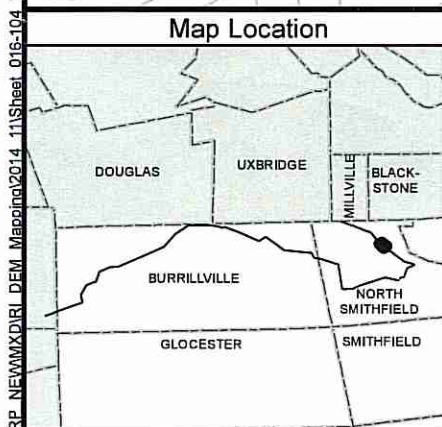


Path: Y:\Projects\NatlGrid\IRP\_NEW\XDR\DEM\_Map\2014\_11\Sheet\_016-104\_PlanMetric\_Map.mxd



**Existing Conditions**

	Right-of-Way
	Access Road
	Wood Pole to be Removed
	Line Structure - Wood Pole
	Steel Structure to be Removed
	Wetland with Flag
	Watercourse
	Parcel Boundaries
	Edge of Wooded Area
	Stone Wall
	Existing Transmission Line
	Existing Distribution Line
	Existing Culvert
	Vernal Pool Location
	Protected Habitat

**Proposed**

	RI Wetland from 1988
	Aerial Photography
	Conservation Area
	50' Perimeter Wetland
	100' Riverbank Buffer
	200' Riverbank Buffer
	Floodway
	Floodplain
	Proposed or Relocated Transmission Line
	Access Route (Existing Road)
	Access Route (New Road)
	Access Route (Tree Clearing)
	Permanent Pole
	Temporary Pole - Construction
	Swamp Mat (Construction)
	Swamp Mat (Tree Clearing)
	Perimeter Sediment Controls
	Proposed Check Dams and Sediment Traps
	Proposed Culvert

	Limit of Clearing
	Construction Pad
	Wire Pulling Station
	Guard Structure
	Work Pad
	Forested Wetland (PFO) Clearing
	Temporary Guy Wire/Anchor
	Limit of Disturbance (Shading is inward of outside edge)

- 1 Stabilized construction ingress/egress
- 2 Mud box/drill cutting box (see Erosion & Sediment Control General Notes)
- 3 Laydown or landing area
- 4 Stockpiling/staging area (see Erosion & Sediment Control General Notes)
- 5 Dewatering area (see Erosion & Sediment Control General Notes)
- 6 Concrete washout/testing area (see Erosion & Sediment Control General Notes)
- 7 If access road grading required on steep terrain (exceeding 3:1 slope), water bars should be installed during road bed preparation
- 8 Stream and ASSF crossings will be accomplished using one of the stream crossing techniques shown on the swamp mat details (mat bridge detail). Access road crossings and construction work pads will be elevated in such a manner to span the stream or ASSF and not obstruct the flow of water.
- 9 Perimeter soil erosion & sediment controls (see Soil Erosion & Sediment Control General Notes)

Limit of Disturbance – Physical alterations include tree clearing and vegetation removal, access road improvements, construction work pads, structure removal, structure installation and wire stringing. Included in the LOD are aerial wire spans of freshwater wetlands and other state-regulated areas where no physical alteration is proposed.



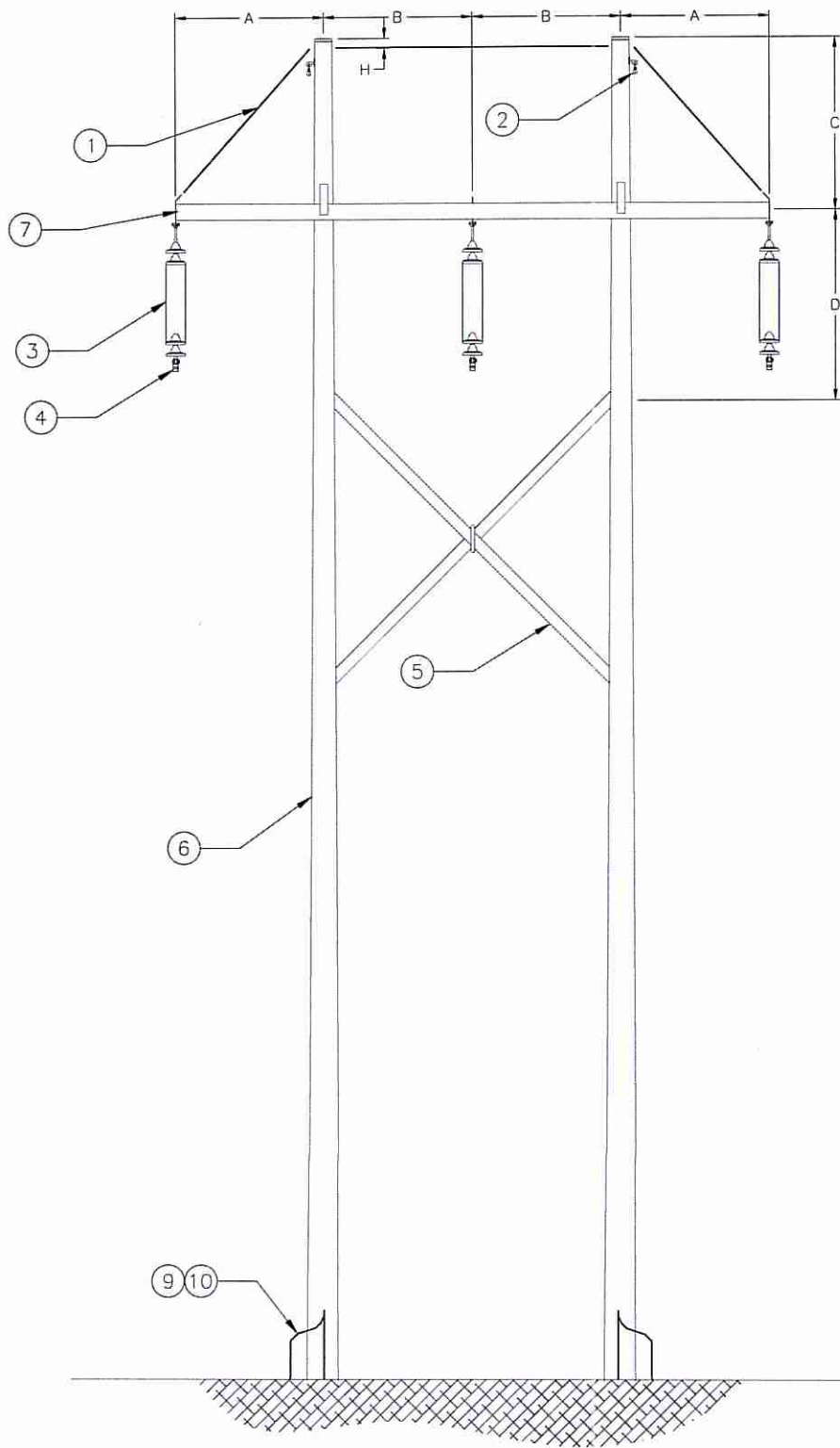
Plan Scale: 1" = 100'  
0 25 50 100 150 Feet

**NOT FOR CONSTRUCTION**

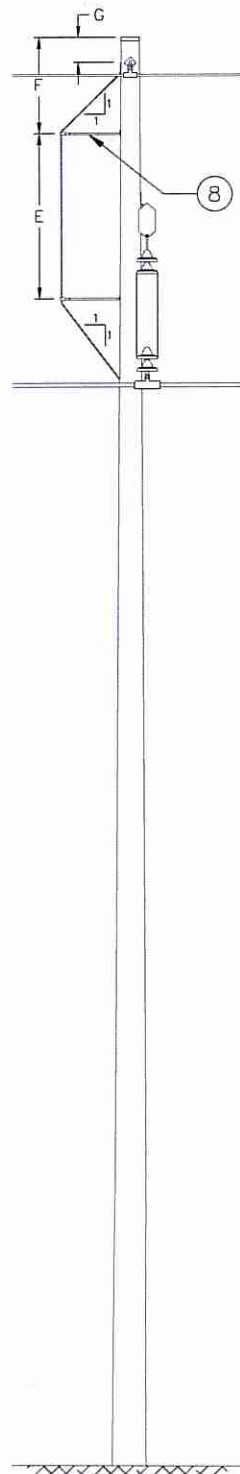
NICHOLAS G. RUBINO  
No. 4740  
REGISTERED PROFESSIONAL ENGINEER

Sheet 1 of 3

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FRONT ELEVATION



SIDE ELEVATION

INCHES ON ORIGINAL

DEC 5 2014

Tag	STANDARD ASSEMBLY ID	MU VARIABLE					Description
		01	02	03	04	05	
1	BR.CS.TT.NS	1	-	-	-	-	Brace (BR), Cable Stay (CS), Tip-to-Tip Stays (TT), Non-Structural (NS)
	BR.CS.AT.UI	-	1	1	1	1	Brace (BR), Cable Stay (CS), Arm Stays (AT), Uninsulated (UI)
2	SW.SU.AG.BK	2	2	2	2	2	Shieldwire (SW), Suspension (SU), AGS Unit (AG), Shieldwire Bracket (BK)
3	IN.SU.SS.00	3	3	-	3	-	Insulator (IN), Suspension (SU), Single String (SS),
	IN.SU.EV.00	-	-	3	-	3	Insulator (IN), Suspension (SU), Single String - EHV (EV).
4	CN.SU.AG.SG	3	3	6	3	6	Conductor (CN), Suspension (SU), AGS Unit (AG), Single (SG)
	BR.XB.FT.00	1	1	1	-	-	Brace (BR), X-Brace (XB), Fixed Type (FT),
5	BR.XB.PI.00	-	-	-	1	1	Brace (BR), X-Brace (XB), Pin Type (PT),
	PO.WD.00.00	2	2	2	2	2	Pole (PO), Wood (WD), .
7	AR.CA.ST.UB	1	-	-	-	-	Arm (AR), Crossarm (CA), Steel (ST), Unbonded (UB)
	AR.CA.ST.BO	-	1	1	1	1	Arm (AR), Crossarm (CA), Steel (ST), Bonded (BO)
8	GN.SF.00.00	4	-	-	-	-	Grounding (GN), Standoff Bracket (SF), .
9	GN.LD.00.00	2	2	2	2	2	Grounding (GN), Downlead (LD), .
10	GN.RD.00.00	2	2	2	2	2	Grounding (GN), Ground Rod (RD), .

DIMENSION TABLE										
	A	B	C	D	E	F	G	H	DISCS	VOLTAGE
1	6'-3"	6'-3"	8'-0"	8'-0"	8'-0"	4'-0"	8"	1'-4"	10	115 kV
2	6'-3"	6'-3"	8'-0"	8'-0"	-	-	8"	1'-4"	10	115 kV
3	6'-3"	6'-3"	8'-0"	8'-0"	-	-	8"	1'-4"	10	115 kV
4	9'-6"	9'-7 1/2"	8'-1 1/2"	8'-1 1/2"	8'-1 1/2"	8"	8"	1'-9"	14	230 kV
5	13'-0"	13'-0"	11'-8"	11'-8"	13'-0"	8"	8"	1'-6"	18	345 kV

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED DEC 26 2014 FILE # 14-0214  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Nancy L. Freeman*

nationalgrid

MACRO UNIT  
 H-FRAME (H2)  
 WOOD (WD)  
 SUSPENSION (SU)

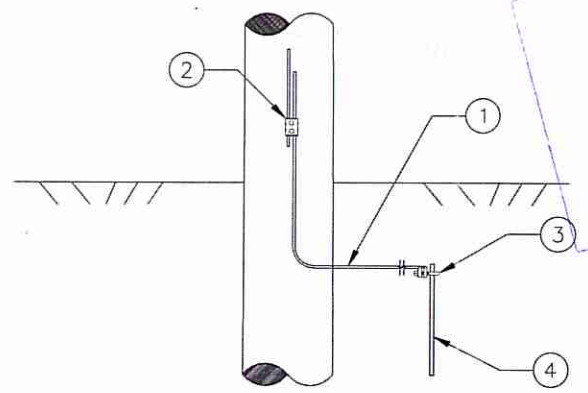
ORIGINAL NAME	DATE
DRAWN	
CHECKED	
REVIEWED	JLC 03/10/11
APPROVED	

REV	DATE	DESCRIPTION
1	10/18/11	CORRECT DIMENSION TABLE
2	11/7/12	CORRECT WOOD POLE CU REFERENCE
3	10/17/14	CHANGED DIMENSIONS 3 & 4
4	10/17/14	CHANGED DIMENSIONS 5 & 6
5	10/17/14	ADDED OPTIONS FOR RESTRAINED INSULATORS
6	10/17/14	ADDED OPTIONS FOR RESTRAINED INSULATORS
7	05/09/14	INSERT NEW ASSEMBLY LIST BASED ON STORMS MU/CU PROJECT
8	10/17/14	REVISED ASSEMBLY LIST

REV	DATE	DESCRIPTION
1	10/18/11	CORRECT DIMENSION TABLE
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8	10/17/14	REVISED ASSEMBLY LIST

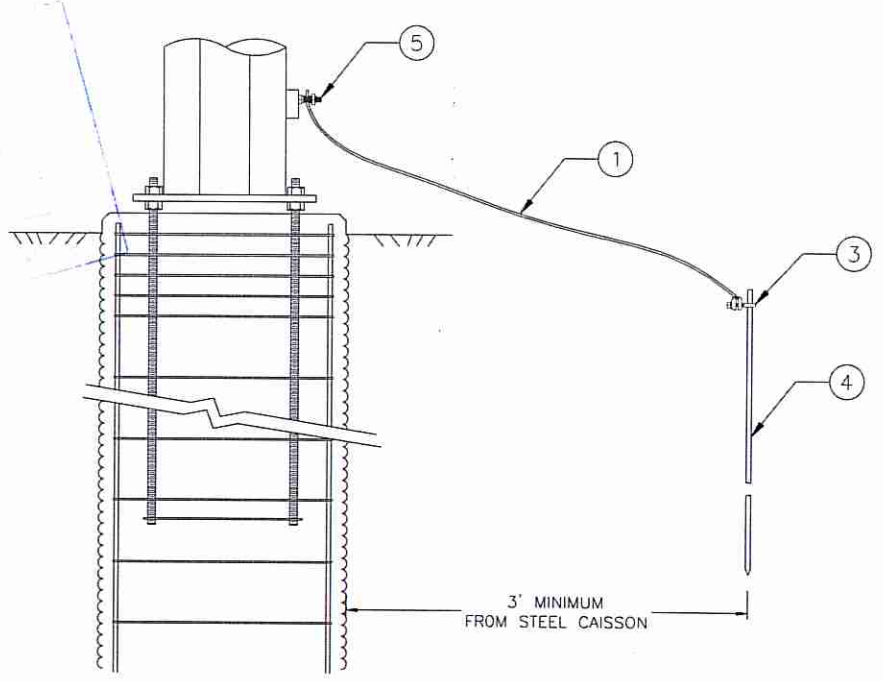
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GN.RD.00.00



VARIABLE 1  
GROUND ROD DETAIL FOR DIRECT EMBEDDED WOOD POLES

DEC 5 2014

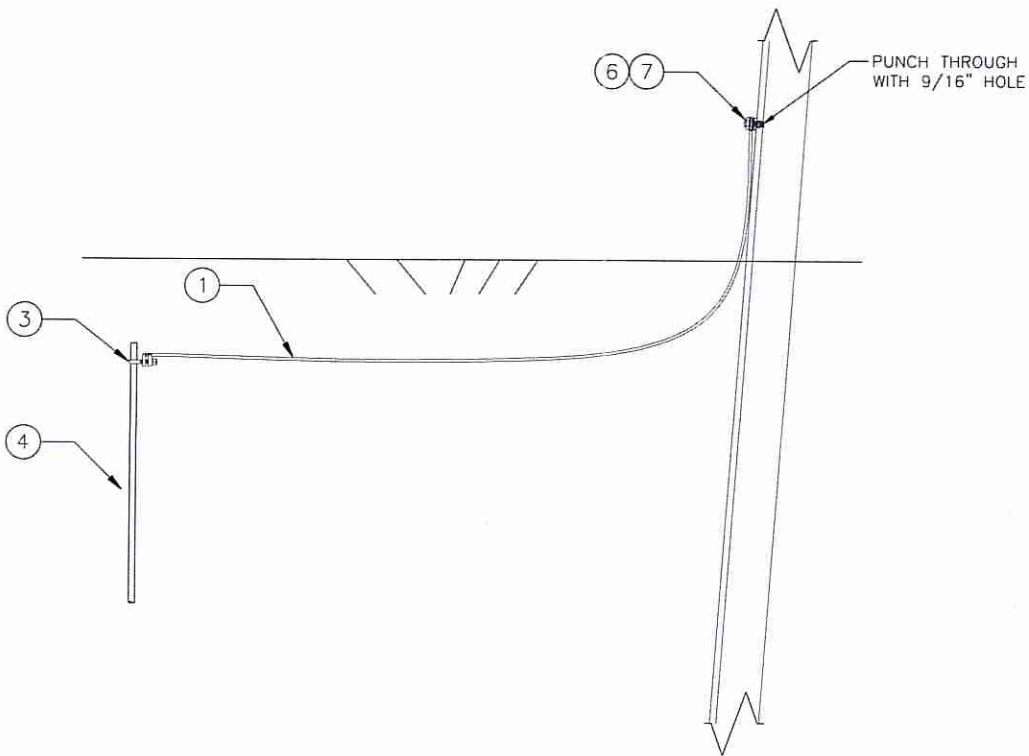


VARIABLE 2  
GROUND ROD DETAIL FOR STEEL POLE STRUCTURES SET ON CAISSON FOUNDATIONS

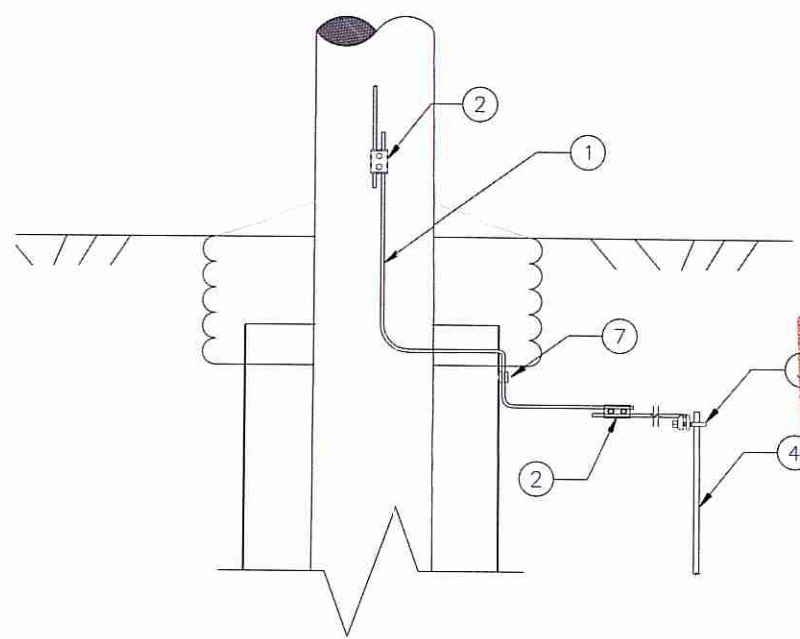
Tag	Peoplesoft ID	SAP ID	Variable					Item Description
			01	02	03	04	05	
1	5998530	9306353	5	5	5	5	5	Wire, 3/8" Steel, Common Grade
2	5962562	9320554	1	-	-	2	1	Parallel Groove Clamp, Bronze
3	3503390	9313417	1	1	1	1	1	Connector, Ground, Cable to Rod
4	3503013	9313616	1	1	1	1	1	Ground Rod
5	5961547	9313780	-	1	-	-	-	Lug, Grounding
6	7001719	9319754	-	-	1	-	-	Nut, Hex, 1/2", S.S.
7	5986688	9320250	-	-	1	1	-	Clamp, Bronze

Variable	Description
01	Ground Rod for Direct Bury Poles
02	Ground Rod for Steel Pole Structures set on Caisson Foundations
03	Ground Rod for Steel Towers
04	Ground Rod for Wood Poles set in Corrugated Pipe
05	Ground Rod for Guyed Structures

NOTE:  
REFER TO SP.06.01.301.101 FOR COMPLETE GROUNDING DETAILS



VARIABLE 3  
GROUND ROD DETAIL FOR STEEL TOWERS



VARIABLE 4  
GROUND ROD DETAIL FOR WOOD POLES INSTALLED IN CORRUGATED STEEL PIPES

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Nancy L. Freeman

VARIABLE 5  
GROUND ROD DETAIL FOR GROUNDING ON GUYS

INCHES ON ORIGINAL

Sheet 3 of 3

GN.RD.00.00

FIGURE 3-2

VER	DATE	DESCRIPTION
1	05/07/14	INITIAL ISSUE
2	07/22/14	CHANGE ITEM TAG #3 BECAUSE OF WIRE SIZE INCOMPATIBILITY, STANDARD PROBLEM LOG ENTRY 218
3		
4		
5		
6		
7		

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PREPARED BY	TEC	04/16/14
REVIEWED BY	BMR	05/05/14
APPROVED BY	LCS	05/07/14
SCALE		N.T.S.
SHEET	1	OF 1
INDEX		

COMPATIBLE UNIT  
GROUNDING (GN)  
GROUND ROD (RD)

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