Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-001 (MS)

Central Hudson Response No: CHGE-001 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Christopher Rottkamp (1, 3, 4, 8, 9, 13, 14, 19, and 20)
Jose Ruaya (5, 7, 10, 11, 16, 18)
John Hecklau (2, 6, 12, 15, 17, 21, 22, 23)
Lewis Fitzgerald (4)

Information Requested:

1. During clean up and restoration of the project will Central Hudson Gas and Electric Corporation (Central Hudson, CHGE, or Company) remove all used/discarded Company-related debris from the right-of-way (ROW)? If not, please explain why.

2. Provide the Company's plans for acquiring the Stormwater Pollution Prevention Plan (SWPPP)/State Pollutant Discharge Elimination System (SPEDES) approval for this project including anticipated filing time horizon.

3. Provide an assessment of the pros and cons of using, for crossing only (not access), the Rail Trail for construction and operation of the facility.

4. Provide all information relating to the use of the Con Edison right of way for construction including, but not limited to, permission, documentation of rights (easement or other approval), environmental assessments (e.g. wetland delineations), proposed access locations, and plans for

restoration of access road and existing features such as culverts.

5. Provide an analysis of the total amount (square footage) of agricultural land that is unusable for each guyed structure that is proposed to be located in agricultural land versus the area that could be utilized if concrete foundations were used.

6. The Application states, in some cases, that the Company will comply with the substantive provisions of these town code chapters/laws as they pertain to construction of the project. However, the Applicant does not specify exactly what part(s) of the codes/law apply to a specific construction practice or design. For each town code/law please identify exactly what portions of the code/law apply to the project and how the Company will or will not comply with such items.

7. Provide the shape files for the preferred proposed route.

8. Is the project ROW currently cleared to its full width?

9. How will driveways and residential areas (landscaping, lawns, etc.) be protected during construction?

10. There appears to be a gas pipeline at Plass Road. This pipeline is not shown on any project drawings. Supply an updated look-down sheet(s) showing its location on the project ROW.

11. Are there any underground cables or pipelines within the project ROW including off-ROW access roads? If so, provide "as-built drawings" or other design drawings identifying where they are located.

12. Are there any other invasive species surveys aside from the completed wetland forms? If so, please supply them.

13. Supply all notes of any meetings with the NYSDEC regarding invasive species.

14. Provide all e-mails, notes or correspondences related to the 8/7/13 field visit with the DEC regarding invasive species.

15. Section 4.5.1.2 states “Invasive species percent coverage and species vary greatly throughout the ROW, but were observed in at least 90% of the delineated wetlands or their immediate vicinity. Field surveys identified the following invasive species within the Project Area: purple loosestrife (Lythrum salicaria), reed canary-grass (Phalaris arundinacea), European common reed grass (Phragmites australis), multiflora rose, common buckthorn, honeysuckle, and privet (Ligustrum obtusifolium).” Please update the language and percentage to reflect the invasive species listed in “6 NYCRR Part 575", which is the most current DEC invasive species list.

16. According to Exhibit 8 to Central Hudson’s Response to PSC’s November 27, 2013 Deficiency Letter and Request for Information, ROW Cross Sections, the centerline, from Diddell Road to the Pleasant Valley Substation, is proposed to be 44 feet from the easterly edge of the ROW. The Company’s optimal ROW width for a 115 kV line is 50 feet from centerline. Please explain whether the Company could construct the new centerline to be located 50 feet from the edge of the ROW through this section.

17. Provide a project ROW map locating each State wetland and protected stream, and list any invasive species occurring within each of those areas.

18. For general 115 kV construction does the Company use any of the following types of structures or foundations:

    a. single poles for angle structures?
    b. H-Frames for dead-end structures?
    c. concrete foundations?

19. What is the planned use for the inactive substation site north of Croft Hill Road?

20. Section 4.4.5 discusses saturated soil conditions relative to agricultural soils. Define:

    a. when the soil is too saturated to work on;
    b. when or under what conditions “excavated soil” would not be suitable for backfill of a new pole; and,
    c. how and where will unsuitable soil be disposed.

21. Section 4.4.4 states, “However, depth to bedrock is greater than 60 inches in most areas, which is sufficient to

accommodate Project construction." Why is this depth sufficient for project construction and what is the anticipated average depth of embedment of the structures for this project?

22. In the "Responses to Requests for Additional Information", responding to PSC Request #14, the Company supplied the original map under a different date. Please resubmit the map with the corrected elevation units.

23. Section 4.3.2 states, "Based upon aerial photo interpretation, approximately 1.7 miles of the proposed transmission line route crosses active agricultural land." How many miles of the project pass through agricultural lands that are located within agricultural districts?

Responses:

1. *During clean up and restoration of the project, Central Hudson will remove all unused/discarded company-related debris from the right-of-way. The only exception is that where noted (e.g., in the EM&CP) at certain locations (e.g., wetlands), the embedded portion of old removed poles may remain in the ground.*

2. *Central Hudson is in the process of finalizing its Stormwater Pollution Prevention Plan (SWPPP) and will distribute it to the parties as a supplement to this information request. Once finalized and distributed, the intent would be to obtain comments, if any, from the parties, particularly including the Department of Environmental Conservation (NYSDEC), for approval. Once approved, the SWPPP would be an exhibit to any Joint Proposal filed in this proceeding. After the Certificate is issued, Central Hudson would file a Notice of Intent with NYSDEC Staff.*

3. *Central Hudson has no plans to cross the Rail Trail during construction and operation of the facility. The Cons of crossing the Rail Trail exceed the Pros.*

   Cons of Crossing Rail Trail include:

   - *Safety – Crossing with vehicles and/or equipment creates potential for injury to pedestrians or bikers using the Rail Trail;*

- *Potential for damage to the Trail's asphalt surface, shoulder or adjacent water line by construction equipment. Such damage could also create safety issues and/or repair expenses;*
- *Difficulty in protecting the Trail surface from equipment crossings, because such protection would likely create safety issues for pedestrians or bikers.*
- *Temporary closures of Trail crossing area whenever crossing with equipment or vehicles. This would likely create dissatisfaction with Trail users.*

Pros of Crossing Rail Trail include:

- *Gives Central Hudson flexibility to reach a variety of structures from two different access points (both Route 376 and Con Edison right-of-way "Access "K")*

4. *In terms of the use of the Con Edison right of way during construction, the following responses are provided:*

Proposed Access Locations:

Central Hudson plans to use a Con Edison off right-of-way access road to access structures A32 through A47 (16 structures total). See Appendix A of the Application, Sheets 9, 10 and 13. The Con Edison road bisects the Central Hudson A-Line right-of-way near structure A43 as shown on Sheet 9 (Application Appendix A). Off right-of-way access to the Con Edison right-of-way is labeled as "Access K" and is shown in its entirety on drawing sheet 13 (Application Appendix A). Access to the Con Edison right-of-way is from Diddell Road.

Environmental Assessments:

Environmental assessments (such as wetland delineations) for the off right-of-way Con Edison right-of-way access road were conducted as part of the overall evaluation of the A and C line right-of-way and have been included as part of the filing. For example, see Sheet 13 (Application Appendix A) which identifies wetlands and any other environmental features. Additional assessment information can be found in Appendix H.

Plans for Restoration:

The existing Con-Edison right-of-way has an access road that would be followed. Should Central Hudson damage this access road or any features such as culverts, appropriate repairs would be made to restore the road to existing conditions.

Permission and Rights:

Central Hudson is in the process of securing the necessary permission and rights to utilize the existing road on Con Edison's Right of Way. Central Hudson's Real Property Services department has been in contact with Con Edison's Transmission Department and has requested an expedited review of our proposed crossing locations on their Right of Way. Once the review is complete, it is expected that Central Hudson will enter into a Temporary License Agreement with Con Edison to utilize their Right of Way.

5. *Attached as **Exhibit A** to this Response is a table which identifies for each pole in agricultural land the following information: (i) existing configuration, including number of guys; (ii) proposed new configuration; (iii) benefit of the new configuration, including the square footage of unimpeded land now usable with the proposed new configuration; (iv) alternatives to Central Hudson's proposed configuration, along with the gains or disadvantages of such alternative; and (v) the cost of the alternative.*

6. *The text of Exhibit 7 specifies the particular sections of local codes for which Central Hudson is seeking a partial waiver. The Summary Table included at the outset of Exhibit 7 did not provide such specificity. The Summary Table has been revised and it is attached as **Exhibit B**. Assuming this level of specificity is adequate and no other changes are made, a revised Exhibit 7 will be included as an Exhibit to the Joint Proposal or otherwise filed as appropriate.*

7. *The requested shape files are attached as **Exhibit C** to this Response.*

8. *The project ROW is currently cleared to its full width.*

9. *Unloading/loading or use of equipment in driveways will be minimized to the greatest extent possible. However, if*

necessary, we would use rubber matting to protect the driveway surface.

In any instances where construction work or right-of-way access needs to occur directly on landscaped residential areas such as lawns, low-impact tracked equipment will be utilized and full restoration would occur post-construction.

10. *We understand that this question relates to Exhibits 8-04 and 8-05 attached to Central Hudson's January 13, 2014 filing. Revised Exhibits are attached as* ***Exhibit D*** *to this Response to show the referenced gas line (which is shown on the profile sheets contain in Appendix A to the Application, Sheet 1).*

11. *See* ***Exhibit E*** *to this Response. The EM&CP drawings contained in Appendix A to the Application have been revised to account for underground utilities and a CD with these updated drawings will be provided before May 9.*

12. *As indicated in response to PSC Request #15 in the Responses to Requests for Additional Information letter dated January 13, 2014, "[t]he invasive species inventory on the A and C Line ROW was conducted in association with wetland delineations and ecological community mapping efforts undertaken by EDR. Non-native invasive plant species, and their dominance within the community, were documented at wetland and upland sampling points (see data sheets in the Wetland Delineation Report included as Appendix H). General observations of invasive species occurrence were also documented elsewhere along the ROW." No additional surveys of invasive species occurrence on the A and C Line ROW were conducted.*

13. *Minutes from the May 14, 2013 meeting between NYSDEC and Central Hudson can be found in "Appendix M – Public Outreach Package." These minutes make reference to a discussion about invasive species.*

14. *The referenced 8/7/13 field visit was requested by the NYSDEC subsequent to the meeting held at NYSDEC's Region 3 office on May 14, 2013, to provide them an opportunity to see actual field conditions prior to formally commenting on our wetlands delineation, Blanding's Turtle study, and Long Range Vegetation Management Plan, (pre-filing). Central*

Hudson personnel escorted NYSDEC staff on site, but it was not really a formal meeting, and therefore no formal meeting notes were produced. There is a sign-in sheet from the field visit which can be found in "Appendix M – Public Outreach Package." NYSDEC did provide a document (letter) dated August 21, 2013 which is their compilation of NYSDEC Staff comments related to the project. This document does reference expectations with regards to invasive species, and is also included in "Appendix M – Public Outreach Package."

15. *Review of the current list of invasive species in "6 NYCRR Part 575", and vegetation data collected during the on-site wetland delineation, did not result in the identification of any new invasive species being present on the A and C Lines ROW. However, reed canary grass (Phalaris arundinacea), which was identified as an invasive species in the Application, is not included on the most current NYSDEC invasive species list. Review of the on-site data indicate that one or more currently listed invasive species were observed in approximately 94% of the delineated wetlands or the adjacent uplands. Field surveys identified the following currently-listed invasive species within the ROW: purple loosestrife (Lythrum salicaria), common reed grass (Phragmites australis), multiflora rose (Rosa multiflora), common buckthorn (Rhamnus cathartica), honeysuckle (Lonicera spp.), and border privet (Ligustrium obtusifolium).*

16. *While the centerline from Diddell Road to the Pleasant Valley Substation follows the existing centerline of the A line, Central Hudson could construct a new centerline so that it is 50 feet from the edge of the right-of-way through this section as opposed to the existing 44 feet. However, Central Hudson chose not to realign the centerline in this area for several reasons.*

    Installing the new structures on the existing centerline will maintain the current alignment that has been familiar with customers for over 60 years. Maintaining the structures on the same centerline will also ensure the structures maintain adequate distances from other facilities including adjacent transmission lines and underground gas facilities. Finally, maintaining the

existing centerline will improve efficiency during installation by simplifying wire installation.

17 *The requested maps are attached as* ***Exhibit F****.*

18. *For general 115 kV construction, Central Hudson uses all of the structures identified in the IR.*

19. *There is no planned use for the inactive substation site north of Croft Hill Road. The previous substation was retired.*

20. a. *The soil will be considered too saturated to work on if the equipment required for construction creates rutting in the agricultural field in excess of 4" deep.*

b. *Excavated soils would not be considered suitable for backfill of a new pole if:*

- *visual inspection showed an unusually high moisture content (mud or "soupy");*
- *if visual inspection showed a significant amount of large rocks that would potentially prohibit proper backfilling, compaction or settling around the structure;*
- *visual inspection showed a high content of organic matter that would prevent adequate compaction.*

c. *Unsuitable soil will be disposed of as follows, under the various circumstances:*

- *<u>In non-agricultural areas or areas that are not maintained by landowners (such as lawns)</u>:*

  Unsuitable soils would either be used for backfill following removal of nearby existing poles, or spread on the right-of-way near the new structure. Spreading would not occur in wetlands and would be performed in such a manner as to maintain existing contours and drainage. Mounding soils against the base of the new structure may also occur.

- *In agricultural areas and in areas maintained by landowners (such as lawns):*

  Unsuitable soils would either be used for backfill following removal of nearby existing poles, or removed from the agricultural field or lawn. Unsuitable soils removed from the agricultural field or lawn area would either be disposed of elsewhere on the landowner's property in a designated upland location approved by the landowner, or removed from the site to a pre-approved location to-be-determined. Mounding soils against the base of the new structure may also occur.

21. *The average depth of embedment of the new structures is anticipated to be approximately 10 feet. The statement in Section 4.4.4 of the Application that "depth to bedrock is greater than 60 inches in most areas" was included to indicate that shallow bedrock is not typical along the A and C Lines ROW. Therefore, special installation procedures or significant impacts to geological features are not anticipated. The auger used to excavate the pole holes will be able to drill through any bedrock encountered, and as indicated in the Application, blasting is not anticipated to be necessary. This supports the conclusion that geologic conditions on site can accommodate Project construction without requiring special installation techniques, or resulting in substantial impacts to geological resources.*

22. *The revised map with the correct elevations is attached as* ***Exhibit G****.*

23. *Based on aerial photo interpretation, approximately 1.4 miles of the proposed transmission line route passes through agricultural lands that are located within agricultural districts. This includes approximately 0.4 mile within Agricultural District 20 and 1.0 mile within Agricultural District 22.*

Exhibit A to CHGE-001 (DPS)
Case 13-T-0469

Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
C3	1	Double pole H-Frame with 4 guys	Single pole structure with 1-guy	Benefit: Old structure occupied 560sf space; new footprint only occupies 30sf space; **530sf of additional unimpeded land (94.6% more space)**	Concrete foundation design with no guys	Eliminating guys results in approximately 17.4 sf more unimpeded land than the proposed configuration	Short term construction impacts – more equipment including caisson drilling rig and concrete trucks. Increased cost.	$40,000	
C4	1	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	
C9	1	Three pole swing angle structure with 4 guys	Two pole swing angle structure with 4 guys	Benefit: Old structure occupied 75sf space; new footprint only occupies 66sf space; **9sf of additional**	Single pole structure with concrete foundation design and no guys	Eliminating guys results in approximately 62.4 sf more unimpeded land than the proposed configuration	Short term construction impacts – more equipment including caisson drilling rig and	$80,000	This angle structure exists due to the line angle of the ROW. Due to the increased loads resulting from the line angle, the

Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
				unimpeded land (12% more space)			concrete trucks. Increased cost.		single pole concrete structure alternative may incur significantly higher costs compared to the proposed guyed structure. Existing structure configuration has been present since approximately 1948
C10	1	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	

Exhibit A to CHGE-001 (DPS)
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Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
C30	3	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	
C34	4	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	

Exhibit A to CHGE-001 (DPS)
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Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
C35	4	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	
C36*	4	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	

Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
C37	4	Three pole structure with 10 guys	Single pole structure	Benefit: Old structure occupied 7380sf space; new footprint only occupies 1.8sf space; **7378.2sf of additional unimpeded land (99.9% more space)**	N/A	N/A	N/A	N/A	
C38	4	Double pole H-Frame	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	N/A	N/A	N/A	N/A	

Exhibit A to CHGE-001 (DPS)
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Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
A9	7	Double pole H-Frame	Reuse existing double pole H-Frame	N/A	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	Short term construction impacts and increased cost.	$30,000	Meeting with Matt Brower on April 2013 resulted in his comment regarding possibility of reusing existing structures

Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
A10	7	Three pole structure with 10-guy wires	Reuse existing three pole structure with x-braces and altered guy lead lengths. Use 6 guys in lieu of existing 10.	Benefit: Old structure occupied 7200 sf space; new footprint only occupies 1952sf space; **5248sf of additional unimpeded land (72.9% more space)**	Single pole structure	Benefit: Old structure occupied 7200sf space; new footprint only occupies 1.8sf space; **7198.2sf of additional unimpeded land (99.9% more space)**	Short term construction impacts and increased cost.	$60,000	Converting this existing deadend structure to a direct buried tangent will result in a very long run (approx. 2 miles) without a deadend. This would compromise the reliability of the line. It would be recommended that another structure (originally proposed as a tangent) be converted to a deadend to maintain line reliability. Additionally, it would be recommended that A8 be changed out to a single pole structure as opposed to

Pole #	Sheet #	Existing Configuration	Proposed New Configuration	Proposed Benefit or Loss	Potential Alternative Design	Benefit(s) Gained	Disadvantages	Estimated Cost Impact	Comments
									keeping the existing H-frame for lightning performance. Meeting with Matt Brower on April 2013 resulted in his comment regarding possibility of reusing existing structures.
A11	7	Double pole H-Frame	Reuse existing double pole H-Frame	N/A	Single pole structure	Benefit: Old structure occupied 21sf space; new footprint only occupies 1.8sf space; **19.2sf of additional unimpeded land (91.4% more space)**	Short term construction impacts and increased cost.	$30,000	Meeting with Matt Brower on April 2013 resulted in his comment regarding possibility of reusing existing structures.

TOTAL SPACE GIVEN BACK WITH PROPOSED DESIGN= ~13,300 SF

Exhibit B to CHGE-001 (DPS)
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Table 7-1, Rev. May 2014
Project Compliance Summary

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
Town of Pleasant Valley	Chapter 39, Building Construction	Will Comply
	Chapter 46, Driveways and Highway Permits	Will Comply
	Chapter 48, Fire Prevention	Will Comply
	Chapter 50, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 50, Article III §50-13(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 53, Wetland, Water Body, and Watercourse Protection	Will Comply
	Chapter 57, Refuse Collection, Storage, and Disposal	Will Comply
	Chapter 60, Illicit Discharges, Activities and Connections	Will Comply
	Chapter 74, Stormwater Management and Erosion and Sedimentation Control	Will Comply
	Chapter 93, Vehicles and Traffic	Will Comply
	Chapter 98, Zoning	Will Comply Except as Noted
	Chapter 98, Article III §98-11 – General Regulations, Schedule of Permitted Uses [re: local site plan review requirements]	Waiver Requested
	Chapter 98, Article III §98-12 – General Regulations, Schedule of Area and Bulk Requirements [re: setbacks, height restrictions]	Waiver Requested
	Chapter 98, Article IV §98-44 – Supplementary Regulations, Public Utility Facility [re: screening requirements]	Waiver Requested
Town of LaGrange	Chapter 83, Building Construction Administration and Enforcement	Will Comply
	Chapter 103, Dumps and Dumping	Will Comply

Exhibit B to CHGE-001 (DPS)
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MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 117, Electrical Inspection	Will Comply
	Chapter 120, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 120, §120-14(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies	Will Comply
	Chapter 140, Illicit Discharges to Storm Sewers	Will Comply
	Chapter 162, Noise	Will Comply Except as Noted
	Chapter 162, §162-5 – Prohibited Acts Enumerated [re: construction-related noise]	Waiver Requested
	Chapter 195, Solid Waste	Will Comply
	Chapter 197, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 199, Streets and Sidewalks	Will Comply
	Chapter 226, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article II §240-27 – Establishment and Designation of Districts, Schedule of Permitted Uses and Special Use Permits [re: local site plan review requirements]	Waiver Requested
	Chapter 240, Article II §240-28 – Establishment and Designation of Districts, Schedule of Bulk Regulations and Coverage Limitations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article III §240-31 – Special Zoning District Provisions, Preservation Overlay Zones [re: setbacks, height restrictions]	Waiver Requested
Town of Wappinger	Chapter 80, Blasting	Will Comply

Exhibit B to CHGE-001 (DPS)
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MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 85, Building Code Administration	Will Comply
	Chapter 117, Environmental Quality Review	Will Comply
	Chapter 133, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 133, §133-13(F) – Duties and Responsibilities of Code Enforcement Officer and Zoning Administrator [re: stop-work orders]	Waiver Requested
	Chapter 137, Freshwater Wetland, Waterbody, and Watercourse Protection	Will Comply
	Chapter 166, Noise	Will Comply Except as Noted
	Chapter 166, §166-4 – Applicability [re: applicability to project construction, which is not otherwise exempt]	Waiver Requested
	Chapter 166, §166-13 – Application for Special Waiver [re: local waiver process requirements]	Waiver Requested
	Chapter 206, Soil Erosion and Sediment Control	Will Comply
	Chapter 210, Solid Waste	Will Comply
	Chapter 213, Stormwater Management	Will Comply
	Chapter 230, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article VI §240-37, Attachments 1 and 2– District Regulations, Schedule of Use Regulations [re: local site plan review and special permit requirements]	Waiver Requested
	Chapter 240, Article VI §240-37, Attachments 3 and 4 – District Regulations, Schedule of Dimensional Regulations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article VII §240-44, Special Permit Uses, General Standards [re: site plan and operational requirements]	Waiver Requested

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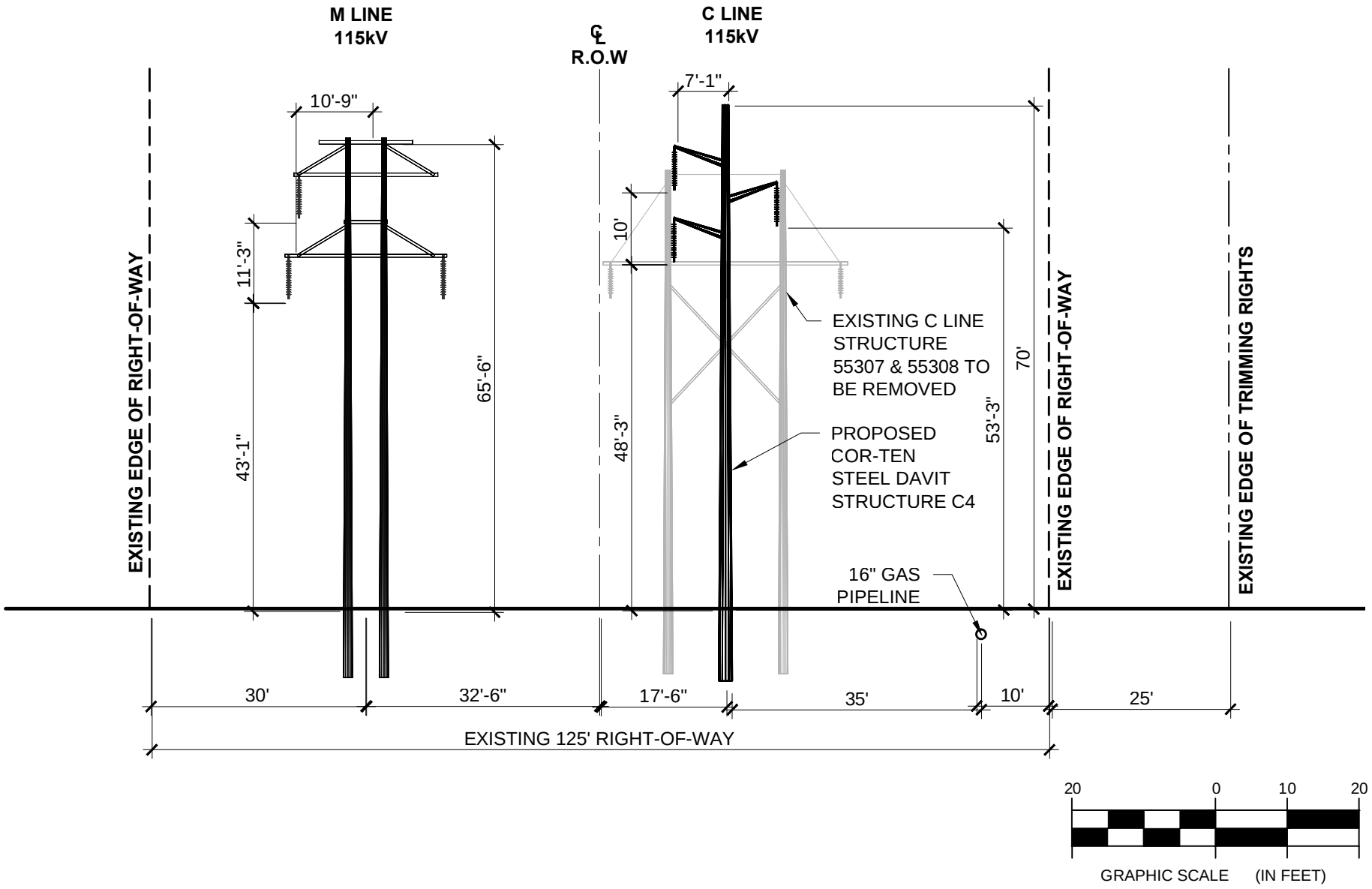
MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 240, Article IX §240-86, Site Development Plans, Standards for Site Development Plan Approval [re: site plan approval requirements]	Waiver Requested
	Chapter 240, Article XI, Performance Standards [re: applicability of performance standards]	Waiver Requested
Town of East Fishkill	Chapter 80, Building Construction and Fire Prevention	Will Comply
	Chapter 108, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 108, Article III §108-13(F), Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses	Will Comply
	Chapter 127, Littering	Will Comply
	Chapter 154, Steep Slope Protection	Will Comply
	Chapter 156, Storm Sewers	Will Comply
	Chapter 157, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 177, Vehicles and Traffic	Will Comply
	Chapter 194, Zoning	Will Comply Except as Noted
	Chapter 194, Article V §194-16, Attachment 2– Schedules of Regulations, Schedule of Permitted Uses [re: prohibition of uses not specifically permitted]	Waiver Requested
	Chapter 194, Article V §194-17, Attachment 3– Schedules of Regulations, Schedule of Bulk Regulations [re: setbacks, height restrictions]	Waiver Requested



PROJECT TITLE: **A & C LINES 115kV ELECTRIC TRANSMISSION REBUILD**	
DRAWING TITLE: **R.O.W. CROSS SECTION AT PLASS ROAD INTERSECTION LOOKING NORTH**	
DRAWN BY: **ZTR**	CHECKED BY: **JH**

edr JOB NUMBER: **12077**	
DRAWING NUMBER: **EX. 8-04**	
SCALE: **1" = 20'**	DATE: **5/5/2014**

Environmental Design & Research,
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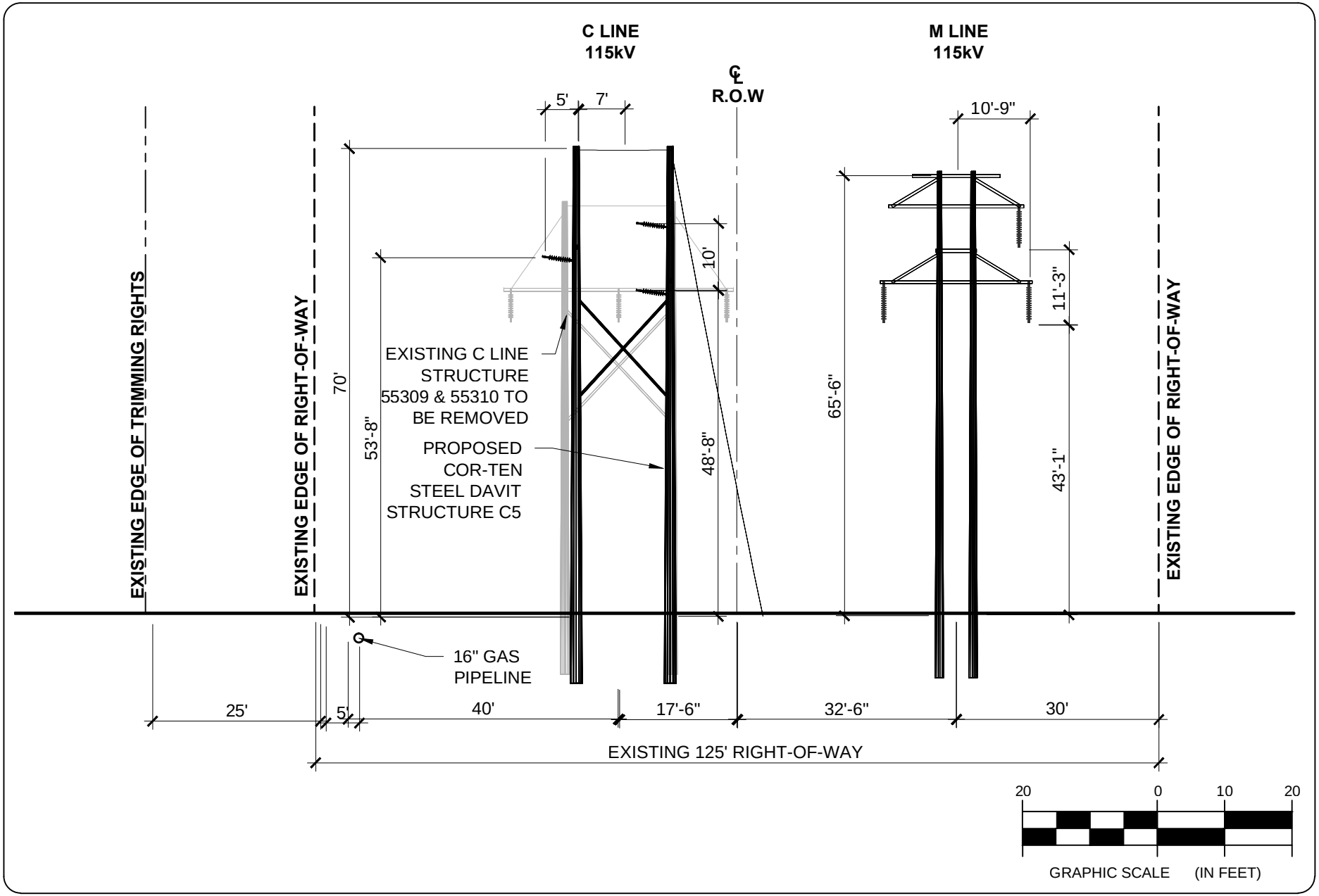


PROJECT TITLE: **A & C LINES 115kV ELECTRIC TRANSMISSION REBUILD**	edr JOB NUMBER: **12077**
DRAWING TITLE: **R.O.W. CROSS SECTION AT PLASS ROAD INTERSECTION LOOKING SOUTH**	DRAWING NUMBER: **EX. 8-05**
DRAWN BY: **ZTR** / CHECKED BY: **JH**	SCALE: **1" = 20'** / DATE: **5/5/2014**

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, New York 13202
P. 315.471.0688

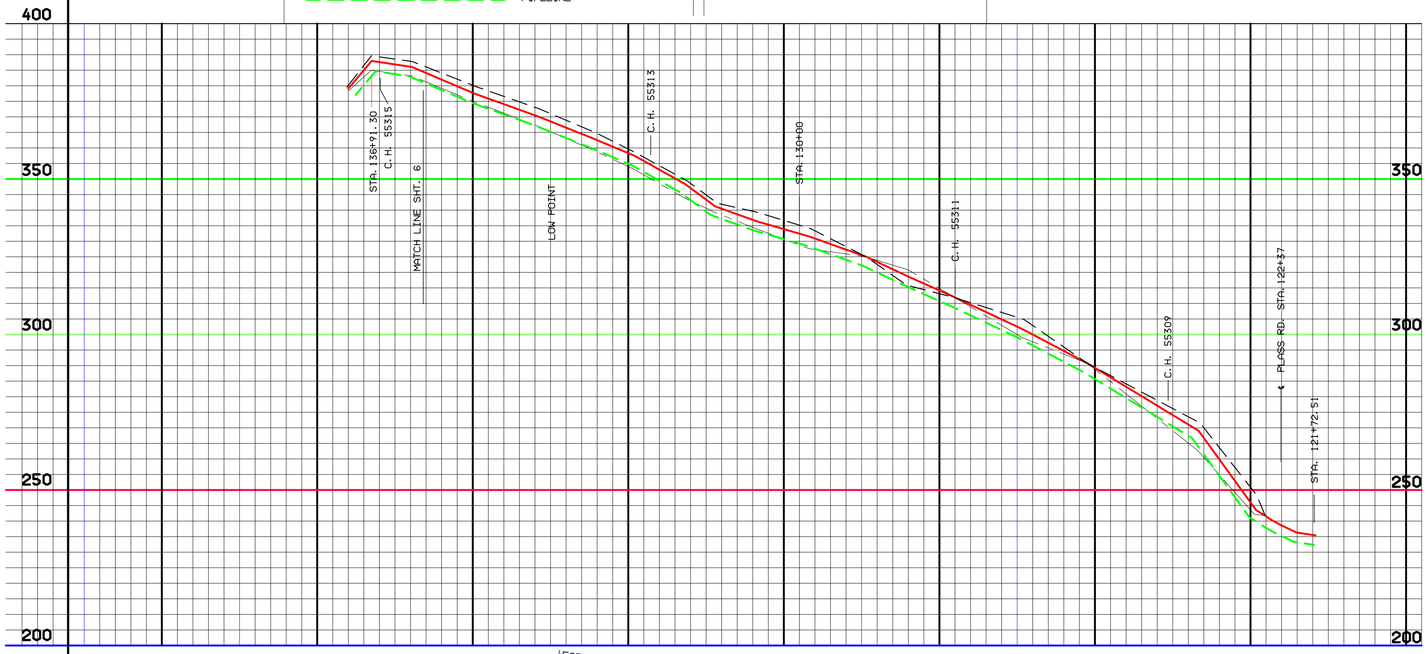
\\roc-dc-01\jobs\12077 CHG&E A&C Lines Article VII\Cad\Working Drawings\12077-C-LINE-ROW-CROSS-SECTIONS.dwg

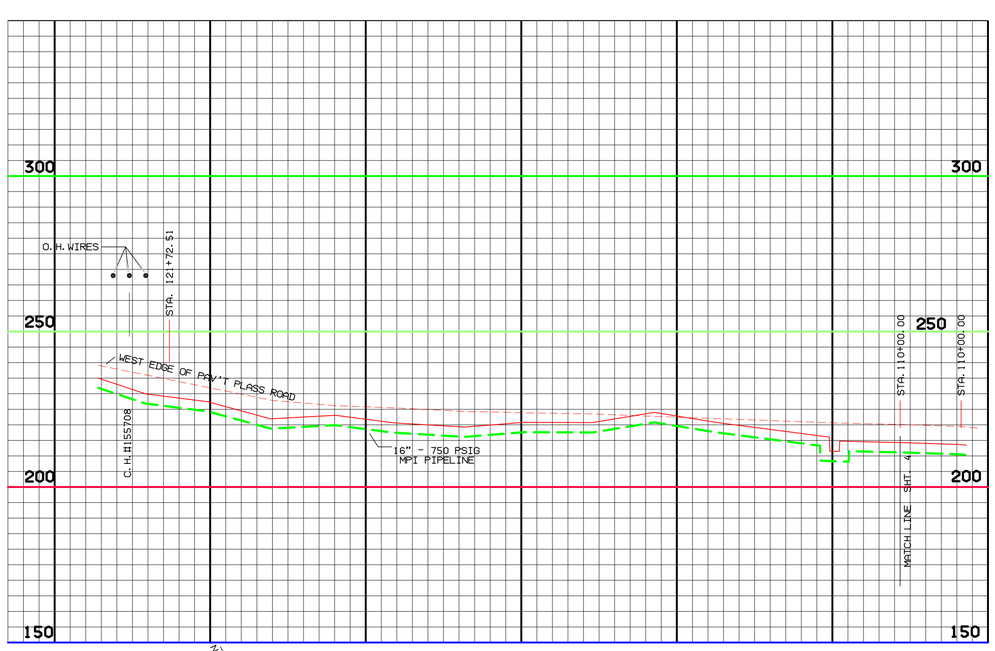
PROFILE LEGEND

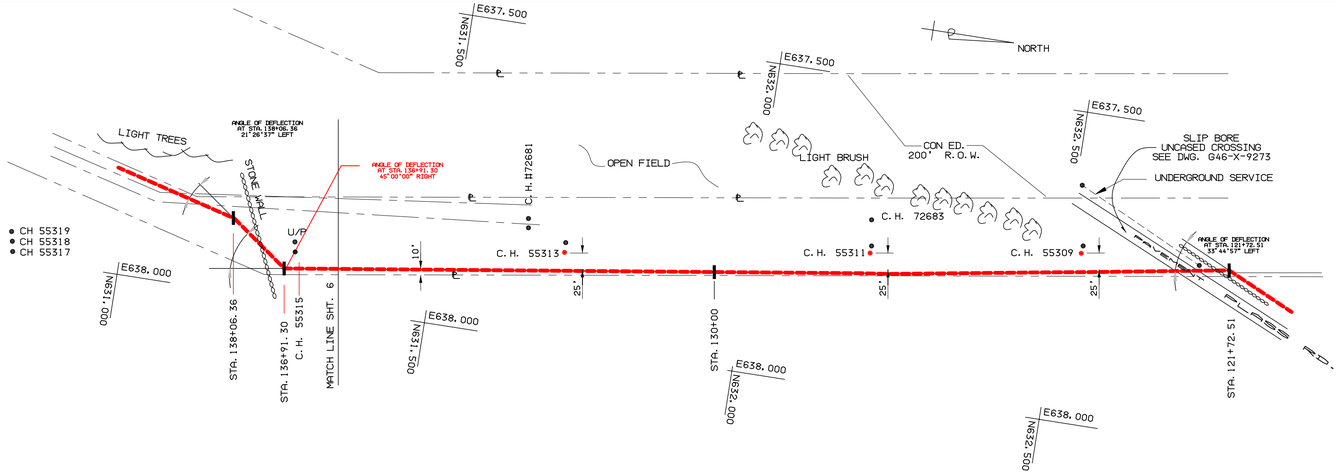
- CENTERLINE
- 15FT. RIGHT OF CENTERLINE
- 15FT. LEFT OF CENTERLINE
- PIPELINE

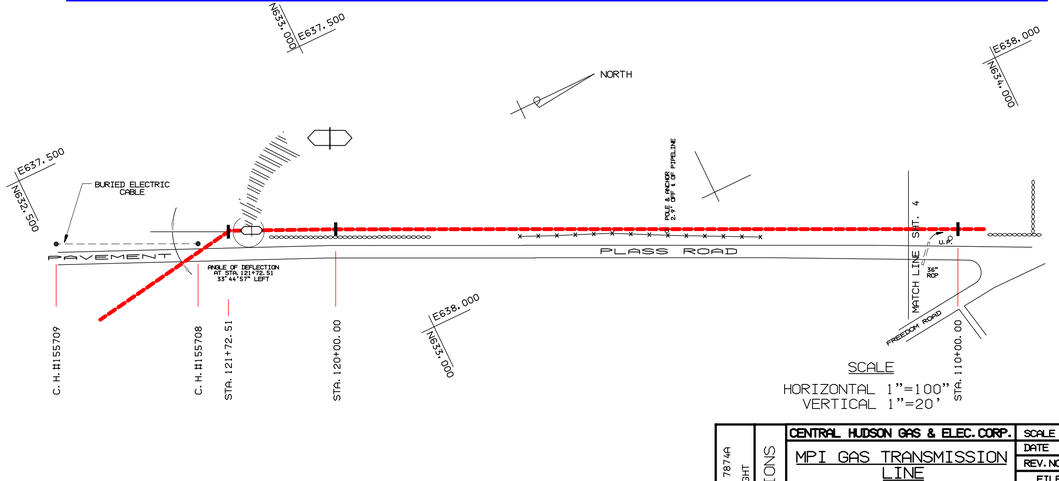
PLAN LEGEND

- MARKED STATION
- LINE VALVE
- WELD END INSULATOR



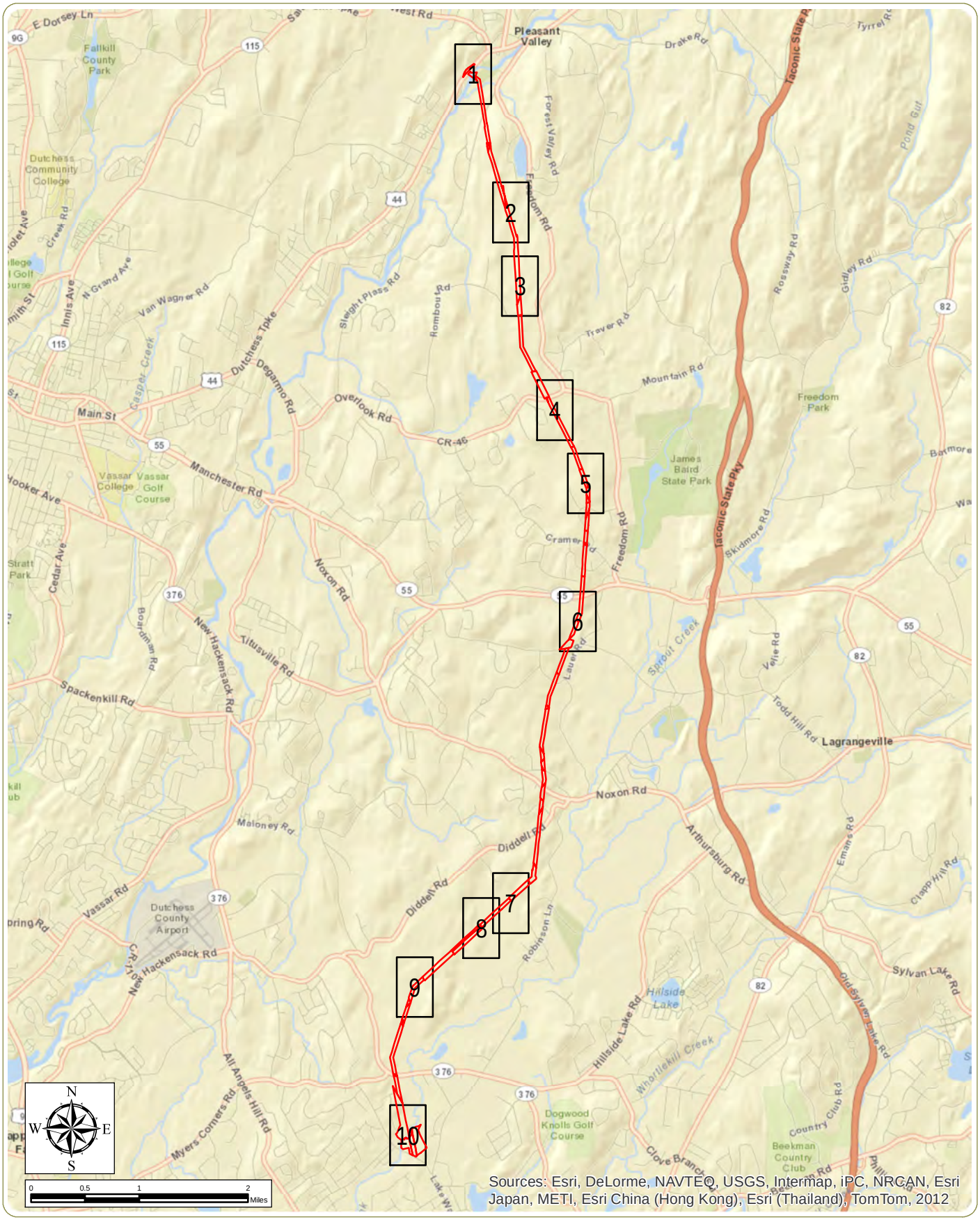






SCALE
HORIZONTAL 1"=100"
VERTICAL 1"=20'

1) 9/21/92 WO 7874A RECORDED DOM BND LJS GHT	REVISIONS	CENTRAL HUDSON GAS & ELEC. CORP.	SCALE NOTED
		MPI GAS TRANSMISSION LINE	DATE 4/26/91
			REV. NO. 1
			FILE NO. G46 P
		PLAN & PROFILES	9157
		W.O.NO. 7874A / CHECKED KER	
		PROJ.NO. 90-665 / CLEARED LJS	
		DRAWN SL/DOM / R/W JCM	
		SUPV. JHS / APPROVED GHT	SH. NO. 5 OF 7



CHG&E A&C Lines Article VII

Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, Dutchess County, New York

Invasive Species Documented within State-Mapped Wetlands and Streams

Sheet Index May 2014

Notes: Basemap: ESRI Online Streets.

Project Area

www.edrcompanies.com

CHG&E A&C Lines Article VII

Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, Dutchess County, New York

Invasive Species Documented within State-Mapped Wetlands and Streams

May 2014 Page 1 of 10

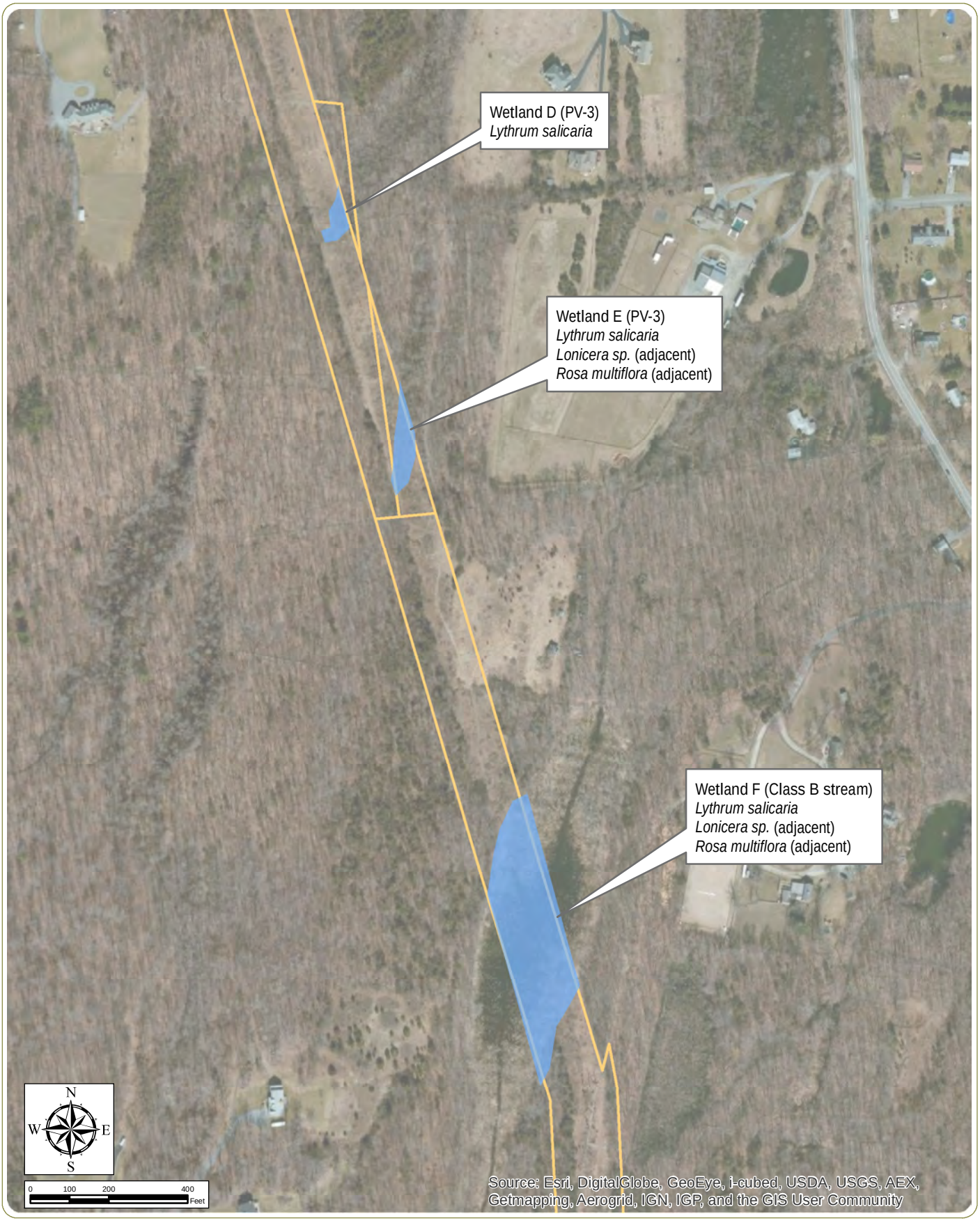
Notes: Basemap: ESRI Online Imagery.

State-Mapped Wetland or Stream

Project Area

edr

www.edrcompanies.com



CHG&E A&C Lines Article VII

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May 2014 Page 2 of 10

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CHG&E A&C Lines Article VII

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May 2014 Page 3 of 10

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CHG&E A&C Lines Article VII

Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, Dutchess County, New York

Invasive Species Documented within State-Mapped Wetlands and Streams

May 2014 Page 4 of 10

Notes: Basemap: ESRI Online Imagery.

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CHG&E A&C Lines Article VII

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May 2014 Page 5 of 10

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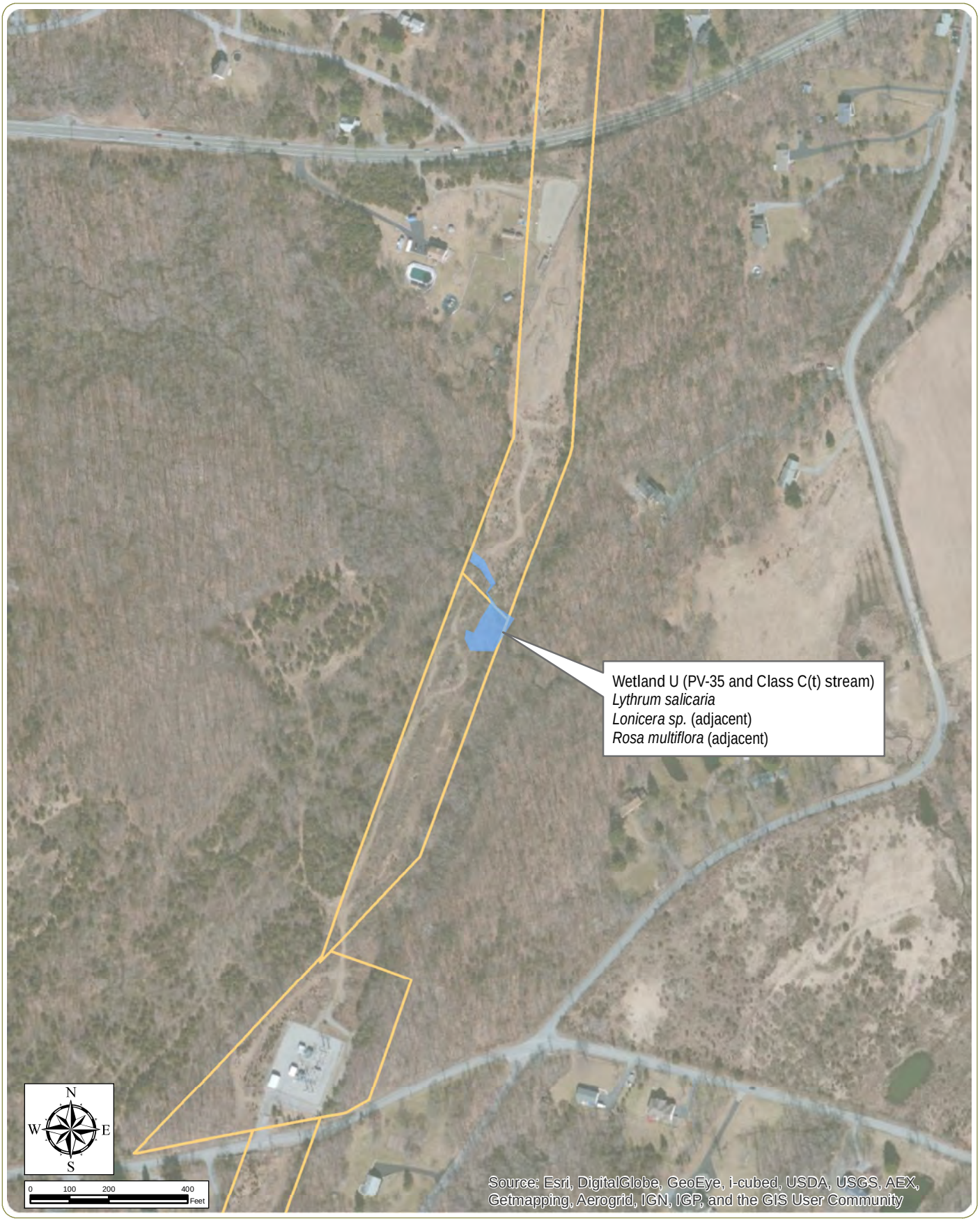

CHG&E A&C Lines Article VII

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May 2014 Page 6 of 10

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May 2014 Page 8 of 10

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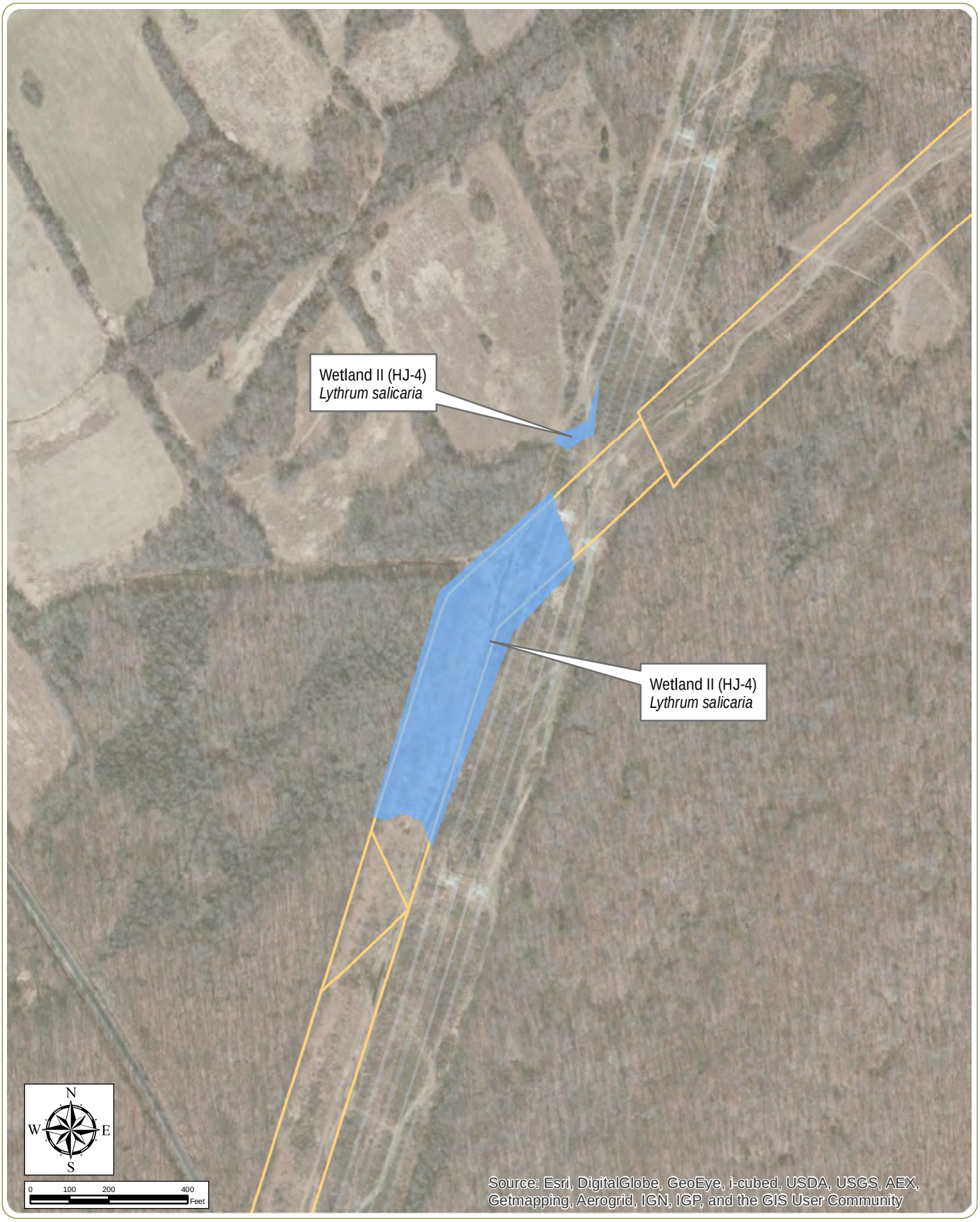

CHG&E A&C Lines Article VII

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May 2014 Page 10 of 10

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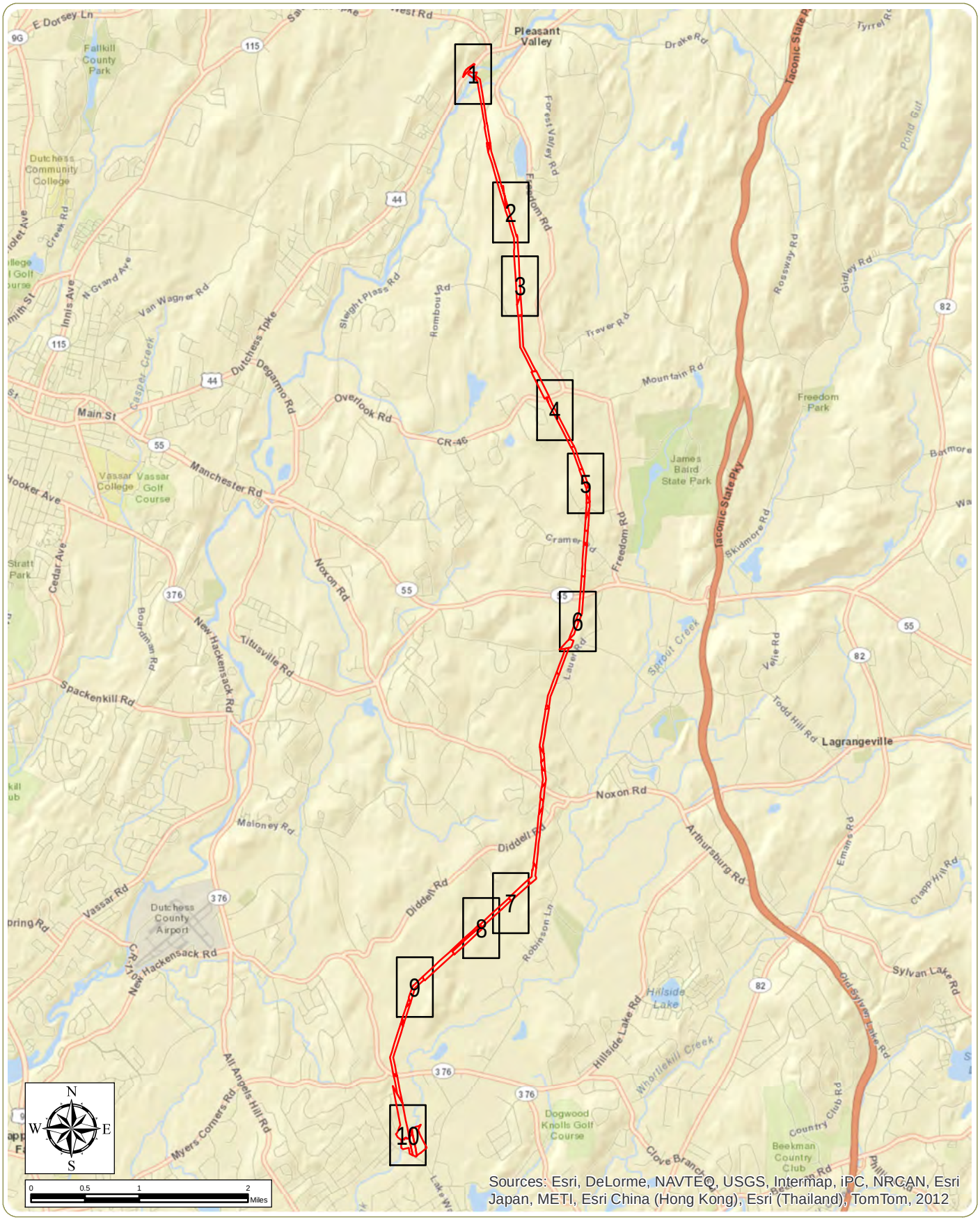

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Sheet Index May 2014

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May 2014 Page 1 of 10

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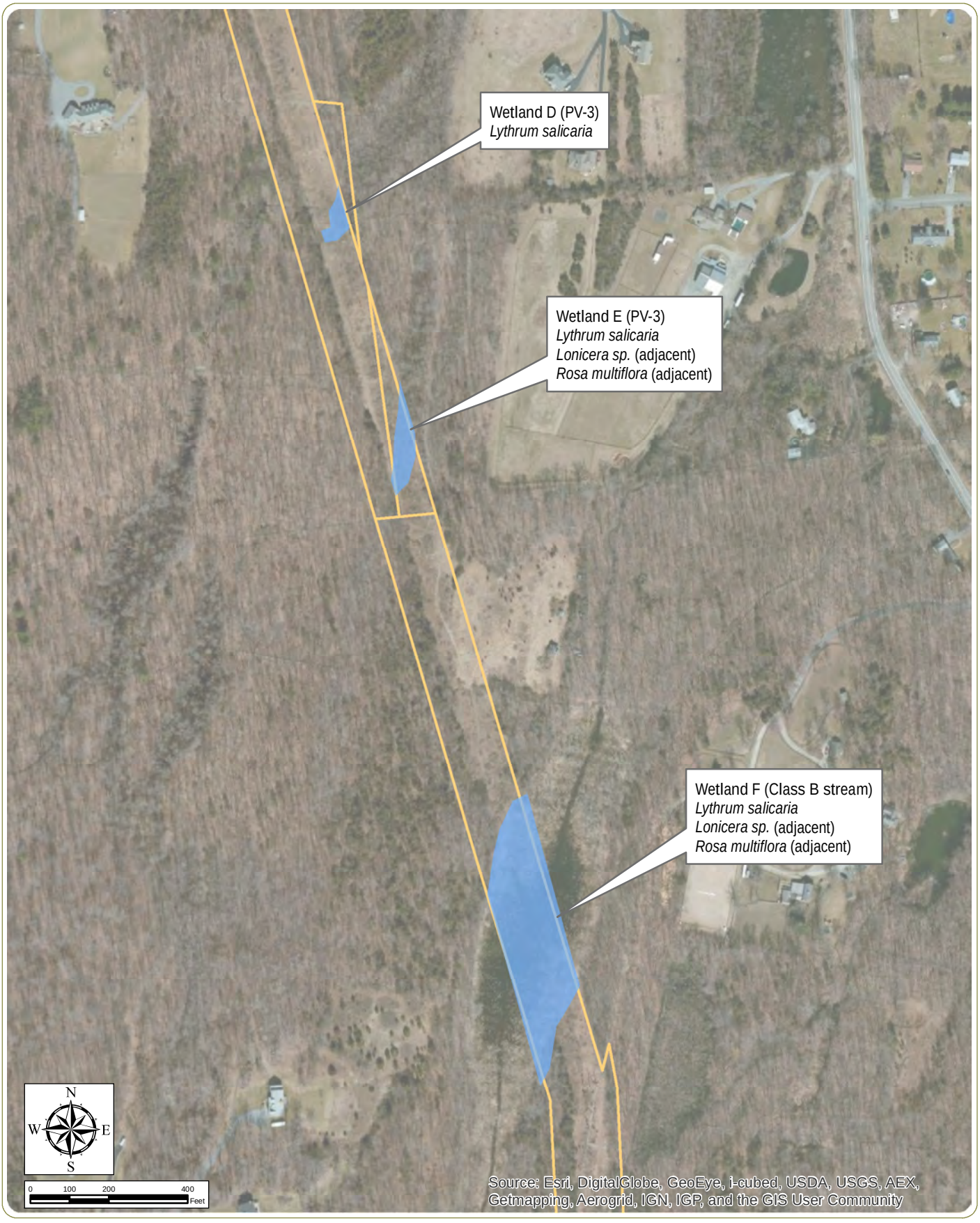

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May 2014 Page 3 of 10

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May 2014 Page 5 of 10

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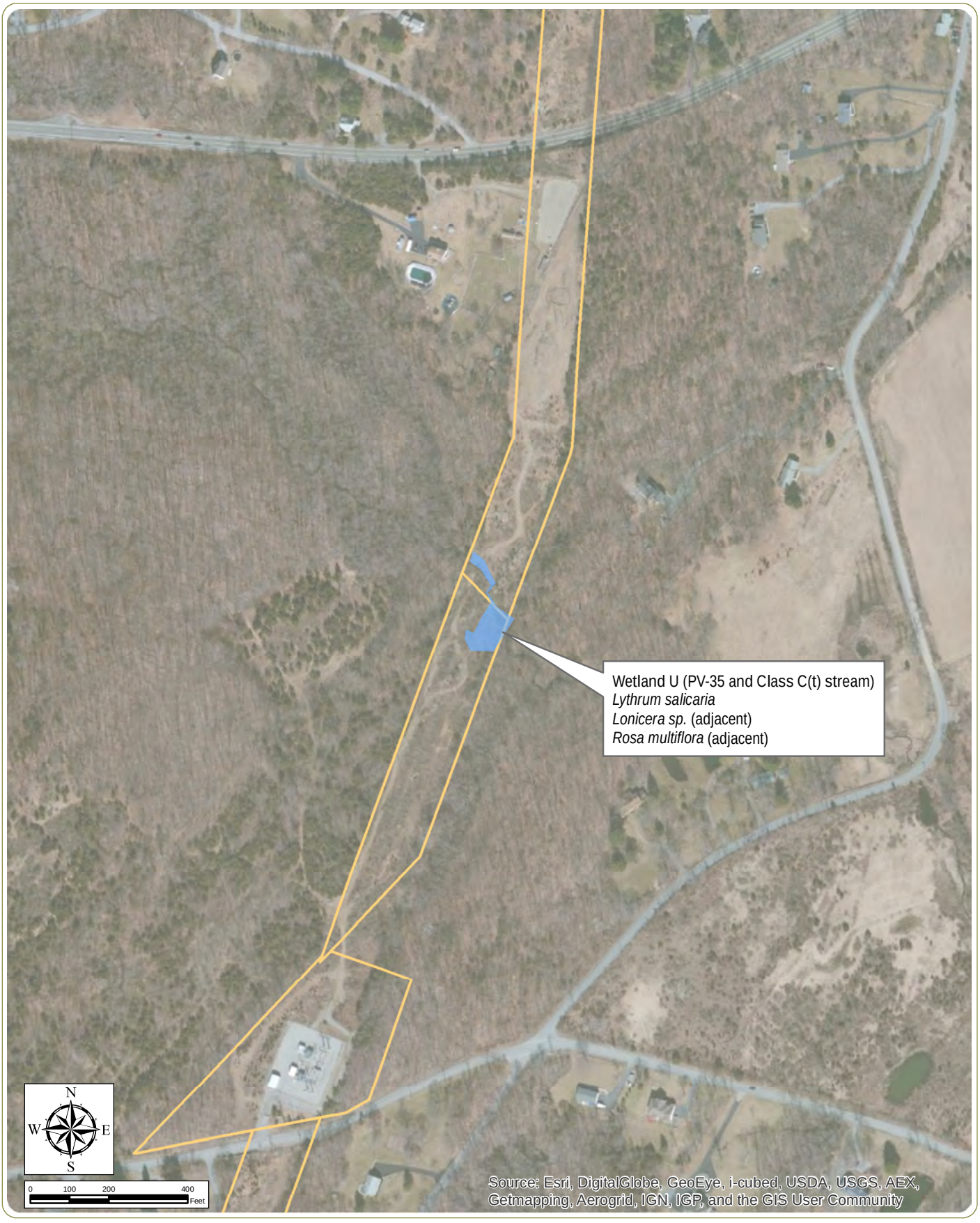

CHG&E A&C Lines Article VII

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May 2014 Page 6 of 10

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CHG&E A&C Lines Article VII

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May 2014 Page 7 of 10

Notes: Basemap: ESRI Online Imagery.

State-Mapped Wetland or Stream

Project Area

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CHG&E A&C Lines Article VII

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May 2014 Page 8 of 10

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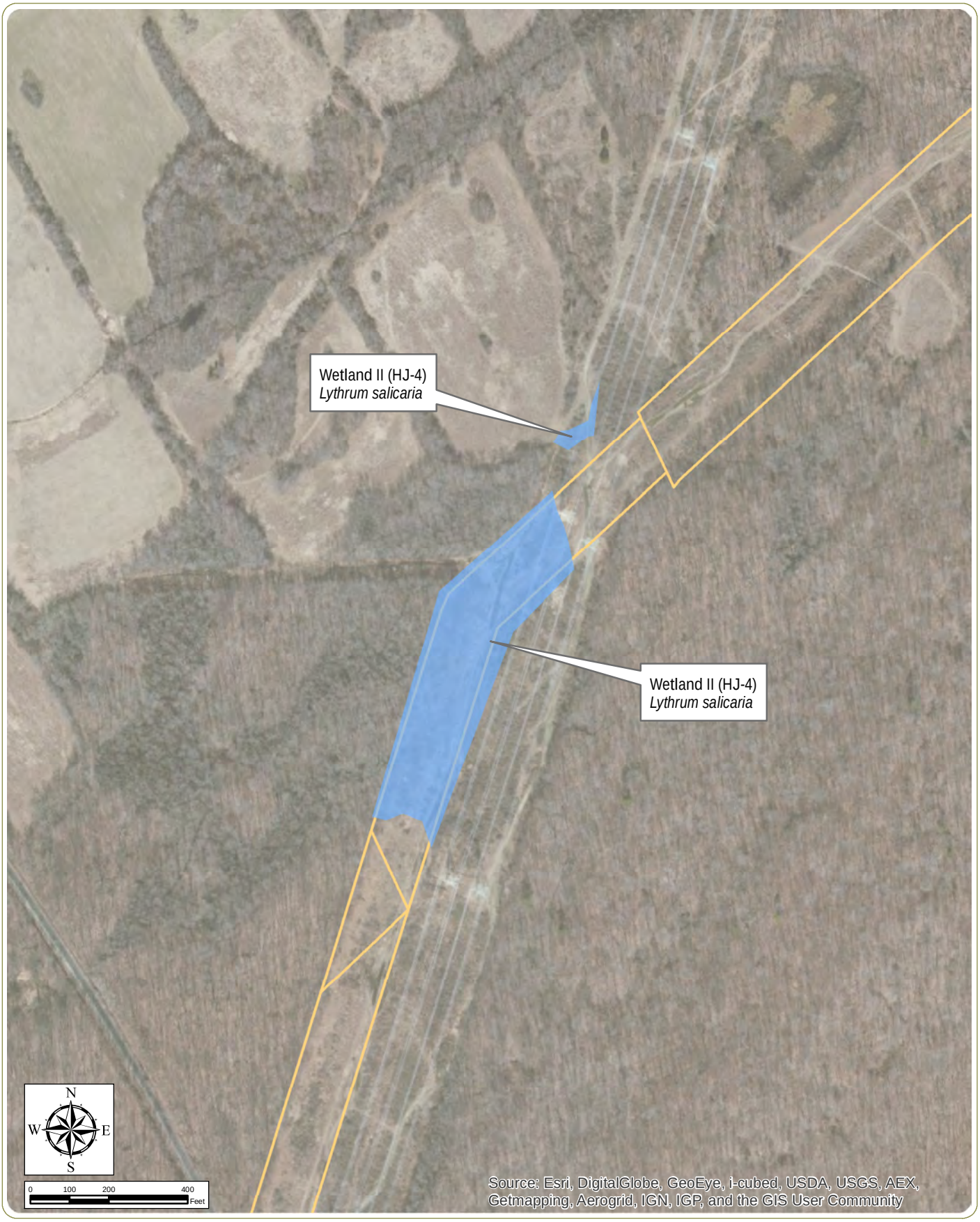

CHG&E A&C Lines Article VII

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May 2014 Page 9 of 10

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CHG&E A&C Lines Article VII

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May 2014 Page 10 of 10

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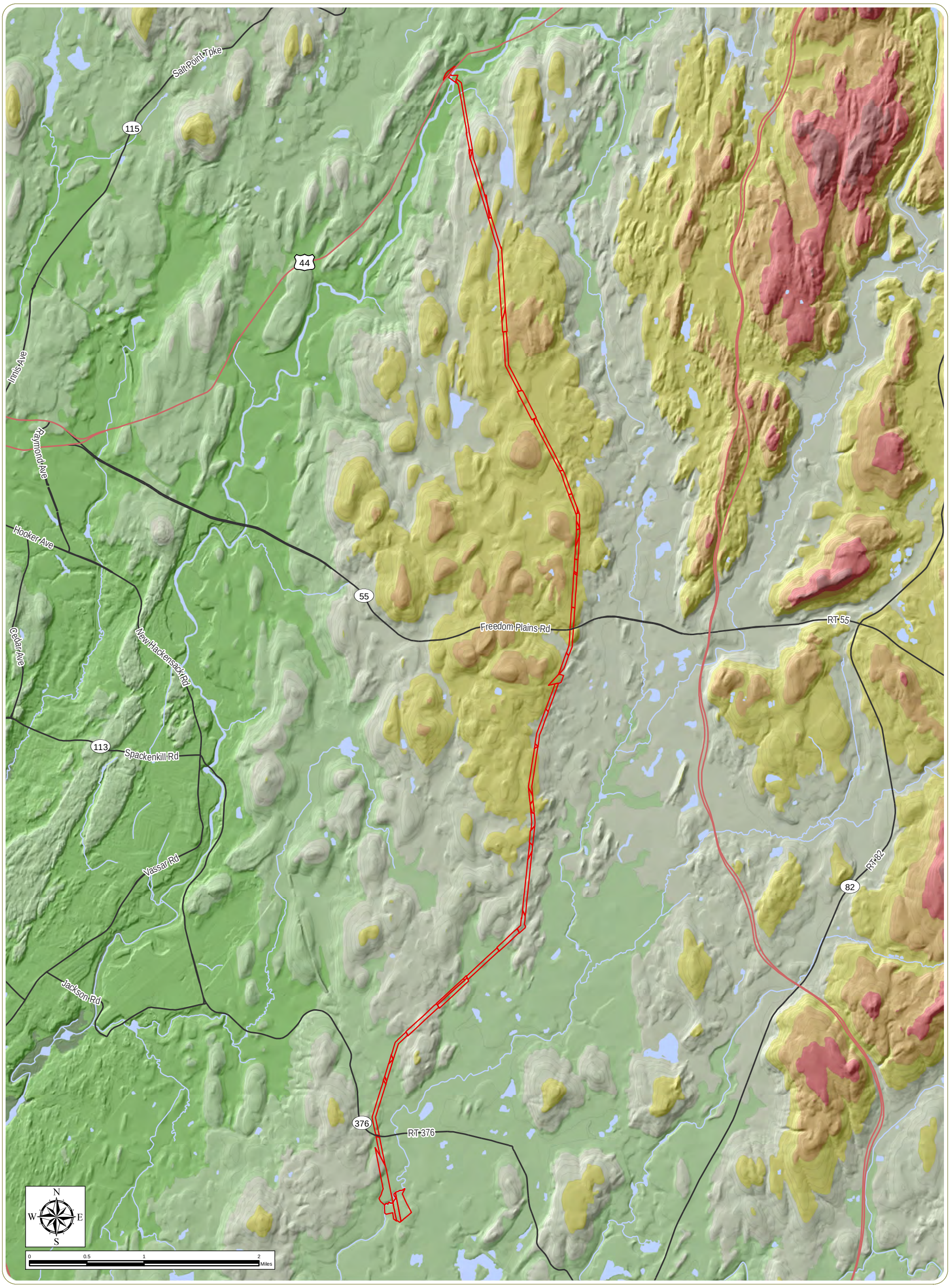


CHG&E A&C Lines Article VII Project

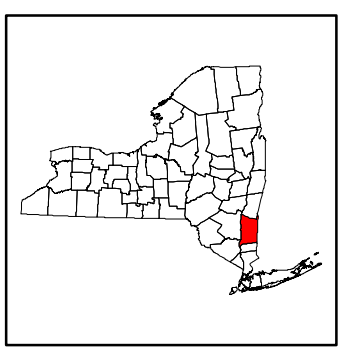
Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, Dutchess County, New York

Revised Figure 4-1: Project Area Topography

May 2014

Notes: Basemap: 1) USGS 10-meter Digital Elevation Model. 2) ESRI StreetMap, 2012.

- Project Area
- <100 feet
- 100 - 200 feet
- 200 - 300 feet
- 300 - 400 feet
- 400 - 500 feet
- 500 - 600 feet
- 600 - 700 feet
- >700 feet



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Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-002 (MAS/RQ)

Central Hudson Response No: CHGE-002 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

Provide the engineering drawings for the Consolidated Edison-owned lines and the Central Hudson Gas and Electric Corporation-owned A&C lines used to calculate the EMF levels that were provided in the Application for various portions of the right-of-way (ROW). The drawings should be to scale and include the dimensions of the structure and spacing of the conductors and ground wires.

a. Include a copy of the work papers and assumptions for each portion of the ROW studied. Include the phasing (A, B, C) of each bundle and conductor modeled.

b. Provide EMF calculations (in 5 foot increments) to 1000 feet beyond the edge of the ROW for each section studied and include both a numerical chart and a graph.

c. Provide a table showing the location of all houses within 1000 feet of the edge of the ROW. Include the nearest structure number and the distance from the edge of the ROW to the residence.

Responses:

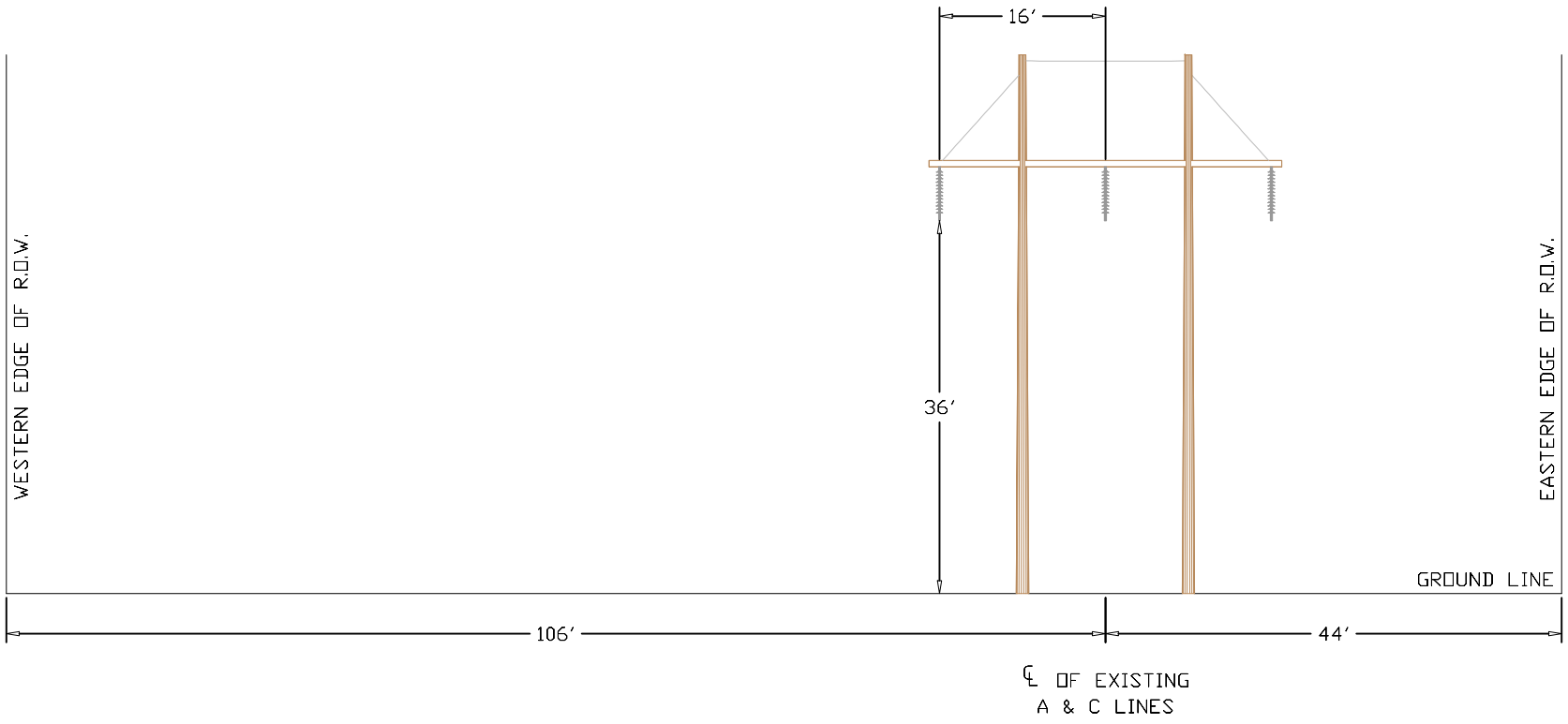
The drawings used to calculate the EMF levels are the cross-sections (8 sheets) attached as ***Exhibit A*** *to this Response.*

a. *The assumptions utilized for the EMF analysis are contained in the EMF report contained in Appendix K to the Application.*

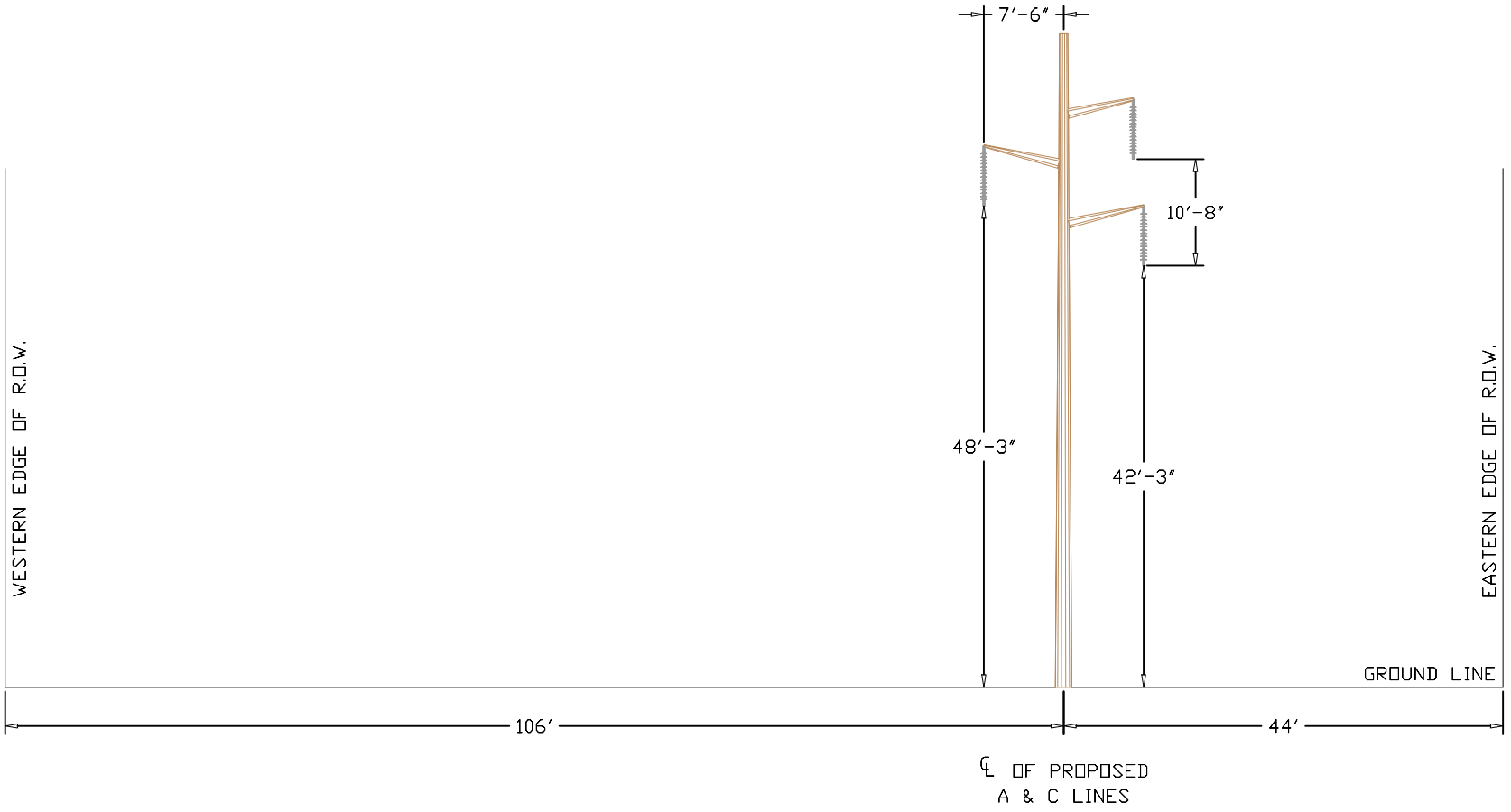
b. *See attached* ***Exhibit B*** *to this Response to show the calculations at 5 foot intervals for each of the areas of study in the EMF Report contained in the Application. A summary table showing the EMF calculations at both ROW edges, 1,000 feet from both edges of the ROW, and the centerlines of each transmission facility in the ROW, is attached as* ***Exhibit C.***

c. A review of GIS mapping has identified 532 houses within 1,000 feet of the edge of the ROW. Central Hudson is in the process of preparing a table showing the specific distance from the edge of the ROW to each such house. This table will be provided in a supplemental response.

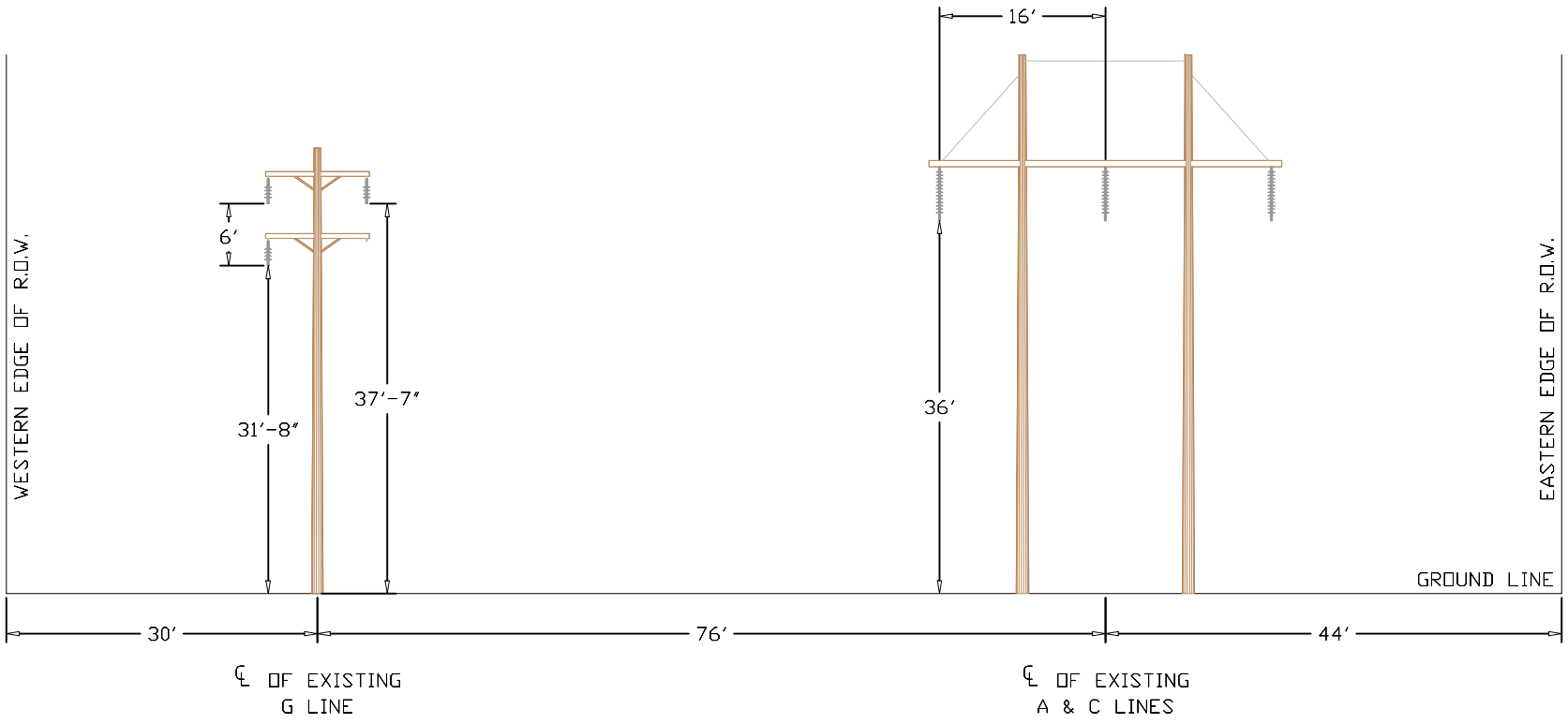
A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 1 OF 8



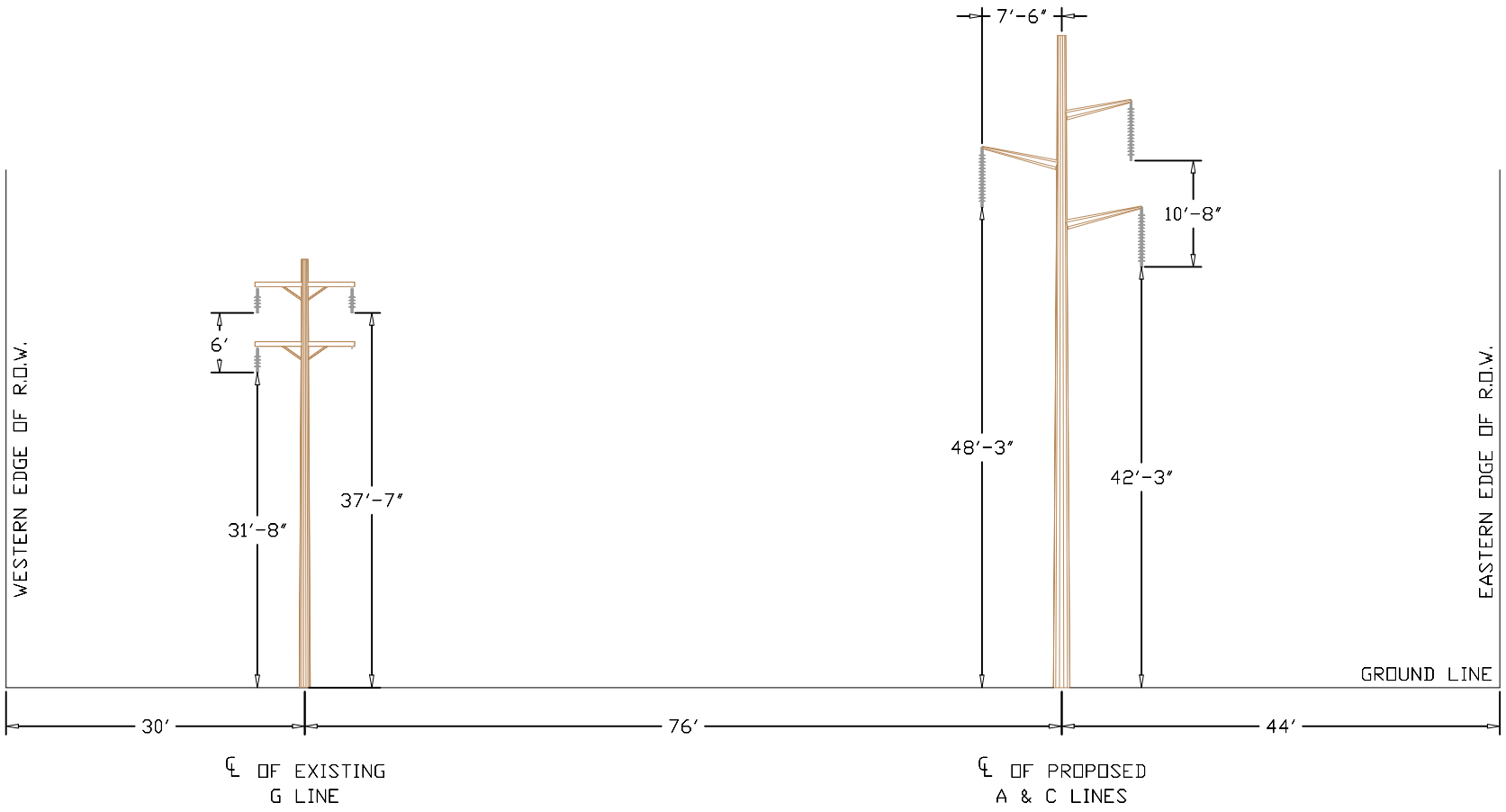
A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 2 OF 8



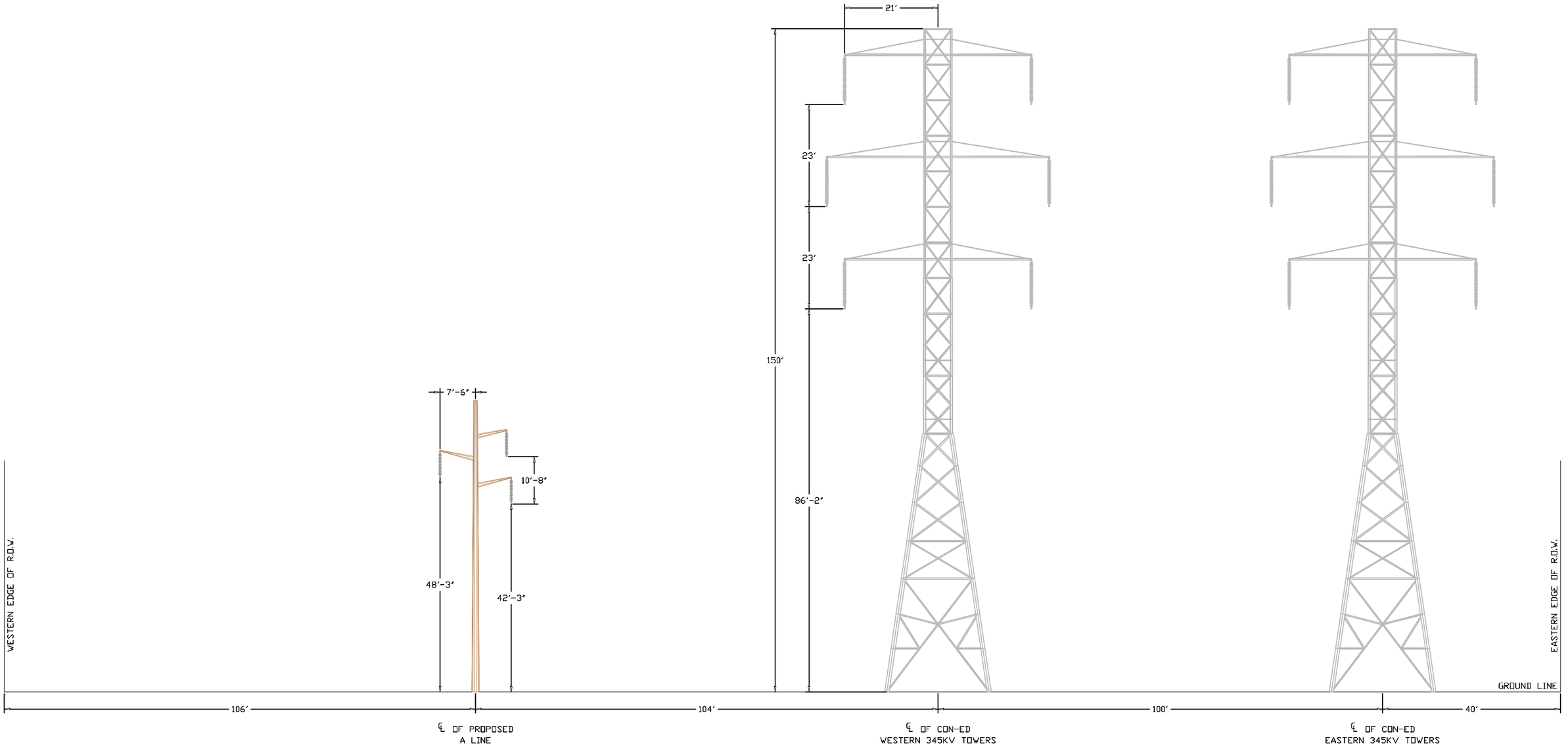
A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 3 OF 8



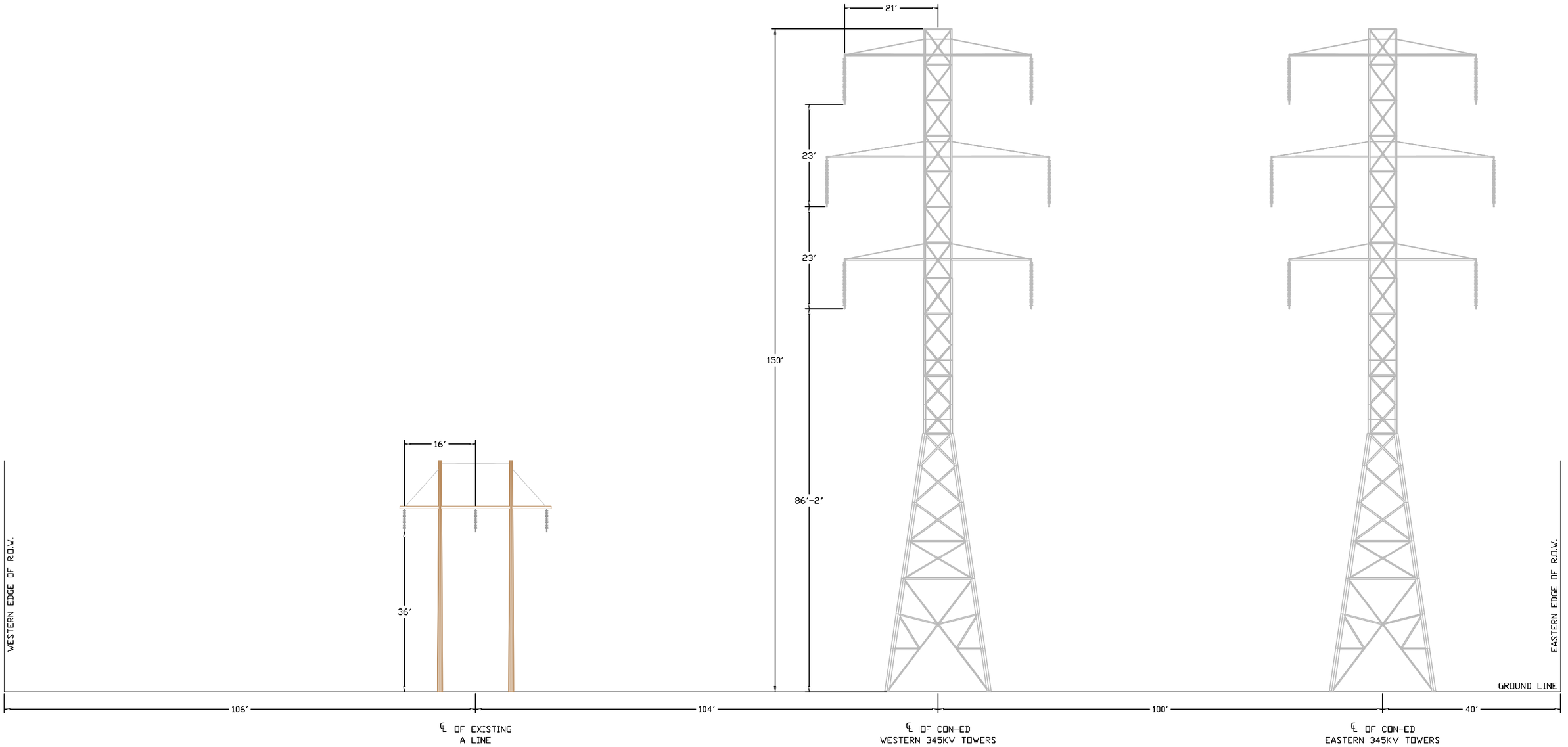
A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 4 OF 8



A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 5 OF 8

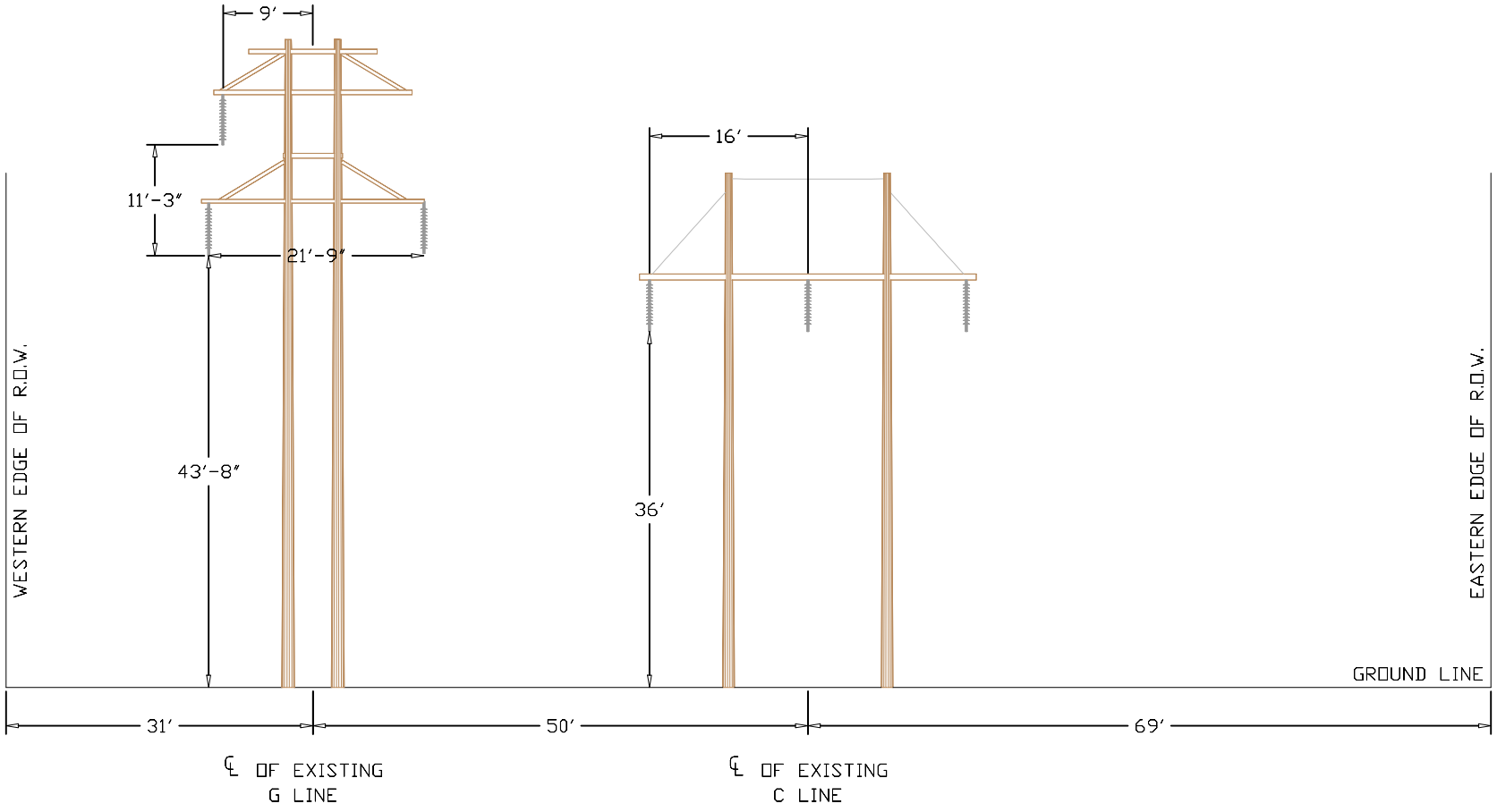


A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 6 OF 8



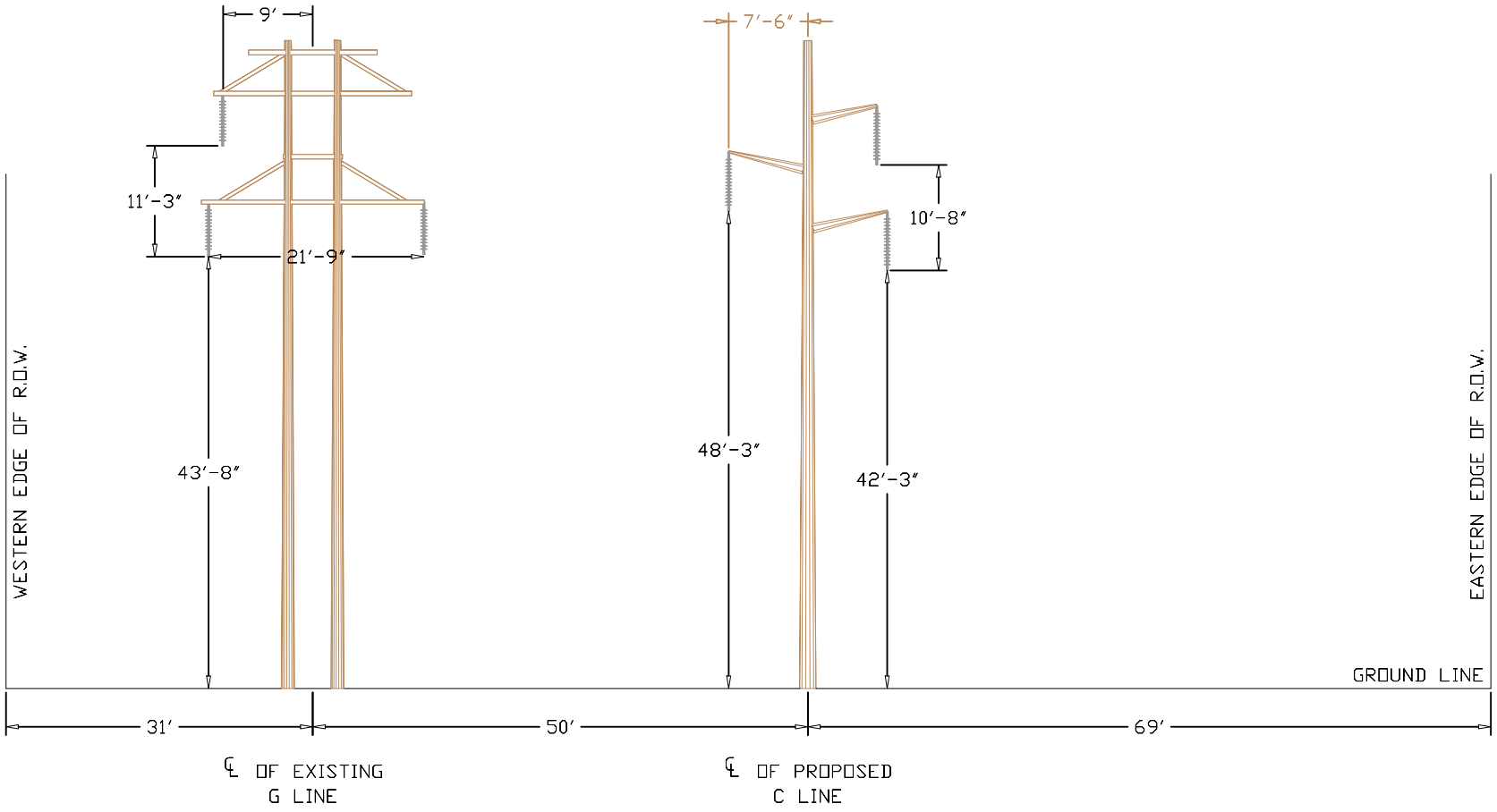
A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 7 OF 8

"M" AND EXISTING "C" LINE SHARED R.O.W.



A & C 115KV LINES
EMF R.O.W. CROSS SECTIONS
SHEET 8 OF 8

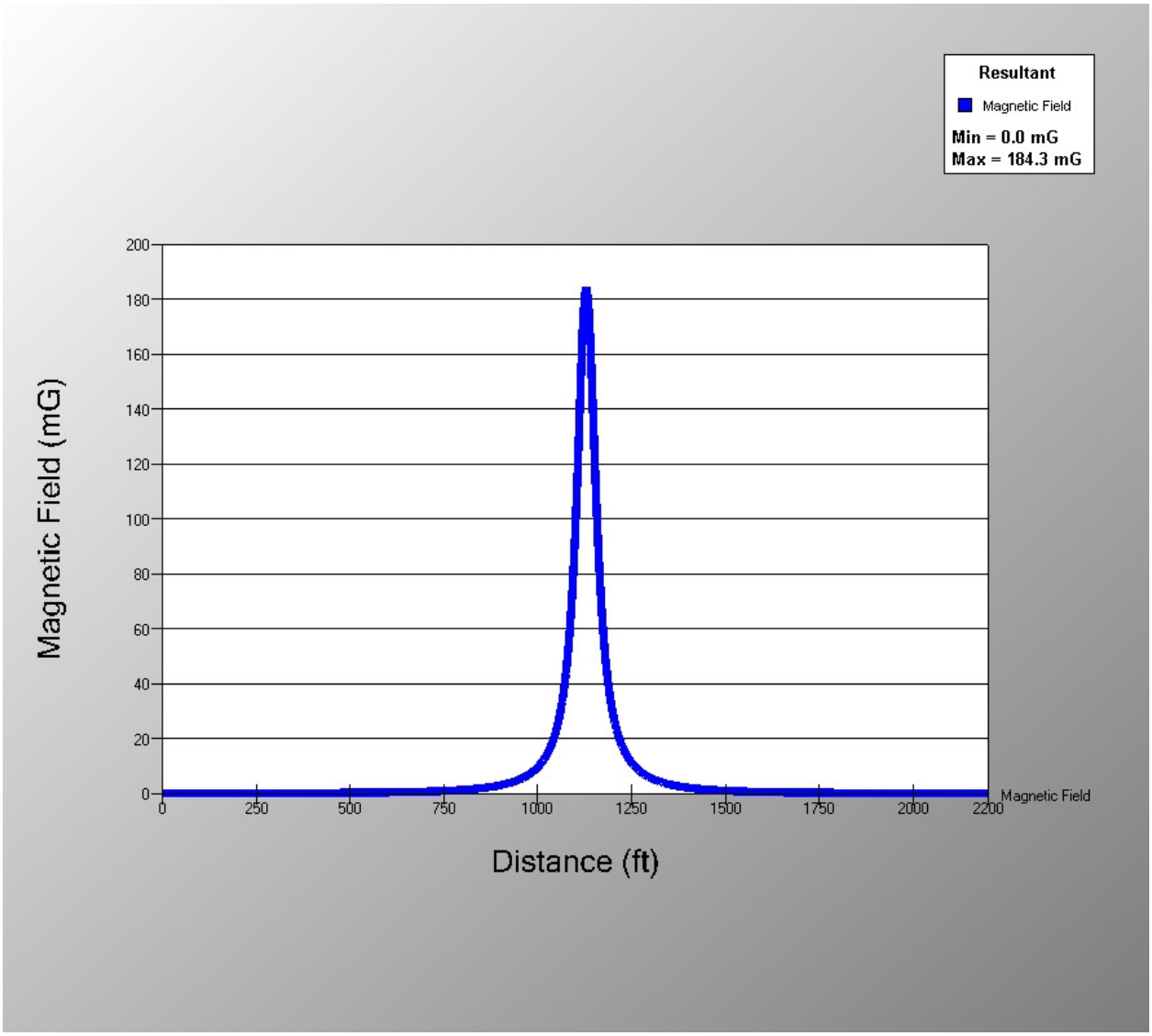
"M" AND PROPOSED "C" LINE SHARED R.O.W.



Attachment for DPS-002 (B)

Existing A&C Lines

Magnetic Field



(ft)	(mG)
0	0.05
5	0.05
10	0.05
15	0.05
20	0.05
25	0.05
30	0.05
35	0.05
40	0.05

45	0.05
50	0.05
55	0.05
60	0.05
65	0.05
70	0.06
75	0.06
80	0.06
85	0.06
90	0.06
95	0.06
100	0.06
105	0.06
110	0.06
115	0.06
120	0.06
125	0.06
130	0.07
135	0.07
140	0.07
145	0.07
150	0.07
155	0.07
160	0.07
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180	0.08
185	0.08
190	0.08
195	0.08
200	0.08
205	0.08
210	0.08
215	0.08
220	0.09
225	0.09
230	0.09
235	0.09
240	0.09
245	0.09
250	0.09
255	0.1
260	0.1
265	0.1
270	0.1
275	0.1
280	0.1

285	0.11
290	0.11
295	0.11
300	0.11
305	0.11
310	0.11
315	0.12
320	0.12
325	0.12
330	0.12
335	0.13
340	0.13
345	0.13
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360	0.14
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470	0.21
475	0.21
480	0.22
485	0.22
490	0.23
495	0.23
500	0.24
505	0.24
510	0.25
515	0.26
520	0.26

525	0.27
530	0.27
535	0.28
540	0.29
545	0.29
550	0.3
555	0.31
560	0.31
565	0.32
570	0.33
575	0.34
580	0.35
585	0.35
590	0.36
595	0.37
600	0.38
605	0.39
610	0.4
615	0.41
620	0.42
625	0.43
630	0.44
635	0.46
640	0.47
645	0.48
650	0.49
655	0.51
660	0.52
665	0.54
670	0.55
675	0.57
680	0.58
685	0.6
690	0.62
695	0.63
700	0.65
705	0.67
710	0.69
715	0.71
720	0.74
725	0.76
730	0.78
735	0.81
740	0.83
745	0.86
750	0.89
755	0.92
760	0.95

765	0.98
770	1.01
775	1.05
780	1.08
785	1.12
790	1.16
795	1.2
800	1.24
805	1.29
810	1.34
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825	1.49
830	1.55
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850	1.81
855	1.88
860	1.96
865	2.04
870	2.13
875	2.22
880	2.32
885	2.42
890	2.53
895	2.65
900	2.77
905	2.9
910	3.04
915	3.19
920	3.35
925	3.52
930	3.7
935	3.89
940	4.1
945	4.33
950	4.57
955	4.83
960	5.12
965	5.42
970	5.76
975	6.13
980	6.53
985	6.97
990	7.46
995	8
1000	8.6

1005	9.27
1010	10.02
1015	10.86
1020	11.82
1025	12.91
1030	14.17
1035	15.61
1040	17.3
1045	19.28
1050	21.63
1055	24.44
1060	27.85
1065	32.03
1070	37.25
1075	43.86
1080	52.39
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1090	78.69
1095	99.32
1100	127.87
1105	166.87
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1140	325.03
1145	289.45
1150	238.37
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1170	86.15
1175	69.1
1180	56.5
1185	47.01
1190	39.71
1195	33.98
1200	29.42
1205	25.72
1210	22.69
1215	20.17
1220	18.05
1225	16.26
1230	14.72
1235	13.39
1240	12.24

1245	11.23
1250	10.34
1255	9.56
1260	8.86
1265	8.23
1270	7.67
1275	7.16
1280	6.7
1285	6.28
1290	5.9
1295	5.56
1300	5.24
1305	4.94
1310	4.67
1315	4.42
1320	4.19
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1330	3.77
1335	3.59
1340	3.41
1345	3.25
1350	3.1
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1360	2.82
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1380	2.36
1385	2.26
1390	2.17
1395	2.08
1400	1.99
1405	1.91
1410	1.84
1415	1.77
1420	1.7
1425	1.64
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1435	1.52
1440	1.46
1445	1.41
1450	1.36
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1460	1.26
1465	1.22
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1475	1.14
1480	1.1

1485	1.06
1490	1.03
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1500	0.96
1505	0.93
1510	0.9
1515	0.87
1520	0.84
1525	0.82
1530	0.79
1535	0.77
1540	0.75
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1560	0.66
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1570	0.62
1575	0.61
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1590	0.56
1595	0.54
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1610	0.5
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1620	0.47
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1645	0.41
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1900	0.14
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1920	0.13
1925	0.13
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1940	0.12
1945	0.12
1950	0.12
1955	0.11
1960	0.11

1965	0.11
1970	0.11
1975	0.11
1980	0.1
1985	0.1
1990	0.1
1995	0.1
2000	0.1
2005	0.1
2010	0.09
2015	0.09
2020	0.09
2025	0.09
2030	0.09
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2040	0.09
2045	0.08
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2060	0.08
2065	0.08
2070	0.08
2075	0.08
2080	0.08
2085	0.07
2090	0.07
2095	0.07
2100	0.07
2105	0.07
2110	0.07
2115	0.07
2120	0.07
2125	0.07
2130	0.07
2135	0.06
2140	0.06
2145	0.06
2150	0.06
2155	0.06
2160	0.06
2165	0.06
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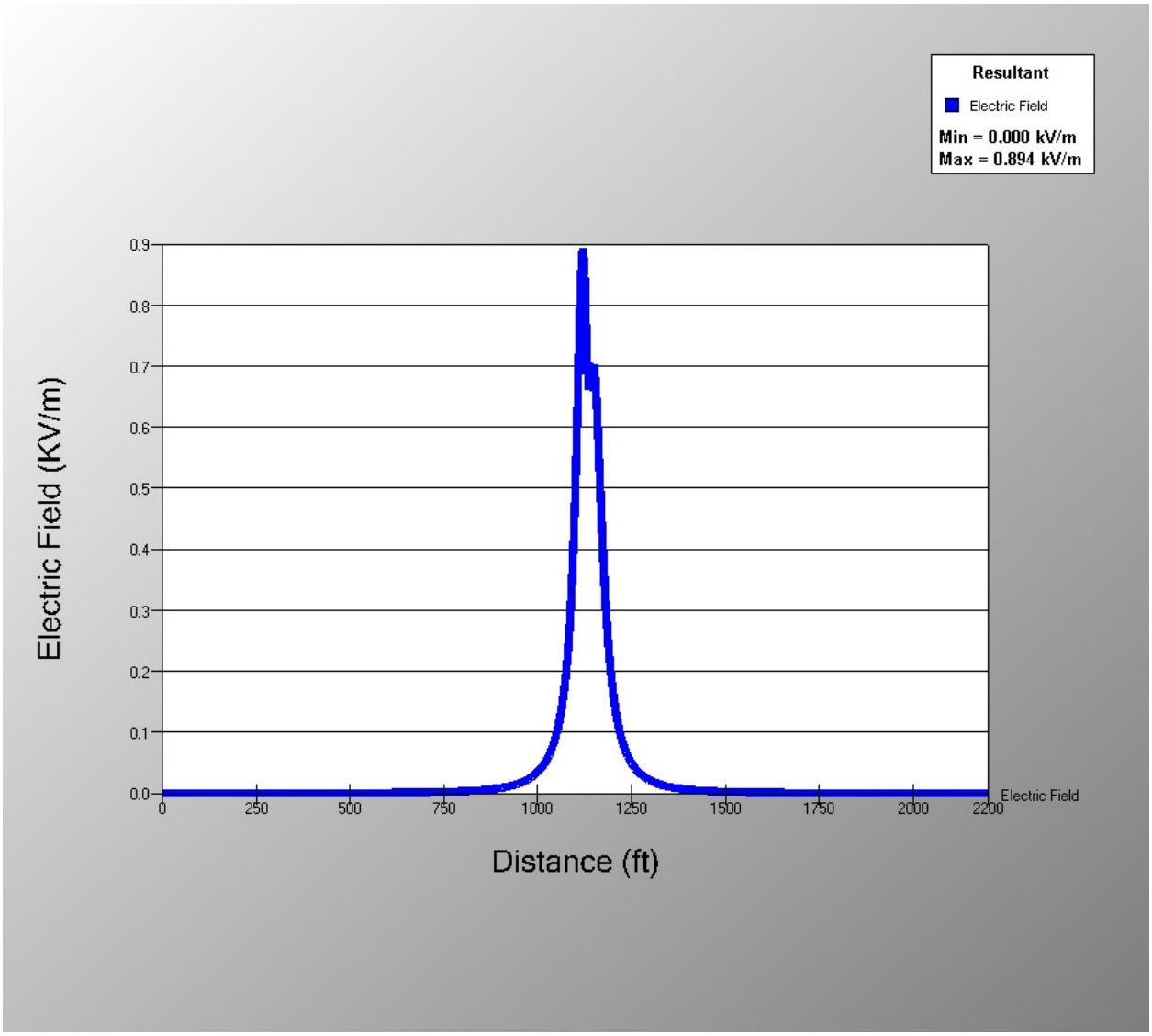
E-FIELD



(ft)	(KV/m)
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60	0
65	0
70	0
75	0
80	0
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190	0
195	0
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235	0
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245	0
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255	0
260	0

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400	0
405	0
410	0
415	0
420	0
425	0
430	0
435	0
440	0
445	0
450	0
455	0
460	0
465	0
470	0

475	0
480	0
485	0
490	0
495	0
500	0
505	0
510	0
515	0
520	0
525	0
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775	0
780	0
785	0
790	0
795	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
860	0
865	0
870	0
875	0
880	0
885	0
890	0

895	0.01
900	0.01
905	0.01
910	0.01
915	0.01
920	0.01
925	0.01
930	0.01
935	0.01
940	0.01
945	0.01
950	0.01
955	0.01
960	0.01
965	0.01
970	0.02
975	0.02
980	0.02
985	0.02
990	0.02
995	0.03
1000	0.03
1005	0.03
1010	0.04
1015	0.04
1020	0.05
1025	0.05
1030	0.06
1035	0.07
1040	0.08
1045	0.1
1050	0.12
1055	0.14
1060	0.17
1065	0.21
1070	0.26
1075	0.32
1080	0.42
1085	0.54
1090	0.72
1095	0.96
1100	1.29

1105	1.7
1110	2.1
1115	2.26
1120	2
1125	1.6
1130	1.47
1135	1.52
1140	1.83
1145	2.2
1150	2.21
1155	1.87
1160	1.45
1165	1.08
1170	0.81
1175	0.61
1180	0.46
1185	0.36
1190	0.28
1195	0.23
1200	0.18
1205	0.15
1210	0.13
1215	0.11
1220	0.09
1225	0.08
1230	0.07
1235	0.06
1240	0.05
1245	0.04
1250	0.04
1255	0.03
1260	0.03
1265	0.03
1270	0.02
1275	0.02
1280	0.02
1285	0.02
1290	0.02
1295	0.02
1300	0.01
1305	0.01
1310	0.01

1315	0.01
1320	0.01
1325	0.01
1330	0.01
1335	0.01
1340	0.01
1345	0.01
1350	0.01
1355	0.01
1360	0.01
1365	0.01
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1385	0
1390	0
1395	0
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1410	0
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1490	0
1495	0
1500	0
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1510	0
1515	0
1520	0

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1755	0
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1940	0

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1960	0
1965	0
1970	0
1975	0
1980	0
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1990	0
1995	0
2000	0
2005	0
2010	0
2015	0
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2090	0
2095	0
2100	0
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2110	0
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2120	0
2125	0
2130	0
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2145	0
2150	0

2155 0
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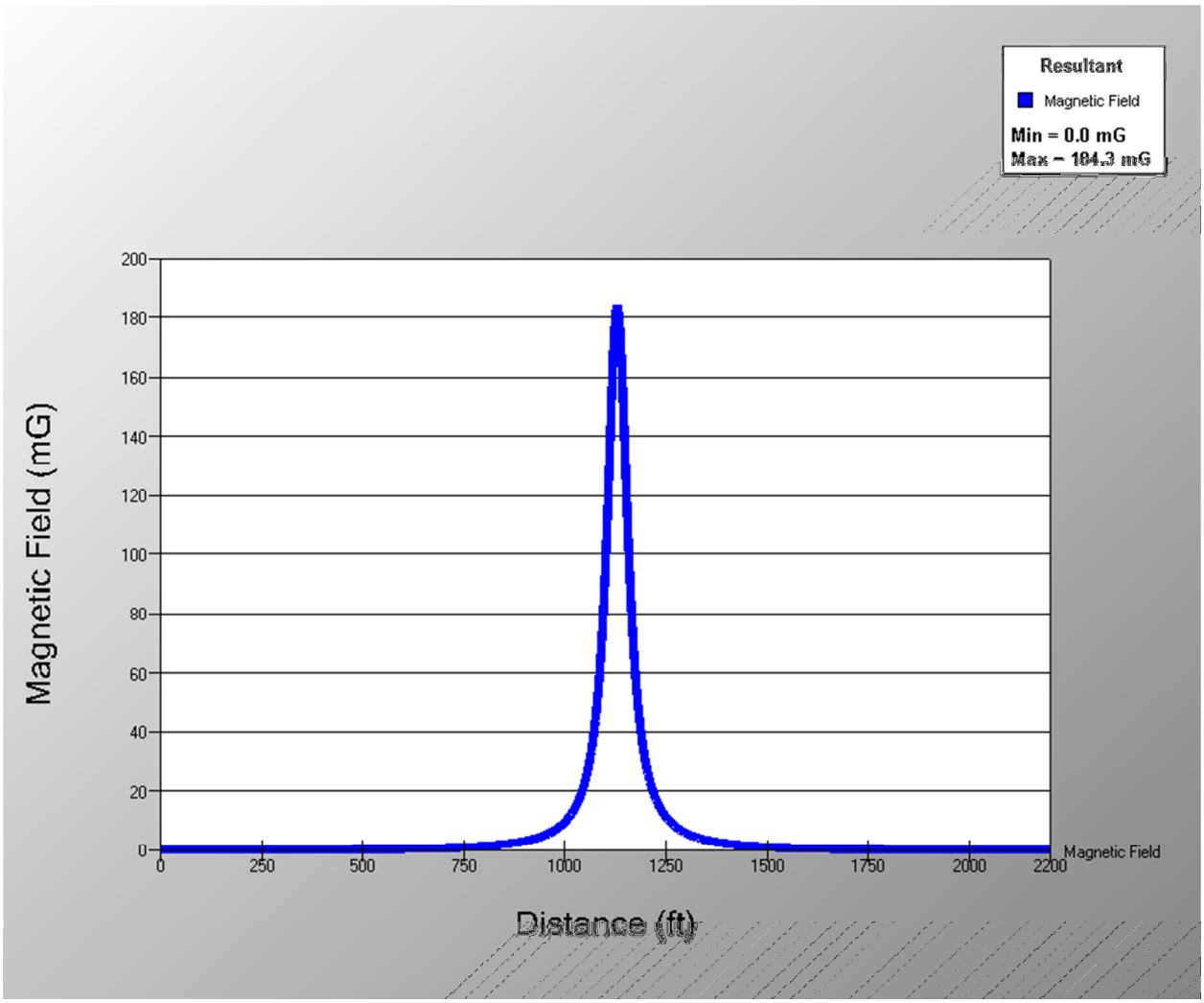
2195 0
2200 0

PROPOSED A&C LINES

MAG FIELD



(ft) (mG)

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10	0.05
15	0.05
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25	0.05
30	0.05
35	0.05
40	0.05
45	0.05
50	0.05
55	0.05
60	0.05
65	0.05
70	0.05
75	0.05
80	0.06
85	0.06
90	0.06
95	0.06
100	0.06
105	0.06
110	0.06
115	0.06
120	0.06
125	0.06
130	0.06
135	0.07
140	0.07
145	0.07
150	0.07
155	0.07
160	0.07
165	0.07
170	0.07
175	0.07
180	0.07
185	0.08
190	0.08
195	0.08
200	0.08
205	0.08
210	0.08
215	0.08
220	0.08
225	0.09
230	0.09
235	0.09

240	0.09
245	0.09
250	0.09
255	0.09
260	0.1
265	0.1
270	0.1
275	0.1
280	0.1
285	0.1
290	0.11
295	0.11
300	0.11
305	0.11
310	0.11
315	0.12
320	0.12
325	0.12
330	0.12
335	0.12
340	0.13
345	0.13
350	0.13
355	0.13
360	0.14
365	0.14
370	0.14
375	0.14
380	0.15
385	0.15
390	0.15
395	0.16
400	0.16
405	0.16
410	0.16
415	0.17
420	0.17
425	0.17
430	0.18
435	0.18
440	0.19
445	0.19
450	0.19
455	0.2
460	0.2
465	0.21
470	0.21
475	0.21

480	0.22
485	0.22
490	0.23
495	0.23
500	0.24
505	0.24
510	0.25
515	0.26
520	0.26
525	0.27
530	0.27
535	0.28
540	0.29
545	0.29
550	0.3
555	0.31
560	0.32
565	0.32
570	0.33
575	0.34
580	0.35
585	0.36
590	0.37
595	0.38
600	0.38
605	0.39
610	0.4
615	0.42
620	0.43
625	0.44
630	0.45
635	0.46
640	0.47
645	0.49
650	0.5
655	0.52
660	0.53
665	0.55
670	0.56
675	0.58
680	0.59
685	0.61
690	0.63
695	0.65
700	0.67
705	0.69
710	0.71
715	0.73

720	0.76
725	0.78
730	0.81
735	0.83
740	0.86
745	0.89
750	0.92
755	0.95
760	0.98
765	1.02
770	1.05
775	1.09
780	1.13
785	1.17
790	1.21
795	1.26
800	1.3
805	1.35
810	1.4
815	1.46
820	1.52
825	1.57
830	1.64
835	1.7
840	1.77
845	1.85
850	1.93
855	2.01
860	2.09
865	2.18
870	2.28
875	2.38
880	2.49
885	2.61
890	2.73
895	2.86
900	3
905	3.15
910	3.3
915	3.47
920	3.65
925	3.84
930	4.05
935	4.27
940	4.51
945	4.76
950	5.04
955	5.34

960	5.66
965	6.01
970	6.4
975	6.82
980	7.27
985	7.77
990	8.32
995	8.93
1000	9.61
1005	10.36
1010	11.19
1015	12.13
1020	13.18
1025	14.37
1030	15.72
1035	17.27
1040	19.04
1045	21.09
1050	23.47
1055	26.26
1060	29.55
1065	33.45
1070	38.11
1075	43.73
1080	50.54
1085	58.83
1090	68.94
1095	81.23
1100	96.03
1105	113.38
1110	132.78
1115	152.65
1120	170.09
1125	181.52
1130	184.27
1135	177.98
1140	164.47
1145	146.7
1150	127.54
1155	109.17
1160	92.76
1165	78.73
1170	67.01
1175	57.34
1180	49.38
1185	42.83
1190	37.41
1195	32.89

1200	29.1
1205	25.91
1210	23.19
1215	20.87
1220	18.87
1225	17.13
1230	15.62
1235	14.29
1240	13.12
1245	12.08
1250	11.16
1255	10.34
1260	9.6
1265	8.93
1270	8.33
1275	7.78
1280	7.28
1285	6.83
1290	6.41
1295	6.03
1300	5.68
1305	5.36
1310	5.06
1315	4.79
1320	4.53
1325	4.29
1330	4.07
1335	3.86
1340	3.67
1345	3.49
1350	3.32
1355	3.17
1360	3.02
1365	2.88
1370	2.75
1375	2.63
1380	2.51
1385	2.4
1390	2.3
1395	2.2
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1405	2.02
1410	1.94
1415	1.86
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1485	1.1
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1495	1.03
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1520	0.87
1525	0.84
1530	0.81
1535	0.79
1540	0.76
1545	0.74
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1580	0.6
1585	0.58
1590	0.57
1595	0.55
1600	0.53
1605	0.52
1610	0.51
1615	0.49
1620	0.48
1625	0.47
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1635	0.44
1640	0.43
1645	0.42
1650	0.41
1655	0.4
1660	0.39
1665	0.38
1670	0.37
1675	0.36

1680	0.35
1685	0.34
1690	0.33
1695	0.33
1700	0.32
1705	0.31
1710	0.3
1715	0.3
1720	0.29
1725	0.28
1730	0.28
1735	0.27
1740	0.26
1745	0.26
1750	0.25
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1770	0.23
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1785	0.22
1790	0.21
1795	0.21
1800	0.2
1805	0.2
1810	0.19
1815	0.19
1820	0.19
1825	0.18
1830	0.18
1835	0.18
1840	0.17
1845	0.17
1850	0.17
1855	0.16
1860	0.16
1865	0.16
1870	0.15
1875	0.15
1880	0.15
1885	0.14
1890	0.14
1895	0.14
1900	0.14
1905	0.13
1910	0.13
1915	0.13

1920	0.13
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1985	0.1
1990	0.1
1995	0.1
2000	0.1
2005	0.09
2010	0.09
2015	0.09
2020	0.09
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2030	0.09
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2040	0.08
2045	0.08
2050	0.08
2055	0.08
2060	0.08
2065	0.08
2070	0.08
2075	0.08
2080	0.07
2085	0.07
2090	0.07
2095	0.07
2100	0.07
2105	0.07
2110	0.07
2115	0.07
2120	0.07
2125	0.07
2130	0.06
2135	0.06
2140	0.06
2145	0.06
2150	0.06
2155	0.06

2160	0.06
2165	0.06
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2180	0.06
2185	0.06
2190	0.05
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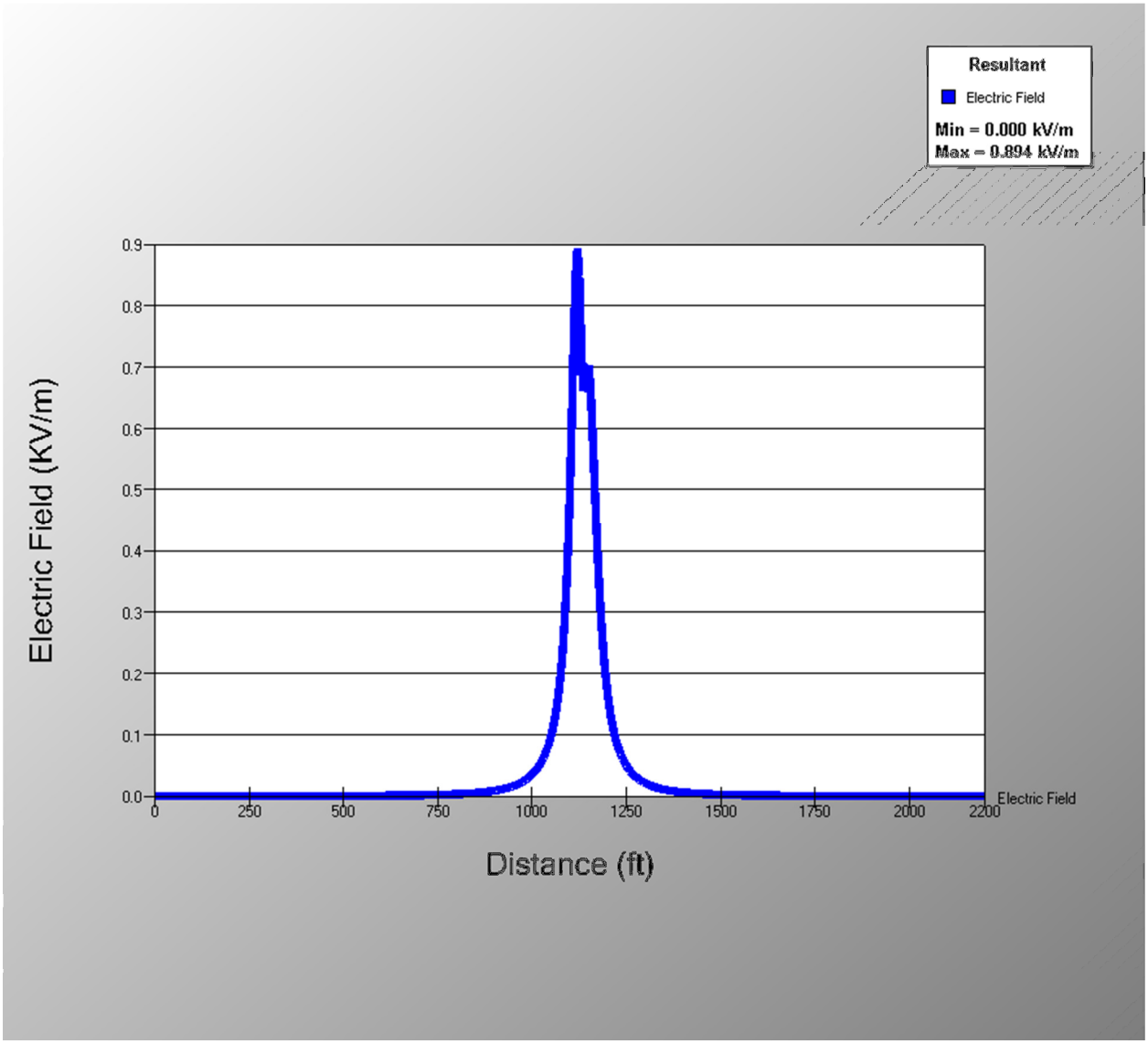
2200	0.05

E-FIELD



(ft)	(KV/m)
0	0

5	0
10	0
15	0
20	0
25	0
30	0
35	0
40	0
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50	0
55	0
60	0
65	0
70	0
75	0
80	0
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100	0
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120	0
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140	0
145	0
150	0
155	0
160	0
165	0
170	0
175	0
180	0
185	0
190	0
195	0
200	0
205	0
210	0

215	0
220	0
225	0
230	0
235	0
240	0
245	0
250	0
255	0
260	0
265	0
270	0
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345	0
350	0
355	0
360	0
365	0
370	0
375	0
380	0
385	0
390	0
395	0
400	0
405	0
410	0
415	0
420	0

425	0
430	0
435	0
440	0
445	0
450	0
455	0
460	0
465	0
470	0
475	0
480	0
485	0
490	0
495	0
500	0
505	0
510	0
515	0
520	0
525	0
530	0
535	0
540	0
545	0
550	0
555	0
560	0
565	0
570	0
575	0
580	0
585	0
590	0
595	0
600	0
605	0
610	0
615	0
620	0
625	0
630	0

635	0
640	0
645	0
650	0
655	0
660	0
665	0
670	0
675	0
680	0
685	0
690	0
695	0
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
760	0
765	0
770	0
775	0
780	0
785	0
790	0
795	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0

845	0.01
850	0.01
855	0.01
860	0.01
865	0.01
870	0.01
875	0.01
880	0.01
885	0.01
890	0.01
895	0.01
900	0.01
905	0.01
910	0.01
915	0.01
920	0.01
925	0.01
930	0.01
935	0.01
940	0.01
945	0.02
950	0.02
955	0.02
960	0.02
965	0.02
970	0.02
975	0.02
980	0.03
985	0.03
990	0.03
995	0.03
1000	0.04
1005	0.04
1010	0.04
1015	0.05
1020	0.05
1025	0.06
1030	0.06
1035	0.07
1040	0.08
1045	0.09
1050	0.1

1055	0.11
1060	0.13
1065	0.15
1070	0.17
1075	0.2
1080	0.23
1085	0.27
1090	0.33
1095	0.4
1100	0.5
1105	0.61
1110	0.74
1115	0.85
1120	0.89
1125	0.85
1130	0.74
1135	0.66
1140	0.67
1145	0.7
1150	0.7
1155	0.66
1160	0.6
1165	0.52
1170	0.44
1175	0.38
1180	0.32
1185	0.27
1190	0.23
1195	0.19
1200	0.17
1205	0.14
1210	0.13
1215	0.11
1220	0.1
1225	0.09
1230	0.08
1235	0.07
1240	0.06
1245	0.05
1250	0.05
1255	0.04
1260	0.04

1265	0.04
1270	0.03
1275	0.03
1280	0.03
1285	0.03
1290	0.02
1295	0.02
1300	0.02
1305	0.02
1310	0.02
1315	0.02
1320	0.02
1325	0.01
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1335	0.01
1340	0.01
1345	0.01
1350	0.01
1355	0.01
1360	0.01
1365	0.01
1370	0.01
1375	0.01
1380	0.01
1385	0.01
1390	0.01
1395	0.01
1400	0.01
1405	0.01
1410	0.01
1415	0.01
1420	0.01
1425	0
1430	0
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1440	0
1445	0
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1460	0
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1480	0
1485	0
1490	0
1495	0
1500	0
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1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1660	0
1665	0
1670	0
1675	0
1680	0

1685	0
1690	0
1695	0
1700	0
1705	0
1710	0
1715	0
1720	0
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1845	0
1850	0
1855	0
1860	0
1865	0
1870	0
1875	0
1880	0
1885	0
1890	0

1895	0
1900	0
1905	0
1910	0
1915	0
1920	0
1925	0
1930	0
1935	0
1940	0
1945	0
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2035	0
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2045	0
2050	0
2055	0
2060	0
2065	0
2070	0
2075	0
2080	0
2085	0
2090	0
2095	0
2100	0

2105 0
2110 0
2115 0
2120 0
2125 0
2130 0
2135 0
2140 0
2145 0
2150 0
2155 0
2160 0
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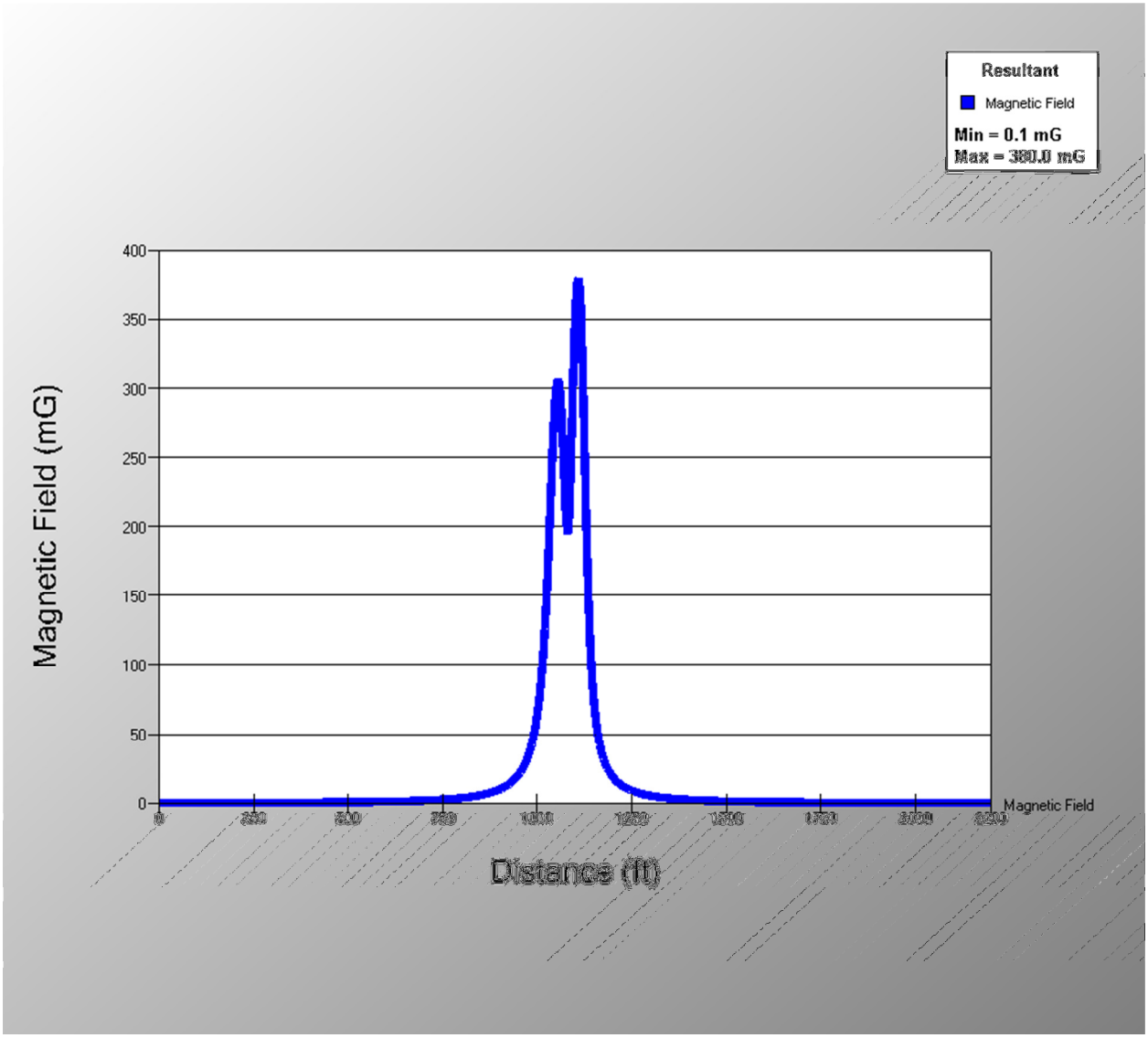
2170 0
2175 0
2180 0
2185 0
2190 0
2195 0
2200 0

EXISTING C AND M LINES

MAG FIELD



(ft)	(mG)
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10	0.1
15	0.1
20	0.1
25	0.11
30	0.11
35	0.11
40	0.11
45	0.11
50	0.11
55	0.11

60	0.12
65	0.12
70	0.12
75	0.12
80	0.12
85	0.13
90	0.13
95	0.13
100	0.13
105	0.13
110	0.13
115	0.14
120	0.14
125	0.14
130	0.14
135	0.15
140	0.15
145	0.15
150	0.15
155	0.15
160	0.16
165	0.16
170	0.16
175	0.16
180	0.17
185	0.17
190	0.17
195	0.18
200	0.18
205	0.18
210	0.18
215	0.19
220	0.19
225	0.19
230	0.2
235	0.2
240	0.2
245	0.21
250	0.21
255	0.21
260	0.22
265	0.22

270	0.23
275	0.23
280	0.23
285	0.24
290	0.24
295	0.25
300	0.25
305	0.26
310	0.26
315	0.27
320	0.27
325	0.28
330	0.28
335	0.29
340	0.29
345	0.3
350	0.3
355	0.31
360	0.32
365	0.32
370	0.33
375	0.34
380	0.34
385	0.35
390	0.36
395	0.36
400	0.37
405	0.38
410	0.39
415	0.39
420	0.4
425	0.41
430	0.42
435	0.43
440	0.44
445	0.45
450	0.46
455	0.47
460	0.48
465	0.49
470	0.5
475	0.51

480	0.52
485	0.54
490	0.55
495	0.56
500	0.58
505	0.59
510	0.6
515	0.62
520	0.63
525	0.65
530	0.66
535	0.68
540	0.7
545	0.72
550	0.73
555	0.75
560	0.77
565	0.79
570	0.81
575	0.83
580	0.86
585	0.88
590	0.9
595	0.93
600	0.95
605	0.98
610	1.01
615	1.04
620	1.07
625	1.1
630	1.13
635	1.16
640	1.2
645	1.23
650	1.27
655	1.31
660	1.35
665	1.39
670	1.43
675	1.48
680	1.52
685	1.57

690	1.62
695	1.68
700	1.73
705	1.79
710	1.85
715	1.92
720	1.98
725	2.05
730	2.12
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740	2.28
745	2.36
750	2.45
755	2.54
760	2.64
765	2.74
770	2.84
775	2.95
780	3.07
785	3.2
790	3.33
795	3.46
800	3.61
805	3.76
810	3.93
815	4.1
820	4.28
825	4.48
830	4.68
835	4.9
840	5.14
845	5.39
850	5.66
855	5.94
860	6.25
865	6.58
870	6.94
875	7.32
880	7.74
885	8.19
890	8.67
895	9.2

900	9.78
905	10.42
910	11.11
915	11.88
920	12.73
925	13.66
930	14.71
935	15.88
940	17.19
945	18.68
950	20.36
955	22.28
960	24.48
965	27.02
970	29.98
975	33.45
980	37.55
985	42.42
990	48.29
995	55.39
1000	64.09
1005	74.84
1010	88.2
1015	104.92
1020	125.83
1025	151.7
1030	182.8
1035	217.94
1040	253.35
1045	282.87
1050	301.11
1055	306.32
1060	298.4
1065	276.88
1070	244.29
1075	210.81
1080	193.92
1085	210.06
1090	256.34
1095	310.01
1100	352.3
1105	376.93

1110	379.99
1115	359.33
1120	315.13
1125	255.18
1130	196.13
1135	148.86
1140	114.42
1145	89.91
1150	72.33
1155	59.46
1160	49.82
1165	42.44
1170	36.65
1175	32.04
1180	28.3
1185	25.22
1190	22.64
1195	20.47
1200	18.61
1205	17.01
1210	15.62
1215	14.4
1220	13.33
1225	12.38
1230	11.52
1235	10.76
1240	10.07
1245	9.45
1250	8.88
1255	8.36
1260	7.89
1265	7.45
1270	7.05
1275	6.68
1280	6.34
1285	6.02
1290	5.72
1295	5.45
1300	5.19
1305	4.95
1310	4.73
1315	4.51

1320	4.32
1325	4.13
1330	3.95
1335	3.79
1340	3.63
1345	3.48
1350	3.34
1355	3.21
1360	3.09
1365	2.97
1370	2.85
1375	2.75
1380	2.64
1385	2.55
1390	2.46
1395	2.37
1400	2.28
1405	2.2
1410	2.13
1415	2.05
1420	1.98
1425	1.92
1430	1.85
1435	1.79
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1445	1.68
1450	1.63
1455	1.57
1460	1.52
1465	1.48
1470	1.43
1475	1.39
1480	1.35
1485	1.31
1490	1.27
1495	1.23
1500	1.19
1505	1.16
1510	1.13
1515	1.1
1520	1.06
1525	1.03

1530	1.01
1535	0.98
1540	0.95
1545	0.93
1550	0.9
1555	0.88
1560	0.85
1565	0.83
1570	0.81
1575	0.79
1580	0.77
1585	0.75
1590	0.73
1595	0.71
1600	0.7
1605	0.68
1610	0.66
1615	0.65
1620	0.63
1625	0.62
1630	0.6
1635	0.59
1640	0.57
1645	0.56
1650	0.55
1655	0.53
1660	0.52
1665	0.51
1670	0.5
1675	0.49
1680	0.48
1685	0.47
1690	0.46
1695	0.45
1700	0.44
1705	0.43
1710	0.42
1715	0.41
1720	0.4
1725	0.39
1730	0.39
1735	0.38

1740	0.37
1745	0.36
1750	0.35
1755	0.35
1760	0.34
1765	0.33
1770	0.33
1775	0.32
1780	0.31
1785	0.31
1790	0.3
1795	0.3
1800	0.29
1805	0.29
1810	0.28
1815	0.28
1820	0.27
1825	0.27
1830	0.26
1835	0.26
1840	0.25
1845	0.25
1850	0.24
1855	0.24
1860	0.23
1865	0.23
1870	0.23
1875	0.22
1880	0.22
1885	0.21
1890	0.21
1895	0.21
1900	0.2
1905	0.2
1910	0.2
1915	0.19
1920	0.19
1925	0.19
1930	0.18
1935	0.18
1940	0.18
1945	0.17

1950	0.17
1955	0.17
1960	0.17
1965	0.16
1970	0.16
1975	0.16
1980	0.16
1985	0.15
1990	0.15
1995	0.15
2000	0.15
2005	0.14
2010	0.14
2015	0.14
2020	0.14
2025	0.14
2030	0.13
2035	0.13
2040	0.13
2045	0.13
2050	0.13
2055	0.12
2060	0.12
2065	0.12
2070	0.12
2075	0.12
2080	0.12
2085	0.11
2090	0.11
2095	0.11
2100	0.11
2105	0.11
2110	0.11
2115	0.11
2120	0.1
2125	0.1
2130	0.1
2135	0.1
2140	0.1
2145	0.1
2150	0.1
2155	0.09

2160 0.09
2165 0.09
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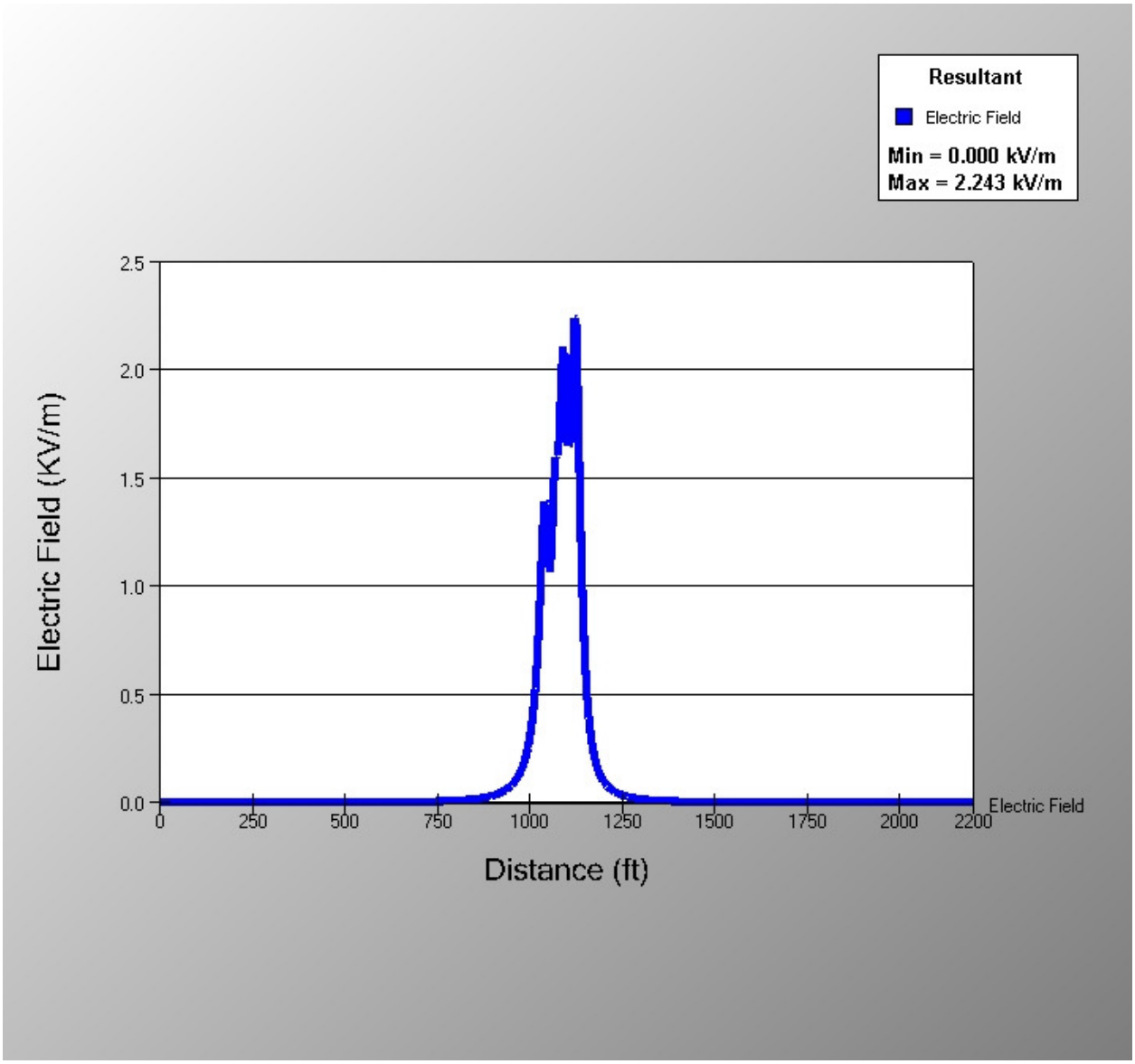
2195 0.08
2200 0.08

E-FIELD



(ft)	(KV/m)
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20	0
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35	0
40	0
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50	0
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140	0
145	0
150	0
155	0
160	0
165	0
170	0
175	0
180	0
185	0
190	0
195	0
200	0
205	0

210	0
215	0
220	0
225	0
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240	0
245	0
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255	0
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265	0
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305	0
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355	0
360	0
365	0
370	0
375	0
380	0
385	0
390	0
395	0
400	0
405	0
410	0
415	0
420	0

425	0
430	0
435	0
440	0
445	0
450	0
455	0
460	0
465	0
470	0
475	0
480	0
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490	0
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575	0
580	0
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590	0
595	0
600	0
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635	0

640	0
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675	0
680	0
685	0
690	0
695	0
700	0
705	0
710	0
715	0
720	0
725	0.01
730	0.01
735	0.01
740	0.01
745	0.01
750	0.01
755	0.01
760	0.01
765	0.01
770	0.01
775	0.01
780	0.01
785	0.01
790	0.01
795	0.01
800	0.01
805	0.01
810	0.01
815	0.01
820	0.01
825	0.01
830	0.01
835	0.01
840	0.02
845	0.02
850	0.02

855	0.02
860	0.02
865	0.02
870	0.02
875	0.02
880	0.03
885	0.03
890	0.03
895	0.03
900	0.03
905	0.04
910	0.04
915	0.04
920	0.05
925	0.05
930	0.05
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940	0.07
945	0.07
950	0.08
955	0.09
960	0.1
965	0.11
970	0.13
975	0.14
980	0.16
985	0.19
990	0.22
995	0.25
1000	0.3
1005	0.36
1010	0.43
1015	0.53
1020	0.66
1025	0.82
1030	1.03
1035	1.24
1040	1.39
1045	1.38
1050	1.2
1055	1.06
1060	1.22
1065	1.47

1070	1.6
1075	1.6
1080	1.69
1085	1.94
1090	2.11
1095	1.96
1100	1.71
1105	1.65
1110	1.66
1115	1.91
1120	2.24
1125	2.24
1130	1.9
1135	1.48
1140	1.12
1145	0.84
1150	0.64
1155	0.5
1160	0.39
1165	0.31
1170	0.26
1175	0.21
1180	0.18
1185	0.15
1190	0.13
1195	0.11
1200	0.1
1205	0.09
1210	0.08
1215	0.07
1220	0.06
1225	0.06
1230	0.05
1235	0.05
1240	0.04
1245	0.04
1250	0.04
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1280	0.02

1285	0.02
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1295	0.02
1300	0.02
1305	0.02
1310	0.02
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1370	0.01
1375	0.01
1380	0.01
1385	0.01
1390	0.01
1395	0.01
1400	0.01
1405	0.01
1410	0.01
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1440	0
1445	0
1450	0
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1470	0
1475	0
1480	0
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1490	0
1495	0

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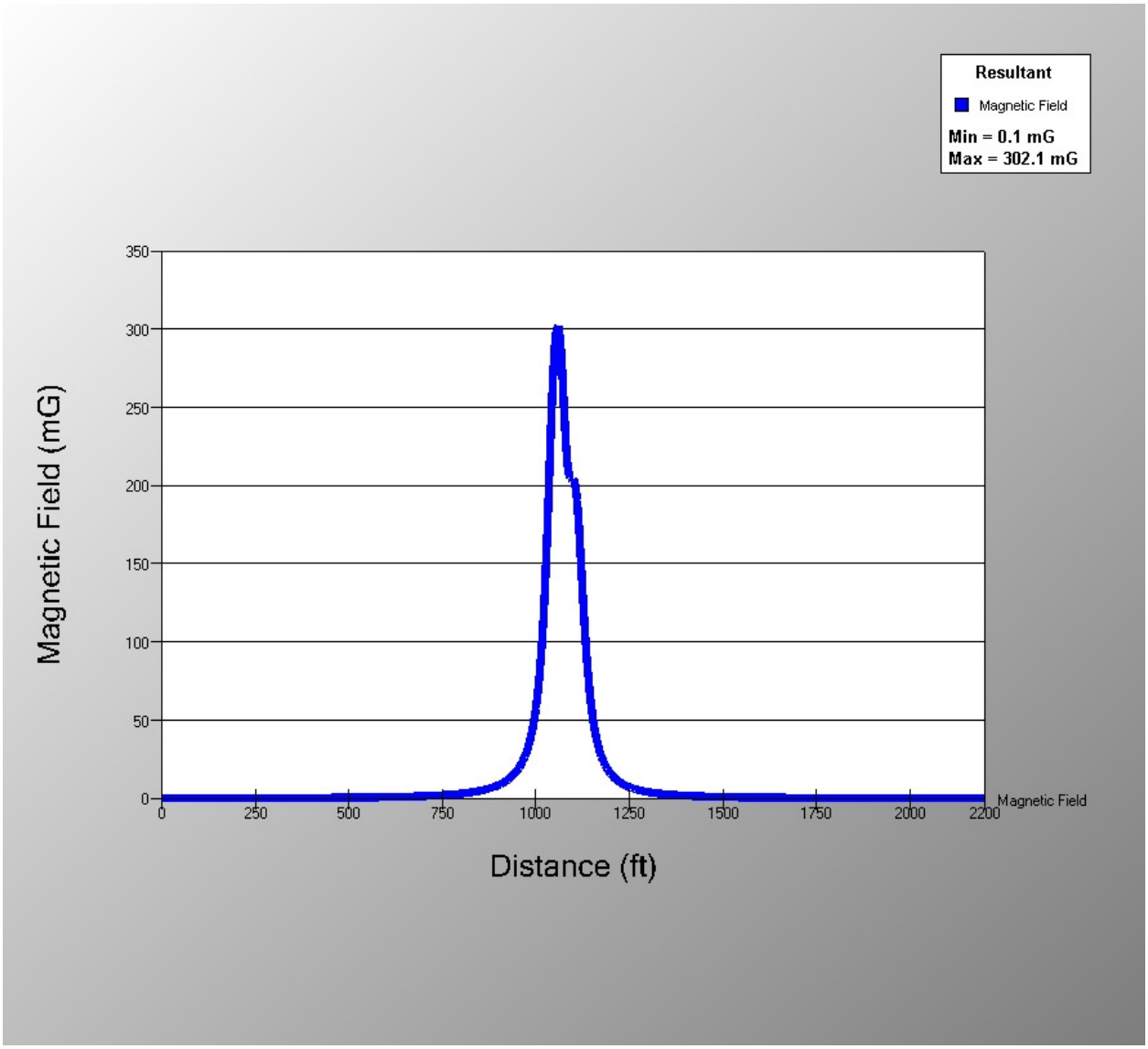
PROPOSED C AND M LINES

MAG FIELD



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60	0.09
65	0.09
70	0.09
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90	0.1
95	0.1
100	0.1
105	0.1
110	0.11
115	0.11
120	0.11
125	0.11
130	0.11
135	0.11
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155	0.12
160	0.12
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185	0.13
190	0.14
195	0.14
200	0.14
205	0.14
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225	0.15
230	0.16
235	0.16
240	0.16
245	0.16
250	0.17
255	0.17
260	0.17

265	0.18
270	0.18
275	0.18
280	0.19
285	0.19
290	0.19
295	0.2
300	0.2
305	0.2
310	0.21
315	0.21
320	0.22
325	0.22
330	0.22
335	0.23
340	0.23
345	0.24
350	0.24
355	0.25
360	0.25
365	0.26
370	0.26
375	0.27
380	0.27
385	0.28
390	0.28
395	0.29
400	0.3
405	0.3
410	0.31
415	0.32
420	0.32
425	0.33
430	0.34
435	0.34
440	0.35
445	0.36
450	0.37
455	0.38
460	0.38
465	0.39
470	0.4
475	0.41

480	0.42
485	0.43
490	0.44
495	0.45
500	0.46
505	0.47
510	0.49
515	0.5
520	0.51
525	0.52
530	0.54
535	0.55
540	0.56
545	0.58
550	0.59
555	0.61
560	0.62
565	0.64
570	0.66
575	0.68
580	0.69
585	0.71
590	0.73
595	0.75
600	0.77
605	0.8
610	0.82
615	0.84
620	0.87
625	0.89
630	0.92
635	0.95
640	0.98
645	1
650	1.04
655	1.07
660	1.1
665	1.14
670	1.17
675	1.21
680	1.25
685	1.29
690	1.33

695	1.38
700	1.42
705	1.47
710	1.52
715	1.58
720	1.63
725	1.69
730	1.75
735	1.82
740	1.88
745	1.95
750	2.03
755	2.11
760	2.19
765	2.27
770	2.36
775	2.46
780	2.56
785	2.67
790	2.78
795	2.9
800	3.02
805	3.15
810	3.29
815	3.44
820	3.6
825	3.77
830	3.95
835	4.14
840	4.34
845	4.56
850	4.79
855	5.04
860	5.31
865	5.6
870	5.91
875	6.25
880	6.61
885	7.01
890	7.43
895	7.9
900	8.41
905	8.97

910	9.59
915	10.27
920	11.02
925	11.85
930	12.79
935	13.83
940	15
945	16.33
950	17.84
955	19.56
960	21.54
965	23.84
970	26.51
975	29.65
980	33.37
985	37.81
990	43.16
995	49.66
1000	57.64
1005	67.54
1010	79.89
1015	95.39
1020	114.85
1025	139.05
1030	168.32
1035	201.77
1040	236.18
1045	266.36
1050	287.95
1055	299.85
1060	302.11
1065	293.58
1070	274.47
1075	249.81
1080	227.13
1085	211.76
1090	204.92
1095	204.11
1100	204.44
1105	200.84
1110	190.5
1115	173.69
1120	152.86

1125	131
1130	110.44
1135	92.43
1140	77.31
1145	64.93
1150	54.89
1155	46.77
1160	40.18
1165	34.81
1170	30.41
1175	26.76
1180	23.71
1185	21.15
1190	18.98
1195	17.12
1200	15.52
1205	14.14
1210	12.93
1215	11.87
1220	10.94
1225	10.11
1230	9.37
1235	8.71
1240	8.12
1245	7.58
1250	7.1
1255	6.65
1260	6.25
1265	5.89
1270	5.55
1275	5.24
1280	4.95
1285	4.69
1290	4.45
1295	4.22
1300	4.01
1305	3.81
1310	3.63
1315	3.46
1320	3.3
1325	3.15
1330	3.01
1335	2.88

1340	2.75
1345	2.64
1350	2.53
1355	2.42
1360	2.33
1365	2.23
1370	2.14
1375	2.06
1380	1.98
1385	1.91
1390	1.84
1395	1.77
1400	1.7
1405	1.64
1410	1.58
1415	1.53
1420	1.48
1425	1.42
1430	1.38
1435	1.33
1440	1.29
1445	1.24
1450	1.2
1455	1.16
1460	1.13
1465	1.09
1470	1.06
1475	1.03
1480	0.99
1485	0.96
1490	0.94
1495	0.91
1500	0.88
1505	0.86
1510	0.83
1515	0.81
1520	0.78
1525	0.76
1530	0.74
1535	0.72
1540	0.7
1545	0.68
1550	0.66

1555	0.65
1560	0.63
1565	0.61
1570	0.6
1575	0.58
1580	0.57
1585	0.55
1590	0.54
1595	0.52
1600	0.51
1605	0.5
1610	0.49
1615	0.47
1620	0.46
1625	0.45
1630	0.44
1635	0.43
1640	0.42
1645	0.41
1650	0.4
1655	0.39
1660	0.38
1665	0.38
1670	0.37
1675	0.36
1680	0.35
1685	0.34
1690	0.34
1695	0.33
1700	0.32
1705	0.31
1710	0.31
1715	0.3
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1740	0.27
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1750	0.26
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1785	0.23
1790	0.22
1795	0.22
1800	0.21
1805	0.21
1810	0.21
1815	0.2
1820	0.2
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1840	0.18
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1870	0.17
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1890	0.16
1895	0.15
1900	0.15
1905	0.15
1910	0.14
1915	0.14
1920	0.14
1925	0.14
1930	0.14
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1940	0.13
1945	0.13
1950	0.13
1955	0.13
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1965	0.12
1970	0.12
1975	0.12
1980	0.12

1985	0.11
1990	0.11
1995	0.11
2000	0.11
2005	0.11
2010	0.11
2015	0.1
2020	0.1
2025	0.1
2030	0.1
2035	0.1
2040	0.1
2045	0.1
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2080	0.09
2085	0.08
2090	0.08
2095	0.08
2100	0.08
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2110	0.08
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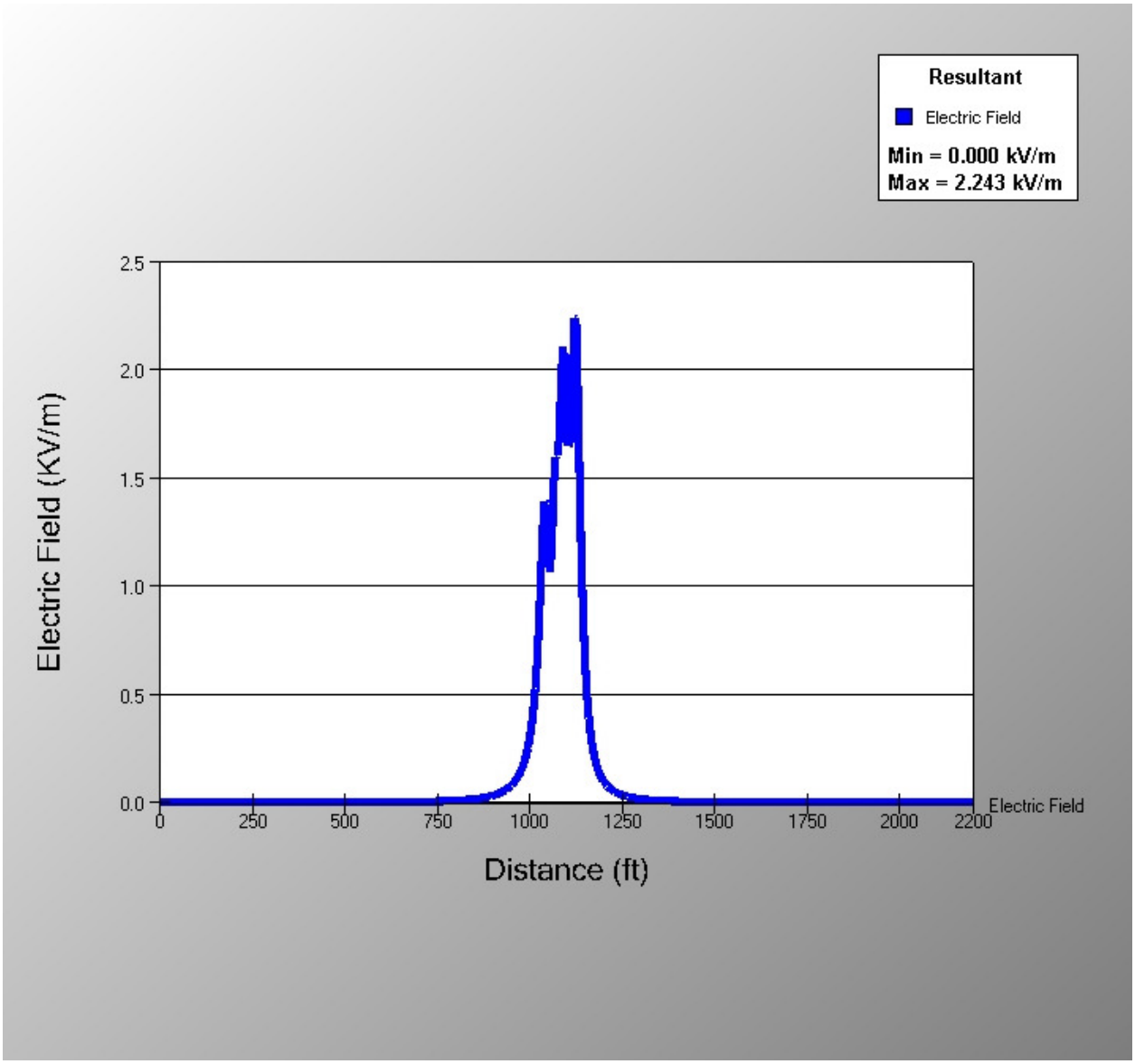
2135	0.07
2140	0.07
2145	0.07
2150	0.07
2155	0.07
2160	0.07
2165	0.07
2170	0.07
2175	0.07
2180	0.07
2185	0.06
2190	0.06
2195	0.06

2200 0.06

E-FIELD



(ft)	(KV/m)
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50	0
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60	0
65	0
70	0
75	0
80	0
85	0
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190	0
195	0
200	0
205	0
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225	0
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245	0

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255	0
260	0
265	0
270	0
275	0
280	0
285	0
290	0
295	0
300	0
305	0
310	0
315	0
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395	0
400	0
405	0
410	0
415	0
420	0
425	0
430	0
435	0
440	0
445	0
450	0
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460	0

465	0
470	0
475	0
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485	0
490	0
495	0
500	0
505	0
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515	0
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705	0
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740	0.01
745	0.01
750	0.01
755	0.01
760	0.01
765	0.01
770	0.01
775	0.01
780	0.01
785	0.01
790	0.01
795	0.01
800	0.01
805	0.01
810	0.01
815	0.01
820	0.01
825	0.01
830	0.01
835	0.01
840	0.02
845	0.02
850	0.02
855	0.02
860	0.02
865	0.02
870	0.02
875	0.02
880	0.03
885	0.03
890	0.03

895	0.03
900	0.03
905	0.04
910	0.04
915	0.04
920	0.05
925	0.05
930	0.05
935	0.06
940	0.07
945	0.07
950	0.08
955	0.09
960	0.1
965	0.11
970	0.13
975	0.14
980	0.16
985	0.19
990	0.22
995	0.25
1000	0.3
1005	0.36
1010	0.43
1015	0.53
1020	0.66
1025	0.82
1030	1.03
1035	1.24
1040	1.39
1045	1.38
1050	1.2
1055	1.06
1060	1.22
1065	1.47
1070	1.6
1075	1.6
1080	1.69
1085	1.94
1090	2.11
1095	1.96
1100	1.71
1105	1.65

1110	1.66
1115	1.91
1120	2.24
1125	2.24
1130	1.9
1135	1.48
1140	1.12
1145	0.84
1150	0.64
1155	0.5
1160	0.39
1165	0.31
1170	0.26
1175	0.21
1180	0.18
1185	0.15
1190	0.13
1195	0.11
1200	0.1
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1320	0.01

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1335	0.01
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1350	0.01
1355	0.01
1360	0.01
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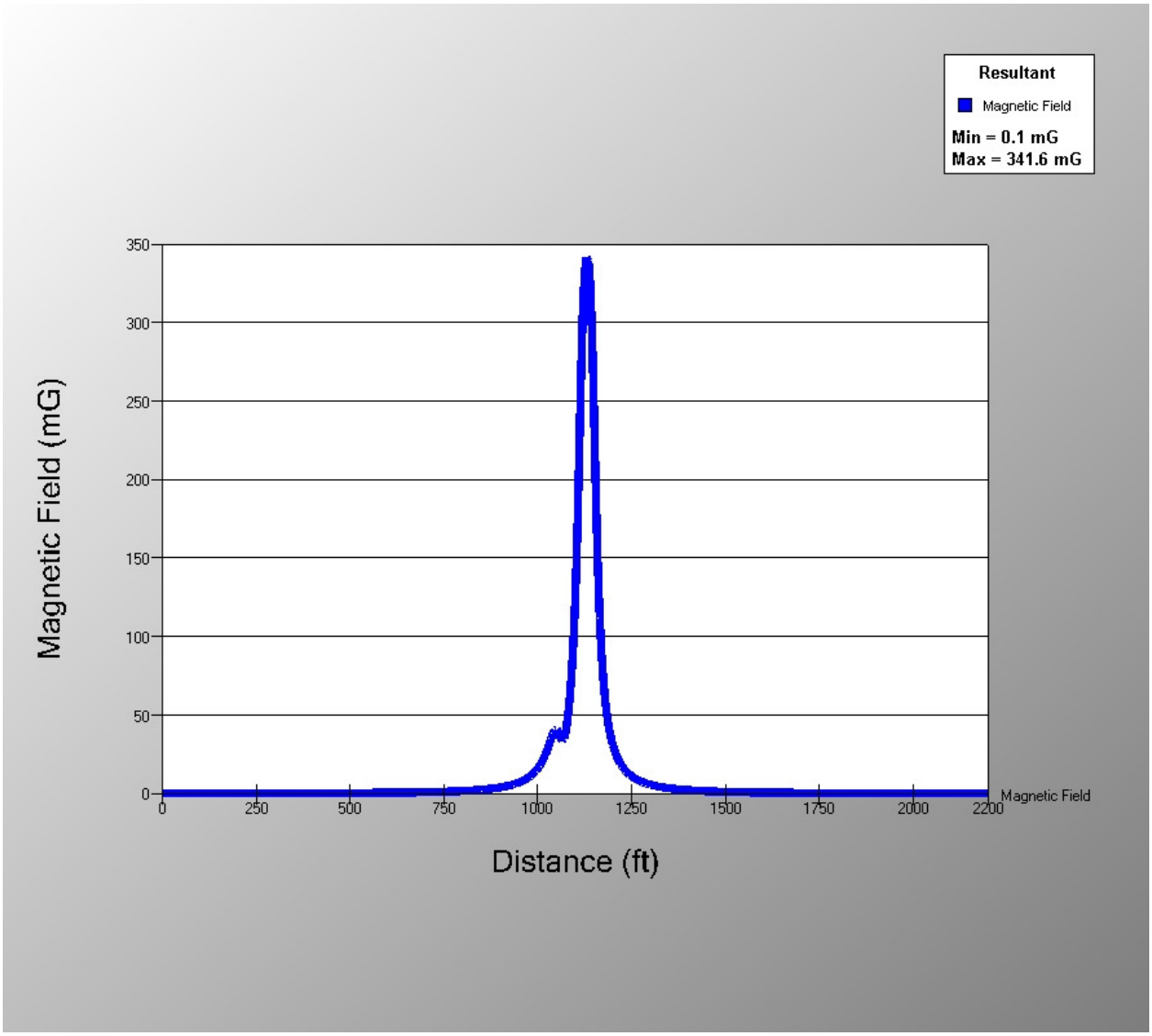
2200	0

EXISTING A&C AND G LINES

MAG FIELD



(ft)	(mG)
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15	0.05
20	0.05
25	0.06
30	0.06
35	0.06
40	0.06
45	0.06
50	0.06
55	0.06
60	0.06
65	0.06
70	0.06
75	0.06
80	0.06
85	0.07
90	0.07
95	0.07
100	0.07
105	0.07
110	0.07
115	0.07
120	0.07
125	0.07
130	0.07
135	0.08
140	0.08
145	0.08
150	0.08
155	0.08
160	0.08
165	0.08
170	0.08
175	0.09
180	0.09
185	0.09
190	0.09
195	0.09
200	0.09
205	0.09
210	0.1
215	0.1
220	0.1

225	0.1
230	0.1
235	0.1
240	0.1
245	0.11
250	0.11
255	0.11
260	0.11
265	0.11
270	0.12
275	0.12
280	0.12
285	0.12
290	0.12
295	0.13
300	0.13
305	0.13
310	0.13
315	0.13
320	0.14
325	0.14
330	0.14
335	0.14
340	0.15
345	0.15
350	0.15
355	0.16
360	0.16
365	0.16
370	0.16
375	0.17
380	0.17
385	0.17
390	0.18
395	0.18
400	0.19
405	0.19
410	0.19
415	0.2
420	0.2
425	0.2
430	0.21
435	0.21

440	0.22
445	0.22
450	0.23
455	0.23
460	0.24
465	0.24
470	0.25
475	0.25
480	0.26
485	0.26
490	0.27
495	0.27
500	0.28
505	0.29
510	0.29
515	0.3
520	0.31
525	0.31
530	0.32
535	0.33
540	0.34
545	0.35
550	0.35
555	0.36
560	0.37
565	0.38
570	0.39
575	0.4
580	0.41
585	0.42
590	0.43
595	0.44
600	0.45
605	0.47
610	0.48
615	0.49
620	0.5
625	0.52
630	0.53
635	0.55
640	0.56
645	0.58
650	0.6

655	0.61
660	0.63
665	0.65
670	0.67
675	0.69
680	0.71
685	0.73
690	0.75
695	0.78
700	0.8
705	0.83
710	0.85
715	0.88
720	0.91
725	0.94
730	0.97
735	1
740	1.04
745	1.07
750	1.11
755	1.15
760	1.19
765	1.23
770	1.28
775	1.32
780	1.37
785	1.42
790	1.48
795	1.53
800	1.59
805	1.66
810	1.72
815	1.79
820	1.87
825	1.95
830	2.03
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840	2.21
845	2.3
850	2.41
855	2.52
860	2.63
865	2.76

870	2.89
875	3.03
880	3.18
885	3.34
890	3.52
895	3.7
900	3.9
905	4.11
910	4.34
915	4.59
920	4.86
925	5.15
930	5.46
935	5.8
940	6.18
945	6.59
950	7.04
955	7.54
960	8.09
965	8.7
970	9.39
975	10.16
980	11.02
985	12
990	13.12
995	14.4
1000	15.87
1005	17.58
1010	19.57
1015	21.88
1020	24.56
1025	27.63
1030	31.06
1035	34.66
1040	38.02
1045	40.36
1050	40.73
1055	38.77
1060	35.54
1065	33.43
1070	34.73
1075	39.99
1080	48.62

1085	60.36
1090	75.87
1095	96.69
1100	125.13
1105	163.73
1110	212.87
1115	265.73
1120	308.15
1125	332.31
1130	341.6
1135	339.18
1140	323.46
1145	289.52
1150	239.61
1155	187.51
1160	144.17
1165	111.72
1170	88.15
1175	70.98
1180	58.25
1185	48.63
1190	41.21
1195	35.38
1200	30.72
1205	26.93
1210	23.82
1215	21.22
1220	19.03
1225	17.17
1230	15.58
1235	14.2
1240	13
1245	11.94
1250	11.01
1255	10.19
1260	9.45
1265	8.79
1270	8.2
1275	7.66
1280	7.18
1285	6.73
1290	6.33
1295	5.96

1300	5.62
1305	5.31
1310	5.02
1315	4.75
1320	4.5
1325	4.27
1330	4.06
1335	3.86
1340	3.67
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1365	2.91
1370	2.78
1375	2.66
1380	2.55
1385	2.44
1390	2.34
1395	2.24
1400	2.15
1405	2.07
1410	1.99
1415	1.91
1420	1.84
1425	1.77
1430	1.7
1435	1.64
1440	1.58
1445	1.52
1450	1.47
1455	1.41
1460	1.36
1465	1.32
1470	1.27
1475	1.23
1480	1.19
1485	1.15
1490	1.11
1495	1.07
1500	1.04
1505	1.01
1510	0.97

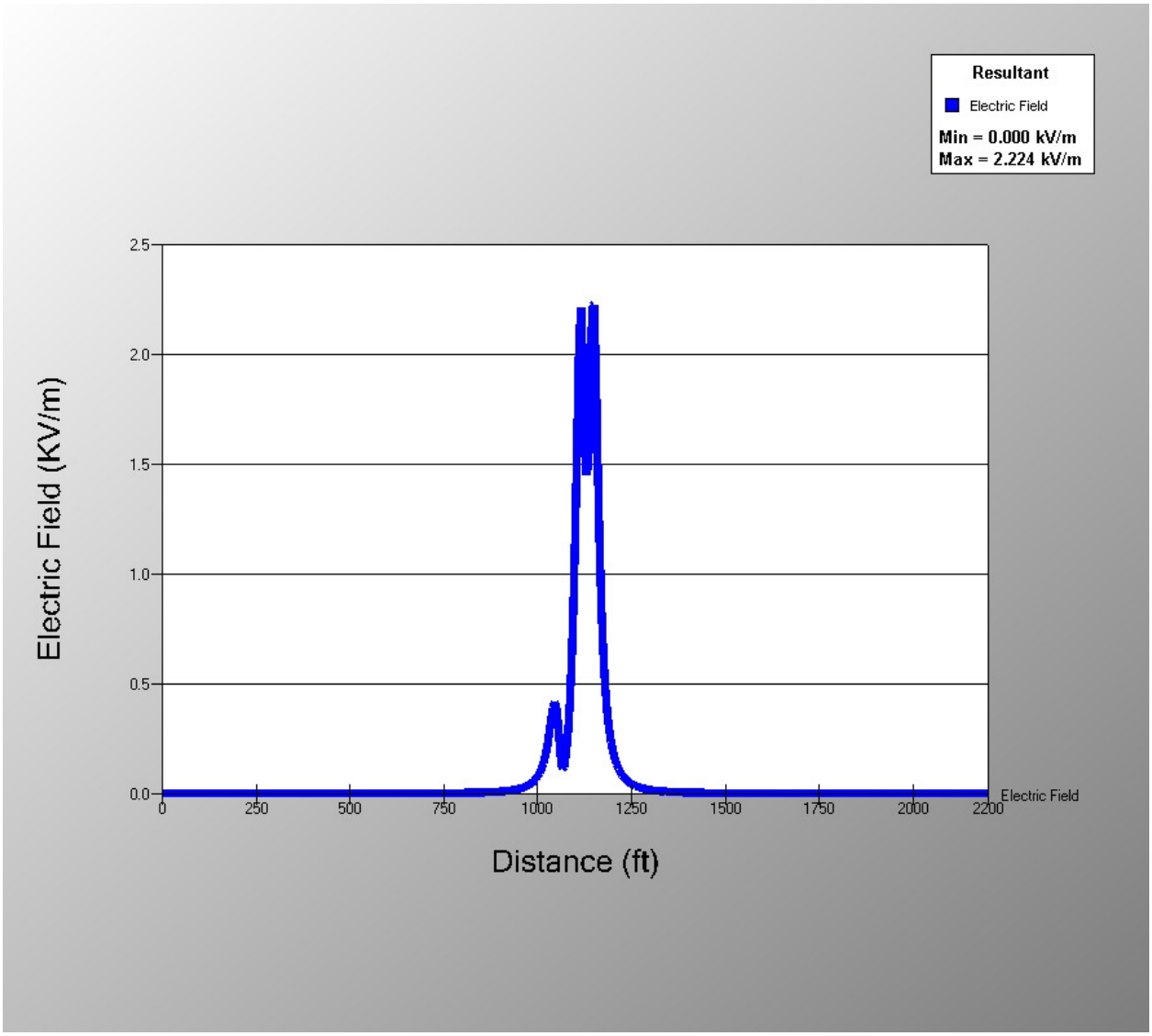
1515	0.94
1520	0.91
1525	0.89
1530	0.86
1535	0.83
1540	0.81
1545	0.78
1550	0.76
1555	0.74
1560	0.72
1565	0.7
1570	0.68
1575	0.66
1580	0.64
1585	0.62
1590	0.6
1595	0.59
1600	0.57
1605	0.56
1610	0.54
1615	0.53
1620	0.51
1625	0.5
1630	0.49
1635	0.47
1640	0.46
1645	0.45
1650	0.44
1655	0.43
1660	0.42
1665	0.41
1670	0.4
1675	0.39
1680	0.38
1685	0.37
1690	0.36
1695	0.35
1700	0.34
1705	0.34
1710	0.33
1715	0.32
1720	0.31
1725	0.31

1730	0.3
1735	0.29
1740	0.29
1745	0.28
1750	0.27
1755	0.27
1760	0.26
1765	0.26
1770	0.25
1775	0.25
1780	0.24
1785	0.24
1790	0.23
1795	0.23
1800	0.22
1805	0.22
1810	0.21
1815	0.21
1820	0.2
1825	0.2
1830	0.2
1835	0.19
1840	0.19
1845	0.19
1850	0.18
1855	0.18
1860	0.17
1865	0.17
1870	0.17
1875	0.16
1880	0.16
1885	0.16
1890	0.16
1895	0.15
1900	0.15
1905	0.15
1910	0.15
1915	0.14
1920	0.14
1925	0.14
1930	0.14
1935	0.13
1940	0.13

1945	0.13
1950	0.13
1955	0.12
1960	0.12
1965	0.12
1970	0.12
1975	0.12
1980	0.11
1985	0.11
1990	0.11
1995	0.11
2000	0.11
2005	0.1
2010	0.1
2015	0.1
2020	0.1
2025	0.1
2030	0.1
2035	0.1
2040	0.09
2045	0.09
2050	0.09
2055	0.09
2060	0.09
2065	0.09
2070	0.09
2075	0.08
2080	0.08
2085	0.08
2090	0.08
2095	0.08
2100	0.08
2105	0.08
2110	0.08
2115	0.07
2120	0.07
2125	0.07
2130	0.07
2135	0.07
2140	0.07
2145	0.07
2150	0.07
2155	0.07

2160	0.07
2165	0.06
2170	0.06
2175	0.06
2180	0.06
2185	0.06
2190	0.06
2195	0.06
2200	0.06

E-FIELD



(ft)	(KV/m)
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15	0
20	0
25	0
30	0
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40	0
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55	0
60	0
65	0
70	0
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140	0
145	0
150	0
155	0
160	0
165	0
170	0
175	0
180	0
185	0
190	0
195	0
200	0
205	0

210	0
215	0
220	0
225	0
230	0
235	0
240	0
245	0
250	0
255	0
260	0
265	0
270	0
275	0
280	0
285	0
290	0
295	0
300	0
305	0
310	0
315	0
320	0
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330	0
335	0
340	0
345	0
350	0
355	0
360	0
365	0
370	0
375	0
380	0
385	0
390	0
395	0
400	0
405	0
410	0
415	0
420	0

425	0
430	0
435	0
440	0
445	0
450	0
455	0
460	0
465	0
470	0
475	0
480	0
485	0
490	0
495	0
500	0
505	0
510	0
515	0
520	0
525	0
530	0
535	0
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545	0
550	0
555	0
560	0
565	0
570	0
575	0
580	0
585	0
590	0
595	0
600	0
605	0
610	0
615	0
620	0
625	0
630	0
635	0

640	0
645	0
650	0
655	0
660	0
665	0
670	0
675	0
680	0
685	0
690	0
695	0
700	0
705	0
710	0
715	0
720	0
725	0
730	0
735	0
740	0
745	0
750	0
755	0
760	0
765	0
770	0
775	0
780	0
785	0
790	0
795	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0

855	0
860	0.01
865	0.01
870	0.01
875	0.01
880	0.01
885	0.01
890	0.01
895	0.01
900	0.01
905	0.01
910	0.01
915	0.01
920	0.01
925	0.01
930	0.01
935	0.02
940	0.02
945	0.02
950	0.02
955	0.02
960	0.03
965	0.03
970	0.03
975	0.04
980	0.04
985	0.05
990	0.06
995	0.07
1000	0.08
1005	0.09
1010	0.11
1015	0.14
1020	0.17
1025	0.21
1030	0.27
1035	0.33
1040	0.39
1045	0.42
1050	0.39
1055	0.3
1060	0.18
1065	0.11

1070	0.12
1075	0.18
1080	0.27
1085	0.4
1090	0.59
1095	0.86
1100	1.21
1105	1.64
1110	2.05
1115	2.21
1120	1.96
1125	1.57
1130	1.45
1135	1.51
1140	1.84
1145	2.22
1150	2.22
1155	1.89
1160	1.47
1165	1.1
1170	0.82
1175	0.62
1180	0.47
1185	0.37
1190	0.29
1195	0.24
1200	0.19
1205	0.16
1210	0.13
1215	0.11
1220	0.1
1225	0.08
1230	0.07
1235	0.06
1240	0.05
1245	0.05
1250	0.04
1255	0.04
1260	0.03
1265	0.03
1270	0.03
1275	0.03
1280	0.02

1285	0.02
1290	0.02
1295	0.02
1300	0.02
1305	0.01
1310	0.01
1315	0.01
1320	0.01
1325	0.01
1330	0.01
1335	0.01
1340	0.01
1345	0.01
1350	0.01
1355	0.01
1360	0.01
1365	0.01
1370	0.01
1375	0.01
1380	0.01
1385	0
1390	0
1395	0
1400	0
1405	0
1410	0
1415	0
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1445	0
1450	0
1455	0
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1465	0
1470	0
1475	0
1480	0
1485	0
1490	0
1495	0

1500	0
1505	0
1510	0
1515	0
1520	0
1525	0
1530	0
1535	0
1540	0
1545	0
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1660	0
1665	0
1670	0
1675	0
1680	0
1685	0
1690	0
1695	0
1700	0
1705	0
1710	0

1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1760	0
1765	0
1770	0
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2085	0
2090	0
2095	0
2100	0
2105	0
2110	0
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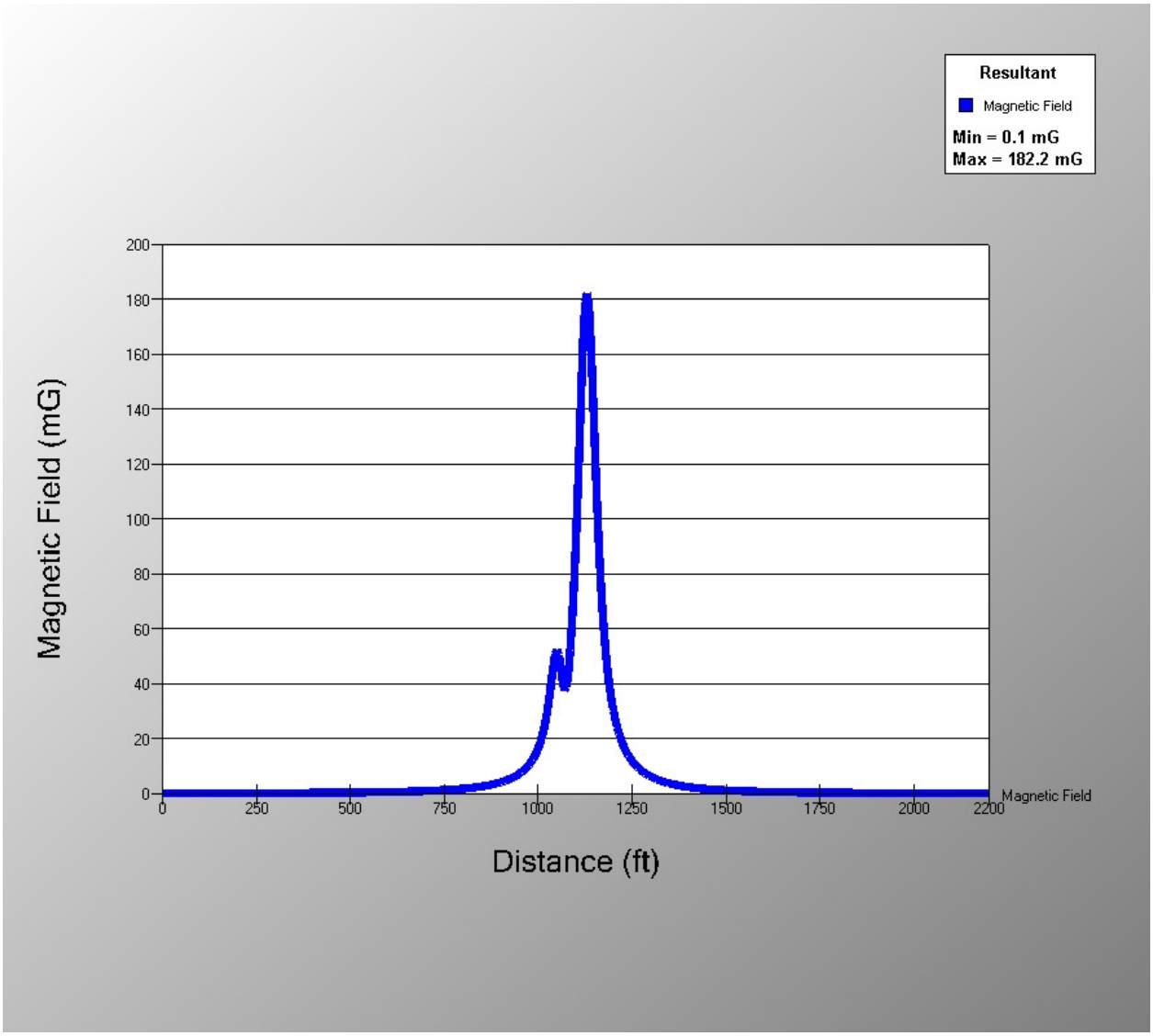
2120	0
2125	0
2130	0
2135	0
2140	0

2145	0
2150	0
2155	0
2160	0
2165	0
2170	0
2175	0
2180	0
2185	0
2190	0
2195	0
2200	0

PROPOSED A&C AND G LINES

MAG FIELD



(ft)	(mG)
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10	0.06
15	0.06
20	0.07
25	0.07
30	0.07
35	0.07
40	0.07
45	0.07
50	0.07

55	0.07
60	0.07
65	0.07
70	0.08
75	0.08
80	0.08
85	0.08
90	0.08
95	0.08
100	0.08
105	0.08
110	0.08
115	0.09
120	0.09
125	0.09
130	0.09
135	0.09
140	0.09
145	0.09
150	0.09
155	0.1
160	0.1
165	0.1
170	0.1
175	0.1
180	0.1
185	0.1
190	0.11
195	0.11
200	0.11
205	0.11
210	0.11
215	0.12
220	0.12
225	0.12
230	0.12
235	0.12
240	0.12
245	0.13
250	0.13
255	0.13
260	0.13
265	0.14

270	0.14
275	0.14
280	0.14
285	0.14
290	0.15
295	0.15
300	0.15
305	0.15
310	0.16
315	0.16
320	0.16
325	0.17
330	0.17
335	0.17
340	0.17
345	0.18
350	0.18
355	0.18
360	0.19
365	0.19
370	0.19
375	0.2
380	0.2
385	0.21
390	0.21
395	0.21
400	0.22
405	0.22
410	0.23
415	0.23
420	0.24
425	0.24
430	0.25
435	0.25
440	0.26
445	0.26
450	0.27
455	0.27
460	0.28
465	0.28
470	0.29
475	0.29
480	0.3

485	0.31
490	0.31
495	0.32
500	0.33
505	0.33
510	0.34
515	0.35
520	0.36
525	0.37
530	0.37
535	0.38
540	0.39
545	0.4
550	0.41
555	0.42
560	0.43
565	0.44
570	0.45
575	0.46
580	0.47
585	0.48
590	0.5
595	0.51
600	0.52
605	0.53
610	0.55
615	0.56
620	0.58
625	0.59
630	0.61
635	0.62
640	0.64
645	0.66
650	0.68
655	0.7
660	0.71
665	0.73
670	0.76
675	0.78
680	0.8
685	0.82
690	0.85
695	0.87

700	0.9
705	0.93
710	0.95
715	0.98
720	1.01
725	1.05
730	1.08
735	1.11
740	1.15
745	1.19
750	1.23
755	1.27
760	1.31
765	1.36
770	1.4
775	1.45
780	1.5
785	1.56
790	1.61
795	1.67
800	1.73
805	1.8
810	1.87
815	1.94
820	2.02
825	2.1
830	2.18
835	2.27
840	2.37
845	2.47
850	2.57
855	2.68
860	2.8
865	2.93
870	3.06
875	3.2
880	3.35
885	3.52
890	3.69
895	3.88
900	4.07
905	4.29
910	4.52

915	4.77
920	5.04
925	5.33
930	5.64
935	5.99
940	6.36
945	6.78
950	7.23
955	7.74
960	8.3
965	8.92
970	9.62
975	10.41
980	11.3
985	12.33
990	13.51
995	14.89
1000	16.5
1005	18.41
1010	20.69
1015	23.44
1020	26.76
1025	30.77
1030	35.51
1035	40.86
1040	46.3
1045	50.66
1050	52.37
1055	50.45
1060	45.65
1065	40.37
1070	37.45
1075	38.66
1080	43.86
1085	52.11
1090	62.78
1095	75.77
1100	91.19
1105	109.07
1110	128.88
1115	149.1
1120	166.91
1125	178.83

1130	182.24
1135	176.74
1140	164.05
1145	146.96
1150	128.32
1155	110.28
1160	94.06
1165	80.11
1170	68.41
1175	58.71
1180	50.7
1185	44.09
1190	38.6
1195	34.02
1200	30.17
1205	26.91
1210	24.14
1215	21.77
1220	19.72
1225	17.94
1230	16.38
1235	15.02
1240	13.81
1245	12.74
1250	11.79
1255	10.94
1260	10.17
1265	9.48
1270	8.86
1275	8.29
1280	7.77
1285	7.3
1290	6.87
1295	6.47
1300	6.1
1305	5.76
1310	5.45
1315	5.16
1320	4.89
1325	4.64
1330	4.41
1335	4.19
1340	3.99

1345	3.8
1350	3.62
1355	3.46
1360	3.3
1365	3.15
1370	3.02
1375	2.89
1380	2.76
1385	2.65
1390	2.54
1395	2.43
1400	2.33
1405	2.24
1410	2.15
1415	2.07
1420	1.99
1425	1.91
1430	1.84
1435	1.77
1440	1.71
1445	1.65
1450	1.59
1455	1.53
1460	1.48
1465	1.43
1470	1.38
1475	1.33
1480	1.29
1485	1.24
1490	1.2
1495	1.16
1500	1.13
1505	1.09
1510	1.06
1515	1.02
1520	0.99
1525	0.96
1530	0.93
1535	0.9
1540	0.88
1545	0.85
1550	0.83
1555	0.8

1560	0.78
1565	0.76
1570	0.74
1575	0.71
1580	0.69
1585	0.68
1590	0.66
1595	0.64
1600	0.62
1605	0.61
1610	0.59
1615	0.57
1620	0.56
1625	0.55
1630	0.53
1635	0.52
1640	0.5
1645	0.49
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1665	0.45
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1675	0.42
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1785	0.26
1790	0.26
1795	0.25
1800	0.24
1805	0.24
1810	0.24
1815	0.23
1820	0.23
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1920	0.16
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1945	0.14
1950	0.14
1955	0.14
1960	0.14
1965	0.13
1970	0.13
1975	0.13
1980	0.13
1985	0.13

1990	0.12
1995	0.12
2000	0.12
2005	0.12
2010	0.12
2015	0.11
2020	0.11
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2030	0.11
2035	0.11
2040	0.11
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2080	0.09
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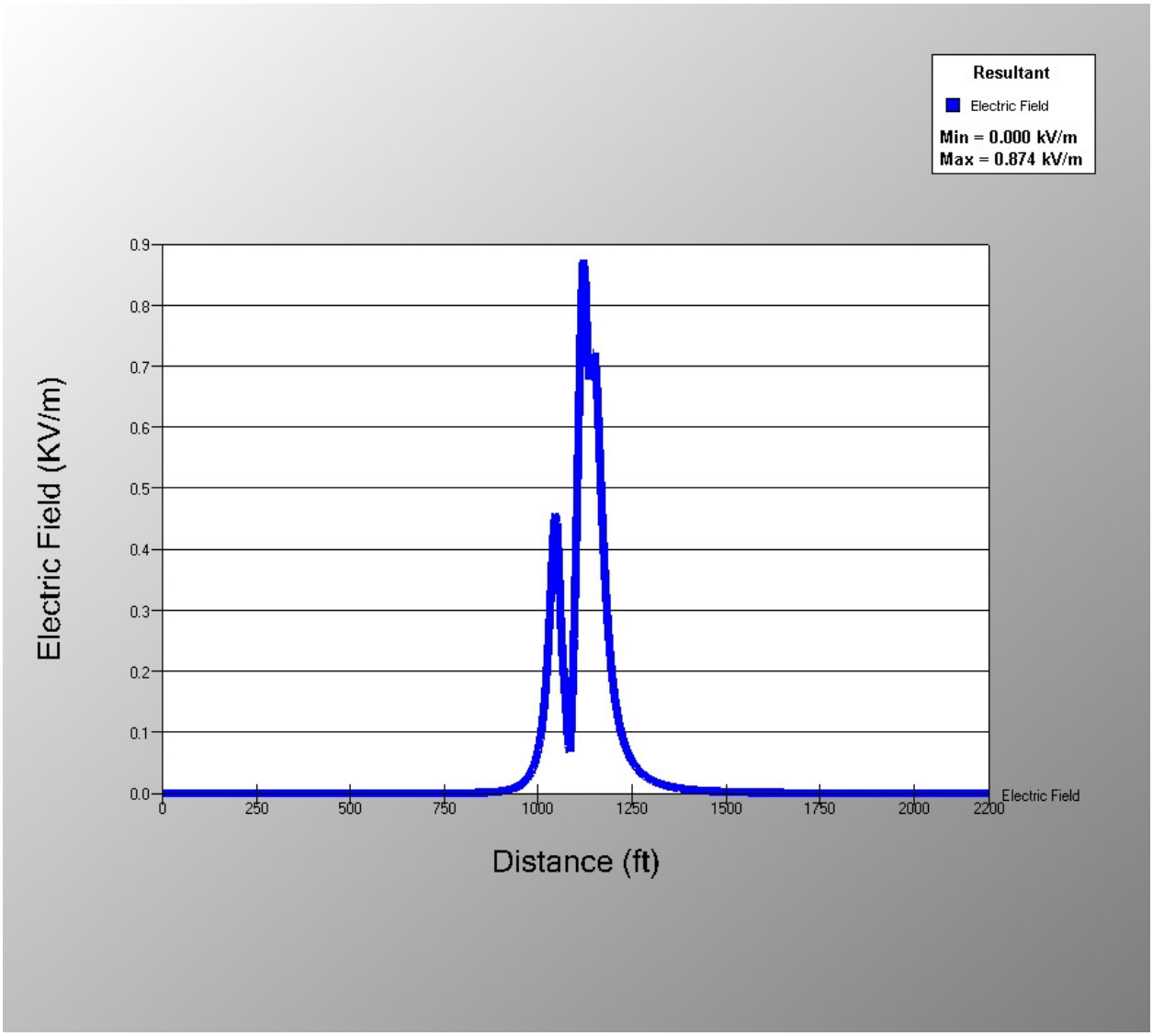
E-FIELD



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185	0
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410	0
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430	0
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455	0
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470	0
475	0
480	0
485	0
490	0
495	0
500	0
505	0
510	0
515	0
520	0
525	0
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695	0
700	0
705	0
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835	0
840	0
845	0
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855	0
860	0
865	0
870	0
875	0
880	0
885	0
890	0
895	0

900	0
905	0
910	0
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950	0.01
955	0.01
960	0.02
965	0.02
970	0.02
975	0.03
980	0.03
985	0.04
990	0.05
995	0.06
1000	0.07
1005	0.09
1010	0.11
1015	0.14
1020	0.18
1025	0.22
1030	0.28
1035	0.35
1040	0.42
1045	0.46
1050	0.44
1055	0.37
1060	0.28
1065	0.22
1070	0.18
1075	0.13
1080	0.08
1085	0.07
1090	0.14
1095	0.25
1100	0.38
1105	0.53
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1125	0.84
1130	0.75
1135	0.68
1140	0.69
1145	0.72
1150	0.72
1155	0.68
1160	0.61
1165	0.53
1170	0.46
1175	0.39
1180	0.33
1185	0.28
1190	0.24
1195	0.2
1200	0.18
1205	0.15
1210	0.13
1215	0.12
1220	0.1
1225	0.09
1230	0.08
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1245	0.06
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1265	0.04
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1280	0.03
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1305	0.02
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1325	0.02

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1360	0.01
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1385	0.01
1390	0.01
1395	0.01
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1710	0
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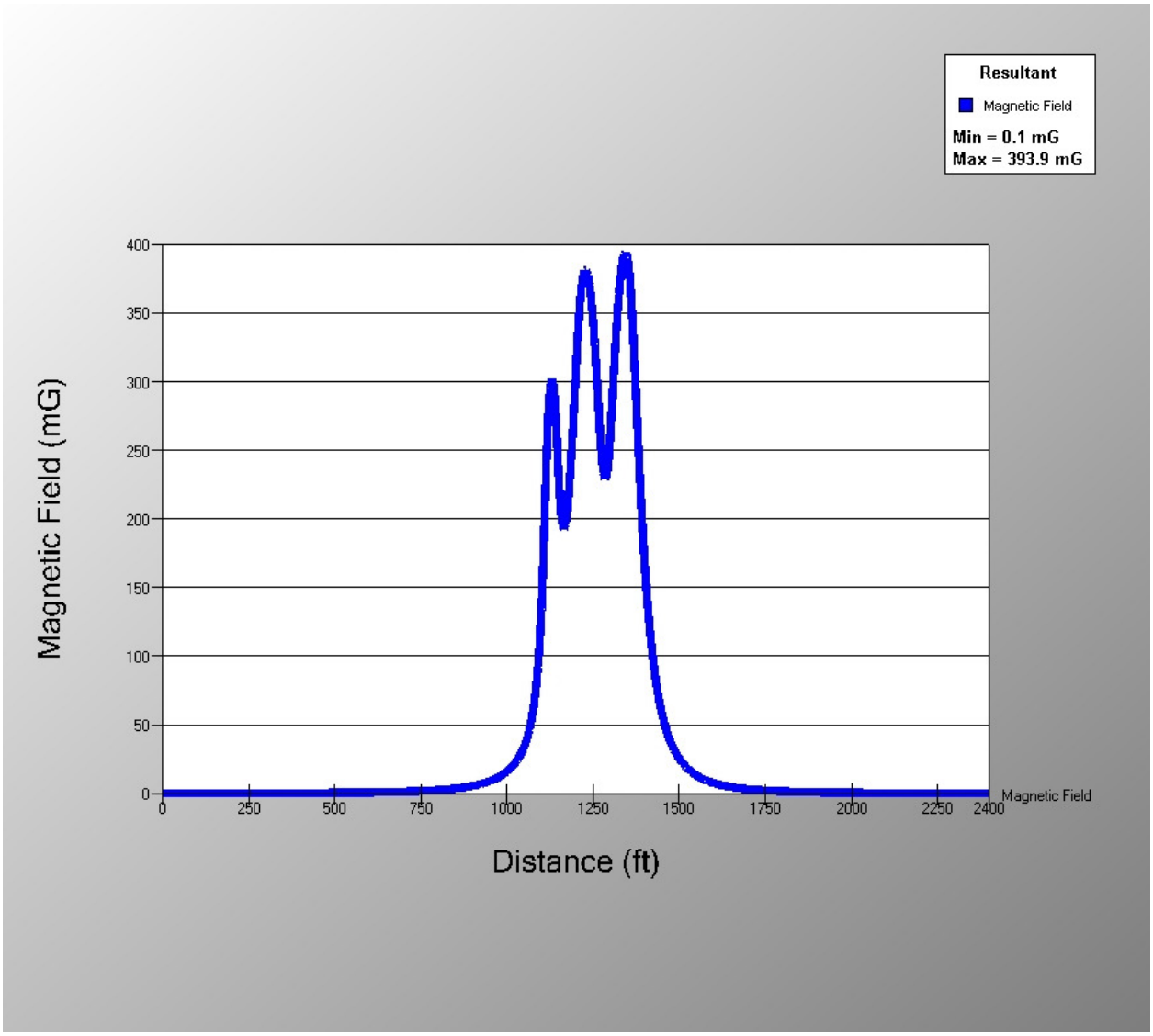
EXISTING A AND CON ED LINES

MAG FIELD



(ft)	(mG)
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35	0.08
40	0.09
45	0.09
50	0.09
55	0.09
60	0.09
65	0.09
70	0.09
75	0.09
80	0.1
85	0.1
90	0.1
95	0.1
100	0.1
105	0.1
110	0.11
115	0.11
120	0.11
125	0.11
130	0.11
135	0.11
140	0.12
145	0.12
150	0.12
155	0.12
160	0.12
165	0.13
170	0.13
175	0.13
180	0.13
185	0.13
190	0.14
195	0.14
200	0.14
205	0.14
210	0.15
215	0.15
220	0.15
225	0.15
230	0.16
235	0.16

240	0.16
245	0.16
250	0.17
255	0.17
260	0.17
265	0.18
270	0.18
275	0.18
280	0.19
285	0.19
290	0.19
295	0.2
300	0.2
305	0.2
310	0.21
315	0.21
320	0.22
325	0.22
330	0.22
335	0.23
340	0.23
345	0.24
350	0.24
355	0.25
360	0.25
365	0.26
370	0.26
375	0.27
380	0.27
385	0.28
390	0.28
395	0.29
400	0.3
405	0.3
410	0.31
415	0.31
420	0.32
425	0.33
430	0.34
435	0.34
440	0.35
445	0.36
450	0.37

455	0.37
460	0.38
465	0.39
470	0.4
475	0.41
480	0.42
485	0.43
490	0.44
495	0.45
500	0.46
505	0.47
510	0.48
515	0.49
520	0.5
525	0.51
530	0.52
535	0.54
540	0.55
545	0.56
550	0.58
555	0.59
560	0.61
565	0.62
570	0.64
575	0.65
580	0.67
585	0.69
590	0.71
595	0.72
600	0.74
605	0.76
610	0.78
615	0.8
620	0.83
625	0.85
630	0.87
635	0.89
640	0.92
645	0.95
650	0.97
655	1
660	1.03
665	1.06

670	1.09
675	1.12
680	1.15
685	1.19
690	1.22
695	1.26
700	1.3
705	1.34
710	1.38
715	1.42
720	1.46
725	1.51
730	1.56
735	1.61
740	1.66
745	1.72
750	1.77
755	1.83
760	1.89
765	1.96
770	2.02
775	2.09
780	2.16
785	2.24
790	2.32
795	2.4
800	2.49
805	2.58
810	2.68
815	2.77
820	2.88
825	2.99
830	3.1
835	3.22
840	3.35
845	3.48
850	3.62
855	3.77
860	3.92
865	4.09
870	4.26
875	4.44
880	4.63

885	4.83
890	5.04
895	5.27
900	5.51
905	5.76
910	6.03
915	6.31
920	6.62
925	6.94
930	7.28
935	7.65
940	8.04
945	8.46
950	8.91
955	9.39
960	9.9
965	10.46
970	11.06
975	11.7
980	12.4
985	13.16
990	13.98
995	14.88
1000	15.86
1005	16.94
1010	18.12
1015	19.42
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1025	22.47
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1040	28.56
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1080	67.47
1085	78.23
1090	92.07
1095	110.22

1100	134.3
1105	165.91
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1115	244.96
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1125	294.95
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1135	296.92
1140	281.38
1145	257.96
1150	231.2
1155	208.96
1160	195.99
1165	192.25
1170	195.95
1175	205.52
1180	219.82
1185	238.04
1190	259.35
1195	282.75
1200	306.86
1205	329.94
1210	350.08
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1225	380.8
1230	380.98
1235	377.22
1240	369.96
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1310	304.32

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1330	376.79
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1340	392.37
1345	393.86
1350	389.98
1355	379.94
1360	363.57
1365	341.7
1370	315.97
1375	288.31
1380	260.5
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1535	15.73
1540	14.77
1545	13.89
1550	13.07
1555	12.32
1560	11.62
1565	10.97
1570	10.37
1575	9.82
1580	9.3
1585	8.81
1590	8.36
1595	7.94
1600	7.54
1605	7.17
1610	6.82
1615	6.5
1620	6.19
1625	5.91
1630	5.64
1635	5.38
1640	5.14
1645	4.92
1650	4.7
1655	4.5
1660	4.31
1665	4.13
1670	3.96
1675	3.8
1680	3.65
1685	3.5
1690	3.36
1695	3.23
1700	3.11
1705	2.99
1710	2.87
1715	2.77
1720	2.66
1725	2.57
1730	2.47
1735	2.39
1740	2.3

1745	2.22
1750	2.14
1755	2.07
1760	2
1765	1.93
1770	1.86
1775	1.8
1780	1.74
1785	1.69
1790	1.63
1795	1.58
1800	1.53
1805	1.48
1810	1.43
1815	1.39
1820	1.35
1825	1.3
1830	1.26
1835	1.23
1840	1.19
1845	1.15
1850	1.12
1855	1.09
1860	1.06
1865	1.03
1870	1
1875	0.97
1880	0.94
1885	0.91
1890	0.89
1895	0.86
1900	0.84
1905	0.82
1910	0.8
1915	0.77
1920	0.75
1925	0.73
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1950	0.64
1955	0.63

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1975	0.57
1980	0.55
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1990	0.52
1995	0.51
2000	0.5
2005	0.49
2010	0.48
2015	0.47
2020	0.45
2025	0.44
2030	0.43
2035	0.42
2040	0.41
2045	0.4
2050	0.39
2055	0.39
2060	0.38
2065	0.37
2070	0.36
2075	0.35
2080	0.34
2085	0.34
2090	0.33
2095	0.32
2100	0.32
2105	0.31
2110	0.3
2115	0.3
2120	0.29
2125	0.28
2130	0.28
2135	0.27
2140	0.27
2145	0.26
2150	0.26
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2165	0.24
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2180	0.23
2185	0.22
2190	0.22
2195	0.21
2200	0.21
2205	0.21
2210	0.2
2215	0.2
2220	0.19
2225	0.19
2230	0.19
2235	0.18
2240	0.18
2245	0.18
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2255	0.17
2260	0.17
2265	0.16
2270	0.16
2275	0.16
2280	0.15
2285	0.15
2290	0.15
2295	0.15
2300	0.14
2305	0.14
2310	0.14
2315	0.14
2320	0.13
2325	0.13
2330	0.13
2335	0.13
2340	0.13
2345	0.12
2350	0.12
2355	0.12
2360	0.12
2365	0.12
2370	0.11
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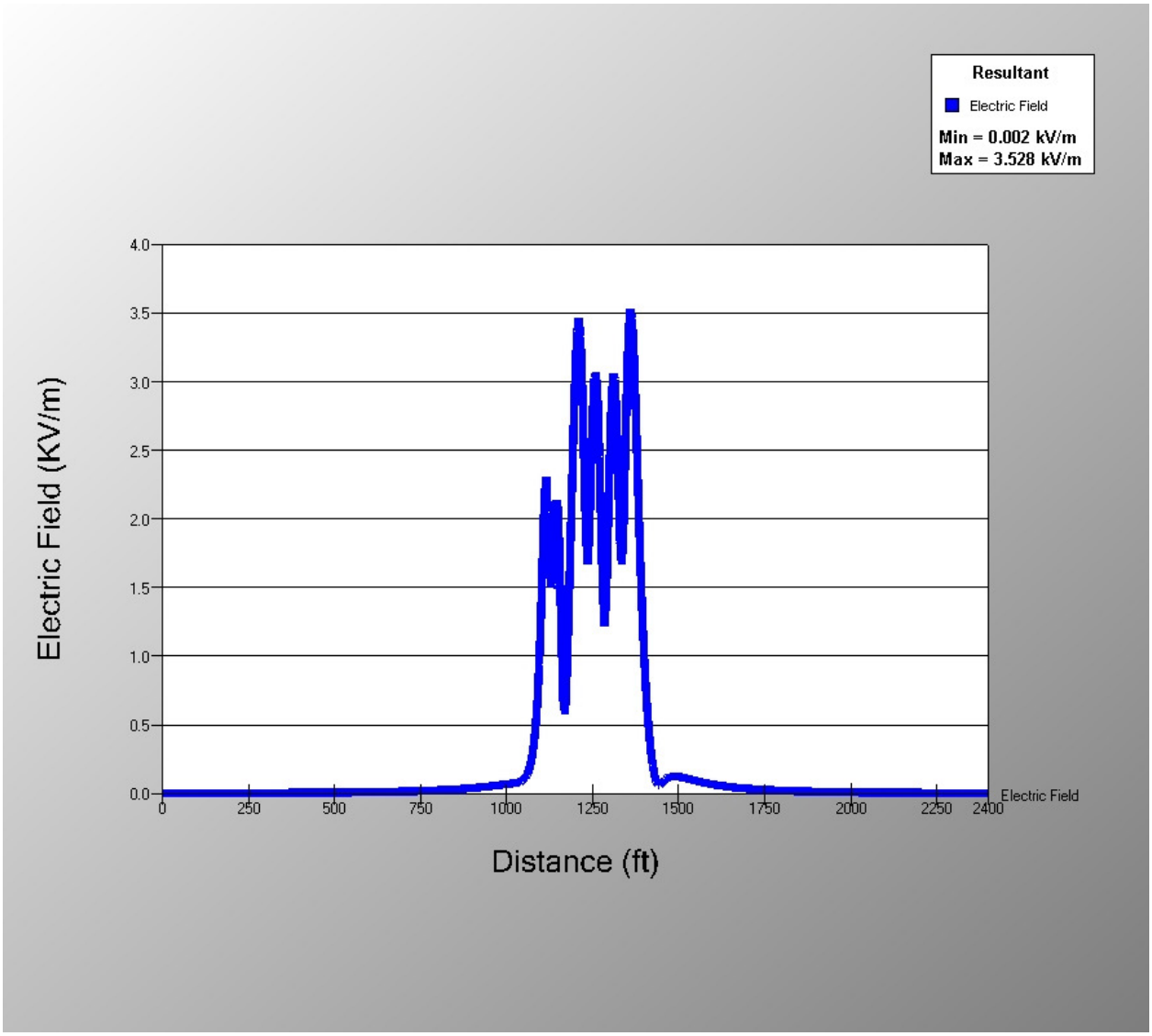
2385	0.11

2390	0.11
2395	0.1
2400	0.1

E-FIELD



(ft)	(KV/m)
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45	0
50	0
55	0
60	0
65	0
70	0
75	0
80	0
85	0
90	0
95	0
100	0
105	0
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190	0
195	0
200	0
205	0
210	0
215	0
220	0
225	0
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245	0

250	0
255	0
260	0
265	0
270	0
275	0
280	0
285	0
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300	0
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315	0
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375	0
380	0
385	0
390	0
395	0
400	0
405	0
410	0
415	0
420	0.01
425	0.01
430	0.01
435	0.01
440	0.01
445	0.01
450	0.01
455	0.01
460	0.01

465	0.01
470	0.01
475	0.01
480	0.01
485	0.01
490	0.01
495	0.01
500	0.01
505	0.01
510	0.01
515	0.01
520	0.01
525	0.01
530	0.01
535	0.01
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970	0.06
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980	0.06
985	0.06
990	0.06
995	0.07
1000	0.07
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1015	0.07
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1095	0.94
1100	1.29
1105	1.72

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1125	1.64
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1145	2.13
1150	2.07
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1195	2.67
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1235	1.67
1240	1.84
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1280	1.44
1285	1.22
1290	1.44
1295	1.93
1300	2.45
1305	2.85
1310	3.06
1315	3.01
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1340	1.95
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1355	3.38
1360	3.53
1365	3.46
1370	3.2
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1380	2.41
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1390	1.61
1395	1.27
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1690	0.04
1695	0.04
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1705	0.03
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1985	0.01
1990	0.01
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2180	0

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2200	0
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2350	0
2355	0
2360	0
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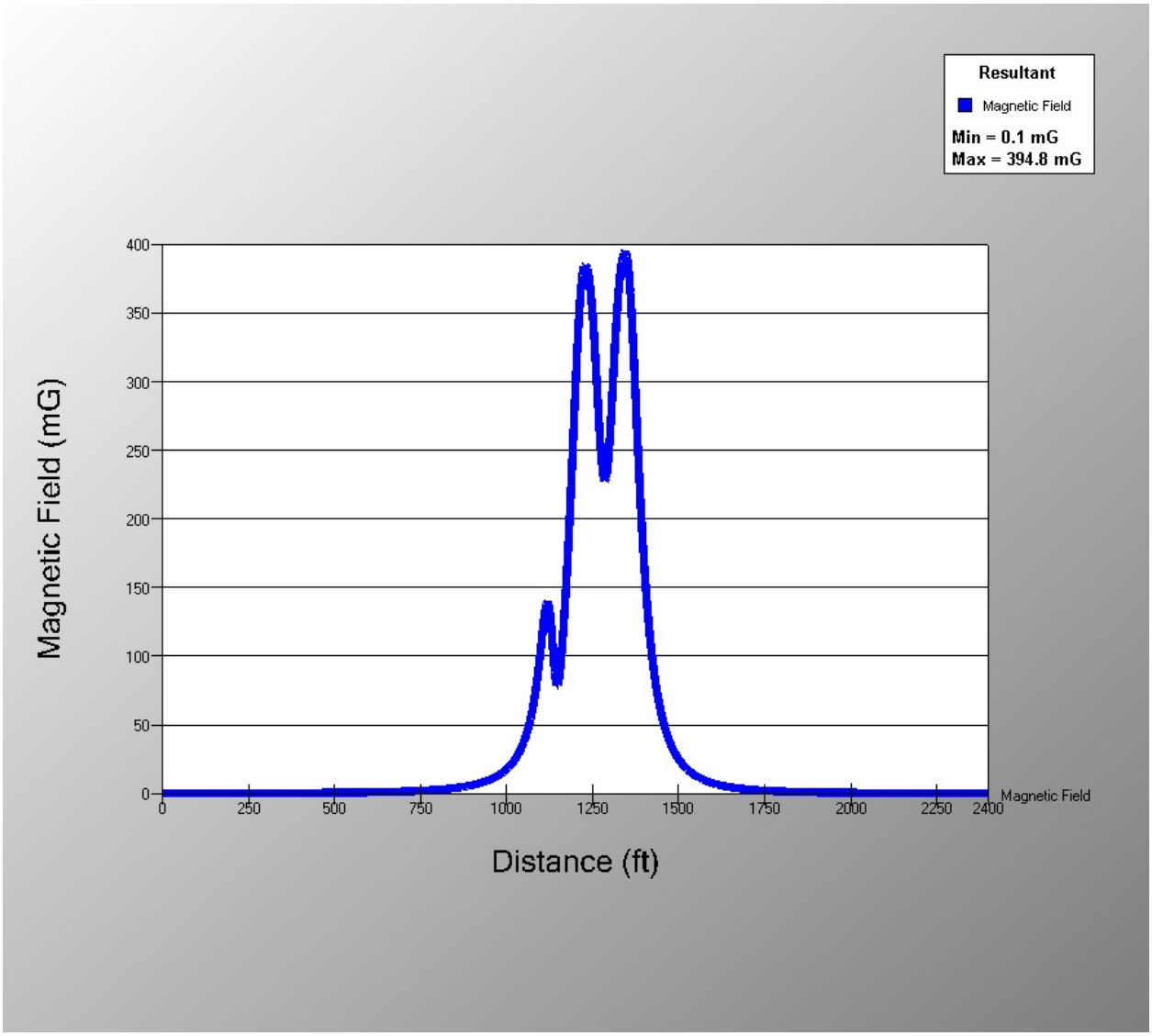
2400 0

PROPOSED A AND CON ED LINES

MAG FIELD



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30	0.09
35	0.09
40	0.09
45	0.09
50	0.1
55	0.1
60	0.1
65	0.1
70	0.1
75	0.1
80	0.1
85	0.11
90	0.11
95	0.11
100	0.11
105	0.11
110	0.11
115	0.12
120	0.12
125	0.12
130	0.12
135	0.12
140	0.13
145	0.13
150	0.13
155	0.13
160	0.13
165	0.14
170	0.14
175	0.14
180	0.14
185	0.15
190	0.15
195	0.15
200	0.15
205	0.16
210	0.16
215	0.16
220	0.16
225	0.17
230	0.17
235	0.17

240	0.18
245	0.18
250	0.18
255	0.19
260	0.19
265	0.19
270	0.2
275	0.2
280	0.2
285	0.21
290	0.21
295	0.21
300	0.22
305	0.22
310	0.23
315	0.23
320	0.23
325	0.24
330	0.24
335	0.25
340	0.25
345	0.26
350	0.26
355	0.27
360	0.27
365	0.28
370	0.28
375	0.29
380	0.3
385	0.3
390	0.31
395	0.31
400	0.32
405	0.33
410	0.33
415	0.34
420	0.35
425	0.36
430	0.36
435	0.37
440	0.38
445	0.39
450	0.4

455	0.4
460	0.41
465	0.42
470	0.43
475	0.44
480	0.45
485	0.46
490	0.47
495	0.48
500	0.49
505	0.51
510	0.52
515	0.53
520	0.54
525	0.56
530	0.57
535	0.58
540	0.6
545	0.61
550	0.63
555	0.64
560	0.66
565	0.67
570	0.69
575	0.71
580	0.73
585	0.75
590	0.76
595	0.78
600	0.81
605	0.83
610	0.85
615	0.87
620	0.89
625	0.92
630	0.94
635	0.97
640	1
645	1.03
650	1.05
655	1.08
660	1.12
665	1.15

670	1.18
675	1.22
680	1.25
685	1.29
690	1.33
695	1.37
700	1.41
705	1.45
710	1.5
715	1.54
720	1.59
725	1.64
730	1.7
735	1.75
740	1.81
745	1.87
750	1.93
755	1.99
760	2.06
765	2.13
770	2.2
775	2.28
780	2.36
785	2.44
790	2.53
795	2.62
800	2.72
805	2.82
810	2.92
815	3.03
820	3.15
825	3.27
830	3.39
835	3.53
840	3.67
845	3.81
850	3.97
855	4.13
860	4.3
865	4.48
870	4.67
875	4.87
880	5.09

885	5.31
890	5.55
895	5.8
900	6.07
905	6.35
910	6.65
915	6.97
920	7.31
925	7.67
930	8.05
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940	8.9
945	9.37
950	9.87
955	10.41
960	10.99
965	11.61
970	12.28
975	13
980	13.78
985	14.63
990	15.55
995	16.55
1000	17.64
1005	18.84
1010	20.14
1015	21.58
1020	23.16
1025	24.92
1030	26.86
1035	29.03
1040	31.45
1045	34.18
1050	37.25
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1070	54.47
1075	60.49
1080	67.45
1085	75.49
1090	84.71
1095	95.14

1100	106.61
1105	118.51
1110	129.55
1115	137.58
1120	139.85
1125	134.35
1130	121.42
1135	104.31
1140	88.23
1145	78.7
1150	78.87
1155	87.55
1160	101.54
1165	118.62
1170	137.92
1175	159.27
1180	182.75
1185	208.38
1190	235.93
1195	264.78
1200	293.77
1205	321.22
1210	345.21
1215	364.07
1220	376.86
1225	383.6
1230	384.99
1235	381.9
1240	374.88
1245	364.1
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1260	309.57
1265	286.72
1270	264.72
1275	246.06
1280	233.03
1285	227.38
1290	229.96
1295	240.51
1300	257.69
1305	279.34
1310	302.89

1315	325.9
1320	346.52
1325	363.75
1330	377.33
1335	387.24
1340	393.28
1345	394.84
1350	390.99
1355	380.93
1360	364.53
1365	342.61
1370	316.8
1375	289.05
1380	261.14
1385	234.34
1390	209.44
1395	186.8
1400	166.53
1405	148.53
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1415	118.64
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1425	95.53
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1435	77.64
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1475	37.19
1480	34.25
1485	31.61
1490	29.22
1495	27.06
1500	25.11
1505	23.33
1510	21.71
1515	20.24
1520	18.89
1525	17.66

1530	16.53
1535	15.5
1540	14.54
1545	13.66
1550	12.85
1555	12.1
1560	11.41
1565	10.77
1570	10.17
1575	9.62
1580	9.1
1585	8.62
1590	8.18
1595	7.76
1600	7.37
1605	7
1610	6.66
1615	6.34
1620	6.04
1625	5.76
1630	5.49
1635	5.24
1640	5
1645	4.78
1650	4.57
1655	4.37
1660	4.18
1665	4.01
1670	3.84
1675	3.68
1680	3.53
1685	3.39
1690	3.25
1695	3.12
1700	3
1705	2.89
1710	2.78
1715	2.67
1720	2.57
1725	2.47
1730	2.38
1735	2.3
1740	2.21

1745	2.13
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1755	1.99
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1775	1.73
1780	1.67
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1790	1.56
1795	1.51
1800	1.46
1805	1.41
1810	1.37
1815	1.33
1820	1.28
1825	1.24
1830	1.21
1835	1.17
1840	1.13
1845	1.1
1850	1.07
1855	1.03
1860	1
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1870	0.95
1875	0.92
1880	0.89
1885	0.87
1890	0.84
1895	0.82
1900	0.8
1905	0.77
1910	0.75
1915	0.73
1920	0.71
1925	0.69
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1935	0.66
1940	0.64
1945	0.62
1950	0.61
1955	0.59

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1970	0.55
1975	0.53
1980	0.52
1985	0.51
1990	0.49
1995	0.48
2000	0.47
2005	0.46
2010	0.45
2015	0.44
2020	0.43
2025	0.41
2030	0.41
2035	0.4
2040	0.39
2045	0.38
2050	0.37
2055	0.36
2060	0.35
2065	0.34
2070	0.34
2075	0.33
2080	0.32
2085	0.31
2090	0.31
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2100	0.29
2105	0.29
2110	0.28
2115	0.27
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2125	0.26
2130	0.26
2135	0.25
2140	0.25
2145	0.24
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2155	0.23
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2185	0.2
2190	0.2
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2205	0.19
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2230	0.17
2235	0.17
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2245	0.16
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2285	0.14
2290	0.14
2295	0.13
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2305	0.13
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2360	0.11
2365	0.1
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2390	0.1
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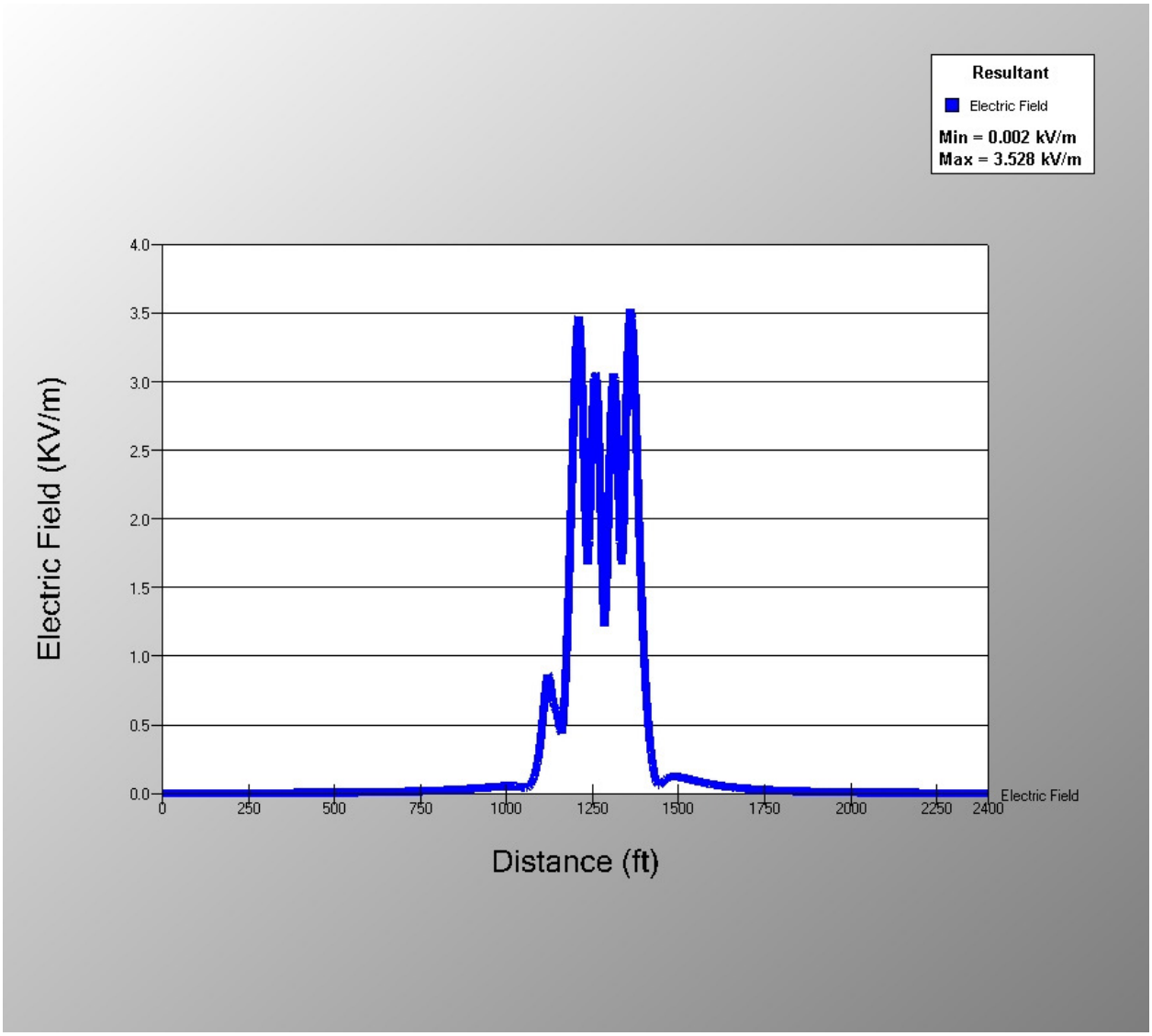
2400	0.09

E-FIELD



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195	0
200	0
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385	0
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395	0
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405	0
410	0
415	0
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455	0.01
460	0.01

465	0.01
470	0.01
475	0.01
480	0.01
485	0.01
490	0.01
495	0.01
500	0.01
505	0.01
510	0.01
515	0.01
520	0.01
525	0.01
530	0.01
535	0.01
540	0.01
545	0.01
550	0.01
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560	0.01
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900	0.03
905	0.04
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980	0.05
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990	0.05
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1045	0.05
1050	0.04
1055	0.04
1060	0.04
1065	0.05
1070	0.07
1075	0.09
1080	0.12
1085	0.17
1090	0.23
1095	0.31
1100	0.41
1105	0.53

1110	0.67
1115	0.8
1120	0.87
1125	0.84
1130	0.75
1135	0.67
1140	0.63
1145	0.6
1150	0.54
1155	0.47
1160	0.44
1165	0.53
1170	0.75
1175	1.05
1180	1.41
1185	1.83
1190	2.27
1195	2.72
1200	3.11
1205	3.39
1210	3.47
1215	3.33
1220	2.97
1225	2.46
1230	1.94
1235	1.67
1240	1.84
1245	2.29
1250	2.74
1255	3.02
1260	3.06
1265	2.86
1270	2.45
1275	1.93
1280	1.44
1285	1.22
1290	1.44
1295	1.93
1300	2.45
1305	2.85
1310	3.06
1315	3.01
1320	2.73

1325	2.28
1330	1.83
1335	1.67
1340	1.95
1345	2.48
1350	3
1355	3.38
1360	3.53
1365	3.46
1370	3.2
1375	2.83
1380	2.41
1385	1.99
1390	1.61
1395	1.27
1400	0.99
1405	0.76
1410	0.57
1415	0.42
1420	0.3
1425	0.21
1430	0.14
1435	0.09
1440	0.06
1445	0.06
1450	0.07
1455	0.09
1460	0.1
1465	0.11
1470	0.12
1475	0.12
1480	0.12
1485	0.12
1490	0.12
1495	0.12
1500	0.12
1505	0.12
1510	0.12
1515	0.11
1520	0.11
1525	0.11
1530	0.1
1535	0.1

1540	0.1
1545	0.09
1550	0.09
1555	0.09
1560	0.09
1565	0.08
1570	0.08
1575	0.08
1580	0.07
1585	0.07
1590	0.07
1595	0.07
1600	0.07
1605	0.06
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1615	0.06
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1685	0.04
1690	0.04
1695	0.04
1700	0.03
1705	0.03
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1740	0.03
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1780	0.02
1785	0.02
1790	0.02
1795	0.02
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1810	0.02
1815	0.02
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1890	0.01
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1990	0.01
1995	0.01
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2015	0.01
2020	0.01
2025	0.01
2030	0.01
2035	0.01
2040	0.01
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2050	0.01
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2060	0.01
2065	0.01
2070	0.01
2075	0.01
2080	0.01
2085	0.01
2090	0.01
2095	0.01
2100	0.01
2105	0.01
2110	0.01
2115	0.01
2120	0.01
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2130	0.01
2135	0.01
2140	0.01
2145	0.01
2150	0
2155	0
2160	0
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2170	0
2175	0
2180	0

2185	0
2190	0
2195	0
2200	0
2205	0
2210	0
2215	0
2220	0
2225	0
2230	0
2235	0
2240	0
2245	0
2250	0
2255	0
2260	0
2265	0
2270	0
2275	0
2280	0
2285	0
2290	0
2295	0
2300	0
2305	0
2310	0
2315	0
2320	0
2325	0
2330	0
2335	0
2340	0
2345	0
2350	0
2355	0
2360	0
2365	0
2370	0
2375	0
2380	0
2385	0
2390	0
2395	0

2400 0

Summary for DPS-002 (b)

Area of Interest 1- A&C Lines Standalone

	1000FT West ROW Edge		Western ROW Edge		A&C Line Centerline		Eastern ROW Edge		1000FT East of ROW Edge	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
E-Field (KV/m)	0	0	0.05	0.06	1.47	0.72	0.61	0.38	0	0
Magnetic Field (mG)	0.05	0.05	12.91	14.37	346.32	183.7	69.1	57.31	0.06	0.06

Area of Interest 2- Shared ROW with the C and M Lines

	1000FT West ROW Edge		Western ROW Edge		M Line Centerline		C Line Centerline		Eastern ROW Edge		1000FT East of ROW Edge	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
E-Field (KV/m)	0	0	0.82	0.77	1.07	1.04	1.65	0.51	0.21	0.019	0	0
Magnetic Field (mG)	0.11	0.08	151.7	139.1	305.8	301.1	379.4	199.3	32	26.8	0.22	0.07

Area of Interest 3- Shared ROW with the A or C Lines and G Line

	1000FT West ROW Edge		Western ROW Edge		G Line Centerline		A&C Line Centerline		Eastern ROW Edge		1000FT East of ROW Edge	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
E-Field (KV/m)	0	0	0.21	0.22	0.3	0.37	1.45	0.73	0.62	0.39	0	0
Magnetic Field (mG)	0.05	0.06	27.22	30.77	38.9	50.45	342.13	181.05	70.99	58.71	1.84	0.07

Area of Interest 4- Shared ROW with the A Line and four 345kV Con Ed circuits

	1000FT West ROW Edge		Western ROW Edge		A Line Centerline		Con Ed Eastern Towers Centerline		Con Ed Western Towers Centerline		Eastern ROW Edge		1000FT East of ROW Edge	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
E-Field (KV/m)	0	0	0.08	0.05	1.49	0.73	1.67	1.67	1.67	1.67	2.83	2.83	0	0
Magnetic Field (mG)	0.08	0.09	22.47	24.92	301.81	118.18	377.22	381.9	386.47	387.24	288.31	289.05	0.11	0.1

Central Hudson Gas & Electric Corporation
A & C LINE REBUILD PROJECT- ARTICLE VII APPLICATION Case 13-T-0469
Exhibit A to Supplemental IR Response CHGE-002A

Section/Block/Lot	Property Owner	Attn:	Parcel Location	Mailing Address	Mail Town/City	Mail State	Mail ZIP	House Distance to Edge of ROW in Feet	Nearest Structure Number
6363-04-862327-0000	Odescalchi, Edmond		1020 Freedom Rd	1020 Freedom Rd	Pleasant Valley	NY	12569	1000	C4
6460-03-184383-0000	Kara, Todd		190 Lauer Rd	190 Lauer Rd	Poughkeepsie	NY	12603	998	A8
6359-02-937991-0000	Flynn, Donald Brian		8 Pine Ridge Rd	8 Pine Ridge Rd	Poughkeepsie	NY	12603	998	A17
6461-03-146026-0000	Carter, Kathleen A		12 Lafayette Ct	12 Lafayette Ct	Poughkeepsie	NY	12603	997	C54
6358-01-452611-0000	Stringham, Varick Jr		1028 Route 376	1030 Route 376	Wappingers Falls	NY	12590	994	A54
6362-04-832403-0000	Yereance, Kenneth G		213 Rombout Rd	213 Rombout Rd	Pleasant Valley	NY	12569	994	C22
6361-02-961859-0000	DeLongis, Vincent		1 Mountain View Dr	1 Mountain View Dr	Pleasant Valley	NY	12569	994	C33
6363-04-853416-0000	Huber, Timothy P		12 South Ave	12 South Ave	Pleasant Valley	NY	12569	992	C3
6461-01-008773-0000	Barber, Ford C		21 Mountain View Dr	21 Mountain View Dr	Pleasant Valley	NY	12569	987	C35
6359-02-823539-0000	Red Hawk Hollow Ltd		41 Red Hawk Hollow Rd	41 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	987	A31
6459-03-095495-0000	Travis Steven Trustee		82 Robinson Ln	82 Robinson Ln	Wappingers Falls	NY	12590	985	A27
6358-01-431579-0000	Small World Child Care Center , Inc		1031 Route 376	1031 Route 376	Wappingers Falls	NY	12590	983	A55
6459-03-035426-0000	Santiago, Hector I		9 Robinson Garden Dr	9 Robinson Gardens Dr	Wappingers Falls	NY	12590	982	A29
6461-03-160215-0000	Liguori, William F		119 Cramer Rd	119 Cramer Rd	Poughkeepsie	NY	12603	982	C49
6358-03-246413-0000	Nagel, Michael R		25 Montfort Rd	25 Montfort Rd	Wappingers Falls	NY	12590	978	A58
6363-04-895167-0000	Ne'Eman Israel		18 Richies Way	18 Richies Way	Pleasant Valley	NY	12569	976	C8
6461-01-020748-0000	Conlan, Brian S		25 Mountain View Dr	25 Mountain View Dr	Pleasant Valley	NY	12569	976	C35
6460-01-136960-0000	Lindsey Q Michael		38 Sedgewick Rd	38 Sedgewick Rd	Poughkeepsie	NY	12603	976	C56
6461-03-383450-0000	Tobin, Ellice R	Attn: Stephen Kirshon	91-115 Freedom Rd	311 Mill St	Poughkeepsie	NY	12601	975	C44
6360-04-933180-0000	Wright, Forrest W		11 Forrest Way	11 Forest Way	Poughkeepsie	NY	12603	972	A12
6460-01-134986-0000	Sefcik, Matthew S		3 Victor Dr	3 Victor Dr	Poughkeepsie	NY	12603	971	C55
6362-04-822344-0000	Kelly, Catherine M		220 Rombout Rd	220 Rombout Rd	Pleasant Valley	NY	12569	969	C23
6461-03-147074-0000	Stewart, Hyacinth L		8 Lafayette Ct	8 Lafayette Ct	Poughkeepsie	NY	12603	966	C54
6462-03-048323-0000	Flynn, Thomas A Jr		312 Freedom Rd	312 Freedom Rd	Pleasant Valley	NY	12569	965	C23
6461-03-151099-0000	Bates, John		6 Lafayette Ct	6 Lafayette Ct	Poughkeepsie	NY	12603	963	C53
6460-03-146216-0000	Barry, Stephen		123 Lauer Rd	123 Lauer Rd	Poughkeepsie	NY	12603	962	A11
6359-02-934917-0000	Commisso, Steven J		14 Pine Ridge Rd	14 Pine Ridge Rd	Poughkeepsie	NY	12603	962	A19
6358-01-254824-0000	Rider, Donald Oliver		1176 Route 376	1176 Route 376	Wapp Fls	NY	12590	960	A49
6459-03-071451-0000	Rowell, Richard C		88-90 Robinson Ln	90 Robinson Ln	Wappingers Falls	NY	12590	958	A27
6459-01-123735-0000	Collins-Judon RoseAnne		22 Robinson Ln	22 Robinson Ln	Wappingers Falls	NY	12590	958	A23
6363-04-870252-0000	Smith, Duane A		987 Freedom Rd	987 Freedom Rd	Pleasant Valley	NY	12569	957	C6
6358-01-205670-0000	Heinemann, Michelle M		1109-1111 Route 376	1111 Route 376	Wappingers Falls	NY	12590	953	A52
6459-01-128753-0000	Lee, Byoung Hun		20 Robinson Ln	5817 Medicine Creek Dr	Austin	TX	78735	952	A22
6361-02-968849-0000	Mastrangelo, Peter A		3 Mountain View Dr	3 Mountain View Dr	Pleasant Valley	NY	12569	948	C33
6461-01-126636-0000	Shin, Jeong Hye		65 Pond Hills Ct	65 Pond Hills Ct	Pleasant Valley	NY	12569	947	C38
6362-02-985845-0000	Groth, Marjorie		821 Freedom Rd	P O Box 677	Pleasant Valley	NY	12569	944	C14
6461-01-160959-0000	Phelan, Keith		224 Freedom Rd	224 Freedom Rd	Pleasant Valley	NY	12569	943	C33
6462-03-053305-0000	Mackey Robert	Attn: Kurt Haun	310 Freedom Rd	588 Clapp Hill Rd	Lagrangeville	NY	12540	942	C24
6461-01-032739-0000	Murphy, Josephine		27 Mountain View Dr	27 Mountain View Dr	Pleasant Valley	NY	12569	942	C36
6359-02-810521-0000	Evans, Kevin R		44 Red Hawk Hollow Rd	44 Red Hawl Hollow Rd	Wappingers Falls	NY	12590	940	A31
6461-03-356097-0000	Wade, Sandra L.		153 Kramer Rd	153 Kramer Rd	Poughkeepsie	NY	12603	940	C53
6358-03-251402-0000	Devincenzi, Ronald P		27 Montfort Rd	27 Montfort Rd	Wappingers Falls	NY	12590	940	A58
6363-04-889140-0000	Igunbor Osaruwense		16 Richies Way	16 Richies Way	Pleasant Valley	NY	12569	938	C8
6363-04-933088-0000	Cannella, Sal		41 Ryans Run	41 Ryans Run	Pleasant Valley	NY	12569	938	C9
6360-04-947149-0000	Davidson, Mark J		7 Forrest Way	7 Forrest Way	Poughkeepsie	NY	12603	922	A13
6359-02-938964-0000	DiPalma, Helene M		10 Pine Ridge Rd	10 Pine Ridge Rd	Poughkeepsie	NY	12603	921	A18
6461-01-004785-0000	Eckna, John Paul		19 Mountain View Dr	19 Mountain View Dr	Pleasant Valley	NY	12569	920	C34
6461-03-150051-0000	Vece, Ronald L Jr		10 Lafayette Ct	10 Lafayette Ct	Poughkeepsie	NY	12603	919	C54
6359-02-940945-0000	Smith, William E		12 Pine Ridge Rd	P O Box 172	LaGrangeville	NY	12540	917	A18
6363-04-850387-0000	Baxter, James N		1040 Freedom Rd	1040 Freedom Rd	Pleasant Valley	NY	12569	913	C3
6358-03-256392-0000	Rhodes, Linda G		29 Montfort Rd	29 Monfort Rd	Wappingers Falls	NY	12590	913	A59
6360-04-966033-0000	Howlett, Nicholas		3 Pine Ridge Rd	3 Pine Ridge Rd	Poughkeepsie	NY	12603	908	A16
6358-01-254808-0000	Beneway, Howard R Jr		1168-1170 Route 376	1170 Route 376	Wappingers Falls	NY	12590	907	A49
6461-01-163939-0000	Galeno Andrew		222 Freedom Rd	222 Freedom Rd	Pleasant Valley	NY	12569	902	C33
6362-02-706966-0000	Drewes, Diane E.		566 Plass Rd.	566 Plass Rd.	Pleasant Valley	NY	12569	900	C10
6359-02-919825-0000	Bruno, Louis J		22 Pine Ridge Rd	22 Pine Ridge Rd	Poughkeepsie	NY	12603	899	A20
6459-01-115720-0000	McKeon Kevin		24 Robinson Ln	24 Robinson Ln	Wappingers Falls	NY	12590	897	A23
6359-04-982402-0000	Riggio, Anthony R		11 Robinson Garden Dr	11 Robinson Garden Rd	Wappingers Falls	NY	12590	896	A29
6361-02-975840-0000	Flores, Noemi		5 Mountain View Dr	5 Mountain View Dr	Pleasant Valley	NY	12569	895	C33
6360-04-960085-0000	Crocker, John L		26-28 Old Noxon Rd	26 Old Noxon Rd	Poughkeepsie	NY	12603	892	A14
6460-01-264633-0000	Nesheiwat, Mazen		10 Todd Hill Rd	10 Todd Hill Rd	Poughkeepsie	NY	12603	890	C62
6461-03-156125-0000	Kunkeli, Theodore		4 Lafayette Ct	4 La Fayette Ct	Poughkeepsie	NY	12603	890	C52
6359-02-944885-0000	Ralston, Bruce R		21 Pine Ridge Rd	21 Pine Ridge Rd	Poughkeepsie	NY	12603	889	A19
6358-03-262382-0000	Mari, Antonio		31 Montfort Rd	31 Montfort Rd	Wappingers Falls	NY	12590	889	A59
6363-04-851365-0000	La Scala, Jane		1034 Freedom Rd	19 Schofield St	Bronx	NY	1464	887	C4
6358-01-220588-0000	Cunningham Richard T Jr		319 Myers Corners Rd	319 Myers Corners Rd	Wappingers Falls	NY	12590	886	A54
6461-01-061690-0000	Stamer, David T		51 Pond Hills Ct	51 Pond Hills Ct	Pleasant Valley	NY	12569	879	C37
6360-04-963207-0000	D'Angelo, Mark		17 Forrest Way	17 Forest Way	Poughkeepsie	NY	12603	878	A12

6362-02-844567-0000	Bodack, Mark P		14 Brenner Ridge Rd	14 Brenner Ridge Rd	Pleasant Valley	NY	12569	878	C18
6358-01-225553-0000	Blatz, Richard W		320 Myers Corners Rd	320 Myers Corners Rd	Wapp Fls	NY	12590	877	A55
6362-02-929860-0000	Juerss, Detlef		837-839 Freedom Rd	837 Freedom Rd	Pleasant Valley	NY	12569	874	C13
6460-01-330938-0000	Matsoukas Ulysses		435-437 Lauer Rd	435 Lauer Rd	Poughkeepsie	NY	12603	874	C57
6360-04-973016-0000	Blanchfield, Marcia A		5 Pine Ridge Rd	5 Pine Ridge Rd	Poughkeepsie	NY	12603	870	A17
6461-01-003797-0000	Ocasio, Francisca		17 Mountain View Dr	17 Mountain View Dr	Pleasant Valley	NY	12569	869	C34
6459-01-105570-0000	Shortt, Yvonne		71 Robinson Ln	71 Robinson Ln	Wappingers Falls	NY	12590	868	A26
6461-01-200793-0000	Dandeneau, James E		215-217 Freedom Rd	215 Freedom Rd	Pleasant Valley	NY	12569	863	C35
6363-04-935074-0000	Henry, Suzanne		45 Ryans Run	45 Ryans Run	Pleasant Valley	NY	12569	860	C10
6461-03-338007-0000	Brown, Deborah A.		459 Lauer Rd.	459 Lauer Rd.	Poughkeepsie	NY	12603	859	C55
6362-04-871477-0000	Cordova, Jerry A		217 Rombout Rd	217 Rombout Rd	Pleasant Valley	NY	12569	859	C21
6361-02-983832-0000	Linnane, Michael		7 Mountain View Dr	7 Mountain View Dr	Pleasant Valley	NY	12569	850	C33
6459-03-049451-0000	Whalen, Bonnie A		6 Robinson Garden Dr	6 Robinson Garden Dr	Wappingers Falls	NY	12590	850	A27
6461-01-045739-0000	Gold, Gene		29 Mountain View Dr	29 Mountain View Dr	Pleasant Valley	NY	12569	842	C36
6363-04-705109-0000	Anduze, David D		26 Valerie Ln	26 Valerie Ln	Pleasant Valley	NY	12569	839	C8
6363-04-849399-0000	Thompson, Michael G		2 South Ave	2 South Ave	Pleasant Valley	NY	12569	837	C3
6362-02-929860-0000	Juerss, Detlef		837-839 Freedom Rd	837 Freedom Rd	Pleasant Valley	NY	12569	835	C13
6461-01-003806-0000	Reardon, John A		15 Mountain View Dr	15 Mountain View Dr	Pleasant Valley	NY	12569	832	C34
6362-02-868606-0000	Fenton, Christopher T		20 Brenner Ridge Rd	20 Brenner Ridge Rd	Pleasant Valley	NY	12569	831	C17
6459-01-093600-0000	Secor, Donald		63 Robinson Ln	63 Robinson Ln	Wappingers Falls	NY	12590	829	A25
6362-02-956982-0000	Kenyon David S		61 Jennie Ln	61 Jennie Ln	Pleasant Valley	NY	12590	829	C12
6459-01-106705-0000	Babio, Frank		26 Robinson Ln	26 Robinson Ln	Wappingers Falls	NY	12590	828	A23
6361-02-975870-0000	Strothmann, Derek H		61 Mountain View Dr	61 Mountain View Dr	Pleasant Valley	NY	12569	827	C33
6460-01-061621-0000	Vetter, Charles G		7 Smith Rd	6574 Misty Harbor Ct	Flowery Branch	GA	30542	826	A3
6362-02-985743-0000	Holder, Audrey Trustee		405-407 Freedom Rd	407 Freedom Rd	Pleasant Valley	NY	12569	826	C16
6460-01-029552-0000	Tao, Barbara A		2 Croft Hill Rd	22 High Acres Dr	Poughkeepsie	NY	12603	818	A4
6459-01-138964-0000	Smith, Dana M		1-3 Old Noxon Rd	1 Old Noxon Rd	Poughkeepsie	NY	12603	816	A17
6363-04-694202-0000	Gasparini, Don D		46 Patricia Dr	46 Patricia Dr	Pleasant Valley	NY	12569	816	C6
6461-01-003815-0000	Bauer, Arthur		13 Mountain View Dr	13 Mountain View Dr	Pleasant Valley	NY	12569	815	C34
6363-04-868088-0000	Doehl, Klaus		5 Richies Way	P O Box 445	Pleasant Valley	NY	12569	813	C9
6460-01-147928-0000	Parker, Kevin		41 Sedgewick Rd	41 Sedgewick Rd	Poughkeepsie	NY	12603	812	C57
6362-04-836491-0000	Lindell Ellen M		6 Brenner Ridge Rd	6 Brenner Ridge Rd	Pleasant Valley	NY	12569	811	C20
6359-02-960901-0000	Fischer, Elizabeth LT		19 Pine Ridge Rd	19 Pine Ridge Rd	Poughkeepsie	NY	12603	810	A19
6358-01-234522-0000	Alexander, Seth T		316 Myers Corners Rd	316 Myers Corners Rd	Wappingers Falls	NY	12590	808	A56
6461-03-350056-0000	Dobbie, Thomas A Trustee		1 Vervalen Dr	1 Ver Valen Dr	Poughkeepsie	NY	12603	804	C54
6461-03-168140-0000	Redl, Mark		2 Lafayette Ct	2 La Fayette Ct	Poughkeepsie	NY	12603	803	C52
6461-01-033775-0000	Hedberg, John V		8 Mountain View Dr	P O Box 1662	Westcliffe	CO	81252	802	C35
6362-02-857520-0000	Waters, Michael P		10 Brenner Ridge Rd	10 Brenner Ridge Rd	Pleasant Valley	NY	12569	800	C19
6360-04-973002-0000	Rubinstein, Adam Lance		7 Pine Ridge Rd	7 Pine Ridge Rd	Poughkeepsie	NY	12603	800	A17
6460-03-135238-0000	Bell, Jessica		131 Lauer Rd	131 Lauer Rd	Poughkeepsie	NY	12603	796	A11
6363-04-708141-0000	Alves, Amanda		38 Patricia Dr	38 Patricia Dr	Pleasant Valley	NY	12569	796	C8
6462-03-001207-0000	Engelhardt, George G LT		291 Freedom Rd	291 Freedom Rd	Pleasant Valley	NY	12569	795	C26
6358-01-234590-0000	Grant, Robert S LT	Attn: Robert A Grant	323 Myers Corners Rd	620 Route 55	Napanoch	NY	12458	792	A54
6461-03-345134-0000	Eshelman, Perry K		151 Cramer Rd	151 Cramer Raod	Poughkeepsie	NY	12603	791	C52
6363-04-873205-0000	Fakhouri Rajai I		28 Richies Way	28 Richies Way	Pleasant Valley	NY	12569	789	C6
6358-03-273362-0000	Cacciatore, Joseph J		35 Montfort Rd	35 Montfort Rd	Wapp Fls	NY	12590	788	A59
6461-03-171181-0000	Schmansky, Gary A		31 Vervalen Dr	31 Ver Valen Dr	Poughkeepsie	NY	12603	788	C51
6461-03-169159-0000	King, Nigel E		29 Vervalen Dr	29 Ver Valen Dr	Poughkeepsie	NY	12603	787	C52
6459-01-118782-0000	Costa, Manuel		314 Diddell Rd	314 Diddell Rd	Poughkeepsie	NY	12603	786	A21
6361-02-990824-0000	Gilman, James F		9 Mountain View Dr	9 Mountain View Dr	Pleasant Valley	NY	12569	785	C33
6461-03-384156-0000	Wade, Glenn L		21-23 Freedom Rd	21 Freedom Rd	Pleasant Valley	NY	12569	785	C50
6461-03-181226-0000	Bauer, Edwin W LT		121 Cramer Rd	121 Cramer Rd	Poughkeepsie	NY	12603	784	C50
6460-01-203522-0000	Smythe Jane A		256 Lauer Rd	P O Box 375	LaGrangeville	NY	12540	783	A4
6462-03-036135-0000	Shipley, William T		273 Freedom Rd	273 Freedom Rd	Pleasant Valley	NY	12569	783	C28
6363-04-941051-0000	Madoff Stacey		51 Ryans Run	51 Ryans Run	Pleasant Valley	NY	12569	783	C10
6460-01-038505-0000	Rendes, Gretchen		51 Smith Rd	757 Traver Rd	Pleasant Valley	NY	12569	782	A5
6363-04-707125-0000	Prusi, Alexander		36 Patricia Dr	36 Patricia Dr	Pleasant Valley	NY	12569	779	C8
6461-01-042766-0000	Perro, William D		10 Mountain View Dr	10 Mountain View Dr	Pleasant Valley	NY	12569	777	C35
6358-01-255535-0000	Korzekwinski, Bernard T		322 Myers Corners Rd	322 Myers Corners Rd	Wappingers Falls	NY	12590	776	A55
6358-03-267372-0000	Stopa, Robert J		33 Montfort Rd	33 Montfort Rd	Wapp Fls	NY	12590	774	A59
6359-02-938748-0000	Kohlmyer, Tara		267 Diddell Rd	267 Diddell Rd	Poughkeepsie	NY	12603	771	A22
6359-02-968918-0000	Greinacher, Klaus A		17 Pine Ridge Rd	17 Pine Ridge Rd	Poughkeepsie	NY	12603	770	A19
6362-02-873628-0000	Mc Hugh, Ronald		22 Brenner Ridge Rd	22 Brenner Ridge Rd	Pleasant Valley	NY	12569	769	C17
6461-01-001824-0000	Di Stefano, Otto R		11 Mountain View Dr	11 Mountain View Dr	Pleasant Valley	NY	12569	768	C34
6359-02-972987-0000	Stortini, Marcellino J		9 Pine Ridge Rd	9 Pine Ridge Rd	Poughkeepsie	NY	12603	767	A17
6359-02-947811-0000	Winters, Timothy Paul		24 Pine Ridge Rd	24 Pine Ridge Rd	Poughkeepsie	NY	12603	766	A20
6459-01-136994-0000	Short, Ralph H		6 Old Noxon Rd	6 Old Noxon Rd	Poughkeepsie	NY	12603	766	A17
6461-01-088675-0000	Harris, Richard C		59 Pond Hills Ct	59 Pond Hills Ct	Pleasant Valley	NY	12569	764	C37
6459-03-021449-0000	Seufert, Vincent		10 Robinson Garden Dr	10 Robinson Garden Dr	Wappingers Falls	NY	12590	763	A28
6462-03-068113-0000	Daly, Brian		266 Freedom Rd	266 Freedom Rd	Pleasant Valley	NY	12569	760	C29
6358-03-253444-0000	Pennachio, James		7 Larissa Ln	7 Larissa Ln	Wappingers Falls	NY	12590	760	A57
6359-02-821501-0000	Feola, Karen R		52 Red Hawk Hollow Rd	52 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	760	A31
6358-03-255312-0000	Vivalda, John A Trustee		20 Shale Dr	20 Shale Dr	Wappingers Falls	NY	12590	760	A60

6361-02-989862-0000	Flemister, Edward R		59 Mountain View Dr	59 Mountain View Dr	Pleasant Valley	NY	12569	758	C33
6359-02-952866-0000	Pollock, Kenneth M Trustee		23 Pine Ridge Rd	23 Pine Ridge Rd	Poughkeepsie	NY	12603	757	A20
6363-04-709156-0000	Brown, David E		40 Patricia Dr	40 Patricia Dr	Pleasant Valley	NY	12569	755	C7
6363-04-705187-0000	Plew, John E		44 Patricia Dr	44 Patricia Dr	Pleasant Valley	NY	12569	753	C7
6460-01-297757-0000	Rockwell, Thomas		347 Lauer Rd	345 Lauer Rd	Poughkeepsie	NY	12603	753	C60
6462-03-005168-0000	Mikula, Michael J		281 Freedom Rd	281 Freedom Rd	Pleasant Valley	NY	12569	751	C27
6461-01-036786-0000	Haight Patricia McGrath Trustee		6 Mountain View Dr	6 Mountain View Dr	Pleasant Valley	NY	12569	748	C35
6462-03-003186-0000	Smith, Richard J		287 Freedom Rd	287 Freedom Rd	Pleasant Valley	NY	12569	744	C27
6359-02-839510-0000	Little, Rodney Alan		54 Red Hawk Hollow Rd	54 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	742	A31
6460-01-052593-0000	Kender, Lonnie R		21 Smith Rd	21 Smith Rd	Poughkeepsie	NY	12603	739	A3
6359-02-973971-0000	Klare, Mark		11 Pine Ridge Rd	11 Pine Ridge Rd	Poughkeepsie	NY	12603	739	A18
6358-03-246464-0000	Riguzzi, Brian A		9 Larissa Ln	9 Larissa Ln	Wappingers Falls	NY	12590	737	A57
6461-01-058741-0000	Buechele, Juergen A		31 Mountain View Dr	31 Mountain View Dr	Pleasant Valley	NY	12569	733	C36
6461-03-319253-0000	Hatch III, Edward L.		125 Frost Hill Rd.	PO Box 376	Lagrangeville	NY	12540	731	C48
6461-03-331038-0000	Landry, Henry B		3 Vervalen Dr	3 Ver Valen Dr	Poughkeepsie	NY	12603	727	C54
6363-04-710171-0000	Andrews, Christopher P		42 Patricia Dr	42 Patricia Dr	Pleasant Valley	NY	12569	726	C7
6460-01-156982-0000	Carpentier, Karen L		2 Timothy Dr	2 Timothy Dr	Poughkeepsie	NY	12603	725	C55
6460-01-219545-0000	Spennacchio, Sam C		264 Lauer Rd	264 Lauer Rd	Poughkeepsie	NY	12603	723	A3
6359-02-971935-0000	Tierney, Brian P Jr		15 Pine Ridge Rd	15 Pine Ridge Rd	Poughkeepsie	NY	12603	720	A19
6461-03-176085-0000	Burrow, Robert M		5 Lafayette Ct	P O Box 406	La Grangeville	NY	12540	720	C53
6461-03-175106-0000	White, Michael P		1 Lafayette Ct	1 Lafayette Ct	Poughkeepsie	NY	12603	719	C53
6363-04-704090-0000	Chavanne, Ilse		587 Plass Rd	587 Plass Rd	Pleasant Valley	NY	12569	717	C9
6460-03-168422-0000	Dean, David L		199 Lauer Rd	199 Lauer Rd	Poughkeepsie	NY	12603	717	A6
6359-02-972954-0000	Lubbers Bonnie L		13 Pine Ridge Rd	13 Pine Ridge Rd	Poughkeepsie	NY	12603	714	A18
6460-01-249644-0000	Allardi, Lisa A		8 Todd Hill Rd	8 Todd Hill Rd	Poughkeepsie	NY	12603	709	C62
6459-01-126876-0000	Dean, Kenneth W		350 Diddell Rd	350 Diddell Rd	Poughkeepsie	NY	12603	708	A19
6363-04-702067-0000	Lembesis, John G		8 Valerie Ln	8 Valerie Ln	Pleasant Valley	NY	12569	708	C9
6361-02-987876-0000	Lapinsky Anthony		Overlook Rd	354 Overlook Rd	Pleasant Valley	NY	12569	703	C33
6358-03-272416-0000	Carroll, William G		6 Larissa Ln	6 Larissa Ln	Wappingers Falls	NY	12590	699	A58
6459-01-088686-0000	Prunty, Erin M		36 Robinson Ln	36 Robinson Ln	Wappingers Falls	NY	12590	698	A23
6462-03-016328-0000	Surico, Lucille		317 Freedom Rd	938 Freedom Rd	Pleasant Valley	NY	12569	697	C23
6461-03-336086-0000	Krauss, Edward	Attn: Peter Krauss	2 Vervalen Dr	2 Ver Valen Dr	Poughkeepsie	NY	12603	696	C53
6361-02-997858-0000	Stavish, Joseph		57 Mountain View Dr	57 Mountain View Dr	Pleasant Valley	NY	12569	695	C33
6462-03-012489-0000	Occhicone, Nicholas J		355 Freedom Rd	355 Freedom Rd	Pleasant Valley	NY	12569	694	C20
6360-04-973134-0000	Peruffo, Neil J		3 Forrest Way	3 Forrest Way	Poughkeepsie	NY	12603	692	A13
6461-01-053764-0000	Feeney, Peter J		12 Mountain View Dr	12 Mountainview Dr	Pleasant Valley	NY	12569	691	C35
6358-04-509177-0000	Valentine, Scott		78 Lake Walton Rd	78 Lake Walton Rd	Wappingers Falls	NY	12590-7321	686	A64
6461-01-036797-0000	Musa Ann Florence		4 Mountain View Dr	4 Mountain View Dr	Pleasant Valley	NY	12569	681	C34
6460-01-322987-0000	Lundewall, Mark Ernest		453 Lauer Rd	453 Lauer Rd	Poughkeepsie	NY	12603	678	C55
6363-04-838311-0000	Warner, David F Jr		1015 Freedom Rd	1015 Freedom Rd	Pleasant Valley	NY	12569	676	C4
6358-01-276539-0000	Warner, Damien E		324 Myers Corners Rd	324 Myers Corners Rd	Wappingers Falls	NY	12590	675	A54
6359-02-921657-0000	Houskeeper, Peter		242-244 Diddell Rd	242 Diddell Rd	Poughkeepsie	NY	12603	673	A25
6358-03-275340-0000	Prager, Joseph Howard		37 Montfort Rd	37 Montfort Rd	Wappingers Falls	NY	12590	673	A60
6358-03-265295-0000	Palmateer, Paul H		40 Montfort Rd	40 Montfort Rd	Wappingers Falls	NY	12590	671	A61
6459-01-084622-0000	Bascone, James J		61 Robinson Ln	61 Robinson Ln	Wappingers Falls	NY	12590	668	A25
6460-03-204485-0000	Ball, James A		230 Lauer Rd	230 Lauer Rd	Poughkeepsie	NY	12603	667	A5
6459-01-070503-0000	Kotchie, John S III		80 Robinson Ln	80 Robinson Ln	Wappingers Falls	NY	12590	665	A27
6461-03-170016-0000	Knop, Felipe		9 Lafayette Ct	9 Lafayette Ct	Poughkeepsie	NY	12603	664	C54
6459-01-061534-0000	Voght Gregory P		72 Robinson Ln	24 Frost Rd	Wappingers Falls	NY	12590	662	A26
6459-01-074674-0000	Voght, Marcia P		38 Robinson Ln	P O Box 367	Wappingers Falls	NY	12590	661	A24
6362-02-868686-0000	Brenner, Willi K Trustee		24 Brenner Ridge Rd	24 Brenner Ridge Rd	Pleasant Valley	NY	12569	659	C16
6359-02-941764-0000	Fox, Carol		271 Diddell Rd	30 Surrey Ln	Plainview	NY	11803-5128	654	A22
6460-01-043536-0000	Hammerschlag, Hans		4 Croft Hill Rd	4 Croft Hill Rd	Poughkeepsie	NY	12603	652	A5
6362-04-880412-0000	Cobb, Regina B		223 Rombout Rd	223 Rombout Rd	Pleasant Valley	NY	12569	651	C22
6363-04-856235-0000	Dunn, Richard		985 Freedom Rd	985 Freedom Rd	Pleasant Valley	NY	12569	648	C6
6461-01-070742-0000	Lyons, John P LT		33 Mountain View Dr	33 Mountain View Dr	Pleasant Valley	NY	12569	643	C36
6460-01-314929-0000	Minotti, Robert Sr		Lauer Rd	200 Rte 216	Stormville	NY	12582	641	C57
6359-02-909564-0000	Snyder, Tod		68 Red Hawk Hollow Rd	68 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	640	A29
6363-04-830334-0000	Lopez, Diana O		1027 Freedom Rd	1027 Freedom Rd	Pleasant Valley	NY	12569	639	C4
6358-03-255479-0000	Romano, John M		11 Larissa Ln	11 Larissa Ln	Wappingers Falls	NY	12590	638	A57
6461-03-174055-0000	Simmons, Jeffrey P		7 Lafayette Ct	7 Lafayette Ct	Poughkeepsie	NY	12603	634	C54
6460-01-063573-0000	Sykes, Josephine G		1 Croft Hill Rd	1 Croft Hill Rd	Poughkeepsie	NY	12603	634	A4
6362-04-998252-0000	Dani, Ashlesh		303 Freedom Rd	89 Ridgeline Dr	Poughkeepsie	NY	12603	633	C25
6359-04-979440-0000	Santiago, Clifford		14 Robinson Garden Dr	14 Robinson Garden Dr	Wappingers Falls	NY	12590	630	A29
6459-01-097794-0000	Atulugama Preethi N		320 Diddell Rd	320 Diddell Rd	Poughkeepsie	NY	12603	629	A21
6359-02-971875-0000	Mayerhauser, John A		25 Pine Ridge Rd	25 Pine Ridge Rd	Poughkeepsie	NY	12603	626	A20
6460-01-170949-0000	Tavarez, David		42 Sedgewick Rd.	42 Sedgewick Rd.	Poughkeepsie	NY	12601	624	C56
6358-01-251588-0000	Bongiorno, Sandra		327 Myers Corners Rd	327 Myers Corners Rd	Wappingers Falls	NY	12590	623	A54
6460-01-230564-0000	Sanavaitis, Andrew		266 Lauer Rd	266 Lauer Rd	Poughkeepsie	NY	12603	619	A3
6462-03-018311-0000	Pace, Leonard A		Freedom Rd	265 Rombout Rd	Pleasant Valley	NY	12569	617	C24
6461-01-011852-0000	Roth, Gerald W		55 Mountain View Dr	55 Mountain View Dr	Pleasant Valley	NY	12569	612	C33
6362-02-927906-0000	Mahler, Timothy E		63 Jennie Ln	63 Jennie Ln	Pleasant Valley	NY	12569	610	C12
6363-04-674398-0000	Stanley, Leonard		255 Rt. 216	42-48 Wilbur Rd.	Stormville	NY	12582	610	C1

6359-02-971830-0000	Pomilla Frank C	26 Pine Ridge Rd	26 Pine Ridge Rd	Poughkeepsie	NY	12603	610	A20
6362-02-896920-0000	Berry, Brian	64 Jennie Ln	64 Jennie Ln	Pleasant Valley	NY	12569	605	C12
6460-01-281760-0000	Rockwell, Thomas	345 Lauer Rd	345 Lauer Rd	Poughkeepsie	NY	12603	604	C60
6363-04-826359-0000	Crichton, James M	698 Plass Rd	698 Plass Rd	Pleasant Valley	NY	12569	603	C4
6360-04-986048-0000	Kern, Edward G	21 Old Noxon Rd	21 Old Noxon Rd	Poughkeepsie	NY	12603	599	A15
6461-03-210341-0000	Carnell, Charles F	82 Frost Hill Rd	82 Frost Hill Rd	Pleasant Valley	NY	12569	599	C46
6459-01-115857-0000	Saint-Louis, Scott C	346 Diddell Rd	346 Diddell Rd	Poughkeepsie	NY	12603	598	A20
6461-03-205185-0000	Burger, Jeffrey E	24 Vervalen Dr	24 Ver Valen Dr	Poughkeepsie	NY	12603	596	C51
6461-01-031817-0000	Insalaco, Joseph S	2 Mountain View Dr	2 Mountain View Dr	Pleasant Valley	NY	12569	595	C34
6360-04-985107-0000	Starvaggi, Frank A	Forrest Way	1 Forrest Way	Poughkeepsie	NY	12603	594	A14
6362-04-874337-0000	Bergman, Betsey R	231 Rombout Rd	231 Rombout Rd	Pleasant Valley	NY	12569	592	C23
6461-03-204169-0000	Buchanan, George H	22 Vervalen Dr	P O Box 17	La Grangeville	NY	12540	591	C51
6362-02-985743-0000	Holder, Audrey Trustee	405-407 Freedom Rd	407 Freedom Rd	Pleasant Valley	NY	12569	586	C16
6461-03-188119-0000	Gagliardo, Adele N	25 Vervalen Dr	25 Vervalen Dr	Poughkeepsie	NY	12603	585	C52
6359-02-957779-0000	Kearney, Kevin F	275 Diddell Rd	275 Diddell Rd	Poughkeepsie	NY	12603	584	A22
6459-01-105841-0000	Napolitano Philip	336 Diddell Rd	336 Diddell Rd	Poughkeepsie	NY	12603	584	A20
6461-03-321070-0000	Fasolino, Julie M	4 Vervalen Dr	4 Vervalen Dr	Poughkeepsie	NY	12603	582	C53
6358-03-277438-0000	Vega, Gilbert	8 Larissa Ln	8 Larissa Ln	Wappingers Falls	NY	12590	569	A57
6460-03-125054-0000	MacMillan, Lance	10 Old Noxon Rd	10 Old Noxon Rd	Poughkeepsie	NY	12603	564	A16
6460-01-256591-0000	Collins, Vincent E	276 Lauer Rd	276 Lauer Rd	Poughkeepsie	NY	12603	563	A2
6460-01-295820-0000	Chorney, Helen B	397 Lauer Rd	397 Lauer Rd	Poughkeepsie	NY	12603	563	C59
6360-04-983168-0000	Chipkin Bruce	6 Forrest Way	6 Forrest Way	Poughkeepsie	NY	12603	562	A13
6461-03-317026-0000	Gibson, Scott P	5 Vervalen Dr	5 Ver Valen Dr	Poughkeepsie	NY	12603	553	C54
6462-03-019272-0000	King Michael	258 Rombout Rd	258 Rombout Rd	Pleasant Valley	NY	12569	553	C24
6363-04-817209-0000	Carlucci, Mary	39 Richies Way	39 Richies Way	Pleasant Valley	NY	12569	547	C6
6363-04-833286-0000	Deichler Victoria A	1007 Freedom Rd	1007 Freedom Plains Rd	Pleasant Valley	NY	12569	544	C5
6460-01-086633-0000	Zelker, John L	100 Bushwick Rd	P O Box 436	Lagrangeville	NY	12540	542	A2
6460-01-073562-0000	Sever, Anthony D	3 Croft Hill Rd	3 Croft Hill Rd	Poughkeepsie	NY	12603	542	A5
6460-01-318965-0000	Lundewall, Ernest R	1023-1025 Freedom Plains Rd	1025 Freedom Plains Rd	Poughkeepsie	NY	12603	542	C56
6358-03-285324-0000	Cortes, Jimena M	39 Montfort Rd	39 Montfort Rd	Wappingers Falls	NY	12590	538	A60
6461-01-066765-0000	Coyne, Kevin T	14 Mountain View Dr	14 Mountain View Dr	Pleasant Valley	NY	12569	538	C35
6461-03-225433-0000	Dunn, Peter C	28 Jeffrey Dr	28 Jeffrey Dr	Pleasant Valley	NY	12569	535	C43
6359-04-999467-0000	Bracchi, Ronald	12 Robinson Garden Dr	12 Robinson Garden Dr	Wappingers Falls	NY	12590	533	A28
6363-04-819342-0000	Knox, Michael H	692 Plass Rd	692 Plass Rd	Pleasant Valley	NY	12569	533	C4
6462-03-019378-0000	Bangura, Johnathan S	323 Freedom Rd	323 Freedom Rd	Pleasant Valley	NY	12569	532	C22
6461-01-010872-0000	Johnson, Patricia A	366 Overlook Rd	366 Overlook Rd	Pleasant Valley	NY	12569	532	C33
6460-01-225643-0000	Agunzo, Michael	4 Todd Hill Rd	4 Todd Hill Rd	Poughkeepsie	NY	12603	532	C62
6461-03-147291-0000	Oh, Minseok	86 Frost Hill Rd	86 Frost Hill Rd	Pleasant Valley	NY	12569	529	C47
6358-04-515198-0000	Gendron, Antoine O	76 Lake Walton Rd	76 Lake Walton Rd	Wappingers Falls	NY	12590	527	A64
6363-04-873010-0000	Holland Kevin L	58 Ryans Run	58 Ryans Run	Pleasant Valley	NY	12569	526	C10
6358-03-269488-0000	Dinardo, Richard	13 Larissa Ln	13 Larissa Ln	Wapp Fls	NY	12590	523	A56
6363-04-850179-0000	Stein, Lawrence C	27 Richies Way	27 Richies Way	Pleasant Valley	NY	12569	517	C7
6459-01-091747-0000	Swatek Brian	30 Robinson Ln	30 Robinson Ln	Wappingers Falls	NY	12590	517	A22
6462-03-017358-0000	Bae, Myung Mun	319 Freedom Rd	319 Freedom Rd	Pleasant Valley	NY	12569	515	C23
6461-01-083745-0000	Milne, Gerard W	35 Mountain View Dr	35 Mountain View Dr	Pleasant Valley	NY	12569	515	C36
6359-02-925523-0000	Olah, Barry R	64 Red Hawk Hollow Rd	64 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	515	A29
6461-03-188014-0000	Boccia, Thomas	7 Timothy Dr	7 Timothy Dr	Poughkeepsie	NY	12603	513	C54
6461-03-198101-0000	Idoni, Brian	23 Vervalen Dr	23 Vervalen Dr	Poughkeepsie	NY	12603	511	C53
6461-01-063778-0000	Healy, Henry G	16 Mountain View Dr	16 Mountain View Dr	Pleasant Valley	NY	12569	511	C35
6358-03-276460-0000	Cohen, Bruce M	10 Larissa Ln	10 Larissa Ln	Wappingers Falls	NY	12590	510	A57
6363-04-827310-0000	Brandow, James F LT	1023 Freedom Rd	1023 Freedom Rd	Pleasant Valley	NY	12569	510	C5
6358-01-274564-0000	Austin, Brad	328 Myers Corners Rd	328 Myers Corners Rd	Wappingers Falls	NY	12590	507	A55
6360-04-998017-0000	Morley, Jeffrey	708 Noxon Rd	708 Noxon Rd	Poughkeepsie	NY	12603	504	A17
6459-01-064611-0000	Scheu, Christian F	44 Robinson Ln	44 Robinson Ln	Wappingers Falls	NY	12590	504	A25
6460-01-189543-0000	Hay, Wayne	260 Lauer Rd	260 Lauer Rd	Poughkeepsie	NY	12603	503	A3
6459-01-113927-0000	Hallock, Donald Alan	355 Diddell Rd	355 Diddell Rd	Poughkeepsie	NY	12603	503	A19
6363-04-826142-0000	Stec, David	19 Richies Way	19 Richies Way	Pleasant Valley	NY	12569	503	C8
6461-01-058787-0000	Waters, Keith	18 Mountain View Dr	18 Mountian View Dr	Pleasant Valley	NY	12569	499	C35
6459-01-067643-0000	Risinit, Michael J	42 Robinson Ln	42 Robinson Ln	Wappingers Falls	NY	12590	499	A24
6461-01-030845-0000	Grega, Patricia Ann Long Trustee	53 Mountain View Dr	53 Mountain View Dr	Pleasant Valley	NY	12569	498	C34
6459-01-097819-0000	Lopes, Jason	332 Diddell Rd	332 Diddell Rd	Poughkeepsie	NY	12603	496	A20
6460-01-178514-0000	Edmonstone, James G	250 Lauer Rd	250 Lauer Rd	Poughkeepsie	NY	12603	494	A4
6460-03-094008-0000	Nagy, Laszlo F	9 Old Noxon Rd	9 Old Noxon Rd	Poughkeepsie	NY	12603	487	A16
6461-03-316145-0000	Eberhard, Henry O	145 Cramer Rd	145 Cramer Rd	Poughkeepsie	NY	12603	487	C51
6461-03-206220-0000	Hoffman, Herbert H	127 Cramer Rd	127 Cramer Rd	Poughkeepsie	NY	12603	485	C50
6461-01-042815-0000	Herrmann, Marilyn A Trustee	22 Mountain View Dr	22 Mountain View Dr	Pleasant Valley	NY	12569	485	C34
6461-03-200049-0000	Vincini, Carmela LT	17 Vervalen Dr	17 Vervalen Dr	Poughkeepsie	NY	12603	485	C54
6460-01-297911-0000	Mastrocinque, John J	427 Lauer Rd	427 Lauer Rd	Poughkeepsie	NY	12603	481	C57
6461-01-054804-0000	Attanasio, Scott R	20 Mountain View Dr	20 Mountain View Dr	Pleasant Valley	NY	12569	479	C35
6461-03-198064-0000	Miller, Michael J	19 Vervalen Dr	19 Ver Valen Dr	Poughkeepsie	NY	12603	479	C54
6359-02-986840-0000	Posta, Daniel J Sr	28 Pine Ridge Rd	28 Pine Ridge Rd	Poughkeepsie	NY	12603	478	A20
6461-03-199083-0000	Ryu, Candice A	21 Vervalen Dr	21 Vervalen Dr	Poughkeepsie	NY	12603	477	C53
6363-04-848119-0000	Dahdal, Ramy	11 Richies Way	11 Richie's Way	Pleasant Valley	NY	12569	476	C8

6363-04-851097-0000	Hoffman, Robert T		9 Richies Way	9 Richies Way	Pleasant Valley	NY	12569	476	C9
6359-02-968763-0000	O'Sullivan, James		279 Diddell Rd	279 Diddell Rd	Poughkeepsie	NY	12603	473	A22
6459-01-080806-0000	Hourahan, Jonathan G		322 Diddell Rd	322 Diddell Rd	Poughkeepsie	NY	12603	471	A21
6460-01-184919-0000	MacPherson, Dermott		973 Freedom Plains Rd.	229 Skidmore Rd.	Pleasant Valley	NY	12659	470	C57
6363-04-815332-0000	Long, Timothy P		686 Plass Rd	22 Sandi Dr	Poughkeepsie, NY	NY	12603	468	C4
6359-02-995972-0000	Befanis, Barbara A		6 Washburn Dr	6 Washburn Dr	Poughkeepsie	NY	12603	463	A18
6358-03-490181-0000	Jordan, James J		6 Neville Rd	6 Neville Rd	Wappingers Falls	NY	12590	463	A64
6460-01-202603-0000	Torok, John G		278 Lauer Rd	278 Lauer Rd	Poughkeepsie	NY	12603	463	A2
6363-04-810192-0000	Sheidlower David I		37 Richies Way	37 Richies Way	Pleasant Valley	NY	12569	460	C7
6359-02-984887-0000	Boccini, Manuel F III		27 Pine Ridge Rd	27 Pine Ridge Rd	Poughkeepsie	NY	12603	460	A19
6460-01-180976-0000	D'avanzo, Michael A		10 Timothy Dr	10 Tomothy Dr	Poughkeepsie	NY	12603	460	C55
6362-04-995142-0000	Leight, Walter E Jr		275 Freedom Rd	275 Freedom Rd	Pleasant Valley	NY	12569	459	C28
6360-04-989181-0000	Jessup, Edward P		8 Forrest Way	8 Forrest Way	Poughkeepsie	NY	12603	456	A12
6358-03-485159-0000	Madeiros, Catherine Trustee		2 Neville Rd	2 Neville Rd	Wappingers Falls	NY	12590	454	A64
6460-01-195574-0000	Lake, William A		270 Lauer Rd	270 Lauer Rd	Poughkeepsie	NY	12603	451	A3
6460-01-256747-0000	Rockwell, Gail		335 Lauer Rd	345 Lauer Rd	Poughkeepsie	NY	12603	451	C60
6459-01-079770-0000	NYS Off Of Mental Retardation	Attn: Robert G Leyden	310 Diddell Rd	44 Holland Ave	Albany	NY	12208	450	A21
6359-02-950663-0000	Lefever, Robert J		260 Diddell Rd	260 Diddell Rd	Poughkeepsie	NY	12603	448	A24
6360-04-996230-0000	Breite, Marshall		14 Forrest Way	14 Forrest Way	Poughkeepsie	NY	12603	446	A11
6359-04-889496-0000	Nunziata, Scott		60 Red Hawk Hollow Rd	60 Red Hawk Hollow Rd	Wappingers Falls	NY	12590	444	A30
6460-01-290891-0000	Mercado, Michael		417 Lauer Rd	417 Lauer Rd	Poughkeepsie	NY	12603	443	C58
6363-02-746548-0000	Daley, Jeffery J		53 Niagara Rd	131 Pine Hill Rd	Pleasant Valley	NY	12569	442	C1
6358-03-297368-0000	Harty, Edward J		18 Elizabeth Ter	18 Elizabeth Ter	Wappingers Falls	NY	12590	441	A59
6461-01-019868-0000	Rousseau, Marc		368 Overlook Rd	368 Overlook Rd	Pleasant Valley	NY	12569	436	C33
6358-03-300350-0000	Tierney, Gerald		20 Elizabeth Ter	20 Elizabeth Ter	Wapp Fls	NY	12590	434	A60
6359-02-981795-0000	Rodgers, Robert S LT		299 Diddell Rd	299 Diddell Rd	Poughkeepsie	NY	12603	433	A21
6461-03-314113-0000	Pelish, Stafford J		144 Cramer Rd	144 Cramer Rd	Poughkeepsie	NY	12603	430	C52
6460-01-106592-0000	Sawicki, Douglas G		114 Bushwick Rd	114 Bushwick Rd	Poughkeepsie	NY	12603	429	A3
6460-03-172466-0000	Smith, Dixon H III		32 Croft Hill Rd	P O Box 168	Lagrangeville	NY	12540	429	A5
6459-01-057708-0000	Dougherty, Mark A		32 Robinson Ln	32 Robinson Ln	Wappingers Falls	NY	12590	428	A23
6358-03-293386-0000	Riccardi, Daniel		14 Elizabeth Ter	14 Elizabeth Ter	Wappingers Falls	NY	12590	422	A59
6359-02-995946-0000	Quizhpe Angel B		5 Washburn Dr	5 Washburn Dr	Poughkeepsie	NY	12603	421	A18
6358-03-289399-0000	Caporale, Robert		12 Elizabeth Ter	12 Elizabeth Ter	Wappingers Falls	NY	12590	420	A59
6358-03-292416-0000	Cavalieri, Jamie		10 Elizabeth Ter	10 Elizabeth Ter	Wappingers Falls	NY	12590	417	A58
6460-01-059520-0000	Edmonds, Mark D		6 Croft Hill Rd	6 Croft Hill Rd	Poughkeepsie	NY	12603	417	A5
6461-03-302053-0000	Faraone, Frank		2 Patriot Ct	2 Patriot Ct	Poughkeepsie	NY	12603	416	C54
6358-01-293552-0000	Sabatelli, Richard		330 Myers Corners Rd	330 Myers Corners Rd	Wapp Fls	NY	12590	414	A54
6358-03-284497-0000	Ho, Joseph K		15 Larissa Ln	Laurel Park Rd	Wappingers Falls	NY	12590	411	A56
6461-03-219139-0000	Casas, Miguel A Jr		18 Vervalen Dr	18 Ver Valen Dr	Poughkeepsie	NY	12603	411	C52
6461-03-307080-0000	Stack, Kieran M		4 Patriot Ct	4 Patriot Ct	Poughkeepsie	NY	12603	410	C53
6461-01-093755-0000	Jenkins, Daniel W		37 Mountain View Dr	37 Mountain View Dr	Pleasant Valley	NY	12569	407	C36
6459-01-035638-0000	Kavanagh, Richard A		278 Diddell Rd	46 Robinson Ln	Wappingers Falls	NY	12590	406	A25
6362-02-817955-0000	Albrecht, James P		570 Plass Rd	P O Box 1619	Pleasant Valley	NY	12569	406	C12
6362-04-983334-0000	Logan, Mark		253 Rombout Rd	253 Rombout Rd	Pleasant Valley	NY	12569	403	C23
6358-01-375599-0000	Snell, Thomas H		1058 Route 376	1058 Rte 376	Wapp Fls	NY	12590	400	A54
6358-01-271593-0000	Rynkiewicz Roger A		1093 Route 376	7 Winnie Ln	Poughkeepsie	NY	12603	400	A54
6363-04-810429-0000	Howe, John C LT		3 South Ave	P O Box 563	Pleasant Valley	NY	12569	400	C2
6363-04-812321-0000	Krom, Lucy Marie LT		684 Plass Rd	684 Plass Rd	Pleasant Valley	NY	12569	400	C4
6461-03-299017-0000	Sheehan, Arthur J		7 Vervalen Dr	7 Ver Valen Dr	Poughkeepsie	NY	12603	398	C54
6358-03-292434-0000	Lockwood, Lily		8 Elizabeth Ter	8 Elizabeth Ter	Wappingers Falls	NY	12590	392	A58
6359-02-999988-0000	Atkins, Robert G		4 Washburn Dr	4 Washburn Dr	Poughkeepsie	NY	12603	392	A17
6362-04-900200-0000	Garrison, Thomas G		240 Rombout Rd	240 Rombout Rd	Pleasant Valley	NY	12569	391	C27
6359-02-991907-0000	Roeser, Richard P		29 Pine Ridge Rd	29 Pine Ridge Rd	Poughkeepsie	NY	12603	378	A19
6358-03-414490-0000	Hunt, Jeffrey		1061 Route 376	P O Box 5289	Mooresville	NC	28117	377	A57
6460-03-009003-0000	Ferrari, Geo.		2 Washburn Dr	2 Washburn Dr	Poughkeepsie	NY	12603	375	A17
6460-01-083548-0000	Sewall, Diane A		5 Croft Hill Rd	5 Croft Hill Rd	Poughkeepsie	NY	12603	375	A4
6461-01-030864-0000	Raymo, James E		370 Overlook Rd	370 Overlook Rd	Pleasant Valley	NY	12569	372	C33
6461-01-052842-0000	Gillespie, Paul		51 Mountain View Dr	51 Mountain View Dr	Pleasant Valley	NY	12569	371	C34
6358-03-304336-0000	Ajmera, Atul C		22 Elizabeth Ter	22 Elizabeth Terr	Wapp Falls	NY	12590	368	A60
6362-04-987309-0000	Horstmann, Paul W		255 Rombout Rd	255 Rombout Rd	Pleasant Valley	NY	12569	367	C24
6363-04-856001-0000	Joray, Ronald D		54 Ryans Run	54 Ryans Run	Pleasant Valley	NY	12569	360	C10
6362-04-908240-0000	Puckette, James A		242 Rombout Rd	242 Rombout Rd	Pleasant Valley	NY	12569	354	C25
6358-03-466179-0000	Collins, Ronald J		3 Neville Rd	3 Neville Rd	Wappingers Falls	NY	12590	348	A64
6461-01-091770-0000	Rosenfeld, Erwin M		39 Mountain View Dr	69 Schrade Rd	Briarcliff Manor	NY	10510	341	C35
6359-02-980772-0000	Di Cesare, Ernest J		285 Diddell Rd	285 Diddell Rd	Poughkeepsie	NY	12603	341	A22
6358-03-293453-0000	Keys, David F		6 Elizabeth Ter	6 Elizabeth Ter	Wappingers Falls	NY	12590	341	A57
6459-01-084869-0000	Medford, Cassimir J		39 Pine Ridge Rd	39 Pine Ridge Rd	Poughkeepsie	NY	12603	339	A20
6462-03-002113-0000	Werner, John G		267 Freedom Rd	267 Freedom Rd	Pleasant Valley	NY	12569	336	C29
6363-04-798389-0000	Traver, Donald F		709 Plass Rd	709 Plass Rd	Pleasant Valley	NY	12569	333	C3
6460-03-004102-0000	Peluse, John R		2 Forrest Way	2 Forest Way	Poughkeepsie	NY	12603	332	A14
6358-04-506246-0000	Gaudinier, Michelle L		66 Lake Walton Rd	58 Lake Walton Rd	Wappingers Falls	NY	12590	331	A64
6363-02-732537-0000	Roth Gerald W		45 Niagara Rd	55 Mountainview Rd	Pleasant Valley	NY	12569	330	C1
6358-03-496201-0000	Gasparini, Dominick D		8 Neville Rd	8 Neville Rd	Wappingers Falls	NY	12590	328	A64

6362-04-999229-0000	Steinberg, Ulrich H	297 Freedom Rd	P O Box 1630	Pleasant Valley	NY	12569	327	C25
6362-04-899310-0000	Otvertchenko, Svetlana	237 Rombout Rd	237 Rombout Rd	Pleasant Valley	NY	12569	327	C24
6461-01-088783-0000	Stekas, Matthaios	41 Mountain View Dr	41 Mountain View Dr	Pleasant Valley	NY	12569	323	C35
6358-03-304290-0000	Fulton, Jos H	49 Montfort Rd	49 Montfort Rd	Wapp Fls	NY	12590	320	A61
6459-01-059764-0000	Jessup, Michael R	308 Diddell Rd	308 Diddell Rd	Poughkeepsie	NY	12603	320	A22
6460-01-194943-0000	Eagen, Marilyn	48 Sedgewick Rd.	48 Sedgewick Rd.	Poughkeepsie	NY	12603	320	C56
6363-04-805312-0000	Roe, Arthur F III	682 Plass Rd	682 Plass Rd	Pleasant Valley	NY	12569	319	C4
6461-03-217266-0000	Stuts, George	100 Frost Hill Rd	100 Frost Hill Rd	Pleasant Valley	NY	12569	319	C48
6460-03-008146-0000	Polish, Daniel F	4 Forrest Way	4 Forrest Way	Poughkeepsie	NY	12603	316	A13
6461-03-204011-0000	Winkelbauer, Joseph F	15 Timothy Dr	15 Timothy Dr	Poughkeepsie	NY	12603	314	C55
6461-01-084793-0000	Harris, Jonathan C	43 Mountain View Dr	43 Mountain View Dr	Pleasant Valley	NY	12569	313	C35
6461-03-237127-0000	Shih, Da-Yuan	16 Vervalen Dr	16 Ver Valen Dr	Poughkeepsie	NY	12603	312	C52
6461-03-333352-0000	Abdelqader, Mohmad H	30 Frost Hill Rd	30 Frost Hill Rd	Pleasant Valley	NY	12569	312	C45
6461-03-237127-0000	Shih, Da-Yuan	16 Vervalen Dr	16 Ver Valen Dr	Poughkeepsie	NY	12603	311	C53
6461-03-296096-0000	Beierholm, Kurt J	6 Patriot Ct	P O Box 86	Lagrangeville	NY	12540	304	C53
6358-03-292470-0000	Giordano, Adriana C	14 Larissa Ln	14 Larissa Ln	Wappinger Falls	NY	12590	301	A57
6358-01-299560-0000	Zipprich, Ferdinand	332 Myers Corners Rd	332 Myers Corners Rd	Wappingers Falls	NY	12590	301	A54
6461-01-080804-0000	Bernardo John C	45 Mountain View Dr	45 Mountain View Dr	Pleasant Valley	NY	12569	298	C35
6461-01-042861-0000	Palladino, Mario P	372 Overlook Rd	372 Overlook Rd	Pleasant Valley	NY	12569	295	C33
6462-03-015083-0000	Lucas, Joseph A	261 Freedom Rd	P O Box 820	Pleasant Valley	NY	12569	295	C29
6459-01-073847-0000	Palmieri, Robert V	333 Diddell Rd	333 Diddell Rd	Poughkeepsie	NY	12603	294	A20
6460-01-218954-0000	Mc Hugh, Kevin	18 Timothy Dr	18 Timothy Dr	Poughkeepsie	NY	12603	293	C56
6461-03-213040-0000	Henry, John S	15 Vervalen Dr	15 Ver Valen Dr	Poughkeepsie	NY	12603	290	C54
6460-03-012038-0000	Lunden, Frances	707 Noxon Rd	7 Red Oaks Mill Rd	Poughkeepsie	NY	12603	290	A16
6358-03-464309-0000	Robertson, John	20 Cambridge Ct	20 Cambridge Ct	Wappingers Falls	NY	12590	289	A63
6460-03-034119-0000	Grimaldi, Marion	18 Old Noxon Rd	18 Old Noxon Rd	Poughkeepsie	NY	12603	285	A14
6460-01-284978-0000	Jenkins, Delores R	26 Timothy Dr	26 Timothy Dr	Poughkeepsie	NY	12603	281	C55
6459-01-008921-0000	Durand, Robert D	31 Pine Ridge Rd	79 Flint Rd - Apt 401	Millbrook	NY	12545	281	A19
6459-01-004849-0000	Weiss, Mellina A	30 Pine Ridge Rd	30 Pine Ridge Rd	Poughkeepsie	NY	12603	279	A20
6363-04-680427-0000	Lembesis, Stacey A	50-52 Wilbur Rd	P O Box 1632	Pleasant Valley	NY	12569	276	C1
6362-04-974270-0000	Ainsworth, Richard A Jr	254 Rombout Rd	254 Rombout Rd	Pleasant valley	NY	12569	273	C24
6461-03-281018-0000	Orchard, Wayne R	9 Vervalen Dr	9 Ver Valen Dr	Poughkeepsie	NY	12603	269	C54
6460-01-272937-0000	Serino, Anthony	1007 Freedom Plains Rd	1007 Freedom Plains Rd	Poughkeepsie	NY	12603	267	C56
6461-01-077820-0000	Howard, Joseph	47 Mountain View Dr	2414 County Rd - #1414	Pearland	TX	77584-5126	266	C34
6460-01-164551-0000	Owen, Lynn	257 Lauer Rd	257 Lauer Rd	Poughkeepsie	NY	12603	263	A3
6363-04-669385-0000	Alves Jose A	36-40 Wilbur Rd	8 Cary Rd	Hyde Park	NY	12538	262	C1
6459-01-061835-0000	Rawls, Robert C	325 Diddell Rd	325 Diddell Rd	Poughkeepsie	NY	12603	260	A20
6358-03-304311-0000	Will, Alfred	45 Montfort Rd	45 Montfort Rd	Wappingers Falls	NY	12590	260	A61
6461-01-072839-0000	Robinson, Richard A	49 Mountain View Dr	49 Mountain View Dr	Pleasant Valley	NY	12569	258	C34
6461-01-051890-0000	Lang Cheryl J	369 Overlook Rd	369 Overlook Rd	Pleasant Valley	NY	12569	253	C33
6461-03-230212-0000	Zach, Dennis	131 Cramer Rd	131 Cramer Rd	Poughkeepsie	NY	12603	253	C50
6461-03-229095-0000	Williams, Joseph V	14 Vervalen Dr	14 Vervalen Dr	Poughkeepsie	NY	12603	251	C53
6460-01-110640-0000	Machine Technology Inc	104 Bushwick Rd	104 Bushwick Rd	Poughkeepsie	NY	12603	249	A2
6460-01-175609-0000	O'Dell, James	281 Lauer Rd	281 Lauer Rd	Poughkeepsie	NY	12603	248	A2
6460-01-140523-0000	Brinckerhoff, Frank L LT	245 Lauer Rd	245 Lauer Rd	Poughkeepsie	NY	12603	248	A4
6461-01-107903-0000	Traver, Kenneth R	385 Overlook Rd	P O Box 446	Pleasant Valley	NY	12569	246	C33
6459-01-015870-0000	Klimanis, Zaiga K	32 Pine Ridge Rd	32 Pine Ridge Rd	Poughkeepsie	NY	12603	246	A19
6460-01-093536-0000	Giacalone, Frank	7 Croft Hill Rd	7 Croft Hill Rd	Poughkeepsie	NY	12603	243	A4
6460-01-076506-0000	Florence, Robert F Jr	8 Croft Hill Rd	8 Croft Hill Rd	Poughkeepsie	NY	12603	243	A5
6358-03-324404-0000	Mc Cracken, Douglas R	13 Elizabeth Ter	13 Elizabeth Ter	Wappingers Falls	NY	12590	242	A59
6459-01-014963-0000	Wesson, Paul R	3 Washburn Dr	3 Washburn Dr	Poughkeepsie	NY	12603	239	A18
6358-03-327387-0000	Dichiaro, Dominick	15 Elizabeth Ter	15 Elizabeth Ter	Wapp Fls		12590	235	A59
6358-03-333357-0000	Eglit, Rose C	21 Elizabeth Ter	21 Elizabeth Ter	Wapp Fls	NY	12590	233	A60
6460-01-250818-0000	Paolilli, Eric A	401 Lauer Rd	401 Lauer Rd	Poughkeepsie	NY	12603	229	C59
6461-03-290132-0000	D'Avanzo, Aurelio V	140 Cramer Rd	140 Cramer Rd	Poughkeepsie	NY	12603	228	C52
6358-03-321416-0000	Cicero, Francisco	11 Elizabeth Ter	11 Elizabeth Ter	Wappingers Falls	NY	12590	227	A58
6461-03-240311-0000	Varuzzo Louis C	85 Frost Hill Rd	85 Frost Hill Rd	Pleasant Valley	NY	12569	226	C47
6459-01-065779-0000	Richard, Albert A Jr	312 Diddell Rd	312 Diddell Rd	Poughkeepsie	NY	12603	221	A21
6358-03-493258-0000	Scaringe Christopher	23 Cambridge Ct	23 Cambridge Ct	Wappingers Falls	NY	12590	220	A64
6362-04-964365-0000	Reith, Jay W	247 Rombout Rd	247 Rombout Rd - P O Box 295	Lagrangeville	NY	12540	218	C22
6359-02-983720-0000	Taylor, Richard M	276 Diddell Rd	2 Pamela Rd	Hopewell Junction	NY	12533	216	A22
6460-01-207884-0000	Sokolik, Stephen	970 Freedom Plains Rd	970 Freedom Plains Rd	Poughkeepsie	NY	12603	216	C58
6363-04-798231-0000	Ennis, Leacroft	662 Plass Rd	662 Plass Rd	Pleasant Valley	NY	12569	215	C6
6358-03-330370-0000	Buoncora, Anthony	19 Elizabeth Ter	19 Elizabeth Ter	Wappingers Falls	NY	12590	209	A59
6461-03-230069-0000	Carnell, Charles H	12 Vervalen Dr	12 Ver Valen Dr	Poughkeepsie	NY	12603	205	C53
6460-01-141587-0000	Johnson, Robert D	116 Bushwick Rd	116 Bushwick Rd	Poughkeepsie	NY	12603	203	A3
6460-01-181625-0000	Borges, John J	287 Lauer Rd	287 Lauer Rd	Poughkeepsie	NY	12603-9802	200	A2
6358-03-319429-0000	Chetner, Karen T	9 Elizabeth Ter	9 Elizabeth Ter	Wappingers Falls	NY	12590	199	A58
6359-02-994778-0000	Fiorisi, Michael C	289 Diddell Rd	289 Diddell Rd	Poughkeepsie	NY	12603	199	A22
6460-03-012191-0000	Di Marco, David V	12 Forrest Way	12 Forrest Way	Poughkeepsie	NY	12603	196	A12
6363-04-799277-0000	Still, Jeffrey D	676 Plass Rd	676 Plass Rd	Pleasant Valley	NY	12569	195	C5
6363-04-781362-0000	Traver, Stephen Michael	695 Plass Rd	695 Plass Rd	Pleasant Valley	NY	12569	193	C3
6459-01-039825-0000	DeNardo, Mary G Trustee	319 Diddell Rd	319 Diddell Rd	Poughkeepsie	NY	12603	192	A21

6461-03-229241-0000	Beinstein, Stanley A		110 Frost Hill Rd	110 Frost Hill Rd	Pleasant Valley	NY	12569	191	C48
6358-01-299502-0000	Kovalsky, Arleen M		17 Larissa Ln	17 Larissa Ln	Wappingers Falls	NY	12590	191	A56
6459-01-071885-0000	Matharu Manpreet H		37 Pine Ridge Rd	37 Pine Ridge Rd	Poughkeepsie	NY	12603	190	A19
6461-01-054863-0000	Bryant, William M		374 Overlook Rd	374 Overlook Rd	Pleasant Valley	NY	12569	186	C33
6461-03-279049-0000	Ceonzo, Richard J		1 Patriot Ct	1 Patriot Ct	Poughkeepsie	NY	12603	184	C54
6358-03-335344-0000	Kolachik, Victor Peter		23 Elizabeth Ter	23 Elizabeth Ter	Wappingers Falls	NY	12590	182	A60
6460-01-200655-0000	Mack, Alfred L LT		301 Lauer Rd	301 Lauer Rd	Poughkeepsie	NY	12603	180	A1
6461-03-317349-0000	Roberts, Roderick		42 Frost Hill Rd	42 Frost Hill Rd	Pleasant Valley	NY	12569	172	C45
6460-01-122628-0000	Vetter, Charles G Jr		Bushwick Rd	110 Bushwick Rd	Poughkeepsie	NY	12603	168	A2
6358-03-319445-0000	McHugh Edward LT		7 Elizabeth Ter	7 Elizabeth Ter	Wappingers Falls	NY	12590	163	A58
6459-01-008782-0000	Karius, Mary Lou G		297 Diddell Rd	297 Diddell Rd	Poughkeepsie	NY	12603	158	A21
6358-03-465198-0000	Perlman, David J		7 Neville Rd	7 Neville Rd	Wappingers Falls	NY	12590	157	A64
6459-01-030983-0000	Peterle, Ruy		1 Washburn Dr	1 Washburn Dr	Poughkeepsie	NY	12603	156	A17
6363-02-706524-0000	Thompson, Nancy		35 Niagara Rd	35 Niagara Rd	Pleasant Valley	NY	12569	156	C1
6460-03-073083-0000	Rabinowitz, Sarah		16 Old Noxon Rd	639 End Ave. - Apt 16A	New York	NY	10025	149	A15
6358-03-472277-0000	Dawson, Michael		24 Cambridge Ct	24 Cambridge Ct	Wappingers Falls	NY	12590	145	A63
6358-01-308568-0000	Mauro Group, Inc The	c/o Anthony Mauro	1081 Route 376	28 Reade St	Yonkers	NY	10703	143	A54
6461-03-238169-0000	Fost, Richard J		132-134 Cramer Rd	134 Cramer Rd	Poughkeepsie	NY	12603	142	C51
6459-01-055954-0000	De Lango, Richard		742 Noxon Rd	742 Noxon Rd	Poughkeepsie	NY	12603	138	A18
6363-04-656400-0000	Doxsey, Howard Jr		41 Wilbur Rd	41 Wilbur Rd	Pleasant Valley	NY	12569	138	C1
6461-03-231033-0000	Friedemann, Robert M		13 Vervalen Dr	13 Ver Valen Dr	Poughkeepsie	NY	12603	135	C54
6363-04-669385-0000	Alves Jose A		36-40 Wilbur Rd	8 Cary Rd	Hyde Park	NY	12538	132	C1
6460-01-150561-0000	Schmidt Barbara		267 Lauer Rd	1840 41st Ave - 102 -177	Capitola	CA	95010	128	A3
6358-03-443185-0000	Miller, George J Trustee		83 Montfort Rd	39 Crestview Dr	Millbrook	NY	12545	127	A64
6460-03-073043-0000	Hastings, John		13 Old Noxon Rd	13 Old Noxon Rd	Poughkeepsie	NY	12603	126	A15
6358-03-317461-0000	Thomas, William J.	Attn: Patricia A. Thomas	3 Elizabeth Terrace	3 Elizabeth Terrace	Wappingers Falls	NY	12590	120	A57
6358-03-480261-0000	Nameth, Donald G		25 Cambridge Ct	25 Cambridge Ct	Wappingers Falls	NY	12590	118	A64
6461-03-228006-0000	De Sisto, Michael		23 Timothy Dr	23 Timothy Dr	Poughkeepsie	NY	12603	114	C55
6460-03-050019-0000	Buzzeo, Robert		715 Noxon Rd	715 Noxon Rd	Poughkeepsie	NY	12603	114	A16
6461-01-064866-0000	Reichert, Joseph M		376 Overlook Rd	376 Overlook Rd	Pleasant Valley	NY	12569	108	C33
6358-03-473213-0000	Dolan, Thomas J		10 Neville Rd	10 Neville Rd	Wappingers Falls	NY	12590	107	A64
6459-01-045775-0000	Williams, Wayne M		306 Diddell Rd	949 Freedom Rd	Pleasant Valley	NY	12569	107	A21
6363-04-794255-0000	Bednarczuk, Francis		664 Plass Rd	664 Plass Rd	Pleasant Valley	NY	12569	104	C5
6362-04-962301-0000	O'Connell, Daniel		249 Rombout Rd	249 Rombout Rd	Pleasant Valley	NY	12569	102	C24
6461-03-280166-0000	Milea, Richard J		137 Cramer Rd	137 Cramer Rd	Poughkeepsie	NY	12603	99	C51
6362-04-927247-0000	Hedgecock, Keith J		244 Rombout Rd	244 Rombout Rd	Pleasant Valley	NY	12569	98	C25
6459-01-036878-0000	Bruen, James F III		34 Pine Ridge Rd	34 Pine Ridge Rd	Poughkeepsie	NY	12603	97	A19
6459-01-022810-0000	Halbert, David Jr		307 Diddell Rd	P O Box 99	LaGrangeville	NY	12540	96	A20
6358-03-340326-0000	Calabro, Elaine M		25 Elizabeth Ter	25 Elizabeth Ter	Wappinger Falls	NY	12590	92	A61
6358-03-314481-0000	Macry, Elaine		1 Elizabeth Ter	1 Elizabeth Ter	Wappingers Falls	NY	12590	91	A56
6362-04-937200-0000	Zwinscher, Edward F III		246 Rombout Rd	246 Rombout Rd	Pleasant Valley	NY	12569	91	C27
6460-03-091480-0000	Hoye, Daniel S		10 Croft Hill Rd	10 Croft Hill Rd	Poughkeepsie	NY	12603	87	A6
6460-03-089371-0000	Rendes, Gretchen		147 Lauer Rd	757 Traver Rd	Pleasant Valley	NY	12569	86	A8
6459-01-048911-0000	Adams, Richard L		35 Pine Ridge Rd	35 Pine Ridge Rd	Poughkeepsie	NY	12603	83	A19
6461-03-245203-0000	Parodi, Louis J		133 Cramer Rd	133 Cramer Rd	Poughkeepsie	NY	12603	80	C50
6459-01-028934-0000	Bentivenga, Richard J.		33 Pine Ridge Rd.	33 Pine Ridge Rd.	Poughkeepsie	NY	12603	80	A19
6358-01-310512-0000	Blackstone, Valley J		19 Larissa Ln	2805 Farris Ln	Bowie	MD	20715	79	A56
6459-01-034737-0000	Balassone, Daniel F		300 Diddell Rd	27 Diddell Rd	Poughkeepsie	NY	12603	75	A22
6461-03-266099-0000	Inello, Frank		5 Patriot Ct	5 Patriot Ct	Poughkeepsie	NY	12603	74	C53
6460-03-039056-0000	Weber, Dianne M		15 Old Noxon Rd	15 Old Noxon Rd	Poughkeepsie	NY	12603	72	A15
6459-01-050857-0000	Cameron, Robert H		36 Pine Ridge Rd	36 Pine Ridge Rd	Poughkeepsie	NY	12603	70	A20
6461-03-265075-0000	Monturo, Madeline		3 Patriot Ct	3 Patriot Ct	Poughkeepsie	NY	12603	68	C53
6459-01-012799-0000	Parlow, James		303 Diddell Rd	303 Diddell Rd	Poughkeepsie	NY	12603	60	A21
6362-04-925323-0000	Hart, James W Jr		241 Rombout Rd	241 Rombout Rd	Pleasant Valley	NY	12569	57	C23
6460-01-261997-0000	Winston, Tess A		25 Timothy Dr	25 Timothy Dr	Poughkeepsie	NY	12603	57	C55
6362-04-928302-0000	Johnston, Robert J		243 Rombout Rd	243 Rombout Rd	Pleasant Valley	NY	12569	51	C24
6459-01-018763-0000	Davis, Warren George		290 Diddell Rd	290 Diddell Rd	Poughkeepsie	NY	12603	46	A22
6459-01-048761-0000	Giorgio, Joseph M Jr		302 Diddell Rd	302 Diddell Rd	Poughkeepsie	NY	12603	45	A21
6460-01-107523-0000	Kistner, William J Jr		9 Croft Hill Rd	9 Croft Hill Rd	Poughkeepsie	NY	12603	43	A5
6461-03-257025-0000	Tamweber Joseph E		11 Vervalen Dr	11 Vervalen Dr	Poughkeepsie	NY	12603	41	C54
6461-03-272179-0000	Hausam, Josephine A		138 Cramer Rd.	138 Cramer Rd.	Poughkeepsie	NY	12603	38	C52
6461-03-257054-0000	Ali, Luz C		10 Vervalen Dr	10 Vervalen Dr	Poughkeepsie	NY	12603	36	C54
6461-03-293353-0000	Knox Jerome C		46 Frost Hill Rd	P O Box 343	LaGrangeville	NY	12540	24	C45

Central Hudson Gas & Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

SUPPLEMENTAL RESPONSE TO INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-002A (MS)

Central Hudson Response No: CHGE-002A (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas & Electric Corporation

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Supplemental Reply Date: May 21, 2014

Supplemental Response Provided by: Lewis Fitzgerald

Information Requested:

c. Provide a table showing the location of all houses within 1000 feet of the edge of the ROW. Include the nearest structure number and the distance from the edge of the ROW to the residence.

Response:

c. A review of GIS mapping has identified 532 houses within 1,000 feet of the edge of the ROW. Central Hudson is in the process of preparing a table showing the specific distance from the edge of the ROW to each such house. This table will be provided in a supplemental response.

Supplemental Response:

The final count is 497 houses. In our initial Response, the original count was 532 but there were properties deleted due to parcels being vacant (upon closer inspection) or the house being outside the 1000' buffer.

*Attached as **Exhibit A** is a table listing dwellings (with tax parcel information, property owner, address, distance to edge of ROW, and nearest structure number) within 1000 feet of the edge of the ROW.*

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-003 (MAS/RQ)

Central Hudson Response No: CHGE-003 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Provide the catalog cut sheet for shield wires (include both the mechanical and electrical characteristics).

b. Provide the catalog cut sheet for the conductors (include both the mechanical and electrical characteristics).

c. Is it Central Hudson's intention to ground the shield wires to the structure or insulate them from the structure? Provide supporting documentation.

d. Provide the un-redacted report pertaining to the A&C line conductor test referenced in the Application.

e. What is the protective angle the company assumed for shield wire protection from lightning strikes?

f. Does Central Hudson plan on using any mid-span splices? If so, provide the locations of planned splices. Explain why Central Hudson would use splices instead of terminating at dead end structures.

Responses:

a. The catalog cut sheet for the shield wire ("OPGW Spec Sheet") most likely to be used is attached as ***Exhibit A*** *to this Response.*

b. The catalog cut sheets for the conductors ("CHGE 1033 ACSR Specifications" and "Southwire ACSR Spec Sheet") are attached as ***Exhibit B (Parts 1 and 2 respectively)*** *to this Response.*

c. It is Central Hudson's intention to ground the shield wires to the structure. Central Hudson's ground standards ("Grounding for Direct Embedded Steel Poles") are attached to this Response as ***Exhibit C.***

d. The reports pertaining to the A & C line conductor test ("CHGE A&C Lines ACSR Testing" and "ACSR Testing Results from NEETRAC 6-2003") referenced in the Application are attached as ***Exhibit D (Parts 1 and 2 respectively)*** *to this Response*

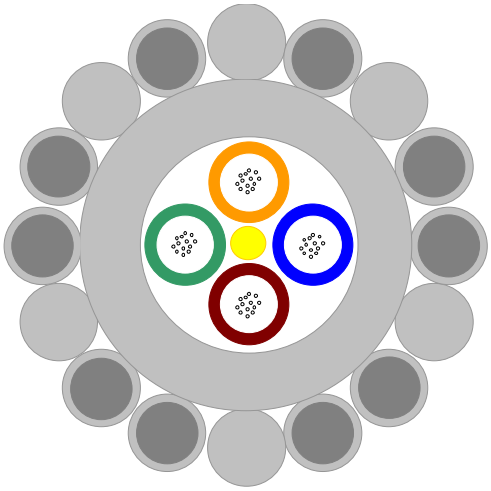
e. The protective angle is 30 degrees.

f. Central Hudson does not plan on using mid-span splices.

AFL Telecommunications LLC
A Fujikura Business
PO Box 3127
Spartanburg, SC 29304
Tel: 1 800 235 3423
Fax: 1 864 433 5560

Specification DNO-7500

AlumaCore Optical Ground Wire



AC-29/49/630

Component Details					
Component	**#**	**OD**		**Area**	
CENTER					
Aluminum Pipe	1	11.00 mm	0.4331 in	56.55 mm²	0.0877 in²
LAYER 1 - LEFT HAND LAY					
Aluminum Clad Steel (20.3% IACS)	10	2.50 mm	0.0984 in	49.09 mm²	0.0761 in²
Aluminum Alloy 6201	6	2.50 mm	0.0984 in	29.45 mm²	0.0457 in²

Standards	
Designed and Manufactured in accordance with the following:	
Cable	*IEEE 1138, IEC 60794-4*
Fiber	*IEC 60793, ITU-T G.65x Series*
Color Code	*ANSI/EIA 359-A, 598-A, IEC 60304*
Aluminum Pipes	*ASTM B483*
Aluminum Alloy Wires	*ASTM B398, IEC 60104*
Aluminum Clad Steel Wires	*ASTM B415*

Specification DNO-7500

Mechanical / Electrical Details				
Calculated Breaking Load	7,739	kg	17,061	lbs
Maximum Cable Design Tension	6,191	kg	13,649	lbs
Approximate Cable Diameter	16.00	mm	0.630	in
Total Cross-Sectional Area	135.09	mm^2	0.2094	in^2
Approximate Cable Weight	592	kg/km	2,101	lbs/mile
Modulus of Elasticity	9,964	kg/mm^2	14,172	kpsi
Coefficient of Linear Expansion	1.70E-05	1/°C	9.47E-06	1/°F
Sag10™ Chart Number	1-1439		1-1439	
Calculated DC Resistance (20°C)	0.2986	Ohms/km	0.4806	Ohms/mile
Short Circuit Rating	155	$(kA)^2$•sec	155	$(kA)^2$•sec
Short Circuit Ambient Temperature	40	°C	104	°F
Short Circuit Duration 1 sec	12.4	kA	12.4	kA
Short Circuit Max Cable Temperature	210	°C	410	°F

Optical Details

Attenuation Characteristics for 62.5/125 GIGA-Link™ 300 Multimode Fiber

Max Individual

3.5 dB/km 850 nm
1.2 dB/km 1300 nm

Attenuation Characteristics for Single-mode Fiber

Max Individual

0.40 dB/km 1310 nm
0.30 dB/km 1550 nm

48 Fiber Loose Tube Design (4 - 12 fiber units)

Unit	Fiber Type	Fiber Count
Blue	62.5/125 GIGA-Link™ 300 Multimode	12
Orange	62.5/125 GIGA-Link™ 300 Multimode	12
Green	Single-mode	12
Brown	Single-mode	12
	Total Fiber Count	48

Standard Fiber Color Code

Fiber	1	2	3	4	5	6	7	8	9	10	11	12
Color	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Designs with more than 12 fibers per tube will use the standard color code and binders for identification of the fibers.

Installation and Handling Recommendations

Installation and cable preparation procedures are outlined in the AFL Telecommunications documents listed below. Contact AFL to request copies.

Recommended Installation Procedures for Composite Optical Ground Wire

Installation Instructions for Installing Optical Ground Wire in an AFL Telecommunications Splice Enclosure

Fiber Optic Cable Receiving, Handling and Storage. Document ACS-WI-809

Specification DNO-7500

Quick Reference Installation Notes

Approximate Cable Diameter	16.00	mm	0.630	in
Maximum Stringing Tension (at tensioner)*	1,548	kg	3,412	lbs
Minimum Bull Wheel Diameter	112	cm	44	in
Stringing Sheave Diameter**	64	cm	26	in
Minimum Bending Radius				
Cable				
Static (No load)	24	cm	10	in
Dynamic (under tension)	32	cm	13	in
Fiber				
Static (No load)	3.8	cm	1.5	in
Buffer Tube				
Static (No load)	8.0	cm	3.0	in

* - The stringing tension is always measured at the tensioner side. In general the maximum stringing tension should be approximately half of the maximum sagging tension and should never exceed 20% RBS of the OPT-GW.

** - The value indicated is for the first and last structures of the pull and is based on 40 times the diameter of the OPT-GW. Smaller diameters can be used at tangent structures. Reference AFL's installation instructions for more details.

Reference AFL's "Recommended Installation Procedures for Composite Optical Ground Wire" for detailed installation instructions.

Shipping Reels

Reel Type	*FL*	*TR*	*DR*	*OW*	*Tare*	*FL*	*TR*	*DR*	*OW*	*Tare*	*Capacity*	
	(cm)				*(kgs)*	*(in)*				*(lbs)*	*(meters)*	*(feet)*
Wood	147	81	71	97	200	58	32	28	38	441	3,420	11,220
Wood	168	91	91	107	260	66	36	36	42	573	4,610	15,120
Wood	183	91	91	107	300	72	36	36	42	662	6,020	19,750
Wood	213	86	89	104	385	84	34	35	41	849	6,120	20,070
Steel	152	81	81	97	345	60	32	32	38	761	3,390	11,120
Steel	183	91	102	107	540	72	36	40	42	1,191	5,470	17,940
Steel	213	114	107	130	773	84	45	42	51	1,704	7,000	22,960

FL - Flange Diameter; TR - Inside Traverse Width; DR - Drum Diameter; OW - Outside Overall Width

Arbor Hole Diameter: Wood: 3-1/4in (7.9cm)
Steel: 3in (7.6cm)

Maximum lengths shown are the longest lengths that AFL offers. Longer lengths may be possible.

Ordered lengths should include a distribution of lengths, i.e., all reels cannot be ordered at the maximum. A typical reel length distribution is as follows:

6000m – 7000m ~ 15% of reels
4500m – 6000m ~ 55% of reels
2500m – 4500m ~ 25% of reels
<2500m ~ 5% of reels

Wood reels with flex-wrap covering are standard. Non-returnable steel reels and/or wood lagging are available upon request. Additional reel sizes may be available upon request.

Steel reels are recommended for long term storage. Reference AFL's "Fiber Optic Cable Receiving, Handling and Storage" document for additional information.

Specification DNO-7500

Electrical Characteristics					
Composite DC Resistance	[20°C]	0.2986	Ohms/km	0.4806	Ohms/mile
Geometric Mean Radius		0.62	cm	0.0204	feet
Inductive Reactance	[60 Hz frequency]	0.2933	Ohms/km	0.4721	Ohms/mile
[one foot (0.3048 meter) spacing]					
	[50 Hz frequency]	0.2444	Ohms/km	0.3934	Ohms/mile
Capacitive Reactance	[60 Hz frequency]	0.1738	MOhms·km	0.1080	MOhms·mile
[one foot (0.3048 meter) spacing]					
	[50 Hz frequency]	0.2085	MOhms·km	0.1296	MOhms·mile

Composite Coefficient of Thermal Resistance 0.00367 (1/°C)

Temperature		DC Resistance		AC Resistance	
(°C)	(°F)	(Ohms/km)	(Ohms/mile)	(Ohms/km)	(Ohms/mile)
20	68	0.2986	0.4806	0.3046	0.4902
25	77	0.3041	0.4894	0.3102	0.4992
30	86	0.3096	0.4982	0.3158	0.5082
35	95	0.3150	0.5070	0.3213	0.5171
40	104	0.3205	0.5158	0.3269	0.5261
45	113	0.3260	0.5246	0.3325	0.5351
50	122	0.3315	0.5334	0.3381	0.5441
55	131	0.3369	0.5423	0.3437	0.5531
60	140	0.3424	0.5511	0.3493	0.5621
65	149	0.3479	0.5599	0.3549	0.5711
70	158	0.3534	0.5687	0.3604	0.5801
75	167	0.3589	0.5775	0.3660	0.5891
80	176	0.3643	0.5863	0.3716	0.5981
85	185	0.3698	0.5951	0.3772	0.6070
90	194	0.3753	0.6040	0.3828	0.6160
95	203	0.3808	0.6128	0.3884	0.6250
100	212	0.3862	0.6216	0.3940	0.6340
105	221	0.3917	0.6304	0.3995	0.6430
110	230	0.3972	0.6392	0.4051	0.6520
115	239	0.4027	0.6480	0.4107	0.6610
120	248	0.4081	0.6568	0.4163	0.6700
125	257	0.4136	0.6656	0.4219	0.6790
130	266	0.4191	0.6745	0.4275	0.6879
135	275	0.4246	0.6833	0.4331	0.6969
140	284	0.4300	0.6921	0.4386	0.7059
145	293	0.4355	0.7009	0.4442	0.7149
150	302	0.4410	0.7097	0.4498	0.7239

Specification DNO-7500

PLS-CADD Inputs

☐ Use simplified elastic cable model (no creep, no coefficient)

Name

Description: AFL OPGW DNO-7500 AC-29/49/630

Cross section area (in^2): 0.2094 Unit weight (lbs/ft): 0.398

Outside diameter (in): 0.630 Ultimate tension (lbs): 17,061

Temperature at which strand data below obtained (deg F): 72

Number of independent wires: 1

(above should be 1 unless cables are separated by spacers)

Outer Strands

Final Modulus of elasticity (psi/100): 134000

Thermal expansion coeff. (/100 deg): 0.000970

Polynomial coefficients (all strains in %)

	A0	A1	A2	A3	A4
Stress-strain	232.5	101213.1	38254.6	-117500	45864
Creep	456.6	93991	-44258.8	74385	-77593

Core Strands (if different from outer strands)

Final Modulus of elasticity (psi/100):

Thermal expansion coeff. (/100 deg):

Polynomial coefficients (all strains in %)

	A0	A1	A2	A3	A4
Stress-strain					
Creep					

Thermal Rating Properties

Resistance at two different temperatures

Resistance (Ohms/mile): 0.4894 at (deg F): 77

Resistance (Ohms/mile): 0.5775 at (deg F): 167

Emissivity coefficient: 0.5

Solar absorption coefficient: 0.5

* Outer strands heat capacity (Watt-s/ft-deg F):

* Core heat capacity (Watt-s/ft-deg F):

Generate Coefficients from points on stress-strain curv

OK Cancel

* These two fields do not need to be entered for OPGW - intentionally left blank.

DATE: 2014/05/02 **MATERIALS MANAGEMENT SYSTEM** **PAGE: 1**
TIME: 14:28:11 **STOCK SPECIFICATIONS INQUIRY** **SPI**

STK#.....: **30-50-164** U/M: **LB** DESC...: **WIRE, ACSR BARE 1033 45/7**
ACQ CD...: HAZ CD...: ID CD.....:
LAST MOD.: **2014/02/26** BY EMPL#. **09981**
XREF STK#: XREF STK#: ALT STK CD:

********** SPECIFICATIONS **********

WIRE, BARE, ACSR/AZ, ACSR/AW OR ACSR.GA. 1033.5MCM 45/7(45 STRANDS AL. OVER 7 STRANDS ALUMINIZED, AL. CLAD,OR CLASS A GALV.STEEL CORE WIRE). CLASS AA, CONCENTRIC. 61% OR 62% CONDUCTIVITY,MFGR.TO STIPULATE ON ALL QUOTES & INVOICES, SUBJECT TO AN ECONOMIC ANALYSIS W/ RESPECT TO AVAILABILITY. CODE NAME: ORTOLAN/AZ, ORTOLAN/AW, OR ORTOLAN/GA. 1.212" O.D. WEIGHT: 1165 LBS./M. IN ACCORD. W/ ASTM B232, B341, B498, B500, B502, AND B549. SHIP 5375 LBS.(4615 FT.) ON REEL RM 68.38 UNLESS OTHERWISE SPECIFIED. (04-06-79)

FOR ADDITIONAL INFORMATION, DEPRESS 'ENTER'.
TRAN./CODE: | |
INIT. DATA: | |

ACSR

Aluminum Conductor. Steel Reinforced . Bare.

APPLICATIONS

Used as bare overhead transmission conductor and as primary and secondary distribution conductor and messenger support. ACSR offers optimal strength for line design. Variable steel core stranding enables desired strength to be achieved without sacrificing ampacity.

SPECIFICATIONS

Southwire's ACSR bare conductor meets or exceeds the following ASTM specifications:

- B230 Aluminum 1350-H19 Wire for Electrical Purposes.
- B232 Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR).
- B498 Zinc-Coated (Galvanized) Steel Core Wire for Use in Overhead Electrical Conductors.
- B500 Metallic Coated Stranded Steel Core for Use in Overhead Electrical Conductors.

CONSTRUCTION

- Aluminum 1350-H19 wires, concentrically stranded about a steel core. Standard core wire for ACSR is class A galvanized.
- Class A core stranding is also available in zinc-5% aluminum-mischmetal alloy coating.
- For aluminum-clad (AW) ACSR, please refer to the ACSR/AW catalog sheet
- Additional corrosion protection is available through the application of grease to the core or infusion of the complete cable with grease.
- ACSR conductor is also available in non-specular.

Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

MADE IN ★ THE USA

ACSR

Code Word	Size (AWG or kcmil)	Strand-ing (Al/Stl)	Diameter (ins.)				Weight Per 1000 ft. (lbs.)			Content (%)		Rated Strength (lbs.)	Resistance OHMS/1000 ft.		Allowable Ampacity+ (Amps)
			Individual Wires		Steel Core	Complete Cable	Al	Stl	Total	Al	Stl		DC @ 20°C	AC @ 75°C	
			Al	Stl											
Turkey	6	6/1	.0661	.0661	.0661	.198	24	12	36	67.88	32.12	1190	.641	.806	105
Swan	4	6/1	.0834	.0834	.0834	.25	39	18	57	67.87	32.12	1860	.403	.515	140
Swanate	4	7/1	.0772	.103	.103	.257	39	28	67	58.1	41.9	2360	.399	.519	140
Sparrow	2	6/1	.1052	.1052	.1052	.316	62	29	91	67.9	32.1	2850	.254	.332	184
Sparate	2	7/1	.0974	.1298	.1298	.325	62	45	107	58.12	41.88	3460	.251	.338	184
Robin	1	6/1	.1181	.1181	.1181	.354	78	37	115	67.88	32.12	3550	.201	.268	212
Raven	1/0	6/1	.1327	.1327	.1327	.398	99	47	145	67.89	32.11	4380	.159	.217	242
Quail	2/0	6/1	.1489	.1489	.1489	.447	124	59	183	67.88	32.12	5310	.126	.176	276
Pigeon	3/0	6/1	.1672	.1672	.1672	.502	156	74	230	67.87	32.13	6620	.100	.144	315
Penguin	4/0	6/1	.1878	.1878	.1878	.563	197	93	291	67.88	32.12	8350	.0795	.119	357
Waxwing	266.8	18/1	.1217	.1217	.1217	.609	250	39	289	86.43	13.57	6880	.0643	.0787	449
Partridge	266.8	26/7	.1013	.0788	.2363	.642	251	115	367	68.51	31.49	11300	.0637	.0779	475
Ostrich	300	26/7	.1074	.0835	.2506	.68	283	130	412	68.51	31.49	12700	.0567	.0693	492
Merlin	336.4	18/1	.1367	.1367	.1367	.684	315	49	365	86.43	13.57	8680	.0510	.0625	519
Linnet	336.4	26/7	.1137	.0885	.2654	.72	317	146	462	68.51	31.49	14100	.0505	.0618	529
Oriole	336.4	30/7	.1059	.1059	.3177	.741	318	209	526	60.35	39.65	17300	.0502	.0613	535
Chickadee	397.5	18/1	.1486	.1486	.1486	.743	373	58	431	86.43	13.57	9940	.0432	.0529	576
Brant	397.5	24/7	.1287	.0858	.2574	.772	374	137	511	73.21	26.79	14600	.0430	.0526	584
Ibis	397.5	26/7	.1236	.0962	.2885	.783	374	172	546	68.51	31.49	16300	.0428	.0523	587
Lark	397.5	30/7	.1151	.1151	.3453	.806	375	247	622	60.35	39.65	20300	.0425	.0519	594
Pelican	477	18/1	.1628	.1628	.1628	.814	447	70	517	86.44	13.56	11800	.0360	.0442	646
Flicker	477	24/7	.141	.094	.2819	.846	449	164	614	73.21	26.79	17200	.0358	.0439	655
Hawk	477	26/7	.1354	.1053	.316	.858	449	207	656	68.51	31.49	19500	.0356	.0436	659
Hen	477	30/7	.1261	.1261	.3783	.883	450	296	746	60.35	39.65	23800	.0354	.0433	666
Osprey	556.5	18/1	.1758	.1758	.1758	.879	522	82	603	86.43	13.57	13700	.0308	.0379	711
Parakeet	556.5	24/7	.1523	.1015	.3045	.914	524	192	716	73.21	26.79	19800	.0307	.0376	721
Dove	556.5	26/7	.1463	.1138	.3413	.927	524	241	765	68.51	31.49	22600	.0306	.0375	726
Eagle	556.5	30/7	.1362	.1362	.4086	.953	525	345	871	60.35	39.65	27800	.0303	.0372	734
Peacock	605	24/7	.1588	.1059	.3177	.953	570	209	779	73.2	26.8	21600	.0282	.0346	760
Squab	605	26/7	.1525	.1186	.3559	.966	570	262	832	68.51	31.49	24300	.0281	.0345	765
Wood Duck	605.0	30/7	.142	.142	.426	.994	571	375	946	60.35	39.65	28900	.0279	.0342	774
Teal	605.0	30/19	.142	.0852	.426	.994	571	367	939	60.86	39.14	30000	.0279	.0342	773
Kingbird	636	18/1	.188	.188	.188	.94	596	94	690	86.43	13.57	15700	.0270	.0332	773
Swift	636.0	36/1	.1329	.1329	.1329	.93	596	47	643	92.72	7.28	13690	.0271	.0334	769
Rook	636	24/7	.1628	.1085	.3256	.977	599	219	818	73.22	26.78	22600	.0268	.0330	784
Grosbeak	636	26/7	.1564	.1216	.3649	.991	599	275	874	68.51	31.49	25200	.0267	.0328	789

Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

MADE IN ★ THE USA

Scoter	636.0	30/7	.1456	.1456	.4368	1.019	600	395	995	60.35	39.65	30400	.0256	.0325	798
Egret	636	30/19	.1456	.0874	.4368	1.019	600	386	987	60.85	39.15	31500	.0266	.0326	798
Flamingo	666.6	24/7	.1667	.1111	.3333	1	628	230	858	73.21	26.79	23700	.0256	.0315	807
Gannet	666.6	26/7	.1601	.1245	.3736	1.014	628	289	916	68.51	31.49	26400	.0255	.0313	812
Stilt	715.5	24/7	.1727	.1151	.3453	1.036	674	247	920	73.21	26.79	25500	.0239	.0294	844
Starling	715.5	26/7	.1659	.129	.3871	1.051	674	310	984	68.51	31.49	28400	.0238	.0292	849
Redwing	715.5	30/19	.1544	.0927	.4633	1.081	676	435	1110	60.85	39.15	34600	.0236	.0290	859
Coot	795	36/1	.1486	.1486	.1486	1.04	745	58	804	92.72	7.28	16710	.0217	.0268	884
Drake	795	26/7	.1749	.136	.408	1.107	749	344	1093	68.51	31.49	31500	.0214	.0263	907
Tern	795	45/7	.1329	.0886	.2658	1.063	749	146	895	83.67	16.33	22100	.0216	.0269	887
Condor	795	54/7	.1213	.1213	.364	1.092	749	274	1023	73.21	26.79	28200	.0215	.0272	889
Mallard	795	30/19	.1628	.0977	.4884	1.14	751	483	1234	60.86	39.14	38400	.0213	.0261	918
Ruddy	900	45/7	.1414	.0943	.2828	1.131	848	165	1013	83.67	16.33	24400	.0191	.0239	958
Canary	900	54/7	.1291	.1291	.3873	1.162	848	310	1158	73.22	26.78	31900	.0190	.0241	961
Rail	954	45/7	.1456	.0971	.2912	1.165	899	175	1074	83.67	16.33	25900	.0180	.0225	993
Cardinal	954	54/7	.1329	.1329	.3987	1.196	899	329	1227	73.21	26.79	33800	.0179	.0228	996
Ortolan	1033.5	45/7	.1515	.101	.3031	1.212	973	190	1163	83.67	16.33	27700	.0167	.0209	1043
Curlew	1033.5	54/7	.1383	.1383	.415	1.245	973	356	1330	73.21	26.79	36600	.0165	.0211	1047
Bluejay	1113	45/7	.1573	.1048	.3145	1.258	1048	205	1253	83.67	16.33	29800	.0155	.0194	1092
Finch	1113	54/19	.1436	.0861	.4307	1.292	1053	375	1429	73.72	26.28	39100	.0154	.0197	1093
Bunting	1192.5	45/7	.1628	.1085	.3256	1.302	1123	219	1343	83.67	16.33	32000	.0144	.0182	1139
Grackle	1192.5	54/19	.1486	.0892	.4458	1.337	1129	402	1531	73.72	26.28	41900	.0144	.0184	1140
Bittern	1272	45/7	.1681	.1121	.3362	1.345	1198	234	1432	83.67	16.33	34100	.0135	.0171	1184
Pheasant	1272	54/19	.1535	.0921	.4605	1.381	1204	429	1633	73.71	26.29	43600	.0135	.0173	1187
Dipper	1351.5	45/7	.1733	.1155	.3466	1.386	1273	248	1521	83.67	16.33	36200	.0127	.0162	1229
Martin	1351.5	54/19	.1582	.0949	.4746	1.424	1279	456	1735	73.72	26.28	46300	.0127	.0163	1232
Bobolink	1431	45/7	.1783	.1189	.3566	1.427	1348	263	1611	83.67	16.33	38300	.0120	.0153	1272
Lapwing	1590	45/7	.188	.1253	.3759	1.504	1498	292	1790	83.67	16.33	42200	.0108	.0139	1354
Falcon	1590	54/19	.1716	.103	.5148	1.544	1505	536	2041	73.72	26.28	54500	.0108	.0140	1359
Chukar	1780	84/19	.1456	.0874	.4368	1.602	1685	386	2072	81.35	18.65	51000	.0097	.0125	1453
Bluebird	2156	84/19	.1602	.0962	.4808	1.762	2040	468	2508	81.34	18.66	60300	.00801	.0105	1623
Kiwi	2167	72/7	.1735	.1157	.347	1.735	2051	249	2300	89.17	10.82	49800	.00801	.0106	1607

+Conductor temperature of 75°C, ambient temperature 25°C, emissivity 0.5, wind 2 ft./sec., in sun.

Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

MADE IN ★ THE USA

ACSR

Code Word	Size (AWG or kcmil)	Strand-ing (Al/Stl)	Diameter (ins.)				Weight Per 1000 ft. (lbs.)			Content (%)		Rated Strength (lbs.)	Resistance OHMS/1000 ft.		Allowable Ampacity+ (Amps)
			Individual Wires		Steel Core	Complete Cable	Al	Stl	Total	Al	Stl		DC @ 20°C	AC @ 75°C	
			Al	Stl											
HIGH MECHANICAL STRENGTH															
Grouse	80	8/1	.1	.1667	.1667	.367	75	74	149	50.48	49.52	5200	.207	.294	204
Petrel	101.8	12/7	.0921	.0921	.2763	.461	96	158	254	37.79	62.21	10400	.158	.250	237
Minorca	110.8	12/7	.0961	.0962	.2885	.481	104	172	276	37.75	62.25	11300	.145	.235	248
Leghorn	134.6	12/7	.1059	.1059	.3177	.53	127	209	335	37.79	62.21	13600	.120	.204	273
Guinea	159.0	12/7	.1151	.1151	.3453	.576	150	247	396	37.79	62.21	16000	.101	.181	297
Dotterel	176.9	12/7	.1214	.1214	.3642	.607	167	274	441	37.79	62.21	17300	.0911	.169	312
Dorking	190.8	12/7	.1261	.1261	.3783	.63	180	296	476	37.78	62.22	18700	.0845	.160	324
Cochin	211.3	12/7	.1327	.1327	.398	.663	199	328	527	37.8	62.2	28400	.0763	.150	340

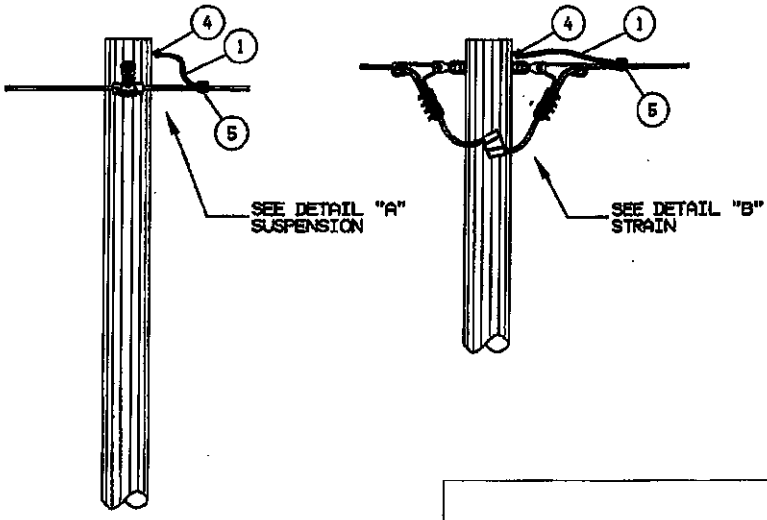
+Conductor temperature of 75°C, ambient temperature 25°C, emissivity 0.5, wind 2 ft./sec., in sun.

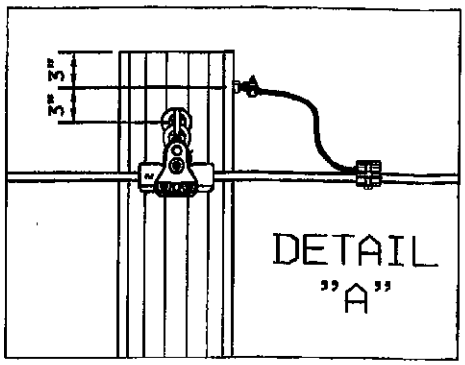
Southwire
One Southwire Drive
Carrollton, Ga. 30119 USA

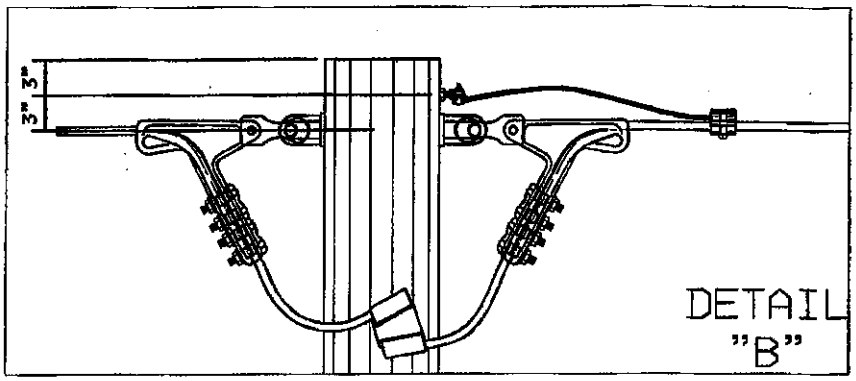
MADE IN ★ THE USA

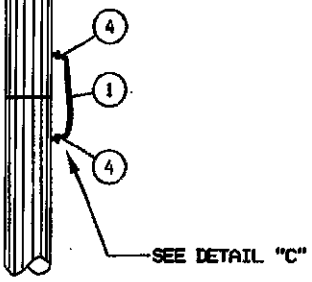
T-A4 STEEL

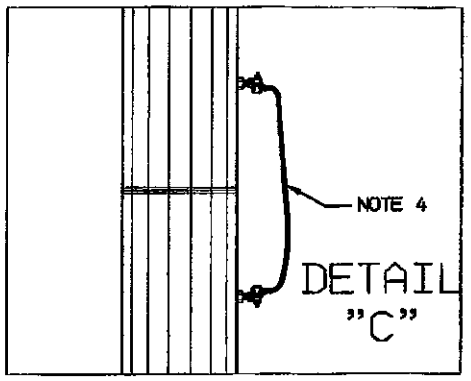
SHEET 1 OF 1

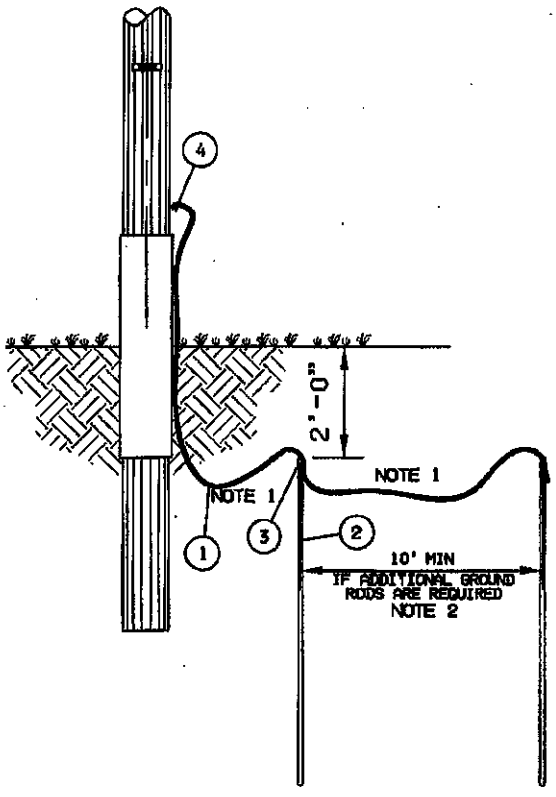












NOTES:

1- CONNECTING WIRE TO BE SLACK TO AVOID BREAKAGE DUE TO FROST ACTION.

2- ADDITIONAL RODS AND/OR ROD SECTIONS TO BE INSTALLED WHERE NECESSARY TO SECURE NECESSARY GROUND RESISTANCE.

3- GROUNDING NUTS TO BE INSTALLED BY STEEL MANUFACTURER

4- SLIP JOINT JUMPER IS NECESSARY ON ALL 2 PIECE POLES

BILL OF MATERIAL		
1	30-50-157	WIRE, CU BARE 4 SD SOLID
2	30-37-002	ROD, GROUND SINGLE 5/8" X 8'
3	30-37-100	CLAMP, GROUND ROD 5/8" F/#8 & 1/0
4	31-09-169	CONN, TRANSFORMER GROUND 8-2 CU.
5	31-09-135	CONN. ALL PURPOSE. 6CU - 336 ACSR

ELECTRIC STANDARDS

DRWN. TCJ
CLEAR MFB
ENGR. RLF
APPD. _____

CENTRAL HUDSON GAS & ELECTRIC CORP.

GROUNDING FOR DIRECT EMBEDDED STEEL POLES

DATE 2-5-13

ISSUE 1

APP.

APP.

October 2, 2008
Updated May 13, 2009
Updated May 19, 2009

ACSR Replacement Program – A and C Lines Reconductor Project

Background

The electric utility industry has been routinely installing ACSR (Aluminum Conductor, Steel Re-enforced) Conductor for decades. Central Hudson has been using the ACSR material since the 1920's. In many cases the conductor installed at time of construction is still in-service and concerns have been raised regarding the remaining strength of the older lines. In the past 10 years, Central Hudson has experienced several ACSR conductor failures.

The ACSR failures prompted a system-wide testing program to determine the remaining strength of the ACSR conductor in-service. Samples of the older ACSR phase wires was removed and evaluated by NEETRAC (National Electric Energy Testing Research and Applications Center), a testing laboratory of the Georgia Institute of Technology. NEETRAC performed a series of tests including a visual inspection of the conductor condition, tensile/elongation testing, and a mandrel testing to access the coating of the strands to estimate total remaining conductor strength.

Based on the historical performance of the in-service ACSR (i.e. recent failures) and the NEETRAC analysis, Central Hudson has instituted an ACSR Replacement Program.

A and C Lines Analysis

The A and C Lines were installed in 1948. The conductor used on these lines is 397.5 ACSR (Ibis). The C Line experienced a failure in 1998 resulting from severe mechanical damage possibly inflicted during initial installation. Sections of the failed conductor on the C Line were tested at the NEETRAC facilities and found to be "normal" although there is evidence of thermal damage. Since the suspected cause of failure indicates damage during construction, other sections of the line could be damaged as well.

Sections of the A Line were removed and tested in August 2003. Most of the tested samples exhibited acceptable rated breaking strengths, however there was evidence that the aluminum had annealed. The annealing in the aluminum strands shows that the line has had some history of thermal overloading. Annealing of the conductor can cause the conductor to lose strength and sag lower than expected, possibly causing NESC clearance violations.

Reconductoring a transmission line is classified as a major update to the existing line and therefore subject to the most current edition of the NESC. Using PLS-CADD, a

preliminary model of the existing C Line was analyzed. The A and C Lines were installed at the same time, using the same structure types (including pole heights and classes). An initial review of the C Line shows structural behavior that is similar to the A Line. It was quickly determined that a minimum of 40% of the existing structures would not support the loads associated with reconductoring with 795 ACSR (tern), even if the structures were in excellent condition. Most of the wood pole structures on the A and C Lines were installed as part of the original line installation in 1948. This suggests that the wood poles would have experienced some age related degradation. The 2007 NESC has more stringent strength factor and load factor requirements for wood pole construction than the codes used at the time of construction.

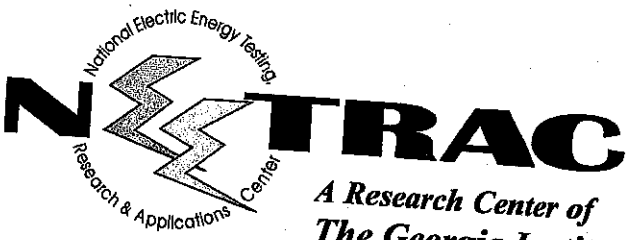
Recommendation

After preliminary PLS-CADD review of the C Line, it is recommended that Central Hudson rebuild the A and C Lines, as many of the current structures will not support reconductoring. Rebuilding the lines will accomplish the need for replacing the aging ACSR conductor, while ensuring that supporting structures will adhere to the latest edition of the NESC and meet all loading requirements. Preliminary planning installation estimate for rebuilding the A and C Lines is $7,080,000.

1/0 "Raven", 4/0 "Penguin", 101.8 "Petrel", and 397.5 "Ibis" ACSR Conductor Remaining Life Evaluation

NEETRAC Project Number: 03-107

June 2003



A Research Center of
The Georgia Institute of Technology

Requested by: Mr. John Van Buren
Central Hudson Gas and Electric

Principal Investigator: Janeen J. McReynolds
Janeen J. McReynolds

Reviewed by: Paul L. Springer, III

1/0 "Raven", 4/0 "Penguin", 101.8 "Petrel", and 397.5 "Ibis" ACSR Conductor Remaining Life Evaluation

NEETRAC Project Number: 03-107

June 2003

Executive Summary

Mr. John Van Buren of Central Hudson Gas and Electric contracted with NEETRAC to perform an evaluation on twelve conductor samples. The field samples included 1/0 ACSR, 4/0 ACSR, 101.8 ACSR, and 397.5 ACSR. The objective of the project is to estimate the remaining service life.

1/0 "Raven" ACSR Samples

One section of 1/0 "Raven" conductor was received. Overall appearance is good. The outer aluminum strands exhibit a moderate oxide layer. The zinc coating remains on the steel core wire. Tensile tests show that most of the aluminum strands are annealed. The steel core failed to meet its minimum required tensile strength. As a result, "as-found" strength of the conductor is 96.9% RBS.

4/0 "Penguin" ACSR Samples

Four sections of 4/0 "Penguin" ACSR were received. Overall appearance is good. The outer aluminum strands exhibit a moderate oxide layer. Zinc coating on the steel core wires remains intact. All aluminum strands are annealed, which is an indication of a history of extreme over-temperature due to fault or sustained overloads. As-found temper of the aluminum strands is ¾ hard. None of the steel core wires met ASTM requirements, either. If continued operation is desired, line loading should be reviewed against "as-found" conductor strength. As a result, "as-found" strength of the conductor ranges between 94-97% RBS.

101.8 kcmil "Petrel" ACSR Samples

Two sections of "Petrel" conductor were received. Overall condition of the samples is marginal. The outer aluminum layers exhibit moderately heavy oxide. Galvanize coating on the steel core wires remains intact. Annealing was identified for some of the aluminum strands; however, temper has not diminished to ¾ hard. As-found strength was found to be 99.6% and 99.4% RBS.

397.5 kcmil "Ibis" ACSR Samples

Four "Ibis" samples were evaluated. Overall appearance is normal. A heavy oxide layer is present on the outer aluminum strands. Galvanize coating on the steel core wires remains intact. All but one sample exceeded RBS. All aluminum strands tested on the annealed sample failed to meet ASTM minimum requirements. Line loading should be reviewed against "as-found" conductor strength (94-102% RBS) for continued operation.

References

ASTM B 230 "Standard Specification for Aluminum 1350-H19 Wire for Electrical Purposes"
ASTM B 232 "Standard Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ACSR)"
ASTM B 498 "Standard Specification for Zinc-Coated (Galvanized) Steel Core Wire for Aluminum Conductors, Steel Reinforced (ACSR)"

Sample Description

Sample ID: #1; One section of 101.8 kcmil "Petrel" ACSR Conductor
Line ID: AC Static; Date: 1948
Conductor Diameter: 0.461", Stranding: 12 x 0.0921" Al/ 7 x 0.0921" St, RBS: 10,400 lbs.

Sample ID: #2; One section of 397.5 kcmil "Ibis" ACSR Conductor
Line ID: AC Line Fish-River Rd. Middle Phase; Date: 1948
Conductor Diameter: 0.783", Stranding: 26 x 0.1236" Al/ 7 x 0.0961" St, RBS: 16,300 lbs.

Sample ID: #3; One section of 397.5 kcmil "Ibis" ACSR Conductor
Line ID: AC Line Fish-River Rd. South Phase; Date: 1948
Conductor Diameter: 0.783", Stranding: 26 x 0.1236" Al/ 7 x 0.0961" St, RBS: 16,300 lbs.

Sample ID: #4; One section of 397.5 kcmil "Ibis" ACSR Conductor
Line ID: AC Line Fish-River Rd. North Phase; Date: 1948
Conductor Diameter: 0.783", Stranding: 26 x 0.1236" Al/ 7 x 0.0961" St, RBS: 16,300 lbs.

Sample ID: #5; One section of 397.5 kcmil "Ibis" ACSR Conductor
Line ID: A Pole 55464; Date: 1948
Conductor Diameter: 0.783", Stranding: 26 x 0.1236" Al/ 7 x 0.0961" St, RBS: 16,300 lbs.

Sample ID: #6; One section of 4/0 "Penguin" ACSR Conductor
Line ID: E Tower 1496; Date: 1948
Conductor Diameter: 0.563", Stranding: 6 x 0.1878" Al/ 1 x 0.1878" St, RBS: 8350 lbs.

Sample ID: #7; One section of 4/0 "Penguin" ACSR Conductor
Line ID: GE Tower 1620 Bottom Phase; Date: 1940
Conductor Diameter: 0.563", Stranding: 6 x 0.1878" Al/ 1 x 0.1878" St, RBS: 8350 lbs.

Sample ID: #8; One section of 4/0 "Penguin" ACSR Conductor
Line ID: GE Tower 1620 Middle Phase; Date: 1940
Conductor Diameter: 0.563", Stranding: 6 x 0.1878" Al/ 1 x 0.1878" St, RBS: 8350 lbs.

Sample ID: #9; One section of 4/0 "Penguin" ACSR Conductor
Line ID: GE Tower 1620 Top Phase; Date: 1940
Conductor Diameter: 0.563", Stranding: 6 x 0.1878" Al/ 1 x 0.1878" St, RBS: 8350 lbs.

Sample ID: #10; One section of 4/0 "Penguin" ACSR Conductor*
Line ID: E Line Middle Phase Tower 1496; Date: not shown
Conductor Diameter: 0.563", Stranding: 6 x 0.1878" Al/ 1 x 0.1878" St, RBS: 8350 lbs.

Sample ID: #11; One section of 1/0 "Raven" ACSR Conductor*
Line ID: TV Static Pole 46085; Date: 1937
Conductor Diameter: 0.398", Stranding: 6 x 0.1327" Al/ 1 x 0.1327" St, RBS: 4,380 lbs.

Sample ID: #12; One section of 101.8 kcmil "Petrel" ACSR Conductor
Line ID: NF Montfort Rd.; Date: 1948
Conductor Diameter: 0.461", Stranding: 12 x 0.0921" Al/ 7 x 0.0921" St, RBS: 10,400 lbs.

* Samples 10 and 11 were tagged with different identification than what was shown in the table provided by CHG&E. Actual tag markings were used. Actual conductor size/type as determined by analysis is shown.

Equipment Used

Tinius Olsen Universal Testing Machine, Control #CQ 0013
Instron Universal Testing Machine, Control #CQ 0195
Starrett Vernier Caliper Micrometer 6", Control #CQ 3044
Starrett Vernier Caliper Micrometer 14", Control #CN 0144

Procedure and Results

An 18-inch section was cut from each section and unstranded. Each strand surface was examined for arcing/burn damage, corrosion, cracking and other signs of deterioration. All of the outer layer strand surfaces exhibited oxidation. Oxide layer for the 1/0 and 4/0 samples was moderate. Oxide layer for the "Petrel" samples was moderate-to-heavy. Oxide layer for the "Ibis" samples was heavy. The zinc coating remains intact for all samples.

The dimensions of each strand were measured and compared to ASTM B 232 and B 498 to identify the conductor size. One sample was positively identified as 1/0 "Raven" 6/1 ACSR. Five samples were identified as 4/0 "Penguin" ACSR. Two samples were identified as 101.8 "Petrel" ACSR. Four samples were identified as 397.5 "Ibis" ACSR.

For the tensile/ elongation test, each strand was loaded into the tensile machine and pulled to destruction. A computer data acquisition system is interfaced with the tensile machine and automatically records crosshead displacement and maximum load obtained. A ten-inch (10.000") gage section marked on each aluminum strand prior to testing was used to calculate the percent (%) elongation for each sample based on elongation measurements from the test. The percent elongation, rated strength, and "as-found" strength of the conductor were calculated according to the method outlined in ASTM B 230 and B 232. A summary of test results is presented in the following table.

Table 1, Summary of Tensile and Elongation Test Results for Aluminum Strands						
Sample ID		Minimum % Elongation ASTM[1]	Average "As-Found" % Elongation[1]	ASTM Average Minimum Tensile (psi)	Average "As-Found" Tensile (psi)	% Tensile ASTM
1	(Petrel)	1.6	2.6	27,000	26,771	99.2
2	(Ibis)	1.8	2.8	25,000	22,156	88.6
3	(Ibis)	1.8	2.8	25,000	25,277	101.1
4	(Ibis)	1.8	2.9	25,000	25,496	102.0
5	(Ibis)	1.8	3.0	25,000	25,835	103.3
6	(Penguin)	2.1	*	24,000	22,063	91.9
7	(Penguin)	2.1	4.9	24,000	21,268	88.6
8	(Penguin)	2.1	4.9	24,000	21,609	90.0
9	(Penguin)	2.1	*	24,000	21,880	91.2
10	(Penguin)	2.1	4.9	24,000	21,851	91.0
11	(Raven)	1.8	3.7	25,000	23,263	93.1
12	(Petrel)	1.6	2.5	27,000	27,116	100.4

[1] Elongation criterion applies to strands prior to conductor manufacturing. Values are reported for reference only.

* Samples broke outside of gage section. Elongation measurement is invalid and not reported.

Table 2, Summary of "As-found" Conductor Strength per ASTM B 232			
Sample ID	ASTM Minimum RBS, lbs.	"As-Found" Value, lbs.	Percent Rating
Sample 1	10,400	10,337	99.4
Sample 2	16,300	15,445	94.8
Sample 3	16,300	16,351	100.3
Sample 4	16,300	16,414	100.7
Sample 5	16,300	16,513	101.3
Sample 6	8,350	8,041	96.3
Sample 7	8,350	7,914	94.8
Sample 8	8,350	7,968	95.4
Sample 9	8,350	8,012	95.9
Sample 10	8,350	8,007	95.9
Sample 11	4,380	4,224	96.4
Sample 12	10,400	10,363	99.6

Complete test results may be found in the appendix. The steel core wire of samples 6 through 11 failed to meet ultimate tensile strength as outlined in ASTM B 498 2002. ASTM requirements for wire manufactured in 1948 may differ but cannot be confirmed.

Conclusions

The project evaluated the condition of twelve conductor samples. The evaluation was based on mechanical strength and corrosion. Corrosion is not a concern – there is still intact galvanizing on the steel cores, and the aluminum strands are not seriously degraded.

Tensile test results show that the overall conductor strength of three of four 397.5 kcmil ACSR samples exceeds the rated breaking strength outlined in ASTM B 232. The "Petrel" samples marginally fail to meet RBS.

The condition of the remaining samples should be addressed. The tensile strength of the aluminum strands shows annealing has occurred. In particular, for the 1/0 and 4/0 conductors, the "as-found" temper is "¾ hard". Temper for ACSR conductor is H19 or "fully hard". In addition, the steel core wires for samples 6 through 11 failed to meet ASTM minimum tensile requirements.

Annealing in the aluminum strands shows the line has some history of thermal overloading – either due to sustained overload, or due to fault overloads that did not clear before conductor temperature exceeded a safe level.

The conductor is suitable for continued use provided:

1. Splices are in good condition
2. There exists a minimal number of broken strands at any location
3. Annealing has not caused NESC ground clearance problems
4. Remaining strength (94-99% RBS) still meets NESC loading requirements.

If the line remains in operation, the reason for the thermal overloads should be found and corrected. If the line ampacity is insufficient, annealing will continue to degrade the conductor. If fault overloads caused annealing, protective relaying should be evaluated for proper line protection.

The condition of the conductor samples that failed to meet RBS is marginal. There is no depletion of the zinc coating. Nevertheless, some degradation has occurred. Based on the age and condition of these samples, an inspection interval of 5 to 10 years is recommended. The "Ibis" samples that exceed RBS should have decades of service life remaining under proper operating conditions.

Appendix

RBS Calculation Spreadsheets for Conductor Samples

Sample ID: #1
Line ID: AC Static; Date: 1948

Sample ID: #2
Line ID: AC Line Fish-River Rd. Middle Phase; Date: 1948

Sample ID: #3
Line ID: AC Line Fish-River Rd. South Phase; Date: 1948

Sample ID: #4
Line ID: AC Line Fish-River Rd. North Phase; Date: 1948

Sample ID: #5
Line ID: A Pole 55464; Date: 1948

Sample ID: #6
Line ID: E Tower 1496; Date: 1948

Sample ID: #7
Line ID: GE Tower 1620 Bottom Phase; Date: 1940

Sample ID: #8
Line ID: GE Tower 1620 Middle Phase; Date: 1940

Sample ID: #9
Line ID: GE Tower 1620 Top Phase; Date: 1940

Sample ID: #10
Line ID: E Line Middle Phase Tower 1496; Date: not shown

Sample ID: #11
Line ID: TV Static Pole 46085; Date: 1937

Sample ID: #12
Line ID: NF Montfort Rd.; Date: 1948

NEETRAC Project No: 03-107
Evaluation of 101.8 ACSR "Petrel" field aged conductor

Date of Test: 6/11/2003
Sample Description:...... 101.8 ACSR "Petrel" 12/7
Line I.D.......................... AC Static
Line Name...................... AC
Date Built........................ 1948
Conductor Diameter....... 0.4750

Conductor Data:				
Al Strands	Number	12	Diameter	0.0921
Steel Strands	Number	7	Diameter	0.0921
Aluminum "Stranding Factor"		0.96		
Steel "Stranding Factor"		0.96		

Key: (light shading) Do NOT enter data in these cells; (dark shading) Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	[illegible]	1,424	213,747	NA	205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1	[illegible]	[illegible]	27,679	[illegible]	26,500	ASTM B230	Pass
Alu Strand 2	[illegible]	[illegible]	27,364	NA	26,500	ASTM B230	Pass
Alu Strand 3	[illegible]	[illegible]	26,163	NA	26,500	ASTM B230	Fail
Alu Strand 4	0.0927	[illegible]	26,888	NA	26,500	ASTM B230	Pass
Alu Strand 5	[illegible]	[illegible]	25,262	NA	26,500	ASTM B230	Fail
Alu Strand 6	[illegible]	[illegible]	27,469	NA	26,500	ASTM B230	Pass
Alu Strand 7			NA		26,500	ASTM B230	NA
Alu Strand 8			NA		26,500	ASTM B230	NA
Alu Strand 9			NA		26,500	ASTM B230	NA
Alu Strand 10			NA		26,500	ASTM B230	NA
Alu Strand 11			NA		26,500	ASTM B230	NA
Alu Strand 12			NA		26,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	213,747 psi	185,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	213,747 psi	205,000 psi	B498	Pass	104.3%
Average Tensile Strength of Aluminum Strands	26,771 psi	27,000 psi	B230	Fail	99.2%
Minimum Tensile Strength of Aluminum Strands	25,262 psi	26,500 psi	B230	Fail	95.3%
Estimated* Conductor Strength for this Sample	10,337 lbs	10,400 lbs	B232	Fail	99.4%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	2.6 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 397.5 ACSR "Ibis" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 397.5 26/7 "Ibis" ACSR
Line I.D...... AC Middle Phase
Line Name..... AC
Date Built..... 1948
Conductor Diameter..... 0.7890

Conductor Data:

Al Strands:	Number:	Diameter:	[illegible]
Steel Strands:	Number:	Diameter:	[illegible]
Aluminum "Stranding Factor":		0.93	
Steel "Stranding Factor"		0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	[illegible]	[illegible]	212,179	NA	205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1	[illegible]	[illegible]	21,769	[illegible]	23,500	ASTM B230	Fail
Alu Strand 2	[illegible]	[illegible]	23,170	[illegible]	23,500	ASTM B230	Fail
Alu Strand 3	[illegible]	[illegible]	21,236	[illegible]	23,500	ASTM B230	Fail
Alu Strand 4	[illegible]	[illegible]	22,136	[illegible]	23,500	ASTM B230	Fail
Alu Strand 5	[illegible]	[illegible]	21,846	[illegible]	23,500	ASTM B230	Fail
Alu Strand 6	[illegible]	[illegible]	22,778	[illegible]	23,500	ASTM B230	Fail
Alu Strand 7			NA		23,500	ASTM B230	NA
Alu Strand 8			NA		23,500	ASTM B230	NA
Alu Strand 9			NA		23,500	ASTM B230	NA
Alu Strand 10			NA		23,500	ASTM B230	NA
Alu Strand 11			NA		23,500	ASTM B230	NA
Alu Strand 12			NA		23,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	212,179 psi	185,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	212,179 psi	205,000 psi	B498	Pass	103.5%
Average Tensile Strength of Aluminum Strands	22,156 psi	25,000 psi	B230	Fail	88.6%
Minimum Tensile Strength of Aluminum Strands	21,236 psi	23,500 psi	B230	Fail	90.4%
Estimated* Conductor Strength for this Sample	15,445 lbs	16,300 lbs	B232	Fail	94.8%
Percent elongation of steel strands (Individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (Individual)	2.6 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 397.5 ACSR "Ibis" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 397.5 26/7 "Ibis" ACSR
Line I.D..... AC South Phase
Line Name..... AC
Date Built..... 1948
Conductor Diameter..... 0.7810

Conductor Data:

Al Strands:	Number:	26	Diameter:	0.1236
Steel Strands	Number:	7	Diameter:	0.0961
Aluminum "Stranding Factor"			0.93	
Steel "Stranding Factor"			0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	0.0955	583	218,245	NA***	205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1	0.1265	298	24,845		23,500	ASTM B230	Pass
Alu Strand 2	0.1261	296	24,620	2.5	23,500	ASTM B230	Pass
Alu Strand 3	0.1248	312	25,978	NA***	23,500	ASTM B230	Pass
Alu Strand 4	0.1245	299	24,936	2.8	23,500	ASTM B230	Pass
Alu Strand 5	0.1245	300	25,036	NA***	23,500	ASTM B230	Pass
Alu Strand 6	0.1238	316	26,245	NA***	23,500	ASTM B230	Pass
Alu Strand 7			NA		23,500	ASTM B230	NA
Alu Strand 8			NA		23,500	ASTM B230	NA
Alu Strand 9			NA		23,500	ASTM B230	NA
Alu Strand 10			NA		23,500	ASTM B230	NA
Alu Strand 11			NA		23,500	ASTM B230	NA
Alu Strand 12			NA		23,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	218,245 psi	185,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	218,245 psi	205,000 psi	B498	Pass	106.5%
Average Tensile Strength of Aluminum Strands	25,277 psi	25,000 psi	B230	Pass	101.1%
Minimum Tensile Strength of Aluminum Strands	24,620 psi	23,500 psi	B230	Pass	104.8%
Estimated* Conductor Strength for this Sample .	16,351 lbs	16,300 lbs	B232	Pass	100.3%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	2.8 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 397.5 ACSR "Ibis" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 397.5 26/7 "Ibis" ACSR
Line I.D..... AC North Phase
Line Name..... AC
Date Built..... 1948
Conductor Diameter..... 0.7795

Conductor Data:			
Al Strands:	Number:	26	Diameter: 0.1296
Steel Strands	Number:	7	Diameter: 0.0961
Aluminum "Stranding Factor":		0.93	
Steel "Stranding Factor"		0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	0.0956	1,856	214,523	NA***	205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1	0.1240	306	25,528	NA***	23,500	ASTM B230	Pass
Alu Strand 2	0.1239	305	25,045	2.9	23,500	ASTM B230	Pass
Alu Strand 3	0.1238	310	25,828	2.7	23,500	ASTM B230	Pass
Alu Strand 4	0.1230	310	25,795	3.1	23,500	ASTM B230	Pass
Alu Strand 5	0.1227	297	24,736	NA***	23,500	ASTM B230	Pass
Alu Strand 6	0.1230	313	26,045	NA***	23,500	ASTM B230	Pass
Alu Strand 7			NA		23,500	ASTM B230	NA
Alu Strand 8			NA		23,500	ASTM B230	NA
Alu Strand 9			NA		23,500	ASTM B230	NA
Alu Strand 10			NA		23,500	ASTM B230	NA
Alu Strand 11			NA		23,500	ASTM B230	NA
Alu Strand 12			NA		23,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	214,523 psi	185,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	214,523 psi	205,000 psi	B498	Pass	104.6%
Average Tensile Strength of Aluminum Strands	25,496 psi	25,000 psi	B230	Pass	102.0%
Minimum Tensile Strength of Aluminum Strands	24,736 psi	23,500 psi	B230	Pass	105.3%
Estimated* Conductor Strength for this Sample	16,414 lbs	16,300 lbs	B232	Pass	100.7%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	2.9 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 397.5 ACSR "Ibis" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 397.5 26/7 "Ibis" ACSR
Line I.D..... A Pole 55464
Line Name..... A
Date Built..... 1948
Conductor Diameter..... 0.7845

Conductor Data

Al Strands	Number		Diameter		
Steel Strands	Number		Diameter		
Aluminum "Stranding Factor"				0.93	
Steel "Stranding Factor"				0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1			213,557		205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1			26,203		23,500	ASTM B230	Pass
Alu Strand 2			24,911		23,500	ASTM B230	Pass
Alu Strand 3			25,487		23,500	ASTM B230	Pass
Alu Strand 4			26,112		23,500	ASTM B230	Pass
Alu Strand 5			26,312		23,500	ASTM B230	Pass
Alu Strand 6			25,987		23,500	ASTM B230	Pass
Alu Strand 7			NA		23,500	ASTM B230	NA
Alu Strand 8			NA		23,500	ASTM B230	NA
Alu Strand 9			NA		23,500	ASTM B230	NA
Alu Strand 10			NA		23,500	ASTM B230	NA
Alu Strand 11			NA		23,500	ASTM B230	NA
Alu Strand 12			NA		23,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data		ASTM Requirements (Minimum)		ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	213,557	psi	185,000	psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	213,557	psi	205,000	psi	B498	Pass	104.2%
Average Tensile Strength of Aluminum Strands	25,835	psi	25,000	psi	B230	Pass	103.3%
Minimum Tensile Strength of Aluminum Strands	24,911	psi	23,500	psi	B230	Pass	106.0%
Estimated* .Conductor Strength for this Sample	16,513	lbs	16,300	lbs	B232	Pass	101.3%
Percent elongation of steel strands (individual).	NA	%	4.0	%	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	3.0	%	1.7	%	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 4/0 ACSR "Penguin" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 4/0 6/1 "Penguin" ACSR
Line I.D..... E Tower 1496
Line Name..... E Tower
Date Built..... 1948
Conductor Diameter..... 0.5305

Conductor Data:				
Al Strands:	Number:	6	Diameter:	0.1878
Steel Strands	Number:	1	Diameter:	0.1878
Aluminum "Stranding Factor":			0.96	
Steel "Stranding Factor"			0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	0.1889	5,430	196,028	NA	200,000	ASTM B498	Fail
Core Strand-2			NA		200,000	ASTM B498	NA
Core Strand-3			NA		200,000	ASTM B498	NA
Core Strand-4			NA		200,000	ASTM B498	NA
Core Strand-5			NA		200,000	ASTM B498	NA
Core Strand-6			NA		200,000	ASTM B498	NA
Alu Strand 1	0.1877	610	22,018	NA	23,000	ASTM B230	Fail
Alu Strand 2	0.1885	645	23,271	NA	23,000	ASTM B230	Pass
Alu Strand 3	0.1875	594	21,089	NA	23,000	ASTM B230	Fail
Alu Strand 4	0.1862	566	20,448	NA	23,000	ASTM B230	Fail
Alu Strand 5	0.1870	639	23,058	NA	23,000	ASTM B230	Pass
Alu Strand 6	0.1880	624	22,513	NA	23,000	ASTM B230	Fail
Alu Strand 7			NA		23,000	ASTM B230	NA
Alu Strand 8			NA		23,000	ASTM B230	NA
Alu Strand 9			NA		23,000	ASTM B230	NA
Alu Strand 10			NA		23,000	ASTM B230	NA
Alu Strand 11			NA		23,000	ASTM B230	NA
Alu Strand 12			NA		23,000	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	196,028 psi	170,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	196,028 psi	200,000 psi	B498	Fail	98.0%
Average Tensile Strength of Aluminum Strands	22,063 psi	24,000 psi	B230	Fail	91.9%
Minimum Tensile Strength of Aluminum Strands	20,448 psi	23,000 psi	B230	Fail	88.9%
Estimated* Conductor Strength for this Sample	8,041 lbs	8,950 lbs	B232	Fail	89.8%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	N/A %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 4/0 ACSR "Penguin" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 4/0 6/1 "Penguin" ACSR
Line I.D..... GE Tower 1620 Bottom Phase
Line Name..... GE Tower
Date Built..... 1940
Conductor Diameter..... 0.5540

Conductor Data:

Al Strands	Number	[redacted]	Diameter	[redacted]
Steel Strands	Number	[redacted]	Diameter	[redacted]
Aluminum "Stranding Factor"			0.96	
Steel "Stranding Factor"			0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	[redacted]	[redacted]	189,169	NA	200,000	ASTM B498	Fail
Core Strand-2			NA		200,000	ASTM B498	NA
Core Strand-3			NA		200,000	ASTM B498	NA
Core Strand-4			NA		200,000	ASTM B498	NA
Core Strand-5			NA		200,000	ASTM B498	NA
Core Strand-6			NA		200,000	ASTM B498	NA
Alu Strand 1			22,173	NA	23,000	ASTM B230	Fail
Alu Strand 2			21,758	NA	23,000	ASTM B230	Fail
Alu Strand 3			21,787	NA	23,000	ASTM B230	Fail
Alu Strand 4			19,682	NA	23,000	ASTM B230	Fail
Alu Strand 5			21,902	NA	23,000	ASTM B230	Fail
Alu Strand 6			20,303	NA	23,000	ASTM B230	Fail
Alu Strand 7			NA		23,000	ASTM B230	NA
Alu Strand 8			NA		23,000	ASTM B230	NA
Alu Strand 9			NA		23,000	ASTM B230	NA
Alu Strand 10			NA		23,000	ASTM B230	NA
Alu Strand 11			NA		23,000	ASTM B230	NA
Alu Strand 12			NA		23,000	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	189,169 psi	170,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	189,169 psi	200,000 psi	B498	Fail	94.6%
Average Tensile Strength of Aluminum Strands	21,268 psi	24,000 psi	B230	Fail	88.6%
Minimum Tensile Strength of Aluminum Strands	19,682 psi	23,000 psi	B230	Fail	85.6%
Estimated* Conductor Strength for this Sample	7,914 lbs	8,350 lbs	B232	Fail	94.8%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	4.9 %	4.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 4/0 ACSR "Penguin" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 4/0 6/1 "Penguin" ACSR
Line I.D...... GE Tower 1620 Middle Phase
Line Name..... GE Tower
Date Built..... 1940
Conductor Diameter..... 0.5645

Conductor Data:

Al Strands	Number		Diameter		
Steel Strands	Number		Diameter		
Aluminum Stranding Factor*				0.96	
Steel Stranding Factor*				0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1			178,339	NA	200,000	ASTM B498	Fail
Core Strand-2			NA		200,000	ASTM B498	NA
Core Strand-3			NA		200,000	ASTM B498	NA
Core Strand-4			NA		200,000	ASTM B498	NA
Core Strand-5			NA		200,000	ASTM B498	NA
Core Strand-6			NA		200,000	ASTM B498	NA
Alu Strand 1			21,805		23,000	ASTM B230	Fail
Alu Strand 2			22,126		23,000	ASTM B230	Fail
Alu Strand 3			21,585	NA	23,000	ASTM B230	Fail
Alu Strand 4			22,242		23,000	ASTM B230	Fail
Alu Strand 5			20,913		23,000	ASTM B230	Fail
Alu Strand 6			20,982		23,000	ASTM B230	Fail
Alu Strand 7			NA		23,000	ASTM B230	NA
Alu Strand 8			NA		23,000	ASTM B230	NA
Alu Strand 9			NA		23,000	ASTM B230	NA
Alu Strand 10			NA		23,000	ASTM B230	NA
Alu Strand 11			NA		23,000	ASTM B230	NA
Alu Strand 12			NA		23,000	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	178,339 psi	170,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	178,339 psi	200,000 psi	B498	Fail	89.2%
Average Tensile Strength of Aluminum Strands	21,609 psi	24,000 psi	B230	Fail	90.0%
Minimum Tensile Strength of Aluminum Strands	20,913 psi	23,000 psi	B230	Fail	90.9%
Estimated* Conductor Strength for this Sample	7,968 lbs	8,350 lbs	B232	Fail	95.4%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	4.9 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 4/0 ACSR "Penguin" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 4/0 6/1 "Penguin" ACSR
Line I.D...... GE Tower 1620 Top Phase
Line Name..... GE Tower
Date Built..... 1940
Conductor Diameter..... 0.5355

Conductor Data:			
Al Strands:	Number:	6	Diameter: 0.1878
Steel Strands:	Number:	1	Diameter: 0.1878
Aluminum "Stranding Factor":		0.96	
Steel "Stranding Factor"		0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	0.1883	5,290	190,974	NA***	200,000	ASTM B498	Fail
Core Strand-2			NA		200,000	ASTM B498	NA
Core Strand-3			NA		200,000	ASTM B498	NA
Core Strand-4			NA		200,000	ASTM B498	NA
Core Strand-5			NA		200,000	ASTM B498	NA
Core Strand-6			NA		200,000	ASTM B498	NA
Alu Strand 1	0.1878	604	21,787	NA***	23,000	ASTM B230	Fail
Alu Strand 2	0.1885	606	21,863	NA***	23,000	ASTM B230	Fail
Alu Strand 3	0.1882	594	21,430	NA***	23,000	ASTM B230	Fail
Alu Strand 4	0.1878	616	22,224	NA***	23,000	ASTM B230	Fail
Alu Strand 5	0.1878	609	21,989	NA***	23,000	ASTM B230	Fail
Alu Strand 6	0.1882	609	21,989	NA***	23,000	ASTM B230	Fail
Alu Strand 7			NA		23,000	ASTM B230	NA
Alu Strand 8			NA		23,000	ASTM B230	NA
Alu Strand 9			NA		23,000	ASTM B230	NA
Alu Strand 10			NA		23,000	ASTM B230	NA
Alu Strand 11			NA		23,000	ASTM B230	NA
Alu Strand 12			NA		23,000	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	190,974 psi	170,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	190,974 psi	200,000 psi	B498	Fail	95.5%
Average Tensile Strength of Aluminum Strands	21,880 psi	24,000 psi	B230	Fail	91.2%
Minimum Tensile Strength of Aluminum Strands	21,430 psi	23,000 psi	B230	Fail	93.2%
Estimated* Conductor Strength for this Sample	8,012 lbs	8,350 lbs	B232	Fail	95.9%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	#DIV/0! %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 4/0 ACSR "Penguin" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 4/0 6/1 "Penguin" ACSR
Line I.D..... E Line Middle Phase Tower 1496
Line Name..... E
Date Built..... unknown
Conductor Diameter..... 0.5800

Conductor Data:

Al Strands:	Number:	6	Diameter:	0.1878
Steel Strands	Number:	1	Diameter:	0.1878
Aluminum "Stranding Factor"			0.96	
Steel "Stranding Factor"			0.96	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1	0.1877	5,150	185,920	NA	200,000	ASTM B498	Fail
Core Strand-2			NA		200,000	ASTM B498	NA
Core Strand-3			NA		200,000	ASTM B498	NA
Core Strand-4			NA		200,000	ASTM B498	NA
Core Strand-5			NA		200,000	ASTM B498	NA
Core Strand-6			NA		200,000	ASTM B498	NA
Alu Strand 1	0.1883	708	25,556	NA	23,000	ASTM B230	Pass
Alu Strand 2	0.1882	669	20,527	NA	23,000	ASTM B230	Fail
Alu Strand 3	0.1881	651	19,877	5.0	23,000	ASTM B230	Fail
Alu Strand 4	0.1882	596	21,487	4.0	23,000	ASTM B230	Fail
Alu Strand 5	0.1882	627	22,639	NA	23,000	ASTM B230	Fail
Alu Strand 6	0.1875	582	21,022	4.0	23,000	ASTM B230	Fail
Alu Strand 7			NA		23,000	ASTM B230	NA
Alu Strand 8			NA		23,000	ASTM B230	NA
Alu Strand 9			NA		23,000	ASTM B230	NA
Alu Strand 10			NA		23,000	ASTM B230	NA
Alu Strand 11			NA		23,000	ASTM B230	NA
Alu Strand 12			NA		23,000	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	185,920 psi	170,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	185,920 psi	200,000 psi	B498	Fail	93.0%
Average Tensile Strength of Aluminum Strands	21,851 psi	24,000 psi	B230	Fail	91.0%
Minimum Tensile Strength of Aluminum Strands	19,877 psi	23,000 psi	B230	Fail	86.4%
Estimated* Conductor Strength for this Sample	8,007 lbs	8,350 lbs	B232	Fail	95.9%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	4.9 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 105.6 ACSR "Raven" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 1/0 6/1 "Raven" ACSR
Line I.D..... TV Static Pole 46085
Line Name..... TV
Date Built..... 1937
Conductor Diameter..... 0.3750

Conductor Data:

Al Strands	Number	Diameter	
Steel Strands	Number	Diameter	
Aluminum "Stranding Factor"		0.98	
Steel "Stranding Factor"		0.96*	

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1			178,593	NA	205,000	ASTM B498	Fail
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1			22,747	NA	23,500	ASTM B230	Fail
Alu Strand 2			23,629	NA	23,500	ASTM B230	Pass
Alu Strand 3			23,383	NA	23,500	ASTM B230	Fail
Alu Strand 4			22,769	NA	23,500	ASTM B230	Fail
Alu Strand 5			23,058	NA	23,500	ASTM B230	Fail
Alu Strand 6			23,991	NA	23,500	ASTM B230	Pass
Alu Strand 7			NA		23,500	ASTM B230	NA
Alu Strand 8			NA		23,500	ASTM B230	NA
Alu Strand 9			NA		23,500	ASTM B230	NA
Alu Strand 10			NA		23,500	ASTM B230	NA
Alu Strand 11			NA		23,500	ASTM B230	NA
Alu Strand 12			NA		23,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data	ASTM Requirements (Minimum)	ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	178,593 psi	180,000 psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	178,593 psi	205,000 psi	B498	Fail	87.1%
Average Tensile Strength of Aluminum Strands	23,263 psi	25,000 psi	B230	Fail	93.1%
Minimum Tensile Strength of Aluminum Strands	22,747 psi	23,500 psi	B230	Fail	96.8%
Estimated* Conductor Strength for this Sample	4,224 lbs	4,380 lbs	B232	Fail	96.4%
Percent elongation of steel strands (individual).	N/A %	4.0 %	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	9.7 %	1.7 %	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

NEETRAC Project No: 03-107
Evaluation of 101.8 ACSR "Petrel" field aged conductor

Date of Test: 6/11/2003
Sample Description:..... 101.8 ACSR "Petrel" 12/7
Line I.D..... NF Montfortd Road
Line Name..... NF
Date Built..... 1948
Conductor Diameter..... 0.4620

Conductor Data:					
Al Strands	Number		Diameter		
Steel Strands	Number		Diameter		
Aluminum "Stranding Factor"			0.96		
Steel "Stranding Factor"			0.96		

Key: Do NOT enter data in these cells
Enter data into these cells

Strand Description (Layer/Strand)	Strand Diameter (As Found) (Inches)	Breaking Strength of Individual Strands (lbs)	Tensile Strength** (psi)	Elongation (%) (Reference only)	Required ASTM Minimum (psi)	ASTM (Reference)	Pass/Fail
Core Strand-1			215,248	NA	205,000	ASTM B498	Pass
Core Strand-2			NA		205,000	ASTM B498	NA
Core Strand-3			NA		205,000	ASTM B498	NA
Core Strand-4			NA		205,000	ASTM B498	NA
Core Strand-5			NA		205,000	ASTM B498	NA
Core Strand-6			NA		205,000	ASTM B498	NA
Alu Strand 1			29,135		26,500	ASTM B230	Pass
Alu Strand 2			22,711		26,500	ASTM B230	Fail
Alu Strand 3			27,364		26,500	ASTM B230	Pass
Alu Strand 4			25,563		26,500	ASTM B230	Fail
Alu Strand 5			27,439		26,500	ASTM B230	Pass
Alu Strand 6			30,486		26,500	ASTM B230	Pass
Alu Strand 7			NA		26,500	ASTM B230	NA
Alu Strand 8			NA		26,500	ASTM B230	NA
Alu Strand 9			NA		26,500	ASTM B230	NA
Alu Strand 10			NA		26,500	ASTM B230	NA
Alu Strand 11			NA		26,500	ASTM B230	NA
Alu Strand 12			NA		26,500	ASTM B230	NA

** Actual breaking strength divided by nominal area of strand
*** Strand broke outside gage marks - cannot determine elongation when that happens

Test Results Summary:

	As Found Data		ASTM Requirements (Minimum)		ASTM (Reference)	Pass/Fail	Percent (%) of Minimum
Average Tensile Strength of Steel Strands	215,248	psi	185,000	psi *	NA	NA	NA
Minimum Tensile Strength of Steel Strands	215,248	psi	205,000	psi	B498	Pass	105.0%
Average Tensile Strength of Aluminum Strands	27,116	psi	27,000	psi	B230	Pass	100.4%
Minimum Tensile Strength of Aluminum Strands	22,711	psi	26,500	psi	B230	Fail	85.7%
Estimated* Conductor Strength for this Sample	10,363	lbs	10,400	lbs	B262	Fail	99.6%
Percent elongation of steel strands (individual).	N/A	%	4.0	%	B498	For Reference Only	
Percent elongation of aluminum strands (individual)	2.5	%	1.7	%	B230	For Reference Only	

* Value is minimum tensile requirement for stress at 1% extension

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-004 (MAS/RQ)

Central Hudson Response No: CHGE-004 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Provide engineering drawings of the structures: small angle, medium angle, large angle, and dead end. Include guying details. Provide a guying table.

b. Does Central Hudson Gas and Electric Corporation (Central Hudson or Company) plan to replace all wood poles? Provide a list of structures that the company proposes to keep. Include pole numbers and whether they are wood or steel (i.e., lattice, galvanized, or corten).

c. The Company has indicated that some wood poles will be reused. Explain how the poles will be used (i.e., as a utility pole, barricade, or other use). If they are to be reused as a utility pole and at a future time a wood pole failed, what would its replacement be? Explain.

d. Does Central Hudson plan on using only steel poles for the rebuild? If not, explain the conditions under which Central Hudson would use some other type of pole and explain the reason for the type of structure to be used.

e. Does Central Hudson plan on using only direct embedded poles and concrete caissons? If not, explain what other

types of pole foundations Central Hudson will utilize and provide examples and catalogue cut sheets.

f. Does Central Hudson plan to use corrugated steel culverts as part of the foundation for pole placement? If so, provide an explanation and drawings of the foundations. In addition, provide a discussion of the backfill material and explain how the material for backfill material will be managed.

g. The insulators on structure A36 are under compression. Explain what Central Hudson will do to remedy this compression issue and provide documentation. Explain and provide the Central Hudson standards on how such problems will be corrected and prevented from occurring in the future.

Responses:

*a. The engineering drawings ("Structure drawings") are attached as **Exhibit A** to this Response. Guying drawings ("Guy Drawings") are attached as **Exhibit B** to this Response.*

b. Yes, Central Hudson plans on replacing all wood poles. Below is a Table listing the structures Central Hudson proposes to keep. The table contains pole numbers, type of pole and pole material.

No.	Structure Number	Type	Material Type
1	C57	H-Frame	Corten Steel
2	C58	H-Frame	Corten Steel
3	C59	3-Pole Swing Angle	Corten Steel
4	A8	H-Frame	Corten Steel
5	A9	H-Frame	Corten Steel
6	A10	3-Pole Deadend	Corten Steel
7	A11	H-Frame	Corten Steel
8	A12	3-Pole Swing Angle	Corten Steel
9	A33	H-Frame	Corten Steel
10	A34	H-Frame	Corten Steel
11	A35	H-Frame	Corten Steel
12	A37	H-Frame	Corten Steel
13	A38	H-Frame	Corten Steel

c. If the Application indicates that Central Hudson intends to reuse wood poles, then that was an inadvertent error. Central Hudson does not intend to reuse wood poles to be removed.

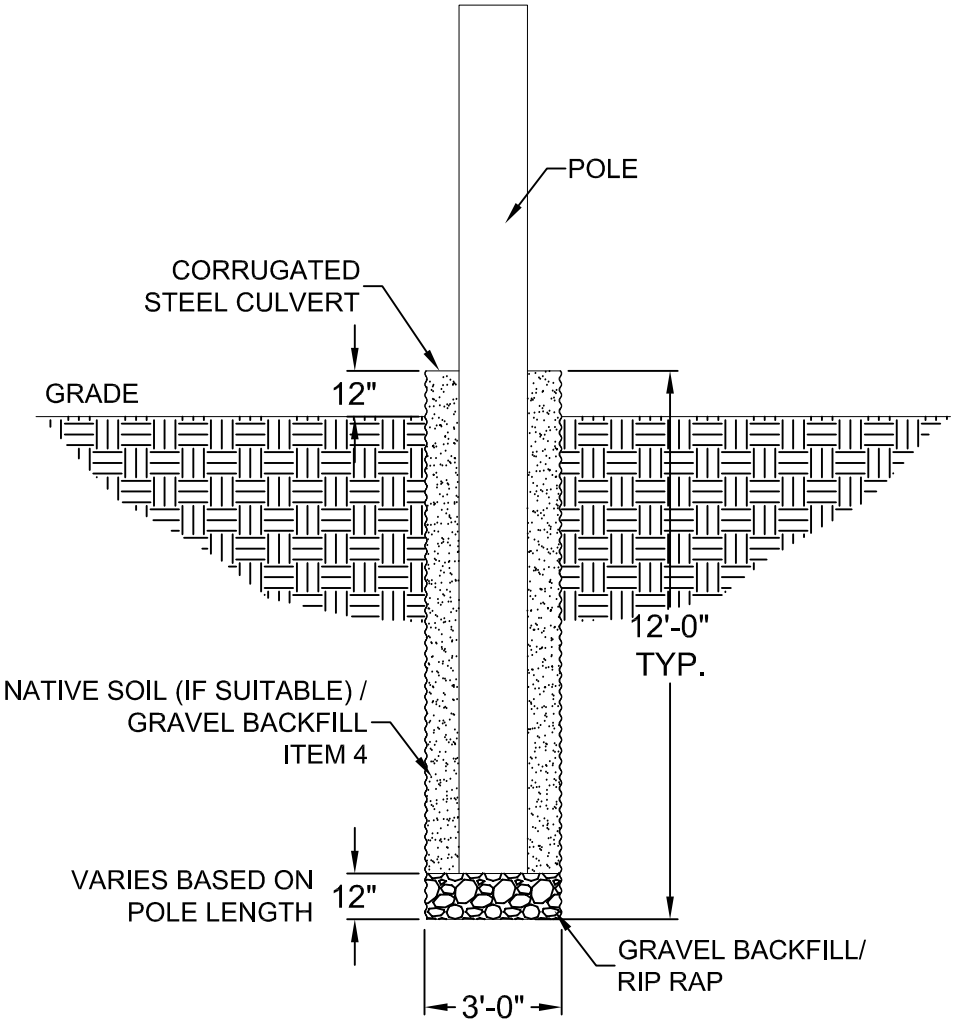
d. Yes, Central Hudson intends on using only steel poles.

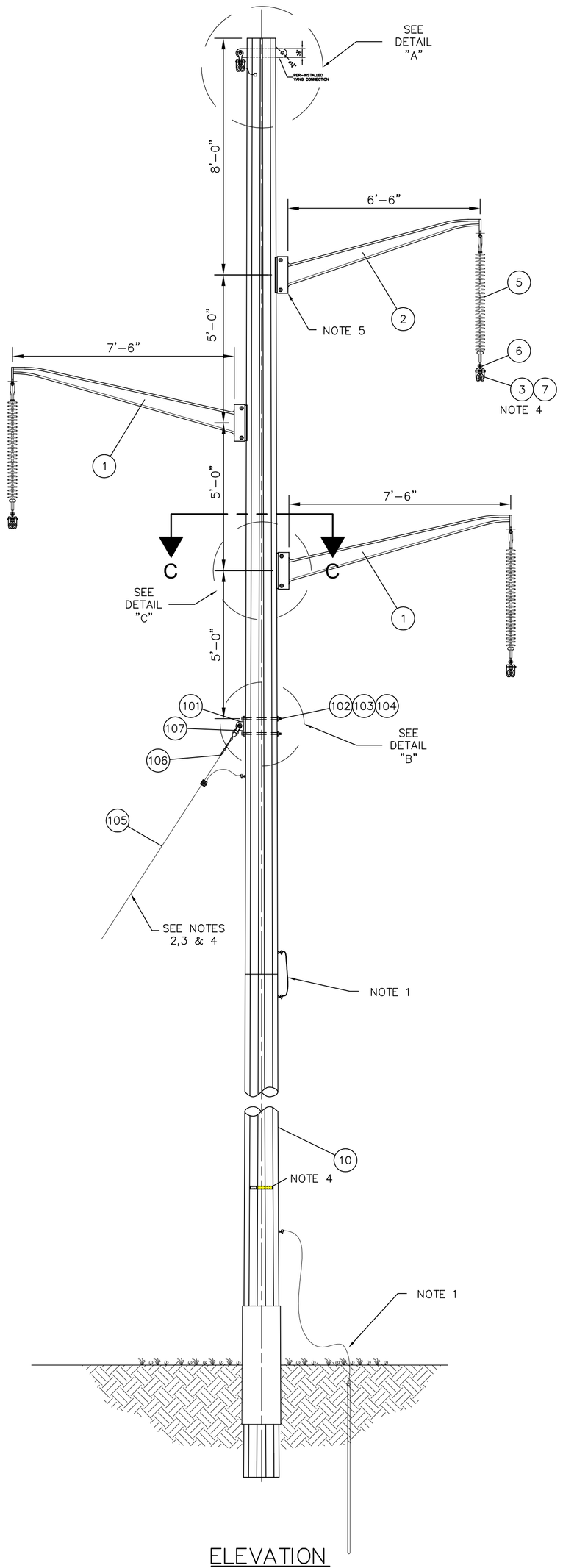
e. Central Hudson has proposed to use only direct embedded poles.

f. Central Hudson intends to use corrugated steel culverts or sleeves as part of the direct embedding of the pole structure when the field and/or soil conditions are such that added stability in the excavation is required to keep the hole from collapsing prior to and during pole installation. If, however, the soils around the hole are stable and the pole is being installed shortly after the hole is dug, then Central Hudson may opt to not use a culvert sleeve. See ***Exhibit C*** *("Corrugated Steel Culverts").*

g. Central Hudson does not believe that the insulators on proposed new structure A36 are under compression.

STEEL POLE INSTALLATION
USING CORRUGATED STEEL CULVERT





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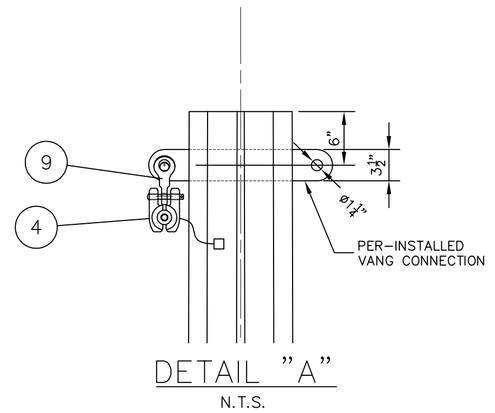
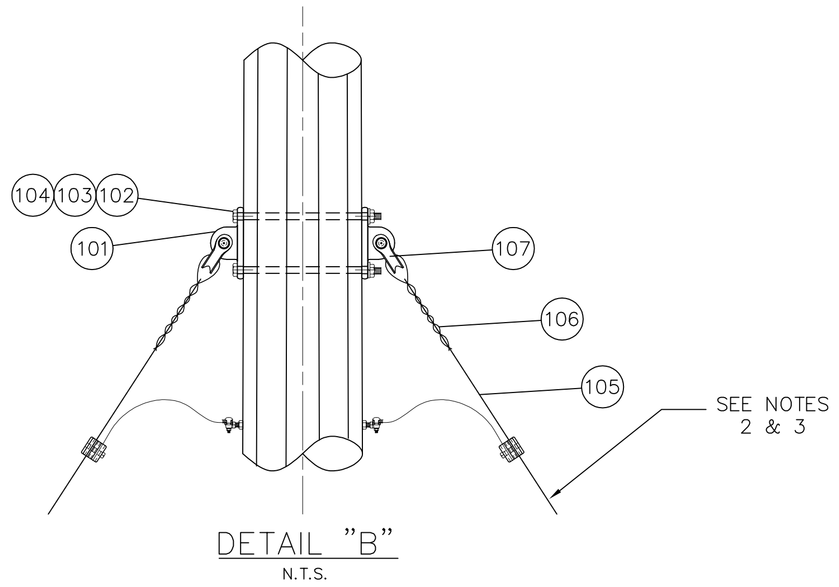


DETAIL "A"
N.T.S.



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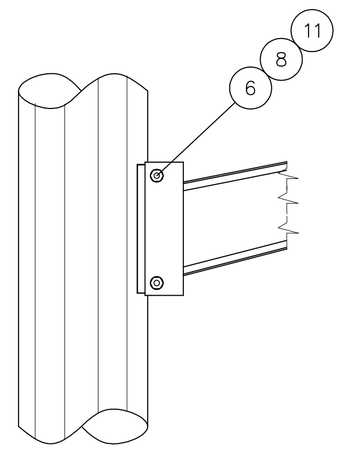
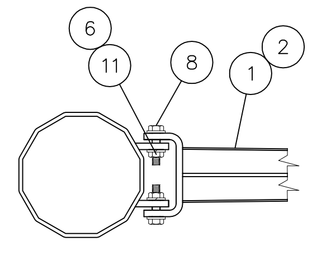


DETAIL "C"
DAVIT VANG CONNECTION
N.T.S.



SECTION "C-C"
DAVIT VANG CONNECTION
N.T.S.

BILL OF MATERIAL

ITEM	STOCK NO.	QUANT.	DESCRIPTION
1	NONSTOCK	2	ARM STEEL DAVIT 7'-6" LONG
2	NONSTOCK	1	ARM STEEL DAVIT 6'-6" LONG
3	30-07-102	3	CLAMP, SUSP 1.40-2.13 AL, 25,000# W/SOCKET
4	NONSTOCK	1	CLAMP, SUSP OPGW
5	30-23-141	3	INSUL, SUSP UNIT 115KV PLYMER 25000# SML
6	NONSTOCK	12	VALMONT #131650 WASHER, LOCK 1 1/4" BARE A563
7	30-37-181	3	ROD, ARMOR PRESHAPED 1033.5 ACSR ORTOLAN
8	NONSTOCK	12	VALMONT #163360 BOLT 1 3/4" X 3 1/2" BARE A325
9	30-11-024	1	CLEVIS, Y W/EYE 30000#
10	NONSTOCK	1	POLE, WEATHERED STEEL (SEE P&P FOR HEIGHT & CLASS)

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)

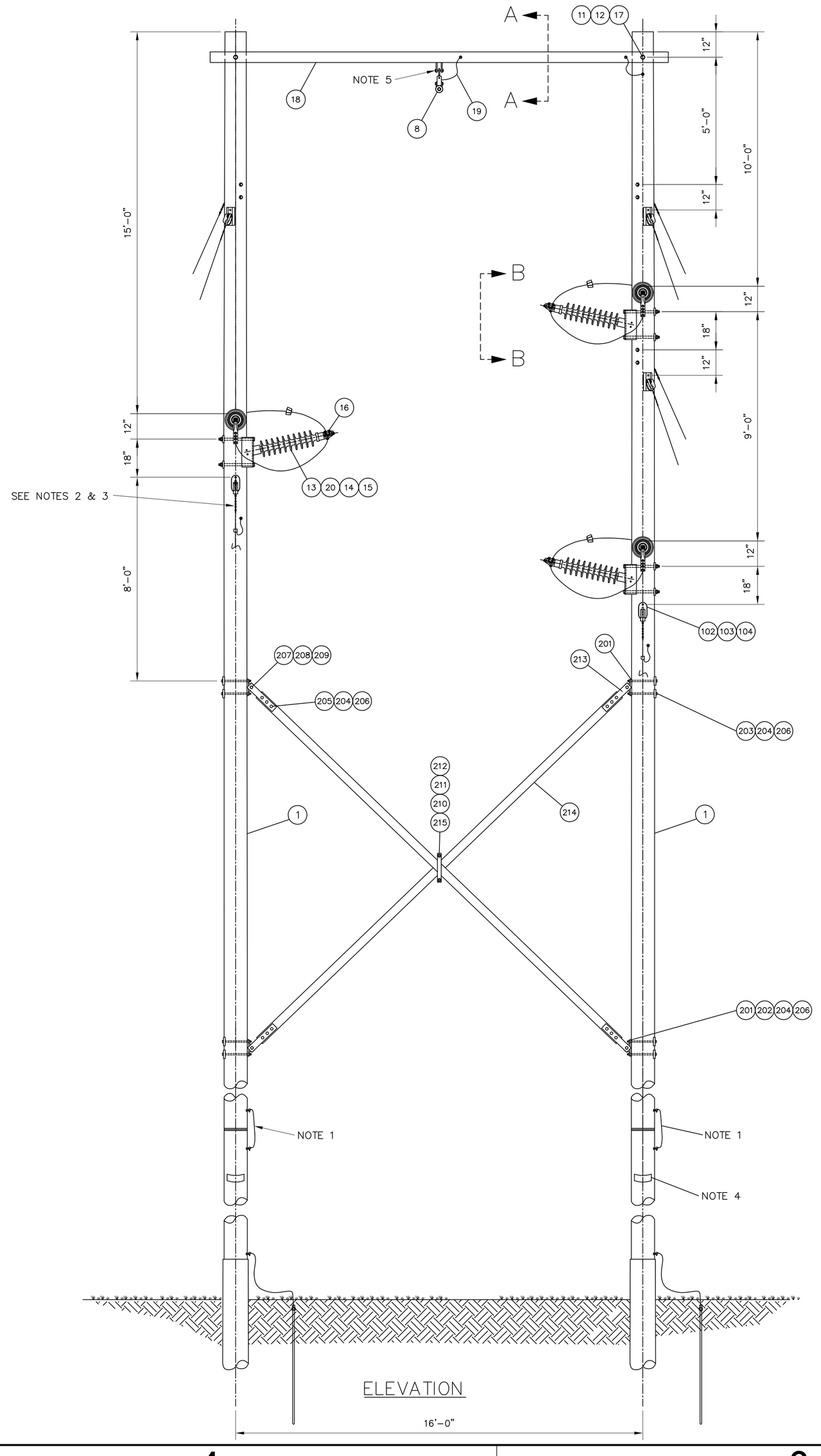
ITEM	STOCK NO.	QUANT.	DESCRIPTION
101	30-11-041	1	TEE, DEAD END, 60K LBS., F/STEEL POLES
102	31-04-063	2	BOLT, MACHINE 3/4 X 14
103	31-49-039	2	WASHER, ROUND LOCK 3/4"
104	31-49-020	2	WASHER, ROUND FLAT 3/4"ID X 2"OD
105	30-50-136	25#	WIRE, STL, BARE 7/16 EHS GALV 20800#
106	30-07-116	2	GRIP, DE, PRESH 39 GREEN 7/16 STEEL
107	31-11-040	1	CLEVIS, THIMBLE 1" GROOVE

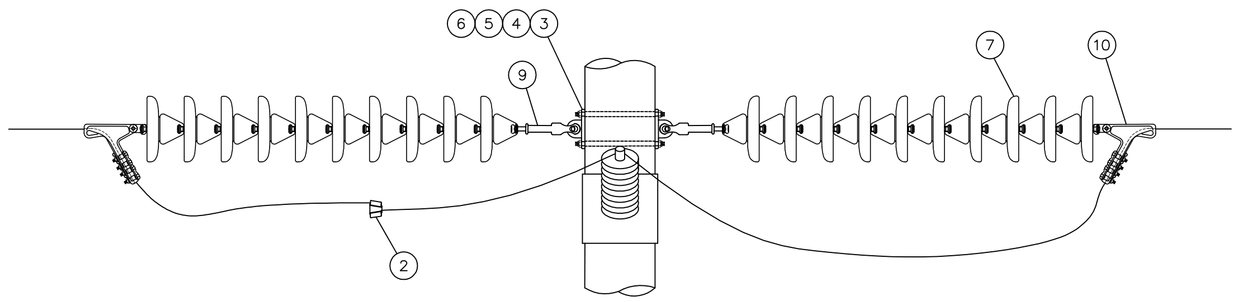
NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA-4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA-3, FOR GUY GROUNDING.
3. REFER TO P&P, FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01-03-006.0, FOR POLE TAG DETAIL.
5. DAVIT ARMS ATTACH USING PRE-FABRICATED VANGS.

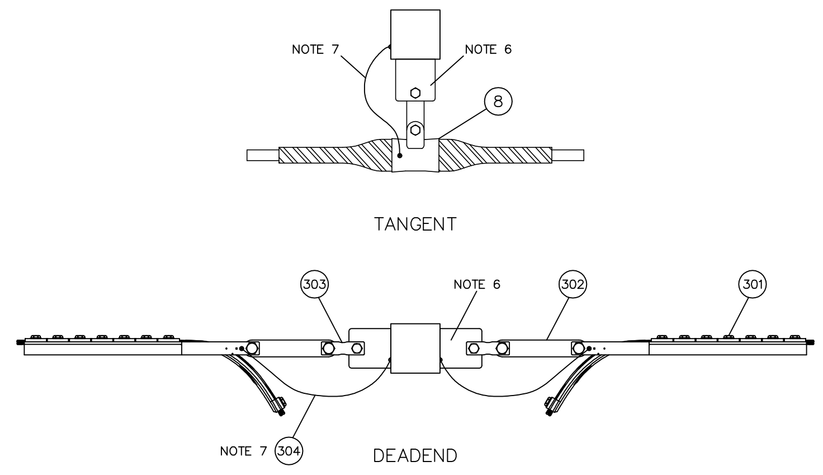
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.	SCALE AS NOTED	
PLEASANT VALLEY-TODD HILL-FISHKILL PLAINS	DATE 4-28-14	
	REV.NO.	
"A & C" 115kV LINES	FILE NO.	
TANGENT STEEL DAVIT STRUCTURE	51	C
W.O.NO. 7836A		
PROJ.NO.	CLEARED	14X1
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY







BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN, WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14"
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

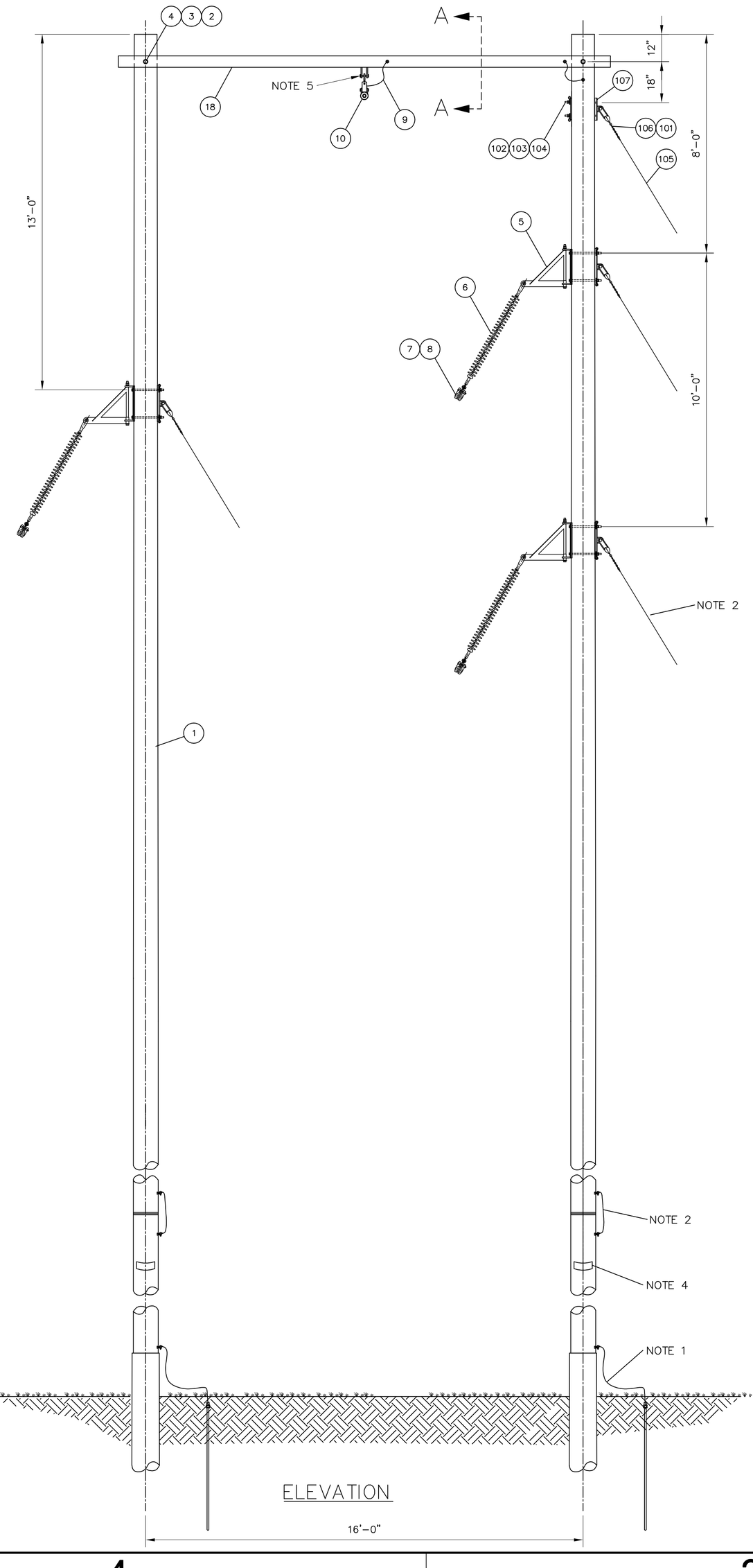
STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

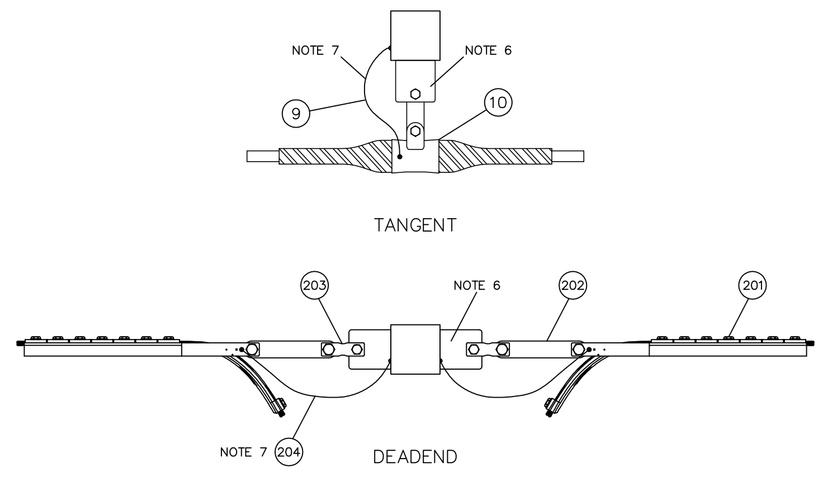
NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE 4–28–14
		REV.NO.
"A & C" 115kV LINES		FILE NO.
INLINE DEADEND STEEL STRUCTURE		51 C
W.O.NO. 7836A		14X2
PROJ.NO.	CLEARED	
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY





VIEW A–A
NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	1	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	31–04–191	2	PC	CONN WEDGE, (BURNDY CAT# WCY91)
3	31–49–021	2	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–49–199	2	PC	WASHER, ROUND LOCK 1"
5	30–06–062	3	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	30–23–141	3	PC	WASHER, ROUND LOCK 3/4"
7	30–37–181	3	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	30–07–102	3	PC	CLAMP, SUSP 1.40–2.13 AL 25000# W/SOCKT
9	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
10	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

STANDARD DEADEND ASSEMBLY BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
201	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
202	NONSTOCK	1	PC	10" LINK PLATE
203	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
204	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT
7. SEE DWG. 51–C–14XX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.

PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS

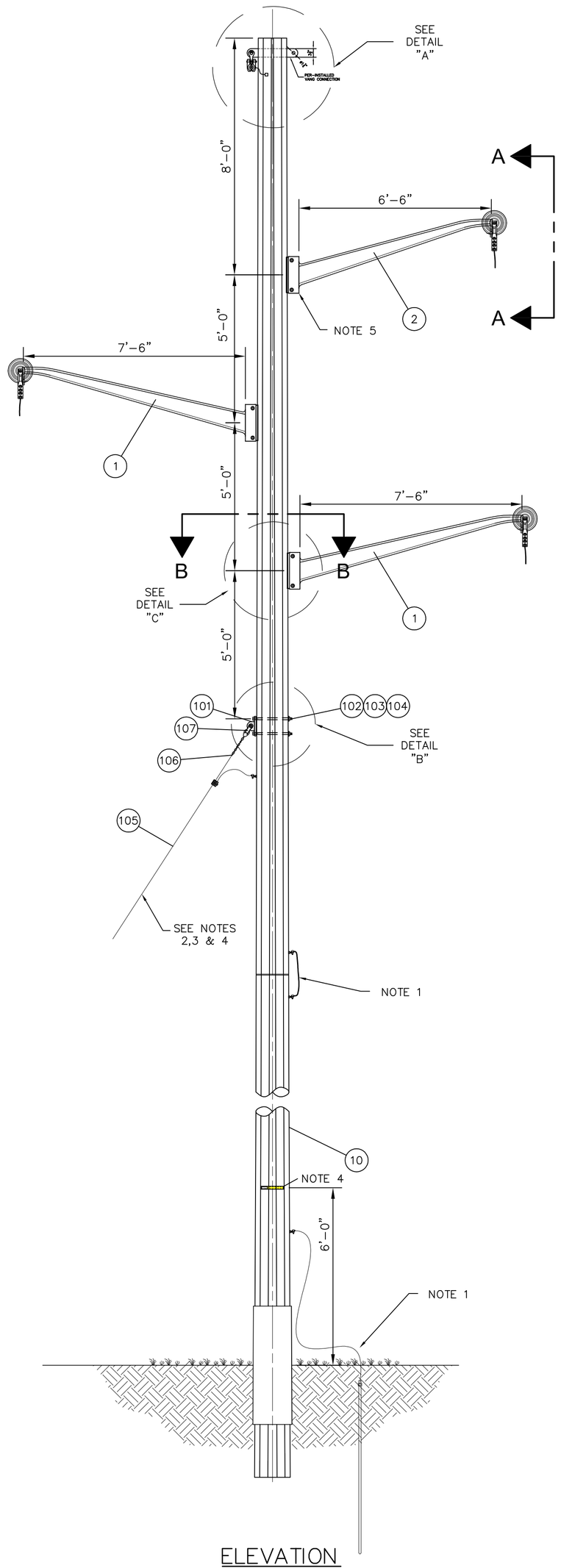
"A & C" 115kV LINES

TWO POLE SWING ANGLE LEFT STRUCTURE

W.O.NO.	7836A		
PROJ.NO.		CLEARED	
DRAFTER	SMK	APPROVED	
DRFT.SUPV.		APPROVED	

SCALE AS NOTED
DATE 4–28–14
REV.NO.
FILE NO.
51 C
14X3
SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY



ELEVATION
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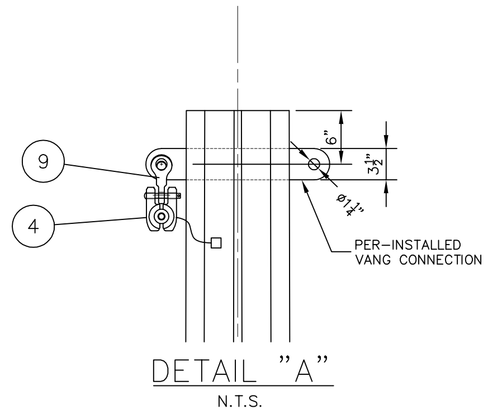

DETAIL "A"
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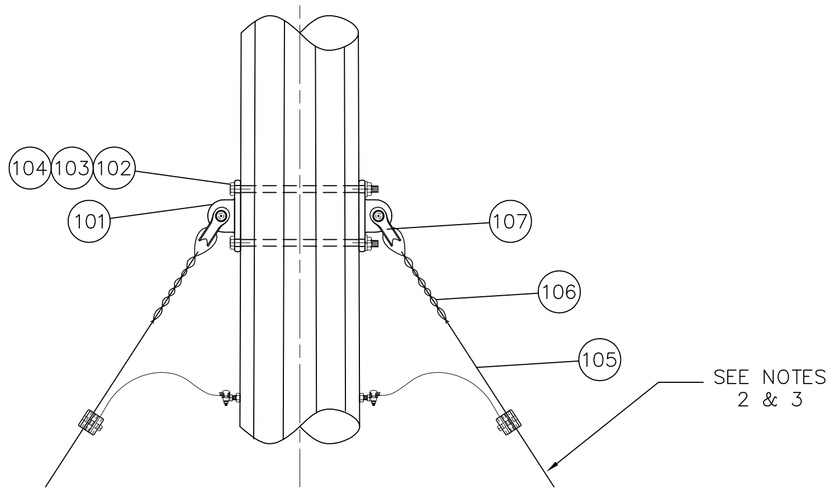

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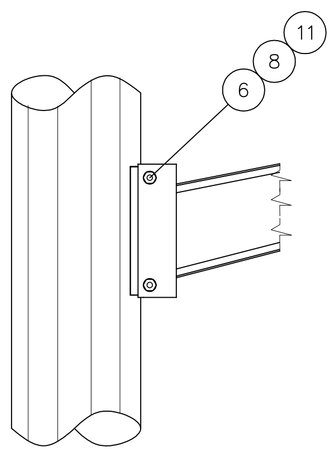
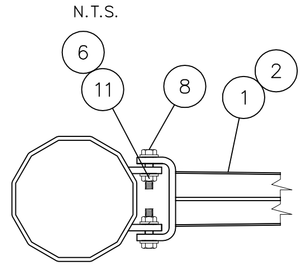


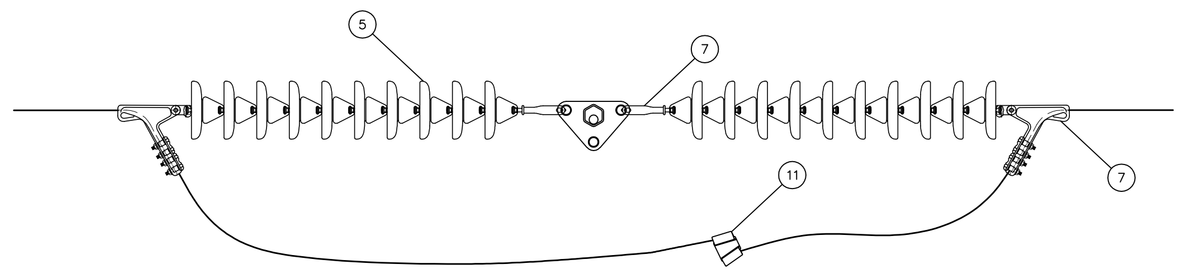
DETAIL "C"
DAVIT VANG CONNECTION
N.T.S.



SECTION "B–B"
DAVIT VANG CONNECTION
N.T.S.

BILL OF MATERIAL			
ITEM	STOCK NO.	QUANT.	DESCRIPTION
1	NONSTOCK	2	ARM STEEL DAVIT 7'–6" LONG
2	NONSTOCK	1	ARM STEEL DAVIT 6'–6" LONG
3	30–07–130	3	CLAMP, STRAIN W/ SOCKET 1.18–1.55 AL
4	NONSTOCK	1	CLAMP, SUSP OPGW
5	30–23–123	3	INSUL, SUSP 10" 30000# GRY ANSI 52–5
6	NONSTOCK	12	VALMONT #131650 WASHER, LOCK 1¼" BARE A563
7	30–11–028	3	CLEVIS, Y W/BALL
8	NONSTOCK	12	VALMONT #163360 BOLT 1½" X 3½" BARE A325
9	30–11–024	1	CLEVIS, Y W/EYE 30000#
10	NONSTOCK	1	POLE, WEATHERED STEEL (SEE P&P FOR HEIGHT & CLASS)
11	30–07–230	3	CONN, WEDGE 1073 ACSR RUN, 1033 ACSR TAP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)			
ITEM	STOCK NO.	QUANT.	DESCRIPTION
101	30–11–041	1	TEE, DEAD END, 60K LBS., F/STEEL POLES
102	31–04–063	2	BOLT, MACHINE 3/4 X 14
103	31–49–039	2	WASHER, ROUND LOCK 3/4"
104	31–49–020	2	WASHER, ROUND FLAT 3/4"ID X 2"OD
105	30–50–136	25#	WIRE, STL, BARE 7/16 EHS GALV 20800#
106	30–07–116	2	GRIP, DE, PRESH 39 GREEN 7/16 STEEL
107	31–11–040	1	CLEVIS, THIMBLE 1" GROOVE



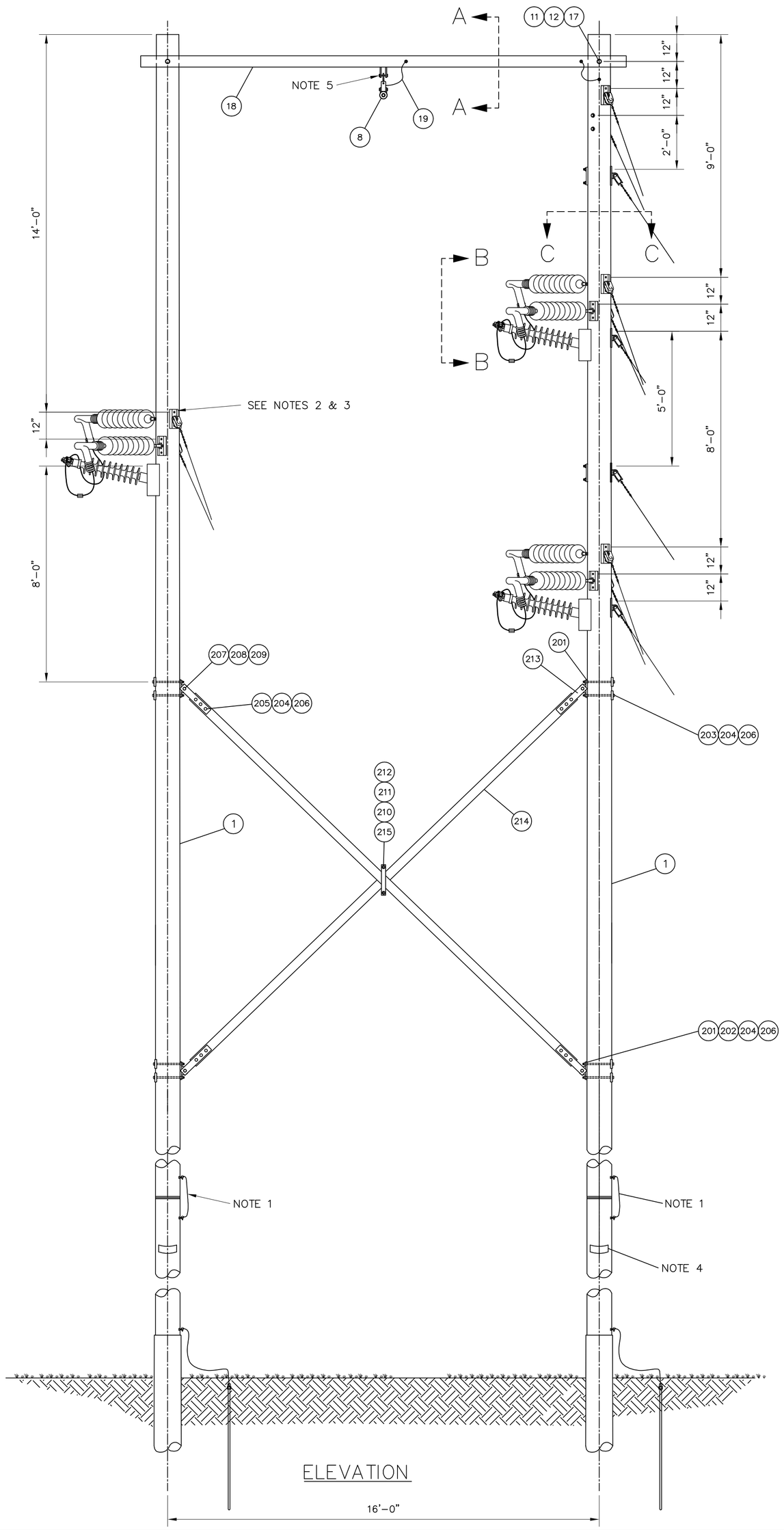
SECTION "A–A"
DAVIT VANG CONNECTION
N.T.S.

NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P, FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. DAVIT ARMS ATTACH USING PRE–FABRICATED VANGS.

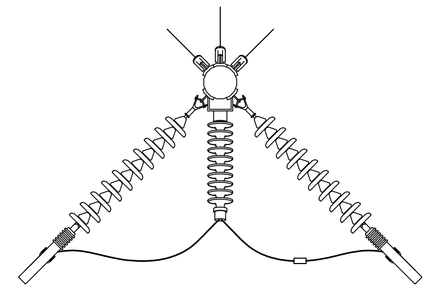
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED	
PLEASANT VALLEY – TODD HILL – FISHKILL PLAINS		DATE 4–28–14	
		REV.NO.	
"A & C" 115kV LINES		FILE NO.	
DEADEND STEEL DAVIT STRUCTURE		51	C
W.O.NO. 78364		14X4	
PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO.	OF

CAD DRAWING
DO NOT REVISE MANUALLY

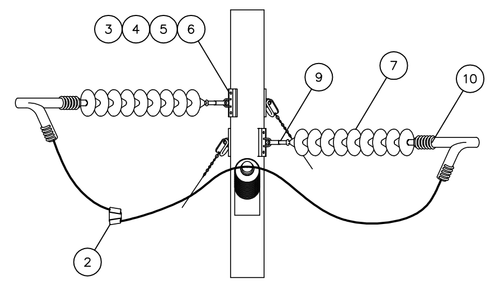


ELEVATION



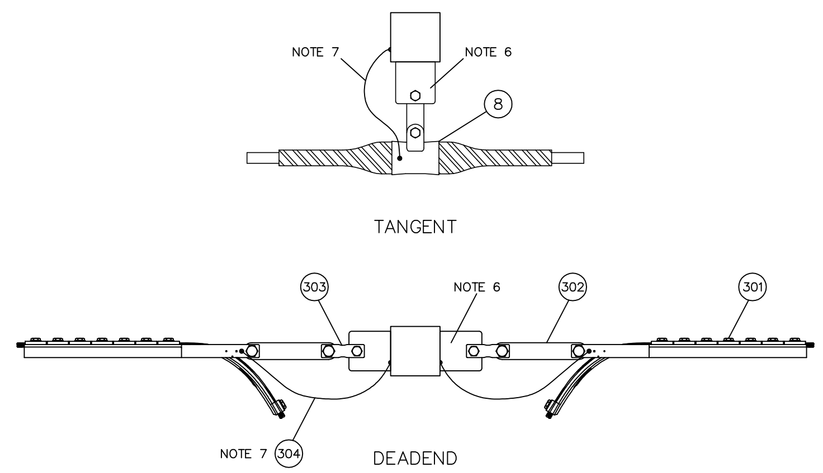
VIEW C–C

NTS



VIEW B–B

NTS



VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14"
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

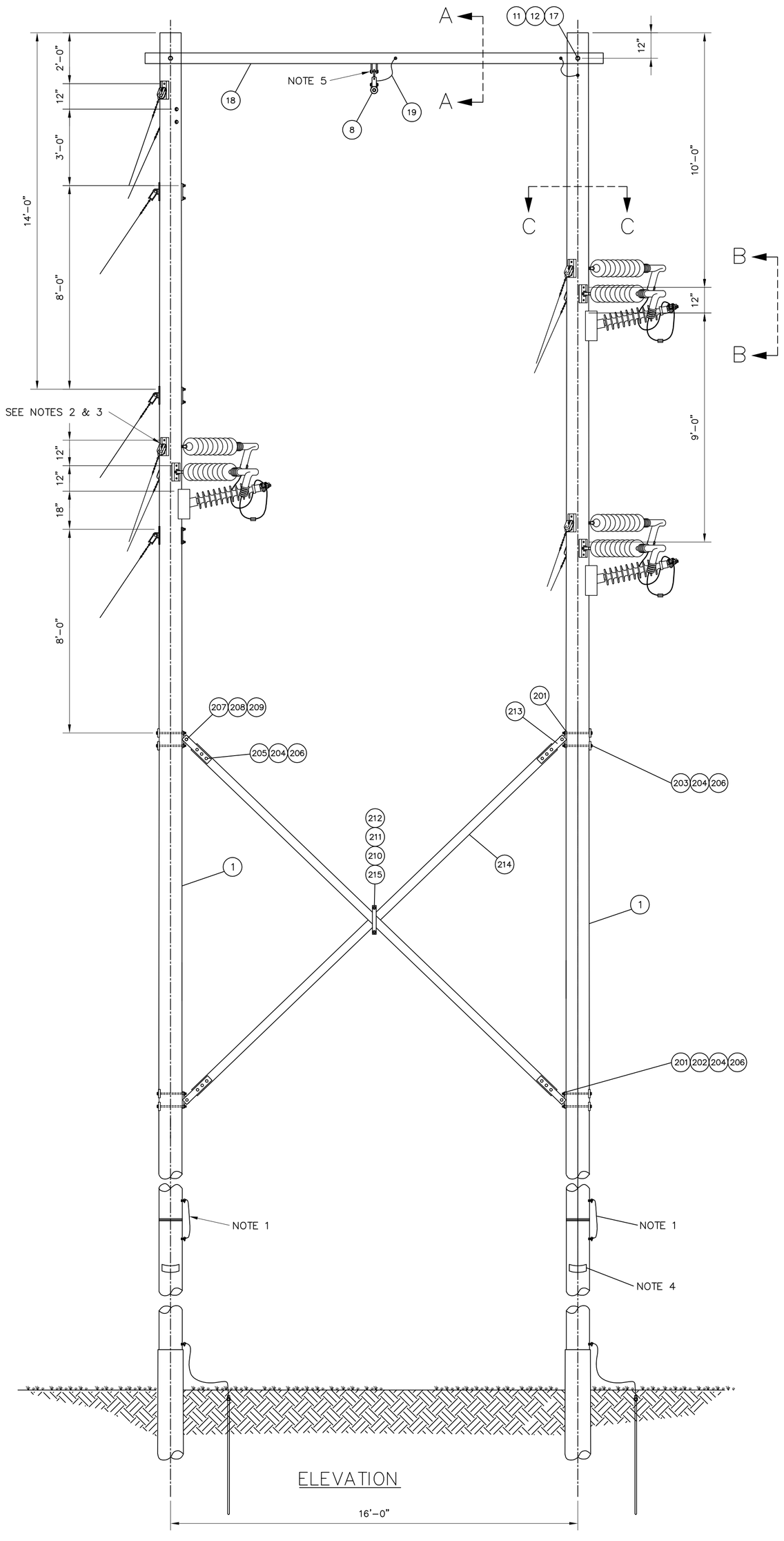
NOTES:

1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

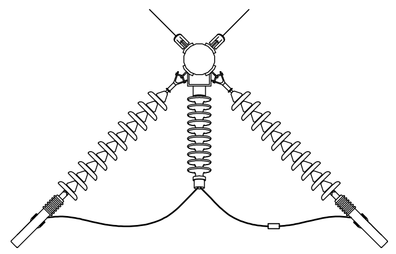
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE 4–28–14
		REV.NO.
"A & C" 115kV LINES		FILE NO.
DEADEND LEFT ANGLE STEEL STRUCTURE		51 C
W.O.NO. 7836A		14X5
PROJ.NO.	CLEARED	
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY

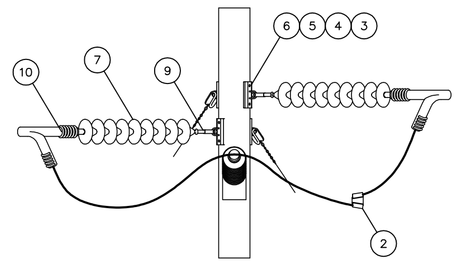


ELEVATION



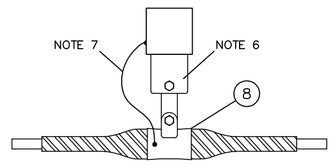
VIEW C–C

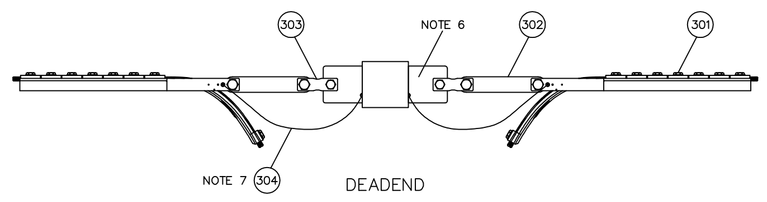
NTS



VIEW B–B

NTS





VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN, WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14'
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

NOTES:

1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.

PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS

"A & C" 115kV LINES

DEADEND RIGHT ANGLE STEEL STRUCTURE

W.O.NO.	7836A	
PROJ.NO.		CLEARED
DRAFTER	SMK	APPROVED
DRFT.SUPV.		APPROVED

SCALE AS NOTED

DATE 4–28–14

REV.NO.

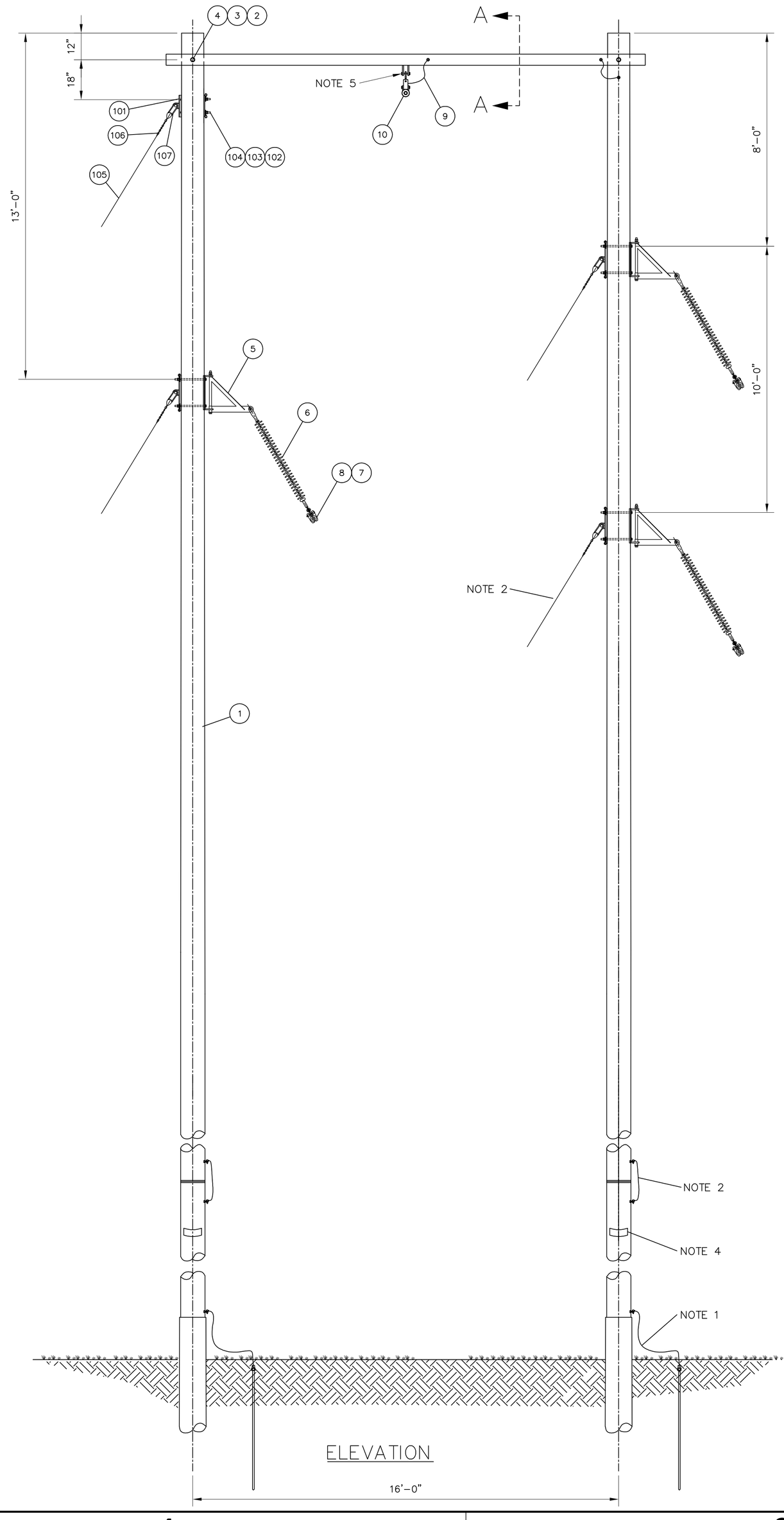
FILE NO.

51 C

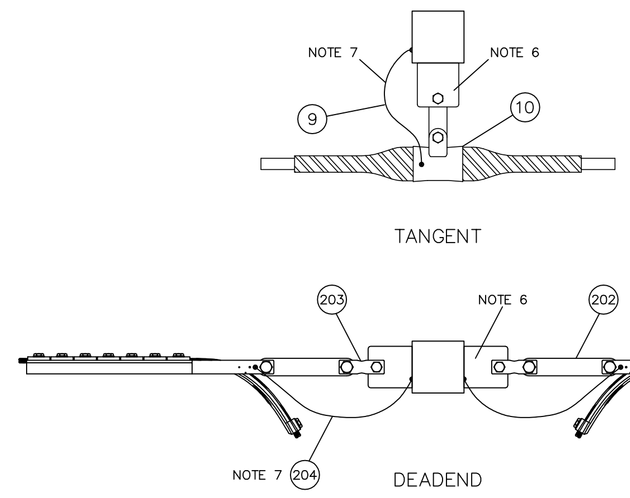
14X6

SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY



ELEVATION



TANGENT

VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	1	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	31–04–191	2	PC	CONN WEDGE, (BURNDY CAT# WCY91)
3	31–49–021	2	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–49–199	2	PC	WASHER, ROUND LOCK 1"
5	30–06–062	3	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	30–23–141	3	PC	WASHER, ROUND LOCK 3/4"
7	30–37–181	3	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	30–07–102	3	PC	CLAMP, SUSP 1.40–2.13 AL 25000# W/SOCKT
9	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
10	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

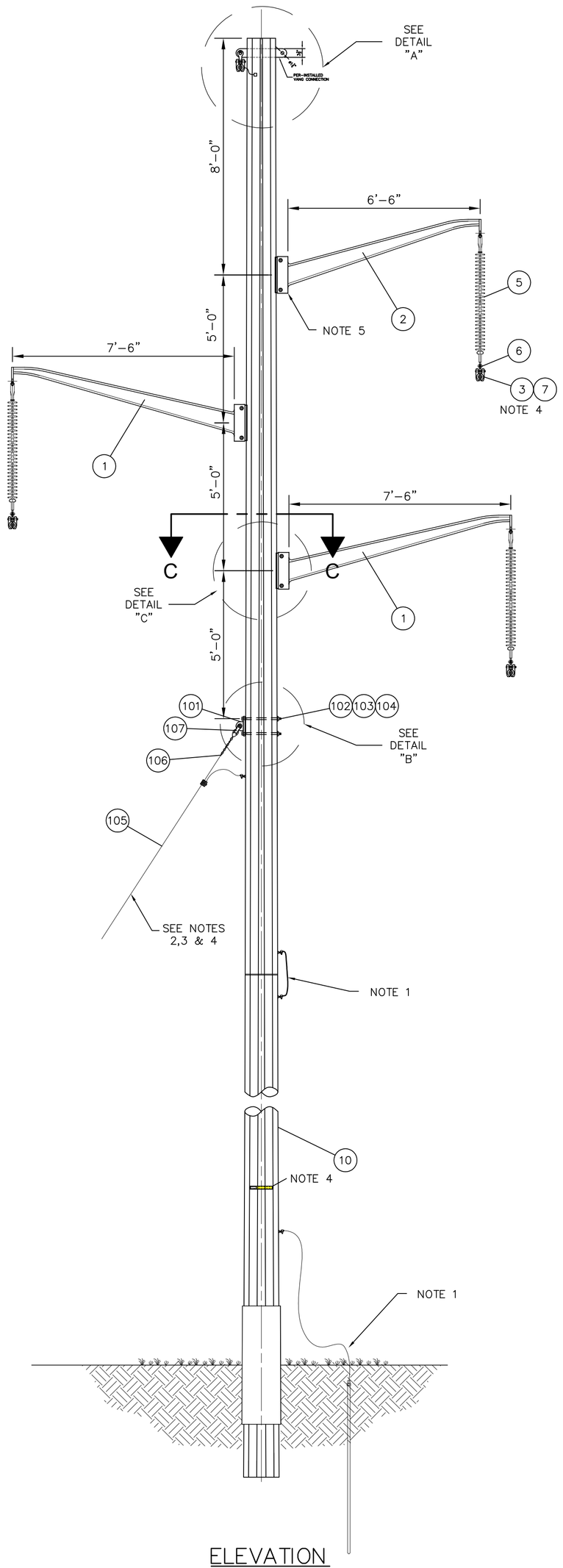
STANDARD DEADEND ASSEMBLY BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
201	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
202	NONSTOCK	1	PC	10" LINK PLATE
203	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
204	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT
7. SEE DWG. 51–C–14XX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE	AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE	4–28–14
		REV.NO.	
"A & C" 115kV LINES		FILE NO.	
TWO POLE SWING ANGLE RIGHT STRUCTURE		51	C
W.O.NO. 7836A		14X7	
PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO.	OF

CAD DRAWING
DO NOT REVISE MANUALLY



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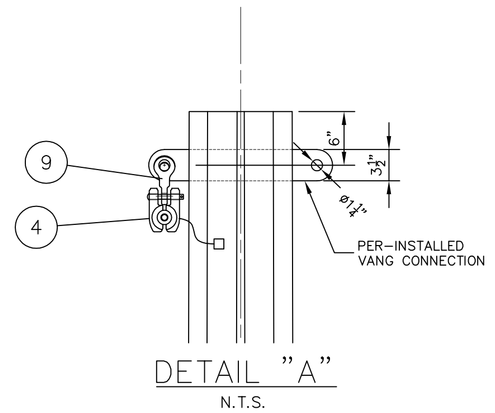
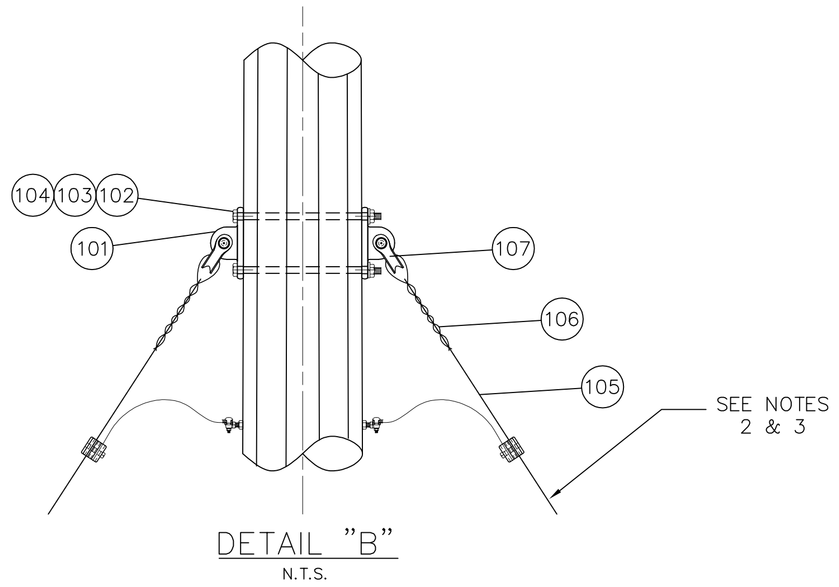


DETAIL "A"
N.T.S.



DETAIL "B"
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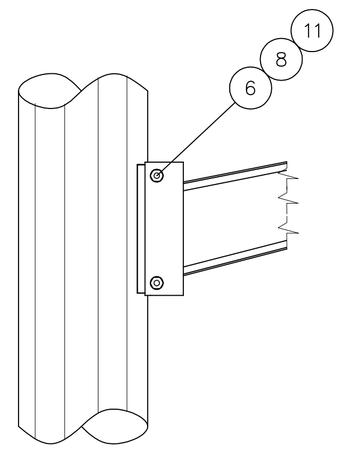
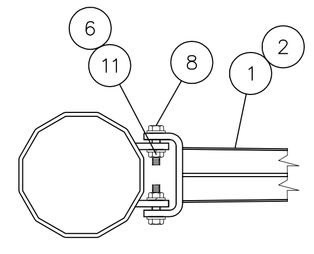


DETAIL "C"
DAVIT VANG CONNECTION
N.T.S.



SECTION "C-C"
DAVIT VANG CONNECTION
N.T.S.

BILL OF MATERIAL

ITEM	STOCK NO.	QUANT.	DESCRIPTION
1	NONSTOCK	2	ARM STEEL DAVIT 7'-6" LONG
2	NONSTOCK	1	ARM STEEL DAVIT 6'-6" LONG
3	30-07-102	3	CLAMP, SUSP 1.40-2.13 AL, 25,000# W/SOCKET
4	NONSTOCK	1	CLAMP, SUSP OPGW
5	30-23-141	3	INSUL, SUSP UNIT 115KV PLYMER 25000# SML
6	NONSTOCK	12	VALMONT #131650 WASHER, LOCK 1 1/4" BARE A563
7	30-37-181	3	ROD, ARMOR PRESHAPED 1033.5 ACSR ORTOLAN
8	NONSTOCK	12	VALMONT #163360 BOLT 1 3/4" X 3 1/2" BARE A325
9	30-11-024	1	CLEVIS, Y W/EYE 30000#
10	NONSTOCK	1	POLE, WEATHERED STEEL (SEE P&P FOR HEIGHT & CLASS)

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)

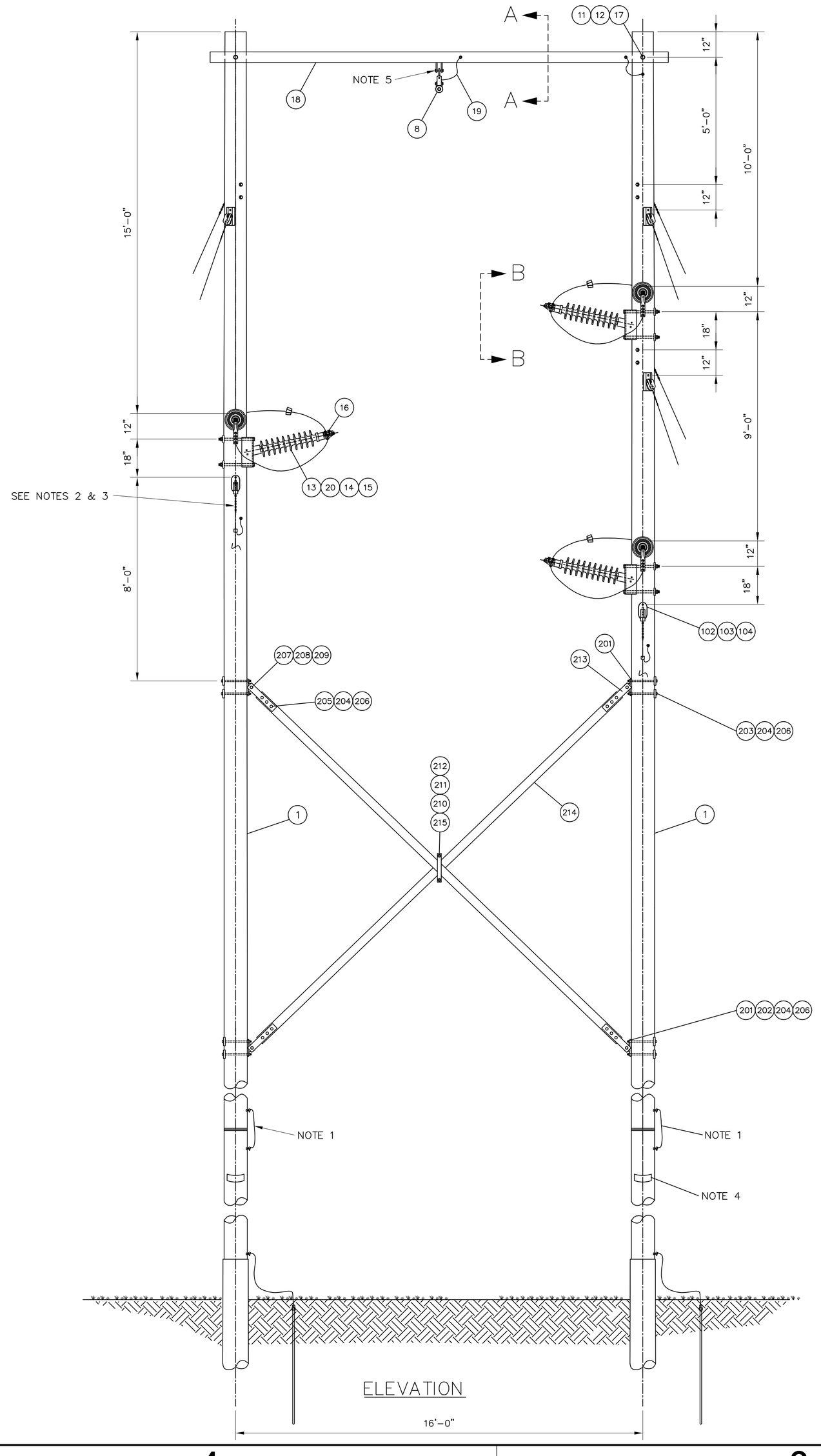
ITEM	STOCK NO.	QUANT.	DESCRIPTION
101	30-11-041	1	TEE, DEAD END, 60K LBS., F/STEEL POLES
102	31-04-063	2	BOLT, MACHINE 3/4 X 14
103	31-49-039	2	WASHER, ROUND LOCK 3/4"
104	31-49-020	2	WASHER, ROUND FLAT 3/4"ID X 2"OD
105	30-50-136	25#	WIRE, STL, BARE 7/16 EHS GALV 20800#
106	30-07-116	2	GRIP, DE, PRESH 39 GREEN 7/16 STEEL
107	31-11-040	1	CLEVIS, THIMBLE 1" GROOVE

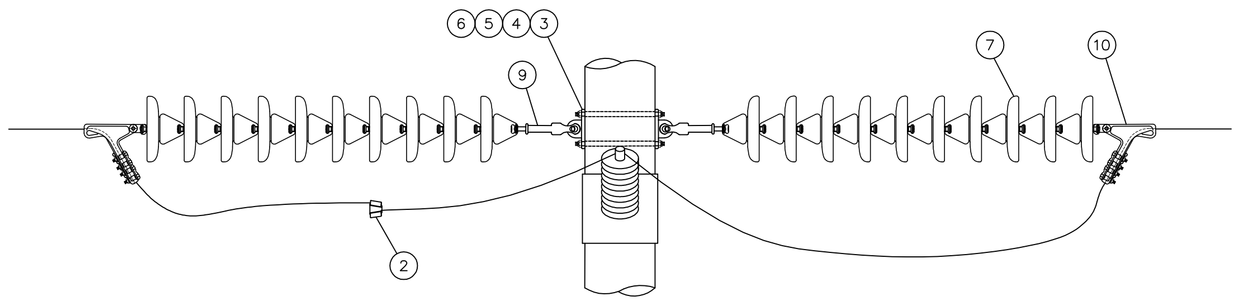
NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA-4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA-3, FOR GUY GROUNDING.
3. REFER TO P&P, FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01-03-006.0, FOR POLE TAG DETAIL.
5. DAVIT ARMS ATTACH USING PRE-FABRICATED VANGS.

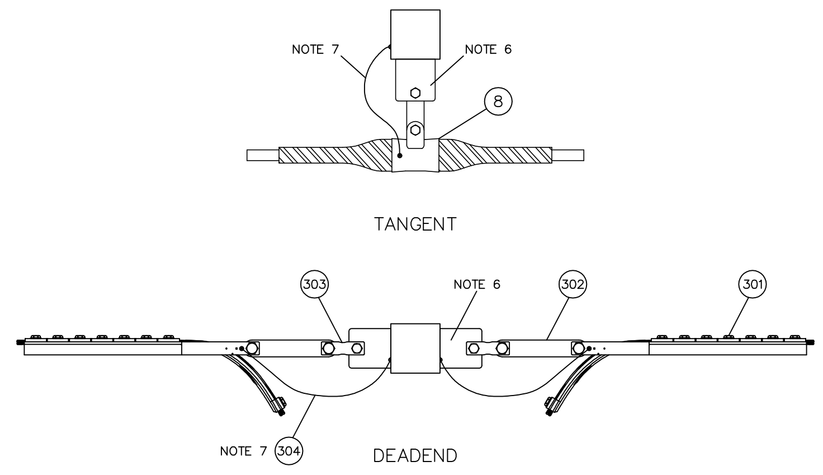
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.	SCALE AS NOTED	
PLEASANT VALLEY-TODD HILL-FISHKILL PLAINS	DATE 4-28-14	
	REV.NO.	
"A & C" 115kV LINES	FILE NO.	
TANGENT STEEL DAVIT STRUCTURE	51	C
W.O.NO. 7836A		
PROJ.NO.	CLEARED	14X1
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY







BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN, WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14"
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

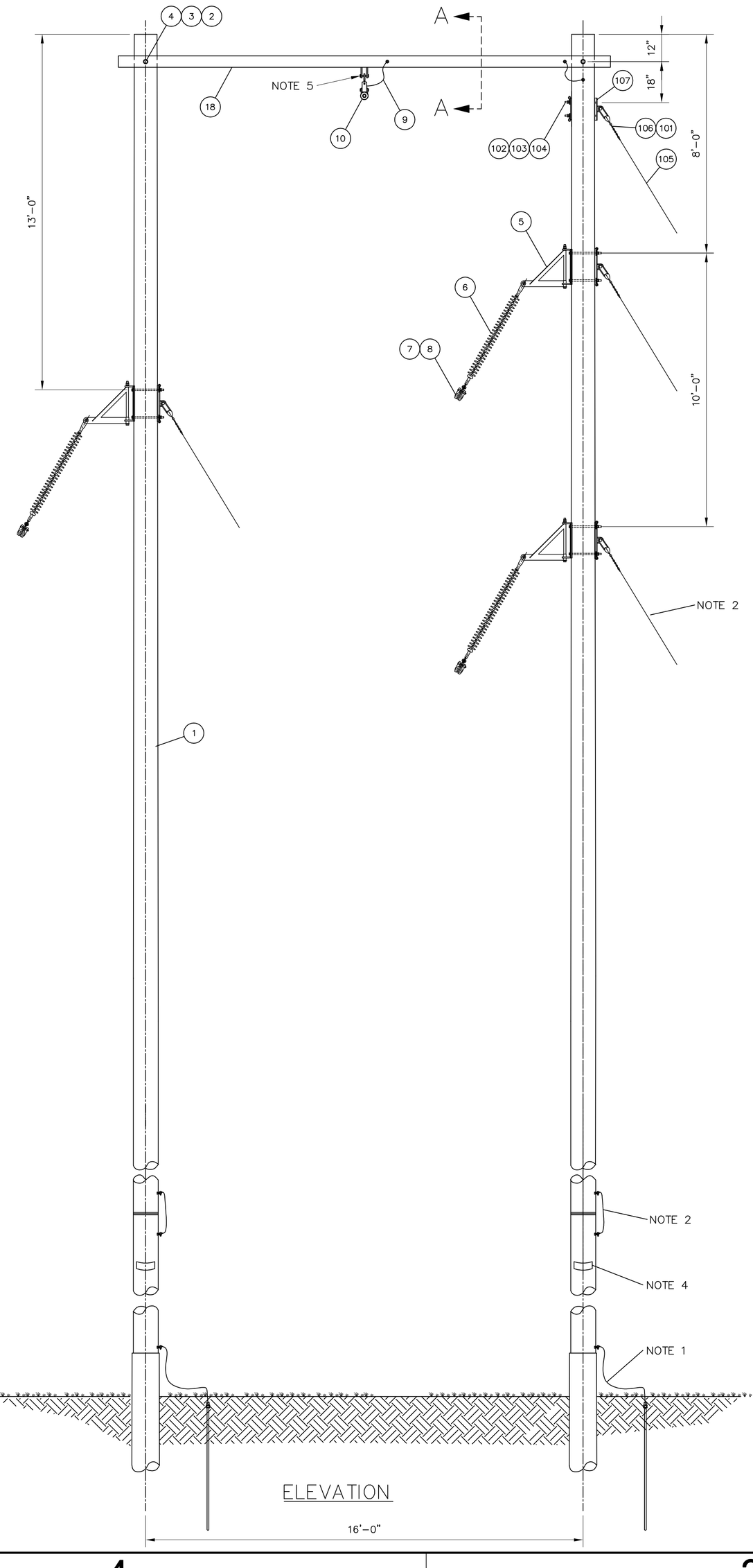
STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

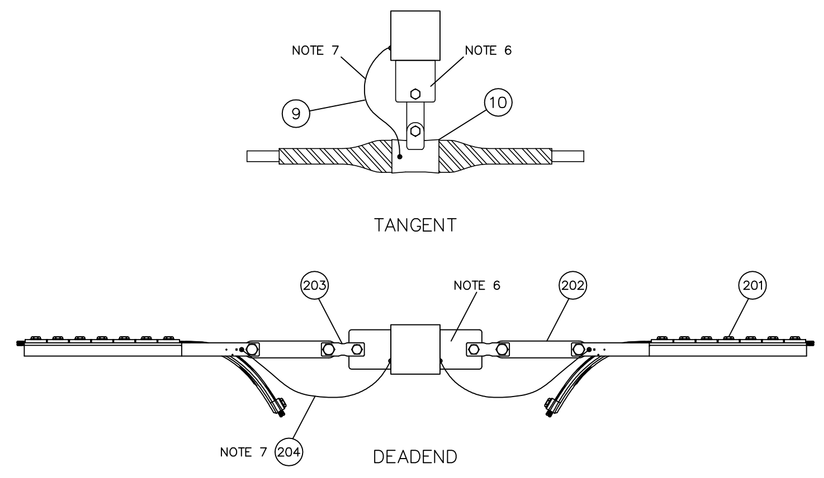
NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE 4–28–14
		REV.NO.
"A & C" 115kV LINES		FILE NO.
INLINE DEADEND STEEL STRUCTURE		51 C
W.O.NO. 7836A		14X2
PROJ.NO.	CLEARED	
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY





VIEW A–A
NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	1	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	31–04–191	2	PC	CONN WEDGE, (BURNDY CAT# WCY91)
3	31–49–021	2	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–49–199	2	PC	WASHER, ROUND LOCK 1"
5	30–06–062	3	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	30–23–141	3	PC	WASHER, ROUND LOCK 3/4"
7	30–37–181	3	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	30–07–102	3	PC	CLAMP, SUSP 1.40–2.13 AL 25000# W/SOCKT
9	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
10	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

STANDARD DEADEND ASSEMBLY BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
201	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
202	NONSTOCK	1	PC	10" LINK PLATE
203	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
204	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT
7. SEE DWG. 51–C–14XX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.

PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS

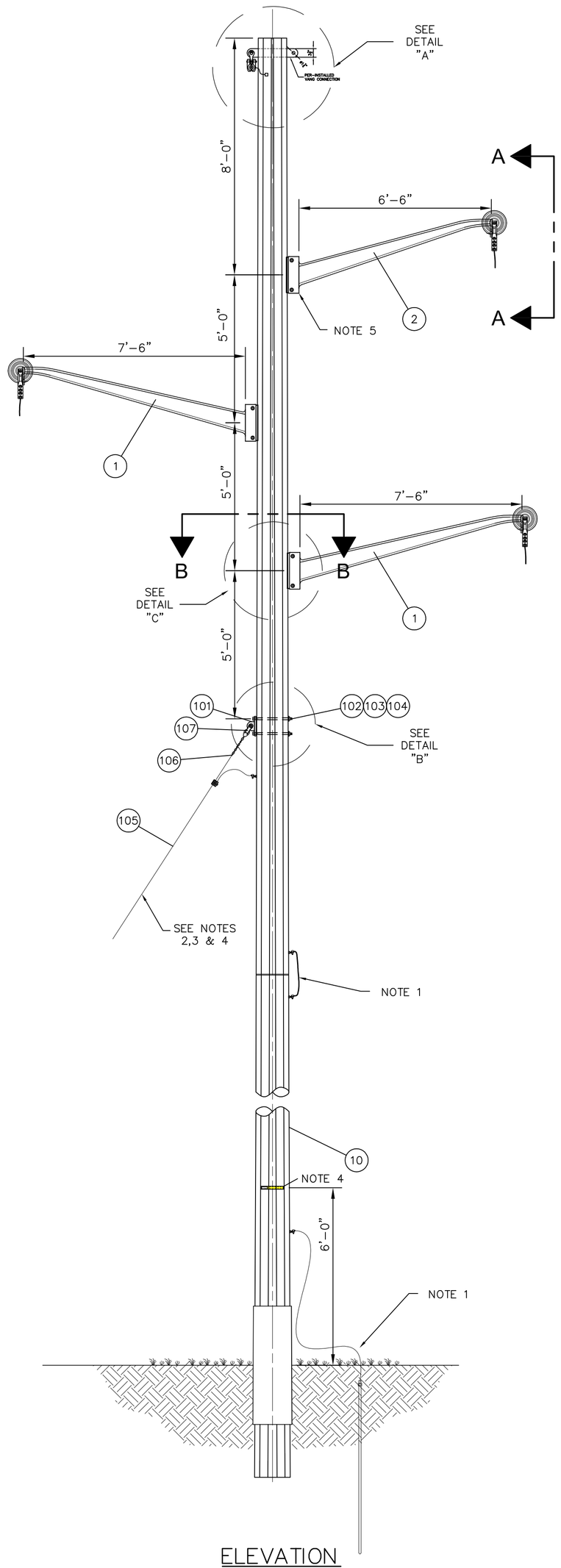
"A & C" 115kV LINES

TWO POLE SWING ANGLE LEFT STRUCTURE

W.O.NO.	7836A		
PROJ.NO.		CLEARED	
DRAFTER	SMK	APPROVED	
DRFT.SUPV.		APPROVED	

SCALE AS NOTED
DATE 4–28–14
REV.NO.
FILE NO.
51 C
14X3
SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY



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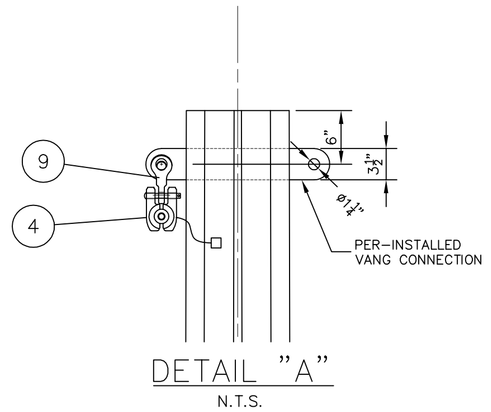

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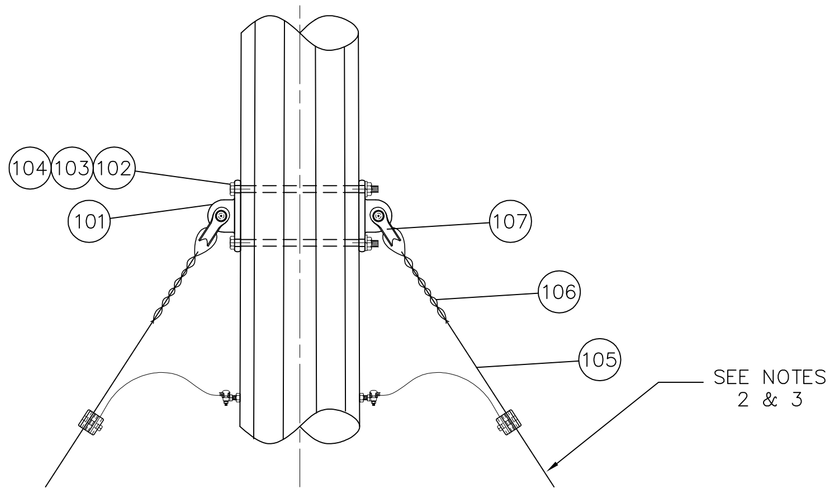

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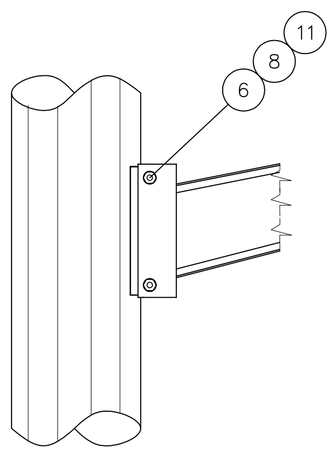
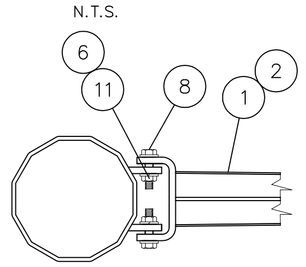


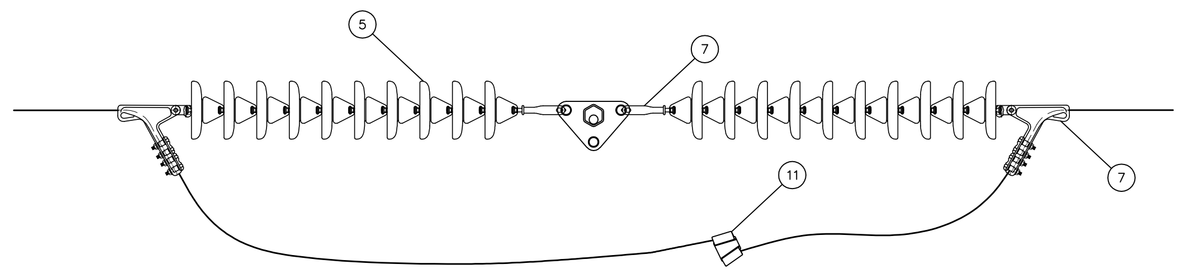
DETAIL "C"
DAVIT VANG CONNECTION
N.T.S.



SECTION "B–B"
DAVIT VANG CONNECTION
N.T.S.

BILL OF MATERIAL			
ITEM	STOCK NO.	QUANT.	DESCRIPTION
1	NONSTOCK	2	ARM STEEL DAVIT 7'–6" LONG
2	NONSTOCK	1	ARM STEEL DAVIT 6'–6" LONG
3	30–07–130	3	CLAMP, STRAIN W/ SOCKET 1.18–1.55 AL
4	NONSTOCK	1	CLAMP, SUSP OPGW
5	30–23–123	3	INSUL, SUSP 10" 30000# GRY ANSI 52–5
6	NONSTOCK	12	VALMONT #131650 WASHER, LOCK 1¼" BARE A563
7	30–11–028	3	CLEVIS, Y W/BALL
8	NONSTOCK	12	VALMONT #163360 BOLT 1½" X 3½" BARE A325
9	30–11–024	1	CLEVIS, Y W/EYE 30000#
10	NONSTOCK	1	POLE, WEATHERED STEEL (SEE P&P FOR HEIGHT & CLASS)
11	30–07–230	3	CONN, WEDGE 1073 ACSR RUN, 1033 ACSR TAP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)			
ITEM	STOCK NO.	QUANT.	DESCRIPTION
101	30–11–041	1	TEE, DEAD END, 60K LBS., F/STEEL POLES
102	31–04–063	2	BOLT, MACHINE 3/4 X 14
103	31–49–039	2	WASHER, ROUND LOCK 3/4"
104	31–49–020	2	WASHER, ROUND FLAT 3/4"ID X 2"OD
105	30–50–136	25#	WIRE, STL, BARE 7/16 EHS GALV 20800#
106	30–07–116	2	GRIP, DE, PRESH 39 GREEN 7/16 STEEL
107	31–11–040	1	CLEVIS, THIMBLE 1" GROOVE



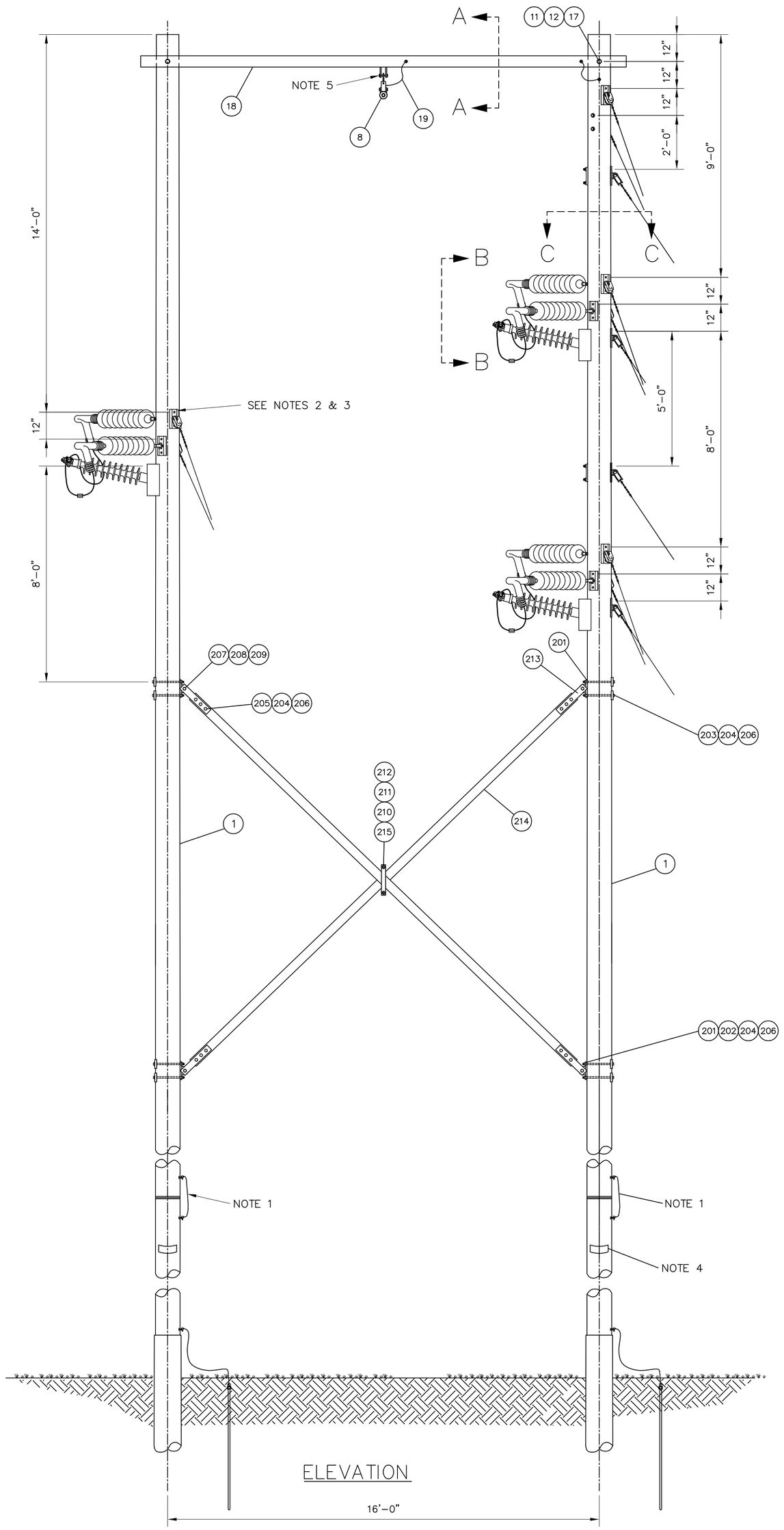
SECTION "A–A"
DAVIT VANG CONNECTION
N.T.S.

NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P, FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. DAVIT ARMS ATTACH USING PRE–FABRICATED VANGS.

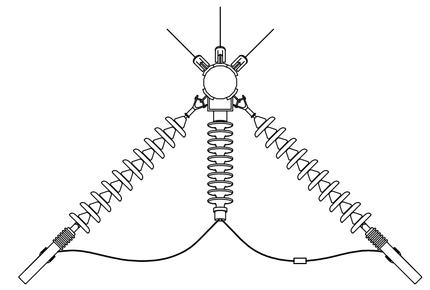
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED	
PLEASANT VALLEY – TODD HILL – FISHKILL PLAINS		DATE 4–28–14	
		REV.NO.	
"A & C" 115kV LINES		FILE NO.	
DEADEND STEEL DAVIT STRUCTURE		51	C
W.O.NO. 78364		14X4	
PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO.	OF

CAD DRAWING
DO NOT REVISE MANUALLY

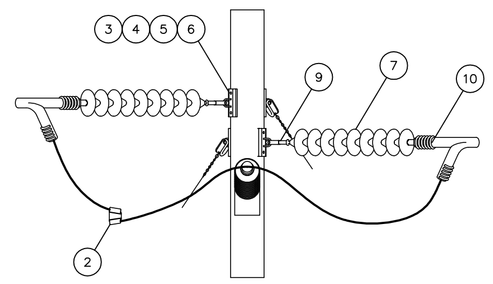


ELEVATION



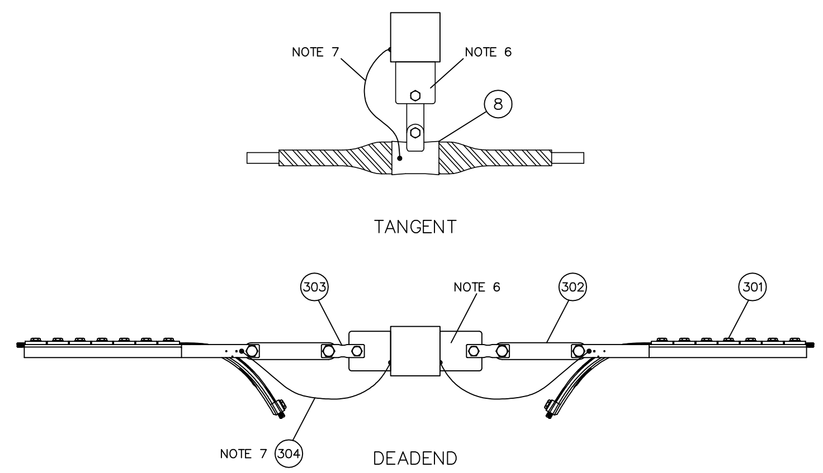
VIEW C–C

NTS



VIEW B–B

NTS



VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14"
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

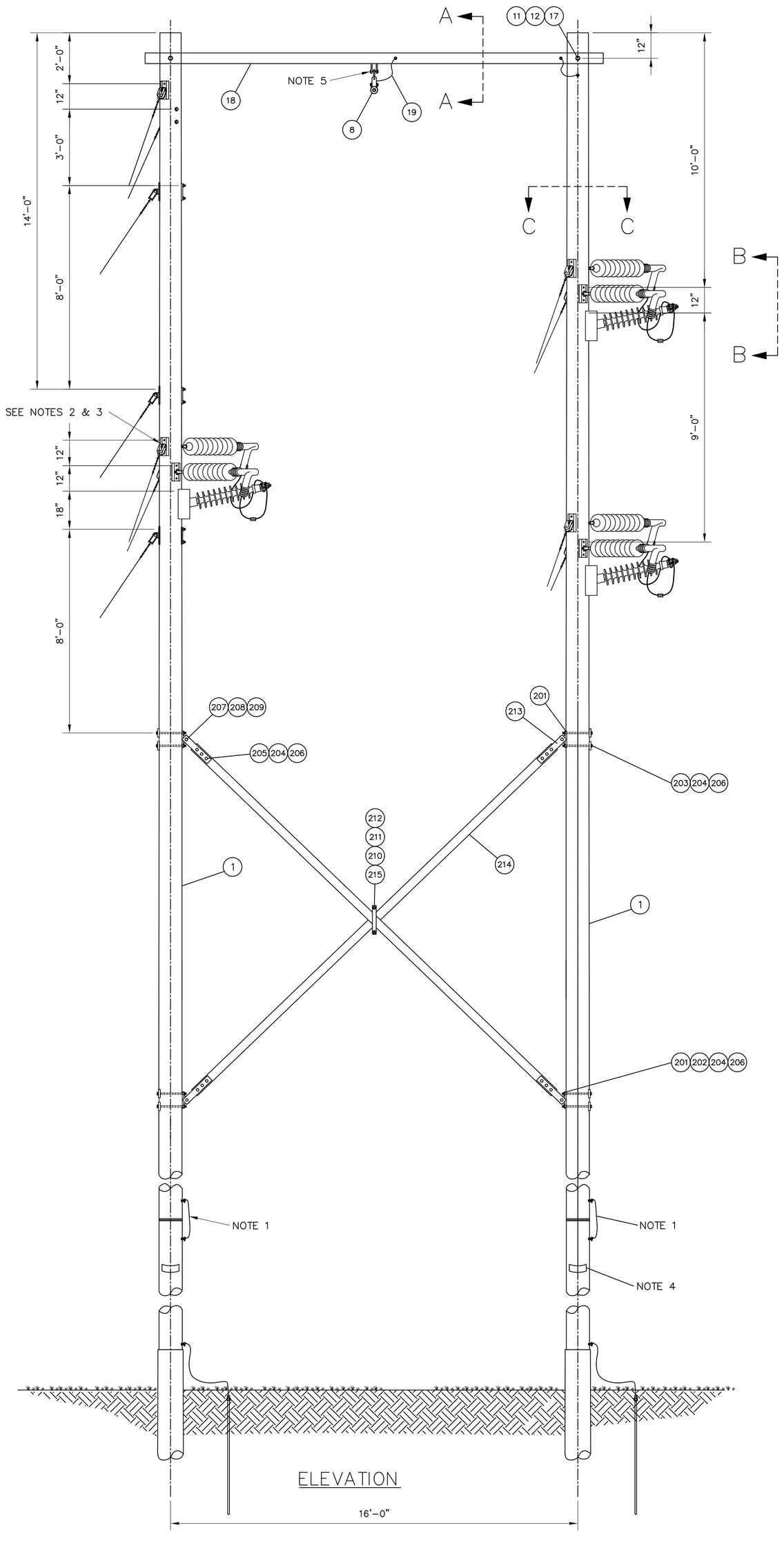
NOTES:

1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

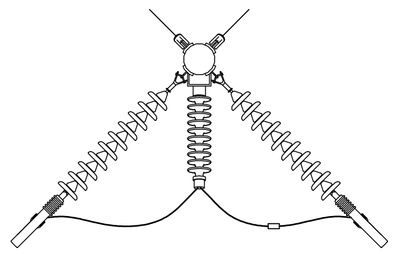
REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE 4–28–14
		REV.NO.
"A & C" 115kV LINES		FILE NO.
DEADEND LEFT ANGLE STEEL STRUCTURE		51 C
W.O.NO. 7836A		14X5
PROJ.NO.	CLEARED	
DRAFTER SMK	APPROVED	
DRFT.SUPV.	APPROVED	SH.NO. OF

CAD DRAWING
DO NOT REVISE MANUALLY

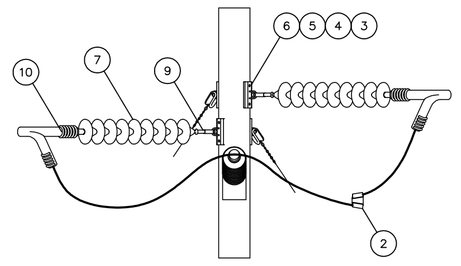


ELEVATION



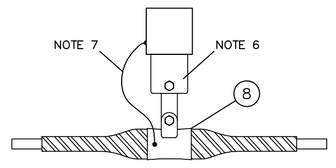
VIEW C–C

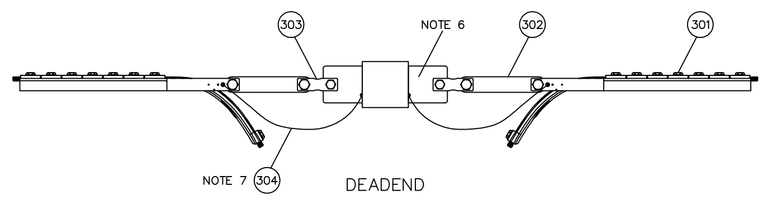
NTS



VIEW B–B

NTS





VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	2	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	30–07–230	3	PC	CONN, WEDGE, 1033 ACSR RUN, 1033 ACSR TAP
3	30–11–041	6	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–04–063	6	PC	BOLT, MACHINE 3/4" X 14'
5	31–49–020	6	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	31–49–039	6	PC	WASHER, ROUND LOCK 3/4"
7	30–23–123	60	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP
9	30–11–028	6	PC	CLEVIS,Y W/BALL
10	30–07–130	6	PC	CLAMP, STRAIN W/SOCKET 1.18–1.55 AL
11	31–04–191	2	PC	BOLT, MACHINE, 1" X 18"
12	31–49–021	2	PC	WASHER, ROUND, FLAT, 1" ID X 6" OD
13	30–23–139	3	PC	INSUL, POST CLMP HORIZ 115kV PLYMER 3300#
14	31–49–035	6	PC	WASHER, ROUND, FLAT, 1" ID X 4" OD
15	31–49–198	6	PC	WASHER, ROUND LOCK 7/8"
16	30–07–150	3	PC	CLAMP, POST INSUL, STRAIT, 1.00–1.50 AL
17	31–49–199	2	PC	WASHER, ROUND, LOCK, 1"
18	NONSTOCK	1	PC	CROSSARM, 5" X 5" X 18'
19	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
20	31–04–124	6	XX	BOLT, MACHINE 7/8" X 18"

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

BILL OF MATERIAL (X–BRACE)				
ITEM	STOCK NO.	QUANT.	UM	
201	30–11–041	4	PC	TEE DEAD END 60K LBS.F/STEEL POLES
202	31–04–061	4	PC	BOLT, MACHINE 3/4"X20"
203	31–04–059	4	PC	BOLT, MACHINE 3/4"X16"
204	31–49–020	20	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
205	31–04–195	12	PC	BOLT, MACHINE 3/4"X6"
206	31–49–039	20	PC	WASHER, ROUND LOCK 3/4"
207	31–04–145	4	PC	BOLT, MACHINE 7/8"X3"
208	31–49–198	4	PC	WASHER, ROUND LOCK 7/8"
209	31–49–035	4	PC	WASHER, ROUND FLAT 7/8"IDX3–1/2"OD
210	31–04–011	2	PC	BOLT, MACHINE 5/8"X8"
211	31–49–019	2	PC	WASHER, ROUND FLAT 5/8"IDX1–3/4"OD
212	31–49–032	2	PC	WASHER, ROUND LOCK 5/8"
213	34–79–008	4	PC	X–BRACE, MOUNTING PLATE CHG&E
214	34–79–006	2	PC	X–BRACE, 14 FT SPACING STEEL CHG&E
215	34–79–009	2	PC	X–BRACE, CENTER CLAMP CHG&E

STANDARD DEADEND ASSEMBLY				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
301	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
302	NONSTOCK	1	PC	10" LINK PLATE
303	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
304	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

NOTES:

1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT.
7. SEE DWG. 51–C–14XXX FOR OPGW GROUNDING.

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.

PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS

"A & C" 115kV LINES

DEADEND RIGHT ANGLE STEEL STRUCTURE

W.O.NO.	7836A	
PROJ.NO.		CLEARED
DRAFTER	SMK	APPROVED
DRFT.SUPV.		APPROVED

SCALE AS NOTED

DATE 4–28–14

REV.NO.

FILE NO.

51 C

14X6

SH.NO. OF

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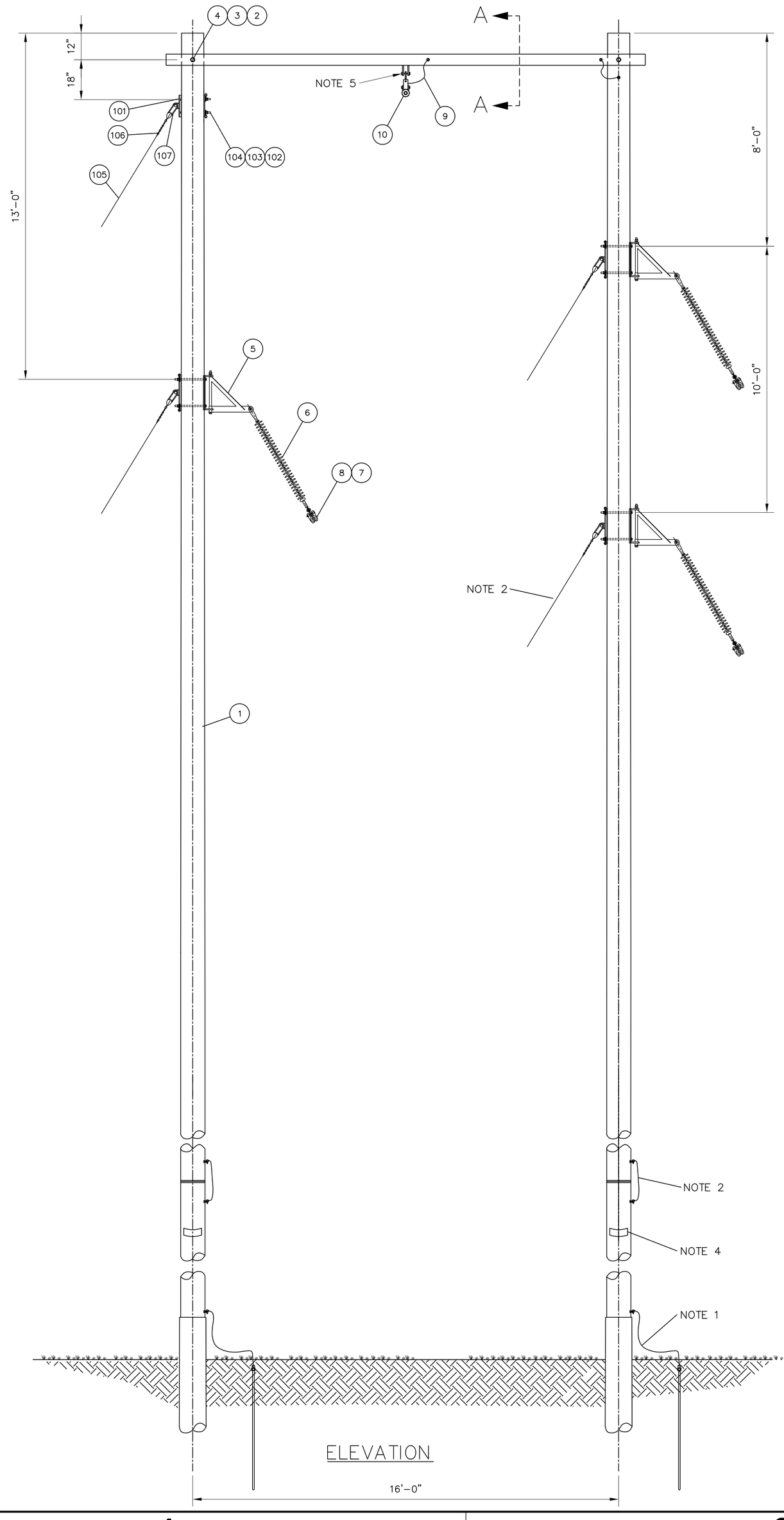
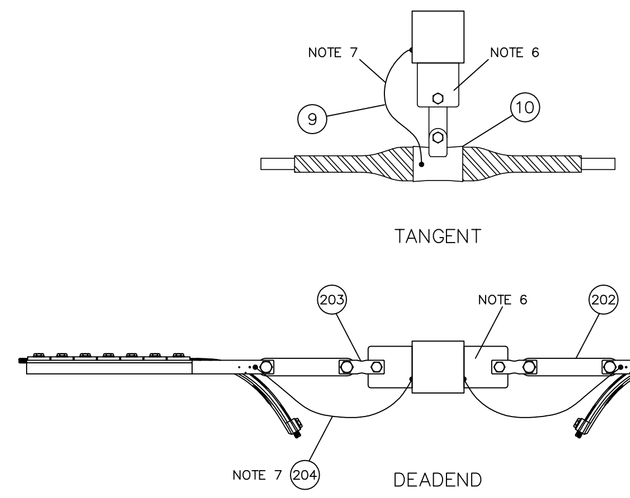
DO NOT REVISE MANUALLY



ELEVATION



TANGENT

VIEW A–A

NTS

BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
1	NONSTOCK	1	PC	STEEL POLE, SEE P & P FOR HEIGHT AND CLASS
2	31–04–191	2	PC	CONN WEDGE, (BURNDY CAT# WCY91)
3	31–49–021	2	PC	TEE, DEAD END, 60K LBS., F/STEEL POLES
4	31–49–199	2	PC	WASHER, ROUND LOCK 1"
5	30–06–062	3	PC	WASHER, ROUND FLAT 3/4" ID X 2" OD
6	30–23–141	3	PC	WASHER, ROUND LOCK 3/4"
7	30–37–181	3	PC	INSUL, SUSP 10" 30000# GRY ANSI 52–5
8	30–07–102	3	PC	CLAMP, SUSP 1.40–2.13 AL 25000# W/SOCKT
9	NONSTOCK	1	PC	ALUMINUM BONDING WIRE
10	NONSTOCK	1	PC	OPGW SUSPENSION CLAMP

GUY ASSEMBLY BILL OF MATERIAL (PER GUY)				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
101	30–11–041	1	PC	TEE DEAD END 60K LBS.F/STEEL POLES
102	31–04–063	2	PC	BOLT, MACHINE 3/4"X14"
103	31–49–039	2	PC	WASHER ROUND LOCK 3/4"
104	31–49–020	2	PC	WASHER ROUND FLAT 3/4" ID X 2" OD
105	30–50–136	25	#	WIRE STEEL BARE 7/16" EHS GALV 20800#
106	30–07–116	2	PC	GRIP, DE, PRESH 39 GREEN 7/16" STEEL
107	31–11–040	1	PC	CLEVIS THIMBLE 1" GROOVE

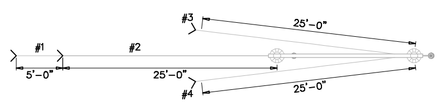
STANDARD DEADEND ASSEMBLY BILL OF MATERIAL				
ITEM	STOCK NO.	QUANT.	UM	DESCRIPTION
201	NONSTOCK	1	PC	AFL BOLTED DEADEND CLAMP
202	NONSTOCK	1	PC	10" LINK PLATE
203	NONSTOCK	1	PC	Y–CLEVIS CLEVIS
204	NONSTOCK	1	PC	ALUMINUM BONDING WIRE

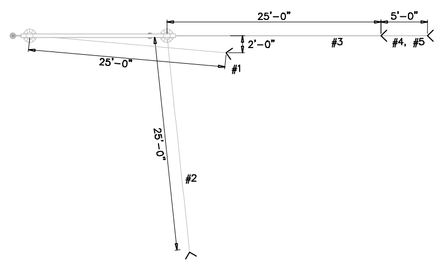
NOTES:
1. REFER TO STANDARD TRANSMISSION DRAWING TA–4 STEEL, ISSUE 1, FOR STEEL POLE GROUNDING.
2. REFER TO STANDARD TRANSMISSION DRAWING TA–3, FOR GUY GROUNDING.
3. REFER TO P&P FOR GUY LEAD LENGTH AND ORIENTATION.
4. SEE STANDARDS DWG. E01–03–006.0, FOR POLE TAG DETAIL.
5. SEE P&P FOR OPGW CONFIGURATION (DE OR TANGENT).
6. VANG WELDED FOR OPGW ATTACHMENT
7. SEE DWG. 51–C–14XX FOR OPGW GROUNDING.

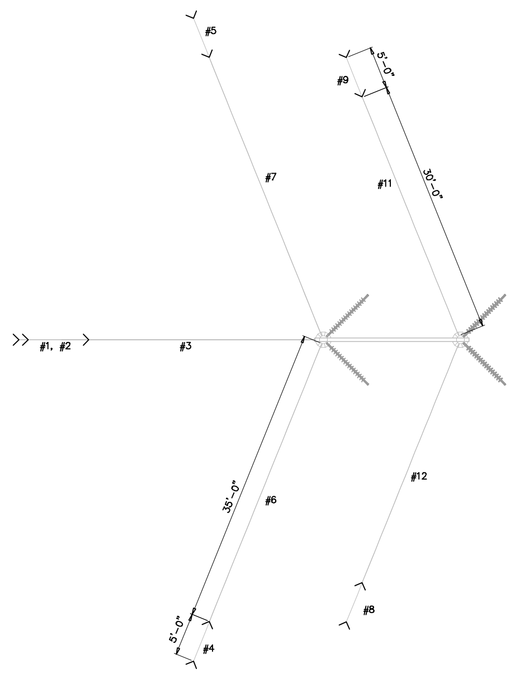
REVISIONS

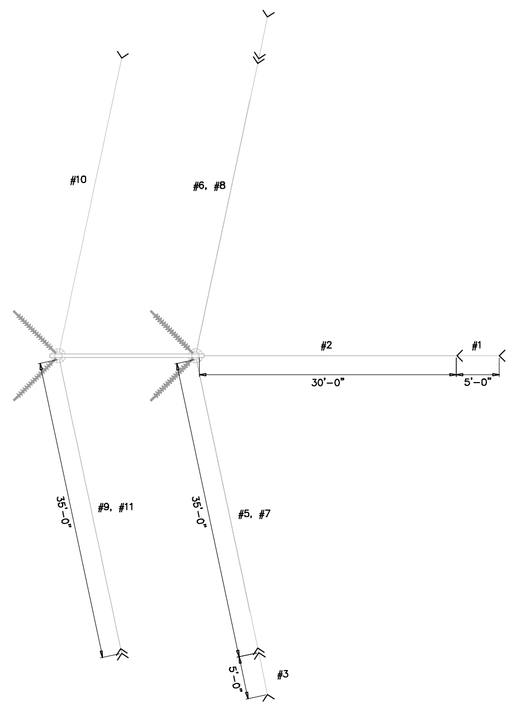
CENTRAL HUDSON GAS & ELEC.CORP.		SCALE	AS NOTED
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE	4–28–14
		REV.NO.	
"A & C" 115kV LINES		FILE NO.	
TWO POLE SWING ANGLE RIGHT STRUCTURE		51	C
W.O.NO. 7836A		14X7	
PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO.	OF

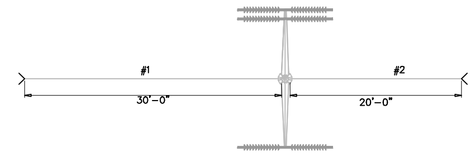
CAD DRAWING
DO NOT REVISE MANUALLY

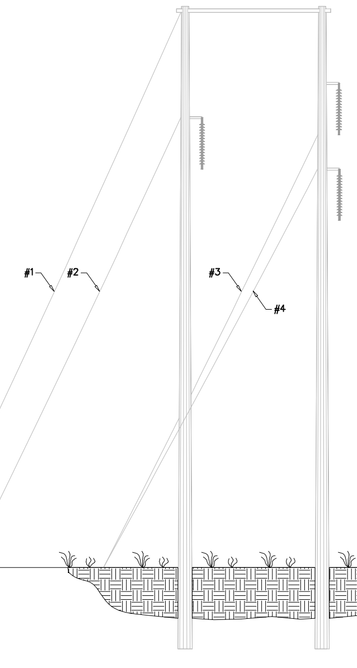




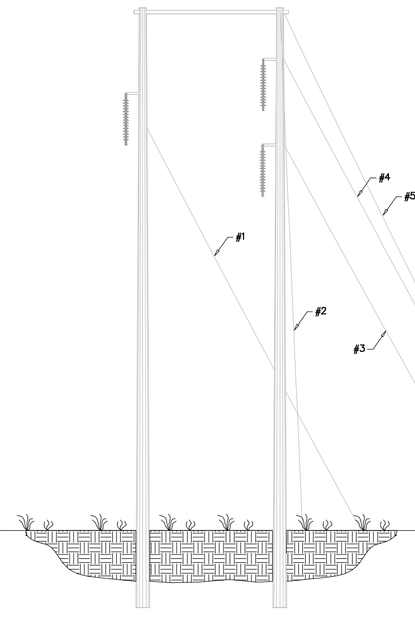




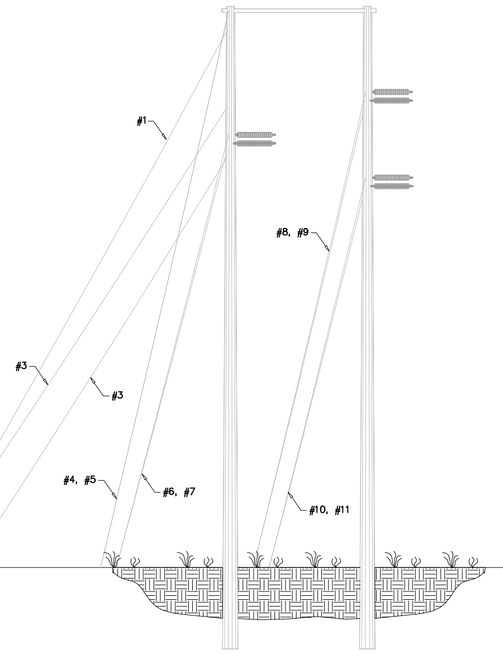




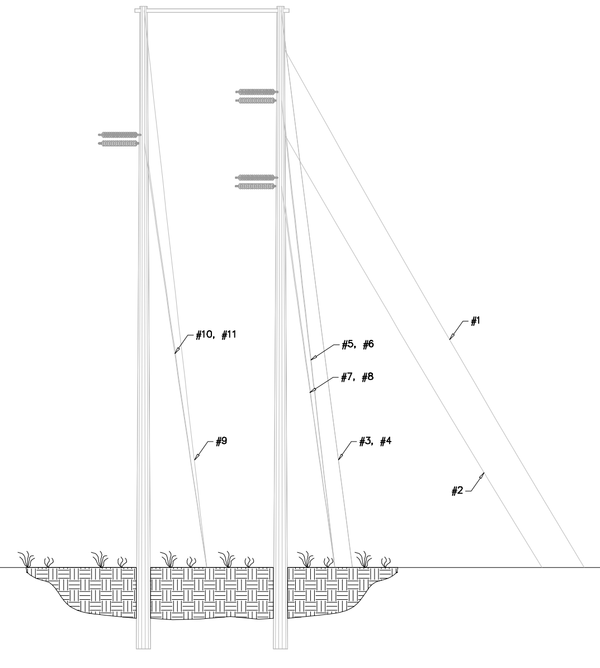
DETAIL A
RIGHT SWING ANGLE
GUYING DETAIL



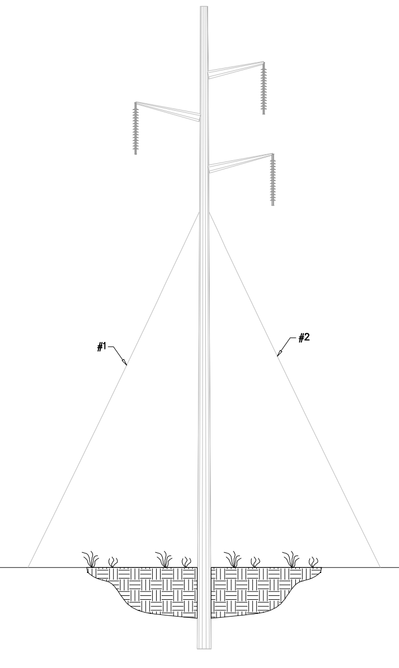
DETAIL B
LEFT SWING ANGLE (SPECIAL)
GUYING DETAIL



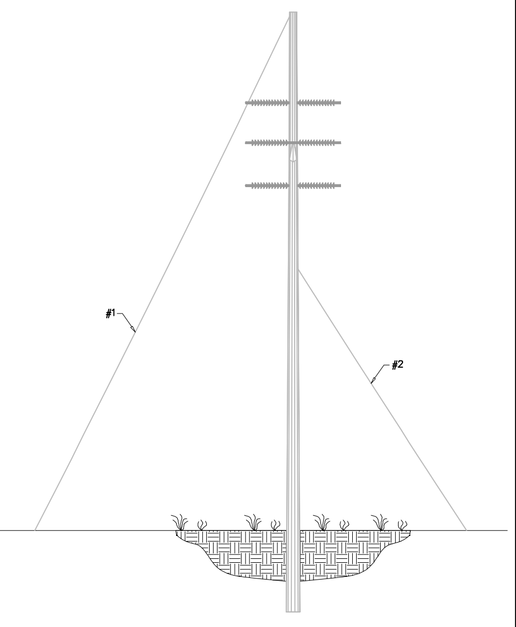
DETAIL C
DEADEND RIGHT C2
GUYING DETAIL



DETAIL D
DEADEND LEFT SPECIAL A44
GUYING DETAIL



DETAIL E
DAVIT 2 SIDE GUYS
GUYING DETAIL



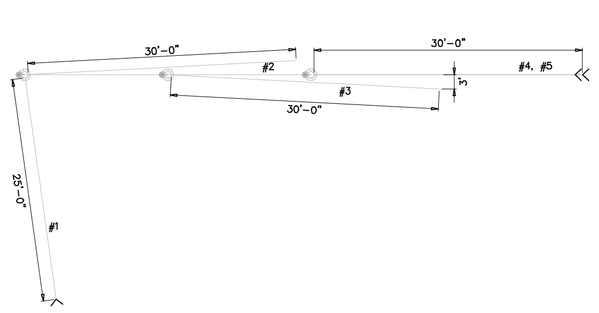
DETAIL F
DAVIT 2 SIDE GUYS
GUYING DETAIL

NOTE: ALL GUYS TO BE 7/16" EHS

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE	NTS
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE	4–28–14
		REV.NO.	
"A & C" 115kV LINES		FILE NO.	
GUYING DETAILS		51	C
W.O.NO. 7836A		14X0	
PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO. 1 OF 2	

CAD DRAWING
DO NOT REVISE MANUALLY



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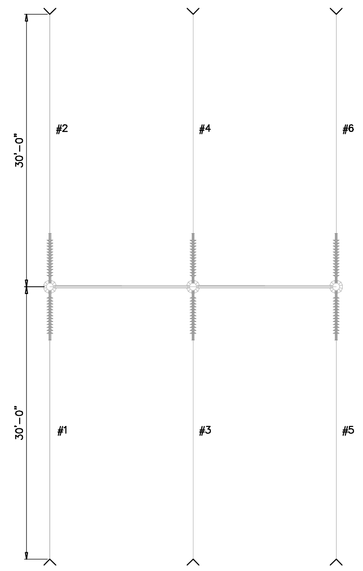
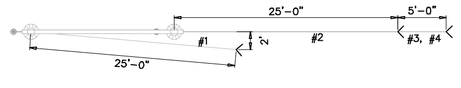
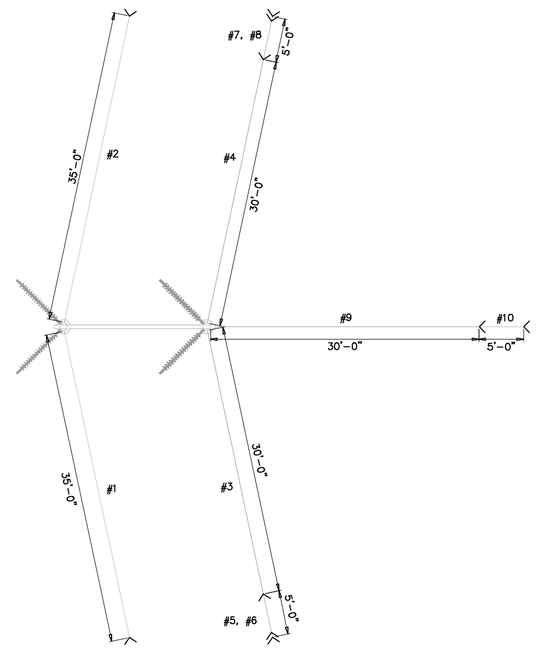
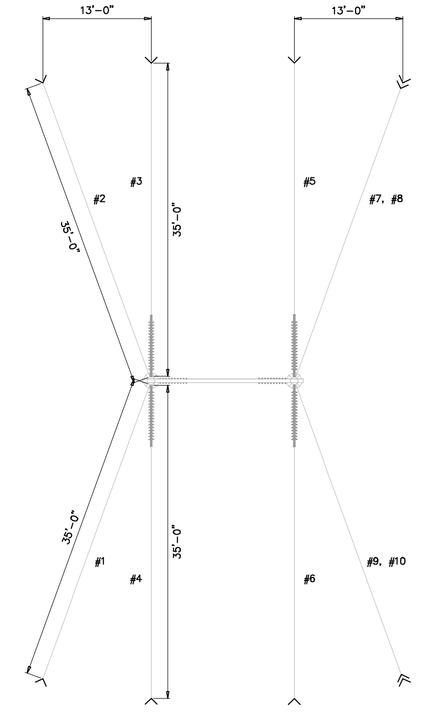
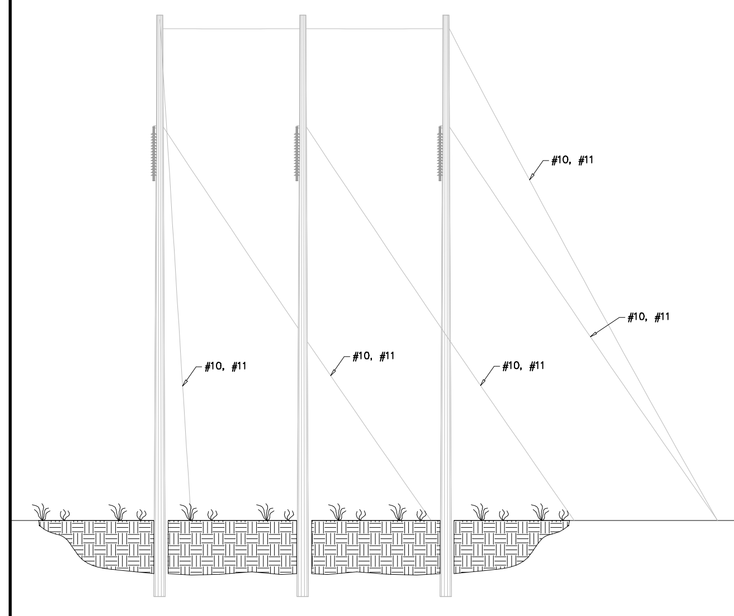


NOTE: ALL GUYS TO BE 19#9 AW

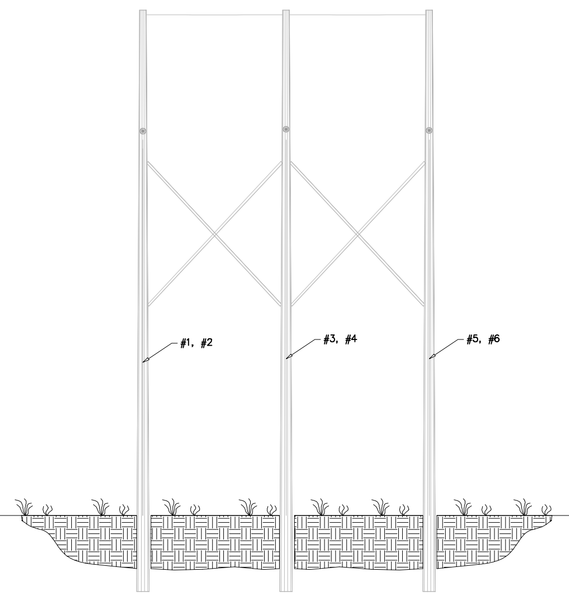




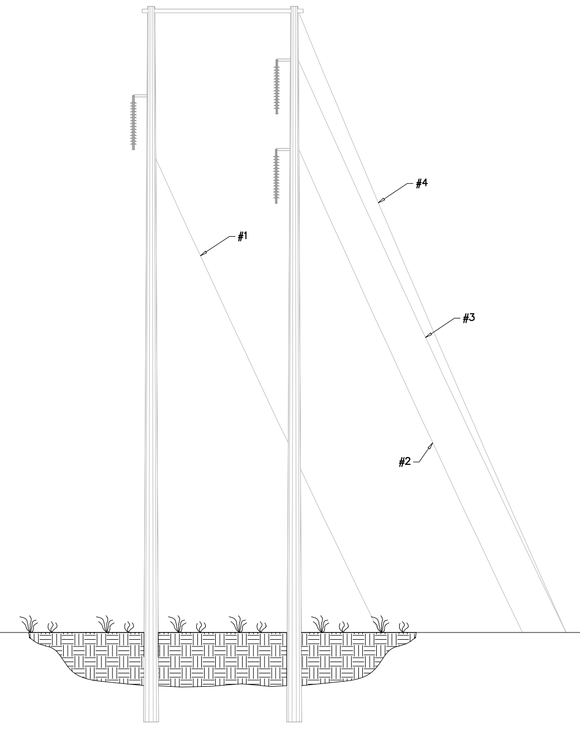




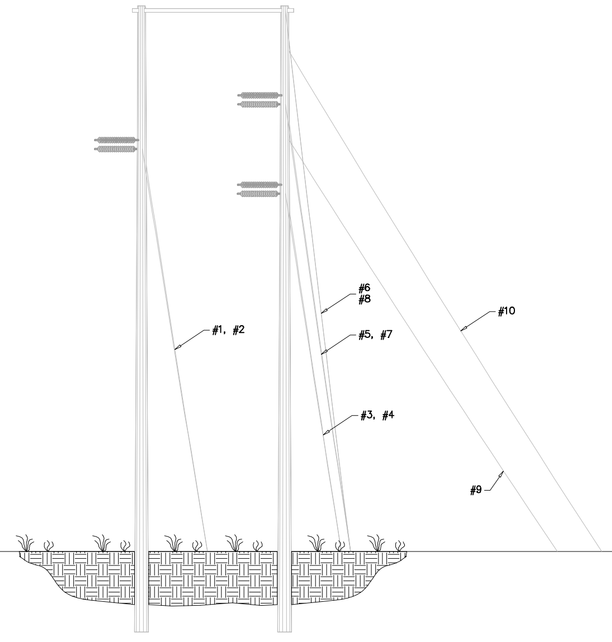
DETAIL G
3 POLE SWING C60
GUYING DETAIL



DETAIL H
3 POLE DEADEND
GUYING DETAIL



DETAIL I
LEFT SWING ANGLE
GUYING DETAIL



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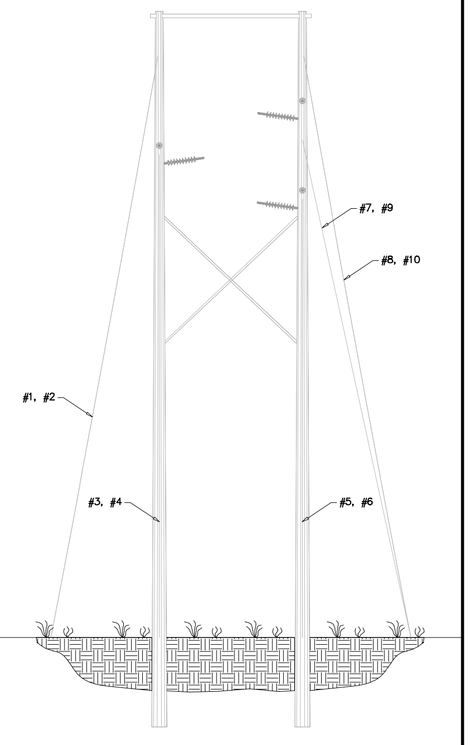
DEADEND LEFT C28
GUYING DETAIL



DETAIL K
INLINE DEADEND
GUYING DETAIL

NOTE: UNLESS NOTED, ALL GUYS TO BE 7/16" EHS

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE NTS	
PLEASANT VALLEY–TODD HILL–FISHKILL PLAINS		DATE 4–28–14	
		REV.NO.	
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PROJ.NO.	CLEARED		
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO. 2 OF 2	

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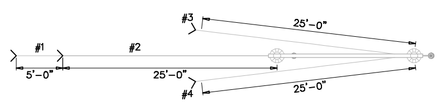
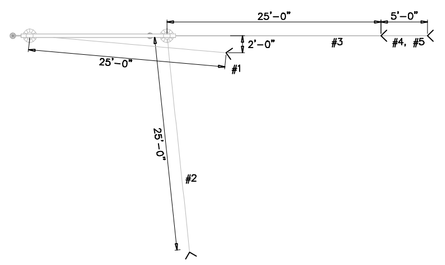
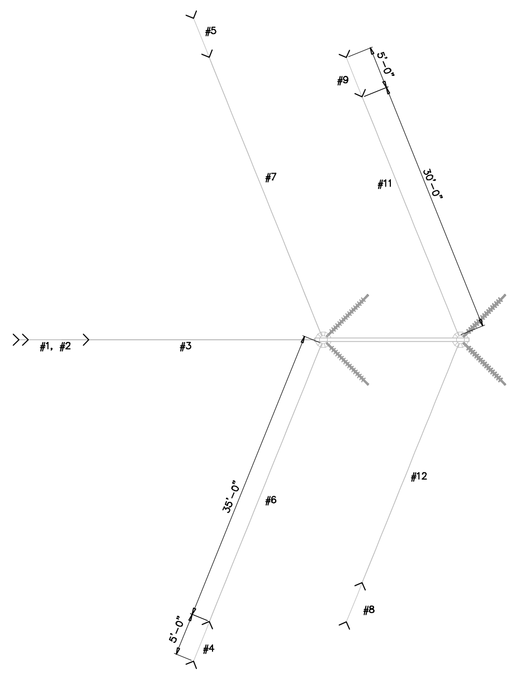
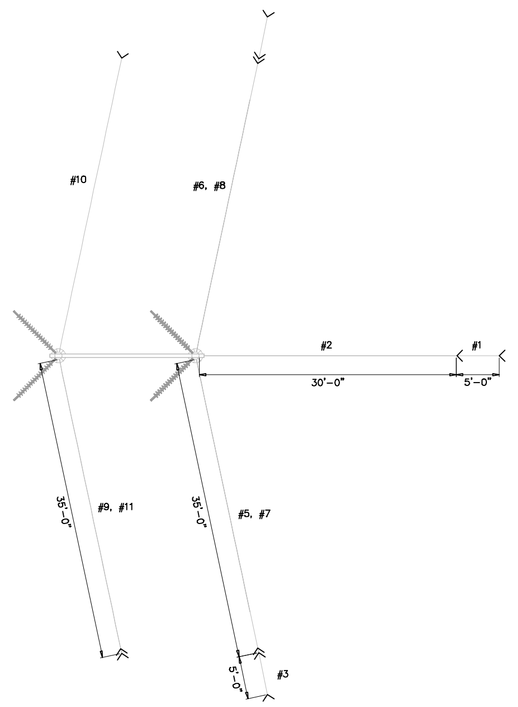
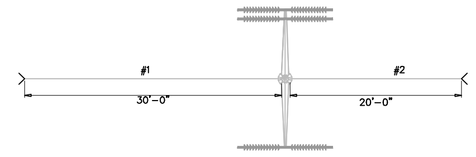
DO NOT REVISE MANUALLY

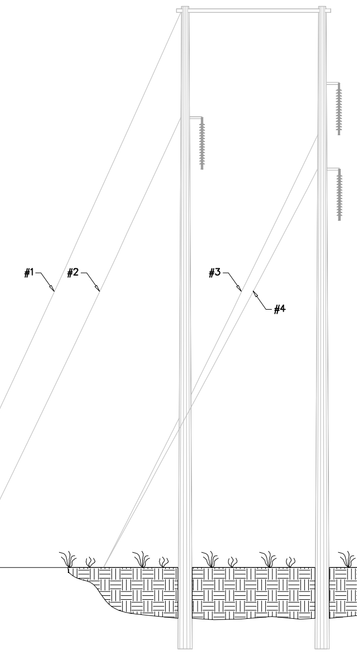












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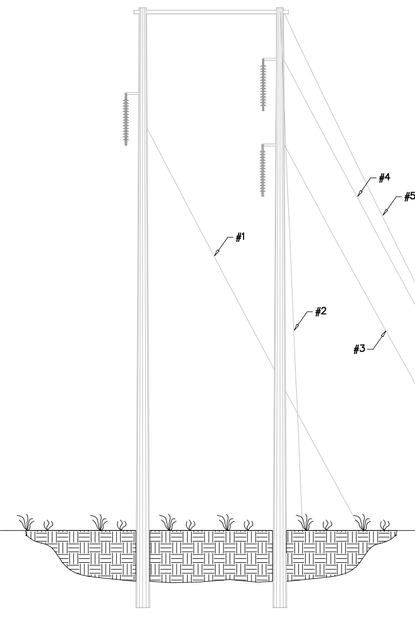
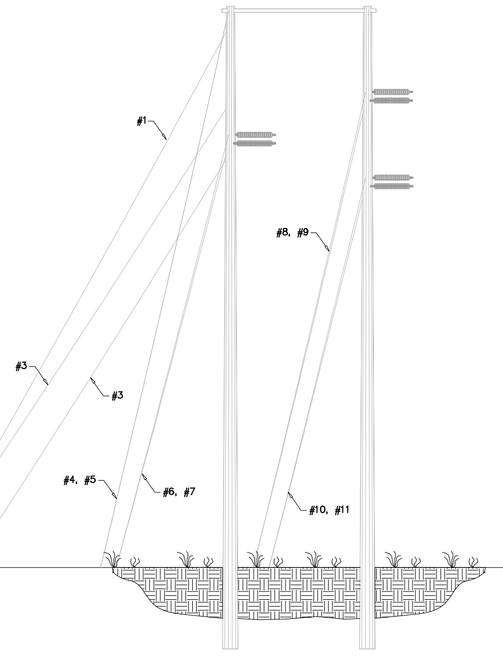
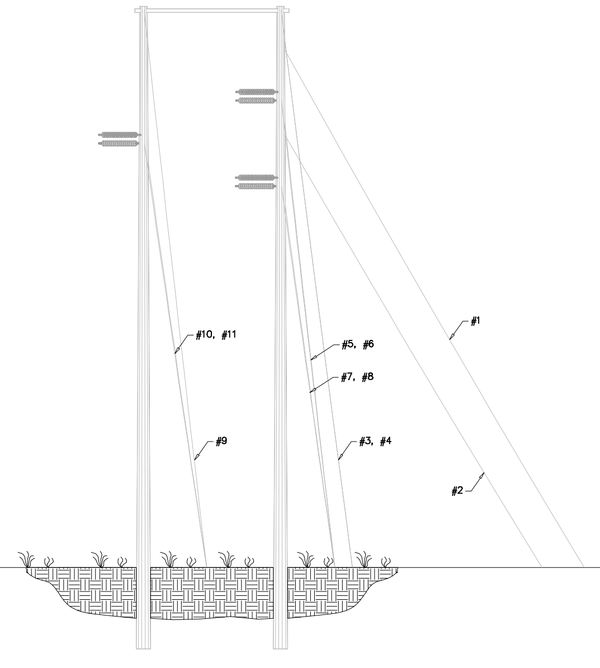
RIGHT SWING ANGLE
GUYING DETAIL



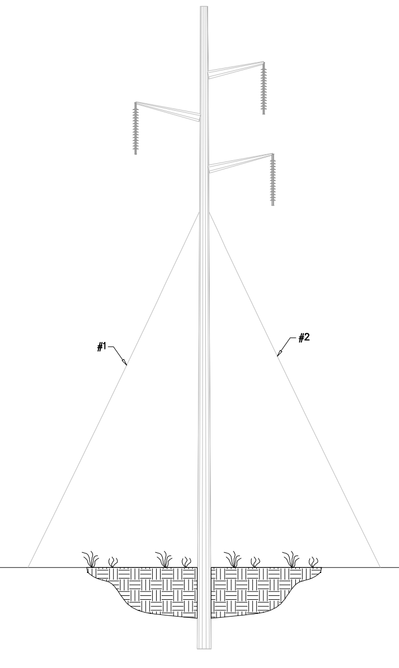
DETAIL B
LEFT SWING ANGLE (SPECIAL)
GUYING DETAIL



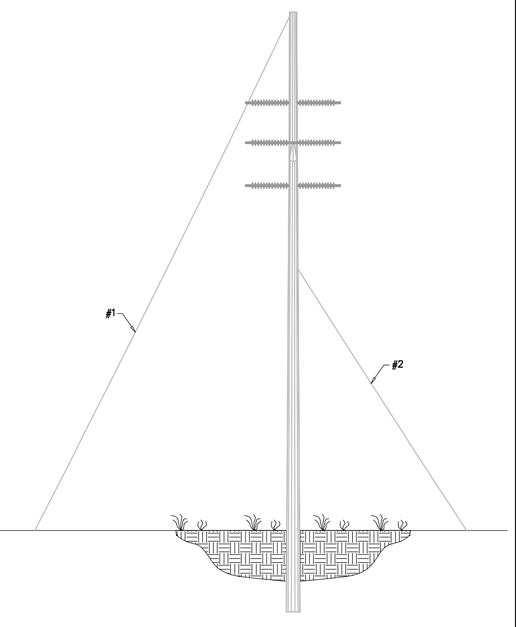
DETAIL C
DEADEND RIGHT C2
GUYING DETAIL



DETAIL D
DEADEND LEFT SPECIAL A44
GUYING DETAIL



DETAIL E
DAVIT 2 SIDE GUYS
GUYING DETAIL



DETAIL F
DAVIT 2 SIDE GUYS
GUYING DETAIL

NOTE: ALL GUYS TO BE 7/16" EHS

REVISIONS

CENTRAL HUDSON GAS & ELEC.CORP.		SCALE	NTS
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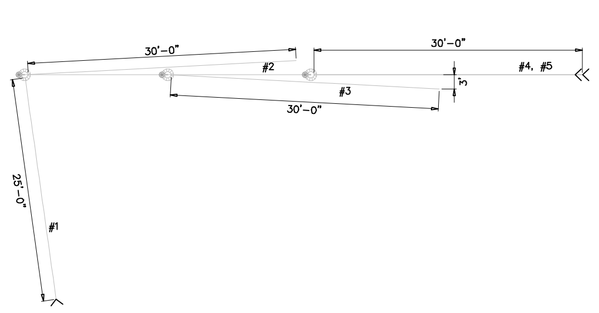
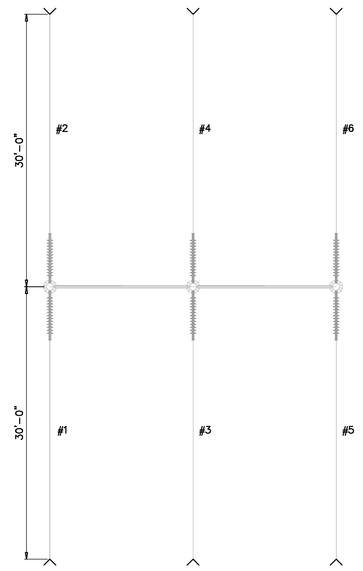
DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO. 1 OF 2	

CAD DRAWING
DO NOT REVISE MANUALLY



NOTE: GUY 1 INLINE WITH STATIC WIRE



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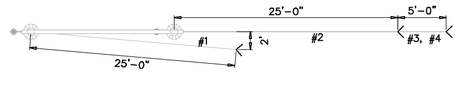
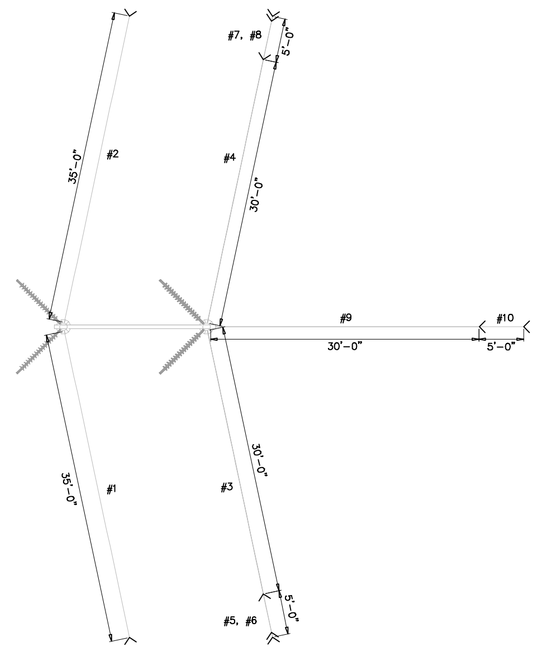
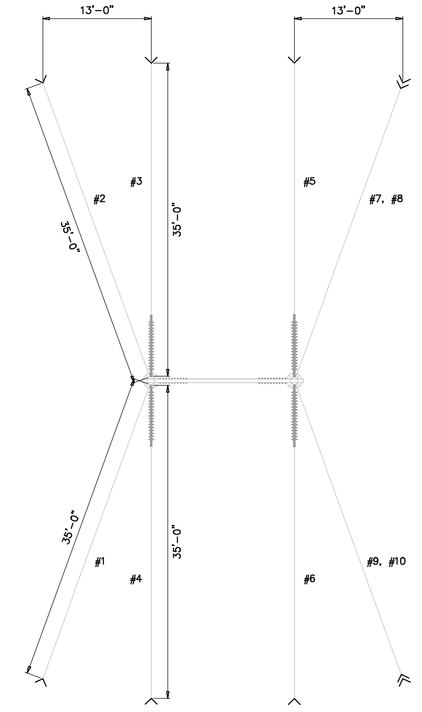
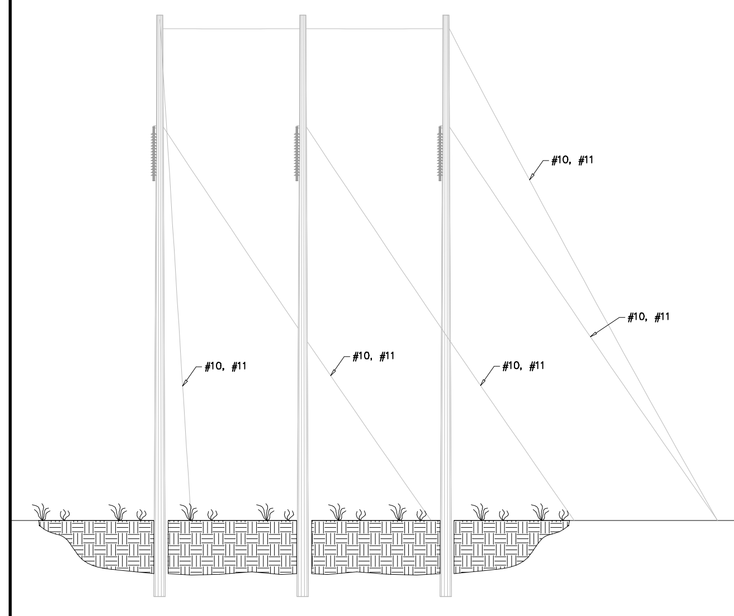
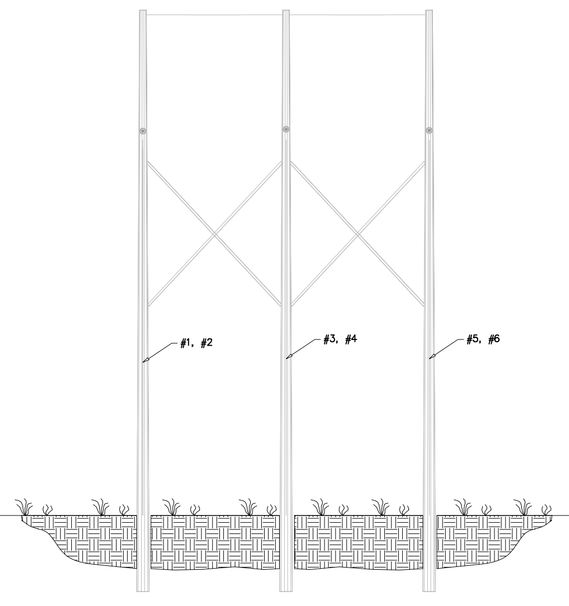




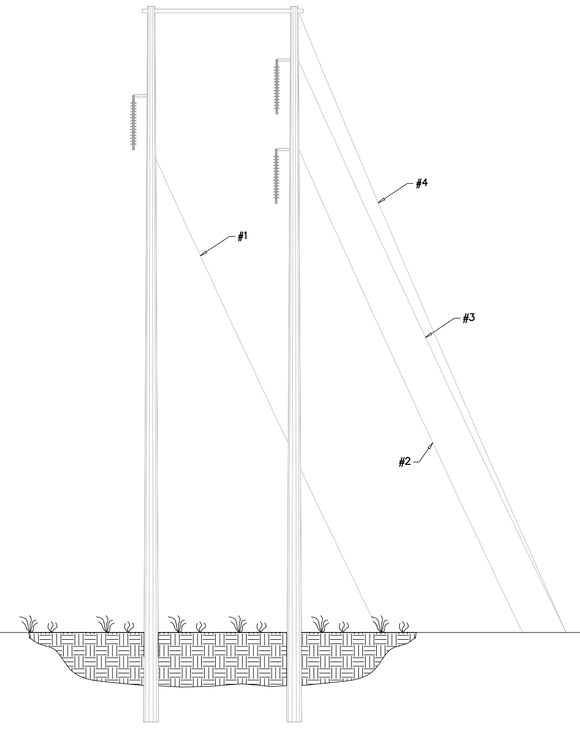




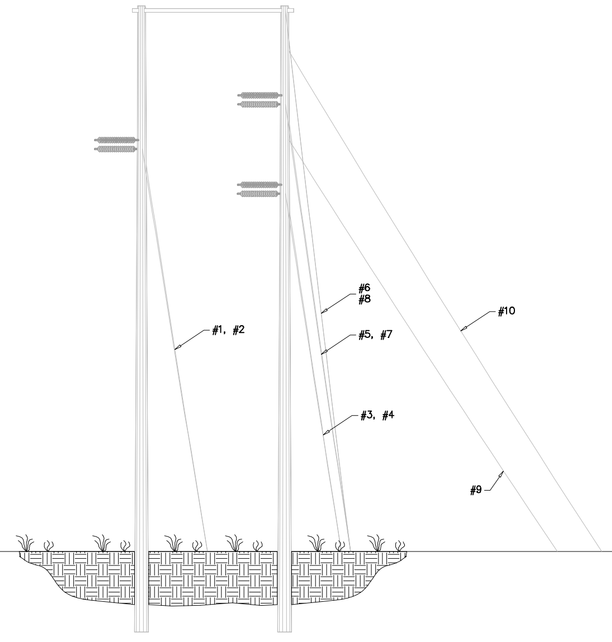
DETAIL G
3 POLE SWING C60
GUYING DETAIL



DETAIL H
3 POLE DEADEND
GUYING DETAIL



DETAIL I
LEFT SWING ANGLE
GUYING DETAIL



DETAIL J
DEADEND LEFT C28
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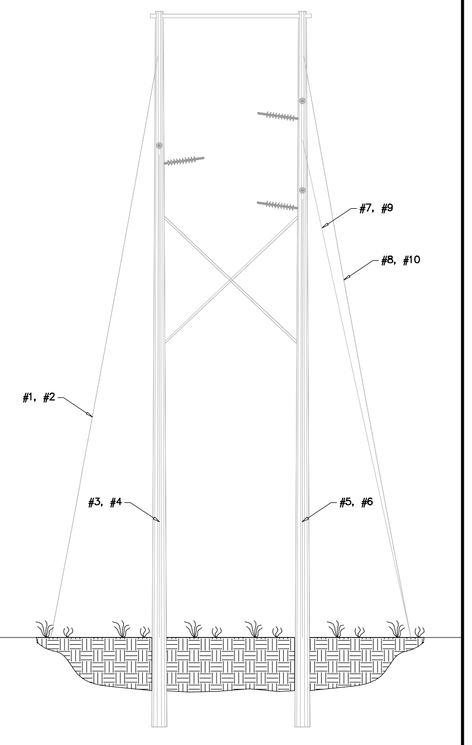

DETAIL K
INLINE DEADEND
GUYING DETAIL

NOTE: UNLESS NOTED, ALL GUYS TO BE 7/16" EHS

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DRAFTER SMK	APPROVED		
DRFT.SUPV.	APPROVED	SH.NO. 2 OF 2	

CAD DRAWING
DO NOT REVISE MANUALLY

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-005 (MAS/RQ)

Central Hudson Response No: CHGE-005 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Does the A&C line currently have a counterpoise system? Provide drawing of the type counterpoise system and where it is on the right-of-way.

b. Does Central Hudson Gas and Electric Corporation (Central Hudson or Company) plan to use counterpoise with the A&C line rebuild? If so, where does the Company plan to use it? Provide engineering drawings of the counterpoise that the Company plans to incorporate and include the depth of burial.

c. How does Central Hudson plan to accommodate poor grounding situations where the Company cannot obtain good impedances?

Responses:

a. The A and C line does not have a counterpoise system.

b. Central Hudson does not plan on using a counterpoise system with the rebuild.

c. Central Hudson uses ground rods to accommodate and/or remediate poor grounding situations.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-006 (MAS/RQ)

Central Hudson Response No: CHGE-006 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. What types of insulators are available that could be used for the A&C line rebuild (include color and material)? If color chips are available please provide.

b. Will Central Hudson Gas and Electric Corporation (Central Hudson) use insulators other than polymer? Has Central Hudson considered using ceramic or glass insulators? If not, why? Explain your answer. Provide copies of all supporting documentation for choosing polymer over ceramic. Include reports by EPRI or any other origination.

Responses:

Polymer insulators are available in gray and blue. Ceramic insulators are available in brown and gray. Central Hudson's standard color is gray, which will be used on this Project. Polymer insulators will be used on tangent and angle structures, and ceramic will be used at dead ends.

Polymer insulators do not come in brown and Central Hudson does not want to use ceramic on suspension insulators for a number of reasons. First, ceramic bells are heavier than polymer. Second, ceramic bells are more expensive than polymer. Third,

ceramic bells are more difficult to work with in the field. Fourth, the performance of polymer insulators is just as good or better than ceramic from an electrical and mechanical perspective. Finally, the polymer insulators utilized by Central Hudson are made in the United States. Central Hudson understands that ceramic insulators are not made in the United States.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-007 (MAS/RQ)

Central Hudson Response No: CHGE-007 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: John Hecklau

Information Requested:

a. Provide the specific location (latitude and longitude) of all AM/TV broadcast antenna(s) within a 2 miles radius of the line. Include the call letters of the antenna(s).

b. Should any AM/TV broadcast antennas fall within 2 miles of the rebuild, does Central Hudson Gas and Electric Corporation have plans to conduct an interference study? Explain.

Responses:

Communication tower studies were conducted and included in Appendix L of the Article VII application. The AM and FM Radio Report found the nearest AM broadcast tower was approximately 3.37 miles (5.43 kilometers) from the nearest Project structure. The call sign for that station is WKIP. The Off-Air Television Report indicates the nearest TV tower is W42AE, which is approximately 8.61 miles (13.85 kilometers) from the nearest Project structure. Because no AM/TV broadcast antennas fall within 2 miles of the rebuild, no interference study is planned.

Central Hudson Electric and Gas Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-008 (MAS/RQ)

Central Hudson Response No: CHGE-008 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Provide a copy of Central Hudson Gas and Electric's (Central Hudson) NESC calculations and work papers for vertical clearances of the transmission line from roads, agricultural fields, places accessible by off-road vehicles, pedestrians, etc.

b. Provide a table of the vertical clearances for each area that the line traverses along the route.

c. Provide the distance required between the 115 kV lines and the 345 kV line. Provide a copy of calculations and supporting documentation.

Responses:

a. *Vertical clearances were determined using the National Electric Safety Code ("NESC"). Using the NESC 2012 Rule 232B, the results are summarized in the table below*:

Voltage	Roads /Areas traversed by vehicles	Agricultural fields/Areas accessible by off-road vehicles	Pedestrian
115KV	20.1 FT	20.1 FT	16.1 FT

b. See answer above

c. Using NESC 2012 Rule 233C, the calculated vertical clearance between the 345kV lines and 115kV lines is 9.8 ft.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-009 (MAS/RQ)

Central Hudson Response No: CHGE-009 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Provide a copy of Central Hudson Gas and Electric's (Central Hudson) quality assurance program for steel poles delivered to the company.

b. Discuss and document how and where the quality assurance will be done.

c. Discuss and document where Central Hudson will do inspections for quality assurance.

d. Discuss and document how Central Hudson will reject poles that have been delivered and do not meet the quality assurance program.

e. Discuss and document who will be responsible for all costs related to poles that are rejected and sent back to be reworked or replaced.

Responses:

a. Central Hudson does not have a written quality assurance program for the receipt of steel poles delivered to the company in advance of construction.

b-d. Most of the materials planned for use on this project are Central Hudson standard stock materials (either in stock storage already or will be ordered) that have been reviewed and approved by Central Hudson's Engineering and Standards Departments for purchase and use on other Central Hudson transmission facilities. All standard stock materials are received at Central Hudson's maintenance and warehouse facility and checked by Central Hudson employees to ensure that orders match materials received.

Any proposed materials that are project specific (such as Optical Groundwire ("OPGW") and associated hardware) will be competitively bid, reviewed, and approved by Central Hudson's Engineering Department prior to purchase. As with stock materials, such project specific materials will be received at Central Hudson's maintenance and warehouse facility and, in the case of OPGW, tested to ensure no delivery defects. Poles are visually inspected upon delivery to ensure it meets the pole specifications as shown on ***Exhibit A*** *to this Response ("CH Steel Pole Specs").*

If materials are rejected for whatever reason, the vendor will be notified and will be directed to replace the defective material and pick up that material which has been rejected.

e. The vendor will be responsible for any costs related to Central Hudson's rejection of defective material delivered by the vendor.

Technical Specification

Standard Class Steel Transmission Poles

CENTRAL HUDSON GAS & ELECTRIC CORP.

Specification:	**STLPOLE**
Revision No:	**Original**
Revision Date:	**09/25/2012**
Revision Originator:	
Revision Approval:	

Original Approval		**Date**
Originator:		9/26/2012
Reviewed:		10/1/12
Reviewed:		
Cleared:		
Approved:		

TABLE OF CONTENTS

SPECIFICATIONS FOR STANDARD CLASS STEEL TRANSMISSION POLES

1 **SCOPE:** This specification covers the design, materials, welding, inspection, protective coatings, drawings and delivery of standard class, direct embedded, steel transmission poles. The poles are to be used in single pole, multiple pole, H frames, guyed, and unguyed structures. Direct embedded wood equivalent poles are to be embedded to a depth of 10% + 2 feet unless otherwise specified.

2 **DEFINITIONS:**

a. Appurtenance – Any hardware or structural members that are attached to the pole to make a complete structure.

b. Bearing Plate - A plate at the base of the pole that is intended to transfer the vertical loads of the pole.

c. Cambering – The fabrication of a slight convex curve in a pole.

d. Charpy Impact - The impact properties of the material which are used to evaluate the susceptibility of structural steel to brittle fracture. See ASTM A370 and ASCE Manual No. 72 for details.

e. Crook – A localized deviation from straightness that causes the centerline of one section of the pole not to align with the centerline of another section of the pole.

f. Circumferential Weld /C-weld - A weld perpendicular to the long axis of a structural member.

g. D/t - The ratio of the diameter of a tubular pole to the plate thickness.

h. Engineer – A registered or licensed person, who may be a staff employee or an outside consultant, and who provides engineering services. Engineer also includes duly authorized assistants and representatives of the licensed person.

i. Ground Collar – An additional steel plate jacket that encapsulates the portion of the buried pole immediately above and below the *groundline*

j. Group of Bolt Holes - All of the holes in which an appurtenance will be attached.

k. Guyed Structure - A structure in which cable supports are used to increase its lateral load resistance.

l. Groundline – A designated location on the pole where the surface of the ground will be after installation of a direct embedded pole. The groundline location will be used to locate the *ground collar* and other attachments to the pole.

m. Flanged Connection/splice – A bolted type connection.

n. Factored Load - The design load that includes the appropriate *load factor*.

o. In-Line Face – The face of the pole which "faces" an adjacent structure in the line.

p. Longitudinal Weld - A weld parallel to the long axis of a structural member.

q. Manufacturer – The company responsible for the fabrication of the poles. The manufacturer fabricates

the poles based on the design drawings developed by the structural designer, which is the manufacturer's engineer responsible for the structural design of the poles.

r. Load Factors (LF) – A multiplier, which is applied to each of the vertical, transverse and longitudinal structure loads to obtain an *ultimate load.*

s. Owner – The Rural Utilities Servic borrower or owner's representative.

t. P-delta (P-Δ) Moment – A measure of the increase in bending moment resulting from a structure's displacement under load.

u. Pole Height - For this bulletin, this term is used interchangeably with *pole length.*

v. Pole Length - The length from the pole top to the bearing plate on the pole bottom.

w. Pole Sweep - The measure of deviation from straightness along the length of the pole.

x. Point of Fixity – The point where the maximum moment occurs. The actual location of this point is dependent on the characteristics of soils around the embedded portion of the pole. For this specification it will be assumed to be equal to 7 percent of the pole length.

y. Slip Connection/splice - A telescoping type connection of two tapered tubular pole sections.

z. Standard Class Pole – A direct embedded steel pole that is designed according to a standardized strength and loading criteria established by the owner.

aa. Taper - The change in diameter of a tubular section from its base to its top.

bb. Tip Load – The horizontal load that is applied to the standard class pole at a distance of 2 feet from the pole top.

cc. Ultimate Load – The maximum design load that includes the appropriate *load factor* specified.

dd. Yield Strength – The minimum stress at which a material will start to physically deform without further increase in the load or which produces a permanent 0.2 percent deformation. This is also known as the elastic limit of the material.

ee. Ultimate Moment Capacity - The moment that is developed in the pole at the time the yield strength of the pole is realized.

ff. *w/t* – Ratio of a flat width of a multisided pole to the thickness of the steel plate.

gg. Weathering Steel - Steel that conforms to ASTM A588 or A871. This steel forms a natural protective oxide layer on the surface.

3. CODES AND STANDARDS: Codes, standards, or other documents referred to in this specification shall be considered as part of this specification. The following codes and standards are referenced:

a. American Institute of Steel Construction (AISC), "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings," latest edition.

b. American Society of Civil Engineers (ASCE) Standard, "Design of Steel Transmission Pole Structures," Manual 72, latest edition.

c. American Society of Testing and Materials (ASTM), various standards, latest revision. Referenced ASTM specifications:

A6/ A6M Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling
A36/A36M Specification for Carbon Structural Steel
A123/A123M Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
A143 Practice for Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel Products and Procedure for Detecting Embrittlement
A153/153M Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
A325 Specification for High-Strength Bolts for Structural Steel Joints
A354 Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners
A370 Test Methods and Definitions for Mechanical Testing of Steel Products
A384 Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies
A570/A570M Specification for Steel, Sheet and Strip, Carbon, Hot-Rolled, Structural Quality
A572/A572M Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
A588/588M Specification for High Strength Low-Alloy Structural Steel with 50 ksi Minimum Yield Point to 4 in. Thick
A595 Specification for Steel Tubes, Low-Carbon, Tapered for Structural Use
A607 Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, columbium or Vanadium, or Both, Hot-Rolled and Cold-Rolled
A673/A673M Specification for Sampling Procedure for Impact Testing of Structural Steel
A687 Specification for High-Strength Nonheaded Steel Bolts and Studs
A871/A871M Specification for High Strength Low-Alloy Structural Steel Plate with Atmospheric Corrosion Resistance
B695 Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel
B696 Specification for Coatings of Cadmium Mechanically Deposited

d. American Welding society (AWS), Structural Welding Code, AWS D1.1, latest edition.

e. American National Standards Institute (ANSI), National Electrical Safety Code, ANSI C2, latest edition.

f. Society for Protective Coatings (SSPC, formerly Steel Structure Painting Council)/ National Association of Corrosion Engineers (NACE) Surface Preparations Specification, SSPC/NACESP-6/NACE 3.

4. CONFLICT BETWEEN THIS SPECIFICATION, DRAWINGS, AND REFERENCES DOCUMENTS: In the event of conflict between this specification and the above referenced documents, the requirements of this specification shall take precedence. In the case of conflict between several referenced documents, the most stringent requirement shall be followed. If a conflict exits between this specification or the referenced documents and the attached drawings, the attached drawings shall be followed. If clarification is necessary, contact the owner.

5 GENERAL REQUIREMENTS: The design, fabrication, allowable stresses, processes, tolerances, and inspection shall conform to ASCE Standard, "Design of Steel Transmission Pole Structures" (Manual 72), latest edition, with the following additions and/or exceptions:

5.1 Design Requirements

5.1.1 Pole designs shall be prepared for the attached Standard Class design loads. The poles shall be designed to meet ASCE Manual No. 72, "Design of Steel Transmission Pole Structures", design methods. The point-of-fixity shall be considered to be located at a distance from the pole bottom that is equal to 7 percent of the pole length. The pole shall be symmetrically designed such that the strength required in any one direction shall be required in all directions about the longitudinal axis.

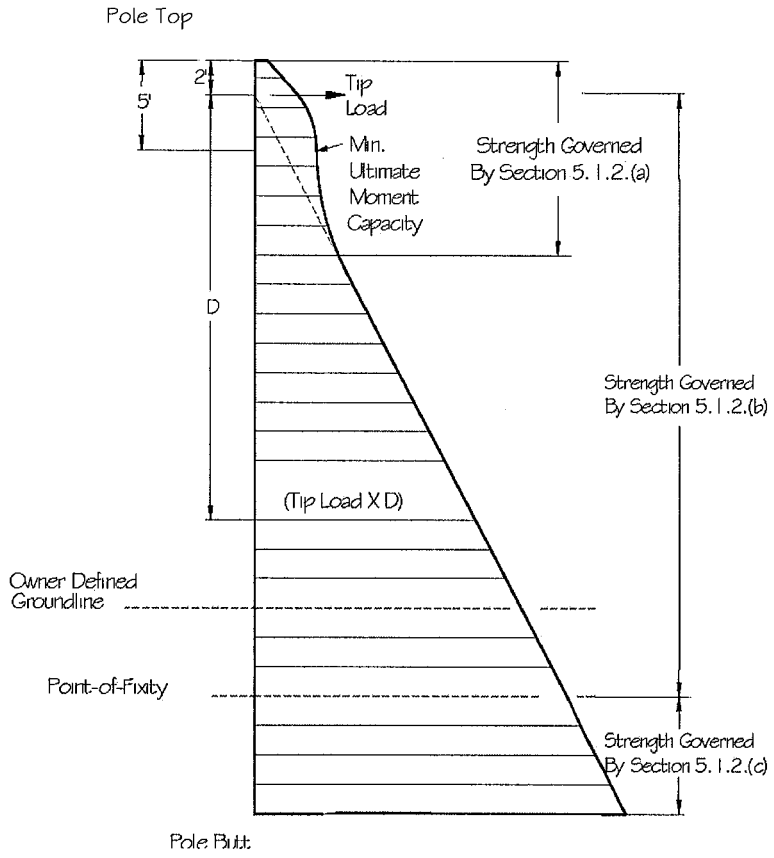
5.1.2 Using the corresponding values in Table 1, the poles shall be designed for the following requirements as illustrated by Figure 1.

a. The pole shall develop the minimum ultimate moment capacity required in Table 1 at a distance of five feet from the pole top.

b. The pole shall develop the minimum ultimate moment capacity above the point-of-fixity that is calculated by multiplying the tip load in Table 1 by the distance to the tip load.

c. The geometry and taper of the pole shall be uniform throughout their entire length (top to butt).

FIGURE 1
Minimum Ultimate Moment Capacity Diagram along the Pole



5.1.3 The poles shall be designed to withstand the specified tip loading in Table 1 without exceeding a pole deflection of 15 percent of the pole length above the point of fixity when tested in accordance with ASCE Manual No. 72.

5.1.4 Overall length of poles shall be designed and manufactured in incremental lengths of 5 feet.

5.1.5 Poles shall be designed for the loads generated from handling and erecting without causing permanent deformation or damage to the pole when handled according to the manufacturer's instructions. Handling and erecting loads shall include but not be limited to, a one-point (tilting) pickup and a two point (horizontal) pickup.

5.1.6 The maximum design unit stress shall be the minimum yield strength as stated in applicable ASTM specifications for the particular application and types of loads, including load factors.

5.1.7 Minimum plate thickness for all pole components shall be 3/16 inch.

5.1.8 For vendor engineered structures, the owner shall provide the pole manufacturer with the load capabilities, attachment method, and attachment location of the appurtenances. The pole manufacture shall verify that the pole will not have a localized strength problem at the attachment point.

TABLE 1
Strength Requirements

Standard Class Designations for Steel Poles	Minimum Ultimate Moment Capacity At Five Feet From Pole Top (Ft.-Kip)	Horizontal Tip Load Applied 2 Ft from Pole Top (Lbs.)
S-12.0	96	12,000
S-11.0	88	11,000
S-10.0	80	10,000
S-09.0	72	9,000
S-08.0	64	8,000
S-07.4	57	7,410
S-06.5	50	6,500
S-05.7	44	5,655
S-04.9	38	4,875
S-04.2	32	4,160
S-03.5	27	3,510
S-02.9	23	2,925
S-02.4	19	2,405
S-02.0	15	1,950

5.1.9 All poles shall have bearing plates. Bearing plates shall have a maximum diameter not more than 2 inches greater than the maximum diameter at the pole butt, and shall not exceed the maximum anticipated pole butt diameter of Douglas Fir/Southern Pine wood poles as interpolated from ANSI 05.1.2008 table #8 @ 20% greater than minimum. See Attachment A-4 for dimensions.

5.1.10 Galvanized poles shall have a drain hole at the bottom. This hole shall not be greater than 20 percent of the bottom plate surface area.

5.1.11 Grade and type of steel shall be uniform for the poles.

5.1.12 Ground collars to protect the pole groundline area from corrosive environments are required per Attachment B. Length of the ground collar shall be 48 inches unless otherwise specified.

5.1.13 Ground collars shall have a minimum thickness of 3/16 inch; shall be centered at the groundline (located @ 10% + 2 feet above the bearing plate); and shall not be considered in strength calculations. A seal weld shall be provided around the ground collar at the top and bottom of the ground collar.

5.1.14 The top of the pole shall have a minimum dimension of 9" across flats, and be permanently covered with a structural steel plate that is welded or otherwise permanently attached to the pole. The pole shall be delivered with the pole cover attached in place.

5.1.15 Lifting lugs are optional. The manufacturer shall supply all guidelines for handling and erection of poles and arms.

5.1.16 In the design of connections for vangs, brackets, or stiffeners attached to the pole shaft, care shall be taken to distribute the loads sufficiently to protect the wall of the pole from local buckling.

5.1.17 Weathering steel structures shall be designed to eliminate water and refuse traps. The tubular sections shall be sealed from moisture entering the inside of the pole. Factory drilled holes shall be plugged to prevent moisture intrusion during shipping. Connections shall be designed to reduce the effect of pack-out by preventing moisture from entering the joint or by designing the connection to allow moisture to easily drain off. Welded grounding lug and jacking nuts shall not be drilled thru the pole surface, Surface weld nuts only.

5.1.18 Plastic plugs shall be installed in all nuts welded to the structure and all tapped holes.

5.1.19 Pole design and design calculations shall be the responsibility of the manufacturer.

5.1.20 Poles shall be designed with the minimum number of joints.

5.1.21 Field welding is not normally permitted. In rare instances, it will be permitted to make minor repairs. All welds must be approved by the owner and must follow the manufacturer's direction.

5.1.22 Flange connections for weathering steel poles shall be designed to avoid packout.

5.1.22 Application requirements: (See Attachment B of this Specification)

5.2 Materials

5.2.1 All materials shall comply with the applicable requirements of ASTM specifications. Any modifications from ASTM specifications must be approved by the owner or the owner's representative.

5.2.2 Steel utilized for the purposes of making poles shall conform with the following ASTM Specifications: ASTM A36, ASTM A570, ASTM A572, ASTM 588, ASTM A607, ASTM A871 or ASTM A595, and must be qualified to the requirements contained in ASTM A6/A6M-96b.

5.2.3 Structural plate, and weld material, shall conform to ASTM A370 and ASCE Manual 72. Plates shall be heat-lot tested in conformance with ASTM A 673 Charpy V-Notch Impact test for properties of 15ft.lbs. at –20°F.

5.2.4 For galvanized structures, steel used for the pole shaft and arms shall have a silicon content less than .06 percent.

5.2.5 Bolts and nuts shall conform, as applicable to ASTM A307, ASTM A325, ASTM A354, ASTM A687. Any required bolts or locknuts shall be hot dip galvanized. Other types of nut locking devices must be approved by the owner.

5.3 Fabrication

5.3.1 All welding shall be in accordance with the American Welding Society Code AWS D1.1, latest edition. Welders shall be qualified in accordance with AWS D1.1 welding procedures.

5.3.2 One hundred percent penetration welds shall be required in, but not limited to, the following areas:

- Circumferential welds (C-welds) joining structural members;
- Longitudinal welds in the female portion of the joint within the slip joint area plus 6 inches;
- Welds at butt joints with back-up strips; and

- Longitudinal welds for a minimum length of 3 inches adjacent to C-welds, flange welds, base welds and ends of tubes.

5.3.3 Full penetration, or equivalent 90 percent partial penetration with fillet overlay to develop the shaft capacity, shall be used for arm-to-arm brackets, vang-to-plate reinforcement, and arm box joints.

5.3.4 Quality and acceptability along the entire length of full penetration welds shall be determined by visual and ultrasonic inspection.

5.3.5 All other penetration welds shall have 60 percent minimum penetration. Quality and acceptability of all welds other than full penetration welds shall be determined by visual inspection, supplemented by magnetic particle, ultrasonic, or dye penetrant inspection.

5.3.6 All weld back-up strips shall be welded continuous for the length of the welds. Care shall be exercised in the design of welded connections to avoid areas of high stress concentration that could be subject to fatigue or brittle fractures.

5.3.7 Field welding shall not be permitted except with owners, or owner's representative's approval, and the manufacturer's direction in repairing the pole.

5.3.8 All parts of the pole shall be neatly finished and free from kinks or twists. All holes, blocks, and clips shall be made with sharp tools and shall be clean-cut without torn or ragged edges.

5.3.9 Before being laid out or worked in any manner, structural material shall be straight and clean. If straightening is necessary, it shall be done by methods that will not compromise the steel.

5.3.10 Shearing and cutting shall be performed carefully and all portions of the work shall be finished neatly. Copes and re-entrant cuts shall be finished neatly.

5.3.11 All forming or bending during fabrication shall be done by methods that will prevent embrittlement or loss of strength in the material being worked.

5.3.12 Holes for connection bolts shall be 1/8 inch larger than the nominal diameter of the bolts. Holes in the flange plates for bolted splices shall be 1/8 inch larger than the bolt diameter. The details of all connections and splices shall be subject to the approval of the owner or the owner's representative.

5.3.13 Holes in steel plates which are punched must be smooth and cylindrical without excessive tear out or depressions. Any burrs that remain after punching shall be removed by grinding, reaming, etc.

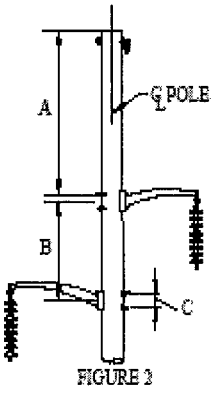
5.3.14 Holes of any diameter may be drilled in plate of any thickness. Care shall be taken to maintain accuracy when drilling stacks of plates.

5.3.15 Holes may be made by use of a machine guided oxygen torch. Flame cut edges shall be reasonably smooth to minimize stress concentrations.

5.3.16 Field drilled holes must be approved by the owner. Unless otherwise specified the manufacture must supply a galvanizing touch-up kit for galvanized poles per section 5.9.1 of this specification.

5.4 Tolerances

Manufacturing tolerances shall be limited to the following:

Pole Length	One piece: ±2 inches, or ±1 inch ±1/8 inch per 10 feet of length, whichever is greater (i.e. - 120 foot pole shall have a length of 120 feet ±2½ inches)	
	Assembled pole with flange connections: same as for one piece Assembled pole with slip joint connections: The accumulation of the slip joint tolerances not to exceed –6 inch, +12 inch	
Pole Diameter	-0 inch, +1/4 inch	
Pole End Squareness	±1/2 inch per foot of pole diameter	
Pole Sweep	1/8 inch per 10 feet of pole length	
Pole Twist	None Acceptable	
Slip Joint tolerances	Tolerances per manufacturer's recommendations and total pole length requirements above. See Paragraph 5.7	
Pole Taper	See paragraph 5.1.2c .	
Location of Groups of Bolt Holes from Top of Pole	±1.0 inches (tolerance to dimension A, Figure 2)	 FIGURE 2
Location of Centerline Between Groups of Bolt Holes	±1.0 inch (tolerance to dimension B, Figure 2)	
Location of Holes Within a Group of Bolt Holes	±1/8 inch (tolerance to dimension C, Figure 2)	
Bolt Hole Diameter	See Paragraph 5.3.12 for hole diameters	
Bolt Hole Alignment	Not to vary from the longitudinal pole centerline of that group of holes by more than 1/16 inch	
Location of Identification Plate	±2.0 inch	

5.5 Grounding

5.5.1 Two (2) grounding connections shall be welded to the pole shaft 6 inches above the ground collar, at 180 degrees offset, as well as additional locations specified in attachment A-3 and listed below. All grounding connections will be ½"-13 stainless steel heavy hex nuts, or an approved alternative.

5.5.2 Additionally, each pole shall have ½-13 NC stainless steel grounding nuts at the locations specified in attachment A-3. For multi-section poles, 2 additional ½-13 NC stainless steel grounding nuts per slip joint are required to be provided for electrical continuity. One nut is to be located at the bottom of the top section and the other at the top of the bottom section. Both nuts are to be placed so that they are 1 foot away from the slip joint of the assembled pole.

5.5.2 The grounding nuts shall be protected from coatings.

5.5.4 Threaded inserts for grounding that are riveted into the pole surface shall not be permitted.

5.6 Climbing Devices

5.6.1 Design Loads:

a. Step Bolts and removable steps: The step bolts, removable steps and attachment to the pole shall be designed to support a minimum of a 300 pound worker and equipment multiplied by a load factor as defined in paragraph 5.6.2. The load shall be at the outer edge of the step or bolt.
b. Removable Ladders: The ladder and each attachment to the pole shall be designed to support a minimum of a 300 pound worker and equipment multiplied by a load factor as defined in paragraph 5.6.2. The load shall be at the outer edge of the step or bolt.

5.6.2 Load Factor: A load factor of 2.0 shall be applied to the design loads in 5.6.1. These loads shall be supported without permanent deformation.

5.6.3 Location: Climbing devices shall start 8 feet above groundline and extend to the pole top unless specified by the owner. The climbing device shall be spaced such that each step is 1 foot 6 inches apart and orientated to provide maximum ease of climbing. They shall be located to avoid interference with other attachments.

5.6.4 Finish: Step bolts, removable steps, and removable ladders for galvanized and painted poles shall be hot dipped galvanized. For weathering steel poles, step bolts and removable ladders shall be weathering steel.

5.6.5 Intent of steps/ladder: This system is intended for climbing the pole and working on the structure. It is not intended to replace the worker's fall arrest system.

5.7 Splices

5.7.1 Poles shall be designed with a minimum number of joints. Field welding shall not be allowed as part of the design of a new pole. The shaft joints to be made in the field shall be slip joints or bolted flange joints. Slip joints shall be designed for a nominal lap that will develop the full required design strength of the pole at that point. The minimum lap shall meet the requirements of ASCE Manual No. 72. All welds on both sections of the pole, in the area of the splice, shall be complete penetration welds for at least a length equal to the maximum lap dimension.

5.7.2 Manufacturer shall verify slip joint fit, through dimensional measurement or actual fit-up, before shipment. Joints should not interfere with threaded inserts, step nuts, ladder clips, or jacking nuts.

5.7.3 Sufficient jacking lugs and permanent orientation marks shall be provided at all slips joints to ensure proper alignment and complete overlap of the joint.

5.7.4 The axis of the pole shall not be distorted after the pole is mated. Shims shall not be allowed to

straighten the pole unless approved by the owner. The owner reserves the right to reject a pole based on the improper mating of a pole splice.

5.8 Appurtenances

5.8.1 The steel pole manufacturer and the owner shall work together to assure design coordination and fit up of all appurtenance connections and members to poles. Also refer to paragraph 5.1.8 of this specification.

5.9 Finishes

5.9.1 The following finishes are acceptable: Galvanizing, zinc primer combined with paint, weathering steel, and a below grade coating.

a. Galvanizing – All poles and structural components which are hot-dip galvanized shall meet all the requirements of ASTM A123 or ASTM A153. Measures shall be taken to prevent warping and distortion according to ASTM A384 and to prevent embrittlement according to ASTM A143. Poles made of ASTM A588 steel shall not be galvanized due to the high silicon content of the steel. One gallon of zinc enriched paint shall be provided with each ten (10) poles.

b. Zinc Primer and Painting - Poles which are to be painted shall be hermetically sealed to prevent corrosion of interior surfaces. After shot or sand blasting and cleaning in accordance with the surface preparations specification, SSPC/NACE SP-6/NACE 3, a zinc primer of 3 mils dry film thickness (DFT) and two coats of finish paint, each 3 mils DFT shall be applied to all exterior surfaces in accordance with the paint supplier's recommendations. One gallon each of primer and finish paint shall be supplied with each ten (10) poles. A guarantee against flaking or fading of the paint for a minimum of 5 years shall be provided.

c. Weathering Steel - Steel shall conform to ASTM A588 or A871. After fabrication, poles made of weathering steel shall be cleaned of oil, scale, etc. to ensure uniform and rapid formation of the protective oxide layer.

d. Coatings for the Embedded Portion of the Pole A minimum 16 mil DFT of two component hydrocarbon extended polyurethane coating that is resistant to ultraviolet light shall be applied on the exposed surface of the embedded portion of the pole. The coating shall extend from the butt to the top of the ground collar, or 24 inches above Groundline, whichever is greater. Other coatings shall be approved by the owner prior to their use. One-quart container of touch up shall be provided with each ten (10) poles.

5.9.2 Bolts and nuts with yield strengths under 100,000 psi shall be hot-dip galvanized per ASTMA153 and ASTM A143, or mechanically coated with zinc in accordance with ASTM B695, Class 50. Bolting materials with yield strengths in excess of 100,000 psi shall not be hot-dip galvanized. Instead, they shall be painted with zinc enriched paint or mechanically coated with zinc per ASTM B695, Class 50. Bolts and nuts made from weathering steel do not require a galvanizing coating.

5.9.3 Compliance with coating thickness requirements shall be checked with a magnetic thickness gauge.

5.10 Markings

5.10.1 Each Pole shall be permanently marked on the pole shaft 60 inches above groundline with the following identifying information, unless specified otherwise by the owner:

- Manufacturer's name

- Month and year of manufacture
- Length and class of pole

5.10.2 The identification information listed above shall be permanently marked on the transverse side of the pole. The method of identification shall be approved by the owner. The lettering shall be at least 3/4 inch in height.

5.10.3 Each bearing plate and top cap plate shall be permanently marked with length and pole class by electric arc weld. Characters shall be a minimum of 2 inches in height, and be easily identifiable from the ends.

5.10.4 Each section of a spliced pole shall be marked such that the intended mate section can be easily identified. The markings shall be permanent and legible and contain at least the following information:

- Pole Length and Class (each section and total pole).

5.11 Inspection And Testing

5.11.1 The owner and the owner's representative shall have free entry at all times during fabrication, to all parts of the manufacturer's plant to inspect any part of the production of the poles covered by this specification.

5.11.2 Steel members that are bent or warped or otherwise improperly fabricated shall be properly repaired or replaced at the sole discretion of the owner.

5.11.3 The cost of tests made by the manufacturer (except full scale load tests on poles), including cost of the certified test reports shall be considered included in the bid price.

5.11.4 The manufacturer shall make tests in accordance with ASTM A370 and A673 to verify that the material used in the structures meets the impact properties.

5.11.5 Mill test reports showing chemical and physical properties of all material furnished under this specification shall be maintained by the manufacturer for a period of 5 years and shall be traceable to the pole.

5.11.6 All plates over 1-1/2 inches thick shall be ultrasonically tested to assure against defects that could lead to lamellar tearing.

5.11.7 Qualification of welders or welding operators will be verified as to conformance with the provisions of AWS D1.1.

5.11.8 The manufacturer shall make certified welding reports for each pole. The reports covering welding shall include all welds of a pole. Each weld shall be clearly identified; and the report shall consist of the method of testing, whether the weld is acceptable, the identification of the pole, the date, and the name and signature of the inspector.

5.12 Full Scale Structure Testing

5.12.1 The poles that are to have full-scale load tests performed on them are listed in Attachment B. Cost for such test shall be the responsibility of the owner, shall be separated from the manufacturer's bid, and shall be negotiated in advance of any test preparation.

5.12.2 Details of the test procedures and methods of measuring and recording test loads and deflections shall be specified by the manufacturer prior to testing and shall be subject to the review and approval of the owner or the owner's representative.

5.12.3 Deflections shall be recorded in the transverse and longitudinal directions when applicable. Deflection measurements shall be taken under the no load condition both before and after testing.

5.12.4 Material procurement for test poles shall be identical to material procurement procedures for regular production run poles.

5.12.5 A full report listing results shall be submitted after completion of all testing. Copies of mill test reports shall be included in the load test report. The report shall also include a compete description of the load tests with diagrams and photographs.

5.12.6 The owner or the owner's representative reserves the right to be present during testing and shall be notified 2 weeks prior to the start of pole test.

6. SHIPPING AND DELIVERY

6.1 Shipping

6.1.1 Each shipment shall be accompanied by a bill of materials, identifiable by pole type and number. All parts that are required for any one pole shall be in one shipment, if possible.

6.1.2 The owner and owner's representative shall be notified at least 10 business days prior to shipment that such shipment is to take place, and they reserve the right to inspect the components prior to shipment. The notification shall give quantities, weight, name of common carrier used, and expected time of arrival.

6.1.3 Salt-treated wood blocking and urethane foams shall not be used when shipping or storing weathering steel poles.

6.1.4 Transportation and site handling shall be performed with acceptable equipment and methods by qualified personnel. The manufacturer shall exercise precaution to protect poles against damage in transit.

6.1.5 Handling instructions shall be included with the pole shipment (if special handling is required).

6.1.6 The manufacturer or their representative shall be responsible for acquiring all permits, escorting services and flag personnel for a safe and timely delivery in accordance with all federal, state, and local permitting and safety requirements.

6.1.7 Poles shall be shipped on open flatbed trailers. Loads shall be banded and cribbed to facilitate unloading as a single unit, with sufficient spacing between the bottom row of poles and the trailer deck to insert 7" I-beams for lifting. Additionally, each row of poles shall be individually cribbed and banded to facilitate single row fork truck unloading. Receival of deliveries not meeting the above criteria may be refused at the manufacturer's expense.

6.2 Delivery

6.2.1 The owner may take delivery at a designated location with the delivering carrier's equipment. The manufacturer shall coordinate with the owner to ensure smooth and efficient delivery of poles.

6.2.2 The owner will provide all labor, equipment, and materials for the unloading of poles at the project site. A pole is considered delivered when the pole is lifted from the trailer or semitrailer of the delivery carrier.

7. DRAWINGS AND INFORMATION TO BE SUPPLIED BY THE MANUFACTURER

7.1 Information to be Supplied with the Proposal (See Attachment C). Dimensional & strength data to be additionally supplied in PLS-POLE format.

a. Pole diameter at the top, groundline, bottom, and bearing plate diameter.
b. The pole taper of each pole in inches/foot.
c. The calculated weight of each class and length of pole.
d. General information about each pole length and class including tip load, location of point of fixity, type of steel used for the pole (ASTM number and yield), cross sectional shape, and connection details of multiple piece poles (slip joints/flange joints/welded to be one piece).
e. Calculated groundline and point-of-fixity reactions due to the tip loadings (including shear, moment, and axial reactions) in order to demonstrate conformance with the requirements of 5.1.1 and 5.1.2.
f. Description of pole shaft cross section including thickness of the plate at the bottom, groundline, and at the top.
g. For each standard class pole, provide pole top deflection using the specified tip loading in order to demonstrate conformance with the requirements of and 5.1.3.
h. The cost of each pole by size and length. Also the total order cost for each class and length of pole.
i. Corrosion resistant metalized material and thickness, as well as embedment coating material and thickness.
j. Per unit costs for: manufacturer drilled holes, grounding nuts, and ladder clips.
k. Delivery costs shall be quoted as a separate line item. Delivery can be anywhere within Central Hudson's territory. If the delivery location is not known at the time bidding, it may be assumed to be Central Hudson's main storeroom located @ 24 South St, Highland, NY, 12528. If mileage adjustments to the final delivery location will apply, they must be specified on the initial proposal.

7.2 Documentation to be Supplied for the Owner's Approval Prior to Fabrication (as requested by the owner): Documentation includes final design calculations for the pole shaft at 5-foot intervals and will be based upon the pole loading shown in Table 1. The following information shall be supplied:

- Total shear forces
- Moment
- Design Stress, Allowable stress, and Stress ratio
- Section moduli
- Cross-sectional area
- Deflection at the pole top due to tip load
- Detailed approval drawings for each structure type giving weights, dimensions, exact locations of: corrosion protection, ground sleeves, climbing attachments, grounding nuts, jacking nuts, and manufacturer drilled holes.
- Bill of materials list (if any)
- Assembly instructions and erection drawings
  (Slip joint lengths and allowable tolerances)
- Special handling instructions (if required)

7.3 Test Reports (as requested).

- Certified mill test reports for all structural material.
- Certified welding reports for each pole.
- Impact property test reports showing that the material used in the poles meets the impact properties.
- Test reports on coating thickness.
- Report of pole testing, when required, including photographs, and diagrams.

8. APPROVALS, ACCEPTANCE AND OWNERSHIP

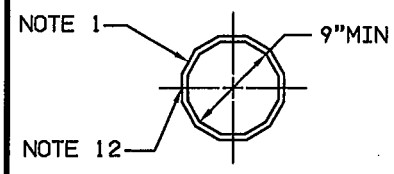
8.1 Final designs must be approved by the owner or owner's representative before material ordering and fabrication. Material ordering and fabrication prior to approval will be at supplier's risk. It is understood that award of this contract does not constitute acceptance of design calculations submitted with the bid, if corrections are required in the final structure designs due to manufacturer's errors, omissions, or misinterpretations of the specifications, the quoted price shall not change. Approval of the drawings and calculations by the owner or the owner's Representative does not relieve the supplier of responsibility for the adequacy of the design, correctness of dimensions, details on the drawings, and the proper fit of parts.

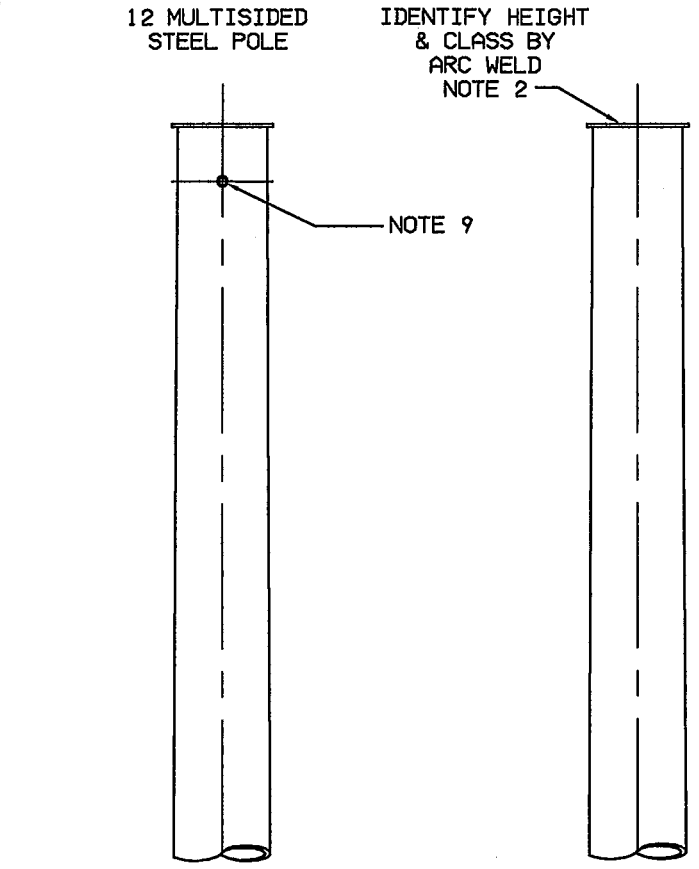
8.2 After delivery, the poles will be inspected and shall be free of dirt, oil blisters, flux, black spots, dross, teardrop edges, flaking paint or zinc; and in general shall be smooth, attractive, and unscarred. Poles not meeting this requirement shall be repaired or replaced by the manufacturer at no additional cost to the owner. Final decision to repair rather than replace a pole shall be at the owner's sole discretion.

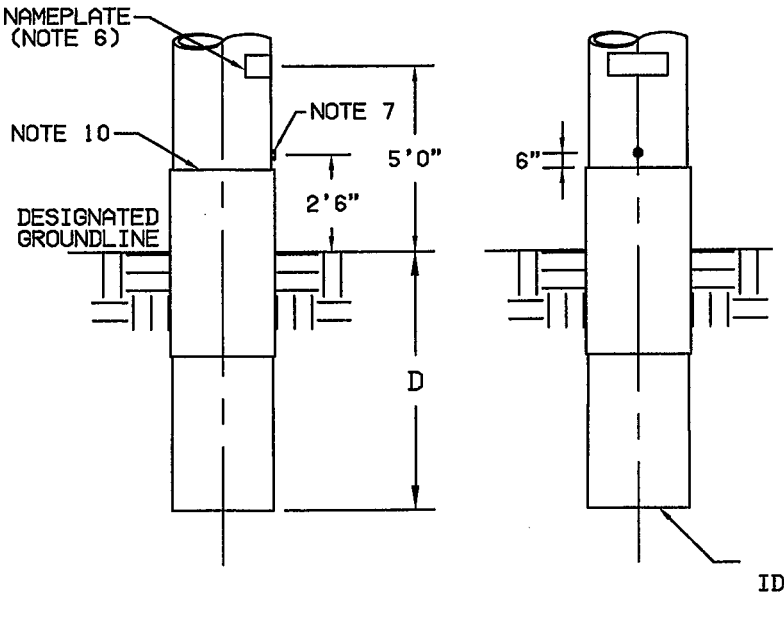
8.3 All final drawings shall become the property of the owner, who shall have full rights to reproduce drawings and use them as the owner sees fit.

9. LIST OF ATTACHMENTS TO THIS SPECIFICATION: (Attachment A, and B to be completed by the engineer. Attachment C to be completed by the manufacturer)

- Attachment A, Structure Dimensions and Pole Framing Drawings
- Attachment B, Application Requirements
- Attachment C, Bid Summary



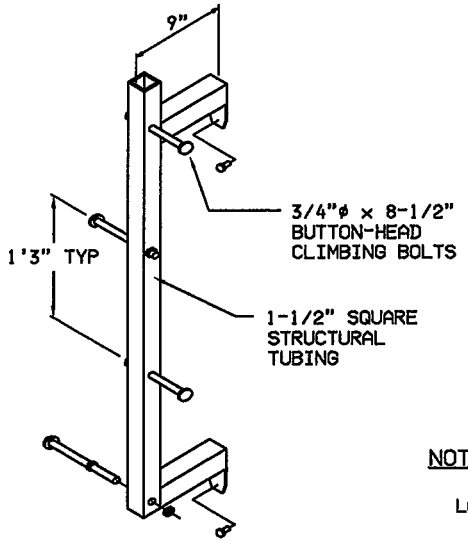




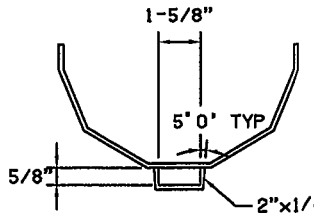
NOTES:

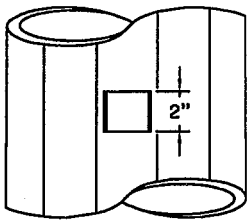
1. PROVIDE LADDER ATTACHMENT CLIPS FROM 1' BELOW POLE TOP TO APPROX. 8' ABOVE DESIGNATED GROUNDLINE TO POLETOP. ORIENTATION IS INDICATED ON TECHNICAL SPECIFICATION DRILLING PATTERN, ATTACHMENT A3.
2. THE TOP OF THE POLE SHALL HAVE A PERMANENTLY COVERED STRUCTURAL STEEL PLATE WELDED TO THE POLE. THE POLE SHALL BE DELIVERED WITH THE POLE COVER ATTACHED IN PLACE. IDENTIFY HEIGHT & CLASS OF POLE BY ARC WELD.
3. PLASTIC PLUGS SHALL BE INSTALLED IN ALL NUTS WELDED TO THE STRUCTURE AND ALL TAPPED HOLES.
4. FOR SPLICE DETAILS, SEE ATTACHEMENT A2, STEEL POLE DETAIL #2 DRAWING.
5. TOLERANCES: SECTION 5.4 OF THE CENTRAL HUDSON TECHNICAL SPECIFICATION STANDARD CLASS STEEL TRANSMISSION POLES.
6. NAMEPLATE SHALL BE LOCATED AS SHOWN WITH THE FOLLOWING MINIMUM INFORMATION:
   MANUFACTURER'S NAME
   MONTH AND YEAR OF MANUFACTURE
   LENGTH AND CLASS OF POLE
7. 1/2-13 STAINLESS STEEL HHN WELDED GROUNDING CONNECTION. FOR GROUNDING PLATE/NUT DETAILS, SEE DRAWING ATTACHMENT A2, STEEL POLE DETAIL #2 DWG.
8. DIMENSION 'D' FROM POLE BUTT TO DESIGNATED GROUNDLINE IS 10% + 2' OF POLE LENGTH.
9. SEE TECHNICAL SPECIFICATION DRILLING PATTERN ATTACHMENT A3 FOR DETAILS.
10. GROUND COLLARS SHALL HAVE A MINIMUM THICKNESS OF 3/16", HAVE A LENGTH OF 4 FEET, AND BE LOCATED ON THE CENTERLINE OF THE DESIGNATED GROUNDLINE.
11. FOR GALVANIZED POLES, THE DRAIN HOLE IN THE BOTTOM BEARING PLATE SHALL NOT BE GREATER THAN 20% OF THE BEARING PLATE AREA.
12. FOR ALL MULTISIDED SECTIONS, A FLAT SIDE SHOULD BE ON THE 0-180° AXIS.

ELECTRIC STANDARDS	CENTRAL HUDSON GAS & ELECTRIC CORP.	DATE 9-25-12
DRAWN. LNM CLEAR ENGR. APP.	TRANSMISSION POLES STEEL POLE DETAILS DRAWING #1	ISSUE APP. APP.

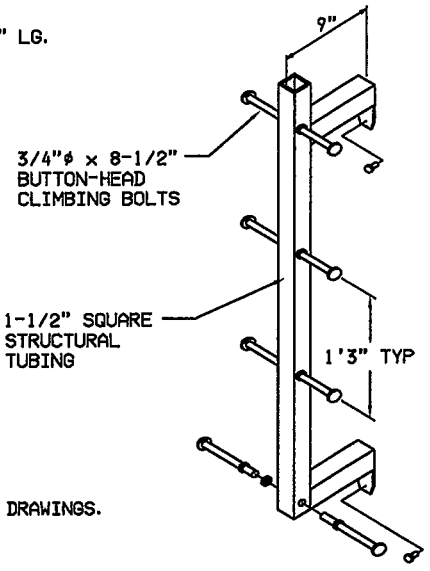


CLIMBING LADDER





STANDARD DETAIL 'G'
STANDARD LADDER
CLIP DETAIL

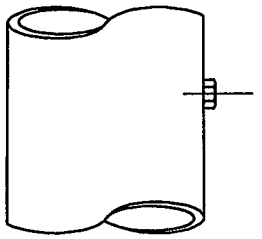


WORKING LADDER

NOTE:

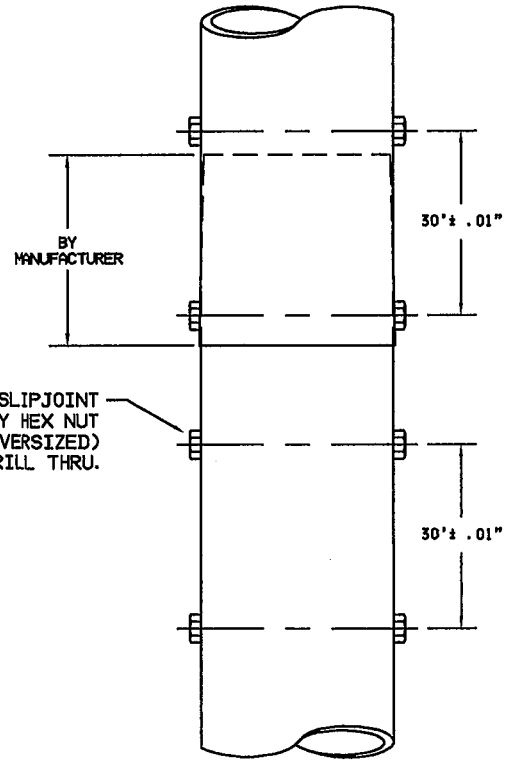
LADDER CLIPS ARE LOCATED PER OWNER'S DRAWINGS.

STANDARD LADDER DETAILS



1/2"-13 UNC THREADS
STAINLESS STEEL
HEAVY HEX NUT WELDED
TO POLE. THREADS
SHALL BE PROTECTED
DURING GALVANIZING IF
REQ'D. DO NOT DRILL
THRU.

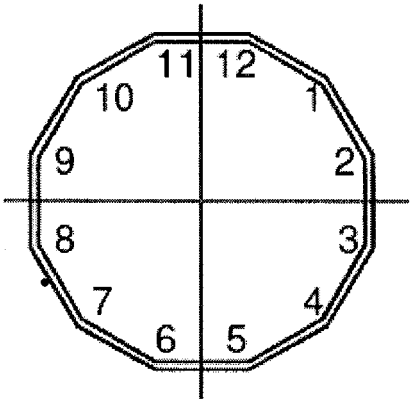
GROUNDING NUT
DETAIL



STANDARD JACKING NUT
DETAIL FOR SLIP JOINTS

ELECTRIC STANDARDS	CENTRAL HUDSON GAS & ELECTRIC CORP.	DATE 9-25-12
DRAWN. LNM CLEAR ENGR. APP.	TRANSMISSION POLES STEEL POLE DETAILS DRAWING #2	ISSUE APP. APP.

Attachment A-3: Drilling Pattern & Hardware Attachment Schedule.



Item	Description	Size	For Use	Distance / From	Face
1	Weld Size & Class On Top Cap	2" min	ID	0'-0" / Top	Top Cap
2	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	0'-3" / Top	2-3 & 8-9
3	Thru Hole / Knockouts	13/16" Dia	Static / Guys	0'-6" / Top	5-6 & 11-12
4	Thru Hole / Knockouts	13/16" Dia	Static / Guys	0'-7" / Top	2-3 & 8-9
5	Thru Hole / Knockouts	13/16" Dia	Static / Guys	1'-0" / Top	5-6 & 11-12
6	Thru Hole / Knockouts	13/16" Dia	Static / Guys	1'-1" / Top	2-3 & 8-9
7	Heavy Hex SS Ground nut	½ - 13 NC	Groundwire	7'-0" / Top	8-9
8	Thru Hole / Knockouts	15/16" Dia	Insulator	7'-0" / Top	5-6 & 11-12
9	Thru Hole / Knockouts	15/16" Dia	Insulator	8'-0" / Top	5-6 & 11-12
10	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	12'-0" / Top	2-3 & 8-9
11	Thru Hole / Knockouts	15/16" Dia	Insulator	13'-0" / Top	5-6 & 11-12
12	Thru Hole / Knockouts	15/16" Dia	Insulator	14'-0" / Top	5-6 & 11-12
13	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	18'-0" / Top	2-3 & 8-9
14	Thru Hole / Knockouts	15/16" Dia	Insulator	19'-0" / Top	5-6 & 11-12
15	Thru Hole / Knockouts	15/16" Dia	Insulator	20'-0" / Top	5-6 & 11-12
16	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	24'-0" / Top	2-3 & 8-9
17	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	1'-0"/Above top section slip joint	2-3 & 8-9
18	Heavy Hex SS Ground nuts	½ - 13 NC	Groundwire	1'-0" / Below bottom sect max slip joint	2-3 & 8-9
19	Nameplate	¾" Min Lettering	ID	5'-0" / Above calculated groundline	2-3
20	Ground Sleeve, 3/16" min thick	4'0" long	Corrosion Protection	Center on calculated groundline	All
21	Ladder Clip Attachments	2"x1/4"x3" Industry standard shape.	Climbing & Working ladders	1'-0" Below pole top & continuing to approximately 8' above calculated groundline @ standard spacing.	8-9
22	Weld Size & Class On Bearing Plate	2" min	ID	0'-0" / Bottom	Bearing Plate

ATTACHMENT A-4

Maximum Allowable Bearing Plate Diameters

Pole Class:	H6	H5	H4	H3	H2	H1	C1	C2
Pole Height (feet)								
40			20.56	19.57	18.58	17.59	16.60	15.62
45	23.49	22.51	21.52	20.54	19.55	18.35	17.37	16.38
50	24.45	23.47	22.27	21.29	20.31	19.11	18.13	16.93
55	25.40	24.21	23.23	22.04	20.84	19.87	18.67	17.48
60	26.14	24.96	23.77	22.79	21.60	20.41	19.23	18.04
65	26.89	25.71	24.52	23.34	22.15	20.97	19.78	18.60
70	27.43	26.46	25.28	24.09	22.70	21.52	20.34	19.16
75	28.18	27.00	25.82	24.65	23.47	22.08	20.90	19.51
80	28.73	27.55	26.38	25.20	23.82	22.64	21.46	20.08
85	29.49	28.31	26.93	25.76	24.38	23.20	21.82	20.44
90	30.04	28.87	27.49	26.32	24.94	23.56	22.18	21.01
95	30.59	29.42	28.05	26.67	25.50	24.12	22.54	21.37
100	31.15	29.98	28.61	27.23	25.86	24.49	23.11	21.74
105	31.71	30.34	29.17	27.80	26.43	24.85	23.48	22.11
110	32.27	30.90	29.53	28.16	26.79	25.42	23.85	22.48
115	32.83	31.46	30.09	28.52	27.16	25.79	24.22	22.85
120	33.39	31.82	30.46	29.09	27.52	26.16	24.59	23.22
125	33.75	32.39	30.82	29.46	27.89	26.52	24.96	23.39

Attachment B
Application Requirements

Type of finish of the pole (indicate by checking one)

Weathering____X _____

Galvanized_____

Zinc primer and paint_____

Special Charpy requirements None_____

Surface protection desired for embedded portion of pole (indicate by checking one or both)

Polyurethane Coating___ X (All Poles)___

Anodes_____

Climbing device type (indicate by checking one)

Step Bolts_____

Ladder ____ X (All Poles)_____

Removable Steps_____

Location of climbing device: Ladder clips to begin @ 1 foot below pole top and continue to approximately 8' above calculated ground level. See attachment A-3 for details.

Length of ground collar ___4 Feet_____

Grounding plate or nut ___1/2-13 stainless steel heavy hex nuts_____

Delivery schedule _____

Free on board destination _____

Pole test (if required) _____

Additional Requirements (below) _____

Attachment C

Standard Class Steel Pole Bid Summary (Information to be supplied with the bid)					
DESIGN INFORMATION					
Pole framing drawing					
Pole Class					
Pole Length					
POLE DESCRIPTION					
Top Diameter					
Groundline Diameter					
Bottom Diameter					
Taper (in/ft)					
GENERAL					
Pole Wt/ each					
Tip Load					
Point of Fixity Loc					
Steel (ASTM/yield)					
Cross section shape					
Splice joint type					
CALCULATIONS AT THE GROUNDLINE					
Moment					
Shear					
Axial					
Cross Sectional Area					
CALCULATIONS AT THE POINT OF FIXITY					
Moment					
Shear					
Axial					
Cross Sectional Area					
WALL THICKNESS					
Top					
Groundline					
Bottom					
DEFLECTION (Top)					
COST SUMMARY					
COST/POLE					
NUMBER OF POLES					
TOTAL COSTS					

COMMENTS:	TRANSMISSION LINE POLES ATTACHMENT C BID SUMMARY - DESIGN INFORMATION,WEIGHTS, AND PRICE INFORMATION (INFORMATION TO BE SUPPLIED WITH THE PROPOSAL)

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-010 (MAS/RQ)

Central Hudson Response No: CHGE-010 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 5, 2014

Response Provided by: Jose Ruaya

Information Requested:

a. Explain what analysis Central Hudson Gas and Electric Corporation (Central Hudson) has or will perform on the existing structures scheduled to remain. Provide a copy of the documentation that Central Hudson used in determining what structures will stay.

b. Discuss what changes Central Hudson will make to those structure so that they are in conformance with the new structures and look like the new facility the company is installing (i.e., color, change in cross arm, insulators, etc.). Explain.

Responses:

a. Central Hudson will analyze the strength of the structures which are proposed to remain by performing a load analysis to determine if those structures can handle the weight of the new conductors.

b. No changes are planned to those structures proposed to remain.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-011 (MAS/RQ)

Central Hudson Response No: CHGE-011 (DPS)

Date of Request: 4/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: May 5, 2014

Response Provided by: Lewis Fitzgerald (1 and 2)
Christopher Rottkamp (3)

Information Requested:

1. Provide a table or other suitable format listing all right-of-way (ROW) encroachments, including the locations where they are found (between structures) and the property owner's name.

   a. Include a column listing the final resolution of each encroachment and provide updates as they become available.

2. Provide a copy of Central Hudson Gas and Electric's policy on ROW encroachments and explain how the policy is enforced.

3. Provide the cost to remove the rocky outcrop between structures A8 and A9. Provide the cost associated with moving the structures to avoid the outcrop. Provide copies of workpapers and detailed explanations for each cost.

Responses:

*1. See Table attached as **Exhibit A** to this Response.*

2. *See **Exhibit B**, Encroachments Review and Mitigation Procedures.*

3. *The estimated cost to remove the rock outcrop between structures A8 and A9 is approximately $24,000. This is based upon an estimated (assumed) 2-day rock removal operation performed by a contractor (not Central Hudson forces). Cost breakdown is as follows:*

Rock Location:		
Mobilize machinery	*1 lump sum*	*$1,800*
20 ton excavator w/ 5000# hammer	*16 hours@$185/hr. =*	*$2,960*
15 ton excavator – clean out/load	*16 hours@$125/hr. =*	*$2,000*
Silt fence	*300'*	*$ 500*
Pick-up truck	*2 days@$200/day =*	*$ 400*
Dump truck (subcontract)	*18 hours@$130/hr. =*	*$2,340*
Dump Site, Assumed Spreading Material:		
Find/markout/approve/monitor	*8 hours@$85/hr. =*	*$ 680*
Mobilize machinery	*1 lump sum*	*$ 800*
125 hp dozer	*8 hours@$115 =*	*$ 920*
Silt fence	*300'*	*$ 500*
SUBTOTAL EARTHWORK CONTRACTOR:		*$12,900*
Other Costs:		
Ag. field protection (matting)	*1 lump sum*	*$8,000*
Final restoration and de-compaction	*1 lump sum*	*$1,000*
Contract administration/management	*1 lump sum*	*$ 800*
Field supervision	*1 lump sum*	*$ 800*
Overheads expenses	*included*	*$ 0*
AFUDC	*AFUDC calculator*	*$ 746*
		========
GRAND TOTAL COST ESTIMATE:		***$24,246 ($24,000 rounded)***

Providing a cost estimate for re-routing the A-Line to avoid the outcropping would require at least a conceptual design. At a minimum, a re-route would require moving one of the recently installed existing structures that is planned to remain in place. The new structure would likely be an angle structure that requires guying, or an engineered (concrete foundation) structure would be required to avoid a net negative impact on the active agricultural field.

Re-route work would have a negative impact on the agricultural field, and would require additional costly protection and restoration measures. In addition, a new (or revised) right-of-way easement would need to be obtained from the landowner. All these re-route costs could easily be double or triple the cost of simply reducing the rock outcrop. Therefore, detailed design alternatives and cost estimates have not been pursued any further. It is our belief that the plan as submitted is

not only the most economically feasible, but has the best outcome for the landowner.

Exhibit A to CHGE-001 (DPS)
Case 13-T-0469

A&C Line- Known ROW Encroachments

LINE	ENCROACHMENT	DATE FOUND	OWNER	LOCATED BETWEEN STRUCTURES	FINAL RESOLUTION
A&C	ENCROACHMENTS (DRIVEWAY, UG UTILITIES)	11/9/1993 11/16/1997	William Beyer - original owner	55415/55416 - 55417/55418	Licensed
A&C	ENCORACHMENTS (WATER TOWER & MAINS)	& 2/25/2003	Town of LaGrange	55415/55416 - 55417/55418	Licensed

ELECTRIC & GAS TRANSMISSION RIGHT OF WAY ENCROACHMENT REVIEW AND MITIGATION PROCEDURE

1) Real Property Services is notified of a potential encroachment. Notification comes from:

   a. Quarterly aerial patrols of electric transmission lines
      i. Receive quarterly Aerial Patrol Inspection spreadsheets, which contain the x-y coordinates of found encroachments.
      ii. Import spreadsheet into the ARC GIS map and save as a shape file.
      iii. Compare new encroachment layer with existing encroachment layer. For new encroachments, proceed to Step 2.

   b. Ground Patrols of electric transmission lines performed in accordance with the Comprehensive and Bulk Inspection of Electric Transmission Guideline Schedule. The Comprehensive Inspection is a 5-year schedule for which 20% of the transmission lines are inspected each year. Bulk Inspections are done once a year prior to the Summer Load period and are performed on the 345kV lines and those interconnecting 115kV and 69 kV lines.
      i. Transmission Design receives the reports from these inspections. Upon receipt of inspection reports, Transmission Design will provide Real Property Services with these findings.
      ii. Real Property Services will compare any found encroachments to existing encroachments on the ARC Gis Map. For new encroachments, proceed to Step 2.

   c. Quarterly aerial and annual ground patrols of gas transmission lines
      i. Receive aerial Inspection Reports on a quarterly basis and Ground Patrol Reports on an annual basis. Real Property Services to

compare found encroachments on report to existing encroachments on the ARC Gis Map. For new encroachments, proceed to Step 2.

d. Field personnel

e. Other sources

2) In all cases, upon notification of a found encroachment, Real Property Services will establish that this encroachment is a "new" and unauthorized encroachment using both the ARC GIS Map and encroachment database. After verifying that the found encroachment is new and unauthorized, Real Property Services will:

a. Plot the found encroachment on the ARC GIS Map.

b. Enter the encroachment into the database. At a minimum, the following information should be entered:
    i. The Tax Identification Number defined as the Section, Block and Lot # (SBL) and address of the parcel the encroachment is located on.
    ii. Name of property owner and mailing address, if different from parcel address.
    iii. The name of the impacted transmission line, i.e., EF Line, A-H Gas Line.
    iv. ROW # or Deed # that pertains to encroachment.

c. Try to determine date that encroachment was built or installed and if permit from the Town was required and/or issued. Various resources can be used: Town Clerks, County Tax Parcel Websites, etc.

d. Transmission Design will determine if encroachment violates any safety codes and/or if it could be licensed – determination is based on field verification, lidar analysis, transmission design, etc.

Note: The database should be updated as soon as any form of communication and/or other informational items are received.

3) Within 30 days of Real Property Services' notification of a found encroachment, Real Property Services will send the Notice of Encroachment letter to the responsible property owner. Real Property Services will advise Risk Management of Notices to be sent prior to mailing.

4) To remove or remedy the encroachment, Real Property Services will commence action to either seek the voluntary removal of the encroachment, licensing of the encroachment or begin legal action for its removal.

a. If voluntary and/or legal action for removal is not available, and the encroachment is **not considered** a safety or access issue, CH will proceed with the licensing process. If the encroachment was not removed or licensed, the database will be updated noting that the encroachment is unlicensed.

b. For encroachments that **are considered** a safety or access issue, every legal attempt will be made to seek removal. If after 45 days, all attempts to have encroachment removed are unsuccessful, Real Property Services will notify Transmission Design and Line Clearance to develop a mitigation plan to remedy such safety or access issue. This mitigation plan will be developed within 30 days after expiration of the 45 days. If deemed necessary by Transmission Design and/or Line Clearance, temporary

measures will be taken to mitigate any safety issues. Database should be updated for all events.

5) Ongoing Public Awareness of CH Property Rights. Real Property Services will mail letters to:

a. Property Owners along our electric and gas transmission corridors emphasizing the need for Central Hudson permission prior to any use of property within the confines of our easements on an annual basis.

b. Municipalities asking them to be aware of Central Hudson facilities and right of ways and their restrictions prior to issuing building permits on an annual basis.

6) Semi-annually, Real Property Services will mail a follow up letter to those property owners where either an application or license was mailed and no response was received.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-012 (MS)

Central Hudson Response No: CHGE-012 (DPS)

Date of Request: 5/23/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 29, 2014

Response Provided by: Eric Loeven

Information Requested:

Regarding the engineering justification to rebuild the A & C line provide the following information:

1. For the last ten years provide the actual and weather-normalized peaks loads for the Todd Hill Road and Fishkill Plains substations.

2. Provide the peak loads forecast for the Todd Hill Road and the Fishkill Plains substations for the next ten years.

3. Provide the new load-serving capability and a timeline (for the next ten years) showing the projected summer peaks of the Todd Hill Road and Fishkill Plains substations given that the A & C lines' conductors are replaced with 1033.5 MCM ACSR Ortolan.

4. What analysis was performed to determine the capability of the rebuild relative to projected load forecast?

Responses:

1. *Central Hudson does not weather-normalize individual substation loads. Coincident peak loads are shown in the table below:*

Coincident Peak MW Loads				
Year	*Date*	*Time*	*Fishkill Plains*	*Todd Hill*
2004	*August 3*	*1700*	*31.9*	*16.8*
2005	*July 27*	*1400*	*36.5*	*18.6*
2006	*August 2*	*1700*	*43.5*	*22.2*
2007	*August 8*	*1700*	*38.5*	*26.6*
2008	*June 10*	*1500*	*39.4*	*25.7*
2009	*August 17*	*1700*	*37.05*	*24.4*
2010	*July 6*	*1700*	*44.6*	*29.5*
2011	*July 22*	*1800*	*46.3*	*30.4*
2012	*July 17*	*1800*	*41.2*	*23.5*
2013	*July 18*	*1700*	*43.8*	*24.1*

2. *Forecast coincident peak loads are shown in the table below:*

Forecast Coincident Peak MW Loads		
Year	*Fishkill Plains*	*Todd Hill*
2014	*44.7*	*24.2*
2015	*44.8*	*24.3*
2016	*45.0*	*24.4*
2017	*45.1*	*24.5*
2018	*45.3*	*24.7*
2019	*45.4*	*24.8*
2020	*45.5*	*24.9*
2021	*45.7*	*25.0*
2022	*45.8*	*25.4*
2023	*46.0*	*25.3*

3. *The load serving capabilities of the Fishkill Plains & Todd Hill substations are approximately 50 MVA each. The A & C line rebuild project will not change these values.*

   Under an (n – 1) – 1 condition involving the loss of both East Fishkill 345/115 kV transformers, the proposed 1033.5 MCM ACSR conductor is expected to be limiting at a system load level of approximately 2620 MW (note that other facilities may be limiting at lesser system load levels). The 2620 MW load level considerably exceeds Central Hudson's all-time system peak load of 1295 MW.

4. *System load serving capability analyses were performed to aid in selection of the proposed conductor (1033.5 MCM ACSR). As shown in the table below, that conductor is not expected to be limiting until system loads more than double (note that other facilities may be limiting at lesser system load levels).*

Conductor Limits following an (n – 1) – 1 outage of both East Fishkill 345/115 kV transformers	
Potential A & C Line ACSR Conductor	***Approximate System Load (MW)***
397.5 MCM (existing)	*985*
795 MCM	*1470*
1033.5 MCM	*2620*
1272 MCM	*3065*

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-013 (MS)

Central Hudson Response No: CHGE-013 (DPS)

Date of Request: 5/14/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: May 29, 2014

Response Provided by: Jose Ruaya

Information Requested:

1. Request DPS-04(g) requested information about the compressed insulators on structure A36. In its response, Central Hudson states the insulators on proposed new structure A36 are not under compression. The request referred to the current structure, which does have compressed insulators. Provide a list of any other structures on the A and C lines in which insulators are under compression. Explain what Central Hudson will do to remedy this compression issue and provide documentation. Provide and explain the Central Hudson standards on how such problems will be corrected and prevented from occurring in the future.

2. Provide justification for the response to Request DPS-06, which claims "the performance of polymer insulators is just as good or better than ceramics from an electrical and mechanical perspective." Provide copies of all supporting documentation including EPRI reports.

3. Pages 8-19, inclusive, of Part 2 of Exhibit D of Central Hudson's response to Request DPS-03 are illegible. Provide a legible copy.

Responses:

1. *Central Hudson understands that the question referred to above relates to the presence of an uplift condition on the existing structure, which is replaced by A36. An uplift condition will generate the compressed insulators as stated in the question. An uplift condition occurs when there is negative vertical load on the insulator. This condition typically arises during a high wind and/or low temperature condition. NESC 2012 provides for an extreme wind event, Rule 230C, for which a structure must withstand. Using this criterion yields a positive vertical load on the insulators. A second analysis was performed using a very low temperature condition (-20F) and the insulators maintained positive vertical loads. Therefore, it can be concluded that the insulators are not in uplift condition for its designed operating weather/temperature range. There are no suspension insulators in uplift condition in the proposed design.*

   Central Hudson's design methodology includes analysis of uplift and ensures that designs for suspensions do have this condition.

2. *Using a technical comparison between the two types, the polymer insulator (one proposed for use by Central Hudson) exceeds or meets its ceramic equivalent. Please refer to the table below.*

Property	*Ceramic (7 Bells) 52-5 (ANSI C29.2-1977)*	*Polymer (Maclean Cat# S148054MX01)*
Mechanical Strength	*25,000 lbs*	*25,000 lbs (SML)*
Section Length	*51.75*	*48.4*
60 Hz Dry Flashover	*440kV*	*453kV*
60 Hz Wet Flashover	*280kV*	*406kV*
Critical Impulse Flashover Positive	*640kV*	*778kV*
Critical Impulse Flashover Negative	*660kV*	*825kV*
Leakage distance	*77 in*	*93 in*

An additional comparison prepared by Central Hudson in other instances is attached as ***Exhibit 1****.*

3. *We do not have a better scanned copy of the document. We can bring a hard copy to the next negotiation session, currently scheduled for June 10, 2014.*

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT- ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 1 to DPS IR Response CHGE-013

Central Hudson Insulator Analysis

Central Hudson has employed the use of non-ceramic polymer insulators on tangent structures since the 1990s. In 2003, after careful review of EPRI research on the subject, Central Hudson updated the approved polymer insulator specifications to meet strict material requirements. Central Hudson's approved polymer insulators are available in gray and bright blue colors. Central Hudson engineers contacted all approved vendors and confirmed that no brown polymer insulators were available for use on 115kV voltages. Each approved vendor confirmed that the process required to achieve a brown polymer included introduction of black carbon to the polymer resulting in a semi-conductive material that is not suitable for use as high voltage insulation.

Central Hudson has made it a practice of using polymer insulators in suspension applications on transmission pole replacements and new transmission lines in recent years because polymer offers clear benefits outlined in the table below:

	Polymer Insulators	Ceramic Insulator Strings
Constructability	Polymer suspension insulators are constructed as a single unit. 115kV insulators are typically 4.0'-5.0' long and weigh approximately 10lbs-12lbs. Polymer insulators are slim, having sheds that are typically 4"-5" in diameter. The small size and low weight of the polymer units allow for efficient installation. These units can be handled and carried safely by one crew member. The single unit means less assembly time and requires less small pieces of hardware for connection. The single unit is also fairly rugged and will not shatter or crack easily during installation.	Ceramic insulators are manufactured as smaller units (bells) that are connected to achieve the desired insulation lengths. For 115kV suspension applications, 7 or more bells are attached as one insulator string. Each bell is 10" in diameter, approximately 6" tall, and weighs approximately 8lbs. The total length of the 115kV ceramic insulator is 3.5'-4.0'. The total weight of one 115kV string is approximately 55lbs-60lbs. The 115kV string is comprised of 7 bells linked together in non-rigid connections. The weight and flexibility of the string typically requires more than one crew member for handling. The string requires more assembly and increased use of small hardware, such as cotter keys, for connection. Although crews are instructed in the proper handling of ceramic insulators, they are fragile and will crack and shatter if knocked together or against the poles during installation. In the event of a cracked or shatter bell, that bell must be removed and replaced before the string can be installed.
Appearance	115kV insulators are typically 4.0'-5.0' long and typically 4"-5" in diameter. Polymer insulators are available in gray and blue colors. The slim profile and gray or blue color tend to blend in with the sky and do not add to the bulk of the transmission line.	For 115kV suspension applications, 7 or more ceramic bells are attached as one insulator string. Each bell is 10" in diameter and approximately 6" tall. The total length of the 115kV ceramic insulator is 3.5'-4.0'. Ceramic insulators are wider than polymer insulators and have a more substantial appearance. Ceramic insulator bells are available in brown and gray.

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

In the Matter of the Application of Central Hudson Gas & Electric Corporation For a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the Public Service Law for the A and C Line Rebuild Project, Approximately 10.85 miles of 115 Kilovolt Transmission Lines in the Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, in Dutchess County	Case No.: 13-T-____

CENTRAL HUDSON GAS & ELECTRIC CORPORATION

A AND C LINE REBUILD PROJECT

EXHIBIT 7

LOCAL ORDINANCES

Table of Contents

EXHIBIT 7 – LOCAL ORDINANCES

7.1 Introduction

Pursuant to 16 NYCRR § 86.8, this Exhibit identifies the local ordinances, laws and regulations that are applicable or potentially applicable to this project, and the status of compliance thereto. Pursuant to Section 130 of the Public Service Law, no state agency, municipality or any agency thereof may require any approval, permit or consent for the construction or operation of a facility subject to Article VII approval unless otherwise required by the Commission. The Commission has the responsibility of either waiving (at the request of the Applicant) or applying the requirements of the local municipalities where the Project is sited.

As described in Exhibit 2, CHG&E proposes to re-build and operate an approximately 10.8-mile electric transmission line located between the Towns of Pleasant Valley and East Fishkill in Dutchess County. This Project will be located in one county, four towns, and no villages. Towns crossed by the electric transmission line are the Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill in Dutchess County.

The Applicant researched and directly inquired about local laws, ordinances and regulations that may pertain to this project. To determine the existence of ordinances for municipalities within the Project ROW, the Applicant contacted the town clerks or code enforcement officers, other appropriate officials, or the published ordinances for the above-referenced municipalities. Each of the four towns has local land use regulations in the form of a zoning ordinance that may apply to Project activities.

Section 126(1)(f) of the Public Service Law requires that the Commission find "that the location of the facility as proposed conforms to the applicable state and local laws and regulations…" To the extent the project does not conform to such laws, CHG&E has provided the justification for the Commission to refuse to apply such provisions to which the project cannot comply by explaining why such provision is unreasonably restrictive in view of the existing technology, or of factors of cost or economics, or of the needs of consumers whether located inside or outside of such municipality. In doing so, the Applicant has evaluated whether changes in the facility location or design could result in compliance with the specific law in question. A summary of these local ordinances and the project's anticipated compliance is provided in Table 7-1, below.

7.1.1 Compliance Summary

The compliance summary contained in Table 7-1 below lists every substantive local legal provision potentially applicable to the Project. The table identifies whether the Applicant can or will comply with such potentially applicable local laws or where a waiver is being requested.

Table 7-1: Project Compliance Summary

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
Town of Pleasant Valley	Chapter 39, Building Construction	Will Comply Except as Noted
	Chapter 39, §39-4, Stop-work Orders	Waiver Requested
	Chapter 46, Driveways and Highway Permits	Will Comply
	Chapter 48, Fire Prevention	Will Comply Except as Noted
	Chapter 48, §48-6(B), Firesafety and property maintenance inspections [re: local inspections]	Waiver Requested
	Chapter 50, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 50, Article III §50-11 – Floodplain Development Permit	Waiver Requested
	Chapter 50, Article III §50-13(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 53, Wetland, Water Body, and Watercourse Protection	Will Comply Except as Noted
	Chapter 53, Article III §50-8, Prohibited Activities [re: local enforcement]	Waiver Requested
	Chapter 57, Refuse Collection, Storage, and Disposal	Will Comply
	Chapter 60, Illicit Discharges, Activities and Connections	Will Comply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 74, Stormwater Management and Erosion and Sedimentation Control	Will Comply
	Chapter 93, Vehicles and Traffic	Will Comply
	Chapter 98, Zoning	Will Comply Except as Noted
	Chapter 98, Article III §98-11 – General Regulations, Schedule of Permitted Uses [re: local site plan review requirements]	Waiver Requested
	Chapter 98, Article III §98-12 – General Regulations, Schedule of Area and Bulk Requirements [re: setbacks, height restrictions]	Waiver Requested
	Chapter 98, Article IV §98-44 – Supplementary Regulations, Public Utility Facility [re: screening requirements]	Waiver Requested
Town of LaGrange	Chapter 83, Building Construction Administration and Enforcement	Will Comply Except as Noted
	Chapter 83, §83-9, Stop-work Orders	Waiver Requested
	Chapter 103, Dumps and Dumping	Will Comply
	Chapter 107, Electrical Inspection	Will Comply Except as Noted
	Chapter 107, §107-3(C), Stop-work Orders	Waiver Requested
	Chapter 120, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 120, §120-14(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 120, §120-15 – General Construction Standards [re: local permit requirements]	Waiver Requested
	Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies	Will Comply Except as Noted
	Chapter 124, §124-15 Permit Procedure– [re: local enforcement]	Waiver Requested
	Chapter 140, Illicit Discharges to Storm Sewers	Will Comply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 162, Noise	Will Comply
	Chapter 195, Solid Waste	Will Comply
	Chapter 197, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 199, Streets and Sidewalks	Will Comply
	Chapter 226, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article II §240-27 – Establishment and Designation of Districts, Schedule of Permitted Uses and Special Use Permits [re: local site plan review requirements]	Waiver Requested
	Chapter 240, Article II §240-28 – Establishment and Designation of Districts, Schedule of Bulk Regulations and Coverage Limitations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article III §240-31 – Special Zoning District Provisions, Preservation Overlay Zones [re: setbacks, height restrictions]	Waiver Requested
Town of Wappinger	Chapter 80, Blasting	Will Comply
	Chapter 85, Building Code Administration	Will Comply Except as Noted
	Chapter 85, §85-10, Inspections; Notification of Fire or Explosion; Operating Permits [re: local inspections]	Waiver Requested
	Chapter 85, §85-12, Stop-Work Orders	Waiver Requested
	Chapter 117, Environmental Quality Review	Will Comply
	Chapter 133, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 133, §133-13(F) – Duties and Responsibilities of Code Enforcement Officer and Zoning Administrator [re: stop-work orders]	Waiver Requested
	Chapter 133, §133-14(B) – General Standards, Encroachment [re: local permit requirements]	Waiver Requested

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 137, Freshwater Wetland, Waterbody, and Watercourse Protection	Will Comply
	Chapter 166, Noise	Will Comply
	Chapter 206, Soil Erosion and Sediment Control	Will Comply
	Chapter 210, Solid Waste	Will Comply
	Chapter 213, Stormwater Management	Will Comply Except as Noted
	Chapter 213, §213-11, Enforcement [re: stop-work orders]	Waiver Requested
	Chapter 230, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article VI §240-37, Attachments 1 and 2– District Regulations, Schedule of Use Regulations [re: local site plan review and special permit requirements]	Waiver Requested
	Chapter 240, Article VI §240-37, Attachments 3 and 4 – District Regulations, Schedule of Dimensional Regulations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article VII §240-44, Special Permit Uses, General Standards [re: site plan and operational requirements]	Waiver Requested
	Chapter 240, Article IX §240-83, Site Development Plan Approval [re: site plan approval requirements]	Waiver Requested
Town of East Fishkill	Chapter 80, Building Construction and Fire Prevention	Will Comply Except as Noted
	Chapter 80, §80-10, Stop-Work Orders	Waiver Requested
	Chapter 108, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 108, Article III §108-13(F), Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 108, Article III §108-14, General Standards [re: local permit requirements]	Waiver Requested

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses	Will Comply Except as Noted
	Chapter 110, §110-7(C), Permit Limitations, Certificate of Completion [re: stop-work orders]	Waiver Requested
	Chapter 127, Littering	Will Comply
	Chapter 154, Steep Slope Protection	Will Comply
	Chapter 156, Storm Sewers	Will Comply
	Chapter 157, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 177, Vehicles and Traffic	Will Comply
	Chapter 194, Zoning	Will Comply Except as Noted
	Chapter 194, Article V §194-16, Attachment 2– Schedules of Regulations, Schedule of Permitted Uses [re: prohibition of uses not specifically permitted]	Waiver Requested
	Chapter 194, Article V §194-17, Attachment 3– Schedules of Regulations, Schedule of Bulk Regulations [re: setbacks, height restrictions]	Waiver Requested

7.2 Town of Pleasant Valley

Project activities in the Town of Pleasant Valley would include the removal of 12 electric transmission structures, to be replaced by the construction of 4 double pole structures and 8 single pole structures associated with approximately 1.25 miles of the A and C Lines Rebuild Project.

7.2.1 Chapter 39, Building Construction

Chapter 39 and Chapter 48 (see below) implement the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

The Applicant will comply with the requirements of Chapter 39 However, the Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §39-14, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection 39-4(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.2.2 Chapter 46, Driveways and Highway Permits

Chapter 46, §46-1 requires the issuance of a highway work permit for any improvements made within a Town right-of-way.

The Applicant will comply with the requirements of Chapter 46, although the need for a local highway work permit is preempted by PSL §130. The proposed Project will require overhead crossings of Plass Road and Niagara Road.

7.2.3 Chapter 48, Fire Prevention

Chapter 48 and Chapter 39 (see above) implement the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

The applicant will comply with the requirements of Chapter 48. However, the Applicant requests that the Commission refuse to apply local inspection provision granted in subsection §48-6(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.2.4 Chapter 50, Flood Damage Prevention

Chapter 50 implements the National Flood Insurance Program. Chapter 50, §50-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Wappinger Creek in the Town of Pleasant Valley crossed by

a portion of the proposed Project are included in this special flood hazard area. Subsection §50-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in § 50-6, without a valid floodplain development permit."

Chapter 50 also details requirements for construction within special flood hazard areas, including general standards (§50-14).The construction standards detailed in subsection §50-14 are applicable to "new development, including new and cumulative substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §50-6." Development is defined within §50-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. Subsection §50-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 50, §50-13(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 50.

The Applicant requests that the Commission refuse to apply the provisions of Chapter *§50-11 of the Town of Pleasant Valley's flood damage prevention ordinance that require all structures within the floodplain to go through a local permitting process. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the transmission facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include poles C2 and C3 in the 100-year floodplain and C4 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. Transmission structures such as these are not prone to flood damage in the same way that residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace three existing structures (consisting of six individual poles) that are currently located within the special flood hazard area. For these reasons, Chapter 50 of the Code of the Town of Pleasant Valley is unduly restrictive in view of existing technology.*

The Applicant further requests that the Commission refuse to apply Chapter *§50-13(F) of the ordinance which includes local stop-work order provisions, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.*

7.2.5 Chapter 53, Wetland, Water Body, and Watercourse Protection

Pursuant to §53-1, "it is declared to be the public policy of the Town of Pleasant Valley to preserve, protect and conserve freshwater wetlands, watercourses and water bodies and to regulate development in such wetlands and protect such watercourses and water bodies in order to secure the natural benefits derived therefrom consistent with the general welfare and the beneficial economic, social and agricultural development of the Town". According to §53-1, the areas subject to regulation under Chapter 53 are as follows:

- All wetlands identified on the map entitled "Town of Pleasant Valley, Dutchess County, N.Y." prepared by the Dutchess County Environmental Management Council, GIS Lab, and dated March 2001, as amended, and any other wetlands as yet unmapped exceeding 1/2 acre in area that will meet the definition provided in § 24-0107(1) of the New York State Freshwater Wetlands Act as amended and updated.
- All water bodies, natural or created, having an area of a 1/2 acre or more.
- All lands lying within:
    - Twenty-five feet of wetlands and water bodies of 1/2 acre to one acre in size;
    - Fifty feet of wetlands and water bodies of one acre to two acres in size;
    - Seventy-five feet of wetlands and water bodies of two acres to three acres in size; and
    - One-hundred feet of wetlands and water bodies of three acres or more in size.
- All lands lying within 100 feet of the normal stream bank of the Wappingers Creek, Little Wappingers Creek, Great Spring Creek, and any other perennial watercourse or tributary to these named streams. A twenty-five-foot-wide natural buffer shall be maintained from the normal stream bank for all activities except for those dependent upon the passive recreational use of the stream or as a source of water for emergency purposes or agriculture in accordance with Agricultural Best Management Practices.
- Wetlands located on property that is the subject of a subdivision application pursuant to Chapter 82 shall also be subject to the provisions of § 82-18 and to any requirements that may be imposed by the Planning Board in the application process.

Chapter 53, §53-4 identifies six regulated activities, including the erection "of any structure, construction of roads, driving of pilings or placing of any other obstructions, whether or not changing the ebb and flow of the water" . This definition would include the proposed Project, as the proposed transmission towers may be located within a regulated proximity to a delineated wetland.

Chapter 53, §53-5 identifies three prohibited activities. These activities are as follows:

- Placement or deposit of any chemical waste, hazardous waste, or storage of any materials that could result in the contamination of any wetland, water body or watercourse.
- Introduction of fluids or other materials with sufficiently high temperature to cause injurious or other harmful ecological effects in any wetland, water body, watercourse or buffer area.
- Such activities which may cause substantial damage or destruction to wetlands.

Potential construction activities have the potential to result in contamination or damage to wetlands, water bodies or other watercourse. The potential as well as detailed construction measures to prevent such occurrences are described in Exhibit 4 of this application and the project's EM&CP.

Chapter 53, §53-6 establishes a requirement for obtaining local permits for undertaking these activities within regulated areas, noting that "Anyone proposing to undertake a regulated activity within a freshwater wetland, watercourse or water body, or its buffer, shall apply for and receive a permit from the Town before commencing such regulated activity." In addition, according to §53-8, "Any person or entity found to be in violation of this chapter shall be ordered and required to cease and desist the violating activity."

The Applicant will comply with Chapter 53. However, the Applicant requests that the Commission refuse to apply local enforcement authority as described in §53-8, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Cease and desist orders and fines pursuant to local authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.2.6 Chapter 57, Refuse Collection, Storage, and Disposal

Chapter 57 outlines restrictions regarding the collection, storage, and disposal of refuse material. Industrial refuse may be stored in portable waste-storage compactors, dumpsters, or similar devices. Equipment used for the collection of refuse must provide suitable coverage of the refuse to prevent littering. The Town of Pleasant Valley refuse disposal facility will not accept that which has originated outside of Town boundaries.

The applicant will comply with the requirements of Chapter 57.

7.2.7 Chapter 60, Illicit Discharges, Activities and Connections

Together with Chapter 74, Chapter 60 regulates discharges into the Town of Pleasant Valley municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

The applicant will comply with the requirements of Chapter 60.

7.2.8 Chapter 74, Stormwater Management and Erosion and Sediment Control

Chapter 74 regulates development within the Town of Pleasant Valley with regard to erosion control measures. Per §74-4(D), all land development activities other than those regulated by the Town of Pleasant Valley Subdivision law (§82) are required to submit a stormwater pollution prevention plan to the Town Stormwater Management Officer. Eleven categories of activity are granted exemption per §74-5, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles". The ordinance does not make a clear distinction between electric poles and transmission towers.

The Applicant will comply with Chapter 74, although local permitting requirements are preempted per PSL §130.

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010.

7.2.9 Chapter 93, Vehicles and Traffic

Chapter 93 describes traffic and vehicle ordinances for the purposes of preventing obstruction of Town roads and highways. Chapter 93, §93-2 outlines specific parking regulations relative to winter parking on Town roads and Highways between November 1 and April 1.

The applicant will comply with the requirements of Chapter 93.

7.2.10 Chapter 98, Zoning

Chapter 98 describes 15 zoning districts, including one overlay district, within the Town of Pleasant Valley. The proposed Project is located within the Rural Residential (RR) and Medium Density Residential (MDR) zoning districts, as well as the Special Flood Hazard (SFH) overlay district. Per Attachment 1 of Chapter 98 and §98-11, each of these districts allows for "public utility facilities" as a permitted use subject to site plan review. Article X of Chapter 98 defines such facilities as an "installation used by a public agency or a specially franchised public utility to supply or transmit electric, gas, water, sewage disposal, cable television, telephone service, or other utility service, excluding electric power plants and gas wells" .

Attachment 2 of Chapter 98 (§98-12) identifies dimensional requirements relative to each zoning district, as follows (N/A dimensional or other requirements are not listed):

- Rural Residential (RR):
    - Average density: 3.5 acres
    - Minimum road frontage: 50 feet
    - Minimum front yard setback: 70 feet
    - Minimum side yard setback: 30 feet
    - Minimum back yard setback: 50 feet
    - Minimum lot width at primary building line: 200 feet
    - Maximum impervious coverage: 20%
    - Maximum building footprint per nonresidential establishment: 4,000 sq. feet
    - Maximum height: 35 feet
- Medium Density Residential (MDR):
    - Average density: 1 acre
    - Minimum road frontage: 50 feet
    - Minimum front yard setback: 50 feet
    - Minimum side yard setback: 20 feet

- Minimum back yard setback: 30 feet
- Minimum lot width at primary building line: 100 feet
- Maximum impervious coverage: 25%
- Maximum building footprint per nonresidential establishment: 4,000 sq. feet
- Maximum height: 35 feet

- Special Flood Hazard (SFH):
  - Minimum road frontage: 50 feet
  - Allowed uses in the SFH district shall conform to the most restrictive adjoining zoning area and bulk requirements
  - Other requirements as per Chapter 50 of the Code of Ordinances, Flood Damage Prevention.

Per Chapter 98, Article IV §98-44, public utility facilities are required to provide adequate screening to mitigate detrimental impacts on neighboring properties. According to the supplementary regulations associated with public utilities, "in order to protect neighboring properties from any associated facility noises, facility lighting and/or detriments to the visual qualities of the surrounding area, adequate screening of the facility and sound barriers consisting of landscaping and/or fencing shall be provided if the need for such additional protection is determined necessary by the Planning Board in the site plan review process" .

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §98-11 that requires local site plan review and approval.

The Applicant requests that the Commission refuse to apply the dimensional requirements described within subsection §98-12. The proposed Project is a permitted use within each zoning district, and will be constructed wholly within an existing ROW, where transmission lines are currently strung along existing towers. Both the existing ROW and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The area and bulk requirements detailed within subsection §98-12 are not designed to accommodate these specifications. For these reasons, compliance with dimensional requirements are either not applicable, or are being reviewed pursuant to Article VII.

The proposed Project will provide screening, landscaping, and/or fencing in accordance with any applicable conditions of the issued Certificate of Environmental Compatibility and Public Need and the approved EM&CP. Such screening, landscaping, and fencing must also comply with the National Electrical Safety Code (NESC).

The Applicant cannot determine whether the screening, landscaping, and/or fencing provided in accordance with the Certificate and EM&CP satisfies the supplementary regulations described in §98-44, as the latter would be a matter of local Planning Board discretion and a product of the site plan review process from which the Applicant has requested relief. Therefore, the Applicant requests that the Commission refuse to apply the provisions of §98-44.

7.3 Town of LaGrange

Project activities in the Town of LaGrange would include the removal of 66 electric transmission structures, to be replaced by the construction of 13 double pole structures and 53 single pole structures associated with approximately 6.75 miles of the A and C Line Rebuild Project.

7.3.1 Chapter 83, Building Construction Administration and Enforcement

Chapter 83 implements the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

The Applicant will comply with Chapter 83. However, the Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §83-9, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §83-4(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.3.2 Chapter 103, Dumps and Dumping

Chapter 103 regulates waste disposal and transport within the Town. The use of private or public lands for the purpose of waste disposal or dumping is prohibited. All garbage, industrial waste, or refuse transported within the Town is required to be handled and covered so it cannot be accessible to rodents, flies, or other insects, or create a nuisance.

The applicant will comply with the requirements of Chapter 103.

7.3.3 Chapter 107, Electrical Inspections

Chapter 107 outlines the roles of the Electrical Inspector for the Town. According to subsection §107-3(A), it is a violation for any person, firm or corporation to install or alter electrical wiring for light, heat or power without first filing an application for inspection with the local Electrical Inspector. According to §107-3(B), it is also a violation to connect electrical wiring in or on properties for light, heat, or power to any source of electrical energy supply prior to the issuance of a temporary certificate or certificate of compliance by the local Electrical Inspector. Per §107-3(C), the Electrical Inspector has stop work authority should they determine that any section of this chapter has been violated.

The Applicant will comply with Chapter 107, although local permitting requirements are preempted per PSL §130.

Because local permitting requirements are preempted, the Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §107-3(C), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §107-2; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local electrical inspection.

7.3.4 Chapter 120, Flood Damage Prevention

Chapter 120 implements the National Flood Insurance Program. Chapter 120, §120-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Wappinger Creek and Sprout Creek in the Town of LaGrange crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §120-12 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards

and ensuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in §120-6, without a valid floodplain development permit."

Chapter 120 also details requirements for construction within special flood hazard areas, including general construction standards (§120-15). The construction standards detailed in subsection §120-15 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §120-6." Development is defined within subsection §120-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. Subsection §120-15(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 120, §120-14(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 120.

The Applicant requests that the Commission refuse to apply the provisions of subsection §120-15 of the Town of LaGrange's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include poles C16 and C33, both in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. The transmission facilities proposed to be located within the special flood hazard area are not prone to flood damage in the same way that residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace two existing structures (consisting of four individual poles) that are currently located within the special flood hazard area, or overhead transmission lines would traverse them. For these reasons, subsection §120-15 of the Code of the Town of LaGrange is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection §120-14(F) , which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-

work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.3.5 Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies

Pursuant to Chapter §124-2, "it is declared to be the public policy of the Town of LaGrange to preserve, protect and conserve freshwater wetlands, watercourses and water bodies and the benefits derived therefrom; to prevent despoilation and destruction of freshwater wetlands, watercourses and water bodies; and to regulate development in such wetlands and protect such watercourses and water bodies in order to secure the natural benefits derived therefrom consistent with the general welfare and the beneficial economic, social and agricultural development of the Town" (Town of LaGrange, 2002). According to Chapter 124, the boundaries of wetlands shall be determined by field investigation.

Chapter 124, §124-7(C) identifies eight activities that are subject to regulation, including the erection of "any structures or roads, the driving of pilings or placing of any other obstructions, whether or not changing the ebb and flow of the water" (Town of LaGrange, 2002). Chapter 124, §124-5 defines structure as "anything constructed or erected, the use of which requires location on or within the ground or attachment to something having location on the ground, including but not limited to buildings, tennis courts, swimming pools, as examples." This definition would include the proposed Project, as the proposed transmission towers may be located within a regulated proximity to a delineated wetland.

The Applicant will comply with Chapter 124 and Article 24, although local permitting requirements and those of Article 24 of the ECL are preempted per PSL §130.

However, the Applicant requests that the Commission refuse to apply local enforcement authority as described in §124-15, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Penalties and appearance tickets pursuant to local authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.3.6 Chapter 140, Illicit Discharges to Storm Sewers

Chapter 140 regulates discharges into the Town of LaGrange municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

The applicant will comply with the requirements of Chapter 140.

7.3.7 Chapter 162, Noise

Chapter 162 delineates permitted noise levels within the Town of LaGrange. Chapter 162, §162-4 states that "no person shall make, continue or cause or permit to be made or continued any unnecessary noise" (Town of LaGrange, 2002). Chapter 162, §162-2 defines such noises as "any excessive or unusually loud sound or any sound which either annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of a person or which causes injury to animal life or damages to property or business" (Town of LaGrange, 2002). The standard by which unnecessary noise shall be judged includes a consideration regarding "whether the sound source is temporary" (Town of LaGrange, 2002). The ordinance does not state whether this standard applies specifically to construction-related noises, nor is the term "temporary" defined within the ordinance.

The list of prohibited acts in §162-5 includes construction-related noises between the hours of 9:00 p.m. and 6:30 a.m., pump or fan-related noises between 11:00 p.m. and 7:00 a.m., and the loading and unloading of vehicles or materials between the hours of 11:00 p.m. and 7:00 a.m. within 300 feet of a residentially zoned area.

The list of permitted noses in §162-10 include sounds created by public utilities in carrying out the operations of their franchise.

Sounds created by public utilities are allowed pursuant to subsection §162-10. The construction process will include the use of motorized equipment during transportation, excavation, and erection of the proposed transmission towers. Temporary noises produced by such equipment are unavoidable given the nature of the activities. Industry-standard noise mitigation techniques will be employed as part of the project.

Construction hours of operation will be determined by the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Construction hours are anticipated to be in compliance with the requirements of §162-5.

7.3.8 Chapter 195, Solid Waste

Chapter 195 regulates local garbage disposal and collection. According to §195-2, only residents and business owners may utilize the Town dump facilities.

The applicant will comply with the requirements of Chapter 195.

7.3.9 Chapter 197, Stormwater Management and Erosion and Sediment Control

Chapter 197 regulates development within the Town of LaGrange with regard to erosion control measures. Unless otherwise exempted, all land development activities are required to submit stormwater pollution prevention plans to the Town's Stormwater Management Officer. Eleven categories of activity are granted exemption per §197-6, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles" (Town of LaGrange, 2002). The ordinance does not make a clear distinction between electric poles and transmission towers; however, it is assumed that towers such as those included in the proposed Project are not exempted in §197-6.

Article IV of Chapter 197 outlines the requirements of stormwater pollution prevention plans to be submitted in support of land development activities. In addition, any land development activity disturbing more than one acre (with exceptions for single-family residences and agricultural activities) must provide additional information with regard to each post-construction stormwater management practice per the requirements of §197-9.

The Applicant will comply with Chapter 197. However, stormwater management and sediment control requirements will be determined by conditions of the Certificate of Environmental Compatibility and Public Need, the approved EM&CP, and a Stormwater Pollution Prevention Plan (SWPPP).

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010.

7.3.10 Chapter 199, Streets and Sidewalks

Chapter 199, §199-52 requires the issuance of a work permit for any excavations made within a Town right-of-way.

The proposed Project will require overhead crossings of the following roads within the Town of LaGrange:

- *Rombout Road*
- *Overlook Road/County Route 46*
- *Frost Hill Road*
- *Cramer Road*
- *Vervalen Drive*
- *Freedom Plains Road/State Route 55*
- *Bushwick Road*
- *Croft Hill Road*
- *Old Noxon Road*
- *Noxon Road/County Route 21*
- *Pine Ridge Road*
- *Diddell Road*

The Applicant will comply with Chapter 199, although local permitting requirements are preempted per PSL §130.

7.3.11 Chapter 226, Vehicles and Traffic

Chapter 226 outlines regulations related to vehicular movement on roadways within the Town. Article II of Chapter 226 regulates stop and yield intersections, and Article IV regulates parking, stopping, and standing.

The applicant will comply with the requirements of Chapter 226.

7.3.12 Chapter 240, Zoning

Chapter 240 describes 12 zoning districts within the Town of LaGrange. The proposed Project is located within the Moderate Density Residential (R-40/60/80), Low Density Residential (R-80), and Rural Residential (R-120) districts. Per Schedule A of §240-27 (the Schedule of Permitted Uses and Special Use Permits), each of these

districts allows for "essential services" as a permitted use subject to project development plan review. Article XI, §240-112 of Chapter 240 defines essential services as "the erection, construction, alteration, or maintenance by public utilities or the Town or other governmental agencies of underground, surface or overhead electrical, gas or water transmission or distribution systems, including poles, wires, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, police call boxes, traffic signals, hydrants, and other similar equipment and accessories, in connection therewith reasonably necessary for the furnishing of adequate service by such public utilities or Town or other governmental agencies or for the public health or safety or general welfare, but not including buildings" (Town of LaGrange, 2002).

Article VII of Chapter 240 outlines requirements for the project development plan review process. Per Schedule A of Chapter 240, only site plan approval would be required. Schedule A of Chapter 240 also notes that such reviews are a prerequisite for the development of essential services within the R-40/60/80, R-80, and R-120 districts, the applicability of the process for such uses is unclear per the requirements of Article VII. Chapter 240, §240-72 notes the following:

> "Project development plan approval by the Planning Board in accordance with this section is required for the proposed use or changes in use of land, buildings, and other structures for:
> (a) All special use permits in R-120, R-80, and R-40/60/80 Districts.
> (b) In all other districts, new principal uses, accessory uses and special permit uses and any expansion or reconstruction of existing uses." (Town of LaGrange, 2002)

Dimensional requirements are detailed in Schedule B of §240-28, the Schedule of Bulk Regulations and Coverage Limitations. Dimensional requirements for the R-40/60/80, R-80, and R-120 districts are as follows:

- Moderate Density Residential (R-40/60/80):
    - Minimum single-family residential lot area:
        - With public water and sewer: 40,000 square feet
        - With public water or sewer: 60,000 square feet
        - Without private well and septic system: 80,000 square feet
    - Minimum width of lot along building line: 150 feet
    - Minimum width of lot at any point:
        - On 40,000 square foot lots: 50 feet
        - On 60,000 square foot lots: 75 feet
        - On 80,000 square foot lots: 100 feet
    - Minimum dimension of building square on lot: 150 feet
    - Minimum lot frontage on Town right-of-way:

        - On 40,000 square foot lots: 50 feet
        - On 60,000 square foot lots: 50 feet
        - On 80,000 square foot lots: 75 feet
    - Minimum lot frontage on County or State highway:
        - On 40,000 square foot lots: 125 feet
        - On 60,000 square foot lots: 125 feet
        - On 80,000 square foot lots: 200 feet
    - Maximum height of a building or structure: 35 feet
    - Minimum yard depth:
        - Front yard from County/State road: 90 feet
        - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
        - Rear yard: 20 feet
        - Side yard: 20 feet
    - Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving):
        - On 40,000 square foot lots: 30%
        - On 60,000 square foot lots: 25%
        - On 80,000 square foot lots: 20%
- Low Density Residential (R-80):
    - Minimum single-family residential lot area: 80,000 square feet
    - Minimum width of lot along building line: 200 feet
    - Minimum width of lot at any point: 100 feet
    - Minimum dimension of building square on lot: 200 feet
    - Minimum lot frontage on Town right-of-way: 75 feet
    - Minimum lot frontage on County or State highway: 200 feet
    - Maximum height of a building or structure: 35 feet
    - Minimum yard depth:
        - Front yard from County/State road: 90 feet
        - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
        - Rear yard: 30 feet
        - Side yard: 30 feet
    - Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving): 20%
- Rural Residential (R-120):

- Minimum single-family residential lot area: 120,000 square feet
- Minimum width of lot along building line: 200 feet
- Minimum width of lot at any point: 150 feet
- Minimum dimension of building square on lot: 200 feet
- Minimum lot frontage on Town right-of-way: 100 feet
- Minimum lot frontage on County or State highway: 225 feet
- Maximum height of a building or structure: 35 feet
- Minimum yard depth:
    - Front yard from County/State road: 90 feet
    - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
    - Rear yard: 40 feet
    - Side yard: 40 feet
- Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving): 15%

In addition to the conventional zones described above, Article III of Chapter 240 (§240-31) identifies six overlay zones, as follows: Stream Corridor; Farmland Preservation; Historic; Scenic; Ridgeline Protection; and Groundwater Protection. Per zone descriptions provided in §240-31, as well as the Town of LaGrange Overlay Zone Maps illustrating the locations where such overlays apply, proposed Project facilities would be located within the Ridgeline and Groundwater Protection Overlay Zones.

The Ridgeline Protection Overlay Zone requires that all new construction or development within that zone obtain a special permit from the Town Planning Board, and that such development constitutes a Type I action pursuant to the State Environmental Quality Review Act. Standards for development within this zone are described in §240-31(F)(4), as follows:

- Maximum building or structure height shall not exceed 35 feet;
- Maximum cleared area shall be no more than 50 feet in extent from the outer edge of the primary structure's footprint, and during construction only the minimum amount of existing vegetation shall be cleared;
- 25-foot buffer strips are required at the outer edge of cleared areas
    - these strips shall be planted with vegetation of sufficient height and density as determined by the Planning Board, and
    - these strips shall be free of any man-made structures, including but not limited to fences, facilities, and roads; and

- Proposed yard setbacks from the property line must be no less than 1.5 times the height of the proposed structure or the setback requirements in the existing zoning regulations, whichever are greater.

The general provisions of the Groundwater Protection Overlay Zone, as detailed in §240-13(G)(4), do not apply to facilities such as those included in the proposed Project.

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §240-72 that requires local site plan review and approval.

The Applicant requests that the Commission refuse to apply the dimensional requirements described within subsections §240-28 and §240-31 of the Code of the Town of LaGrange. The proposed Project is a permitted use within each zoning district, and will be constructed wholly within an existing ROW, where transmission lines are currently strung along existing towers. Both the existing ROW and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The area and bulk requirements detailed within subsections §240-28 and §240-31 are not designed to accommodate these specifications. For these reasons, compliance with dimensional requirements are either not applicable, or are being reviewed pursuant to Article VII.

7.4 Town of Wappinger

Project activities in the Town of Wappinger would include the removal of 31 electric transmission structures, to be replaced by the construction of 8 double pole structures and 23 single pole structures associated with approximately 2.8 miles of the A and C Line Rebuild Project.

7.4.1 Chapter 80, Blasting

Chapter 80 requires the issuance of a blasting permit for any use of explosives within the Town of Wappinger. Per §80-6, the use of explosives shall be governed by the provisions of the following regulations:

- Article 16 of the New York State Labor Law;
- 12 NYCRR Part 39;
- Title 19 of NYCRR, Chapter XXXIII, Subchapter A, the Uniform Fire Prevention and Building Code of New York State;
- 27 CFR 55;

- 29 CFR 1926, Subpart U;
- Title 49 of the Code of Federal Regulations;
- NFPA No. 495-1973; and
- Generally recognized criteria and accepted industry standards for the manufacture, sale, transportation, storage, handling or use of explosives.

Blasting permits are issued by the Town of Wappinger Fire Inspector, and subject to standard requirements detailed in §80-8. Blasting hours are limited to the period between 8:30 a.m. and 3:00 p.m., Monday through Friday. Blasting is prohibited on Saturdays, Sundays, and legal holidays, unless otherwise approved by the Town.

Local permitting requirements are preempted per PSL §130. The Applicant will comply with Chapter 80 in the event that blasting is required; however, the Applicant does not anticipate that blasting will be necessary.

7.4.2 Chapter 85, Building Code Administration

Chapter 85 implements the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

The Applicant will comply with Chapter 85. However, the Applicant requests that the Commission refuse to apply local stop-work order provisions granted in §85-12, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §85-10; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building or fire inspection.

7.4.3 Chapter 117, Environmental Quality Review

Chapter 117 outlines Type I, Type II, and Exempt Actions within the Town of Wappinger, pursuant to Part 617 of Title 6 of the NYCRR.

The proposed Project is identified within §117-6(A) as an Exempt Action, as it requires a Certificate of Environmental Compatibility and Public Need under Article VII of the PSL.

7.4.4 Chapter 133, Flood Damage Prevention

Chapter 133 implements the National Flood Insurance Program. Chapter 133, §133-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Sprout Creek in the Town of Wappinger crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §133-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in § 133-6, without a valid floodplain development permit."

Chapter 133 also details requirements for construction within special flood hazard areas, including general construction standards (§133-14). The construction standards detailed in subsection §133-14 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §133-6." Development is defined within subsection §133-4 as "Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the project. Subsection §133-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 133, §133-13(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 133.

The Applicant requests that the Commission refuse to apply the provisions of subsection §133-14 of the Town of Wappinger's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include poles A59, A60, and A61 in the 100-year floodplain and A31, A32, and A34 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. Transmission structures such as

these are not prone to flood damage in the same way that residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace six existing structures (consisting of twelve individual poles) that are currently located within the special flood hazard area. For these reasons, subsection §133-14 of the town code is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection §133-13(F), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.4.5 Chapter 137, Freshwater Wetland, Waterbody and Watercourse Protection

Per Chapter 137, §137-2 "it is declared to be the public policy of the Town of Wappinger to preserve, protect and conserve freshwater wetlands, waterbodies and watercourses and the benefits derived therefrom and to prevent the despoliation and destruction of such freshwater resources by regulating activities with potential impacts to such resources in order to secure their natural benefits consistent with the general health, safety and welfare of the public, and with the beneficial economic, social and agricultural development of the Town of Wappinger".

Chapter 137, §137-6(A) identifies 14 activities that are subject to regulation if they occur within a freshwater wetland or 100-foot buffer around such wetland, including the "placement or construction of any structure". This statement would include the proposed Project, as the proposed transmission towers may be located within a delineated wetland.

The Applicant will comply with Chapter 137 and Article 24, although local permitting requirements, as well as those of Article 24 of the ECL, are preempted per PSL §130.

7.4.6 Chapter 166, Noise

Chapter 166 restricts certain noise sources within the Town of Wappinger. Per §166-2, "no person shall cause or permit to be caused any noise which can be heard by a person with normal hearing beyond the boundaries of property owned, leased or otherwise controlled by him". Construction and demolition-related noises are

prohibited between the hours of 7:00 p.m. and 7:00 a.m. Subsection §166-5(J) exempts "sound generated by the normal operation of utilities".

The Applicant considers the Project to be consistent with the exemption granted in subsection §166-5(J). The construction process will include the use of motorized equipment during transportation, excavation, and erection of the proposed transmission towers. Temporary noises produced by such equipment are unavoidable given the nature of the activities and the brevity of the construction season. Industry-standard noise mitigation techniques (e.g. properly maintained equipment) will be employed as part of the project.

Construction hours of operation will be determined by the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Construction hours are anticipated to be in compliance with the requirements of §166-7(C).

7.4.7 Chapter 206, Soil Erosion and Sediment Control

Chapter 206 regulates development within the Town of Wappinger with regard to erosion control measures. According to §206-8, no land development activities (e.g. grading, stripping, cutting, filling, excavation, or other site preparation) shall be conducted "without a grading permit issued by the Zoning Administrator, […or], for anything other than a one-family dwelling, without site plan approval from the Planning Board, pursuant to §240-83".

Article IV of Chapter 206 outlines the requirements of erosion and sediment control structures. In addition, it authorizes the local Zoning Administrator to issue cease and desist orders for any work that is not consistent with relevant applications, grading permits, and approved plans.

The Applicant will comply with Chapter 206, although local permitting requirements are preempted per PSL §130.

7.4.8 Chapter 210, Solid Waste

Chapter 210 regulates the storage and disposal of garbage and debris. The Town dump facility may not be used to dispose of garbage or debris that has originated from outside of the Town of Wappinger. Use of other private or public land for storage and/or disposal of garbage and debris are prohibited. In addition, §210-14 describes requirements for large refuse receptacles that are typically associated with construction-related activities. In

general, the ownership of large receptacles must be clearly identifiable, the receptacles must be securely closed and free of leakage, and the area around the receptacle must be kept free of debris and spillage.

The applicant will comply with the requirements of Chapter 210.

7.4.9 Chapter 213, Stormwater Management

Chapter 206 regulates development within the Town of Wappinger with regard to stormwater management. Per §213-3, these standards are applicable to "all land development activities… including, but not limited to, land development activities subject to review and approval by the Town Board, the Planning Board or the Zoning Board of Appeals of the Town under subdivision, site plan, special permit, wetland permit, grading permit and/or other environmental permit regulations". Applicants must submit stormwater pollution prevention plans to the local Stormwater Management Officer, complete with details as enumerated in §213-6. However, per §213-4 (H), the installation of fence, sign, telephone and electric poles and other kinds of posts or poles are exempt from this review. Per §213-11, the Town may issue a stop-work order for land development activities that are inconsistent with permits issued by the Town.

Article II of Chapter 113 also prohibits illicit discharges into the local storm sewer system.

The Applicant will comply with Chapter 213, although local permitting requirements are preempted per PSL §130.

The Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §213-11, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a

Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010.

7.4.10 Chapter 230, Vehicles and Traffic

Chapter 230 outlines regulations related to vehicular movement on roadways within the Town. Article II of Chapter 226 outlines all traffic regulations, and Article III regulates parking, stopping, and standing specifically.

The applicant will comply with the requirements of Chapter 230.

7.4.11 Chapter 240, Zoning

Chapter 240 outlines requirements relative to 25 zoning districts within the Town of Wappinger. Of these, the proposed Project intersects four: 1-Family Residence District R-3A, 1-Family Residence District R-40, 1-Family Residence District R-40/80, and Conservation Commercial District CC. Per the Schedule of Use Regulations (Attachments1 and 2 of Chapter 240, as referenced in §240-37), public utility uses are allowed within the each of these districts, subject to special permits.

Dimensional requirements are detailed in Attachments 3 and 4 of Chapter 240. Dimensional requirements for each of the four districts listed above are as follows:

- 1- Family Residential District R-3A:
    - Minimum lot size: 3 acres
    - Minimum lot width: 225 feet
    - Minimum lot depth: 300 feet
    - Minimum lot frontage: 50 feet
    - Minimum front yard from:
        - County/State highway: 75 feet
        - Center line of other street: 75 feet
        - Front lot line of other street: 75 feet
    - Minimum side yard: 50 feet
    - Minimum rear yard: 50 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22) (B)
    - Maximum lot coverage: 7%
- 1- Family Residential District R-40:

- Minimum lot size: 40,000 square feet
- Minimum lot width: 125 feet
- Minimum lot depth: 125 feet
- Minimum lot frontage: 50 feet
- Minimum front yard from:
  - County/State highway: 75 feet
  - Center line of other street: 75 feet
  - Front lot line of other street: 50 feet
- Minimum side yard: 25 feet
- Minimum rear yard: 50 feet
- Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
- Maximum lot coverage: 12%

- 1- Family Residential District R-40/80:
  - Minimum lot size:
    - With public water and sewer: 40,000 square feet
    - With public water or sewer: 60,000 square feet
    - Without public water and sewer: 80,000 square feet
  - Minimum lot width:
    - On 40,000 square foot lots: 125 feet
    - On 60,000 square foot lots: 150 feet
    - On 80,000 square foot lots: 200 feet
  - Minimum lot depth:
    - On 40,000 square foot lots: 125 feet
    - On 60,000 square foot lots: 150 feet
    - On 80,000 square foot lots: 200 feet
  - Minimum lot frontage: 50 feet
  - Minimum front yard: 50 feet (conflicting minimum front yard requirements exist; see below)
  - Minimum front yard from:
    - County/State highway: 75 feet
    - Center line of other street: 75 feet
    - Front lot line of other street: 50 feet
  - Minimum side yard: 40 feet (conflicting minimum side yard requirements exist; see below)
  - Minimum side yard:

        - On 40,000 square foot lots: 25 feet
        - On 60,000 square foot lots: 30 feet
        - On 80,000 square foot lots: 40 feet
    - Minimum rear yard: 50 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
    - Maximum lot coverage: 10%
- Conservation Commercial District CC:
    - Minimum lot size: 1 acre
    - Minimum lot width: 100 feet
    - Minimum lot depth: 100 feet
    - Minimum lot frontage: 100 feet
    - Minimum front yard from:
        - County/State highway: 75 feet
        - Center line of other street: 75 feet
        - Front lot line of other street: 50 feet
    - Minimum side yard: 10 feet
    - Minimum rear yard: 30 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
    - Maximum building coverage: 20%
    - Maximum impervious surface: 40%
    - Minimum landscaped open space: 60%
    - Minimum parking setback from front, side, and rear lot lines: 20, 10, and 10 feet, respectively.

Article VII of Chapter 240, §240-44 describes four general standards for special use permits, as follows:

- The location and size of the use, the nature and intensity of the operations involved in or conducted in connection with it, the size of the site in relation to it and the location of the site with respect to streets giving access to it, are such that it will be in harmony with the appropriate and orderly development of the district in which it is located.
- The location, nature and height of buildings, walls, fences and the nature and extent of existing or proposed plantings on the site are such that the use will not hinder or discourage the appropriate development and use of adjacent land and buildings.

- Operations in connection with any special permit use will not be more objectionable to nearby properties by reason of noise, fumes, vibration, illumination or other characteristics, than would be the operations of any permitted use not requiring a special permit.
- Parking areas will be of adequate size for the particular use, will be properly located and suitably screened from adjoining residential uses and the entrance and exit drives shall be laid out so as to achieve maximum safety.

In addition to these standards, applicants for special use permits are required to submit site development plans for review by the Planning Board. This process requires the assessment of 16 project components for their compatibility with standards as defined in Chapter 240, §240-86. These standards require adequate site access, on-site circulation, landscaping and buffering, lighting, protection of natural resources, and drainage, as well as other requirements that may or may not apply to utility structures (e.g. building design, signage, etc.).

Per Article XI of Chapter 240, §240-101 "no business or industrial use shall hereafter be maintained, established, altered, moved or expanded" unless it complies with a series of performance standards. Neither Article XI nor Article II (Zoning- Definitions) indicates whether utility uses such as the proposed Project would be regulated as an industrial use. The noise-related performance standards enumerated in §240-13 provide an exemption for construction-related noise between 8:00 a.m. and sunset.

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §240-83 that requires local site plan review and approval.

The Applicant requests that the Commission refuse to apply the dimensional requirements described within Attachments 3 and 4 of Chapter 240. Special use permits and local site plan review requirements are preempted per PSL §130. The general standards under §240-44 and compatibility standards under §240-86 are considerations the commission will make, where applicable, in making its findings under PSL §126.

Both the existing right-of-way and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The requirements detailed within Attachments 3 and 4 of Chapter 240 are not designed to accommodate these specifications. For these reasons, the bulk requirements described therein are unduly restrictive in view of existing technology.

7.5 Town of East Fishkill

Project activities in the Town of East Fishkill would include the removal of 3 electric transmission structures and the construction of 2 double pole structures and 1 single pole structure associated with approximately 0.2 mile of the A and C Line Rebuild Project.

7.5.1 Chapter 80, Building Construction and Fire Prevention

Chapter 80 implements the New York State Uniform Fire Prevention and Building Code.

The Applicant will comply with Chapter 80, although local permitting requirements are preempted per PSL §130.

The Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §80-10, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §80-9; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.5.2 Chapter 108, Flood Damage Prevention

Chapter 108 implements the National Flood Insurance Program. Chapter 108, §108-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Sprout Creek in the Town of East Fishkill crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §108-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in §108-6, without a valid floodplain development permit."

Subsection §108-14 details general standards for construction within special flood hazard areas. The construction standards detailed in subsection §108-14 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §108-6." Development is defined within subsection §108-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. Subsection §108-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 108, §108-13(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 108.

The Applicant requests that the Commission refuse to apply the provisions of subsection §108-14 of the Town of East Fishkill's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include pole A63 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. Transmission structures such as these are not prone to flood damage in the same manner as residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace one existing structure (consisting of two individual poles) that is currently located within the special flood hazard area. For these reasons, subsection §108-14 of the town code is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection 108-13(F), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.5.3 Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses

Chapter 110 regulates development within and around wetlands, water bodies, and watercourses, including the following:

- Ponds, lakes, reservoirs, marshes, swamps, bogs, vernal pools or other area of permanent water retention, regardless of origin.
- All natural drainage systems, including rivers, streams and brooks which contain water at least three months of the year and the associated floodplains of such watercourses. (Town of East Fishkill, 2001).

Chapter 110, §110-3(B) identifies 15 activities that are subject to regulation if they occur within such areas, including the "erecting or enlarging any building or structure of any kind, roads, driveways, the driving of pilings, digging of wells or placing of any obstructions, whether or not they change the ebb and flow of the water" (Town of East Fishkill, 2001). This definition (which would fall within the definition of structure) would include the proposed Project, as the proposed transmission towers may be located within a wetland or floodplain.

Chapter 110, Chapter 110, §110-4(K) identifies 11 activities that are permitted by right within freshwater wetlands, water bodies and watercourses. These include activities within wetlands under the jurisdiction of the federal or state government for which a permit has been obtained from the appropriate agency provided that a copy of the permit is filed with the approval authority or if none, the Town Clerk. Per this chapter the proposed project would be an exempt activity since the activity is authorized under an existing U.S. Army Corps of Engineers Nationwide Permit.

The Applicant will comply with Chapter 110 although local permitting requirements are preempted per PSL §130.

The Applicant requests that the Commission refuse to apply local stop-work order provisions granted in subsection §110-7(C) , which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.5.4 Chapter 127, Littering

Chapter 127 prohibits the deposition of garbage or debris on or about any street, lawn, vacant lot, or in any building, public place, culvert, or stream within the Town.

The applicant will comply with the requirements of Chapter 127.

7.5.5 Chapter 154, Steep Slope Protection

Chapter 154 requires local permits for disturbances occurring on any area with greater than 3:1 slope or 33.33% grade. Per §154-3, disturbances include "excavation or fill or any combination which changes the existing ground surface by more than two feet, or any removal of trees and/or vegetation and shall include the conditions resulting from any excavation or fill" (Town of East Fishkill, 2001). The standards for approval of such permits are enumerated in §154-6.

The Applicant will comply with Chapter 154, although local permitting requirements are preempted per PSL §130. .

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required. Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.

7.5.6 Chapter 156, Storm Sewers

Together with Chapter 157, Chapter 156 regulates discharges into the Town of Pleasant Valley municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

The Applicant will comply with Chapter 156, although permitting requirements are preempted per PSL §130.

7.5.7 Chapter 157, Stormwater Management and Erosion and Sediment Control

Chapter 157 regulates development within the Town of East Fishkill with regard to erosion control measures. Per §157-7(A), all land development activities are required to submit a stormwater pollution prevention plan to the Town. Nine categories of activity are granted exemption per §157-6, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles" (Town of East Fishkill, 2001). The ordinance does not make a clear distinction between electric poles and transmission towers; however, for purposes of preparing Exhibit 7, it is assumed that towers such as those included in the proposed Project are not exempted in §157-6.

The Applicant will comply with Chapter 80, although local permitting requirements are preempted per PSL §130.

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010.

7.5.8 Chapter 177, Vehicles and Traffic

Chapter 177 outlines regulations related to vehicular movement on roadways within the Town. Article I of Chapter 177 outlines parking regulations relative to public roads, specifically no-parking zones and seasonal parking restrictions.

The applicant will comply with the requirements of Chapter 177.

7.5.9 Chapter 194, Zoning

Zoning regulations are described in Chapter 194 of the Town Code. The proposed Project would be located in only one of the 17 existing districts, specifically the R-1 residential district. Public utility uses are not identified within the Schedule of Permitted Uses (§194-16 and Attachment 2) as a permitted use within the R-1 district, and are therefore not permitted per §194-8.

The Schedule of Bulk Regulations (§194-17 and Attachment 3) sets forth the following dimensional requirements for the R-1 residential district:

- Minimum lot size: 1 acre
- Minimum lot frontage: 50 feet
- Minimum lot width: 125 feet
- Minimum lot depth: 150 feet
- Minimum front yard: 50 feet
- Minimum side yard: 25 feet
- Minimum rear yard: 50 feet
- Maximum lot coverage: 12%
- Maximum building height: 35 feet

Per Chapter 194, §194-110, all power and communication lines shall be installed underground in the manner prescribed by regulations of the governmental agency or utility company having jurisdiction. However, where site or other environmental considerations would cause undue hardship, the appropriate reviewing agency shall have authority to waive this requirement.

Per Chapter 194, §194-161, the construction or modification of public utility structures, including the construction or use of overhead lines or other structures used for public utility purposes and subject to the jurisdiction of the Public Service Commission of the State of New York is a permitted use in the Industrial districts within the Town.

The Applicant requests that the Commission refuse to apply the use and dimensional requirements described within subsection §194-17 and Attachment 3.

The proposed Project will be constructed wholly within an existing right-of-way, where transmission lines are currently strung along existing towers, and will connect to an existing substation within the R-1 district. Both the existing right-of-way and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The requirements detailed within §194-17 and Attachment 3 are not designed to accommodate these specifications. For these reasons, the bulk requirements described therein are unduly restrictive in view of existing technology.

7.6 References

Town of East Fishkill, New York. 2001. Code of the Town of East Fishkill. Published by General Code, as amended through June 23, 2011. Available at: http://ecode360.com/EA0495. Accessed January, 2013.

Town of LaGrange, New York. 2002. Code of the Town of LaGrange. Published by General Code, as amended through November 14, 2012. Available at: http://ecode360.com/LA0563. Accessed January, 2013.

Town of Pleasant Valley, New York. 1978. Code of the Town of Pleasant Valley. Published by General Code, as amended through April 11, 2012. Available at: http://ecode360.com/PL0575. Accessed January, 2013.

Town of Wappinger, New York. 1999. Code of the Town of Wappinger. Published by General Code, as amended through April 9, 2012. Available at: http://ecode360.com/WA0691. Accessed January, 2013.

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

In the Matter of the Application of Central Hudson Gas & Electric Corporation For a Certificate of Environmental Compatibility and Public Need Pursuant to Article VII of the Public Service Law for the A and C Line Rebuild Project, Approximately 10.85 miles of 115 Kilovolt Transmission Lines in the Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill, in Dutchess County	Case No.: 13-T-____

CENTRAL HUDSON GAS & ELECTRIC CORPORATION

A AND C LINE REBUILD PROJECT

EXHIBIT 7

LOCAL ORDINANCES

Table of Contents

EXHIBIT 7 – LOCAL ORDINANCES

7.1 Introduction

Pursuant to 16 NYCRR § 86.8, this Exhibit identifies the local ordinances, laws and regulations that are applicable or potentially applicable to this project, and the status of compliance thereto. Pursuant to Section 130 of the Public Service Law, no state agency, municipality or any agency thereof may require any approval, permit or consent for the construction or operation of a facility subject to Article VII approval unless otherwise required by the Commission. The Commission has the responsibility of either waiving (at the request of the Applicant) or applying the requirements of the local municipalities where the Project is sited.

As described in Exhibit 2, CHG&E proposes to re-build and operate an approximately 10.8-mile electric transmission line located between the Towns of Pleasant Valley and East Fishkill in Dutchess County. This Project will be located in one county, four towns, and no villages. Towns crossed by the electric transmission line are the Towns of Pleasant Valley, LaGrange, Wappinger, and East Fishkill in Dutchess County.

The Applicant researched and directly inquired about local laws, ordinances and regulations that may pertain to this project. To determine the existence of ordinances for municipalities within the Project ROW, the Applicant contacted the town clerks or code enforcement officers, other appropriate officials, or the published ordinances for the above-referenced municipalities. Each of the four towns has local land use regulations in the form of a zoning ordinance that may apply to Project activities.

Section 126(1)(f) of the Public Service Law requires that the Commission find "that the location of the facility as proposed conforms to the applicable state and local laws and regulations…" To the extent the project does not conform to such laws, CHG&E has provided the justification for the Commission to refuse to apply such provisions to which the project cannot comply by explaining why such provision is unreasonably restrictive in view of the existing technology, or of factors of cost or economics, or of the needs of consumers whether located inside or outside of such municipality. In doing so, the Applicant has evaluated whether changes in the facility location or design could result in compliance with the specific law in question. A summary of these local ordinances and the project's anticipated compliance is provided in Table 7-1, below.

7.1.1 Compliance Summary

The compliance summary contained in Table 7-1 below lists every substantive local legal provision potentially applicable to the Project. The table identifies whether the Applicant can or will comply with such potentially applicable local laws or where a waiver is being requested.

Table 7-1: Project Compliance Summary

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
Town of Pleasant Valley	Chapter 39, Building Construction	Will Comply
	Chapter 46, Driveways and Highway Permits	Will Comply
	Chapter 48, Fire Prevention	Will Comply
	Chapter 50, Flood Damage Prevention	Requests PSC Partial Refusal to Apply
	Chapter 53, Wetland, Water Body, and Watercourse Protection	Will Comply
	Chapter 57, Refuse Collection, Storage, and Disposal	Will Comply
	Chapter 60, Illicit Discharges, Activities and Connections	Will Comply
	Chapter 74, Stormwater Management and Erosion and Sedimentation Control	Will Comply
	Chapter 93, Vehicles and Traffic	Will Comply
	Chapter 98, Zoning	
	Chapter 98, Article III §98-11 – General Regulations, Schedule of Permitted Uses	Requests PSC Partial Refusal to Apply
	Chapter 98, Article III §98-12 – General Regulations, Schedule of Area and Bulk Requirements	Requests PSC Partial Refusal to Apply
	Chapter 98, Article IV §98-44 – Supplementary Regulations, Public Utility Facility	Requests PSC Partial Refusal to Apply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
Town of LaGrange	Chapter 83, Building Construction Administration and Enforcement	Will Comply
	Chapter 103, Dumps and Dumping	Will Comply
	Chapter 117, Electrical Inspection	Will Comply
	Chapter 120, Flood Damage Prevention	Requests PSC Partial Refusal to Apply
	Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies	Will Comply
	Chapter 140, Illicit Discharges to Storm Sewers	Will Comply
	Chapter 162, Noise	Requests PSC Partial Refusal to Apply
	Chapter 195, Solid Waste	Will Comply
	Chapter 197, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 199, Streets and Sidewalks	Will Comply
	Chapter 226, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	
	Chapter 240, Article II §240-27 – Establishment and Designation of Districts, Schedule of Permitted Uses and Special Use Permits	Requests PSC Partial Refusal to Apply
	Chapter 240, Article II §240-28 – Establishment and Designation of Districts, Schedule of Bulk Regulations and Coverage Limitations	Requests PSC Partial Refusal to Apply
	Chapter 240, Article III §240-31 – Special Zoning District Provisions, Preservation Overlay Zones	Requests PSC Partial Refusal to Apply
Town of Wappinger	Chapter 80, Blasting	Will Comply
	Chapter 85, Building Code Administration	Will Comply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 117, Environmental Quality Review	Will Comply
	Chapter 133, Flood Damage Prevention	Requests PSC Partial Refusal to Apply
	Chapter 137, Freshwater Wetland, Waterbody, and Watercourse Protection	Will Comply
	Chapter 166, Noise	Requests PSC Partial Refusal to Apply
	Chapter 206, Soil Erosion and Sediment Control	Will Comply
	Chapter 210, Solid Waste	Will Comply
	Chapter 213, Stormwater Management	Will Comply
	Chapter 230, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	
	Chapter 240, Article VI §240-37, Attachments 1 and 2 – District Regulations, Schedule of Use Regulations	Requests PSC Partial Refusal to Apply
	Chapter 240, Article VI §240-37, Attachments 3 and 4 – District Regulations, Schedule of Dimensional Regulations	Requests PSC Partial Refusal to Apply
	Chapter 240, Article VII §240-44, Special Permit Uses, General Standards	Requests PSC Partial Refusal to Apply
	Chapter 240, Article IX §240-86, Site Development Plans, Standards for Site Development Plan Approval	Requests PSC Partial Refusal to Apply
	Chapter 240, Article XI, Performance Standards	Requests PSC Partial Refusal to Apply
Town of East Fishkill	Chapter 80, Building Construction and Fire Prevention	Will Comply
	Chapter 108, Flood Damage Prevention	Requests PSC Partial Refusal to Apply
	Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses	Will Comply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 127, Littering	Will Comply
	Chapter 154, Steep Slope Protection	Will Comply
	Chapter 156, Storm Sewers	Will Comply
	Chapter 157, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 177, Vehicles and Traffic	Will Comply
	Chapter 194, Zoning	
	Chapter 194, Article V §194-16, Attachment 2 – Schedules of Regulations, Schedule of Permitted Uses	Requests PSC Partial Refusal to Apply
	Chapter 194, Article V §194-17, Attachment 3 – Schedules of Regulations, Schedule of Bulk Regulations	Requests PSC Partial Refusal to Apply

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
Town of Pleasant Valley	Chapter 39, Building Construction	Will Comply Except as Noted
	Chapter 39, §39-4, Stop-work Orders	Waiver Requested
	Chapter 46, Driveways and Highway Permits	Will Comply
	Chapter 48, Fire Prevention	Will Comply Except as Noted
	Chapter 48, §48-6(B), Firesafety and property maintenance inspections [re: local inspections]	Waiver Requested
	Chapter 50, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 50, Article III §50-11 – Floodplain Development Permit	Waiver Requested
	Chapter 50, Article III §50-13(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 53, Wetland, Water Body, and Watercourse Protection	Will Comply Except as Noted
	Chapter 53, Article III §50-8, Prohibited Activities [re: local enforcement]	Waiver Requested
	Chapter 57, Refuse Collection, Storage, and Disposal	Will Comply
	Chapter 60, Illicit Discharges, Activities and Connections	Will Comply
	Chapter 74, Stormwater Management and Erosion and Sedimentation Control	Will Comply
	Chapter 93, Vehicles and Traffic	Will Comply
	Chapter 98, Zoning	Will Comply Except as Noted
	Chapter 98, Article III §98-11 – General Regulations, Schedule of Permitted Uses [re: local site plan review requirements]	Waiver Requested
	Chapter 98, Article III §98-12 – General Regulations, Schedule of Area and Bulk Requirements [re: setbacks, height restrictions]	Waiver Requested
	Chapter 98, Article IV §98-44 – Supplementary Regulations, Public Utility Facility [re: screening requirements]	Waiver Requested
Town of LaGrange	Chapter 83, Building Construction Administration and Enforcement	Will Comply Except as Noted
	Chapter 83, §83-9, Stop-work Orders	Waiver Requested
	Chapter 103, Dumps and Dumping	Will Comply
	Chapter 107, Electrical Inspection	Will Comply Except as Noted
	Chapter 107, §107-3(C), Stop-work Orders	Waiver Requested
	Chapter 120, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 120, §120-14(F) – Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 120, §120-15 – General Construction Standards [re: local permit requirements]	Waiver Requested
	Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies	Will Comply Except as Noted
	Chapter 124, §124-15 Permit Procedure– [re: local enforcement]	Waiver Requested
	Chapter 140, Illicit Discharges to Storm Sewers	Will Comply
	Chapter 162, Noise	Will Comply
	Chapter 195, Solid Waste	Will Comply
	Chapter 197, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 199, Streets and Sidewalks	Will Comply
	Chapter 226, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article II §240-27 – Establishment and Designation of Districts, Schedule of Permitted Uses and Special Use Permits [re: local site plan review requirements]	Waiver Requested
	Chapter 240, Article II §240-28 – Establishment and Designation of Districts, Schedule of Bulk Regulations and Coverage Limitations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article III §240-31 – Special Zoning District Provisions, Preservation Overlay Zones [re: setbacks, height restrictions]	Waiver Requested
Town of Wappinger	Chapter 80, Blasting	Will Comply
	Chapter 85, Building Code Administration	Will Comply Except as Noted
	Chapter 85, §85-10, Inspections; Notification of Fire or Explosion; Operating Permits [re: local inspections]	Waiver Requested
	Chapter 85, §85-12, Stop-Work Orders	Waiver Requested

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 117, Environmental Quality Review	Will Comply
	Chapter 133, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 133, §133-13(F) – Duties and Responsibilities of Code Enforcement Officer and Zoning Administrator [re: stop-work orders]	Waiver Requested
	Chapter 133, §133-14(B) – General Standards, Encroachment [re: local permit requirements]	Waiver Requested
	Chapter 137, Freshwater Wetland, Waterbody, and Watercourse Protection	Will Comply
	Chapter 166, Noise	Will Comply
	Chapter 206, Soil Erosion and Sediment Control	Will Comply
	Chapter 210, Solid Waste	Will Comply
	Chapter 213, Stormwater Management	Will Comply Except as Noted
	Chapter 213, §213-11, Enforcement [re: stop-work orders]	Waiver Requested
	Chapter 230, Vehicles and Traffic	Will Comply
	Chapter 240, Zoning	Will Comply Except as Noted
	Chapter 240, Article VI §240-37, Attachments 1 and 2– District Regulations, Schedule of Use Regulations [re: local site plan review and special permit requirements]	Waiver Requested
	Chapter 240, Article VI §240-37, Attachments 3 and 4 – District Regulations, Schedule of Dimensional Regulations [re: setbacks, height restrictions]	Waiver Requested
	Chapter 240, Article VII §240-44, Special Permit Uses, General Standards [re: site plan and operational requirements]	Waiver Requested
	Chapter 240, Article IX §240-83, Site Development Plan Approval [re: site plan approval requirements]	Waiver Requested
Town of East Fishkill	Chapter 80, Building Construction and Fire Prevention	Will Comply Except as Noted

MUNICIPALITY	APPLICABLE ORDINANCE	PROJECT COMPLIANCE STATUS
	Chapter 80, §80-10, Stop-Work Orders	Waiver Requested
	Chapter 108, Flood Damage Prevention	Will Comply Except as Noted
	Chapter 108, Article III §108-13(F), Duties and Responsibilities of Local Administrator [re: stop-work orders]	Waiver Requested
	Chapter 108, Article III §108-14, General Standards [re: local permit requirements]	Waiver Requested
	Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses	Will Comply Except as Noted
	Chapter 110, §110-7(C), Permit Limitations, Certificate of Completion [re: stop-work orders]	Waiver Requested
	Chapter 127, Littering	Will Comply
	Chapter 154, Steep Slope Protection	Will Comply
	Chapter 156, Storm Sewers	Will Comply
	Chapter 157, Stormwater Management and Erosion and Sediment Control	Will Comply
	Chapter 177, Vehicles and Traffic	Will Comply
	Chapter 194, Zoning	Will Comply Except as Noted
	Chapter 194, Article V §194-16, Attachment 2–Schedules of Regulations, Schedule of Permitted Uses [re: prohibition of uses not specifically permitted]	Waiver Requested
	Chapter 194, Article V §194-17, Attachment 3–Schedules of Regulations, Schedule of Bulk Regulations [re: setbacks, height restrictions]	Waiver Requested

7.2 Town of Pleasant Valley

Project activities in the Town of Pleasant Valley would include the removal of 12 electric transmission structures, to be replaced by the construction of 4 double pole structures and 8 single pole structures associated with approximately 1.25 miles of the A and C Lines Rebuild Project.

7.2.1 Chapter 39, Building Construction

Chapter 39 and Chapter 48 (see below) implement the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

~~Local permitting requirements are preempted per PSL §130. However, t~~The Applicant will comply with the ~~substantive portions~~requirements of Chapter 39~~, that are applicable to the Project.~~ However,

~~T~~the Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §39-14, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection 39-4(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.2.2 Chapter 46, Driveways and Highway Permits

Chapter 46, §46-1 requires the issuance of a highway work permit for any improvements made within a Town right-of-way.

The Applicant will comply with the requirements of Chapter 46, although the need for a local highway work permit is preempted by PSL §130. The proposed Project will require overhead crossings of Plass Road and Niagara Road. ~~The need for a local highway work permit is preempted by PSL §130.~~
~~Central Hudson will work with local highway superintendents to ensure that the standard requirements for new driveways contained in §46-3, if required, are met.~~

7.2.3 Chapter 48, Fire Prevention

Chapter 48 and Chapter 39 (see above) implement the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

The applicant will comply with the requirements of Chapter 48. However, the Applicant requests that the Commission refuse to apply local inspection provision granted in subsection §48-6(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

~~*Local permitting requirements are preempted per PSL §130. However, the Applicant will comply with the substantive portions of Chapter 48 that apply to the Project.*~~

7.2.4 Chapter 50, Flood Damage Prevention

Chapter 50 implements the National Flood Insurance Program. Chapter 50, §50-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Wappinger Creek in the Town of Pleasant Valley crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §50-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in § 50-6, without a valid floodplain development permit." ~~Article IV of Chapter 50 details requirements for construction within special flood hazard areas, including~~

Chapter 50 also details requirements for construction within special flood hazard areas, including general standards (§50-14)~~, standards for all structures (§50-15), and standards for nonresidential structures (§50-17)~~ The construction standards detailed in subsection §50-14 are applicable to "new development, including new and cumulative substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §50-6." Development is defined within §50-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. ~~these standards appear to be inapplicable given that "structure" is defined as a "walled and roofed building, including a gas or liquid storage tank, that is principally above the ground, as well as a manufactured home" (§50-4).~~ Subsection §50-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 50, §50-13(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found

ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 50. ~~Under the code, the term development is more broadly defined then "structure" and could include work on the ROW.~~

The Applicant requests that the Commission refuse to apply the provisions of Chapter *§50-11 of the Town of Pleasant Valley's flood damage prevention ordinance that require all structures within the floodplain to go through a local permitting process. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the transmission facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include poles C2 and C3 in the 100-year floodplain and C4 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. Transmission structures such as these are not prone to flood damage in the same ~~manner as~~way that residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace ~~a number of those~~ three existing structures (consisting of six individual poles) that are currently located within the special flood hazard area. For these reasons, Chapter 50 of the Code of the Town of Pleasant Valley is unduly restrictive in view of existing technology.*

The Applicant further requests that the Commission refuse to apply Chapter *§50-13(F) of the ordinance which includes local stop-work order provisions, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.*

7.2.5 Chapter 53, Wetland, Water Body, and Watercourse Protection

Pursuant to §53-1, "it is declared to be the public policy of the Town of Pleasant Valley to preserve, protect and conserve freshwater wetlands, watercourses and water bodies and to regulate development in such wetlands and protect such watercourses and water bodies in order to secure the natural benefits derived therefrom consistent with the general welfare and the beneficial economic, social and agricultural development of the Town" ~~(Town of Pleasant Valley, 1978)~~. According to §53-1, the areas subject to regulation under Chapter 53 are as follows:

- All wetlands identified on the map entitled "Town of Pleasant Valley, Dutchess County, N.Y." prepared by the Dutchess County Environmental Management Council, GIS Lab, and dated March 2001, as amended, and any other wetlands as yet unmapped exceeding 1/2 acre in area that will meet the definition provided in § 24-0107(1) of the New York State Freshwater Wetlands Act as amended and updated.
- All water bodies, natural or created, having an area of a 1/2 acre or more.
- All lands lying within:
    - Twenty-five feet of wetlands and water bodies of 1/2 acre to one acre in size;
    - Fifty feet of wetlands and water bodies of one acre to two acres in size;
    - Seventy-five feet of wetlands and water bodies of two acres to three acres in size; and
    - One-hundred feet of wetlands and water bodies of three acres or more in size.
- All lands lying within 100 feet of the normal stream bank of the Wappingers Creek, Little Wappingers Creek, Great Spring Creek, and any other perennial watercourse or tributary to these named streams. A twenty-five-foot-wide natural buffer shall be maintained from the normal stream bank for all activities except for those dependent upon the passive recreational use of the stream or as a source of water for emergency purposes or agriculture in accordance with Agricultural Best Management Practices.
- Wetlands located on property that is the subject of a subdivision application pursuant to Chapter 82 shall also be subject to the provisions of § 82-18 and to any requirements that may be imposed by the Planning Board in the application process. ~~(Town of Pleasant Valley, 1978)~~

Chapter 53, §53-4 identifies six regulated activities, including the erection "of any structure, construction of roads, driving of pilings or placing of any other obstructions, whether or not changing the ebb and flow of the water" ~~(Town of Pleasant Valley, 1978)~~. This definition would include the proposed Project, as the proposed transmission towers may be located within a regulated proximity to a delineated wetland.

Chapter 53, §53-5 identifies three prohibited activities. These activities are as follows:

- Placement or deposit of any chemical waste, hazardous waste, or storage of any materials that could result in the contamination of any wetland, water body or watercourse.
- Introduction of fluids or other materials with sufficiently high temperature to cause injurious or other harmful ecological effects in any wetland, water body, watercourse or buffer area.
- Such activities which may cause substantial damage or destruction to wetlands.

Potential construction activities have the potential to result in contamination or damage to wetlands, water bodies or other watercourse. ~~This~~ The potential as well as detailed construction measures to prevent such occurrences are described in Exhibit 4 of this application and the project's EM&CP.

Chapter 53, §53-6 establishes a requirement for obtaining local permits for undertaking these activities within regulated areas, noting that "Anyone proposing to undertake a regulated activity within a freshwater wetland, watercourse or water body, or its buffer, shall apply for and receive a permit from the Town before commencing such regulated activity." In addition, according to §53-8, "Any person or entity found to be in violation of this chapter shall be ordered and required to cease and desist the violating activity."

The Applicant will comply with Chapter 53. However, the Applicant requests that the Commission refuse to apply local enforcement authority as described in §53-8, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Cease and desist orders and fines pursuant to local authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

~~*Local permitting requirements, as well as those of Article 24 of the ECL, are preempted per PSL §130. However, the Applicant will comply with the substantive portions of Chapter 53 and Article 24.*~~

7.2.6 Chapter 57, Refuse Collection, Storage, and Disposal

Chapter 57 outlines restrictions regarding the collection, storage, and disposal of refuse material. Industrial refuse may be stored in portable waste-storage compactors, dumpsters, or similar devices. Equipment used for the collection of refuse must provide suitable coverage of the refuse to prevent littering. The Town of Pleasant Valley refuse disposal facility will not accept that which has originated outside of Town boundaries.

The applicant will comply with the requirements of Chapter 57.

7.2.7 Chapter 60, Illicit Discharges, Activities and Connections

Together with Chapter 74, Chapter 60 regulates discharges into the Town of Pleasant Valley municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

The applicant will comply with the requirements of Chapter 60.

7.2.8 Chapter 74, Stormwater Management and Erosion and Sediment Control

Chapter 74 regulates development within the Town of Pleasant Valley with regard to erosion control measures. Per §74-4(D), all land development activities other than those regulated by the Town of Pleasant Valley Subdivision law (§82) are required to submit a stormwater pollution prevention plan to the Town Stormwater Management Officer. Eleven categories of activity are granted exemption per §74-5, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles" ~~(Town of Pleasant Valley, 1978)~~. The ordinance does not make a clear distinction between electric poles and transmission towers.

~~Local permitting requirements are preempted per PSL §130. However, the~~ The Applicant will comply with ~~the substantive portions of~~ Chapter 74, although local permitting requirements are preempted per PSL §130. ~~.~~

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. ~~Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required.~~The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010. ~~Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.~~

7.2.9 Chapter 93, Vehicles and Traffic

Chapter 93 describes traffic and vehicle ordinances for the purposes of preventing obstruction of Town roads and highways. Chapter 93, §93-2 outlines specific parking regulations relative to winter parking on Town roads and Highways between November 1 and April 1.

The applicant will comply with the requirements of Chapter 93.

7.2.10 Chapter 98, Zoning

Chapter 98 describes 15 zoning districts, including one overlay district, within the Town of Pleasant Valley. The proposed Project is located within the Rural Residential (RR) and Medium Density Residential (MDR) zoning districts, as well as the Special Flood Hazard (SFH) overlay district. Per Attachment 1 of Chapter 98 and §98-11, each of these districts allows for "public utility facilities" as a permitted use subject to site plan review. Article X of Chapter 98 defines such facilities as an "installation used by a public agency or a specially franchised public utility to supply or transmit electric, gas, water, sewage disposal, cable television, telephone service, or other utility service, excluding electric power plants and gas wells" ~~(Town of Pleasant Valley, 1978)~~.

Attachment 2 of Chapter 98 (§98-12) identifies dimensional requirements relative to each zoning district, as follows (N/A dimensional or other requirements are not listed):

- Rural Residential (RR):
    - Average density: 3.5 acres
    - Minimum road frontage: 50 feet
    - Minimum front yard setback: 70 feet
    - Minimum side yard setback: 30 feet
    - Minimum back yard setback: 50 feet
    - Minimum lot width at primary building line: 200 feet
    - Maximum impervious coverage: 20%
    - Maximum building footprint per nonresidential establishment: 4,000 sq. feet
    - Maximum height: 35 feet
- Medium Density Residential (MDR):
    - Average density: 1 acre
    - Minimum road frontage: 50 feet
    - Minimum front yard setback: 50 feet
    - Minimum side yard setback: 20 feet
    - Minimum back yard setback: 30 feet
    - Minimum lot width at primary building line: 100 feet
    - Maximum impervious coverage: 25%
    - Maximum building footprint per nonresidential establishment: 4,000 sq. feet
    - Maximum height: 35 feet
- Special Flood Hazard (SFH):
    - Minimum road frontage: 50 feet

- Allowed uses in the SFH district shall conform to the most restrictive adjoining zoning area and bulk requirements
- Other requirements as per Chapter 50 of the Code of Ordinances, Flood Damage Prevention.

Per Chapter 98, Article IV §98-44, public utility facilities are required to provide adequate screening to mitigate detrimental impacts on neighboring properties. According to the supplementary regulations associated with public utilities, "in order to protect neighboring properties from any associated facility noises, facility lighting and/or detriments to the visual qualities of the surrounding area, adequate screening of the facility and sound barriers consisting of landscaping and/or fencing shall be provided if the need for such additional protection is determined necessary by the Planning Board in the site plan review process" ~~(Town of Pleasant Valley, 1978)~~.

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §98-11 that requires local site plan review and approval.

~~To the extent that they are applicable to the proposed Project, t~~The Applicant requests that the Commission refuse to apply the ~~use and~~ dimensional requirements described within subsection §98-12~~Chapter 98~~. The proposed Project is a permitted use within each zoning district, ~~although local site plan review requirements are preempted per PSL §130.~~and

~~The proposed Project~~ will be constructed wholly within an existing ROW, where transmission lines are currently strung along existing towers. Both the existing ROW and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The area and bulk requirements detailed within ~~Chapter 98~~ subsection §98-12 ~~are not designed to accommodate these specifications. For these reasons, Chapter 98 of the Code of the Town of Pleasant Valley is unduly restrictive in view of existing technology~~compliance with dimensional requirements are either not applicable, or are being reviewed pursuant to Article VII.

The proposed Project will provide screening, landscaping, and/or fencing in ~~such a manner as to~~accordance with any applicable conditions of the issued Certificate of Environmental Compatibility and Public Need and the approved EM&CP. Such screening, landscaping, and fencing must also comply with the National Electrical Safety Code (NESC). ~~To the extent that these and other vegetation and/or access management controls are incompatible with the supplementary regulations described in §98-44, the Applicant requests that the Commission refuse to apply the supplementary regulations.~~

The Applicant cannot determine whether the screening, landscaping, and/or fencing provided in accordance with the Certificate and EM&CP satisfies the supplementary regulations described in §98-44, as the latter would be a matter of local Planning Board discretion and a product of the site plan review process from which the Applicant has requested relief. Therefore, the Applicant requests that the Commission refuse to apply the provisions of §98-44.

7.3 Town of LaGrange

Project activities in the Town of LaGrange would include the removal of 66 electric transmission structures, to be replaced by the construction of 13 double pole structures and 53 single pole structures associated with approximately 6.75 miles of the A~~&~~ and C Line Rebuild Project.

7.3.1 Chapter 83, Building Construction Administration and Enforcement

Chapter 83 implements the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

~~Local permitting requirements are preempted per PSL §130. However, t~~The Applicant will comply with ~~the substantive portions of~~ Chapter 83. However,

~~T~~the Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §83-9, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need~~,~~ and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §83-4(B); as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.3.2 Chapter 103, Dumps and Dumping

Chapter 103 regulates waste disposal and transport within the Town. The use of private or public lands for the purpose of waste disposal or dumping is prohibited. All garbage, industrial waste, or refuse transported within

the Town is required to be handled and covered so it cannot be accessible to rodents, flies, or other insects, or create a nuisance.

The applicant will comply with the requirements of Chapter 103.

7.3.3 Chapter ~~117~~107, Electrical Inspections

Chapter ~~117~~ 107 outlines the roles of the Electrical Inspector for the Town. According to subsection §107-3(A), it is a violation for ~~Any~~ any person, firm or corporation ~~that~~ to install~~s~~ ~~and~~ or alter~~s~~ electrical wiring for light, heat or power without first filing an application ~~must apply~~ for ~~an~~ inspection with the local Electrical Inspector. According to §107-3(B), it is also a violation to connect electrical wiring in or on properties for light, heat, or power to any source of electrical energy supply prior to the issuance of a temporary certificate or certificate of compliance by the local Electrical Inspector. Per §107-3(C), t~~T~~he Electrical Inspector has stop work authority should they determine that any section of this chapter has been violated.

~~Local permitting requirements are preempted per PSL §130. However, t~~The Applicant will comply with ~~the substantive portions of~~ Chapter ~~117~~107, although local permitting requirements are preempted per PSL §130.~~.~~

Because local permitting requirements are preempted,

~~T~~the Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §107-3(C), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §107-2; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local electrical inspection.

7.3.4 Chapter 120, Flood Damage Prevention

Chapter 120 implements the National Flood Insurance Program. Chapter 120, §120-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Wappinger Creek and Sprout Creek in the Town of

LaGrange crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §120-12 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and ensuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in §120-6, without a valid floodplain development permit."

Chapter 120 also details requirements for construction within special flood hazard areas, including general construction standards (§120-15)~~, standards for all structures (§120-16), and standards for nonresidential structures (§120-18).~~ The construction standards detailed in subsection §120-15 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §120-6." Development is defined within subsection §120-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. ~~these standards appear to be inapplicable given that "structure" is defined as a "walled and roofed building, including a gas or liquid storage tank, that is principally above the ground, as well as a manufactured home" (§120-4).~~ Subsection §120-15(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 120, §120-14(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 120. ~~Under the code, the term development is more broadly defined then "structure" and could include work on the ROW.~~

The Applicant requests that the Commission refuse to apply the provisions of subsection §120-15 of the Town of LaGrange's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include poles C16 and C33, both in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. The transmission facilities proposed to be located within the special flood hazard area are not prone to flood damage in the same ~~manner~~ way that~~as~~ residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace ~~a number of those~~two existing structures (consisting of four individual poles) that are currently located within the special flood hazard area, or overhead

transmission lines would traverse them. For these reasons, subsection §120-15 ~~Chapter 120~~ of the Code of the Town of LaGrange is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection §120-14(F) , which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.3.5 Chapter 124, Freshwater Wetlands, Watercourses, and Water Bodies

Pursuant to Chapter §124-2, "it is declared to be the public policy of the Town of LaGrange to preserve, protect and conserve freshwater wetlands, watercourses and water bodies and the benefits derived therefrom; to prevent despoilation and destruction of freshwater wetlands, watercourses and water bodies; and to regulate development in such wetlands and protect such watercourses and water bodies in order to secure the natural benefits derived therefrom consistent with the general welfare and the beneficial economic, social and agricultural development of the Town" (Town of LaGrange, 2002). According to Chapter 124, the boundaries of wetlands shall be determined by field investigation.

Chapter 124, §124-7(C) identifies eight activities that are subject to regulation, including the erection of "any structures or roads, the driving of pilings or placing of any other obstructions, whether or not changing the ebb and flow of the water" (Town of LaGrange, 2002). Chapter 124, §124-5 defines structure as "anything constructed or erected, the use of which requires location on or within the ground or attachment to something having location on the ground, including but not limited to buildings, tennis courts, swimming pools, as examples." This definition would include the proposed Project, as the proposed transmission towers may be located within a regulated proximity to a delineated wetland.

The Applicant will comply with Chapter 124 and Article 24, although ~~L~~local permitting requirements~~, as well as~~ and those of Article 24 of the ECL~~,~~ are preempted per PSL §130.

However, ~~the Applicant will comply with the substantive portions of Chapter 124 and Article 24.~~

~~T~~the Applicant ~~further~~ requests that the Commission refuse to apply local ~~stop-work order provisions~~enforcement authority as described in §124-15, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Penalties and appearance tickets pursuant to local ~~Local stop-work~~ authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.3.6 Chapter 140, Illicit Discharges to Storm Sewers

Chapter 140 regulates discharges into the Town of LaGrange municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

The applicant will comply with the requirements of Chapter 140.

7.3.7 Chapter 162, Noise

Chapter 162 delineates permitted noise levels within the Town of LaGrange. Chapter 162, §162-4 states that "no person shall make, continue or cause or permit to be made or continued any unnecessary noise" (Town of LaGrange, 2002). Chapter 162, §162-2 defines such noises as "any excessive or unusually loud sound or any sound which either annoys, disturbs, injures or endangers the comfort, repose, health, peace or safety of a person or which causes injury to animal life or damages to property or business" (Town of LaGrange, 2002). The standard by which unnecessary noise shall be judged includes a consideration regarding "whether the sound source is temporary" (Town of LaGrange, 2002). The ordinance does not state whether this standard applies specifically to construction-related noises, nor is the term "temporary" defined within the ordinance.

The list of prohibited acts in §162-5 includes construction-related noises between the hours of 9:00 p.m. and 6:30 a.m., pump or fan-related noises between 11:00 p.m. and 7:00 a.m., and the loading and unloading of vehicles or materials between the hours of 11:00 p.m. and 7:00 a.m. within 300 feet of a residentially zoned area.

The list of permitted noses in §162-10 include sounds created by public utilities in carrying out the operations of their franchise.

Sounds created by public utilities are allowed pursuant to subsection §162-10~~To the extent that they are applicable to the proposed Project, the Applicant requests that the Commission refuse to apply the noise standards as enumerated in Chapter 162, as they are unreasonably restrictive in view of the existing technology~~. The construction process will include the use of motorized equipment during transportation, excavation, and erection of the proposed transmission towers. Temporary noises produced by such equipment ~~. During the temporary construction period, such equipment may occasionally and intermittently produce noise in excess of the standards enumerated in Chapter 162, and these noises~~ are unavoidable given the nature of the activities. Industry-standard noise mitigation techniques will be employed as part of the projec~~t,~~t.

~~and c~~Construction hours of operation will be determined by the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Construction hours are anticipated to be in compliance with the requirements of §162-5.

7.3.8 Chapter 195, Solid Waste

Chapter 195 regulates local garbage disposal and collection. According to §195-2, only residents and business owners may utilize the Town dump facilities.

The applicant will comply with the requirements of Chapter 195.

7.3.9 Chapter 197, Stormwater Management and Erosion and Sediment Control

Chapter 197 regulates development within the Town of LaGrange with regard to erosion control measures. Unless otherwise exempted, all land development activities are required to submit stormwater pollution prevention plans to the Town's Stormwater Management Officer. Eleven categories of activity are granted exemption per §197-6, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles" (Town of LaGrange, 2002). The ordinance does not make a clear distinction between electric poles and transmission towers; however, it is assumed that towers such as those included in the proposed Project are not exempted in §197-6.

Article IV of Chapter 197 outlines the requirements of stormwater pollution prevention plans to be submitted in support of land development activities. In addition, any land development activity disturbing more than one acre (with exceptions for single-family residences and agricultural activities) must provide additional information with regard to each post-construction stormwater management practice per the requirements of §197-9.

~~*Local permitting requirements are preempted per PSL §130. However, t*~~*The Applicant will comply with* ~~*the substantive portions of*~~ *Chapter 197.* *However, stormwater management and sediment control requirements will be determined by conditions of the Certificate of Environmental Compatibility and Public Need, the approved EM&CP, and a Stormwater Pollution Prevention Plan (SWPPP).*

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. *The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010.* ~~*Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required. Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.*~~

7.3.10 Chapter 199, Streets and Sidewalks

Chapter 199, §199-52 requires the issuance of a work permit for any excavations made within a Town right-of-way.

The proposed Project will require overhead crossings of the following roads within the Town of LaGrange:

- *Rombout Road*
- *Overlook Road/County Route 46*
- *Frost Hill Road*
- *Cramer Road*
- *Vervalen Drive*
- *Freedom Plains Road/State Route 55*
- *Bushwick Road*
- *Croft Hill Road*
- *Old Noxon Road*

- *Noxon Road/County Route 21*
- *Pine Ridge Road*
- *Diddell Road*

~~*The need for a local highway work permit is preempted by PSL §130. Central Hudson will work with local highway superintendents to ensure that the standard requirements for new driveways contained in §199-3, if required, are met.*~~*The Applicant will comply with Chapter 199, although local permitting requirements are preempted per PSL §130.*

7.3.11 Chapter 226, Vehicles and Traffic

Chapter 226 outlines regulations related to vehicular movement on roadways within the Town. Article II of Chapter 226 regulates stop and yield intersections, and Article IV regulates parking, stopping, and standing.

The applicant will comply with the requirements of Chapter 226.

7.3.12 Chapter 240, Zoning

Chapter 240 describes 12 zoning districts within the Town of LaGrange. The proposed Project is located within the Moderate Density Residential (R-40/60/80), Low Density Residential (R-80), and Rural Residential (R-120) districts. Per Schedule A of §240-27 (the Schedule of Permitted Uses and Special Use Permits), each of these districts allows for "essential services" as a permitted use subject to project development plan review. Article XI, §240-112 of Chapter 240 defines essential services as "the erection, construction, alteration, or maintenance by public utilities or the Town or other governmental agencies of underground, surface or overhead electrical, gas or water transmission or distribution systems, including poles, wires, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, police call boxes, traffic signals, hydrants, and other similar equipment and accessories, in connection therewith reasonably necessary for the furnishing of adequate service by such public utilities or Town or other governmental agencies or for the public health or safety or general welfare, but not including buildings" (Town of LaGrange, 2002).

Article VII of Chapter 240 outlines requirements for the project development plan review process. Per Schedule A of Chapter 240, only site plan approval would be required. Schedule A of Chapter 240 also notes that such reviews are a prerequisite for the development of essential services within the R-40/60/80, R-80, and R-120

districts, the applicability of the process for such uses is unclear per the requirements of Article VII. Chapter 240, §240-72 notes the following:

> "Project development plan approval by the Planning Board in accordance with this section is required for the proposed use or changes in use of land, buildings, and other structures for:
>
> (a) All special use permits in R-120, R-80, and R-40/60/80 Districts.
>
> (b) In all other districts, new principal uses, accessory uses and special permit uses and any expansion or reconstruction of existing uses." (Town of LaGrange, 2002)

Dimensional requirements are detailed in Schedule B of §240-28, the Schedule of Bulk Regulations and Coverage Limitations. Dimensional requirements for the R-40/60/80, R-80, and R-120 districts are as follows:

- Moderate Density Residential (R-40/60/80):
    - Minimum single-family residential lot area:
        - With public water and sewer: 40,000 square feet
        - With public water or sewer: 60,000 square feet
        - Without private well and septic system: 80,000 square feet
    - Minimum width of lot along building line: 150 feet
    - Minimum width of lot at any point:
        - On 40,000 square foot lots: 50 feet
        - On 60,000 square foot lots: 75 feet
        - On 80,000 square foot lots: 100 feet
    - Minimum dimension of building square on lot: 150 feet
    - Minimum lot frontage on Town right-of-way:
        - On 40,000 square foot lots: 50 feet
        - On 60,000 square foot lots: 50 feet
        - On 80,000 square foot lots: 75 feet
    - Minimum lot frontage on County or State highway:
        - On 40,000 square foot lots: 125 feet
        - On 60,000 square foot lots: 125 feet
        - On 80,000 square foot lots: 200 feet
    - Maximum height of a building or structure: 35 feet
    - Minimum yard depth:
        - Front yard from County/State road: 90 feet
        - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
        - Rear yard: 20 feet

        - Side yard: 20 feet
    - Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving):
        - On 40,000 square foot lots: 30%
        - On 60,000 square foot lots: 25%
        - On 80,000 square foot lots: 20%
- Low Density Residential (R-80):
    - Minimum single-family residential lot area: 80,000 square feet
    - Minimum width of lot along building line: 200 feet
    - Minimum width of lot at any point: 100 feet
    - Minimum dimension of building square on lot: 200 feet
    - Minimum lot frontage on Town right-of-way: 75 feet
    - Minimum lot frontage on County or State highway: 200 feet
    - Maximum height of a building or structure: 35 feet
    - Minimum yard depth:
        - Front yard from County/State road: 90 feet
        - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
        - Rear yard: 30 feet
        - Side yard: 30 feet
    - Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving): 20%
- Rural Residential (R-120):
    - Minimum single-family residential lot area: 120,000 square feet
    - Minimum width of lot along building line: 200 feet
    - Minimum width of lot at any point: 150 feet
    - Minimum dimension of building square on lot: 200 feet
    - Minimum lot frontage on Town right-of-way: 100 feet
    - Minimum lot frontage on County or State highway: 225 feet
    - Maximum height of a building or structure: 35 feet
    - Minimum yard depth:
        - Front yard from County/State road: 90 feet
        - Front yard from Town road: 55 feet (from lot line) and 80 feet (from road centerline)
        - Rear yard: 40 feet
        - Side yard: 40 feet

- Maximum total lot coverage as a percent of lot area (buildings, structures, outdoor deposit, paving): 15%

In addition to the conventional zones described above, Article III of Chapter 240 (§240-31) identifies six overlay zones, as follows: Stream Corridor; Farmland Preservation; Historic; Scenic; Ridgeline Protection; and Groundwater Protection. Per zone descriptions provided in §240-31, as well as the Town of LaGrange Overlay Zone Maps illustrating the locations where such overlays apply, proposed Project facilities would be located within the Ridgeline and Groundwater Protection Overlay Zones.

The Ridgeline Protection Overlay Zone requires that all new construction or development within that zone obtain a special permit from the Town Planning Board, and that such development constitutes a Type I action pursuant to the State Environmental Quality Review Act. Standards for development within this zone are described in §240-31(F)(4), as follows:

- Maximum building or structure height shall not exceed 35 feet;
- Maximum cleared area shall be no more than 50 feet in extent from the outer edge of the primary structure's footprint, and during construction only the minimum amount of existing vegetation shall be cleared;
- 25-foot buffer strips are required at the outer edge of cleared areas
  - these strips shall be planted with vegetation of sufficient height and density as determined by the Planning Board, and
  - these strips shall be free of any man-made structures, including but not limited to fences, facilities, and roads; and
- Proposed yard setbacks from the property line must be no less than 1.5 times the height of the proposed structure or the setback requirements in the existing zoning regulations, whichever are greater.

The general provisions of the Groundwater Protection Overlay Zone, as detailed in §240-13(G)(4), do not apply to facilities such as those included in the proposed Project.

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §240-72 that requires local site plan review and approval.

~~To the extent that they are applicable to the proposed Project, the~~ The Applicant requests that the Commission refuse to apply the ~~use and~~ dimensional requirements described within ~~Chapter~~ subsections §240-28 and §240-31 of the Code of the Town of LaGrange. The proposed Project is a permitted use within each zoning district, ~~although local site plan review requirements are preempted per PSL §130.~~and

~~In addition, the proposed Project~~ will be constructed wholly within an existing ROW, where transmission lines are currently strung along existing towers. Both the existing ROW and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The area and bulk requirements detailed within ~~Chapter~~ subsections §240-28 and §240-31 are not designed to accommodate these specifications. For these reasons, compliance with dimensional requirements are either not applicable, or are being reviewed pursuant to Article VII.~~the use and dimensional requirements enumerated within Chapter 240 of the Code of the Town of LaGrange are unduly restrictive in view of existing technology.~~

7.4 Town of Wappinger

Project activities in the Town of Wappinger would include the removal of 31 electric transmission structures, to be replaced by the construction of 8 double pole structures and 23 single pole structures associated with approximately 2.8 miles of the A~~&~~ and C Line Rebuild Project.

7.4.1 Chapter 80, Blasting

Chapter 80 requires the issuance of a blasting permit for any use of explosives within the Town of Wappinger. Per §80-6, the use of explosives shall be governed by the provisions of the following regulations:

- Article 16 of the New York State Labor Law;
- 12 NYCRR Part 39;
- Title 19 of NYCRR, Chapter XXXIII, Subchapter A, the Uniform Fire Prevention and Building Code of New York State;
- 27 CFR 55;
- 29 CFR 1926, Subpart U;
- Title 49 of the Code of Federal Regulations;
- NFPA No. 495-1973; and
- Generally recognized criteria and accepted industry standards for the manufacture, sale, transportation, storage, handling or use of explosives.

Blasting permits are issued by the Town of Wappinger Fire Inspector, and subject to standard requirements detailed in §80-8. Blasting hours are limited to the period between 8:30 a.m. and 3:00 p.m., Monday through Friday. Blasting is prohibited on Saturdays, Sundays, and legal holidays, unless otherwise approved by the Town.

Local permitting requirements are preempted per PSL §130. The Applicant will comply with ~~the substantive portions of~~ Chapter 80 in the event that blasting is required; however, the Applicant does not anticipate that blasting will be necessary.

7.4.2 Chapter 85, Building Code Administration

Chapter 85 implements the New York State Uniform Fire Prevention and Building Code and the State Energy Conservation Construction Code.

~~Local permitting requirements are preempted per PSL §130. However, t~~The Applicant will comply with ~~the substantive portions of~~ Chapter 85. However,

~~T~~the Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in §85-12, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §85-10; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building or fire inspection.

7.4.3 Chapter 117, Environmental Quality Review

Chapter 117 outlines Type I, Type II, and Exempt Actions within the Town of Wappinger, pursuant to Part 617 of Title 6 of the NYCRR.

The proposed Project is identified within §117-6(A) as an Exempt Action, as it requires a Certificate of Environmental Compatibility and Public Need~~certificate of environmental compatibility and public need~~ under Article VII of the PSL.

7.4.4 Chapter 133, Flood Damage Prevention

Chapter 133 implements the National Flood Insurance Program. Chapter 133, §133-6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Sprout Creek in the Town of Wappinger crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §133-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in § 133-6, without a valid floodplain development permit."

Chapter 133 also details requirements for construction within special flood hazard areas, including general construction standards (§133-14). The construction standards detailed in subsection §133-14 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §133-6." Development is defined within subsection §133-4 as "Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the project. ~~, standards for all structures (§133-15), and standards for nonresidential structures (§133-17) these standards appear to be inapplicable given that "structure" is defined as a "walled and roofed building, including a gas or liquid storage tank, that is principally above the ground, as well as a manufactured home" (§133-4).~~ Subsection §133-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 133, §133-13(F) authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 133. ~~Under the code, the term development is more broadly defined then "structure" and could include work on the ROW.~~

The Applicant requests that the Commission refuse to apply the provisions of subsection §133-14 of the Town of Wappinger's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include

poles A59, A60, and A61 in the 100-year floodplain and A31, A32, and A34 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole structures. Transmission structures such as these ~~The transmission facilities proposed to be located within the special flood hazard area~~ are not prone to flood damage in the same ~~manner as~~way that residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace ~~a number of those~~six existing structures (consisting of twelve individual poles) that are currently located within the special flood hazard area. For these reasons, ~~Chapter~~ subsection §133-14 ~~133~~ of the town code is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection §133-13(F), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.4.5 Chapter 137, Freshwater Wetland, Waterbody and Watercourse Protection

Per Chapter 137, §137-2 "it is declared to be the public policy of the Town of Wappinger to preserve, protect and conserve freshwater wetlands, waterbodies and watercourses and the benefits derived therefrom and to prevent the despoliation and destruction of such freshwater resources by regulating activities with potential impacts to such resources in order to secure their natural benefits consistent with the general health, safety and welfare of the public, and with the beneficial economic, social and agricultural development of the Town of Wappinger" ~~(Town of Wappinger, 1999)~~.

Chapter 137, §137-6(A) identifies 14 activities that are subject to regulation if they occur within a freshwater wetland or 100-foot buffer around such wetland, including the "placement or construction of any structure" ~~(Town of Wappinger, 1999)~~. This statement would include the proposed Project, as the proposed transmission towers may be located within a delineated wetland.

~~Local permitting requirements, as well as those of Article 24 of the ECL, are preempted per PSL §130. However, the~~The Applicant will comply with ~~the substantive portions of~~ Chapter 137 and Article 24, although local~~.~~ permitting requirements, as well as those of Article 24 of the ECL, are preempted per PSL §130.

7.4.6 Chapter 166, Noise

Chapter 166 restricts certain noise sources within the Town of Wappinger. Per §166-2, "no person shall cause or permit to be caused any noise which can be heard by a person with normal hearing beyond the boundaries of property owned, leased or otherwise controlled by him" ~~(Town of Wappinger, 1999)~~. Construction and demolition-related noises are prohibited between the hours of 7:00 p.m. and 7:00 a.m. ~~It is noted that the standards as enumerated in Chapter 166 with regard to construction-related noise are inconsistent with the exemption for such noise as is noted in §240-103 of the Zoning ordinance. This exemption states the following activity is exempt from the noise level regulations, noises emanating from construction and construction maintenance activities between 8:00 a.m. and sunset.~~ Subsection §166-5(J) exempts "sound generated by the normal operation of utilities".

~~*To the extent that they are applicable to the proposed Project, the Applicant requests that the Commission refuse to apply the noise standards as enumerated in Chapter 166, as they are unreasonably restrictive in view of the existing technology.*~~ *The Applicant considers the Project to be consistent with the exemption granted in subsection §166-5(J). The construction process will include the use of motorized equipment during transportation, excavation, and erection of the proposed transmission towers. Temporary noises produced by such equipment* ~~*During the temporary construction period, such equipment may occasionally and intermittently produce noise in excess of the general standard enumerated in Chapter 166, and occur outside of the hours during which construction noise is permitted. However, these noises*~~ *are unavoidable given the nature of the activities and the brevity of the construction season. Industry-standard noise mitigation techniques (e.g. properly maintained equipment) will be employed as part of the project.* ~~*, and c*~~

Construction hours of operation will be determined by the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Construction hours are anticipated to be in compliance with the requirements of §166-7(C).

7.4.7 Chapter 206, Soil Erosion and Sediment Control

Chapter 206 regulates development within the Town of Wappinger with regard to erosion control measures. According to §206-8, no land development activities (e.g. grading, stripping, cutting, filling, excavation, or other site preparation) shall be conducted "without a grading permit issued by the Zoning Administrator, […or], for

anything other than a one-family dwelling, without site plan approval from the Planning Board, pursuant to §240-83" ~~(Town of Wappinger, 1999)~~.

Article IV of Chapter 206 outlines the requirements of erosion and sediment control structures. In addition, it authorizes the local Zoning Administrator to issue cease and desist orders for any work that is not consistent with relevant applications, grading permits, and approved plans.

~~*Local permitting requirements are preempted per PSL §130. However, the*~~*The Applicant will comply with* ~~*the substantive portions of*~~ *Chapter 206,* *although local permitting requirements are preempted per PSL §130.* ~~*unless they are otherwise inconsistent with a Commission approved EM&CP.*~~

~~*The Applicant further requests that the Commission refuse to apply local stop-work order provisions, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.*~~

7.4.8 Chapter 210, Solid Waste

Chapter 210 regulates the storage and disposal of garbage and debris. The Town dump facility may not be used to dispose of garbage or debris that has originated from outside of the Town of Wappinger. Use of other private or public land for storage and/or disposal of garbage and debris are prohibited. In addition, §210-14 describes requirements for large refuse receptacles that are typically associated with construction-related activities. In general, the ownership of large receptacles must be clearly identifiable, the receptacles must be securely closed and free of leakage, and the area around the receptacle must be kept free of debris and spillage.

The applicant will comply with the requirements of Chapter 210.

7.4.9 Chapter 213, Stormwater Management

Chapter 206 regulates development within the Town of Wappinger with regard to stormwater management. Per §213-3, these standards are applicable to "all land development activities… including, but not limited to, land development activities subject to review and approval by the Town Board, the Planning Board or the Zoning Board of Appeals of the Town under subdivision, site plan, special permit, wetland permit, grading permit and/or

other environmental permit regulations" ~~(Town of Wappinger, 1999)~~. Applicants must submit stormwater pollution prevention plans to the local Stormwater Management Officer, complete with details as enumerated in §213-6. However, per §213-4 (H), the installation of fence, sign, telephone and electric poles and other kinds of posts or poles are exempt from this review. Per §213-11, the Town may issue a stop-work order for land development activities that are inconsistent with permits issued by the Town.

Article II of Chapter 113 also prohibits illicit discharges into the local storm sewer system.

~~Local permitting requirements are preempted per PSL §130. However, the~~ The Applicant will comply with ~~the substantive portions of~~ Chapter 213, although local permitting requirements are preempted per PSL §130. ~~.~~

The Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §213-11, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010. ~~Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required. Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.~~

7.4.10 Chapter 230, Vehicles and Traffic

Chapter 230 outlines regulations related to vehicular movement on roadways within the Town. Article II of Chapter 226 outlines all traffic regulations, and Article III regulates parking, stopping, and standing specifically.

The applicant will comply with the requirements of Chapter 230.

7.4.11 Chapter 240, Zoning

Chapter 240 outlines requirements relative to 25 zoning districts within the Town of Wappinger. Of these, the proposed Project intersects four: 1-Family Residence District R-3A, 1-Family Residence District R-40, 1-Family Residence District R-40/80, and Conservation Commercial District CC. Per the Schedule of Use Regulations (Attachments1 and 2 of Chapter 240, as referenced in §240-37), public utility uses are allowed within the each of these districts, subject to special permits.

Dimensional requirements are detailed in Attachments 3 and 4 of Chapter 240. Dimensional requirements for each of the four districts listed above are as follows:

- 1- Family Residential District R-3A:
    - Minimum lot size: 3 acres
    - Minimum lot width: 225 feet
    - Minimum lot depth: 300 feet
    - Minimum lot frontage: 50 feet
    - Minimum front yard from:
        - County/State highway: 75 feet
        - Center line of other street: 75 feet
        - Front lot line of other street: 75 feet
    - Minimum side yard: 50 feet
    - Minimum rear yard: 50 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22) (B)
    - Maximum lot coverage: 7%
- 1- Family Residential District R-40:
    - Minimum lot size: 40,000 square feet
    - Minimum lot width: 125 feet
    - Minimum lot depth: 125 feet

- Minimum lot frontage: 50 feet
- Minimum front yard from:
  - County/State highway: 75 feet
  - Center line of other street: 75 feet
  - Front lot line of other street: 50 feet
- Minimum side yard: 25 feet
- Minimum rear yard: 50 feet
- Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
- Maximum lot coverage: 12%

- 1- Family Residential District R-40/80:
  - Minimum lot size:
    - With public water and sewer: 40,000 square feet
    - With public water or sewer: 60,000 square feet
    - Without public water and sewer: 80,000 square feet
  - Minimum lot width:
    - On 40,000 square foot lots: 125 feet
    - On 60,000 square foot lots: 150 feet
    - On 80,000 square foot lots: 200 feet
  - Minimum lot depth:
    - On 40,000 square foot lots: 125 feet
    - On 60,000 square foot lots: 150 feet
    - On 80,000 square foot lots: 200 feet
  - Minimum lot frontage: 50 feet
  - Minimum front yard: 50 feet (conflicting minimum front yard requirements exist; see below)
  - Minimum front yard from:
    - County/State highway: 75 feet
    - Center line of other street: 75 feet
    - Front lot line of other street: 50 feet
  - Minimum side yard: 40 feet (conflicting minimum side yard requirements exist; see below)
  - Minimum side yard:
    - On 40,000 square foot lots: 25 feet
    - On 60,000 square foot lots: 30 feet
    - On 80,000 square foot lots: 40 feet

    - Minimum rear yard: 50 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
    - Maximum lot coverage: 10%
- Conservation Commercial District CC:
    - Minimum lot size: 1 acre
    - Minimum lot width: 100 feet
    - Minimum lot depth: 100 feet
    - Minimum lot frontage: 100 feet
    - Minimum front yard from:
        - County/State highway: 75 feet
        - Center line of other street: 75 feet
        - Front lot line of other street: 50 feet
    - Minimum side yard: 10 feet
    - Minimum rear yard: 30 feet
    - Maximum building height: 35 feet (transmission towers are exempt from building height restrictions, per §240-22)
    - Maximum building coverage: 20%
    - Maximum impervious surface: 40%
    - Minimum landscaped open space: 60%
    - Minimum parking setback from front, side, and rear lot lines: 20, 10, and 10 feet, respectively.

Article VII of Chapter 240, §240-44 describes four general standards for special use permits, as follows:

- The location and size of the use, the nature and intensity of the operations involved in or conducted in connection with it, the size of the site in relation to it and the location of the site with respect to streets giving access to it, are such that it will be in harmony with the appropriate and orderly development of the district in which it is located.
- The location, nature and height of buildings, walls, fences and the nature and extent of existing or proposed plantings on the site are such that the use will not hinder or discourage the appropriate development and use of adjacent land and buildings.
- Operations in connection with any special permit use will not be more objectionable to nearby properties by reason of noise, fumes, vibration, illumination or other characteristics, than would be the operations of any permitted use not requiring a special permit.

- Parking areas will be of adequate size for the particular use, will be properly located and suitably screened from adjoining residential uses and the entrance and exit drives shall be laid out so as to achieve maximum safety. ~~(Town of Wappinger, 1999)~~

In addition to these standards, applicants for special use permits are required to submit site development plans for review by the Planning Board. This process requires the assessment of 16 project components for their compatibility with standards as defined in Chapter 240, §240-86. These standards require adequate site access, on-site circulation, landscaping and buffering, lighting, protection of natural resources, and drainage, as well as other requirements that may or may not apply to utility structures (e.g. building design, signage, etc.).

Per Article XI of Chapter 240, §240-101 "no business or industrial use shall hereafter be maintained, established, altered, moved or expanded" unless it complies with a series of performance standards. Neither Article XI nor Article II (Zoning- Definitions) indicates whether utility uses such as the proposed Project would be regulated as an industrial use. The noise-related performance standards enumerated in §240-13 provide an exemption for construction-related noise between 8:00 a.m. and sunset. ~~It is noted that this standard is inconsistent with that which is enumerated in §166-2 of the Noise Ordinance.~~

Given that layout and design of the proposed facilities are being reviewed and approved pursuant to Article VII, the Applicant requests that the Commission refuse to apply subsection §240-83 that requires local site plan review and approval.

~~To the extent that they are applicable to the proposed Project, the~~ The Applicant requests that the Commission refuse to apply the ~~use and~~ dimensional requirements described within Attachments 3 and 4 of Chapter 240~~Chapter 240~~. Special use permits and local site plan review requirements are preempted per PSL §130. The general standards under §240-44 and compatibility standards under §240-86 are considerations the commission will make, where applicable, in making its findings under PSL §126.

Both the existing right-of-way and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The requirements detailed within Attachments 3 and 4 of Chapter 240 are not designed to accommodate these specifications. For these reasons, ~~Chapter 240 of the Code of the Town of Wappinger~~the bulk requirements described therein are ~~is~~ unduly restrictive in view of existing technology.

~~*In addition, to the extent that they are applicable to the proposed Project, the Applicant requests that the Commission refuse to apply the noise standards as enumerated in Chapter 240, as they are unreasonably restrictive in view of the existing technology, cost, and the needs of the Applicant's consumers. The construction process will include the use of motorized equipment during transportation, excavation, and erection of the proposed transmission towers. During the temporary construction period, such equipment may occasionally and intermittently produce noise in excess of the standards enumerated in Chapter 240, and these noises are unavoidable given the nature of the activities. Industry-standard noise mitigation techniques will be employed as part of the project, and construction hours of operation will be determined by the conditions and requirements of the Certificate of Environmental Compatibility and Public Need, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service.*~~

7.5 Town of East Fishkill

Project activities in the Town of East Fishkill would include the removal of 3 electric transmission structures and the construction of 2 double pole structures and 1 single pole structure associated with approximately 0.2 mile of the A~~&~~ and C Line Rebuild Project.

7.5.1 Chapter 80, Building Construction and Fire Prevention

Chapter 80 implements the New York State Uniform Fire Prevention and Building Code.

~~*Local permitting requirements are preempted per PSL §130. However, the*~~*The ~~*Applicant will comply with ~~*the substantive portions of*~~ *Chapter 80*, although local permitting requirements are preempted per PSL §130. ~~.~~*

The Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §80-10, which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs. In addition, the Applicant requests that the Commission refuse to apply local inspection provisions granted in subsection §80-9; as the Project is a rebuild of an existing high-voltage transmission line, the Applicant does not envision the need for local building inspection.

7.5.2 Chapter 108, Flood Damage Prevention

Chapter 108 implements the National Flood Insurance Program. Chapter 108, §108-~~3~~ 6 identifies a special flood hazard area within the Town, pursuant to Flood Insurance Rate Maps created by the Federal Emergency Management Agency. Floodplains associated with Sprout Creek in the Town of East Fishkill crossed by a portion of the proposed Project are included in this special flood hazard area. Subsection §108-11 establishes the local floodplain development permit requirement as follows: "A floodplain development permit is hereby established for all construction and other development to be undertaken in areas of special flood hazard in this community for the purpose of protecting its citizens from increased flood hazards and insuring that new development is constructed in a manner that minimizes its exposure to flooding. It shall be unlawful to undertake any development in an area of special flood hazard, as shown on the Flood Insurance Rate Map enumerated in §108-6, without a valid floodplain development permit."

~~Chapter 108, §108-6~~Subsection §108-14 ~~-~~details general standards ~~requirements~~ for construction within special flood hazard areas~~.~~ ~~including general provisions (§108-6 (A through F)) and standards for nonresidential structures (§108-6(H)) these standards appear to be inapplicable given that "structure" is defined as a "walled and roofed building, including a gas or liquid storage tank, that is principally above the ground, as well as a manufactured home" (§108-4).~~ The construction standards detailed in subsection §108-14 are applicable to "new development, including new and substantially improved structures, in the areas of special flood hazard shown on the Flood Insurance Rate Map designated in §108-6." Development is defined within subsection §108-4 as "any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, paving, excavation or drilling operations or storage of equipment or materials", which would appear to apply to the Project. Subsection §108-14(B) requires applicants to demonstrate that encroachments within special flood hazard areas will not cause increases in flood levels during flood events. Chapter 108, §108-~~5~~13(F) ~~-~~authorizes the local zoning administrator to issue stop-work orders for floodplain development found ongoing without a development permit, or for that which is found noncompliant with the provisions of Chapter 108. ~~Under the code, the term development is more broadly defined then "structure" and could include work on the ROW.~~

The Applicant requests that the Commission refuse to apply the provisions of subsection §108-14 of the Town of East Fishkill's flood damage prevention ordinance. The ordinance is designed to regulate the construction of primarily residential, commercial, and industrial structures, as opposed to the utility facilities included in the proposed Project. The transmission facilities proposed to be located within the special flood hazard area include pole A63 in the 500-year floodplain. The Project would convert existing two-pole structures to monopole

structures. Transcription structures such as these ~~The transmission facilities proposed to be located within the special flood hazard area~~ are not prone to flood damage in the same manner as residential, commercial, or industrial structures are. In addition, the proposed Project will not alter the floodplain, and will not increase flood hazards to adjacent properties. As proposed, the new transmission towers would replace one existing structure (consisting of two individual poles) that is currently located within the special flood hazard area~~As proposed, the new transmission towers would replace a number of those that are currently located within the special flood hazard area, or overhead transmission lines would traverse them~~. For these reasons, subsection §108-14 ~~Chapter 108~~ of the town code is unduly restrictive in view of existing technology.

The Applicant further requests that the Commission refuse to apply local stop-work order provisions granted in subsection 108-13(F), which the Applicant believes to be unduly restrictive in relation to project cost and the needs of utility ratepayers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.5.3 Chapter 110, Freshwater Wetlands, Water Bodies, and Watercourses

Chapter 110 regulates development within and around wetlands, water bodies, and watercourses, including the following:

- Ponds, lakes, reservoirs, marshes, swamps, bogs, vernal pools or other area of permanent water retention, regardless of origin.
- All natural drainage systems, including rivers, streams and brooks which contain water at least three months of the year and the associated floodplains of such watercourses. (Town of East Fishkill, 2001).

Chapter 110, §110-3(B) identifies 15 activities that are subject to regulation if they occur within such areas, including the "erecting or enlarging any building or structure of any kind, roads, driveways, the driving of pilings, digging of wells or placing of any obstructions, whether or not they change the ebb and flow of the water" (Town of East Fishkill, 2001). This definition (which would fall within the definition of structure) would include the proposed Project, as the proposed transmission towers may be located within a wetland or floodplain.

Chapter 110, Chapter 110, §110-4(K) identifies 11 activities that are permitted by right within freshwater wetlands, water bodies and watercourses. These include activities within wetlands under the jurisdiction of the

federal or state government for which a permit has been obtained from the appropriate agency provided that a copy of the permit is filed with the approval authority or if none, the Town Clerk. Per this chapter the proposed project would be an exempt activity since the activity is authorized under an existing U.S. Army Corps of Engineers Nationwide pPermit. ~~will be sought for federally jurisdictional wetland impacts.~~

~~Local permitting requirements are preempted per PSL §130. However, the~~The Applicant will comply with ~~the substantive portions of~~ Chapter 110 although local permitting requirements are preempted per PSL §130. ~~, unless they are otherwise inconsistent with a Commission approved EM&CP.~~

The Applicant ~~further~~ requests that the Commission refuse to apply local stop-work order provisions granted in subsection §110-7(C) , which the Applicant believes to be unduly restrictive in relation to project cost and the needs of customers. Construction activities will meet the conditions and requirements of the Certificate of Environmental Compatibility and Public Need and the approved EM&CP, and will be monitored by the New York State Public Service Commission and the staff of the New York State Department of Public Service. Local stop-work authority could potentially disrupt construction, resulting in adverse impacts to the construction schedule as well as increased Project costs.

7.5.4 Chapter 127, Littering

Chapter 127 prohibits the deposition of garbage or debris on or about any street, lawn, vacant lot, or in any building, public place, culvert, or stream within the Town.

The applicant will comply with the requirements of Chapter 127.

7.5.5 Chapter 154, Steep Slope Protection

Chapter 154 requires local permits for disturbances occurring on any area with greater than 3:1 slope or 33.33% grade. Per §154-3, disturbances include "excavation or fill or any combination which changes the existing ground surface by more than two feet, or any removal of trees and/or vegetation and shall include the conditions resulting from any excavation or fill" (Town of East Fishkill, 2001). The standards for approval of such permits are enumerated in §154-6.

~~Local permitting requirements are preempted per PSL §130. However, the~~The Applicant will comply with ~~the substantive portions of~~ Chapter 154, although local permitting requirements are preempted per PSL §130. .

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required. Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.

7.5.6 Chapter 156, Storm Sewers

Together with Chapter 157, Chapter 156 regulates discharges into the Town of Pleasant Valley municipal separate storm sewer system, per the requirements of the Town's SPDES General Permit.

~~Local permitting requirements are preempted per PSL §130. However, the~~The Applicant will comply with ~~the substantive portions of~~ Chapter 156, although permitting requirements are preempted per PSL §130.

7.5.7 Chapter 157, Stormwater Management and Erosion and Sediment Control

Chapter 157 regulates development within the Town of East Fishkill with regard to erosion control measures. Per §157-7(A), all land development activities are required to submit a stormwater pollution prevention plan to the Town. Nine categories of activity are granted exemption per §157-6, including the "installation of fence, sign, telephone, and electric poles and other kinds of posts and poles" (Town of East Fishkill, 2001). The ordinance does not make a clear distinction between electric poles and transmission towers; however, for purposes of preparing Exhibit 7, it is assumed that towers such as those included in the proposed Project are not exempted in §157-6.

~~Local permitting requirements are preempted per PSL §130. However, the~~The Applicant will comply with ~~the substantive portions of~~ Chapter 80, although local permitting requirements are preempted per PSL §130.

Construction activities for the proposed Project will entail soil disturbances of greater than one acre. Absent an Article VII certificate, storm water discharge(s) from the construction site(s) are required to be covered under a

State Pollutant Discharge Elimination System (SPDES) General Permit issued in accordance with the New York Environmental Conservation Law (ECL) Article 17. The approved EM&CP will include as an appendix a Stormwater Pollution Prevention Plan that will satisfy the requirements of General Permit No. GP-0-10-001 dated January 29, 2010. ~~Based on past experience and guidance provided by New York State Department of Public Service Staff, Central Hudson understands that this project's EM&CP and associated erosion control measures will fulfill the NYSDEC's erosion and sediment control requirements and that a separate SWPPP will not be required. Concurrent with the EM&CP filing, Central Hudson will provide the NYSDEC with the required Notice of Intent for coverage of this Project under General Permit No. GP-0-10-001 dated January 29, 2010 for Stormwater Discharges from Construction Activities. The required Notice of Termination of such General Permit coverage will be provided to the NYSDEC following completion of the Project.~~

7.5.8 Chapter 177, Vehicles and Traffic

Chapter 177 outlines regulations related to vehicular movement on roadways within the Town. Article I of Chapter 177 outlines parking regulations relative to public roads, specifically no-parking zones and seasonal parking restrictions.

The applicant will comply with the requirements of Chapter 177.

7.5.9 Chapter 194, Zoning

Zoning regulations are described in Chapter 194 of the Town Code. The proposed Project would be located in only one of the 17 existing districts, specifically the R-1 residential district. Public utility uses are not identified within the Schedule of Permitted Uses (§194-16 and Attachment 2) as a permitted use within the R-1 district, and are therefore not permitted per §194-8.

The Schedule of Bulk Regulations (§194-17 and Attachment 3) sets forth the following dimensional requirements for the R-1 residential district:

- Minimum lot size: 1 acre
- Minimum lot frontage: 50 feet
- Minimum lot width: 125 feet
- Minimum lot depth: 150 feet
- Minimum front yard: 50 feet
- Minimum side yard: 25 feet
- Minimum rear yard: 50 feet

- Maximum lot coverage: 12%
- Maximum building height: 35 feet

Per Chapter 194, §194-110, all power and communication lines shall be installed underground in the manner prescribed by regulations of the governmental agency or utility company having jurisdiction. However, where site or other environmental considerations would cause undue hardship, the appropriate reviewing agency shall have authority to waive this requirement.

Per Chapter 194, §194-161, the construction or modification of public utility structures, including the construction or use of overhead lines or other structures used for public utility purposes and subject to the jurisdiction of the Public Service Commission of the State of New York is a permitted use in the Industrial districts within the Town.

~~To the extent that they are applicable to the proposed Project, the~~ The Applicant requests that the Commission refuse to apply the use and dimensional requirements described within ~~Chapter~~ subsection §194~~-17~~ and Attachment 3.

The proposed Project will be constructed wholly within an existing right-of-way, where transmission lines are currently strung along existing towers, and will connect to an existing substation within the R-1 district. Both the existing right-of-way and the proposed tower locations have been and will be sited according to technical specifications regarding clearance, reliability criteria, span lengths, and directional requirements. The requirements detailed within §194-17 and Attachment 3 ~~Chapter 194~~ are not designed to accommodate these specifications. For these reasons, ~~Chapter 194~~the bulk requirements described therein ~~of the town code is~~ are unduly restrictive in view of existing technology.

7.6 References

Town of East Fishkill, New York. 2001. Code of the Town of East Fishkill. Published by General Code, as amended through June 23, 2011. Available at: http://ecode360.com/EA0495. Accessed January, 2013.

Town of LaGrange, New York. 2002. Code of the Town of LaGrange. Published by General Code, as amended through November 14, 2012. Available at: http://ecode360.com/LA0563. Accessed January, 2013.

Town of Pleasant Valley, New York. 1978. Code of the Town of Pleasant Valley. Published by General Code, as amended through April 11, 2012. Available at: http://ecode360.com/PL0575. Accessed January, 2013.

Town of Wappinger, New York. 1999. Code of the Town of Wappinger. Published by General Code, as amended through April 9, 2012. Available at: http://ecode360.com/WA0691. Accessed January, 2013.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-014 (DM)

Central Hudson Response No: CHGE-014 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: July 8, 2014

Response Provided by: John Hecklau (Item 1)
Hans Schick (Item 2)

Information Requested:

1. Relative to Exhibit 7 in the Application regarding local laws provide clarification for any sections where the following verbiage is used: that the Company will either comply with the "substantive" or "to the extent they are applicable". Any clarification needs to detail the specific sections or provision of the local law/ordinance that is being discussed relative to the particular construction design or activity that cannot be complied with and why. The following are some examples of the Sections of local laws in question.

   A. 7.2.2. – Will driveways be built for this project?

   B. 7.2.4. – Do utility structures come under this definition or not?

   C. 7.2.5. – What portions of this code are applicable and which parts need waiving?

   D. 7.2.8. Is this section exempt or not?

E. 7.2.10. – Will or will not all structures comply with the supplemental regulations. If not which ones will not.

F. 7.3.1. List all provisions of Chapter 83 and specify which provisions the project cannot comply with.

G. 7.3.3. – Explain how the electrical inspector would have stop work authority (hence needing a waiver of such activity) if local permitting is superseded by the Certificate.

H. 7.3.4. – Clarify if or if not this project is defined as "development" for purposes of this ordinance.

I. 7.3.5 – Does this ordinance contain a stop work provision? If so please provide it.

J. 7.3.7 – Clarify this response i.e. will the Company comply with the work hours for construction and or are construction noises for utility work permitted?

K. 7.3.9. – Clarify this section in light of recent discussions regarding the SPEDES General Permit.

2. Provide the Company's policies, practices or procedures (including any drawings or typicals) for crossing underground utilities with heavy equipment as they relate to this project.

Responses:

1. *Exhibit 7 has been revised to reflect Staff's requests for clarification as described above. The specific examples cited by Staff have been addressed as follows:*

A. No, the Project will not include the construction of driveways. The review of Chapter 46 of the Town of Pleasant Valley Code has been revised to state that the Project will comply.

B. Yes, utility structures would meet the definition of "development". The review of Chapter 50 of the Town of Pleasant Valley Code has been revised to remove reference to the definition of "structure", which would not apply. Similar revisions have been made

throughout Exhibit 7 regarding the definition of "development" relative to the Project.

C. *The review of Chapter 53 of the Pleasant Valley Code has been revised to request a waiver relative to local enforcement authority granted in §53-6.*

D. *Yes, local permit requirements would be preempted by PSL §130.*

E. *The screening and fencing requirements discussed in Section 7.2.10 and §98-44 of the Pleasant Valley Code are not specifically defined within the Code. The review of Chapter 98 has been revised to note the following: "The Applicant cannot determine whether the screening, landscaping, and/or fencing provided in accordance with the Certificate and EM&CP satisfies the supplementary regulations described in §98-44, as the latter would be a matter of local Planning Board discretion and a product of the site plan review process from which the Applicant has requested relief. Therefore, the Applicant requests that the Commission refuse to apply the provisions of §98-44."*

F. *The review of Chapter 83 of the Town of LaGrange Code has been revised to request waivers relative to local stop-work authority granted in §83-9 and local inspection authority granted in §83-4(B).*

G. *As local permit requirements would be preempted by PSL §130, stop work authority granted in Chapter 107 of the Town of LaGrange Code would therefore not apply.*

H. *Utility structures would meet the definition of "development", which is "any man-made change to improved or unimproved real estate". The review of Chapter 120 of the Town of LaGrange Code has been revised to remove reference to the definition of "structure", which would not apply.*

I. *The review of Chapter 124 of the Town of LaGrange Code has been revised to request a waiver from local enforcement authority granted in §124-15.*

J. *The review of Chapter 162 of the Town of LaGrange Code has been revised to note that Project will comply with*

the construction hour requirements of the EM&CP, which are compliant with the requirements of §162-5.

K. The review of Chapter 197 of the Town of LaGrange Code has been revised in light of discussions regarding the SPDES General Permit.

2. The A & C Lines Rebuild project team consulted with Central Hudson's Gas Engineering Department regarding the appropriate protections for buried gas transmission piping in close proximity to substantial construction work on overhead electric transmission facilities. This response constitutes the practice the Gas Engineering Department would typically follow regarding taking appropriate precautions.

According to the Gas Engineering Department, the most important consideration is to make sure that all aspects of the One-Call rules are followed. This will provide an accurate indication of exactly where the pipeline is located. It will be the responsibility of those overseeing the electric transmission work, along with the contractor hired to do the work, to keep the marks fresh in the vicinity of the work. If the marks are lost for any reason, another One-Call must be made. Gas Engineering should be consulted about actual pipe depth in the immediate area of the work.

The second most important consideration is to keep the Central Hudson Gas Engineering department fully informed in a timely manner about the conduct and progress of the electrical transmission work so Gas Engineering personnel can be present if/when the pipeline is at heightened risk. For example, Gas Engineering must review (and approve) plans for crossing over the pipeline with heavy equipment (and perform periodic site inspections to make sure the plan is being followed). Gas Engineering must also be present on site whenever excavation work may expose the pipe.

The pipeline is at heightened risk whenever excavation/ drilling work is done near the pipe, heavy machinery passes over it, and heavy loads are lifted to a significant height above it. If there is any plan to dig or drill close to any Central Hudson gas pipeline, Gas Engineering will require that the pipe first be exposed in its presence via

Hydrovac or hand excavation to confirm its exact location. If moving heavy equipment or lifting heavy objects over the pipe location, appropriate matting will be required.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-015(MS)

Central Hudson Response No: CHGE-015 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: June 24, 2014

Response Provided by: Jose Ruaya

Information Requested:

1. In response to DPS-6, Central Hudson Gas and Electric Corporation (Central Hudson or the Company) states that ceramic bells are more expensive than polymer. Provide a cost estimate of the A&C line rebuild assuming ceramic bell insulators are used instead of polymer insulators.

   a. For each tangent structure provide:
      1. the number of polymer insulators;
      2. the length of each polymer insulator to be used;
      3. the expected cost of each insulator;
      4. the vendor/manufacture name of each insulator; and,
      5. the catalog cut sheet.

   b. Assuming ceramic bell insulators are to be used in the line rebuild, provide:
      1. the number of strings required;
      2. the number of bells for each string required;
      3. the expected cost of each bell and/or string;
      4. the expected cost of associated hardware (cotter keys);
      5. the vendor/manufacture name of each bell;
      6. the vendor/manufacture name of all associated hardware; and,

7. catalog cut sheets for the insulators and associated hardware.

2. Provide a description of any hardware differences required for the installation of polymer and ceramic insulators. Include an engineering drawing as well as a complete description of the differences.

3. Explain any differences in tools required for the installation and replacement of polymer insulators versus ceramic insulators.

4. Provide a list of Central Hudson's "approved" (as mentioned in response to DPS-13) polymer insulators.
   a. Provide the life expectancy of each Central Hudson approved polymer insulator. What is the basis for the life expectancy?
   b. Provide the life expectancy of ceramic insulators. What is the basis for the life expectancy?
   c. Provide the life expectancy of glass insulators. What is the basis for the life expectancy?

5. Pertaining to Central Hudson experienced insulator replacements since 1990:

   a. Provide the number of ceramic insulator strings that have been replaced on Central Hudson's 115 kV system. Include a table showing the location of the failure, the reason for replacement, and the vintage of the failed equipment.
   b. Provide the total number of ceramic insulator strings on Central Hudson's 115 kV system at the time of each failure.
   c. Provide the number of polymer insulators that have been replaced on Central Hudson's 115 kV system. Include a table showing the location of the failure, the reason for replacement, and the vintage of the failed equipment.
   d. Provide the total number of polymer insulators on Central Hudson's 115 kV system at the time of each failure.

6. Explain how Central Hudson determines if/when a polymer insulator has failed.

7. Provide Central Hudson's inspection procedures for detecting degrading or failing polymer insulators.

8. For Central Hudson experienced polymer insulator failures provide:
   a. a description of the failure (brittle fracture, flashunder, discharge degradation of rods, end fitting pullout, etc) and pictures if available;
   b. an explanation of whether the failure was partial or complete; and,
   c. an explanation of the impact of the failure on the electric system.

9. Explain why Central Hudson plans on using ceramic bell insulators for dead-end structures (Reference: Exhibit E-1, Section E-1.2.1.)

Responses:

1. Cost breakdown per structure:

Item	*Cost/per structure*	*Notes*
Ceramic Insulator Cost	*$ 407.49*	*(27) ceramic bells and (3) Clevis Y w/ Ball*
Polymer Insulator Cost	*$ 231.36*	*(3) Polymer Insulator Strings per structure*
Incremental Material Cost	***$ 176.13***	
Additional Labor Cost	***$ 180.00***	*Assumed 1.5 MH per structure @ $120/MH*
Total Cost Difference Per Structure	***$ 356.13***	*Includes labor and material*

Line Totals:

Structures	*Qty*	*Incremental Cost*	*Total*	*Notes*
New Davit and Swing Angle Structures	*90*	*$ 356.13*	*$ 32,051.70*	*Incremental cost is due to the labor and material cost differences between installation of polymer and ceramic insulators.*
Existing 2- and 3- pole structures to remain	*12*	*$ 587.49*	*$ 7,049.88*	*The higher incremental cost is due to the fact that existing structures to remain will require all insulators to be replaced to ceramic from existing polymer insulators*

Total Cost Difference: $39,101.58

a. 1. There will be three polymer insulators per structure.

2. *The length of each polymer insulator ranges from approximately 48 to 54 inches.*

3. *The average cost of each insulator is $77.12, so the cost for each structure is $231.36.*

4.

Hubbell	*S0250362010*
LAPP	*CS2-054-YB-106-A*
Locke	*A255-SC0330-YB-04*
MacLean	*S148054MX01*

5. *The catalog cut sheets for the insulators identified in response to Item 1(a)(4) above are attached as* ***Exhibit 1.***

b. 1. *Three strings per non-deadend structure and six strings per deadend structure would be required if ceramic bell insulators were used in this manner. This amounts to a total of 444 ceramic insulator strings.*

2. *Central Hudson anticipates using nine bells per string at deadend structures.*

3. *The average cost per bell is $14.14. For a nine bell string, the total is $127.26*

4. *The additional hardware required per ceramic insulator string is a "Clevis, Y with Ball" at an average cost of $8.57.*

5.

LAPP	*5960A-70*
Locke	*30S255*
Ohio Brass	*47410*
PSN Components	*2325250-7001*
PSN Components	*P525-11340*
Victor	*VI 52-5*

6.

MacLean (formerly Reliable/Bethea)	*YCB-65A*
Anderson	*YBC-30*

7. *The catalog cut sheets for the insulators and other hardware identified in response to Item 1(b)(5) and (6) above are attached as* ***Exhibit 2.***

2. *The main hardware difference is the Y-Clevis with Ball when using ceramic insulators. See* ***Exhibit 3.***

3. *Due to the increased weight of ceramic insulators, a hoist may be required for installation. In addition, because of the weight, there would be an additional labor cost.*

4. *The "approved" insulators are those which are referenced in response to 1(a) above.*

   a. *The life expectancy of a polymer insulator is similar to that of a ceramic insulator subjected to the same environmental and load factors. The basis for this is manufacturer literature.*

   b. *The life expectancy of a ceramic insulator varies with environmental and loading conditions. Based on Central Hudson's experience, this could range from 40 to 80 years.*

   c. *Central Hudson does not have glass insulators in the transmission line system.*

5. a. *While there have been insulator replacements since 1990, Central Hudson does not have specific details on this question.*

   b. *Central Hudson does not have this data.*

   c. *Central Hudson is not aware of any in-service failures of polymer insulators.*

   d. *Central Hudson is not aware of any in-service failures of polymer insulators.*

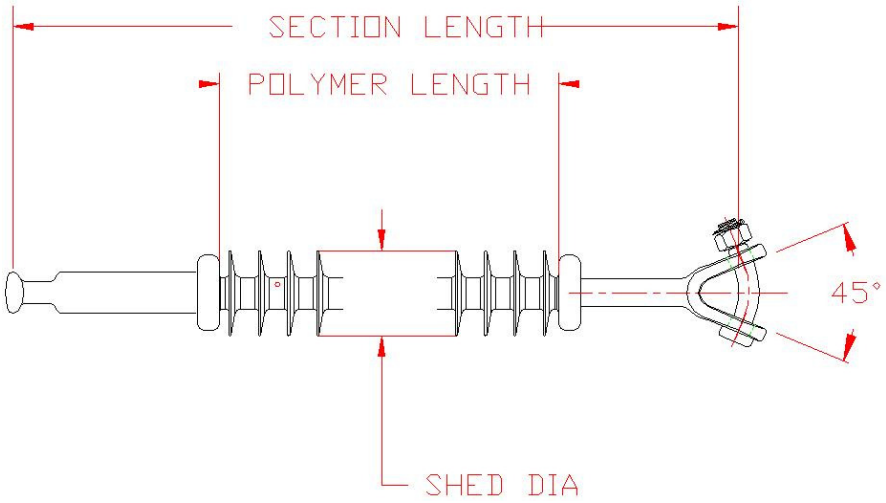
6. *For insulators suspected to have failed, Central Hudson confirms via visual field inspections and, if necessary, through use of thermal and/or corona cameras*

7. *As part of the comprehensive ground and/or aerial inspections, polymer insulators are visually checked for signs of flashover, tracking, and material degradation. Aerial patrols of the entire transmission system are performed on a quarterly basis. These inspections check for tree issues, pole and hardware conditions and ROW encroachments etc.*

8. *Central Hudson has not experienced an in-service failure of a polymer insulator.*

9. *Ceramic bell insulators have been chosen in deadends due to their resistance to degradation and premature aging caused by high electric field (e-field) levels in this insulator configuration. Research has shown a very high correlation between high e-field and loss of hydrophobicity and/or insulator damage.*

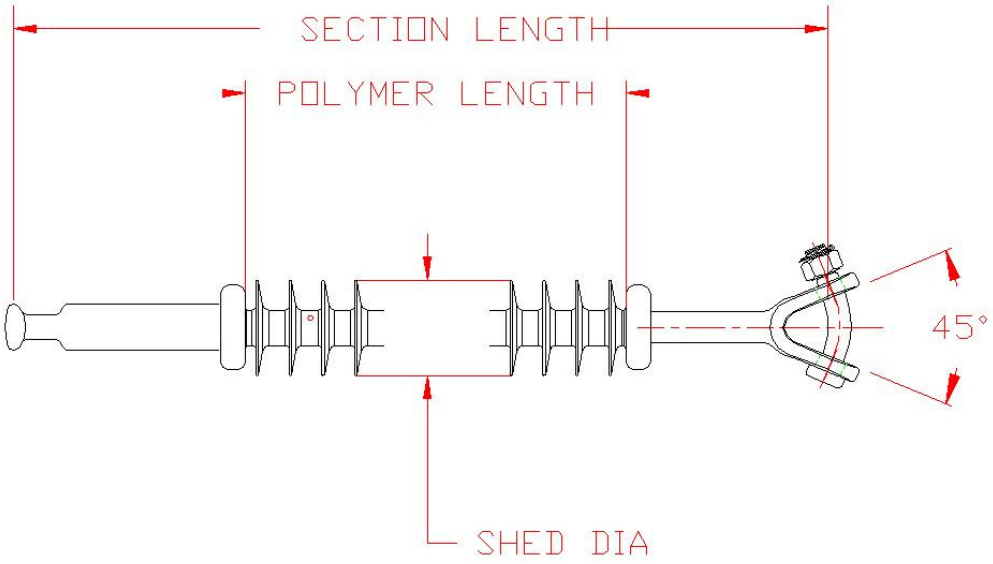
S025036S2010



Product Specifications	
Typical System Voltage	138kV / 161kV
Strength Class	25 kip, 5/8'' (16 mm)
Top/Ground End Fitting	Y-Clevis
Bottom/Line End Fitting	ANSI Ball
Section Length	48.42 IN (1230 MM)
Leakage Distance	94 IN (2375 MM)
Corona Ring	None
Polymer Length	36.62 IN (930 MM)
System Voltage (kV)	138kV
Working Load	12,500 lbs
Dry Arc Distance	36.6 IN (931 MM)
Number of Sheds	34
Shed Style	Uniform
Shed Diameter	2.9 IN
Rod Diameter	5/8 IN (16 MM)
Thickness of housing over Rod	> 3MM
End Fitting Class	ANSI
End Fitting Material	Ductile Iron
SML	25,000 lbs
RTL	12,500 lbs
ANSI 60Hz Dry FO	385 kV
Housing Material	SILICONE RUBBER
ANSI 60Hz Wet FO	365 kV
ANSI 60Hz Wet Withstand	230 kV
IEC lightning Impulse Withstand - Positive	635 kV
ANSI Critical Impulse FO - Positive	540 kV
IEC lightning Impulse Withstand - Negative	620 kV

ANSI Critical Impulse FO - Negative	525 kV

Compressed Product Number
S025036S2010



Suspension Insulator

Mechanical Rating

SML: 25,000 lbs • 111 kN

RTL: 12,500 lbs • 56 kN

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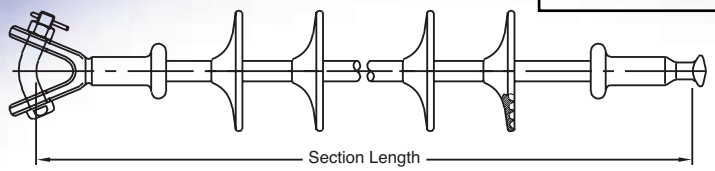
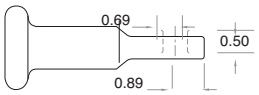


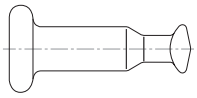
Available End Fittings

Socket: ANSI 52-5

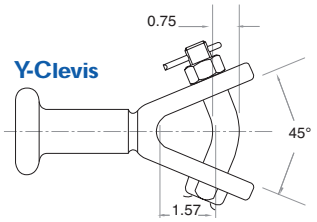
Tongue: ANSI 52-6



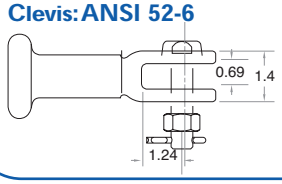
Ball: ANSI 52-5



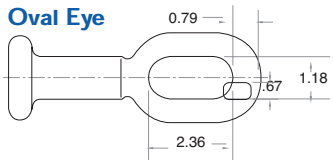
Y-Clevis



Clevis: ANSI 52-6



Oval Eye



TYPICAL LINE VOLTAGE	PART NUMBER	ANSI CLASS	SECTION LENGTH	CREEPAGE DISTANCE	ARCING DISTANCE	LOW FREQUENCY FLASHOVER DRY	LOW FREQUENCY FLASHOVER WET	CRITICAL IMPULSE FLASHOVER POS	CRITICAL IMPULSE FLASHOVER NEG	WEIGHT
69	CS2-036-YB-064-A CS2-036-YB-092-A	- -	36	64 92	27	269	257	446	455	7 9
69	CS2-040-YB-072-A CS2-040-YB-101-A	- -	40	72 101	31	307	287	506	516	7.5 9
69/115	CS2-047-YB-089-A CS2-047-YB-127-A	60-1	47	89 127	38	374	337	609	622	8 11
115	CS2-054-YB-106-A CS2-054-YB-120-A	60-2	54	106 120	45	442	388	713	729	9 10
138	CS2-060-YB-121-A CS2-060-YB-145-A	60-3	60	121 145	51	499	431	801	820	10 11.5
138/161	CS2-065-YB-140-A CS2-065-YB-159-A	60-4	65	140 159	56	547	468	875	896	11 12
161	CS2-071-YB-141-A CS2-071-YB-170-A	60-5	71	141 170	62	605	511	964	988	11 13
161	CS2-077-YB-157-A CS2-077-YB-190-A	60-6	77	157 190	68	663	555	1053	1079	12 14
161/230	CS2-083-YB-187-A CS2-083-YB-215-A	60-7	83	187 215	74	720	598	1141	1170	13.5 15
230	CS2-088-YB-192-A CS2-088-YB-225-A	60-8	88	192 225	79	768	634	1215	1247	14 16
230	CS2-097-YB-234-A CS2-097-YB-295-A	60-9	97	234 295	88	854	699	1347	1383	16 20
230	CS2-107-YB-244-A CS2-107-YB-305-A	60-10	107	244 305	98	950	772	1495	1535	16 20
345	CS2-120-YB-257-A CS2-120-YB-309-A	60-12	120	257 309	111	1075	866	1688	1734	17 20
500	CS2-137-YB-307-A CS2-137-YB-382-A	60-13	137	307 382	128	1238	990	1939	1991	20 24

1. All section lengths are based on Y-Clevis & Ball end fittings.
2. Electrical data shown for insulators without corona rings. Lapp recommends corona rings to be installed at 230kV and above.
3. Additional section lengths and creepage distances are available. Contact sales agency for details.
4. All dimensions, tolerances and tests are within allowable ANSI standards.
5. All dimensions are in inches and pounds.

REVISIONS	
0	AUG. 31, 2011

NOTES:
1. DIMENSIONS ARE IN INCHES, METRIC EQUIVALENTS (mm) ARE SHOWN IN ( ).
2. BALL COUPLINGS CONFORM TO GAUGES FOR ANSI CLASS 52-5 (TYPE-J).
3. TOLERANCES ARE IN ACCORDANCE WITH ANSI C29.11 AND C29.12.
   POSITIVE TOLERANCE TO LEAKAGE (CREEPAGE) DISTANCE IS NOT LIMITED.

NGK-LOCKE

DWG. NO. A255-SC0330-YB-04

POLYMER SUSPENSION INSULATOR

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT - ARTICLE VII APPLICATION
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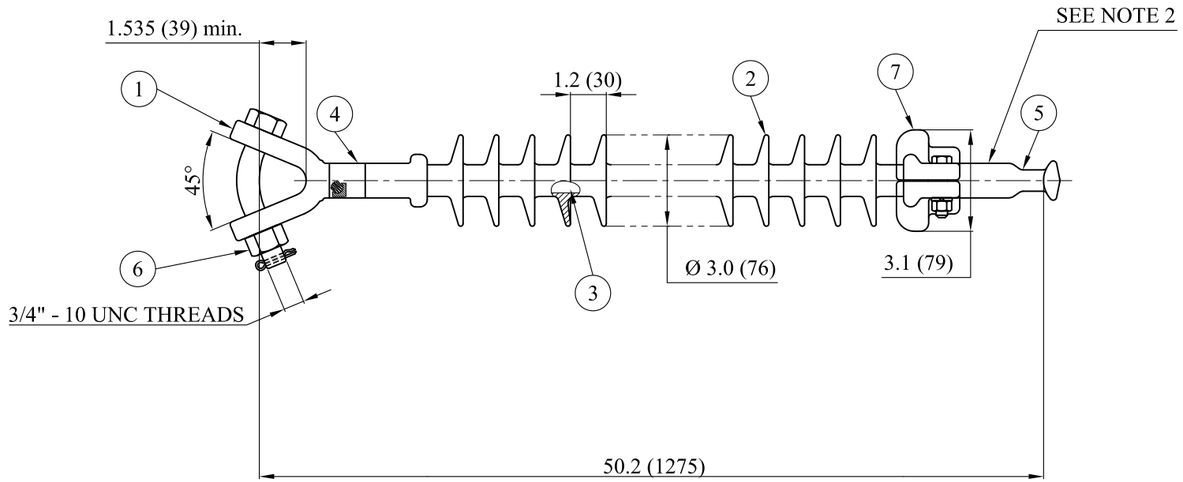

TECHNICAL DATA
Specification Applied: ANSI C29.11 and C29.12, Latest Issue

CHARACTERISTICS	RATING
DIMENSIONS	
Arcing Distance, in. (mm)	40.1 (1019)
Leakage (Creepage) Distance, in. (mm)	92.2 (2343)
Number of Sheds, "N"	33
Core Diameter, in. (mm)	0.650 (17)
MECHANICAL VALUES	
Specified Mechanical Load, lb.(kN)	25000 (111)
Routine Tension Load, lb. (kN)	12500 (56)
APPROX. NET WEIGHT, lb. (kg)	9.8 (4.4)

CHARACTERISTICS	RATING
ELECTRICAL VALUES	
Power Frequency Dry Flashover, kV	430
Power Frequency Wet Flashover, kV	380
Critical-Impulse Flashover, Pos., kV	660
Critical-Impulse Flashover, Neg., kV	700

ITEM	COMPONENT	MATERIAL
7	4" CORONA RING	ALUMINUM ALLOY
6	COTTER BOLT SET	STEEL, HDG
5	BALL FITTING	HIGH GRADE FORGED STEEL, HDG
4	LABEL	POLYESTER
3	CORE	HIGH QUALITY PULTRUDED FRP ROD
2	WEATHERSHEDS	GRAY SILICONE RUBBER
1	Y CLEVIS FITTING	HIGH GRADE FORGED STEEL, HDG

MADE BY	NGK-LOCKE POLYMER INSULATORS, INC. VIRGINIA BEACH, VA 23455	CAT. NO.
MM		251-SC330-YJ-04
APPROVED KE		

8/31/2011 11:12:30 AM

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT -
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MACLEAN POWER SYSTEMS
Reliable Power Products
11411 Addison, Franklin Park, IL 60131 USA (847) 455-0014

Catalog Number: **S148054MX01**
Date: 10/17/2008

END FITTINGS / MATERIAL

Tower End Fitting:	Y-Clevis
Line End Fitting:	Ball (ANSI 52-5)

Corona Ring (tower):		none
Corona Ring (line):		none
Number of Sheds:		27
Weight Estimate:	13.6 Lbs	6.2 kg

DIMENSIONAL VALUES

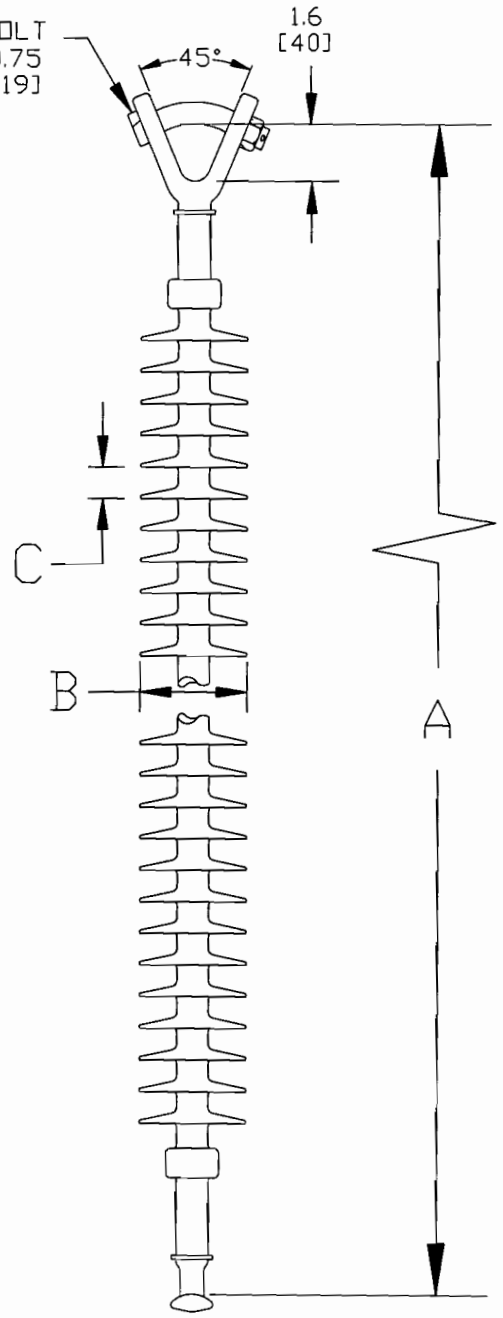
Section Length (A):	54.3 In	1,379 mm
Shed Diameter (B):	3.7 In	94 mm
Shed Spacing (C):	1.57 In	40 mm
Dry Arc Distance:	46.1 In	1,171 mm
Leakage Distance:	109.2 In	2,773 mm

ELECTRICAL VALUES

60 Hz Dry F.O.(Min. Withstand):	453 kV	(419 kV)
60 Hz Wet F.O.(Min. Withstand):	406 kV	(353 kV)
CIFO + (Min. Withstand):	778 kV	(675 kV)
CIFO - (Min. Withstand):	825 kV	(722 kV)

MECHANICAL VALUES

Specified Mech. Load (SML):	25,000 Lbs	111.2 kN
Routine Test Load (RTL):	12,500 Lbs	55.6 kN



Approved	S148054MX01	JBB
JBorlanadi		

Silicone Rubber Sheath & Sheds
Complies with applicable ANSI and IEC standards.

Central Hudson Gas & Electric Corporation
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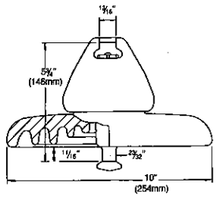
HIGH STRENGTH UNITS

Lapp high strength porcelain suspension insulators are available in 25,000, 30,000, and 40,000 lb. strength ratings to give transmission design engineers the closest possible insulator match for any maximum design load requirement. High strength suspensions are widely used for unusually heavy lines, dead-ending long spans, or for extra factors of safety, particularly in EHV construction.

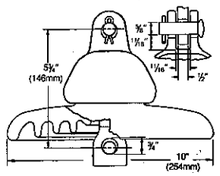
The 25,000 and 30,000 lb. suspension insulators meet ANSI Standards for Class 52-5 and Class 52-6 suspension insulators.

Insulator numbers 61236H and 97503B have a 40,000 lb. strength rating and have gray glaze as standard. Other glazes are available on specification.

25,000 lb. Suspension Insulators

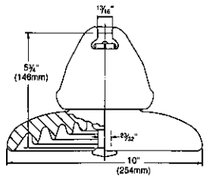


301425-70

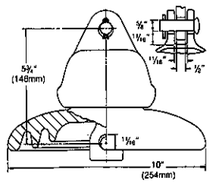


301426-70

30,000 lb. Suspension Insulators

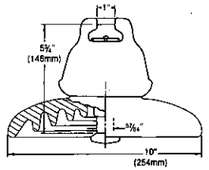


5960A-70

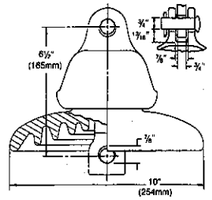


2300-70

40,000 lb. Suspension Insulators



61236H-70



97503-70

Catalog Number						
Color – No. 70 Gray	301425-70	301426-70	5960A-70	2300-70	61236H-70	97503-70
Chocolate	301425	301426	5960A	2300	61236H	97503B
Charcoal Gray	301425G	301426G	5960G	2300D	61236	
Royal Blue					61236E	
ANSI Class	**52-5**	**52-6**	**52-5**	**52-6**	**52-8**	**52-10**
Dimensions						
Leakage Distance, Inches (mm)	12 (305)	12 (305)	11 (279)	11 (279)	11 (279)	11 (279)
Dry Arcing Distance, Inches (mm)	7.75 (197)	7.75 (197)	7.75 (197)	7.75 (197)	7.75 (197)	7.75 (197)
Mechanical Values						
Combined M&E Strength, Lbs. (kN)	25,000 (111)	25,000 (111)	30,000 (133)	30,000 (133)	40,000 (178)	40,000 (178)
Impact Strength, Inch-Lbs. (Nm)	90 (10)	90 (10)	90 (10)	90 (10)	100 (11.3)	100 (11.3)
Routine Proof Test, Lbs. (kN)	12,500 (55.5)	12,500 (55.5)	15,000 (67)	15,000 (67)	20,000 (89)	20,000 (89)
Time Load Test Value, Lbs. (kN)	15,000 (67)	15,000 (67)	18,000 (80)	18,000 (80)	24,000 (107)	24,000 (107)
Maximum Working Load, Lbs. (kN)	12,500 (55.5)	12,500 (55.5)	15,000 (67)	15,000 (67)	20,000 (89)	20,000 (89)
Electrical Values						
Low Frequency Dry Flashover, kV	80	80	80	80	80	80
Low Frequency Wet Flashover, kV	50	50	50	50	50	50
Impulse Flashover, Positive, kV	125	125	125	125	125	125
Impulse Flashover, Negative, kV	130	130	130	130	130	130
Low Frequency Puncture Voltage, kV	110	110	110	110	110	110
Radio Influence Voltage Data						
Test Voltage-rms to Ground, kV	10	10	10	10	10	10
Maximum RIV-Microvolts at 1000 kHz	50	50	50	50	50	50
Packing and Shipping Data						
Net Weight, Each, Lbs. (kg), Approx.	12.5 (5.7)	12.5 (5.7)	14.2 (6.4)	14.0 (6.3)	16.8 (7.6)	17.0 (7.7)
Packed Weight, Each, Lbs. (kg), Approx.	13.2 (6.0)	13.2 (6.0)	14.8 (6.7)	14.7 (6.7)	17.5 (7.9)	17.7 (8.0)
Number in Standard Package	6	6	6	6	6	6
Pallet Weight, Pounds (kg), Approx.	1,620 (734.8)	1,620 (734.8)	1,840 (834.6)	1,820 (825.6)	2,160 (979.8)	2,180 (988.8)
Pallet Quantity	120	120	120	120	120	120

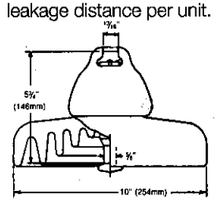
FOG-PACER®
FOG-TYPE SUSPENSION INSULATORS

Many applications in contaminated areas or where a line is being upgraded or compacted require a suspension insulator with increased leakage distance. The Lapp Fog-Pacer is designed to meet this need.

The Fog-Pacer is a true fog-type insulator and provides 17 inches of leakage distance per unit.

This is 48% more leakage than the 11.5 inches on the comparable ANSI standard suspensions. Fog-Pacer suspension insulators are available in M&E ratings of 20,000 lbs., 30,000 lbs., and 36,000 lbs., in either ball-and-socket or clevis-eye designs.

Design tests show that the Fog-Pacer units meet or exceed all of the rating requirements of the equivalent ANSI standard suspensions. A series of contamination tests proved the Fog-Pacer can withstand voltages 27% higher than the equivalent standard unit at the highest contamination level tests.



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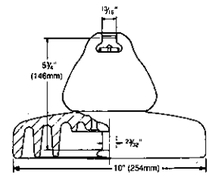

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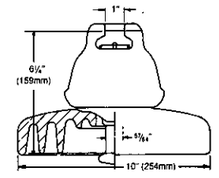

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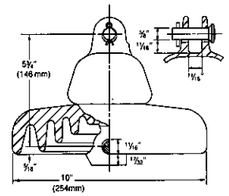

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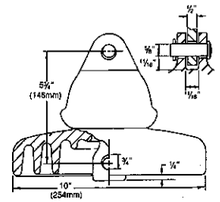
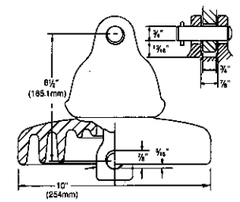


303025



303027

Catalog Number						
Color – #No. 70 Gray	302268-70	302500-70	302718-70	303025-70	303026-70	303027-70
Chocolate	302268	302500	NA	303025A	303026B	NA
Charcoal Gray			302718	303025	303026	303027
Royal Blue					303026A	303027A
Dimensions						
Leakage Distance, In. (mm)	17 (432)	17 (432)	17 (432)	17 (432)	17 (432)	17 (432)
Dry Arcing Distance, In. (mm)	9 (229)	8 (203)	8.5 (216)	8 (203)	8.5 (216)	8 (203)
Mechanical Values						
Combined M&E Strength, Lbs. (kN)	20,000 (89)	20,000 (89)	30,000 (133)	30,000 (133)	36,000 (160)	36,000 (160)
Impact Strength, Inch-Lbs. (Nm)	90 (10)	90 (10)	90 (10)	90 (10)	100 (11.3)	100 (11.3)
Routine Proof Test Load, Lbs. (kN)	10,000 (44.5)	10,000 (44.5)	15,000 (67)	15,000 (67)	18,000 (80)	18,000 (80)
Time Load Test Value, Lbs. (kN)	12,000 (53.4)	12,000 (53.4)	18,000 (80)	18,000 (80)	24,000 (107)	24,000 (107)
Max. Working Load, Lbs. (Nm)	10,000 (44.5)	10,000 (44.5)	15,000 (67)	15,000 (67)	18,000 (80)	18,000 (80)
Electrical Values						
Low Freq. Dry Flashover, kV	80	80	80	80	80	80
Low Freq. Wet Flashover, kV	50	50	50	50	50	50
Impulse Flashover, Pos., kV	125	125	125	125	125	125
Impulse Flashover, Neg., kV	130	130	130	130	130	130
Low Freq. Puncture Voltage, kV	110	110	110	110	110	110
Radio Influence Voltage Data						
Test Voltage-rms to Grd., kV	10	10	10	10	10	10
Max. RIV-Microvolts at 1000 kHz	50	50	50	50	50	50
Packing and Shipping Data						
Net Wt., Ea., Lbs. (kg), Approximate	13.7 (6.2)	14.0 (6.4)	16.2 (7.3)	15.3 (6.9)	19.0 (8.6)	19.0 (8.6)
Packed Wt., Ea., Lbs. (kg), Approximate	14.3 (6.5)	14.7 (6.7)	16.8 (7.6)	16 (7.3)	19.7 (8.9)	19.7 (8.9)
Number in Standard Package	6	6	6	6	6	6
Pallet Weight, Lbs. (kg), Approximate	1,780 (807.4)	1,820 (825.6)	2,080 (943.5)	2,020 (916.3)	2,420 (1097.7)	2,420 (1097.7)
Pallet Quantity	120	120	120	120	120	120

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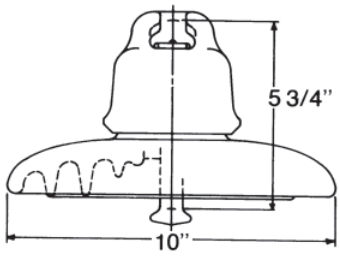
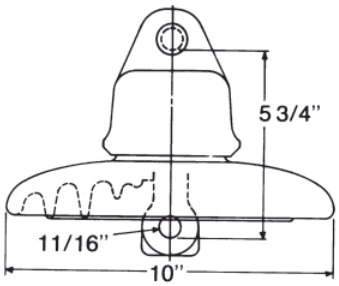
CHGE-015

CHARACTERISTICS

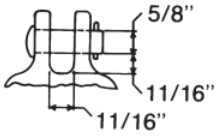
Catalog Number		30S255	30S257
Cat. No. w/LOKGARD Sleeve		30S295	-
ANSI Class		**52-5**	**52-6**
M&E Rating, lb.		30,000	30,000
Leakage Distance in.		12 5/8	12 5/8
Dry Arcing Distance, in.		7 9/16	7 9/16
Mechanical Impact Strength, in.-lb.		100	100
Tension Proof, lb.		15,000	15,000
Low Frequency Flashover	Dry, kV	80	80
	Wet, kV	50	50
Critical Impulse Flashover	Pos., kV	125	125
	Neg., kV	130	130
Low Frequency Puncture, kV		110	110
"Radio influence Voltage Data"	"Test Voltage, RMS to Ground, kV"	10	10
	"Max. RIV at 1000 kHz, uV "	50	50
Net Weight Each, lb.		11.7	12.1
Standard Package Quantity		6	6
Packed Weight, lb.		84	82

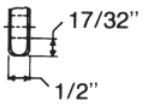


30S255
ANSI CLASS 52-5



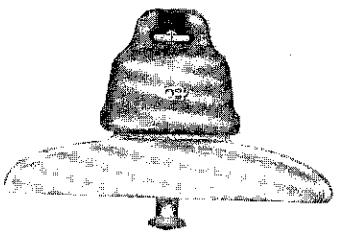
30S257
ANSI CLASS 52-6



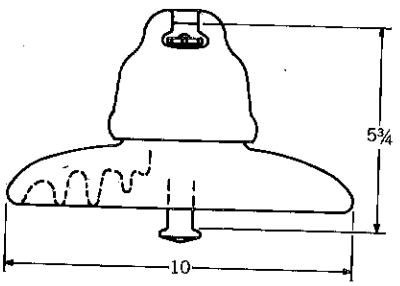


STRENGTH RATINGS	Pounds
M & E RATING	30 000
ANSI M & E CATEGORY	25 000
O - B PROOF TEST	15 000

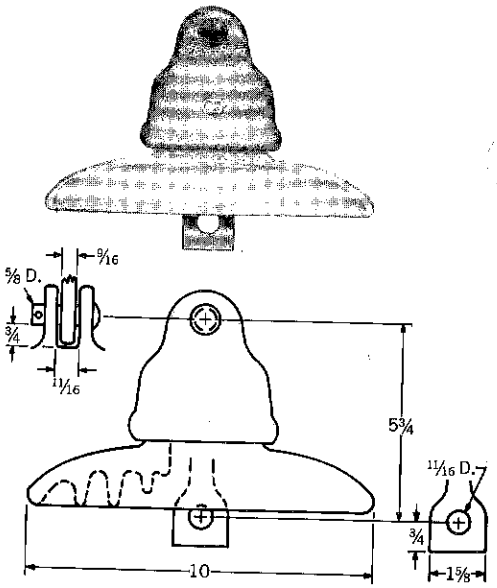
Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 2 to DPS IR Response
CHGE-015



Heavier conductors, bundle configurations, and longer spans in modern transmission construction result in increasing requirements for mechanical strength in insulators. Units listed below represent the first step in strength characteristics beyond conventional designs, and meet a large segment of the demand.



Ball - Socket Number 47410



Clevis Number 47415

Line No.	Characteristics ①				Ball-Socket Type	Clevis Type
1	**CATALOG NUMBER**				**47410**	**47415**
2	ANSI Class (Std. C. 29.2 - 1977)				52.5	52.6
3	Flashover ② Voltage	Impulse Critical 1.2 × 50 Mu-Sec Wave	Positive	kV	125	125
4			Negative	kV	130	130
5		60 Hz	Dry	kV	80	80
6			Wet	kV	50	50
7	Low-Frequency Puncture Voltage			kV	110	110
8	Radio Influence Voltage	Test Voltage To Ground		kV	10	10
9		Max. RIV at 1000 kHz		Micro-Volts	50	50
10	Leakage Distance			Inches	12	12
11	Dry Arcing Distance			Inches	7¾	7¾
12	Section Length			Inches	5¾ ③	5¾
13	Porcelain Disc Diameter			Inches	10	10
14	Strength Ratings	M & E Rating		Pounds	30 000	30 000
15		ANSI M & E Category		Pounds	25 000	25 000
16		O - B Proof Test		Pounds	15 000	15 000
17	Recommended Max. Sustained Load			Pounds	15 000	15 000
18	Impact Strength			Inch - Lbs.	90	90
19	Standard Glaze Color (Specify on Order)			—	Skytone Dark Gray	
20	Net Weight			Lbs. Per 100	1260	1260
21	Packed Weight			Lbs. Per 100	1420	1420
22	Standard Package Quantity			—	6	6

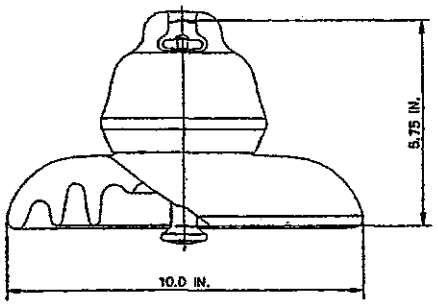
Notes to catalog listings

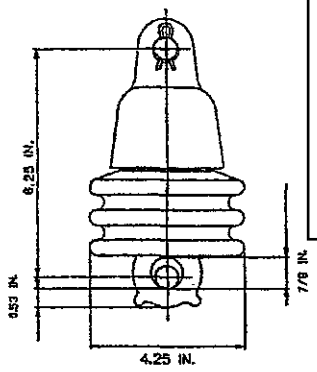
① For equivalent insulators to meet conditions of severe contamination or corrosion, see Numbers 47414 and 47413 on the following page and numbers 47416 and 47417 on page 26.

② For electrical characteristics of insulators in strings, see page 14.

③ To obtain identical electrical and mechanical values in an insulator with 5-inch section length, specify Number 47400.

SUSPENSION INSULATORS

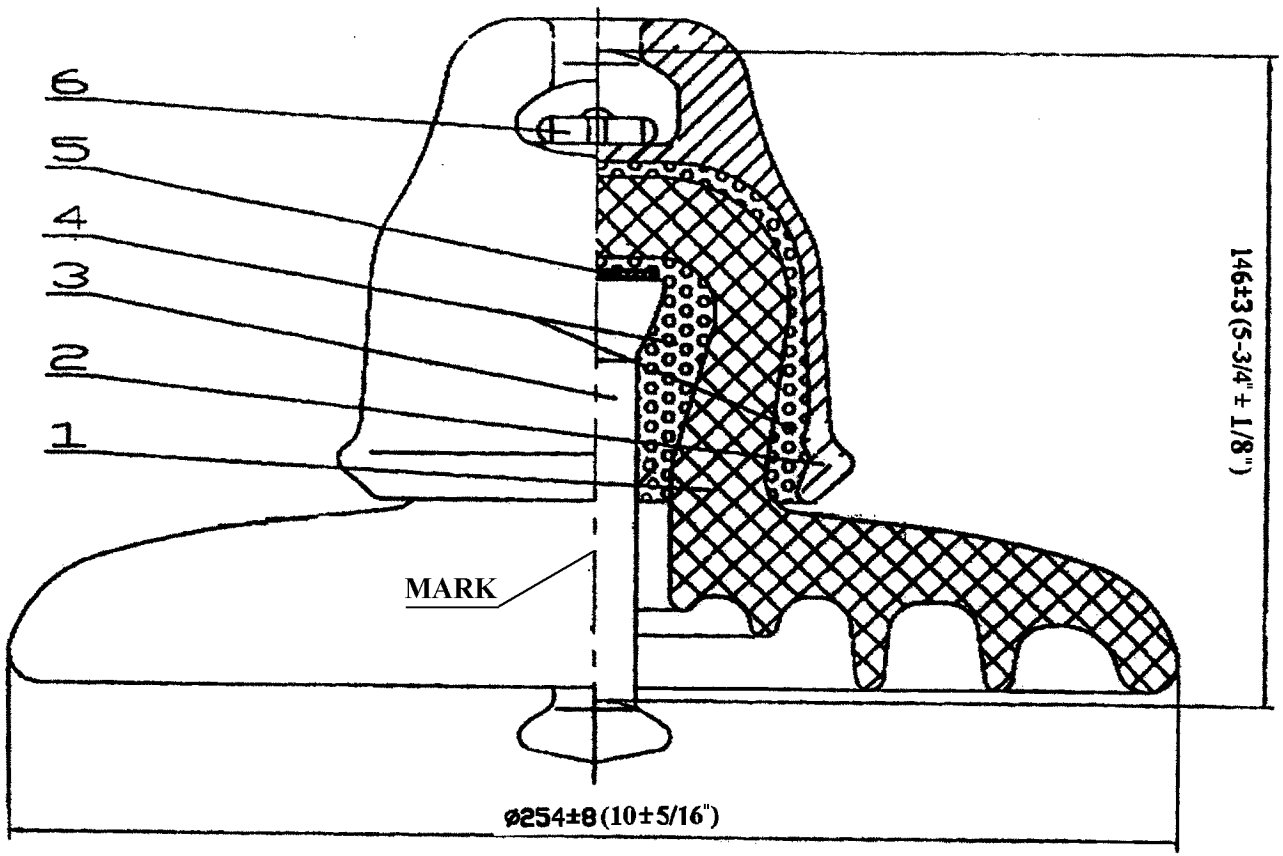




CATALOG NUMBER	2325250	2325290
ANSI Class	52-5	52-9
Electrical Characteristics:		
Lightning impulse withstand, dry, kV	100	70
Low-frequency wet withstand, kV	45	25
Low-frequency dry withstand, kV	70	55
Critical impulse flashover, positive, kV	125	100
Critical impulse flashover, negative, kV.....	130	90
Low-frequency dry flashover, kV	80	60
Low-frequency wet flashover, kV	50	30
Low-frequency puncture, kV	80	80
Radio-influence test voltage, kV	10	7.5
Max. radio-influence voltage, mV	50	50
Mechanical Characteristics:		
Combined M & E strength. pounds (kN) ...	26,900 (120)	10,000 (45)
Routine mechanical strength, pounds (kN)	13,450 (60)	5,000 (22.5)
Mechanical impact strength, inch-lbs. (Nm)	55.8 (6.3)	45.2 (5.1)
Leakage distance, inches (mm)	11.5 (292)	6.75 (172)
Dry arcing distance, inches (mm)	8.25 (210)	4.3 (110)
Net weight per unit, pounds (kg)	13.4 (6.1)	4.4 (2.0)
Units per package	6	16
Gross weight per package, pounds (kg)	94.2 (42.7)	86.0 (39)

NEWELL-PSN, LLC 500 HARRISON ST., PO BOX 309 NEWELL, WV 26050
TELEPHONE: (304) 387-2700 FAX: (304) 387-2792

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 2 to DPS IR Response
CHGE-015



Technical Specification

Combined E&M Strength:	30000lb
Tension proof test:	15000lb
Leakage distance, Min:	280mm(11")
Mechanical impact strength	60in-lb
Low-freq. dry flashover:	80kV
Low-freq. wet flashover:	50kV
Critical impulse flashover Positive Min:	125kV
Critical impulse flashover Negative Min:	130kV
Low-Freq. Puncture Min:	110kV
RIV low-freq. Test voltage RMS to ground	10kV
Max. RIV at 1000KHZ:	50μV

1. Porcelain shed
2. Malleable cast iron socket cap
3. Forged steel ball pin
4. Portland cement
5. Lincrusta cushion
6. Stainless steel clip

ANSI 52-5 E&M STRENGTH: 30000lb	P525-11340	
DISC PORCELAIN SUSPENSION INSULATOR	WEIGHT	UNIT
	5.7KG	MM/INCH
ASSEMBLY DRAWING	PSN COMPONENTS	

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 2 to DPS IR Response
CHGE-015

BALL AND SOCKET SUSPENSION

ANSI CLASS 52-5

CAT NO: VI 52-5

ENG. MGR
2 ENG
PURCH.
MKTG.
PLT.MGR.
COST
PROD.
INSP
GLAZE
BUSHING
MAKING
SHIP
ASSEM
MODEL
MACH.
45
TOOLING
CER LAB
EL LAB
E. MEDIA

DIMENSIONS

LEAKAGE DISTANCE	IN	12	mm	305

MECANICAL VALUES

M & E STRENGTH	LB	30,000	kN	133
IMPACT STRENGTH	IN-LB	90	N-m	10
TENSION PROOF	LB	15,000	kN	67

ELECTRICAL VALUES

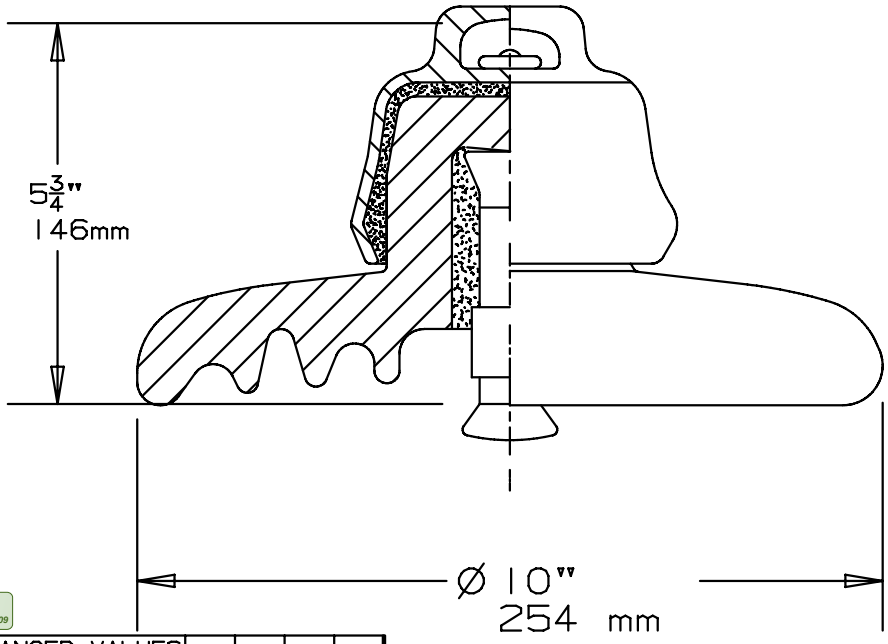
LOW FREQUENCY FLASHOVER VOLTAGE DRY	kV	80
LOW FREQUENCY FLASHOVER VOLTAGE WET	kV	50
CRITICAL IMPULSE FLASHOVER VOLTAGE POSITIVE	kV	125
CRITICAL IMPULSE FLASHOVER VOLTAGE NEG.	kV	130
LOW FREQUENCY PUNCTURE VOLTAGE	kV	110

RADIO INFLUENCE VOLTAGE DATA

LOW FREQUENCY TEST VOLTAGE	kV	10
MAXIMUM RIV @ 1000 kHz	μV	50

PACKING INFORMATION

NET WEIGHT PER 100	LB	1320
PACKED WEIGHT PER 100	LB	1580
STANDARD PACKAGE		6



APPROVED
By A. E. Schwalm at 2:31 pm, Jun 02, 2009

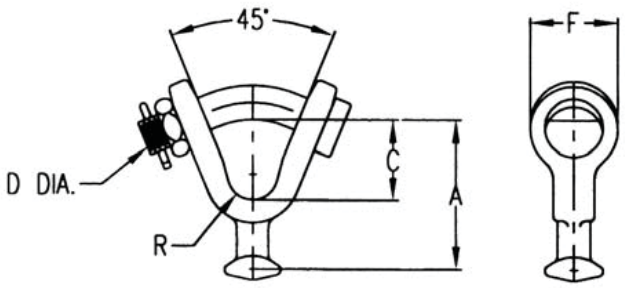
CHANGED VALUES 06-02-09	TM			C
CORRECTED OAL 05-26-09	TM			B
REV'D MECHANICAL RATING 03-30-09	TM			A
02-29-08	TM			

INSULATORS
VICTOR INSULATORS, INC.
280 MAPLE AVENUE
VICTOR, NEW YORK 14564
TELEPHONE: (585)924-2127

FILE: VI 52-5

Y-Clevis - Ball, Standard

Material
Forged steel hot dip galvanized

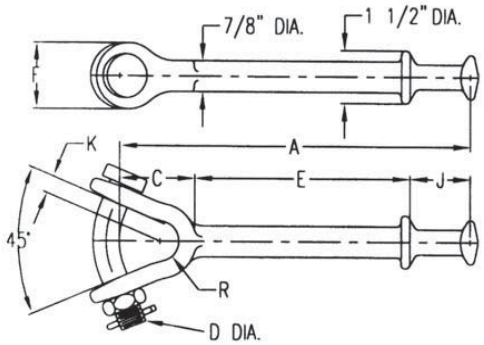


Catalog Number	For Insulator Class	A	C	D	F	R	Ultimate Strength (lbs)	Weight /100 (lbs)
YCB-65A	*ANSI 52-3 & 5	3 1/4	1 9/16	3/4	1 7/8	1 /2	35000	215
YCB-78	ANSI 52-8 & 11	3 13/16	1 9/16	7/8	2 3/16	5/8	50000	330
YCB-720	IEC 20MM	4 1/16	1 9/16	7/8	2 3/16	5/8	40000	340

Notes:
1) ANSI 52-5 & IEC 16mm are generally accepted as being interchangeable

Y-Clevis - Ball, Hot Line

Material
Forged steel hot dip galvanized



Catalog Number	For Insulator Class	A	C	D	E	F	J	K	R	Ultimate Strength (lbs)	Weight /100 (lbs)
YCBHL-65A	*ANSI 52-3 & 5	10 1/8	1 11/16	3/4	6	1 7/8	1 3/4	1/2	9/16	35000	317
YCBHL-78	ANSI 52-8 & 11	10 7/8	1 3/4	7/8	6	2 3/16	1 7/8	9/16	11/16	50000	460

Notes:
1) ANSI 52-5 & IEC 16mm are generally accepted as being interchangeable

Issued: May 2010
Supercedes: n/a

11411 Addison Avenue, Franklin Park, IL 60131
T: 847.455.0014 F: 847.455.0029
www.macleanpower.com

HUBBELL POWER SYSTEMS, INC.

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Catalog Home

Product Datasheet

ANDERSON FARGO

YBC30 -- Ball Y-Clevis

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT -
ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 2 to DPS IR Response CHGE-015

Ball Y-Clevis, Forged Steel, 0.750" Curved Bolt, UTS 30,000 lb; For use with ANSI class 52-3 & 52-5 insulators.

Product Specifications

Hardware Family	 Ball Clevis & Ball Eye Coupling Fittings
Ball Fittings	 YBC Series Y-Clevis Ball Coupling Fittings
PDF Catalog Page	Click HERE to view the web page.
Ultimate Strength	30,000 lb (13,608 kg)
Coupling Length	3.094 in (78.58 mm)
Dimension B	1.500 in (38.10 mm)

Dimension T	0.719 in (18.26 mm)
Dimension PD	0.750 in (19.05 mm)
Material	Forged Steel
Cotter Pin Material	Stainless Steel
Clevis Pin Material	Galvanized Steel
Material Type	Standard
UPC Code	09635934440
Standard Package	25
Standard Package Unit	Each
Min Order Qty	1
Weight / Ea.	1.744 lbs

Notes
For use with ANSI class 52-3 & 52-5 insulators.

Compressed Product Number
YBC30

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT -
ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 2 to DPS IR Response CHGE-015

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469
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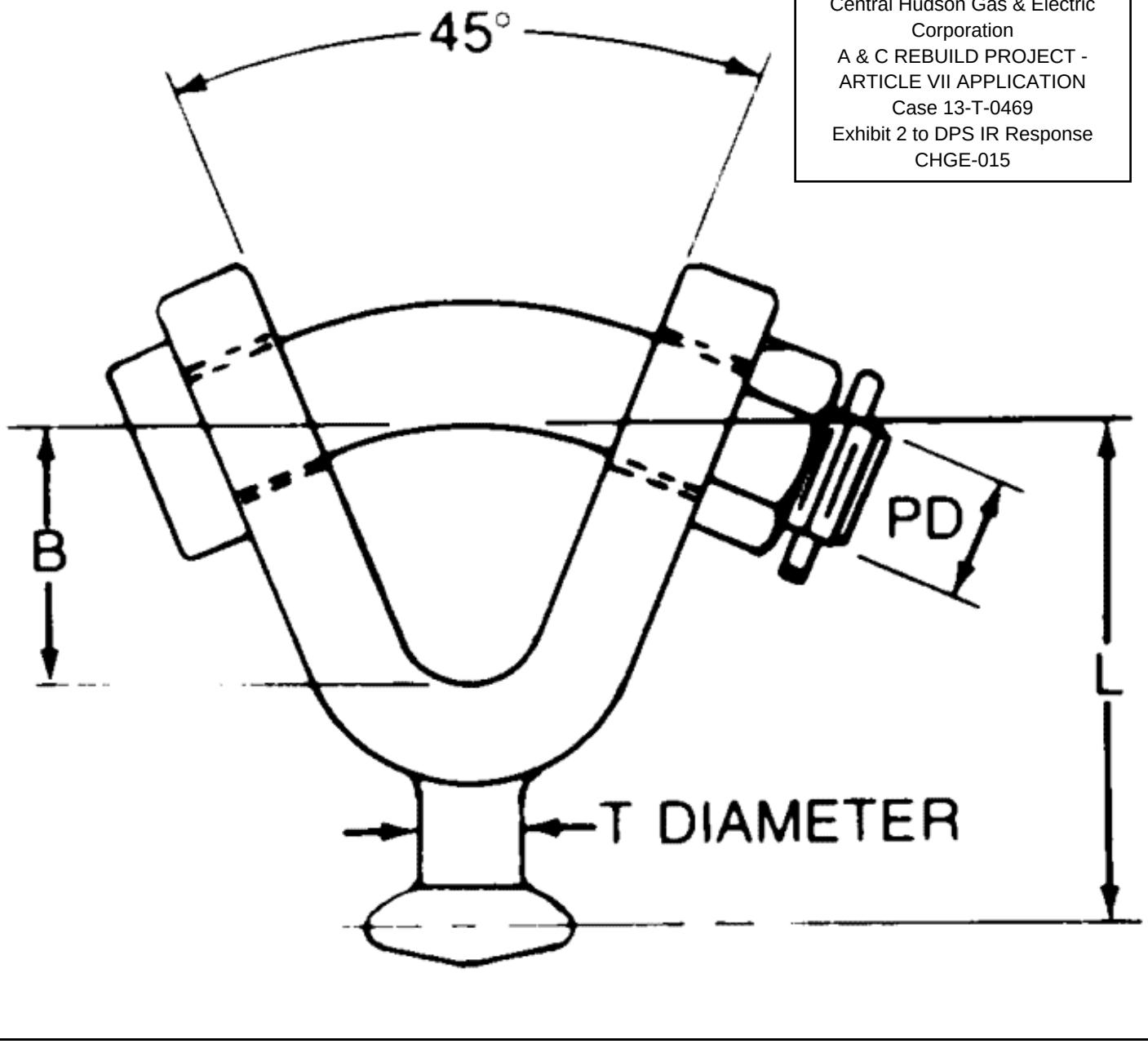
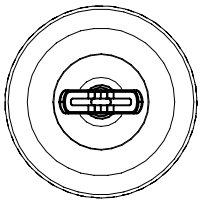
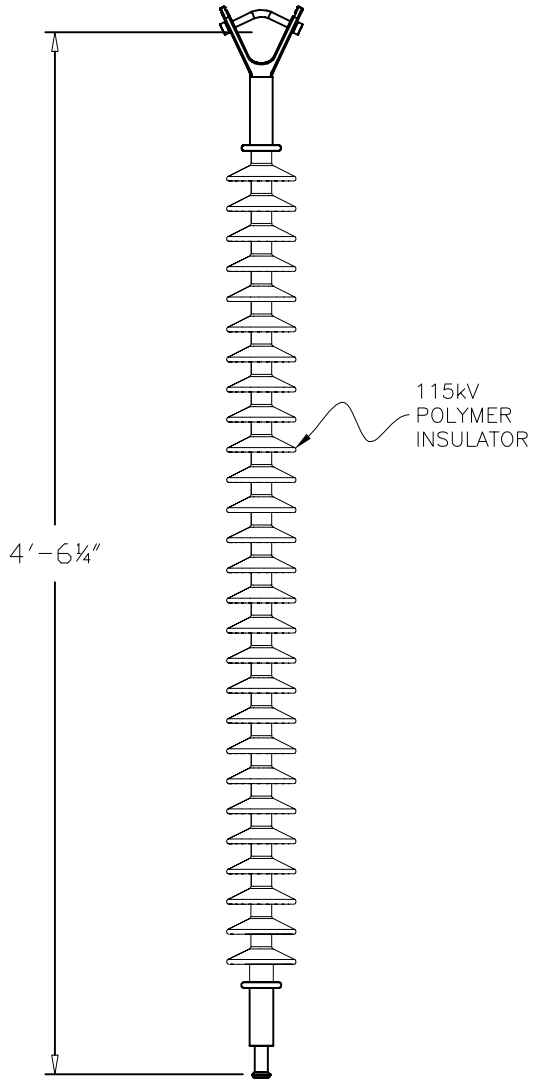
CHGE-015



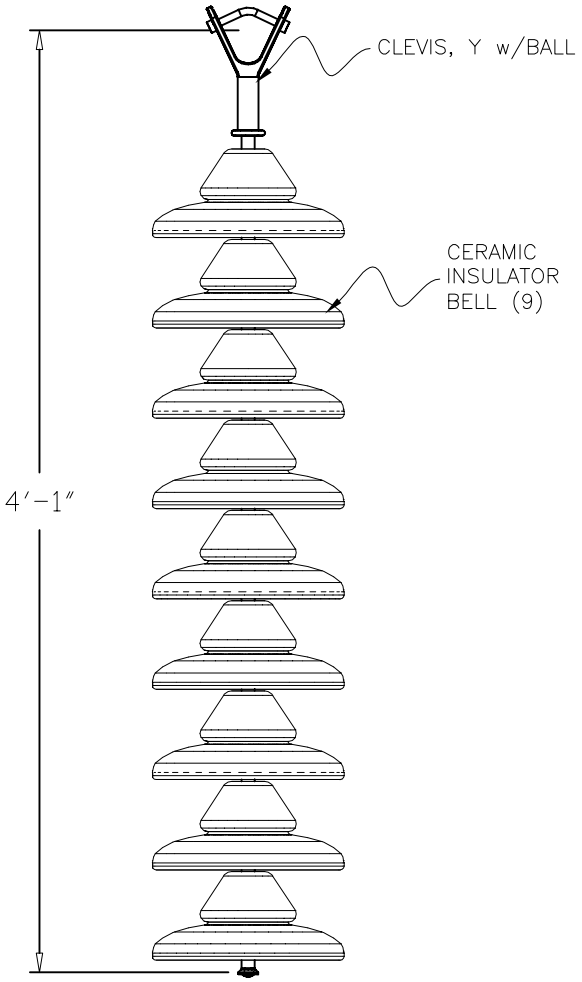
Catalog Home

Central Hudson Gas & Electric Corporation
A & C REBUILD PROJECT- ARTICLE VII APPLICATION
Case 13-T-0469
Exhibit 3 to DPS IR Response CHGE-015





POLYMER INSULATOR



CERAMIC INSULATOR STRING

MATERIAL DIFFERENCE

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-016 (MS)

Central Hudson Response No: CHGE-016 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: June 24, 2014

Response Provided by: John Hecklau

Information Requested: Off ROW clearing

Section 3.1 of the Application states, "With the exception of potential minor clearing for off-ROW access, no additional clearing beyond the existing ROW is anticipated."

1. Provide the clearing type or types, clearing width, timing of trimming or tree removal, and vegetation disposal methods for all off-ROW accesses.

2. Provide the applicant's criteria for taking trees along the off-ROW accesses.

3. Provide what landowner agreements or rights the company has for taking of trees along the off-ROW accesses. Include a matrix for each property and describe the rights.

Responses:

1. *Currently, only two types of vegetation clearing and disposal are anticipated on the ROW. One would involve clearing of all woody vegetation that would interfere with construction activity within the limits of designated access routes, structure work areas, laydown areas, and wire pulling sites in upland locations. This would involve*

clearing by hand (with a chain saw) or mowing. If cleared by hand, all cut material would be chipped and distributed on the ROW (outside of wetlands and agricultural land).

The second type of clearing/disposal would be a drop and lop technique in which woody vegetation would be cut by hand, lopped-up where it falls, and left in place. This technique would be used within the limits of designated access routes and work areas that occur within delineated wetlands. No herbicide application is proposed with either clearing type.

2. *All off-ROW access routes utilize existing roads or driveways, so the need for clearing along these routes will be limited. A clear area of approximately 15 feet wide by 15 feet high will generally be required to accommodate passage by construction vehicles. To achieve this, some selective clearing/trimming of woody vegetation may be required. Cutting will be done by hand, and cut material will generally be disposed of by piling along the edge of the access road, with lopping as necessary to lay the material flat on the ground. No application of herbicide is proposed.*

3. *Central Hudson has been in contact with the owners of land where the Company will be using off-ROW access. As noted in response to Item 2 above, there will be only limited instances where some clearing will be required. Central Hudson is in the process of formalizing agreements with these landowners regarding any potential clearing.*

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-017 (MS)

Central Hudson Response No: CHGE-017 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: June 24, 2014

Response Provided by: Christopher Rottkamp

Information Requested:

1. In response to DPS 1-3, the company states that it has no plans to close the Rail Trail during the construction of the project. How will the project ensure the safety of the public using the rail trail during the construction activities (e.g line pulling operation)?

Response:

Central Hudson met with Dutchess County on June 11, 2014 regarding the Rail Trail. In light of Staff's IRs, Central Hudson is considering the option (to be described in the EM&CP) of using the Rail Trail for equipment crossings. If that option is utilized, Central Hudson will use rubber matting to protect the paved Rail Trail from any potential damage from tracked equipment. Flaggers and signage will be utilized along the trail during any equipment crossings or wire pulling operations. It is not anticipated that rubber matting will be necessary for the crossing by any rubber tracked or tired equipment. In either case, Central Hudson will ensure that a clean surface is maintained and any damage is repaired. In addition, Central Hudson will provide the County (most likely its Department of Public Works) with advance notification of any activity affecting the Rail Trail.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-018 (MS)

Central Hudson Response No: CHGE-018 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: June 24, 2014

Response Provided by: Jose Ruaya

Information Requested: Follow Up to DPS 1-7

1. Provide the shape files for the centerline and edge of the ROW for preferred proposed route.

Response:

Shape files were previously provided as Exhibit C to IR Response CHGE-007.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-019 (MS)

Central Hudson Response No: CHGE-019 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

---

Reply Date: June 24, 2014

Response Provided by: John Hecklau

Information Requested:

1. In the company's response to DPS 1-12 the company states "*General observations of invasive species occurrence were also documented elsewhere along the ROW.*" Provide those notes and/or documents.

Response:

Attached as ***Exhibit 1*** *is a spread sheet that summarizes invasive plant species documented at wetland and adjacent upland sampling points during the on-site wetland delineations. As indicated in the Invasive Species Control Plan included with the Application (Appendix E), "although not documented, invasive species were observed throughout upland areas throughout the ROW." Exhibit 1 thus constitutes all the available information regarding the occurrence of invasive species on the A and C Lines. However, conversations with EDR staff that conducted various field surveys on ROW indicate that in addition to the species listed in this spread sheet, the following non-native invasive species were also observed on the ROW:*

Autumn olive (Eleagnus umbellata)
Garlic mustard (Alliaria petiolata)

With the exception of black swallow wort (Cynanchum louiseae), which was only observed near Wetlands MM and NN, all other observed invasive species were widely distributed along the ROW.

Exhibit 1 to CHGE-019: Invasive Plant Species Documented on the A and C Lines Right-of-Way
Case 13-T-0469

Wetland Name	NYSDEC Wetland 1=Yes, 0=No	Invasive Species Observed at Wetland Sample Point	Invasive Species in Wetlands 1=Yes, 0=No	Invasive Species Observed at Adjacent Upland Sample Point	Invasive Species in Uplands 1=Yes, 0=No
A	0		0		0
B	0	Lythrum salicaria	1	Lonicera morrowii	1
C	0	Rosa multiflora	1		0
D	0	Lythrum salicaria	1	Lonicera morrowii	1
E	0	Lythrum salicaria	1	Lonicera morrowii, Rosa multiflora	1
F	0	Lythrum salicaria	1	Lonicera morrowii, Rosa multiflora	1
G	0		0	Lonicera morrowii	1
H	0		0	Lonicera morrowii	1
I	0	Lythrum salicaria	1	Lonicera morrowii, Rhamnus cathartica	1
J	0	Lythrum salicaria, Rosa multiflora	1	Rosa multiflora	1
K	0	Lythrum salicaria	1	Lonicera morrowii, Rhamnus cathartica	1
L	0	Lythrum salicaria, Rosa multiflora, Lonicera morrowii	1	Lonicera morrowii	1
M	0	Lythrum salicaria, Lonicera morrowii	1	Lonicera morrowii, Rosa multiflora	1
N	0	Lonicera morrowii	1	Lonicera morrowii	1
O	1	Rosa multiflora	1	Lonicera morrowii, Rhamnus cathartica, Rosa multiflora	1
P	0	Lythrum salicaria	1	Lonicera morrowii	1
Q	0	Lythrum salicaria	1		0
R	0	Phalaris arundinacea	1	Rosa multiflora	1
S	0		0		0
T	0		0		0
U	1	Lythrum salicaria	1	Lonicera morrowii, Rosa multiflora	1
V	0	Lythrum salicaria, Phalaris arundinacea	1	Lonicera morrowii, Rosa multiflora	1
W	0	Lythrum salicaria	1	Rosa multiflora	1
X	0	Lythrum salicaria, Lonicera morrowii	1	Lonicera morrowii	1
Y	0	Lythrum salicaria	1		0
Z	0	Phalaris arundinacea, Lonicera morrowii	1		0
AA	0	Lythrum salicaria, Phalaris arundinacea	1	Phalaris arundinacea, Lonicera morrowii	1

Exhibit 1 to CHGE-019: Invasive Plant Species Documented on the A and C Lines Right-of-Way
Case 13-T-0469

Wetland Name	NYSDEC Wetland 1=Yes, 0=No	Invasive Species Observed at Wetland Sample Point	Invasive Species in Wetlands 1=Yes, 0=No	Invasive Species Observed at Adjacent Upland Sample Point	Invasive Species in Uplands 1=Yes, 0=No
BB	0	Lythrum salicaria	1	Lonicera morrowii, Ligustrum obtusifolium	1
CC	0	Lythrum salicaria	1		0
DD	1	Lythrum salicaria	1		0
EE	1	Lythrum salicaria	1		0
FF	0		0	Lonicera morrowii	1
GG	0	Lythrum salicaria	1	Lonicera morrowii, Rosa multiflora	1
HH	0	Lythrum salicaria	1		0
II	1	Lythrum salicaria, Phragmites australis	1	Lonicera morrowii, Rosa multiflora	1
JJ	0	Lythrum salicaria, Phragmites australis, Phalaris arundinacea	1	Lonicera morrowii, Rosa multiflora	1
KK	0	Lythrum salicaria, Lonicera morrowii	1	Lonicera morrowii	1
LL	0	Lythrum salicaria	1	Lonicera morrowii, Rosa multiflora	1
MM	0	Lythrum salicaria, Phragmites australis	1	Lonicera morrowii, Lythrum salicaria, Cynanchum louiseae, Rosa multiflora	1
NN	0	Lythrum salicaria, Phragmites australis	1	Lonicera morrowii, Rosa multiflora, Cynanchum louiseae, Rosa multiflora	1
OO	0	Lythrum salicaria	1	Lonicera morrowii	1
PP	1	Lythrum salicaria	1	Lonicera morrowii	1
	6		36		31

36 of 42 wetland sample points contained invasive species

31 of 42 upland sample points contained invasive species

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-020 (MS)

Central Hudson Response No: CHGE-020 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: June 24, 2014

Response Provided by: Christopher Rottkamp

Information Requested:

1. In the company's response to DPS 1-19, the company states "There is no planned use for the inactive substation site north of Croft Hill Road. The previous substation was retired." With the substation being retired are there any plans to restore the site to a natural preconstruction condition? If not, why?

Response:

There are no plans at this time to perform any work at the retired substation north of Croft Hill Road. Until such time as a final determination is made as to the future use of the property, work to restore the site will not be conducted.

Central Hudson Gas and Electric Corporation

A&C REBUILD PROJECT - ARTICLE VII APPLICATION
Case 13-T-0469

RESPONSE TO
INTERROGATORY/DOCUMENT REQUEST

Requesting Party and No.: DPS Staff - DPS-021 (MS)

Central Hudson Response No: CHGE-021 (DPS)

Date of Request: 6/13/2014

Information Requested of: Central Hudson Gas and Electric Corporation

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Reply Date: June 24, 2014

Response Provided by: John Hecklau

Information Requested: ACOE (Army Corps of Engineers) Communications

In the May 9, 2013 e-mail included in Appendix M of the Application, the company states, to the Army Corp of Engineers, that this project is a rebuild on the existing right of way and no new clearing will be needed. Central Hudson states, in the January 13, 2014 response PSC request #2 of the Requests for Additional Information, that access routes and work areas will be mowed as necessary. In Section 3.1 of the Application the company states, "With the exception of potential minor clearing for off-ROW access, no additional clearing beyond the existing ROW is anticipated."

1. Has the Army Corp of Engineers been informed of the proposed mowing of access routes and work areas on the ROW, as well as off ROW trimming and clearing? Provide copies of all communications with the Army Corp of Engineers, including summaries of phone conversations and documents pertaining to this project.

Response:

1. Any clearing or trimming of vegetation within wetlands under the jurisdiction of the U.S. Army Corps of Engineers (USACE) would be conducted in a non-jurisdictional manner.

No mowing or other form of mechanized land clearing would be performed. All clearing/trimming within wetlands would be done by hand in a drop-and-lop manner. Clearing along the banks of streams would be minimized to the extent practicable, and any cleared vegetation would be removed from the stream channel and the area immediately adjacent to the stream.

There has been no formal submittal to the USACE, as all vegetation clearing and vehicular access within wetlands and streams are proposed to be conducted in a non-jurisdictional manner. The project as proposed would be authorized under Nationwide Permit 12 and installation of three new poles in wetlands represents the only project related impact that is not temporary. Furthermore, installation of these poles will not require submittal of a pre-construction notification (PCN), as the filling associated with their installation(totaling less than 100 square feet) is under the 0.1 acre notification threshold.