

Washington State Department of
Labor & Industries

Electrical Plan Review Submittal Guide

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Introduction

Although electrical plans are checked for compliance with many sections of the National Electrical Code, the main focus of our review is the load on the service and feeders of the electrical system(s), and proper design of emergency and standby systems. Our review starts at the branch circuit level and investigates equipment and conductors in the load path back to the service point.

The pages following this introduction describe the information needed to review your electrical plans and load data. We have included instructions, sample forms, and schedules to demonstrate an acceptable format that can be used to present your supporting documentation. You may use our forms, or you may create your own. These forms are designed to assist you in assembling an accurate presentation that demonstrates your design is in compliance with the appropriate codes.

The "***Electrical Plan Review Submittal***" form shown on page 10 **must be completed and enclosed** with all plan submittals. The information in items 1 through 10 on this form is entered into our database and provides us the details needed to identify, track, and record your project. **Plans sent in without a submittal form may be rejected upon receipt.** If you would like this form in an electronic version please call Bill Eckroth at (360) 902-5254.

The documentation as outlined in "*the Screen In Check List*" **must be** presented in order for the plans examiner to begin a review. **Plans lacking the appropriate screen-in information or "identified" as something other than construction documents, may be disapproved and sent back.**

The Electrical Plan Review staff would like to hear any suggestions or concerns you may have about the review process. We welcome your constructive comments.

RCW and WAC Requirements for Electrical Plan Review

Revised Code of Washington (RCW) 19.28 states that electrical installations “*shall be in conformity with approved methods of construction.*” The standards used for “*approved methods*” are listed in Washington Administrative Code (WAC) 296-46B-010 and include the currently adopted editions of NFPA 70 (National Electrical Code), NFPA 20 (Centrifugal Fire Pumps), and NFPA 110 (Emergency and Standby Power Systems).

WAC 296-46B-900 (1) provides classification or definition of occupancies. WAC 296-46B-900 (3) Table 900-1, and Table 900-2 specify the occupancies for which plan review is required.

WAC 296-46B-900 (3)(h) requires that plans that are to be reviewed by the department “... *must clearly show the electrical installation or alteration in floor plan view, include switchboard and/or panelboard schedules and when a service or feeder is to be installed or altered, must include a riser diagram, load calculation, fault current calculation and interrupting rating of equipment. Where existing electrical systems are to supply additional loads, the plans must include documentation that proves adequate capacity and ratings. The plans must be submitted with a plan review submittal form available from the department...*”

Riser diagrams and load calculations must include all of the equipment carrying the additional loads and be complete to the point of connection between the facilities of the serving utility and the premises wiring. NEC 215-5 requires that the details of such diagrams and calculations shall include “... *the area in square feet of the building or other structure supplied by each feeder, the total calculated load before applying demand factors, the demand factors used, the calculated load after applying demand factors, and the size and type of conductors to be used.*”

WAC 296-46B-900 (2) states “Plan review is a part of the electrical inspection process; its primary purpose is to determine: (a) That service/feeder conductors are calculated and sized according to the proper NEC or WAC article or section; (b) The classification of hazardous locations; and (c) The proper design of emergency and standby systems.” The Electrical Plans Examiner’s responsibility is to review plans for electrical installations to verify compliance with the National Electrical Code and Washington State Rules and Regulations.

For the latest Electrical RCW and WAC rules please visit our web site at:
<http://www.lni.wa.gov/TradesLicensing/Electrical>

Electrical Plan Review Staff Phone Numbers and Mailing Address

Please direct all billing calls and plan status checks to Bill Eckroth.
The plan review supervisor will address technical or plan review policy questions.

Chief Electrical Inspector:

Ron Fuller
Telephone Number: 360.902.5249
Fax Number: 360.902.5229

Plan Review Supervisor:

Bill Eckroth
Phone number: 360.902.5254
Fax Number: 360.902.5296

Plans Examiner:

Mike Buettner
Phone number: 360.902.5253
Fax Number: 360.902.5296

Plans Examiner:

Scott Kelly
Phone number: 360.902.5248
Fax Number: 360.902.5296

Plans Examiner:

Norm Williams
Phone Number: 360.902.5247
Fax Number: 360.902.5296

Plans Examiner:

Trent Harris
Phone Number: 360.902.4920
Fax Number: 360.902.5296

Please address all mail to:

Electrical Plan Review
Attn.: Bill Eckroth

Street / Delivery Address:

7273 Linderson Way SW
Tumwater, WA 98502

Mailing Address:

PO Box 44460
Olympia, WA 98504-4460

Plan review fees are based on a percentage of the electrical inspection fee that is calculated during the review. You will be billed for the plan review fee after the review is completed.

Plans Examiner Geographical Areas?

Electrical Plans are not assigned based upon a geographic area.

Plan Review in Cities Doing Their Own Electrical Inspections?

If the project you are submitting is within the inspection jurisdiction of the cities listed on page 7, Labor and Industries **does not** do the plan review. You will have to submit your plans to the city responsible for the electrical inspection.

City Electrical Inspectors

City of Aberdeen

James Criel, Inspector
200 E Market Street
Aberdeen WA 98502
Phone: 360.537.3275
Fax: 360.537.3386

City of Bellevue

Bob Lloyd, Inspector
11511 Main Street
Bellevue WA 98009
Phone: 425.452.7911
Fax: 425.452.7930

City of Bellingham

Bill Paulson/Mark Sniffen,
Inspectors
210 Lottie Street
Bellingham WA 98225
Phone: 360.778.8300
Fax: 360.778.8301

City of Burien

Dan Cruz, Inspector
415 SW 150th
Burien WA 98146
Phone: 206.241.4647
Fax: 206.248.5539

City of Des Moines

Rex Christensen, Inspector
21650 11th Ave S
Des Moines WA 98198
Phone: 206.870-7576
Fax: 206.870.6544

City of Eatonville

Nestor Sundita, Inspector
PO BOX 309
Eatonville WA 98328
Phone: 360.832.3361
Fax: 360.832.3977

City of Everett

Tim Alaniz & Dave Misner
3200 Cedar Street
Everett, WA 98201
Phone: 425-257-8810
Fax: 425-257-8856

City of Federal Way

Joseph Szpek, Inspector
33530 1st Way South
Federal Way, WA 98003
Phone: 253.661.4152
Fax: 253.835.2609

City of Kirkland

Clell Mason, Inspector
123 Fifth Ave
Kirkland WA 98033
Phone: 425.587.3600
Fax: 425.828.1292

City of Lacey

Kevin Rapacz, Inspector
PO BOX 3400
Lacey WA 98509
Phone: 360.491.5642
Fax: 360.438.2669

City of Longview

Wayne Wagner, Inspector
PO BOX 128
Longview WA 98632
Phone: 360.442.5085
Fax: 360.442.5953

City of Lynnwood

Ken Copeland, Inspector
PO BOX 5008
Lynnwood WA 98046
Phone: 425.670.6616
Fax: 425.771.6585

City of Marysville

Orlando Roche, Inspector
80 Columbia Avenue
Marysville, WA 98270
Phone: 360.363.8203
Fax: 360.651.5099

City of Mercer Island

Al Davis, Inspector
9611 SE 36th Street
Mercer Island WA 98040
Phone: 206.236.5300
Fax: 206.236.3599

City of Milton

Dick Bronson, Inspector
Tacoma Power Inspections
Milton Power
1000 Laurel ST
Milton, WA 98354
Phone: 253.502.8444/253.922.8738

City of Mountlake Terrace

John Clay, Inspector
23204 58th
Mount Lake Terrace, WA 98043
Phone: 425-744-6268
Fax: 425-778-6421

City of Normandy Park

Dan Cruz, Inspector
801 SW 174th ST
Normandy Park, WA 98166
Phone: 206.248.7603
Fax: 206.439.8674

City of Olympia

Scott Hopp, Inspector
PO Box 1967
Olympia WA 98507
Phone: 360.753.8337
Fax: 360.753.8087

City of Port Angeles

Trent Peppard, Inspector
240 W Front
Port Angeles WA 98632
Phone: 360.417.4735
Fax: 360.417.4711

City of Redmond

Thomas Denney, Inspector
15670 NE 85th St
Redmond WA 98052
Phone: 425.556.2473
Fax: 425.556.2400

City of Renton

Dick Gilcrist, Inspector
1055 S Grady Way
Renton WA 98055
Phone: 425-430-7273
Fax: 425-430-7300

City of Sea Tac

Jerry Berndt/Bill Buterbaugh,
Inspectors
17900 International Bldg.
Sea Tac WA 98188
Phone: 206.973.4750
Fax: 206.973.4769

City of Seattle

Dick Alford, Chief Inspector
710 5nd Ave Ste 2000
Seattle WA 98104
Phone: 206.684.8421
Fax: 206.386.4039

City of Spokane

Dan Skindzier, Inspector Supervisor
W 808 Spokane Falls
Spokane WA 99201
Phone: 509.625.6300
Fax: 509.625.6822

City of Tacoma

James Hellman Chief Inspector
3628 S 35th
Tacoma, WA 98409
Phone: 253.502.8439
Fax: 253.502.8659

City of Tukwila

Jim Benner, Inspector
6300 Southcenter Blvd., #100
Tukwila WA 98188
Phone: 206-431-3670

City of Vancouver

Cindy Peterson, Building Official
PO BOX 1995
Vancouver WA 98668
Phone: 360.487.7855
Fax 360.487.7805

Labor and Industries Service Locations 2011

ABERDEEN

415 W Wishkah STE 1B
Aberdeen WA 98520-0013
360.533.8200
Fax: 360.533.8220

Electrical Supervisor
Bob Thomas 360.902.5201

BELLEVUE

616 120th Ave. NE #C201
Bellevue WA 98005-3037
425.990.1400
Fax: 425.990.1446

Electrical Supervisor
Tim Hingtgen 425.990.1462

BELLINGHAM

1720 Ellis St. STE 200
Bellingham WA 98225
360.647.7300 or 7320
Fax: 360.647.7310

Electrical Supervisor
Jerry Vance 360.416.3020

BREMERTON

500 Pacific Ave. STE 400
Bremerton WA 98337
360.478.4921
Fax: 360.415.4048

Electrical Supervisor
(Vacant) 360.415.4015

EAST WENATCHEE

519 Grant Rd
E. Wenatchee WA 98802-5459
509.886.6500
Fax: 509.886.6510

Electrical Supervisor
Gary Gooler 509.454.3763

EVERETT

729 100th St SE
Everett WA 98208-2620
425.290.1300
Fax: 425.290.1399

Electrical Supervisor
Jim Hinrichs 425.290.1320

KENNEWICK

4310 W. 24th Ave
Kennewick WA 99338-1992
509.735.0138
Fax: 509.735.0120

Electrical Supervisor
Dene Koons 509.735.0130

KELSO

711 Vine St
Kelso WA 98626
360.575.6900
Fax: 360.575.6918

Electrical Supervisor
Steve Thornton 360.896.2356

MOSES LAKE

3001 W Broadway Ave
Moses Lake WA 98837-2907
509.764.6900
Fax: 509.764.6923

Electrical Supervisor
Dene Koons 509.735.0130

MOUNT VERNON

525 E College Way STE H
Mt. Vernon WA 98273-5500
360.416.3000
Fax: 360.416.3030

Electrical Supervisor
Jerry Vance 360.416.3020

PORT ANGELES

1605 E Front St. STE C
Port Angeles WA 98362-4628
360.417.2702
Fax: 360.417.2733

Electrical Supervisor
(Vacant) 360.415.4015

PULLMAN

1250 Bishop Blvd. STE G
Pullman WA 99163-0847
509.334.5296
Fax: 509.334.3417

Electrical Supervisor
Bob Olson 509.324.2532

SPOKANE

901 N Monroe STE 100
Spokane WA 99201-2149
509.324.2640
Fax: 509.324.2655

Electrical Supervisor
Bob Olson 509.324.2532

TACOMA

950 Broadway, Suite 200
Tacoma WA 98402
253.596.3808
Fax: 253.596.3956

Electrical Supervisor
Steve Leighton 253.596.3815

TUKWILA

12806 Gateway Drive
Tukwila WA 98168
206.835.6630
Fax: 206.835.6636

Electrical Supervisor
Tim Hingtgen 425.990.1462

TUMWATER

7273 Linderson Way SW
Tumwater WA 98501
360.902.5269
Fax: 360.902.6340

Electrical Supervisor
Bob Thomas 360.902.5201

VANCOUVER

312 SE Stonemill Drive STE 120
Vancouver WA 98684
360.896.2300
Fax: 360.896.2345

Electrical Supervisor
Steve Thornton 360.896.2356

YAKIMA

15 W Yakima Ave. STE 100
Yakima WA 98902-3401
509.454.3760
Fax: 509.454.3710

Electrical Supervisor
Gary Gooler 509.454.3763

SUBMITTAL FORM INSTRUCTIONS

1. Facility Name:

Where project is taking place.

EXAMPLE: Grant Elementary School

2. Project Address:

Facility (inspection) address as assigned by local building or planning department. Include the city in which the project is located.

EXAMPLE: 1101 First Ave - Moses Lake, WA 99555

3. Submitter Name and Mailing Address:

Address of the person or firm submitting the plans for review. Please give the proper address for Federal Express delivery.

EXAMPLE: Puget Sound Engineers LLC - 777 First Ave W - Seattle, WA 98000

4. Project Owner:

Name of the person, corporation, or agency that is the registered owner of facility.

EXAMPLE: Moses Lake School District

5. Is this project licensed through Department of Health (DOH) or a contracted service with the Department of Social and Health Services (DSHS)?

What type of facility license is it? Boarding home, Nursing home, etc?

EXAMPLE: (If applicable) Boarding Home

6. Contact Person (including phone and Fax numbers):

The electrical designer or individual that can answer technical questions on electrical plans, load calculations, panel schedules, etc.

EXAMPLE: Bob Salmon 206.555.5555 Fax: 206.555.5555
Email Address: bob@provider.com

7. General Description:

Provide a detailed description of the complete scope of electrical work being done; indicate whether project is new construction, addition, remodel, modification of prior EPR project, etc.

EXAMPLE: Portable classroom additions to the school electrical system...

8. Start Date:

Date electrical work starts.

9. Completion Date:

Date project is scheduled for completion.

10. SPI Funding Information

Does the project have state matching funds from the Office of the Superintendent of Public Instruction? If so, Bid Date and School District.

EXAMPLE: June 30, 2011 Mukilteo School District

Electrical Plan Review - Check List instruction sheet

Professional Engineers stamp and signature

Professional Engineers stamp and signature shall be on all plan sheets for the following types of facilities; Educational, Hospitals, Nursing Homes, and other medical facilities that require review by the Department of Health.

Plan Sheet requirements

Shall include all the following:

- Minimum scale 1/8" (except site plan)
- Minimum font size "9"
- Symbol legends
- Circuit connecting lines with home runs shown for all equipment, lighting, receptacle symbols; or other methods by permission.
- Schedules with electrical specifications for Luminaires, Mechanical/Equipment, Kitchen, Shop, and all other equipment items listed on the switchboard and panel schedules.
- Show the location of all items on the One-Line/Riser diagrams.
- Plan sheets "specifically" identified as something other than the "Construction Set", cannot be approved.

One-line/Riser Diagrams

Shall be complete and include the following:

- Service point
- Conductor size, type, and number of
- Conduit sizes, type, and number of
- Identifier's for distribution equipment such as switchboards, panelboards, transformers, etc.
- Overcurrent protection devices
- System (Voltage, phase, wire.)
- Bus ratings (the true value)
- AIC ratings
- Transformer primary/secondary voltages and KVA size.
- Clearly indicate if system is fully rated or series rated for the available fault current.
- Locations with fault calculation values greater than 10,000 AIC need to be identified
- Additional items that maybe required shall be indicated. Such as; **Ground Fault Protection**, 2nd Level Ground Fault Protection, etc.

Panel Schedules

Panel schedules for switchboards, distributions, and panels must be provided on the plan sheets and one set of panel schedules on 8½" × 11" sheets for use during the review process. The following information is required to be shown on the panel schedule. (*Panel Schedules Continued on following page.*)

Panel Schedules Cont...

- System voltage, phase, wire, bus rating, bus available interrupting current rating.
- Overcurrent protection device size with available interrupting current rating, circuit number, phase identification, total phase load.
- Load values in VA or KVA. If using KVA the value needs to be expressed out to two decimal places.
- Each circuit shall indicate the type of load category.
- Load summary by type of category provided at the bottom of the panel schedule with the connected and calculated load values and NEC demand factor(s) shown.
- Single panels and Multi-section panels shall indicate Main breaker size or lug configuration; Main lug only, Double lugs, Feed thru lugs.
- A separate panel schedule and calculation which includes downstream loads is required for each section of a Multi-section panel design.
- A "Before and After" panel schedule presentation, must be located side by side on the same plan sheet.

Fault Current Calculations

The one line/riser diagram shall show the AIC value at all locations that are equal to or greater than 10,000 ampere. Fault calculations are required for new installations or existing installations when requested by Plan Review.

Metered Demand Data

Metered demand data shall include the following:

- Copy of the current last 12 months of utility demand.
- Complete Calculations for all metered data shall be in KVA.
- Use of utility KW demand shall be converted to KVA using an appropriate power factor adjustment.
- Metered load studies shall include a minimum of 30 days continuously recorded.
- Provide the ampere value of each phase at the beginning of the study.
- The current transformer shall be connected to the highest ampere phase at the beginning of the study when all phase conductors are not being recorded.
- Where multiple load studies are conducted at different locations on the distribution system the recording of all phases at that metered location will be required.
- The one-line diagram shall indicate the metered point location for each load study. The following information is also required.
- Graph of the study with time periods, ampere values, and ampere peak clearly identified.
- Make/model of recording equipment, make/model of current transformer's.
- Where equipment is not or cannot be set to record a 15 minute demand (average value over a 15-minute period continuously recorded) contact plan review concerning acceptability of your alternate recording method before starting load study.
- Calculations provided shall be based on the ampere peak value shown on the graph.
- Existing loads included in metered load data and removed or altered shall not be subtracted from the demand data or demand calculation.

Generator or Alternate Power System

- Where Generator unit(s) or alternate power system(s) are existing, or going to be installed, the locations are required to be provided on the plan sheets and clearly identified.
- Identification of generator or alternate power system **type** is required, such as...
- NEC-517 *Essential Electrical System,
- NEC-700 *Emergency System,
- NEC-701 Legally Required Standby System,
- NEC-702 Optional Standby System,
- NEC-705 Interconnected Electrical Power Production Sources,
- NEC-708 Critical Operations Power Systems (COPS).

***Only NEC-517 Essential Electrical System(s) and NEC-700 Emergency System(s) can supply Emergency load(s).**

Documentation on system coordination

The documentation needs to clearly indicate that the Professional Engineer takes full responsibility that the installation, when installed as designed, shall comply with the requirements of NEC-700.27 Coordination for Emergency System, **or** NEC-701.18 Coordination for Legally Required Standby System, **or** NEC-517.26 Essential Electrical System. Provide documentation on plan sheet(s) or the professional engineer's company letterhead. Statement needs to include Professional Engineer's stamp and signature whether on plan sheet or company letterhead.

High voltage System (over 600v)

Shall be complete and include the following:

- Service point
- Conductor size, type, and number of
- Conduit sizes
- Overcurrent protection devices
- System (Voltage, phase, wire.)
- Bus ratings
- AIC ratings
- Transformer primary/secondary voltages and KVA size
- Locations with fault calculation values greater than 10,000 AIC need to be identified.

Hazardous Locations (classified)

The boundary lines for any area classified as Class I, Division 1; Class I, Division 2; Class I, Zone 0; Class I, Zone 1; Class I, Zone 2; Class II, Division 1; Class II, Division 2; Class III, Division 1; Class III, Division 2; or any combination thereof shall be clearly indicated on the floor plan sheets and indicate the Classification of this area.

Electrical Plan Review Screen in Check List

Facility Name: _____ Facility type: Assisted Living,
 Educational, Hospital, Institutional, Other specify: _____

Professional Engineers stamp and signature

Professional Engineers stamp and signature has been placed on each plan sheet. *(See check list instruction sheet)*

Service Point

Service Point has been verified and shown on sheet _____. *(See Plan Review Definitions or NEC -100 Definitions for **Service Point**)*

Plan Sheets

Number of **plan sheets** provided _____. Number of **plan sets** provided _____. Only one set is required. *(See check list instruction sheet for minimum requirements.)*

One-Line/Riser diagrams

Complete one-line is located on sheet(s) _____. *(See check list instruction sheet for minimum requirements.)*

Panel Schedules

Number of panel schedules _____. Panel schedules are required to be provided. *(See check list instruction sheet for minimum requirements.)*

Fault Current Calculations

AIC values greater than 10,000 have been identified on the one-line/riser diagram. *(See check list instruction sheet for minimum requirements.)*

Metered Demand Data

Where used, provide statement attesting to the validity of the demand data, signed by a professional electrical engineer; or where allowed, by the electrical administrator of the electrical contractor performing the work. *(See check list instruction sheet for minimum requirements.)*

Generator or Alternate Power System

Generator system(s) present at the facility is located on sheet(s) _____ and identified as _____. *(See check list instruction sheet for minimum requirements.)*

Documentation on system "Selective" coordination

Documentation is located on sheet(s) _____ or is provided by separate letter. *(See check list instruction sheet for minimum requirements.)*

High voltage System (over 600v)

Customer owned primary distribution one-line diagram is shown on sheet(s) _____. *(See check list instruction sheet for minimum requirements.)*

Hazardous Locations (classified)

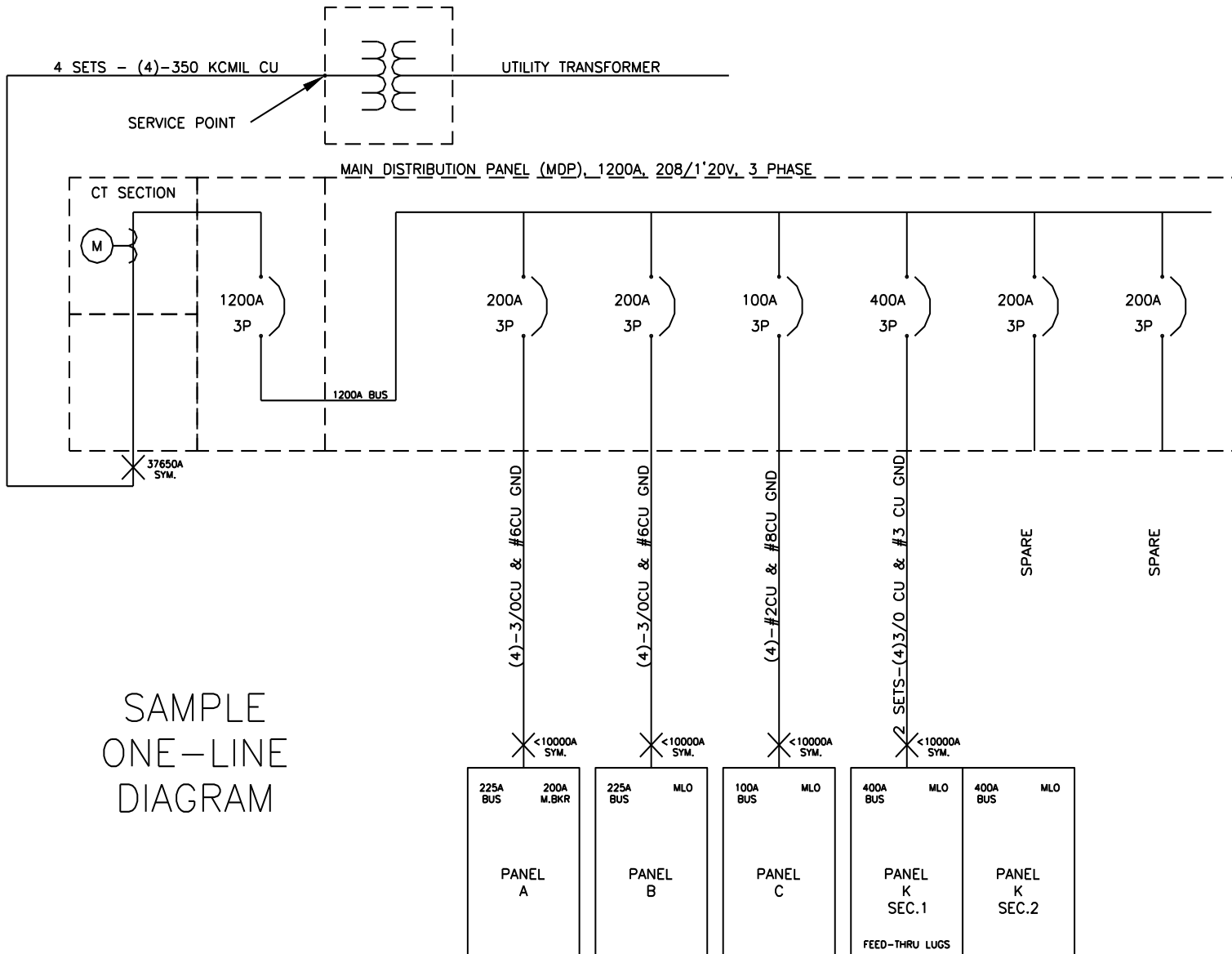
The boundary lines are shown on sheet(s) _____. *(See check list instruction sheet for minimum requirements.)*

Plan sheets, panel schedules, calculations, etc; provided in pencil, pen, or are illegible; are not acceptable.

I have reviewed and provided all the required information for this submittal.

Sign and date _____

Note: Plans submitted without this form signed & dated, or that do not comply with the requirements listed above may be returned Disapproved with fees charged.



SAMPLE
ONE-LINE
DIAGRAM

PANEL LOAD CALCULATION WORKSHEET

Project: _____ Date ____/____/____

Panel ID: _____

LOAD TYPE	CONNECTED LOAD	NEC ADJUSTMENT FACTOR	CALCULATED NEC LOAD
Lighting	_____	X 125%	= _____
General-use Receptacles (First 10KVA)	_____	X 100%	= _____
General-use Receptacles (Over 10KVA)	_____	X 50%	= _____
Motors and Compressors	_____	X 100%	= _____
(Largest Motor Load)	(_____)	X 25%	= _____
Dedicated or Specific-use Receptacles	_____	X 100%	= _____
HVAC and Mechanical Equipment Loads	_____	X 100%	= _____
Kitchen Equipment (#____)	_____	X ____%	= _____
Miscellaneous Loads	_____	X 100%	= _____
_____	_____	X ____%	= _____
_____	_____	X ____%	= _____
_____	_____	X ____%	= _____

<input type="checkbox"/> 240/120 <input type="checkbox"/> 3Ø <input type="checkbox"/> 208/120 <input type="checkbox"/> 1Ø <input type="checkbox"/> 480/277 <input type="checkbox"/> _____ System Voltage	TOTAL CONNECTED LOAD	TOTAL CALCULATED LOAD
		TOTAL CALCULATED AMPS

Connected Load-

1. The nameplate rating of all appliances that are fastened in place, permanently connected, or located to be on a specific circuit. (Water heaters, space heaters, ranges, refrigerators, etc.)
2. 180 VA for each general-use receptacle.
3. Maximum VA of lighting fixtures.
4. VA of all motors based on full load amps from table 430-247, 248, 249 and 250 of the National Electrical Code.

Calculated NEC Load-

The connected load after any code required adjustment factors have been applied. Load calculations shall be submitted/expressed in VA and converted to amps when sizing feeders and equipment, and is the minimum size allowed based upon these calculations.

Panel ID: _____ Location: _____ Fed From: _____	PANEL SCHEDULE Single Phase	Bus Rating: _____ A <input type="checkbox"/> Main Breaker _____ A <input type="checkbox"/> Main Lugs Only <input type="checkbox"/> Fed-Thru Lugs <input type="checkbox"/> Double Lugs	Single Phase <input type="checkbox"/> 4-wire <input type="checkbox"/> 3-wire <input type="checkbox"/> Iso. GND	Voltage <input type="checkbox"/> 240/120 <input type="checkbox"/> 208/120 <input type="checkbox"/> _____
Panel A.I.C. Rating: <input type="checkbox"/> 10 K <input type="checkbox"/> 14 K <input type="checkbox"/> 18 K <input type="checkbox"/> 22 K <input type="checkbox"/> 25 K <input type="checkbox"/> 42 K <input type="checkbox"/> 65 K <input type="checkbox"/> 100 K <input type="checkbox"/> 150 K <input type="checkbox"/> 200 K				

Circuit Description		LOAD(VA)	Code	Breaker	BUS	Breaker	Code	LOAD(VA)	Circuit Description	
1					A					2
3					B					4
5					A					6
7					B					8
9					A					10
11					B					12
13					A					14
15					B					16
17					A					18
19					B					20
21					A					22
23					B					24
25					A					26
27					B					28
29					A					30
31					B					32
33					A					34
35					B					36
37					A					38
39					B					40
41					A					42

Code Description:

L = LIGHTING LOADS	M = TOTAL MOTOR LOAD	H = HVAC	LM = LARGEST SINGLE MOTOR
R = GENERAL USE RECEPTACLES	S = DEDICATED RECEPTACLES	K = KITCHEN EQUIPMENT	Z = MISC OR APPLIANCES

Panel ID: _____ Location: _____ Fed From: _____	PANEL SCHEDULE Three Phase	Bus Rating: _____ A <input type="checkbox"/> Main Breaker _____ A <input type="checkbox"/> Main Lugs Only <input type="checkbox"/> Fed-Thru Lugs <input type="checkbox"/> Double Lugs	Three Phase <input type="checkbox"/> 4-wire <input type="checkbox"/> 3-wire <input type="checkbox"/> Iso. GND	Voltage <input type="checkbox"/> 480/277Y <input type="checkbox"/> 208/120Y <input type="checkbox"/> 240/120Δ <input type="checkbox"/> _____
Panel A.I.C. Rating: <input type="checkbox"/> 10 K <input type="checkbox"/> 14 K <input type="checkbox"/> 18 K <input type="checkbox"/> 22 K <input type="checkbox"/> 25 K <input type="checkbox"/> 42 K <input type="checkbox"/> 65 K <input type="checkbox"/> 100 K <input type="checkbox"/> 150 K <input type="checkbox"/> 200 K				

	Circuit Description	LOAD(VA)	Code	Breaker	Ø	Breaker	Code	LOAD(VA)	Circuit Description	
1					A					2
3					B					4
5					C					6
7					A					8
9					B					10
11					C					12
13					A					14
15					B					16
17					C					18
19					A					20
21					B					22
23					C					24
25					A					26
27					B					28
29					C					30
31					A					32
33					B					34
35					C					36
37					A					38
39					B					40
41					C					42

Code Description:

L = LIGHTING LOADS

R = GENERAL USE RECEPTACLES

M = TOTAL MOTOR LOAD

S = DEDICATED RECEPTACLES

H = HVAC

K = KITCHEN EQUIPMENT

LM = LARGEST SINGLE MOTOR

Z = MISC. OR APPLIANCES

PEAK DEMAND CALCULATION WORKSHEET

PER NEC 220-87 and WAC 296-46B-900(3)(j)

1.	Recorded Peak Demand on Date: __/__/__	=	KW
	Study Dates: From __/__/__ To __/__/__		
2.	Power Factor	÷	(P.F.)
	Apparent Peak Demand	=	KVA
3.	NEC 220-87 adjustment factor	X	1.25
	Adjusted Peak Demand		KVA
4.	Seasonal adjustment factor * & **	X	KVA
	Seasonally Adjusted Peak Demand	=	KVA
5.	Occupancy adjustment factor **	X	KVA
	Occupancy Adjusted Peak Demand	=	KVA
6.	Other adjustment factor(s) **	X	KVA
	Total Peak Demand	=	KVA
7.	New Calculated Load Added	+	KVA
Metered demand based			
CALCULATED LOAD:			KVA
			AMPS

Note: See WAC 296-46B-900(3)(j) for additional metering requirements.

* Based upon 12 month utility data, or explain why not.

** Explain how the factor was derived for 30-day demand metering or explain why it doesn't apply.

Seasonal _____

Occupancy _____

Other _____

APPROVED PLANS

WAC 296-46B-900 (3)(d)(v) requires that "approved" plans shall be available on the job site for use by the electrical inspector prior to the final inspection. The following illustrations represent the appearance of the approval stamps currently in use by the Labor and Industries Electrical Plans Examiners.

The large stamp below will be placed on the cover sheet of the complete plan package, on the first sheet of the electrical plans, or on both. It may be stamped with red or black ink. The signature of the electrical plans examiner will be on the approval stamp.

- APPROVED-Means that the plans have been approved as submitted without corrections.
- APPROVED **AS NOTED**-Means that the plans have been approved and the plans examiner has included notes, intended for the electrical inspector that describe corrections or changes in the original design submittal. These notes are always written or highlighted in RED INK and individually initialed by the plans examiner. Compliance with these notes is mandatory and a condition of the plan approval.

DEPT. OF LABOR & INDUSTRIES
Electrical Plan Review

PLANS APPROVED _____
 APPROVED _____
 AS NOTED **SEP 14 2011** _____

BY *Examiner's Signature*
Plans Examiner

SUBJECT TO PERMIT FEE _____

PROJECT SUBJECT TO _____

CODE AND FIELD INSPECTION

The small stamp below will be placed on each approved electrical plan sheet. It may be stamped with red or black ink. The signature of the electrical plans examiner will be on each approval stamp.

STATE OF WASHINGTON
DEPT. OF LABOR AND INDUSTRIES
ELECTRICAL PLAN REVIEW SECTION
APPROVED

SEP 14 2011

SUBJECT TO CODE
AND FIELD INSPECTION

BY *Examiner's Signature*

All plan sheets, specifications, calculations, and other materials are stamped with the electrical plan review number:

