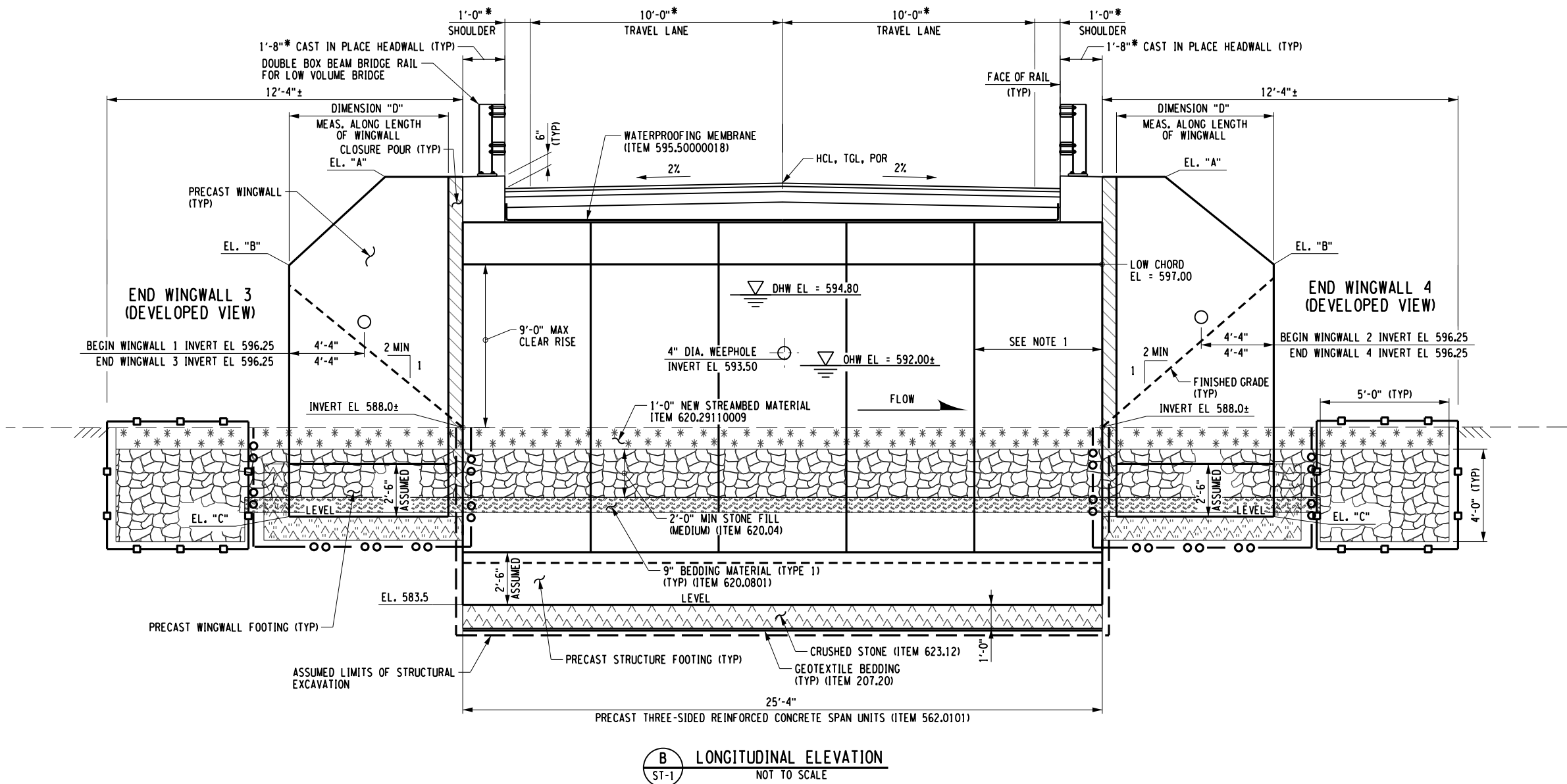


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DATE/TIME : 9/2/2020
USER : 3293



LEGEND:

- * - DIMENSION MEASURED PERPENDICULAR TO HCL.
- CRUSHED MATERIAL MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. (ITEM 623.12)
 - CONTROLLED LOW STRENGTH MATERIAL (CLSM) MEETING THE REQUIREMENTS OF SECTION 204. CLSM SHALL BE DESIGNED SO THAT IT FLOWS INTO THE VOIDS OF THE CRUSHED MATERIAL (FOR REQUIREMENTS OF THIS MATERIAL, SEE ABOVE) AND SETS UP SUFFICIENTLY WITHIN 24 HOURS TO ALLOW PLACEMENT OF ADDITIONAL MATERIAL. COST TO BE INCLUDED IN PRECAST ITEMS. SEE NOTE 2.
 - STONE FILLING (MEDIUM) (ITEM 620.04)
 - BEDDING MATERIAL (TYPE 1) (ITEM 620.0801)
 - NEW STREAMBED MATERIAL (ITEM 620.29110009)

LEGEND (CONT'D):

- ASSUMED AREA OF EXCAVATION. ACTUAL AREA OF EXCAVATION WILL BE BASED ON ACTUAL FOOTING WIDTHS AS DESIGNED BY THE PRECAST FABRICATOR. AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR STRUCTURE EXCAVATION (ITEM 206.01)
- AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR TRENCH & CULVERT EXCAVATION - (ITEM 206.0201)
- WITHIN THESE LINES, EXCAVATE IN ACCORDANCE WITH ITEM 206.01 STRUCTURE EXCAVATION AND BACKFILL IN ACCORDANCE WITH ITEM 203.07 SELECT GRANULAR FILL, ITEM 206.01 SUITABLE EXCAVATED MATERIAL AND CRUSHED MATERIAL ITEM 623.12 MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. FOR PRECAST WINGWALLS ALL THESE ITEMS ARE INCLUDED IN THE PRICE BID FOR THE WINGWALL ITEM, INCLUDING WITHIN OVERLAPPING AREAS OF EXCAVATION FOR RIGID FRAME FOUNDATION.

NOTES:

- THE LENGTH OF EACH CULVERT SEGMENT SHALL BE DETERMINED BY THE CONTRACTOR. IF STAGED CONSTRUCTION IS EMPLOYED, THE PRECAST BOX CULVERT SEGMENT LENGTH MUST BE COMPATIBLE WITH STAGING REQUIREMENTS.
- PRECAST WINGWALLS TO BE PLACED ON A LEVELING BED OF CRUSHED MATERIAL MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. AFTER PLACING AND LEVELING THE PRECAST UNITS, THE AREAS BENEATH, IN FRONT AND BEHIND THE UNITS SHALL BE GROUTED WITH CONTROLLED LOW STRENGTH MATERIAL MEETING THE REQUIREMENTS OF SECTION 204.
- EXISTING INVERT ELEVATION IS APPROXIMATE AND SHALL BE CONFIRMED BY THE CONTRACTOR IN THE FIELD.
- ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 1".
- DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.

WINGWALL DATA				
LOCATION	ELEVATION "A"	ELEVATION "B"	ELEVATION "C"	DIMENSION "D"
BEGIN LEFT WINGWALL 1	600.28	598.67	587.00	8'-9"
BEGIN RIGHT WINGWALL 2	600.28	598.67	587.00	8'-9"
END LEFT WINGWALL 3	600.28	598.67	587.00	8'-9"
END RIGHT WINGWALL 4	600.28	598.67	587.00	8'-9"

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No.	Submittal / Revision	Appd.	Date

NEXTERA ENERGY
TRANSMISSION NEW YORK, INC
EMPIRE STATE LINE
DYSINGER SWITCHYARD
BRIDGE OVER MUD CREEK

TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

LONGITUDINAL ELEVATION

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: IHK/PKR	Scale: Scale	ST-2
Checked By: IHK	Plot Date: 9/2/2020	SHEET 2

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USER = 3293

GENERAL NOTES

- DESIGN SPECIFICATIONS: NYSDOT LRFD BRIDGE DESIGN SPECIFICATIONS WITH ALL PROVISIONS IN EFFECT AS OF OCTOBER 2020 (FOR DESIGN PURPOSES, COMPRESSIVE STRENGTH OF CONCRETE FOR CAST IN PLACE CONCRETE ELEMENTS AT 28 DAYS: f'c = 3000 psi.)
- LIVE LOAD: AASHTO HL - 93 AND NYSDOT SPECIAL PERMIT VEHICLE. ADDITIONAL SPECIAL DESIGN LOADING CONSIDERATIONS SHALL APPLY. (SEE 562 SPECIAL NOTE)
- CONSTRUCTION AND MATERIALS SPECIFICATIONS: STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, OFFICE OF ENGINEERING.
- DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS FOR WHICH NO SCALE IS SHOWN ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.
- ALL SHOP DRAWINGS SUBMITTED FOR THIS PROJECT SHALL BE IN US CUSTOMARY UNITS.
- THIS BRIDGE SHALL BE MAINTAINED IN ACCORDANCE WITH THE GUIDELINES CONTAINED IN THE CURRENT EDITION OF THE AASHTO MAINTENANCE MANUAL FOR ROADWAYS AND BRIDGES.

SUBSTRUCTURE NOTES:

- HIGHWAY EMBANKMENT MATERIAL (FROM STRUCTURE EXCAVATION BACKFILL) AND SELECT STRUCTURAL FILL, ITEM 203.21, SHALL BE PLACED SIMULTANEOUSLY, IN CONTACT, ON BOTH SIDES OF THE VERTICAL PAYMENT LINE.
- THE COST OF WATER USED FOR COMPACTION OF SELECT FILL ITEMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 203.21 - SELECT STRUCTURAL FILL.

COFFERDAM AND HYDRAULIC NOTES:

- SHOULD THE CONTRACTOR ELECT TO LAY BACK A PORTION OF THE EXISTING EARTH ADJACENT TO AN EXCAVATION REQUIRING A COFFERDAM, ANY REQUIRED EXTENSIONS OF THE COFFERDAM NECESSARY TO KEEP WATER FROM ENTERING THE EXCAVATION SHALL BE FURNISHED AND PLACED AT NO COST TO THE OWNER.
- WHERE A COFFERDAM IS USED, THE COST OF DEWATERING THE ENTIRE EXCAVATION, REGARDLESS OF SOURCE OF WATER, SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE COFFERDAM ITEM.
- SHOULD FIELD CONDITIONS REQUIRE A CHANGE FROM THE TYPE OF COFFERDAM SYSTEM CALLED FOR ON THE PLANS, THE ENGINEER SHALL CONTACT THE ENGINEER IN CHARGE FOR COORDINATION WITH APPROPRIATE AGENCIES TO APPROVE THE CHANGE.
- DEWATER THE COFFERDAM BY PUMPING THE WATER TO AN APPROVED UPLAND VEGETATED AREA OUTSIDE OF THE STREAMBED AS SHOWN ON THE PLANS AND/OR APPROVED BY THE ENGINEER. TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL, SUCH AS STRAW BALES OR APPROVED EQUAL, MAY BE REQUIRED AS DETERMINED BY THE ENGINEER. NO SETTLEMENT BASIN SHALL BE CONSTRUCTED.
- ORDINARY HIGH WATER IS ESTIMATED TO BE 592.00 THIS IS DEFINED AS THE WATER SURFACE ELEVATION FOR THE MEAN ANNUAL FLOOD, WHICH IS THE FLOOD THAT HAS A RECURRENCE INTERVAL OF 2.33 YEARS.
- ORDINARY WATER IS ESTIMATED TO BE 591.00. THIS IS DEFINED AS THE HIGHEST SURFACE WATER ELEVATION LIKELY TO BE ENCOUNTERED DURING ONE CONSTRUCTION SEASON (OTHER THAN MAJOR FLOODS). IT IS ALWAYS LESS THAN THE ORDINARY HIGH WATER ELEVATION AND IT IS USUALLY AN OBSERVED ELEVATION RATHER THAN A COMPUTED ONE.
- LOW WATER IS ESTIMATED TO BE 590.00. THIS WATER ELEVATION IS THE NORMAL LOW WATER ELEVATION PREVALENT DURING ONE CONSTRUCTION SEASON FOR MORE THAN 25% OF THE TIME. IT IS AN OBSERVED ELEVATION RATHER THAN A COMPUTED ONE.

REMOVAL NOTES

- EXISTING STRUCTURE SHALL BE REMOVED WITHIN THE LIMITS SHOWN ON THE PLANS UNDER ITEM 202.19.
- RECORD PLANS FOR THIS STRUCTURE ARE NOT AVAILABLE.

MISCELLANEOUS NOTES

- THREADED INSERTS (WHERE DETAILED) SHALL BE DESIGNED FOR USE WITH NUMBER 5 AND NUMBER 6 REINFORCING BARS. INSERTS SHALL BE NON-CORROSIVE AND ABLE TO RESIST MINIMUM PULL-OUT LOADS OF 11,000 LB FOR NUMBER 5 REINFORCEMENT OR 16,000 LB FOR NUMBER 6 REINFORCEMENT WHEN USED IN F'C=3000 PSI CONCRETE
- CAST IN PLACE HEADWALLS ARE TO BE ATTACHED TO THE PRECAST STRUCTURE BY USE OF MECHANICAL CONNECTORS FOR REINFORCING BAR SPLICES MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 709-10 (EPOXY COATED) OF THE STANDARD SPECIFICATIONS. THE FEMALE THREADED PORTION OF THE CONNECTOR IS CAST INTO THE PRECAST STRUCTURE.
- THE COST OF CAST IN PLACE HEADWALLS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 562.0101 - REINFORCED CONCRETE SPAN UNITS.
- THE LENGTH OF EACH STRUCTURE SEGMENT SHALL BE DETERMINED BY THE CONTRACTOR. IF STAGE CONSTRUCTION IS EMPLOYED, THE PRECAST THREE SIDED STRUCTURE SEGMENT LENGTH MUST BE COMPATIBLE WITH STAGING REQUIREMENTS.
- WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF SUPPLYING A DISPOSAL AREA AND TRANSPORTATION TO THAT AREA SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THOSE ITEMS.
- SURVEY DATUM: NAVD88.

GEOTECHNICAL NOTES

- THE BEARING CAPACITY OF THE CONTROLLED LOW STRENGTH MATERIAL (CLSM) SHALL MEET OR EXCEED THE SERVICE AND STRENGTH BEARING CAPACITY OF THE SOIL (SEE ST-1).
- A QUALIFIED GEOTECHNICAL ENGINEER SHOULD CAREFULLY INSPECT THE FINAL EXCAVATION SURFACE FOR SPREAD FOUNDATIONS TO ASCERTAIN THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED. THE INSPECTION OF THE SUGRADE SHOULD INCLUDE PROBING AT SELECT LOCATIONS, SPECIFICALLY TO VERIFY THE BEARING CAPACITY OF THE SUPPORTING SOILS AND WHERE LOAD BEARING SOILS MAY HAVE BEEN DISTURBED.
- MATERIALS USED AS FILL, INCLUDING THOSE USED BENEATH FOOTINGS AND PAVEMENT SHOULD BE TESTED BY A QUALIFIED SOILS LABORATORY TO VERIFY THAT THEY MEET THE SPECIFIED GRADATIONS AND TO DETERMINE THEIR MAXIMUM DRY DENSITY FOR COMPACTION. IN-PLACE DENSITY TESTS SHOULD BE PERFORMED TO VERIFY THAT THE COMPACTION METHODS AND EQUIPMENT ACHIEVE THE REQUIRED DENSITIES.
- THE SEISMIC SOIL CLASSIFICATION FOR THE DESIGN OF PRECAST UNITS AND WINGWALLS IS 'C'.
- THE DESIGNER OF THE REINFORCED CONCRETE SPAN UNITS SHALL FILL IN THE BEARING PRESSURES TO THE NEAREST KIP PER SQUARE FOOT

SUBSTRUCTURE	STRENGTH LIMIT STATE BEARING PRESSURE (KSF)	SERVICE LIMIT STATE BEARING PRESSURE (KSF)
BEGIN		
END		

ENGINEER'S ESTIMATE (NEXTERA DYSINGER SWITCHYARD BRIDGE)

ITEM	DESCRIPTION	UNIT	ESTIMATED QUANTITY	FINAL QUANTITY
202.19	REMOVAL OF SUBSTRUCTURES	CY	60	
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	95	
203.21	SELECT STRUCTURE FILL	CY	284	
206.01	STRUCTURE EXCAVATION	CY	1,162	
206.0201	TRENCH AND CULVERT EXCAVATION	CY	53	
207.20	GEOTEXTILE BEDDING	SY	170	
207.26	PREFABRICATED COMPOSITE STRUCTURAL DRAIN	SY	105	
553.010001	COFFERDAMS (TYPE 1)	EA	1	
553.010002	COFFERDAMS (TYPE 1)	EA	1	
553.030001	TEMPORARY WATERWAY DIVERSION STRUCTURE	EA	1	
562.0101	REINFORCED CONCRETE SPAN UNITS	SY	152	
562.03	WING WALL WITH FOOTING	SY	55	
568.16000015	DOUBLE BOX BEAM BRIDGE RAIL	LF	112	
568.70	TRANSITION BRIDGE RAILING	LF	128	
595.50000018	SHEET-APPLIED WATERPROOFING MEMBRANE	SF	1,519	
606.120101	BOX BEAM END PIECE	EA	4	
620.04	STONE FILLING (MEDIUM)	CY	300	
620.0801	BEDDING MATERIAL, TYPE 1	CY	96	
620.29110009	NEW (IMPORTED) STREAM BED MATERIAL (B)	CY	55	
623.12	CRUSHED STONE (IN-PLACE MEASURE)	CY	57	
697.03	FIELD CHANGE PAYMENT	DC	31000	
699.040001	MOBILIZATION	LS	1	

INDEX OF DRAWINGS

ST-1	GENERAL PLAN
ST-2	LONGITUDINAL ELEVATION
ST-3	GENERAL NOTES, ESTIMATE OF QUANTITIES AND INDEX OF DRAWINGS
ST-4	EXCAVATION AND EMBANKMENT PLAN
ST-5	EXCAVATION AND EMBANKMENT SECTIONS
ST-6	MISCELLANEOUS CONCRETE DETAILS
ST-7	PRECAST WINGWALL DETAILS
ST-8	C.I.P. HEADWALL DETAILS
ST-9	RAILING LAYOUT PLAN AND DETAILS
ST-10	RAILING DETAILS (1 OF 3)
ST-11	RAILING DETAILS (2 OF 3)
ST-12	RAILING DETAILS (3 OF 3)

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CHA

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NEXTERA

ENERGY

TRANSMISSION
NEW YORK

STATE OF NEW YORK

SEAL

RYAN DOUGLAS HENDERS

082023

PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	Submittal / Revision	Appd.	Date

NEXTERA ENERGY

TRANSMISSION NEW YORK, INC

EMPIRE STATE LINE

DYSINGER SWITCHYARD

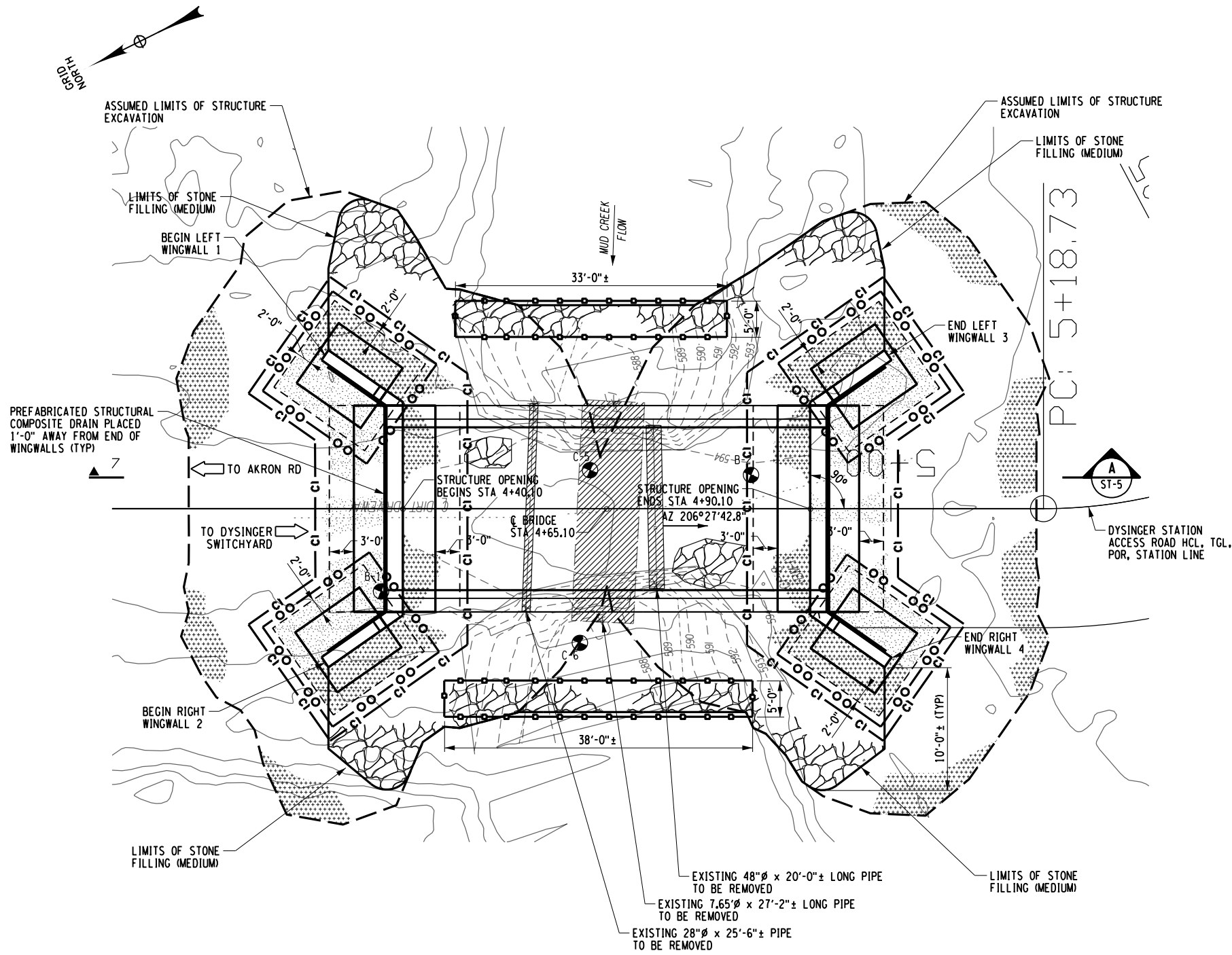
BRIDGE OVER MUD CREEK

TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

GENERAL NOTES,
ESTIMATE OF QUANTITIES
AND INDEX OF DRAWING,

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: PKR	Scale: Scale	<div>ST-3</div>
Checked By: IKK	Plot Date: 9/2/2020	
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DATE/TIME : 9/2/2020
USER : 3293



NOTE:

1. ANY AREAS OF EXCAVATION REQUIRED FOR THE REMOVAL OF EXISTING PIPES (EXCLUDING AREAS WITHIN PIPES TO BE PAID FOR UNDER ITEM 202.19) THAT ARE OUTSIDE OF THE AREA DEFINED AS STRUCTURE EXCAVATION AND TRENCH AND CULVERT EXCAVATION SHALL BE PAID FOR UNDER ITEM 203.02 - UNCLASSIFIED EXCAVATION.

LEGEND

- - - - - EXISTING GROUND SURFACE
- [Hatched Box] - LIMITS OF SUBSTRUCTURE REMOVAL, ITEM 202.19
- [Stippled Box] - SELECT STRUCTURAL FILL (ITEM 203.21), COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY (BRIDGE ESTIMATE)
- [Dotted Box] - BACKFILL WITH SUITABLE EXCAVATED MATERIAL AS PROVIDED FOR AND PAID FOR UNDER ITEM 206.01, STRUCTURE EXCAVATION (BRIDGE ESTIMATE) OR 206.0201 (TRENCH & CULVERT EXCAVATION) NO ADDITIONAL PAYMENT WILL BE MADE FOR BACKFILL
- [Crushed Material Box] - CRUSHED MATERIAL MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. (ITEM 623.12)
- [Stone Filling Box] - STONE FILLING (MEDIUM) (ITEM 620.04)
- [Bedding Material Box] - BEDDING MATERIAL, TYPE 1 (ITEM 620.0801)
- - - - - ASSUMED AREA OF EXCAVATION. ACTUAL AREA OF EXCAVATION WILL BE BASED ON ACTUAL FOOTING WIDTHS AS DESIGNED BY THE PRECAST FABRICATOR. AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR STRUCTURE EXCAVATION (ITEM 206.01)
- [Square] - AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR TRENCH & CULVERT EXCAVATION - (ITEM 206.0201)
- [Circle] - WITHIN THESE LINES, EXCAVATE IN ACCORDANCE WITH ITEM 206.01 STRUCTURE EXCAVATION AND BACKFILL IN ACCORDANCE WITH ITEM 203.07 SELECT GRANULAR FILL, ITEM 206.01 SUITABLE EXCAVATED MATERIAL AND CRUSHED MATERIAL ITEM 623.12 MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. FOR PRECAST WINGWALLS ALL THESE ITEMS ARE INCLUDED IN THE PRICE BID FOR THE WINGWALL ITEM, INCLUDING WITHIN OVERLAPPING AREAS OF EXCAVATION FOR RIGID FRAME FOUNDATION.
- [C] - DESIGNATES COFFERDAM (TYPE 1) - (ITEMS 553.010001 & 553.010002)



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No.	Submittal / Revision	Appd.	Date

NEXTERA ENERGY
TRANSMISSION NEW YORK, INC
EMPIRE STATE LINE
DYSINGER SWITCHYARD
BRIDGE OVER MUD CREEK

TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

EXCAVATION AND EMBANKMENT PLAN

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: PKR	Scale:	ST-4
Checked By: IKK	Plot Date: 9/2/2020	SHEET 4

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TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

Designed By:	Project No.:	Drawing No.:
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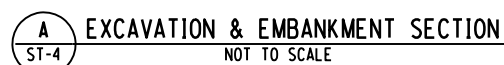
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






SHEET 5



** - DIMENSION ASSUMED. ACTUAL DIMENSION TO BE DETERMINED BY FABRICATOR.

1. DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.
2. ANY AREAS OF EXCAVATION REQUIRED FOR THE REMOVAL OF EXISTING PIPES (EXCLUDING AREAS WITHIN PIPES TO BE PAID FOR UNDER ITEM 202.19) THAT ARE OUTSIDE OF THE AREA DEFINED AS STRUCTURE EXCAVATION AND TRENCH AND CULVERT EXCAVATION SHALL BE PAID FOR UNDER ITEM 203.02 - UNCLASSIFIED EXCAVATION.

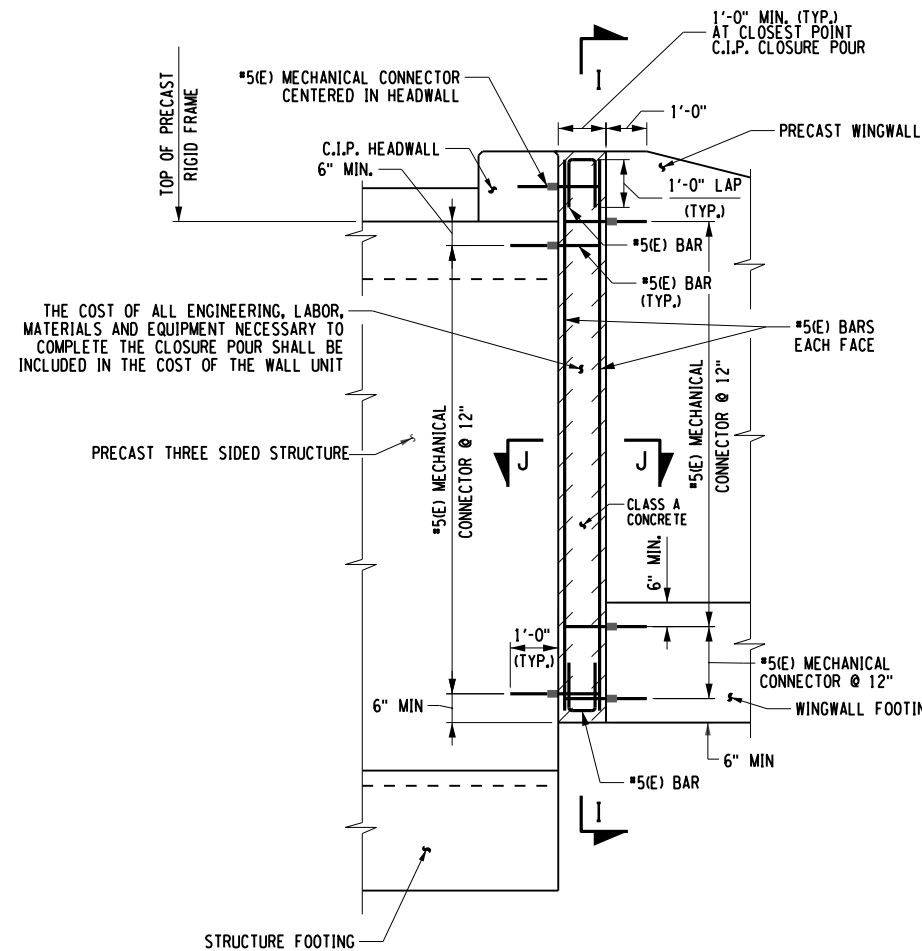
-//T- - EXISTING GROUND SURFACE

-  - LIMITS OF SUBSTRUCTURE REMOVAL, ITEM 202.19.
-  - SELECT STRUCTURAL FILL (ITEM 203.21), COMPACTED TO 95% OF STANDARD PROCTOR MAXIMUM DENSITY (BRIDGE ESTIMATE)
-  - BACKFILL WITH SUITABLE EXCAVATED MATERIAL AS PROVIDED FOR AND PAID FOR UNDER ITEM 206.01, STRUCTURE EXCAVATION (BRIDGE ESTIMATE) OR 206.0201 (TRENCH & CULVERT EXCAVATION) NO ADDITIONAL PAYMENT WILL BE MADE FOR BACKFILL
-  - NEW STREAMBED MATERIAL (ITEM 620.29110009)
-  - CRUSHED MATERIAL MEETING THE REQUIREMENTS OF MATERIAL DESIGNATION 703-0201, 703-0202 OR 703-0204 WITH A PRIMARY SIZE DESIGNATION OF CA2. (ITEM 623.12)
-  - CONTROLLED LOW STRENGTH MATERIAL (CLSM) MEETING THE REQUIREMENTS OF SECTION 204. CLSM SHALL BE DESIGNED SO THAT IT FLOWS INTO THE VOIDS OF THE CRUSHED MATERIAL (FOR REQUIREMENTS OF THIS MATERIAL, SEE ABOVE) AND SETS UP SUFFICIENTLY WITHIN 24 HOURS TO ALLOW PLACEMENT OF ADDITIONAL MATERIAL. COST TO BE INCLUDED IN PRECAST ITEMS. SEE NOTE 2 ON ST-2.
-  - STONE FILLING (MEDIUM) (ITEM 620.04)
-  - BEDDING MATERIAL, TYPE 1 (ITEM 620.0801)
-  - ASSUMED AREA OF EXCAVATION. ACTUAL AREA OF EXCAVATION WILL BE BASED ON ACTUAL FOOTING WIDTHS AS DESIGNED BY THE PRECAST FABRICATOR. AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR STRUCTURE EXCAVATION (ITEM 206.01)
-  - AREA ENCLOSED WITHIN THESE LINES DESIGNATES PAYMENT LINES FOR TRENCH & CULVERT EXCAVATION - (ITEM 206.0201)
-  - WITHIN THESE LINES, EXCAVATE IN ACCORDANCE WITH ITEM 206.01

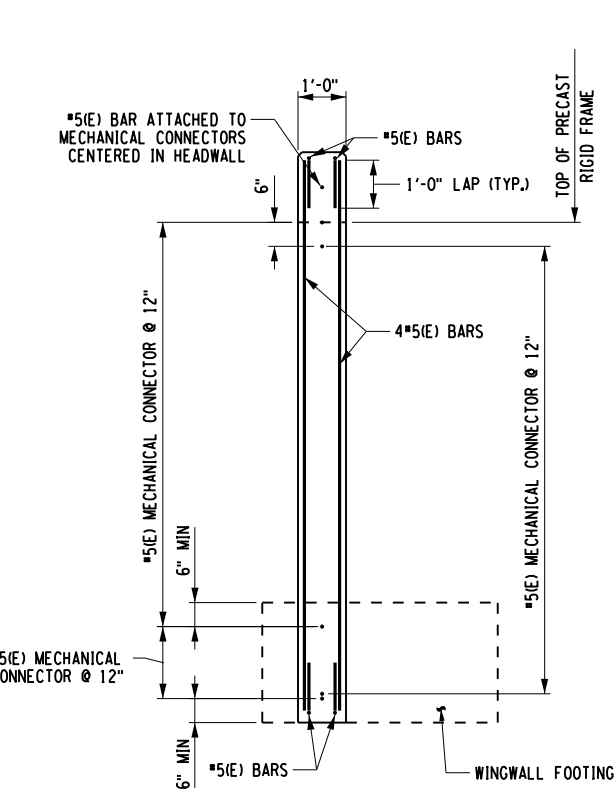


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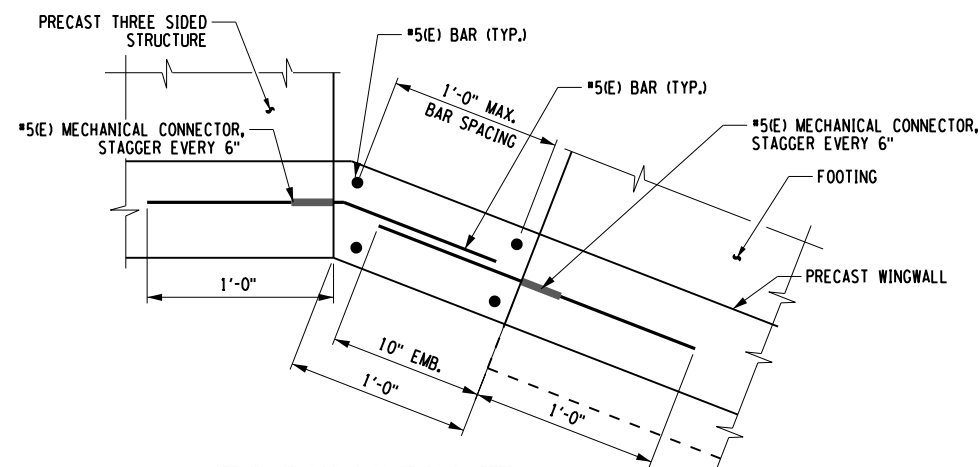
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DATE/TIME : 9/2/2020
USER : 3293



CLOSURE POUR DETAIL
NOT TO SCALE

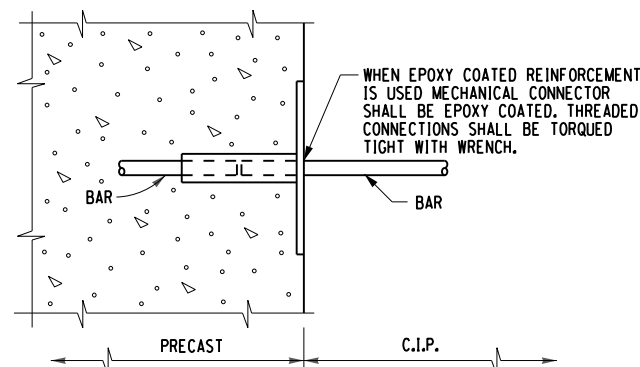


SECTION I-I
CLOSURE POUR REINFORCEMENT SECTION
NOT TO SCALE

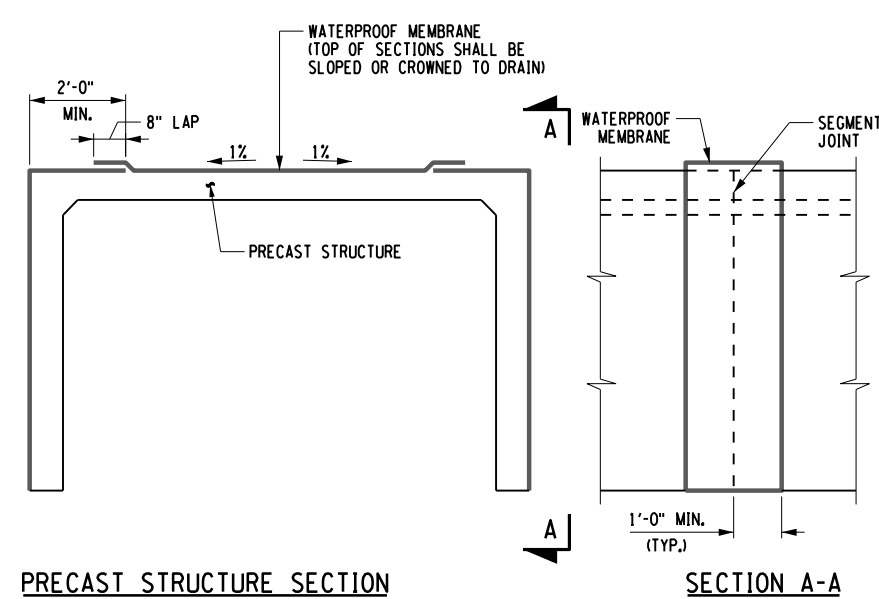


NOTE: PLACE C.I.P. CLOSURE POUR AFTER BACKFILLING USING S.I.P. FORMS.

SECTION J-J
NOT TO SCALE



NOTE:
MECHANICAL CONNECTORS SHALL CONFORM TO N.Y.S. STANDARD SPECIFICATIONS SUBSECTION 709-10. COST OF MECHANICAL CONNECTORS, FURNISHED AS PER DEPARTMENTS APPROVED LIST SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRECAST UNITS.

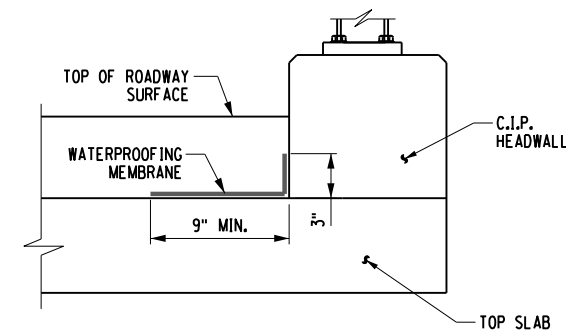


PRECAST STRUCTURE SECTION

SECTION A-A

WATERPROOF MEMBRANE SPLICE DETAIL
NOT TO SCALE

- WATERPROOFING NOTES:
1. WATERPROOFING ON TOP OF UNITS SHALL BE OVER THE ENTIRE WIDTH AND LENGTH OF SURFACE. THE WATERPROOFING ALONG VERTICAL JOINTS SHALL BE AS SHOWN IN SECTION A-A
2. WHEN SPLICES ARE REQUIRED IN THE WATERPROOF MEMBRANE, LOCATE AS SHOWN.



WATERPROOFING MEMBRANE AT HEADWALL
NOT TO SCALE

NOTES:

1. ACTUAL PRECAST STRUCTURE WALL, TOP SLAB THICKNESSES, REINFORCEMENT SIZE AND SPACINGS TO BE DETERMINED BY CONTRACTOR.
2. WHERE EPOXY COATED THREADED INSERTS ARE SHOWN, ANY NON-CORROSIVE MECHANICAL CONNECTOR MEETING §709-10 MAY BE USED AS AN ALTERNATIVE.
3. ALL REINFORCEMENT COVER ON CAST IN PLACE CONCRETE SHALL BE 2" UNLESS OTHERWISE NOTED.
4. ALL REINFORCEMENT COVER ON PRECAST UNITS SHALL BE 1" UNLESS OTHERWISE NOTED.



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No.	Submittal / Revision	Appd.	Date

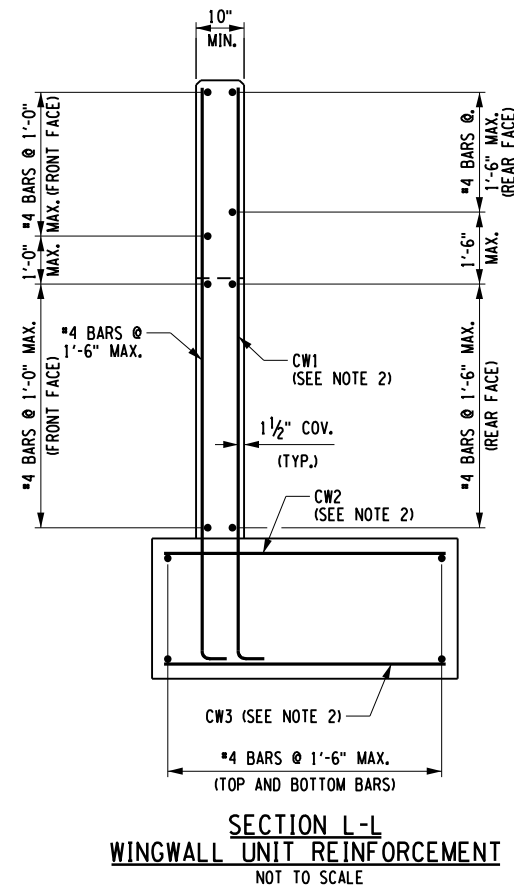
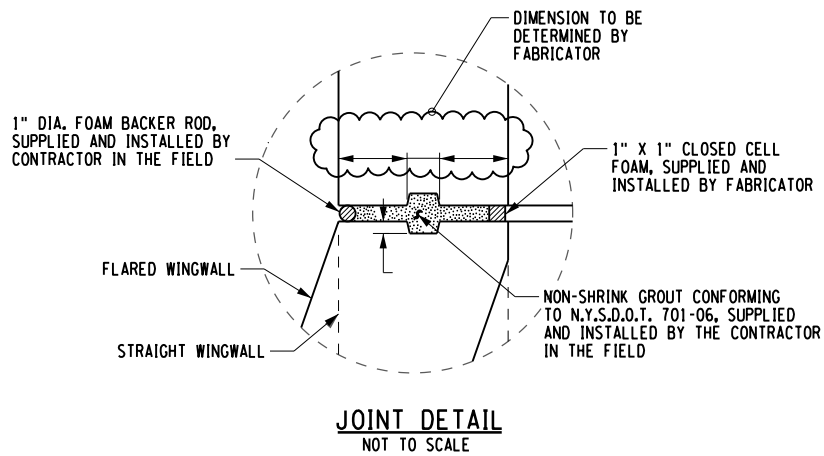
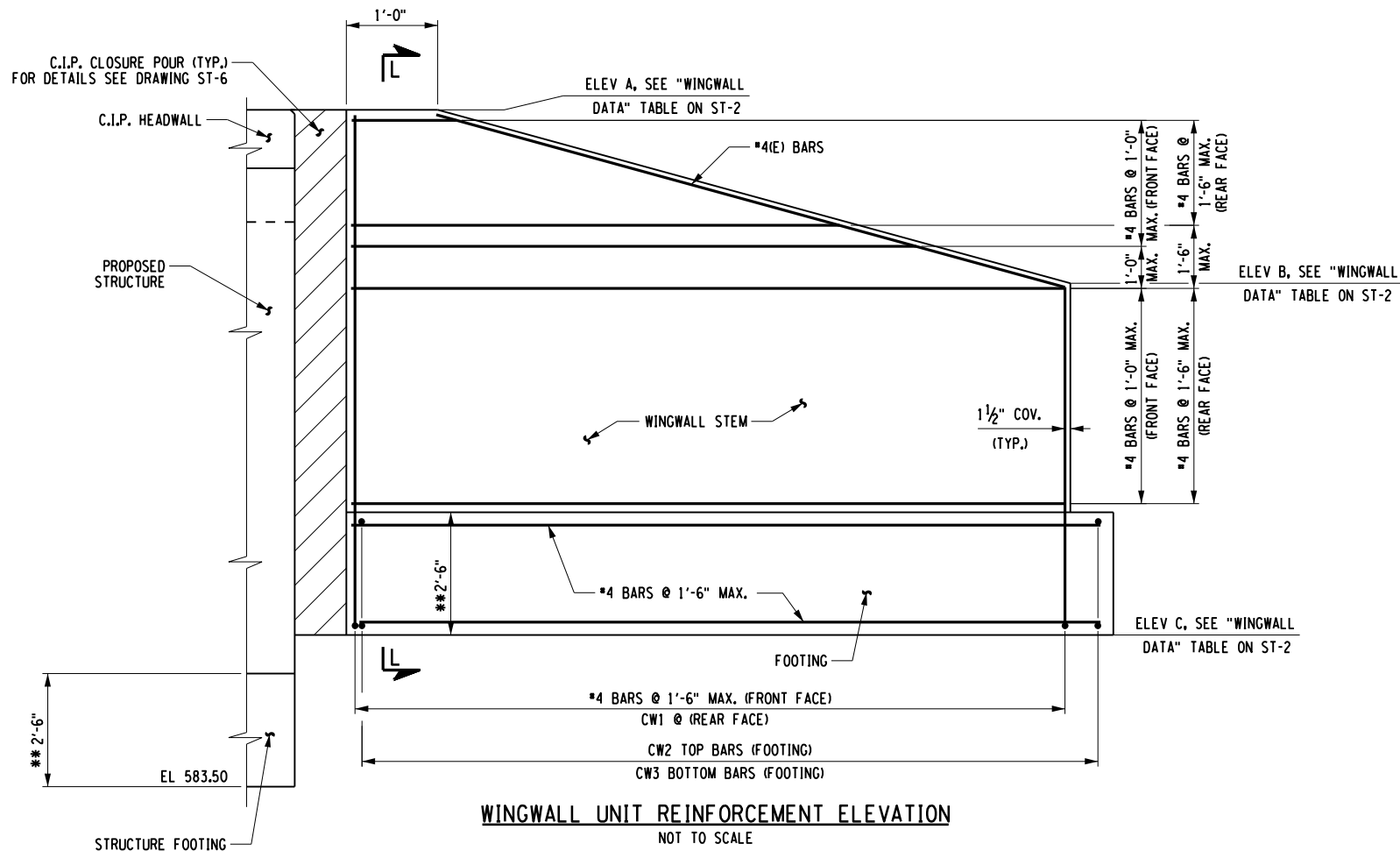
NEXTERA ENERGY
TRANSMISSION NEW YORK, INC
EMPIRE STATE LINE
DYSINGER SWITCHYARD
BRIDGE OVER MUD CREEK

TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

MISCELLANEOUS
CONCRETE DETAILS

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: PKR	Scale: Scale	ST-6
Checked By: IKK	Plot Date: 9/2/2020	SHEET 6

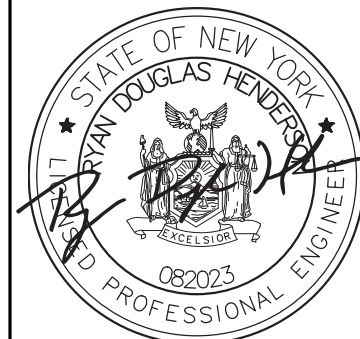
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DATE/TIME = 9/2/2020
USER = 3293



NOTES:

** - DIMENSION ASSUMED. ACTUAL DIMENSION TO BE DETERMINED BY FABRICATOR.

- TALL WALLS MAY USE A DOWEL BAR LAPPED TO A VERTICAL BAR.
- BAR SIZE AND SPACING TO BE DETERMINED BY CONTRACTOR.
- ACTUAL WALL THICKNESS AND FOOTING DIMENSIONS TO BE DETERMINED BY CONTRACTOR.
- BASED ON HANDLING AND SHIPPING CONSTRAINTS, THE CONTRACTOR MAY ELECT TO USE MULTIPLE WINGWALL UNITS TO SATISFY WALL LENGTH REQUIRED ON THE PLANS. THE JOINT DETAIL BETWEEN WINGWALL UNITS SHALL BE IN ACCORDANCE WITH DETAILS PRESENTED (SEE "JOINT DETAIL").
- SEE DRAWING ST-2 FOR WINGWALL DATA TABLE.



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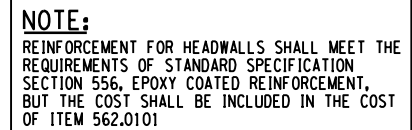
No.	Submittal / Revision	Appd.	Date

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TOWN OF ROYALTON,
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PRECAST WINGWALL
DETAILS

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: PKR	Scale: Scale	ST-7
Checked By: IKK	Plot Date: 9/2/2020	SHEET 7



SECTION C-C
BRIDGE RAIL ANCHORAGE DETAIL
NOT TO SCALE

LOCATION	TOP OF HEADWALL ELEV. (FT)	TOP OF STRUCTURE ELEV. (FT)	HEADWALL HEIGHT (FT)
BEGIN WINGWALL 1	600.28	* 598.67	1.61
BEGIN WINGWALL 2	600.28	* 598.67	1.61
END WINGWALL 3	600.28	* 598.67	1.61
END WINGWALL 4	600.28	* 598.67	1.61

* TOP OF PRECAST STRUCTURE ELEVATION ASSUMED
BASED ON ROOF THICKNESS OF 1'-8"

1. FOR WINGWALL ELEVATIONS, SEE WINGWALL DATA TABLE ON DWG. ST-2.
2. REINFORCEMENT IN PRECAST UNIT IS NOT SHOWN.
3. ALL COVER SHALL BE 2" UNLESS OTHERWISE NOTED.
4. FOR RAILING LAYOUT SEE DWG. ST-9.

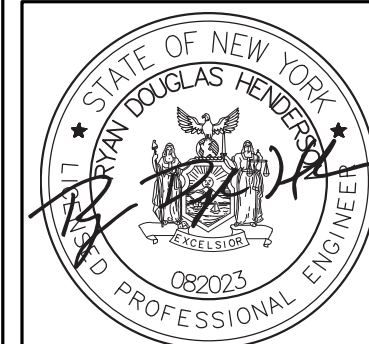
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C.I.P. HEADWALL DETAILS

Designed By: CJO	Project No.:	Drawing No.: <div style="font-size: 2em; font-weight: bold; text-align: center;">ST-8</div>
Drawn By: PKR	Scale: Scale	
Checked By: IJK	Plot Date: 9/2/2020	

SHEET 8

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DATE/TIME = 9/2/2020
USER = 3293



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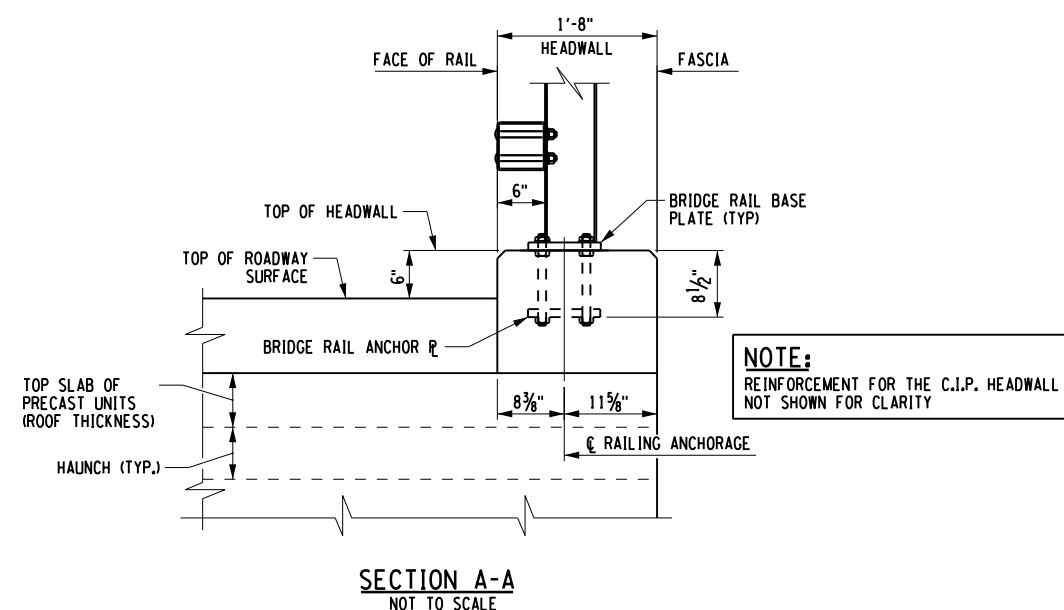
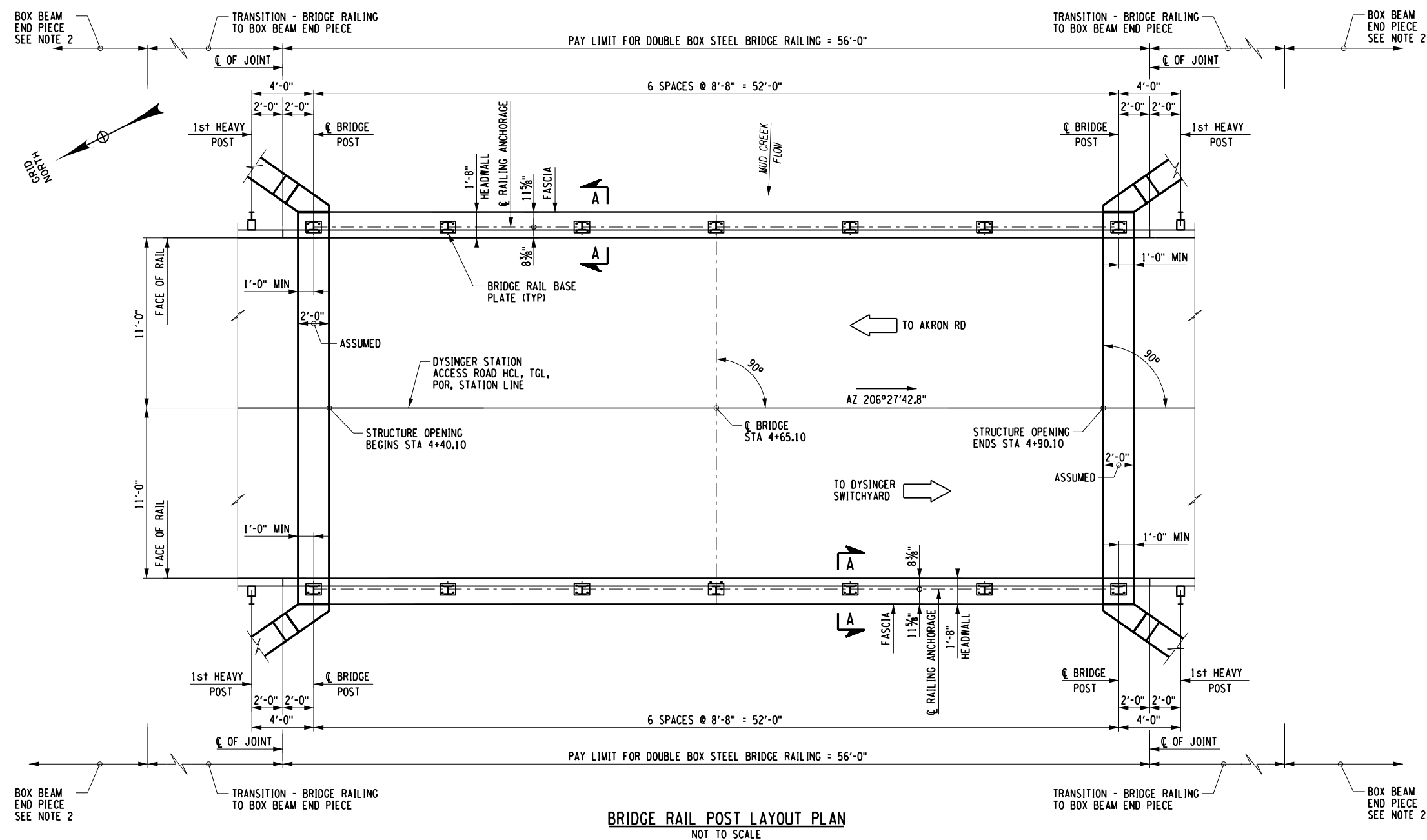
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DYSINGER SWITCHYARD
BRIDGE OVER MUD CREEK

TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

RAILING LAYOUT PLAN

Designed By: CJO	Project No.:	Drawing No.: <div style="font-size: 2em; font-weight: bold;">ST-9</div>
Drawn By: PKR	Scale: Scale	
Checked By: IJK	Plot Date: 9/2/2020	

SHEET 9

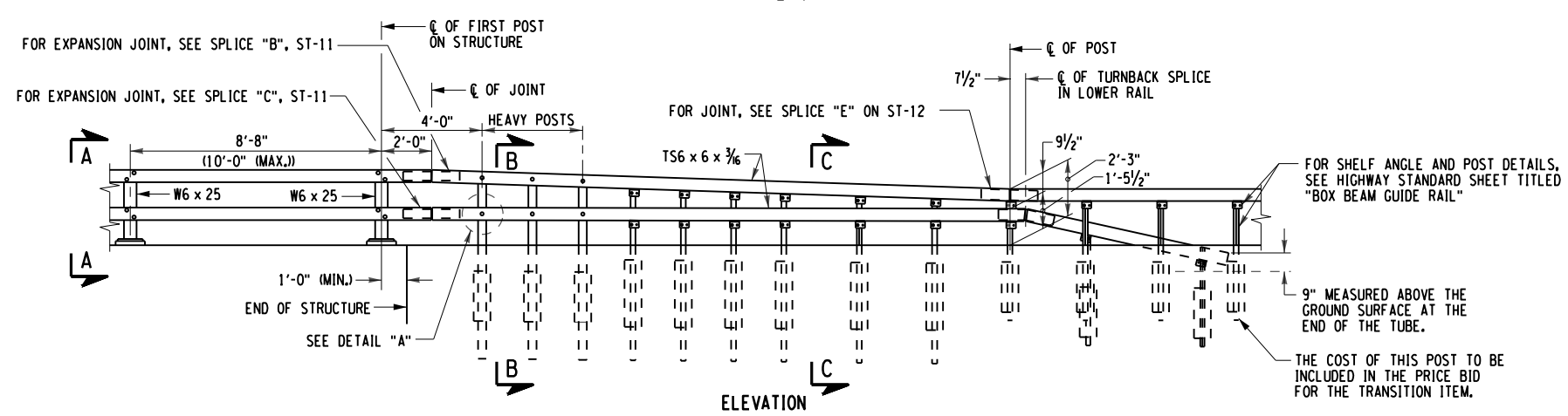
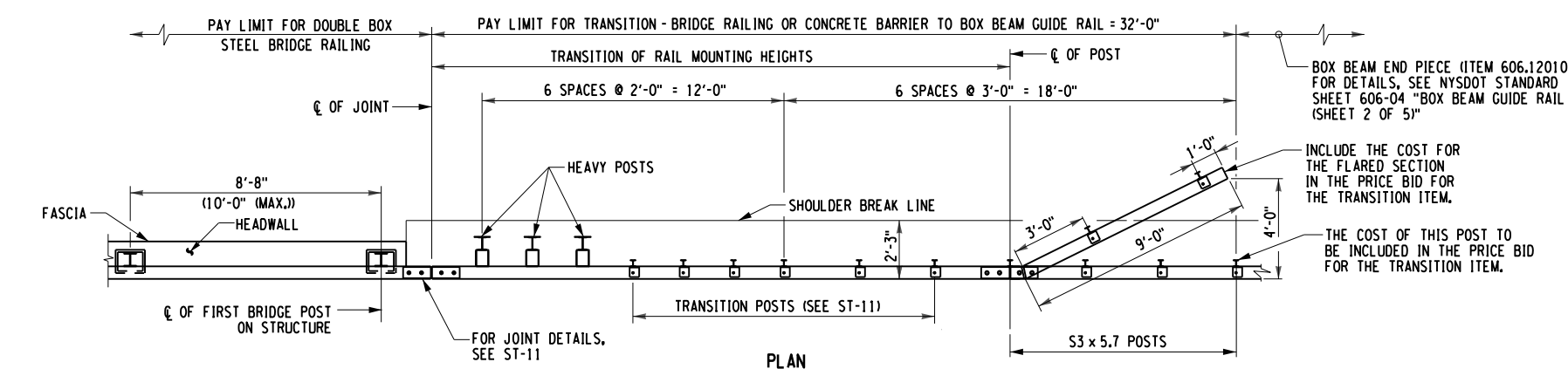


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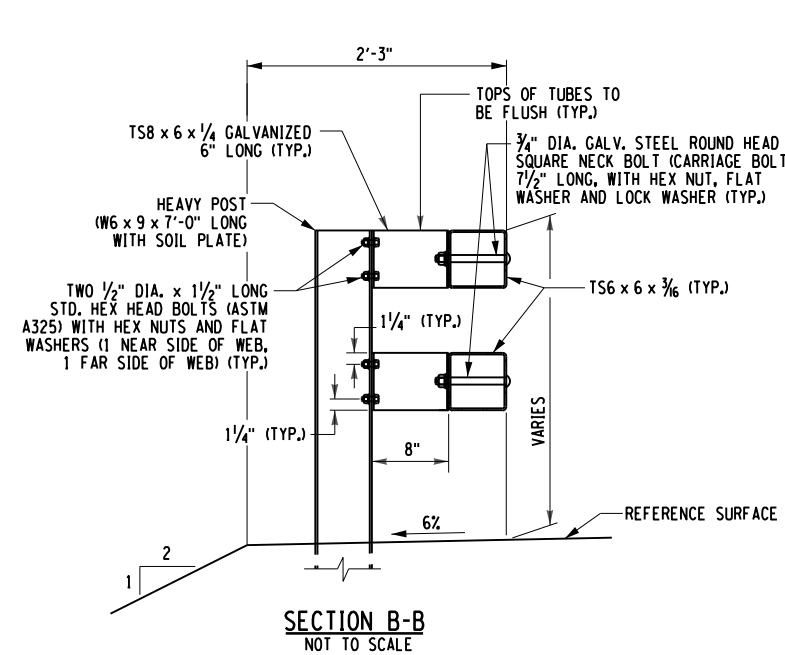
1. FOR RAILING DETAILS SEE DWGS ST-10 THROUGH ST-12
2. FOR BOX BEAM END PIECE DETAILS (ITEM 606.120101), SEE NYSDOT STANDARD SHEET 606-04 "BOX BEAM GUIDE RAIL (SHEET 2 OF 5)".

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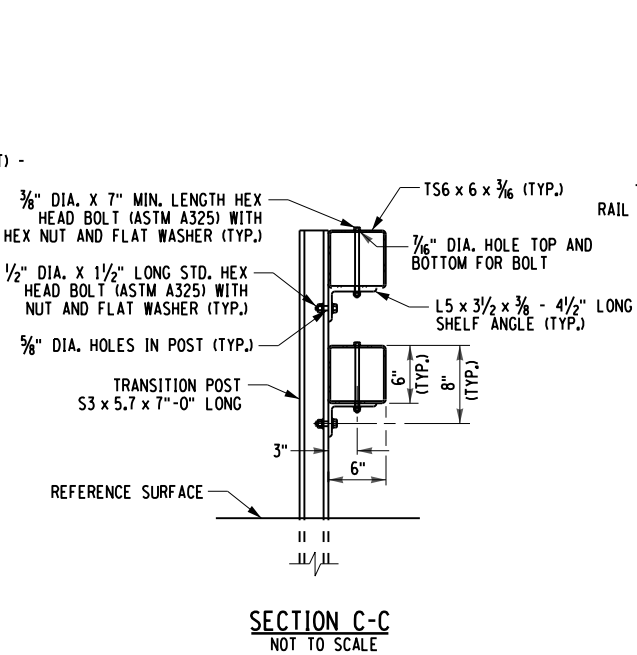
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DATE/TIME = 9/2/2020
USER = 3293



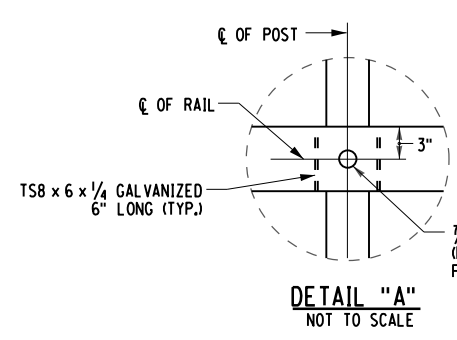
BRIDGE RAILING TRANSITION TO BOX BEAM END PIECE
NOT TO SCALE



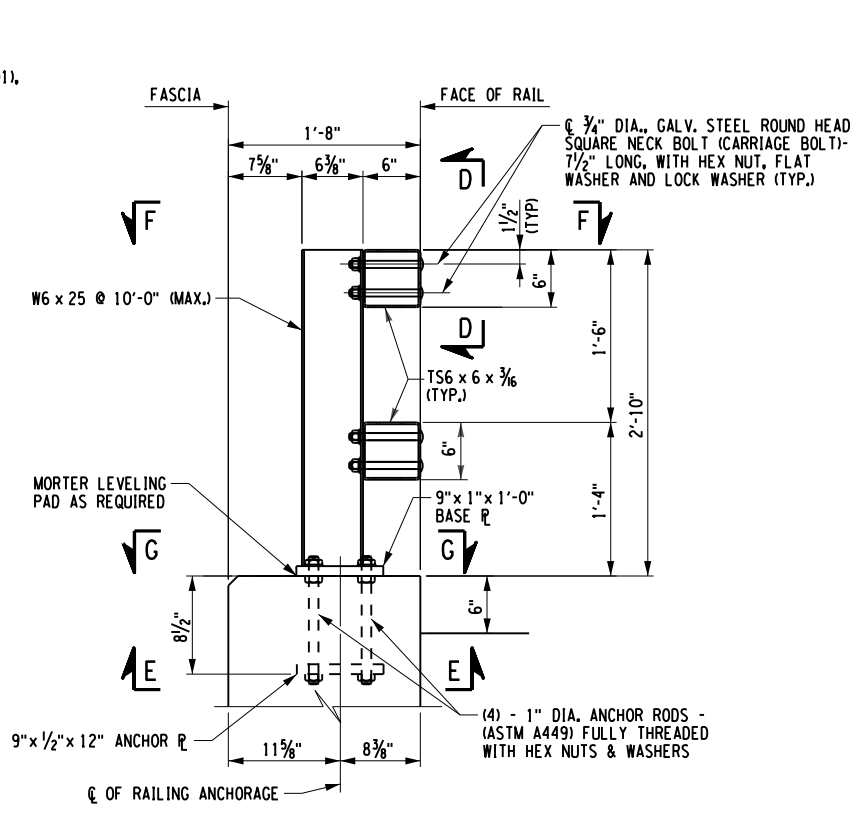
SECTION B-B
NOT TO SCALE



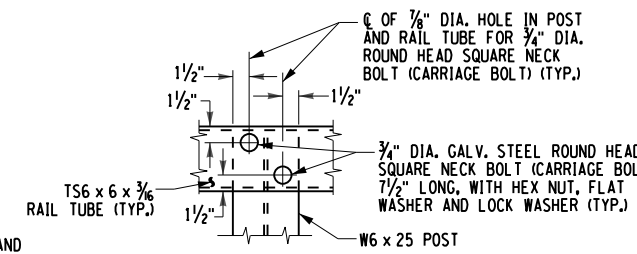
SECTION C-C
NOT TO SCALE



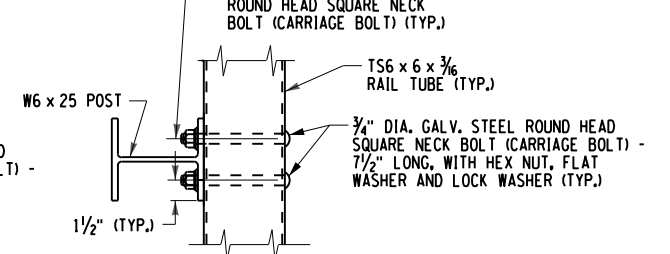
DETAIL "A"
NOT TO SCALE



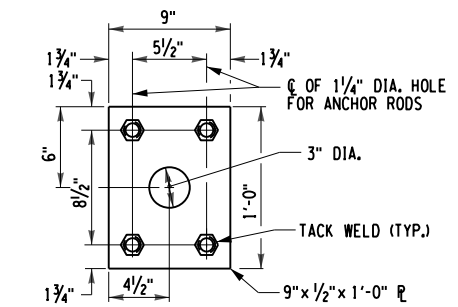
SECTION A-A
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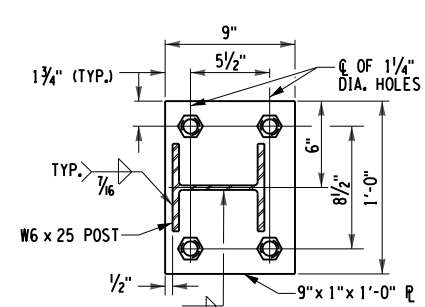
SECTION D-D
NOT TO SCALE



SECTION F-F
NOT TO SCALE



ANCHOR PLATE SECTION E-E
NOT TO SCALE



BASE PLATE SECTION G-G
NOT TO SCALE

NOTES:
FOR "SPlice A" THRU "SPlice D," SEE ST-11.
FOR "SPlice E," SEE ST-12.
FOR ADDITIONAL NOTES, SEE ST-12.
DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.

CHA
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Albany, NY 12205-0269
518.453.4500 - www.chacompanies.com

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TRANSMISSION
NEW YORK

STATE OF NEW YORK
BRYAN DOUGLAS HENDERS
082023
LICENSED PROFESSIONAL ENGINEER

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No.	Submittal / Revision	Appd.	Date

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BRIDGE OVER MUD CREEK
TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

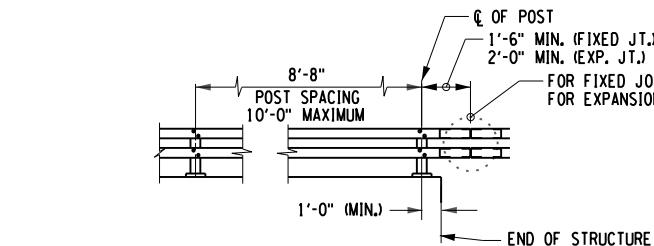
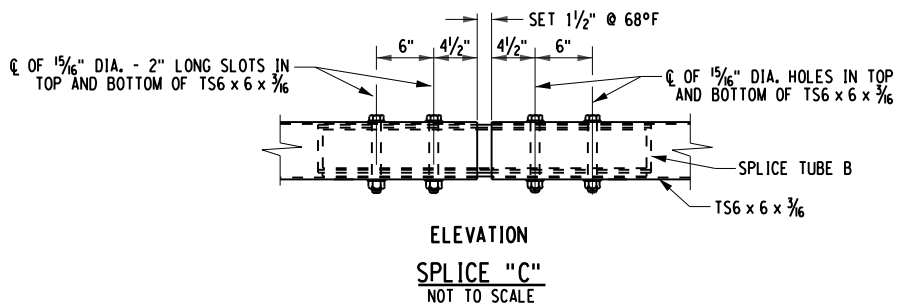
RAILING DETAILS
(1 OF 3)

Designed By:	Project No.:	Drawing No.:
CJO		ST-10
Drawn By:	Scale:	SHEET 10
PKR	Scale	
Checked By:	Plot Date:	
IKK	9/2/2020	

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TOWN OF ROYALTON,
NIAGARA COUNTY, NEW YORK

Designed By: CJO	Project No.:	Drawing No.:
Drawn By: PKR	Scale: Scale	ST-11
Checked By: IIK	Plot Date: 9/2/2020	SHEET 11



The image contains two main technical drawings, A and B, showing cross-sections of rail posts and spacers.

Drawing A: Shows two types of posts. The left post is a "HEAVY POST" with a 6-inch diameter and a 6-inch length. It features a central hole with a diameter of 5/8 inch. The right post is a "TRANSITION POST" with a 5/8 inch diameter and a 6-inch length. It also features a central hole with a diameter of 5/8 inch. Both posts have a 1/4 inch thick wall and a 1/4 inch thick flange. The posts are shown with a 3/2 inch spacing between them.

Drawing B: Shows a "POST SPACER" and a "TRANSITION RAIL". The post spacer is a TS8 x 6 x 1/4 inch, 6-inch long. The transition rail is a 3 x 5.7 inch rail. The drawing shows the rail being driven into the post spacer. The rail has a 1/4 inch thick wall and a 1/4 inch thick flange. The post spacer has a 1/4 inch thick wall and a 1/4 inch thick flange. The rail is shown with a 2-inch spacing between them.

Notes:

- NOTE: TRANSITION RAILS NOT SHOWN
- NOTE: TRANSITION RAILS NOT SHOWN

Dimensions:

- HEAVY POST: 6" DIA., 6" LONG, 1/4" THICK WALL, 1/4" THICK FLANGE, 3/2" SPACING.
- TRANSITION POST: 5/8" DIA., 6" LONG, 1/4" THICK WALL, 1/4" THICK FLANGE, 3/2" SPACING.
- POST SPACER: TS8 x 6 x 1/4", 6" LONG, 1/4" THICK WALL, 1/4" THICK FLANGE.
- TRANSITION RAIL: 3 x 5.7", 1/4" THICK WALL, 1/4" THICK FLANGE, 2" SPACING.

NOTE "B":
PROTRUSIONS CAUSED BY WELDING OR GALVANIZING ARE NOT
PERMITTED ON THE OUTSIDE WALLS OF THE SPLICE TUBE AND
THE OUTSIDE SURFACES OF THE FILL PLATES.

DETAILS ON THE DRAWINGS LABELED AS "NOT TO SCALE" ARE INTENTIONALLY DRAWN NOT TO SCALE FOR VISUAL CLARITY. ALL OTHER DETAILS, FOR WHICH NO SCALE IS SHOWN, ARE DRAWN PROPORTIONAL AND ARE FULLY DIMENSIONED.

<h1 style="text-align: center;">RAILING DETAILS</h1> <h2 style="text-align: center;">(3 OF 3)</h2>		
Designed By: CJO	Project No.:	Drawing No.: <div style="font-size: 2em; font-weight: bold; text-align: center;">ST-12</div>
Drawn By: PKR	Scale: Scale	
Checked By: IHK	Plot Date: 9/2/2020	
		SHEET 12



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