# EXHIBIT 7

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Monday, December 10, 2012

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Via: US Postal Mail and Email

Re: Time extension for PE certification of Pole Attachment License Applications to March 31, 2013
Agreement: Pole Attachment Contract Between Nevada Power Company and Community Cable TV
Dated 6/1/97 NVE Contract File # 97-00009

Ladies and Gentlemen:

NV Energy (NVE) has extensively revamped its Pole Attachment processes. This activity is motivated as much by internal concern regarding system safety and reliability as in response to the most recent FCC Report & Order (11-50). Along with these issues, matters of efficiency, cost effectiveness and accounting are vital parts of the processes going forward.

Throughout this difficult transition, your patience and responsiveness has been particularly noteworthy. Further, audit of completed attachment jobs indicated a high level of client commitment to quality assurance in their installations.

Our initial correspondence to you in April of this year was a first step in transitioning to a new process that would be responsive to these internal and external concerns. Subsequently, it became apparent that further development was merited, as the field data collection, analysis, administrative effort and turn-around times were proving costly for all concerned. Consequently, NVE is transitioning to a more "client driven" process. Pursuant to this, you are hereby notified that NVE is turning over to you as the Licensee, the structural engineering aspect of Distribution Pole attachment licensing as of March 31, 2013.

The attached guidance document: Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS 11.19.2012 sets forth NVE requirements for Attachment License Applications going forward. As you will note, it will be necessary for your company to retain the services of a Civil Engineer with a Nevada Professional Engineer (PE) license who must certify the structural integrity and NESC compliance of your company's proposed pole attachments to NVE infrastructure.

This process will integrate your existing make-ready assessment and pole data collection work with the final step, which is the application of this information in an authoritative assessment as to whether your proposed attachment will jeopardize the structural integrity of the NVE pole.

Existing NVE resources are insufficient to accommodate the desired Licensee time frames for survey, license processing and issuance. Deferring these functions to you will lead to improved efficiency and cost reduction through task integration. For its part, NVE will confine itself to validation of License Applications through audit of a sampling of those submissions received. This should shorten turn-around times while giving you more direct cost control.

The engineering review of Transmission structures will remain with the NVE Transmission Engineering Department. This is largely due to the fact that the steel transmission poles are engineered structures whose designs are proprietary to the pole vendors.

Revised Pole Attachment Agreements incorporating this new licensing process for both, poles subject to FCC access mandate and those FERC registered Transmission pole assets not subject to FCC Rule, will be sent to you for execution within sixty (60) days. These agreements are intended to wholly supersede the current master agreement under which all past licenses were issued.

NVE is most interested in a realistic and constructive discussion and resolution of any issues at your earliest convenience. Prior to then, you may contact me if you have any questions or need further information.

Respectfully,

Joint Use Agent

Enclosure

Cc: Patricia Ortwein, Mngr. Rule 9 Joint Use Contract Admin.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS

11.19.2012

## All Applications

**To ensure the integrity of NV Energy's overhead plant, a structural analysis must be performed for each pole in the application. For all applications, it is the Applicant's responsibility to:**

- Gather all pole data related to performing a complete structural analysis for each pole. This includes field information for facilities in the power space and communications space, alike. See ***Appendix A*** for a detailed list of the pole data requirements.
- Determine conventional, industry recognized make-ready solutions for facilities in both the power space and communications space. Applicant is encouraged to favor the common, power space make-ready solutions listed in ***Appendix B***, as doing so will facilitate acceptance by NV Energy and speed cost estimation. ***Appendix C*** lists anchor and down-guy sharing guidelines to assist in the make-ready determinations.
- Submit all pole data and make-ready notes for audit purposes. See ***Audit Process (page F2)*** for more details.

## Distribution Applications

**APPLICANT must submit a complete structural analysis report for each Distribution pole in the application. The report must be stamped by a Civil Engineer with a Nevada State Professional Engineer (PE) license. The PE assumes full responsibility for the content and conclusions of the structural analysis report, as required by Nevada State Law.**

**Structural Analysis Requirements**

The analyses must abide by all applicable standards outlined in the 2012 NESC edition. Load analyses must reflect make-ready solutions, apply overload and strength reduction factors for Grade B construction, and include calculations and results specifying "pass" or "fail" for:

- Overturning moment of the pole at ground line
- Down-guy strengths (***Appendices D and E)*** list typical working strengths for NV Energy conductors used in Northern and Southern Nevada, respectively.]
- Buckling using the Euler Method (for anchored poles and as necessary for tangent poles)

The analyses must also include verification of the following:

- Compliance with all applicable NESC clearances
- Summation of down-guy tensions does not exceed the ultimate holding strength of the anchor(s). ***Appendices F and G*** list typical holding strengths for NV Energy anchors used in Northern Nevada and Southern Nevada, respectively. Also, see ***Appendix C*** for anchor and down-guy sharing guidelines.

All pole data used and any assumptions made must be included.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS, CON'T

**Sample Report**

Structural analysis reports must be submitted in a standardized format, such as those produced by the following programs: PLS-CADD, LineDesign Engineering, O-Calc, and Spida Calc. Other formats will not be accepted without prior approval. Applicant must be familiar with their chosen analysis program as NV Energy cannot provide instructional guidance in this regard. ***Appendix H*** shows sample templates for submitting pole data, make-ready notes, and structural analysis reports.

## Transmission Applications

**NV ENERGY will perform the structural analysis for each Transmission pole in the application.** The pole data and make-ready solutions submitted by the Applicant will be used in the analysis. ***Appendix I*** shows a sample template for submitting the pole data and make-ready notes.

## Audit Process

The validity of the information submitted in the application is subject to verification by NV Energy. Audits will be performed on an Applicant's weekly submissions. All of the submissions received during a given week will be treated as one batch. If the sampled applications are found to contain pervasive errors or omissions, then the entire week's batch will be rejected and returned to the Applicant with a brief explanation as to nature of the denial. The explanation will be sufficient to guide the Applicant in their corrections; however, detailed information will not be provided as the Applicant is responsible for the quality assurance of its submissions. The Applicant will be required to reevaluate all of the applications submitted in a rejected batch before they can resubmit at a later date. Applicant is advised that rejected applications will constitute an increase in the auditing frequency, which may cause processing delays for future submissions.

# Exhibit F, – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix A – Pole Data Requirements

**Applicant must submit the following information for each pole in the application:**

- Pole Information
  - Route map
    - Must show pole locations in relationship to streets, roads, and other geographical landmarks
    - Pole data list in application shall match and be in the same order as those appearing in the map
  - Pole number
  - Pole type (Transmission, Distribution, Wood, Steel)
    - For wood poles, wood species (e.g. Western Red Cedar, Douglas Fir, etc.)
    - For steel poles, data on name plate (welded ~ 5' above ground)
  - Pole length*
  - Height of top of pole* *(feet and inches)*
  - Pole class
  - Ground line circumference *(inches)*
  - Pictures of pole
    - Must provide a minimum of one picture showing pole from ground line to top that can be utilized to scale attachment and equipment locations on pole
- Existing Attachment Information (for ALL attachments on pole, NVE and 3rd Party)
  - Cable Information
    - Size
      i. For 3rd Party Lines, specify the Owner and the Effective (cable + strand) Bundle Diameter
      (e.g. "TEL 1 inch overall diameter")
    - Span lengths, ahead and back *(feet)*
    - Attachment height* *(feet and inches)*
    - Direction of attachment**
  - Riser Information
    i. Riser thickness out from face of pole (e.g. "3 inch u-guard")
    ii. Distance from grade to the top of riser* *(feet and inches)*
    iii. Location on pole**
  - Equipment Information
    - NVE Equipment
      i. Type and Name (e.g. "75 KVA transformer number HHH1234")
      ii. Distance from grade to the top of equipment* *(feet and inches)*
      iii. Location on pole**
    - 3rd Party Equipment
      i. Owner and Type (e.g. "CATV Splice Can")
      ii. Dimensions: length, width, and height *(inches)*
      iii. Distance from grade to the top of equipment *(feet and inches)*
      iv. Location on pole**

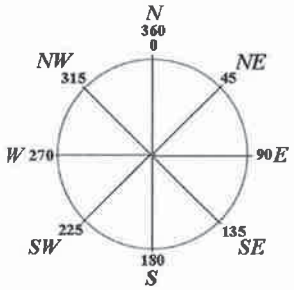
# Exhibit F, – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix A – Pole Data Requirements Con't

- Existing Anchor/Guying Information (for all guys/anchors, NVE and 3rd Party)
    - D-guy diameter *(inches)*
    - Height of D-guy attachment* *(feet and inches)*
    - Lead from pole to anchor *(feet and inches)*
    - Direction of D-guy lead**
    - Anchor rod diameter *(inches)*
- Proposed Attachment and Additional Attachment (Overlash) Information
    - Cable Information
        - Effective (cable + strand) bundle diameter *(inches)*
        - Weight *(lb/ft)*
        - Total line tension under NESC loading conditions *(lbs)*
            - i. For Southern Nevada (NESC Light Loading District) these are 30 deg Fahrenheit with no ice and a 9 # wind load
            - ii. For Northern Nevada (NESC Medium Loading District) these are 15 deg Fahrenheit with ¼" radial ice and a 4 # wind load
        - Attachment height *(feet and inches)*
        - Direction of attachment**
    - Equipment Information
        - Total "projected area" of the equipment *(square feet)*
        - Distance from grade to the top of equipment *(feet and inches)*
        - Location on pole**
    - Riser Information
        - Riser thickness out from face of pole (e.g. "3 inch u-guard")
        - Distance from grade to the top of riser *(feet and inches)*
        - Location on pole**
- Anchoring-Guying Information (for each proposed guy and anchor)
    - D-guy diameter *(inches)*
    - Height of D-guy attachment *(feet and inches)*
    - Lead from pole to anchor *(feet and inches)*
    - Direction of D-guy lead**
    - Anchor Assembly (e.g. "24 inch plate, 1 inch rod triple eye")

***All measurements above the communications space must be made by remote means, such as optical surveying or laser range finding. In <u>no event</u> shall mechanical devices, such as measuring sticks, be used to collect power space data. Applicant is expected to follow these guidelines. NV Energy will not be held responsible for the acts or omissions of Applicant in completing its survey. Applicant proceeds in its survey assuming all risks of injury, death, or other damages.**

****Use compass directions:**



# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix B – Common NV Energy Make-Ready Solutions for Telecom Attachments

**General Pole Issues**

- Reframe 3 phase Delta Primary [tangent] to a horizontal configuration with Neutral and phases up on arm.

**Primary on Pole**

- Move [tangent] power Neutral higher up on pole without need of other power facilities reframing.
  + Move transformer higher up on pole.
  + Move fused cut-out assembly higher up on pole.

**Secondary on Pole**

- Move up Secondary power [triplex] dead-end.
- Fold up and tape in-place Secondary drip loops [to increase separation above communications attachment].

**Primary in Span**

- Re-sag Primary and Neutral to achieve increased separation from communications cables below (30" radial separation needed).

**Secondary in Span**

- Retire open Secondary and replace with triplex, including replacement of 3-spool rack with single dead-end spool, shackle & eyebolt.
- Retire/remove abandoned span of secondary.
- Re-sag Secondary to achieve increased separation from communications cables below (30" radial separation needed).

**Risers**

- Extend/add U-guard over Secondary riser cable.
  + If possible, splice and extend Secondary riser cable to allow such upward extension of U- guard cover below transformer, drip loops, etc.
  + Otherwise, change-out secondary riser cable to allow such upward extension of U-guard cover below new splice connectors, transformer, etc.

**Grounding**

- Replace/reattach lower [6'-10'] segment of pole ground wire [stolen] and cover with ¾" WOOD U-guard, heavily stapled to pole.

**Anchoring & Down Guys**

- Install NVE spec plate anchor w 3-knuckle eye [in open ground].
  + Pull up sidewalk slab and then re-pour it.
  + Relocate down-guy(s) to new anchor.
- Re-tension down guy(s).

**Note:**

- Highlighted items usually occur together
- Cost estimates are available for these items; however, Applicant Purchase Orders must commit to payment of ACTUAL NV Energy cost incurred, not the estimated values.
- Applicant is in no way restricted to these make-ready options. Other make-ready solutions may be appropriate but will require a specific design and cost estimate.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

### Appendix C – Anchor & Down-Guy Sharing Guidelines

## Anchor Guidelines:

To minimize repeated disruption of NV Energy and public infrastructure, NV Energy reserves the right to require installation of anchors with holding strength in excess of that needed for Applicant's attachments alone. All new anchor installations shall be of current NV Energy standard specification [3-knuckle eye, 1"x10' rod, 24" plate] absent specific NV Energy authorization to the contrary. NV Energy authorization for lesser capacity anchors shall not be unreasonably withheld for those locations where it is unlikely that other users will request attachment space in the future, and where there is no significant risk of undermining adjacent anchor installations or necessity of demolishing and reconstructing paved surfaces.

## Down-Guy Sharing Guidelines:

Telecommunications down-guy load sharing through strand upgrade and rearrangement of existing down-guy attachments on the pole will be approved subject to case specific, documented, engineering design, and concurrence among the affected telecommunications users. Installation of more than 4 telecommunications down-guys or more than two anchors in any lead is to be avoided, as is the use of bolt-on auxiliary anchor eyes. However, NV Energy approval of such will not be unreasonably withheld.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix D – Typical Working Strengths for NV Energy Conductors (Northern Nevada)

| Conductor Strengths | | | |
|---|---|---|---|
| Conductor AWG or KCMIL | Code Name | Breaking Strength (lbs.) | Working Strength (lbs.) |
| ***Primary Conductors*** | | | |
| #2 ACSR | Sparrow | 2,850 | 1,425 |
| 1/0 ACSR | Raven | 4,380 | 2,190 |
| 2/0 AA | Aster | 2,510 | 1,255 |
| 2/0 ACSR | Quail | 5,310 | 2,655 |
| 4/0 AA | Oxlip | 3,830 | 1,915 |
| 4/0 ACSR | Penguin | 8,350 | 4,175 |
| 397.5 AA | Canna | 7,110 | 3,555 |
| 397.5 ACSR | Ibis | 16,300 | 8,150 |
| 477 ACSR | Hawk | 19,430 | 9,715 |
| 636 AA | Orchid | 11,400 | 5,700 |
| 636 ACSR | Grosbeak | 25,200 | 12,600 |
| 795 AA | Arbutus | 13,900 | 6,950 |
| ***Secondary Conductors*** | | | |
| #2 TRIPLEX | Cockle | 1,860 | 930 |
| #2 QUADRUPLEX | Palomino | 2,850 | 1,425 |
| 2/0 TRIPLEX | Clio | 3,550 | 1,775 |
| 2/0 TRIPLEX | Runcina | 5,310 | 2,655 |
| 2/0 QUADRUPLEX | Grullo | 5,310 | 2,655 |
| 4/0 TRIPLEX | Zuzara | 8,350 | 4,175 |
| 4/0 QUADRUPLEX | Appaloosa | 8,350 | 4,175 |

**Note:**
These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate working strengths for their analyses.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix E – Typical Working Strengths for NV Energy Conductors (Southern Nevada)

| Total Line Tension Under Maximum Loading Conditions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Type and Size of Conductors* | | | *NESC Light Loading District* | | | | | | |
| | | | *Short Span* 225' ruling Span – 300' max | | | | *Long Span (a) unless otherwise noted* (a) 350' Ruling Span – 550' max (b) 500' ruling Span – 625' max (c) 800' ruling span – 1000' max | | |
| | | | *Number of Conductors* | | | | | | |
| | | | *1* | *2* | *3* | *4* | *1* | *2* | *3* |
| *Bare Primary Conductors* | *ACSR* | 4 | 282 | 564 | 846 | | 603 | 1,206 | 1,809 |
| | | 2 | 397 | 794 | 1,191 | | 822 | 1,644 | 2,466 |
| | | 2/0 | 1,355 (a) | 2,710 | 4,065 | | 1,355 | 2,710 | 4,065 |
| | | 4/0 | 1,000 | 2,000 | 3,000 | | 2,500 | 5,000 | 7,500 |
| | | 336.4 | 1,470 | 2,940 | 4,410 | | 3,850 | 7,700 | 11,550 |
| | | 477 | 1,965 | 3,930 | 5,895 | | 5,250 | 10,500 | 15,750 |
| | | 636 | | | | | 6,963 (b) | 13,926 | 20,888 (b) |
| | | 9000 | | | | | 9,000 (c) | 18,000 (c) | 27,000 (c) |
| | *AA* | 2 | 460 | 920 | 1,380 | | | | |
| | | 2/0 | 565 | 1,130 | 1,695 | | | | |
| | | 4/0 | 811 | 1,622 | 2,433 | | 1,060 | 2,120 | 3,180 |
| | | 336.4 | 1,165 | 2,330 | 3,495 | | 1,450 | 2,900 | 4,350 |
| | | 477 | 1,540 | 3,080 | 4,620 | | 1,865 | 3,730 | 5,595 |
| | | *556.5 | *3,390 | 6,780 | 10,170 | | | | |
| | | 636 | 2,204 | 4,408 | 6,612 | | 2,310 | 4,620 | 6,930 |
| | | *715.5 | *2,401 | 4,802 | 7,203 | | *3,110 | 6,220 | 9,330 |
| | | 954 | 3,068 | 6,136 | 9,204 | | 6,509 (b) | 13,118 (b) | 19,527 (b) |
| | *CU* | 6 | 275 | 550 | 825 | | 520 | 1,040 | 1,560 |
| | | 4 | 420 | 840 | 1,260 | | 880 | 1,760 | 2,640 |
| | | 2 | 625 | 1,250 | 1,875 | | 1,130 | 2,260 | 3,390 |
| | | 2/0 | 1,180 | 2,360 | 3,540 | | 2,030 | 4,060 | 6,090 |
| | | 4/0 | 1,825 | 3,650 | 5,475 | | 3,000 | 6,000 | 9,000 |
| *Secondary Conductors* | *Multiplex* | 4 | | | 585 | 826 | | | |
| | | 2 | | | 774 | 1,098 | | | |
| | | 2/0 | | | 1,507 | 1,872 | | | |
| | | 4/0 | | | 1,803 | 2,645 | | | |
| * Formerly C.P. National: Henderson & Laughlin Service Areas | | | | | | | | | |

**Note:**
These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate working strengths for their analyses.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix F – Typical Holding Strengths for NV Energy Anchors (Northern Nevada)

| TABLE 1 ANCHOR ROD STRENGTHS | | |
|---|---|---|
| Rod Size | Breaking Strength | Working Strength |
| 1" x 7' | 36,000 | 18,000 |
| 1" x 8' | 36,000 | 18,000 |

| TABLE 2 ANCHOR HOLDING POWER | | | | | |
|---|---|---|---|---|---|
| Anchor @ 7'-0" Depth | Soil Type Classification* | | | | |
| | 1 thru 3 | 4 | 5 | 6 | 7 |
| Expanding 12" – 8 Way w/ 1 ¼" Rod | 20,000 | 17,000 | 13,250 | 10,750 | 8,000 |
| Crossplate 20" w/ 1" Rod | 17,000 | 14,500 | 12,000 | 9,500 | 7,000 |
| Crossplate 24" w/ 1" Rod | 22,500 | 18,500 | 15,000 | 11,750 | 9,000 |
| Rock ¾"x 30" No Rod Required | 11,500 | N/A | N/A | N/A | N/A |
| Rock 1" x 53" No Rod Required | 18,000 | N/A | N/A | N/A | N/A |
| * For Soil Classification Descriptions, Refer To Table 4 | | | | | |

| TABLE 3-A MID-STRENGTH SCREW ANCHORS | | | | |
|---|---|---|---|---|
| Installing Torque | Shear Pins Required | Twin 4" Helices | Twin 8" Helices | Twin 10" Helices |
| 1,500 | 3 | * | 18,000 | 18,000 |
| 2,000 | 4 | * | 20,000 | 20,000 |
| 3,000 | 6 | 26,000 | 26,000 | 26,000 |
| 4,000 | 8 | 33,000 | 33,000 | 33,000 |
| 5,000 | 10 | 36,000 | 36,000 | 36,000 |
| 6,000 | 12 | 36,000 | 36,000 | 36,000 |
| * Do Not Use This Anchor At This Torque | | | | |

The above screw anchors are used with 7' x 1" galvanized steel rod with a triple strand-eye nut. 3-½' x 1" rod extensions with couplings are used to set anchors deeper.

Anchor holding power of 36,000 pounds is limited only by minimum yield strength of the 1" anchored rod.

**Note:**

- These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate holding strengths for their anchor analyses.
- New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix F – Typical Holding Strengths for NV Energy Anchors (Northern Nevada) Con't.

**TABLE 3-B HIGH-STRENGTH SCREW ANCHORS**

| Installing Torque | Shear Pins Required | 6" Helix | 8" Helix | 10" Helix | 12" Helix | 14" Helix |
|---|---|---|---|---|---|---|
| 1,500 | 3 | * | 11,500 | 12,500 | 16,000 | 16,000 |
| 2,000 | 4 | * | 14,000 | 15,000 | 20,000 | 20,000 |
| 3,000 | 6 | 18,500 | 20,000 | 22,500 | 24,000 | 24,000 |
| 4,000 | 8 | 25,000 | 27,000 | 28,000 | 30,000 | 30,000 |
| 4,500 | 9 | 28,000 | 29,000 | 32,000 | 33,000 | 33,000 |
| 5,000 | 10 | 31,000 | 32,000 | 34,000 | 36,000 | 36,000 |
| 5,500 | 11 | 35,000 | 36,000 | 36,000 | * | * |
| 6,000 | 12 | 36,000 | * | * | * | * |

* Do Not Use This Anchor At This Torque

The above screw anchors are used with 7' x 1" galvanized steel rod with a triple strand-eye nut. 3-½' x 1" rod extensions with couplings are used to set anchors deeper.

Anchor holding power of 36,000 pounds is limited only by minimum yield strength of the 1" anchored rod.

**Note:**

- These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate holding strengths for their anchor analyses.
- New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix F – Typical Holding Strengths for NV Energy Anchors (Northern Nevada) Con't.

| TABLE 4 SOIL CLASSIFICATIONS | | |
|---|---|---|
| Class | Usual Consistency | Possible Soil Characteristics or Composition |
| 1 | Solid | Hard Rock |
| 2 | Solid or In Layers | Laminated Rock, Shale, Sandstone, Slate |
| 3 | Hard, Dry | Hard Pan, Broken Bedrock, Compact Clay-Gravel Mixture |
| 4 | Crumbly, Damp | Clay Pan, Compact Sand-Gravel Mixture |
| 5 | Firm, Moist | Firm Clay, Loose Sand-Gravel Mixture, Compact Coarse Sand |
| 6 | Plastic, Wet | Soft Plastic Clay, Clayey Silt, Loose Coarse Sand, Compact Fine Sand. Areas Seasonally Wet And Usually Fairly Flat |
| 7 | Loose Dry or Loose Wet | Wet Clay, Silt, Mud, Loose Fine Sand |
| 8 | Marshy | Marshes And Swamps. Install Anchor Deep Enough To Penetrate Class 5, 6, Or 7 Soils. |

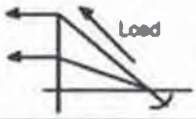
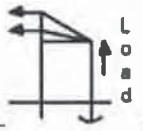
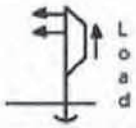
| TABLE 5 STRUT SELECTION CHART | | | |
|---|---|---|---|
| Total Pull ( Ps ) Exerted On Pole (lbs.) | Length of Strut | I.D. Size Of Strut | |
| | | 2" | 2½" |
| Under 6,000 | 6' - 12' | X | |
| 6,000 - 8,000 | 6' - 10' | X | |
| | 10' - 12' | | X |
| 8,000 - 10,000 | 6' - 8' | X | |
| | 8' - 12' | | X |
| 10,000 - 12,000 | 6' - 8' | X | |
| | 8' - 12' | | X |

**Note:**

- These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate holding strengths for their anchor analyses.
- New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.

# • Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## • Appendix G – Typical Holding Strengths for NV Energy Anchors (Southern Nevada)

| Ultimate Holding Strength of Anchors and Strut Guys in Pounds | | | | | | |
|---|---|---|---|---|---|---|
| Soil Classification |   | | |   |   | Owner |
| | Anchor Assembly | | | Sidewalk | Strut-Guy | |
| | 1<br>16" plate, 3/4" or 5/8" rod twin eye | 2*<br>20" plate, 3/4" CW rod twin eye | 3<br>24" plate, 1" rod triple eye | 24" plate, 1" rod triple eye | 24" plate, 1" rod | |
| 3 HARD PAN Dry, requires use of a digging bar; dense clayey sands & gravel hard silts & clays | 12,000 | 15,900 | 27,000 | 27,000 | 4,440 | NVE |
| | 8,000 | 10,600 | 18,800 | 18,800 | 2,960 | Century Link |
| | 20,000 (16,000)** | 26,500 | 45,000 (36,000)** | 45,000 (36,000)** | ***7,400 | Not joint use |
| 5 AVG. FIRM Predominant type in L.V.; md dense coarse sand, sandy gravels stiff silts & clays | 12,000 | 15,900 | 21,000 | 21,000 | 4,440 | NVE |
| | 8,000 | 10,600 | 14,000 | 14,000 | 2,960 | Century Link |
| | 20,000 (16,000)** | 26,500 | 35,000 | 35,000 | ***7,400 | Not joint use |
| 7 LOOSE DRY Loose, fine sand & gravel; lack of clay or bonding material | 6,600 | 8,400 | 11,400 | 11,400 | 4,400 | NVE |
| | 4,400 | 5,600 | 7,600 | 7,600 | 2,960 | Century Link |
| | 11,000 | 14,000 | 19,000 | 19,000 | ***7,400 | Not joint use |

* Anchor size no longer used, but may be encountered in the field.
** Limiting factor: Rated breaking strength of galvanized anchor eyes used with CU plated (CW) rods prior to 96.
*** Limiting factor: Rated breaking strength of struts. Use of strut guys is generally not recommended as they only keep the pole (class 3 max.) straight and do not add to the strength of the pole.

**Note:**

- Joint use anchor holding strength allocation: NVE – 60%, Century Link – 40%.
- These values are only approximations and will vary based on field conditions. The Professional Engineer in the hire of the Applicant is responsible for determining the appropriate holding strengths for their anchor analyses.

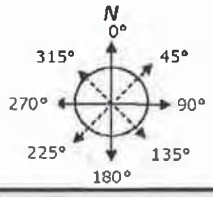
# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix H – Distribution Sample Report

### Pole Inspection Sheet



| | |
|---|---|
| Pole # *in Field* | *P12345* |
| *Class* | 4 |
| *Length* | 40 |
| *Wood* | Western Ponderosa Pine |
| *Gl. Circum* | 42" |
| *Type* | Distribution |




| | |
|---|---|
| Pole # *in License* | *P12345* |
| *Date* | 6/7/2012 |
| *Job Name* | CATV Attachment |
| *Location* | ABC Street and XYZ Way |

| Guy # | Entity | Attachments | | | | | Span Length | | Direction | | Bundle diameter |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | # of wires | Size | Height | | Ahead | Back | Ahead | Back | |
| | | | | | ft | in | ft | ft | deg | deg | in |
| | | | | Top of Pole | 32 | 11 | | | | | |
| | NVE | Pri- Tri | 3 | 954 aa | 32 | 4 | 158' | 182' | 270° | 90° | |
| 1 | NVE | Pri- 1 Ø | 1 | #4 acsr | 30 | 11 | 155' | | 0° | | |
| | NVE | 2Ø Cutout Brkt | | 1/0 ug | 27 | 8 | | | 270° | | |
| | NVE | Riser | | 4" u-guard | 25 | 6 | | | 45° | | |
| | NVE | Pri- neut | 1 | #4 acsr | 24 | 5 | 155' | | 0° | | |
| | NVE | Pri- neut | 1 | 2/0 acsr | 24 | 5 | 158' | 182' | 270° | 90° | |
| | NVE | Sec- svc | 1 | #4 triplex | 24 | 5 | 158' | | 270° | | |
| | NVE | Pal light | | | 23 | 7 | | | 0° | | |
| | | | | | | | | | | | |
| | COM | 3 bolt | | 5/16"ehs, 144ct | 19 | 0 | 158' | 182' | 270° | 90° | 1.06" |
| | | | | | | | | | | | |
| | CATV | 3 bolt | | 1/4 ehs, 2-750cx, 48ct | 18 | 0 | 158' | 182' | 270° | 90° | 1.50" |
| 2 | CATV | DE | | 1/4"ehs, 500cx | 18 | 0 | 155' | | 0° | | 0.75" |
| | CATV | Proposed | | ADD 48ct | 18 | 0 | 155' | | 0° | | 0.98" |
| | CATV | Riser | | 2" u-guard | 17 | 0 | | | | 135° | |
| | | | | | | | | | | | |
| | TEL | 3 bolt | | 5/16"ehs, 2.50"cu | 14 | 5 | 158' | 182' | 270° | 90° | 2.82" |

| Entity | Equipment | | | | | | | Make-Ready Notes (Communications Space) |
|---|---|---|---|---|---|---|---|---|
| | Type | Description | Dimensions | | Height | | Location | |
| | | | in | in | ft | in | deg | |
| CATV | LE | - | 12 | 8 | 18 | 0 | 270° | Extend CATV riser, trim trees off CATV midspan, reframe CATV. |

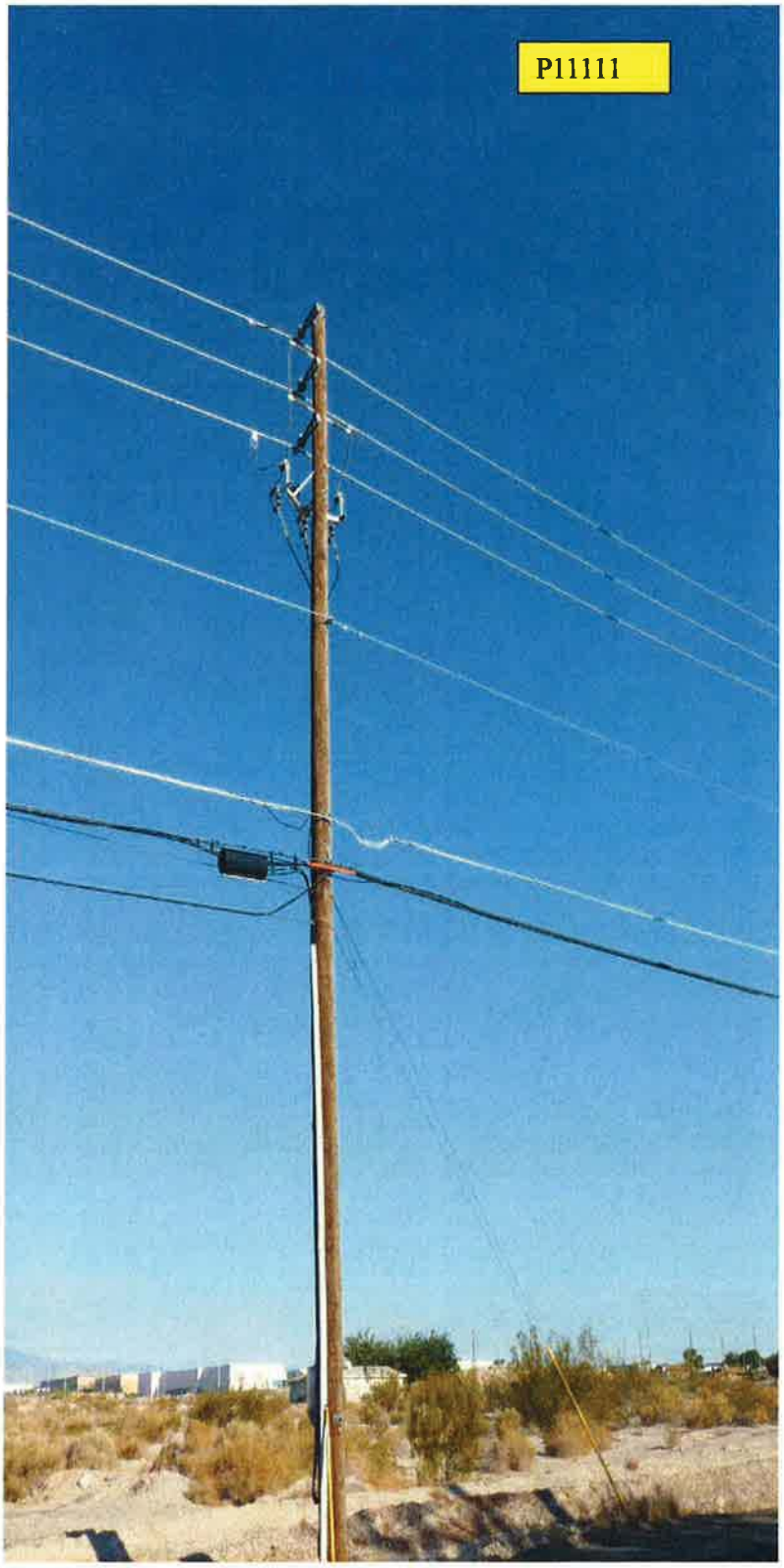
| Guy # | Entity | Guy Size | Anchor | | | | | | | Make-Ready Notes (Power Space) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # | Size & Description | Location | Height | | Lead | | |
| | | | | | deg | ft | in | ft | in | |
| 1 | NVE | 5/16" | 1 | 3 eye, 1" rod | 180° | 30 | 11 | 20 | 0 | |
| 2 | CATV | 5/16" | 1 | 3 eye, 1" rod | 180° | 18 | 0 | 20 | 0 | |

**Additional Comments:**

See attached for picture of pole.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

**Appendix H – Distribution Sample Report Con't.**



# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix H – Distribution Sample Report Con't.

LICENSEE: [redacted]
APPLICATION: [redacted]
MAP NUMBER: 1 THRU 10

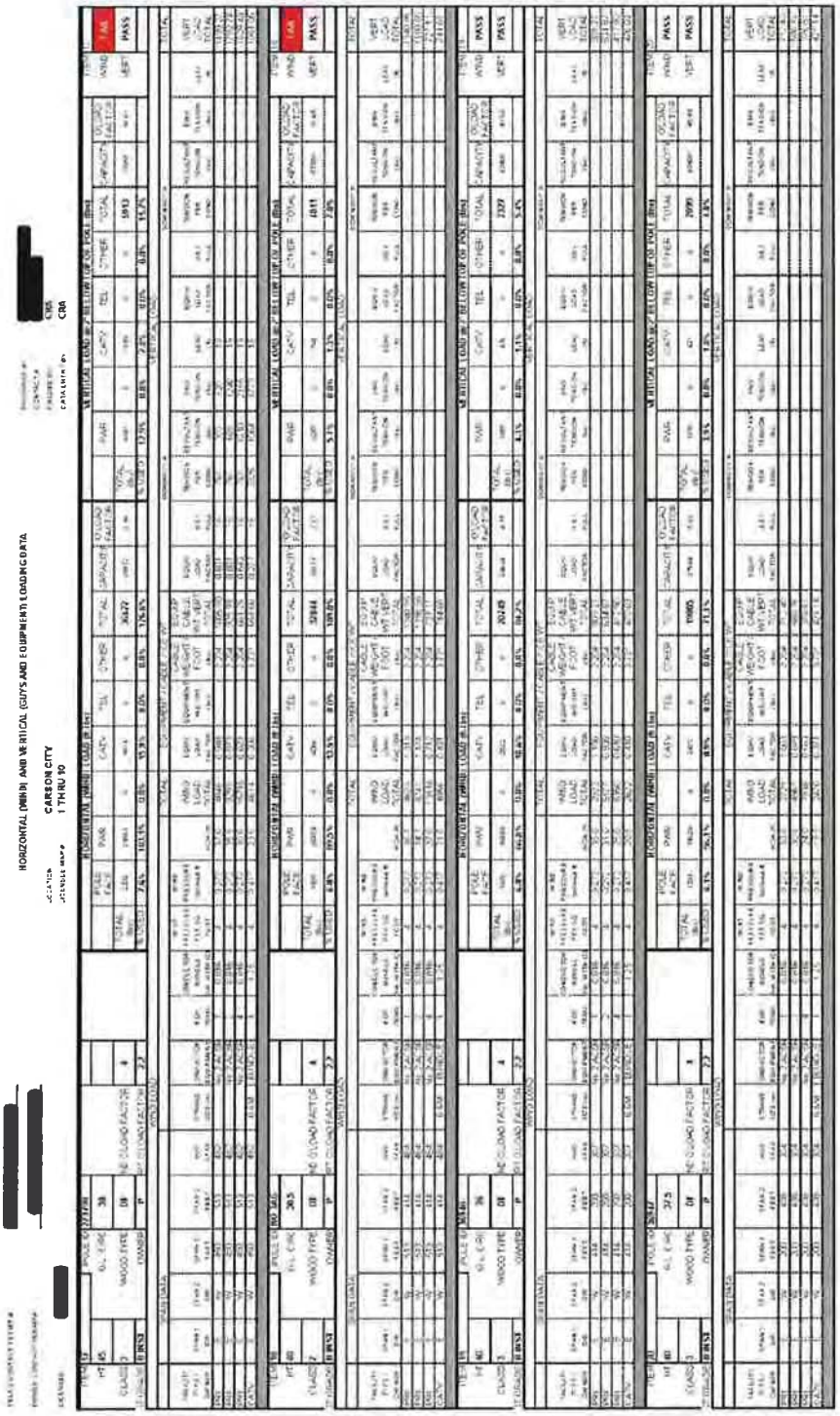
**JOB DETAIL (MAKE READY) WORK SHEET**
PREPARED BY: [redacted]
CONTACT #: [redacted]
FIELDED BY: CRA
DATA ENTRY: CRA

| POLE NUMBER | LEAD CODE / MAX GR / POLE ID | LOCATION | POWER WORK | CATV WORK | TELCO WORK | OTHER WORK | OWNER | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | PWR | TEL | JP | CATV |
| 17 | 273798<br>45 | 39 DEG 7.469' N<br>119 DEG 47.570' W | PRI = 29' 0".<br>3/8" DG TO 5/8" ANC 19' S. 3/8" DG TO 5/8" ANC 19' S.<br>***POWER FAILS WIND LOAD.*** | **ATTACH CATV @ HOA 23' 0".**<br>**PL 1/4" DG TO NEW 5/8" ANC 15' S. P=16. PL GUY GUARD.** | | | X | | | |
| 18 | 36945<br>40 | 39 DEG 7.472' N<br>119 DEG 47.677' W | PRI = 26' 0". | **ATTACH CATV @ HOA 21' 0".**<br>***CATV FAILS WIND LOAD.*** | | | X | | | |
| 19 | 36946<br>40 | 39 DEG 7.475' N<br>119 DEG 47.766' W | PRI = 24' 0". | **ATTACH CATV @ HOA 20' 6".** | | | X | | | |
| 20 | 36947<br>40 | 39 DEG 7.477' N<br>119 DEG 47.807' W | PRI = 23' 0". | **ATTACH CATV @ HOA 19' 6".** | | | X | | | |
| 21 | 36948<br>40 | 39 DEG 7.479' N<br>119 DEG 47.891' W | PRI = 25' 6"<br>EXISTING POLE TOP EXTENSION. TOP OF POLE = 31' 0". | **ATTACH CATV @ HOA 21' 0".** | | | X | | | |
| 22 | 273797<br>50 | 39 DEG 7.481' N<br>119 DEG 47.977' W | PRI = 31' 6". | **ATTACH CATV @ HOA 26' 0".**<br>***CATV FAILS WIND LOAD.*** | | | X | | | |
| 23 | 273796<br>50 | 39 DEG 7.484' N<br>119 DEG 48.078' W | PRI = 32' 0".<br>***POWER FAILS WIND LOAD.*** | **ATTACH CATV @ HOA 26' 0".**<br>**PL VGR.** | | | X | | | |
| 24 | 273795<br>50 | 39 DEG 7.487' N<br>119 DEG 48.168' W | PRI = 32' 0". | **ATTACH CATV @ HOA 26' 0".** | | | X | | | |
| 25 | 273794<br>55 | 39 DEG 7.490' N<br>119 DEG 48.226' W | PRI = 29' 9".<br>3/8" DG TO 1" ANC 30' SE | **ATTACH CATV @ HOA 26' 3".** | | | X | | | |
| 26 | 36953<br>40 | 39 DEG 7.492' N<br>119 DEG 48.309' W | PRI = 25' 4". | **ATTACH CATV @ HOA 21' 0".** | | | X | | | |

[redacted]

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix H – Distribution Sample Report Con't.



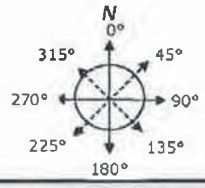
# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix I – Transmission Sample Templates

### Pole Inspection Sheet

*Page* 1 *of* 1

| | |
|---|---|
| Pole # *In Field* | *X12345* |
| *Class* | N/A |
| *Length* | |
| *Wood* | |
| *Gl Circum* | 11'11" |
| *Type* | Steel Transmission |




| | |
|---|---|
| Pole # *In License* | *X12345* |
| *Date* | 6/7/2012 |
| *Job Name* | CATV Attachment |
| *Location* | ABC Street and XYZ Way |

| Guy # | Entity | Attachments | | | | | Span Length | | Direction | | Bundle diameter |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | # of wires | Size | Height | | Ahead | Back | Ahead | Back | |
| | | | | | ft | in | ft | ft | deg | deg | in |
| | | | | Top of Pole | 128 | 5 | | | | | |
| | NVE | Static | 2 | West arm- 5/16" ehs, East arm- 5/16" ehs | 128 | 5 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 118 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 118 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 105 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 105 | 1 | 474' | 499' | 272° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 92 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 92 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 76 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 70 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 64 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Pri- X arm | 3 | 954 acsr | 54 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | 3Ø Cutout Brkt | | 1/0 ug, jckt | 51 | 4 | | | 180° | | |
| | NVE | Riser | | 3" u-guard | 46 | 5 | | | 225° | | |
| | NVE | Pri- neut | 1 | West side, shoe- 2/0 acsr, 48 ct | 44 | 2 | 474' | 499' | 270° | 90° | |
| | NVE | Sec | 1 | East side, DE- 2/0 triplex | 41 | 5 | | 499' | | 90° | |
| | NVE | Riser | | 2" u-guard | 38 | 3 | | | | 45° | |
| | | | | | | | | | | | |
| | ZFS | ADSS Block | | ADSS 144ct | 38 | 4 | 474' | 499' | 270° | 90° | 0.76" |
| | | | | | | | | | | | |
| | COX | Tangent | | 1/4"ehs, 72 ct, 750cx | 37 | 0 | 474' | 499' | 270° | 90° | 1.25" |
| | COX | Proposed | | ADD 144ct, REMOVE 72ct | 37 | 0 | 474' | 499' | 270° | 90° | 1.55" |

| Entity | Equipment | | | | | | | Make-Ready Notes (Communications Space) |
|---|---|---|---|---|---|---|---|---|
| | Type | Description | Dimensions | | Height | | Location | |
| | | | in | in | ft | in | deg | Adjust existing communications vangs for 40" clearance. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| Guy # | Entity | Guy Size | Anchor | | | | | | | Make-Ready Notes (Power Space) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # | Size & Description | Location | Height | | Lead | | |
| | | | | | deg | ft | in | ft | in | Weld new NVE spec vang, add rod & shoe. |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Additional Comments:**

See attached for picture of pole.

# Exhibit F – NVE LICENSE APPLICATION REQUIREMENTS CON'T.

## Appendix I – Transmission Sample Templates Con't.

# EXHIBIT 8

NVEnergy

July 9, 2014

Central Telephone Company
330 S. Valley View
Las Vegas, NV 89152

Re: Updated Exhibits D, E, and Revised Joint Use Application Requirements associated with Pole Attachment Agreement between NV Energy and Central Telephone Company, Agreement #97-00010

Dear Mr. Lightenburger

This is to inform you that NV Energy has revised its annual rates as identified in Exhibit D, and Contacts, as identified in Exhibit E (attached). NV Energy has also revised its pole attachment application process (attached) hereto and incorporated into the operative pole attachment agreement between NV Energy and Central Telephone Company. NV Energy is continuing with its client driven process, requiring you, the Applicant, to perform the structural engineering aspect of distribution pole attachment licensing. However, the requirement of obtaining a Professional Engineering stamp has been removed. This change in process does not eliminate your responsibility to ensure the structural integrity and NESC compliance of your company's proposed attachment(s) to NV Energy infrastructure.

Pursuant to NV Energy's pole attachment application requirements, NV Energy requires all entities seeking to attach to its distribution poles to affirm that they have performed a complete structural analysis on each particular pole in compliance with all of the standards set forth in NV Energy's Joint Use Attachment License Application Requirements. This analysis is vital to maintaining a safe and reliable infrastructure.

By submitting the license application, you represent and warrant that you have met the contractual obligations of your Pole Attachment Agreement and are thereby affirming you performed a complete structural analysis of the effects of the proposed attachment(s) to NV Energy poles and have reached the conclusion that said poles will adequately and safely support such proposed attachment(s) pursuant to applicable engineering standards.

The engineering review of transmission structure attachment applications will remain with the NV Energy Transmission Engineering Department.

Sincerely,

Patricia Ortwein, Manager Rule 9 Contract and Joint Use Administration

Attachments:
Exhibit D - Licensing Fees and Charges
Revised Joint Use Application Requirements
Exhibit E – Contacts

# Exhibit D – LICENSING FEES AND CHARGES

## For FCC Mandated 3rd Party Telecommunications APPLICANTs

### Annual Cost Sharing (Rental) Fees (FCC Rule):

| For One (1) Foot of Pole Attachment | SPPC (NVE-North) Values | |
|---|---|---|
| Carrier Service | Distribution Poles | Transmission Poles |
| Cable TV - Information | $4.88 | $13.75 |
| Telecommunications | $4.86 | $13.72 |

| For One (1) Foot of Pole Attachment | SPPC (NVE-South) Values | |
|---|---|---|
| Carrier Service | Distribution Poles | Transmission Poles |
| Cable TV - Information | $7.11 | $144.96 |
| Telecommunications | $7.10 | $144.66 |

### Licensing Fees (Fixed):

Attachment Application Processing Fee:

- For Poles: **$150.00** base fee for up to 10 poles requested in an Application, plus 37.50 for every additional 10 poles or portion thereof requested in that same Attachment Application.
- For Duct/Conduit: **$150** per Application
- This fee covers all NVE costs associated with License document preparation, issuance, database recordation of information, and IT or 3rd Party mediated joint use communication interface.
- NVE actual labor, transportation, or material costs are charged for this function.

### Licensing Fees (Cost Actuals):

All Field Inspection and Review Fees for both overhead and underground installations:

Actual Cost incurred by NVE for in-house or contracted field services in accordance with relevant provisions of the Agreement

Engineering Fee:

Actual Cost incurred by NVE for in-house or contracted engineering services in accordance with relevant provisions of the Agreement

Other reimbursable costs:

Actual Cost incurred by NVE for in-house or contracted clerical, mapping, IT, and other services in accordance with relevant provisions of the Agreement

APPLICANT shall advance funds sufficient to reimburse estimated cost of Processing, Field Inspection, Engineering, and Other functions. Upon completion, NVE will true-up each project and render refund payment or invoice for balances due, as applicable.

## EXHIBIT E - CONTACTS

The Parties' contacts are as designated below:

| | LICENSOR | LICENSEE |
|---|---|---|
| Address | Nevada Power Company<br>Attn: Elmer L. Herndon<br>M/S B54RN<br>7155 Lindell Rd.<br>Las Vegas, NV. 89118 | Central Telephone Company<br>330 S. Valley View Blvd.<br>Las Vegas, NV. 89152 |
| Mailing Address | Same | Same |
| | | |
| License Administrator | Joint Use Analysis | not applicable |
| Telephone | (702) 402-6127 | |
| Email | EHerndon@nvenergy.com | |
| | | |
| Contract Representative | Patricia Ortwein, Mgr.<br>Rule 9, Contract and Joint Use Administration | Greg Lightenburger |
| Telephone | (702) 402-6766 | (702) 244-8157<br>(702) 596-8136 (cellular) |
| Email | POrtwein@nvenergy.com | (702) 892-1091 |

# NV ENERGY JOINT USE LICENSE APPLICATION REQUIREMENTS

## Distribution Applications

**To ensure the integrity of NV Energy's overhead plant, Applicant must assure itself that each Distribution pole in the application will have adequate strength to support the addition of Applicant's facilities. The information below shall serve as a guide to Applicant for completing its own structural analysis, but this information does not need to be submitted to NV Energy. The Applicant must still provide their proposed attachment details as requesting in the license application (cable specifications, height of attachment, make-ready solutions, etc.).**

- Gather all pole data related to performing a complete structural analysis for each pole. This includes field information for facilities in the power space and communications space, alike. See ***Appendix A*** for a detailed list of the pole data requirements.
- Determine conventional, industry recognized make-ready solutions for facilities in both the power space and communications space. Compliance with all applicable NESC standards and clearances must be maintained at all times. Applicant is encouraged to favor the common, power space make-ready solutions listed in ***Appendix B***, as doing so will facilitate acceptance by NV Energy and speed cost estimation. ***Appendix C*** lists anchor and down-guy sharing guidelines to assist in the make-ready determinations.
- Perform structural analysis calculations for each pole in the application following all applicable standards outlined in the latest NESC edition. Load analyses must reflect make-ready solutions, apply overload and strength reduction factors for Grade B construction, and include calculations and results specifying "pass" or "fail" for:
    - Overturning moment of the pole at ground line
    - Down-guy strengths [***Appendix D*** lists typical guy wire sizes and guy strengths used by NV Energy. ***Appendices E and F*** list typical working strengths for NV Energy conductors used in Northern and Southern Nevada, respectively.]
    - Buckling using the Euler Method (for anchored poles and as necessary for tangent poles)

  The analyses must also include verification of the following:
    - Summation of down-guy tensions does not exceed the ultimate holding strength of the anchor(s). ***Appendices G and H*** list typical holding strengths for NV Energy anchors used in Northern Nevada and Southern Nevada, respectively. Also, see ***Appendix C*** for anchor and down-guy sharing guidelines.

  See ***Appendix I*** for a sample distribution report showing pole data, make-ready notes, and structural analysis reports.

## Transmission Applications

**NV Energy will perform the structural analysis for each Transmission pole in the application. For these applications, it is the Applicant's responsibility to:**

- Gather all pole data related to performing a complete structural analysis for each pole. This includes field information for facilities in the power space and communications space, alike. See ***Appendix A (page 3)*** for a detailed list of the pole data requirements.
- Determine conventional, industry recognized make-ready solutions for facilities in both the power space and communications space. Compliance with all applicable NESC standards and clearances must be maintained at all times. Applicant is encouraged to favor the common, power space make-ready solutions listed in ***Appendix B (page 6)***, as doing so will facilitate acceptance by NV Energy and speed cost estimation. ***Appendix C*** lists anchor and down-guy sharing guidelines to assist in the make-ready determinations.
- Submit all pole data and make-ready solutions to be used by NV Energy in the analysis. This information is subject to verification by NV Energy (see ***Audit Process*** below for more details). ***Appendix J*** shows a sample template for submitting the pole data and make-ready notes.

**EXCEPTIONS: An application is not needed for RISER ONLY installations, but if there are any cable storage attachments associated with the riser then an application must be submitted describing the length, size, and location of the attachments.**

## Audit Process

The validity of the information submitted in the application is subject to verification by NV Energy. If the application is found to contain pervasive errors or omissions, then the application will be rejected and returned to the Application with a brief explanation as to the nature of the denial. The explanation will be sufficient to guide the Applicant in their corrections; however, detailed information will not be provided as the Applicant is responsible for the quality assurance of its submissions. Applicant is advised that rejected applications will constitute an increase in the auditing frequency, which may cause processing delays for future submissions.

# Appendix A

***Pole Data Requirements***

**Applicant must collect the following information for each pole in the application:**

- Pole Information
  - Route map
    - Show pole locations in relationship to streets, roads, and other geographical landmarks
    - Pole data list in application shall match and be in the same order as those appearing in the map
  - Pole number
  - Pole type (Transmission, Distribution, Wood, Steel)
    - For wood poles, wood species (e.g. Western Red Cedar, Douglas Fir, etc.)
    - For steel poles, data on name plate (welded ~ 5' above ground)
  - Pole length*
  - Height of top of pole* *(feet and inches)*
  - Pole class
  - Ground line circumference *(inches)*
  - Pictures of pole
    - Provide a minimum of one picture showing pole from ground line to top that can be utilized to scale attachment and equipment locations on pole
- Existing Attachment Information (for ALL attachments on pole, NVE and 3rd Party)
  - Cable Information
    - Size
      1. For 3rd Party Lines, specify the Owner and the Effective (cable + strand) Bundle Diameter (e.g. "TEL 1 inch overall diameter")
    - Span lengths, ahead and back *(feet)*
    - Attachment height* *(feet and inches)*
    - Direction of attachment**
  - Riser Information
    1. Riser thickness out from face of pole (e.g. "3 inch u-guard")
    2. Distance from grade to the top of riser* *(feet and inches)*
    3. Location on pole**
  - Equipment Information
    - NVE Equipment
      1. Type and Name (e.g. "75 KVA transformer number HHH1234")
      2. Distance from grade to the top of equipment* *(feet and inches)*
      3. Location on pole**
    - 3rd Party Equipment
      1. Owner and Type (e.g. "CATV Splice Can")
      2. Dimensions: length, width, and height *(inches)*
      3. Distance from grade to the top of equipment *(feet and inches)*
      4. Location on pole**

***All measurements above the communications space must be made by remote means, such as optical surveying or laser range finding. In no event shall mechanical devices, such as measuring sticks, be used to collect power space data. Applicant is expected to follow these guidelines. NV Energy will not be held responsible for the acts or omissions of Applicant in completing its survey. Applicant proceeds in its survey assuming all risks of injury, death, or other damages.**
****Use compass directions: North (N)= 0° or 360°, Northeast (NE)= 45°, East (E)= 90°, Southeast (SE)= 135°, South (S)= 180°, Southwest (SW)= 225°, West (W)= 270°, Northwest (NW)= 315°**

**Continued from previous page:**

- Existing Anchor/Guying Information (for all guys/anchors, NVE and 3rd Party)
    - D-guy diameter *(inches)*
    - Height of D-guy attachment* *(feet and inches)*
    - Lead from pole to anchor *(feet and inches)*
    - Direction of D-guy lead**
    - Anchor rod diameter *(inches)*
- Proposed Attachment and Additional Attachment (Overlash) Information
    - Cable Information
        - Effective (cable + strand) bundle diameter *(inches)*
        - Weight *(lb/ft)*
        - Total line tension under NESC loading conditions *(lbs)*
            1. For Southern Nevada (NESC Light Loading District) these are 30 deg Fahrenheit with no ice and a 9 # wind load
            2. For Northern Nevada (NESC Medium Loading District) these are 15 deg Fahrenheit with ¼" radial ice and a 4 # wind load
        - Attachment height *(feet and inches)*
        - Direction of attachment**
    - Equipment Information
        - Total "projected area" of the equipment *(square feet)*
        - Distance from grade to the top of equipment *(feet and inches)*
        - Location on pole**
    - Riser Information
        - Riser thickness out from face of pole (e.g. "3 inch u-guard")
        - Distance from grade to the top of riser *(feet and inches)*
        - Location on pole**
- Anchoring-Guying Information (for each proposed guy and anchor)
    - D-guy diameter *(inches)*
    - Height of D-guy attachment *(feet and inches)*
    - Lead from pole to anchor *(feet and inches)*
    - Direction of D-guy lead**
    - Anchor Assembly (e.g. "24 inch plate, 1 inch rod triple eye")

***All measurements above the communications space must be made by remote means, such as optical surveying or laser range finding. In no event shall mechanical devices, such as measuring sticks, be used to collect power space data. Applicant is expected to follow these guidelines. NV Energy will not be held responsible for the acts or omissions of Applicant in completing its survey. Applicant proceeds in its survey assuming all risks of injury, death, or other damages.**
****Use compass directions: North (N)= 0° or 360°, Northeast (NE)= 45°, East (E)= 90°, Southeast (SE)= 135°, South (S)= 180°, Southwest (SW)= 225°, West (W)= 270°, Northwest (NW)= 315°**

# Appendix B

***Common Make-Ready Solutions***

**Common NV Energy Make-Ready Solutions for Telecom Attachments:**

***General Pole Issues***

-Reframe 3 phase Delta Primary [tangent] to a horizontal configuration with Neutral and phases up on arm.

***Primary on Pole***

-Move [tangent] power Neutral higher up on pole without need of other power facilities reframing.

+ Move transformer higher up on pole.
+ Move fused cut-out assembly higher up on pole.

***Secondary on Pole***

-Move up Secondary power [triplex] dead-end.

-Fold up and tape in-place Secondary drip loops [to increase separation above communications attachment].

***Primary in Span***

-Re-sag Primary and Neutral to achieve increased separation from communications cables below. (30" radial separation needed)

***Secondary in Span***

-Retire open Secondary and replace with triplex, including replacement of 3-spool rack with single dead-end spool, shackle & eyebolt.

-Retire/remove abandoned span of secondary.

-Re-sag Secondary to achieve increased separation from communications cables below. (30" radial separation needed)

***Risers***

-Extend/add U-guard over Secondary riser cable.

+ If possible, splice and extend Secondary riser cable to allow such upward extension of U-guard cover below transformer, drip loops, etc.
+ Otherwise, change-out secondary riser cable to allow such upward extension of U-guard cover below new splice connectors, transformer, etc.

***Grounding***

-Replace/reattach lower [6'-10'] segment of pole ground wire [stolen] and cover with ¾" WOOD U-guard, heavily stapled to pole.

***Anchoring & Down Guys***

-Install NVE spec plate anchor w 3-knuckle eye [in open ground].

+ Pull up sidewalk slab and then repour.
+ Relocate down-guy(s) to new anchor.

-Re-tension down guy(s).

***Note:***

- ***Highlighted items usually occur together***
- ***Cost estimates are available for these items; however, Applicant Purchase Orders must commit to payment of ACTUAL NV Energy cost incurred, not the estimated values.***
- ***Applicant is in no way restricted to these make-ready options. Other make-ready solutions may be appropriate but will require a specific design and cost estimate.***

# Appendix C

***Anchor & Down-Guy Sharing Guidelines***

**Anchor Guidelines:**

To minimize repeated disruption of NV Energy and public infrastructure, NV Energy reserves the right to require installation of anchors with holding strength in excess of that needed for Applicant's attachments alone. All new anchor installations shall be of current NV Energy standard specification [3-knuckle eye, 1"x10' rod, 24" plate] absent specific NV Energy authorization to the contrary. NV Energy authorization for lesser capacity anchors shall not be unreasonably withheld for those locations where it is unlikely that other users will request attachment space in the future, and where there is no significant risk of undermining adjacent anchor installations or necessity of demolishing and reconstructing paved surfaces.

**Down-Guy Sharing Guidelines:**

Telecommunications down-guy load sharing through strand upgrade and rearrangement of existing down-guy attachments on the pole will be approved subject to case specific, documented, engineering design, and concurrence among the affected telecommunications users. Installation of more than 4 telecommunications down-guys or more than two anchors in any lead is to be avoided, as is the use of bolt-on auxiliary anchor eyes. However, NV Energy approval of such will not be unreasonably withheld.

# Appendix D

***Typical Guy Wire Sizes and Guy Strengths used by NV Energy***

| NORTHERN NEVADA | |
|---|---|
| **Guy Wire Size*** | **Strength** (lb)** |
| 3/8" EHS Zinc Coated | 13,860 |
| 3/8" EHS | 13,860 |
| 1/2" EHS | 24,210 |
| *Older installations may have used ¼" EHS and 5/16" EHS (90% of Rated Breaking Strength=5,985 lb, and 10,080 lb), but these are no longer used and should not be proposed as part of make-ready solutions. | |
| **90% of Rated Breaking Strength | |

| SOUTHERN NEVADA | |
|---|---|
| **Guy Wire Size** | **Strength* (lb)** |
| 1/4"EHS | 5,985 |
| 5/16" EHS | 10,080 |
| 7/16" EHS | 18,720 |
| 9/16" EHS | 31,500 |
| *90% of Rated Breaking Strength | |

***Note**: These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate guy strengths for their analyses.*

# Appendix E

***Typical Working Strengths for NV Energy Conductors (Northern Nevada)***

| Conductor Strengths | | | |
|---|---|---|---|
| Conductor AWG or KCMIL | Code Name | Breaking Strength (lbs.) | Working Strength (lbs) |
| ***Primary Conductors*** | | | |
| #2 ACSR | Sparrow | 2,850 | 1,425 |
| 1/0 ACSR | Raven | 4,380 | 2,190 |
| 2/0 AA | Aster | 2,510 | 1,255 |
| 2/0 ACSR | Quail | 5,310 | 2,655 |
| 4/0 AA | Oxlip | 3,830 | 1,915 |
| 4/0 ACSR | Penguin | 8,350 | 4,175 |
| 397.5 AA | Canna | 7,110 | 3,555 |
| 397.5 ACSR | Ibis | 16,300 | 8,150 |
| 477 ACSR | Hawk | 19,430 | 9,715 |
| 636 AA | Orchid | 11,400 | 5,700 |
| 636 ACSR | Grosbeak | 25,200 | 12,600 |
| 795 AA | Arbutus | 13,900 | 6,950 |
| ***Secondary Conductors*** | | | |
| #2 TRIPLEX | Cockle | 1,860 | 930 |
| #2 QUADRUPLEX | Palomino | 2,850 | 1,425 |
| 2/0 TRIPLEX | Clio | 3,550 | 1,775 |
| 2/0 TRIPLEX | Runcina | 5,310 | 2,655 |
| 2/0 QUADRUPLEX | Grullo | 5,310 | 2,655 |
| 4/0 TRIPLEX | Zuzara | 8,350 | 4,175 |
| 4/0 QUADRUPLEX | Appaloosa | 8,350 | 4,175 |

***Note**: These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate working strengths for their analyses.*

# Appendix F

***Typical Working Strengths for NV Energy Conductors (Southern Nevada)***

**SHORT SPAN**
*225' ruling Span – 300' max*

**LONG SPAN**
*(a) 350' Ruling Span – 550' max*
*(b) 500' ruling Span – 625' max*
*(c) 800' ruling span – 1000' max*

**Total Line Tension Under Maximum Loading Conditions**

| Type and Size of Conductors | | | NESC Light Loading District | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Short Span | | | | Long Span (a) | | |
| | | | Number of Conductors | | | | | | |
| | | | 1 | 2 | 3 | 4 | 1 | 2 | 3 |
| Bare Primary Conductors | ACSR | 4 | 282 | 564 | 846 | | 603 | 1,206 | 1,809 |
| | | 2 | 397 | 794 | 1,191 | | 822 | 1,644 | 2,466 |
| | | 2/0 | 1,355 (a) | 2,710 | 4,065 | | 1,355 | 2,710 | 4,065 |
| | | 4/0 | 1,000 | 2,000 | 3,000 | | 2,500 | 5,000 | 7,500 |
| | | 336.4 | 1,470 | 2,940 | 4,410 | | 3,850 | 7,700 | 11,550 |
| | | 477 | 1,965 | 3,930 | 5,895 | | 5,250 | 10,500 | 15,750 |
| | | 636 | | | | | 6,963 (b) | 13,926 | 20,888 (b) |
| | | 9000 | | | | | 9,000 (c) | 18,000 (c) | 27,000 (c) |
| | AA | 2 | 460 | 920 | 1,380 | | | | |
| | | 2/0 | 565 | 1,130 | 1,695 | | | | |
| | | 4/0 | 811 | 1,622 | 2,433 | | 1,060 | 2,120 | 3,180 |
| | | 336.4 | 1,165 | 2,330 | 3,495 | | 1,450 | 2,900 | 4,350 |
| | | 477 | 1,540 | 3,080 | 4,620 | | 1,865 | 3,730 | 5,595 |
| | | *556.5 | *3,390 | 6,780 | 10,170 | | | | |
| | | 636 | 2,204 | 4,408 | 6,612 | | 2,310 | 4,620 | 6,930 |
| | | *715.5 | *2,401 | 4,802 | 7,203 | | *3,110 | 6,220 | 9,330 |
| | | 954 | 3,068 | 6,136 | 9,204 | | 6,509 (b) | 13,118 (b) | 19,527 (b) |
| | CU | 6 | 275 | 550 | 825 | | 520 | 1,040 | 1,560 |
| | | 4 | 420 | 840 | 1,260 | | 880 | 1,760 | 2,640 |
| | | 2 | 625 | 1,250 | 1,875 | | 1,130 | 2,260 | 3,390 |
| | | 2/0 | 1,180 | 2,360 | 3,540 | | 2,030 | 4,060 | 6,090 |
| | | 4/0 | 1,825 | 3,650 | 5,475 | | 3,000 | 6,000 | 9,000 |
| Secondary Conductors | Multiplex | 4 | | | 585 | 826 | | | |
| | | 2 | | | 774 | 1,098 | | | |
| | | 2/0 | | | 1,507 | 1,872 | | | |
| | | 4/0 | | | 1,803 | 2,645 | | | |

* Formerly C.P. National: Henderson & Laughlin Service Areas

***Note:** These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate working strengths for their analyses.*

# Appendix G

***Typical Holding Strengths for NV Energy Anchors (Northern Nevada)***

| TABLE 1<br>ANCHOR ROD STRENGTHS | | |
|---|---|---|
| Rod Size | Breaking Strength | Working Strength |
| 1" x 7' | 36,000 | 18,000 |
| 1" x 8' | 36,000 | 18,000 |

| TABLE 2<br>ANCHOR HOLDING POWER | | | | | |
|---|---|---|---|---|---|
| Anchor @ 7'-0" Depth | Soil Type Classification* | | | | |
| | 1 thru 3 | 4 | 5 | 6 | 7 |
| Expanding 12" – 8 Way w/ 1 ¼" Rod | 20,000 | 17,000 | 13,250 | 10,750 | 8,000 |
| Crossplate 20" w/ 1" Rod | 17,000 | 14,500 | 12,000 | 9,500 | 7,000 |
| Crossplate 24" w/ 1" Rod | 22,500 | 18,500 | 15,000 | 11,750 | 9,000 |
| Rock ¾" x 30" No Rod Required | 11,500 | N/A | N/A | N/A | N/A |
| Rock 1" x 53" No Rod Required | 18,000 | N/A | N/A | N/A | N/A |
| * For Soil Classification Descriptions, Refer To Table 4 | | | | | |

***Note:***

- ***These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate holding strengths for their anchor analyses.***
- ***New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.***

| TABLE 3-A<br>MID-STRENGTH SCREW ANCHORS | | | | |
|---|---|---|---|---|
| Installing Torque | Shear Pins Required | Twin 4" Helices | Twin 8" Helices | Twin 10" Helices |
| 1,500 | 3 | * | 18,000 | 18,000 |
| 2,000 | 4 | * | 20,000 | 20,000 |
| 3,000 | 6 | 26,000 | 26,000 | 26,000 |
| 4,000 | 8 | 33,000 | 33,000 | 33,000 |
| 5,000 | 10 | 36,000 | 36,000 | 36,000 |
| 6,000 | 12 | 36,000 | 36,000 | 36,000 |
| * Do Not Use This Anchor At This Torque | | | | |

***The above screw anchors are used with 7' x 1" galvanized steel rod with a triple strand-eye nut. 3-½' x 1" rod extensions with couplings are used to set anchors deeper.***

***Anchor holding power of 36,000 pounds is limited only by minimum yield strength of the 1" anchored rod.***

| TABLE 3-B<br>HIGH-STRENGTH SCREW ANCHORS | | | | | | |
|---|---|---|---|---|---|---|
| Installing Torque | Shear Pins Required | 6" Helix | 8" Helix | 10" Helix | 12" Helix | 14" Helix |
| 1,500 | 3 | * | 11,500 | 12,500 | 16,000 | 16,000 |
| 2,000 | 4 | * | 14,000 | 15,000 | 20,000 | 20,000 |
| 3,000 | 6 | 18,500 | 20,000 | 22,500 | 24,000 | 24,000 |
| 4,000 | 8 | 25,000 | 27,000 | 28,000 | 30,000 | 30,000 |
| 4,500 | 9 | 28,000 | 29,000 | 32,000 | 33,000 | 33,000 |
| 5,000 | 10 | 31,000 | 32,000 | 34,000 | 36,000 | 36,000 |
| 5,500 | 11 | 35,000 | 36,000 | 36,000 | * | * |
| 6,000 | 12 | 36,000 | * | * | * | * |
| * Do Not Use This Size Anchor At This Torque | | | | | | |

***Note:***

- ***These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate holding strengths for their anchor analyses.***
- ***New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.***

| TABLE 4<br>SOIL CLASSIFICATIONS | | |
|---|---|---|
| Class | Usual Consistency | Possible Soil Characteristics or Composition |
| 1 | Solid | Hard Rock |
| 2 | Solid or In Layers | Laminated Rock, Shale, Sandstone, Slate |
| 3 | Hard, Dry | Hard Pan, Broken Bedrock, Compact Clay-Gravel Mixture |
| 4 | Crumbly, Damp | Clay Pan, Compact Sand-Gravel Mixture |
| 5 | Firm, Moist | Firm Clay, Loose Sand-Gravel Mixture, Compact Coarse Sand |
| 6 | Plastic, Wet | Soft Plastic Clay, Clayey Silt, Loose Coarse Sand, Compact Fine Sand. Areas Seasonally Wet And Usually Fairly Flat |
| 7 | Loose Dry or Loose Wet | Wet Clay, Silt, Mud, Loose Fine Sand |
| 8 | Marshy | Marshes And Swamps. Install Anchor Deep Enough To Penetrate Class 5, 6, Or 7 Soils. |

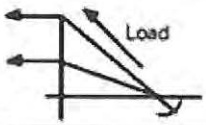
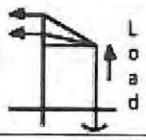
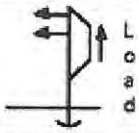
| TABLE 5<br>STRUT SELECTION CHART | | | |
|---|---|---|---|
| Total Pull ( Ps ) Exerted On Pole (lbs.) | Length of Strut | I.D. Size Of Strut | |
| | | 2" | 2½" |
| Under 6,000 | 6' - 12' | X | |
| 6,000 - 8,000 | 6' - 10' | X | |
| | 10' - 12' | | X |
| 8,000 - 10,000 | 6' - 8' | X | |
| | 8' - 12' | | X |
| 10,000 - 12,000 | 6' - 8' | X | |
| | 8' - 12' | | X |

***Note:***

- ***These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate holding strengths for their anchor analyses.***
- ***New installations utilize helix anchors, but older installations may have utilized cross plate, rock anchors, or other types.***

# Appendix H

***Typical Holding Strengths for NV Energy Anchors (Southern Nevada)***

| Ultimate Holding Strength of Anchors and Strut Guys in Pounds | | | | | | |
|---|---|---|---|---|---|---|
| Soil Classification |   | | |   |   | Owner |
| | Anchor Assembly | | | Sidewalk | Strut-Guy | |
| | 1<br>16" plate, 3/4" or 5/8" rod twin eye | 2*<br>20" plate, 3/4" CW rod twin eye | 3<br>24" plate, 1" rod triple eye | 24" plate, 1" rod triple eye | 24" plate, 1" rod | |
| 3 HARD PAN<br>Dry, requires use of a digging bar; dense clayey sands & gravel hard silts & clays | 12,000 | 15,900 | 27,000 | 27,000 | 4,440 | NVE |
| | 8,000 | 10,600 | 18,800 | 18,800 | 2,960 | Century Link |
| | 20,000<br>(16,000)** | 26,500 | 45,000<br>(36,000)** | 45,000<br>(36,000)** | ***7,400 | Not joint use |
| 5 AVG. FIRM<br>Predominant type in L.V.; md dense coarse sand, sandy gravels stiff silts & clays | 12,000 | 15,900 | 21,000 | 21,000 | 4,440 | NVE |
| | 8,000 | 10,600 | 14,000 | 14,000 | 2,960 | Century Link |
| | 20,000<br>(16,000)** | 26,500 | 35,000 | 35,000 | ***7,400 | Not joint use |
| 7 LOOSE DRY<br>Loose, fine sand & gravel; lack of clay or bonding material | 6,600 | 8,400 | 11,400 | 11,400 | 4,400 | NVE |
| | 4,400 | 5,600 | 7,600 | 7,600 | 2,960 | Century Link |
| | 11,000 | 14,000 | 19,000 | 19,000 | ***7,400 | Not joint use |

***Anchor size no longer used, but may be encountered in the field.**
****Limiting factor: Rated breaking strength of galvanized anchor eyes used with CU plated (CW) rods prior to 96.**
*****Limiting factor: Rated breaking strength of struts. Use of strut guys is generally not recommended as they only keep the pole (class 3 max.) straight and do not add to the strength of the pole.**

***Note:***

- ***Joint use anchor holding strength allocation: NVE – 60%, Century Link – 40%.***
- ***These values are only approximations and will vary based on field conditions. The Applicant's Engineer is responsible for determining the appropriate holding strengths for their anchor analyses.***

# Appendix I

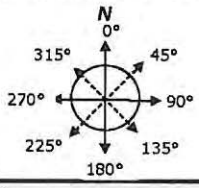
***Distribution Sample Report***

NVEnergy

# Pole Inspection Sheet



| | |
|---|---|
| Pole # *in Field* | *P12345* |
| *Class* | 4 |
| *Length* | 40 |
| *Wood* | Western Ponderosa Pine |
| *GL Circum* | 42" |
| *Type* | Distribution |




| | |
|---|---|
| Pole # *in License* | *P12345* |
| *Date* | 6/7/2012 |
| *Job Name* | CATV Attachment |
| *Location* | ABC Street and XYZ Way |

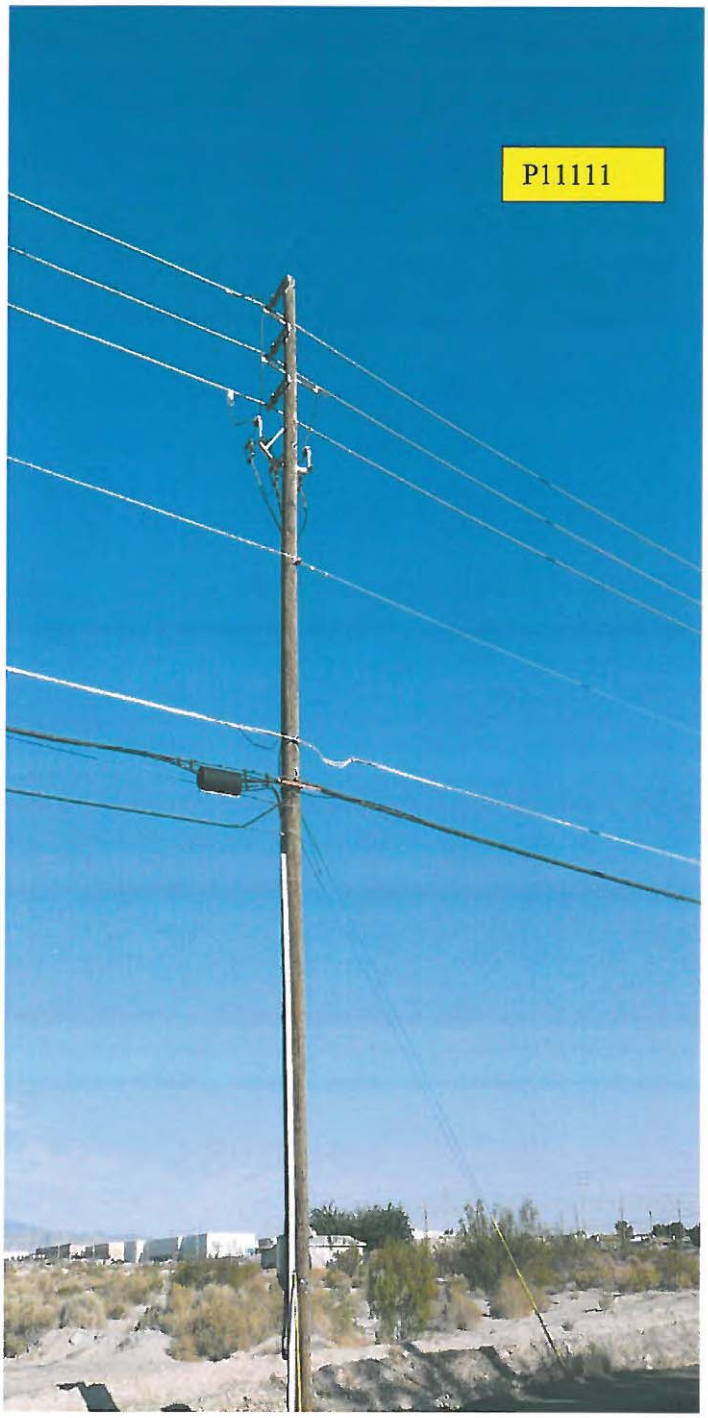
| Guy # | Entity | Attachments | | | | | Span Length | | Direction | | Bundle diameter |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | # of wires | Size | Height | | Ahead | Back | Ahead | Back | |
| | | | | | ft | in | ft | ft | deg | deg | in |
| | | | | Top of Pole | 32 | 11 | | | | | |
| | NVE | Pri- Tri | 3 | 954 aa | 32 | 4 | 158' | 182' | 270° | 90° | |
| 1 | NVE | Pri- 1 Ø | 1 | #4 acsr | 30 | 11 | 155' | | 0° | | |
| | NVE | 2Ø Cutout Brkt | | 1/0 ug | 27 | 8 | | | 270° | | |
| | NVE | Riser | | 4" u-guard | 25 | 6 | | | 45° | | |
| | NVE | Pri- neut | 1 | #4 acsr | 24 | 5 | 155' | | 0° | | |
| | NVE | Pri- neut | 1 | 2/0 acsr | 24 | 5 | 158' | 182' | 270° | 90° | |
| | NVE | Sec- svc | 1 | #4 triplex | 24 | 5 | 158' | | 270° | | |
| | NVE | Pal light | | | 23 | 7 | | | 0° | | |
| | | | | | | | | | | | |
| | COM | 3 bolt | | 5/16"ehs, 144ct | 19 | 0 | 158' | 182' | 270° | 90° | 1.06" |
| | | | | | | | | | | | |
| | CATV | 3 bolt | | 1/4 ehs, 2-750cx, 48ct | 18 | 0 | 158' | 182' | 270° | 90° | 1.50" |
| 2 | CATV | DE | | 1/4"ehs, 500cx | 18 | 0 | 155' | | 0° | | 0.75" |
| | CATV | Proposed | | ADD 48ct | 18 | 0 | 155' | | 0° | | 0.98" |
| | CATV | Riser | | 2" u-guard | 17 | 0 | | | | 135° | |
| | | | | | | | | | | | |
| | TEL | 3 bolt | | 5/16"ehs, 2.50"cu | 14 | 5 | 158' | 182' | 270° | 90° | 2.82" |

| Entity | Equipment | | | | | | | Make-Ready Notes (Communications Space) |
|---|---|---|---|---|---|---|---|---|
| | Type | Description | Dimensions | | Height | | Location | |
| | | | in | in | ft | in | deg | |
| CATV | LE | - | 12 | 8 | 18 | 0 | 270° | Extend CATV riser, trim trees off CATV midspan, reframe CATV. |

| Guy # | Entity | Guy Size | Anchor | | | | | | Make-Ready Notes (Power Space) |
|---|---|---|---|---|---|---|---|---|---|
| | | | # | Size & Description | Location | Height | | Lead | |
| | | | | | deg | ft | in | ft | in | |
| 1 | NVE | 5/16" | 1 | 3 eye, 1" rod | 180° | 30 | 11 | 20 | 0 | |
| 2 | CATV | 5/16" | 1 | 3 eye, 1" rod | 180° | 18 | 0 | 20 | 0 | |

**Additional Comments:**

See attached for picture of pole.


P11111

**JOB DETAIL (MAKE READY) WORK SHEET**

LICENSEE: [redacted]
APPLICATION: [redacted]
MAP NUMBER: **1 THRU 10**

PREPARED BY: [redacted]
CONTACT #: [redacted]
FIELDED BY: CRA
DATA ENTRY: CRA

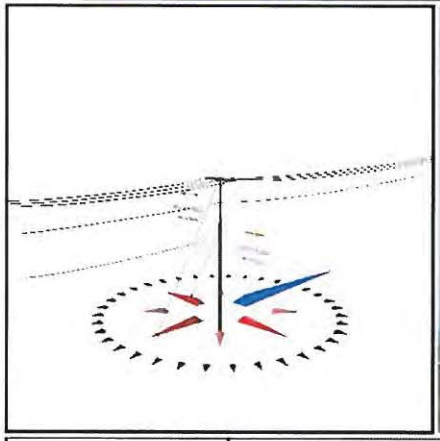
| POLE NUMBER | LEAD CODE / MAX GR / POLE ID | LOCATION | POWER WORK | CATV WORK | TELCO WORK | OTHER WORK | OWNER | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | NVE | TEL | JP | CATV |
| 17 | 273798<br>45 | 39 DEG 7.469' N<br>119 DEG 47.570' W | PRI = 29' 0".<br>3/8" DG TO 5/8" ANC 19' S. 3/8" DG TO 5/8" ANC 19' S.<br>*POWER FAILS WIND LOAD.* | ATTACH CATV @ HOA 23' 0".<br>PL 1/4" DG TO NEW 5/8" ANC 15' S. P=16. PL GUY GUARD. | | | X | | | |
| 18 | 36945<br>40 | 39 DEG 7.472' N<br>119 DEG 47.677' W | PRI = 26' 0". | ATTACH CATV @ HOA 21' 0".<br>*CATV FAILS WIND LOAD.* | | | X | | | |
| 19 | 36946<br>40 | 39 DEG 7.475' N<br>119 DEG 47.766' W | PRI = 24' 0". | ATTACH CATV @ HOA 20' 6". | | | X | | | |
| 20 | 36947<br>40 | 39 DEG 7.477' N<br>119 DEG 47.807' W | PRI = 23' 0". | ATTACH CATV @ HOA 19' 6". | | | X | | | |
| 21 | 36948<br>40 | 39 DEG 7.479' N<br>119 DEG 47.891' W | PRI = 25' 6".<br>EXISTING POLE TOP EXTENSION. TOP OF POLE = 31' 0". | ATTACH CATV @ HOA 21' 0". | | | X | | | |
| 22 | 273797<br>50 | 39 DEG 7.481' N<br>119 DEG 47.977' W | PRI = 31' 6". | ATTACH CATV @ HOA 26' 0".<br>*CATV FAILS WIND LOAD.* | | | X | | | |
| 23 | 273796<br>50 | 39 DEG 7.484' N<br>119 DEG 48.078' W | PRI = 32' 0".<br>*POWER FAILS WIND LOAD.* | ATTACH CATV @ HOA 26' 0".<br>PL VGR. | | | X | | | |
| 24 | 273795<br>50 | 39 DEG 7.487' N<br>119 DEG 48.168' W | PRI = 32' 0". | ATTACH CATV @ HOA 26' 0". | | | X | | | |
| 25 | 273794<br>55 | 39 DEG 7.490' N<br>119 DEG 48.226' W | PRI = 29' 9".<br>3/8" DG TO 1" ANC 30' SE. | ATTACH CATV @ HOA 26' 3". | | | X | | | |
| 26 | 36953<br>40 | 39 DEG 7.492' N<br>119 DEG 48.309' W | PRI = 25' 4". | ATTACH CATV @ HOA 21' 0". | | | X | | | |

[redacted]

# O-Calc® Pro *Analysis Report*

Monday, April 22, 2013 10:26:34 AM

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| File Name: | 198100.pplx | Pole Length / Class: | 45 / 3 | Code: | NESC | Structure Type: | Guyed |
| Pole Num: | 198100 | Pole Species: | DOUGLAS FIR | NESC Rule: | Rule 250B | Status: | N/A |
| Aux Data | Unset | Setting Depth (ft): | 6.00 | Construction Grade: | B | Pole Strength Factor: | 0.65 |
| Aux Data | Unset | G/L Circumference (in): | 41.00 | Loading District: | Medium | Transverse Wind LF: | 2.50 |
| Aux Data | Unset | G/L Fiber Stress (psi): | 8,000 | Ice Thickness (in): | 0.25 | Wire Tension LF: | 1.65 |
| Aux Data | Unset | Allowable Stress (psi): | 5,200 | Wind Speed (mph): | 39.53 | Vertical LF: | 1.50 |
| Aux Data | Unset | Fiber Stress Ht. Reduction: | No | Wind Pressure | 4.00 | | |



| Pole Capacity Utilization | | Height | Wind Angle |
|---|---|---|---|
| Maximum: | 23.7% | 23.0 ft | 263.4° |
| Groundline: | 13.1% | 0.0 ft | 87.2° |
| Vertical: | 7.3% | 30.7 ft | 50.0° |

| Pole Moments | | Load Angle | Wind Angle |
|---|---|---|---|
| Max Capac. Util: | 8,588 ft-lb | 309.8° | 263.4° |
| Groundline: | 11,157 ft-lb | 89.2° | 87.2° |

| Guy Summary | | Guy Tensions | | Maximum Guy Tensions | |
|---|---|---|---|---|---|
| | Attach Height (ft) | % Allowable Tension | Wind Angle | % Allowable Tension | Wind Angle |
| Guy 1 | 38.5 | 32.9% | 87.2° | 33.9% | 58.4° |
| Guy 2 | 23.0 | 56.5% | 87.2° | 56.6% | 86.5° |

| Anchor Summary | | | |
|---|---|---|---|
| | Lead Length (ft) | Lead Angle | Max. % Allow. Capacity |
| Anchor 1 | 23.0 | 180.0° | 23.5% |
| Anchor 2 | 16.0 | 280.0° | 15.3% |

Version: 4.8 / 4.08 * includes Load Factor(s) Page 1 of 4 [2] Worst Wind per Guy Wire [3] Wind at 87.2°

Pole ID: 198100.pplx (198100)

## O-Calc® Pro *Analysis Report*

Monday, April 22, 2013 10:26:34 AM

**GROUNDLINE LOAD SUMMARY:*Wind at 87.2°, Applied Moment 11,157 ft-lb at 89.2°, Allowable Moment 94,564 ft-lb**

| | Shear Load (lbs)* | Percent Applied Load | Bending Moment (ft-lb) | Percent of Applied Moment | Percent of Pole Capacity | Bending Stress (+/-psi) | Vertical Load (lbs) | Vertical Stress (psi) | Total Stress (psi) | Percent of Pole Capacity |
|---|---|---|---|---|---|---|---|---|---|---|
| Powers: | 397 | 112.9 | 14,688 | 131.6 | 15.5 | 808 | 265 | 2 | 810 | 15.6 |
| Comms: | 1,290 | 367.3 | 29,746 | 266.6 | 31.5 | 1,636 | 112 | 1 | 1,637 | 31.5 |
| Guys/Braces: | -1,696 | -482.7 | -40,252 | -360.8 | -42.6 | -2,213 | 6,465 | 48 | -2,165 | -41.6 |
| Pole: | 331 | 94.2 | 5,846 | 52.4 | 6.2 | 321 | 2,039 | 15 | 337 | 6.5 |
| Crossarms: | 6 | 1.8 | 237 | 2.1 | 0.3 | 13 | 342 | 3 | 16 | 0.3 |
| Insulators: | 23 | 6.6 | 891 | 8.0 | 0.9 | 49 | 108 | 1 | 50 | 1.0 |
| Pole Load: | 351 | 100.0 | 11,157 | 100.0 | 11.8 | 614 | 9,331 | 70 | 683 | 13.1 |
| Pole Reserve Capacity: | | | 83,407 | | 88.2 | 4,586 | | | 4,517 | 86.9 |

**LOAD SUMMARY BY OWNER**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NVE: | 742 | | 21,058 | | | 1,158 | 6,683 | 50 | 1,208 | 23.2 |
| [redacted] | -390 | | -9,902 | | | -544 | 2,648 | 20 | -525 | -10.1 |
| Totals | 351 | | 11,157 | | | 614 | 9,331 | 70 | 683 | 13.1 |

Version: 4.8 / 4.08 * includes Load Factor(s) Page 2 of 4 [2] Worst Wind per Guy Wire [3] Wind at 87.2°

## Detailed Load Components

| Power: | | Owner | Height (ft) | Horiz. Offset (in) | Cable Dia. (in) | Sag at Max Temp (ft) | Cable Weight (lbs/ft) | Lead/Span Length (ft) | Span Angle (deg) | Wire Length (ft) | Tension (lbs) | Tension Moment (ft-lb)* | Offset Moment (ft-lb)* | Wind Moment (ft-lb)* | Moment at GL (ft-lb)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 56.79 | 0.5220 | 3.74 | 0.198 | 163.0 | 0.0 | 163.2 | 788 | 680 | 16 | 2,663 | 3,359 |
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 17.57 | 0.5220 | 3.74 | 0.198 | 163.0 | 0.0 | 163.2 | 788 | 680 | 0 | 2,663 | 3,343 |
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 56.79 | 0.5220 | 3.74 | 0.198 | 163.0 | 0.0 | 163.2 | 788 | 680 | -16 | 2,663 | 3,327 |
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 56.79 | 0.5220 | 1.43 | 0.198 | 57.0 | 180.0 | 57.1 | 278 | -240 | 5 | 931 | 697 |
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 17.57 | 0.5220 | 1.43 | 0.198 | 57.0 | 180.0 | 57.1 | 278 | -240 | 0 | 931 | 692 |
| Primary | AAC 4/0 AWG 7 STRAND OXLIP | NVE | 38.42 | 56.79 | 0.5220 | 1.43 | 0.198 | 57.0 | 180.0 | 57.1 | 278 | -240 | -6 | 931 | 686 |
| Neutral | AAC 1/0 AWG 7 STRAND POPPY | NVE | 32.00 | 6.42 | 0.3680 | 3.82 | 0.099 | 163.0 | 0.0 | 163.2 | 477 | 343 | -19 | 1,884 | 2,208 |
| Neutral | AAC 1/0 AWG 7 STRAND POPPY | NVE | 32.00 | 6.42 | 0.3680 | 1.07 | 0.099 | 57.0 | 180.0 | 57.0 | 384 | -276 | -7 | 659 | 376 |
| | | | | | | | | | | | Totals: | 1,387 | -25 | 13,326 | 14,688 |

| Comm: | | Owner | Height (ft) | Horiz. Offset (in) | Cable Dia. (in) | Sag at Max Temp (ft) | Cable Weight (lbs/ft) | Lead/Span Length (ft) | Span Angle (deg) | Wire Length (ft) | Tension (lbs) | Tension Moment (ft-lb)* | Offset Moment (ft-lb)* | Wind Moment (ft-lb)* | Moment at GL (ft-lb)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fiber | BELOPTIX DT096 - 72 FIBERS - DIELECTRIC (0.516) | [redacted] | 23.00 | 7.34 | 1.0400 | 5.92 | 0.196 | 194.0 | 100.0 | 194.5 | 774 | 28,921 | 53 | 119 | 29,093 |
| Fiber | BELOPTIX DT096 - 72 FIBERS - DIELECTRIC (0.516) | [redacted] | 23.00 | 7.34 | 1.0400 | 1.37 | 0.196 | 57.0 | 180.0 | 57.1 | 392 | -203 | 16 | 840 | 653 |
| | | | | | | | | | | | Totals: | 28,719 | 69 | 959 | 29,746 |

| Crossarm: | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Height (in) | Unit Depth (in) | Unit Diameter (in) | Unit Length (in) | Tension Moment (ft-lb)* | Offset Moment (ft-lb)* | Wind Moment (ft-lb)* | Moment at GL (ft-lb)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Normal | CROSSARM 4-3/4 X 5-3/4 X 10 HD | NVE | 38.50 | 6.07 | 0.0 | 0.0 | 114.00 | 5.75 | 4.75 | - | 120.00 | - | 0 | 237 | 237 |
| | | | | | | | | | | | Totals: | 0 | 0 | 237 | 237 |

| Insulator: | | Owner | Height (ft) | Horiz. Offset (in) | Offset Angle (deg) | Rotate Angle (deg) | Unit Weight (lbs) | Unit Height (in) | Unit Depth (in) | Unit Diameter (in) | Unit Length (in) | Tension Moment (ft-lb)* | Offset Moment (ft-lb)* | Wind Moment (ft-lb)* | Moment at GL (ft-lb)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | 54.00 | 83.6 | 0.0 | 11.00 | 11.50 | - | 4.75 | - | - | 75 | 146 | 221 |
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | 0.00 | 0.0 | 0.0 | 11.00 | 11.50 | - | 4.75 | - | - | 0 | 146 | 146 |
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | -54.00 | 276.4 | 0.0 | 11.00 | 11.50 | - | 4.75 | - | - | -74 | 146 | 72 |
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | 54.00 | 96.4 | 180.0 | 11.00 | 11.50 | - | 4.75 | - | - | 74 | 146 | 220 |
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | 0.00 | 180.0 | 180.0 | 11.00 | 11.50 | - | 4.75 | - | - | 0 | 146 | 146 |
| Suspension | Suspension Insulator - 15 kV | NVE | 38.50 | -54.00 | 263.6 | 180.0 | 11.00 | 11.50 | - | 4.75 | - | - | -75 | 146 | 71 |
| Spool | Spool Insulator - 20 kV | NVE | 32.00 | 4.17 | 270.0 | 0.0 | 1.00 | 2.12 | - | 2.50 | - | - | -1 | 12 | 11 |
| Bolt | Single Bolt | [redacted] | 23.00 | 4.84 | 90.0 | 0.0 | 5.00 | 0.00 | - | 3.00 | - | - | 5 | 0 | 5 |
| | | | | | | | | | | | Totals: | 0 | 4 | 887 | 891 |

Pole ID: 198100.pplx (198100)

# O-Calc® Pro *Analysis Report*

Monday, April 22, 2013 10:26:34 AM

| Guy Wire and Brace: | | Owner | Attach Height (ft) | End Height (ft) | Lead/Span Length (ft) | Wire Dia. (in) | Percent Solid (%) | Lead Angle (deg) | Incline Angle (deg) | Wire Weight (lbs/ft) | Rest Length (ft) | Stretch Length (in) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guy 1: EHS 3/8 | Down | NVE | 38.50 | 0.00 | 23.00 | 0.375 | 75.0 | 180.0 | 59.1 | 0.273 | 43.35 | 1.24 |
| Guy 2: 6M | Down | [redacted] | 23.00 | 0.00 | 16.00 | 0.242 | 75.0 | 280.0 | 55.2 | 0.104 | 26.52 | 1.22 |

| Guy Wire and Brace (Loads and Reactions) | | Elastic Modulus (psi) | Rated Tensile Strength (lbs) | Guy Strength Factor | Allowable Tension (lbs) | Initial Tension (lbs) | Required Tension[2] (lbs) | Required Tension[3] (lbs) | Applied Tension[3] (lbs) | Vertical Load[3] (lbs) | Shear Load in Guy Dir[3] (lbs) | Shear Load at Report Angle[3] (lbs) | Moment at GL[3] (ft-lb)* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Guy 1: EHS 3/8 | Down | 23,000,000 | 15,400 | 0.90 | 13,860 | 700 | 4,703 | 4,554 | 4,554 | 3,909 | 2,335 | -32 | -600 |
| Guy 2: 6M | Down | 23,000,000 | 6,000 | 0.90 | 5,400 | 700 | 3,057 | 3,049 | 3,049 | 2,503 | 1,741 | -1,710 | -39,652 |
| | | | | | | | | | Totals: | 6,412 | 4,076 | -1,742 | -40,252 |

| Anchor/Rod Load Summary: | Owner | Rod Length AGL (in) | Lead Length (ft) | Lead Angle (deg) | Strength of Assembly (lbs) | Anchor/Rod Strength Factor | Allowable Load (lbs) | Max Load[2] (lbs) | Load at Pole MCU[3] (lbs) | Max Required Capacity[2] (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Single Helix Anchor | NVE | 18.00 | 23.00 | 180.0 | 20,000 | 1.00 | 20,000 | 4,703 | 4,554 | 23.5 |
| Single Helix Anchor | [redacted] | 18.00 | 16.00 | 280.0 | 20,000 | 1.00 | 20,000 | 3,057 | 3,049 | 15.3 |

## Pole Buckling

| Buckling Constant | Buckling Column Hgt (ft) | Buckling Section Height (% Buckling Col. Hgt.) | Buckling Section Diam. (in) | Min. Buckling Diam. at GL (in) | Diameter at Tip (in) | Diameter at GL (in) | Modulus of Elasticity (psi) | Pole Density (pcf) | Ice Density (pcf) | Pole Tip Height (ft) | Buckling Load Capacity at Hgt. (lbs) | Buckling Load Applied at Hgt. (lbs) | Buckling Load Factor of Safety |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.71 | 30.67 | 35.18 | 11.47 | 17.00 | 7.32 | 13.06 | 1,600,000 | 60.00 | 57.00 | 39.00 | 128,538 | 9,331 | 13.78 |

Version: 4.8 / 4.08 * Includes Load Factor(s) Page 4 of 4 [2] Worst Wind per Guy Wire [3] Wind at 87.2°

# Appendix J

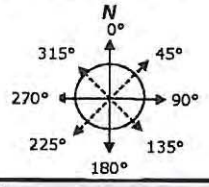
***Transmission Sample Templates***

NVEnergy

# Pole Inspection Sheet



| | |
|---|---|
| Pole # *In Field* | *X12345* |
| *Class* | N/A |
| *Length* | |
| *Wood* | |
| *GL Circum* | 11'11" |
| *Type* | Steel Transmission |




| | |
|---|---|
| Pole # *In License* | *X12345* |
| *Date* | 6/7/2012 |
| *Job Name* | CATV Attachment |
| *Location* | ABC Street and XYZ Way |

| Guy # | Entity | Attachments | | | | | Span Length | | Direction | | Bundle diameter |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Type | # of wires | Size | Height | | Ahead | Back | Ahead | Back | |
| | | | | | ft | in | ft | ft | deg | deg | in |
| | | | | Top of Pole | 128 | 5 | | | | | |
| | NVE | Static | 2 | West arm- 5/16" ehs, East arm- 5/16" ehs | 128 | 5 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 118 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 118 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 105 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 105 | 1 | 474' | 499' | 272° | 90° | |
| | NVE | Trans- 230 KV | 2 | West strut post- 954 acsr | 92 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 230 KV | 1 | East strut post- 954 acsr | 92 | 1 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 76 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 70 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Trans- 138 KV | 1 | West post ins- 954 acsr | 64 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | Pri- X arm | 3 | 954 acsr | 54 | 6 | 474' | 499' | 270° | 90° | |
| | NVE | 3Ø Cutout Brkt | | 1/0 ug, jckt | 51 | 4 | | | 180° | | |
| | NVE | Riser | | 3" u-guard | 46 | 5 | | | 225° | | |
| | NVE | Pri- neut | 1 | West side, shoe- 2/0 acsr, 48 ct | 44 | 2 | 474' | 499' | 270° | 90° | |
| | NVE | Sec | 1 | East side, DE- 2/0 triplex | 41 | 5 | | 499' | | 90° | |
| | NVE | Riser | | 2" u-guard | 38 | 3 | | | | 45° | |
| | | | | | | | | | | | |
| | ZFS | ADSS Block | | ADSS 144ct | 38 | 4 | 474' | 499' | 270° | 90° | 0.76" |
| | | | | | | | | | | | |
| | COX | Tangent | | 1/4"ehs, 72 ct, 750cx | 37 | 0 | 474' | 499' | 270° | 90° | 1.25" |
| | COX | Proposed | | ADD 144ct, REMOVE 72ct | 37 | 0 | 474' | 499' | 270° | 90° | 1.55" |

| Entity | Equipment | | | | | | | Make-Ready Notes (Communications Space) |
|---|---|---|---|---|---|---|---|---|
| | Type | Description | Dimensions | | Height | | Location | |
| | | | in | in | ft | in | deg | Adjust existing communications vangs for 40" clearance. |

| Guy # | Entity | Guy Size | Anchor | | | | | | | Make-Ready Notes (Power Space) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | # | Size & Description | Location | Height | | Lead | | |
| | | | | | deg | ft | in | ft | in | Weld new NVE spec vang, add rod & shoe. |

Additional Comments:

See attached for picture of pole.

X12345

# Revisions Index

**Revision #1 (2-4-2013)**

- Moved statement "Compliance with all applicable NESC standards and clearances must be maintained at all times" from Structural Analysis Requirements section to section discussing determination of make-ready solutions

**Revision #2 (5-21-2013)**

- Added "Exceptions" note for riser only installations
- Updated Distribution Sample Report Appendix to show O-Calc reports

**Revision #3 (12-24-2013)**

- Added Appendix D "Typical Guy Wire Sizes and Guy Strengths used by NV Energy"
- Adjusted Appendix letters and page reference numbers to accommodate new Appendix D

**Revision #4 (6-25-2014)**

- Removed Applicant requirement of submitting pole data, make-ready notes, and Professional Engineer stamped structural analysis reports for Distribution applications
- Modified verbiage in remainder of document accordingly