



Little Creek Casino Resort

91 West State Route 108

Shelton, WA 98584

800-667-7711

REQUEST FOR PROPOSALS

For

Uninterrupted Power Supply (UPS) Replacement

The Squaxin Island Tribe's Little Creek Casino Resort (LCCR) invites qualified bidders to submit proposals for contract services to:

Little Creek Casino Resort

Joshua Crook, Compliance & Risk Manager

Joshua.Crook@LittleCreek.com

Renay VanDelden, Procurement & Supply Chain Manager

Renay.VanDelden@LittleCreek.com

Issue/Posting Date: September 18, 2023
Proposals Due: October 13, 2023 by 5:00 pm PST

Notice of Intent to Participate: Qualified contractors/consultants must RSVP/email their intent to participate in the bidding process no later than two (2) weeks after RFP's Issue/Posting Date listed above. Only those that RSVP intent to bid/participate will be granted access to necessary supporting documentation.

1. Background and Scope of Work

Little Creek Casino Resort is replacing an existing UPS, adding a distribution panel, removing existing HVAC and installing new units according to the plans. Applicable schematics are appended to the end of the RFP.

2. Mandatory Pre-Bid Site Visit

A pre-bid site visit will be held on the date listed below (unless marked as N/A). Bidders are expected to attend and sign in. Any updated/additional bid information will be distributed to those on the list. Those who do not attend will not qualify to submit bids.

The Little Creek Casino Resort will conduct a pre-bid site visit on:

Date

Time

☒ N/A

Location

3. Bid Requirements

Interested, qualified contractors or consultants must complete the attached *Bid Form*, which includes space for a firm, fixed price proposal, and a proposed schedule for completion. Bidders must also complete the *Contractor & Consultant Qualifications Form* and provide the requested information. Please see below for the description of a qualified contractor/consultant.

All aspects of the project must comply with the following codes and regulatory guidelines:

- International Building Code
- Occupational Safety and Health Administration (OSHA)
- Washington Industrial Safety and Health Act (WISHA)

4. Contractor/Consultant Qualifications

In order to bid on the proposed project, contractor/consultant must be considered to be a qualified applicant. Qualification requirements are listed below and referenced in the *Contractor & Consultant Qualifications Form*. The form must be completed along with the bid in order to be considered.

- Contractor/consultant to provide information on related tribal and non-tribal projects completed by your firm within the past 5 years.
- Provide a copy of a current Washington State general contractor/consultant license.
- Contractor/consultant to accommodate and successfully provide required contracted services on a timely basis. Proposed schedule will be a considered part of the *Bid Form*.
- Financial stability and strength of the submitting contractor/consultant will be determined by their bonding capacity. A line item is listed on the form. Proof will be required upon award of bid.
- Positive references from previous clients.

5. Instructions to Prospective Contractors – Submittal Instructions

Renay VanDelden, Procurement & Supply Chain Manager and Joshua Crook, Compliance & Risk Manager will receive submittals on behalf of the Little Creek Casino Resort. Please note that digital submissions are preferred. Bound hard copies are also acceptable but must be submitted in a sealed envelope clearly marked in the lower left-hand corner with the name of the RFP.

A complete submittal should contain:

- A. Completed *Bid Proposal Form*
- B. Completed *Contractor/Consultant Qualifications Form* and supplemental information (fields specific to construction projects may be omitted for this RFP)
- C. Proof of Indian Ownership (if applicable)

6. Review Process

The Respondent's proposal will be reviewed by the LCCR's RFP Committee with the following criteria in mind:

- A. The Respondent's qualifications, and those of its in-house personnel who will be directly responsible for managing the engagement, will be 40% of the evaluation. This includes the demonstrated capacity and capability of the Respondent to perform work of comparable scope and complexity. The qualification information requested is on the Contractor/Consultant Qualification form and must be fully completed.
- B. The project cost will be 40% of the evaluation. Although selecting the lowest bidder is not the goal, where equally qualified contractors/consultants are being considered, cost will be the determining factor. This amount will be listed on the Bid Form and signed by the Respondent.
- C. Review of the Respondent's proposed schedule will be 20% of the evaluation. The expectation is that this project follow the proposed schedule and that long lead items are taken into consideration.

7. Proposal Due Date and Time

Interested Contractors/Consultants must submit their proposals no later than **October 13, 2023 by 5:00 pm PST**.

Deliver to: Renay VanDelden, Procurement & Supply Chain Manager
Renay.VanDelden@LittleCreek.com

Joshua Crook, Compliance & Risk Manager
Joshua.Crook@LittleCreek.com

Bids will be delivered to the Little Creek Casino Resort and privately opened by The Tribe within 24 hours of the due date. See Notification to Award below for result information.

8. Conflict of Interest

Information regarding possible conflicts of interest should be provided as part of the qualification response. Such information will be taken into consideration in making a decision on the selection of the contractor. Should a conflict arise during preparation for or while undertaking these services, the contractor must immediately advise one of the following individuals of such a conflict:

Renay VanDelden, Procurement & Supply Chain Manager – Renay.VanDelden@LittleCreek.com / 360-432-7030

Joshua Crook, Compliance & Risk Manager – Joshua.Crook@LittleCreek.com / 360-427-3027

9. Davis-Bacon Wages

Davis-Bacon Wages ☐ Apply ☒ Do Not Apply to this RFP

10. Inquiries

All inquiries concerning this RFP should be directed to Renay VanDelden, Procurement & Supply Chain Manager – Renay.VanDelden@LittleCreek.com / 360-432-7030 or Joshua Crook, Compliance & Risk Manager – Joshua.Crook@LittleCreek.com / 360-427-3027.

Inquiries must be submitted at least one (1) week prior to RFP submission deadline. To preserve fairness and transparency, all Q&A will be shared anonymously with all competing bidding firms.

11. Native American Preference Policy

Applicants may assert a claim for tribal preference on the *Contractor/Consultant Qualifications Form* and provide supporting documentation.

Indian preference may be used in the purchase of goods or services. Indian preference is preferential treatment in securing goods and services from Alaska Natives and Indians, or Indian Owned Enterprises, as provided in Public Law 93-638, Section 7(b) Indian Self Determination and Education Assistance Act, January 1975.

All awarding contracts or subcontracts for supplies, services, labor, or materials in the amount of \$35,000 or more, where the majority of the work on the contract or subcontract will occur on lands subject to the jurisdiction of the Squaxin Island Tribe, shall give preference to Indian Owned Enterprises in the award of such contracts or subcontracts.

Unless federal law or the source of funds requires a different consideration, an Indian Owned Enterprise shall be considered among all preference applicants.

Preference will apply to bids that are within the percentages below of the lowest bid submitted by a qualified bidder not claiming preference, provided that the successful Indian Owned Enterprise agrees to perform the work at the cost of the lowest bid submitted by a qualified bidder not claiming preference.

Bid Preference Table:

Where the lowest responsive bid is:	Bid preference amount:
Less than \$100,000	10%
At least \$100,000 but less than \$500,000	5%
At least \$500,000 but less than \$1,000,000	3%
\$1,000,000 or more	1%

In circumstances where issues in addition to cost form a part of the decision-making, for example, design, experience, and/or timeliness, preference will be considered in the cost element only. In such circumstances, the bid document will identify the relevant elements and the scoring methodology to be used.

12. Tribal Sovereignty

Nothing herein shall be deemed to waive the sovereign immunity of the Tribe, the Squaxin Island Tribe, or the enterprises, agents, or employees of any of them.

13. Right to Reject

The Squaxin Island Tribe and their agents reserve the right to reject any or all bids, or any part thereof, to waiver irregularities or informalities in the bid or bidding process.

14. Notification of Award







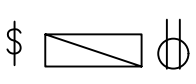


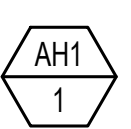
The Squaxin Island Tribe reserves all rights to award, or not award, any of the individual items listed under the scope of work above upon issuance of an Award of Contract. The Tribe will provide written notice to the successful bidder of actual items awarded.

It is expected that a decision selecting the successful Interested Contractor/Consultant will be made within four (4) weeks of the closing date for the receipt of proposals. Upon conclusion of final

negotiations with the successful firm, all Contractors/Consultants submitting proposals in response to this Request for Proposal will be informed, in writing, of the name of the successful firm.

15. Appended Scope of Work/Exhibits

Please see the attachments immediately following this page for additional information/scope of work.

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
EQUIPMENT, WIRING AND RACEWAYS	
	ENCLOSED CIRCUIT BREAKER, AMPERES AS INDICATED
	FUSED DISCONNECT SWITCH
	EXISTING PANELBOARD TO BE RETAINED
MISCELLANEOUS	
	CONSTRUCTION NOTES
	DEMOLITION NOTES
	W INDICATES WEATHERPROOF FOR ALL DEVICES, PROVIDE LOCKING COVER ON RECEPTACLES.
	ALL DEVICES WITH LIGHT LINE WEIGHT INDICATES EXISTING TO BE RETAINED
	REFER TO NOTES ON ELECTRICAL SHEETS FOR ALL DEVICES SHOWN WITH DASHED LINES
	ALL DEVICES WITH HEAVY LINE WEIGHT INDICATES NEW WORK
	MECHANICAL EQUIPMENT CONNECTION

GENERAL ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
C	MOUNT ABOVE COUNTER
EC	ELECTRICAL CONTRACTOR
GC	GENERAL CONTRACTOR
GFCI	GOVERNMENT FURNISHED, CONTRACTOR INSTALLED
GFGI	GOVERNMENT FURNISHED, GOVERNMENT INSTALLED
MC	MECHANICAL CONTRACTOR
W	WEATHERPROOF

ELECTRICAL ABBREVIATIONS	
AIC	AMPERE INTERRUPTING CAPACITY
AFC	AVAILABLE FAULT CURRENT
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CU	COPPER
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
EWB	ELECTRIC WALL HEATER
FLA	FULL LOAD AMPERE(S)
GND	GROUND
HP	HORSEPOWER OR HEAT PUMP
KVA	KILOVOLT-AMPERE(S)
KW	KILOWATT(S)
LED	LIGHT-EMITTING DIODE(S)
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NTS	NOT TO SCALE
OU	OUTDOOR UNIT
PH	PHASE
REC	RECEPTACLE
RECPT	RECEPTACLE
SCH	SCHEDULE
V	VOLT(S)
VA	VOLT-AMPERE(S)
XFMR	TRANSFORMER

GENERAL NOTES - APPLIES TO ALL SHEETS

- SEE EACH SHEET FOR ADDITIONAL GENERAL NOTES THAT ARE SPECIFIC TO AN AREA OR SHEET.
- THE ELECTRICAL DRAWINGS AND SCHEDULES ARE FUNCTIONAL IN NATURE AND DO NOT SPECIFY EXACT LOCATIONS OF EQUIPMENT OR EQUIPMENT TERMINATIONS. IT IS THE INTENT OF THESE DRAWINGS TO DESCRIBE AND PROVIDE FOR THE FURNISHING, INSTALLING, TESTING AND PLACING IN FULLY OPERATIONAL CONDITION ALL EQUIPMENT, MATERIALS, DEVICES AND NECESSARY APPURTENANCES TO PROVIDE A COMPLETE ELECTRICAL SYSTEM, TOGETHER WITH SUCH OTHER MISCELLANEOUS INSTALLATIONS AND EQUIPMENT SHOWN ON THE DRAWINGS. THE WORK SHALL INCLUDE ALL MATERIALS, APPLIANCES AND APPARATUS NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE DRAWINGS, BUT WHICH ARE NECESSARY TO MAKE A COMPLETE, FULLY OPERATIONAL INSTALLATION OF ALL ELECTRICAL SYSTEMS SHOWN ON THE DRAWINGS.
- CONTRACTOR TO PROVIDE A UTILITY LOCATE PRIOR TO DIGGING TO AVOID DAMAGING ANY EXISTING UNDERGROUND UTILITIES. LOCATION OF EXISTING UTILITIES SHOWN MAY DIFFER FROM ACTUAL INSTALLATION. COORDINATE DUCT BANKS, VAULTS, AND HAND HOLES WITH EXISTING UTILITIES AND NEW UTILITIES.
- PROVIDE 200-POUND TENSILE STRENGTH PULL CORD IN ALL SPARE OR EMPTY CONDUITS.
- SEAL ALL CONDUIT OPENINGS CONTAINING CABLES TO PROTECT WATER AND RODENT INGRESS. PROVIDE END CAPS OR PLUGS FOR ALL UNUSED CONDUITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY.

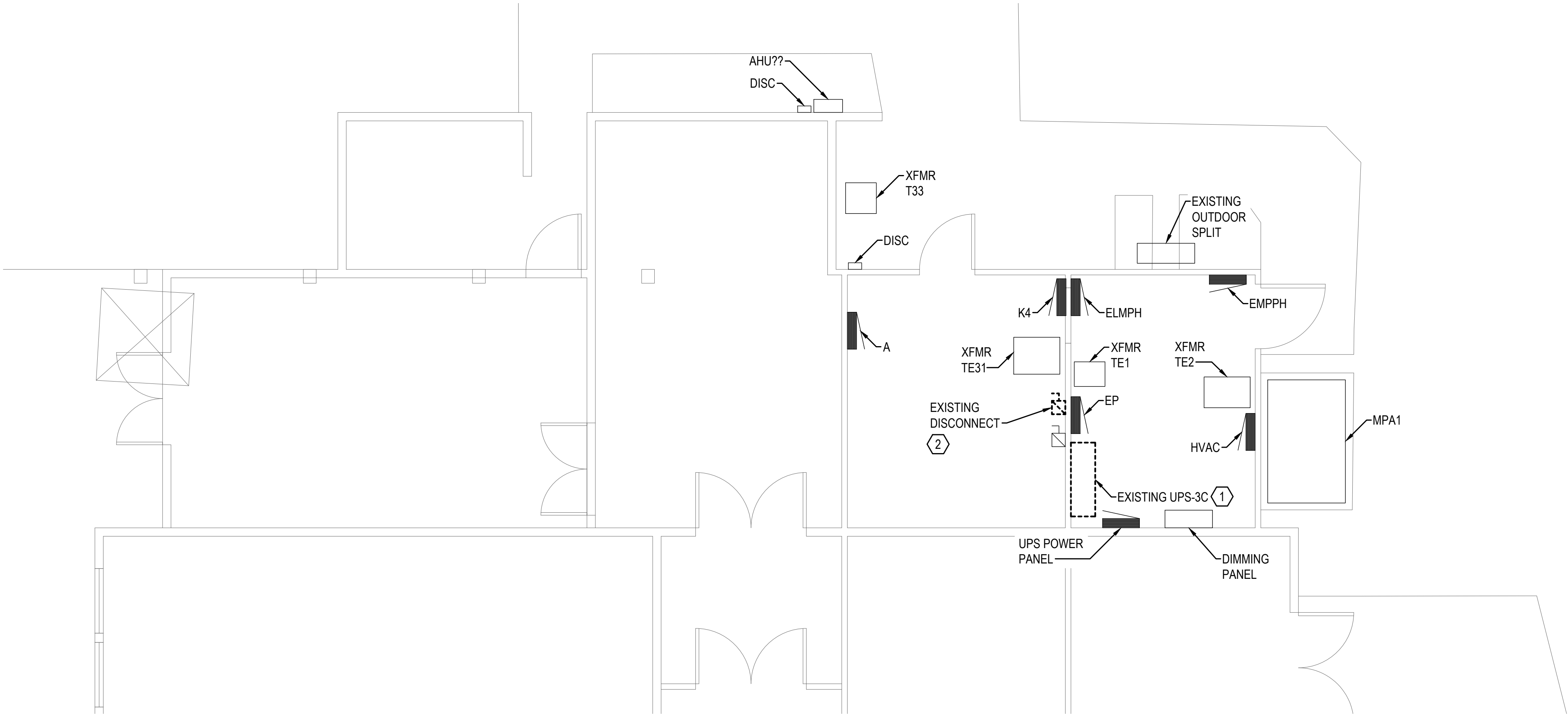
GENERAL DEMOLITION NOTES - APPLIES TO ALL SHEETS

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO INCLUDE ALL COSTS ASSOCIATED WITH NECESSARY DEMOLITION TO ALLOW THE NEW CONSTRUCTION SHOWN IN CONTRACT DOCUMENTS.
- THESE DOCUMENTS DELINEATE THE BASIC SCOPE OF WORK FOR THE REMOVAL OF EXISTING MATERIAL. THE DEMOLITION DRAWINGS AND NOTES ARE PROVIDED WITH THE INTENT TO GENERALLY DESCRIBE AREAS AND LIMITS OF WORK. THE CONTRACTOR SHALL BE FAMILIAR WITH THE SITE AND CONDITIONS, AND SHALL NOT RELY SOLELY ON REVIEW OF THE BIDDING DOCUMENTS IN DETERMINING THE EXTENT OF DEMOLITION WORK REQUIRED. COORDINATION OF THESE DRAWINGS WITH REQUIREMENTS FOR CONTRACT WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
- REMOVE ALL CABLES, CONDUCTORS, SURFACE RACEWAYS AND APPURTENANCES WHICH SERVE EXISTING EQUIPMENT TO BE DEMOLISHED.
- CONTRACTOR TO REMOVE AND DELIVER TO OWNER ALL DEVICES THAT ARE IDENTIFIED BY THE OWNER TO BE RETAINED. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO ASSURE THAT ALL ITEMS TO BE RETAINED ARE IDENTIFIED PRIOR TO THE START OF DEMOLITION. ALL ITEMS NOT SO IDENTIFIED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF SITE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR FOR ALL CUTTING PATCHING & FINISH WORK.
- ANY INTERRUPTED CIRCUIT SHALL BE MADE CONTINUOUS.

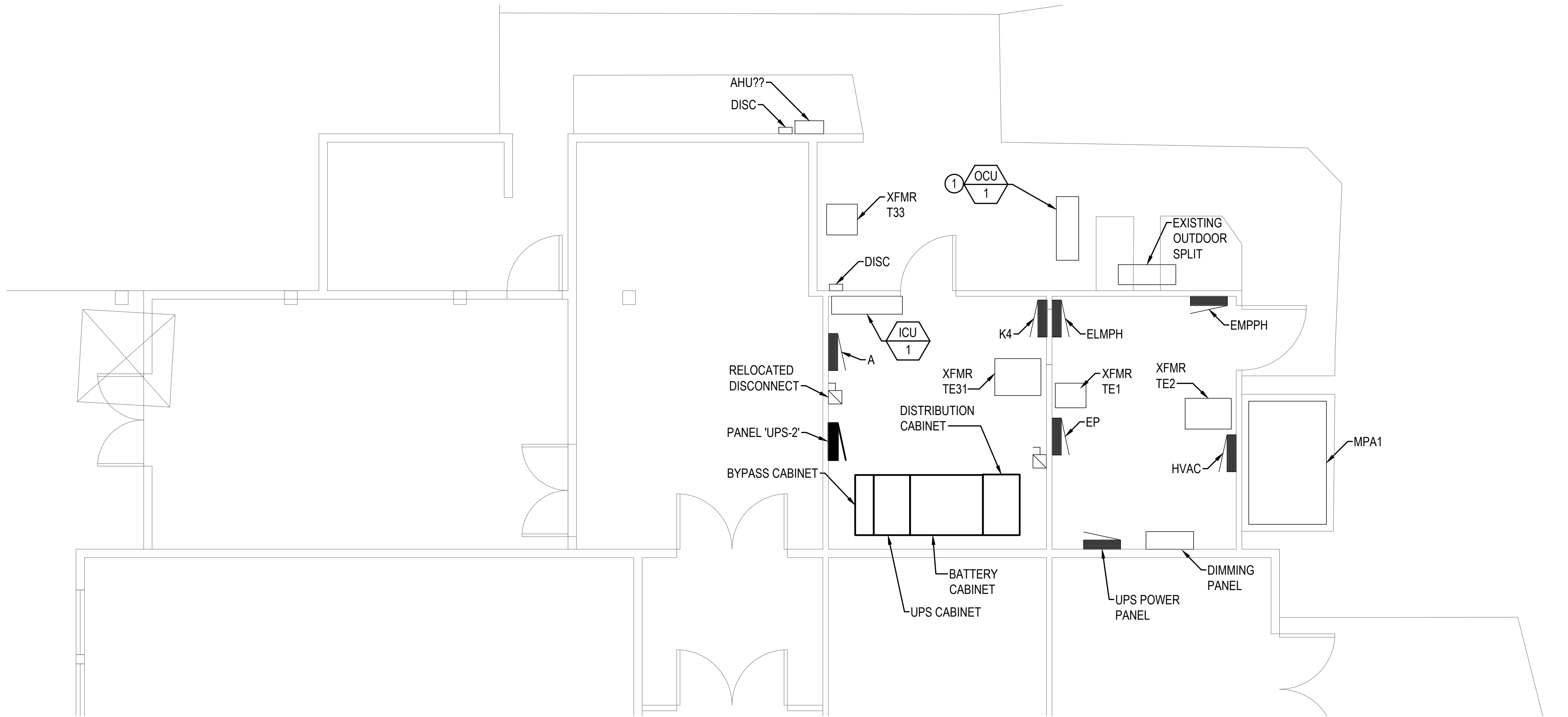
PANEL:		UPS-2 (FED FROM UPS-3C)		3 PH		4 WIRE		VOLTAGE: 208Y/120V		225A MLO				
LOC:		UPS-3C ROOM		MOUNT: SURFACE		FEED: BOTTOM								
TYPE:		NEMA 1		POLES: 42		SF MAINS:		65,000AIC MINIMUM						
LOAD TYPE	LOAD	CIRCUIT DIRECTORY	CIR. NO.	CIR. P	BRKR AMP	A	B	C	CIR. P	BRKR AMP	CIR. NO.	CIRCUIT DIRECTORY	LOAD	LOAD TYPE
ML	2600	OCU-1, ICU-1	1	1		2600			1	20	2	SPARE		
ML	2600		3		40		2600		1	20	4	SPARE		
		SPARE	5	1	20				1	20	6	SPARE		
		SPARE	7	1	20				1	20	8	SPARE		
		SPARE	9	1	20				1	20	10	SPARE		
		SPARE	11	1	20				1	20	12	SPARE		
		SPARE	13	1	20				1	20	14	SPARE		
		SPARE	15	1	20				1	20	16	SPARE		
		SPARE	17	1	20				1	20	18	SPARE		
		SPARE	19	1	20				1	20	20	SPARE		
		SPARE	21	1	20				1	20	22	SPARE		
			23								24			
			25								26			
			27								28			
			29								30			
			31								32			
			33								34			
			35								36			
			37								38			
			39								40			
			41								42			
	5200	TOTAL	THIS PANEL->			2600	2600					TOTAL		
						2600	2600							
LIGHTING(125%) = 0.00						LARGEST MOTOR(125%) = 3250.00			KITCHEN LOAD(65%) = 0.00			TOTAL CONNECTED LOAD (VA): 5,200.00		
RECEPTS<=10000(100%) = 0.00						OTHER MOTORS(100%) = 2600.00			APPLIANCES(100%) = 0.00			TOTAL CONNECTED CURRENT (A): 14.43		
RECEPTS>10000(50%) = 0.00						MOTOR TOTAL = 5850.00			DEDICATED(100%) = 0.00			TOTAL DEMAND LOAD (VA): 5,850.00		
ELECTRIC HEAT(100%) = 0.00						WATER HEATERS(100%) = 0.00			MISC(100%) = 0.00			TOTAL DEMAND CURRENT (A) 16.24		
NOTES: L=LIGHTING, R=RECEPTACLES, H=ELECTRIC HEAT, ML=LARGEST MOTOR, MO=OTHER MOTORS, WH=WATER HEATERS, K=KITCHEN LOADS, A=APPLIANCES, D=DEDICATED, X=MISC, SF=SUB FEED														

MECHANICAL EQUIPMENT CONNECTION SCHEDULE (EXHAUST FANS, AIR HANDLING UNITS, ETC)												
EQUIP.	VOLT/PH	LOAD			CIRCUIT		CONDUIT/WIRE SIZE	MANUAL STARTER (NOTE 1)	MAGNETIC STARTER (NOTE 1)	FUSED DISC. (NOTE 1)	DUCT SMOKE DETECTOR (NOTE 3)	REMARKS
		VA	MCA	HP	PANEL	BKR						
OCU- 1	208/1	5200	25		UPS-2	1,3	1" C., (3) #10 & (1) 10 GR.	MFR	EC	BY EC - 40A		
ICU- 1	208/1	208	1		UPS-2	1,3	1" C., (3) #10 & (1) 10 GR.	MFR	EC	BY EC-40A		FED FROM OUTDOOR UNIT (OCU-1)
NOTE: 1. CONTRACTOR LISTED SHALL FURNISH AND INSTALL THE LISTED DEVICE. 2. PROVIDE NEMA 3R DEVICES AND CONNECTIONS												

ELECTRICAL LEGEND AND ABBREVIATION		
REVISIONS		
NO.	DESCRIPTION	DATE
-	-	-
DRAWN BY: JM		
CHECKED BY: JS		
PROJECT MANAGER: JS		



1 ELECTRICAL SITE PLAN - DEMO
SCALE: 1/4" = 1' - 0"



2 ELECTRICAL SITE PLAN - CONSTRUCTION
SCALE: 1/4" = 1' - 0"

DEMOLITION NOTES

- 1 EXISTING UPS TO BE DEMOLISHED, BUT MUST REMAIN IN SERVICE UNTIL NEW UPS IS OPERATIONAL AND LOADS HAVE BEEN TRANSFERRED TO IT.
- 2 EXISTING DISCONNECT SHALL BE RELOCATED TO AVOID SPLIT SYSTEM PIPING. EXTEND CABLING TO NEW LOCATION.

CONSTRUCTION NOTES

- 1 NEW LOCATION FOR OUT DOOR UNIT.

REUSE OF DOCUMENTS
THE DRAWINGS AND SPECIFICATIONS CONTAINED HEREIN ARE THE PROPRIETARY, UNPUBLISHED PROPERTY OF BCE ENGINEERS, INC. AND SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED IN WHOLE OR PART WITHOUT THE WRITTEN PERMISSION OF BCE ENGINEERS, INC.

LITTLE CREEK
CASINO RESORT
UPS REPLACEMENT
91 WA-108
SHELTON, WA 98584

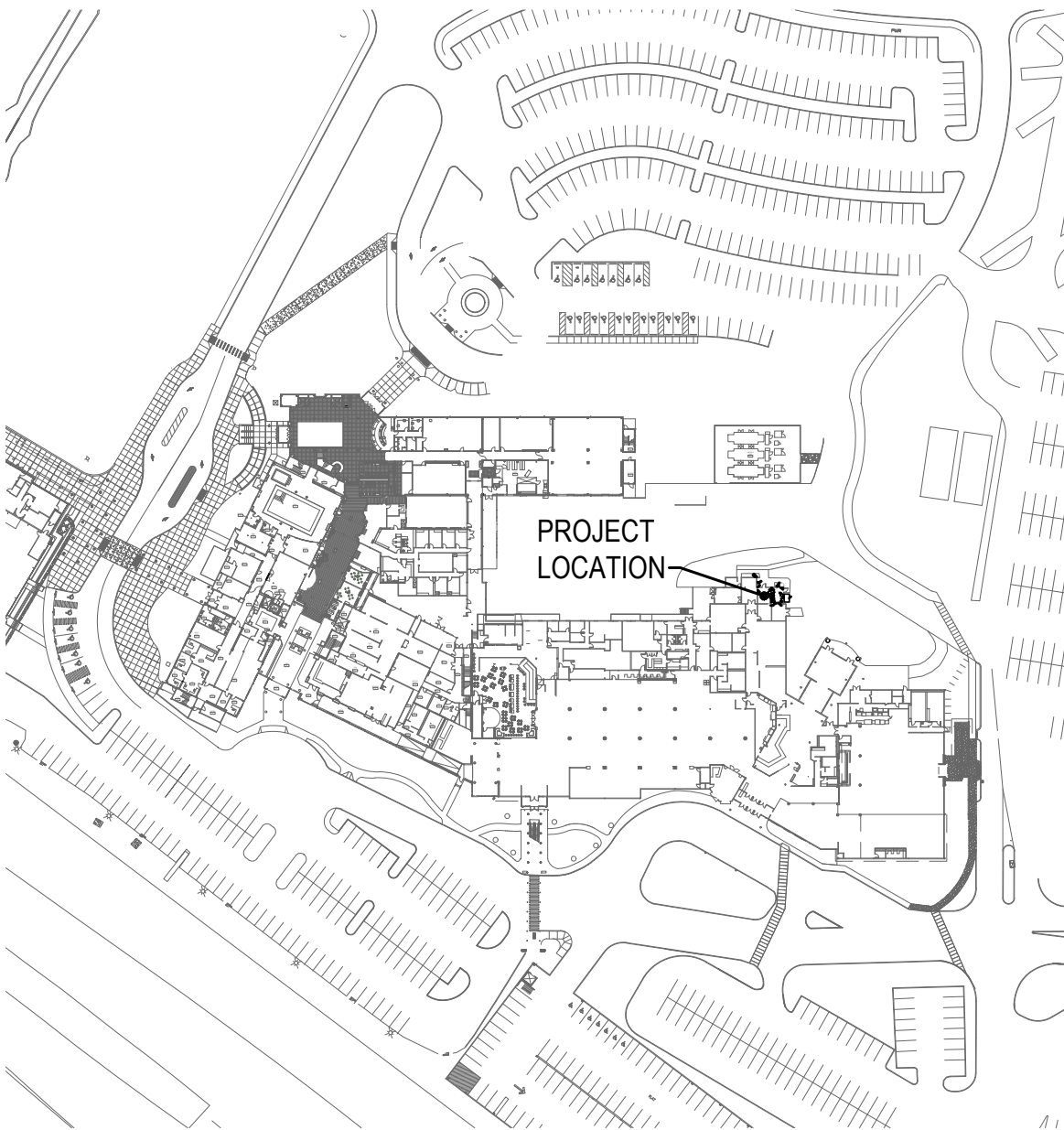
ELECTRICAL SITE PLAN

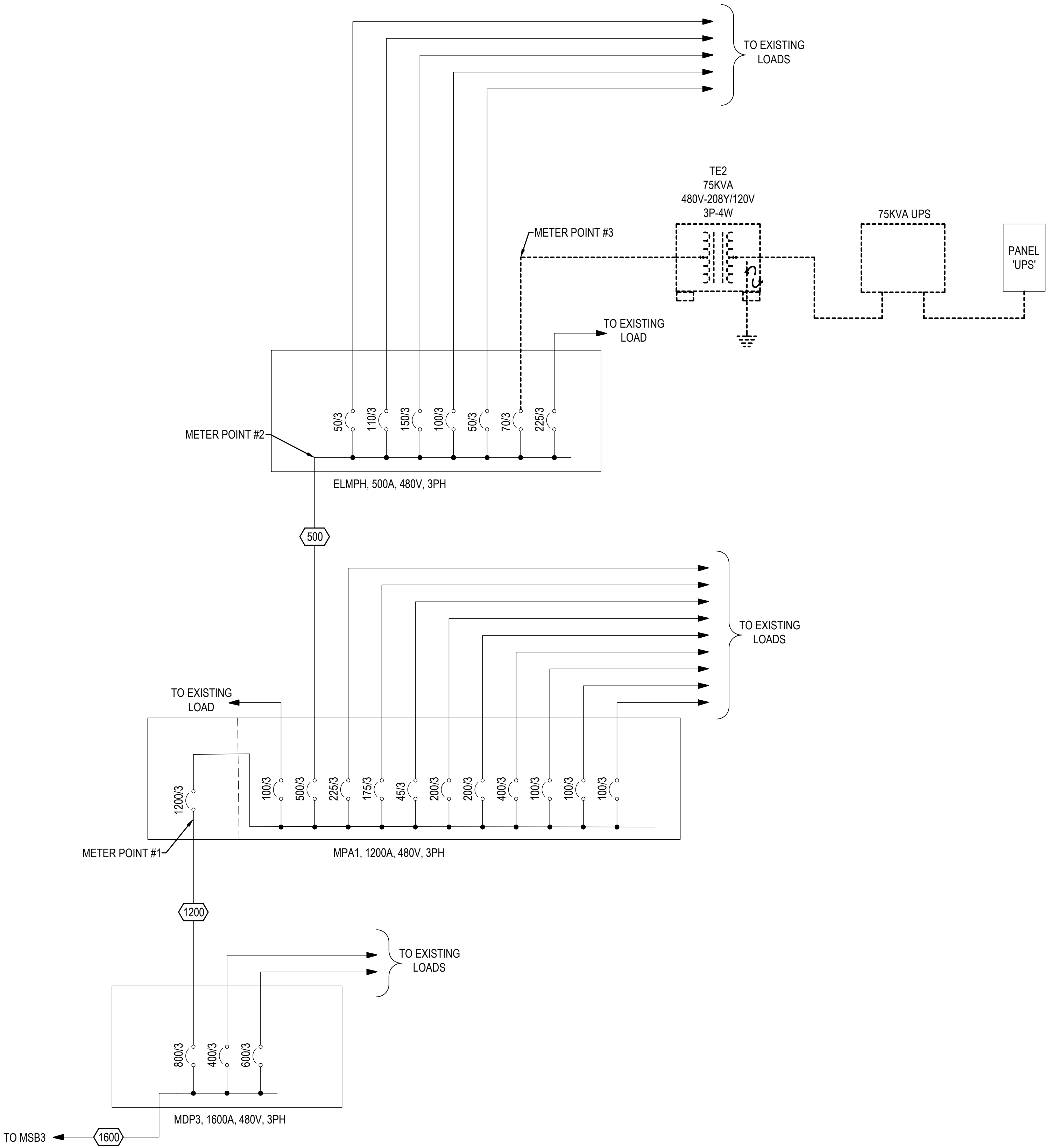
REVISIONS		
NO.	DESCRIPTION	DATE
DRAWN BY:		JM
CHECKED BY:		JS
PROJECT MANAGER:		JS

DRAWING No. XX of 4

E-101

DATE: 03/08/2023
SUBMITTAL: OWNER REVIEW SET
PROJECT No. 222-106





1 ELECTRICAL ONE-LINE - DEMO
SCALE: DIAGRAMMATIC

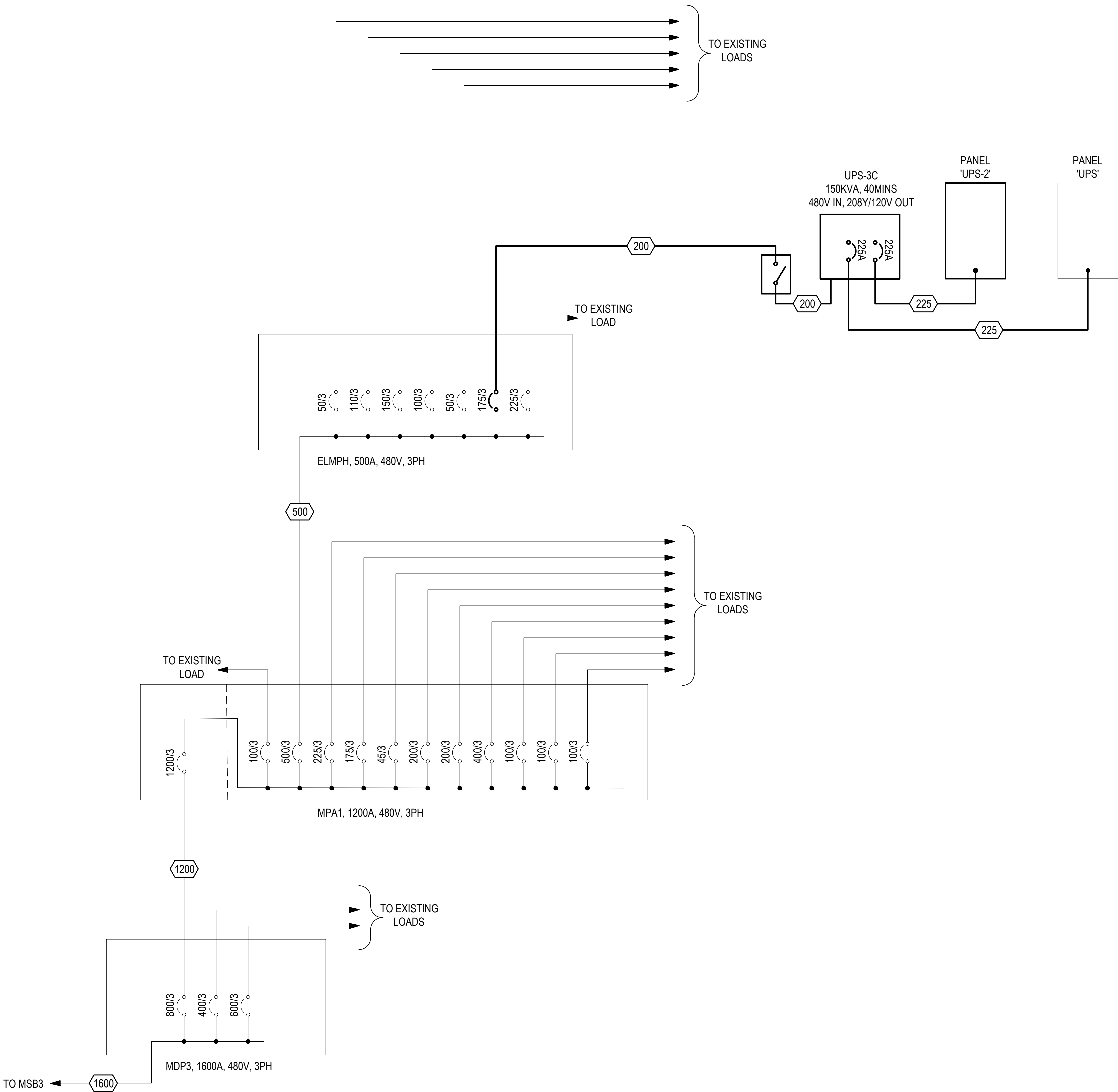
FEEDER SCHEDULE	
1600	5" C., (3) #500KCM CU., 15KV, SHIELDED, MV105, (1) #4/0 600V NEUTRAL
1200	4" C., (3) #2 CU., 15KV, SHIELDED, MV105, (1) #2 CU., 600V NEUTRAL
500	

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ELECTRICAL ONE-LINE
DIAGRAM

REVISIONS		
NO.	DESCRIPTION	DATE
-	-	-

DRAWN BY:	JM
CHECKED BY:	JS
PROJECT MANAGER:	JS



FEEDER SCHEDULE	
200	2" C., (3) #3/0 CU., 600V, (1) #6 CU. GND
225	2" C., (4) #4/0 CU., 600V, (1) #4 CU. GND

1 ELECTRICAL ONE-LINE - CONSTRUCTION

SCALE: DIAGRAMMATIC

REUSE OF DOCUMENTS
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LITTLE CREEK CASINO RESORT UPS REPLACEMENT

91 WA-108
SHELTON, WA 98584

ELECTRICAL ONE-LINE - CONSTRUCTION

REVISIONS		
NO.	DESCRIPTION	DATE
-	-	-

DRAWN BY:	JM
CHECKED BY:	JS
PROJECT MANAGER:	JS

DRAWING No. XX of 4

E-602

DATE: 03/08/2023
SUBMITTAL: OWNER REVIEW SET
PROJECT No. 222-106

GENERAL NOTES

1. ALL WORK PERFORMED SHALL BE DONE IN STRICT ACCORDANCE TO ALL APPLICABLE MECHANICAL, BUILDING, ENERGY, AND LOCAL CODES, WITH AMENDMENTS.
2. COORDINATE MECHANICAL WORK WITH ELECTRICAL WORK SHOWN ON OTHER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL OFFSETS FOR COORDINATED INSTALLATION WHERE REQUIRED.
3. COORDINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
4. LOCATIONS AND SIZES OF WALL OPENINGS SHALL BE COORDINATED WITH OTHER TRADES INVOLVED. INCLUDE IN THE COST OF MECHANICAL WORK, CUTTING, CORING, PATCHING AND PAINTING OF EXISTING WALLS, CEILINGS, FLOORS AND ROOFS AS REQUIRED TO ACCOMMODATE WORK AS INDICATED IN THE MECHANICAL CONTRACT DOCUMENTS, UNLESS SPECIFICALLY SHOWN ON ARCHITECTURAL DRAWINGS.
5. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 70 STANDARDS AND LOCAL REQUIREMENTS.
6. ALL FIELD WIRING SHALL REQUIRE AN ELECTRICAL PERMIT AND SHALL BE PERFORMED BY A LICENSED ELECTRICIAN.

NON-STRUCTURAL MECHANICAL COMPONENTS:

1. HANGERS AND SEISMIC BRACING FOR THE MECHANICAL SYSTEMS SHALL BE DESIGNED AND PROVIDED BY THE MECHANICAL CONTRACTOR. REFER TO CONTRACTOR SHOP DRAWINGS FOR LOCATIONS OF EQUIPMENT AND HUNG MECHANICAL SYSTEMS. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE SUPPORT SYSTEMS AND DESIGN LOADS FOR HUNG MECHANICAL SYSTEMS WITH THE GENERAL CONTRACTOR AND OTHER TRADES THAT MAY BE IMPACTED.

PIPING:



















1. INSULATE PIPING PER INSULATION SPECIFICATION.
2. PROVIDE COMPLETE CONDENSATE DRAINAGE SYSTEM FOR THE NEW SPLIT SYSTEM. FIELD ROUTE DRAINAGE PIPING FROM EQUIPMENT TO EXTERIOR LOCATION, SEE PLANS FOR PROPOSED LOCATIONS. SLOPE DRAIN PIPING TO DRAIN LOCATION.
3. VALVES SHALL BE INSTALLED SO THAT SYSTEM REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
4. PROVIDE UNIONS AND/OR FLANGES AT EACH PIECE OF EQUIPMENT TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.

DEMOLITION:

1. EXISTING MATERIALS THAT ARE REMOVED SHALL NOT BE REUSED IN NEW SYSTEMS, EXCEPT WHERE INDICATED AS BEING RELOCATED.
2. CONTRACTOR SHALL REMOVE ALL PIPING AND EQUIPMENT INCLUDING ALL ASSOCIATED INSULATION, HANGERS, VALVES, WIREMOLD, WIRING, CONTROLS, AND APPURTENANCES ASSOCIATED WITH EACH PIECE OF EQUIPMENT, UNLESS OTHERWISE SHOWN TO ABANDON IN PLACE.
3. WHERE EXISTING ITEMS PENETRATE A WALL, CONTRACTOR SHALL PROVIDE INFILL AT (E) PENETRATIONS THROUGH WALL WITH LIKE MATERIALS. PATCH & REPAIR TO MATCH SURROUNDING SURFACES INCLUDING PAINT.
4. MAINTAIN AND RESTORE (IF INTERRUPTED) ALL CONDUITS & CONDUCTORS, PIPING, & DUCTWORK PASSING THROUGH RENOVATED AREAS AND SERVICING UNDISTURBED AREAS.
5. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR ALL EQUIPMENT AND COMPONENTS REMOVED DURING CONSTRUCTION.

MECHANICAL LEGEND

HVAC/PLUMBING/HYDRONIC

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONDENSATE		THERMOSTAT (T'STAT)
	PIPE DOWN		REFRIGERANT PIPING ①
	PIPE UP		BRANCH PIPE DOWN
	MECHANICAL CONTRACTOR		BRANCH PIPE UP
	ELECTRICAL CONTRACTOR		TEE & UP
	GENERAL CONTRACTOR		TEE
	POINT OF CONNECTION		ELBOWS, 90° & 45°
	BELOW FINISHED FLOOR		CROSSING LINES, NON CONNECTING
	ABOVE FINISHED FLOOR		PIPE CONTINUATION

NOTES FOR MECHANICAL LEGEND SCHEDULE.

- ① SINGLE LINE INDICATED ON PLANS DESIGNATES THE PROPOSED ROUTING FOR THE REFRIGERATION PIPING BETWEEN THE INDOOR AND OUTDOOR UNITS. THAT SINGLE LINE REPRESENTS ALL THE REQUIRED PIPING RUNS REQUIRED FOR THE SYSTEM DESIGNED.

SPLIT SYSTEM CONDENSING UNIT SCHEDULE

UNIT NO	MANUFACTURER	MODEL	COOLING		ELECTRICAL				STARTER FURNISHED BY	DISCONNECT FURNISHED BY	WEIGHT (LBS)	REMARKS
			SEER	TOTAL MBH	MCA	MOP	VOLTS	PH				
OCU-1	mitsubishi	PUY-A36	18.8	36.0	25.0	31	208	1	MFR	EC	240	1,2,3,4
NOTES FOR SPLIT SYSTEM CONDENSING UNIT SCHEDULE												
1. EC TO PROVIDE SINGLE POINT POWER CONNECTION. INDOOR UNIT IS POWERED THROUGH OUTDOOR UNIT. CC TO INSTALL CONTROL WIRING BETWEEN INDOOR AND OUTDOOR UNITS. 2. UNIT USES R-410A REFRIGERANT. PROVIDE LONG LINE LENGTH KIT AND ADDITIONAL REFRIGERANT AS REQUIRED. 3. PROVIDE LOW AMBIENT COOLING TO OF. 4. PROVIDE INVERTER DRIVEN COMPRESSORS FOR VARIABLE CAPACITY OPERATION.												

SPLIT SYSTEM INDOOR UNIT SCHEDULE

UNIT NO	MANUFACTURER	MODEL	LOCATION	INTERLOCKED WITH	MOUNTING	CFM	COOLING	ELECTRICAL				STARTER FURNISHED BY	DISCONNECT FURNISHED BY	WEIGHT (LBS)	REMARKS
							TOTAL MBH	MCA	FLA	VOLTS	PH				
ICU-1	mitsubishi	PKA-A36	NEW UPS ROOM	OCU-1	WALL	810	36.0	1.0	0.6	208	1	MFR	EC	60	1,2,3,4,5,6
NOTES FOR SPLIT SYSTEM INDOOR UNIT SCHEDULE															
1. INDOOR UNIT IS POWERED THROUGH OUTDOOR UNIT. CC TO INSTALL CONTROL WIRING BETWEEN INDOOR AND OUTDOOR UNITS. 2. PROVIDE WITH MANUFACTURER'S WIRED WALL MOUNTED THERMOSTAT. 3. PROVIDE WITH INTEGRAL CONDENSATE PUMP. 4. PROVIDE WITH WIND BAFFLE FOR LOW AMBIENT OPERATION. 5. INSTALL TIGHT TO CEILING, PER MANUFACTURER'S RECOMMENDATION. 6. SPLIT SYSTEM COOLING UNIT SHALL BE CONTROLLED BY MANUFACTURER'S THERMOSTAT. THE INDOOR UNIT FAN AND OUTDOOR CONDENSING UNIT SHALL CYCLE ON AND OFF TO MAINTAIN A SPACE TEMPERATURE OF 70°F.															

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PROJECT MANAGER: JS		

SECTION 20 00 00 - GENERAL

NOTE TO CONTRACTOR: ALL SUBMITTALS INDICATED HEREIN SHALL BE MADE TO ENGINEER.

1.01 SUMMARY

- A. THIS SECTION INCLUDES THE FOLLOWING MECHANICAL WORK TO COMPLEMENT OTHER DIVISION 20 SPECIFICATIONS:
- SECTION 20 00 00 - GENERAL
 - SECTION 23 05 29 - HANGERS AND SUPPORTS
 - SECTION 23 05 48 - VIBRATION AND SEISMIC CONTROL
 - SECTION 23 05 53 - MECHANICAL IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT
 - SECTION 23 07 19 - PIPING INSULATION
 - SECTION 23 09 00 - CONTROLS
 - SECTION 23 21 00 - SLEEVES AND SEALS
 - SECTION 23 23 00 - REFRIGERANT PIPING SYSTEM
 - SECTION 23 81 26 - DUCTLESS SPLIT SYSTEM

1.02 GENERAL

- A. ALL INSTALLATION MATERIALS, LABOR, DUCTWORK AND AIR DISTRIBUTION ENGINEERING, PIPING AND MISCELLANEOUS MATERIALS AND JOBSITE COORDINATION SHALL BE THE RESPONSIBILITY OF THIS MECHANICAL CONTRACTOR. THIS CONTRACTOR IS TO DESIGN AND COORDINATE ALL SYSTEMS DESCRIBED HEREIN WITH ALL OTHER DIVISIONS.
- B. FURNISH EXACT LOCATION AND ELECTRICAL CHARACTERISTICS OF ALL ELECTRICAL CONNECTIONS TO MECHANICAL EQUIPMENT REQUIRING CONNECTION TO THE ELECTRICAL CONTRACTOR.

1.03 OPERATION AND MAINTENANCE MANUAL FOR MECHANICAL SYSTEMS

- A. SUBMIT (2) COPIES OF THE MECHANICAL O & M MANUALS TO THE OWNER FOR APPROVAL 14 DAYS PRIOR TO COMPLETION OF THE PROJECT.
- B. BIND O & M MANUALS FOR MECHANICAL SYSTEMS IN THREE-RING, HARD-BACKED BINDER. PROVIDE MASTER INDEX TO THE BEGINNING OF THE MANUAL SHOWING ITEMS INCLUDED. USE PLASTIC TAB INDEXES FOR SECTIONS OF MANUAL.
- C. FIRST SECTION SHALL CONSIST OF NAME, ADDRESS, AND PHONE NUMBER OF MECHANICAL, PLUMBING, SHEET METAL, REFRIGERATION, TEMPERATURE CONTROL, AND ELECTRICAL CONTRACTORS. ALSO INCLUDE COMPLETE LIST OF EQUIPMENT INSTALLED WITH NAME, ADDRESS AND PHONE NUMBER OF EACH VENDOR.
- D. INCLUDE DESCRIPTIVE LITERATURE (MANUFACTURER'S CATALOG DATA) OF EACH MANUFACTURED ITEM. LITERATURE SHALL SHOW CAPACITIES AND SIZE OF EQUIPMENT USED AND MARKED INDICATING EACH SPECIFIC ITEM WITH APPLICABLE DATA UNDERLINED.
- E. MAINTENANCE INSTRUCTIONS SHALL INCLUDE MANUFACTURER'S MAINTENANCE INSTRUCTIONS FOR EACH PIECE OF MECHANICAL EQUIPMENT INSTALLED FOR PROJECT. INSTRUCTIONS SHALL INCLUDE NAME OF VENDOR, INSTALLATION INSTRUCTIONS, PARTS NUMBERS AND LISTS OPERATION INSTRUCTIONS OF EQUIPMENT, AND MAINTENANCE AND LUBRICATION INSTRUCTIONS.
- F. PROVIDE ONE COMPLETE COPY OF ALL EQUIPMENT WARRANTY REGISTRATION FORMS IN EACH MANUAL.

1.04 QUALITY ASSURANCE

- A. REQUIREMENTS OF REGULATORY AGENCIES:
- PERFORM WORK IN ACCORDANCE WITH APPLICABLE CODES.
 - IN CASE OF DIFFERENCES BETWEEN BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, UTILITY COMPANY REGULATIONS, AND CONTRACT DOCUMENTS, THE MOST STRINGENT SHALL GOVERN.
- B. MOTOR AND EQUIPMENT NAME PLATES AS WELL AS APPLICABLE UL AND AGA LABELS SHALL BE IN PLACE WHEN PROJECT IS TURNED OVER TO OWNER.

1.05 CODES AND STANDARDS

- A. CODES AND AGENCIES HAVING JURISDICTIONAL AUTHORITY OVER MECHANICAL INSTALLATION.
- WASHINGTON STATE ENERGY CODE
 - INTERNATIONAL BUILDING CODE
 - INTERNATIONAL MECHANICAL CODE
 - UNIFORM PLUMBING CODE
 - LOCAL SEWER AND WATER DISTRICT REQUIREMENTS
 - STATE AND COUNTY DEPARTMENT OF HEALTH
 - LOCAL FIRE MARSHAL
 - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

1.06 PRODUCT HANDLING AND PROTECTION

- A. PROTECT FLANGES, FITTINGS, AND DUCTWORK OR PIPING SPECIALTIES FROM MOISTURE AND DIRT.
- B. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL MATERIAL, EQUIPMENT AND APPARATUS PROVIDED UNDER THIS SECTION FROM DAMAGE, WATER, CORROSION, FREEZING AND DUST, BOTH IN STORAGE AND WHEN INSTALLED, UNTIL FINAL PROJECT ACCEPTANCE.
- C. COMPLETELY COVER MOTORS AND OTHER MOVING MACHINERY TO PROTECT FROM DIRT AND WATER DURING CONSTRUCTION.
- D. HANDLE AND PROTECT EQUIPMENT AND/OR MATERIAL IN MANNER PRECLUDING UNNECESSARY FIRE HAZARD.
- E. EQUIPMENT REQUIRING ROTATING AND/OR LUBRICATION DURING STORAGE SHALL HAVE RECORDS MAINTAINED AND WITNESSED ON A MONTHLY BASIS AND FORWARDED TO THE ARCHITECT/ENGINEER PRIOR TO ACCEPTANCE.

1.07 WARRANTIES

- A. IN ADDITION TO GUARANTEE SPECIFIED IN GENERAL CONDITIONS, GUARANTEE HEATING, COOLING, EXHAUST, AND PLUMBING SYSTEMS TO BE FREE FROM NOISE IN OPERATION THAT MAY DEVELOP FROM FAILURE TO CONSTRUCT SYSTEM IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- B. IN ORDER TO BE PROTECTED, SECURE PROPER GUARANTEES FROM SUPPLIERS AND SUBCONTRACTORS.
- C. PROVIDE CERTIFICATES OF WARRANTY FOR EACH PIECE OF EQUIPMENT. CLEARLY RECORD "START-UP" DATE OF EACH PIECE OF EQUIPMENT ON CERTIFICATE. PROVIDE START-UP CERTIFICATES AT SUBSTANTIAL COMPLETION TO THE OWNER.

1.08 SUBMITTALS

- A. PROVIDE SUBMITTAL PACKAGE FOR ALL SECTIONS LISTED.

1.09 COMMISSIONING

- A. MINIMUM STATE OF WASHINGTON COMMISSIONING REQUIREMENTS ARE TO BE MET PER WSEC C408.
- B. A COMMISSIONING PLAN SHALL BE PREPARED, TO INCLUDE EXPLANATION OF DESIGN INTENT, EQUIPMENT AND FUNCTIONS TO BE TESTED, CONDITIONS UNDER WHICH TEST SHALL BE PERFORMED, AND MEASURABLE CRITERIA FOR ACCEPTABLE PERFORMANCE.
- C. TESTING AND BALANCING SHALL BE PROVIDED.
- D. CONTROLS FUNCTIONAL PERFORMANCE TESTING SHALL DEMONSTRATE CORRECT INSTALLATION AND OPERATION OF EQUIPMENT.
- E. COMMISSIONING REPORT SHALL BE PROVIDED TO OWNER, AND SHALL INCLUDE PROCEDURES AND RESULTS OF FUNCTIONAL PERFORMANCE TESTING.

PART 2 - EXECUTION

2.01 ACCESS DOOR

- A. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING FLUSH MOUNTED ACCESS DOORS IN WALL, CEILINGS, AND CHASES WHERE VALVES AND DAMPERS ARE CONCEALED AND IS NOT ACCESSIBLE.
- B. DOORS SHALL BE UL LISTED 16 GA. COLD ROLLED STEEL WITH CONCEALED HINGE, SCREWDRIVER OPERATED LOCK AND PRIME COATED. FURNISH SUITABLE FOR AREA MOUNTED.

2.02 OPERATION AND MAINTENANCE TRAINING

- A. AFTER COMPLETION OF WORK AND AFTER ALL TEST AND INSPECTIONS, THE CONTRACTOR SHALL DEMONSTRATE AND INSTRUCT THE OWNER IN OPERATION AND MAINTENANCE OF THE VARIOUS MECHANICAL SYSTEMS. INSTRUCTION SHALL INCLUDE HVAC CONTROLS, HVAC EQUIPMENT MAINTENANCE, AND PLUMBING EQUIPMENT.
- B. INSTRUCTION PERIODS SHALL BE SCHEDULED WITH OWNER. LENGTH OF INSTRUCTION PERIOD SHALL BE TO OWNER SATISFACTION.
- C. COST OF TIME INVOLVED BY CONTRACTOR SHALL BE INCLUDED IN THE BID.

2.03 PREPARATION

- A. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES NECESSARY FOR MECHANICAL INSTALLATIONS. PERFORM CUTTING BY SKILLED MECHANICS OF TRADES INVOLVED. DO NOT CUT BEAMS, COLUMNS, OR TRUSSES.
- B. PATCH AND REPAIR CUT SURFACES WITH MATERIALS OF SAME QUALITY APPEARANCE AS ADJACENT SURFACES UNLESS OTHERWISE SHOWN. SURFACE FINISHES BY GENERAL CONTRACTOR.
- C. THIS WORK SHALL BE SCHEDULED SUCH THAT UTILITY SERVICES AND/OR EXISTING SYSTEMS FOR THE FACILITY ARE NOT INTERRUPTED DURING NORMAL OCCUPANCY HOURS, WITHOUT PRIOR WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.

2.04 INSTALLATION

- A. PERFORM WORK IN ACCORDANCE TO ALL APPLICABLE LOCAL, STATE AND NATIONAL GOVERNMENT INSTALLATION CODES.
- B. INSTALL MECHANICAL EQUIPMENT TO PERMIT EASY ACCESS FOR NORMAL MAINTENANCE, AND SO THAT PARTS REQUIRING PERIODIC REPLACEMENT OR MAINTENANCE, (E.G., COILS, SHEAVES, FILTERS, MOTORS, BEARINGS, ETC.) CAN BE REMOVED. RELOCATE ITEMS, WHICH INTERFERE WITH ACCESS.
- C. PROVIDE ACCESS DOORS IN EQUIPMENT, DUCTS, AND WALL/CEILINGS AS REQUIRED TO ALLOW FOR INSPECTION AND PROPER MAINTENANCE.
- D. VALVES, DAMPER OPERATORS, AND OTHER DEVICES WHICH ARE MANUALLY ADJUSTED OR OPERATED SHALL BE LOCATED SO AS TO BE EASILY ACCESSIBLE BY A PERSON STANDING ON THE FLOOR. ANY SUCH ITEMS WHICH ARE NOT IN THE OPEN SHALL BE MADE ACCESSIBLE THROUGH ACCESS OPENINGS IN THE BUILDING CONSTRUCTION.
- E. BELTS, PULLEYS, COUPLINGS, PROJECTING SET SCREWS, KEYS AND OTHER ROTATING PARTS WHICH MAY POSE A DANGER TO PERSONNEL, SHALL BE FULLY ENCLOSED OR GUARDED IN ACCORDANCE WITH OSHA AND WISHA REGULATIONS.
- F. DISSIMILAR METALS: PROVIDE SEPARATIONS BETWEEN ALL DISSIMILAR METALS. WHERE NOT SPECIFIED IN ANOTHER WAY, USE 10 MIL BLACK PLASTIC TAPE WRAPPED AT POINT OF CONTACT OR PLASTIC CENTERING INSERTS.
- G. PROVIDE OFFSETS AROUND ALL ELECTRICAL PANELS (AND SIMILAR ELECTRICAL EQUIPMENT) TO MAINTAIN SPACE CLEAR ABOVE AND BELOW PANEL TO STRUCTURE AND CLEARANCE OF 3.5 FEET DIRECTLY IN FRONT OF PANEL, EXCEPT WHERE INDICATED OTHERWISE OR REQUIRED BY NEC TO BE MORE. SUCH OFFSETS ARE TYPICALLY NOT SHOWN ON THE DRAWINGS, BUT ARE REQUIRED PER THIS PARAGRAPH.

SECTION 23 05 29 - HANGERS AND SUPPORTS

- A. MANUFACTURERS: IN ACCORDANCE WITH MSS SP 58, MSS SP 69, AND ANSI B31.1.
- B. ALL MECHANICAL EQUIPMENT SHALL BE ANCHORED AND SUPPORTED.
- C. REFRIGERANT PIPE HANGERS AND SUPPORTS SHALL UTILIZE CLEVIS, STRUT-MOUNTED, OR TRAPEZE STYLE SUPPORTS.
- SECURE REFRIGERANT PIPE TO STRUT CHANNEL USING EITHER SNAP IN SHIELD SUPPORTS OR INSULATED PIPE INSERTS AND INSULATION SHIELDS.
 - TRAPEZE HANGERS SHALL BE SUPPORTED WITH HANGER RODS SUSPENDED FROM APPROVED STRUCTURAL CLIPS. PROVIDE WITH WASHER PLAT WHERE HANGER ROD NUTS BEAR ON TRAPEZE HANGER.
 - CLEVIS HANGERS SHALL BE PROVIDED WITH SNAP-IN SHIELD, OR INSULATED PIPE INSERTS AND INSULATION SHIELDS AT EACH CLEVIS HANGER SUPPORT.
 - VERTICAL REFRIGERANT PIPE SUPPORTS SHALL UTILIZE STRUTS WITH CUSHION CLAMPS.
- D. CONCRETE ANCHORING: EXPANSION SHELLS MAY BE USED IN EXISTING CONSTRUCTION.
- E. HANGER RODS SHALL BE THREADED HOT ROLLED STEEL, ELECTRO-GALVANIZED OR CADMIUM PLATED TYPE.
- F. HANGER STRAPS SHALL BE GALVANIZED STEEL.
- G. USE OF ZIP TIES OR PLASTIC STRAPS IS PROHIBITED.

SECTION 23 05 48 - VIBRATION AND SEISMIC CONTROL

- A. INCLUDES SEISMIC RESTRAINING OF ALL PIPING AND MECHANICAL EQUIPMENT. SEE ASCE 7-10 FOR REQUIREMENTS.
- B. THE FOLLOWING ITEMS SHALL BE SEISMICALLY RESTRAINED OR ANCHORED:
- ALL EQUIPMENT WEIGHING MORE THAN 400 LB. BRACE PER 13.1.4, ASCE 7-10.
 - ALL EQUIPMENT HAVING A CENTER OF MASS LOCATED MORE THAN 4FT ABOVE THE ADJACENT FLOOR LEVEL.
 - CEILING HUNG MECHANICAL COMPONENTS WEIGHING MORE THAN 20 POUNDS, OR DISTRIBUTION SYSTEMS WEIGHING MORE THAN 5 LB/FT. BRACE PER 13.1.4, ASCE 7-10.
- C. SEISMIC RESTRAINTS SHALL BE CONTRACTOR-DESIGNED. SEISMIC DESIGN CRITERIA ARE TO BE ESTABLISHED PER THE INTERNATIONAL BUILDING CODE AND ASCE 7-10 ALONG WITH PROJECT STRUCTURAL DRAWINGS.
- D. SUSPENSION ISOLATORS SHALL BE DOUBLE DEFLECTION NEOPRENE TYPE, WITH ISOLATOR ENCASED IN OPEN STEEL BRACKET AND MINIMUM 3/8" DEFLECTION. HANGER ROD SHALL BE ISOLATED FROM STEEL BRACKET WITH NEOPRENE GROMMETS. MASON SERIES HD, AMBER BOOTH BRD, OR APPROVED EQUAL.
- E. FLOOR MOUNTED ISOLATORS SHALL BE DOUBLE DEFLECTION NEOPRENE TYPE, WITH MINIMUM OF 0.35" DEFLECTION. ALL METAL SURFACES SHALL BE NEOPRENE COVERED, BASE PLATE SHALL HAVE MOUNTING HOLES, AND TOP SHALL HAVE THREADED STEEL PLATE OR THREADED STEEL INSERT. MASON SERIES ND, AMBER BOOTH RV, OR APPROVED EQUAL.

SECTION 23 05 53 - MECHANICAL IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

- A. PROVIDE MANUFACTURERS STANDARD PREPRINTED, FLEXIBLE, OR SEMI-RIGID PERMANENT, COLOR-CODED, PLASTIC SHEET PIPE MARKERS.
- B. PROVIDE FOR ALL ITEMS ON EQUIPMENT SCHEDULE.
- ENGRAVED PLASTIC LAMINATE SIGN ON OR NEAR EACH ITEM.
- C. PROVIDE ON ALL PIPE
- REFRIGERANT: COLOR = YELLOW, STENCIL = WHITE

SECTION 23 07 19 - PIPING INSULATION

- A. INSULATION AT HANGERS: INSULATION SHALL BE CONTINUOUS THROUGH HANGERS ON ALL INSULATED SYSTEMS.
- B. INSOFAR AS PRACTICABLE, THE PRODUCTS HEREINAFTER DESCRIBED SHALL BE OF ONE MANUFACTURER AND SHALL MEET THE FOLLOWING REQUIREMENTS LISTED AS TO THEIR FUNCTION.
- C. REFRIGERANT PIPING: ELASTOMERIC - INSULATION SHALL BE FLEXIBLE, CLOSED CELL, CELLULAR ELASTOMERIC, MOLDED OR SHEET TYPE.
- CONFORMING TO THE REQUIREMENTS OF ASTM C534.
 - THERMAL CONDUCTIVITY: 0.25 BTU-IN/H·R. FT²·°F AT 75°F.
 - MAXIMUM SERVICE TEMPERATURE OF -70 TO 220°F.
 - MAXIMUM FLAME SPREAD: 25.
 - MAXIMUM SMOKE DEVELOPED: 25/50 THROUGH 1" WALL.
 - MAXIMUM WATER VAPOR PERMEABILITY, WET CUP, PERM-IN .10.
 - CONNECTION: WATERPROOF VAPOR RETARDER ADHESIVE AS NEEDED.
 - UV-PROTECTION: OUTDOOR PROTECTIVE COATING.
 - SHALL HAVE R-VALUE OF 4.2 AT 1" AND R=8 AT 2".
 - SHALL BE FIBER FREE, FORMALDEHYDE-FREE, AND LOW VOC'S.
 - MANUFACTURERS: ARMACELL, KFLEX, AEROFLEX.

SECTION 230900 - CONTROLS

- A. PROVIDE CONTROLS AS REQUIRED TO ACCOMMODATE THE SEQUENCE IN THE SCHEDULE.

SECTION 23 21 00 - SLEEVES AND SEALS

- A. PIPE SLEEVES SHALL BE PROVIDED AS INDICATED FOR STRUCTURAL AND NON-STRUCTURAL APPLICATIONS.
- B. PIPE SLEEVES SHALL BE PROVIDED FOR ALL PIPING PASSING THROUGH WALLS AND SIMILAR ELEMENTS, EXCEPT THAT SLEEVES ARE NOT REQUIRED FOR PENETRATIONS THROUGH EXISTING SINGLE SOLID ELEMENTS, HAVING NO VOIDS, AT THE LOCATION WHERE THE PIPING PASSES THROUGH THE SOLID ELEMENTS.
- C. SET PIPE SLEEVES PLUMB OR LEVEL (OR SLOPED AS REQUIRED FOR DRAINAGE PIPE) IN PROPER POSITION, TIGHTLY FITTED INTO THE WORK.
- D. FILL OPENINGS AROUND OUTSIDE OF PIPE SLEEVE WITH SAME MATERIAL AS SURROUNDING CONSTRUCTION, OR WITH MATERIAL OF EQUIVALENT FIRE AND SMOKE RATING.
- E. SEAL AROUND ALL PIPES INSIDE OF PIPE SLEEVES.
- F. INSULATION SHALL RUN CONTINUOUSLY THROUGH PIPE AND DUCT SLEEVES.
- G. PROVIDE SEALS AROUND ALL PIPING PASSING THROUGH WALLS AND SIMILAR ELEMENTS.
- H. SEALS SHALL BE WATERTIGHT WHERE THE PENETRATION MAY BE EXPOSED TO WATER OR MOISTURE.
- I. SEALS IN INTERIOR FIRE RATED ASSEMBLIES SHALL BE TESTED IN ACCORDANCE WITH ASTM E814 AND UL CLASSIFIED PER UL1479 AS A THROUGH-PENETRATION FIRESTOP DEVICE. SEALS SHALL BE OF MATERIAL AND WORKMANSHIP TO MAINTAIN THE FIRE AND/OR SMOKE RATING OF ELEMENT BEING PENETRATED. THE CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT ANY DATA REQUIRED BY LOCAL AGENCIES TO SATISFY THEM THAT THE CONTRACTOR'S PROPOSED FIRE SEALS ARE SATISFACTORY.

SECTION 23 23 00 - REFRIGERANT PIPING

- A. REFRIGERANT PIPING
- MEET THE REQUIREMENTS OF ASTM B 280-86, "SPECIFICATION FOR SEAMLESS COPPER TUBE FOR AIR CONDITIONING AND REFRIGERATION FIELD SERVICE", ACR HARD DRAWN STRAIGHT LENGTHS.
- B. REFRIGERANT FITTINGS
- 100% WROT COPPER WITH LONG RADIUS ELBOWS.
 - APPROVED MANFACTURERS: MUELLER STREAMLINE, NIBCO.
- C. BRAZING MATERIAL
- BRAZING RODS WITH A MINIMUM OF 5% SILVER CONTENT SHALL BE UTILIZED. RODS CONTAINING CADMIUM WILL NOT BE PERMITTED.
- D. ISOLATION VALVES
- LINE SIZE, BALL TYPE ISOLATION VALVES SHALL BE PROVIDED ON BOTH VAPOR AND LIQUID LINES OF ALL SYSTEMS. PROVIDE ONE VAPOR AND 2 LIQUID LINE VALVES (FOR FILTER/DRIER ISOLATION) AT THE OUTDOOR UNIT.
 - VALVES SHALL BE SUITABLE FOR USE WITH HCFC AND HFC REFRIGERANTS, FORGED BRASS BODY, SEAL CAP AND WROT COPPER FITTING EXTENSIONS. TEMPERATURE RATING SHALL BE -40°F TO +325°F MINIMUM.
 - COORDINATE OPTIMUM LOCATION OF VALVES WITH FILTER/DRYER UNIT (A VALVE ON EACH SIDE OF THE FILTER) TO FACILITATE REPLACEMENT WITH MINIMAL LOSS OF REFRIGERANT. AT MINIMUM, PROVIDE ONE SET OF SCHRADER VALVES LOCATED ON THE INDOOR COIL SIDE OF THE VALVES TO FACILITATE EVACUATION AND CHARGING OF THE PIPING.
- E. CONDENSATE PIPING: SCHEDULE 40 PVC, SOLID CORE.

SECTION 23 81 26 - DUCTLESS SPLIT SYSTEM

- A. CABINET TO BE 20-GAUGE GALVANIZED STEEL.
- B. FANS TO BE CENTRIFUGAL TYPE AND DYNAMICALLY BALANCED.
- C. COIL IS SEAMLESS, COPPER TUBING WITH ALUMINUM FINS MECHANICALLY ATTACHED.
- D. COMPRESSOR SHALL BE OF THE HERMETIC DESIGN.
- E. WALL SLEEVE SHALL BE FULLY WEATHERPROOF FOR OUTDOOR INSTALLATION.
- F. REFRIGERANT SHALL MEET THE LATEST EPA REQUIREMENTS.
- G. ISOLATE MOVING PARTS FROM CABINETS TO REDUCE NOISE.
- H. SINGLE POINT ELECTRICAL CONNECTION.
- I. ACCUMULATOR AS REQUIRED PER MANUFACTURER.

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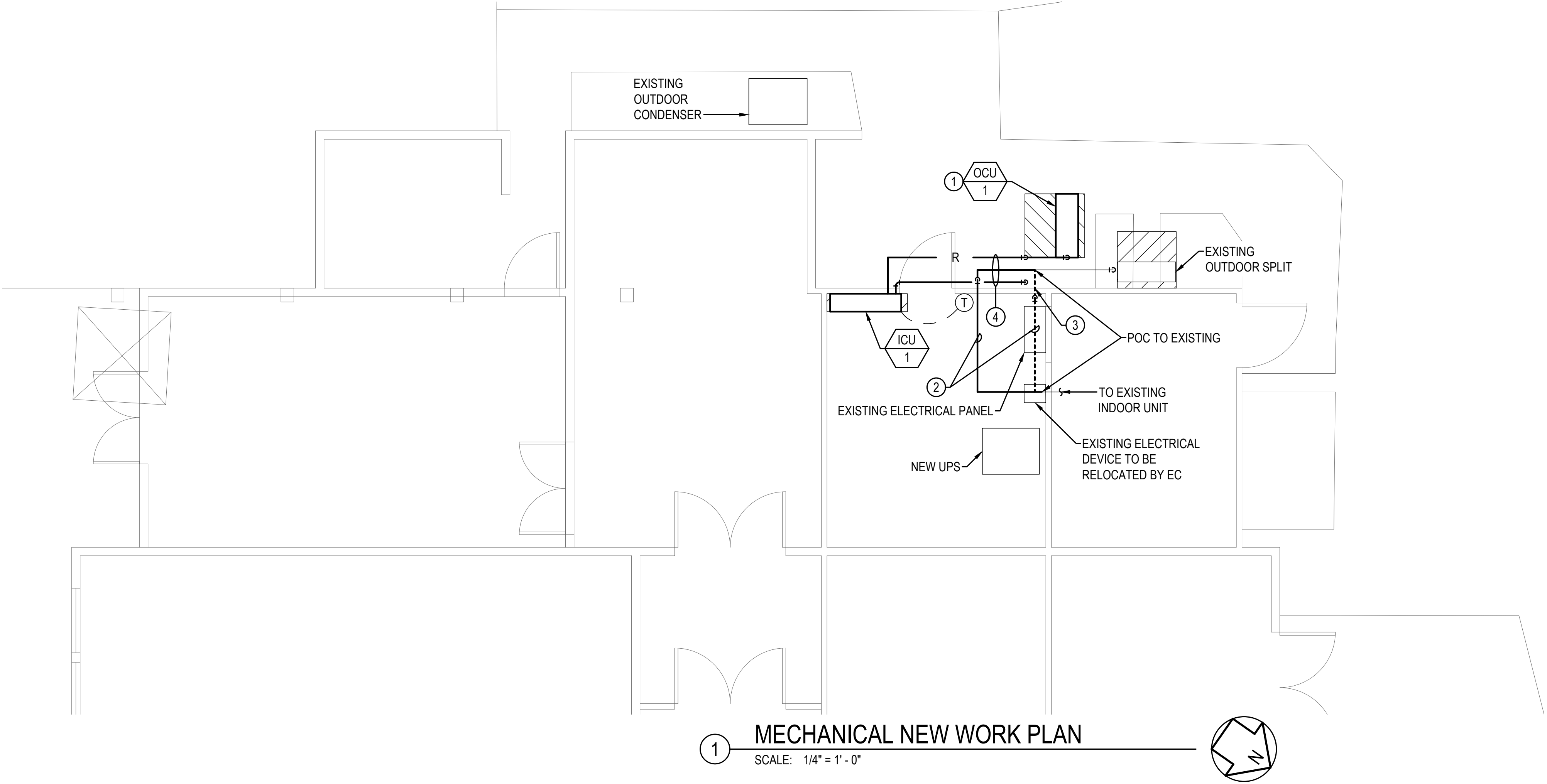
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M-002

DATE: 03/08/2023
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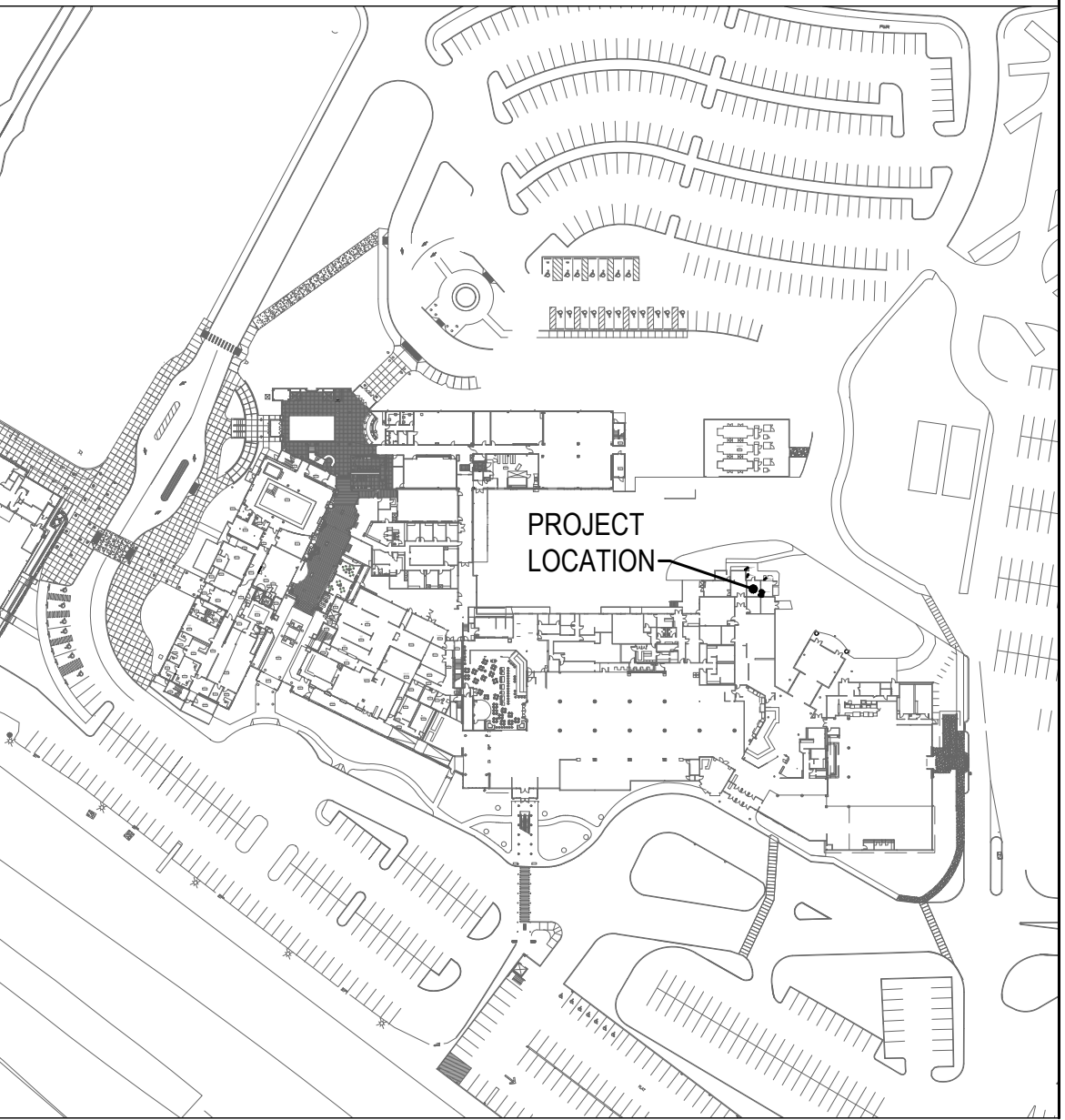


GENERAL NOTES

1. THIS DRAWING WAS CREATED FROM AS-BUILT DOCUMENTATION AND FIELD NOTES AND MAY NOT REPRESENT ACTUAL AS-BUILT CONDITIONS. CONTRACTOR TO VERIFY SCOPE PRIOR TO COMMENCING WORK.
2. SEE ELECTRICAL PLANS FOR ELECTRICAL EQUIPMENT LOCATIONS AND SCOPE OF WORK.

CONSTRUCTION NOTES

- ① MOUNT NEW OUTDOOR CONDENSING UNIT OFFSET FROM WALL FOR ACCESS OF EXISTING WALL MOUNTED ITEMS IN THIS AREA. MOUNT EQUIPMENT ON CONCRETE WALK PATH.
- ② REMOVE AND PROVIDE NEW REFRIGERANT PIPING AND CONDENSATE PIPE ROUTING MOUNTED ABOVE ELECTRICAL EQUIPMENT WORKING CLEARANCE IN SPACE. PROVIDE NEW PVC CONDENSATE PIPING. TERMINATE CONDENSATE PIPING MINIMUM OF 6" ABOVE FINISHED GRADE, ADJACENT TO EXISTING CONDENSATE TERMINATION. CONNECT NEW PIPING TO EXISTING AS NECESSARY. RECOVER REFRIGERANT AS REQUIRED. PROVIDE PROTECTIVE COVER SIMILAR TO EXISTING.
- ③ PATCH AND SEAL EXISTING WALL PENETRATIONS.
- ④ ROUTE NEW REFRIGERANT AND CONDENSATE PIPING TIGHT TO EXTERIOR WALL ABOVE DOOR. TERMINATE 3/4" CONDENSATE PIPING MINIMUM OF 6" ABOVE FINISHED GRADE, ADJACENT TO EXISTING CONDENSATE TERMINATION. MATCH TERMINATION HEIGHT TO EXISTING. PROVIDE PROTECTIVE COVER SIMILAR TO EXISTING.



LITTLE CREEK
CASINO RESORT
UPS REPLACEMENT

91 WA-108
SHELTON, WA 98584

MECHANICAL NEW WORK
PLAN

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M-101

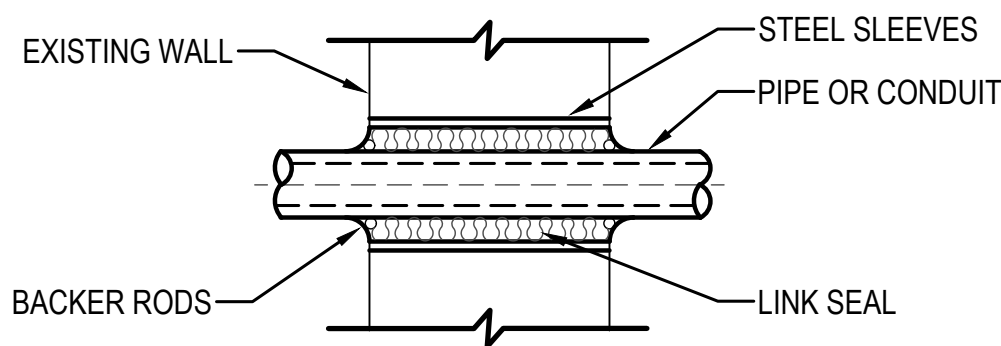
DATE: 03/08/2023
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PROJECT No. 222-106

REUSE OF DOCUMENTS
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④

PIPE THROUGH WALL PENETRATION DETAIL

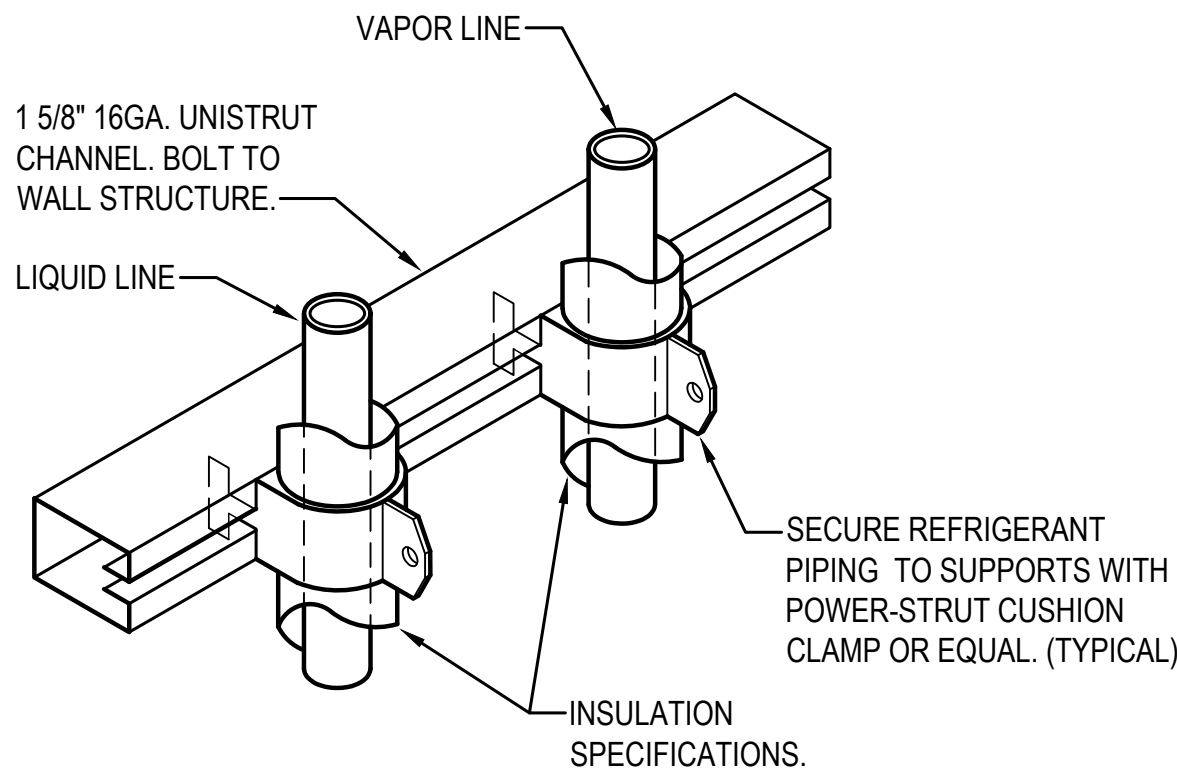
SCALE: DIAGRAMMATIC



③

REFRIGERANT PIPE SUPPORT DETAIL

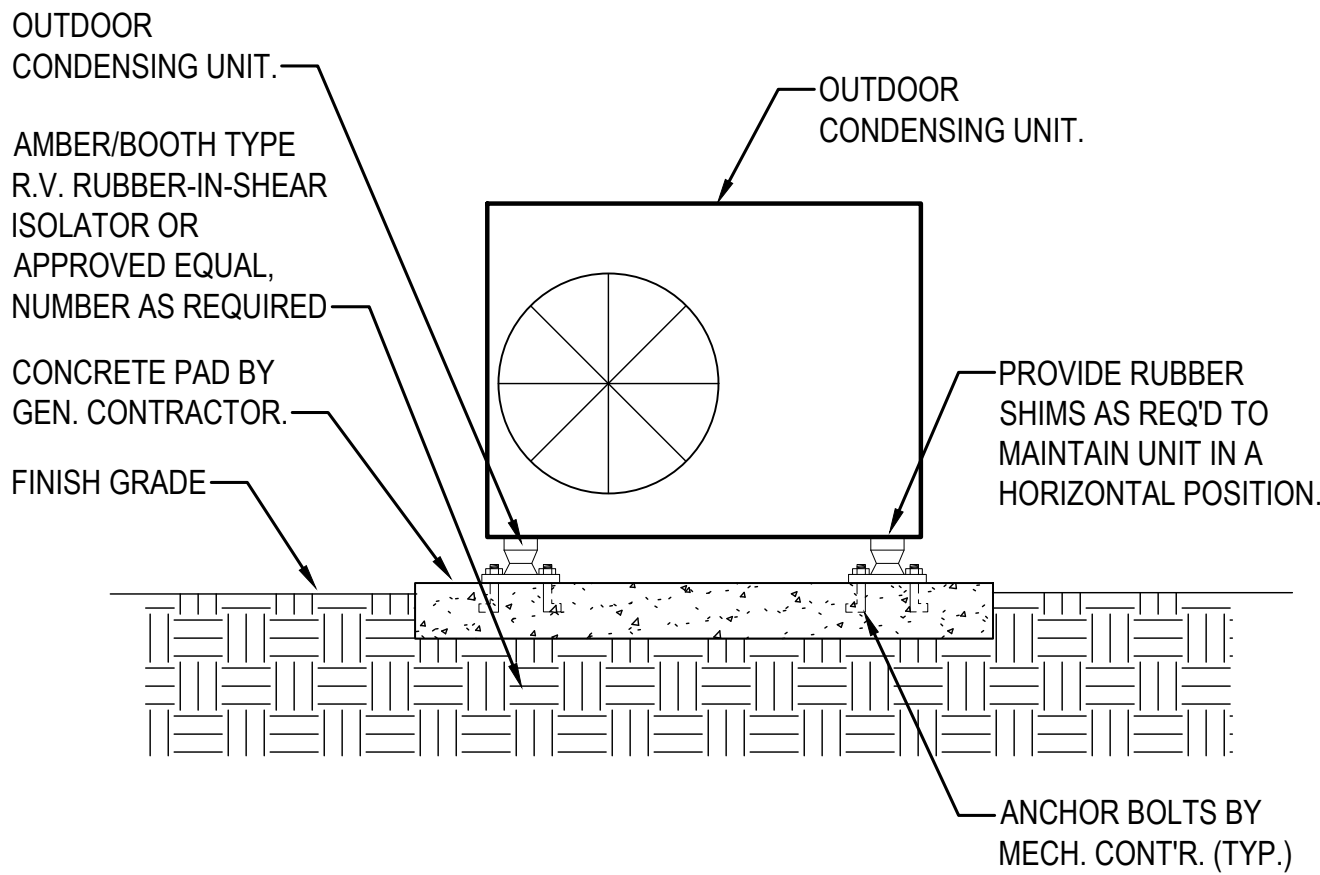
SCALE: DIAGRAMMATIC



②

OUTDOOR CONDENSING UNIT INSTALLATION DETAIL

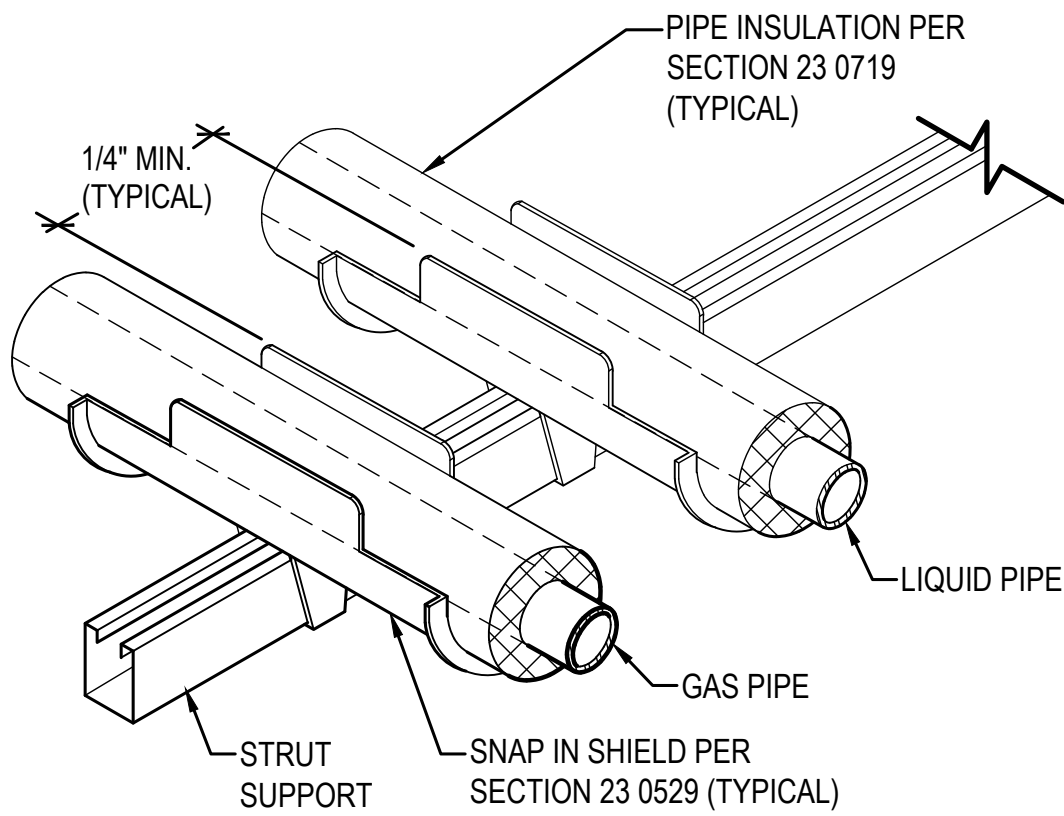
SCALE: DIAGRAMMATIC



①

REFRIGERANT PIPE SUPPORT DETAIL

SCALE: NOT TO SCALE



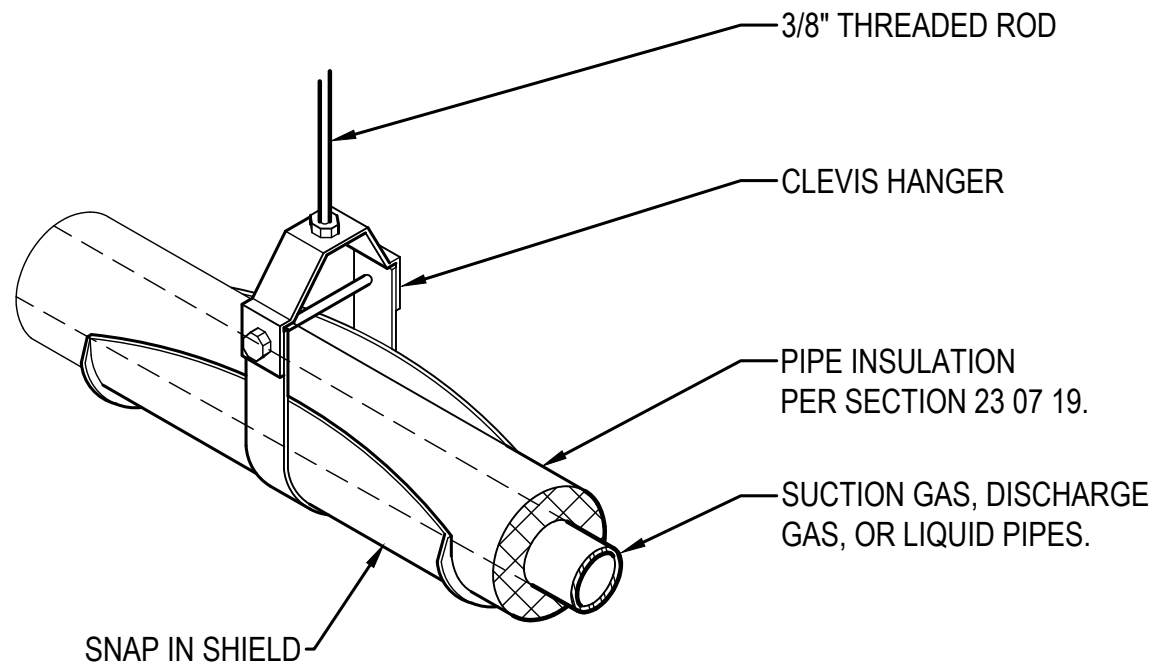
NOTES:

1. GAS AND LIQUID PIPES SHALL BE INDIVIDUALLY SUPPORTED. AT NO TIME SHALL PIPES BE COMBINED AND INSTALLED WITHIN THE SAME SNAP IN SHIELD SUPPORT.
2. DETAIL APPLIES TO STRUT AND TRAPEZE STYLE SUPPORTS.

⑥

REFRIGERANT PIPE CLEVIS HANGER SUPPORT DETAIL

SCALE: NOT TO SCALE



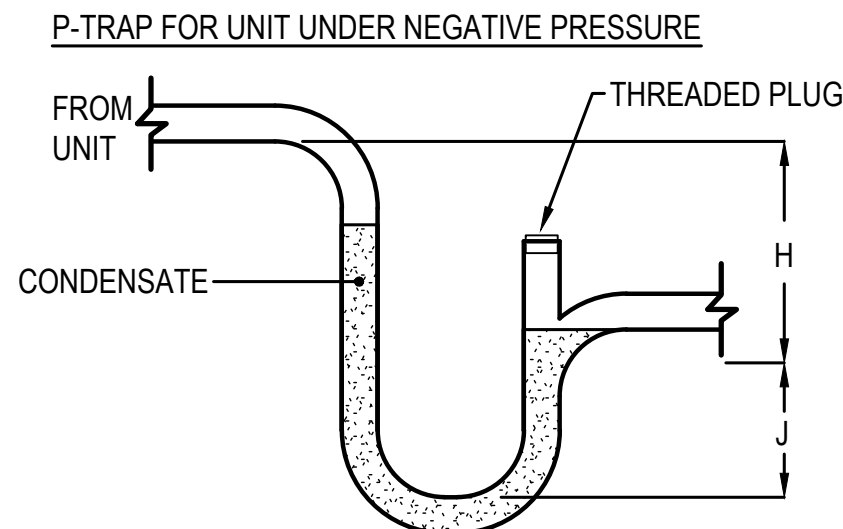
NOTE:

1. SUCTION GAS, DISCHARGE GAS, AND LIQUID PIPES SHALL BE INDIVIDUALLY SUPPORTED. AT NO TIME SHALL PIPES BE COMBINED AND INSTALLED WITHIN THE SAME CLEVIS HANGER.

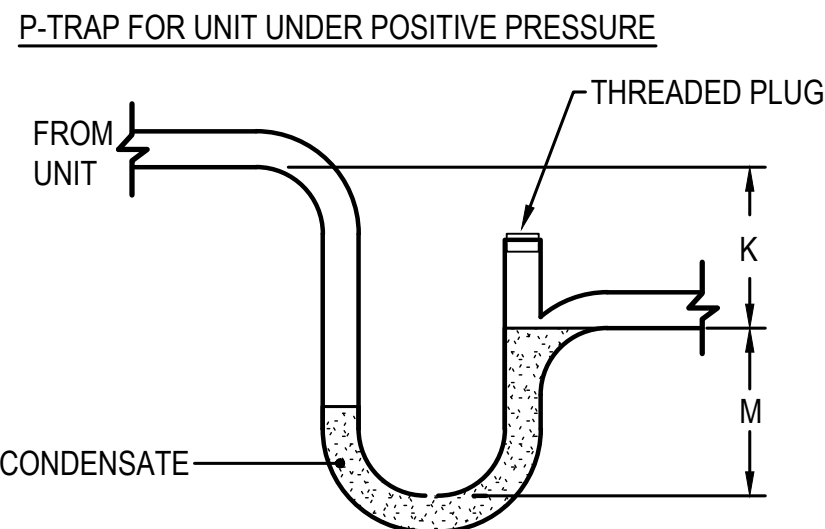
⑤

CONDENSATE P-TRAP DETAIL

SCALE: DIAGRAMMATIC



$$H = (1" \text{ FOR EACH } 1" \text{ OF MAXIMUM NEGATIVE PRESSURE}) = 1"$$
$$J = \left(\frac{1}{2}\right) H$$



$$K = 1/2" \text{ MINIMUM}$$
$$M = 1/2" + \text{MAXIMUM TOTAL STATIC PRESSURE}$$

TOTAL PRESSURE	H	J	K	M
1" W.C.	2"	1"	1/2"	1-1/2"
2" W.C.	3"	1.5"	1/2"	2-1/2"
3" W.C.	4"	2"	1/2"	3-1/2"

MECHANICAL DETAILS AND SCHEDULES

REVISIONS		
NO.	DESCRIPTION	DATE
-	-	-

DRAWN BY: RK

CHECKED BY: KC

PROJECT MANAGER: JS

DRAWING No. XX of 4

M-201

DATE: 03/08/2023
SUBMITTAL: OWNER REVIEW SET
PROJECT No. 222-106

LITTLE CREEK CASINO RESORT UPS REPLACEMENT

91 WA-108
SHELTON, WA 98584

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