BINDING EDGE

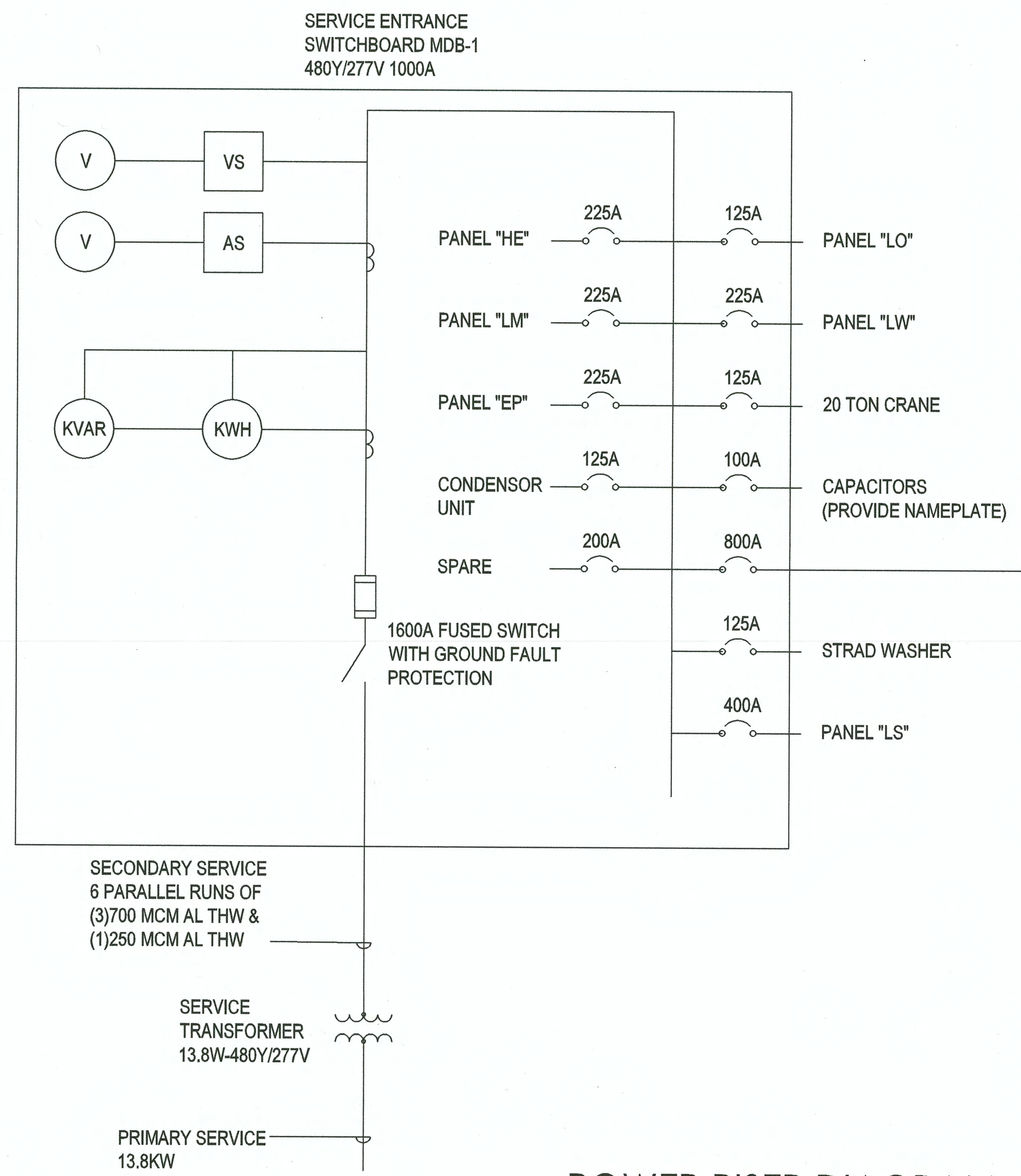
GENERAL NOTES :

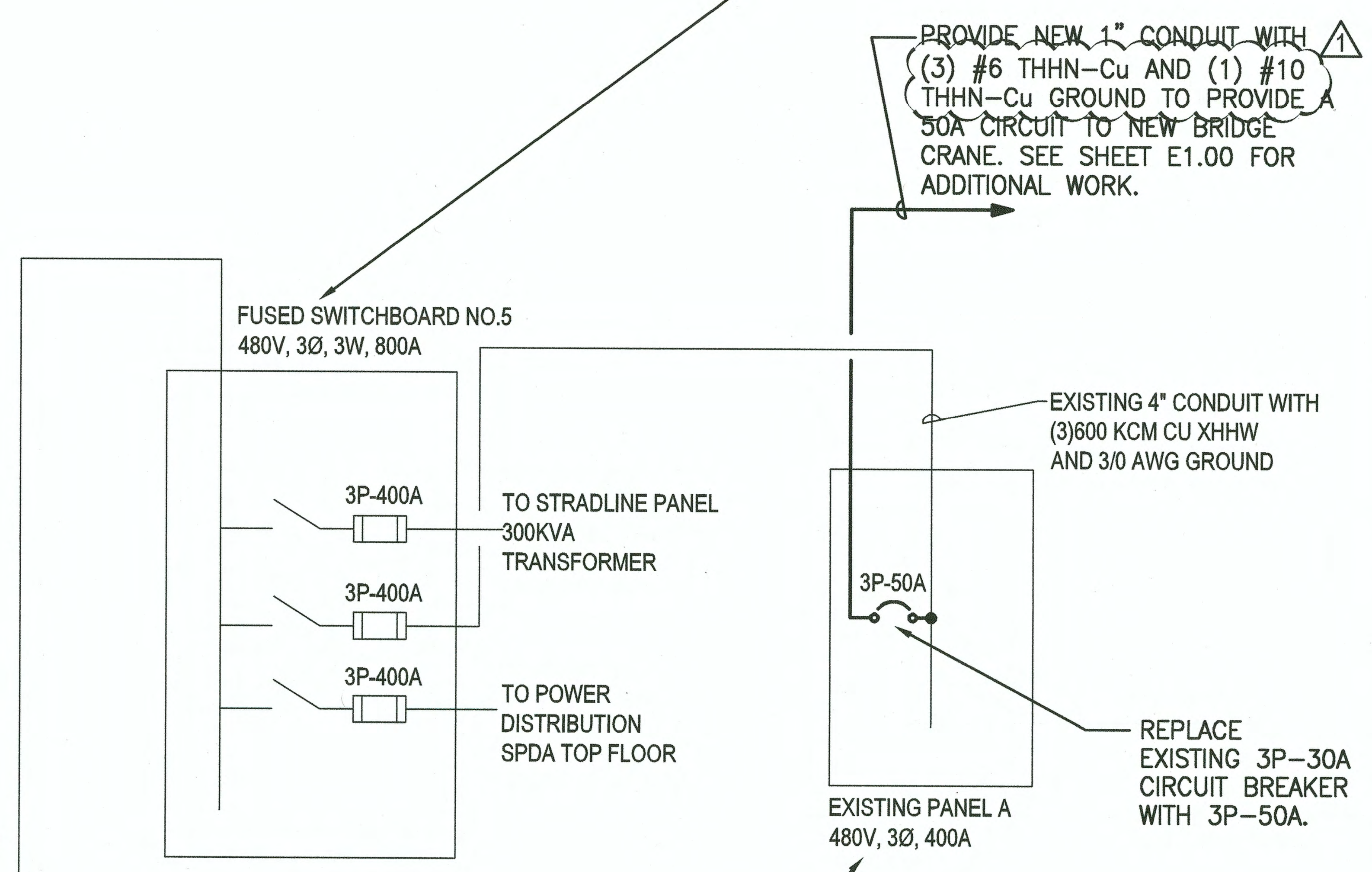
1. FURNISH AND INSTALL MATERIAL AND EQUIPMENT AS INDICATED ON THE DRAWINGS AND AS SPECIFIED FOR A COMPLETE AND OPERATING INSTALLATION. THE INTENTION OF THE CONTRACT DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS, EQUIPMENT, AND TRANSPORTATION NECESSARY FOR THE EXECUTION OF THE WORK.
2. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO SHOW ALL RACEWAY, WIRING, EXACT LOCATIONS OF EQUIPMENT, TERMINATIONS, OR NUMBER OR TYPES OF FITTINGS REQUIRED BY THE ELECTRICAL SYSTEM. PROVIDE ALL RELATED ELECTRICAL WORK SHOWN OR SCHEDULED ON THE ELECTRICAL DRAWINGS AND AS REQUIRED BY CODE ENFORCING AGENCIES FOR COMPLETE AND OPERATING ELECTRICAL SYSTEMS. SINCE DRAWINGS ARE MADE AT A SMALL SCALE, OUTLETS, DEVICES, EQUIPMENT, ETC. ARE SHOWN ONLY IN THEIR APPROXIMATE LOCATION UNLESS DIMENSIONED OR OTHERWISE SHOWN. WHERE NOT DIMENSIONED, COORDINATE SUCH LOCATIONS WITH THE WORK OF OTHER TRADES TO PREVENT INTERFERENCES. VERIFY ALL DIMENSIONS ON THE JOB. DO NOT SCALE THE ELECTRICAL DRAWINGS.
3. PROVIDE ALL CONDUIT, WIRE, AND JUNCTION BOXES IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS. HOME RUNS ARE NOT TO EXCEED THREE (3) PHASE CONDUCTORS, UNLESS SPECIFICALLY INDICATED ON DRAWINGS. FOR CIRCUITS WITH NON-LINEAR LOADS, THE NEUTRAL SHALL BE CONSIDERED A CURRENT-CARRYING CONDUCTOR AND ADJUSTMENT FACTORS SHALL BE APPLIED IN DETERMINING CONDUCTOR AMPACITY. PROVIDE A DEDICATED NEUTRAL FOR EACH CIRCUIT. CIRCUIT BREAKER HANDLE TIES ARE NOT ACCEPTABLE.
4. ALL MATERIALS MUST BE OF THE QUALITY HEREIN SPECIFIED. ALL MATERIALS SHALL BE NEW, OF THE BEST QUALITY AND FREE FROM DEFECTS. THEY SHALL BE DESIGNED TO ENSURE SATISFACTORY OPERATION AND OPERATIONAL LIFE IN THE ENVIRONMENTAL CONDITIONS WHICH WILL PREVAIL WHERE THEY ARE BEING INSTALLED. PROVIDE A SECURE STORAGE SPACE FOR STORAGE OF MATERIALS AND APPARATUS FOR PROTECTION FROM PHYSICAL DAMAGE, OR DAMAGE DUE TO CORROSION, AND ASSUME COMPLETE RESPONSIBILITY FOR ALL LOSSES AND DAMAGE. PROTECT COMPLETED WORK, WORK UNDERWAY, AND APPARATUS AGAINST LOSS OR DAMAGE.
5. COORDINATE ALL ELECTRICAL WORK WITH OTHER TRADES. EVERY REASONABLE EFFORT SHALL BE MADE TO PREVENT CONFLICTS AS TO SPACE REQUIREMENTS, DIMENSIONS, LOCATIONS, ACCESS OPENINGS OR OTHER MATTERS TENDING TO OBSTRUCT OR DELAY THE WORK OF ANY CRAFT. ANY CHANGES REQUIRED IN THE WORK CAUSED BY THE CONTRACTOR'S NEGLECT TO COORDINATE WITH OTHERS SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
6. TEMPORARY OR INTERIM USE OF ANY AND ALL PORTIONS OF THE ELECTRICAL SYSTEM SHALL BE UNDER THE SUPERVISION OF THE ELECTRICAL CONTRACTOR. THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ENSURE THAT ELECTRICAL SAFETY AND PROTECTION ARE MAINTAINED, INCLUDING THE PROPER COVERING, SIGNAGE, AND SECURING OF "LIVE" CIRCUITS PER NEC AND NATIONAL ELECTRICAL SAFETY CODE.
7. ALL MATERIALS SHALL BE U.L. OR E.T.L. LISTED FOR THE PURPOSE FOR WHICH THEY ARE USED. EQUIPMENT IN COMPLIANCE WITH U.L. STANDARDS BUT NOT BEARING THEIR LABEL IS NOT ACCEPTABLE. IF THE MANUFACTURER CANNOT ARRANGE FOR LABELING OF AN ASSEMBLED UNIT AT THE FACTORY THE UNIT SHALL BE FIELD EVALUATED PER THE WASHINGTON STATE ADMINISTRATIVE CODE (WAC) AND THE ELECTRICAL INSPECTOR'S REQUIREMENTS.
8. PROVIDE ELECTRICAL CONNECTION OF ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, WITH RECOGNIZED INDUSTRY PRACTICES, AND COMPLYING WITH REQUIREMENTS OF THE NEC. COORDINATE INSTALLATION OF ELECTRICAL CONNECTIONS WITH EQUIPMENT INSTALLATION WORK. MEET WITH EACH SUBCONTRACTOR FURNISHING EQUIPMENT REQUIRING ELECTRICAL SERVICE AND REVIEW SHOP DRAWINGS AND ELECTRICAL CHARACTERISTICS (VOLTAGE, PHASE, FULL LOAD AMPERES, NUMBER AND POINT OF CONNECTIONS, MINIMUM CIRCUIT CAPACITY, ETC.) TO DETERMINE ALL FINAL CONNECTION REQUIREMENTS BEFORE ROUGH-IN BEGINS FOR EACH EQUIPMENT ITEM. REPORT ANY VARIANCES FROM ELECTRICAL CHARACTERISTICS NOTED ON THE ELECTRICAL DRAWINGS TO THE PORT BEFORE PROCEEDING WITH ROUGH-IN WORK.
9. PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING FOR THE LATERAL AND VERTICAL SUPPORT OF CONDUIT AND ELECTRICAL EQUIPMENT FOR SEISMIC ZONE 3, AS REQUIRED BY SECTION 2312 OF THE UNIFORM BUILDING CODE AND LOCAL CODES AND ORDINANCES.
10. REMOVE FROM SITE ALL WASTE AND DEBRIS RESULTING FROM THE WORK. KEEP SITE CLEAN ON A DAY-TO-DAY BASIS.
11. PROVIDE CHANNEL AND ANGLE SUPPORT SYSTEMS, HANGERS, ANCHORS, SLEEVES, BRACKETS, FABRICATED ITEMS, AND FASTENERS DESIGNED TO PROVIDE SECURE SUPPORT FOR ELECTRICAL COMPONENTS. MATERIAL SHALL BE STEEL, EXCEPT AS OTHERWISE INDICATED, PROTECTED FROM CORROSION WITH ZINC COATING OR WITH TREATMENT OF EQUIVALENT CORROSION RESISTANCE. PROVIDE HOT-DIP GALVANIZED STEEL WITH STAINLESS STEEL HARDWARE OUTDOORS OR IN DAMP LOCATIONS. CONFORM TO MANUFACTURER'S RECOMMENDATIONS FOR SELECTING AND INSTALLING SUPPORTS.
12. FEEDERS, BRANCH CIRCUITS, AND CONTROL WIRING SHALL BE COPPER, 600-VOLT INSULATION, 75°C, TYPE THHN/THWN IN RACEWAY UNLESS NOTED OTHERWISE. #12 AWG AND LARGER SHALL BE STRANDED. USE NO WIRE SMALLER THAN #12 AWG FOR POWER AND LIGHTING CIRCUITS. CONTROL PANEL WIRING SHALL BE COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, EXTRA FLEXIBLE TYPE MTW. USE NO WIRE SMALLER THAN #14 AWG FOR CONTROL CIRCUITS. USE UL LISTED COMPRESSION TYPE CONNECTORS FOR ALL TERMINATIONS. PROVIDE EPOXY FILLED, WATERPROOF INSULATING COVERS FOR COPPER WIRE SPLICES AND TAPS BELOW GRADE. PROVIDE CABLE TIES IN PANELBOARDS AND OTHER ENCLOSURES TO NEATLY GROUP AND LACE ELECTRICAL CONDUCTORS.
13. PROVIDE WIRE MARKERS ON EACH CONDUCTOR AT ALL CONNECTIONS. IDENTIFY WITH BRANCH CIRCUIT OR FEEDER NUMBER AS INDICATED ON DRAWINGS. FOR CONTROL WIRING, IDENTIFY WITH WIRE NUMBER INDICATED ON SCHEMATIC OR INTERCONNECTION DIAGRAMS. USE PREPRINTED SELF-ADHESIVE VINYL LABELS WITH CLEAR CHEMICAL-RESISTANT COATING.
14. ALL GROUNDING SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE. PROVIDE GREEN INSULATED COPPER GROUNDING CONDUCTOR IN ALL RACEWAYS OR TO MATCH EXISTING CONDITION. USE HIGH-CONDUCTIVITY PLATED PRESSURE CONNECTORS. MAKE CONNECTIONS SO POSSIBILITY OF GALVANIC ACTION OR ELECTROLYSIS IS MINIMIZED. SELECT CONNECTORS, CONNECTION HARDWARE, CONDUCTORS, AND CONNECTION METHODS SO METALS IN DIRECT CONTACT WILL BE GALVANICALLY COMPATIBLE.
15. MOLDED-CASE CIRCUIT BREAKERS SHALL BE NEMA AB 1, WITH INTERRUPTING CAPACITY TO EXCEED AVAILABLE FAULT CURRENTS. THERMAL-MAGNETIC CIRCUIT BREAKERS SHALL HAVE INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUIT.
16. PRESENT THE PORT WITH CERTIFICATION OF INSPECTION FROM THE CODE ENFORCING AGENCY UPON COMPLETION OF WORK STATING THAT ALL WORK COMPLIES WITH APPLICABLE CODES AND ORDINANCES.
17. MAINTAIN, ON A DAILY BASIS, A COMPLETE SET OF REDLINE PRINTS OF THE CONTRACT DRAWINGS, REFLECTING AN ACCURATE DIMENSIONAL RECORD OF THE PRECISE LOCATIONS OF ALL CONCEALED WORK AND DOCUMENTING ALL CHANGES IN DESIGN. IDENTIFY LOCATIONS BY AT LEAST TWO DIMENSIONS TO PERMANENT REFERENCE POINTS. THIS REQUIREMENT SHALL NOT BE CONSTRUED AS AUTHORIZATION FOR THE CONTRACTOR TO MAKE CHANGES IN THE LAYOUT OR WORK WITHOUT DEFINITE AUTHORIZATION FOR SUCH CHANGES.
18. UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL DELIVER THE RED LINED DRAWINGS AND ONE SET OF NEATLY DRAFTED AS-BUILT DRAWINGS TO THE ENGINEER FOR TRANSMITTAL THROUGH THE ENGINEER TO THE PORT.
19. PROVIDE A WRITTEN WARRANTY THAT THE ELECTRICAL WORK IS FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. CONTRACTOR SHALL REPLACE AND REPAIR, TO THE SATISFACTION OF THE ENGINEER, ANY PARTS OF THE INSTALLATION WHICH MAY FAIL WITHIN A PERIOD OF 12 MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION, PROVIDED THAT SUCH FAILURE IS DUE TO DEFECTS IN MATERIAL OR WORKMANSHIP, OR FAILURE TO FOLLOW THE SPECIFICATIONS AND DRAWINGS.
20. UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS FOR PROJECT CLOSEOUT.
21. PROVIDE PRODUCT SUBMITTALS FOR ENGINEER'S REVIEW AND APPROVAL:
    - COPPER CONDUCTORS
    - OUTLET AND PULL BOXES
    - CONDUIT RACEWAYS
    - CIRCUIT BREAKER

DEMAND CALCULATION EXISTING FUSED SWITCHBOARD #5

NEC 220-87 AND WAC 296-46B-010(16)(J)

Phase to Phase Voltage(volts):		480	
Phases(1 = Single Phase, 3 = Three Phase):		3	
Peak Demand 30-Day Meter Reading	=	220.78	kW
Demand Adjustment Factor Per NEC 220-87(2)	x	1.25	
Adjusted Peak Demand		**275.98**	**kVA**
	(	332.10	A)
Added New Load			
New Panel P	+	**30.75**	kVA
Calculated Demand Load		**306.73**	kVA
Calculated Demand Current		**369**	Amps
Existing Switchboard Size		*800*	Amps





DEMAND CALCULATION EXISTING PANEL "A"

NEC 220-87 AND WAC 296-46B-010(16)(J)

Phase to Phase Voltage(volts):		480	
Phases(1 = Single Phase, 3 = Three Phase):		3	
Peak Demand 30-Day Meter Reading	=	91.88	kW
Demand Adjustment Factor Per NEC 220-87(2)	x	1.25	
Adjusted Peak Demand		**114.85**	**kVA**
	(	138.21	A)
Added New Load			
New Panel P	+	**30.75**	kVA
Calculated Demand Load		**145.60**	kVA
Calculated Demand Current		**175**	Amps
Existing Switchboard Size		*400*	Amps

POWER RISER DIAGRAM

1/8" = 1'-0"

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6021 12th street east, suite 200 Fife, WA 98424
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MARK:	REVISION:	BY:	APPR:	DATE:
1	ADDENDUM 1	HS		8/16/17

CHARLES A. HEATON, REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON — 8/16/2017

HS		7/18/17
CHECKED BY	CH	DATE 7/18/17
PROJ. ENGR		DATE
APPROVED:	DIRECTOR ENG.	DATE

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BRIDGE CRANE IN THE STRAD HOUSE

ELECTRICAL NOTES RISER DIAGRAM AND CALCULATIONS

TOWNSHIP: 21N	RANGE: 3E	SECTION: 34	
DAT-HRZ: NAD 83-07	VERT: NOS TIDAL (MLLW = 0.0)		
PARCEL: 27	DRAWING SCALE: AS NOTED		

6569
E2.00
SH # 6 OF # 6

CONT/CONS:	070651
M. ID:	101116.01
PHASE:	BID SET

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