## IOC CHILLER REPLACEMENT 400 EAST SOUTH STREET ORANGE COUNTY, FLORIDA

MAYOR JERRY L. DEMINGS

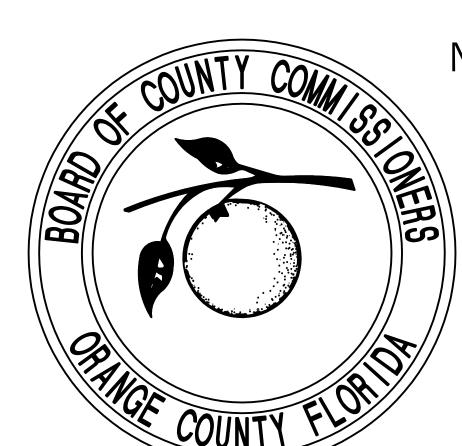
COMMISSIONER
BETSY VANDERLEY
DISTRICT 1

COMMISSIONER
CHRISTINE MOORE
DISTRICT 2

COMMISSIONER
MAYRA URIBE
DISTRICT 3

PROJECT LOCATION:

400 EAST SOUTH STREET ORLANDO, FLORIDA



COMMISSIONER
MARIBEL GOMEZ CORDERO
DISTRICT 4

COMMISSIONER EMILY BONILLA DISTRICT 5

COMMISSIONER
VICTORIA P. SIPLIN
DISTRICT 6

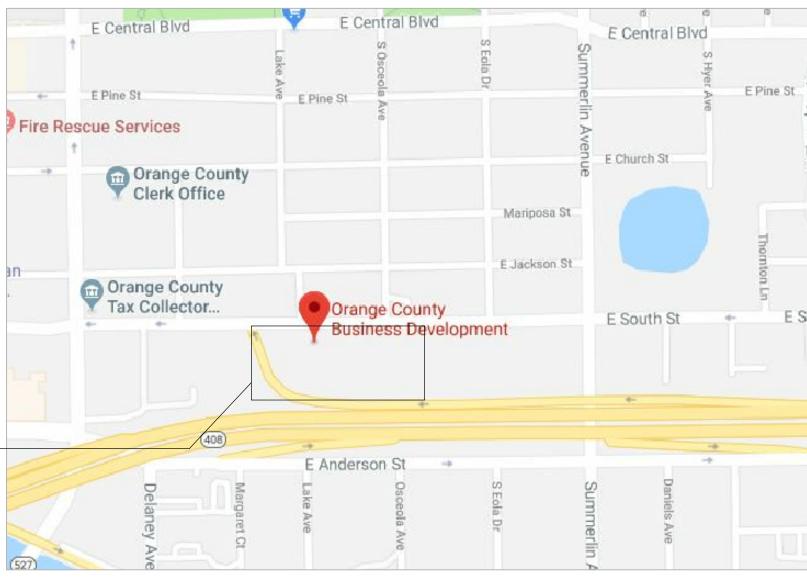
### **SCOPE OF WORK:**

THE CHILLER REPLACEMENT PROJECT SCOPE OF WORK INCLUDES;

PROVIDE A TEMPORARY CHILLER AND PUMP (LOCATED AT GROUND LEVEL) AND PIPE INTO THE EXISTING TEMPORARY CHILLER PIPE CONNECTIONS LOCATED AT THE UTILITY YARD. PROVIDE TEMPORARY POWER TO TEMP. CHILLER AND PUMP.

DEMOLISH THE EXISTING CHILLER, PUMPS, PIPING AND EQUIPMENT STRUCTURAL SUPPORTS LOCATED ON THE ROOF LEVEL AND PREPARE FOR NEW. DISCONNECT EXISTING POWER TO CHILLER AND PUMPS...

PROVIDE NEW CHILLER, PUMPS, PIPING AND EQUIPMENT STRUCTURAL SUPPORTS. PROVIDE NEW POWER CONNECTIONS TO NEW EQUIPMENT.



LEGAL DESCRIPTION:

CENTENNIAL CENTER 20/150 LOT 2, OR

B&P 5917/4866, ON 12-30-99, INST SW

LOCATION MAP

ORANGE COUNTY BCC
REAL ESTATE MANAGEMENT DEPARTMENT
BOX 1393 ORLANDO, FLORIDA 32802

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ISSUE: 100% CONSTRUCTION DOCUMENTS

DATE: 2/19/19

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Client Name

ORANGE COUNTY
INTERNAL OPERATIONS
CENTER

No. Date Description

2/19/19 100% CONSTRUCTION DOCS.

ORANGE COUNTY
INTERNAL OPERATIONS
CENTER CHILLER
REPLACEMENT

	Project Number: 2017-304	Drawing File Name:
	Scale: AS SHOWN	Seal:
	Design By:	
	Drawn By:	
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É	License Number:	

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**COVER SHEET** 

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C0.01

#### **GENERAL**

- NO PROVISION OF ANY REFERENCED STANDARD SPECIFICATION, MANUAL OR CODE (WHETHER OR NOT SPECIFICALLY INCORPORATED BY REFERENCE IN THE CONTRACT DOCUMENTS) SHALL BE EFFECTIVE TO CHANGE THE DUTIES AND RESPONSIBILITIES OF OWNER, CONTRACTOR, DESIGN PROFESSIONAL, SUPPLIER, OR ANY OF THEIR CONSULTANTS, AGENTS, OR EMPLOYEES FROM THOSE SET FORTH IN THE CONTRACT DOCUMENTS. NOR SHALL IT BE EFFECTIVE TO ASSIGN TO THE DESIGN PROFESSIONAL OF RECORD OR ANY OF THE DESIGN PROFESSIONAL OF RECORD'S CONSULTANTS, AGENTS, OR EMPLOYEES ANY DUTY OR AUTHORITY TO SUPERVISE OR DIRECT THE FURNISHING OR PERFORMANCE OF THE WORK OR ANY DUTY OR AUTHORITY TO UNDERTAKE RESPONSIBILITIES CONTRARY TO THE PROVISIONS OF THE CONTRACT DOCUMENTS.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS, AND ERECTION IN THE FIELD.
- THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE

REFER TO DRAWINGS OTHER THAN STRUCTURAL FOR COMPLETE INFORMATION INCLUDING: TYPES OF

FLOOR SLAB FINISHES AND THEIR LOCATIONS, FLOOR SLAB DEPRESSIONS AND CURBS, OPENINGS IN

- STRUCTURAL WALLS, ROOFS AND FLOORS REQUIRED BY ARCHITECTURAL AND MEP FEATURES, STAIRS, RAMPS, ETC. REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION, OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES, SHALL MEAN THE LATEST
- STANDARD, CODE, SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AT THE DATE OF TAKING BIDS, UNLESS SPECIFICALLY STATED OTHERWISE. CONTRACT DOCUMENTS SHALL GOVERN IN THE EVENT OF A CONFLICT WITH THE CODE OF PRACTICE OR SPECIFICATIONS OF ACI, PCI, AISC, OR OTHER STANDARDS. WHERE A CONFLICT OCCURS WITHIN THE CONTRACT DOCUMENTS, THE STRICTEST REQUIREMENT SHALL GOVERN.
- MATERIAL, WORKMANSHIP, AND DESIGN SHALL CONFORM TO THE REFERENCED BUILDING CODE. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, SHOP DRAWINGS AND SPECIFICATIONS. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL DOCUMENTS. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY OR OMISSION. FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS
- SEE THE ARCHITECTURAL DRAWINGS. CONTRACTOR SHALL VERIFY EXISTING DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS BEFORE STARTING WORK. DESIGN PROFESSIONAL SHALL BE NOTIFIED OF ANY DISCREPANCY. 0. OPENINGS THROUGH FLOORS, ROOFS, AND WALLS FOR DUCTS, PIPING, AND/OR CONDUIT SHALL
- BE COORDINATED BY THE CONTRACTOR. CONTRACTOR SHALL VERIFY SIZES AND LOCATIONS OF HOLES AND OPENINGS WITH THE MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS AND THE RESPECTIVE SUBCONTRACTORS AND PROVIDE THIS INFORMATION TO ANY STRUCTURAL SUBCONTRACTORS THAT WILL BE AFFECTED BY ANY OPENINGS THAT REQUIRE SUPPLEMENTARY FRAMING PER THE TYPICAL DETAILS.
- CONTRACTOR HAS SOLE RESPONSIBILITY FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, AND
- PROCEDURES OF CONSTRUCTION. 12. THE STRUCTURE IS STABLE ONLY IN ITS COMPLETED FORM. TEMPORARY SUPPORTS REQUIRED FOR STABILITY DURING ALL INTERMEDIATE STAGES OF CONSTRUCTION SHALL BE DESIGNED,
- FURNISHED, AND INSTALLED BY THE CONTRACTOR. CONTRACTOR HAS SOLE RESPONSIBILITY TO COMPLY WITH ALL OSHA REGULATIONS. 14. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE DESIGN PROFESSIONAL DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE DESIGN PROFESSIONAL. CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF
- SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACT DOCUMENTS. 15. DETAILS LABELED "TYPICAL" ON THE STRUCTURAL DRAWINGS APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THE TYPICAL DETAILS UNLESS
- THOSE LOCATIONS ARE SPECIFICALLY DETAILED OTHERWISE. CONTRACTOR TO ISSUE REQUEST FOR INFORMATION (RFI) FOR ANY INFORMATION NOT CLEAR/NOT SHOWN IN THE DRAWINGS.
- 17. DO NOT SCALE DRAWINGS.
- 18. ANY MATERIALS OR PRODUCTS SUBMITTED FOR APPROVAL THAT ARE DIFFERENT FROM THE MATERIAL OR PRODUCTS SPECIFIED IN THE STRUCTURAL CONTRACT DOCUMENTS WILL BE APPROVED ONLY IF THE FOLLOWING CRITERIA ARE SATISFIED:
- a. A COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST. THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CODE COUNCIL (ICC) AND THE ICC REPORT IS SUBMITTED WITH THE REQUEST.
- THE ICC ESR THAT IS SUBMITTED MUST REFERENCE THE BUILDING CODE UNDER WHICH THE PROJECT IS PERMITTED. ICC REPORTS THAT HAVE BEEN DISCONTINUED AT THE TIME OF PRODUCT INSTALLATION WILL NOT BE ACCEPTED.
- SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED. REFER TO SPECIFICATIONS FOR SUBSTITUTION PROCEDURES. BASE CONSULTANTS, INC. RETAINS THE RIGHT TO REJECT ANY SUBSTITUTION REQUESTS.
- STRUCTURAL DESIGN PROFESSIONAL IS NOT RESPONSIBLE FOR THE DESIGN OF CURTAIN WALL/WINDOW WALL SYSTEMS, COLD-FORMED METAL FRAMING, OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DOCUMENTS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED, AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.

#### CODE/DESIGN CRITERIA

- STRUCTURE IS DESIGNED IN ACCORDANCE WITH THE FOLLOWING: FLORIDA BUILDING CODE 2017.
- ASCE 7 **DESIGN WIND LOADS:** ULTIMATE WIND SPEED 149 MPH

RISK CATEGORY **EXPOSURE** INTERNAL PRESSURE COEFF GCPI +/- 0.18

ROOF TOP EQUIPMENT SHALL BE DESIGNED FOR A LATERAL PRESSURE OF 138 PSF (ULTIMATE) / 83 PSF (NOMINAL) AND A SIMULTANEOUS UPLIFT PRESSURE OF 67 PSF (ULTIMATE) / 40 PSF

THE CONTRACTOR SHALL VERIFY ALL MECHANICAL EQUIPMENT WEIGHTS, LOCATIONS AND ASSOCIATED OPENINGS WITH THE MECHANICAL CONTRACTOR AND SUBMIT SUCH INFORMATION PRIOR TO FABRICATION OF THE SUPPORTING STRUCTURE. PROMPTLY NOTIFY THE ENGINEER IF THE ACTUAL WEIGHT EXCEEDS THE WEIGHT SHOWN ON THE STRUCTURAL DRAWINGS.

#### STRUCTURAL STEEL

#### MATERIAL

- a. HOT ROLLED STRUCTURAL MEMBERS: ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PILING, AND
- BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6-98A. ASTM SPECIFICATION AND GRADE: CLEARLY MARK THE GRADE OF STEEL ON EACH PIECE, WITH A DISTINGUISHING MARK VISIBLE FROM FLOOR SURFACES, FOR THE PURPOSE OF FIELD INSPECTION OF PROPER GRADE OF STEEL. UNLESS NOTED OTHERWISE ON THE DRAWINGS, STRUCTURAL STEEL SHALL BE AS FOLLOWS:
- W- AND WT-SHAPES: ASTM A 992 (FY=50KSI)
- CONNECTION MATERIAL:
- BEAM COLUMN CONTINUITY PLATES AND DOUBLER PLATES: ASTM A 572 GRADE 50 ALL CONNECTION MATERIAL, EXCEPT AS NOTED OTHERWISE HEREIN OR ON THE DRAWINGS, INCLUDING BEARING PLATES, GUSSET PLATES, STIFFENER PLATES, FILLER PLATES, ANGLES, ETC. SHALL CONFORM
- RESULTING SIZES ARE COMPATIBLE WITH THE CONNECTED MEMBERS. OTHER STEEL: ANY OTHER STEEL NOT INDICATED OTHERWISE SHALL CONFORM TO ASTM A 992 OR ASTM A 572, GRADE 50, EXCEPT PLATES AND ANGLES THAT SHALL BE ASTM A 36.

TO ASTM A 36 UNLESS A HIGHER GRADE OF STEEL IS REQUIRED BY STRENGTH AND PROVIDED THE

#### CONNECTIONS

- REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- STRUCTURAL BOLTS AND THREADED FASTENERS
- A 325 BOLTS: ALL BOLTS IN STRUCTURAL CONNECTIONS SHALL CONFORM TO ASTM A 325 TYPE 1, UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- BOLTED MOMENT CONNECTIONS SHALL BE SLIP-CRITICAL CONNECTIONS. OTHER CONNECTIONS SHALL BE BEARING CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANES.
- UNLESS NOTED OTHERWISE, ELECTRODES FOR WELDING SHALL CONFORM TO E70XX (SMAW),
- F7XX-EXXX (SAW), ER70S-X (GMAW), OR E7XT-X (FCAW).
- WELDING SHALL CONFORM TO THE STANDARDS SET FORTH IN AWS PUBLICATION, "WELDING IN BUILDING CONSTRUCTION"
- ELECTRODES FOR GRADE 60 OR GRADE 65 MATERIAL SHALL CONFORM TO E80XX (SMAW),
- F8XX-EXX-XX (SAW), ER80S-X (GMAW), OR E8XT-X (FCAW). WELDS INDICATED "CIP" ["PIP"] SHALL BE COMPLETE [PARTIAL] JOINT PENETRATION GROOVE WELDS. FABRICATOR SHALL PRODUCE COMPLETE [OR PARTIAL] JOINT PENETRATION GROOVE WELDS WHICH CONFORM TO ALL AWS D1.1 QUALIFIED WELD REQUIREMENTS AND WHICH ARE APPLICABLE TO THE SPECIFIC CONDITIONS SHOWN.
- ALL ERECTION DRAWINGS SHALL SHOW ALL FIELD WELDS REQUIRED.

#### **DEMOLITION**

- 1. REMOVE STRUCTURE FROM TOP DOWN. DO NOT ALLOW DEBRIS TO PILE UP OR FALL ON SLABS WHICH ARE TO REMAIN IN PLACE. PROVIDE PLYWOOD AND/OR PLANKING TO CUSHION AND PROTECT SLABS FROM DAMAGE. REPAIR OR REPLACE DAMAGED SLABS, BEAMS, OR GIRDERS AS DIRECTED BY OWNER.
- 2. THESE DRAWINGS ARE INTENDED TO DEFINE LIMITS OF REMOVAL OF STRUCTURAL ELEMENTS AND PRECAUTIONS TO BE TAKEN TO PREVENT DAMAGE TO STRUCTURE WHICH WILL REMAIN.
- 3. THE CONTRACTOR IS REQUIRED TO PROVIDE ALL TEMPORARY SCAFFOLDING, PLATFORMS, BARRICADES, RAILINGS, SCREENING, ETC. NECESSARY TO PROTECT EXISTING FACILITIES, STRUCTURES AND THE PUBLIC DURING DEMOLITION AND ERECTION OF THE NEW CONSTRUCTION, AS WELL AS FOR JOB SAFETY. JOB SAFETY, CONSTRUCTION AND DEMOLITION PROCEDURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONS TO MINIMIZE VIBRATION, NOISE, DUST AND DEBRIS IN ALL AREAS ADJACENT TO AREAS OF DEMOLITION. REFER TO BUILDING DEMOLITION SPECIFICATIONS FOR MORE INFORMATION.
- 4. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS AND SUBMIT A WRITTEN REPORT TO THE ENGINEER FOR REVIEW AND/OR INSTRUCTION OF ACTUAL FIELD CONDITIONS, WHICH MAY VARY
- FROM INFORMATION, INDICATED ON DRAWINGS. 5. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURE AS REQUIRED, AS WELL AS PROTECT EXISTING FACILITIES, STRUCTURES AND THE PUBLIC DURING
- DEMOLITION AND ERECTION OF THE NEW CONSTRUCTION. 6. THE CONTRACTOR IS REQUIRED TO PERFORM HIS WORK IN A MANNER WHICH WILL NOT CONFLICT WITH ANY OPERATION WHICH IS TO REMAIN FUNCTIONAL DURING THE COURSE OF THE PROJECT, UNTIL SUCH OPERATION IS SCHEDULED TO SHUT DOWN.
- 7. AT ALL LOCATIONS WHERE NEW CONSTRUCTION WILL INTERFACE WITH EXISTING ELEMENTS, CUT THROUGH EXISTING STRUCTURE IN STRAIGHT AND TRUE LINES TO INSURE A NEAT INTERFACE.
- 8. BEFORE DEMOLISHING ANY STRUCTURAL ELEMENT, INSTALL ALL REQUIRED TEMPORARY AND/OR PERMANENT BRACING AND SUPPORTS.
- 9. UPON COMPLETION OF NEW CONSTRUCTION UNDER EACH PHASE, ALL DEMOLISHED AREAS SHALL BE RESTORED TO ACCEPTABLE USAGE ACCORDING TO THE CONTRACT DOCUMENTS AS DETERMINED BY THE ARCHITECT AND/OR ENGINEER.

#### **EXISTING STRUCTURE**

- 1. INFORMATION SHOWN ON THE DRAWINGS WAS TAKEN FROM THE FOLLOWING PROJECT DRAWINGS
  - CENTENNIAL CENTRE 200 OFFICE BUILDING PREPARED BY VOA AND DON MOE ENGINEERING, INC. DATED JULY 15, 1985...
- WORK SHOWN (INCLUDING, BUT NOT LIMITED TO DIMENSIONS, ELEVATIONS, MEMBER SIZES MATERIALS, DETAILS ETC.) ON THE DRAWINGS ASSUMES THAT THE ORIGINAL CONSTRUCTION WAS PERFORMED IN ACCORDANCE WITH THE ABOVE INDICATED ORIGINAL DRAWINGS IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE CONDITIONS RELATING TO THE EXISTING STRUCTURE AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS. SHOP DRAWINGS SHALL REFLECT FIELD VERIFIED INFORMATION AND RESOLUTION OF ANY CONFLICTS WITH THE ENGINEER.

#### THRESHOLD BUILDINGS

1. THIS PROJECT IS CLASSIFIED AS HAVING "THRESHOLD BUILDINGS". SPECIAL INSPECTION OF THE CONSTRUCTION OF "THRESHOLD BUILDINGS" IS REQUIRED BY THE STATE OF FLORIDA IN ACCORDANCE WITH CHAPTERS 471 AND 553 OF THE FLORIDA STATUTES. THE OWNER SHALL PAY FOR THIS INSPECTION. REFER TO THE THRESHOLD INSPECTION PLAN FOR ADDITIONAL

#### SPECIALTY ENGINEERING REQUIREMENTS

1. THE FLORIDA BOARD OF PROFESSIONAL ENGINEERS HAS ISSUED STATEMENTS ON RESPONSIBILITIES OF PROFESSIONAL ENGINEERS, IN ACCORDANCE WITH RULE 21H-19.00(3) CERTAIN COMPONENTS OF THE STRUCTURE REQUIRE THE WORK OF A SPECIALTY ENGINEER FOR THE DESIGN OF THOSE COMPONENTS.

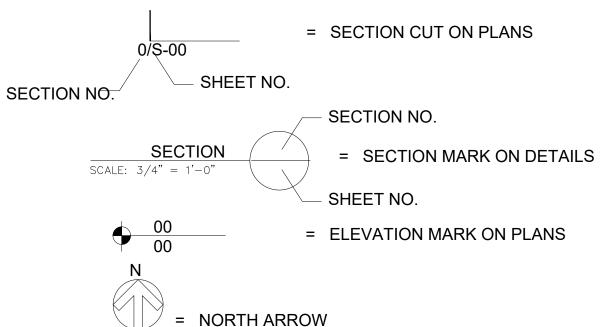
#### SUBMITTALS

- 1. THE GENERAL CONTRACTOR SHALL PREPARE A DETAILED LIST AND SCHEDULE OF ALL SUBMITTAL ITEMS TO BE SENT TO THE STRUCTURAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
- 2. GENERAL CONTRACTORS SHALL REVIEW AND STAMP ALL SHOP DRAWINGS BEFORE SUBMITTING FOR REVIEW. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND/OR ENGINEER AND HAVE THE ENGINEER'S SHOP DRAWING APPROVAL STAMP AFFIXED PRIOR TO FABRICATION. FABRICATION AND ERECTION SHALL BE FROM REVIEWED SHOP DRAWINGS.
- 3. A RECORD SET OF APPROVED SHOP DRAWINGS SHALL BE KEPT IN THE FIELD BY THE GENERAL CONTRACTOR.
- 4. ANY DEVIATION FROM, ADDITION TO, SUBSTITUTION FOR, OR MODIFICATION TO THE STRUCTURE OR ANY PART OF THE STRUCTURE DETAILED ON THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SUBMITTED FOR REVIEW DO NOT CONSTITUTE "IN-WRITING" UNLESS IT IS CLEARLY NOTED THAT SPECIFIC CHANGES ARE BEING SUGGESTED.
- 5. THE OMISSION FROM THE SHOP DRAWINGS OF ANY MATERIALS REQUIRED BY THE CONTRACT DOCUMENTS TO BE FURNISHED SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF FURNISHING AND INSTALLING SUCH MATERIALS, REGARDLESS OF WHETHER THE SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED.
- 6. THE USE OF ELECTRONIC FILES OR REPRODUCTIONS OF THESE CONTRACT DOCUMENTS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIFT OF PREPARATION OF SHOP DRAWINGS SIGNIFIES THEIR ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES THEMSELVES TO ANY JOB EXPENSE, REAL OR IMPLIED,
- RISING DUE TO ANY ERRORS THAT MAY OCCUR HEREON. 7. REQUEST FOR INFORMATION (RFI) SHALL BE ORIGINATED BY THE CONTRACTOR AND SHALL BE SUBMITTED TO THE ENGINEER VIA ARCHITECT OR DIRECTLY TO ENGINEER WHEN APPROVED BY ARCHITECT. RFI SHALL BE SUBMITTED IN A PROMPT MANNER TO AVOID DELAYS IN THE
- CONTRACTORS WORK. 8. RFI RESPONSES ARE NOT INTENDED TO AUTHORIZE ANY INCREASE IN CONSTRUCTION COST, SCHEDULE OR CONFLICT WITH APPLICABLE STANDARDS OR CODES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY DESIGN TEAM IMMEDIATELY OF ANY PERCEIVED COST, SCHEDULE
- OR SCOPE IMPACTS. 9. SUBMITTALS BY THE CONTRACTOR ARE NOT A PART OF THE CONTRACT DOCUMENTS.
- 10. CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION ON THE SUBMITTAL TO ANY DEVIATION FROM THE CONTRACT DOCUMENTS. CONTRACTOR SHALL STAMP AND SIGN SHOP DRAWINGS AND PRODUCT DATA, AND SIGN OR INITIAL EACH SAMPLE TO CERTIFY COMPLIANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS. SUBMITTALS RECEIVED WITHOUT THE CONTRACTOR'S STAMP OF REVIEW WILL BE RETURNED TO THE CONTRACTOR FOR REVIEW AND RESUBMITTAL.
- 11. WORK REQUIRING SHOP DRAWINGS, WHETHER CALLED FOR BY THE CONTRACT DOCUMENTS OR REQUESTED BY THE CONTRACTOR, SHALL NOT COMMENCE UNTIL THE SUBMISSION HAS BEEN REVIEWED BY THE DESIGN PROFESSIONAL. WORK MAY COMMENCE IF THE CONTRACTOR VERIFIES THE ACCURACY OF THE DESIGN PROFESSIONAL'S CORRECTIONS AND NOTATIONS AND COMPLIES WITH THEM WITHOUT EXCEPTION AND WITHOUT REQUESTING CHANGE IN CONTRACT SUM OR CONTRACT TIME. A COPY OF THE MARKED STRUCTURAL SHOP DRAWINGS WITH THE DESIGN PROFESSIONAL'S REVIEW STAMP IS TO BE MAINTAINED AT THE JOB SITE.
- 12. THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE
  - MISCELLANEOUS STEEL
  - STRUCTURAL STEEL, SHOP AND ERECTION DRAWINGS.
- ROOF TOP AND EQUIPMENT AND ANCHORAGES (1)
- 14. ITEMS MARKED (1) SHALL HAVE SHOP DRAWINGS SIGNED AND SEALED BY A REGISTERED ENGINEER IN THE STATE OF FLORIDA.

#### **ABBREVIATIONS**

A.B. A.C.I. A.I.S.C.  BOTT. C or CL C.J.  C.M.U. COL CONC CONT DIA DWG DWL EA. E.F. E.J. EL. EQ. E.W. EXT GA. GALV	ANCHOR BOLT AMERICAN CONCRETE INSTITUTE AMERICAN INSTITUTE OF STEEL CONSTRUCTION BOTTOM CENTERLINE CONSTRUCTION JOINT OR CONTROL JOINT CONCRETE MASONRY UNIT COLUMN CONCRETE CONTINUOUS DIAMETER DRAWING DOWEL EACH EACH FACE EXPANSION JOINT ELEVATION EQUAL EACH WAY EXTERIOR GAGE, GAUGE GALVANIZE	HORIZ JT LSH LSV L.S.H. MAX MECH MIN. NTS O.C. OPNG OPP Por PL P.S.F. P.S.I. REINF REQ'D STL STD U.N.O. VERT WWR W/	HORIZONTAL JOINT LONG SIDE HORIZONTAL LONG SIDE VERTICAL LONG SLOTTED HOLES MAXIMUM MECHANICAL MINIMUM NOT TO SCALE ON CENTER OPENING OPPOSITE PLATE POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH REINFORCE(D) (ING) REQUIRED STEEL STANDARD UNLESS NOTED OTHERWISE VERTICAL WELDED WIRE REINFORCEMENT WITH
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#### STRUCTURAL SYMBOLS



= FILLED CELLS ON PLANS AND DETAILS

= SPAN DIRECTION

= MOMENT CONNECTION

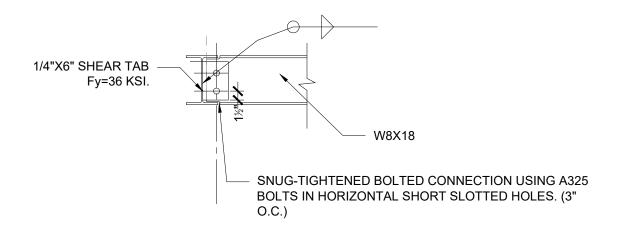
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ORANGE COUNTY **INTERNAL OPERATIONS** CENTER Date Description 

**ORANGE COUNTY INTERNAL OPERATIONS CENTER CHILLER** REPLACEMENT

Project Number 2017-3		Drawing	File Name:	
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NOTES:

1. PROVIDE WASHER OVER SLOTTED HOLES.

## HIGH STRENGTH SLIP CRITICAL BOLTS $\frac{1}{4}$ "X6" PLATE WITH (2)- 3/4" BOLT BACKING BAR

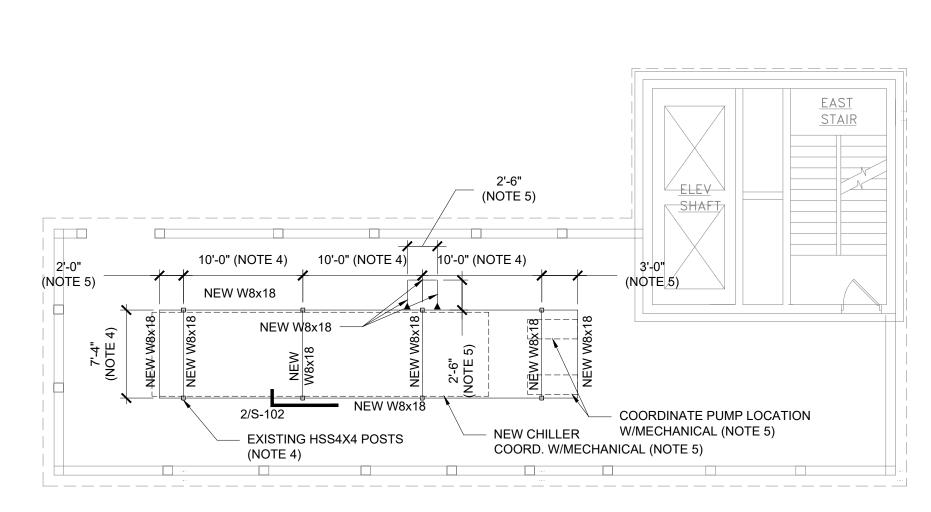
- BOLTS IN WEB CONNECTION SHALL BE SNUG TIGHTENED PRIOR TO WELDING OF FLANGES.
- 2. SLIP-CRITICAL BOLTED CONNECTION IN WEB USING A325 BOLTS IN HORIZONTAL SHORT-SLOTTED HOLES U.N.O. RESISTANCE BY BOLTS TO SHEAR SHALL BE BY FRICTION, PROPORTIONED USING THE STANDARD HOLE VALUE ON A CLASS "A" SURFACE.

MOMENT CONNECTION

#### SHEAR CONNECTION

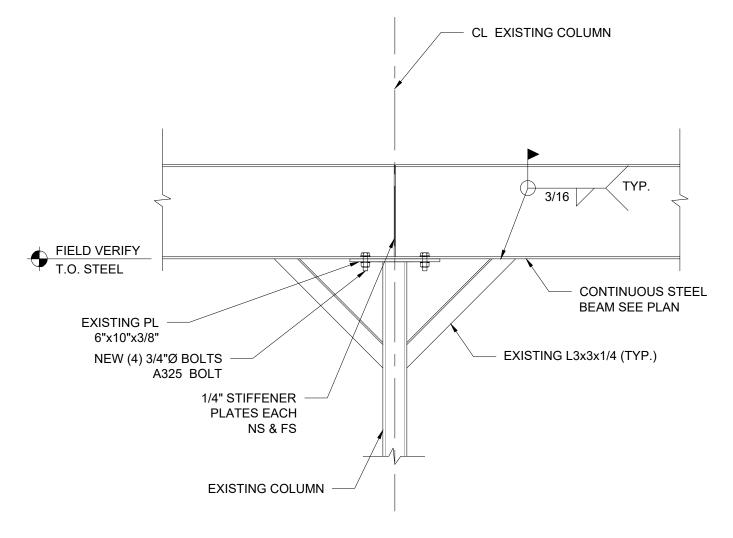


SCALE: N.T.S.



PLAN NOTES: ► INDICATES MOMENT CONNECTION. SEE 3/S-102 FOR BEAM TO BEAM

- CONNECTIONS.
  3. COORDINATE DIMENSIONS WITH
- MECHANICAL. 4. G.C. TO FIELD VERIFY EXISTING DIMENSIONS PRIOR TO BID AND NOTIFY EOR IF DISCREPANCIES ARE
- ENCOUNTERED. 5. COORDINATE WITH SELECTED MECHANICAL EQUIPMENT FOR EXACT SUPPORT POINTS FOR NEW CHILLER AND ASSOCIATED EQUIPMENT FOR EXACT SUPPORT REQUIREMENTS.



BEAM OVER COLUMN CONNECTION SCALE: 3/4"=1'-0"

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**ORANGE COUNTY** INTERNAL OPERATIONS CENTER

No. Date Description 11/06/2018 100% CONSTRUCTION DOCUMENT

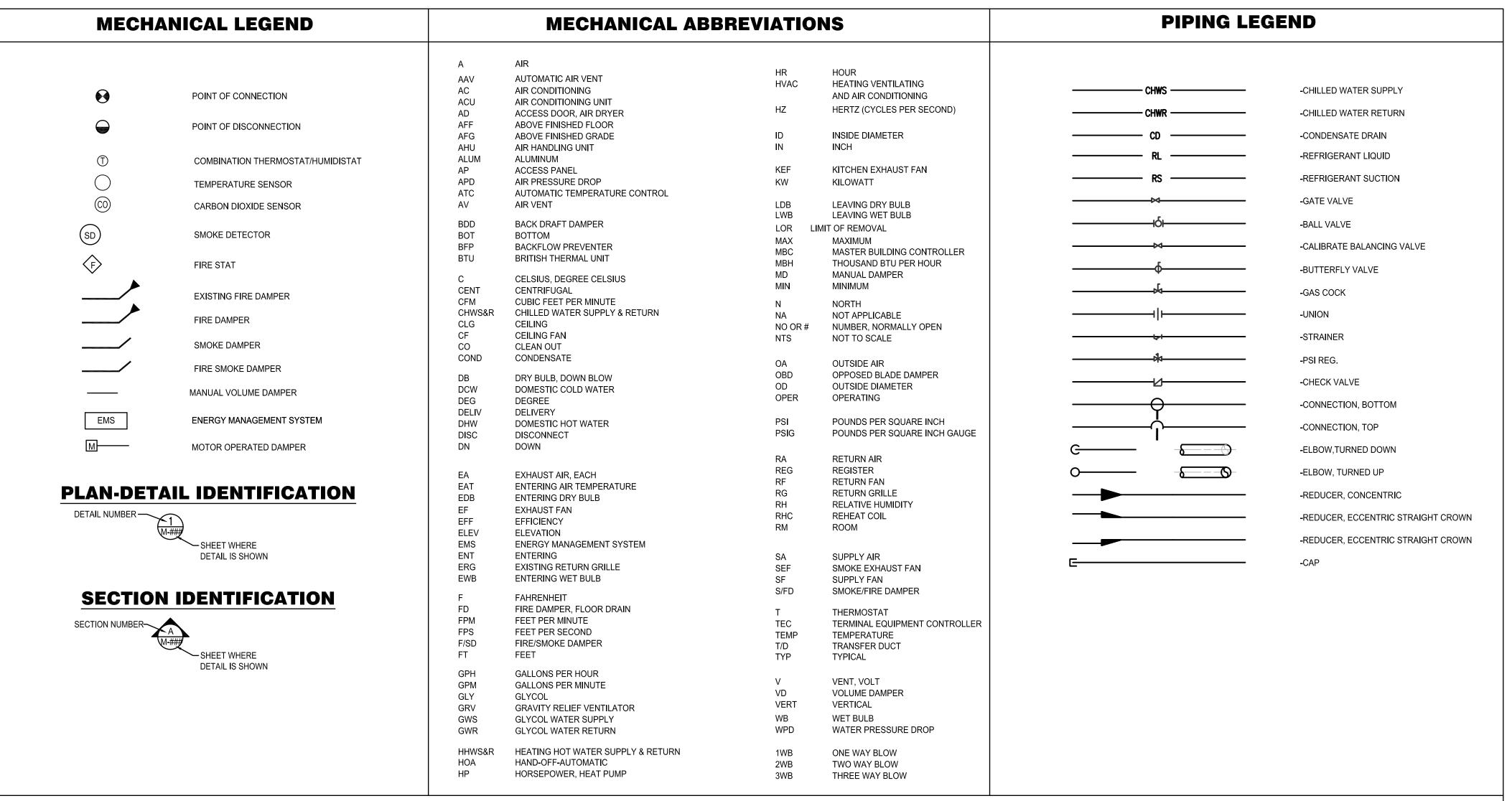
**ORANGE COUNTY** INTERNAL OPERATIONS CENTER CHILLER **REPLACEMENT** 

Drawing File Name: 2017-304 AS SHOWN Seal: LAURA ISABEL BARBERO-BUFFA

> FRAMING PLAN & **DETAILS**

NEW CHILLER FRAME PLAN

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



### MECHANICAL GENERAL NOTES

- 1. IF THE INTENT OF ARCHITECT/ ENGINEER WITH REGARD TO ANY DETAIL IS NOT CLEAR, OR IS CAPABLE OF MORE THAN ONE INTERPRETATION, SUCH MATTERS WILL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER IN WRITING BEFORE THE SUBMISSION OF BIDS, AND THE ARCHITECT/ ENGINEER SHALL MAKE CORRECTION OR13. EXPLANATION IN WRITING. OTHERWISE, NO EXTRA CHARGE WILL BE ALLOWED FOR THE WORK OR MATERIAL WHICH THE ARCHITECT/ENGINEER WILL REQUIRE, PROVIDED THAT IT COMES WITHIN A REASONABLE INTERPRETATION OF THE DRAWINGS AND SPECIFICATIONS.
- THE PLANS AND SPECIFICATIONS ARE INTENDED AS A GENERAL DESCRIPTION OF THE WORK TO BE PERFORMED. ALL ITEMS NOT SPECIFICALLY MENTIONED OR SHOWN, BUT NECESSARY FOR THE COMPLETION OF THE INSTALLATION, SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. THIS CONTRACTOR SHALL THOROUGHLY ACQUAINT THEMSELVES WITH THE MECHANICAL, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL PLANS BEFORE SUBMITTING THEIR FINAL BID. NO ADDITIONAL COMPENSATION WILL BE15. ALLOWED DUE TO THE CONTRACTOR'S FAILURE TO FAMILIARIZE THEMSELVES WITH THE PLANS.
- 3. ALL WORK SHALL BE IN ACCORDANCE WITH THE FLORIDA BUILDING CODE 2017 & FLORIDA MECHANICAL CODE 2017.
- 4. THE SIZE AND LOCATION OF EQUIPMENT INSTALLED UNDER DIVISION 23 MECHANICAL SHALL BE COORDINATED WITH OTHER TRADES. CONNECTION TO EQUIPMENT SHALL BE VERIFIED WITH MANUFACTURER'S CERTIFIED DRAWINGS. TRANSITIONS TO ALL EQUIPMENT SHALL BE VERIFIED AND PROVIDED FOR EQUIPMENT FURNISHED.
- 5. PIPING TO MECHANICAL EQUIPMENT SHALL BE INSTALLED IN A MANNER THAT DOES NOT OBSTRUCT EQUIPMENT SERVICE CLEARANCES.
- 6. COORDINATE WORK WITH ALL TRADES INCLUDING, BUT NOT LIMITED TO, STRUCTURAL, LIGHTING, POWER SYSTEMS, AND PLUMBING EXISTING AND NEW WORK.
- 7. INTERRUPTION OF EXISTING SERVICES SHALL BE MINIMAL AND SHALL BE FULLY COORDINATED WITH THE OWNER AND ALL TRADES IN ADVANCE TO SCHEDULE ALL19.
  INTERRUPTIONS DURING NON-CRITICAL TIMES. OWNER SHALL BE PROVIDED WITH THREE BUSINESS DAYS NOTICE PRIOR TO INTERRUPTION.
- 9. DISCONNECT SWITCHES REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE PROVIDED BY DIVISION 26 ELECTRICAL EXCEPT WHEN INDICATED ON SCHEDULE.
- 10. CHILLER SHALL BE INSTALLED ON A NEW STRUCTURAL SUPPORT; ITS THE CONTRACTORS RESPONSIBILITY TO COORDINATE ALL SUPPORT POINTS FROM SELECTED CHILLER WITH STRUCTURAL SUPPORT SYSTEM TO ENSURE THAT A TURN-KEY INSTALLATION IS PROVIDED AND THE STRUCTURE MEETS ALL SUPPORT REQUIREMENTS FOR THE NEW SELECTED CHILLER.
- 11. ALL EQUIPMENT SHALL BE SUPPORTED AS DETAILED AND/OR SPECIFIED. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO PROVIDE A VIBRATION-FREE, RIGID INSTALLATION. SUPPORT ALL OBJECTS FROM STRUCTURE WITHOUT PENETRATING THE CEILING.
- 12. ALL HVAC EQUIPMENT LOCATION & WEIGHT SHALL BE COORDINATED AND APPROVED BY THE STRUCTURAL ENGINEER, CONTRACTOR AND OWNER PRIOR TO PURCHASE AND INSTALLATION.

PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS IN CHILLED WATER PIPING.

REFER TO TYPICAL DETAILS FOR PIPING AND INSTALLATION OF EQUIPMENT.

ALL PIPING IS SHOWN SCHEMATICALLY. PROVIDE ALL TRANSITIONS, ELBOWS, FITTINGS, ETC., TO ALLOW SMOOTH FLOWS. ALL SPLIT DUCT FITTINGS SHALL TRANSITION TO FULL SIZE OF THE SUM OF BOTH BRANCHES, UPSTREAM OF SPLIT.

16. ALL CONTROL WIRING AND HARDWARE TO COMPLETE THE HVAC CONTROL SYSTEM SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 23 MECHANICAL OF THESE CONTRACT DOCUMENTS.

THE CONTRACTOR SHALL SUBMIT TO THE OWNER AND ENGINEER FOR REVIEW, A TEST AND BALANCE REPORT OF ALL SYSTEMS. THE TESTING AND BALANCING SHALL BE PERFORMED BY A CERTIFIED TEST AND BALANCE COMPANY. TEST AND BALANCE SHALL BE UNDER CM CONTRACT AND BE COMPLETED AT SUBSTANTIAL COMPLETION DATE. REFER TO SPECIFICATIONS FOR COMPLETE TEST AND BALANCE REQUIREMENTS.

18. PROVIDE ALL MANUFACTURER INSTALLATION AND MAINTENANCE MANUALS FOR EQUIPMENT INSTALLED FOR ENGINEER REVIEW BEFORE RELEASE TO THE OWNER.

ALL PIPING SHALL BE PROPERLY SUPPORTED TO HANDLE THE WEIGHT OF THE PIPING, INSULATION, WATER WEIGHT, AND ATTACHED ACCESSORIES. SUPPORTS SHALL BE INSTALLED IN A MANNER THAT WOULD NOT REDUCE THE SERVICEABILITY OF THE AIR HANDLING EQUIPMENT.

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**ORANGE COUNTY** 

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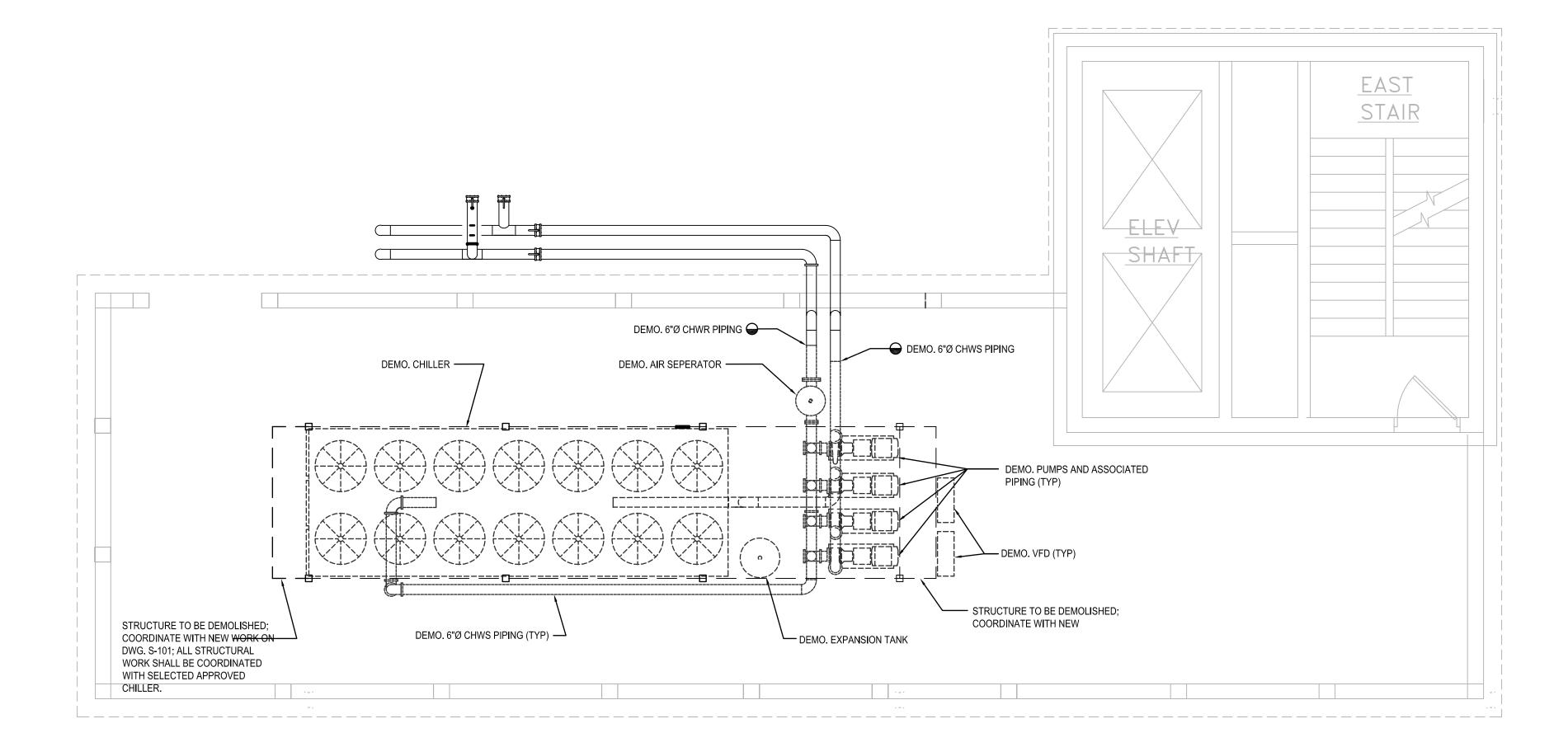
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SYMBOLS LEGEND

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### GENERAL NOTES: a. REFER TO SYMBOL LEGENDS.

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- b. REFER TO SPECIFICATION MANUAL.
- c. DISCONNECT EXISTING CONTROLS; PREPARE FOR NEW.
- d. DEMOLISH CONTROL COMPONENTS ON EXISTING PIPING; PREPARE FOR NEW.
- e. TEST WATER QUALITY PRIOR TO DEMOLITION OF EQUIPMENT.

### PLAN KEY NOTES:

1. #####

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MECHANICAL ROOF DEMOLITION PLAN

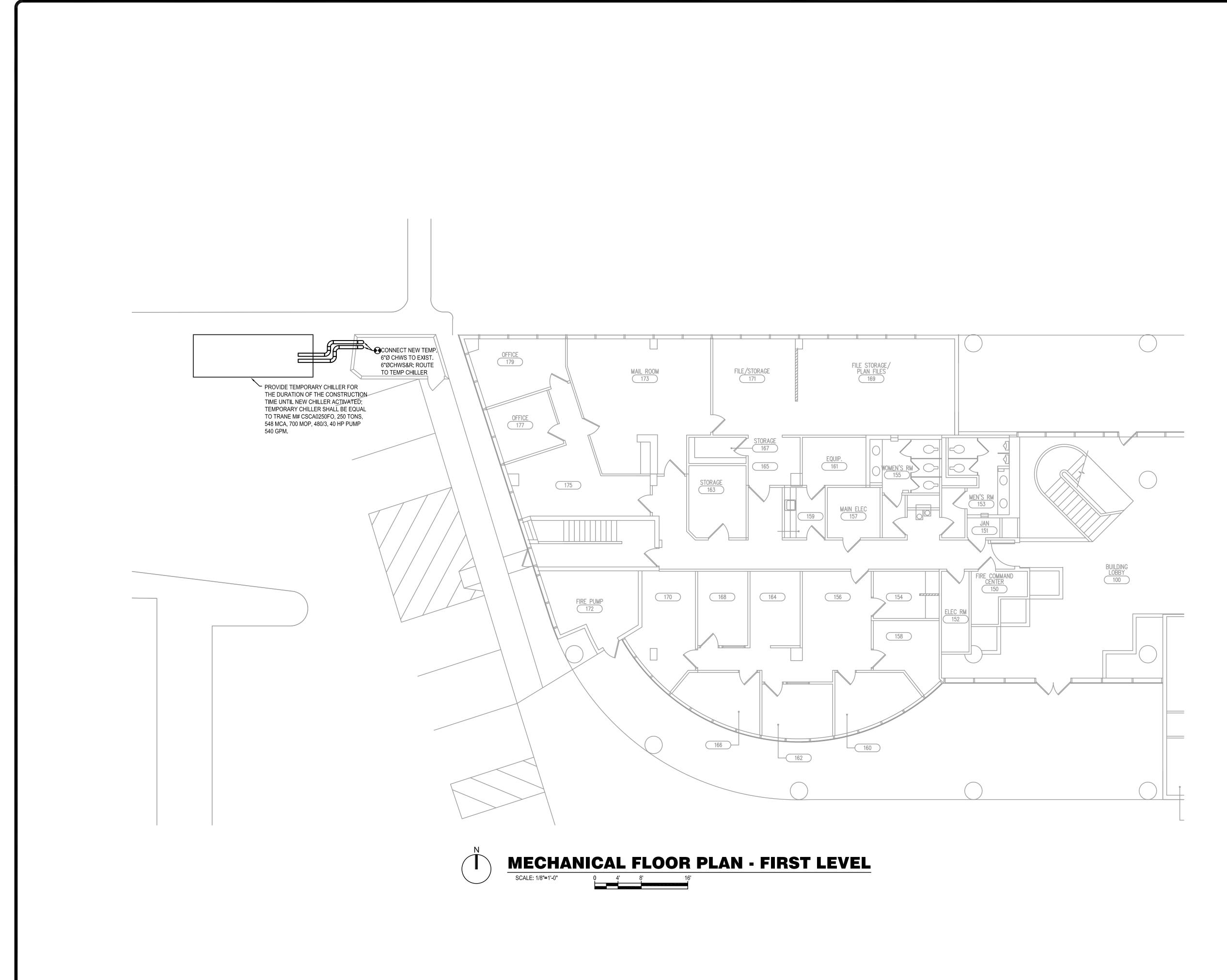
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MECHANICAL ROOF DEMOLITION PLAN

SCALE: 1/4"=1'-0" 0 2 4'



#### **GENERAL NOTES:**

- a. REFER TO SYMBOL LEGENDS.
- b. REFER TO SPECIFICATION MANUAL.
- c. PROVIDE A FIVE YEAR WARRANTY ON ALL MECHANICAL, ELECTRICAL, AND CONTROLS LABOR AND PARTS.
- d. REUSE MAIN BUILDING MANAGEMENT (BMS) CONTROLLER, INTEGRATE NEW EQUIPMENT ONTO THE EXISTING BMS. EXISTING CONTROLS ARE METAYSYS SYSTEM. EXPAND AND REPROGRAM BACNET COMPATIBLE SYSTEM METASYS SYSTEM TO CONTROL VARIABLE PRIMARY CONTROLS. EXISTING CONTROLLER IS LOCATED IN THE 1ST FLOOR ELECTRICAL ROOM 152.
- e. PROVIDE AND INSTALL A NEW CHILLER PLANT CONTROLLER AND PROGRAM SOFTWARE FOR A VARIABLE PRIMARY CHW CONTROL DISTRIBUTION SYSTEM.
- f. PROVIDE AND INSTALL ALL NEW CONTROL COMPONENTS ON EXISTING PIPING.
- g. PROVIDE BALANCING OF THE CHILLED WATER SYSTEM FOR NEW EQUIPMENT.
- h. PERFORM WATER TREATMENT TO MAINTAIN WATER QUALITY AT PRE-D EMOLITION LEVELS.

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GENERAL NOTES:

a. REFER TO SYMBOL LEGENDS.

b. REFER TO SPECIFICATION MANUAL.

CONTROLS LABOR AND PARTS.

d. REUSE MAIN BUILDING MANAGEMENT

PROVIDE A FIVE YEAR WARRANTY ON ALL MECHANICAL, ELECTRICAL, AND

(BMS) CONTROLLER (LOCATED IN THE 1ST FL ELECTRICAL ROOM). INTEGRATE NEW EQUIPMENT ONTO THE EXISTING BMS. EXISTING CONTROLS ARE METAYSYS SYSTEM. EXPAND AND REPROGRAM BACNET COMPATIBLE SYSTEM METASYS

SYSTEM TO CONTROL VARIABLE PRIMARY CONTROLS. EXISTING CONTROLLER IS

e. PROVIDE PROGRAMMING AS REQUIRED FOR EXISTING METASYS CONTROLLER TO CONVERT CURRENT CONTROLLED SYSTEM FROM A PRIMARY /SECONDARY PUMP SYSTEM TO A VARIABLE PRIMARY SYSTEM INCLUDING BYPASS CONTROL VALVE AND

MAINTAINING MINIMUM FLOW THROUGH

AS REQUIRED FOR NEW SEQUENCE.

PROVIDE AND INSTALL ALL NEW CONTROL COMPONENTS ON EXISTING

g. PROVIDE BALANCING OF THE CHILLED

h. PERFORM WATER TREATMENT TO

PRE-D EMOLITION LEVELS.

MAINTAIN WATER QUALITY AT

WATER SYSTEM FOR NEW EQUIPMENT.

CHILLER. PROVIDE EXPANDABLE CONTROLS

LOCATED IN 1ST FLOOR ELECTRICAL RM 152.

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MECHANICAL ROOF PLAN

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CHILLED WATER SYSTEM SEQUENCE OF OPERATION:

ON A CALL FOR COOLING FROM BUILDING MANAGEMENT SYSTEM (EXISTING SYSTEM IS JOHNSON CONTROLS - METASYS), THE LEAD CHILLED WATER PUMP SHALL BE STARTED THROUGH ITS VFD AND THE PUMP SHALL MODULATE TO MAINTAIN DIFFERENTIAL SETPOINT AS SENSED BY DPS-2 (LOCATED IN 1ST FL JANIITOR CLOSET). PUMPS SHALL BE LEAD/LAGGED EVERY TWO WEEKS. IF LEAD PUMP FAILS, THE LAG PUMP SHALL BE COMMANDED ON. WHEN THE PUMP STARTS AND FLOW IS PROVEN THE CHILLER SHALL BE ACTIVATED. DURING CHILLER OPERATION, THE CONTROL PANEL SHALL CYCLE COMPRESSORS ON/OFF TO MAINTAIN CHWS TEMPERATURE SETPOINT OF 45°F (ADJ.). THE MASTER DDC PANEL SHALL MONITOR THE CHWS & CHWR TEMPERATURES, AND CHILLER ALARM CONDITIONS

CHILLER BYPASS VALVE SHALL MODULATE TO MAINTAIN MINIMUM CHILLER FLOW (260 GPM, ADJ.) AS DETERMINED BY FLOW METER.

OCCUPIED / UN-OCCUPIED MODE SHALL BE SCHEDULED AS 6AM TO 7PM (ADJUSTABLE - CONFIRM WITH OWNER) DURING UNOCCUPIED MODE CHILLERS AND PUMPS SHALL BE DEACTIVATED. DURING OCCUPIED MODE PUMPS SHALL BE ACTIVATED, AND CHILLER (ONCE FLOW IS PROVEN) SHALL BE ACTIVATED AND SHALL CYCLE COMPRESSORS TO MAINTAIN DISCHARGE WATER TEMPERATURE SETPOINT (45°F, ADJ.). ON A CALL FOR COOLING OR DE-HUMIDIFCATION DURING UNOCCUPIED MODE, SYSTEM SHALL BE PLACED IN OCCUPIED MODE. UNTIL SATISFIED, THEN RESUME UNOCCUPIED MODE.

INTEGRATE NEW CONTROLS WITH EXISTING. CONTRACTOR SHALL DUPLICATE THE EXISTING SEQUENCES AND INTEGRATE INTO NEW CONTROLS AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM

PUMP VARIABLE FREQUENCY DRIVE SHALL BE CONTROLLED TO MODULATE PUMP SPEED BASED ON THE DIFFERENTIAL PRESSURE (DP) SENSOR SETPOINT . REMOVE EXISTING DP & PROVIDE NEW DP AND REPROGRAM TO CONTROL SYSTEM AS A VARIABLE PRIMARY SYSTEM WITH LEAD / LAG PUMPS.

(E)CENTRAL PLANT CONTROLLER

CH-1 CHWP-1 CHWP-2 FM-1 METER

(E)BC

VFD-1 VFD-2

GENERAL NOTES:

MODIFY EXISTING METASYS CONTROL PANEL TO PROVIDE VARIABLE PRIMARY PUMP CONTROLS. EXPAND AS NECESSARY FOR A COMPLETE OPERATING VARIABLE PRIMARY PUMP SYSTEM.

CHW SYSTEM CONTROL SYSTEM SCHEMATIC

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CONTROL SYSTEM ARCHITECTURE

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	AIR COOLED CHILLER SCHEDULE																		
						EVAPORATOR					ELECTRICAL								
MARK	MA NUF.	MODEL#	NOMINAL CAPACITY (TONS)	EER	IPLV	WATER FLOW (GPM)	EWT (°F)	LWT (°F)	NUMBER OF PASSES	PRESSURE DROP (FT)	# COND FANS/ AMPS	COMPR STARTER TYPE	# COMPR / A MPS	POWER CONNECTION	MCA	MOCP	VOLTAG E	WEIGHT (LBS)	REMARKS
CH-1	TRANE	RTAE225	225	11.9	19.6	520	56	45	2	23.5	12 @ 2.7	WYE DELTA	2 @ 160	SINGLE POINT POWER	396	500	460/3	16266	SEE NOTES
NOTES:	<u>DTES:</u>																		
1			PROVIDE RE	FRIGERAN	NT ISOLAT	TION VALV	'ES ON I	NDIVIDU/	AL COMPRES	SSORS INTAL	LED BY MAN	JFACTURER.							
2			CHILLERS TO																
3			CHILLERS TO																
4						•					MANUFACTUR								
5											ONTROL CENT	∃R.							
6			PROVIDE CH							•	,								
7			MOUNT CHIL	LER ON 2	INCH THI	CK ISOLAT	ION PAE	OS PROV	IDED WITH C	HILLER BY M	IA NUFA CTURE	R.							
8			PROVIDE CH																
9			PROVIDE CH	ILLER WIT	'H FACTO	RY MOUN	LED COI	_ GUARE	).										
10			PROVIDE CO																
11			TRANEMAN	UFACTUR	ER IS SCH	HEDULED A	SANO	R EQUAL	COORDIN	ATE WITH SP	ECIFICATIONS	FOR OTHER L	ISTED ACCEPTABLE	E MANUFACTURERS					

	EXPANSION TANK SCHEDULE											
MARK	MANUF.	MODEL#	SERVICE	TYPE	FLUID	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	RELIEF VALVE (PSIG)	DIAMETER (IN)	HEIGHT (IN)	WEIGHT (LBS)	REMARKS
ET-1	B&G	B-400LA	CHILLED WATER	BLADDER	WATER	106	53	50	24	68"	1148	SEE NOTES
NOTES:												
1	ASME CERTI	FIED.										
2	WEIGHT IS TA	ANK @ 100%	FULL.									
3	PROVIDE B&	G MODEL 107	A HIGH CAPACITY AUT	OAIRVENT								

	HYDRONIC PUMP SCHEDULE									
MARK	RK MANUE, MODEL# FLOW HEAD (FT)   IMPELLER   PLEV Eff   ELECTRICAL   F						REMA RKS			
IVIATAL	IVIAINOI .	IVIODEL#	(GPM)	MAX	DIA.	(%)	HP	RPM	VOLTAGE	INDIVINIO
CHWP-1	B&G	e-1510-3EB	520	90	10.75	79.7	20	1730	480/3	SEE NOTES
CHWP-2	CHWP-2 B&G e-1510-3EB 520 90 10.75 79.7 20 1730 480/3 SEE NOTES									
NOTES:	NOTES:									
1. PROVIDE TR	RIPLE DUTY VA	LVE WITH NON-SLAM	DRIP TIGHT C	CHECK VALVE	E, POSITIVE S	HUT-OFF VA	LVE AND CAI	LIBRATED SY	STEM BALANCE	EVALVE
2 DDOM/IDE SI	ICTION DIEELISI	ER W// STA INILESS STE	EI STRAIGH	TENING VANE	S STAINLES	S STEEL STR		RESSI IRE/TE	MDERATI IRE DOI	PTS

2. PROVIDE SUCTION DIFFUSER W/ STAINLESS STEEL STRAIGHTENING VANES, STAINLESS STEEL STRAINER AND PRESSURE/TEMPERATURE PORTS
3. PROVIDE PREMIUM EFFICIENCY MOTOR, TEFC TYPE, VFD COMPATIBLE

	AIR SEPARATOR SCHEDULE								
MARK	MANUF	MODEL#	SERVICE	GPM	WORKING	HEAD LOSS	DIAMETER	WEIGHT	REMARKS
			02.11.02		FLUID	(FT)	(IN)	(LBS)	
AS-1	B&G	RL-6F	CHILLED WATER	540	WATER	1	6	564	1,2
VOTES:									
	1. ASME CERTIFIED.								

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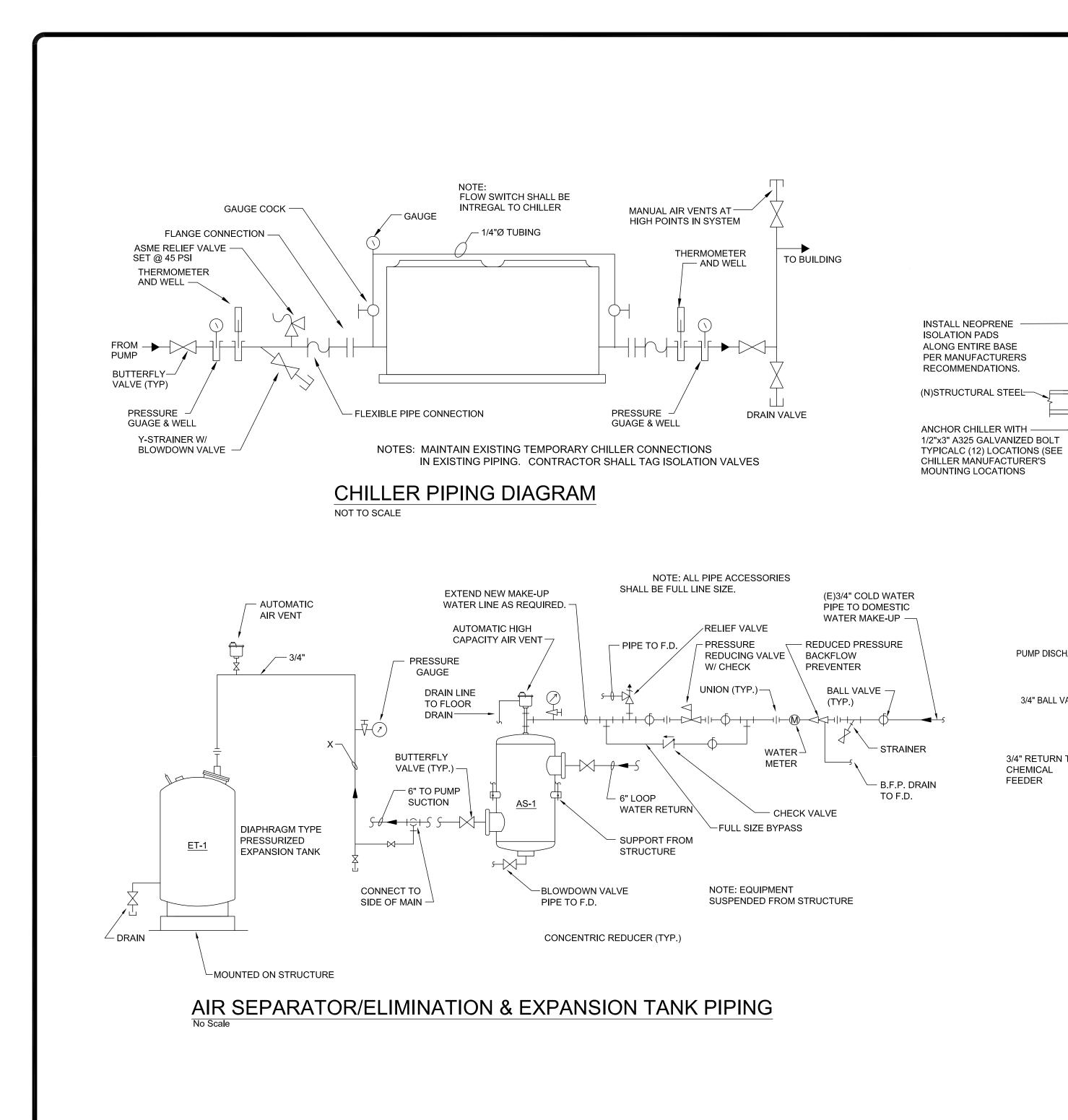
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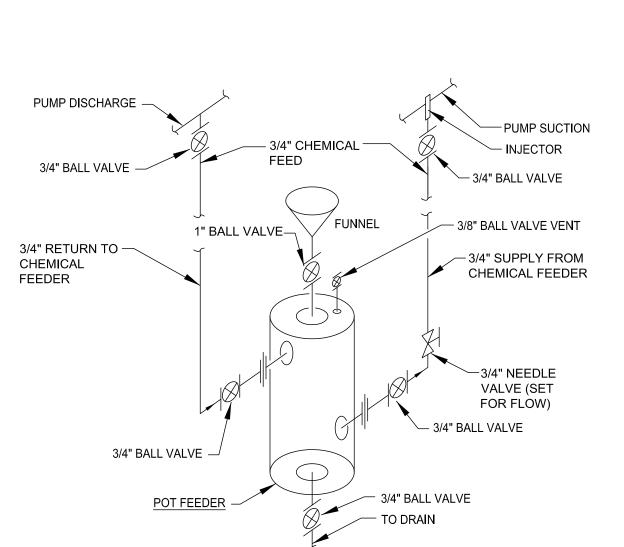
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MECHANICAL SCHEDULES





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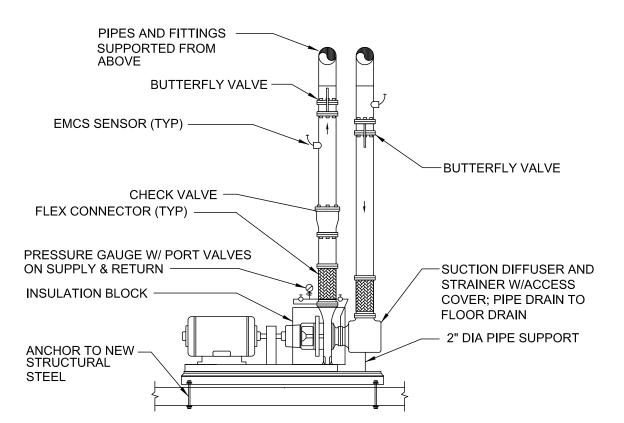
- CHILLER BASE RAIL

CHILLER MOUNTING DETAIL

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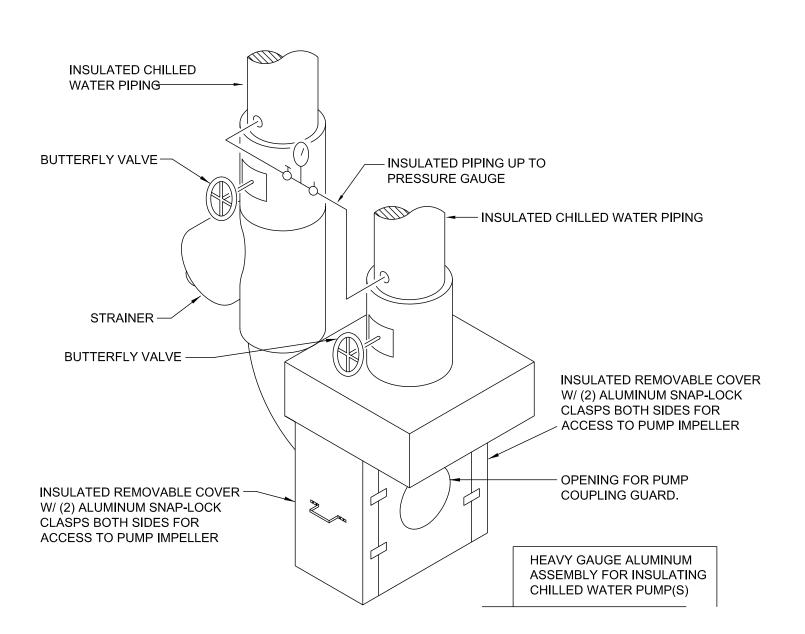
- PROVIDE ISOLATION VALVES AT SUPPLY AND RETURN LINES.
   ALLOW START-UP STRAINER IN SUCTION DIFFUSER TO WORK FOR THE FIRST EIGHT HOURS,

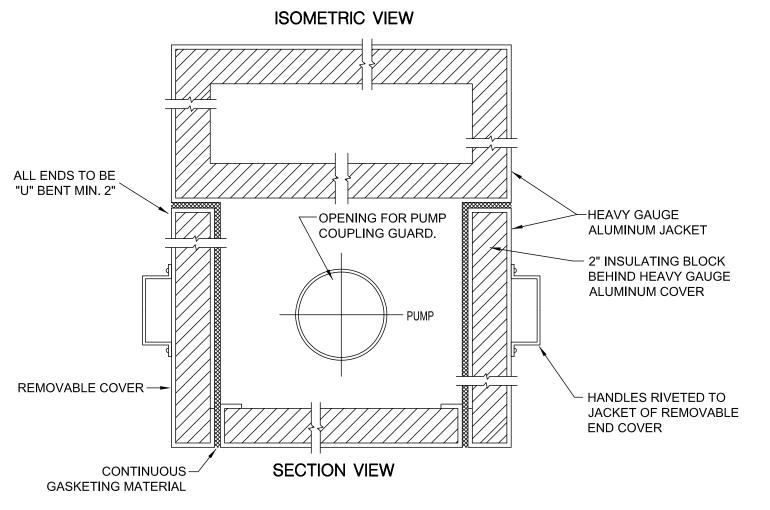
  REMOVE START-UP STRAINER AND INSTALL THE FINAL STRAINER PERMANENTLY.
- REMOVE START-UP STRAINER, AND INSTALL THE FINAL STRAINER PERMANENTLY.

  3. PROVIDE PRESSURE PORT ON BOTH SUPPLY AND RETURN PIPING OF PUMP (TYP)

CHILLER WATER PUMP DETAIL

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END SUCTION INSULATED PUMP COVER
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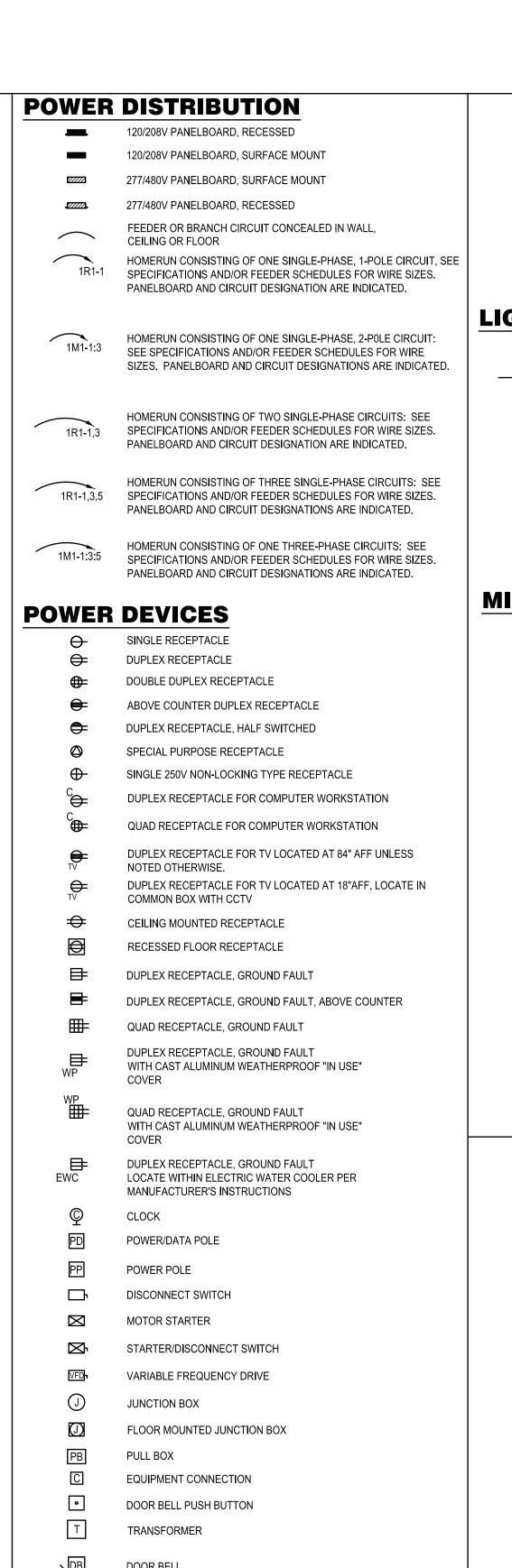
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**GENERATOR** 

LOCKBOX GROUND BUS BAR

GROUND ROD WITH TEST INSPECTION WELL. SEE SPECIFICATIONS.

SURGE PROTECTION DEVICE, SEE SPECIFICATIONS.

#### LIGHTNING PROTECTION

AIR TERMINAL (ALUMINUM CLASS 1 MIN).

#### CODES

1. ALL ELECTRICAL WORK AND MATERIALS SHALL BE IN COMPLIANCE WITH ALL GOVERNING CODES AND STANDARDS. THIS SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING. A. NFPA 70 NATIONAL ELECTRICAL CODE (2014 EDITION) B. FLORIDA BUILDING CODE (SIXTH EDITION 2017) C. NFPA 72 NATIONAL FIRE CODE (2013 EDITION) D. FLORIDA FIRE PREVENTION CODE (SIXTH EDITION)

E. LOCAL REQUIREMENTS OF THE AUTHORITY HAVING

JURISDICTION

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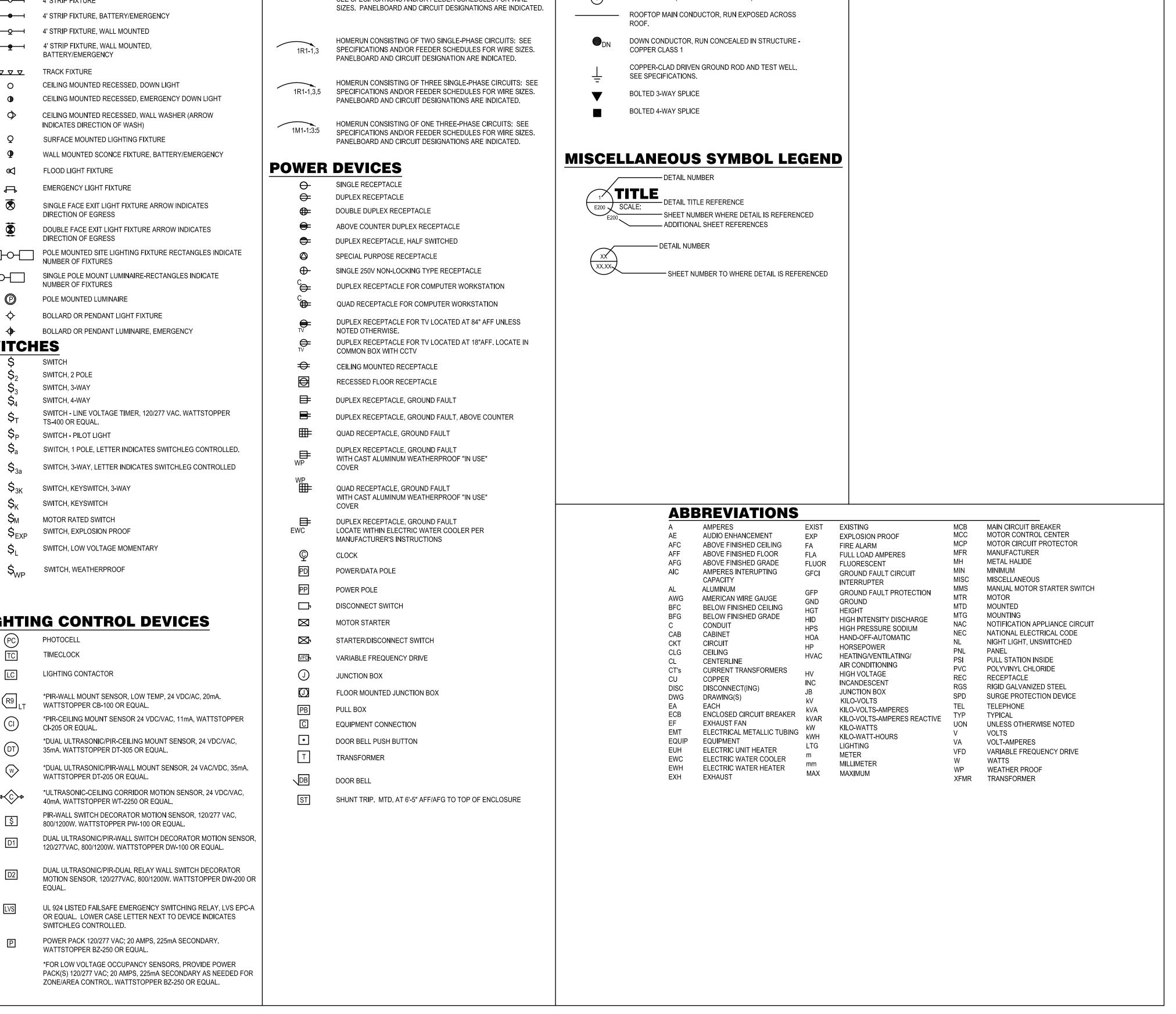
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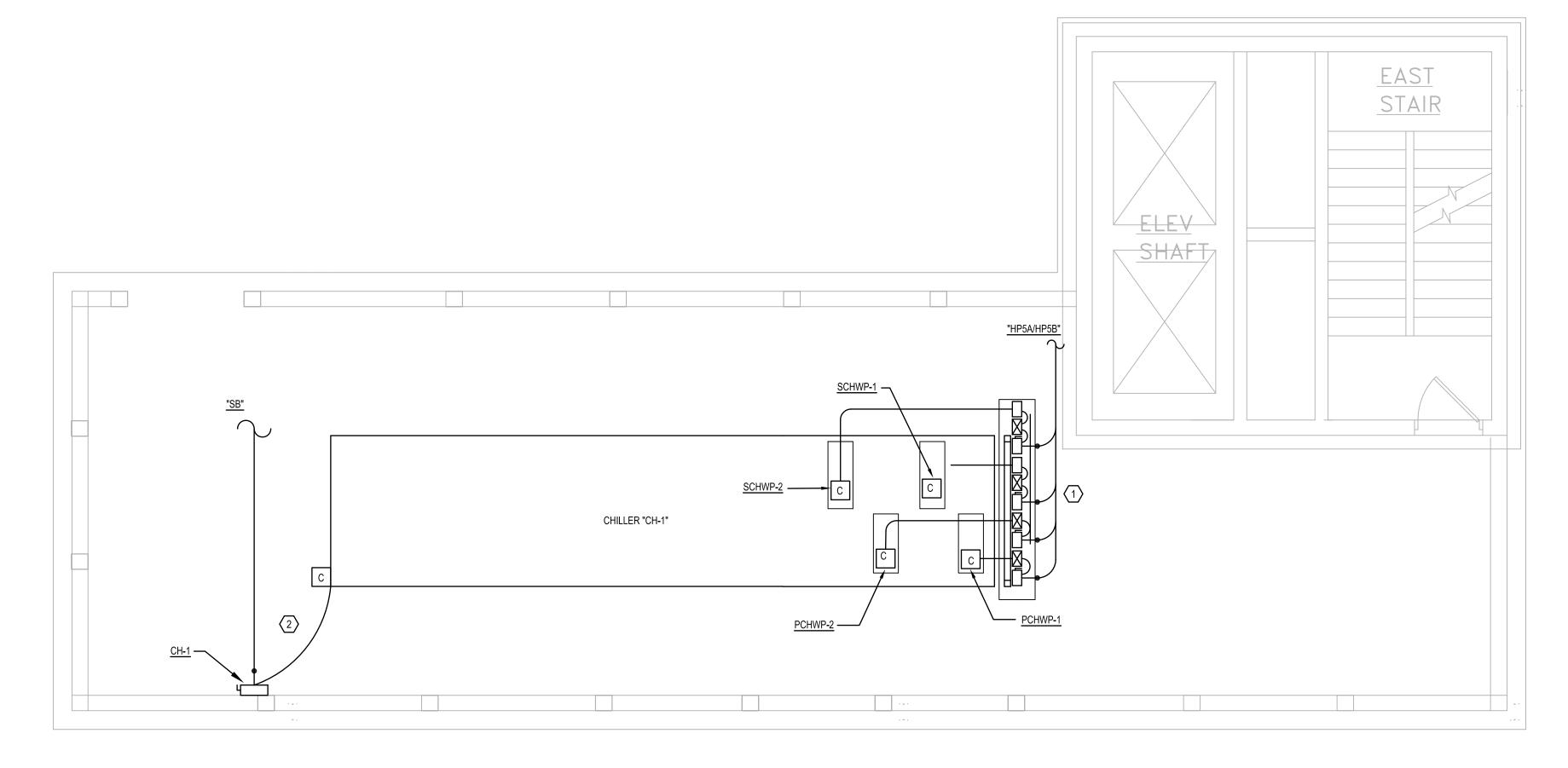
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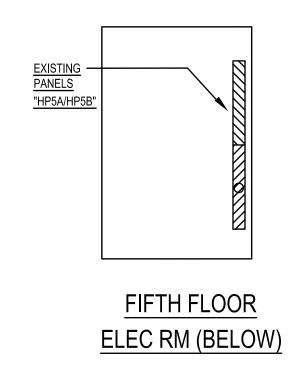
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# ELECTRICAL DEMO ROOF PLAN SCALE: 1/4"=1'-0" 0 2' 4' 8'



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**GENERAL NOTES:** 

b. REFER TO BOOK SPECIFICATIONS.

PLAN KEY NOTES: (#)

a. REFER TO SYMBOL LEGEND ON SHEET E0.01.

1. REMOVE ALL ELECTRICAL BACK TO SOURCE.

2. REMOVE ELECTRICAL BACK TO DISCONNECT SWITCH.

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ORANGE COUNTY
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CENTER CHILLER
REPLACEMENT

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ELECTRICAL DEMO ROOF PLAN

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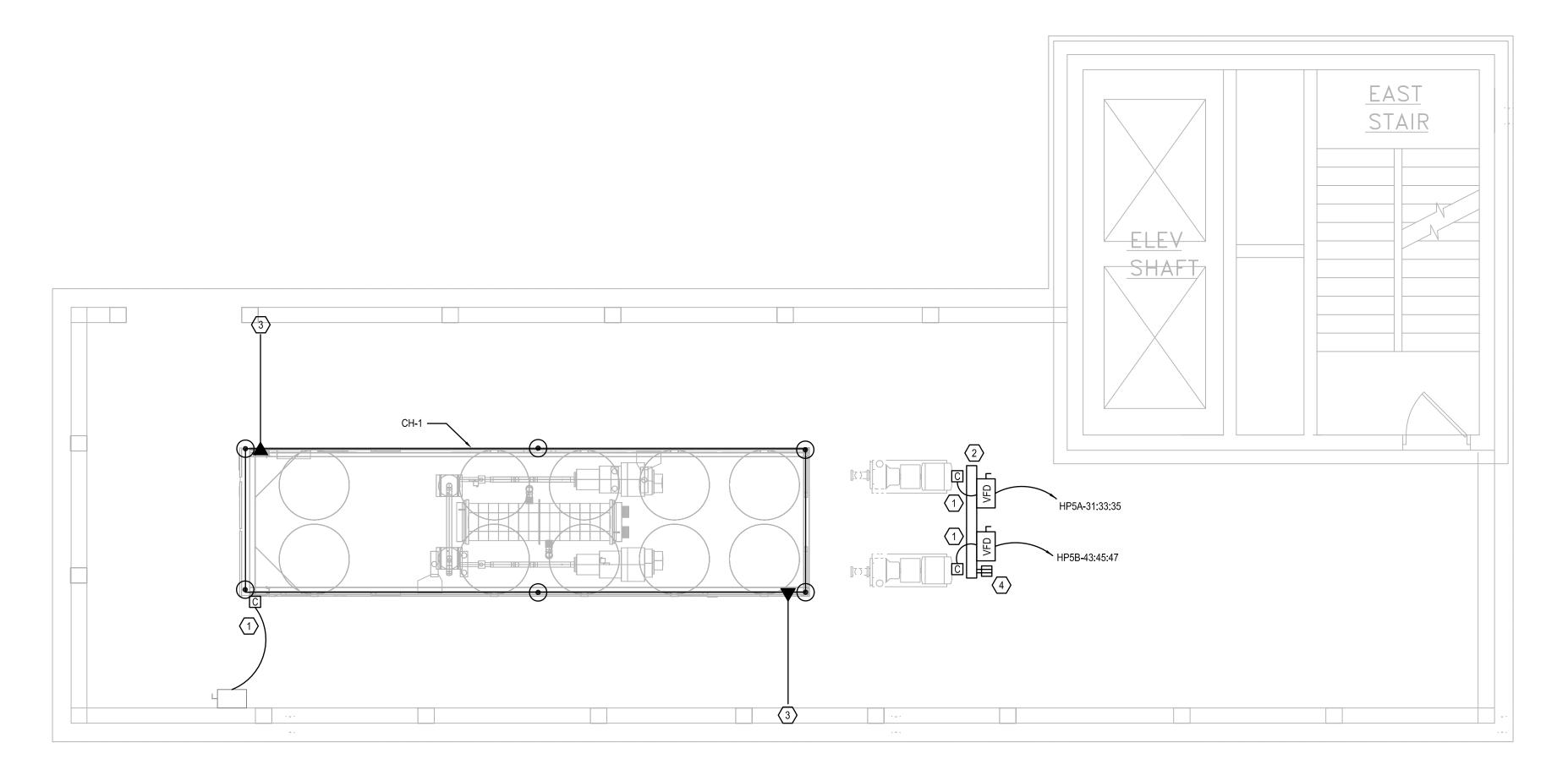
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ELECTRICAL FLOOR PLAN - FIRST LEVEL



#### **GENERAL NOTES:**

- a. REFER TO SYMBOL LEGEND ON SHEET E0.01.
- b. REFER TO BOOK SPECIFICATIONS.
- c. REFER TO EQUIPMENT SCHEDULES FOR DISCONNECT, CONDUIT AND WIRE SIZES.
- d. ALL FEEDERS ARE DESIGNED TO HAVE LESS THAN 2% TOTAL VOLTAGE DROP AND ALL BRANCH CIRCUITS ARE DESIGNED TO HAVE LESS THAN 3% VOLTAGE DROP.
- e. IF CIRCUITS ARE COMBINED AND RUN AS MULTI-WIRE BRANCH CIRCUITS SHARING A COMMON NEUTRAL, THEN EACH UNGROUNDED CONDUCTOR MUST BE DISCONNECTED SIMULTANEOUSLY BY A COMMON TRIP CIRCUIT BREAKER. CONTRACTOR MAY, AT THEIR OPTION, PROVIDE EITHER COMMON TRIP MULTI-POLE CIRCUIT BREAKERS OR UTILIZE MANUFACTURERS LISTED HANDLE TIES IN ORDER TO PROVIDE THE SIMULTANEOUS TRIP. THESE DEVICES ARE NOT SHOWN IN THE PANEL SCHEDULES AND MUST BE PROVIDED BY THIS SCOPE OF WORK. NO MORE THAN 3 CIRCUITS MAY BE COMBINED IN A SINGLE RACEWAY WITHOUT PRIOR APPROVAL BY THE ENGINEER.
- f. CONTRACTOR TO IDENTIFY CONDUITS EXITING PANEL WITH CIRCUIT NUMBER INFORMATION.

### PLAN KEY NOTES: 🛇

- PROVIDE NEW CONNECTION TO MECHANICAL EQUIPMENT AS SHOWN.
- 2. PROVIDE NEW UNISTRUT SUPPORT STRUCTURE FOR VFD'S.
- 3. CONNECT TO EXISTING LIGHTING PROTECTION SYSTEM.
- 4. DUPLEX RECEPTICLE GROUND FAULT IN WEATHERPROOF ENCLOSURE, CKT L5A-22

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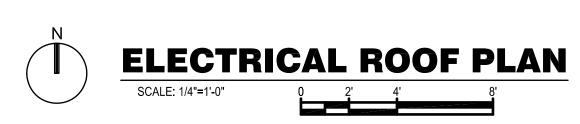
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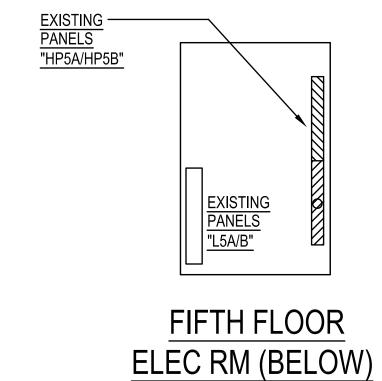
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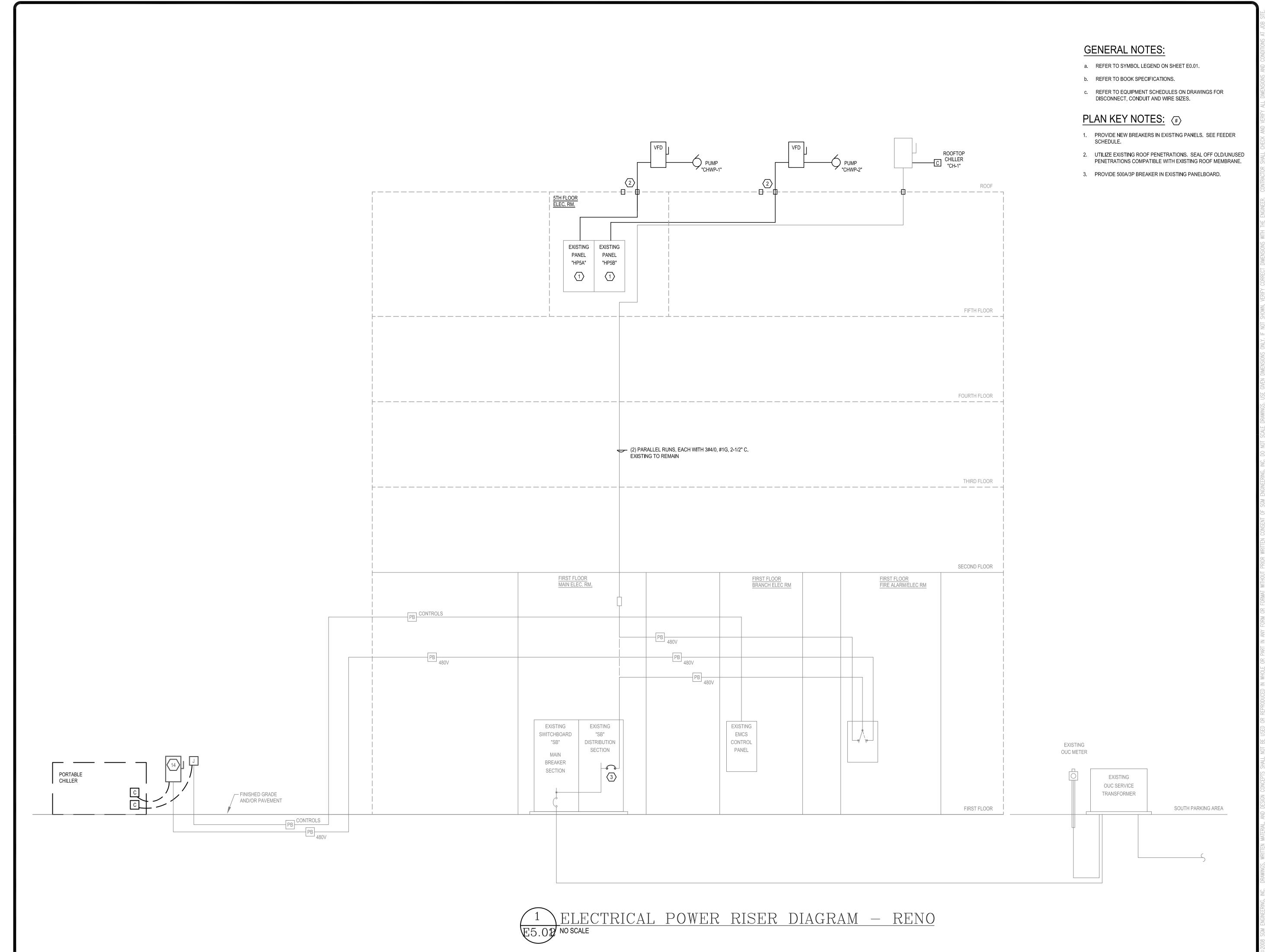
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ELECTRICAL ONE LINE DIAGRAM -DEMO

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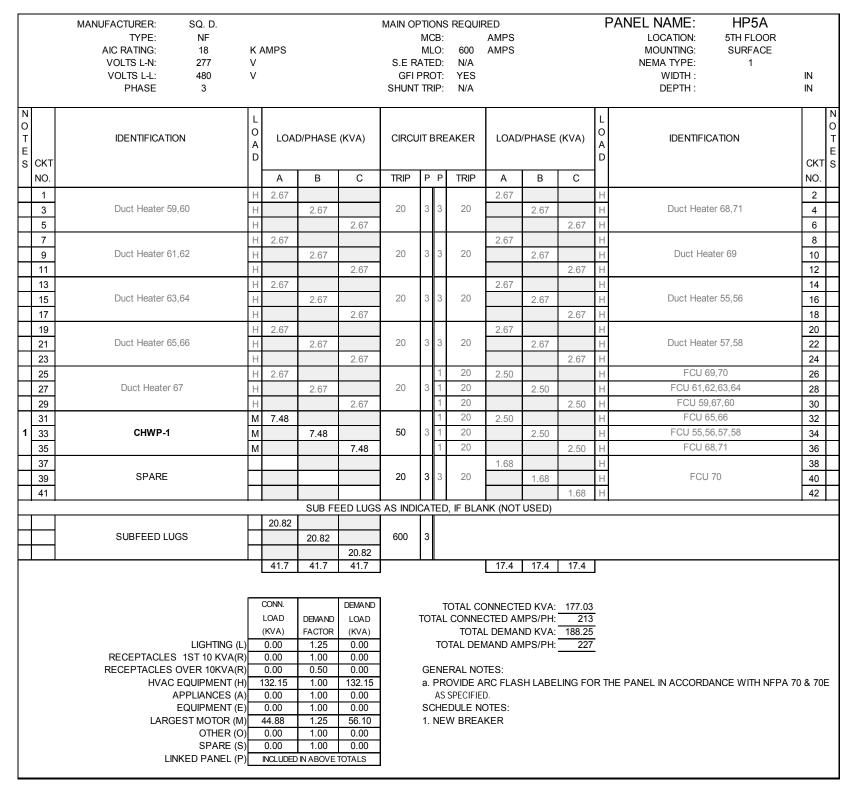
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ELECTRICAL ONE-LINE DIAGRAM -RENO

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		MANUFACTURER: SQ. D. TYPE: NF AIC RATING: 18 VOLTS L-N: 277 VOLTS L-L: 480 PHASE 3	K A V V	MPS			S.E R GFI SHUNT	MCE MLC ATEI PRO	B: O: D: T:	600 N/A YES	RED AMPS AMPS			F	PANEL NAME: HP5B  LOCATION: 5TH FLOOR  MOUNTING: SURFACE  NEMA TYPE: 1  WIDTH:  DEPTH:	IN IN
N O T E S	СКТ	IDENTIFICATION	L O A D	LOAI	D/PHASE	(KVA)	CIRCL	JIT BI	RE/	AKER	LOAD	/PHASE	(KVA)	L O A D	IDENTIFICATION	С
	NO.			Α	В	С	TRIP	Р	Р	TRIP	Α	В	С			N
	43		М	7.48										S		
1	45	CHWP-2	М		7.48		50	3	3	20				S	SPARE	[
	47		М			7.48		Ш						S		4
	49		Н	5.00												Ŀ
-	51	RTU-2 Heater	Н		5.00		30	3	3	20						Ŀ
	53		Н			5.00		₩	_							+
	55	RTU-2	H	2.67	0.07		20	2	3	20	2.67	0.07		H	RTU-1	1
	57 59	K10-2	Н		2.67	2.67	20	3	3	20		2.67	2.6	7 LI	K10-1	Н
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				CONN.		DEMAND	]		TC	OTAL C	ONNECTE		•			
				LOAD	DEMAND	LOAD		TOT			CTED AN			75		
				(KVA)	FACTOR	(KVA)	1				L DEMAN					
		LIGHTING (L RECEPTACLES 1ST 10 KVA(R	_	0.00	1.25 1.00	0.00	4	_	IO	IAL DÉI	MAND AN	/IPS/PH:		82		
		RECEPTACLES OVER 10KVA(R		0.00	0.50	0.00	1	GEI	NEI	RAL NO	TES:					
		HVAC EQUIPMENT (H	)	10.02	1.00	40.02	1	a. P	PRC	VIDE A	RC FLAS	H LABE	LING F	OR T	HE PANEL IN ACCORDANCE WITH NFPA 7	70 &
		APPLIANCES (A		0.00	1.00	0.00	1			PECIFIE						
		EQUIPMENT (E LARGEST MOTOR (M		0.00 22.44	1.00 1.25	0.00 28.05	-	SCI	ΗĿĹ	DULE N	OIES:					
		OTHER (O	_	0.00	1.25	0.00	1	1. N	۱E۷	V BREA	KER					
		SPARE (S		0.00	1.00	0.00	1									
		LINKED PANEL (P	)	NCLUDED	INABOVE	TOTALS										

EQUIPMENT FEEDER SCHEE	DULE:				* WIRE S	SIZES A	REBAS	ED ON N	IFPA 70	TABLE 3	310.15(B	)(16) 60	DEGF	REE COL	UMN F	OR SIZ	ES OF 10	00A OR	LESS, A	LL OTH	ERS BASED	ON 75 DE	GREE CO	OLUMN
									**D	ISTANC	E SHOW	N FOR	/OLTA	GE DRO	OP CAL	.CULAT	TON ONL	Y. ACTU	JAL DIST	TANCE	MAY VARY	DEPENDE	NT ON R	OUTING
EQUIPMENT	VOLTS	PH	NEUT	MO	TOR	ADDIT	IONAL	HE	AT	MISC	TOTAL	PNL.		DISCO	NNECT		WIRE	NEUT	GND	#	CONDUIT	APPROX	VOLT	
DESCRIPTION			Y/N	(LAR	GEST)	MOT	ORS	ST	RIPS	AMPS	AMPS	C.B.	SIZE	FUSE	SIZE	NEMA	PER	WIRE	WIRE	OF	SIZE	DIST.**	DROP	NOTE
				H.P.	FLA	H.P.	FLA	KW	AMPS			SIZE				TYPE	PHASE*			RUNS		FT	VD%	
CH-1	480	3	N							340.0	340.0	500					#4/0		#1	2	2-1/2"	100	0.39%	
CHWP-1	480	3	N	20.00	27.00						27.0	50				4XSS	#6		#10	1	1-1/4"	35	0.17%	VFI
CHWP-2	480	3	N	20.00	27.00						27.0	50				4XSS	#6		#10	1	1-1/4"	35	0.17%	VF

MANUFACTURER: TYPE: AIC RATING: VOLTS L-N: VOLTS L-L: PHASE	SQ. D. 65 277 480 3	K AMPS V V		MAIN OPT  MCB: MLO: .E RATED: GFI PROT: HUNT TRIP:	1200	Al	D MPS MPS		LOCATION: SECTIONS EMA TYPE: WIDTH: DEPTH:	SB  0 3R IN IN
CKT NO.		IDENTIFICATION		CIRCUI	T BREAM	KER	LOAD TYPE	LOAD (KVA)		NOTES
				FRAME	TRIP	Р				
1		PANEL H-1		250	225	3	Е	83		
2		SPACE				3				
3		HP-5		250	225	3	Е	83		
4		SPACE				3				
5		TVSS		30	30	3				
6		SPACE				3				
7		HP-1,3		250	225	3	Е	83		
8		SPACE				3				
9		PANEL H-5		200	150	3	Е	50		
10		SPACE				3				
11		PANEL H-2		200	125	3	Е	42		
12		SPACE		000	10=	3				
13		PANEL H-3		200	125	3	Е	42		
14		SPACE		000	450	3				
15		PANEL H-4 SPACE		200	150	3	Е	50		
16		SPACE				3				
17		SPACE				3				
18		HP-3,4		400	300	3	_	404		
19		SPACE		400	000	3	Е	104		
20		CH-1		600	500	3	М	291		NEW BREAKER
22		ATS		400	250	3	E	291		NEW BILANEIX
23										
24										
25										
26										
27										
28										
29										
30										
						T	OTAL	827		
RECEPTA	LIGHTING ( ACLES 1ST 10 KVA() ICLES OVER 10KVA() HVAC EQUIPMENT () APPLIANCES (I EQUIPMENT () LARGEST MOTOR (I) SPARE () LINKED PANEL ()	R) 0.00 R) 0.00 H) 0.00 A) 0.00 E) 536.00 M) 290.85 O) 0.00 S) 0.00	DEMAND LOAD (KVA)  1.25 0.00  1.00 0.00  1.00 0.00  1.00 0.00  1.00 536.00  1.25 363.56  0.00 0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00		TOTAL (	CONNE TOTA	ONNECTE CTED AM IL DEMAN MAND AM	PS/PH: 995 D KVA: 900		

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