM ID	SAP ITEM ID
ITEM	OPT 1	OPT 2	DESCRIPTION		
1	1	1	12 GA. CORRUGATED STEEL PIPE	PO	PO
2	1	–	HDPE PIPE, 42" DIAMETER	PO	PO

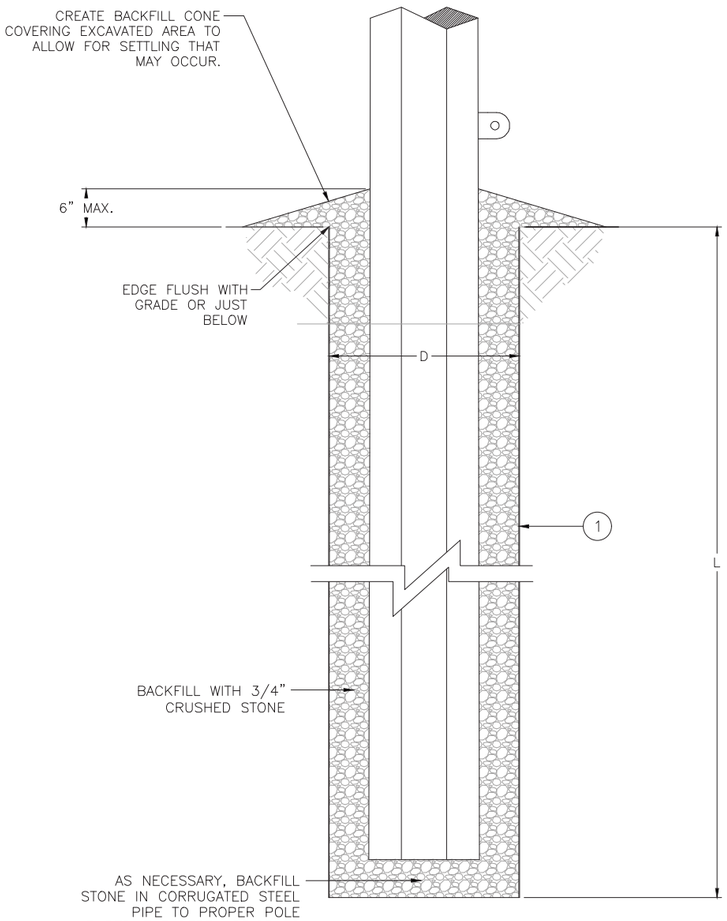
NOTES:
1. SEE DRAWING SP.06.01.301.101 FOR GROUNDING DETAILS.
2. MAINTAIN 8" TO 10" SPACING BETWEEN POLE AND CORRUGATED STEEL PIPE. CORRUGATED STEEL PIPE LENGTHS "L" ARE TO BE USED SUCH THAT THEY ARE BURIED AT LEAST AS DEEP AS POLES. BACKFILL INSIDE CORRUGATED STEEL PIPE AS NECESSARY TO ACHIEVE PROPER POLE EMBEDMENT DEPTH. FOR STEEL POLES, "L" AND "D" ARE SPECIFIED BY THE DESIGNER
3. TOP EDGE OF CORRUGATED STEEL PIPE SHALL BE BURIED A MINIMUM OF 18 INCHES BELOW GRADE FOR WOOD POLES. BACKFILL STONE SHALL BE MOUNDED ABOVE GROUNDLINE
4. WHERE CORRUGATED STEEL PIPES ARE INSTALLED IN ADVANCE OF POLE INSTALLATION, HOLE IS TO BE COVERED AND SECURED IN A METHOD ACCEPTABLE TO NATIONAL GRID
5. HDPE PIPE IS ORDERED IN 20' LENGTHS. PIPE SHALL BE FIELD CUT TO 2' INCREMENTS.
6. HDPE PIPE IS PROVIDED FOR CONSTRUCTABILITY TO HOLD HOLE OPEN WHEN CORRUGATED STEEL PIPE IS INSTALLED IN ADVANCE OF POLE INSTALLATION. IN CASES WHERE THE POLE WILL BE SET IMMEDIATELY, OR THE SOIL SHOWS SUFFICIENT COHESION TO RESIST COLLAPSE INTO THE HOLE, HDPE PIPE MAY BE OMITTED.



OPTION 1
SCALE: 1" = 1'-0"



ISOMETRIC VIEW
SHOWING ORIENTATION OF WOOD POLE, CORRUGATED STEEL PIPE AND HDPE PIPE



OPTION 2
SCALE: 1" = 1'-0"
STEEL POLE

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VERSION	DESCRIPTION	PREPARED/REVISED/APPROVED
4	02/07/13 VARIOUS MINOR CORRECTIONS	KAD SAM MSB
5	03/24/14 REMOVE GROUNDING DETAILS FROM WOOD POLE DETAILS, ADD USE HDPE PIPE	TEC KAD
6	01/13/15 REMOVED UNNEEDED DIMENSION FOR OPTION 2 DETAIL	TEC KAD
7	06/16/17 ADDED NOTE CONCERNING BACKFILL CONE PROBLEM LOG ENTRY 3333	TEC BMR
8	04/26/18 ADDED NOTE 6 CONCERNING THE USE OF HDPE PIPE, PPROBLEM LOG ENTRY 3617	TEC BMR
9	04/17/20 CHANGED MAXIMUM SPACING DIMENSION, RESOLUTION OF PROBLEM LOG ISSUE 3867	TEC BMR
10	05/21/20 CHANGED NOTE 2, MINIMUM SPACING REQUIREMENTS, RESOLUTION OF PROBLEM LOG ENTRY 3866	TEC BMR

VERSION 10

nationalgrid

PREPARED BY JLC 2/4/10
REVIEWED BY
APPROVED BY
SCALE NTS
SHEET 1 OF 1
INDEX

TRANSMISSION STANDARD

DETAILS FOR INSTALLATION OF WOOD AND STEEL POLES IN CORRUGATED PIPES

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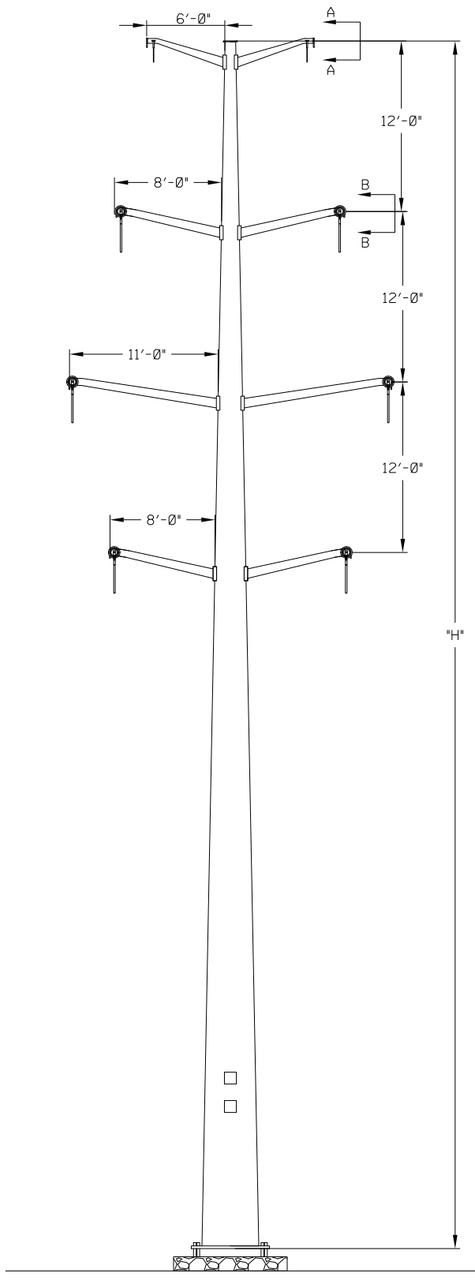
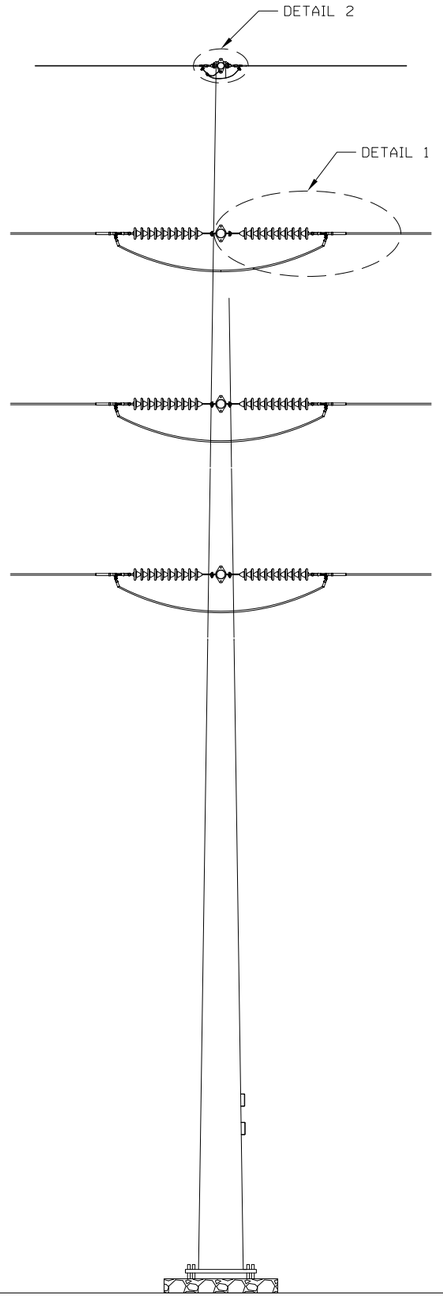
INCHES ON ORIGINAL

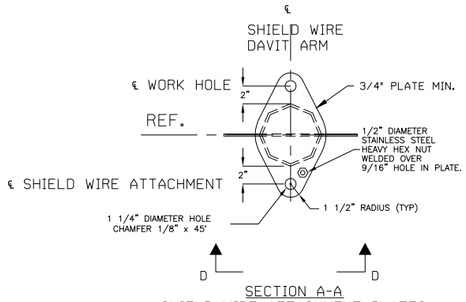
Figure 5-4 Line 112 Rebuild Proposed Transmission Structures / Material (9 Sheets)



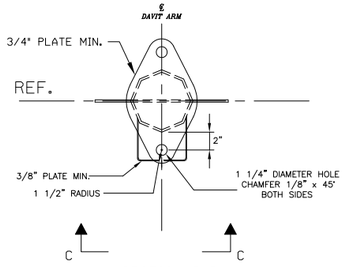
FRONT PROFILE
$\frac{3}{16}$" = 1'-Ø"



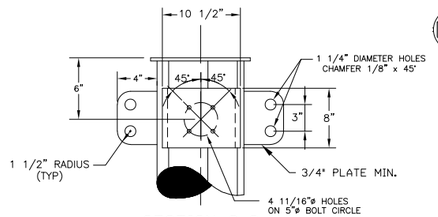
SIDE PROFILE
$\frac{3}{16}$" = 1'-Ø"



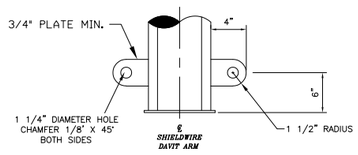
SECTION A-A
SHIELD WIRE ATTACHMENT PLATES
WITH GROUNDING NUTS
TYPICAL 2 LOCATIONS



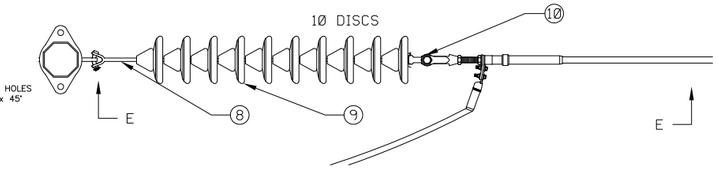
SECTION B-B
CONDUCTOR ATTACHMENT PLATES
TYPICAL 6 LOCATIONS



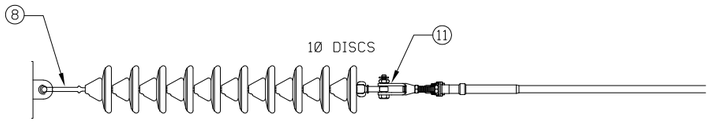
SECTION C-C



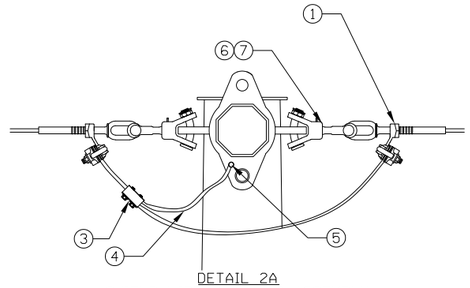
SECTION D-D



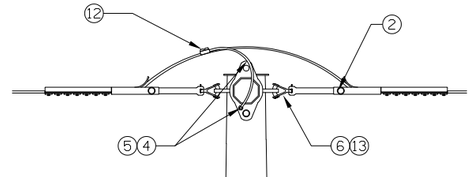
DETAIL 1
DEAD-END INSULATOR ASSEMBLY - SINGLE STRING
$\frac{3}{4}$" = 1'-Ø"



SECTION E-E
DEAD-END INSULATOR ASSEMBLY - SINGLE STRING
$\frac{3}{4}$" = 1'-Ø"



DETAIL 2A
SHIELD WIRE DEAD-END ASSEMBLY
1-1/2" = 1'-Ø"



DETAIL 2B
OPGW DEAD-END ASSEMBLY
3/4" = 1'-Ø"

MATERIAL LIST

TAG	QUAN	DESCRIPTION	PART CODE
1	2	CLAMP, COMPRESSION ASSY, 3/8" EHS STE	9306572
2	2	BOLTED DEAD-END ASSEMBLY, OPGW	PO
3	2	CLAMP, PARALLEL GROOVE	9320568
4	10	WIRE, 3/8" EHS STEEL, COMMON GRADE	9306353
5	2	GROUNDING LUG	9313780
6	4	CLEVIS BALL	9307471
7	2	SOCKET CLEVIS	9307403
8	12	HOT LINE SOCKET CLEVIS	9305991
9	120	INSULATOR, TOUGHENED GLASS, 30K	9389305
10	12	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006
11	12	SOCKET EYE	9313316
12	2	CLAMP, PARALLEL GROOVE, OPGW	PO
13	2	HOT LINE SOCKET EYE	9305994

GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H".
2. SHIELD WIRE DAVIT ARMS TO BE 5'-6" IN LENGTH FROM FACE OF POLE.
3. TOP AND BOTTOM PHASE DAVIT ARMS TO BE 7'-6" IN LENGTH FROM THE FACE OF POLE.
4. MIDDLE PHASE DAVIT ARMS TO BE 10'-6" IN LENGTH FROM FACE OF POLE.
5. INSTALL $\frac{3}{8}$" EHS STEEL SHIELD WIRE OVER #10 LINE.
6. INSTALL OPGW SHIELD WIRE OVER #3 LINE.
7. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
8. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING AND WARNING SIGNS REQUIRED ON ALL STRUCTURES.

VERSION	DESCRIPTION	PREPARED	REVIEWED	APPROVED
1	ISSUED FOR ARTICLE VII	JCB	AIR	AIR

VER.	DATE
1	02/12/21
2	
3	
4	
5	
6	
7	

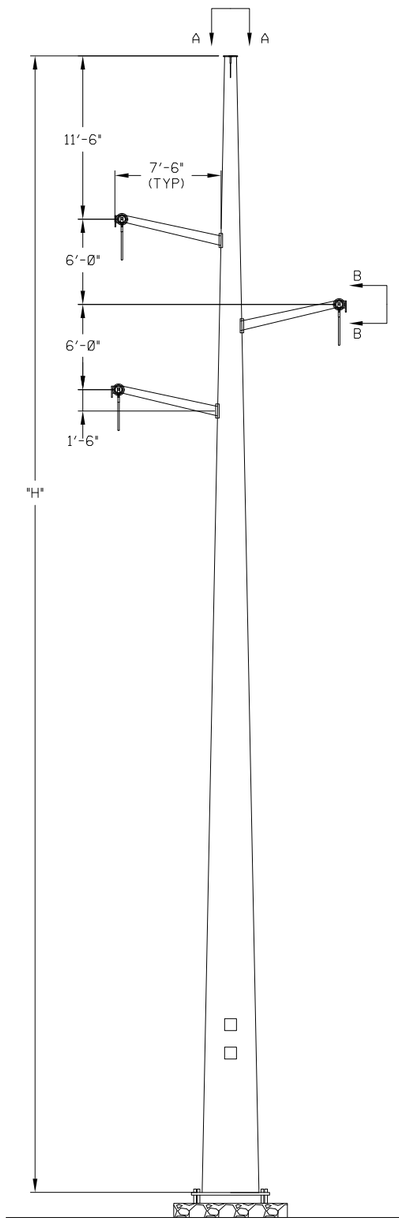
nationalgrid

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
DOUBLE CIRCUIT DAVIT ARM DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

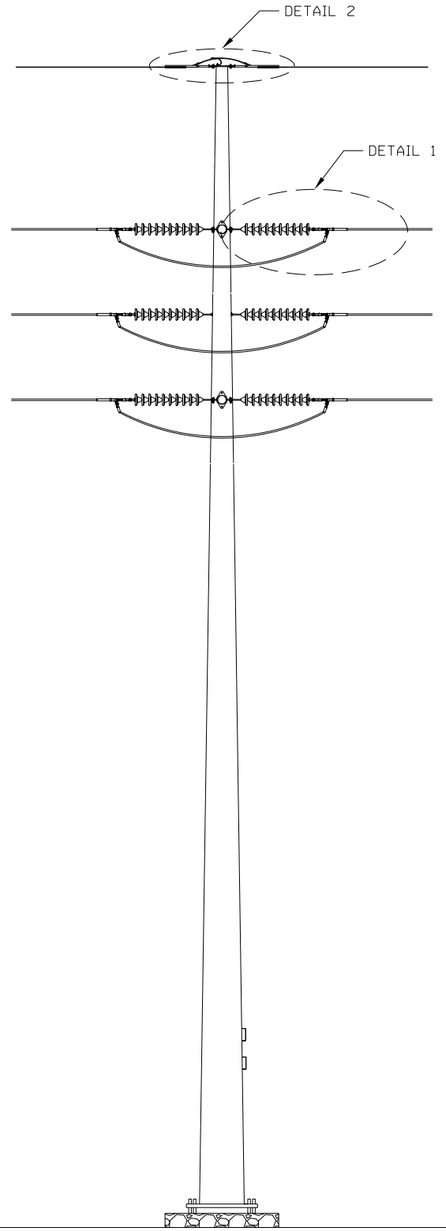
PREPARED BY	JCB	02/12/2021	
REVIEWED BY	AIR	02/12/2021	
APPROVED BY	AIR	02/12/2021	
SCALE	SEE NOTES		
SHEET	1 OF 2		
INDEX	–		

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

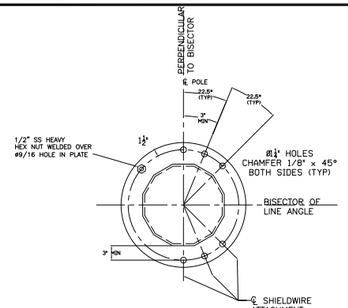
INCHES ON ORIGINAL



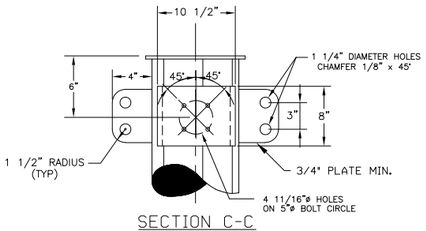
FRONT PROFILE
$\frac{3}{16}$" = 1'-0"



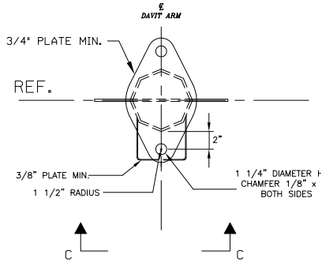
SIDE PROFILE
$\frac{3}{16}$" = 1'-0"



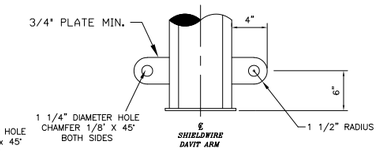
SECTION A-A
POLE CAP WITH SHIELD WIRE ATTACHMENT AND GROUNDING NUT



SECTION C-C



SECTION B-B
CONDUCTOR ATTACHMENT PLATES
TYPICAL 3 LOCATIONS

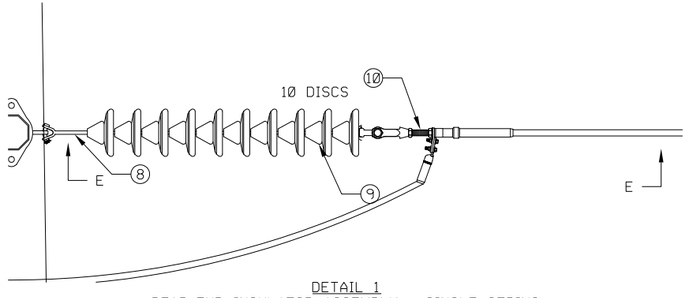


SECTION D-D

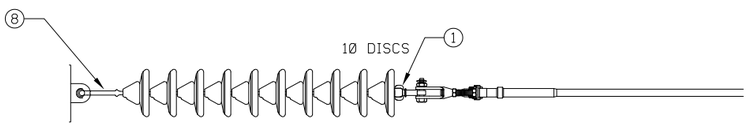
MATERIAL LIST

TAG	QUAN	DESCRIPTION	PART CODE
1	6	SOCKET EYE	9313316
2	2	BOLTED DEAD-END ASSEMBLY, OPGW	PO
3	2	CLAMP, PARALLEL GROOVE, OPGW	PO
4	10	WIRE, 3/8" EHS STEEL, COMMON GRADE	9306353
5	1	GROUNDING LUG	9313780
6	2	CLEVIS BALL	9307471
7	2	HOT LINE SOCKET EYE	9305994
8	6	HOT LINE SOCKET CLEVIS	9305991
9	60	INSULATOR, TOUGHENED GLASS, 30K	9389305
10	6	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006

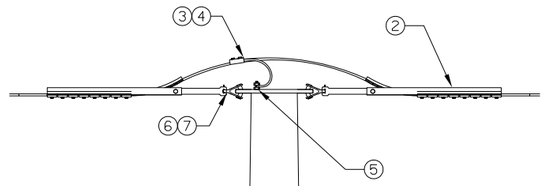
GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H".
2. ALL DAVIT ARMS TO BE 7'-6" IN LENGTH FROM THE FACE OF THE POLE.
3. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
4. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING AND WARNING SIGNS REQUIRED ON ALL STRUCTURES.
5. STEEL POLE MANUFACTURER DRAWINGS TO SUPERCEDE CONCEPT DRAWINGS AND WILL BE ISSUED FOR CONSTRUCTION AS SOON AS THEY ARE AVAILABLE.



DETAIL 1
DEAD-END INSULATOR ASSEMBLY - SINGLE STRING
$\frac{3}{4}$" = 1'-0"



SECTION E-E
DEAD-END INSULATOR ASSEMBLY - SINGLE STRING
$\frac{3}{4}$" = 1'-0"



DETAIL 2
SHIELD WIRE DEAD-END ASSEMBLY
3/4" = 1'-0"

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED BY
1	06/12/21	ISSUED FOR ARTICLE VII	JCB AIR AIR
2			
3			
4			
5			
6			
7			

nationalgrid

PREPARED BY	JCB 02/12/21
REVIEWED BY	AIR 02/12/21
APPROVED BY	AIR 02/12/21
SCALE	SEE NOTES
SHEET	1 OF 2
INDEX	–

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT DAVIT ARM DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

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INCHES ON ORIGINAL

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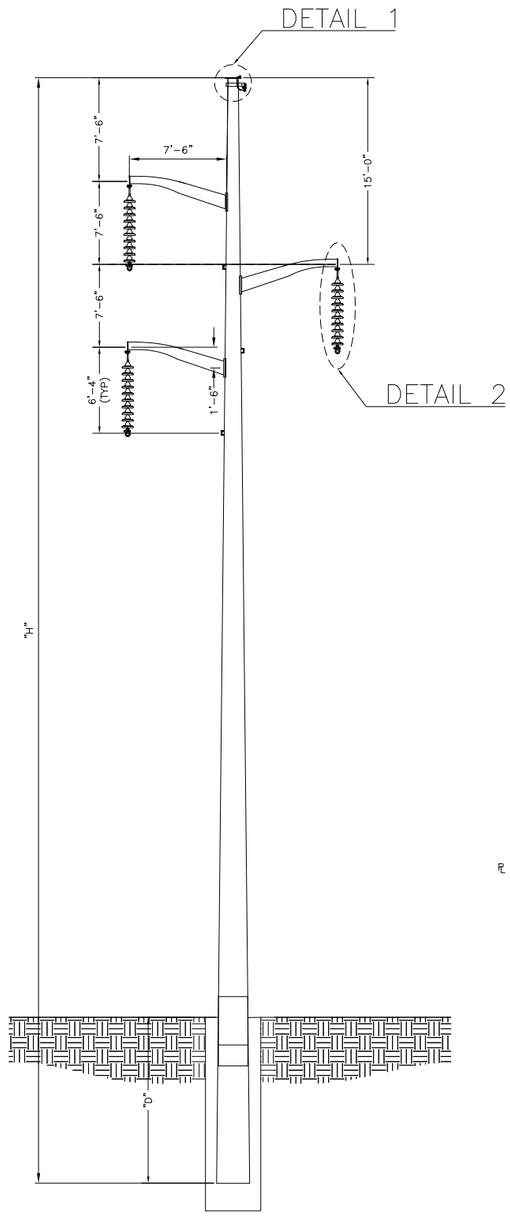
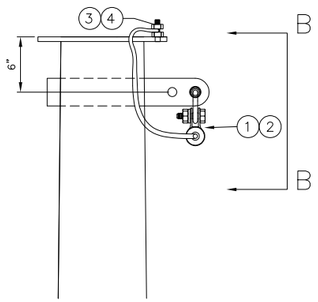
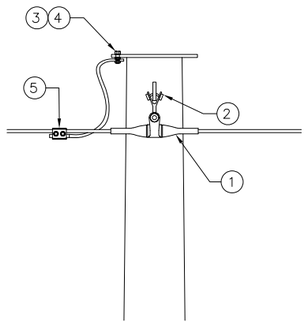


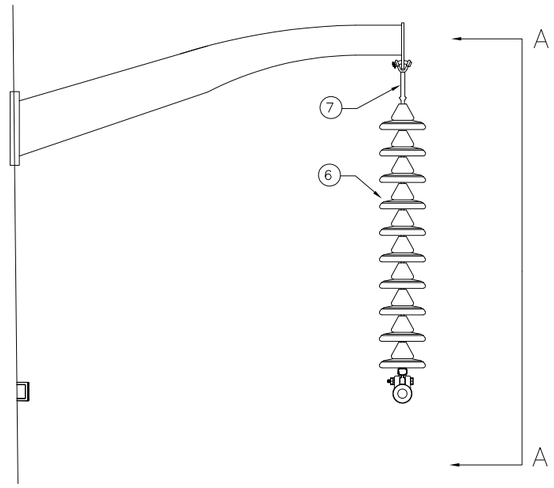
FRONT ELEVATION



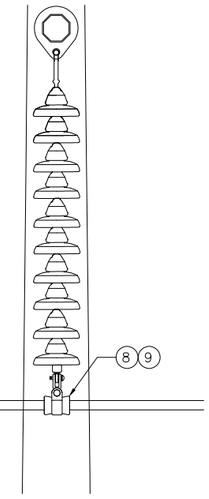
DETAIL 1



SECTION B–B



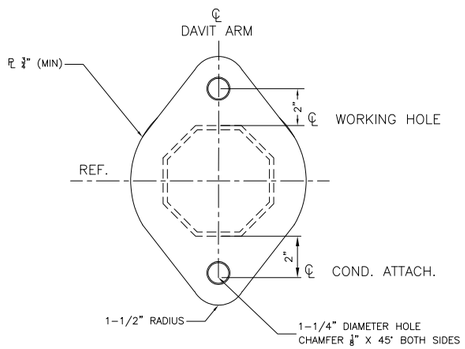
DETAIL 2



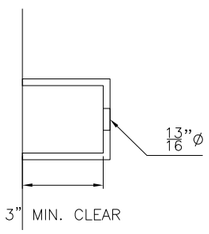
SECTION A–A

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	1	CLAMP, AGS UNIT FOR OPGW	PO
2	1	Y-CLEVIS 90°	9312422
3	10	WIRE, 3/8" COMMON GRADE STEEL	9306353
4	1	GROUNDING LUG	9313780
5	1	CLAMP, PARALLEL GROOVE	PO
6	30	INSULATOR, TOUGHENED GLASS, 30K	9389305
7	3	HOT LINE Y CLEVIS BALL	9312243
8	3	CLEVIS EYE 90° FOR 795 ACSR	9320427
9	3	CLAMP, CGS UNIT FOR 795 ACSR	9306305

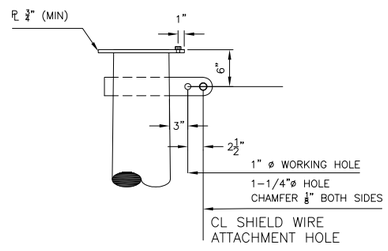
GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H", EMBEDMENT DEPTH "D", AND CULVERT DIAMETER.
2. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
3. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING AND WARNING SIGNS REQUIRED FOR ALL STRUCTURES. DRAWING REPRESENTS A TYPICAL STRUCTURE. FOR ARM ORIENTATION PLEASE REFER TO PROJECT CROSS-SECTIONS.
4. MODIFICATIONS TO STANDARD INSTALLATION MAY PROCEED BASED ON DIRECTION FROM PROJECT ENGINEER.



DETAIL 2A
CONDUCTOR ATTACHMENT PLATES
(TYPICAL 3 LOCATIONS)



DETAIL 3
STRUT INSULATOR ATTACHMENT BRACKET
(TYPICAL 3 LOCATIONS)



DETAIL 1A
SHIELD WIRE ATTACHMENT VANG
WITH GROUNDING NUT

VERSION	DESCRIPTION	DATE	PREPARED	REVIEWED	APPROVED
1	ISSUED FOR ARTICLE VII	02/12/21	JCB	AIR	AIR

	PREPARED BY	REVIEWED BY	APPROVED BY	SCALE	SHEET
JCB	JCB	AIR	AIR	SEE NOTES	1 OF 2
02/12/21	02/12/21	02/12/21	02/12/21		INDEX

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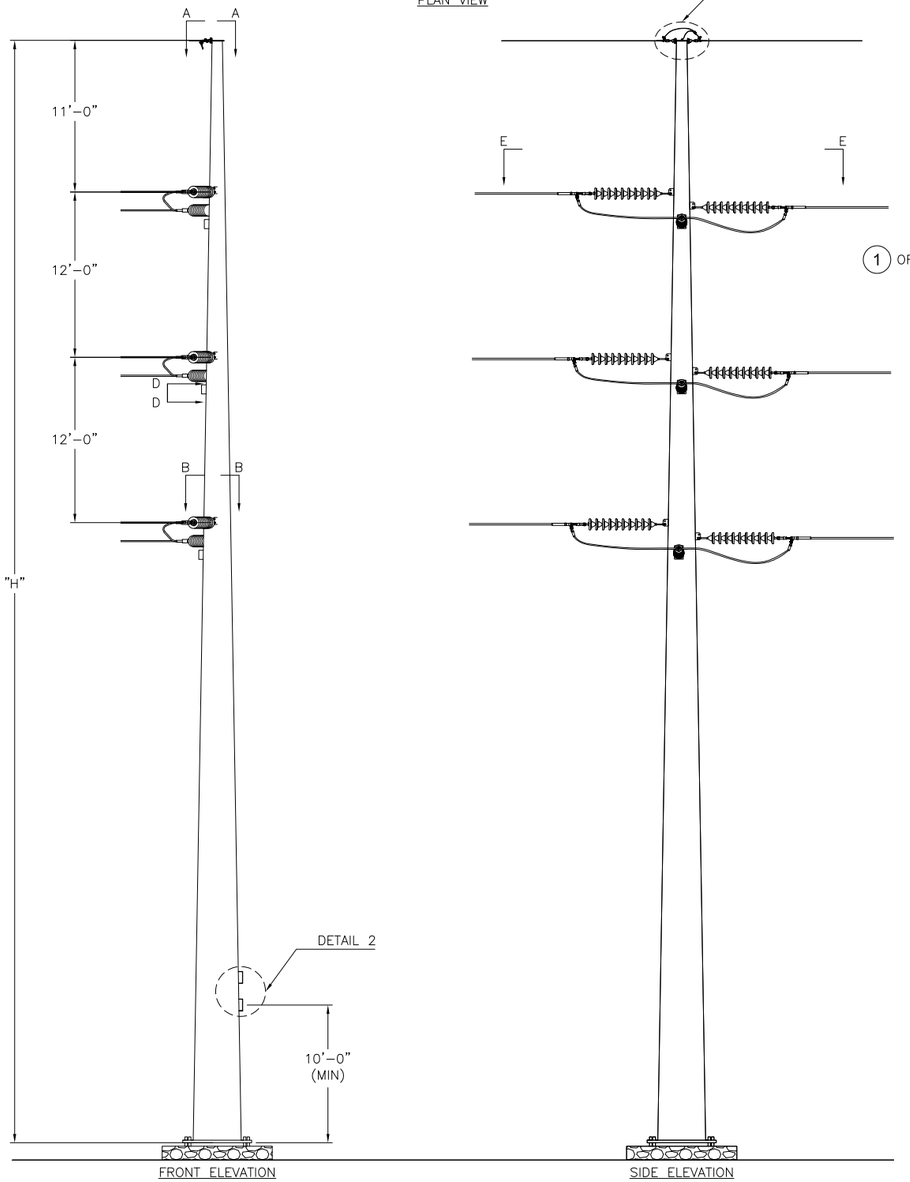
T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT DAVIT ARM SUSPENSION
STEEL POLE CONCEPT DRAWING
DIRECT EMBEDDED FOUNDATION

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

INCHES ON ORIGINAL

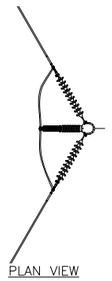
100786-C-S-03

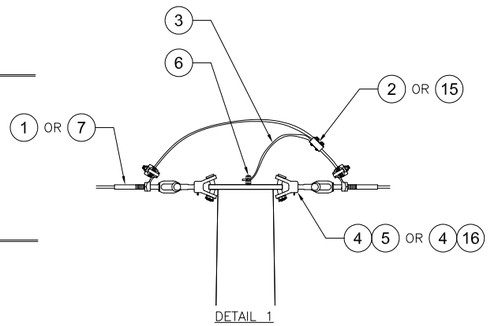


FRONT ELEVATION

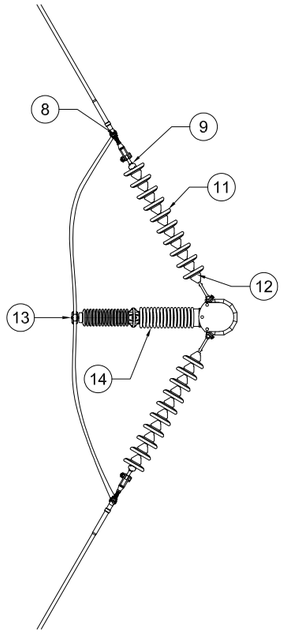
SIDE ELEVATION

PLAN VIEW

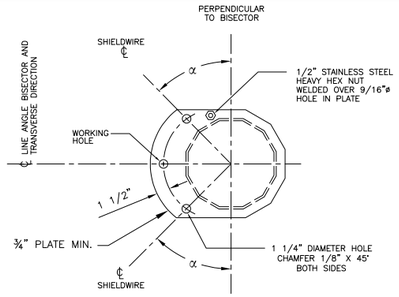




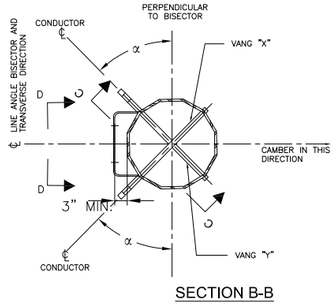
DETAIL 1
SHIELD WIRE HARDWARE DETAIL
1" = 1'-0"



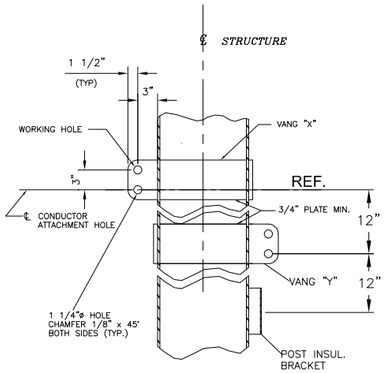
SECTION E-E
CONDUCTOR HARDWARE DETAIL
3/8" = 1'-0"



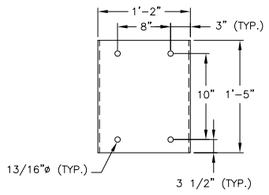
SECTION A-A
POLE CAP WITH SHIELD WIRE
ATTACHMENT AND GROUNDING NUT



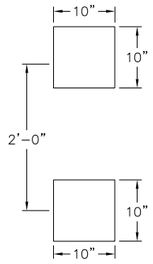
SECTION B-B
(TYP. 3 PLACES)



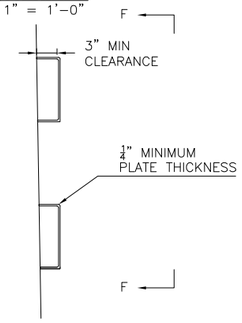
SECTION C-C



SECTION D-D
POST INSULATOR BRACKET
FOR JUMPER LOOP



SECTION F-F
1" = 1'-0"



DETAIL 2
OPGW SPLICE BRACKET
1" = 1'-0"

MATERIAL LIST

TAG	QUAN	DESCRIPTION	PART CODE
1	2	CLAMP, COMPRESSION ASSY, 3/8" EHS STE	9306572
2	1	CLAMP, PARALLEL GROOVE, OPGW	PO
3	15	WIRE, 3/8" STEEL, COMMON GRADE	9306353
4	4	CLEVIS BALL	9307471
5	2	SOCKET CLEVIS	9307403
6	1	GROUNDING LUG	9313780
7	2	CLAMP, BOLTED DEAD-END, OPGW	PO
8	6	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006
9	6	SOCKET EYE	9313316
10	12	HOT LINE Y-CLEVIS BALL	9312243
11	60	INSULATOR, TOUGHENED GLASS, 30K	9389305
12	6	HOT LINE SOCKET CLEVIS	9305991
13	3	CLAMP, TRUNION FOR 1.00" TO 1.50" ALUM	9312462
14	3	INSULATOR, PORCELAIN LINE POST, TWO PIE	9386601
15	1	CLAMP, PARALLEL GROOVE	9320568
16	2	HOT LINE SOCKET EYE	9305994

GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H".
2. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
3. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING AND WARNING SIGNS REQUIRED FOR ALL STRUCTURES.
4. STEEL POLE MANUFACTURER DRAWINGS TO SUPERCEDE CONCEPT DRAWINGS AS SOON AS PRACTICAL.
5. OPGW ASSEMBLY INCLUDES ITEMS 2, 4, 7 & 16
6. 3/8" EHS STEEL ASSEMBLY INCLUDES ITEMS 1, 4, 5, & 15

VERSION	DESCRIPTION	PREPARED	REVIEWED	APPROVED
1	ISSUED FOR ARTICLE VII	JCB	AIR	AIR

VER	DATE
1	02/12/21
2	
3	
4	
5	
6	
7	

nationalgrid

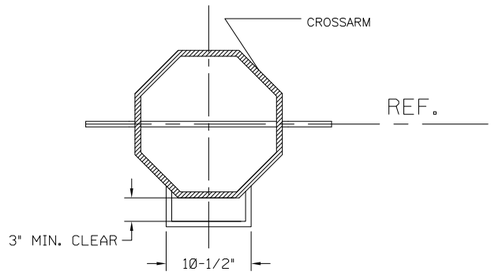
PREPARED BY	JCB	02/12/21
REVIEWED BY	AIR	02/12/21
APPROVED BY	AIR	02/12/21
SCALE		SEE NOTES
SHEET	1	OF 2
INDEX		1

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT MONOPOLE DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

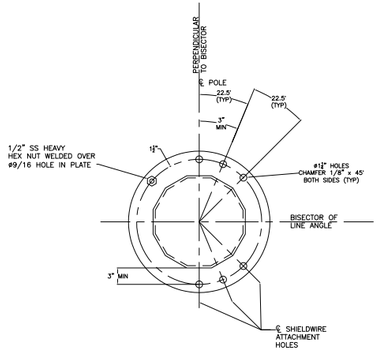
ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

INCHES ON ORIGINAL

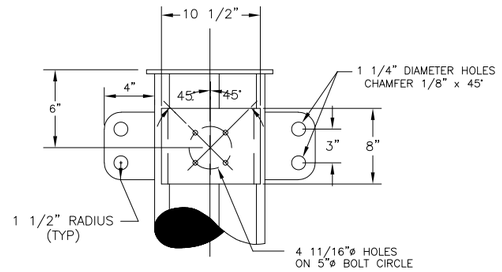
100786-C-S-05



SECTION B-B
CONDUCTOR ATTACHMENT PLATE
AND POST INSUSLATOR ATTACHMENT PLATE
(TYPICAL 3 LOCATIONS)



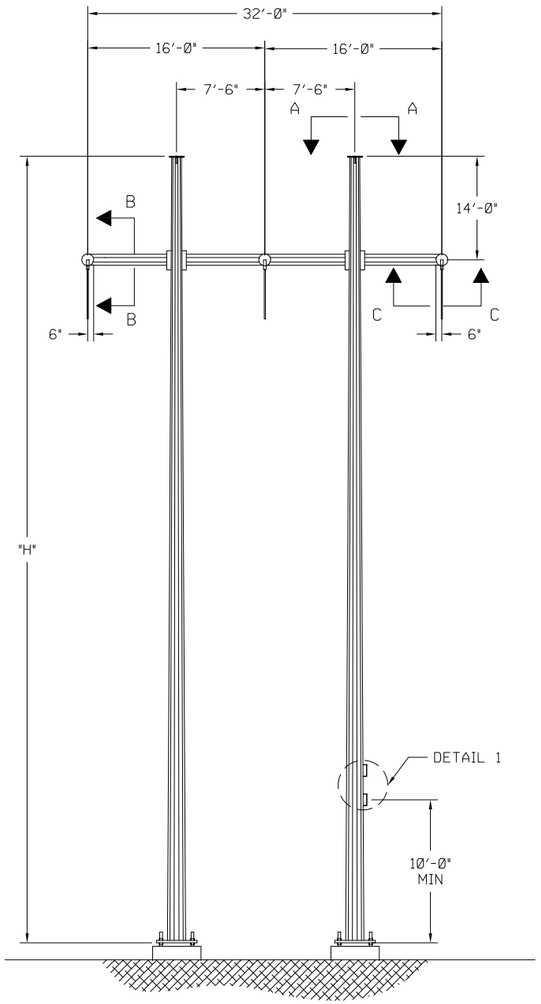
SECTION A-A
POLE CAP WITH SHIELD WIRE
ATTACHMENT AND GROUNDING NUT
(TYPICAL 2 LOCATIONS)



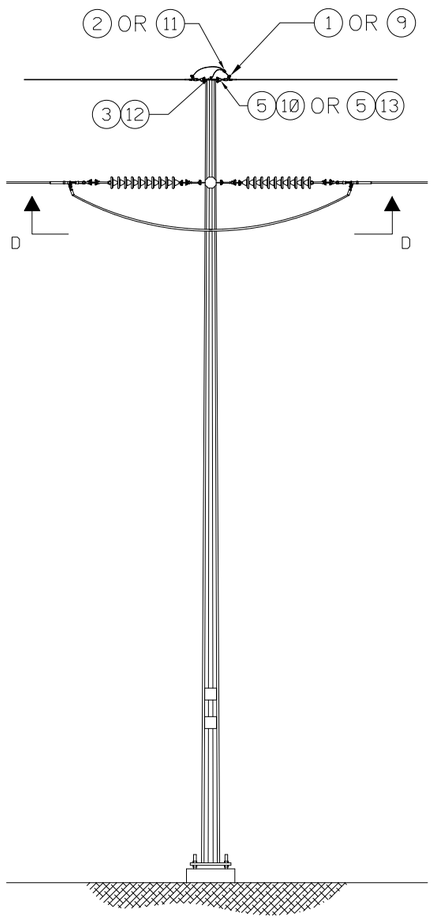
SECTION C-C
CONDUCTOR ATTACHMENT PLATE AND
POST INSULATOR ATTACHMENT PLATE
(TYPICAL 3 LOCATIONS)

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	2	CLAMP, COMPRESSION ASSY, 3/8" EHS STE	9306572
2	1	CLAMP, PARALLEL GROOVE	9320568
3	15	WIRE, 3/8" STEEL, COMMON GRADE	9306353
4	6	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006
5	16	CLEVIS BALL	9307471
6	6	HOT LINE SOCKET CLEVIS	9305991
7	60	INSULATOR, TOUGHENED GLASS, 30K	9389305
8	6	SOCKET EYE	9313316
9	2	BOLTED DEAD-END ASSEMBLY, OPGW	PO
10	2	SOCKET CLEVIS	9307403
11	1	CLAMP, PARALLEL GROOVE, OPGW	PO
12	1	GROUNDING LUG	9313780
13	2	HOT LINE SOCKET EYE	9305994

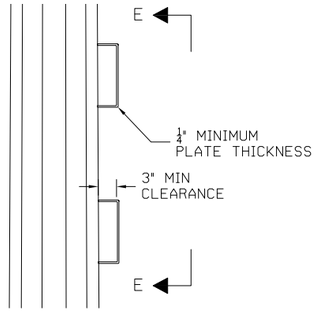
GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H"
2. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
3. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING, WARNING SIGNS, AND MARKINGS RQUIRED FOR ALL STRUCTURES.
4. INSTALL OPGW ON RIGHT POLE OF STRUCTURE.
   4.1. ITEMS 5, 11, 13, & 15
5. INSTALL 3/8" EHS ON LEFT POLE OF STRUCTURE.
   5.1. ITEMS 1, 2, 5, & 12.
6. MODIFICATIONS TO STANDARD INSTALLATION MAY PROCEED BASED ON DIRECTION FROM PROJECT ENGINEER.



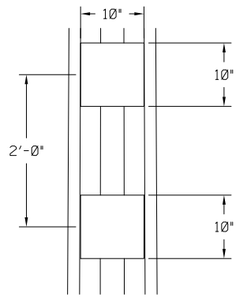
FRONT ELEVATION



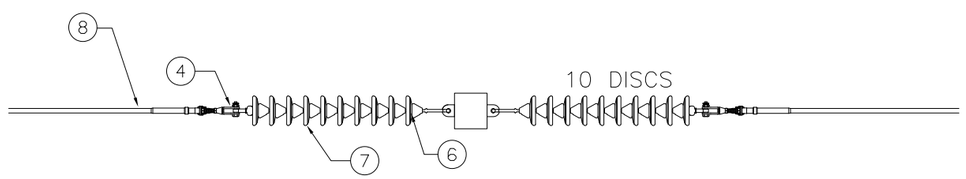
SIDE ELEVATION



DETAIL 1
OPGW SPLICE BRACKET



SECTION E-E



SECTION D-D
CONDUCTOR HARDWARE DETAIL

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT H-FRAME DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

PREPARED BY	JCB	02/15/21
REVIEWED BY	AIR	02/15/21
APPROVED BY	AIR	02/15/21
SCALE	SEE NOTES	
SHEET	1 OF 2	
INDEX	–	

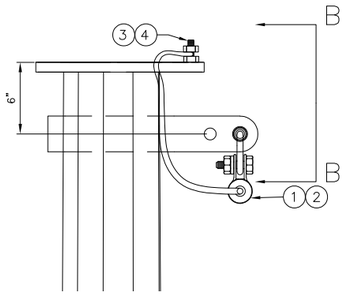
VER	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	02/15/21	ISSUED FOR ARTICLE VII	JCB AIR AIR
2			
3			
4			
5			
6			
7			

VERSION 1

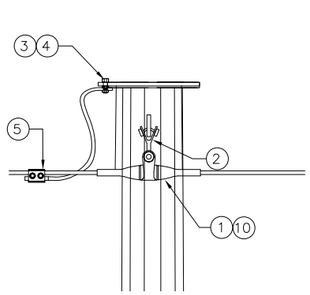
PRINTED 6/1/2021 1:32 PM

INCHES ON ORIGINAL

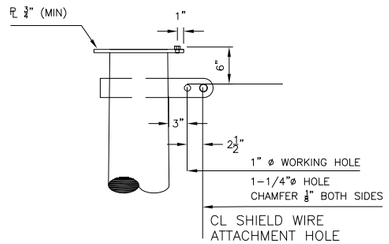
100786-C-S-05



DETAIL 1



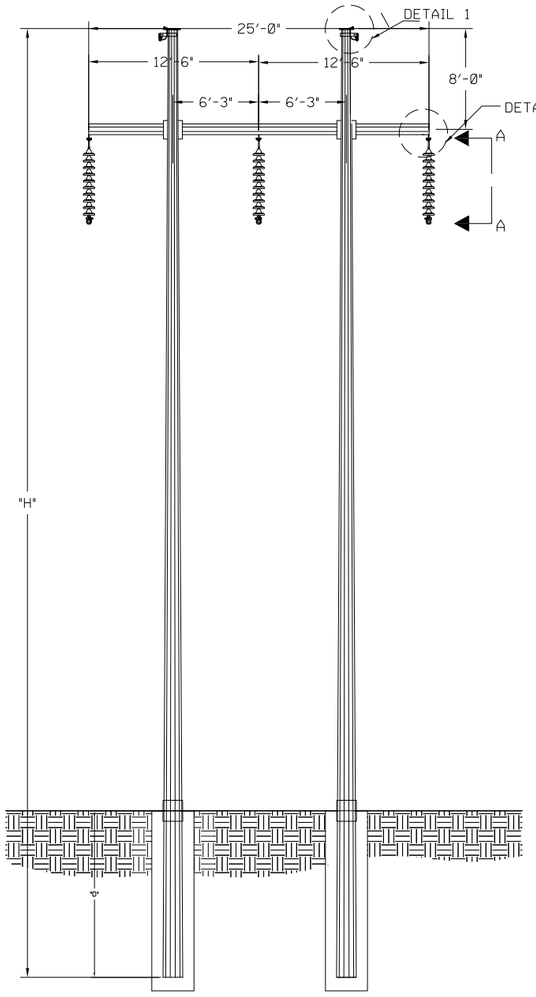
SECTION B–B



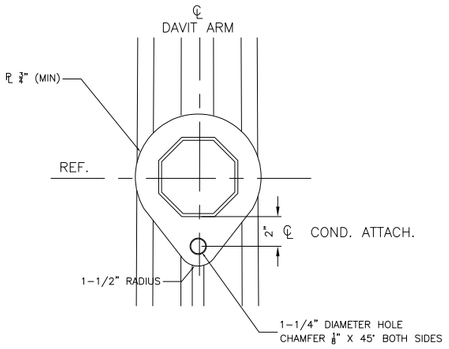
DETAIL 1A
SHIELD WIRE ATTACHMENT VANG
WITH GROUNDING NUT

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	1	CLAMP, AGS UNIT FOR OPGW	PO
2	1	Y-CLEVIS 90°	9312422
3	10	WIRE, 3/8" COMMON GRADE STEEL	9306353
4	1	GROUNDING LUG	9313780
5	1	CLAMP, PARALLEL GROOVE	PO
6	30	INSULATOR, TOUGHENED GLASS, 30K	9389305
7	3	HOT LINE Y CLEVIS BALL	9312243
8	3	CLEVIS EYE 90° FOR 795 ACSR	9320427
9	3	CLAMP, CGS UNIT FOR 795 ACSR	9306305
10	1	CLAMP, AGS W/ROD FOR 3/8" EHS STEEL	9306625

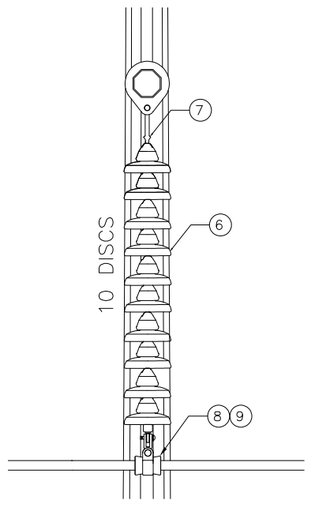
GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H"
2. SEE SPECIFICATION SP.06.01.301.101 FOR STRUCTURE GROUNDING DETAILS.
3. SEE SPECIFICATION SP.06.01.301.201 FOR STRUCTURE NUMBERING, WARNING SIGNS, AND MARKINGS REQUIRED FOR ALL STRUCTURES.
4. INSTALL OPGW ON RIGHT POLE OF STRUCTURE.
5. INSTALL ⅜" EHS ON LEFT POLE OF STRUCTURE.
6. MODIFICATIONS TO STANDARD INSTALLATION MAY PROCEED BASED ON DIRECTION FROM PROJECT ENGINEER.



FRONT ELEVATION



DETAIL 2
CONDUCTOR ATTACHMENT PLATES
(TYPICAL 3 LOCATIONS)



SECTION A–A

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT H-FRAME SUSPENSION
STEEL POLE CONCEPT DRAWING
DIRECT EMBEDDED FOUNDATION

PREPARED BY	JCB	02/15/21
REVIEWED BY	AIR	02/15/21
APPROVED BY	AIR	02/15/21
SCALE	SEE NOTES	
SHEET	1 OF 1	
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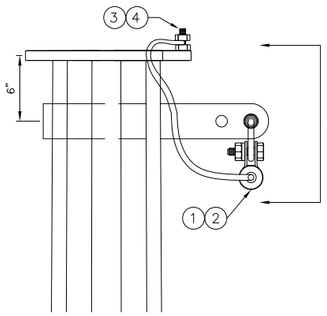
nationalgrid

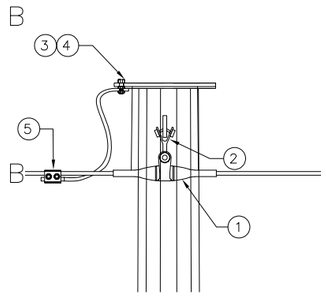
VER	DATE	VERSION DESCRIPTION	PREPARED/CHECKED/APPROVED
1	02/15/21	ISSUED FOR ARTICLE VII	JCB AIR AIR

VERSION 1

INCHES ON ORIGINAL



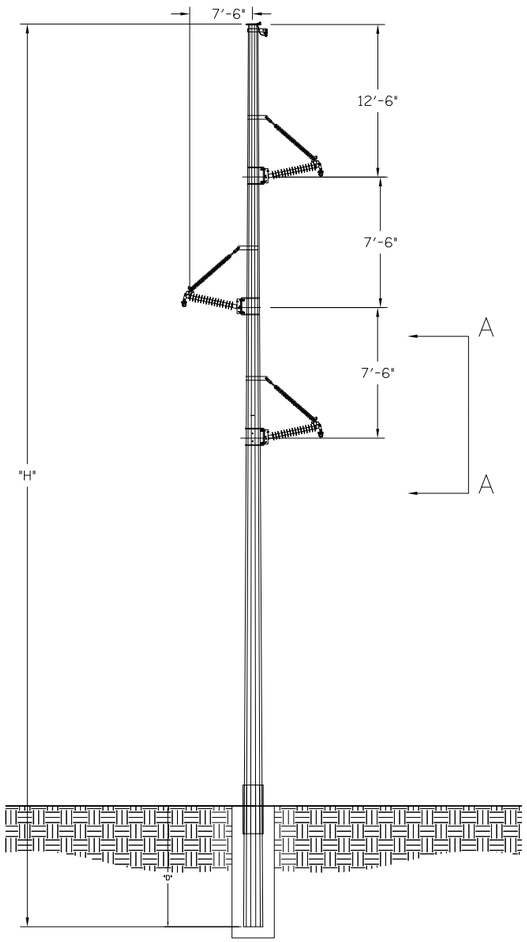
DETAIL 1



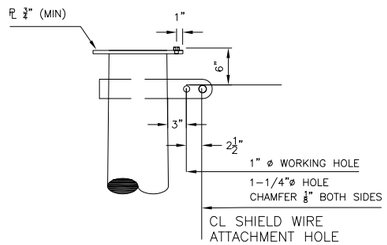
SECTION B–B

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	1	CLAMP, AGS UNIT FOR OPGW	PO
2	1	Y-CLEVIS 90°	9312422
3	10	WIRE, 3/8" COMMON GRADE STEEL	9306353
4	1	GROUNDING LUG	9313780
5	1	CLAMP, PARALLEL GROOVE	PO
6	3	BRACED POST ASSEMBLY	PO
7	3	CLEVIS EYE 90° FOR 795 ACSR	9320427
8	3	CLAMP, CGS UNIT FOR 795 ACSR	9306305

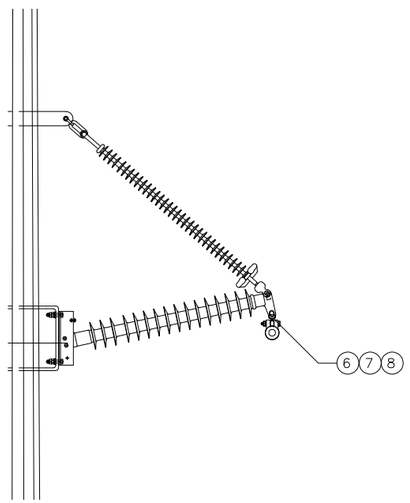
GENERAL NOTES:
1. REFER TO WORK LIST FOR POLE HEIGHT "H"
2. SEE SPECIFICATION SP.Ø6.Ø1.3Ø1.1Ø1 FOR STRUCTURE GROUNDING DETAILS.
3. SEE SPECIFICATION SP.Ø6.Ø1.3Ø1.2Ø1 FOR STRUCTURE NUMBERING, WARNING SIGNS, AND MARKINGS RQUIRED FOR ALL STRUCTURES.
4. MODIFICATIONS TO STANDARD INSTALLATION MAY PROCEED BASED ON DIRECTION FROM PROJECT ENGINEER.



FRONT ELEVATION



DETAIL 1A
SHIELD WIRE /BRACE
ATTACHMENT VANG WITH
GROUNDING NUT



SECTION A–A

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT BRACED POST TANGENT
STEEL POLE CONCEPT DRAWING
DIRECT EMBEDDED FOUNDATION

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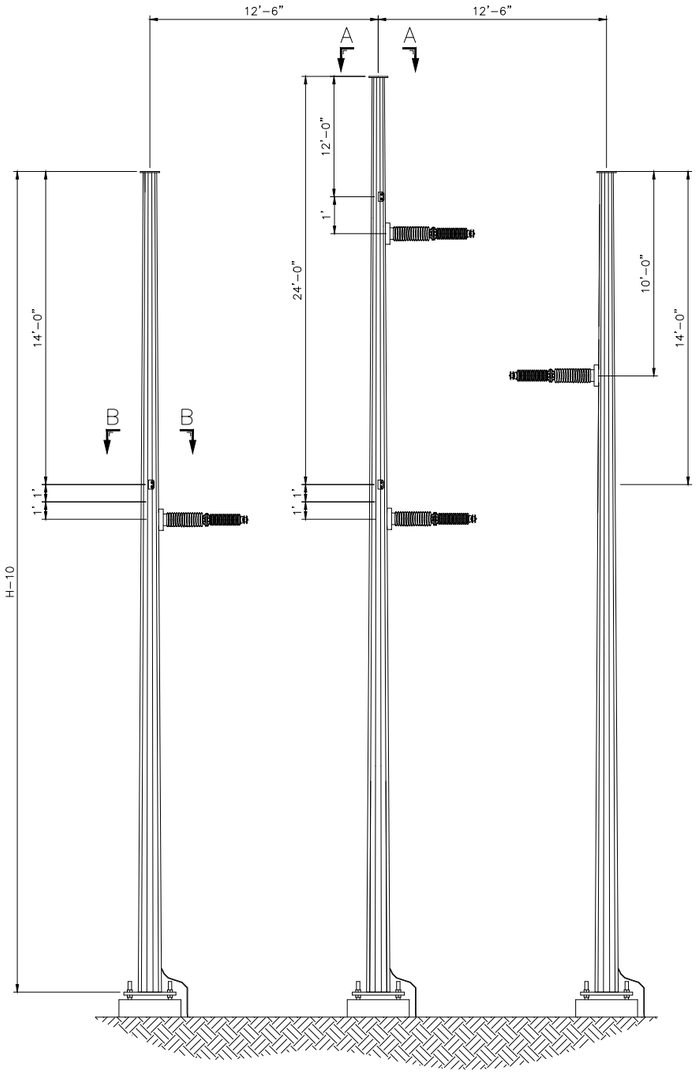
PREPARED BY	JCB	02/15/21
REVIEWED BY	AIR	02/15/21
APPROVED BY	AIR	02/15/21
SCALE	SEE NOTES	
SHEET	1 OF 1	
INDEX	–	

VER	DATE	VERSION, DESCRIPTION	PREPARED	REVIEWED	APPROVED
1	02/15/21	ISSUED FOR ARTICLE VII	JCB	AIR	AIR
2					
3					
4					
5					
6					
7					

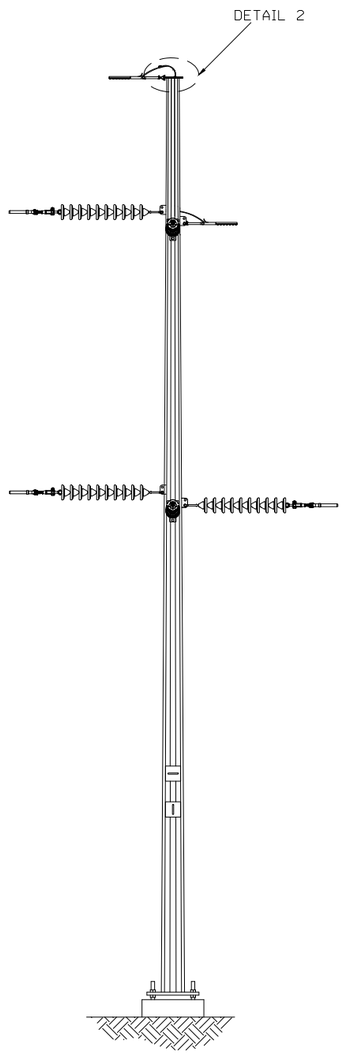
VERSION 1

PRINTED 6/1/2021 1:31 PM

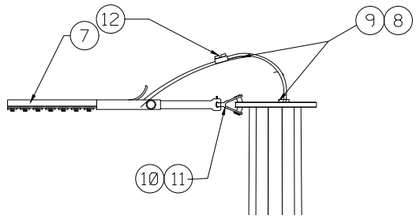
INCHES ON ORIGINAL



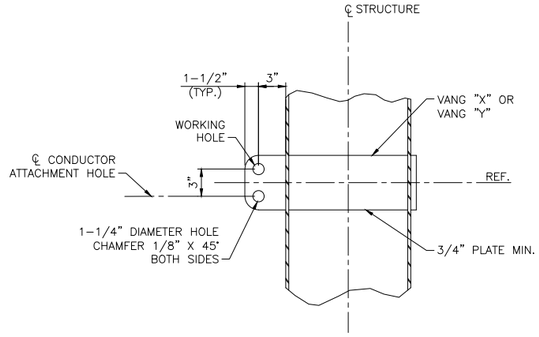
FRONT ELEVATION



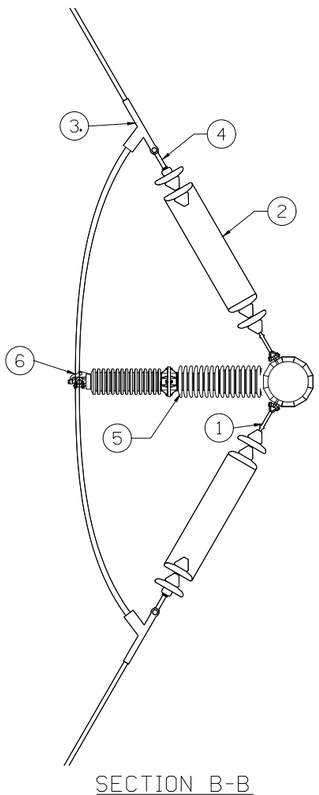
SIDE ELEVATION



DETAIL 2
OPGW DEAD-END ASSEMBLY

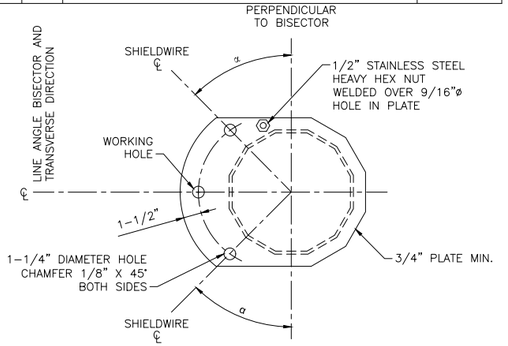


SECTION C-C
(TYPICAL 6 PLACES)
ROTATED TO SHOW DETAIL

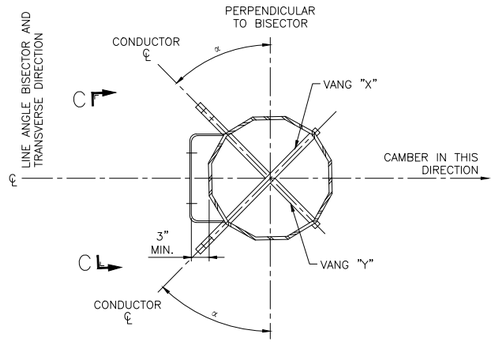


SECTION B-B
CONDUCTOR HARDWARE
ASSEMBLY

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	6	HOT LINE SOCKET CLEVIS	9305991
2	60	INSULATOR, TOUGHENED GLASS, 30K	9389305
3	6	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006
4	6	SOCKET EYE	9313316
5	3	INSULATOR, PORCELAIN LINE POST, 115KV	9386601
6	3	CLAMP, TRUNION FOR 1.00" TO 1.50" ALUM	9312462
7	2	BOLTED DEAD-END ASSEMBLY, OPGW	PO
8	10	WIRE, 3/8" EHS STEEL, COMMON GRADE	9306353
9	2	GROUNDING LUG	9313780
10	2	CLEVIS BALL	9307471
11	2	HOT LINE SOCKET EYE	9305994
12	2	CLAMP, PARALLEL GROOVE, OPGW	PO



SECTION A-A
POLE CAP WITH SHIELD WIRE
ATTACHMENT AND GROUNDING NUT



SECTION B-B

VERSION DESCRIPTION	VERSION	PRINTED	REVIEWED	APPROVED
ISSUED FOR ARTICLE VII	1	JCB	AIR	AIR

VER	DATE
1	05/14/21
2	
3	
4	
5	
6	
7	

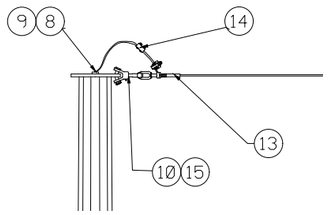
nationalgrid

PREPARED BY	JBL	04/26/2021
REVIEWED BY	AIR	04/26/2021
APPROVED BY	AIR	04/26/2021
SCALE		NTS
SHEET	1	OF 1
INDEX		

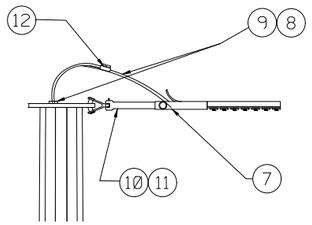
T1510 LOCKPORT – BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT 3-POLE DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

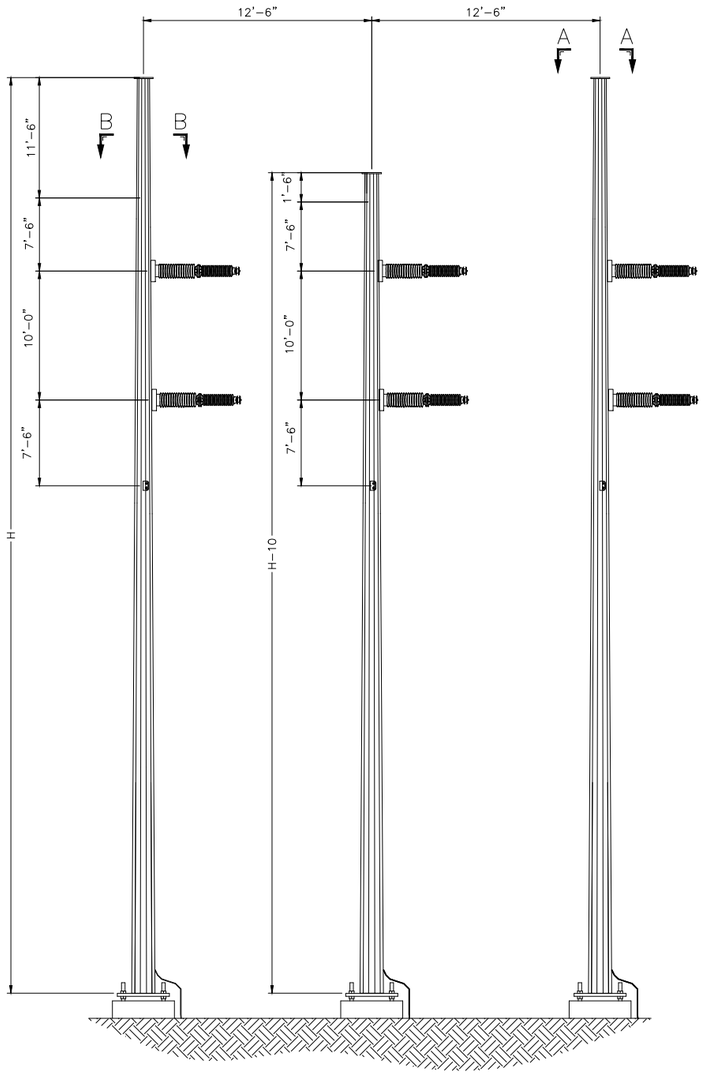
INCHES ON ORIGINAL



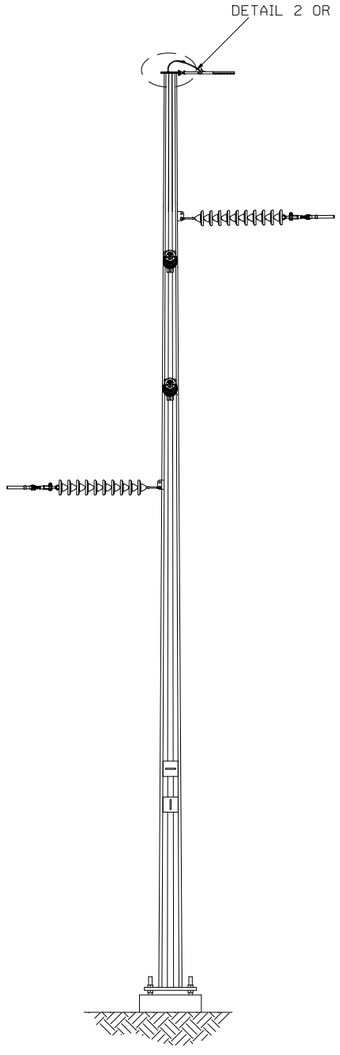
DETAIL 2A
SHIELDWIRE DEAD-END ASSEMBLY



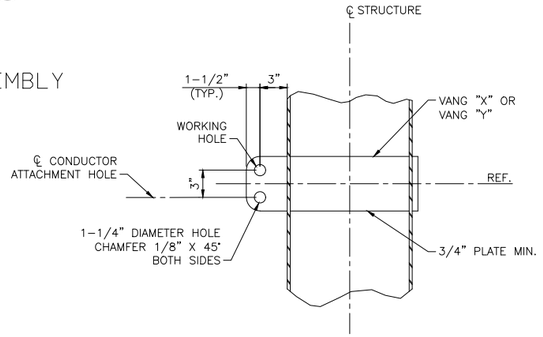
DETAIL 2
OPGW DEAD-END ASSEMBLY



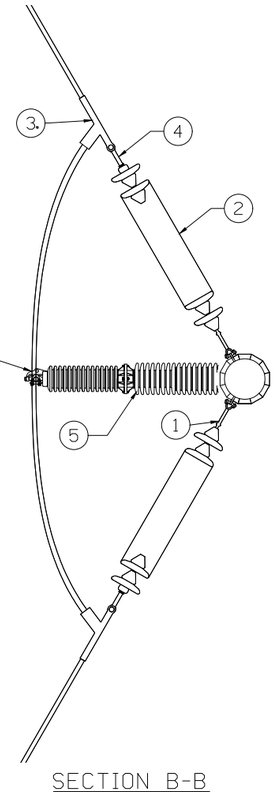
FRONT ELEVATION



SIDE ELEVATION

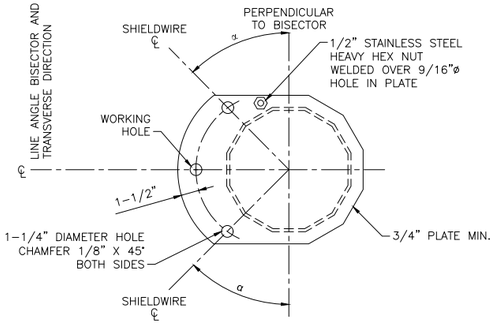


SECTION C-C
(TYPICAL 6 PLACES)
ROTATED TO SHOW DETAIL

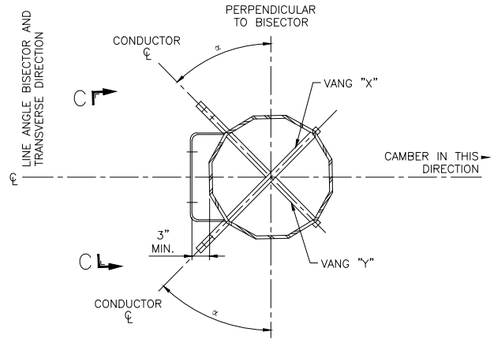


SECTION B-B
CONDUCTOR HARDWARE
ASSEMBLY

MATERIAL LIST			
TAG	QUAN	DESCRIPTION	PART CODE
1	6	HOT LINE SOCKET CLEVIS	9305991
2	60	INSULATOR, TOUGHENED GLASS, 30K	9389305
3	6	CLAMP, COMPRESSION ASSY, 795 ACSR	9308006
4	6	SOCKET EYE	9313316
5	6	INSULATOR, PORCELAIN LINE POST, 115KV	9386601
6	6	CLAMP, TRUNION FOR 1.00" TO 1.50" ALUM	9312462
7	1	BOLTED DEAD-END ASSEMBLY, OPGW	PO
8	20	WIRE, 3/8" EHS STEEL, COMMON GRADE	9306353
9	2	GROUNDING LUG	9313780
10	2	CLEVIS BALL	9307471
11	1	HOT LINE SOCKET EYE	9305994
12	1	CLAMP, PARALLEL GROOVE, OPGW	PO
13	1	CLAMP, COMPRESSION ASSY, 3/8" EHS STE	9306572
14	1	CLAMP, PARALLEL GROOVE	9320568
15	1	SOCKET CLEVIS	9307403



SECTION A-A
POLE CAP WITH SHIELD WIRE
ATTACHMENT AND GROUNDING NUT



SECTION B-B

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VERSION	DATE	VERSION DESCRIPTION	PREPARED/REVIEWED/APPROVED
1	06/1/21	ISSUED FOR ARTICLE VIII	JCB AIR AIR

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T1510 LOCKPORT - BATAVIA
112 LINE REBUILD PROJECT
SINGLE CIRCUIT 3-POLE DEAD-END
STEEL POLE CONCEPT DRAWING
CONCRETE CAISSON FOUNDATION

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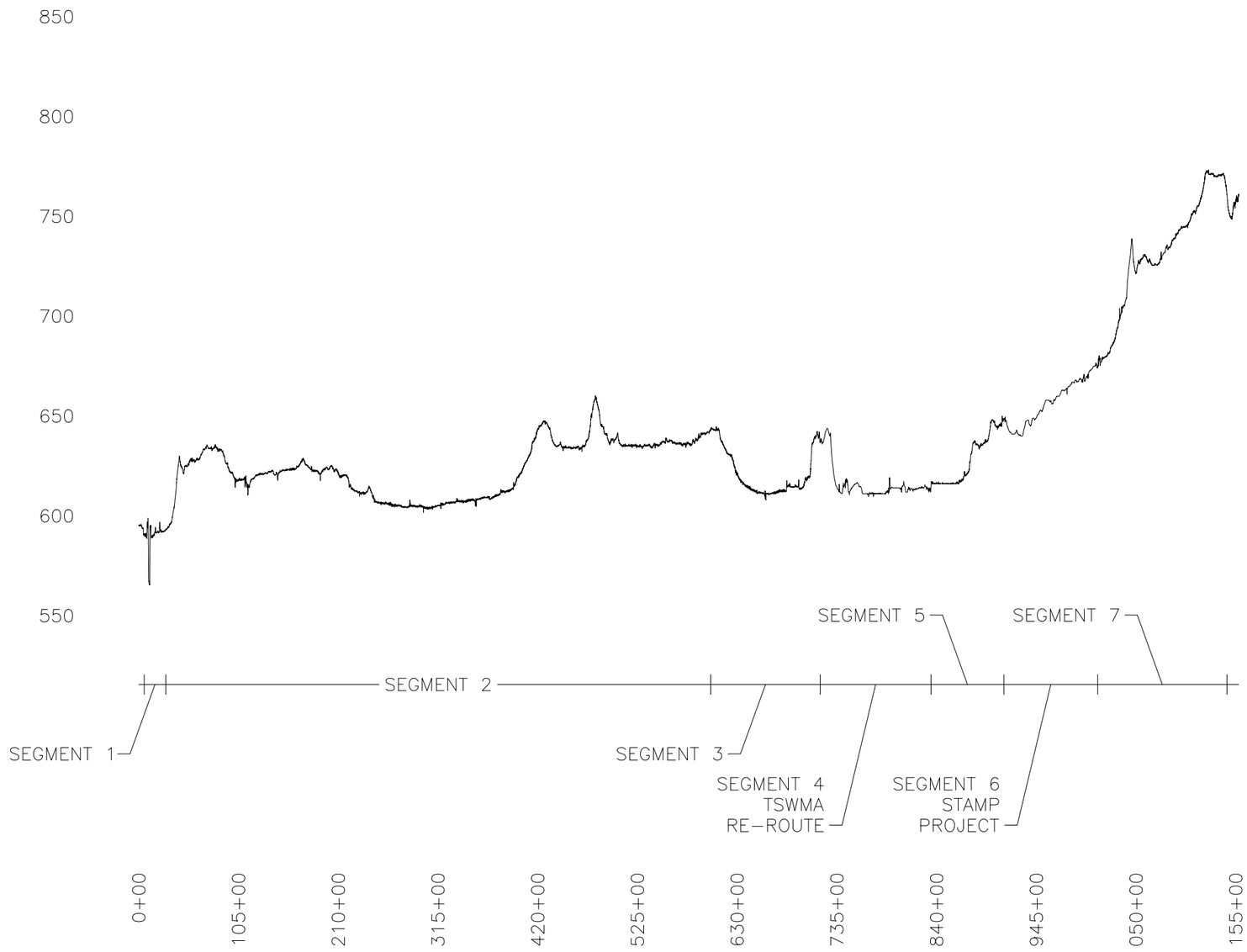
PREPARED BY	JBL	04/26/2021
REVIEWED BY	AIR	04/26/2021
APPROVED BY	AIR	04/26/2021
SCALE	NTS	
SHEET	1 OF 1	
INDEX		

INCHES ON ORIGINAL

Figure 5-5 Centerline Elevation Profile (1 Sheet)

100786-C-X-01

SCALE
1" = 50' VERTICAL
1" = 10,500' HORIZONTAL



SURFACE PROFILING OF X, Y, AND Z WAS OBTAINED
BY USING LIDAR DATA GENERATED BY NETWORK MAPPING

ISSUED FOR
ARTICLE VII APPLICATION
JUNE 7, 2021

VER	DATE	VERSION DESCRIPTION	PREPARED BY	REVIEWED BY	APPROVED BY
1	2/8/21	ISSUED FOR ARTICLE VII	NDL	AIR	AIR
2					
3					
4					
5					
6					
7					

VERSION 1

PREPARED BY	NDL	10/09/20	
REVIEWED BY	FDM	–	–
APPROVED BY	–	–	–
SCALE	SEE NOTES	SHEET	1 OF 1
INDEX	1	TBD	

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CENTERLINE ELEVATION PROFILE

T1510 LOCKPORT – BATAVIA 112
REBUILD PROJECT

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INCHES ON ORIGINAL