Exhibit RH-3(3)
Documents Produced with
Data Request Responses

Contains 3 documents (LIUNA 1.6a, 1.6b, and 1.25)

Attachment LIUNA 1.6a

NorthWestern Transmission Line Construction Standards

Attachment B to Appendix 1:
NorthWestern Energy Transmission Line Construction Standards

GENERAL

Construction of the line will be performed in accordance with the best modern practice for construction of electric transmission lines, which considers the persons or agencies having ownership or legal rights associated with the real property underlying the right-of-way for the line (the "*Landowners*"), the environmental impacts, economies and engineering considerations.

Contractor shall perform the Work in accordance with the following standards as well as any local, State, or Federal requirements:

1.0 Construction Facilities

Preservation of the landscape shall be a primary consideration in the location of temporary construction facilities, storage areas, and buildings required in performance of the Work.

1.1 The proposal location of access roads and staging areas shall be located in cooperation with and consultation with the individual Landowners so as to mitigate the effects of said transmission facility on the individual Landowners.

1.2 Such sites shall be kept as small as possible and shall be located in areas of minimum vegetation and slope. Full restoration and reshaping of these areas shall be made upon completion of their use in accordance with Section 16 of these Standards entitled, "Post Construction Cleanup and Road Closure" Along with any landowner-specific requirements.

1.3 Contractor will comply with the project storm water plan at all times, including using best management practices (BMPs) in constructing and using access roads and staging areas.

All portions of the Work areas shall be maintained in a neat, clean and sanitary condition at all times.

2.0 Public Safety and Protection of Property

2.1 Construction operations shall be conducted so as not to close or obstruct any portion of any railroad, road, or other property until the necessary permits have been obtained from the governmental or other authorities having jurisdiction.

2.2 All cultivated and planted areas and vegetation such as trees, plants, shrubs and grass on or adjacent to the right-of-way premises which do not reasonably interfere with the performance of Work shall be preserved.

2.3 Reasonable precautions shall be taken to protect, in place, all public land survey monuments and private property corners and/or boundary markers. If any such

land markers or monuments are destroyed, they shall be reestablished and referenced in accordance with the procedures outlined in the Bureau of Land Management "Manual of Surveying Instructions (2009)" or the specifications of the county engineer in the case of private property.

2.4 The Contractor must immediately notify the Landowner of unavoidable or accidental land or water damage caused by the Contractor's construction activities, and the Contractor shall restore any damaged resources to as nearly as practical to its original conditions.

2.5 Construction will be limited to dry periods when accessibility is optimal, and disturbance is minimized.

2.6 Firearms are not permitted to be carried in any vehicle and/or by construction workers involved in the Work while on or in the vicinity of the project right-of-way.

3.0 Access Roads and Vehicle Movement

3.1 State, county and other existing roads will be marked for use as access roads whenever feasible. Contractor agrees to limit or avoid the construction of new roads to the greatest extent possible. Construction of new road will not occur without discussion with NWE impacted landowners.

3.2 Access roads to and on the right-of-way shall follow NWE Representative approved, Landowner approved and/or Government agency approved routes that are appropriately flagged for visibility. The roads shall be constructed with the minimum possible clearing and soil disturbance and to minimize the disruption of natural drainage and control erosion. The Contractor shall use best management practice (each a "BMP") drainage and erosion control devices to minimize this disturbance. In areas where roads are designated for reclamation, Contractor shall separate the topsoil from the subsoil such that the topsoil can be redistributed over the reclaimed area to promote plant growth. All reclaimed roads will receive follow-up assessment, seeding (agency or landowner approved/specified seed mix) and weed control provided by the Manager of Vegetation Management. Vehicle Track Pads will need to be in place if sediment tracking is expected to be tracked onto paved sections from vehicular traffic transitioning from disturbed areas. Contractor shall comply with the DEQ Storm Water Management during Construction Field Guide for Best Management Practices for Track Pad installations.

3.3 The road width shall be determined by need, such as equipment size, and shall be no wider than necessary.

3.4 During construction, unauthorized cross-country travel, both within and outside of the right of way, and the development of roads beyond those approved will be

strictly prohibited. Cross-country movement must be on flagged routes designated by the Landowner, Government agency, and limited to pole site access. Contractor shall be liable for unnecessary damage and destruction of any private property and disruption of any private property and disruption of the land thereon which might be caused by its construction personnel and equipment.

3.5 The limits and location of access for construction equipment and vehicles shall be clearly marked at each new site before any equipment is moved to the site. Construction foremen and personnel should be well versed in recognizing these markers and shall understand the restriction on equipment movement that is involved.

4.0 Clearing and Grading

4.1 Clearing for roads and right-of-way in shrub areas shall be limited to crushing rather than uprooting brush. Plants may be cut off at ground level, leaving roots undisturbed so that they may re-sprout. Clearing should not be conducted within 25ft of a stream or wetland without appropriate permitting.

4.2 Where centerline clearing is allowed, it shall be limited to cutting of trees, which will interfere with operation of the line. In areas where the lines would touch the treetops during stringing, clearing shall be for a width of no more than ten feet in all directions around any of the phase conductor positions.

4.3 Scalping of the earth or any unnecessary disturbances will not be allowed on any clearing, except in rocky areas, or on slopes where cuts and fills are necessary.

4.4 No timber shall be cut or destroyed outside the right of way without first obtaining permission from the appropriate Landowner. Contractor is liable for any unauthorized cutting, injury or destruction to timber whether such timber is on or off the right-of-way. Contractor shall reimburse the Landowner for such timber at the current market value and pay the Landowner any penalty provided by the laws of the State of Montana.

4.5 Clearing materials shall be cut as close to the ground as practicable, but not exceeding six (6) inches above the ground. Stumps removal is not necessary unless the stump is in conflict with a structure or guy anchor.

4.6 On some sensitive lands, hand clearing may be necessary. The necessity for hand clearing will be determined in conjunction with the Landowner on a site-by-site basis.

4.7 Between towers where no traffic is required, vegetation shall be selectively cut to remove any interference with the conductors. Wherever appropriate, selective clearing will be done to produce curved or wavy boundaries along the right-of-way limits. There shall be no removal of grasses or shrubs except as required for the pulling of the line.

4.8 Grading at the structure sites shall be permitted only for positioning equipment necessary for working at the sites. The same restrictions that apply to cut and fill on temporary roads will be required for these equipment areas to effect site restoration.

4.9 Unless shrubs and trees within the construction area interfere excessively with equipment movement during construction, such vegetation will not be removed but will be marked for preservation.

4.10 In areas of over 4% side slope, road building that may be required shall be constructed at a 4% out slope. The roads shall be constructed so that material will not be accumulated in piles. The materials will be side-cast as construction proceeds. Contractor shall avoid making shoulders or berms on the downhill slope during the road construction.

4.11 No cutting and filling for access road construction shall be allowed in areas of 4% side slope or less.

5.0 Fences and Cattle guards

5.1 All fences crossed by this power line shall be provided with a gate not less than 16 feet wide. All fences crossed by the right of way or access roads shall be "H" braced before the fence is cut.

5.2 Cattle guards, when required, shall be aligned at right angles with the roadway and shall be accompanied by an off-road gate of sufficient width to accommodate all construction equipment.

6.0 Erosion and Sediment Control; Dust Control

6.1 All construction activity shall be conducted to minimize erosion and impacts from sedimentation. Erosion controls and sedimentation controls devices shall be installed to prevent the movement of excavated materials. Erosion controls and sedimentation controls may be implemented in two stages: first, the temporary controls such as ditch check dams, drainage culverts and roadway water bars which are to control erosion during construction and, second, the permanent controls post construction.

6.2 Care shall be taken so that erosion problems do not develop below the construction site due to channeling of water into new areas.

6.3 All erosion controls and sedimentation BMPs shall follow the guidelines in the **Montana Department of Environmental Quality Storm Water Management During Construction Field Guide For Best Management Practices**.

6.4 BMPs will be installed prior to working in the affected area.

6.5 Contractor shall maintain the natural drainage pattern of the area wherever practicable.

6.6 In construction areas, work shall be halted where wet conditions cause excessive rutting of roads and/or work areas. Work will not resume until conditions improve and the damaged road segments are repaired.

6.7 Limit operation of equipment when ground conditions could result in excessive rutting, soil puddling or runoff of sediments directly into water bodies.

6.8 Dust Control. Contractor shall, at NorthWestern's discretion, provide dust control measures. Dust control measures shall be in the form of water trucks to wet down the right-of-way or impacted access routes. The NWE Representative or Project Inspector shall approve the source of water for dust control.

7.0 Archeology

7.1 In the event that items with archeological or historical value are discovered during construction, the Contractor will immediately stop work and notify the NWE Representative.

7.2 Title to any relics, artifacts, fossils or other items of historical or archeological value is expressly reserved in the name of the Landowner or agency having jurisdiction.

7.3 Cultural review may be required and may result in additional restrictions and/or mitigations before, during, and after construction.

8.0 Control of Fires

8.1 A fire plan shall be proposed that will set forth in detail the plan for prevention, control and extinguishing of fires on and in the vicinity of the Work area. In areas of the Work where dry, native grasses or crops are present, and the danger of fire exists, Contractor shall have on-site a water truck, fire extinguishers, shovels and any other appropriate firefighting equipment. This type of equipment is mandatory where chainsaws are being used or welding is taking place.

8.2 Every effort shall be made to dispose of material by methods other than open burning. If burning is necessary, it will be permitted only upon the following conditions and with the prior approval of the NWE Representative or Project Inspector.

a. Materials must be in clean dry piles suitable for burning.

b. Plant material must be dried for thirty days under good drying conditions or sixty days if more than 1.00 inch of precipitation has fallen.

c. Burning may only take place between 8:00 a.m. and 5:00 p.m. on days of good smoke dispersion. Before any burning occurs, (i) approval of the Landowner must be obtained; (ii) the County Health Department wherein

the burning will occur or the Montana Department of Environmental Quality, Air Program shall be advised that burning will occur, and (iii) Contractor shall obtain any required permits. Contractor shall maintain appropriate equipment/materials onsite to control the burn.

d. Burning in forest areas must be coordinated with and meet with the approval of the forester in charge of the area and the Landowner.

8.3 Contractor shall comply with all county, town, state or governing municipality having jurisdiction regarding fire laws and regulations.

8.4 Blasting caps and powder shall be stored only in approved areas and containers and always separate from each other.

9.0 Environmental Compliance

9.1 Purpose. NorthWestern is committed to conducting business in a manner that reflects respect for the quality of the environment. Proper instruction concerning environmental rules and regulations is an important part of every construction project. This document provides information to minimize the impact of construction on the environment and help assure compliance with all applicable rules and regulations.

9.2 Environmental Permits. NorthWestern will acquire the necessary environmental permits for the performance of the Work. Contractor shall perform the Work in compliance with the environmental permits, and is responsible for implementing the terms and conditions of the permits.

Questions concerning the environmental permits will be directed to the Environmental Permit Specialist.

9.3 General Requirements. No construction activities including access improvements are to be conducted on or near streams, wetlands or designated floodplains without prior written approval of the NWE Representative. All Work in such sensitive environments shall be performed under the oversight of the Environmental Inspector and in accordance with the following requirements of this Section.

The Environmental Permit Specialist, Manager of Environmental Permitting & Compliance and Environmental Inspector will coordinate all permitting requirements associated with Work in environmentally sensitive areas.

9.4 Waters of the United States. The term “waters of the United States” has broad meaning, but generally includes without limitation: waters, lakes, rivers, and streams that are navigable waters of the United States, including their adjacent wetlands; tributaries to navigable waters of the United States, including adjacent wetlands; and interstate waters and their tributaries, including adjacent wetlands and all others waters of the United States not identified above, such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable waters, the

degradation or destruction of which could affect interstate commerce. Contractor shall not discharge dredged or fill material into waters of the United States without a permit.

9.5 Wetlands Work Requirements. Contractor shall avoid construction or discharging dredged or fill materials in wetlands, which are generally defined as those areas inundated or saturated by surface or ground water sufficient to support vegetation typically adapted to life in saturated soil conditions. Contractor shall notify the NWE Representative immediately upon encountering wetlands during construction activities. Wetland matting will be used if wetlands must be crossed while accessing power line structure locations.

9.6 Stream Work Requirements. When stream crossings cannot be avoided, existing fords or crossings shall be utilized where present. In lieu of existing crossing sites, new sites shall cross drainage bottoms at sharp or nearly right angles and level with the streambed gradient whenever possible. Culverts or temporary work bridges may, at the discretion of the NWE Representative, be installed across the streams to provide access to the Work areas on both sides of the stream. This will minimize stream bank degradation; erosion and sediment flow into the waterway. Culverts shall be stabilized using existing material. Driving on or upslope of stream banks will also be avoided when practicable to minimize erosion or discharge of sediments to the stream.

Construction equipment and debris shall be removed from the stream bank area as quickly as possible following the construction activity. All disturbed stream banks shall be restored to as near pre-construction contours as possible and re-seeded. BMP devices at the base of all slopes located adjacent to streams shall be maintained until right-of-way re-vegetation is completed. Contractor shall be responsible for maintaining all sediment filter devices until the completion of the project. NorthWestern will take over the maintenance BMPs once construction is complete until re-vegetation is complete.

All construction activities including clearing and grubbing for roads and right-of-way and excavations for stream crossing shall be carefully controlled to minimize soil erosion and sedimentation. Installation and maintenance of BMPs may be required.

9.7 Work Staging Areas. Formal or informal structure staging areas near streams and wetlands shall be located at least 50 feet away from the stream bank or edge of the designated wetland area. The size of the staging area shall be limited to the minimum amount needed to construct the adjacent transmission line facilities. Hazardous materials, chemicals, fuels, and lubricating oils used for the daily requirements of the construction equipment, shall not be stored within 100 feet of stream banks, wetlands, or within any municipal watershed areas. All refueling of equipment or vehicles shall take place no closer than 100 feet from a stream bank or wetland. All onsite vehicles and equipment shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of petroleum leaks. Contractor will maintain spill containment materials at refueling locations.

9.8 Blasting. No blasting shall be allowed in or near streambeds, streambanks, wetlands or within designated floodplains.

9.9 Pole Hole Dewatering. The NWE Representative shall approve de-watering for pole hole excavations. At no time shall silt-laden water be allowed to flow into any perennial stream or river. All de-watering shall be done in such a manner that the water is discharged onto an upland area. Diffusers on the end of discharge hoses, of suitable type and design, shall be used to reduce the risk of cutting trenches with the discharge water.

9.10 Pole Hole Excavating. No excavation within 50 feet of a stream or wetland shall be permitted until actual structure setting is to be accomplished. BMP's shall be installed at the discretion of the NWE Representative or Environmental Inspector. No BMP's shall be installed or removed without prior approval from the NWE Representative or Environmental Inspector.

9.10 Pole Hole Backfilling. Backfilling of the pole holes shall be accomplished in such a manner as to prevent the disturbance of additional previously undisturbed soil adjacent to stream banks or wetland areas. Upon completion of the backfilling of the pole holes using the previously excavated subsoil, the salvaged topsoil shall then be placed on the subsoil and disturbed areas within the construction zone.

10.0 Hazardous Materials

Hazardous materials, chemicals, fuels, and lubricating oils shall not be stored on the right-of-way. The above-mentioned items shall be hauled to the job site in suitable containers each day, or when needed, and removed from the job site at the end of each day. Every effort shall be made to prevent the spilling of hazardous materials, chemicals, fuels and lubricating oils onto the right-of-way. All spills of hazardous materials, chemicals, fuels and lubricating oils shall be immediately reported to The NWE Representative or Project Inspector. All on-site vehicles and equipment shall be monitored for leaks and receive regular preventative maintenance to reduce the chance of petroleum leaks. All concrete washout areas shall be constructed and maintained in a fully functional condition to appropriately manage liquid wastes generated from concrete operators and in compliance with the DEQ Storm Water Management during Construction Field Guide for Best Management Practices for Concrete Washout Areas.

11.0 Waste Disposal

Staging areas, decking areas, all other work areas and access roads shall be kept in an orderly condition throughout the construction period. Totally enclosed containment shall be provided for all trash and construction debris. All construction waste including trash and litter, garbage, and other solid waste, petroleum products and other potentially hazardous materials shall be removed daily to a disposal facility authorized to accept such materials. No open burning of construction trash shall occur. No oil drums, empty or full, shall be left on or stored on the right-of-way. Trash and construction debris of any kind left

behind from previous transmission line construction activity, shall be stockpiled and hauled away prior to the completion of the Work.

12.0 Spill Prevention and Response

12.1 Spill Prevention. Contractor will conduct daily inspections for leaks from heavy equipment. When tank truck loading/unloading operations occur, oil-handling personnel will ensure that procedures at the Work site meet the minimum requirements and regulations established by the U.S. Department of Transportation (USDOT). Oil transfer operations will occur through aboveground unloading hoses, which will be supported and designed to minimize abrasion during transfer operations. Contractor shall comply with the following requirements:

12.1.1 Prior to unloading:

a. Ensure that oil and other hazardous material handling personnel have spill containment materials available.
b. Set up barriers or signs to prevent the mobile fuel truck from leaving before unloading is complete.
c. Post signs in the transfer area to warn all vehicular traffic to use caution.
d. Place wheel chocks on the truck's tires to prevent it from moving during unloading.
e. Verify oil levels, recheck connections, and examine transfer hoses for integrity.

12.1.2 During unloading:

a. Utilize only trained personnel who are authorized to conduct the oil transfer.
b. Continually monitor the transfer and pumping system for leaks.
c. Monitor the oil level in the receiving container to prevent overfilling.

12.1.3 After unloading:

a. Closely inspect the lowermost drain and all outlets for discharges.
b. Properly drain and disconnect the transfer hose.
c. Ensure truck drains/outlets are tightened, adjusted, or replaced as needed and closed before departure.

12.2 Spill Response and Control Measures. Contractor shall have adequate spill absorbent or containment materials on Work site at all times. In the event of a release, Contractor will make every effort to stop the release, contain it, and clean it up. Contractor will report leaks, spills, or other unintentional releases of any amount that reaches surface water and of reportable amounts according to MTDEQ (>25 gallons) immediately to NWE Representative. Contractor will be responsible for reporting, cleanup, and closure of Contractor spill sites.

13.0 Wildlife

13.1 Wildlife.

13.1.1 Avian. The Work will be performed and the transmission line constructed

in compliance with the Avian Power Line Interaction Committee (APLIC) guidelines, found at www.aplic.org and incorporated herein by this reference.

Contractor shall notify the NWE Representative and the Environmental Inspector whenever Contractor observes a dead bird on, under or near a transmission line.

13.1.2 Non-avian. Contractor will take measures to avoid or minimize impacts to wildlife including minimizing ground disturbance and vegetation removal to the extent possible.

13.1.3 Threatened and Endangered Species. Contractor shall minimize ground disturbance and vegetation removal to minimize potential impacts to threatened or endangered species or species of special concern.

13.1.4 Species of Special Concern Construction crews shall avoid practices that attract bears. This includes removal and or storage of food related materials consistent with BLM or Forest Service guidelines.

Contractor shall perform the Work in accordance with timing restrictions necessary to avoid conflicts with peregrine falcon or golden eagle nests. A representative of the NorthWestern Environmental Department shall advise Contractor of any such restrictions.

14.0 Stormwater Pollution Prevention Plan (SWPPP)

If applicable, Contractor shall perform the Work in accordance with the following requirements:

14.1 Contractor will implement the Project SWPPP.

14.2 Environmental Inspector will serve as the SWPPP Administrator.

14.3 BMPs will be installed prior to construction activities.

14.4 BMPs will be not be damaged or removed by construction crews or during construction activities.

14.5 Construction vehicles will use concrete washout areas to control the tracking of sediments from laydown areas to paved roads.

15.0 Herbicides and Noxious Weed Control

Herbicides will not be used during construction or maintenance of this line without permission of the Landowner and the Manager of Vegetation.

Contractor shall formulate and maintain an effective weed control plan for the duration of

the Work. The plan shall be submitted to the Manager of Vegetation Management and to the Environmental Inspector for review and approval. The plan shall include, but not be limited to, methods of reducing the spread of noxious weeds between line segments and between adjacent Landowners such as avoiding heavily infested noxious weed areas and by removing weed stalks, stems and seeds by high pressure spraying of vehicle under-carriages and tracks.

16.0 Post-Construction Cleanup and Road Closure

16.1 All signs of temporary construction facilities such as haul roads, Work areas, buildings, foundations or temporary structures, stockpiles, or waste materials, or any other vestiges of construction, shall be removed and the areas restored to as natural a condition as is practical.

16.2 Grading and scarifying of roadways and structure sites will be required where appropriate to restore the area to near natural conditions that will permit growth of vegetation thereon and discourage future traffic.

16.3 Any landscape feature scarred or damaged by equipment or operations shall be, as nearly as practical, restored to its original condition.

16.4 In areas where no cut or fill was made, closure of roads shall be completed by installing signs, constructing rock barriers, soil berms, planting trees, or other approved means after scarifying, water-barring and revegetation in these areas are complete.

16.5 Replacement of earth adjacent to access roads crossing streams shall be at slopes less than the normal angle of repose for the soil type involved.

16.6 Disturbance of drainage bottoms will be kept to a minimum, and all drainage bottoms shall be restored to their preconstruction gradient and width to prevent accelerated gully erosion.

16.7 Cross drains shall be added to an angle and as frequently as appropriate to satisfy road grades.

16.8 Drainage systems, which have been interrupted, shall be restored.

16.9 The above-referenced statements (12.1-12.8) are subject to Landowner desire and the integrity of structure foundations and anchors.

17.0 Post-Construction Activity

After construction, the following will be completed subject to the desire of the Landowner.

17.1 Temporary roads shall be closed and, together with other damaged lands, shall be restored by grading and seeding. NorthWestern Energy's Vegetation Management Department will do all seeding once the existing soils are restored as close as possible to existing conditions.

17.2 Vegetation cover will be maintained, if appropriate, in the areas immediately adjacent to transmission towers.

17.3 Native trees, shrubs, herbs and grass will be retained except on agricultural land where other species are grown.

Attachment LIUNA 1.6b

NorthWestern Specifications for Construction of Electric Transmission Lines

Attachment C to Appendix 1:
Specifications for Construction of Electric Transmission Lines

1.0 These Specifications cover construction of a complete electric transmission line.

1.1 The price set forth under each unit item shall include all labor, equipment, supplies, expenses and costs which are not properly classified under any other item or items, and which may be necessary to completely perform the Work to be done under said item in the manner herein set forth and specified. Contractor shall, without additional compensation therefore, coordinate and join together all the various subdivisions of the Work, including connections to work performed by others, and produce a complete finished electric transmission line ready for continuous operation.

1.2 All Work shall be done and completed in a thoroughly workmanlike manner in accordance with the best modern practice for construction of electric transmission lines, notwithstanding any omissions from these Specifications or drawings.

POLES AND HOLES

2.0 All poles shall be handled with care. Particular care shall be exercised in the use of pole tongs, peavies, or cant hooks so that the pole is not damaged unnecessarily. Pole tongs, peavies or cant hooks shall not be used in the creosote-incised area. Poles must not be dropped in unloading from truck or car. Skids must be used if not directly "picked" by a pole truck, crane or any other approved lifting method. Poles shall not be snaked along the ground. If poles must be snaked, suitable skids shall be used to keep the poles off the ground. New cross arms shall not be used as skids. Poles damaged in handling will be replaced at the expense of the Contractor and to the complete satisfaction of the NWE Representative or Project Inspector.

2.1 Poles shall be matched for size so that poles in the same structure shall have approximately the same top dimensions. Poles having larger top diameters than average shall be selected for use on angle and dead-end structures.

2.2 Excavation holes for poles and anchors, excluding rock anchors, shall be a minimum of 24" in diameter and at least 8" larger in diameter than the pole. Hole depths shall be as listed in the following chart, unless otherwise specified within the staking sheets or supplemental construction documents:

Length of Pole	Depth of Hole
40 Ft	6.0 Ft
45 Ft	6.5 Ft
50 Ft	7.0 Ft
55 Ft	7.5 Ft
60 Ft	8.0 Ft
65 Ft	8.5 Ft
70 Ft	9.0 Ft
75 Ft	9.5 Ft

80 Ft	10.0 Ft
85 Ft	10.5 Ft
90 Ft	11.0 Ft
95 Ft	11.5 Ft
Anchor Holes for 10' Rod	8.0 Ft
Anchor Holes for 8' Rod	6.0 Ft

2.3 The above depths for poles shall not be exceeded by more than six (6) inches in order to avoid covering the incised area of the pole with tamped backfill. Poles are furnished incised in a 3.0-foot width extending 1.0 foot above and 2.0 feet below the normal ground line.

2.4 All backfilling shall be done with the use of pneumatic tampers. Tamping of the backfill shall be done in layers of eight inches or less. Each layer is to be firmly tamped before the addition of fresh material to the hole. Compaction density must equal at least 90% of the undisturbed earth surrounding the hole. Particular attention shall be given to tamping the bottom 18 inches and the top 24 inches of the pole holes. The backfill shall be evenly banked and firmly tamped around the poles to a height of no greater than six (6) inches above the original ground level.

In rock areas, sufficient soil must be mixed with the rocks used in the backfill to eliminate voids and insure firm compaction. Frozen earth or materials subject to decay shall not be used in the backfilling process.

Where the condition or type of native soil is unsatisfactory for backfill, Contractor shall furnish a suitable substitute, such as a structural fill or crushed rock in swampy ground or adding water to compact powder dry fines. A suitable substitute will be subject to the approval of the NWE Representative. **No round river rock will be accepted for structural backfill**.

2.5 Excavations that cannot be immediately backfilled or barricaded, must be properly protected in accordance with OSHA standards. Fence posts, reel ends or timbers are satisfactory types of material to lie over the holes for protection if properly dimensioned. Items such as empty insulator crates or any material not capable of supporting any potential human or livestock weight is not a satisfactory hole cover. In the event any kind of livestock or undesired element is discovered in a pole or anchor hole, the Contractor is to notify the NWE Representative as soon as possible.

2.6 Grading of the existing ground line surface at the structure location will be limited to plus or minus six (6) inches from natural grade. No grading in excess of this amount will be permitted without adjustment of the pole height as approved by the NWE Representative.

2.7 When blasting rock, the use of excessive amounts of explosive will not be permitted. This refers particularly to side hill locations where rock can be dislodged so that the strength of the rock formation is seriously reduced. It also applies to structures located where loss of material would lower the elevation from original grade. Contractor will

exercise care to control the size of the charges, regardless of the type of explosive employed.

STRUCTURES

3.0 Except where specifically noted on the structure schedule, all structures on side hills shall be framed level. Framing shall be referenced to the lowest pole of the structure. When it is necessary to cut or gain a pole, the raw cut area shall be treated with an approved preservative solution.

All poles shall be plumbed to insure proper vertical placement. The complete structure shall be plumbed within a vertical tolerance of six (6) inches.

3.1 Through bolts for each structure shall be selected of such length as to leave not more than two (2) inches protruding beyond the nuts after the latter have been fully tightened. Bolts shall not be cut off to accomplish this. The arms in the completed structures shall be level within a tolerance of two (2) inches per ten (10) feet.

3.2 Anchors shall be installed in accordance with the transmission anchor installation standard T3-G-1.

3.3 The insulators and fittings shall be carefully handled while being transported, assembled and placed. All insulators shall be thoroughly cleaned of foreign material immediately before being installed on the structures. Insulator packaging material shall be gathered up and hauled from the construction site daily.

3.4 To assure tight hardware, all bolts, unless otherwise noted, must have locknuts of one form or another installed. It is the responsibility of Contractor to assure that all hardware on pre-assembled material, such as X-brace, Vee-brace end fittings and cross arm spacer fittings, are tight before installation on the structure.

3.5 To provide and retain the full bearing capacity of the hardware, all bolts and nuts shall be tightened to a degree such that the washer is indented into the surface of the wood member to a depth of at least 1/16 inch but no more than 3/16 inch.

CONDUCTOR STRINGING

4.0 Protection in the form of reel lagging or similar wood material will be used wherever the conductor is likely to come into contact with abrasive ground, rocks, metal or any other object that may damage it. Insulator crates are <u>not</u> to be used as lagging. <u>In all cases, the conductor shall be properly handled and protected to prevent injury to the cable</u>. The NWE Representative or Project Inspector will be the sole judge as to the extent of any damage to the cable and how damage will be repaired.

4.1 Stringing sheaves shall have a minimum diameter of 12 to 15 times the conductor diameter, measured from opposing groove bottom to groove bottom. The groove diameter of the sheave shall be at least <u>10%</u> greater than the conductor diameter. The

grooves shall have a neoprene or rubber lining. Such lining shall be conductive, to facilitate grounding the conductor through the sheave.
Care should be taken to see that the sheaves are kept clean and properly lubricated at all times, and that no splicing sleeves are run through a sheave.

The use of two stringing sheaves in tandem on sharp line angles (vertical or horizontal) is required to avoid difficulty in stringing, sagging and clipping the conductors.

4.2 The aluminum conductor shall be strung by the controlled tension method by means of neoprene-lined double-bull wheel-type tensioner. This equipment must be so designed that there can be no conduction of heat to the conductor generated by the braking action of the bull wheels. There shall be slight mechanical braking action on the reels to prevent loose conductor between the reels and bull wheels. Brakes or brake control shall not be actuated pneumatically, hydraulically or electrically. To minimize the danger of brake failure, the brakes shall be a manually controlled mechanical device. The design must be such that when the desired tension is obtained, the same constant tension will be held as long as the brakes are engaged. Contractor shall provide a description of the make, style and quantity of tension stringing equipment to be used prior to commencement of the project. The NWE Representative or Project Inspector shall be the final judge as to the adequacy of the equipment.

CONDUCTOR SNUBS

5.0 Any structure used as a snubbing point must have temporary guys installed to prevent movement of the structure under sagging tensions.

5.1 The conductor at the snubbing points often suffers damage from coffin-hoist abrasion. Covering the exposed wire with lengths of hose or a similar substitute shall be performed to prevent damage from abrasion.

5.2 Special care must be exercised in stringing a new section ahead of a sagged section. Under certain conditions, the tension on the new section will upset the sag behind due to forces that come into play at the snubs. It may pull the hoists and grips up vertically or to one side. Either condition results in over tensioning the previously sagged section. Frequently, this occurs before clipping of the sagged section is complete, causing improper clipping. When tension is to be applied to a new section, the conductor must be caught off at the snubs to prevent the strain from being carried through to the back section.

CONDUCTOR SPLICING

6.0 Contractor will furnish the splicing tools and appropriate dies recommended for use by the splice manufacturer. All conductor and static wires and splices must be thoroughly cleaned prior to splicing to prevent contaminants from entering the splice.

6.1 The steel static wire will be spliced with automatic splices. Extreme care must be taken to assure that these splices are installed correctly. Do not attempt to utilize splices from previously opened packaging without verifying that no contaminants have entered the splice cavity.

6.2 Splices in the conductor shall be at least 15 feet away from any structure to provide adequate room for the installation of armor rods and dampers and to eliminate vibration difficulties. Splices shall not be installed in crossings of railroads, highways, transmission lines of 46 kV or higher voltage and rivers. A splice shall not be installed within 100 feet of a dead-end structure. The NWE Representative or Project Inspector will determine final determination of the splice location.

CONDUCTOR SAGGING

7.0 In each sag section, the wire will be brought up to sag by utilizing two control spans that will be sagged simultaneously. The location of the sagging control spans will be determined by the NWE Representative or Project Inspector and in coordination with the Contractor's sagging foreman. All conductors will be sagged within a 24-hour period following installation.

7.1 Sagging is to be done by "the visual sighting method" using pole-mounted transits, or as approved by the NWE Representative or the Project Inspector.

7.2 While releasing snubs and sagging on suspension insulator construction, the front insulators in the previous sag section shall be restrained from moving ahead or back by temporary guys attached to the bottom of the insulator strings.

7.3 If static wires are to be sagged into double dead-end structures that do not have provisions for guying the static, Contractor shall install temporary guys as near to the point of attachment(s) as possible, to prevent the poles from breaking. This is important as a safety measure as well.

CONDUCTOR CLIPPING

8.0 Each structure shall be plumbed and tamped plumb within the tolerance given in Paragraph 3.0 before static wires and conductors are clipped to that structure. Static wires shall not be used to plumb the structure. All conductors shall be clipped to the structures in each sag section within a 72-hour period following completion of the sag.

8.1 The NWE Representative or the Project Inspector will specify torque values that shall be used to tighten conductor suspension and strain clamp bolts. A torque wrench or other device suitable to the NWE Representative or the Project Inspector shall be used to tighten the bolts to the specified values. If excessively high clamping forces are applied to the conductor, notches at contact points can occur, that may ultimately lead to failure of the conductor. Therefore, it is important to assure that the proper torque values be applied to the conductor suspension and strain clamp bolts to prevent this "notching" effect. Jumpers should be one continuous piece of cable where possible. Conductor for sleeved jumpers should be taken from remnants that have not passed through the tensioner. Uplift on jumper insulator assemblies will not be permitted.

COMMUNICATION EQUIPMENT

9.0 When Contractor utilizes radio equipment for sagging operations that are dissimilar from NorthWestern radio equipment, they shall furnish the NWE Representative or the Project Inspector one (1) set of similar equipment for their use during all stringing and sagging operations. No sagging operations shall be started or allowed to proceed without the use of fully functional communication equipment by Contractor that is compatible with the NorthWestern Project Manager's/Inspector's equipment.

ROADS & ACCESS TRAILS

10.0 Contractor shall utilize any existing state highways, county roads, trails or accesses whenever feasible. Construction of new roads will be held to an absolute minimum.

10.1 Access routes to and along the right of way must be approved by the NWE Representative or the Project Inspector approved routes may be flagged for easy visibility. All roads shall be constructed with the minimum possible clearing, soil disturbance, and disruption of natural drainages, and with maximum erosion control practices. Contractor shall use any appropriate drainage and erosion control devices to minimize ground surface disturbance.

10.2 Any road width shall be determined by need, such as equipment size, and shall be no wider than necessary.

10.3 During construction, unauthorized cross-country travel, both within and outside of the right-of-way, and the development of roads, other than those approved, will be strictly prohibited. Cross-country movement must be on approved routes to access the structure site. **Contractor shall be liable for unnecessary damage or destruction of any private property and disruption of the land that might be caused by its construction personnel and equipment.**

10.4 Permanent roads to be retained for future maintenance will be so designated prior to installation. All temporary roads shall be the responsibility of Contractor to install and remove, including re-contouring to natural grade, following construction.

RIGHT-OF-WAY CLEARING

The following units are included for incidental clearing and removal only. Primary vegetation clearing of the right-of–way (by others) is assumed prior to or during actual construction activities.

11.0 Tree and brush clearing shall be held to the absolute minimum necessary to accomplish the construction of the transmission line.

11.1 No vegetation shall be cut or destroyed outside the right-of-way without first obtaining permission from the appropriate landowner or governing agency. Contractor shall be held liable for any unauthorized cutting, injury or destruction to vegetation, whether on or off the right of way.

11.2 Cleared vegetation shall be cut as close to the ground as possible. Any remaining tree stump must not exceed a height of six (6) inches above the ground. Stumps need not be removed unless conflict with a structure or guy anchor is involved. Disposal of removed vegetation shall be as approved by an authorized NorthWestern representative.

11.3 On some environmentally sensitive lands, hand clearing may be necessary and the need will be determined in conjunction with the landowner on a site-by-site basis.

11.4 Between towers, where no traffic is required, vegetation shall be selectively cut to remove any interference with the conductors. Wherever appropriate, selective clearing will be done to produce curved or wavy boundaries along the right-of-way limits. There shall be no removal of grasses or shrubs except as required for stringing the conductors along the centerline.

11.5 Unless shrubs and trees within the construction area interfere excessively with equipment movement during construction, such vegetation will not be removed.

ITEMS OF WORK

12.0 Pole and Anchor Hole Excavation in Earth and Loose Rock

This item applies to holes excavated by either machine or hand in material other than solid rock. The unit of measurement for this work shall be per/lineal foot of hole depth measured from the low side of the hole on sloping ground. The quantity to be paid for shall be the total lineal footage of hole depth excavated.

12.1 Pole or Anchor Holes Excavation in Solid Rock.

This item applies to holes excavated in material classified as solid rock. Rock in ledges or detached masses and stone over eighteen (18) inches in maximum dimension shall be classified as solid rock. The unit of measurement for this work shall be per/lineal foot of hole depth measured from the low side of the hole on sloping ground. The quantity to be paid for shall be the total lineal footage of hole depth excavated in material classified as solid rock as determined by the NorthWestern Project Manager or Inspector.

12.2 Pole Erection

This item includes hauling of the pole, installation of the individual poles in their hole, along with backfilling and pneumatically tamping each hole. The unit of payment shall be for each separate pole installation.

12.3 Structure Framing

This item includes hauling of all necessary hardware and assemblies required to complete the structure. This includes, but is not limited to the cross arms or cross arm assemblies, Vee-braces, X-braces, brackets, insulators and associated hardware This also includes assembling all materials to structure along with the installation of all ground wires, bonding wire, cross ties and guy assemblies to make completed structures as required on the respective drawings and staking sheets. This item does not include installation of pole

numbers as indicated on the structure schedule. This item will include attaching all individual guys to structures and to anchor rods.

12.4 Anchor and Anchor Rod Installation

This item consists of hauling all anchor materials and installing, whether cross plate, helix, log or rock type anchor, including trenching for, hauling and installing the anchor rod, backfilling and pneumatically tamping the hole, and pre-pulling the completed installation to the approved testing procedures, or as specified within the transmission anchor installation standard T3-G-3. This unit of payment shall be for each complete installation not associated with the standard framing.

12.5 Wire Stringing

This item includes hauling all conductor and static wire, stringing, sagging and splicing all conductors and any steel static wires, installing armor rod on each conductor at each wire clamp, installing vibration dampers, installing conductor weights at locations specified on the structure schedule, clamping and applying conductor (offsets when required) and attaching the steel static wires to the ground wire support. The unit of measurement for this work shall be based on per/1000' or per/mile of completed line, and includes all of the current carrying conductors and all static wires. This unit also includes the work required to properly dead-end the conductors and static wires at the appropriate structures.

12.5 Aerial Structure Marker Installation

This item includes hauling all materials, assembling and installing the aerial structure marker. One set of markers will be installed every five (5) miles along the line and the unit of payment will be for each unit installed.

12.6 Gate Installation

This item includes hauling materials, digging postholes and construction of gates according to the appropriate drawing as designated by the NorthWestern Project Manager or Inspector.

12.7 Road and Access Trail Installation

This item includes all equipment and time required to install the road or trail along with necessary culvert or temporary stream crossing material. Culvert installation includes all labor and materials such as backfill of any type needed to complete the installation.

Attachment LIUNA 1.25

NorthWestern Attachment II OQ Plan Review Form for Contractors

Attachment II Contractor OQ Plan Review Form

NWE Contractor OQ Plan Review V2

This review was completed by the person(s) listed below, who have been designated by the operator to perform the annual review.

Contractor Name:		Calendar Year:	
Reviewed By:		OQ Plan Approval Date:	

Checklist	Plan Reference	Notes
General Plan Information		
☐ Contractor has supplied their own OQ Plan ☐ Contractor agrees to follow Operators OQ Plan		
What OQ platform or system does the contractor use for tracking qualifications?		
Does the contractor have a glossary of terms to avoid ambiguity or misinterpretation?		
Evaluation Methods and Corrective Actions		
How does the contractor ensure evaluators maintain current training? Evaluator credentials or the process used to select evaluators should be documented.		
What type of evaluation method(s) is used, (e.g. written or web-based test, practical demonstration, field observation)?		
What is the passing score of a Knowledge Test? (Distribution = 70%, GTS = 80%)		
Skill evaluations must be conducted one-on-one with the individual being evaluated and must pass all parts of the skill evaluation. Has this been verified?		
What are the guidelines for retesting after failed evaluation(s)? What is the established wait period(s) before retesting?		
What are the guidelines or corrective actions for multiple failed evaluations?		
What are the contractor guidelines for reevaluation when an individual's performance of a covered task may have contributed to an incident or if their qualifications are questioned?		
AOC's		
What processes does the contractor have to determine if the employee can recognize and react to reasonable abnormal operating conditions (AOC) during the		

Attachment II Contractor OQ Plan Review Form

performance of covered tasks?		
Covered Tasks		
Have covered tasks been identified? Do they meet or exceed the minimum requirements for the 4-part test? (Note if they use an industry standard task list such as ASME or MEA.)		
If the contractor does not use the same approved task list as NWE, a direct correlation must be provided to show cross references. Has this been provided?		
What is the ratio of qualified to unqualified personnel when performing covered tasks? (*NWE's ratio 1:1; exception - Welding tasks and plastic joining are not to be performed by non-qualified individuals, even under direct supervision from a qualified individual*)		
Evaluation Intervals		
Does the plan specify re-evaluation intervals for each covered task? Requalification dates should be based upon: • Task requiring knowledge evaluation only – last successful evaluation date. • Task requiring knowledge and performance evaluation – last successful date of performance evaluation.		
Does the contractor state the criteria used to establish intervals, such as task complexity, critical nature, frequency, checks and balances and statutory requirements?		
Plastic Fusion Maintenance Checklist (for distribution use only)		
If appropriate, has contractor supplied annual record review of plastic joining and maintaining equipment maintenance per 192.756?		