Amended and Restated North Mountain Substation Operation and Maintenance Agreement Between

The City of Seattle, City Light Department

And the

Public Utility District No. 1 Snohomish County

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Exhibit Index

This AMENDED AND RESTATED NORTH MOUNTAIN SUBSTATION OPERATION AND MAINTENANCE AGREEMENT (O&M Agreement) is entered into by THE CITY OF SEATTLE, CITY LIGHT DEPARTMENT ("City" or "Seattle"), and PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY, WASHINGTON ("District"), municipal corporations of the State of Washington, hereinafter individually referred to as "Party" or collectively as "Parties."

RECITALS

WHEREAS, the District and Seattle, entered into an operation and maintenance agreement effective August 1, 1991(1991 Agreement) for the North Mountain substation (Substation); and

WHEREAS, the District purchased the land for the Substation and conveyed the property title and rights acquired specifically for the substation to Seattle prior to the commercial operation of the Substation; and

WHEREAS, the District and Seattle have continuously operated and maintained the Substation under the 1991 Agreement: and

WHEREAS, the 1991 Agreement expires on July 31, 2022 and the Parties wish to continue sharing in the operation and maintenance of the Substation as detailed in this O&M Agreement; and

WHEREAS, the Parties desire to provide herein for equitable payment for the maintenance of such equipment; and

WHEREAS, the Energy Policy Act of 2005 authorized the Federal Energy Regulatory Commission, to approve Reliability Standards with which users, owners and operators of the Bulk Power System are required to comply; and

WHEREAS, Seattle is the Registered Entity with compliance responsibility for the Reliability Standards applicable to Seattle-owned equipment described herein; and

WHEREAS, The District is the Registered Entity with compliance responsibility for the Reliability Standards applicable to the District-owned equipment described herein; and

WHEREAS, the District has contracted with the Bonneville Power Administration (BPA) to purchase electrical energy for delivery to District customers that cannot be served by the resources of the District; and

WHEREAS Seattle will transfer power from BPA's Snohomish Substation to the North Mountain Substation under terms and conditions of the Power Transfer Agreement or a successor agreement , and the Telecommunications Agreement will provide for the operation and maintenance of the communication systems for the Substation; which together with this Agreement, are "the Agreements" necessary for Seattle to transfer power to the District's Darrington area customers; and

WHEREAS, Seattle has no current or future identified need for the Substation for the operation of its own electrical system in the absence of the District's request to interconnect with Seattle for increased District service reliability to the District's Darrington area customers, and it is the intention of the Parties that Seattle operate the Substation for the primary purpose of facilitating delivery the District's power to the District, within the constraints of Seattle and BPA's system.

NOW, THEREFORE, the Parties agree as follows

1. **Terms of Agreement**

1.1. This Agreement shall take effect at 0000 hours on August 1st, 2022, and shall expire at 2400 hours on July 31st, 2042, unless terminated by agreement of the Parties.

1.2. This Agreement may be extended, amended, or terminated upon mutual agreement of the Parties

1.3. In the event that the Agreement is terminated, all liabilities incurred hereunder are hereby preserved until satisfied.

On its effective date, this Agreement terminates and replaces in its entirety, the prior 1991 Agreement. All Obligations incurred under the prior agreement shall be preserved until fully satisfied.

2. **Definitions**

When used in this Agreement, the following terms have the meaning shown below:

2.1. "Business Day" means any day that is normally observed by the Federal Government as a workday.

2.2. "FERC" is the Federal Energy Regulatory Commission

2.3. "NERC" is the North American Electric Reliability Corporation.

2.4. "Reliability Standard" means a requirement, approved by the United States Federal Energy Regulatory Commission under Section 215 of the Federal Power Act, or approved or recognized by an applicable governmental authority in other jurisdictions, to provide for reliable operation of the bulk power system. The term includes requirements for the operation of existing bulk-power system

facilities, including cybersecurity protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for reliable operation of the bulk-power system, but the term does not include any requirement to enlarge such facilities or to construct new transmission capacity or generation capacity.

2.5. "Actual Costs" include the Operation & Maintenance as well as Capital costs which are typically comprised of direct labor and benefits, parts, materials, equipment, services, administrative and general costs, taxes, payments in lieu of taxes, licenses fees, and permits. Capital costs financed by Seattle will accrue interest at Seattle's average annual borrowing rate. Seattle accounts for all of its transactions in accordance with Generally Accepted Accounting Principles (GAAP).

3. **Ownership of Facilities and Equipment**

3.1. The District has conveyed the Substation site to Seattle by statutory warranty deed in fee simple, together with additional real property rights specifically acquired by the District for this project. A copy of said statutory warranty deed, which was filed (AF#9105240041) with the Snohomish County Auditor on May 24, 1991, is contained in Exhibit A, which together with other designated exhibits herein, is attached to and by this reference made a part of this Agreement. The District hereby conveys, transfers and assigns to Seattle all approvals, permits, and licenses obtained by it from any governmental Subdivision, for construction, use, maintenance, and operation of the Substation.

3.2. Seattle has conveyed an easement to the District to erect, operate, maintain, repair, rebuild and patrol two 12.5 kV electric distribution lines and related facilities over and across a portion of Seattle's Skagit Transmission Line Right-of-Way which Seattle owns, and Seattle has consented to said use by the District over Seattle's Skagit Transmission Line Right-of-Way over which Seattle holds easement rights only. The Easement and Consent Agreement was recorded and filed with the Auditor of Snohomish County on May 24, 1991, and a copy is contained in Exhibit B, however, paragraph 16 of the Easement and Consent Agreement is superseded by the provisions of the Agreements.

3.3. Insofar as Seattle has the necessary rights, an easement from Seattle to the District shall be conveyed for the right, privilege, and authority to operate and maintain, repair, and replace the existing 12.5 kV equipment outlined in Exhibit D for a portion of the Substation described in the said Easement necessary for service to District's Darrington area customers. A copy of the Substation

easement is contained in Exhibit B. Said Easement further grants the District rights of vehicular ingress and egress over lands adjacent to the Substation specifically described in the Easement. Seattle further reserves the right to the exclusive use of the storage room. Should the District's operation and maintenance cause disruption to or physical modification of Seattle's owned facilities and equipment, the District shall be responsible for restoration of the same.

3.4. Title to and ownership of the plant and equipment installed in the Substation, and specified in Exhibit C, shall be and remain with Seattle.

3.5. The property, plant and equipment, and rights hereto, listed in Exhibits A and C are part of Seattle's electric system.

3.6. Title to and ownership of equipment specified in Exhibit D is and will remain with the District.

3.7. Title to and ownership of any equipment located on the property that is not listed in either Exhibits A, C or D is hereby conveyed to Seattle.

3.7.1. If a dispute arises over the ownership of an item(s) not listed in Exhibits C or D, the District will notify Seattle and state the reason why they believe they own the item(s) in question and the Parties will make a good faith effort to resolve the ownership of the disputed item.

3.8. The point of physical integration of the District's 12.5 kV distribution service to Seattle is at the point of connection to the 230 kV transformer bushings. The bushings and the transformer are owned by the District as set forth in Exhibit D. This point shall continue to separate ownership of electric plant between Seattle and the District as shown in Exhibit E. All common facilities used by the Parties are owned by Seattle, unless otherwise provided herein.

3.9. Renewals, replacements, modifications or additions to the Substation and equipment including the common facilities that are reasonably necessary to facilitate the transfer of power in a manner compatible with Seattle's operation, maintenance, power transfer, and communications service will be done by and become property of Seattle and be paid for by the District according to the provisions of Section 4.3 or 7.3. Future renewals and replacements to the transformers and 12.5 kV distribution equipment at the Substation necessary to facilitate the District's transformation and distribution of power in a manner compatible with the District's system operations and Seattle's

Interconnection Requirements will be done by and become property of the District and be paid for by the District.

3.10. Exhibits C, D, and E shall be reviewed by the Representatives of the Parties on an as needed basis. Revisions to the aforementioned exhibits will be agreed to by both Parties through written or digital agreement.

3.11. The Parties shall identify the major station components and equipment specified in Exhibits C and D, tools stored on site, and future modifications, by permanently affixing thereto suitable tags, stencils, stamps, or other markers plainly stating who owns the property, but failure to do so shall not affect title and ownership of such equipment.

3.12. This Agreement shall not convey title or ownership of any kind to the facilities or transmission system of Seattle to the District, nor will it confer on the District any right to use any part of Seattle's transmission system. The District shall not use rights obtained under this Agreement to provide transmission or any other services for any other person, municipality, association, or other entity.

4. **Responsibility for Operations and Maintenance**

4.1. Seattle will operate and maintain the property and equipment of Seattle, which are designated and described in Exhibits A and C, in the same manner in which Seattle maintains similar facilities of its own and in accordance with good utility practices. BPA will own, operate and maintain the billing meters. Seattle shall operate and maintain Seattle facilities in accordance with NERC Reliability Standards and in a neat and orderly manner so as not to be hazardous to life or property. Seattle generated debris shall be removed or otherwise disposed of to reduce threat of fire and a degradation of the environment.

4.2. Unless otherwise provided for herein, the District will operate and maintain its facilities and equipment, which are designated and described in Exhibit D, in the same manner in which it operates and maintains similar facilities and equipment it owns and in accordance with good utility practices. The District shall operate, maintain, and keep District facilities in accordance with NERC Reliability Standards and in a neat and orderly manner so as not to be hazardous to life or property. District generated debris shall be promptly removed or otherwise disposed of to reduce threat of fire and a degradation of the environment.

4.3. Seattle shall develop and submit to the District a comprehensive plan for routine operation and maintenance activities to be performed upon Seattle’s equipment and North Mountain Substation ("O&M Plan"). Seattle shall limit the O&M Plan to include all

activities that are routinely performed at similar facilities that are maintained and operated by Seattle. These activities include and are not limited to inspection, major and minor maintenance, testing, work to maintain access, and vegetation management.

4.3.1. The O&M Plan shall include a monthly cost estimate for each O&M Plan year.

4.3.2. The O&M Plan shall be updated annually for the following year on or before May 1st of each year and shared with the District as a draft. The District will have thirty (30) days to request a meeting or review time extension to discuss the O&M Plan.

4.3.2.1. Seattle will endeavor to include known periodic work and projects in the O&M Plan.

4.3.3. At the sole discretion of Seattle, the timing and type of activities performed by Seattle may differ from the O&M Plan.

4.3.4. Seattle shall endeavor to provide thirty (30) days written notice to the District for periodic operations and maintenance activities not included in the O&M Plan that will result in exceeding the monthly estimated O&M Plan cost by 100% or more. The District may request a meeting with Seattle to discuss the periodic activity. In any such meeting, Seattle shall explain the periodic activity not included in the O&M Plan and that exceeds the O&M Plan monthly estimated cost by 100% or greater amount.

4.3.5. If Seattle, in its sole judgement, determines that an emergency condition exists that requires any operation and maintenance activity necessary to preserve system reliability or promptly restore the operation of the North Mountain Substation, it may commend work immediately and retroactively provide notice to the District as soon as practicable thereafter. The District may request a meeting with Seattle to discuss any emergency activities within thirty (30) days of receiving notice of such.

4.4. Seattle will operate and maintain both the indoor and outdoor common facilities to be used by both Parties in the same manner in which it operates and maintains its own; and the District shall have access to these facilities, except the Storage Room pursuant to Subsection 3.3.

4.5. The District shall supply Seattle with station service power for the operation and maintenance of all North Mountain Substation property and equipment required by Seattle. The District owns all the station service transformers listed in Exhibit D, but Seattle owns the automatic transfer switch for Seattle's station service.

4.6. The maintenance of all the batteries used for the North Mountain Substation will be the responsibility of Seattle, but Seattle is not a guarantor of the battery system.

4.7. The District shall provide voice telephone service over a common carrier from the work room that will be available to all employees using the station for station communications and for Substation business. This telephone is separate from the District OPX provided under the Telecommunications Agreement. Seattle will provide a Seattle-owned PAX telephone line in the control room for communications with Seattle dispatcher and for other Substation business, which is the same phone referenced in the Telecommunications Agreement.

4.8. Seattle and the District shall provide and maintain adequate protective equipment sufficient to prevent damage to their own systems, including but not limited to, system disturbances or other anomalies. Adequacy shall be determined based upon good utility practice, but neither Party shall be deemed a guarantor of the effectiveness of the protective equipment.

4.9. The Parties shall cooperate and coordinate with each other regarding the installation, operation and maintenance and future renewals, replacements, retirements, additions or modifications to or from the equipment they own in the Substation, including furnishing any plans, drawings, specifications, documentation, and information relating to its requirements or property plant and equipment as may reasonably be requested by the other Party.

4.10. A drawing of the Plot Plan (D30450) and Control House (D-30531) for the Substation and one-line drawings of the District's 12.5 kV system S-8802, and Seattle's 230 kV system D-30485, are contained in Exhibit E. Drawings of the Conduit and Cable Trench Plan (D-30515, D-30516, D-30517) and the Oil Containment Plan (D-58807) are also contained in Exhibit E. Whenever there is a revision by either the District or Seattle, to any of the property, plant or equipment referenced by these drawings, the Party making the change will provide the other an updated drawing to reflect the change.

4.11. Whenever the District or Seattle makes a change to their own system that can affect the operation of the other's system under normal or emergency conditions, revised drawings of the change will be provided to the other Party.

5. **Security and Access Control**

5.1. Security and Access control of facilities will be governed by Exhibit G North Mountain Security and Access Control Letter of Agreement

5.1.1. Exhibit G will be periodically reviewed by the Parties and amended by mutual

agreement.

6. **Operations**

6.1. Operations will be governed by Exhibit H North Mountain Operational Coordination Letter of Agreement

6.1.1. Exhibit H will be periodically reviewed by the Parties and amended by mutual agreement.

7. **Expenses and Payment**

7.1. Beginning on the first day of July, 2022, the District will pay to Seattle monthly, the amounts and charges set forth below. If any new regulatory fees or taxes payable by the City are imposed by any federal, state, or local government upon services, revenues, or income of Seattle by reason of the services provided hereunder, the District shall pay, in addition to the charges herein specified, an amount sufficient to cover any such incremental taxes or regulatory fees payable by Seattle.

7.2. In consideration of the equipment and services to be provided by Seattle in operating and maintaining the Substation, and in accordance with Subsection 7.1 of this Agreement, the District shall pay to Seattle monthly the following amounts and charges. The District shall reimburse Seattle for the Actual Cost of operating and maintaining the Substation by paying the Reimbursable Operation and Maintenance Expense. The Reimbursable Operation and Maintenance Expenses shall be calculated as described below.

7.2.1. Actual Cost of Operating and Maintenance Expenses shall be accounted for by Seattle in accordance with Generally Accepted Accounting Principles (GAAP).

7.3. Replacement, additions and modifications by Seattle for the North Mountain City-owned facilities or equipment, which are capitalized by Seattle in accordance with Generally Accepted Accounting Principles, shall be considered separately from Reimbursable Operation and Maintenance Expense as described in Subsection 7.2. Equipment or facilities requiring installation due to safety, security, or regulations, replacement due to defect, obsolescence, damage, or wear or changes which are necessary for the cost-effective operation and maintenance of the North Mountain system, including the Substation and the interconnecting line, shall be billed to the District on an Actual Cost.

7.3.1. Expenses for work related to an periodic activity performed pursuant to Section 4.3.4 shall be tracked through a work order or other accounting means such that the actual expenses can be accurately recorded and shall be billed separately from the expenses of routine activities contained in the O&M Plan. The District shall reimburse Seattle for Actual Cost for an periodic activity, except that the total amount of reimbursement by the District shall be limited to 125 percent of the estimate for the periodic activity, unless the Parties have agreed in writing to a revision of the estimate.

7.3.2. Except in the event of an emergency requiring immediate action, Seattle shall give to the District at least thirty (30) days' notice prior to the date it takes action pursuant to Subsections 7.3 to renew, replace, add or modify Seattle-owned facilities or equipment at the Substation having an expected cost in excess of $100,000.

7.4. Billing and payment will occur monthly in accordance with the following:

7.4.1. The accounting period for billing under this Agreement shall be the first day of the calendar month to the last day of the calendar month unless otherwise agreed in writing between the Parties' Representative. By the twenty fifth day of the first month of the next calendar quarter, Seattle will prepare and submit to the District an invoice.

7.4.2. The District shall pay Seattle the amount due under any invoice no later than thirty days after the date of the invoice. Seattle shall transmit via email or other acceptable means the invoice no later than 5 days after the date on the invoice.

7.4.3. A late charge of 1 percent per month shall be added to the invoiced amount that is not paid within the time limits set forth in Subsection 7.4.2.

7.4.4. In the event any invoice, or part thereof, is disputed, payment of the invoice as rendered shall be made when due, with subsequent invoice being adjusted for any amount found to be in error. Interest at the rate of 1% per month shall be included in the final monetary settlement of any adjustment due to either Party. Such interest shall run from the date of receipt of the original payment to the date of settlement of any adjustment.

7.4.5. Seattle may combine invoices for this Agreement with other bilateral District-City Agreements into one monthly billing, but the itemized cost of each Agreement will be identified separately.

8. **Insurance**

8.1. The District shall maintain at its expense through the term of this Agreement, a policy or policies of comprehensive fire and casualty insurance in an amount sufficient to replace North Mountain substation, including all equipment and interconnections with the Gorge to Snohomish Transmission System. The 2022 minimum amount shall be $5million. Self-insurance coverage by the District is a satisfactory alternative to Seattle. Any such policy or policies shall name the City of Seattle as an additional insured. If any fire or casualty loss at such facilities exceeds the amount of such insurance and coverage, the District shall pay to Seattle the amount of difference between the insured or covered amount and the actual loss in order to compensate Seattle for its full reconstruction expense, unless the District elects to terminate the Agreement, pursuant to Subsection 15.2.

9. **Release**

9.1. Each Party releases the other from liability for loss or damage to it which shall include, but not be limited to, consequential damages and the loss of use or profit, which arises out of or in connection with the negligence of a Party, or negligence any officer, agent, or employee of a Party, under this Agreement.

10. **Indemnification Regarding North Substation**

10.1. To the maximum extent allowed by law, including R.C.W. 25.32A.090, each Party shall defend, indemnify and hold harmless the other Party, its successors and assigns, and the respective directors, officers, employees and agents of the other Party and its successors and assigns (collectively referred to as the "Indemnitees") from any and all claims, losses, costs, liabilities, damages and expenses (including but not limited to, reasonable attorneys' fees) caused by the negligence of the other Party or anyone acting on the other Party's behalf

10.2. A Party shall not be liable to the other Party's customers for any interruption to the service or property damage caused by the provision of service, and each Party hereby indemnifies, protects and saves harmless the other Party against any and all such claims or demands, suit or judgment for loss, liability, damages and expenses.

10.3. Indemnity, protection and hold harmless shall include any demand, claim, suit or judgment for damages to property or injury to or death of persons, including officers, agents, and

employees of either party hereto including payment made under or in connection with the Workers' Compensation Law or under any plan for employees' disability and death benefits.

10.4. It is further specifically and expressly understood that, solely to the extent required to enforce the indemnification provided herein, the District and Seattle waive their immunity under RCW Title 51 as provided in RCW 4.24.115; provided, however, the foregoing waiver shall not in any way preclude either Party from raising such immunity as a defense against any claim brought against a Party by any of its employees. This waiver has been mutually negotiated by the Parties.

11. **Force Majeure**

11.1. "Force Majeure" means an event or circumstance that prevents a Party from performing its obligations under this Agreement, which event or circumstance:

11.1.1. Is not within the control of or the result of the fault or negligence of the Party claiming its occurrence, and

11.1.2. Which by the exercise of due diligence and foresight could not reasonably have been avoided, including acts of God; sudden action of the elements such as floods, earthquakes, hurricanes, or tornados, lightening, fire, ice storms, smoke or other particulates from volcanoes; sabotage; vandalism beyond that which could reasonably be prevented; terrorism; war; riots; explosion; blockades; insurrection; strikes by third parties, breakdowns of, or damage to facilities, court order, acts of government authority, electrical disturbances of any kind, and acts of omissions or third parties;

11.1.2.1. Inability, or excess cost to procure any equipment necessary to perform the obligation of this Agreement.

11.1.2.2. Acts or omissions of a third party unless such acts or omissions are themselves excused by reason of Force Majeure.

11.1.2.3. Mechanical or equipment breakdown or inability to operate, attributable to circumstances occurring within design criteria and normal operating tolerances of similar equipment unless such breakdown or condition was itself caused by an event of Force Majeure; or

11.1.2.4. Changes in market conditions.

11.2. Applicability of Force Majeure

11.2.1. Neither Party shall be responsible or liable for any delay or failure in its performance under this Agreement, nor shall any delay, failure, or other occurrence or event become an event of default, to the extent such delay, failure, occurrence or event is substantially caused by conditions or events of Force Majeure, provided that;

11.2.1.1. The non-performing Party gives the other Party prompt written notice describing the particulars of the occurrence of the Force Majeure.

11.2.1.2. The suspension of performance is of no greater scope and no longer duration than is required by the Force Majeure.

11.2.1.3. The non-performing Party proceeds with reasonable diligence to remedy its inability to perform and provides weekly progress reports to the other Party describing actions taken to end the Force Majeure; and

11.2.1.4. When the non-performing Party is able to resume performance of its obligations under this Agreement, that Party shall give the other Party written notice to that effect.

11.2.2. Except as otherwise expressly provided for in this Agreement, the existence of a condition or event of Force Majeure shall not relieve the Parties of their obligations under this Agreement (including, but not limited to, payment obligations) to the extent that performance of such obligations is not precluded by the conditions or event of Force Majeure.

12. **Dispute Resolution**

12.1. The Parties recognize that cooperation and communication are essential to resolving issues quickly and efficiently. If any dispute arises in regard to the terms or conditions of this Agreement, then the parties shall meet and engage in good faith discussions with the objective of settling the dispute within thirty (30) days after either party requests such a meeting.

12.2. If the dispute remains unresolved at the end of thirty (30) days, the matter shall be referred to designated senior managers from each Party, who shall meet and engage in good faith discussions with the objective of settling the dispute.

12.3. If the parties cannot resolve the dispute within ninety (90) days from commencing dispute resolution, the parties shall refer the dispute to mediation using a mediator

mutually agreeable to the parties. If these representatives cannot resolve the dispute within fourteen (14) calendar days after referral of the dispute to mediation, either party may seek resolution of the dispute through litigation or other judicial proceedings in Superior Court of King County.

13. **Continuity of Service**

13.1. Except for the District's obligation to pay the charges described in this Agreement, neither Party hereto shall be liable to the other, or any other person or entity for, or be considered in default in the performance of its obligations hereunder to the extent that the performance of any such obligation is prevented or delayed by a Force Majeure or by any action taken by either Party which is, in its sole judgement, necessary or prudent to protect the performance, reliability, or stability of its electric system, or any electric system with which it is interconnected, whether such actions occur automatically or manually, which action shall not be deemed to be "willful misconduct" for purposes of this Agreement.

14. **Assignment**

14.1. This Agreement shall not be assigned by either Party without the prior written approval of the other.

15. **Review and Termination**

15.1. The District may terminate this Agreement at any time upon twelve (12) months prior written notice to Seattle, and provided that similar notices of termination are provided by it with respect to the Power Transfer and Telecommunications Agreements.

15.2. The District may terminate this Agreement upon prompt written notice to Seattle in the event of catastrophic loss or damage to the Substation which precludes transfer of power to the District. In such case, if loss or damage to City-owned equipment or property at the Substation has occurred, a) the District shall reimburse Seattle for all costs, including environmental expenditures, reasonably incurred by it to clean up the affected substation area, and b) the District shall pay to Seattle an amount equal to the cost reasonably estimated by Seattle to restore the direct Gorge to Snohomish 230kV transmission line.

15.3. Seattle may terminate this Agreement at any time upon (120) days prior written notice to the District in the event of nonpayment of charges. If payment of such charges is made by the District within the 120-day notice period, this agreement shall not be terminated.

15.4. Seattle may terminate this Agreement at any time upon twelve (12) months prior written notice to the District, for the District's failure to comply with the provisions of Subsection 2.9, or the District's failure to otherwise comply with any material provision of this Agreement, unless the District rectifies the violation to the satisfaction of Seattle.

15.5. If upon termination, either Party is required to commence an action to recover or to enforce obligations incurred prior to such termination, the prevailing Party shall be entitled to reasonable attorneys' fees and costs, plus interest on the unpaid amount.

15.6. The Parties agree that on or before February 1, 2040, they will begin to discuss appropriate terms and conditions which could be incorporated into a new or extended Agreement in view of all applicable factors including existing and prospective Darrington area load and use of Seattle's Gorge to Snohomish transmission system.

15.7. Six months prior to the expiration of this Agreement, and following the procedures agreed to by the Parties, Seattle will offer to extend this Agreement provided hereunder for a term and on conditions then deemed to be just and reasonable by both Parties

15.8. The provisions of this Article shall not limit any remedy at law or equity otherwise available to either Party.

16. **Removal of Facilities and Payment Therefor**

16.1. The District will remove its equipment in the Substation within 180 days when deliveries of electric energy from Seattle are terminated pursuant to Section 15 or upon agreement by the Parties hereto that such facilities and equipment are no longer required. Such removal shall include the repair of any damage to Seattle's facilities resulting from the removal of the District facilities or equipment.

16.2. The District shall reimburse Seattle for all costs, including environmental expenditures, reasonably incurred by it to clean up the affected substation area after equipment removal.

17. **Representatives of the Parties and Notices**

17.1. Representatives of the Parties will be contained in Exhibit I Notices.

17.1.1. Either Party can revise their respective Exhibit I Representative contact information without mutual consent. Exhibit I revisions shall be communicated as soon as practicable to the other party.

18. **No Waiver**

18.1. The failure of either Party to insist upon or enforce strict performance by the other Party of any provision of this Agreement or to exercise any right under this Agreement shall not be construed as a waiver or relinquishment to any extent of such Party's right to assert or rely upon any such provision or right in that or any other instance; rather, the same shall be and remain in full force and effect.

19. **Status of Parties**

19.1. Each Party to this Agreement will perform services as an independent contractor with respect to the other. Any work or service performed by either Party is deemed performed for that Party, and no person employed by one Party shall be deemed an employee of the other.

19.2. Work will be performed by each Party in accordance with its own methods.

19.3. Each Party will perform work in accordance with this Agreement, applicable laws, and regulations.

20. **Whole Agreement**

20.1. The terms, covenants and conditions of this Agreement, together with any exhibits or other such documents incorporated therein, or written amendments constitute the entire agreement between the Parties, and no understandings or obligations not therein expressly set forth will be binding upon them.

21. **Amendment**

21.1. This Agreement may be amended at any time upon mutual written or digital agreement of the Parties.

22. **Severability**

22.1. If any part of this Agreement shall prove to be unenforceable, such unenforceability shall not extend beyond the part affected. The unaffected part of the Agreement will continue in full force and effect and will be binding upon the Parties hereto.

23. **Legal Relations**

23.1. The Parties will perform and comply with all applicable laws or other governmental regulations.

23.2. The Agreement will be construed and interpreted in accordance with the laws of the State of Washington and the Venue of any action brought hereunder will be the Superior Court of King County.

24. **Signatures**

ACCEPTING FOR THE CITY OF SEATTLE, CITY LIGHT DEPARTMENT

_____

Debra Smith

General Manager/CE0

Date:_____

ACCEPTING FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY, WASHINGTON

_____

John Haarlow

Chief Executive Officer, General Manager

Date:_____

Exhibit A
North Mountain Statutory Warranty Deed

1. The Statutory Warranty Deed as recorded in Snohomish County under recording number 9105240014.

Exhibit B
North Mountain Easements

1. The Easements as recorded in Snohomish County under recording number 9105240015 and 9111140043.

Exhibit C
North Mountain Seattle Owned Equipment

1. Seattle Owned Equipment

    a. All 230kV equipment including:

        i. 230kV Bus, support structures and all the appurtenances.
        ii. Three 230kV Power Circuit Breakers
        iii. Six 230kV Voltage Transformers
        iv. Eight 230kV G.O. Disconnect Switches

    b. Control Building, 230kV Switchboards, Communication Equipment, AC and DC systems, the Seattle owned RTU, 2 revenue meters, and the remaining content of the Control Building except: 12.5kV switchboard, District owned RTU, District owned communication equipment, and District's spare fuses and other appurtenances.

    c. Real Property of the fenced switchyard including Yard Lighting, 230kV Cable Trench, Water Well, Sanitary Sewage System, Grounding Grid System, Parking area, Landscaped Area, Storm Water Drainage System, and Access Driveways.

    d. 230kVTurning Towers

    e. Seattle Owned Equipment is further identified by drawings and technical notes contained in Exhibit E North Mountain Diagrams and Drawings

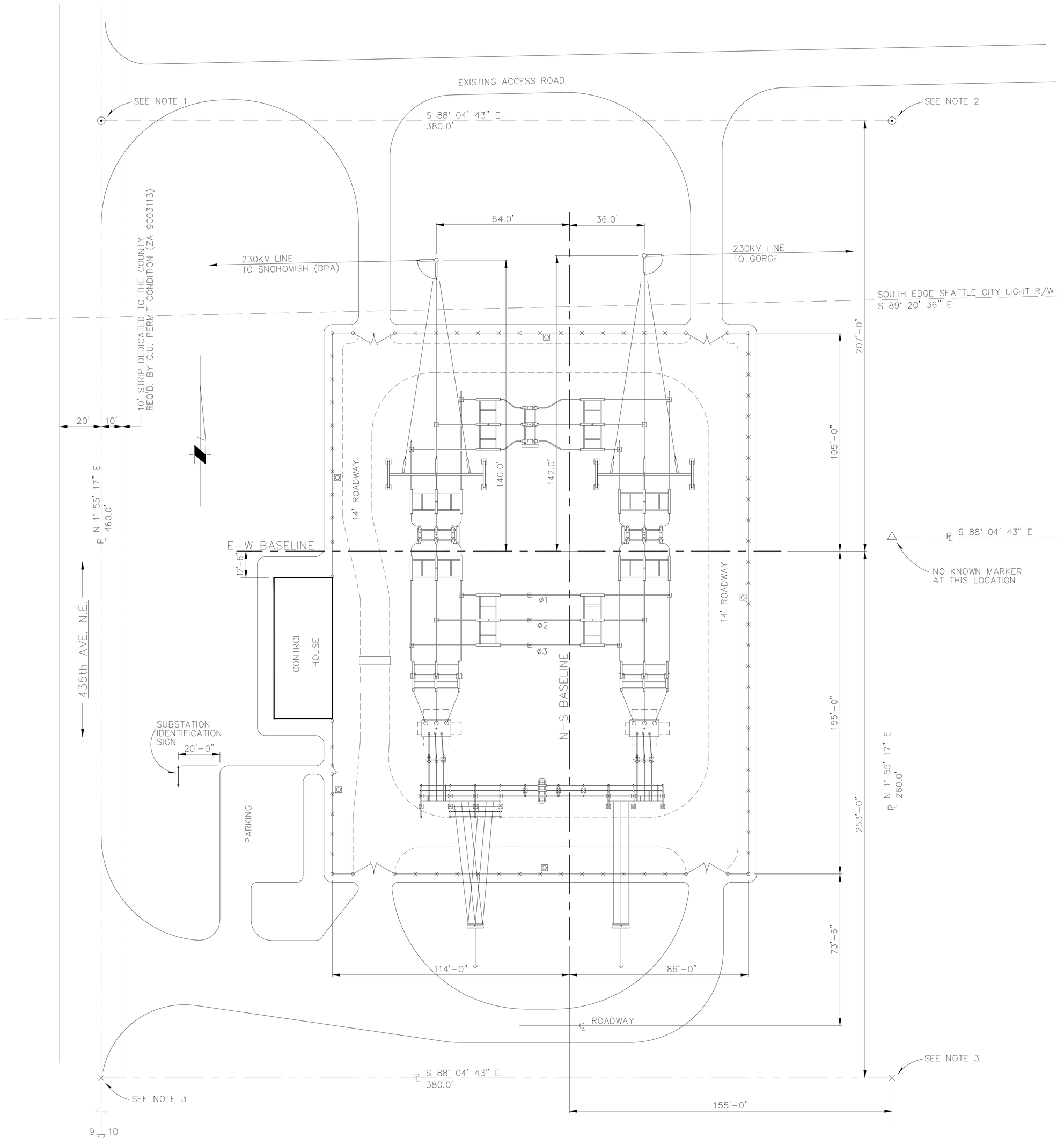
Exhibit D
North Mountain District Owned Equipment

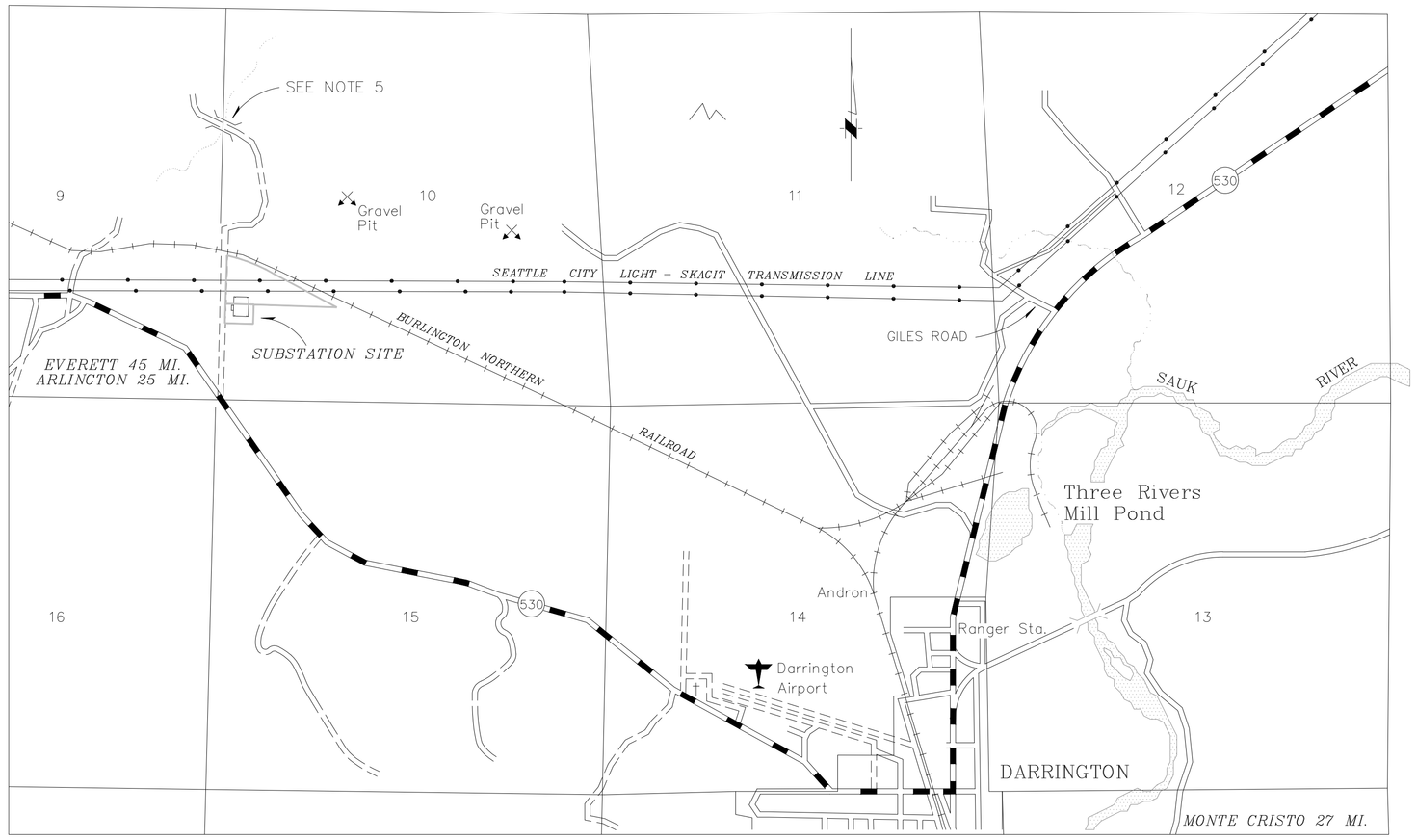
1. District Owned Equipment

    a. Two 230/12.5kV Power Transformers (T1, T2)
    b. Three 12.5kV Feeder Circuit Breakers (B2)
    c. Three 12.5kV Load Break Disconnect Switches, one horizontal, two vertical. (S4, S5)
    d. Twenty-seven Single Pole 12.5kV H.O. Disconnect Switches (S6)
    e. Three 7.2kV Current Transformers
    f. Six 12.5kV Current Transformers
    g. Two 12.5kV Potential Transformers (PT2) and fuses (F3).
    h. 12.5kV Bus, Insulators, Support Structures and all the Appurtenances
    i. Two sets Station Service Transformers Consisting of two 50KVA Transformers, two 25KVA Transformers, and fuses. (ST1, ST2, F1, F2)
    j. Six 8.4kV MCOV, Lightning Arrestors (SA2)
    k. Six 140kV MCOV, Surge Arrestors (SA3)
    l. 12.5kV Switchboard Line up including all the relays, meters, control switches and other devices on the switchboard. All control cable and conduits connecting the switchboard to the District's 12.5kV facilities.
    m. Districts Remote Terminal Unit
    n. Transformer Oil Containment System
    o. Three 12.5kV Distribution Feeders and all Appurtenances
    p. District Owned Equipment is further identified by drawings and technical notes contained in Exhibit E North Mountain Diagrams and Drawings

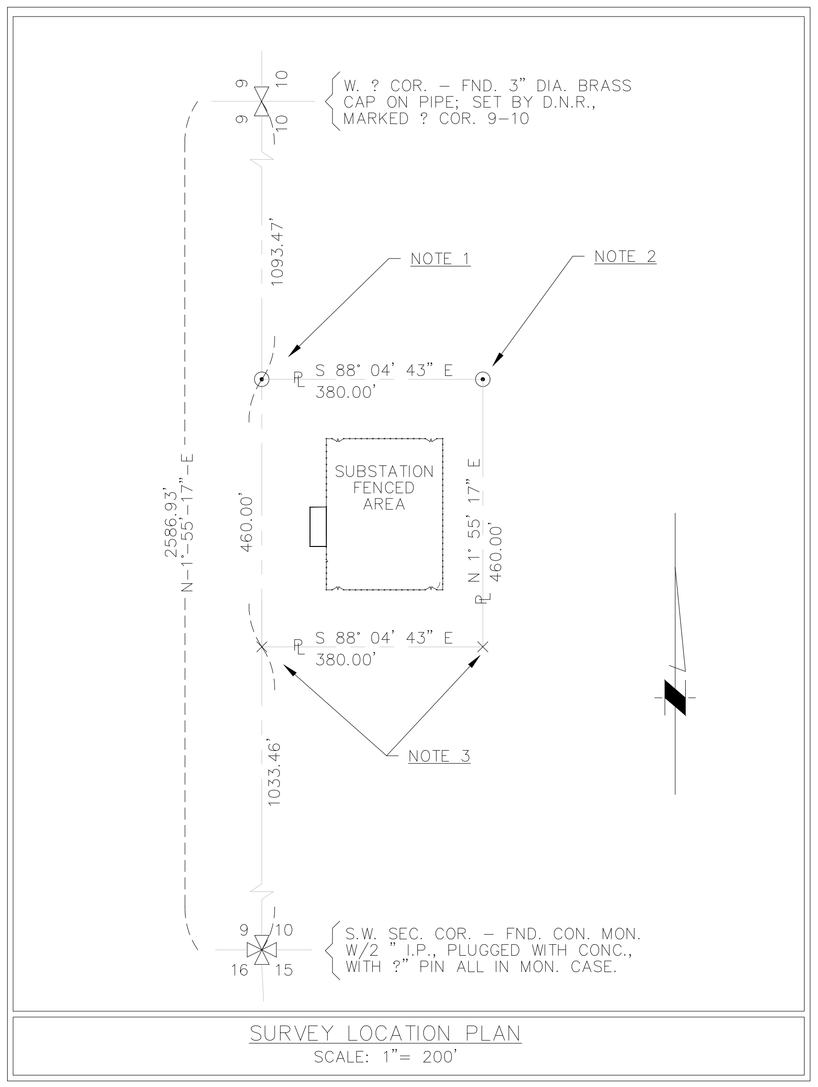
Exhibit E
North Mountain North Mountain Diagrams and Drawings

1. List of Diagrams and Drawings
2. Plot Plan D-30450
3. Control House Equipment Plan D-30531
4. 230kV Electrical Arrangement Plan D-30460
5. 230kV One Line Diagram D-30485
6. 12.5kV One Line Diagram D-30459
7. Conduit and Cable Trench Plan D-30515
8. Conduit and Cable Trench Plan D-30516
9. Conduit and Cable Trench Plan D-30517
10. Oil Containment Plan D-30514
11. PUD: S-88-T1
12. PUD: S-88-1C
13. PUD: S-88-2
14. PUD: S-88-7





VICINITY MAP
TOWNSHIP 32 NORTH, RANGE 9 EAST OF W.M. SNOHOMISH COUNTY, WASHINGTON
SCALE: 1" = 1500'



SURVEY LOCATION PLAN
SCALE: 1"= 200'

NOTES

1. EXISTING IRON ROD WITH PLASTIC CAP. TOP ELEVATION OF PLASTIC CAP IS 526.27'. DO NOT DISTURB THIS IRON ROD UNTIL ALL CONCRETE FOUNDATIONS ARE COMPLETE. ROD WILL BE USED AS A BEARING POINT.
2. EXISTING IRON ROD WITH PLASTIC CAP. TOP ELEVATION OF PLASTIC CAP IS 525.72'. THIS ELEVATION WILL BE USED AS REFERENCE ELEVATION FOR SUBSTATION CONSTRUCTION.
3. CONTRACTOR WILL SET PERMANENT IRON RODS OR PIPES AT THESE TWO LOCATIONS. THESE TWO LOCATIONS ARE PROPERTY CORNERS.
4. EAST-WEST BASELINE TO BE PARALLEL WITH A LINE INTERSECTING THE TWO REFERENCE IRON RODS NORTH OF THE STATION, SEE NOTES 1 & 2. NORTH-SOUTH BASELINE TO BE PERPENDICULAR TO EAST-WEST BASELINE. EAST-WEST BASELINE IS NOT PARALLEL TO SEATTLE CITY LIGHT RIGHT OF WAY.
5. BASIS OF VERTICAL DATA: U.S.G.S. REFERENCE RM90; ELEV. 490.60'.

   DESCRIPTION:
   CHISELED "X" ON TOP OF STEEL ANGLE PLATE ON LEFT BANK ABUTMENT OF DOWNSTREAM END OF CONCRETE BRIDGE NORTH OF STATION PROPERTY. SEE VICINITY MAP FOR BRIDGE LOCATION.

REFERENCE DRAWINGS

SHT. 3	D-30485	230KV ONE LINE DIAGRAM
SHT. 4	S-88-02	12.5KV ONE LINE DIAGRAM
SHT. 7	D-30451	GRADING & SURFACING PLAN
SHT. 8	D-30453	FENCE PLAN & DETAILS
SHT. 11	D-30483	FOUNDATION PLAN
SHT. 12	D-30484	FOUNDATION PLAN
SHT. 35	D-30515	CONDUIT & CABLE TRENCH PLAN
SHT. 36	D-30516	CONDUIT & CABLE TRENCH PLAN
SHT. 37	D-30517	CONDUIT & CABLE TRENCH PLAN
SHT. 44	D-30525	GROUNDING PLAN
SHT. 45	D-30526	GROUNDING PLAN
SHT. 49	D-30460	230KV ELECTRICAL ARRANGEMENT – PLAN
SHT. 54	S-88-09	12.5KV ELECTRICAL ARRANGEMENT – PLAN

MICROFILMED

CAD:C-0401

REVISIONS				
REV	DATE	MF		
DR	CK	APP	DESCRIPTION	
1	9-4-90			
EDA			ADDED 10' COUNTY RIGHT-OF-WAY ON 435TH.	
2	9-7-90			
RLZ			MINOR CHANGES	

Engineering & Design Associates

ENDORSEMENTS	
SIGNATURE	DATE
DR RLZ	6-5-90
CK	
DSGN DJH	
CK	

CITY OF SEATTLE
CITY LIGHT DEPARTMENT

APPROVED FOR CITY LIGHT DEPARTMENT

DATE

NORTH MOUNTAIN SUBSTATION

PLOT PLAN

CLASS

DRAWING NO. D-30450

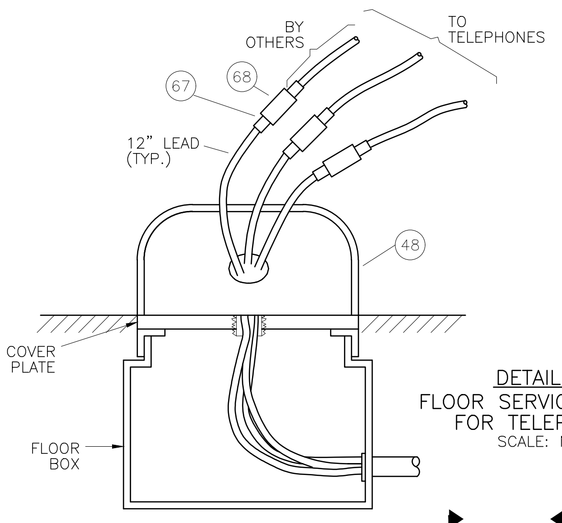
SCALE 1"= 30'

REV. NO. 2

SHEET 2 of

Michael Watkins
503, North Mountain Substation Agreements ATT 1

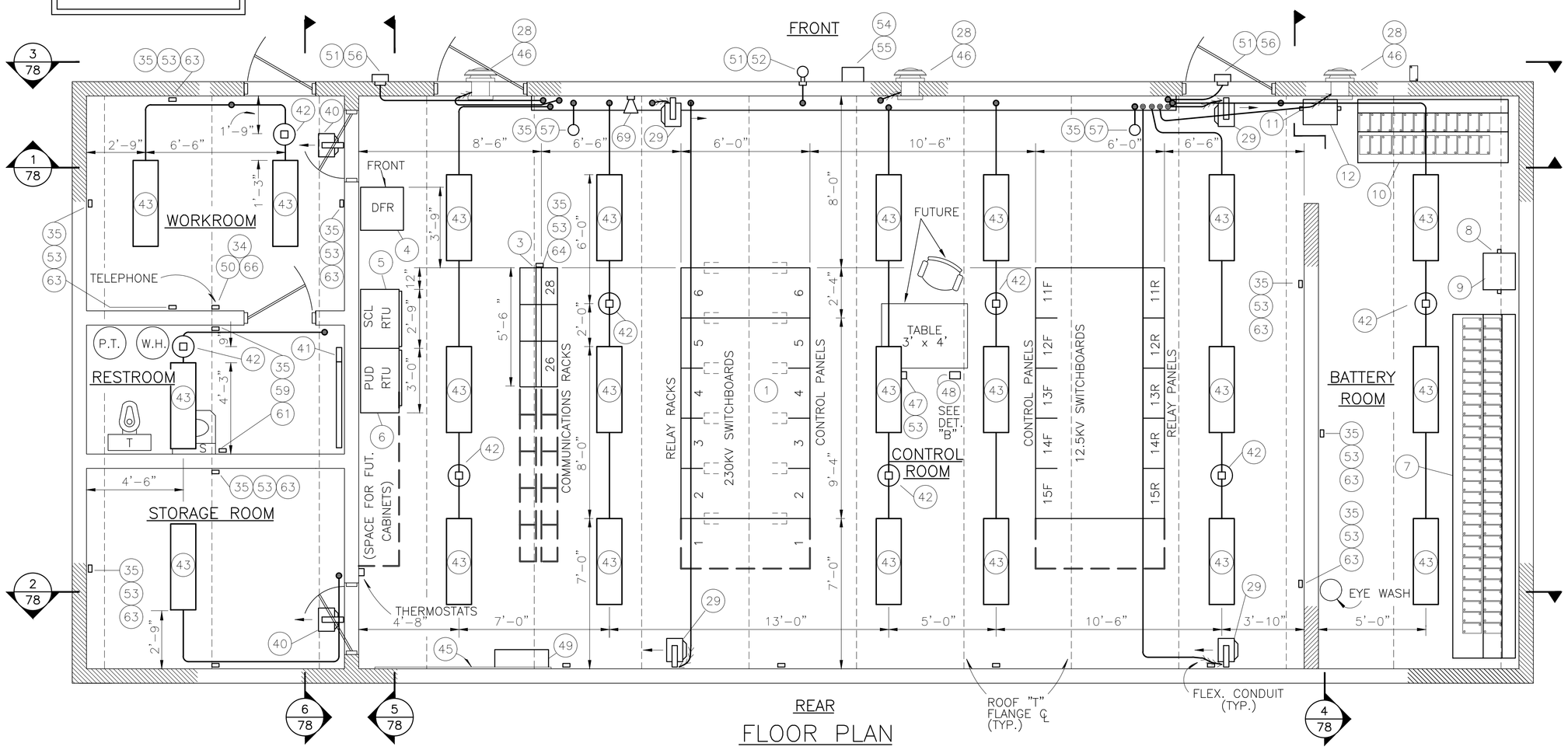
ATTACHMENT 1 to 503, North Mountain Substation Agreements ORD



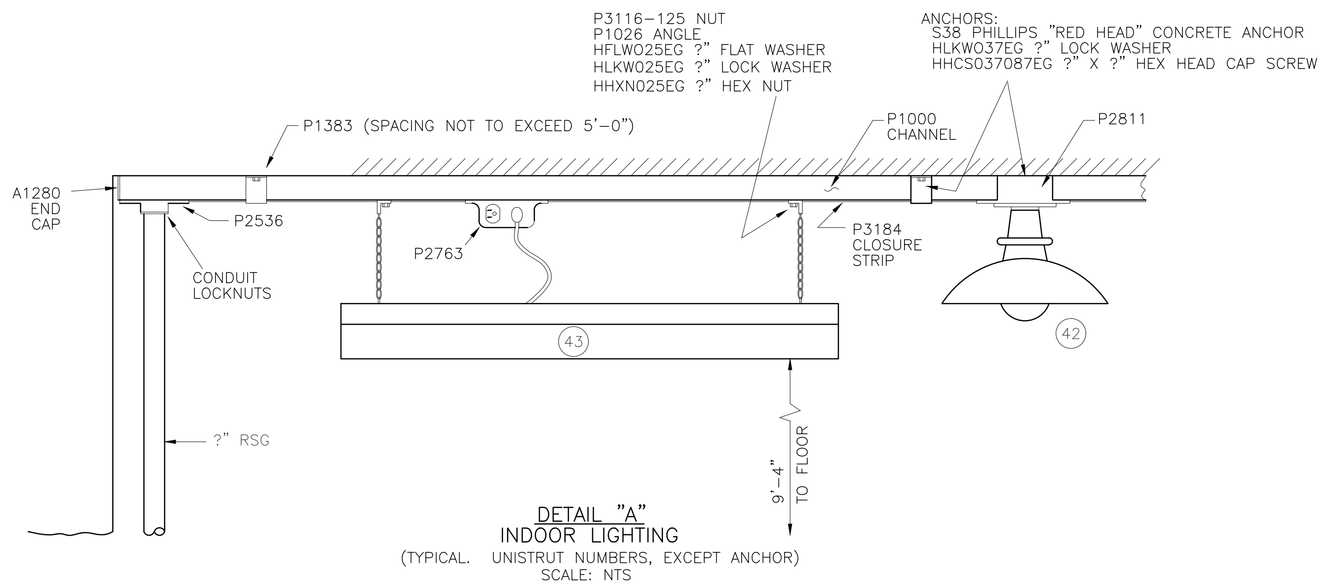
DETAIL "B"
FLOOR SERVICE FITTINGS FOR TELEPHONES
SCALE: NTS

REFERENCE DRAWINGS

SHT. 2 D-30450 PLOT PLAN
SHT. 22 D-30503 CONTROL HOUSE – FOUNDATION PLAN
SHT. 78 D-30532 CONTROL HOUSE EQUIPMENT – LOCATION ELEV. & SECTS.
SHT. 79 D-30533 CONTROL HOUSE EQUIPMENT – WIRING



FLOOR PLAN



DETAIL "A"
INDOOR LIGHTING
(TYPICAL. UNISTRUT NUMBERS, EXCEPT ANCHOR)
SCALE: NTS

ITEM NO.	QTY.	SOURCE	DESCRIPTION
58	2	CONTRACTOR	STRIP LIGHT, 1–40W RS FLUORESCENT, BENJAMIN #S–14–4.
59	2	CONTRACTOR	RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER, DUPLEX, IVORY, 15A, HUB–BELL #GF–5262–I.
60	5	CONTRACTOR	COVER FOR STANDARD UTILITY BOX, DUPLEX RECEPTACLE, STEEL CITY #58–C–7.
61	2	CONTRACTOR	COVER FOR 4" SQUARE BOX, GFCI W/HOLES FOR BOX & DEVICE, STEEL CITY TYPE RS.
62	5	CONTRACTOR	COVER FOR STANDARD UTILITY BOX, TOGGLE SWITCH, STEEL CITY #58–C–30.
63	13	CONTRACTOR	COVER FOR 4" SQUARE BOX, DUPLEX RECEPTACLE, STEEL CITY #RS–12.
64	1	CONTRACTOR	COVER FOR 4" SQUARE BOX, TWO DUPLEX RECEPTACLES, STEEL CITY #RS–8.
65	2	CONTRACTOR	COVER FOR 4" SQUARE BOX, TWO TOGGLE SWITCHES, STEEL CITY #RS–5.
66	1	CONTRACTOR	COVER FOR STANDARD UTILITY BOX, FOR SINGLE RECEPTACLE, STEEL CITY #58–C–5.
67	6	CONTRACTOR	MODULAR TELEPHONE LINE CORD PLUG, LEVITON TYPE 266, #49404.
68	3	CONTRACTOR	MODULAR CORD COUPLER, NORTH SUPPLY #S–488051.
69	1	CONTRACTOR	HORN/SIREN, 120VAC, EDWARDS #5520–N5.
70	LOT	CONTRACTOR	CONDUIT, RIGID STEEL, GALV., MISCELLANEOUS SIZES, FITTINGS, AS REQUIRED.
71	LOT	CONTRACTOR	UNISTRUT, MISCELLANEOUS SIZES, FITTINGS, AS REQUIRED.
72	1	CONTRACTOR	ENCLOSURE, ASCO SWITCH FOR ITEM 1 ON SHT. 84.

BILL OF MATERIAL

ITEM NO.	QTY.	SOURCE	DESCRIPTION
1	LOT	CONTRACTOR	230KV SWITCHBOARDS AS SHOWN ON S.C.L. DWG. #D–30542 (SHT. 107)
2	LOT	OWNER	12.5KV SWITCHBOARDS AS SHOWN ON P.U.D. DWG. #S–88–27, 28, & 29 (SHTS. 120–122)
3	LOT	OWNER	COMMUNICATIONS RACKS AS SHOWN ON S.C.L. DWG. #D–30555 (SHT. 133)
4	1	OWNER	DIGITAL FAULT RECORDER.
5	1	OWNER	REMOTE TERMINAL UNIT FOR S.C.L. POWER SYSTEM MONITOR (SCADA).
6	1	OWNER	REMOTE TERMINAL UNIT FOR SNOHOMISH P.U.D. SCADA.
7	1	OWNER	BATTERY, 125 VOLT, 58 CELLS, C & D POWER SYSTEMS TYPE KCR–13 W/RD–803–16 EP–2 RACK.
8	1	OWNER	BATTERY FUSE BOX, 125 VOLT, AS SHOWN ON S.C.L. DWG. #D–30284 (REF.)
9	1	OWNER	BATTERY CHARGER, 125 VOLT, C & D POWER SYSTEMS NO. ARE130CE35F.
10	1	OWNER	BATTERY, 48 VOLT 24 CELL C & D POWER SYSTEMS TYPE KCT–450 W/RD–803–7 EP–2 RACK.
11	1	OWNER	BATTERY FUSE BOX, 48 VOLT, AS SHOWN ON S.C.L. DWG. #D–30284 (REF.)
12	1	OWNER	BATTERY CHARGER, 48 VOLT, C & D POWER SYSTEMS #ART48AC50E.
13	1	CONTRACTOR	PANELBOARD, 250 VDC, 225 AMP, MAIN LUGS ONLY, 40 CKT, WESTINGHOUSE POW–R–LINE3 W/EHD BRANCH ACB'S "125V.DC PANEL NO. 1" AS SHOWN ON S.C.L. DWG. #D–30539 (SHT. 87)
14	1	CONTRACTOR	PANELBOARD, 250 VDC, 225 AMP, MAIN LUGS ONLY, 32 CKT, WESTINGHOUSE POW–R–LINE3 W/EHD BRANCH ACB'S "125V.DC PANEL NO. 2" AS SHOWN ON S.C.L. DWG. #D–30539 (SHT. 87)
15	1	CONTRACTOR	PANELBOARD, 250 VDC, 225 AMP, MAIN LUGS ONLY, 8 CKT, WESTINGHOUSE POW–R–LINE3 W/EHD BRANCH ACB'S "48V.DC PANELBOARD" AS SHOWN ON S.C.L. DWG. #D–30540 (SHT. 88)
16	1	CONTRACTOR	LOAD CENTER, 120/240 VOLT, 1ø, 3W, 150 AMP MAINS, 30 CKT, W/NEUTRAL BUS, WESTINGHOUSE #20–30ASN, W/ACB'S AS SHOWN ON S.C.L. DWG. #D–30536 (SHT. 82)
17	1	CONTRACTOR	LOAD CENTER, 120/208Y. VOLT, 3ø, 4W, 225 AMP MAIN LUGS ONLY, W/NEUTRAL BUS, WESTINGHOUSE #3–42–42CSN, W/ACB'S AS SHOWN ON S.C.L. DWG. #D–30535, "3ø PANEL NO. 1"
18	1	CONTRACTOR	LOAD CENTER, 120/208Y. VOLT, 3ø, 4W, 200 AMP MAIN LUGS ONLY, W/NEUTRAL & GROUND BUSSES, WESTINGHOUSE #3–30–42BSN, W/ACB'S AS SHOWN ON S.C.L. DWG. #D–30535, "3ø PANEL NO. 2"
19	1	CONTRACTOR	AUTOMATIC TRANSFER SWITCH, 120/208Y. VOLT, 3ø, 260 AMP, ASCO #940326049C
20	1	CONTRACTOR	AUTOMATIC TRANSFER SWITCH, 120/240 VOLT, 1ø, 100 AMP, ASCO #940210068C.
21	1	CONTRACTOR	SAFETY SWITCH, 3PDT, 600 VOLT, 200 AMP, UNFUSED, NEMA I, WESTINGHOUSE #XUN–364, W/XNK2 NEUTRAL.
22	2	CONTRACTOR	SAFETY SWITCH, 3P, 600 VOLT, 200 AMP, UNFUSED, NEMA I, WESTINGHOUSE #HUN–364 W/NK–200 NEUTRAL.
23	2	CONTRACTOR	SAFETY SWITCH, 2P, 600 VOLT, 100 AMP, UNFUSED, NEMA I, WESTINGHOUSE #HUN–263 W/NK–100 NEUTRAL.
24	1	CONTRACTOR	LIGHTING RELAY CABINET, AS SHOWN ON S.C.L. DWG. #D–30538 (SHT. 84)
25	1	CONTRACTOR	INTRUSION ALARM RELAY CABINET, AS SHOWN ON S.C.L. DWG. #D–30568 (SHT. 86)
26	1	CONTRACTOR	HEATER & FAN CONTROL CABINET, AS SHOWN ON S.C.L. DWG. #D–30570 (SHT. 85)
27	3	CONTRACTOR	INTRUSION ALARM RELAY CABINET, AS SHOWN ON S.C.L. DWG. #D–30568 (SHT. 86)
28	3	CONTRACTOR	EXHAUST FAN, 470 CFM, GRAINGER STOCK #2C912.
29	4	CONTRACTOR	UNIT HEATER, HORIZONTAL, 4 KW, 208VAC, 3 PHASE, CHROMALOX #LUH–04–83 W/INTERNAL CONTACTOR; W/WALL MTG. BRACKET #WUH–01.
30	3	CONTRACTOR	MAGNETIC SWITCH, EDWARDS #62 W/#67G TERMINAL COVER
31	2	CONTRACTOR	TOGGLE SWITCH, 3–WAY, 1 POLE, 20 AMP, AC, HUBBELL #1223.
32	5	CONTRACTOR	TOGGLE SWITCH, 2 POLE, 20 AMP, AC/DC, HUBBELL #9806.
33	2	CONTRACTOR	TOGGLE SWITCH, 1 POLE, 20 AMP, HUBBELL #1221.
34	11	CONTRACTOR	UTILITY BOX, 1 GANG, ?", STEEL CITY #58371–?.
35	21	CONTRACTOR	OUTLET BOX, 4" SQUARE, ?", STEEL CITY #52171–?.
36	2	CONTRACTOR	TOGGLE CONTROL STATION, 3–WAY MOMENTARY CONTACT W/CENTER NEUTRAL POSITION, SURFACE MOUNT, ASCO #173A3.
37	1	CONTRACTOR	CONDULET BOX, 2 GANG, TANDEM, APPLETON #FS–2T–75.
38	1	CONTRACTOR	THERMOSTAT, LINE VOLTAGE, FOR HEATING, 56–80°F, MERCOID TYPE 860–2, RANGE 63.
39	1	CONTRACTOR	THERMOSTAT, LINE VOLTAGE, FOR COOLING, 80–110°F, MERCOID TYPE 860–3, RANGE 65.
40	2	CONTRACTOR	UNIT HEATER, HORIZONTAL, 2.2 KW, 208VAC, 1 PHASE, CHROMALOX #MUH–03–2 W/INTERNAL THERMOSTAT #MT–1 AND WALL MTG. BRACKET #MMB–5.
41	1	CONTRACTOR	BASEBOARD HEATER, 1 KW, 120VAC, 1 PHASE, CHROMALOX #BB–C–41 W/THERMOSTAT SECTION #BB–C–K–7.
42	8	CONTRACTOR	EMERGENCY LIGHT, 100W, INCANDESCENT, BENJAMIN #5421, W/BOX COVER #3622.
43	22	CONTRACTOR	INDUSTRIAL LIGHT, 120 VOLT, 60 HZ, 2–40 RS, HPF, CBM, ETL BALLAST BEN–JAMIN #FK–1124–4, W/CHAIN ASSEMBLY #FK–126 & CORD & PLUG #FL–125–120.
44			NOT USED
45	1	CONTRACTOR	COMMUNICATIONS DIST. FRAME 4' x 8' x 1" PLYWOOD, DWG. #D–30569 (SHT. 137)
46	3	CONTRACTOR	METAL LOUVER, 14" x 14",
47	1	CONTRACTOR	SERVICE FITTING, FLOOR TYPE, 15 AMP, 125 VOLT, BACK TO BACK DUPLEX RECEPT. HUBBELL HOUSING, #SC–3098, W/2 PLATES #SS–309–D.
48	1	CONTRACTOR	SERVICE FITTING, FLOOR TYPE, W/TELEPHONE BUSHING, ONE SIDE BLANK, HUBBELL #SC–3090
49	1	CONTRACTOR	TELEPHONE PROTECTION EQUIP., AS SHOWN ON S.C.L. DWG. #D–30569 (SHT. 137)
50	1	CONTRACTOR	TELEPHONE JACK, 4W, LEVITON TYPE 625B, #40201–I.
51	3	CONTRACTOR	CAST JUNCTION BOX, 4" ROUND x 1?" DEEP, FOR " CONDUIT APPLETON TYPE JB, #JBX–50.
52	1	CONTRACTOR	LIGHTING FIXTURE, INCANDESCENT TYPE, OUTDOOR WALL (J.B.) MOUNT, COMPLETE W/ GLOBE & GUARD, APPLETON TYPE V–51, #JBW10G.
53	22	CONTRACTOR	RECEPTACLE, DUPLEX, 125VAC, 3W, 15A, IVORY, NEMA 5–15R, HUBBELL #5262I.
54	1	CONTRACTOR	EMERGENCY GENERATOR JUNCTION BOX, & DISC. SWITCH, 200 AMP, 3P, NEMA 3R, SN, 600 VOLT, W/200 AMP D.E. FUSES, G.E. #TH4324R.
55	1	CONTRACTOR	JUNCTION BOX, 18"H x 12"W x 8"D, NEMA 3R, HOFFMAN #A–18R128.
56	2	CONTRACTOR	LIGHTING FIXTURE, INCANDESCENT, OUTDOOR, WALL MOUNT, HOLOPHANE WALL–PACKETTE, #WP1A150INGR.
57	2	CONTRACTOR	SMOKE DETECTOR, PHOTOELECTRONIC TYPE, 120VAC, EDWARDS #6391B.

ATTACHMENT 1 to SCL North Mountain Substation Agreement.ORD

D:\BC–WorkSpace_ADMEDM\M–Lc251edm,D–SCLGenPS2016\Masters\NMS\E – Electrical\D30531.DWG
GenPS D: 28x40 _admedm Apr/13/2018 9:06am

Michael Watkins
SCL North Mountain Substation Agreements ATT 1

ONE INCH AT FULL SIZE

REVISIONS

REV	DATE	BY
DR	CK	APP
W.O.#		
1	09/10/91	MF
DES		EDA
W.O.#		
AS BUILT.		
2	01/26/2009	
KW	RSK	RSK
W.O.# 99899–09		

GD–NM LINE RELAY UPGRADE; INSTALLED RACK 6.

Engineering & Design Associates

ENDORSEMENTS

SIGNATURE	DATE
DR : RLZ	07–09–1990
CK : JWO	
DSGN: LWK	
CK :	

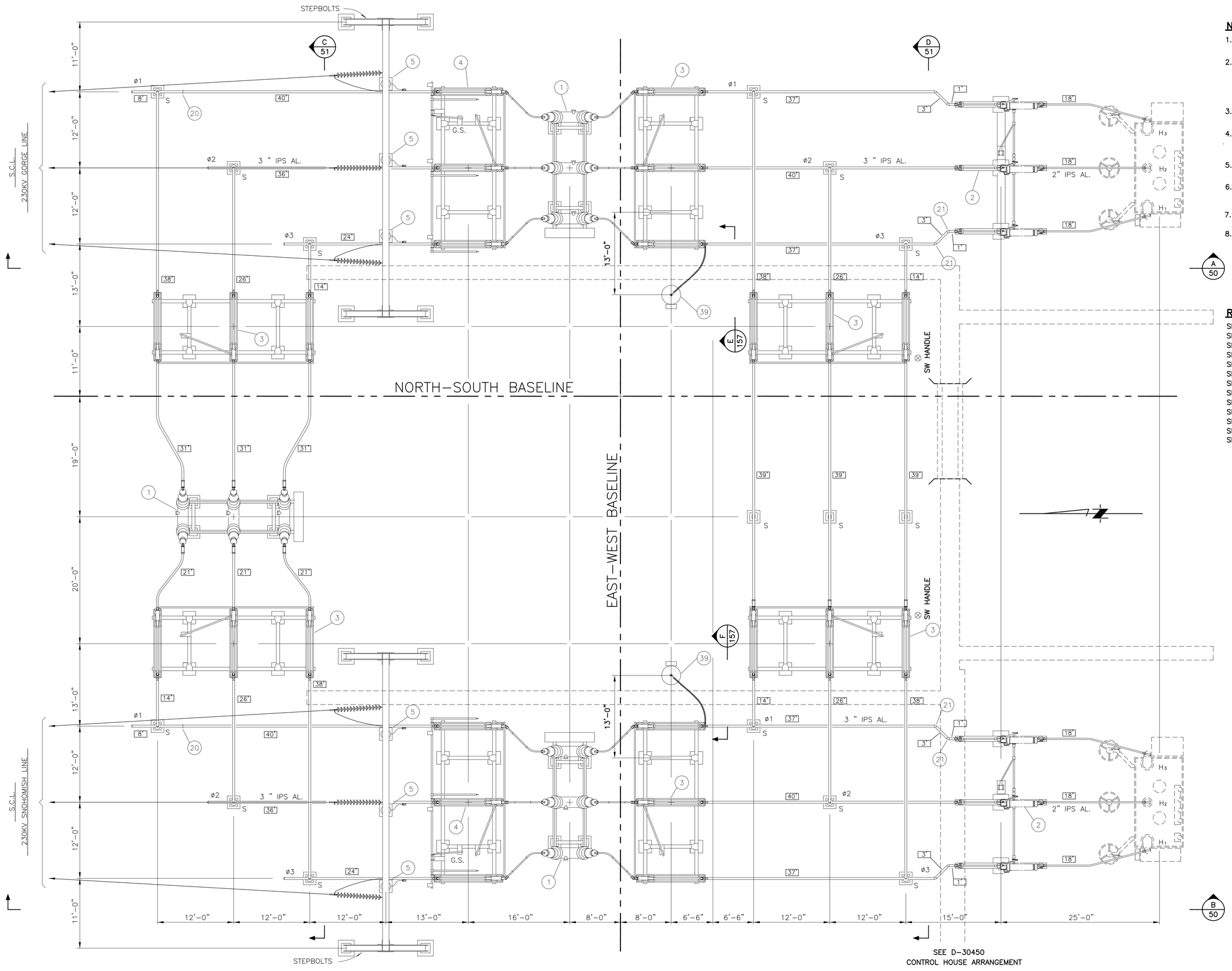
Seattle City Light

APPROVED FOR SEATTLE CITY LIGHT

DATE

PHYSICAL PLANT
NORTH MOUNTAIN SUBSTATION
CONTROL HOUSE EQUIPMENT
LOCATION PLAN

SHEET 77 OF
CLASS E
DRAWING NO. D-30531
SCALE NTS
REV. NO. 2



NOTES

1. BEFORE INSTALLING BUS & FITTINGS, REFER TO THE CONSTRUCTION STANDARDS IN THE SPECIFICATIONS.
2. INSTALL " GALV. GUY STRAND INSIDE ALL HORIZONTAL RUNS OF ALUMINUM BUS TUBING EXCEEDING TEN FEET IN LENGTH TO ACT AS A VIBRATION DAMPER. WIRE IS TO BE PUSHED INTO BUS TUBING. DO NOT CONNECT ENDS.
3. "F" AND "S" REFER TO "FIXED" OR "SLIDING" BUS SUPPORTS AT EACH LOCATION AS INDICATED.
4. SEE SHT. 44 & 45, DWG'S.. D–30525 & D–30526 FOR ALL ABOVE GRADE GROUNDING & GROUND CONNECTIONS TO EQUIPMENT & STRUCTURES.
5. ALL VOIDS BETWEEN BASEPLATES AND TOP OF FOOTINGS TO BE GROUTED.
6. BUS LENGTHS INDICATED BY [27] COORDINATE WITH SUGGESTED BUS CUTTING SCHEDULE. SEE SHT. 52, DWG. D–30463.
7. CIRCLED NUMBERS (1) ARE BILL OF MATERIAL REFERENCE NUMBERS. SEE SHT. 53, DWG. D–30464.
8. DRILL ?"ø WEEP HOLE, BOTTOM OF EACH TUBULAR BUS, AT CENTER OF EACH HORIZONTAL SPAN AND AT BOTTOM OF EACH VERTICAL SPAN.

REFERENCE DRAWINGS

SHT. 2	D–30450	PLOT PLAN
SHT. 3	D–30485	230kV ONE LINE DIAGRAM
SHT. 11	D–30483	FOUNDATION PLAN
SHT. 12	D–30484	FOUNDATION PLAN
SHT. 35	D–30515	CONDUIT & CABLE TRENCH PLAN
SHT. 36	D–30516	CONDUIT & CABLE TRENCH PLAN
SHT. 44	D–30525	GROUNDING PLAN
SHT. 45	D–30526	GROUNDING PLAN
SHT. 50	D–30461	230kV ELEC. ARRGMT. – SECTIONS
SHT. 51	D–30462	230kV ELEC. ARRGMT. – SECTIONS
SHT. 52	D–30463	230kV ELEC. ARRGMT. – DETAILS
SHT. 53	D–30464	230kV ELEC. ARRGMT. – BILL OF MATERIAL
SHT. 157	D–43670	230kV ELEC. ARRGMT. – SECTIONS
	D–42533	CVT MOUNTING STRUCTURE AND FOUNDATION PLAN, SECTIONS AND DETAILS

8' 4' 0 4' 8'
SCALE: 1/8"=1'-0"

C:\BC–WorkSpace\FLORESF\M–Lc251edm.D–SCLGenPS2016\Masters\NMS\E – Electrical\D30460.DWG
GenPS D: 28x40 FloresF Dec/03/2021 8:05am

ONE INCH AT FULL SIZE

REVISIONS			
REV	DATE		MF
DR	CK		APP
W.O.#			
DESCRIPTION			
1	04/16/2008		
KW	EPH		EPH
W.O.# 99899–09			
UPGRADED GO–NM LINE RELAYS.			

Engineering & Design Associates

ENDORSEMENTS	
SIGNATURE	DATE
DR : RLZ	7–9–90
CK :	
DSGN:	
CK :	

Seattle City Light

APPROVED FOR SEATTLE CITY LIGHT

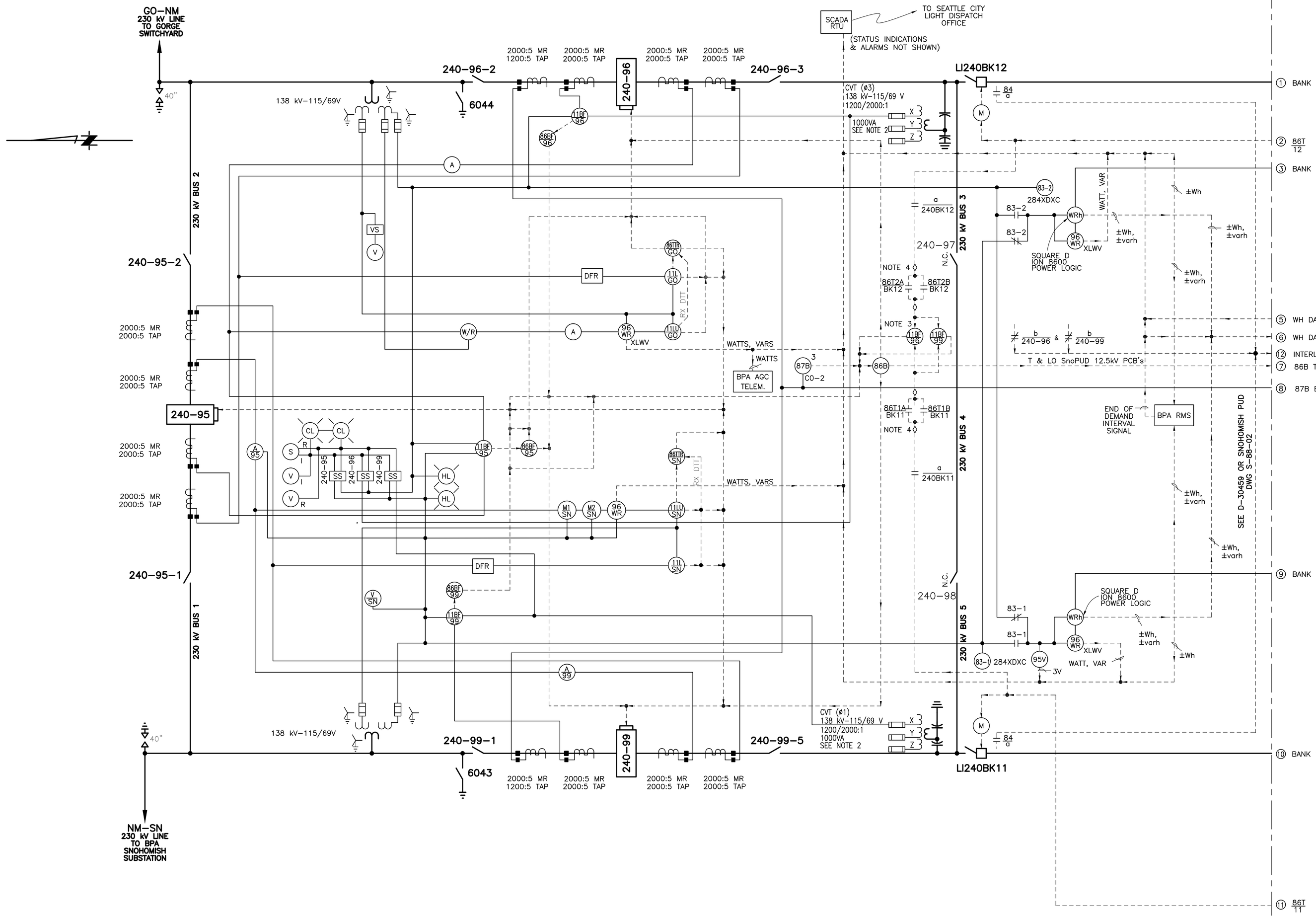
DATE

GENERAL ARRANGEMENT
NORTH MOUNTAIN SUBSTATION
230kV ELECTRICAL ARRANGEMENT PLAN

SHEET 49 OF	
CLASS E	
DRAWING NO. D-30460	
SCALE 1/8"=1'-0"	REV. NO. 1

ATTACHMENT 1 to SCL North Mountain Substation Agreements 0303

Michael Watkins
SCL North Mountain Substation Agreements ATT 1



REFERENCE DRAWINGS

	D–44172	ARC FLASH HAZARD DATA
SHT. 4	*D–30459(S–88–2)	12.5 kV ONE LINE DIAGRAM
SHT. 89	D–30486	AC ELEMENTARY – 230 kV
SHT. 90	*MD–8879	AC ELEMENTARY – 12.5 kV
SHT. 91	D–30490	DC ELEMENTARY – 230 kV SNOHOMISH LINE RELAYS
SHT. 93	D–30492	DC ELEMENTARY – 230 kV BREAKER 240–95
SHT. 94	D–30493	DC ELEMENTARY – 230 kV BREAKER 240–96
SHT. 95	D–30494	DC ELEMENTARY – 230 kV BREAKER 240–99
SHT. 96	D–30495	DC ELEMENTARY – 230 kV BUS 3,4,5 DIFFERENTIAL
SHT. 97	D–30496	DC ELEMENTARY – 230 kV LOAD INTERRUPTER 240BK11
SHT. 98	D–30497	DC ELEMENTARY – 230 kV LOAD INTERRUPTER 240BK12
SHT. 99	*MD–8940	DC ELEMENTARY – TRANSFORMER BANK NO. 11 RELAYS
SHT. 100	*MD–8941	DC ELEMENTARY – TRANSFORMER BANK NO. 12 RELAYS
SHT. 2	D–30450	PLOT PLAN
SHT. 49	D–30460	230 kV ELECTRICAL ARRANGEMENT PLAN
	D–42452	NORTH MOUNTAIN SUBSTATION DRAWIN LIST

CIRCUITS CONTINUED ON DWG. S–88–02

1. 230 kV TO BANK NO. 12
2. TRIP FROM BANK LOCKOUT RELAYS
3. METERING CURRENT FROM BANK NO. 12
4. POLARIZING CURRENT FROM BANK NEUTRALS
5. TRANSDUCER OUTPUTS FROM 12.5 kV SYSTEM
6. Wh, varh & INTERVAL PULSES TO PUD RTU
7. 86B TRIP TO BREAKER 12–2514, 12–2515, & 12–2516
8. TOTAL CURRENT FROM BANKS NO. 11 & 12
9. METERING CURRENT FROM BANK NO. 11
10. 230 kV TO BANK NO. 11
11. TRIP FROM BANK LOCKOUT RELAYS
12. DEVICE INTERLOCK INPUT FROM 240–96, 240–99, LI240BK11, AND LI240BK12 TO SEL 2100 PUD SIDE.

LEGEND

11BF	BREAKER FAILURE RELAY, SEL 351
11L	LINE RELAY #1, SEL 311L
11LU	LINE RELAY #2, SEL 311L
69S	SCADA CONTROL DISABLING SWITCH
79Z	RECLOSING AUXILIARY RELAY
86B	LOCKOUT RELAY
87B	BUS DIFFERENTIAL RELAY
95V	VOLT TRANSDUCER
96WR	WATT/VAR TRANSDUCER
A	AMMETER
CL	CLEAR LIGHT
DFR	DIGITAL FAULT RECORDER
HL	HOT LIGHT (FOR MIMIC BUS)
M	MOTOR
A	MULTIFUNCTION METER – BITRONICS M650M3
PX	METER PULSE AUXILIARY RELAY
S	SYNCHROSCOPE
SS	SYNCHROSCOPE SWITCH
V	VOLTMETER
VS	VOLTMETER SWITCH
W/R	WATT/VAR METER
WRh	WATTHR/VARHR METER
M1	WATT/VAR MULTIFUNCTION METERS – BITRONICS M650M3
M2	AMMETER MULTIFUNCTION METERS – BITRONICS M650M3
V NM–SN	VOLTMETER MULTIFUNCTION METERS – BITRONICS M650M3

NOTES

1. * DRAWINGS MAINTAINED BY SNOHOMISH COUNTY PUD. DO NOT REVISE.
2. RATED PRIMARY VOLTAGE = 138kV
   MAXIMUM PRIMARY VOLTAGE = 141.45kV
   CVT ACCURACY:
   X_{WDG} & Y_{WDG} = 0.3WXYZ, ZZ
   Z_{WDG} = 1.2Y
3. LOAD INTERRUPTER FAILURE TIMER USES INPUTS AND OUTPUTS FROM 11BF/96 AND 11BF/99.
4. CONTACTS IN BETWEEN ◊ SYMBOL DENOTES SNOPUD CIRCUIT ELEMENTS.

S–88–01B

REVISIONS			
REV	DATE		MF
DR	CK	APP	
W.O.#			
	DESCRIPTION		
1	08/30/06		
WEU	LAN	EPH	
W.O.# 99808–01			
HAMPTON GENERATOR INTERCONNECTION.			
2	04/09/2008		MF
KW	EPH	EPH	
W.O.# 99899–09			
UPGRADED LINE GO–NM RELAYS. REMOVED CLOSING CKT INFORMATION; CORRECTED DFR CURRENT INPUT (4).			
3	08/14/2009		
AJB			
W.O.# 99899–09			
UPDATED FOR TRANSFER SWITCH REMOVAL (DEVICE 83)			
4	9–9–09		
PR			
W.O.# 99899–09			
REV. METERING CONN ON BUS 1 & 2 PTS TO REMOVE SHARING OF METERING.			
<5>	08–19–2011		
TJ			
W.O.# 99899–09			
REV. DISTANCE RELAY CONN. W/R CONN. ADDED PWR. SIGNAL FROM 11LU/GO TO 86T14/GO & RESTORED TRANSFER RELAY FOR TRANSFER SWITCH REMOVAL. AS–WIRED.			
6	10/19/2012	IMAGE	
JMD	RSK		
W.O.# 69866–09			
ADDED GO–SN LINE RELAYS.			
7	05/04/2015	IMAGE	
JM	LAN		
W.O.# 1305721–01			
ADDED WATT/VAR MULTI FN. AMMETER AND VOLTMETER AS WIRED.			
8	05/06/2015	IMAGE	
JMD	TDL		
W.O.# 1507252–01			
REVISED LOAD INTERRUPTER BREAKER FAILURE TIMER FOR LI 240BK11 & BK12.			
9	05/29/2015	IMAGE	
JM	APB	WAM	
W.O.# 1305721–01			
MADE CHANGES AS WIRED.			
10	02/29/16	IMAGE	
KC	RSK		
W.O.# 1602077			
NEW 96 WATT/VAR XDCR FOR SNOHOMISH LINE.			
11	03/02/2016	IMAGE	
JMD	JM		
W.O.# 1507252–01			
LI 240BK11 & 12 BREAKER FAILURE TIMER AS WIRED.			
12	07/18/16	IMAGE	
MKS	JM		
W.O.# 1305721–01			
REV. AT GO–NM–SN LINE RELAY PANELS ADDITIONAL REDLINES AS WIRED			

ENDORSEMENTS	
SIGNATURE	DATE
DR FNP	07/09/1990
CK :	
DSGN:	
CK :	

Seattle City Light

APPROVED FOR SEATTLE CITY LIGHT

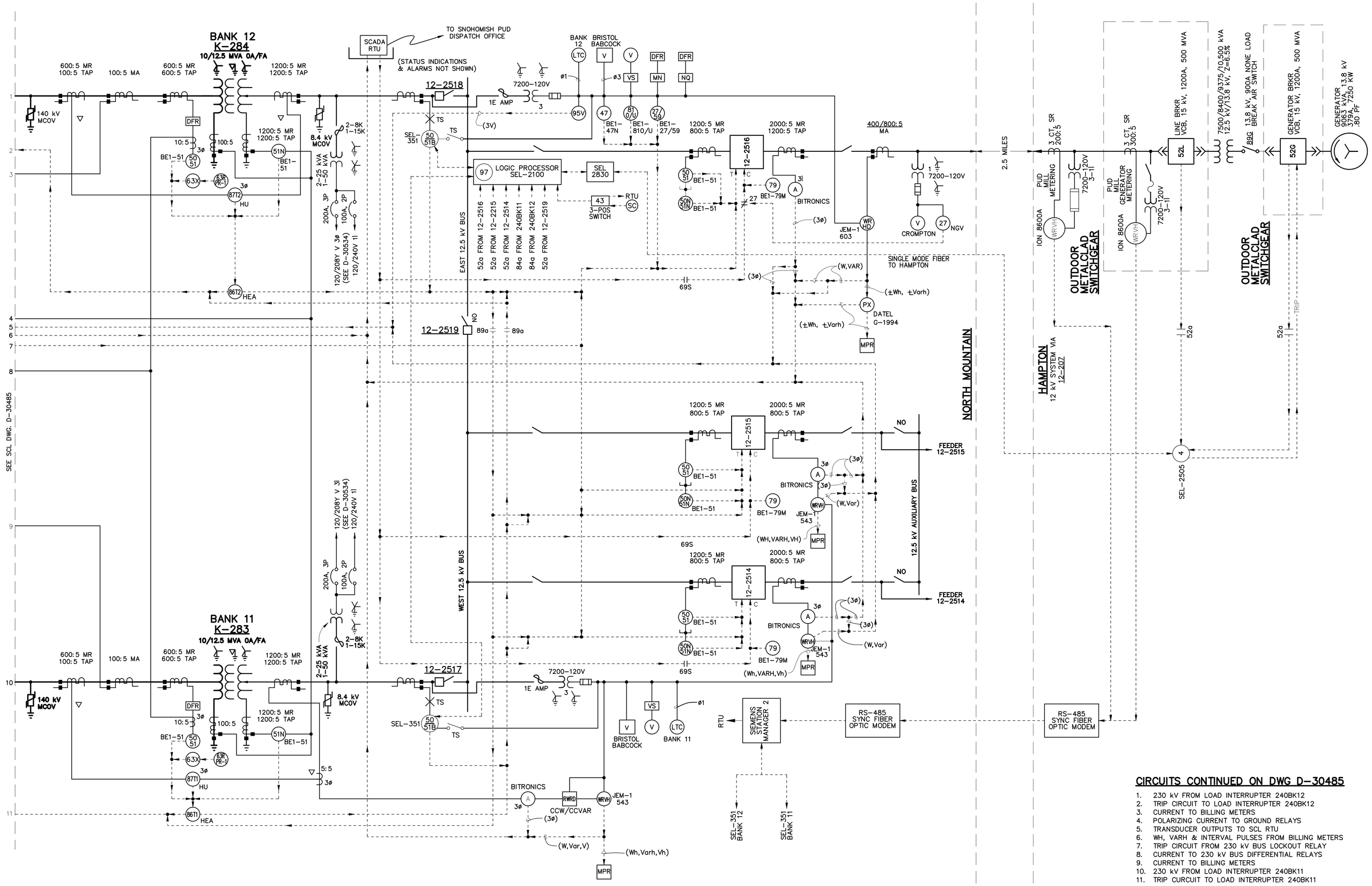
SEE MICROFILM

DATE FOR SIGNATURES

METERING, COMMUNICATIONS, & RELAYING
NORTH MOUNTAIN SUBSTATION
230 kV
ONE LINE DIAGRAM

SHEET 1 OF 1
CLASS. E8-240
DRAWING NO. D-30485
SCALE NONE
REV. NO. 12

D:\BC–WorkSpace_ADMEDM\M–Lc251edm,D–SCLGenPS2016\Masters\NMS\E – Electrical\D30485.DWG
_admedm Jul/12/2017 8:59am
Michael Watkins
SCL\North Mountain Substation Agreements ATT 1
ATTACHMENT 1 to SCL North Mountain Substation Agreement.ORD



LEGEND

	ZINC OXIDE SURGE ARRESTER
	LOAD-BREAK DISCONNECT SWITCH (TPST)
27	UNDERVOLTAGE RELAY
47	NEGATIVE SEQUENCE VOLTAGE RELAY
50	PHASE INSTANTANEOUS OVERCURRENT RELAY
50N	GROUND INSTANTANEOUS OVERCURRENT RELAY
51	PHASE TIME OVERCURRENT RELAY
51N	GROUND TIME OVERCURRENT RELAY
59	OVERVOLTAGE RELAY
63RPR-1	RAPID PRESSURE RISE RELAY
63X	AUXILIARY TARGET RELAY FOR 63RPR-1
69S	SCADA CONTROL DISABLING SWITCH
79	RECLOSING RELAY
810/U	OVER/UNDER FREQUENCY RELAY
86T1,2	LOCKOUT RELAY
87T1,2	TRANSFORMER DIFFERENTIAL RELAY
89a	12.5 kV BUS TIE AUXILIARY SWITCH
95V	VOLT TRANSDUCER
A	AMMETER
DFR	DIGITAL FAULT RECORDER
LTC	LOAD TAP CHANGER
MN	MULTIPHASE NETWORK
MPR	METER PULSE RECORDER (DATASTAR)
NQ	NEGATIVE SEQUENCE VOLTAGE SENSOR
PX	METER PULSE REPEAT RELAY
RWRD	RECORDING WATT/VAR DEMAND METER
V	VOLTMETER
VS	VOLTMETER SWITCH
WRHD	WATT/VAR HOUR DEMAND METER
WRVH	WATT/VAR/VOLTHR METER
	METER OR RELAY
	RECORDING METER
	* INSERT LETTER FOR QUANTITY METERED OR RELAY FUNCTION NUMBER
TS	TEST SWITCH

CIRCUITS CONTINUED ON DWG D-30485

1. 230 kV FROM LOAD INTERRUPTER 240BK12
2. TRIP CIRCUIT TO LOAD INTERRUPTER 240BK12
3. CURRENT TO BILLING METERS
4. POLARIZING CURRENT TO GROUND RELAYS
5. TRANSDUCER OUTPUTS TO SCL RTU
6. WH, VARH & INTERVAL PULSES FROM BILLING METERS
7. TRIP CIRCUIT FROM 230 kV BUS LOCKOUT RELAY
8. CURRENT TO 230 kV BUS DIFFERENTIAL RELAYS
9. CURRENT TO BILLING METERS
10. 230 kV FROM LOAD INTERRUPTER 240BK11
11. TRIP CURCUIT TO LOAD INTERRUPTER 240BK11

S-88-2

D:\BC-WorkSpace_ADMEDM\M-Lc251edm,D-SCLGenPS2016\Masters\NMS\E - Electrical\D30459.DWG, ANSI-F: 28x40, _ADMEDM, June 9, 2017 12:28 PM

Michael Watkins
SCL North Mountain Substation Agreements ATT 1

ONE INCH AT FULL SIZE

REVISIONS		
REV	DATE	IMAGE
DRAWN BY	CHECKED By	APPROVED BY
WORK ORDER #:		
DESCRIPTION		
7	3/25/08	MF
KW	EPH	EPH
WORK ORDER # 99806-01		
ADDITIONAL GENERATOR INTERCONNECTION		
8	3/20/17	IMAGE
CKM	JM	JM
WORK ORDER #: 1305721		
AS WIRED, PER MISC. REDLINES		

ENDORSEMENTS	
SIGNATURE	DATE
DRAWN: FMP	07/01/1990
CHECK:	
DESIGN:	
CHECK:	

Seattle City Light
Power Production & Substations

APPROVED FOR SEATTLE CITY LIGHT

DATE

SUBJECT: METERING, COMMUNICATIONS, & RELAYING
LOCATION: NORTH MOUNTAIN SUBSTATION
TITLE: 12.5 KV BUS
ONE LINE DIAGRAM

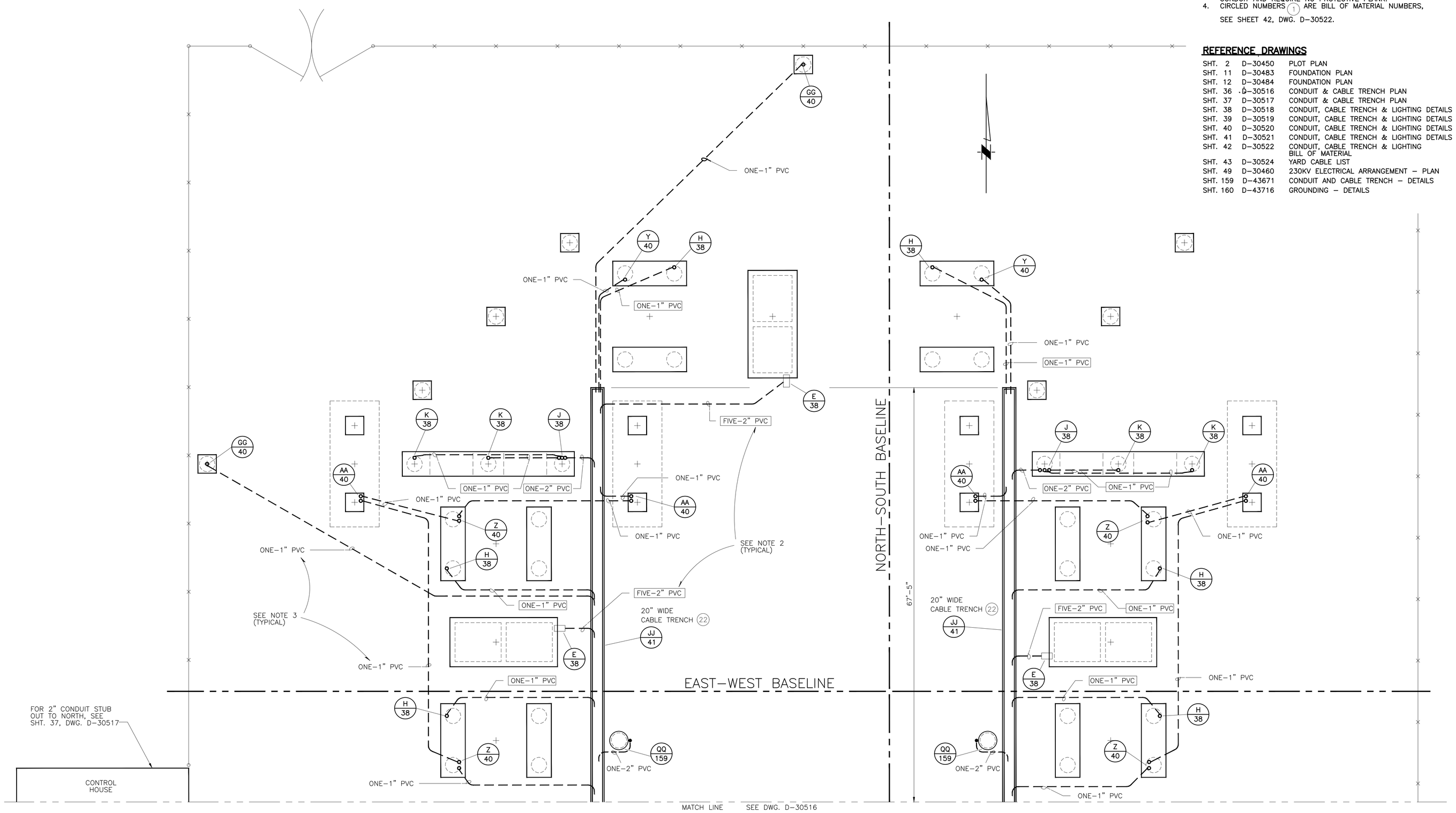
SHEET: 4 OF 156
CLASS \ SHEET: E
DRAWING NO.: D30459
SCALE: NONE
REV. NO.: 8

NOTES

1. ALL CONDUIT SHALL BE BURIED TO A DEPTH OF 2'-6" BELOW SUBGRADE, 3'-0" BELOW FINSHED GRADE.
2. CONDUIT RUNS INDICATED WITH A BOX [TWO-2" PVC] SHALL HAVE PROTECTIVE PLANK COVERING. SEE DETAIL (MM 41)
3. CONDUIT RUNS INDICATED WITHOUT BOX ARE ALL LIGHTING CONDUIT AND REQUIRE NO PROTECTIVE PLANK.
4. CIRCLED NUMBERS (1) ARE BILL OF MATERIAL NUMBERS, SEE SHEET 42, DWG. D-30522.

REFERENCE DRAWINGS

SHT. 2	D-30450	PLOT PLAN
SHT. 11	D-30483	FOUNDATION PLAN
SHT. 12	D-30484	FOUNDATION PLAN
SHT. 36	D-30516	CONDUIT & CABLE TRENCH PLAN
SHT. 37	D-30517	CONDUIT & CABLE TRENCH PLAN
SHT. 38	D-30518	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 39	D-30519	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 40	D-30520	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 41	D-30521	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 42	D-30522	CONDUIT, CABLE TRENCH & LIGHTING BILL OF MATERIAL
SHT. 43	D-30524	YARD CABLE LIST
SHT. 49	D-30460	230KV ELECTRICAL ARRANGEMENT – PLAN
SHT. 159	D-43671	CONDUIT AND CABLE TRENCH – DETAILS
SHT. 160	D-43716	GROUNDING – DETAILS



REVISIONS			
REV	DATE	CK	APP
DR			
W.O.#			
1	04/18/2008	KW	EPH
W.O.#	99899-09		EPH

UPGRADED GO-NM LINE RELAYS.

ENDORSEMENTS	
SIGNATURE	DATE
DR : RLZ	06/06/1990
CK :	
DSGN:	
CK :	

Seattle City Light

APPROVED FOR SEATTLE CITY LIGHT

DATE

PHYSICAL PLANT
NORTH MOUNTAIN SUBSTATION

CONDUIT AND CABLE TRENCH PLAN

SHEET 35 OF
CLASS E
DRAWING NO. D-30515
SCALE 1/8"=1'-0"
REV. NO. 1

ONE INCH AT FULL SIZE

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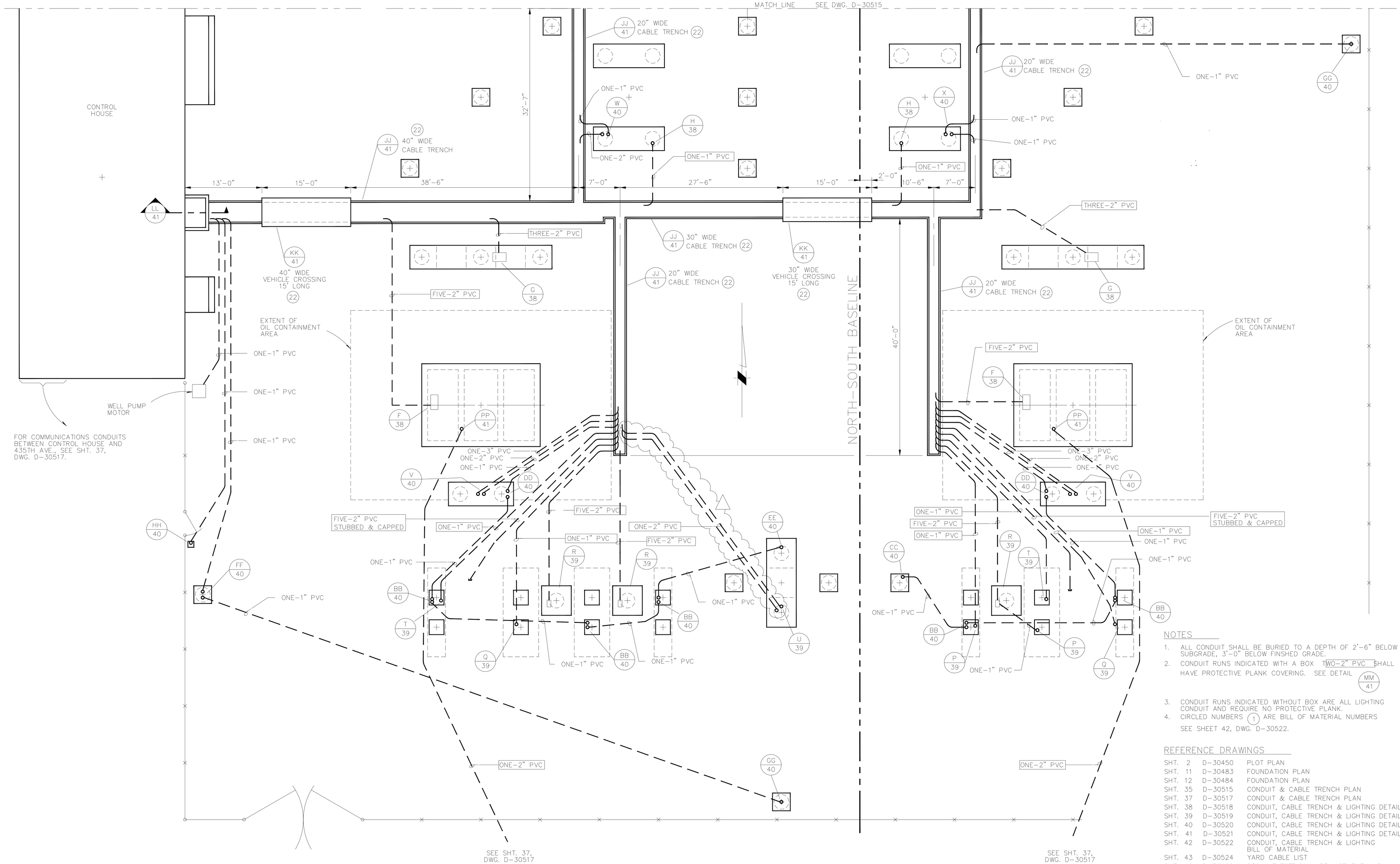
Michael Watkins
SCL: North Mountain Substation Agreements ATT 1



NOTES

1. ALL CONDUIT SHALL BE BURIED TO A DEPTH OF 2'-6" BELOW SUBGRADE, 3'-0" BELOW FINSHED GRADE.
2. CONDUIT RUNS INDICATED WITH A BOX TWO-2" PVC SHALL HAVE PROTECTIVE PLANK COVERING. SEE DETAIL MM 41
3. CONDUIT RUNS INDICATED WITHOUT BOX ARE ALL LIGHTING CONDUIT AND REQUIRE NO PROTECTIVE PLANK.
4. CIRCLED NUMBERS (1) ARE BILL OF MATERIAL NUMBERS SEE SHEET 42, DWG. D-30522.

REFERENCE DRAWINGS

SHT. 2	D-30450	PLOT PLAN
SHT. 11	D-30483	FOUNDATION PLAN
SHT. 12	D-30484	FOUNDATION PLAN
SHT. 35	D-30515	CONDUIT & CABLE TRENCH PLAN
SHT. 37	D-30517	CONDUIT & CABLE TRENCH PLAN
SHT. 38	D-30518	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 39	D-30519	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 40	D-30520	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 41	D-30521	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 42	D-30522	CONDUIT, CABLE TRENCH & LIGHTING BILL OF MATERIAL
SHT. 43	D-30524	YARD CABLE LIST
SHT. 49	D-30460	230KV ELECTRICAL ARRANGEMENT - PLAN
SHT. 54	S-88-09	12.5KV ELECTRICAL ARRANGEMENT - PLAN

CAD:C-0411

REVISIONS				
REV	DATE	CK	APP	DESCRIPTION
DR				
1	9-10-91		EDA	AS BUILT
DES				
2	8-91			ADD 2" CONDUIT FOR XFMR DIFF TRIPPING
MCP				

CHRISTIAN ZACHARIA STATE OF WASHINGTON 27222 REGISTERED PROFESSIONAL ENGINEER

JACK W. OTTERSON STATE OF WASHINGTON 26279 REGISTERED PROFESSIONAL ENGINEER

Engineering & Design Associates

ENDORSEMENTS		
	SIGNATURE	DATE
DR	RLZ	7-6-90
CK	JWO	
DSGN	DJH	
CK		

CITY OF SEATTLE
CITY LIGHT DEPARTMENT
APPROVED FOR CITY LIGHT DEPARTMENT
DATE

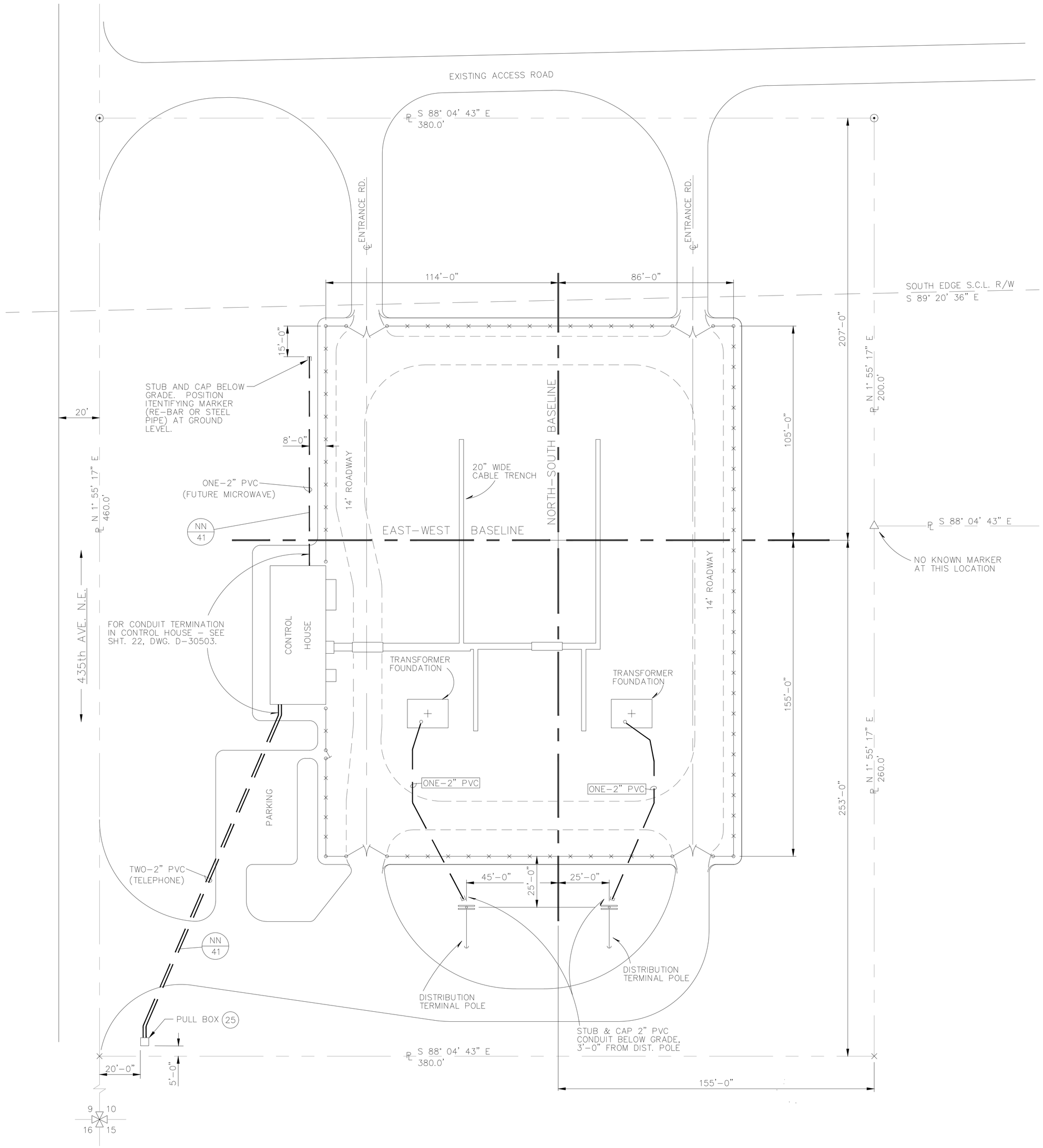
NORTH MOUNTAIN SUBSTATION
CONDUIT & CABLE TRENCH PLAN

CLASS
DRAWING NO. D-30516
SCALE ?"=1'-0"
REV. NO. 2
SHEET 36 of

MICROFILMED

Michael Watkins
SCL/North Mountain Substation Agreement.ATT1

ATTACHMENT 1 to SCL/North Mountain Substation Agreement.ORD



NOTE:

1. ALL BURIED CONDUIT OUTSIDE OF FENCED AREA SHALL BE A MINIMUM OF 36" BELOW EXISTING GRADE. EXCEPTIONS TO THIS REQUIREMENT ARE PERMISSIBLE WITHIN 10' OF CONTROL HOUSE AND WITHIN 10' OF PULL BOX.

REFERENCE DRAWINGS

SHT. 22	D-30503	CONTROL HOUSE - FOUNDATION PLAN
SHT. 35	D-30515	CONDUIT & CABLE TRENCH PLAN
SHT. 38	D-30518	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 40	D-30520	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 41	D-30521	CONDUIT, CABLE TRENCH & LIGHTING DETAILS
SHT. 42	D-30522	CONDUIT, CABLE TRENCH & LIGHTING BILL OF MATERIAL

CAD:C-0420

REVISIONS				
REV	DATE	CK	APP	DESCRIPTION
DR			MF	
1	9-7-90			MINOR CHANGES
	RLZ			

Engineering & Design Associates

ENDORSEMENTS	
SIGNATURE	DATE
DR RLZ	9-7-90
CK	
DSGN DJH	
CK	

CITY OF SEATTLE
CITY LIGHT DEPARTMENT
APPROVED FOR CITY LIGHT DEPARTMENT
DATE

NORTH MOUNTAIN SUBSTATION
CONDUIT & CABLE TRENCH PLAN

CLASS

DRAWING NO. D-30517

SCALE 1"=30'

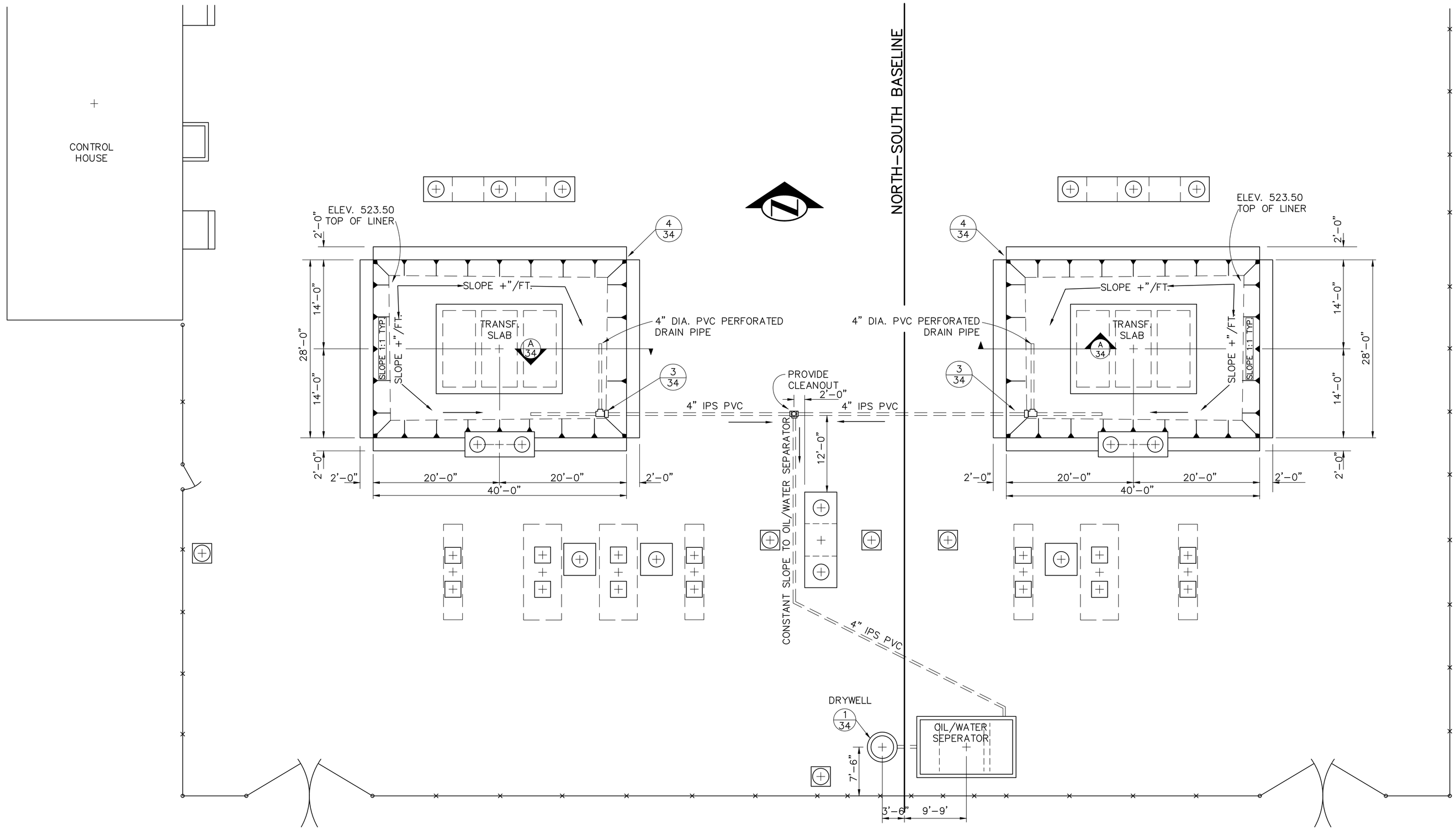
REV. NO. 1

SHEET 37 of

Michael Watkins
SCL/North Mountain Substation Agreements.AFT 1

MICROFILMED

ATTACHMENT 1 to SCL/North Mountain Substation Agreements.ORD



REFERENCE DRAWINGS

SHT. 7 D–30451 GRADING SURFACING PLAN
SHT. 11 D–30483 FOUNDATION PLAN
SHT. 12 D–34484 FOUNDATION PLAN

REVISIONS			
REV	DATE		MF
DR	CK		APP
W.O.#			
DESCRIPTION			
0	7/15/1992		MF
COPY	CIVIL		ENGR
W.O.#			
⚠ COPIED SNO CO PUD FOR FILES			
EPH	EPH		
ADDED SnoPUD Dwg. No. AND CONVERTED TO ACAD 2006.			

ONE INCH AT FULL SIZE

CONFIDENTIAL
FOR SEATTLE CITY LIGHT USE ONLY
FERC/NERC COMPLIANCE STANDARDS APPLY
FOR INFORMATION OR QUESTIONS CONTACT:
SCLCOMPLIANCE@SEATTLE.GOV

SnoPUD Dwg. No. S–88–07

ENDORSEMENTS	
SIGNATURE	DATE
DR : RLZ	07/03/1990
CK :	
DSGN:	
CK :	
ENGR:	JLF

Seattle City Light

APPROVED FOR SEATTLE CITY LIGHT
SEE MICROFILM
DATE FOR SIGNATURES

PHYSICAL PLANT
NORTH MOUNTAIN SUBSTATION

OIL CONTAINMENT PLAN

SHEET 33 OF
CLASS C
DRAWING NO. D-30514
SCALE 1/8"=1'-0"
REV. NO. 1

D:\BC–WorkSpace_ADMEDM\M–Lc251edm,D–SCLGenPS2016\Masters\NMS\C – Civil\D30514.DWG
GenPS D: 28x40 _admedm Apr/13/2018 9:12am

Michael Watkins
SCL\North Mountain Substation Agreements ATT 1

ATTACHMENT 1 to SCL North Mountain Substation Agreement-ORD

NORTH MOUNTAIN SUBSTATION

DRAWING LIST

DRAWING	TITLE
S-88-T1	DRAWING LIST
S-88-T1RH	REVISION HISTORY
S-88-01A	PLOT PLAN, D-30450
S-88-01B	230kV ONE-LINE DIAGRAM, D-30485
S-88-1C	ONE-LINE DIAGRAM
S-88-1D	HAMPTON MILL COMMUNICATION BLOCK DIAGRAM
S-88-2	12.5kV RELAYING & METERING ONE-LINE DIAGRAM AND HAMPTON MILL GENERATOR METERING
S-88-02A	CLEARING & GRUBBING PLAN, D-30452
S-88-02B	EXCAVATION & COMPACTION PLAN, D-30454
S-88-02C	GRADING & SURFACING PLAN, D-30451
S-88-02D	FENCE PLAN & DETAILS, D-30453
S-88-02E	PLANTING PLAN, D-30455
S-88-02F	LANDSCAPING DETAILS, D-30456
S-88-02G	FOUNDATION PLAN, D-30483
S-88-02H	FOUNDATION PLAN, D-30484
S-88-02I	FOUNDATION DETAIL 230kV D.E. TOWER, D-30477
S-88-02J	FOUNDATION DETAIL 230kV-12.5kV TRANSFORMER, D-30478
S-88-02K	FOUNDATION DETAIL 230kV & 12.5kV PIER CAPS, D-30479
S-88-02L	FOUNDATION DETAIL 230kV & 12.5kV PIER CAPS, D-30480
S-88-02M	FOUNDATION DETAILS 230kV CIRCUIT BREAKERS & 12.5kV FEEDER STRUCTURE, D-30481
S-88-02N	FOUNDATION PIER SCHEDULE AND RE-STEEL SCHEDULE, D-30482
S-88-02O	CONTROL HOUSE FLOOR PLAN & SECTIONS, D-30500
S-88-02P	CONTROL HOUSE ELEVATIONS, DETAILS & RE-STEEL SCHEDULE, D-30501
S-88-02Q	CONTROL HOUSE ROOF & SECTIONS, D-30502
S-88-02R	CONTROL HOUSE FOUNDATION PLAN, D-30503
S-88-02S	CONTROL HOUSE SECTIONS, D-30504
S-88-02T	CONTROL HOUSE SECTIONS, D-30505
S-88-02U	CONTROL HOUSE SECTIONS, D-30506
S-88-02V	CONTROL HOUSE FOUNDATION DETAILS, D-30507
S-88-02W	CONTROL HOUSE FOUNDATION DETAILS, D-30508
S-88-02X	CONTROL HOUSE FOUNDATION DETAILS, D-30509
S-88-02Y	CONTROL HOUSE FOUNDATION DETAILS, D-30510
S-88-02Z	CONTROL HOUSE FOUNDATION, PLATE LAYOUT, D-30511
S-88-02AA	CONTROL HOUSE COVER PLATE DETAILS, D-30512
S-88-03	BOUNDARY SURVEY
S-88-03A	TOPOGRAPHIC SURVEY
S-88-07	OIL CONTAINMENT PLAN
S-88-08	OIL CONTAINMENT DETAILS
S-88-08A	CONDUIT & CABLE TRENCH PLAN, D-30515
S-88-08B	CONDUIT & CABLE TRENCH PLAN C-0411 D-30516
S-88-08C	CONDUIT & CABLE TRENCH PLAN, D-30517
S-88-08D	CONDUIT, CABLE TRENCH & LIGHTING DETAILS, D-30518
S-88-08E	CONDUIT, CABLE TRENCH & LIGHTING DETAILS, D-30519
S-88-08F	CONDUIT, CABLE TRENCH & LIGHTING DETAILS, D-30520
S-88-08G	CONDUIT, CABLE TRENCH & LIGHTING DETAILS, D-30521
S-88-08H	CONDUIT, CABLE TRENCH & LIGHTING BILL OF MATERIAL, D-30522
S-88-08I	YARD CABLE LIST D-30524
S-88-08J	GROUNDING PLAN, D-30525
S-88-08K	GROUNDING PLAN, D-30526
S-88-08L	GROUNDING DETAILS, D-30527
S-88-08M	GROUNDING DETAILS, D-30528
S-88-08N	GROUNDING BILL OF MATERIAL, D-30529
S-88-08O	230kV ELECTRICAL ARRANGEMENT PLAN, D-30460
S-88-08P	230kV ELECTRICAL ARRANGEMENT SECTIONS, D-30461
S-88-08Q	230kV ELECTRICAL ARRANGEMENT SECTIONS, D-30462
S-88-08R	230kV ELECTRICAL ARRANGEMENT DETAILS, D-30463
S-88-08S	230kV ELECTRICAL ARRANGEMENT BILL OF MATERIAL, D-30464
S-88-9	12.5kV ELECTRICAL ARRANGEMENT PLAN
S-88-10	12.5kV ELECTRICAL ARRANGEMENT SECTIONS
S-88-11	12.5kV ELECTRICAL ARRANGEMENT ELEVATION
S-88-12	12.5kV ELECTRICAL ARRANGEMENT ELEVATION
S-88-13	12.5kV ELECTRICAL ARRANGEMENT SECTIONS
S-88-14	12.5kV ELECTRICAL ARRANGEMENT BILL OF MATERIAL
S-88-14A	ERECTION DIAGRAM 230kV D.E. STRUCTURE, D-30465
S-88-14B	STEEL DETAILS 230kV D.E. STRUCTURE, D-30466
S-88-14C	STEEL DETAILS 230kV D.E. STRUCTURE, D-30467
S-88-14D	ERECTION DIAGRAM 230kV HIGH DISC SW STRUCTURE, D-30468
S-88-14E	STEEL DETAILS 230kV HIGH DISC. SWITCH STRUCTURE, D-30469
S-88-14F	STEEL DETAILS 230kV HIGH DISC. SWITCH STRUCTURE, D-30470
S-88-14G	ERECTION DIAGRAM 230kV LOW DISC. SWITCH STRUCTURE, D-30471
S-88-14H	STEEL DETAILS 230kV LOW DISC. SWITCH STRUCTURE, D-30472
S-88-14I	STEEL DETAILS 230kV LOW DISC. SWITCH STRUCTURE, D-30473
S-88-14J	STEEL DETAILS 230kV BUS & VT SUPPORT, D-30474
S-88-14K	STEEL DETAILS 230kV SPILL GAP, D-30475
S-88-15	ERECTION DIAGRAM 12.5kV PLAN & ELEVATION
S-88-16	ERECTION DIAGRAM 12.5kV SECTIONS
S-88-17	STEEL DETAILS 12.5kV STRUCTURES
S-88-18	STEEL DETAILS 12.5kV STRUCTURES
S-88-19	STEEL DETAILS 12.5kV STRUCTURES
S-88-20	STEEL DETAILS 12.5kV STRUCTURES
S-88-20A	CONTROL HOUSE EQUIPMENT LOCATION PLAN, D-30531
S-88-20B	CONTROL HOUSE EQUIPMENT LOCATION ELEVATIONS & SECTIONS, D-30532
S-88-20C	CONTROL HOUSE EQUIPMENT WIRING, D-30533
S-88-20D	AC & DC STATION SERVICE ONE LINE DIAGRAM, D-30534
S-88-20E	CONNECTION DIAGRAM 120/208Y VOLT 3ø STATION SERVICE, D-30535
S-88-20F	CONNECTION DIAGRAM 120/240 VOLT 1ø STATION SERVICE, D-30536
S-88-20G	AC & DC STATION SERVICE LIGHTING ELEMENTARIES, D-30537
S-88-20H	LIGHTING RELAY CABINET, D-30538
S-88-20I	HEATER & FAN CONTROL CABINET, D-30570
S-88-20J	INTRUSION ALARM SYSTEM, D-30568
S-88-20K	CONNECTION DIAGRAM 125 VOLT DC STATION SERVICE, D-30539
S-88-20L	CONNECTION DIAGRAM-48 VOLT DC STATION SERVICE, D-30540
S-88-20M	AC ELEMENTARY 230kV, D-30486
S-88-21A	DC ELEMENTARY 230kV SNOHOMISH LINE RELAYS, D-30490
S-88-21B	DC ELEMENTARY 230kV GORGE LINE RELAYS, D-30491
S-88-21C	DC ELEMENTARY 230kV BREAKER 240-95, D-30492
S-88-21D	DC ELEMENTARY 230kV BREAKER 240-96, D-30493
S-88-21E	DC ELEMENTARY 230kV BREAKER 240-99, D-30494
S-88-21F	DC ELEMENTARY 230kV BUS 3, 4, 5 DIFFERENTIAL, D-30495
S-88-21G	DC ELEMENTARY 230kV LOAD INTERRUPTER 240BK11, D-30496
S-88-21H	DC ELEMENTARY 230kV LOAD INTERRUPTER 240BK12, D-30497
S-88-21I	12.5kV THREE-LINE DIAGRAM BANK 11 (PANEL 15F)
S-88-21J	12.5kV THREE-LINE DIAGRAM FEEDER 12-2514 (PANEL 14F)
S-88-21K	12.5kV THREE-LINE DIAGRAM FEEDER 12-2515 (PANEL 13F)
S-88-21L	12.5kV THREE-LINE DIAGRAM FEEDER 12-2516 (PANEL 12F)
S-88-21M	AC ELEMENTARY THREE-LINE DIAGRAM BANK 11 MISCELLANEOUS CONNECTIONS
S-88-21P	12.5kV THREE-LINE DIAGRAM BANK 12 (PANEL 11F)
S-88-21Q	12.5kV THREE-LINE DIAGRAM BANK 12 MISCELLANEOUS CONNECTIONS
S-88-22	DC ELEMENTARY TRANSFORMER BANK 11 RELAYS (SHEET 1 OF 2)
S-88-22A	DC ELEMENTARY TRANSFORMER BANK 11 RELAYS (SHEET 2 OF 2)
S-88-23	DC ELEMENTARY TRANSFORMER BANK 12 RELAYS
S-88-24	DC ELEMENTARY 12.5kV BREAKER 12-2514, MD-8881
S-88-25	DC ELEMENTARY 12.5kV BREAKER 12-2515, MD-8882
S-88-26	DC ELEMENTARY 12.5kV BREAKER 12-2516, MD-8883
S-88-26A	12.5kV SYSTEM ANNUNCIATOR SCHEMATIC
S-88-26B	DC ELEMENTARY 230kV SWITCHBOARD ANNUNCIATOR, D-30498
S-88-26C	BLOCK DIAGRAM COMMUNICATIONS EQUIPMENT, D-30541
S-88-26D	230kV SWITCHBOARDS GENERAL ARRANGEMENT & DETAILS, D-30542
S-88-26E	230kV SWITCHBOARD ARRANGEMENT CONTROL PANELS, D-30543
S-88-26F	230kV SWITCHBOARD ARRANGEMENT RELAY RACKS, D-30544
S-88-26G	230kV SWITCHBOARD BILL OF MATERIAL & NAMEPLATES, D-30545
S-88-26H	230kV SWITCHBOARD CONNECTION DIAGRAM-PANEL 2, D-30546
S-88-26I	230kV SWITCHBOARD CONNECTION DIAGRAM-PANEL 3, D-30547
S-88-26J	230kV SWITCHBOARD CONNECTION DIAGRAM PANEL 4, D-30548
S-88-26K	230kV SWITCHBOARD CONNECTION DIAGRAM-PANEL 5, D-30549
S-88-26L	230kV SWITCHBOARD CONNECTION DIAGRAM-RELAY RACK 2, D-30550
S-88-26M	230kV SWITCHBOARD CONNECTION DIAGRAM-RELAY RACK 3, D-30551
S-88-26N	230kV SWITCHBOARD RELAY RACK 4 CONNECTION DIAGRAM, D-30552
S-88-26O	230kV SWITCHBOARD CONNECTION DIAGRAM-RELAY RACK 5, D-30553
S-88-26P	230kV SWITCHBOARD RELAY INTERNAL CONNECTIONS, D-30554
S-88-27	12.5kV SWITCHBOARD ARRANGEMENT FRONT PANEL, D-1901
S-88-28	12.5kV SWITCHBOARD ARRANGEMENT REAR PANELS, D-1902
S-88-30	12.5kV SWITCHBOARD WIRING PANEL 11R
S-88-30A	12.5kV BANK 12 PANEL 11F WIRING DIAGRAM (TOP SECTION)
S-88-30B	12.5kV BANK 12 PANEL 11F WIRING DIAGRAM (MIDDLE SECTION)
S-88-30C	12.5kV BANK 12 PANEL 11F WIRING DIAGRAM (BOTTOM SECTION)
S-88-31A	12.5kV BRKR 12-2516 PANEL 12F WIRING DIAGRAM (TOP SECTION)
S-88-31B	12.5kV BRKR 12-2516 PANEL 12F WIRING DIAGRAM (BOTTOM SECTION)
S-88-32	12.5kV DATA NETWORK PANEL 12R WIRING DIAGRAM D-2102
S-88-33A	12.5kV BRKR 12-2515 PANEL 13F WIRING DIAGRAM (TOP SECTION) D-2117
S-88-33B	12.5kV BRKR 12-2515 PANEL 13F WIRING DIAGRAM (BOTTOM SECTION) D-2117
S-88-34	12.5kV SWITCHBOARD WIRING PANEL 13R SHEET 1 OF 2
S-88-34A	12.5kV SWITCHBOARD WIRING PANEL 13R SHEET 2 OF 2
S-88-34B	CONTROL SCHEMATIC 3-POSITION SELECTOR SWITCH OF FEEDER BREAKER POSITION TO HAMPTON MILL
S-88-35A	12.5kV BRKR 12-2514 PANEL 14F WIRING DIAGRAM (TOP SECTION)
S-88-35B	12.5kV BRKR 12-2514 PANEL 14F WIRING DIAGRAM (BOTTOM SECTION)
S-88-36	12.5kV SWITCHBOARD WIRING PANEL 14R
S-88-37A	12.5kV BANK 11 PANEL 15F WIRING DIAGRAM (TOP SECTION)
S-88-37B	12.5kV BANK 11 PANEL 15F WIRING DIAGRAM (MIDDLE SECTION)
S-88-37C	12.5kV BANK 11 PANEL 15F WIRING DIAGRAM (BOTTOM SECTION)
S-88-38	12.5kV SWITCHBOARD WIRING DIAGRAM PANEL 15R
S-88-39A	COMMUNICATIONS RACKS ARRANGEMENT & BILL OF MATERIAL, D-30555
S-88-39B	CONNECTION DIAGRAM COMMUNICATION RACK 26, D-30556
S-88-39D	CONNECTION DIAGRAM COMMUNICATION RACK 28, D-30558
S-88-39E	CONNECTION DIAGRAM COMMUNICATIONS DISTRIBUTION FRAME, D-30569
S-88-39F	CONNECTION DIAGRAM DIGITAL FAULT RECORDER, D-30559
S-88-39G	12.5kV DATA NETWORK RACK POWER SCHEMATIC
S-88-40	PUD DATA NETWORK BLOCK DIAGRAM
S-88-41	PUD POINT OF DELIVERY REVENUE METERING BLOCK DIAGRAM
S-88-41B	PUD RTU CABINET SWINGING PANEL
S-88-42A	CONNECTION DIAGRAM SCL RTU CABINET LOWER LEFT WALL, D-30561
S-88-42B	CONNECTION DIAGRAM SCL RTU CABINET UPPER LEFT WALL, D-30562
S-88-42C	CONNECTION DIAGRAM SCL R.T.U. CABINET UPPER REAR WALL, D-30563
S-88-42D	CONNECTION DIAGRAM EXTERNAL CONNECTIONS BREAKERS 240-95 & 240-96, D-30564
S-88-42E	CONNECTION DIAGRAM EXTERNAL CONNECTIONS BREAKER 240-99 & 230kV VT'S, D-30565
S-88-42F	CONNECTION DIAGRAM EXTERNAL CONNECTIONS LOAD INT 240BK11 & 240BK12, D-30566
S-88-42G	CONNECTION DIAGRAM EXTERNAL CONNECTIONS 230kV DISCONNECTS, D-30567
S-88-43	CONNECTION DIAGRAM EXTERNAL CONNECTIONS TRANSFORMER BANK 11
S-88-44	CONNECTION DIAGRAM EXTERNAL CONNECTIONS TRANSFORMER BANK 12
S-88-45	CONNECTION DIAGRAM EXTERNAL CONNECTIONS BREAKER 12-2514 AND 12-2515
S-88-46	CONNECTION DIAGRAM EXTERNAL CONNECTIONS BREAKER 12-2516
S-88-47	CONNECTION DIAGRAM EXTERNAL CONNECTIONS MISC 12.5kV EQUIPMENT
S-88-47A	85' TURNING TOWER FOUNDATION AND INSTALLATION, D-30457
S-88-48	SIGN INSTALLATION AND DETAILS
S-88-49	WEATHER STATION ASSEMBLY, SCHEMATIC AND WIRING DIAGRAM
S-88-50	MATERIAL LIST
S-88-51	CT MOUNTING ADAPTER
S-88-52	PUD DATA NETWORK CABLE SCHEDULE
S-88-72	OUTLINE
S-88-73	NAMEPLATE
S-88-73A	12.5kV SYSTEM DEVICE NAMEPLATE SCHEDULE
S-88-73B	TEST SWITCH FUNCTION NAMEPLATE SCHEDULE (PANEL 1) (PANELS 11F & 15F)
S-88-73C	TEST SWITCH FUNCTION NAMEPLATE SCHEDULE (PANELS 14F, 13F & 12F)
S-88-73D	TEST SWITCH FUNCTION NAMEPLATE SCHEDULE (PANEL 13R)
S-88-74	CONTROL SCHEMATIC
S-88-75	CONTROL SCHEMATIC
S-88-76	CONTROL SCHEMATIC
S-88-77	CONTROL SCHEMATIC
S-88-78	CONTROL WIRING
S-88-79	CONTROL WIRING
S-88-80	WIRE CHARTS
S-88-81	WIRE CHARTS
S-88-82	WIRE CHARTS
S-88-83	MOTOR DRIVE MECH CONTROL WIRING
S-88-84	CIRCULATING CURRENT PARALLELING
S-88-85	SURGE ARRESTOR & C.T. CURVES 230kV-12.5kV TRANSFORMER
S-88-86	12.5kV CIRCUIT BREAKER PHYSICAL DRAWING
S-88-87	C.T. CONTROL SCHEMATIC 12.5kV CIRCUIT BREAKER
S-88-88	BREAKER CONTROL SCHEMATIC 12.5kV CIRCUIT BREAKER
S-88-89	WIRING DIAGRAM 12.5kV CIRCUIT BREAKER
S-88-90A	REMOTE TERMINAL UNIT, NORTH MOUNTAIN "NM" ASSY MA-1769, SHEET 1-6
S-88-90B	REMOTE TERMINAL UNIT, NORTH MOUNTAIN "NM" ASSY MA-1769, SHEET 7
S-88-90C	MIMIC BUS DETAILS-1/4 INCH, B-5161, SHT. 1 OF 2
S-88-90D	DUPLEX SWITCHBOARD GENERAL ARRANGEMENT, D-22401
S-88-90E	DUPLEX SWITCHBOARD FABRICATION DETAILS, D-22403
S-88-90F	130V DC AND 24/48V DC FUSE BOX INSTALLATION, D-30284
S-88-90G	REMOTE TERMINAL UNIT-NORTH MOUNTAIN "NM" ASSY MD-4267
S-88-90H	REMOTE TERMINAL UNIT-SWINGING PANEL CONNECTIONS, MD-4268
S-88-90I	REMOTE TERMINAL UNIT-NORTH MOUNTAIN "NM" ASSY MD-4269
S-88-90J	SITE PLAN, BPA-101
S-88-91	LAYOUT & WIRING METERING RACK
S-88-92	HAMPTON MILL SWITCHGEAR UNIT 103 WIRING DIAGRAM
S-88-93	HAMPTON MILL SWGR UNIT 103 REMOTE I/O SEL 2505 SCHEMATIC
S-88-94	HAMPTON MILL PARTIAL SWITCHGEAR WIRING DIAGRAM

No.	DATE	BY	DESCRIPTION	ENGR	CHKR	APVD
14	2/16/96	ZTW	INSTALLATION RECORD: MOVE REVS 1 THRU 11 TO REV HISTORY WO 390009	RSC	DMH	CDF
13	9/4/95	DPA	AUTOMATION UPGRADE WO 390009	RSC	KG	CDF
12	8/5/95	DPA	AUTOMATION UPGRADE WO 390009	RSC	KG	CDF

REVISIONS

SNOHOMISH COUNTY PUD PUBLIC UTILITY DISTRICT NO 1

ORDER	390009
OPERATION	
SCALE	NONE
DFTR	RLZ
CHKR	
ENGR	DHJ
APVD	CZA/CLI/GH
DATE	8/90

NORTH MOUNTAIN SUBSTATION
DRAWING LIST

REV	DRAWING
14	S-88-T1

B1. CIRCUIT BREAKER
242kV, 2000A, 40kA INT.
G.E. HVBI, SF-6

B2. CIRCUIT BREAKER
15kV, 1200A, 20kA INT.
SQUARE-D
CAT. NO. FVBS1121120A

B3. VACUUM CIRCUIT BREAKER
15kV, 1200A, 500 MVA

F1. STATION SERVICE FUSE (2)
14.4kV, 8kA
S & C TYPE SMU-20

F2. STATION SERVICE FUSE (1)
14.4kV,
S & C TYPE SMU-20

F3. POTENTIAL FUSE (3)
14.4kV, 1A
S & C TYPE SMU-20

G1. GENERATOR
9063 KVA
13.8kV 379A, 7250 KW, 0.8PF

PT1. POTENTIAL TRANSFORMER (3)
138kV-115/69/115/69V
SQUARE-D TYPE UT-900-230

PT2. POTENTIAL TRANSFORMER (3)
15kV, 7200-120V
G.E. TYPE JVW-5

PT3. POTENTIAL TRANSFORMER (3)
7200-120V

S1. DISCONNECT SWITCH
242kV, 2000A, 100kA INT.
VERTICAL BREAK
SIEMENS TYPE AVB

S2. DISCONNECT SWITCH
242kV, 2000A, 100kA INT.
VERTICAL BREAK WITH
GROUNDING BLADE
SIEMENS TYPE AVB

S3. LOAD INTERRUPTER
230kV, 1200A, 20kA INT.
S & C MODEL 2010

S4. DISCONNECT SWITCH
15kV, 1200A, LOAD BREAK
VERTICAL MOUNT
ABB TYPE TTR-6

S5. DISCONNECT SWITCH
15kV, 1200A, LOAD BREAK
HORIZONTAL MOUNT
ABB TYPE TTR-6

S6. DISCONNECT SWITCH
15kV, 1200A, SINGLE POLE
HOOK-STICK OPERATED,
"VEE", CLEAVELAND-PRICE
TYPE LCO-S

S7. DISCONNECT SWITCH
15kV, 600A GROUND OP
AIR BREAK SWITCH

S8. DISCONNECT SWITCH
15kV, 600A OH
GOP SWITCH

SA1. ARC GAP
40" GAP

SA2. SURGE ARRESTER
8.4kV MCOV
G.E. CAT. NO. 9L11XGA010

SA3. SURGE ARRESTER
140kV
MCOV

ST1. STATION SERVICE TRANSFORMER 1ø (1)
50 KVA, 7200-120/240V

STATION SERVICE TRANSFORMER 1ø (2)
25 KVA, 7200-120V

ST2. STATION SERVICE TRANSFORMER 1ø (1)
50 KVA, 7200-120/240V

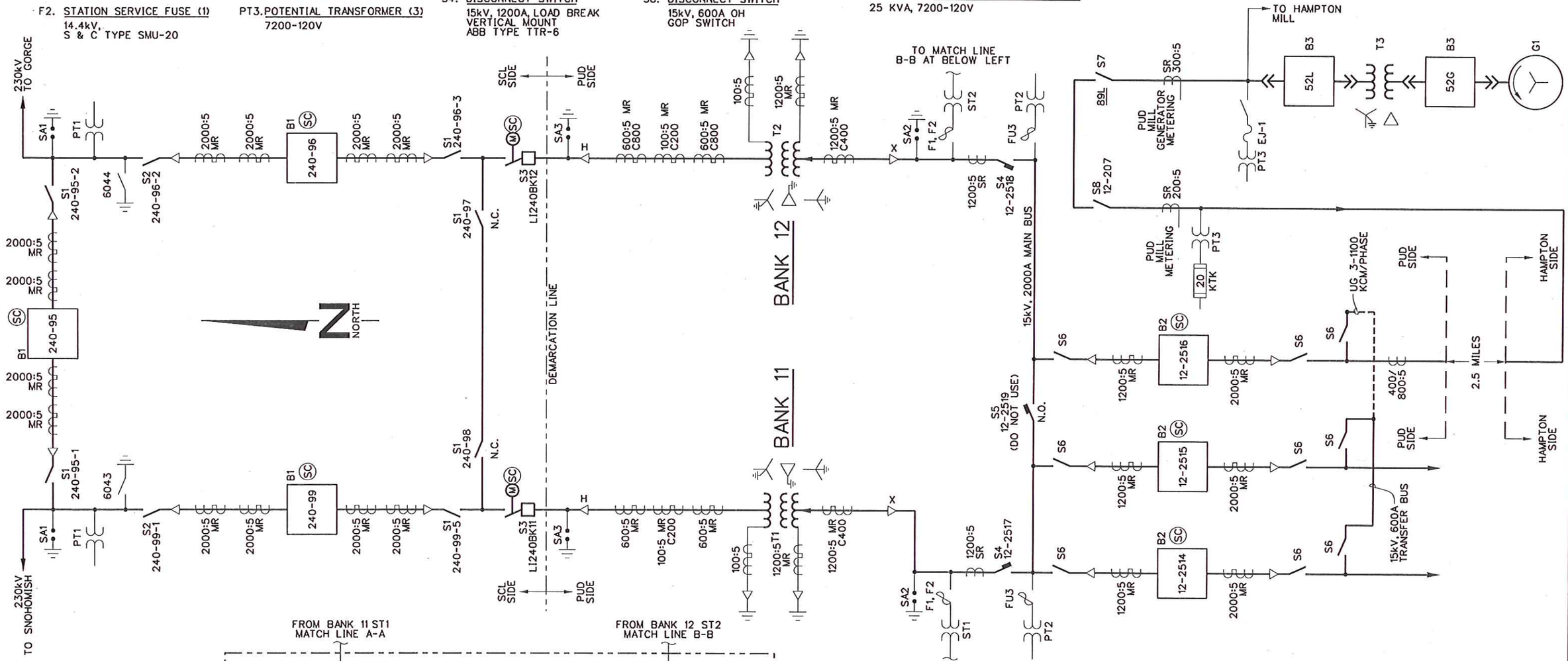
STATION SERVICE TRANSFORMER 1ø (2)
25 KVA, 7200-120V

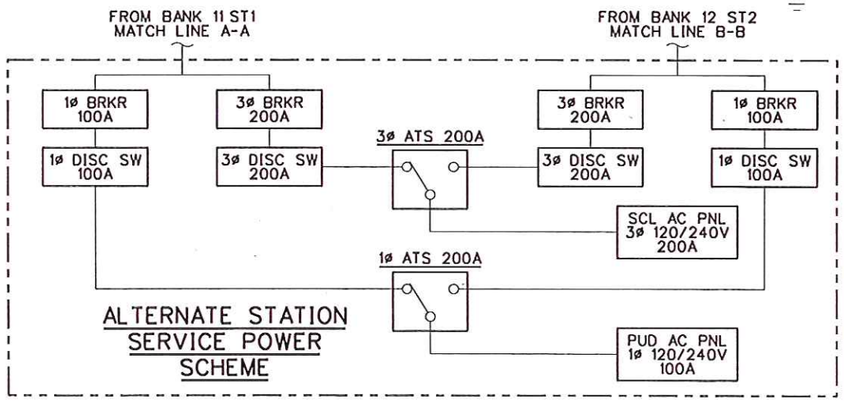
T1. TRANSFORMER K-284 (BANK 11)
ABB, 10/12.5 MVA
230,000Y/132,790Y-12,470Y/7200V
IMPEDANCE 9.23%
NO LOAD TAP SET AT 230kV
LV LTC ±10%, 16-POSITION
UTC 299200

T2. TRANSFORMER K-283 (BANK 12)
ABB, 10/12.5 MVA
230,000Y/132,790Y-12,470Y/7200V
IMPEDANCE 9.29%
NO LOAD TAP SET AT 230kV
LV LTC ±10%, 16-POSITION
UTC 299199

T3. GENERATOR STEP UP TRANSFORMER
7500/8400/9375/10,500 KVA
12.5kV-13.8kV, Z=6.5%

(SC) SUPERVISORY CONTROL





NOTE:
DRAWING IS NOT TO BE USED FOR ANY PHYSICAL DIRECTION OF TRANSMISSION LINES.

DATE	ENGR	APVD	REVISIONS
3/4/16	AF	JAZ	REDRAWN TO LATEST STDS
4/14/15	RSC	JAZ	EXTENDED TRANSF BUS
12/12/08		JAL	REVISED DEFINITIONS
11/14/08		CZ	REVISE EQPT DESIGNATIONS
1/19/07			INSTL RECORD AND RENUMBERED FROM S-88-2A
10/10/06			INSTALL SEL-2100
8/04		CZ	ADD 230kV SWITCH- YARD & UPDATE TO CURRENT STDS
8/92		JCW	REDRAWN ON CAD

NORTH MOUNTAIN SUBSTATION
ONE-LINE DIAGRAM

PUBLIC UTILITY DISTRICT NO. 1
SNOHOMISH COUNTY-EVERETT, WA

ENGR	SCALE	APPROVED	DFTR	DATE	DRAWING
	NONE		MCP DPA	8/92	S-88-1C

FILE: W:\SUB\88\ELEC\S-88-1C.dgn
DATE: 02-Mar-16 09:14

BANK 12

POWER TRANSFORMER, 3ø, K-284
10/12.5 MVA

H
SA 140kV MCOV
600:5A MR
100:5A SR
600:5A MR
DFR
100-5A
1200-5A MR
1200-5A TAP
X
1200:5A MR
63
SA 8.4kV MCOV
1200:5A SR

REFER TO DWG S-88-20D
TO ALTERNATE STATION SERVICE
AUTO TRANSFER SWITCH
AC PANEL

15kV, MAIN BUS (3" AL)
SW 12-2518 15kV, 1200A

PANEL 13R
SEL-2100
B
50/51
SEL-351
1E
3-PT'S 7200-120V
6A

EAST BUS

12kV 1200A
1200:5A MR

FDR BRKR 12-2516 PANEL 12F

114 SEL-451
4TS4
SC
DNP
4TS2
4TS1
4W VH
50 50N | 51 51N | 81 | 01 | 79 | 51 51N | 01
T T T T C C T C
4TS3

1200A 12-2516
52
T
C
86T2A 86T2B

SEE BELOW RIGHT

BANK PANEL 11F

63X
SC
DNP
5TS4
5TS8
5TW VAR
11T2
SEL-451
50/51 | 51N
5TS5
5TSA
86T2A
86T2B
5TS3
87T
5TS2
5TS1
TO SEL-2100

2000:5A MR

12-2519
12kV 1200A
400/800:5A MR

UG TRANSFER BUS (1000 KCMIL AL)

1000 KCM AL
FDR 12-2516
1000 KCM AL (2.5 MILES)
(FROM LI240BK11 & BK12)

BANK 11

POWER TRANSFORMER, 3ø, K-283
10/12.5 MVA

SEE SCL DWG D-30485

H
SA 140kV MCOV
600:5A MR
100:5A SR
600:5A MR
DFR
100-5A
1200-5A MR
1200-5A TAP
X
1200:5A MR
63
SA 8.4kV MCOV
1200:5A SR

REFER TO DWG S-88-20D
TO ALTERNATE STATION SERVICE
10A
AUTO TRANSFER SWITCH
AC PANEL

SW 12-2517 15kV, 1200A

PANEL 13R
SEL-2100
A
50/51
SEL-351
1E
3-PT'S 7200-120V
6A

WEST BUS

15kV, MAIN BUS (3" AL)

12kV 1200A
1200:5A MR

FDR BRKR 12-2514 PANEL 14F

112 SEL-451
2TS4
SC
DNP
2TS2
2TS1
2W VH
50 50N | 51 51N | 81 | 01 | 79 | 51 51N | 01
T T T T C C T C
2TS3

FDR BRKR 12-2515 PANEL 13F

113 SEL-451
3TS4
SC
DNP
3TS2
3TS1
3W VH
50 50N | 51 51N | 81 | 01 | 79 | 51 51N | 01
T T T T C C T C
3TS3

SEE ABOVE RIGHT

1200A 12-2514
52
T
C
86T1A 86T1B

1200A 12-2515
52
T
C
86T1A 86T1B

BANK PANEL 15F
63X
SC
DNP
1TS4
1TS8
1TW VAR
11T1
SEL-451
50/51 | 51N
1TS5
1TSA
86T1A
86T1B
1TS3
87T
1TS2
1TS1
TO SEL-2100

2000:5A MR

TRANSFER BUS (2" AL)

1000 KCM AL
FDR 12-2514
1000 KCM AL
FDR 12-2515

HAMPTON MILL

ION 8600A
WRVH
PUD MILL METERING
3 CT, SR 200:5
20 KTK
7200-120V 3-1ø
89L 13.8kV, 900A NONE LOAD BREAK AIR SWITCH
TO HAMPTON MILL

ION 8600A
WRVH
PUD MILL GENERATOR METERING
3 CT, SR 300:5
7200-120V 3-1ø
EJ-1

4
52a
52L LINE BRKR VCB, 15kV, 1200A, 500MVA
7500/8400/9375/10,500 KVA 12.5kV-13.8kV, Z=6.5%
89G 13.8kV, 900A NONE LOAD BREAK AIR SWITCH
52a
52G GENERATOR BRKR VCB, 15kV, 1200A, 500MVA
GENERATOR 9063 KVA, 13.8kV 379A, 7250 KW .80 PF

SEL 2830
LOGIC PROCESSOR SEL-2100
3-POS SWITCH
43
TO A (SEL-351)
TO B (SEL-351)
1T1 (BANK 11 SEL-451)

52a FROM 12-2516
52a FROM 12-2215
52a FROM 12-2514
84a FROM 240BK11
84a FROM 240BK12
52a FROM 12-2519

CIRCUITS CONT'D ON DWG D-30485

1. 230kV FROM LOAD INTERRUPTER 240BK12
2. TRIP CIRCUIT TO LOAD INTERRUPTER 240BK12
3. CURRENT TO BILLING METERS
4. POLARIZING CURRENT TO GROUND RELAYS
5. TRANSDUCER OUTPUTS TO SCL RTU (NOT USED)
6. WH, VARH & INTERVAL PULSES FROM BILLING METERS
7. TRIP CIRCUIT FROM 230kV BUS LOCKOUT RELAY
8. CURRENT TO 230kV BUS DIFFERENTIAL RELAYS
9. CURRENT TO BILLING METERS
10. 230kV FROM LOAD INTERRUPTER 240BK11
11. TRIP CURCUIT TO LOAD INTERRUPTER 240BK11
12. INDICATION FROM 230kV BREAKER STATUS TO SEL-2100

No.	DATE	BY	DESCRIPTION
10	2/16	ZTW	INSTALLATION RECORD WO 390009
9	6/5/15	DPA	AUTOMATION UPGRADE WO 390009
8	1/19/07	JHM	INSTALLATION RECORD
7	2/28/06	JMM	INSTALL SEL-2100
6	1/00	JW	INSTL RCD-ADD SEL 351 TO BANKS 11 & 12
5	8/99	DPA	ADD SEL 351 TO BANKS 11 & 12
4	6/97	JW	INSTL RCD-DC MONITORING
3	4/96	JHM	ADD DC MONITORING
2	8/91		ADD TRIPPING TO 12-2514 & 12-2515 BY 86T1 & 86T2

	ENGR	CHKR	APVD
	GD	JMM	RJN
	MLM	JW	RJN
	MLM	JW	RSC
	RSC	JW	RJN
	RSC	JW	RJN
			CLI/ CZ/GH

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO 1

ORDER	390009
OPERATION	
SCALE	NONE
DFTR	FMP
CHKR	
ENGR	LWK
APVD	CLI/CZA/GH
DATE	7/90

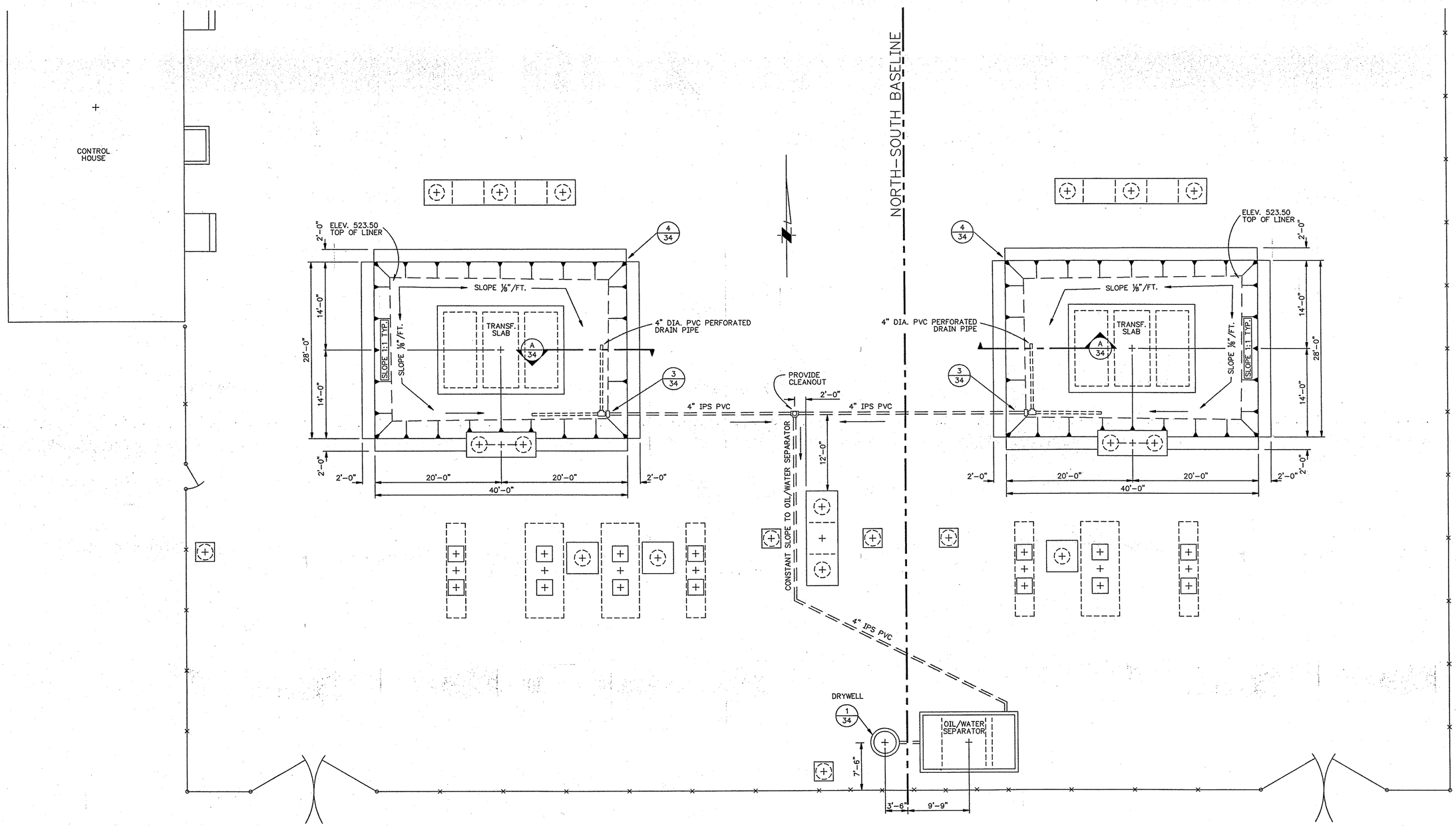
NORTH MOUNTAIN SUBSTATION

12.5kV

RELAYING & METERING ONE-LINE DIAGRAM AND HAMPTON MILL GENERATOR METERING

REV	DRAWING
10	S-88-2

G:\DWG\SUBSTATE\S-88-2.dgn
DATE: 22-Jan-16 09:08



REFERENCE DRAWINGS

SHT. 7	D-30451	GRADING & SURFACING PLAN
SHT. 11	D-30483	FOUNDATION PLAN
SHT. 12	D-34484	FOUNDATION PLAN

JACK W. OTTERSEN STATE OF WASHINGTON 20279 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 3/9/92

Engineering & Design Associates

NO.	DATE	REVISION	APPR.
1	8-9-91	AS BUILT	EDA

NORTH MOUNTAIN SUBSTATION
OIL CONTAINMENT PLAN

PUBLIC UTILITY DISTRICT NO. 1
SNOHOMISH COUNTY -- EVERETT, WA

DWN	ENGR	APPROVED	SCALE	DATE	REV NO	DRAWING
RLZ	JLF	C.E. C.K. Cm	1/8"=1'-0"	7-3-90	1	S-88-07

SHEET 33 of

CAD:C-0101

Exhibit G
North Mountain Security and Access Control

1. Access Administration

a. The Parties agree to work in coordination to provide access to facilities in a manner that meets all security and regulatory requirements.

b. Seattle will be the controlling authority for access to North Mountain Substation.

   i. Seattle will expeditiously respond to requests by the District for access, key cards, or documentation.

   ii. The District will expeditiously respond to request by Seattle for records or documentation related to security or access control.

   iii. The District will follow Seattle City Light's process for requesting and authorizing access, which includes the District completing access requests for personnel requesting un-escorted access to North Mountain substation.

c. All persons granted un-escorted access to North Mountain substation will have met the following standard:

   i. Be a current employee of Seattle City Light or Snohomish County PUD.

   ii. Complete Seattle City Light's Cyber Security Training

   iii. Shall follow the requirements contained in the Rules of Conduct for Seattle City Light Substations.

   iv. Have a reviewed and signed "Agreement to Abide by the Rules" on file with Seattle City Light.

d. All personnel that have not been granted un-escorted access to North Mountain substation shall:

   i. Receive permission from the Parties approving manager for escorted access.

      1. The approval process will include a review and signing of the "Agreement to Abide by the Rules" to be sent to the Seattle Security Manager.

   ii. Be escorted by a Party employee that has been granted un-escorted access.

iii. Be always escorted while inside the fenced area of North Mountain Substation.

e. Maintaining a Seattle City Light Access Badge

i. District employees with a Seattle Access Badge shall maintain positive control of the badge

ii. Loss of a Seattle City Light Access Badge requires notification of Seattle's Security Monitoring Center and Access Administrator within 24 hours.

iii. Quarterly Seattle shall send the District a validation email that requires the District to verify Seattle Access Badges and provide a documentation of validation by email in return.

f. Revoking a Seattle Access Badge

i. If the District terminates personnel with a Seattle Access Badge from employment or if the District determines that the personnel poses a security risk or no longer needs unescorted access to North Mountain Substation, the District shall call or email Seattle's Security Monitoring Center and Access Administrator within 24 hours of the termination action or access no longer being needed.

ii. Seattle shall confirm with the District's Access Administrator that access is terminated, and the District shall return the deactivated Seattle Access Badge to Seattle's Security Office.

g. Non-compliance

i. Seattle reserves the right, with cause, to immediately terminate District personnel's unescorted physical access privileges for failure to comply with the terms of this Agreement.

2. **Security and Access Control**

a. Access to North Mountain Substation

i. The District may access North Mountain Substation via a Seattle Access Badge (electronic cardkey) using badge readers which are installed on all access points.

1. No metal/hard keys shall be used to access perimeter control points and the Control Room of North Mountain Substation.

2. Seattle maintains a Physical Access Control System (PACS) metal override key to be used in case of failure of the PACS.

b. **Alarm Events**

i. In the event that Seattle's Security Monitoring Center (SMC) receives an access or security related alarm regarding North Mountain, Seattle (SMC) will contact the District's Snohomish County PUD's Security Operations Center

ii. The District's Security Operations Center will dispatch a security officer to North Mountain to observe and report.

iii. SMC will dispatch a security officer to relieve the District's security officer and to complete a case report.

1. Seattle City Light may also dispatch a NAS Operator concurrently with the assistance of the System Control Center.

iv. Seattle will provide completed case reports to the District.

c. Perimeter Compromise206-

i. In the event that the District's security officer or District personnel observes a compromise in the integrity of the perimeter fence or gates, the security officer will report their findings to Seattle's SMC.

ii. Seattle's SMC will dispatch a security officer to relieve the District's security officer to complete a case report and initiate the repair process.

1. Seattle City Light may also dispatch a NAS Operator concurrently with the assistance of the System Control Center.

3. Contact Information

a. Seattle City Light

i.	Security Monitoring Center		206-386-9111
ii.	Brendan Armstrong	Security PM	206-948-2944
iii.	Josh Czebotar	Sec. Specialist	206-247-0365
iv.	Robert Terry	Sec. Specialist	206-741-5470

b. Snohomish County PUD
    i. Security Monitoring Center (SOC) 425-783-8787
    ii. Rob Beidler, Sr Manager of Safety and Security 425-783-8770

4. **Revisions to Exhibit G**

Either Party may revise Exhibit G. The revising Party shall update the Exhibit G revision history table and send the revised Exhibit G asking for agreement on the revision to be indicated by representative signature and return. This Agreement may be executed in several counterparts, all of which taken together will constitute one agreement and may be executed by electronic signature and delivered electronically. The parties have executed this Agreement as of the last date indicated below.

Exhibit I Revision History		
Revision #	Revising Party and Description of change	Date
0	North Mountain O&M Agreement Effective	08/01/2022

5. Revision Approval

a. Parties' approval of revision "0" of Exhibit G Security and Access Control indicated below by signature.

ACCEPTING FOR THE CITY OF SEATTLE, CITY LIGHT DEPARTMENT

_____
Mike Haynes
Assistant General Manager

Date:_____

ACCEPTING FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY, WASHINGTON

_____
Guy Payne, Assistant General Manager, Distribution and Engineering Services

Date:_____

Exhibit H

Operational Coordination

1. Operation

a. Seattle shall operate its 230kV equipment and system at North Mountain substation in accordance with this Agreement, Good Utility Practice, and any other applicable local, state, and federal codes and requirements.

b. The District shall operate its 230-12.5kV transformer and 12.5kV distribution system at the North Mountain substation in accordance with this Agreement, Good Utility Practice, and any other applicable local, state, and federal codes and requirements.

c. If, in Seattle's opinion, the District's or its customers' operation or maintenance of their facilities in or connected to the Substation is unsafe or may otherwise adversely affect Seattle's power equipment, personnel or service to its customers, Seattle may physically interrupt the flow of energy to the Substation or take any other steps the City deems appropriate.

2. Dispatching

a. Under normal conditions, the Seattle's Senior Power Dispatcher has authority and the responsibility for operation of the 230-kV components of the North Mountain Substation and the Dist1ict's Power Dispatcher has authority and the responsibility for operation of the l2.5kV components of the Substation. Seattle's Senior Power Dispatcher shall act as the intermediary between the District's Power Dispatcher and Bonneville Power Administration's Transmission for the purpose of North Mountain Substation transmission operations

i. Seattle's Senior Power Dispatcher shall have the right to require switching changes within the capability of the North Mountain Substation by telephone request to the District' s Power Dispatcher.

ii. Voltage Control - The Parties' Power Dispatchers shall mutually establish standing orders to require the 7.25 MW Hampton Lumber Generator (the "Generating Project") to absorb reactive power (i.e.. volt-amperes reactive or "VAR") upon request by the Seattle's Power Dispatcher. The purpose is to reduce excessive voltage in Seattle's 230kV system. The amount of reactive power that the Generating Project may be required to absorb shall be limited to the Generating Project' s safe and stable operating limits. Seattle's Power Dispatcher, at his/her sole discretion may verbally request that the District's Power Dispatcher assist Seattle in altering the 230kV voltage and the District' s Power Dispatcher shall use

his/he r best efforts to accommodate such request. The District shall provide Seattle's Power Dispatcher with the Generating Project's current generation capability curve. which will be used to determine the safe and stable operating limits.

iii. Switchyard Control - North Mountain 230-kV transformer bushings (high side) shall be recognized as the interconnection point between the District and Seattle. Switches labeled " Disconnect 240 Bank 11" and "Disconnect 240 Bank 12" and all equipment on Seattle's side of the jurisdictional boundary shall be under control of the Seattle's Power Dispatcher. All equipment associated with the District's distribution system on the District's side (i.e., the 12.5kV or "low" side) of the transformer shall be under control of the District's Power Dispatcher.

iv. Emergency Operations - The District's Power Dispatcher and Seattle's Senior Power Dispatcher shall establish standing orders that provide that under certain emergency conditions, Seattle may, in its sole discretion, make verbal requests directly to the District's Substation Operator to change the distribution station configuration to assist in arresting emergency conditions.

v. System Priorities - If the emergency condition results in a system blackout or separation of Seattle's Skagit generation. The first priority of the Parties' Power Dispatchers shall be to restore the electric system and bring voltage and frequency into acceptable operating ranges. During the system restoration, Seattle's Senior Power Dispatcher may, in his/her sole discretion, verbally request that the District's Power Dispatcher shut down or separate the Hampton Generation Project from the District's distribution system and the District's Power Dispatcher shall promptly comply with such request. During the system restoration process, Seattle may adjust its generation schedules appropriately.

vi. Seattle's Senior Power Dispatcher in an emergency, shall have the right to curtail or interrupt the operation of the Generating Project, in part or in whole, to prevent overload of Seattle's facilities due to (a) failure of a sectionalizing breaker at Seattle's Bothell Substation, (b) scheduled or unscheduled outages of multiple 230kV lines between the City's Skagit generating plants and Bothell Substation, or (c) multiple 115kV line outages in the City's electric system

vii. The District’s Power Dispatcher shall immediately notify Seattle's Senior Power Dispatcher of any abnormal distribution system switching conditions, including the closure of the District's 12.5kV interconnection to its Oso Substation.

viii. Seattle’s Power Dispatcher shall immediately notify the District’s Power Dispatcher of any abnormal condition that will adversely affect North Mountain load carrying capability.

3. **Outage Coordination**

    a. The Party's will provide notice of planned outages of 230kV or 12.5kV equipment to the other Party's outage coordination office in accordance with the Regional Reliability Coordinator's Outage Coordination Policy requirements.

    b. The Party's will provide notice of planned outages of meter, communication, or relay equipment a minimum of 48 hours in advance of the planned outage.

4. **Formal Notices of an Operating Nature**

    a. Formal Notices should be communicated per Exhibit I.

5. **Revisions to Exhibit H**

Either Party may propose to revise Exhibit H. The revising Party shall update the Exhibit H revision history table and send the revised Exhibit H with a signed letter asking for agreement on the revision to be indicated by representative signature and return. This Agreement may be executed in several counterparts, all of which taken together will constitute one agreement and may be executed by electronic signature and delivered electronically. The parties have executed this Agreement as of the last date indicated below.

Exhibit H Revision History		
Revision #	Revising Party and Description of change	Date
0	North Mountain O&M Agreement Effective	08/01/2022

6. Revision Approval

a. Parties' approval of revision "0" of Exhibit G Security and Access Control indicated below by signature.

ACCEPTING FOR THE CITY OF SEATTLE, CITY LIGHT DEPARTMENT

_____
Mike Haynes
Assistant General Manager

Date:_____

ACCEPTING FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY, WASHINGTON

_____
Guy Payne, Assistant General Manager, Distribution and Engineering Services

Date:_____

Exhibit I

North Mountain Notices

1. NOTICES RELATING TO PROVISIONS OF THE AGREEMENT

Any notice required under this Agreement shall either be in writing with proof of receipt by a nationally recognized delivery service or transmitted electronically. Notices are effective when received by the Party's Representative of delegate.

For purposes of this agreement, the District's Representative shall be:

Guy Payne
Assistant General Manager, Distribution & Engineering Services
Public Utility District No. 1 of Snohomish County Washington
P.O. Box 1107 Everett, WA 98206
Email: gopayne@snopud.com
Phone: 425-783-4201

For the purposes of this agreement, Seattle's Representative shall be:

Andrew Strong
Director of Power Management
700 5th Avenue, Suite 3300
Seattle, WA 98104
Email: Andrew.Strong@seattle.gov
Phone: (206) 684-3806

2. Notices of an Operating Nature

The Parties will provide contact information for high level coordination of operational activities. Such operational activities shall include, but are not limited to outage coordination, system dispatch, and safety.

For purposes of this agreement, the District's Operations Coordinator shall be:

System Operations 24/7 Contact
Public Utility District No. 1 of Snohomish County Washington
P.O. Box 1107 Everett, WA 98206
Email: energycontrolcenter@snopud.com
Phone: 425-783-5040

Paige Olson
Energy Control Superintendent
Public Utility District No. 1 of Snohomish County Washington
P.O. Box 1107 Everett, WA 98206
Email: plolson@snopud.com
Phone: 425-783-5034

For purposes of this agreement, Seattle's Operations Coordinator shall be:

System Operations 24/7 Contact
Phone: 206-706-0204

Kurt Pullman
System Operations Director
Email: Kurt.Pullman@seattle.gov
Phone: (206) 743-4347
Written correspondence should be sent to Seattle's Representative for internal forwarding.

3. **Notices Regarding Invoicing and Operations and Maintenance Plan, (O&M Plan)**
The Parties will provide contact information for ongoing correspondence concerning invoices, the O&M Plan and emergent North Mountain Substation issues.

The District's primary and copied backup contact shall be:

John Liang
Senior Regional Transmission Engineer
Public Utility District No. 1 of Snohomish County Washington
P.O. Box 1107 Everett, WA 98206
Email: JJLiang@snopud.com
Phone: 425-783-5036

Robert Anderson
Manager, Substation Engineering
Public Utility District No. 1 of Snohomish County Washington
P.O. Box 1107 Everett, WA 98206
Email: RSAnderson@snopud.com
Phone: (425) 512-1329

Seattle's primary and copied backup contact shall be:

Michael Watkins
Strategic Advisor
700 5th Avenue, Suite 3300

Seattle, WA 98104
Email: Michael.Watkins@seattle.gov
Phone: (206) 684-3659

Josh Walter
Supervising Strategic Advisor
700 5th Avenue, Suite 3300
Seattle, WA 98104
Email: Michael.Watkins@seattle.gov
Phone: (206) 684-3654

4. **Revisions to Exhibit I**

Either Party may revise Exhibit I Notices. The revising Party shall update the Exhibit I revision history table and send the revised Exhibit I asking for agreement on the revision to be indicated by approval signature and return. This Agreement may be executed in several counterparts, all of which taken together will constitute one agreement and may be executed by electronic signature and delivered electronically. The parties have executed this Agreement as of the last date indicated below.

Exhibit I Revision History		
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a. Parties' approval of revision "0" of Exhibit G Security and Access Control indicated below by signature.

ACCEPTING FOR THE CITY OF SEATTLE, CITY LIGHT DEPARTMENT

_____
Mike Haynes
Assistant General Manager

Date:_____

ACCEPTING FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF SNOHOMISH COUNTY, WASHINGTON

_____
Guy Payne, Assistant General Manager, Distribution and Engineering Services

Date:_____