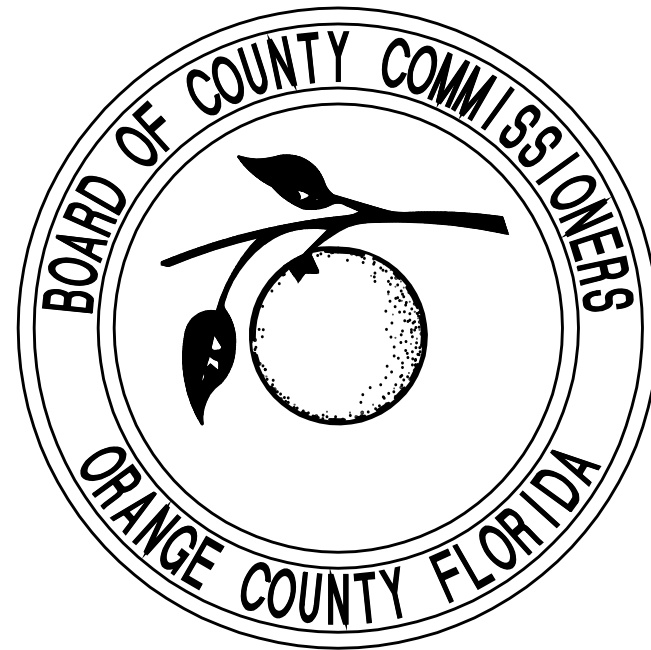


# ORANGE COUNTY ISS - RCC EMERGENCY GENERATOR PROJECT, A BUS REPLACEMENT

100% FOR CONSTRUCTION  
MAY 16, 2016

COMMISSIONER S. SCOTT BOYD DISTRICT 1  
COMMISSIONER FRED BRUMMER DISTRICT 2  
COMMISSIONER PETE CLARKE DISTRICT 3

MAYOR TERESA JACOBS  
COMMISSIONER JENNIFER THOMPSON DISTRICT 4  
COMMISSIONER TED B. EDWARDS DISTRICT 5  
COMMISSIONER TIFFANY MOORE RUSSELL DISTRICT 6



**mri** ARCHITECTURAL GROUP, INC.  
5032 GODDARD AVENUE, SUITE A, ORLANDO, FL 32804  
TEL: (407)245-3660  
CONTACT: PETER M. IKEGAMI, AIA

**BOWEN ENGINEERING CORPORATION**  
1528 VASSAR STREET, ORLANDO, FL. 32804  
PH:(407) 423-7585 FAX: 423-4872  
FRED BOWEN, FLA. PE#38153  
STRUCTURAL ONLY.

**S.G.M. ENGINEERING, INC.**  
FACILITIES CONSULTING ENGINEERS  
EB-006208  
851 Outer Road  
Orlando, FL. 32814  
Tel:(407)767-5188 FAX:(407)767-5772  
www.sgmengineering.com

LIST OF DRAWINGS				
DWG. NO.	DRAWING TITLE	ORIG. ISSUE	REV. NO.	LATEST ISSUE
<u>ARCHITECTURE</u>				
C.0	COVER SHEET			05-16-15
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A2.1	NEW SITE LOCATION PLAN			05-16-15
A6.1	DOOR SCHEDULE, ELEVATIONS, NOTES AND DETAILS			05-16-15
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S1	STRUCTURAL CONCRETE PAD FOR GENERATOR			05-16-15
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E2.2	ELECTRICAL ENLARGED PLAN			05-16-15
E3.1	ENLARGED ELECTRICAL PLAN			05-16-15
ED6.1	ELECTRICAL DEMO PLAN			05-16-15
E6.1	ELECTRICAL POWER RISER			05-16-15
E6.2	ELECTRICAL POWER RISER			05-16-15
E7.1	ELECTRICAL SCHEDULES			05-16-15
E7.2	ELECTRICAL SCHEDULES			05-16-15
E7.3	ELECTRICAL SCHEDULES			05-16-15
E7.4	ELECTRICAL SCHEDULES			05-16-15
E7.5	ELECTRICAL SCHEDULES			05-16-15
E8.1	ELECTRICAL DETAILS			05-16-15
E8.2	ELECTRICAL DETAILS			05-16-15
A SEPARATE PROJECT MANUAL (SPECIFICATIONS) IS				
<input type="checkbox"/> INCLUDED				
<input checked="" type="checkbox"/> NOT INCLUDED				
AS A PART OF THIS PROJECT				



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ORLANDO, FLORIDA 32804  
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FL LIC. # AA0002264  
PROJECT TITLE AND OWNERS NAME

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GENERATOR PROJECT  
A BUS REPLACEMENT

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

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SEAL AND SIGNATURE

PETER M. IKEGAMI  
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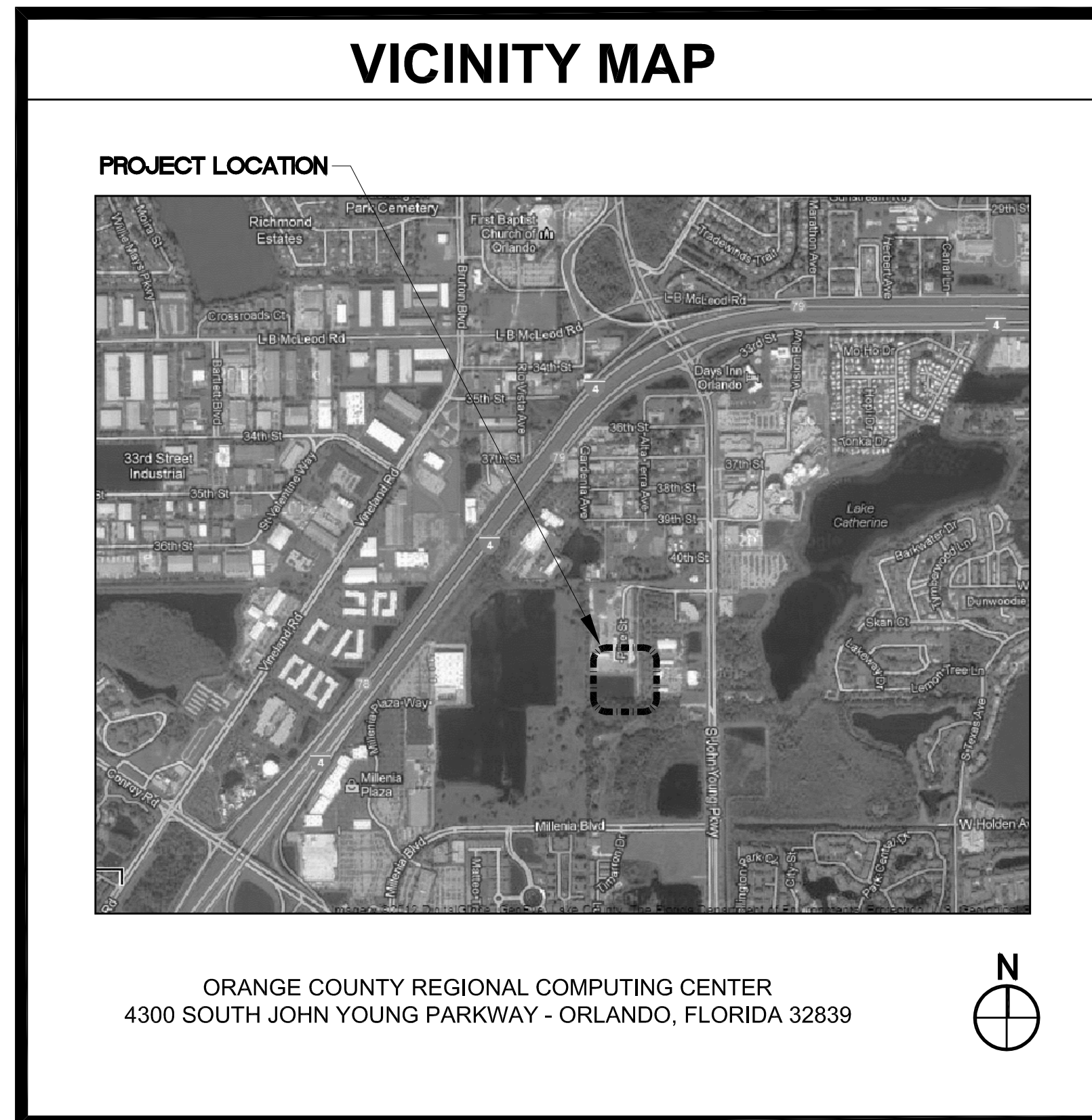
COVER SHEET

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C.0

SHEET OF

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CODE DATA	
<p><b>BUILDING DATA:</b> ADDRESS: ORANGE COUNTY REGIONAL COMPUTING CENTER 4300 SOUTH JOHN YOUNG PARKWAY, ORLANDO, FL 32839</p> <p>LEGAL DESCRIPTION OF PROPERTY: FIRST ADDITION TO WOODHAVEN L/130 ALL OF NE1/4 OF SW1/4 OF SEC 9-23-29 INCLUDING BLKS C,D,E,F &amp; S 15 FT OF LOT 12 BLK B &amp; LOT 13 BLK B &amp; THOSE VAC RDS THERE IN OF FIRST ADD WOODHAVEN L/130 (LESS E 45 FT OF LOTS 10 &amp; 11 BLK E &amp; LESS LOTS 10 &amp; 11 BLK F &amp; LESS RD R/W ON E &amp; S) &amp; (LESS COMM W1/4 COR OF SAID SEC RUN E 1820.02 FT TO POB TH S 77 DEG E 357.92 FT E 409.03 FT NELY 60.36 FT N 15.83 FT W 200 FT N 80.07 FT W 215.63 FT S 54.42 FT W 386.81 FT TO POB) SEE 3922/3416 4121/4366 &amp; 4367 4161/1134</p> <p><b>CODE REFERENCE:</b> FLORIDA BUILDING CODE 2014 FLORIDA EXISTING BUILDING CODE 2014 FLORIDA MECHANICAL CODE 2014 FLORIDA PLUMBING CODE 2014 FLORIDA FUEL GAS CODE 2014 FLORIDA ENERGY CODE 2014 NATIONAL ELECTRICAL CODE 2014 FLORIDA FIRE PREVENTION CODE 2014, 5TH EDITION NFPA 1 AND NFPA 101 2014 FLORIDA EDITION NFPA 110 2014 EDITION</p> <p><b>GENERAL DESCRIPTION:</b> PROVIDE LABOR AND MATERIAL FOR THE REMOVAL OF EXISTING GENERATOR AND PAD, PROVIDE NEW ELECTRICAL SERVICE FROM OUC AND THE ADDITION OF A 1500KW DIESEL GENERATOR AND AUTOMATIC TRANSFER SWITCH, A SECOND PRIMARY POWER FEED, A 600KVA UPS, MULTIPLE TRANSFER SWITCHES AND SWITCHGEAR FOR EXISTING LOADS FOR REDUNDANT FEEDS FROM BOTH BUSES, NEW PDU'S AND EXPANSION MODULES, AND SYSTEM MONITORING. RELATED WORK INCLUDES, BUT NOT LIMITED TO, ELECTRICAL CIRCUITRY AND PANELS, CONCRETE GENERATOR PAD AND MECHANICAL MODIFICATIONS TO FACILITATE REDUNDANT POWER SUPPLY TO DATA CENTER.</p>	<p><b>LEVEL OF ALTERATION:</b> FLORIDA EXISTING BUILDING CODE 2010 SECTION 404 LEVEL 2</p> <p><b>TYPE OF CONSTRUCTION:</b> FBC 2010: TYPE IIB (EXISTING AND UNCHANGED)</p> <p><b>EXISTING BUILDING DATA:</b> HEIGHT: 26'-8" BUILDING AREA: 15,500SF NUMBER OF STORIES: 1 STORY EXISTING AUTOMATIC FIRE SPRINKLER SYSTEM AREA OF INTERIOR ALTERATION: N/A</p> <p><b>OCCUPANCY CLASSIFICATION:</b> FBC 2010: BUSINESS (EXISTING AND UNCHANGED)</p> <p><b>OCCUPANCY LOAD:</b> FBC 2010: 1 OCCUPANT /100SF = 158 OCCUPANTS (EXISTING AND UNCHANGED)</p> <p><b>EGRESS:</b> TRAVEL DISTANCE: ALLOWED: 300FT PROVIDED: 172'-4" (EXISTING AND UNCHANGED)</p> <p><b>COMMON PATH:</b> ALLOWED: 100SF (WITH SPRINKLER SYSTEM) PROVIDED: 56'-6" (EXISTING AND UNCHANGED)</p>

# ABBREVIATIONS

M	AT	ID	INSIDE DIAMETER
ACT	ACOUSTICAL TILE	IN	INCH
AD	AREA DRAIN	INSUL	INSULATE(D)(ION)
AE	ARCHITECT-ENGINEER	INT	INTERIOR
AFF	ABOVE FINISHED FLOOR	JT	JOINT
AHU	AIR HANDLING UNIT	L	LENGTH
ALUM	ALUMINUM	LAV	LAVATORY
APPROX	APPROXIMATE	LF	LINEAL FEET
ARCH	ARCHITECT(URAL)		
BD	BOARD	MAX	MAXIMUM
BIT	BITUMINOUS	MECH	MECHANIC(AL)
BLDG	BUILDING	MTL	METAL
BLK	BLOCK	MFR	MANUFACTURE(R)
BLKG	BLOCKING	MIN	MINIMUM
BM	BEAM	MISC	MISCELLANEOUS
BOT	BOTTOM	MO	MASONRY OPENING
BRG	BEARING		
BRK	BRICK		
BUR	BUILT UP ROOFING	N	NORTH
		NA	NOT APPLICABLE
CEM PL	CEMENT PLASTER	NIC	NOT IN CONTRACT
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	NO	NUMBER
		NOM	NOMINAL
J	CHEMICAL	NTS	NOT TO SCALE
CJ	CONTROL JOINT/ CONSTRUCTION JOINT		
CL	CENTER LINE	OC	ON CENTER(S)
CLG	CEILING	OD	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
COL	COLUMN	OFPI	OWNER FURNISHED CONTRACTOR INSTALLED
CONC	CONCRETE	OFORI	OWNER FURNISHED CONTRACTOR INSTALLED
CONF	CONFERENCE		
CONT	CONTINUE(OUS)		
CPT	CARPET(ED)	OH	OVERHEAD
CT	CERAMIC TILE	OPP	OPPOSITE HAND OPPOSITE
DEMO	DEMOLISH(TION)	PL	PLATE
DET	DETAIL	PLAM	PLASTIC LAMINATE
DF	DRINKING FOUNTAIN	PR	PAIR
DIA	DIAMETER	PT	PRESSURE TREATED
Q	DIMENSION		
DIV	DIVISION		
DN	DOWN	QT	QUARRY TILE
DR	DOOR		
DWG	DRAWING(S)		
E	EAST	R	RISER/RADIUS
EA	EACH	RD	ROOF DRAIN
EJ	EXPANSION JOINT	REC	RECESSED
EL	ELEVATION	REINF	REINFORCE(D)(ING)
ELEC	ELECTRIC(AL)	REQ	REQUIRED
ELEV	ELEVATOR	RES	RESILIENT
EQ	EQUAL	REV	REVISE(SION)(D)
EQUIP	EQUIPMENT	RM	ROOM
EWC	ELECTRIC WATER COOLER	RO	ROUGH OPENING
EXIST	EXISTING		
EXP	EXPOSED	S	SOUTH
EXT	EXTERIOR	SC	SOLID CORE
		SECT	SECTION
		SIM	SIMILAR
		SPEC	SPECIFICATION(S)
FDN	FOUNDATION	SQ	SQUARE
FDB	FIRE DEPARTMENT BOX	SS	STAINLESS STEEL
FE	FIRE EXTINGUISHER	STRUCT	STRUCTURAL
FEC	FIRE EXTINGUISHER CABINET	SYS	SYSTEM
FF	FINISHED FLOOR		
D	FHC	T	TREAD
	FIN	TG	TEMPERED GLASS
	FIXT	THK	THICK(NESS)
	FL	TO	TOP OF
	FO	TY	TYPICAL
	FT		
	FTG		
C	GA	UC	UNDERCUT
	GALV	UL	UNDERWRITERS LABORATORY
	GL	UON	UNLESS OTHERWISE NOTED
	GWB		
	GYP	VCT	VINYL COMPOSITION TILE
		VERT	VERTICAL
		VTR	VENT THRU ROOF
		WVC	VINYL WALL COVERING
HA	HANDICAP ACCESSIBLE		
HDW	HARDWARE	W	WEST/WIDTH
HM	HOLLOW METAL	W/	WITH
HR	HOUR	W/O	WITHOUT
HT	HEIGHT/HIGH	WPT	WORK POINT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING		

# GENERAL SYMBOLS AND LEGENDS

	DETAIL TITLE		CENTERLINE
	DETAIL REFERENCE		WORK ABOVE
	BUILDING SECTION REFERENCE		HIDDEN WORK
	SECTION REFERENCE		BREAK LINE
	BUILDING ELEVATION REFERENCE		EXISTING PARTITION TO REMAIN
	TYPICAL: DETAIL/SECTION NUMBER SHEET WHERE DRAWN		NEW PARTITION
	REVISION		EXISTING PARTITION TO BE REMOVED
	PARTITION TYPES		EXISTING DOOR TO REMAIN
	LEADER OR NOTATION		DOOR
	INTERIOR ELEVATIONS a - SHEET NORTH b - SHEET EAST c - SHEET SOUTH d - SHEET WEST		EXISTING DOOR, FRAME AND HARDWARE TO BE REMOVED
	DEMOLITION KEY NOTES		DOOR W/180° SWNG
	NEW CONSTRUCTION KEY NOTES		PAIR OF DOORS
	TOILET ACCESSORY TYPES		DOUBLE ACTING
	DOOR TAG		BI-FOLD DOORS
	NORTH ORIENTATION IN PLAN		SLIDING DOORS
	ROOM NAME ABOVE ROOM NUMBER MIDDLE		ACCESS PANEL
	WINDOW		INCANDESCENT LIGHT FIXTURE
	WINDOW		FLUORESCENT LIGHT FIXTURE
	LOUVER		SUPPLY AIR DIFFUSER
	WINDOW		RETURN AIR REGISTER
	WINDOW		EXHAUST AIR REGISTER
	WINDOW		SPRINKLER HEAD
	WINDOW		EXIT LIGHT

# GENERAL NOTES

- THE FOLLOWING GENERAL NOTES SHALL PERTAIN TO THE ENTIRE SET OF PRODUCED CONTRACT DOCUMENTS. REFER TO THE SHEET INDEX.
- GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL PERFORM THEIR WORK IN ACCORDANCE WITH ALL APPLICABLE CODES GOVERNING EACH TRADE.
  - EACH CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF DEMOLITION OR THE INITIATION OF WORK AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR CONDITIONS INTERFERING WITH THE ABILITY OF THE CONTRACTOR TO COMPLETE WORK AS OUTLINED ON THE CONSTRUCTION DRAWINGS.
  - ALL SUBCONTRACTORS ARE REQUIRED TO COORDINATE THEIR WORK WITH OTHER TRADES. LACK OF THIS COORDINATION RESULTING IN ADDED COST TO THE CONTRACT WILL BE BORNE BY THE SUBCONTRACTOR.
  - CUTTING OF EXISTING CONSTRUCTION FOR THE INSTALLATION OF ALL NEW WORK BY ALL TRADES, AND THE SUBSEQUENT PATCHING THEREOF, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, WHETHER THE WORK IS DONE BY HIS OWN FORCES OR NOT. GRINDING OF MATERIALS FOR REMOVAL SHALL NOT BE PERMITTED. CUTTING SHALL BE TO STRAIGHT LINE. UNWORKMANLIKE CUTTING, DAMAGE RESULTING THEREFROM AND UNACCEPTABLE PATCHING SHALL BE REPAIRED AND/OR REPLACED TO AN ACCEPTABLE CONDITION APPROVED BY THE ARCHITECT.
  - NO EXISTING (LOAD BEARING) STRUCTURAL MEMBER SHALL BE CUT, REMOVED, AND/OR MODIFIED (UNLESS SPECIFIED IN THE CONSTRUCTION DOCUMENTS) WITHOUT THE WRITTEN APPROVAL OF THE OWNER AND ARCHITECT/STRUCTURAL ENGINEER.
  - DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE CONTRACTING OFFICER AND/OR ARCHITECT BEFORE CONTINUING WITH CONSTRUCTION.
  - ALL DIMENSIONS SHOWN TO NEW PARTITIONS ARE TO FACE OF NEW STUD. DIMENSIONS SHOWN TO EXISTING PARTITIONS ARE TO FACE OF EXISTING FINISH.
  - EACH CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD PRIOR TO FABRICATION OF WORK.
  - THE CONTRACTOR SHALL COORDINATE THE SEQUENCE OF WORK WITH THE OWNER OR REPRESENTATIVE.
  - PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL SUBMIT (2) COPIES OF MATERIAL SAFETY DATA SHEETS (MSDS) TO CBP ONSITE REPRESENTATIVE FOR ALL PRODUCTS USED TO PERFORM THE WORK.
  - THE CONTRACTOR WILL VERIFY THAT EXIT EGRESS IS MAINTAINED FOR ALL OCCUPIED AREAS OF THE BUILDING THROUGHOUT ALL PHASES OF CONSTRUCTION.
  - GENERAL CONTRACTOR TO HAVE PORTABLE FIRE EXTINGUISHERS PLACED ON FLOOR DURING CONSTRUCTION.
  - SCHEDULE & PERFORM ALL CONSTRUCTION WORK SUCH THAT SECURITY OF THE BUILDING IS MAINTAINED 100% OF THE TIME THROUGHOUT THE CONSTRUCTION PERIOD. COORDINATE WITH AND FOLLOW OWNER'S DIRECTIONS.
  - TEMPORARY BARRICADES AND OTHER SAFETY MEASURES SHALL BE ERRECTED AROUND HAZARDOUS AREAS IN ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
  - COORDINATE EXACT LOCATION OF CONSTRUCTION DUST PARTITION WITH OWNER OR REPRESENTATIVE. NO DEMOLITION WORK TO COMMENCE UNTIL DUST PARTITION, AND CONTROL MEASURES ARE COMPLETELY INSTALLED AND APPROVED BY OWNER OR REPRESENTATIVE.
  - CONTRACTOR TO VERIFY OPERATION OF EACH ROOM IN ORDER TO MAINTAIN FUNCTIONS AND OPERATIONS DURING CONSTRUCTION.
  - IN OCCUPIED ROOMS, CONTRACTOR IS RESPONSIBLE OF PROTECTING FURNITURE, FIXTURES AND EQUIPMENT.
  - CONTRACTOR SHALL MAINTAIN A CLEAN AND ORGANIZED JOB SITE ACCEPTABLE TO THE OWNER. BROOM SWEEP AND TRASH REMOVED EACH DAY.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL, MECHANICAL, AND PLUMBING DISCONNECTIONS AND RECONNECTIONS AND FOR THE LENGTHENING AND/OR SHORTENING OF ALL CONDUIT, CONDUCTOR, ETC. WHERE NECESSARY TO INSTALL NEW SYSTEMS.
  - ANY EXISTING DISTURBED AND/OR DAMAGED BUILDING MATERIAL AND FINISHES WITHIN THE AREA OF CONSTRUCTION SHALL BE REPAIRED, AS NECESSARY, TO MATCH EXISTING ADJACENT MATERIALS AS CLOSELY AS POSSIBLE IN COLOR, PATTERNS, AND/OR TEXTURES.
  - THE CONTRACTOR SHALL REPORT DETERIORATED OR UNSUITABLE SUBSTRATES TO THE OWNER PRIOR TO PERFORMING INSTALLATION WORK.
  - SEAL ALL PENETRATIONS IN WALLS, FLOORS, CEILINGS - FOR AIR, WATER AND/OR FIRE PROTECTION AS SPECIFIED IN CONSTRUCTION DOCUMENTS.
  - CAULK JOINTS OF DISSIMILAR EXPOSED TO VIEW MATERIALS AS REQUIRED BY THE ARCHITECT.
  - SEALANT SHALL BE COMPATIBLE WHERE IN CONTACT W/ ONE ANOTHER.
  - ISOLATE ALL DISSIMILAR METALS.

# DEMOLITION GENERAL NOTES

- THE FOLLOWING DEMOLITION GENERAL NOTES SHALL PERTAIN TO THE ENTIRE SET OF PRODUCED CONTRACT DOCUMENTS. REFER TO THE SHEET INDEX.
- PATCH AND REPAIR EXISTING SURFACES AFFECTED BY REMOVAL OF ADJACENT CONSTRUCTION OR FINISHES. PREPARE TO RECEIVE NEW WORK.
  - CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AFFECTING EXISTING CONSTRUCTION ELEMENTS. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE CONTRACTING OFFICER AND/OR ARCHITECT PRIOR TO CONTINUING CONSTRUCTION OF AREA IN QUESTION.
  - PROJECT SPECIFICATIONS CONTAIN ADDITIONAL DEMOLITION AND REPAIR PROCEDURES AND REQUIREMENTS.
  - CONTRACTOR TO VERIFY CONSTRUCTION OF EXISTING WALLS TO BE INFILLED AND ADJUST SIZES OF SPECIFIED MATERIALS TO ALIGN FINISH MATERIALS.
  - SEE FINISH LEGEND FOR ADDITIONAL INFORMATION ON FINISHES.
  - PROVIDE LEVELING COMPOUND AT FLOOR AREAS DAMAGED OR CHIPPED DURING DEMOLITION WHERE REQUIRED TO PROVIDE LEVEL, CONTINUOUS FLOOR SURFACE.
  - NO EXISTING (LOAD BEARING) STRUCTURAL MEMBER SHALL BE CUT, REMOVED, AND/OR MODIFIED (UNLESS SPECIFIED IN THE CONSTRUCTION DOCUMENTS) WITHOUT THE WRITTEN APPROVAL OF THE OWNER AND ARCHITECT/STRUCTURAL ENGINEER. ANY EXISTING DISTURBED AND/OR DAMAGED SURFACES (I.E. GYPSUM BOARD, PLASTER, STUCCO, CONCRETE, WOOD, PAINT, ETC.) WITHIN THE AREA OF CONSTRUCTION SHALL BE REPAIRED, AS NECESSARY, TO MATCH EXISTING FINISHES.
  - AFTER COMPLETION OF CONSTRUCTION, ALL WORK AREAS SHALL BE LEFT CLEAN AND FREE OF ANY EXTRANEIOUS JOINT COMPOUND, PLASTER, STUCCO, PAINT SMEARS OR SPLATTERS AND STAINS.



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ORLANDO, FLORIDA 32804  
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FL LIC. # AA002264  
PROJECT TITLE AND OWNERS NAME

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ORLANDO, FLORIDA 32805

# 100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

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# GENERAL INFORMATION SYMBOLS, LEGENDS AND ABBREVIATIONS

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SHEET EXTERNAL REFERENCES:

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SITE LOCATION PLAN

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A2.1

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NEW CONSTRUCTION LEGEND

- EXISTING IRRIGATION INFORMATION IN WORK AREA FROM 07/10/93 LANDSCAPE AND IRRIGATION PLAN. FIELD VERIFY ALL LOCATIONS OF SPRINKLER HEADS AND IRRIGATION LINES.

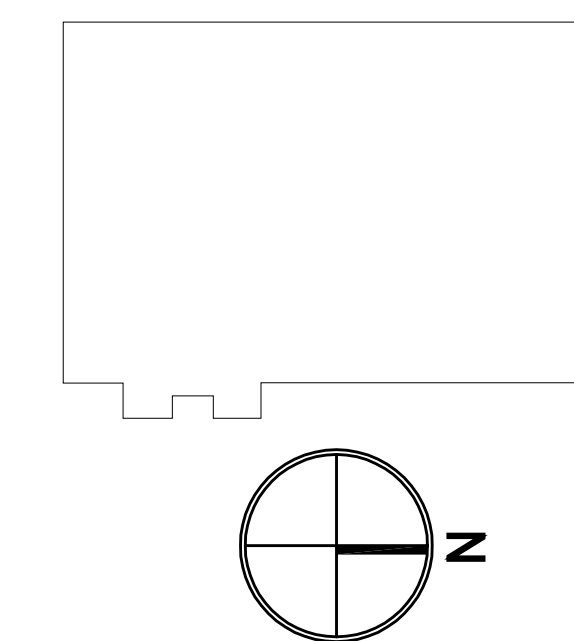
GENERAL CONSTRUCTION NOTES

- ALL DIMENSIONS TO BE FIELD VERIFIED AND ALL CONFLICTS SHALL BE REPORTED TO ARCHITECT AND OWNERS REP. PRIOR TO START OF ANY WORK.
- REGRADE AND REPLACE DAMAGED SOD IN ALL WORK AND STAGING AREAS.

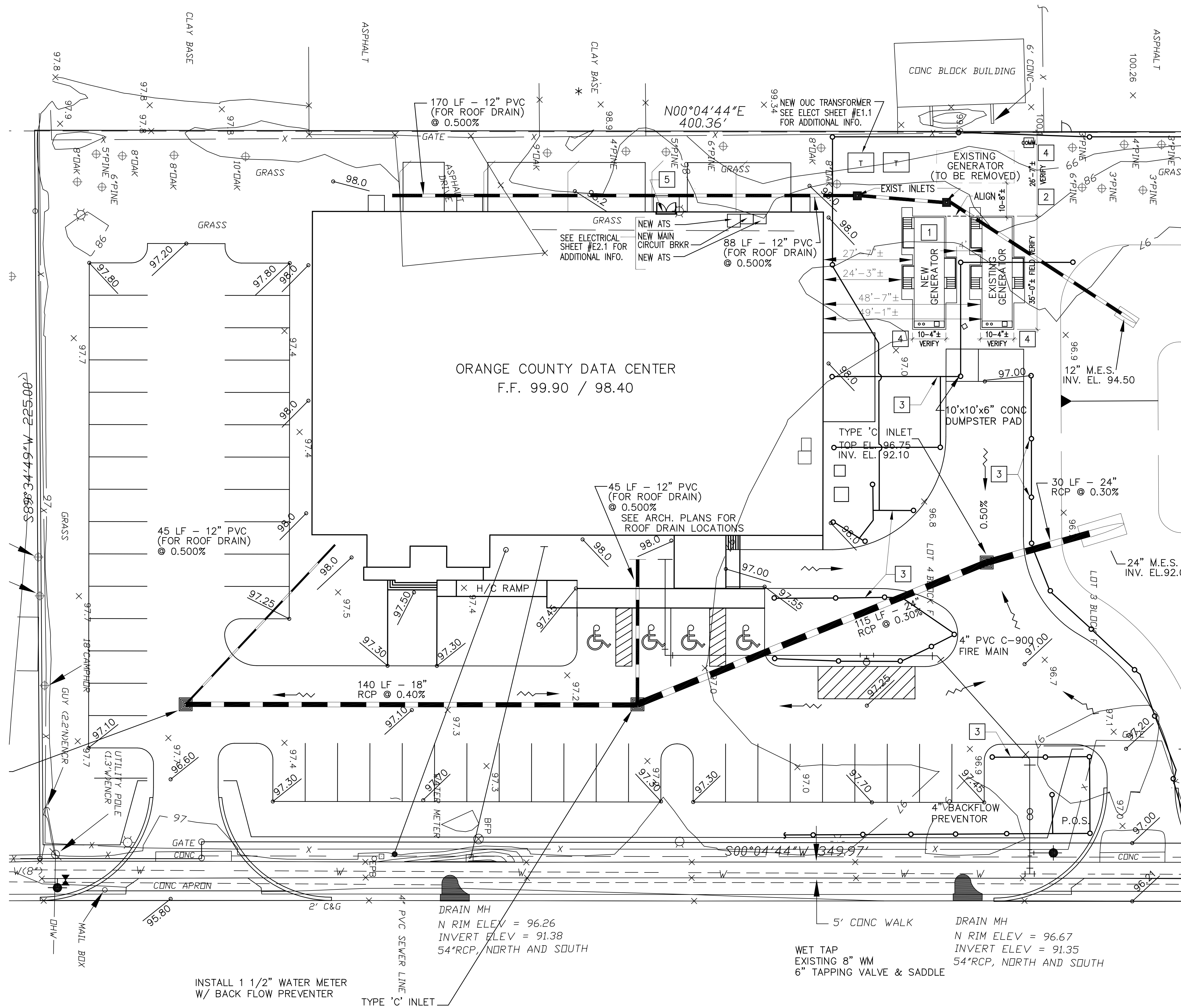
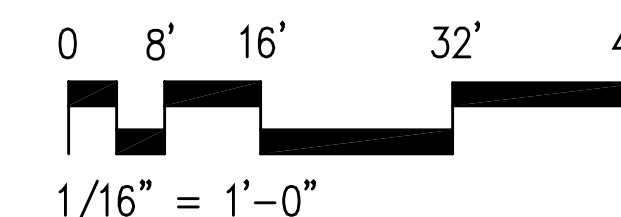
NEW CONSTRUCTION PLAN NOTES

- NEW CONCRETE PAD FOR GENERATOR. VERIFY SIZE OF CONCRETE PAD AND LOCATIONS OF PADS FOR STEPS WITH GENERATOR MANUFACTURER. FIELD VERIFY ALL EXISTING CONDITIONS AND UTILITIES PRIOR TO START OF ANY WORK AND REPORT TO OWNERS REPRESENTATIVE ALL CONFLICTS AND CONCERNS. SEE STRUCTURAL AND ELECTRICAL SHEETS FOR ADDITIONAL DETAILS.
- 24" OAK TREE WAS REMOVED AT GRADE AND FROM SITE. STUMP WAS TREATED TO PREVENT RE-GROWTH. VERIFY IF STUMP CAN REMAIN OR IF IT WILL NOW HAVE TO BE REMOVED OR GROUND DOWN TO BELOW GRADE COORDINATE WITH OWNERS REP..
- VERIFY ALL LOCATIONS OF SPRINKLER HEADS AND IRRIGATION LINES IN WORK AND STAGING AREA. REPAIR/REPLACE/REROUTE AS NEEDED FOR NEW WORK OR ITEMS DAMAGED BY CONSTRUCTION OR STAGING. ALL REPAIRS AND REPLACEMENT TO MATCH EXISTING.
- VERIFY ALL DIMENSIONS FROM PROPERTY LINE TO NEW GENERATOR, FOR NEW CONC. PAD BELOW GENERATOR AND CONC. PADS FOR STEPS TO ACCESS GENERATOR. NOTIFY ARCHITECT AND OWNERS REP. IF THERE ARE ANY CONFLICTS. VERIFY ANY AND ALL CONFLICTS WITH EXISTING UTILITIES AND NOTIFY ARCHITECT AND OWNERS REP. PRIOR TO THE START OF ANY WORK.
- REMOVE EXISTING PAIR OF DOORS AND REPLACE WITH NEW INSULATED PAIR OF 3'-0" x 7'-0" DOORS (EXISTING MTL DOOR FRAME TO REMAIN), SEE SHEET #A6.1 FOR ADDITIONAL INFORMATION.

KEYPLAN



SCALE



A1 NEW SITE LOCATION PLAN  
SCALE: 1/16" = 1'-0"

SHEET EXTERNAL REFERENCES:

SHEET FILENAME:

DOOR SCHEDULE									
NO.	DOOR		FRAME		LABEL	HARDWARE	DETAILS (THIS SHEET UNLESS NOTED OTHERWISE)	REMARKS	
	SIZE	MAT'L	TYPE	MAT'L					TYPE
01	PR3070	HM	F	ST	A	N/A	SEE BELOW	F13/A6.1	SEE DEMOLITION & KEY NOTES BELOW

**GENERAL NOTES**

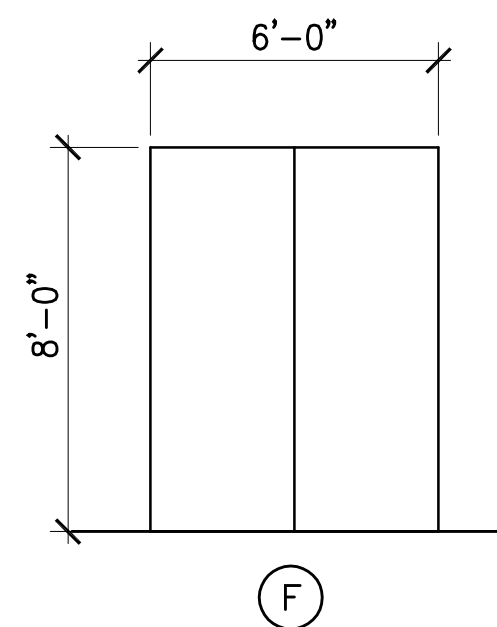
- DIMENSIONS AS SHOWN ARE NOMINAL. ACTUAL DIMENSIONS MAY VARY FIELD VERIFY.
- COORDINATE DOOR HARDWARE AND SECURITY REQUIREMENTS WITH OWNER.
- CONTRACTOR SHALL PROVIDE SEALANT AND CAULKING ALL AROUND EXISTING DOOR FRAME INSIDE AND OUT.

**DOOR SCHEDULE KEY**

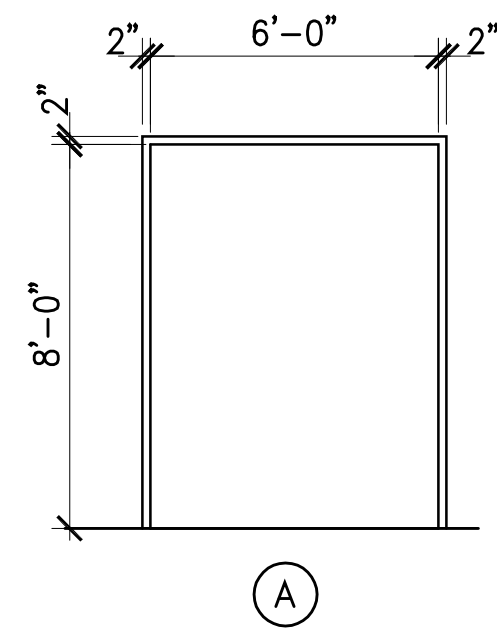
HM: INSULATED HOLLOW METAL DOOR  
ST: STEEL (REUSE EXISTING METAL FRAME)

**DOOR HARDWARE**

- (6) HINGES—FBB191 X 4.5" X 4.5" X NRP X 630—STANLEY PRODUCT OR EQUAL.
- (1) LOCK QCL171 E X 4 7/8" STRIKE X 626 X HURRICANE COMPLIANT—STANLEY PRODUCT OR EQUAL. (KEY TO EXISTING SYSTEM).
- (1) CLOSER FOR ACTIVE DOOR, QDC111—STANLEY PRODUCT OR EQUAL.
- (2) FLUSH BOLTS—282D X 626—HAGER PRODUCT OR EQUAL.
- (1) WEATHERSTRIP—550B (HEADS & JAMBS)—HAGER PRODUCT OR EQUAL.
- (1) ASTRAGAL/MEETING STILE—9115A FOR EACH DOOR—NATIONAL GUARD PRODUCT OR EQUAL.
- (1) THRESHOLD—840 X LAR—NATIONAL GUARD PRODUCT OR EQUAL.
- (2) HOOK STOPS—268F—HAGER PRODUCT OR EQUAL.
- (2) VINYL SWEEPS—ONE FOR EACH DOOR, VERIFY WITH USERS.
- EXISTING CARD READERS TO REMAIN AND BE REUSED.
- EXISTING MAGLOCKS TO REMAIN AND BE REUSED.



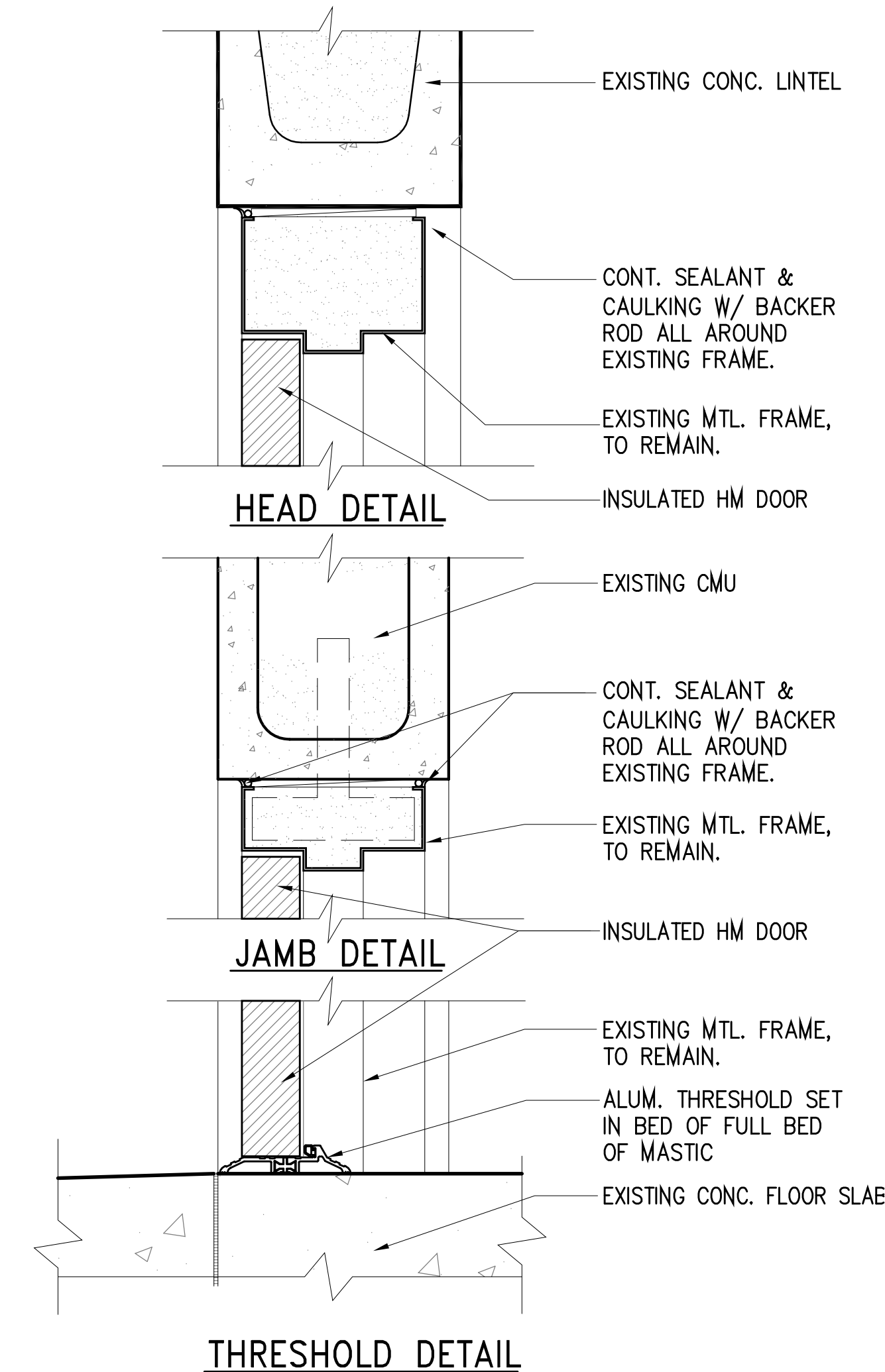
**DOOR TYPES**  
A6.1/A6.1 SCALE: 1/4" = 1'-0"



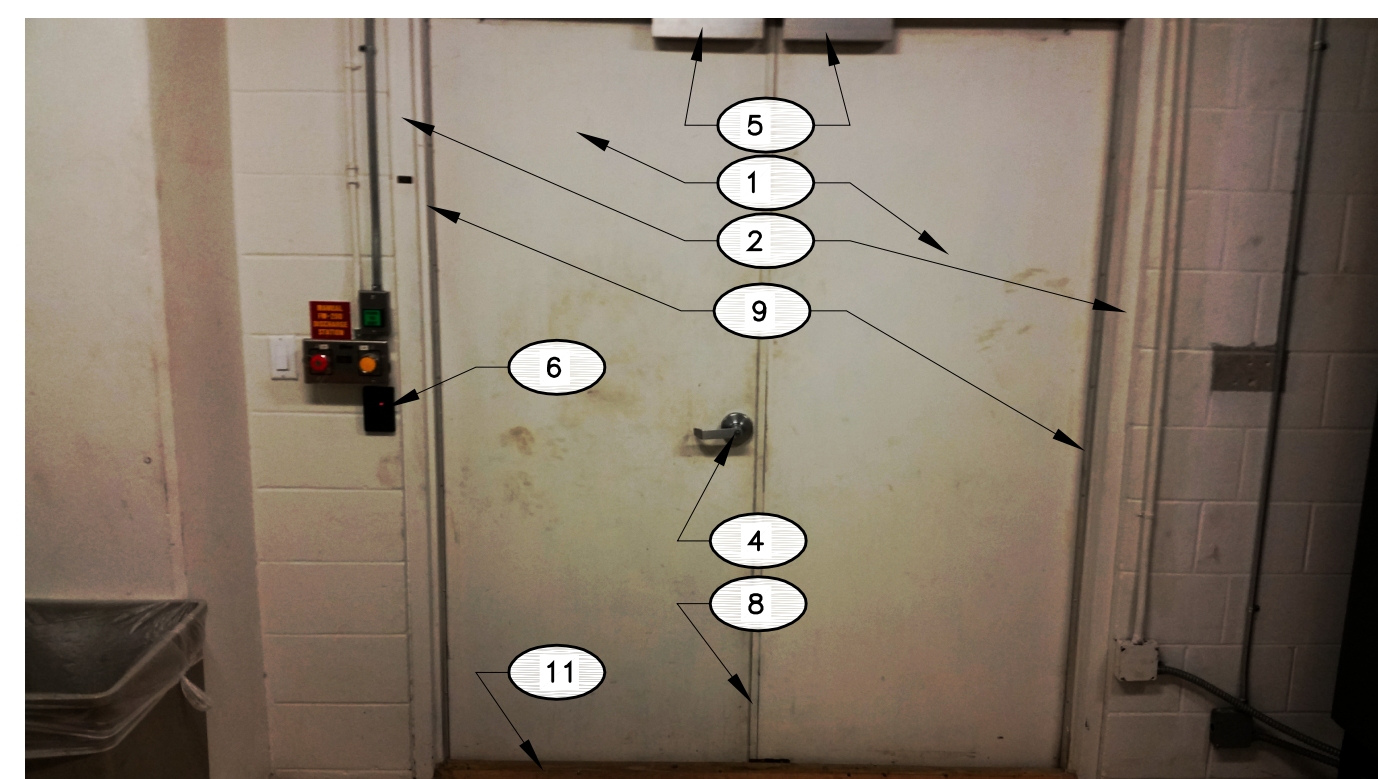
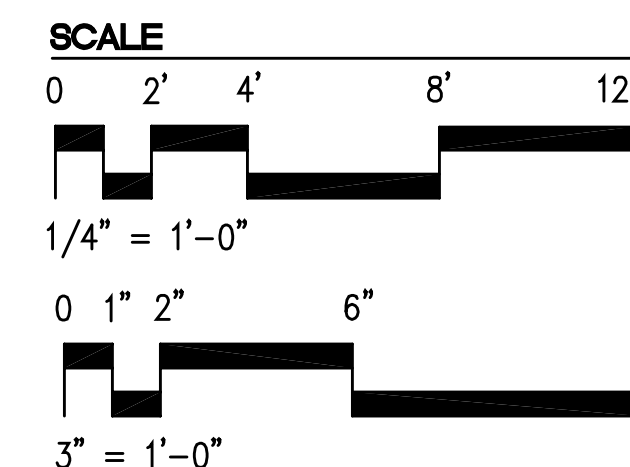
**FRAME TYPE**  
A6.1/A6.1 SCALE: 1/4" = 1'-0"

**DEMOLITION AND KEY NOTES:**

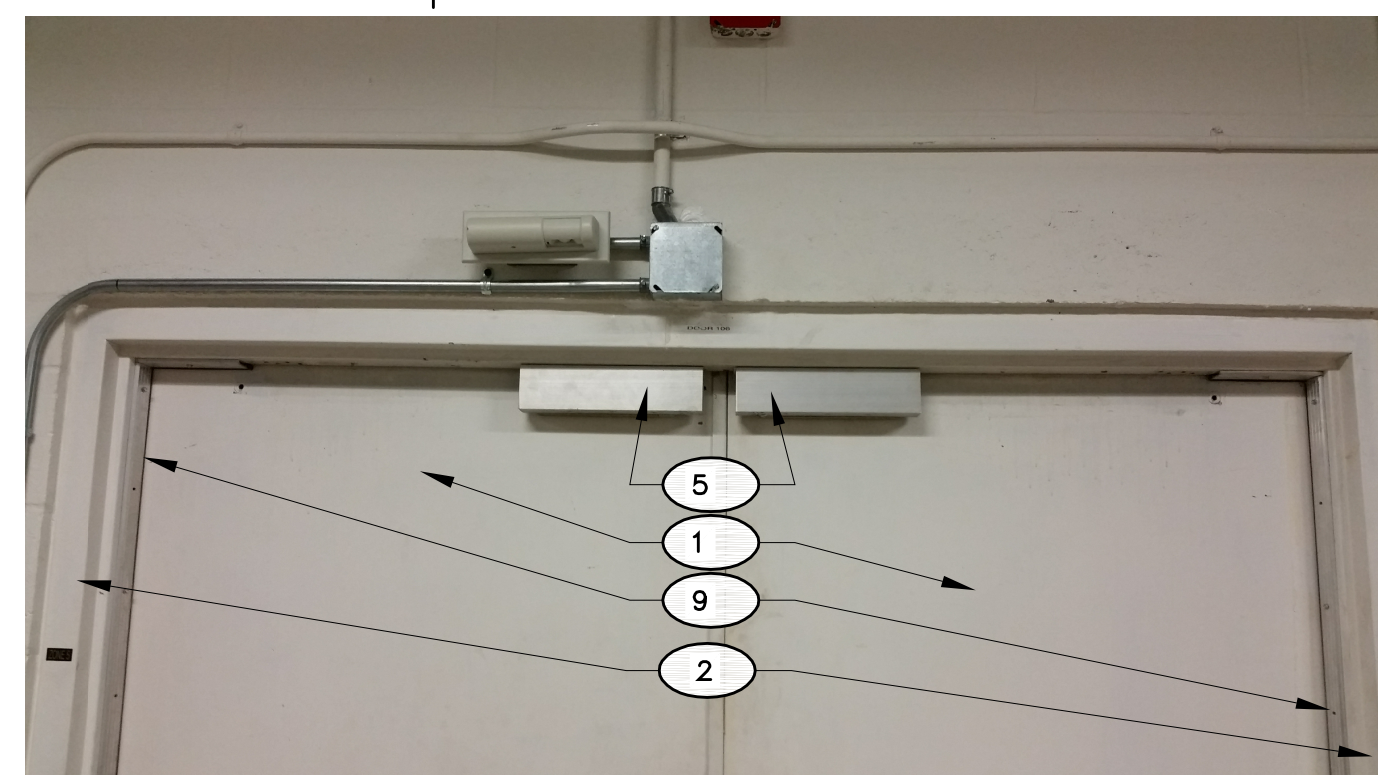
- EXISTING PAIR OF HOLLOW METAL DOORS TO BE REMOVED AND REPLACED WITH NEW PAIR OF 3'-0" X 7'-0" PAIR OF INSULATED HOLLOW METAL DOORS.
- EXISTING METAL DOOR FRAME SHALL REMAIN AS-IS TO RECEIVE NEW PAIR OF INSULATED HOLLOW METAL DOORS.
- EXISTING HINGES SHALL BE REMOVED AND REPLACED WITH NEW, SEE DOOR HARDWARE ABOVE.
- EXISTING LEVER LATCH & LOCKSET SHALL BE REMOVED AND REPLACED WITH NEW, SEE DOOR HARDWARE ABOVE.
- EXISTING MAGLOCKS SHALL REMAIN AS-IS, REMOVE AS NEEDED TO REMOVE EXISTING PAIR OF DOORS AND REINSTALL WITH NEW PAIR OF DOORS.
- EXISTING CARD READERS SHALL REMAIN AS-IS AND CONTRACTOR SHALL RECONNECT AND INSURE THAT CARD ACCESS THROUGH THESE DOORS IS TESTED, MAINTAINED AND COORDINATED WITH USERS.
- EXISTING THRESHOLD SHALL BE REMOVED AND A NEW THRESHOLD PROVIDED & INSTALLED, SEE DOOR HARDWARE ABOVE, SET NEW THRESHOLD IN FULL BED OF MASTIC.
- PROVIDE NEW ASTRAGAL, SEE DOOR HARDWARE ABOVE.
- PROVIDE WEATHERSTRIP AROUND (HEADS & JAMBS), SEE DOOR HARDWARE ABOVE.
- PROVIDE WEATHER TIGHT SWEEPS ALONG BOTTOM OF EXTERIOR SIDE OF EACH NEW DOOR.
- REMOVE EXISTING WOOD BLOCKING ALONG FLOOR ON INTERIOR SIDE OF DOORS TO ALLOW FOR PROPER INSTALLATION OF NEW DOORS AND THRESHOLD, COORDINATE WITH USERS AND REINSTALL OR PROVIDE NEW BLOCKING TO MATCH OLD ONLY AT USERS REQUEST.
- VERIFY CONDITION OF EXISTING SIGNS AND IF THEY CAN BE REUSED REMOVE AND REINSTALL ON NEW DOORS OR PROVIDE NEW SIGNS TO MATCH EXISTING SIGNS AND MOUNT ON NEW DOORS, VERIFY WITH OWNERS REPRESENTATIVE.
- EXISTING DRIP OVER DOORS SHALL REMAIN AS-IS.



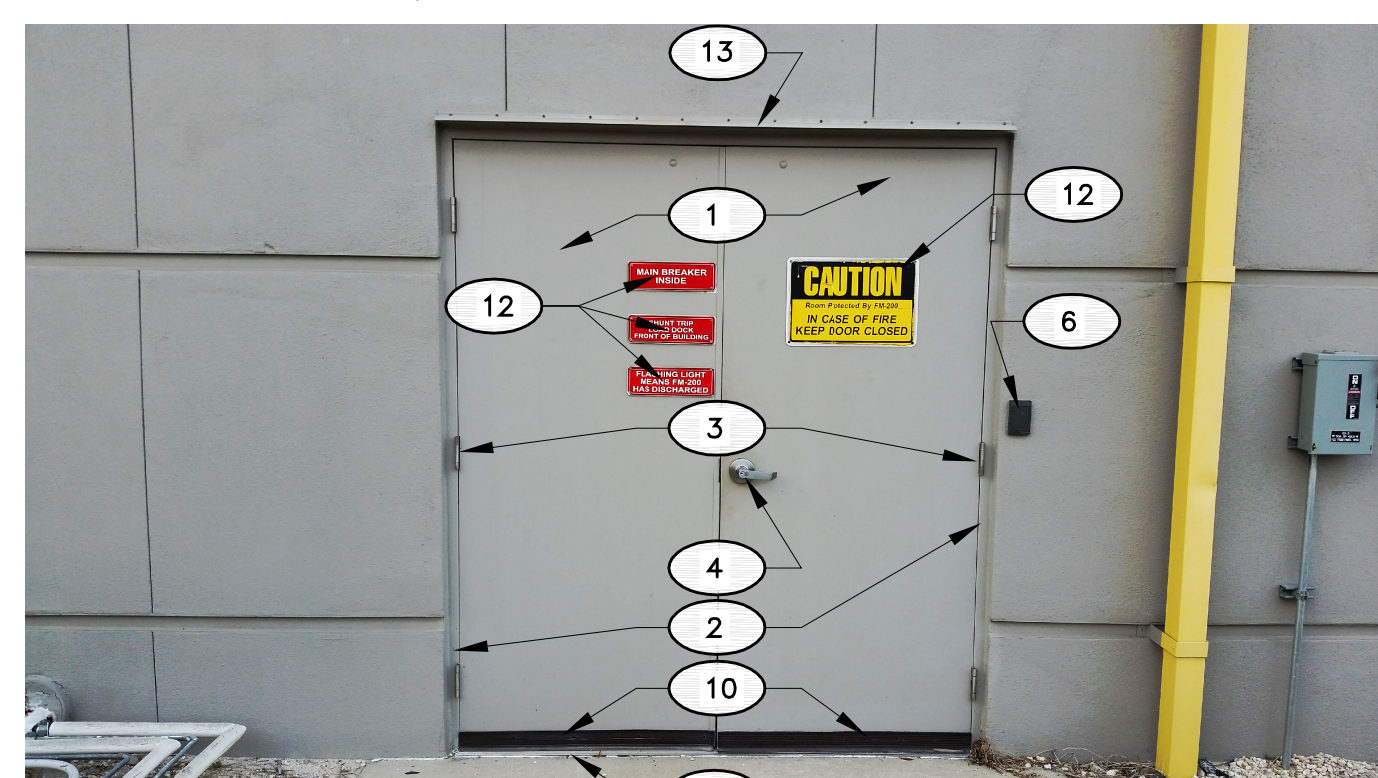
**EXTERIOR H.M. DOOR @ CMU**  
F13/A6.1 3" = 1'-0"



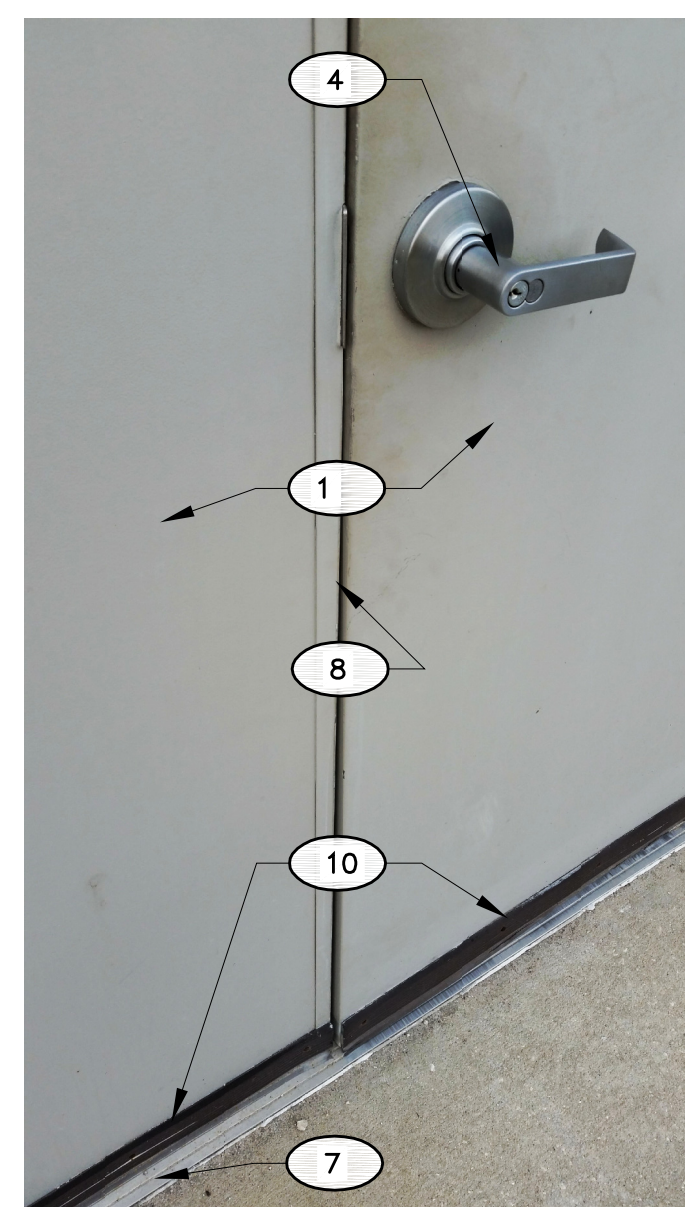
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G4/A6.1 SCALE: N.T.S.



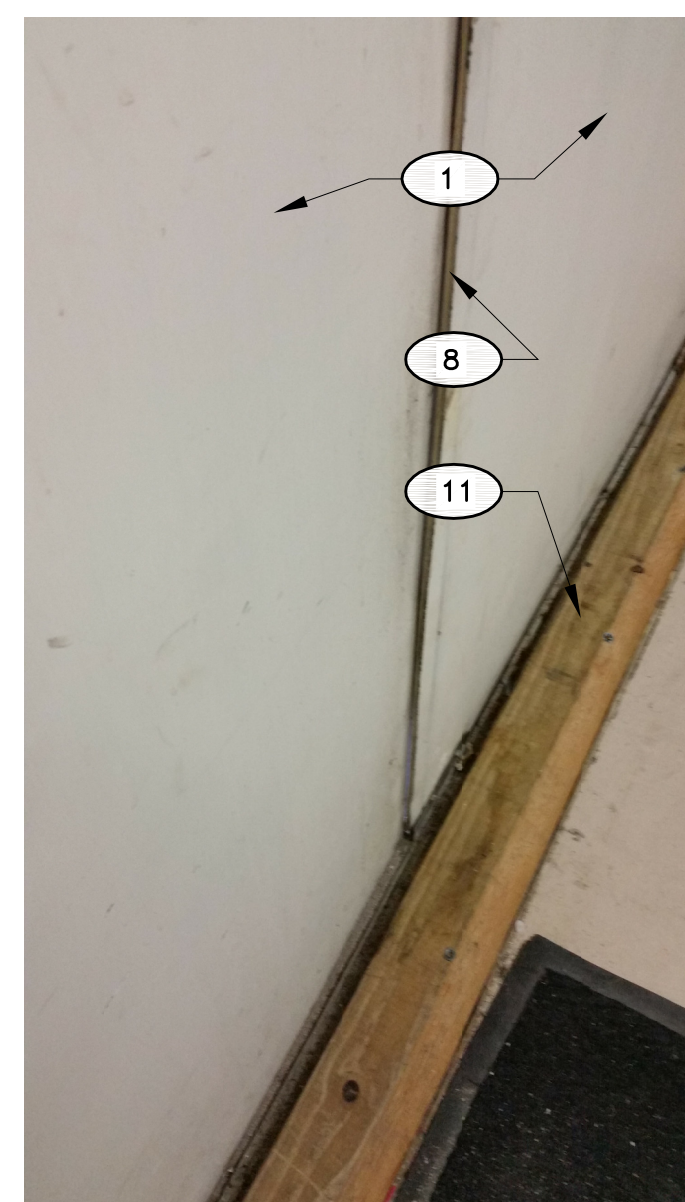
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D4/A6.1 SCALE: N.T.S.



**EXISTING PHOTO 3**  
A4/A6.1 SCALE: N.T.S.



**EXISTING PHOTO 4**  
E7/A6.1 SCALE: N.T.S.



**EXISTING PHOTO 5**  
A7/A6.1 SCALE: N.T.S.



ARCHITECTURAL GROUP, INC.

5032 GODDARD AVENUE  
ORLANDO, FLORIDA 32804  
(407) 245-3660

FL LIC. # AA0002264

PROJECT TITLE AND OWNERS NAME

ORANGE COUNTY  
ISS - RCC EMERGENCY  
GENERATOR PROJECT  
A BUS REPLACEMENT

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

PETER M. IKEGAMI  
FL. LIC. # AR 0003065

REVISIONS

DRAWN BY

RJV

CHECKED BY

PMI

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

DOOR SCHEDULE,  
ELEVATIONS, NOTES  
AND DETAILS

DRAWING NUMBER

A6.1

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# STRUCTURAL NOTES

## GENERAL NOTES

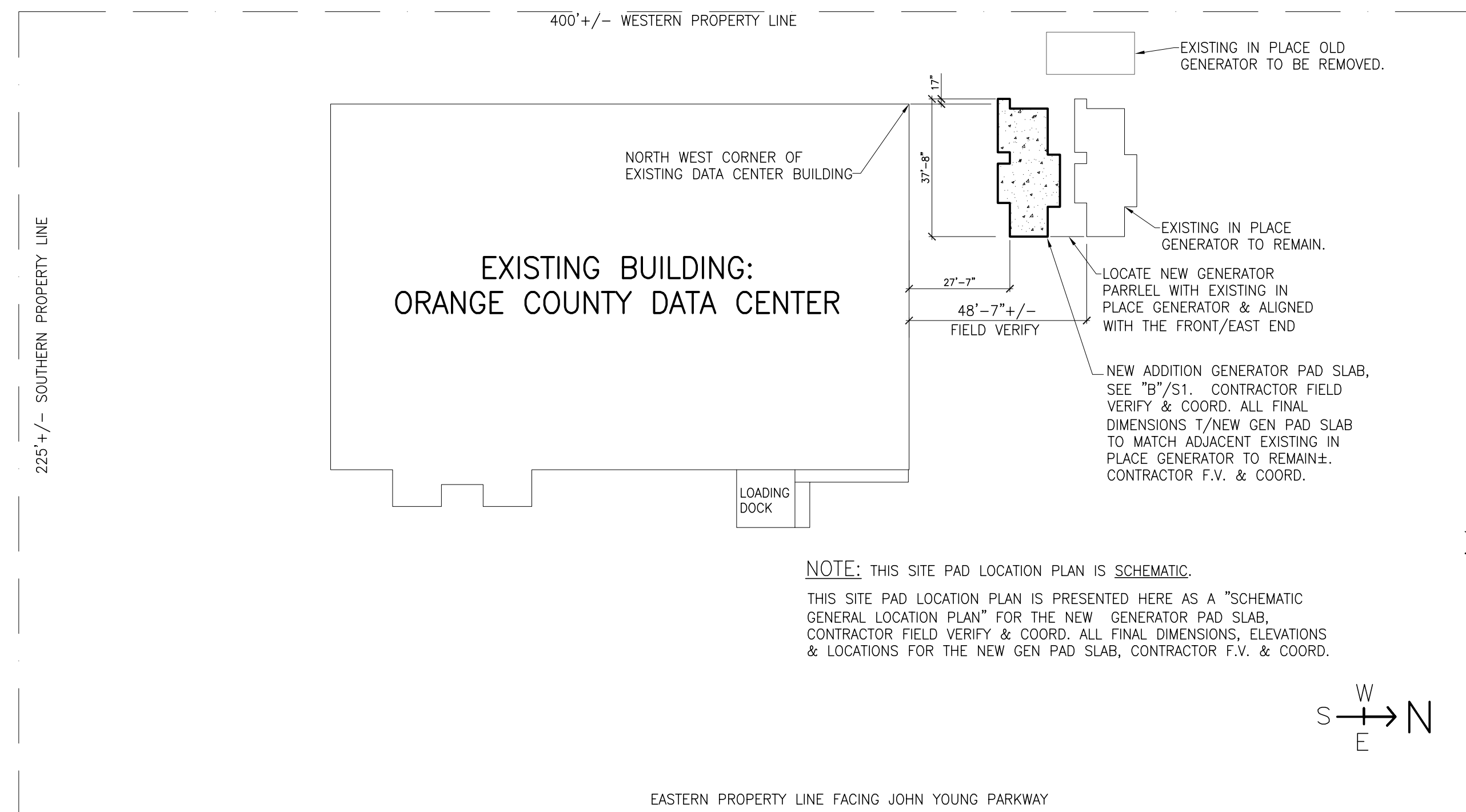
- G-1 REVIEW ALL PROJECT DOCUMENTS PRIOR TO FABRICATION AND START OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO ARCHITECT OR STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH WORK.
- G-2 IT IS THE CONTRACTORS RESPONSIBILITY TO PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITY LINES FROM ALL DAMAGE DURING CONSTRUCTION.
- G-3 COORDINATE STRUCTURAL AND OTHER DRAWINGS THAT ARE PART OF THE CONTRACT DOCUMENTS FOR ANCHORED, EMBEDDED OR SUPPORTED ITEMS WHICH MAY AFFECT THE STRUCTURAL DRAWINGS.
- G-4 GENERAL CONTRACTOR SHALL COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER DISCIPLINES. WHERE THERE ARE CONFLICTS IN INFORMATION PRESENTED IN THE DRAWINGS OR IF THE DRAWINGS ARE UNCLEAR OR INSUFFICIENT IN ANY MANNER THAT MAY INHIBIT THE CONTRACTORS UNDERSTANDING OF THE PROJECT, SUCH CONFLICTS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION PRIOR TO BIDDING AND THE NECESSARY ADJUSTMENTS SHALL BE MADE PER THEIR INSTRUCTIONS.
- G-5 ONLY WRITTEN CHANGES SUBMITTED FOR REVIEW TO THE ARCHITECT/ENGINEER SHALL BE PERMITTED.
- G-6 IF THERE ARE ANY DISCREPANCIES BETWEEN THE STRUCTURAL DRAWINGS ARCHITECTURAL DRAWINGS, MECHANICAL OR EQUIPMENT DRAWINGS, THE PROJECT SPECIFICATIONS, OR APPLICABLE CODES THE STRICTEST SHALL GOVERN.
- G-7 DIMENSIONS SHOWN ARE ASSEMBLED FROM INFORMATION TAKEN FROM EXISTING DRAWINGS AND INFORMATION PROVIDED BEC. AND MAY NOT MATCH EXISTING FIELD CONDITIONS OR DIMENSIONS, CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS & DIMENSIONS RELATIVE TO THE SAME. WHERE THERE ARE CONFLICTS BETWEEN ACTUAL FIELD CONDITIONS AND DATA PRESENTED IN THE DRAWINGS SUCH CONDITIONS SHALL BE BROUGHT TO THE ARCHITECT/ENGINEER'S ATTENTION AND THE NECESSARY ADJUSTMENTS MADE PER THEIR COORDINATION.

## STRUCTURAL DESIGN CRITERIA

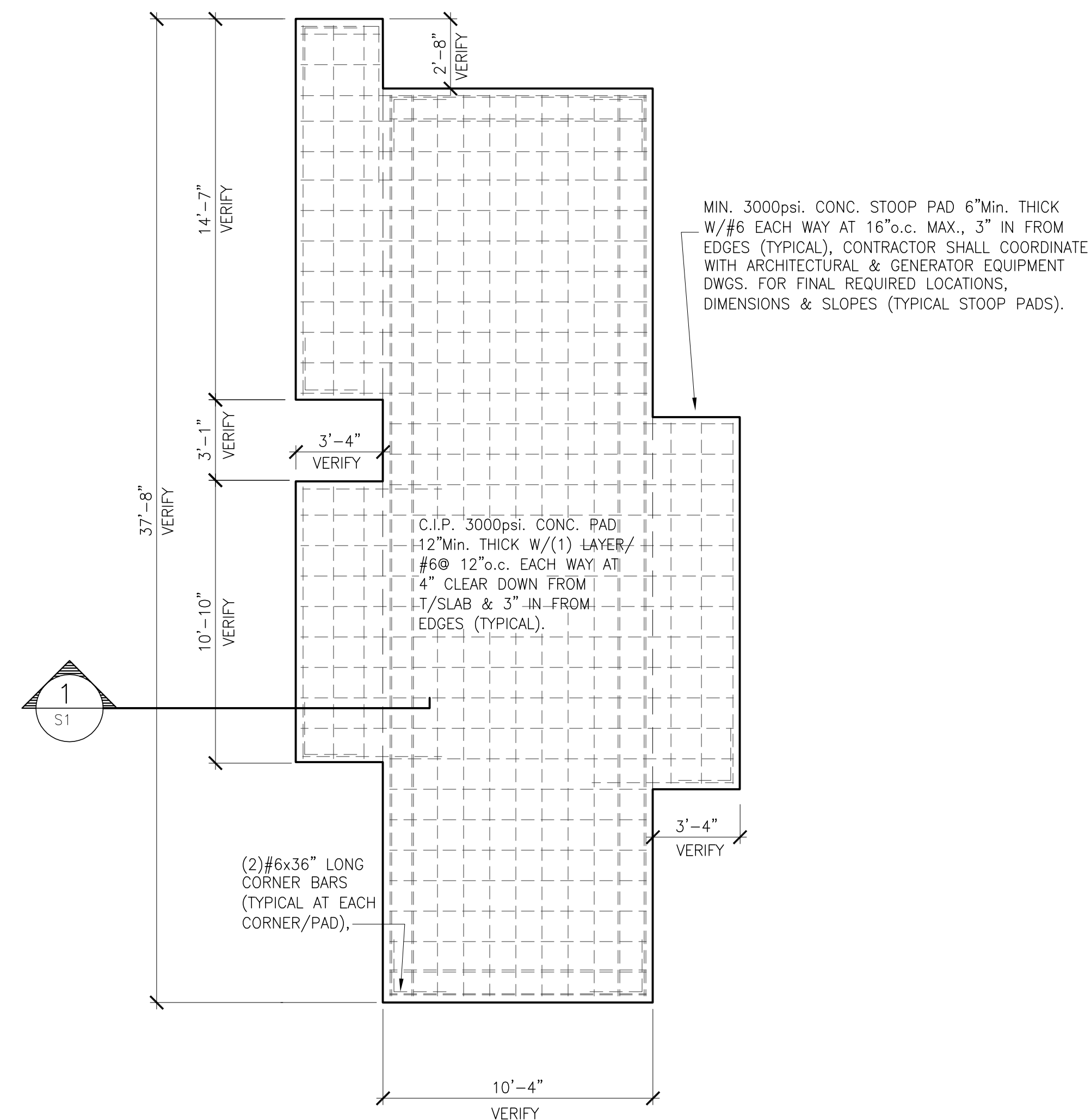
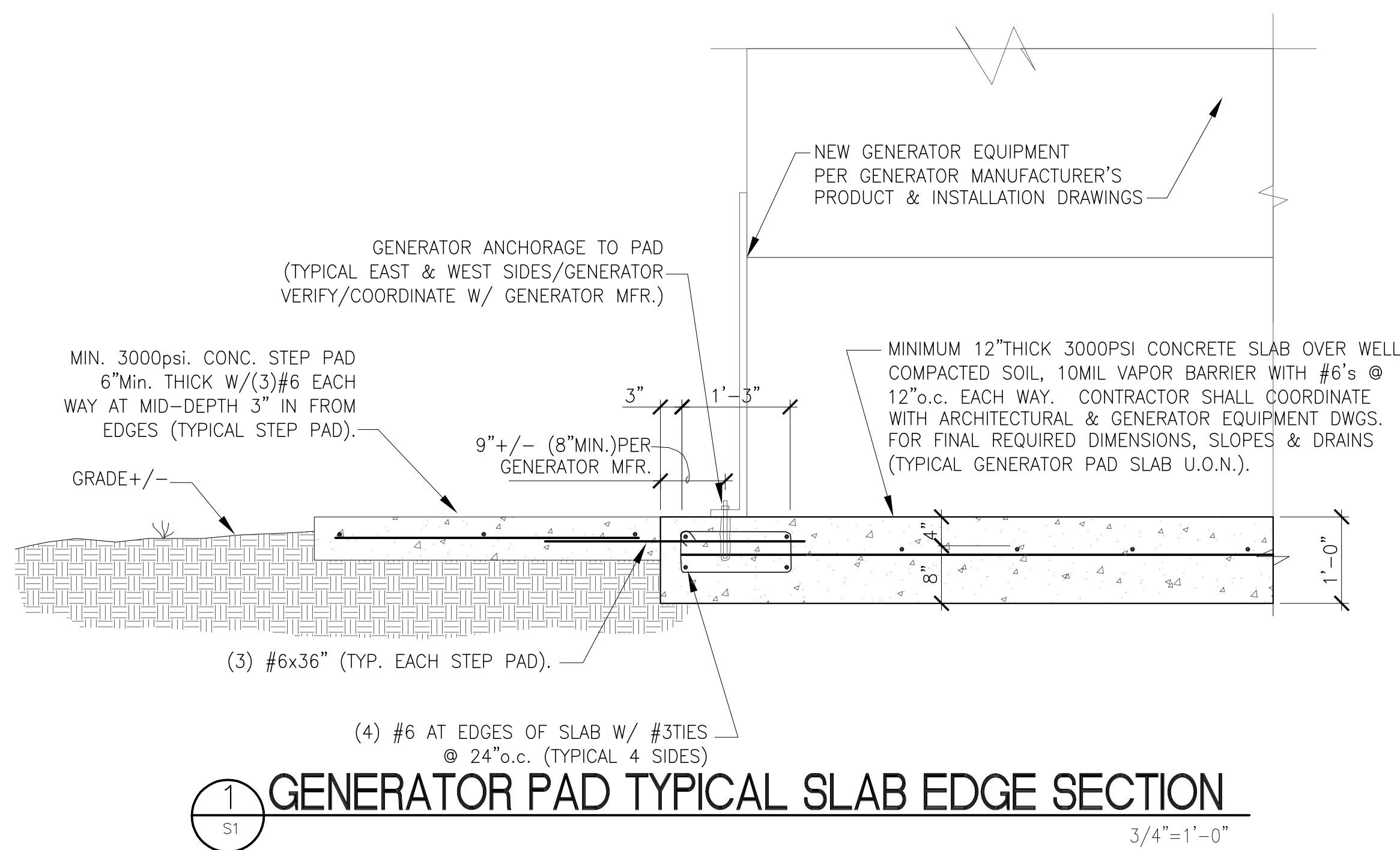
- D-1 THIS STRUCTURAL CONCRETE PAD SUPPORT FOR REPLACEMENT GENERATOR HAS BEEN DESIGNED TO MEET THE STRUCTURAL REQUIREMENTS OF THE FLORIDA BUILDING CODE 5th. EDITION 2014. THESE DRAWINGS ARE NOT MEANT TO IMPLY THAT THE REST OF THE EXISTING STRUCTURES ON SITE TO REMAIN THAT HAVE NOT BEEN ALTERED OR REPAIRED MEET CURRENT CODES.
  - D-2 DESIGN WIND SPEED:  $V_{ult}=150$  mph.,  $V_{asd}=116$  mph 3-SEC. GUST, RISK CATEGORY IV;
- CONCRETE:
- C-1 ALL WORK TO BE IN ACCORDANCE WITH THE ACI 318.
  - C-2 PROVIDE MINIMUM 3000PSI CONCRETE.  
WATER - POTABLE CHLORIDE - NONE
  - C-3 PROVIDE MINIMUM 60KSI REINFORCING STEEL.
  - C-4 BUILDER SHALL ENSURE WELL COMPACTED, TREATED SOIL, MEETING 2000PSF. SOIL BEARING PRESSURE BELOW NEW FOUNDATIONS, PER THE GEOTECHNICAL ENGINEERING REPORT FOR THE SITE BY NODARSE/PAGE ONE JT. VENTURE LLC PROJECT#AK125008 DATED DECEMBER 21, 2012.

## MISCELLANEOUS STRUCTURAL STEEL (RED IRON) (IF REQ'D FOR ANCHORAGE)

- S-1 ALL MISCELLANEOUS STEEL SHALL BE G90 HOT DIP GALVANIZED.
- S-2 FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION," THIRTEENTH EDITION AND THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
- S-3 ALL STRUCTURAL AND MISCELLANEOUS STEEL TO CONFORM TO ASTM A-36 WITH MINIMUM YIELD STRENGTH OF 36 KSI., TUBE & PIPES 46 KSI.
- S-4 BOLTS IN CONCRETE SHALL A490.
- S-5 ALL SHOP AND FIELD WELDING SHALL BE DONE BY CURRENTLY CERTIFIED WELDERS IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS.) D1.1 "STRUCTURAL WELDING CODE," LATEST EDITION.
- S-6 USE E70XX ELECTRODES FOR ALL WELDING UNLESS NOTED OTHERWISE.



**A** SCHEMATIC SITE PAD LOCATION PLAN  
S1 1"=30'



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(407) 245-3660

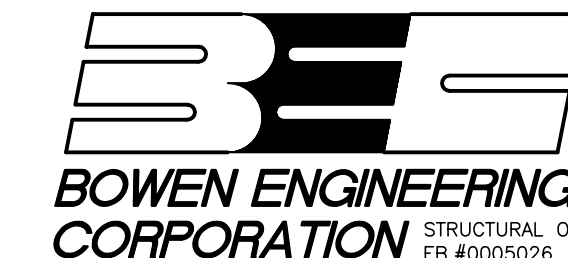
FL LIC. # AA0002264  
PROJECT TITLE AND OWNERS NAME

ORANGE COUNTY  
ISS - RCC EMERGENCY  
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4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS



1528 VASSAR STREET,  
ORLANDO, FLORIDA, 32804  
PH: 407-423-7585  
FAX: 407-423-4872  
WM. H. MATTHEWS,  
FLA. PE#54831.

SEAL AND SIGNATURE

REVISIONS

DRAWN BY

BEK

CHECKED BY

WHM

JOB NUMBER

1510

DATE

May 16, 2016

DRAWING TITLE

STRUCTURAL CONCRETE  
PAD for REPLACEMENT  
GENERATOR

DRAWING NUMBER

**S1**

M  
L  
K  
J  
H  
G  
F  
E  
D  
C  
B  
A

Sheet List Table	
Sheet Number	Sheet Title
E0.1	Electrical Symbol Legend
E1.1	Electrical Site Plan
ED2.1	Electrical Demo Plan
E2.1	Electrical Floor Plan
E2.2	Electrical Enlarged Plan
E3.1	Enlarged Electrical Plan
ED6.1	Electrical Demo Power Riser
E6.1	Electrical Power Riser
E6.2	Electrical Power Riser
E7.1	Electrical Schedules
E7.2	Electrical Schedules
E7.3	ELECTRICAL SCHEDULES
E7.4	ELECTRICAL SCHEDULES
E8.1	Electrical Details
E8.2	Electrical Details

### SWITCHES

\$	SWITCH
\$2	SWITCH, 2 POLE
\$3	SWITCH, 3-WAY
\$4	SWITCH, 4-WAY
TS	SWITCH - LINE VOLTAGE TIMER, 120/277 VAC. WATTSTOPPER TS-400 OR EQUAL.
\$p	SWITCH - PILOT LIGHT
\$a	SWITCH LEG a FOR CONTROL OF THE INBOARD LAMP IN NORMAL AND EMERGENCY POWERED LUMINAIRE.
\$b	SWITCH LEG b FOR CONTROL OF THE OUTBOARD LAMP IN NORMAL AND EMERGENCY POWERED LUMINAIRE.
\$3a	SWITCH, 3-WAY, LEG a FOR CONTROL OF THE INBOARD LAMP IN NORMAL AND EMERGENCY POWERED LUMINAIRE.
\$3b	SWITCH, 3-WAY, LEG b FOR CONTROL OF THE OUTBOARD LAMP IN NORMAL AND EMERGENCY POWERED LUMINAIRE.
\$3K	SWITCH, KEYSWITCH, 3-WAY
\$K	SWITCH, KEYSWITCH
\$M	MOTOR RATED SWITCH
\$EXP	SWITCH, EXPLOSION PROOF

### FIRE ALARM SYSTEM

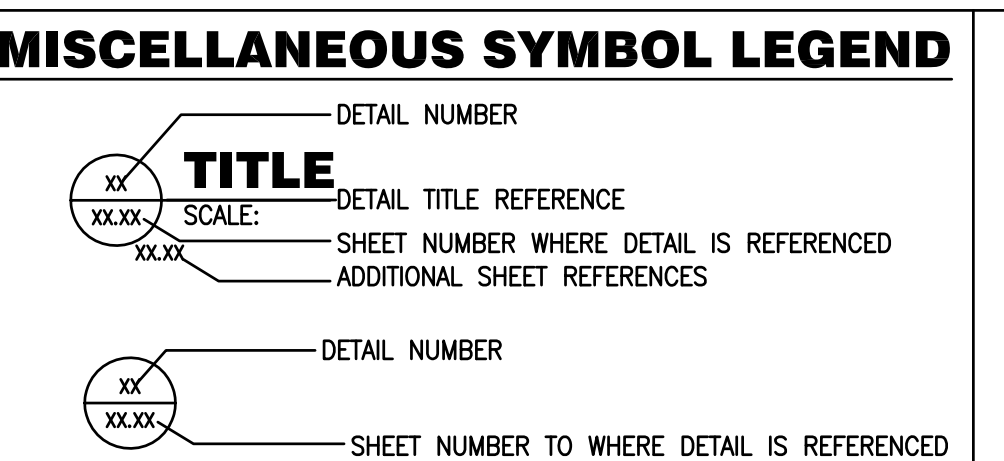
	FIRE ALARM CONTROL UNIT "FACU"
	FIRE ALARM ANNUNCIATOR PANEL "FAAP"
	FIRE ALARM TERMINAL CABINET "FATC", NEMA 1 RATED
	FIRE ALARM CONTROL PANEL "FACP"
	VOICE EVACUATION PANEL "EVAC"

### POWER DISTRIBUTION

	120/208V PANELBOARD, RECESSED
	120/208V PANELBOARD, SURFACE MOUNT
	277/480V PANELBOARD, SURFACE MOUNT
	277/480V PANELBOARD, RECESSED
	FEEDER OR BRANCH CIRCUIT CONCEALED IN WALL, CEILING OR FLOOR
	HOMERUN CONSISTING OF ONE SINGLE-PHASE, 1-POLE CIRCUIT: (2) 12 AWG + (1) 12 AWG GND IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED. PANELBOARD AND CIRCUIT DESIGNATION ARE INDICATED.
	HOMERUN CONSISTING OF ONE SINGLE-PHASE, 2-POLE CIRCUIT: (2) 12 AWG + (1) 12 AWG GND IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED. PANELBOARD AND CIRCUIT DESIGNATIONS ARE INDICATED.
	HOMERUN CONSISTING OF TWO SINGLE-PHASE CIRCUITS: (3) 12 AWG + (1) 12 AWG GND IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED. PANELBOARD AND CIRCUIT DESIGNATION ARE INDICATED.
	HOMERUN CONSISTING OF THREE SINGLE-PHASE CIRCUITS: (4) 12 AWG + (1) 12 AWG GND IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED. PANELBOARD AND CIRCUIT DESIGNATIONS ARE INDICATED.
	HOMERUN CONSISTING OF ONE THREE-PHASE CIRCUITS: (3) 12 AWG + (1) 12 AWG GND IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED. PANELBOARD AND CIRCUIT DESIGNATIONS ARE INDICATED.

### POWER DEVICES

	DISCONNECT SWITCH
	JUNCTION BOX
	PULL BOX
	EQUIPMENT CONNECTION
	TRANSFORMER
	SHUNT TRIP
	MOTOR
	GENERATOR
	LOCKBOX
	GROUND BUS BAR
	5/8" x 30'L GROUND ROD WITH TEST INSPECTION WELL
	SURGE PROTECTION DEVICE, SEE SPECIFICATIONS.
	"EMERGENCY POWER OFF" BUTTON



### ABBREVIATIONS

A	AMPERES	EXIST	EXISTING	MCB	MAIN CIRCUIT BREAKER
AE	AUDIO ENHANCEMENT	EXP	EXPLOSION PROOF	MCC	MOTOR CONTROL CENTER
AFC	ABOVE FINISHED CEILING	FA	FIRE ALARM	MCP	MOTOR CIRCUIT PROTECTOR
AFF	ABOVE FINISHED FLOOR	FLA	FULL LOAD AMPERES	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	FLUOR	FLUORESCENT	MH	METAL HALIDE
AIC	AMPERES INTERRUPTING CAPACITY	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MIN	MINIMUM
AL	ALUMINUM	GFP	GROUND FAULT PROTECTION	MISC	MISCELLANEOUS
AWG	AMERICAN WIRE GAUGE	GND	GROUND	MMS	MANUAL MOTOR STARTER SWITCH
BFC	BELOW FINISHED CEILING	HGT	HEIGHT	MTR	MOTOR
BFG	BELOW FINISHED GRADE	HID	HIGH INTENSITY DISCHARGE	MTD	MOUNTED
C	CONDUIT	HPS	HIGH PRESSURE SODIUM	MTG	MOUNTING
CAB	CABINET	HOA	HAND-OFF-AUTOMATIC	NAC	NOTIFICATION APPLIANCE CIRCUIT
CKT	CIRCUIT	HP	HORSEPOWER	NEC	NATIONAL ELECTRICAL CODE
CLG	CEILING	HVAC	HEATING/VENTILATING/AIR CONDITIONING	NL	NIGHT LIGHT, UNSWITCHED
CL	CENTERLINE	HV	HIGH VOLTAGE	PNL	PANEL
CT's	CURRENT TRANSFORMERS	INC	INCANDESCENT	PSI	PULL STATION INSIDE
CU	COPPER	JB	JUNCTION BOX	PVC	POLYVINYL CHLORIDE
DISC	DISCONNECT(ING)	KV	KILO-VOLTS	REC	RECEPTACLE
DWG	DRAWING(S)	KVA	KILO-VOLTS-AMPERES	RGS	RIGID GALVANIZED STEEL
EA	EACH	KVAR	KILO-VOLTS-AMPERES REACTIVE	SPD	SURGE PROTECTION DEVICE
ECB	ENCLOSED CIRCUIT BREAKER	KW	KILO-WATTS	TEL	TELEPHONE
EF	EXHAUST FAN	KWH	KILO-WATT-HOURS	TYP	TYPICAL
EMT	ELECTRICAL METALLIC TUBING	LTG	LIGHTING	UON	UNLESS OTHERWISE NOTED
EQUIP	EQUIPMENT	m	METER	V	VOLTS
EUH	ELECTRIC UNIT HEATER	mm	MILLIMETER	VA	VOLT-AMPERES
EWC	ELECTRIC WATER COOLER	MAX	MAXIMUM	VFD	VARIABLE FREQUENCY DRIVE
EWH	ELECTRIC WATER HEATER			W	WATTS
EXH	EXHAUST			WP	WEATHER PROOF
				XFMR	TRANSFORMER



ARCHITECTURAL GROUP, INC.  
5032 GODDARD AVENUE  
ORLANDO, FLORIDA 32804  
(407) 245-3660

FL LIC. # AA0002264  
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ORANGE COUNTY  
ISS - RCC EMERGENCY  
GENERATOR PROJECT  
A BUS REPLACEMENT

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL. LIC. # FL70700

REVISIONS

DRAWN BY

DJ/RV

CHECKED BY

JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

ELECTRICAL  
SYMBOL LEGEND

DRAWING NUMBER

E0.1

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# ORANGE COUNTY ISS - RCC EMERGENCY GENERATOR PROJECT A BUS REPLACEMENT

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ORLANDO, FLORIDA 32805

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JUSTIN L. MUNDELL P.E.  
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REVISIONS

DRAWN BY

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DRAWING TITLE

**ELECTRICAL SITE  
PLAN**

DRAWING NUMBER

# E1.1

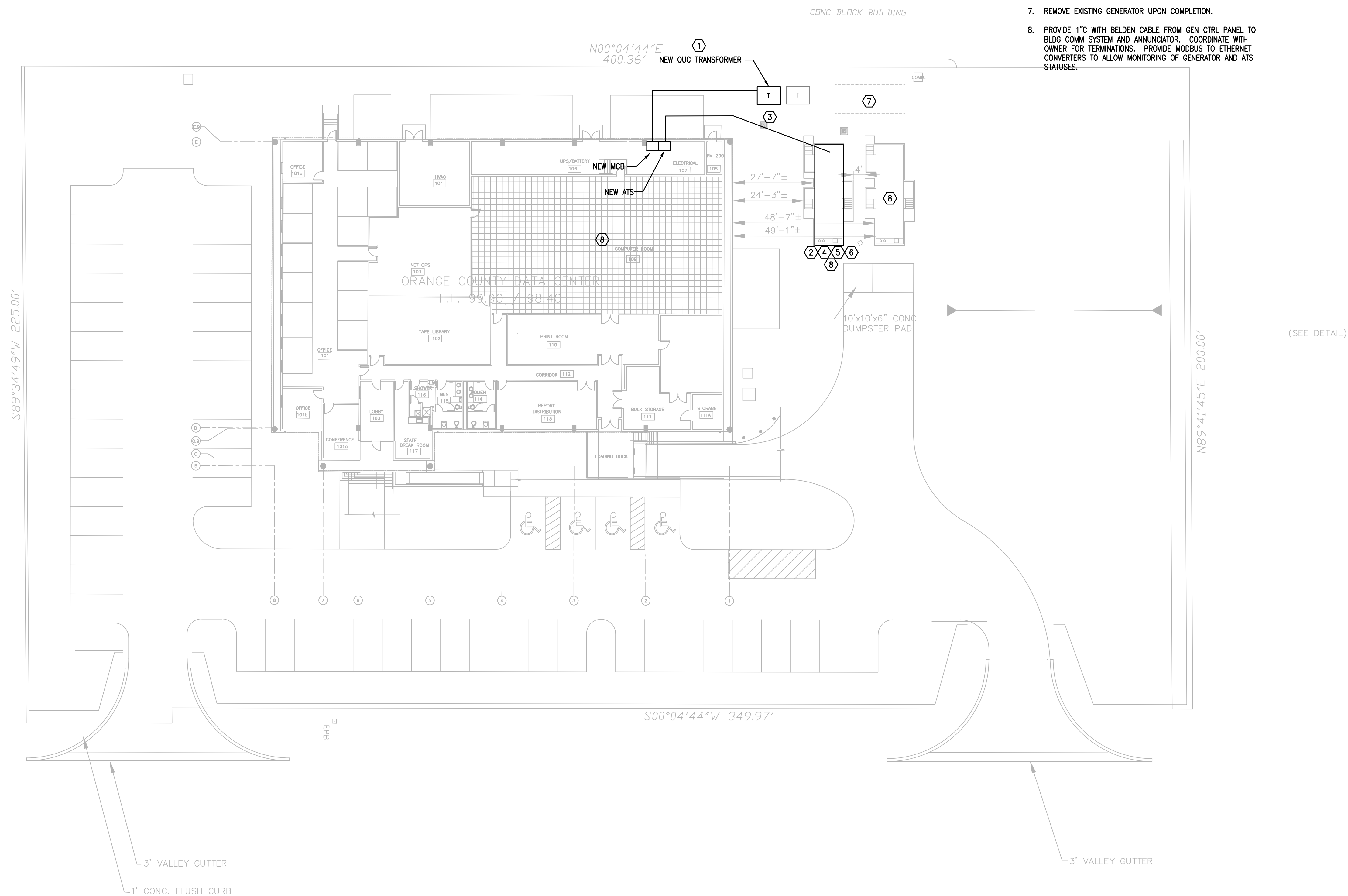
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### GENERAL NOTES:

- REFER TO SYMBOL LEGEND ON SHEET E0.1.
- REFER TO BOOK SPECIFICATIONS.
- ALL FEEDERS ARE TO HAVE LESS THAN 2% TOTAL VOLTAGE DROP AND ALL BRANCH CIRCUITS SHALL HAVE LESS THAN 3% VOLTAGE DROP.

### PLAN KEY NOTES:

- REPLACE EXISTING OUC TRANSFORMER.
- NEW 1500KW GENERATOR, SOUND ATTENUATING ENCLOSURE, BASE TANK SIZED FOR 72 HOURS AT 75% LOAD. ENCLOSURE TO INCLUDE INTERIOR (2) 120V RECEPTACLES AND WORK LIGHTS. INCLUDE A TOGGLE SWITCH FOR INTERSTITIAL MONITORING SYSTEM.
- REMOVE OLD UTILITY TRANSFORMER AND PAD. PROVIDE NEW CONCRETE PAD, METER BASE, CT CAN, AND 1" CONDUIT FROM METER TO PAD. COORDINATE WITH OUC FOR ANY AND ALL REQUIREMENTS. ENGINEER: FABIAN RICHARDS, (407) 434-4155
- PROVIDE 30A, 2P CIRCUIT FOR JACKET WATER HEATER. JACKET WATER HEATER TO BE FED FROM PNL LPB-5/7
- PROVIDE 20A, 1P CIRCUIT FOR GENERATOR CONTROL PANEL. GENERATOR CONTROL PANEL TO BE FED FROM PNL LPB-9
- PROVIDE 20A, 1P CIRCUIT FOR BATTERY CHARGER. BATTERY CHARGER TO BE FED FROM PNL LPB-11
- REMOVE EXISTING GENERATOR UPON COMPLETION.
- PROVIDE 1" C WITH BELDEN CABLE FROM GEN CTRL PANEL TO BLDG COMM SYSTEM AND ANNUNCIATOR. COORDINATE WITH OWNER FOR TERMINATIONS. PROVIDE MODBUS TO ETHERNET CONVERTERS TO ALLOW MONITORING OF GENERATOR AND ATS STATUSES.



## ELECTRICAL SITE PLAN

SCALE: 1"=20'

1023 A2.1



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ORLANDO, FLORIDA 32804  
(407) 245-3660

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4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL LIC. # FL70700

REVISIONS

DRAWN BY

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DRAWING TITLE

**ELECTRICAL DEMO  
PLAN**

DRAWING NUMBER

# ED2.1

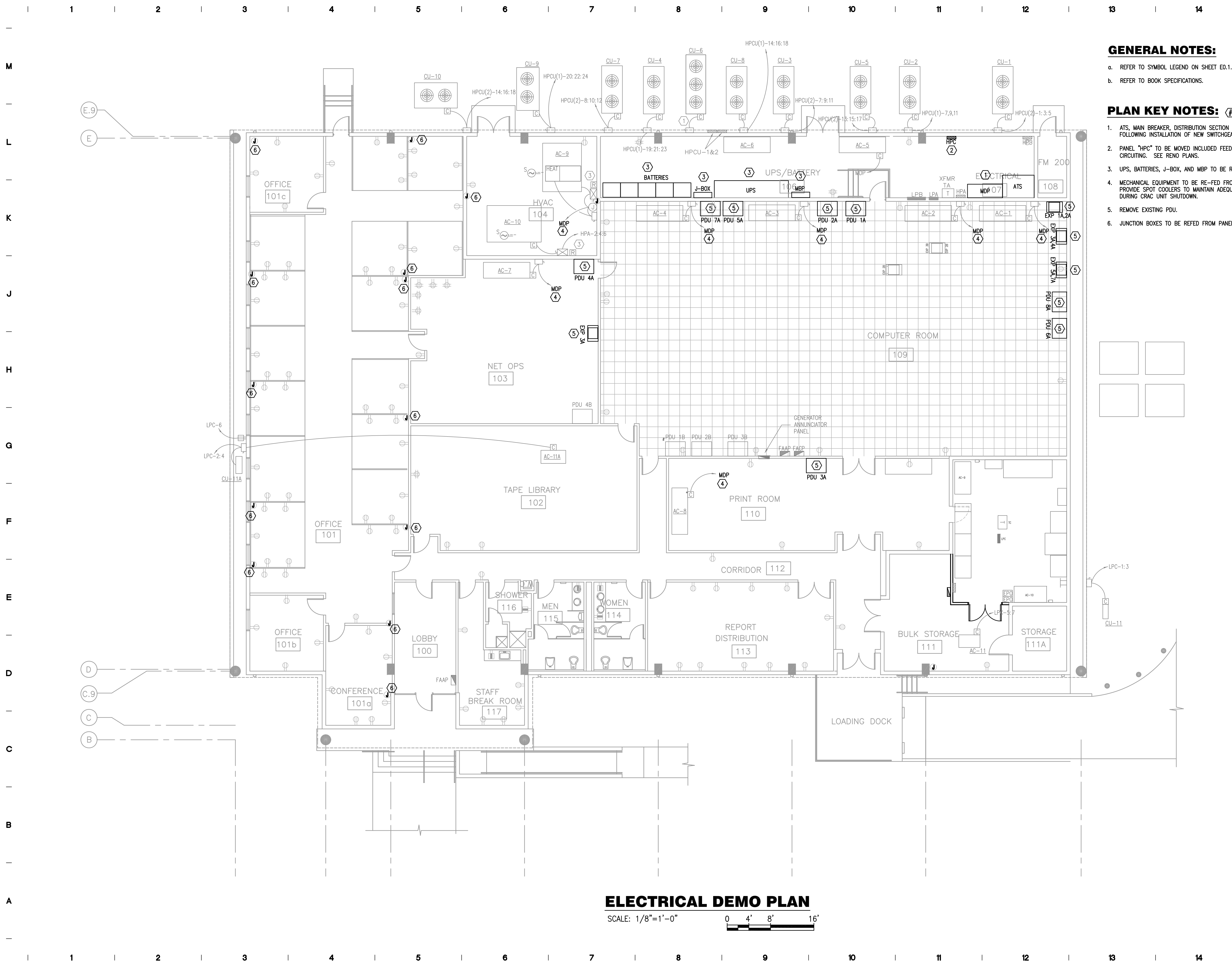
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### GENERAL NOTES:

- REFER TO SYMBOL LEGEND ON SHEET ED.1.
- REFER TO BOOK SPECIFICATIONS.

### PLAN KEY NOTES: (7)

- ATS, MAIN BREAKER, DISTRIBUTION SECTION TO BE REMOVED FOLLOWING INSTALLATION OF NEW SWITCHGEAR.
- PANEL "HPC" TO BE MOVED INCLUDED FEEDER AND BRANCH CIRCUITING. SEE RENO PLANS.
- UPS, BATTERIES, J-BOX, AND MBP TO BE REPLACED.
- MECHANICAL EQUIPMENT TO BE RE-FED FROM NEW DISTRIBUTION. PROVIDE SPOT COOLERS TO MAINTAIN ADEQUATE TEMPERATURE DURING CRAC UNIT SHUTDOWN.
- REMOVE EXISTING PDU.
- JUNCTION BOXES TO BE RE-FED FROM PANEL LPC.



## ELECTRICAL DEMO PLAN

SCALE: 1/8"=1'-0" 0 4' 8' 16'

1023 A2.1





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### ORANGE COUNTY ISS - RCC EMERGENCY GENERATOR PROJECT A BUS REPLACEMENT

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**100% FOR CONSTRUCTION**

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL LIC. # FL70700

REVISIONS

DRAWN BY

DJ/RV

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JL

JOB NUMBER

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DATE

MAY 16, 2016

DRAWING TITLE

**ELECTRICAL  
FLOOR PLAN**

DRAWING NUMBER

# E2.1

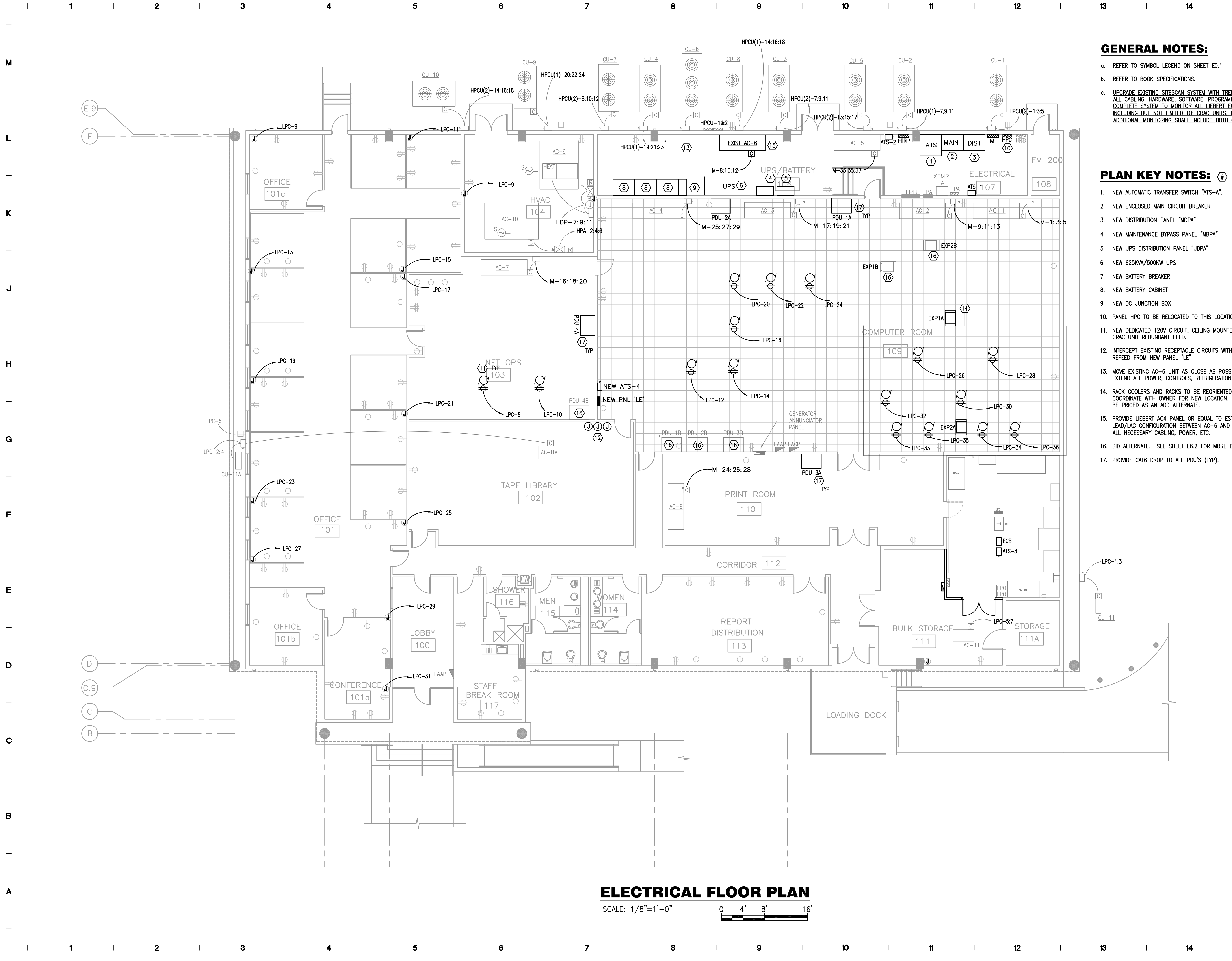
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#### GENERAL NOTES:

- a. REFER TO SYMBOL LEGEND ON SHEET E0.1.
- b. REFER TO BOOK SPECIFICATIONS.
- c. UPGRADE EXISTING SITESCAN SYSTEM WITH TRELIS. PROVIDE ALL CABLING, HARDWARE, SOFTWARE, PROGRAMMING, ETC. FOR A COMPLETE SYSTEM TO MONITOR ALL LIEBERT EQUIPMENT INCLUDING BUT NOT LIMITED TO: CRAC UNITS, UPS'S, PDU'S. ADDITIONAL MONITORING SHALL INCLUDE BOTH GENERATORS.

#### PLAN KEY NOTES: #

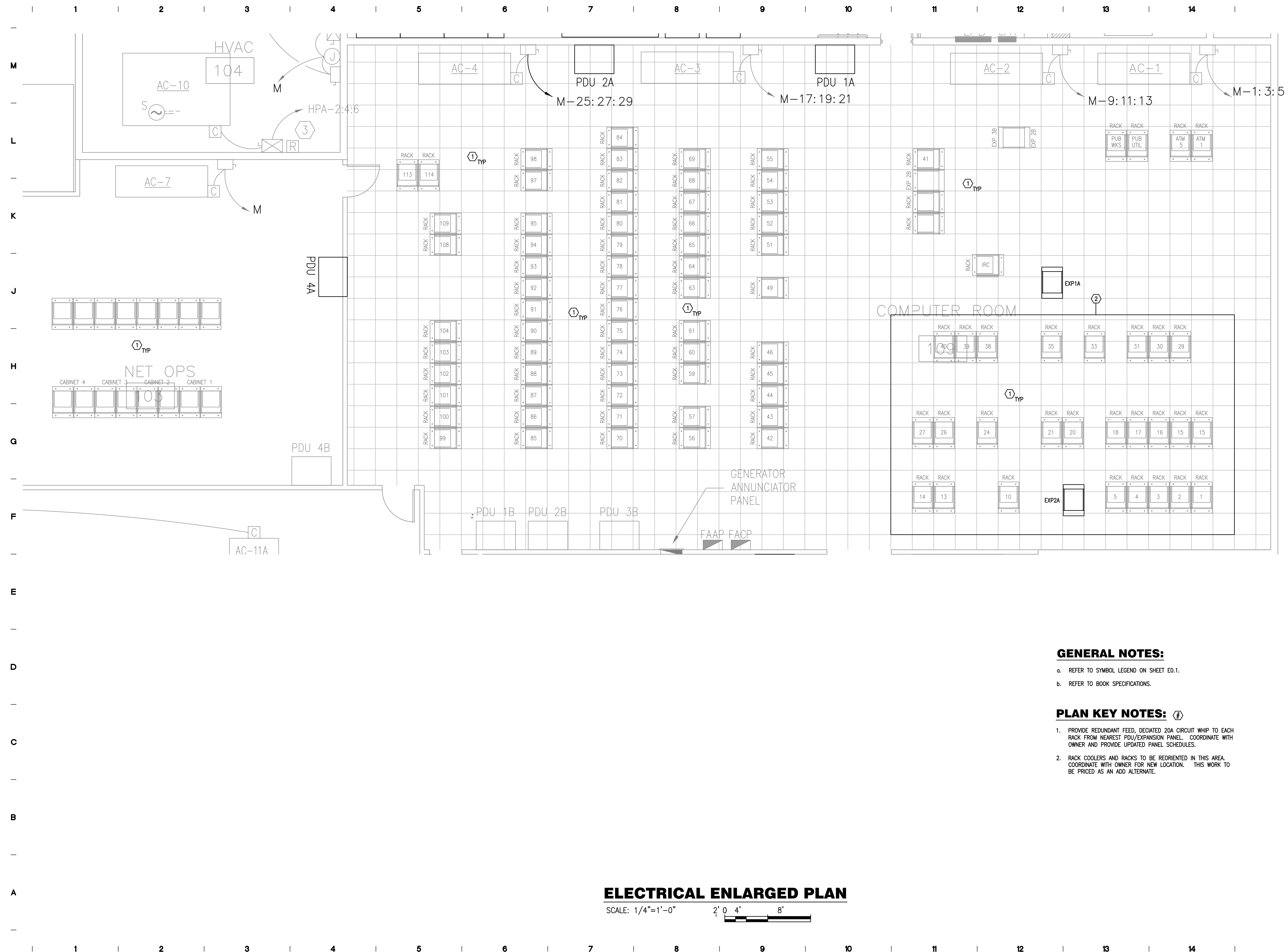
1. NEW AUTOMATIC TRANSFER SWITCH "ATS-A".
2. NEW ENCLOSED MAIN CIRCUIT BREAKER
3. NEW DISTRIBUTION PANEL "MDPA"
4. NEW MAINTENANCE BYPASS PANEL "MBPA"
5. NEW UPS DISTRIBUTION PANEL "UDPA"
6. NEW 625KVA/500KW UPS
7. NEW BATTERY BREAKER
8. NEW BATTERY CABINET
9. NEW DC JUNCTION BOX
10. PANEL HPC TO BE RELOCATED TO THIS LOCATION.
11. NEW DEDICATED 120V CIRCUIT, CEILING MOUNTED RECEPTACLE TO CRAC UNIT REDUNDANT FEED.
12. INTERCEPT EXISTING RECEPTACLE CIRCUITS WITHIN ROOM AND REFEED FROM NEW PANEL "LE"
13. MOVE EXISTING AC-6 UNIT AS CLOSE AS POSSIBLE TO COLUMN. EXTEND ALL POWER, CONTROLS, REFRIGERATION LINES, ETC.
14. RACK COOLERS AND RACKS TO BE REORIENTED IN THIS AREA. COORDINATE WITH OWNER FOR NEW LOCATION. THIS WORK TO BE PRICED AS AN ADD ALTERNATE.
15. PROVIDE LIEBERT AC4 PANEL OR EQUAL TO ESTABLISH A LEAD/LAG CONFIGURATION BETWEEN AC-6 AND AC-5. PROVIDE ALL NECESSARY CABLING, POWER, ETC.
16. BID ALTERNATE. SEE SHEET E6.2 FOR MORE DETAILS.
17. PROVIDE CAT6 DROP TO ALL PDU'S (TYP).



### ELECTRICAL FLOOR PLAN

SCALE: 1/8"=1'-0"  
0 4' 8' 16'

1023 A2.1



ARCHITECTURAL GROUP, INC.

5032 GODDARD AVENUE  
ORLANDO, FLORIDA 32804  
(407) 245-3660

FL LIC. # AA0002264  
PROJECT TITLE AND OWNERS NAME

**ORANGE COUNTY  
ISS - RCC EMERGENCY  
GENERATOR PROJECT  
A BUS REPLACEMENT**

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

**100% FOR CONSTRUCTION**

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL. LIC. # FL70700

REVISIONS


DRAWN BY

DJ/RV

CHECKED BY

JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

**ELECTRICAL  
ENLARGED PLAN**

DRAWING NUMBER

**E2.2**

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**GENERAL NOTES:**

- a. REFER TO SYMBOL LEGEND ON SHEET E0.1.
- b. REFER TO BOOK SPECIFICATIONS.

**PLAN KEY NOTES:** (1)

- 1. PROVIDE REDUNDANT FEED, DECIATED 20A CIRCUIT WHIP TO EACH RACK FROM NEAREST PDU/EXPANSION PANEL. COORDINATE WITH OWNER AND PROVIDE UPDATED PANEL SCHEDULES.
- 2. RACK COOLERS AND RACKS TO BE REORIENTED IN THIS AREA. COORDINATE WITH OWNER FOR NEW LOCATION. THIS WORK TO BE PRICED AS AN ADD ALTERNATE.

**ELECTRICAL ENLARGED PLAN**

SCALE: 1/4"=1'-0" 2' 0' 4' 8'

1023 A2.1



ARCHITECTURAL GROUP, INC.

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FL LIC. # AA0002264

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JOB NUMBER

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DRAWING TITLE

ENLARGED  
ELECTRICAL PLAN

DRAWING NUMBER

# E3.1

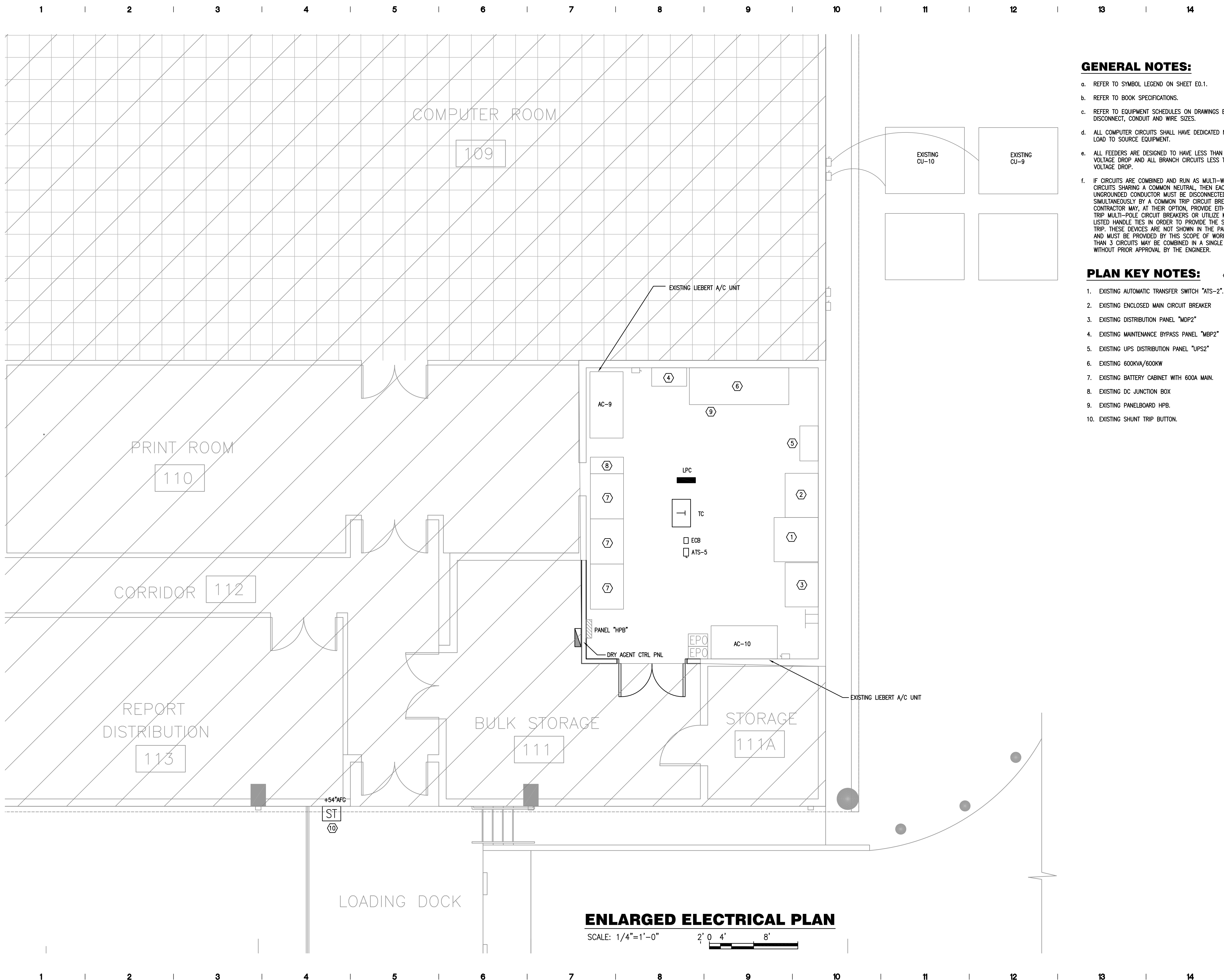
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#### GENERAL NOTES:

- REFER TO SYMBOL LEGEND ON SHEET ED.1.
- REFER TO BOOK SPECIFICATIONS.
- REFER TO EQUIPMENT SCHEDULES ON DRAWINGS E7.1 FOR DISCONNECT, CONDUIT AND WIRE SIZES.
- ALL COMPUTER CIRCUITS SHALL HAVE DEDICATED NEUTRAL FROM LOAD TO SOURCE EQUIPMENT.
- ALL FEEDERS ARE DESIGNED TO HAVE LESS THAN 2% TOTAL VOLTAGE DROP AND ALL BRANCH CIRCUITS LESS THAN 3% VOLTAGE DROP.
- 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.

#### PLAN KEY NOTES:

- EXISTING AUTOMATIC TRANSFER SWITCH "ATS-2".
- EXISTING ENCLOSED MAIN CIRCUIT BREAKER
- EXISTING DISTRIBUTION PANEL "MDP2"
- EXISTING MAINTENANCE BYPASS PANEL "MBP2"
- EXISTING UPS DISTRIBUTION PANEL "UPS2"
- EXISTING 600KVA/600KW
- EXISTING BATTERY CABINET WITH 600A MAIN.
- EXISTING DC JUNCTION BOX
- EXISTING PANELBOARD HPB.
- EXISTING SHUNT TRIP BUTTON.



### ENLARGED ELECTRICAL PLAN

SCALE: 1/4"=1'-0" 2' 0' 4' 8'

1023 A2.1



ARCHITECTURAL GROUP, INC.

5032 GODDARD AVENUE  
ORLANDO, FLORIDA 32804  
(407) 245-3660

FL LIC. # AA0002264  
PROJECT TITLE AND OWNERS NAME

# ORANGE COUNTY ISS - RCC EMERGENCY GENERATOR PROJECT A BUS REPLACEMENT

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

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FL LIC. # FL70700

REVISIONS

DRAWN BY

DJ/RV

CHECKED BY

JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

**ELECTRICAL DEMO  
POWER RISER**

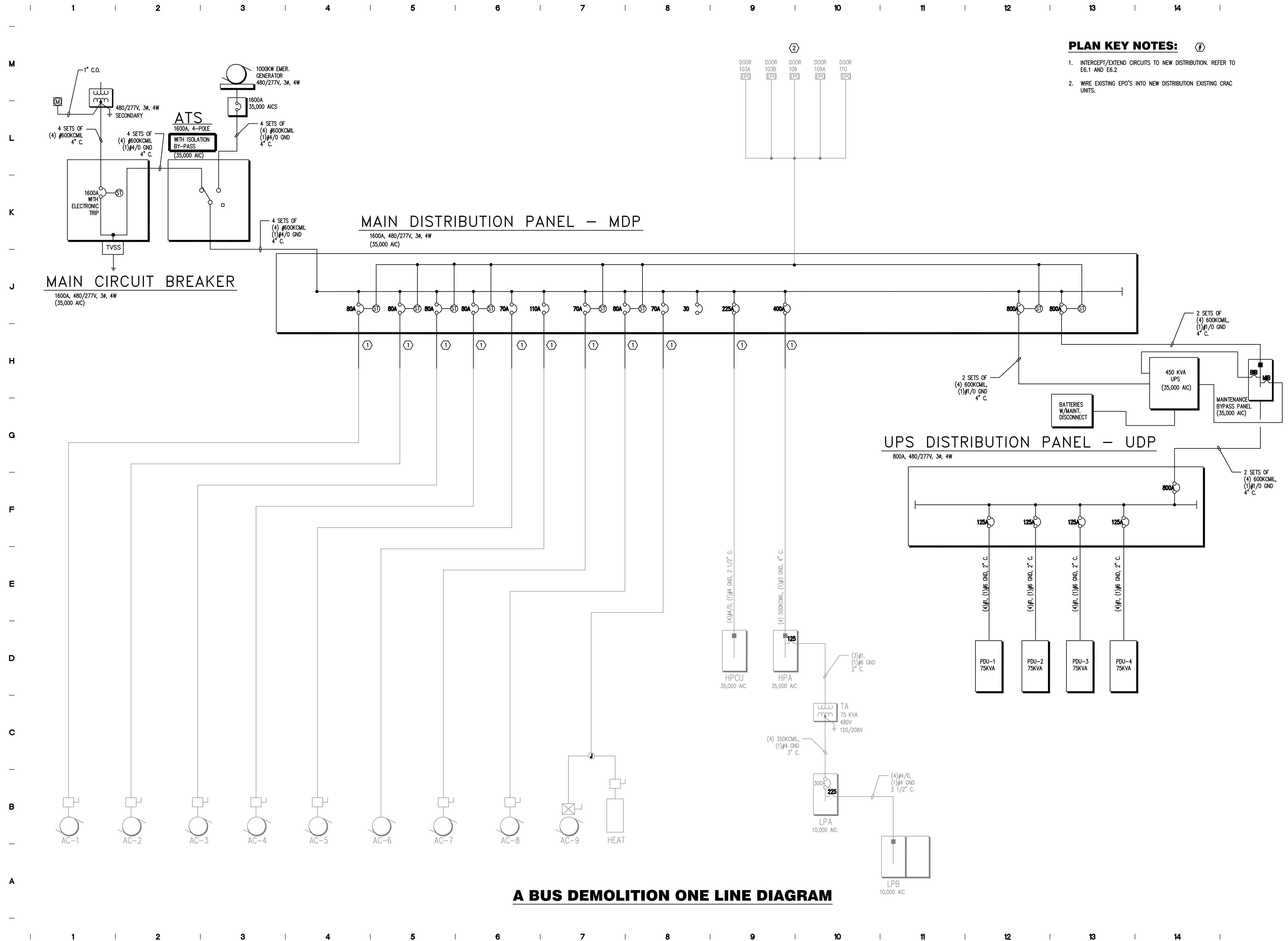
DRAWING NUMBER

# ED6.1

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### PLAN KEY NOTES:

1. INTERCEPT/EXTEND CIRCUITS TO NEW DISTRIBUTION. REFER TO E6.1 AND E6.2
2. WIRE EXISTING EPO'S INTO NEW DISTRIBUTION EXISTING CRAC UNITS.



## A BUS DEMOLITION ONE LINE DIAGRAM



ARCHITECTURAL GROUP, INC.

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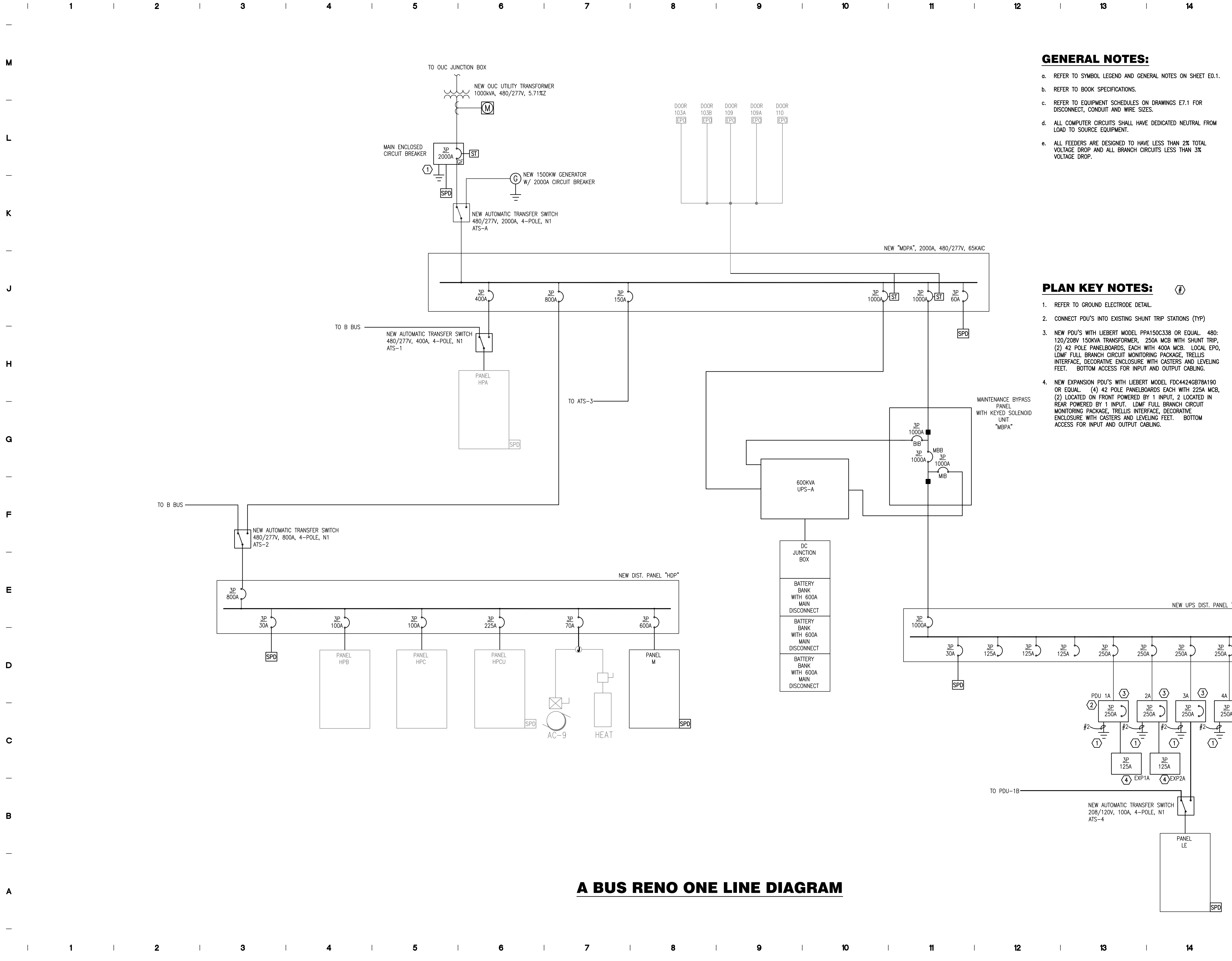
DRAWING TITLE

ELECTRICAL  
POWER RISER

DRAWING NUMBER

E6.1

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**GENERAL NOTES:**

- a. REFER TO SYMBOL LEGEND AND GENERAL NOTES ON SHEET ED.1.
- b. REFER TO BOOK SPECIFICATIONS.
- c. REFER TO EQUIPMENT SCHEDULES ON DRAWINGS E7.1 FOR DISCONNECT, CONDUIT AND WIRE SIZES.
- d. ALL COMPUTER CIRCUITS SHALL HAVE DEDICATED NEUTRAL FROM LOAD TO SOURCE EQUIPMENT.
- e. ALL FEEDERS ARE DESIGNED TO HAVE LESS THAN 2% TOTAL VOLTAGE DROP AND ALL BRANCH CIRCUITS LESS THAN 3% VOLTAGE DROP.

**PLAN KEY NOTES:**

- 1. REFER TO GROUND ELECTRODE DETAIL.
- 2. CONNECT PDU'S INTO EXISTING SHUNT TRIP STATIONS (TYP)
- 3. NEW PDU'S WITH LIEBERT MODEL PPA150C338 OR EQUAL. 480: 120/208V 150KVA TRANSFORMER, 250A MCB WITH SHUNT TRIP, (2) 42 POLE PANELBOARDS, EACH WITH 400A MCB. LOCAL EPO, LDMF FULL BRANCH CIRCUIT MONITORING PACKAGE, TRELIS INTERFACE, DECORATIVE ENCLOSURE WITH CASTERS AND LEVELING FEET. BOTTOM ACCESS FOR INPUT AND OUTPUT CABLING.
- 4. NEW EXPANSION PDU'S WITH LIEBERT MODEL FDC4424GB78A190 OR EQUAL. (4) 42 POLE PANELBOARDS EACH WITH 225A MCB, (2) LOCATED ON FRONT POWERED BY 1 INPUT, 2 LOCATED IN REAR POWERED BY 1 INPUT. LDMF FULL BRANCH CIRCUIT MONITORING PACKAGE, TRELIS INTERFACE, DECORATIVE ENCLOSURE WITH CASTERS AND LEVELING FEET. BOTTOM ACCESS FOR INPUT AND OUTPUT CABLING.

**A BUS RENO ONE LINE DIAGRAM**

1023 A2.1



ARCHITECTURAL GROUP, INC.

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FL LIC. # AA0002264

PROJECT TITLE AND OWNERS NAME

# ORANGE COUNTY ISS - RCC EMERGENCY GENERATOR PROJECT A BUS REPLACEMENT

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ORLANDO, FLORIDA 32805

100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

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FL LIC. # FL70700

REVISIONS

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DJ/RV

CHECKED BY

JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

ELECTRICAL  
POWER RISER

DRAWING NUMBER

# E6.2

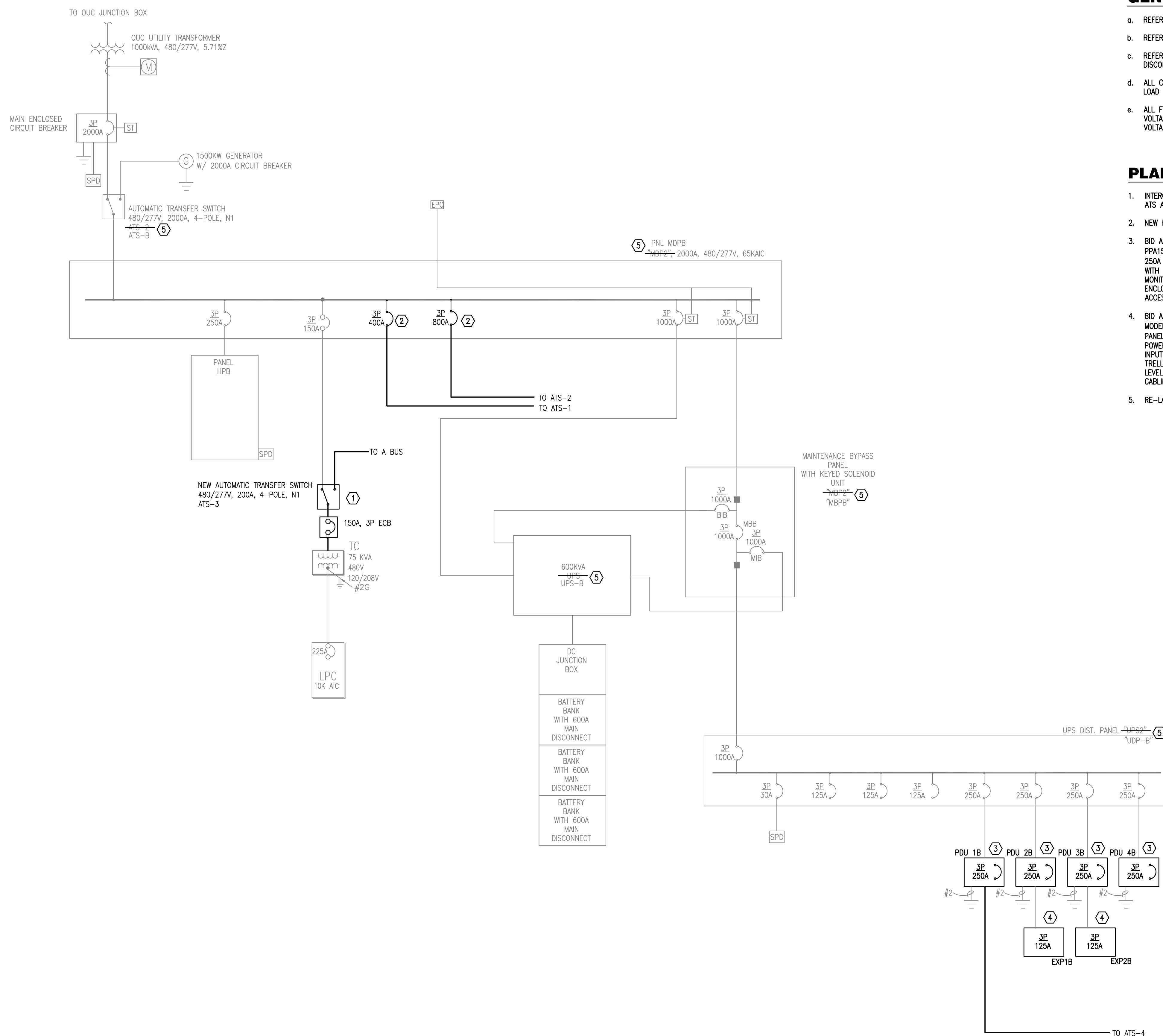
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### GENERAL NOTES:

- REFER TO SYMBOL LEGEND AND GENERAL NOTES ON SHEET E0.1.
- REFER TO BOOK SPECIFICATIONS.
- REFER TO EQUIPMENT SCHEDULES ON DRAWINGS E7.1 FOR DISCONNECT, CONDUIT AND WIRE SIZES.
- ALL COMPUTER CIRCUITS SHALL HAVE DEDICATED NEUTRAL FROM LOAD TO SOURCE EQUIPMENT.
- ALL FEEDERS ARE DESIGNED TO HAVE LESS THAN 2% TOTAL VOLTAGE DROP AND ALL BRANCH CIRCUITS LESS THAN 3% VOLTAGE DROP.

### PLAN KEY NOTES:

- INTERCEPT EXISTING FEED TO TRANSFORMER TC. PROVIDE NEW ATS AND ECB.
- NEW BREAKERS.
- BID ALTERNATE: REPLACE PDU'S WITH LIEBERT MODEL PPA150C338 OR EQUAL. 480: 120/208V 150KVA TRANSFORMER, 250A MCB WITH SHUNT TRIP, (2) 42 POLE PANELBOARDS, EACH WITH 400A MCB. LOCAL EPO, LDMF FULL BRANCH CIRCUIT MONITORING PACKAGE, TRELIS INTERFACE, DECORATIVE ENCLOSURE WITH CASTERS AND LEVELING FEET. BOTTOM ACCESS FOR INPUT AND OUTPUT CABLING.
- BID ALTERNATE: REPLACE EXPANSION PDU'S WITH LIEBERT MODEL FDC4424GB78A190 OR EQUAL. (4) 42 POLE PANELBOARDS EACH WITH 225A MCB, (2) LOCATED ON FRONT POWERED BY 1 INPUT, 2 LOCATED IN REAR POWERED BY 1 INPUT. LDMF FULL BRANCH CIRCUIT MONITORING PACKAGE, TRELIS INTERFACE, DECORATIVE ENCLOSURE WITH CASTERS AND LEVELING FEET. BOTTOM ACCESS FOR INPUT AND OUTPUT CABLING.
- RE-LABEL EQUIPMENT TO 'B' DESIGNATION.



## B BUS EXISTING ONE LINE DIAGRAM

1023 A2.1









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FL LIC. # AA0002264  
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100% FOR CONSTRUCTION

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL LIC. # FL70700

REVISIONS

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JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

## ELECTRICAL SCHEDULES

DRAWING NUMBER

# E7.3

1 2 3 4 5 6 7 8 9 10 11 12 13 14

M

L

K

J

H

G

F

E

D

C

B

A

MANUFACTURER: SQ. D. MAIN OPTIONS REQUIRED PANEL NAME: EXP1A		TYPE: NOOD		MOUNTING: SURFACE																																																			
AIC RATING:	K AMPS	MCB:	AMPS	LOCATION:																																																			
VOLTS L-L:		MLO:	125																																																				
VOLTS L-L:		S.E. RATED:	AMPS	NEMA TYPE:																																																			
PHASE:		GFI PROT:	NO	WIDTH:	20.00																																																		
		SHUNT TRIP:		DEPTH:	5.75																																																		
					IN																																																		
					IN																																																		
Circuit Breaker	TRIP	P	P	TRIP																																																			
	A	B	C	A	B	C																																																	
LOAD/PHASE (KVA)	A	B	C	A	B	C																																																	
	SUB FEED LUGS AS INDICATED, IF BLANK (NOT USED)																																																						
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MANUFACTURER: SQ. D. MAIN OPTIONS REQUIRED PANEL NAME: EXP2A		TYPE: NOOD		MOUNTING: SURFACE																																																			
AIC RATING:	K AMPS	MCB:	AMPS	LOCATION:																																																			
VOLTS L-L:		MLO:	125																																																				
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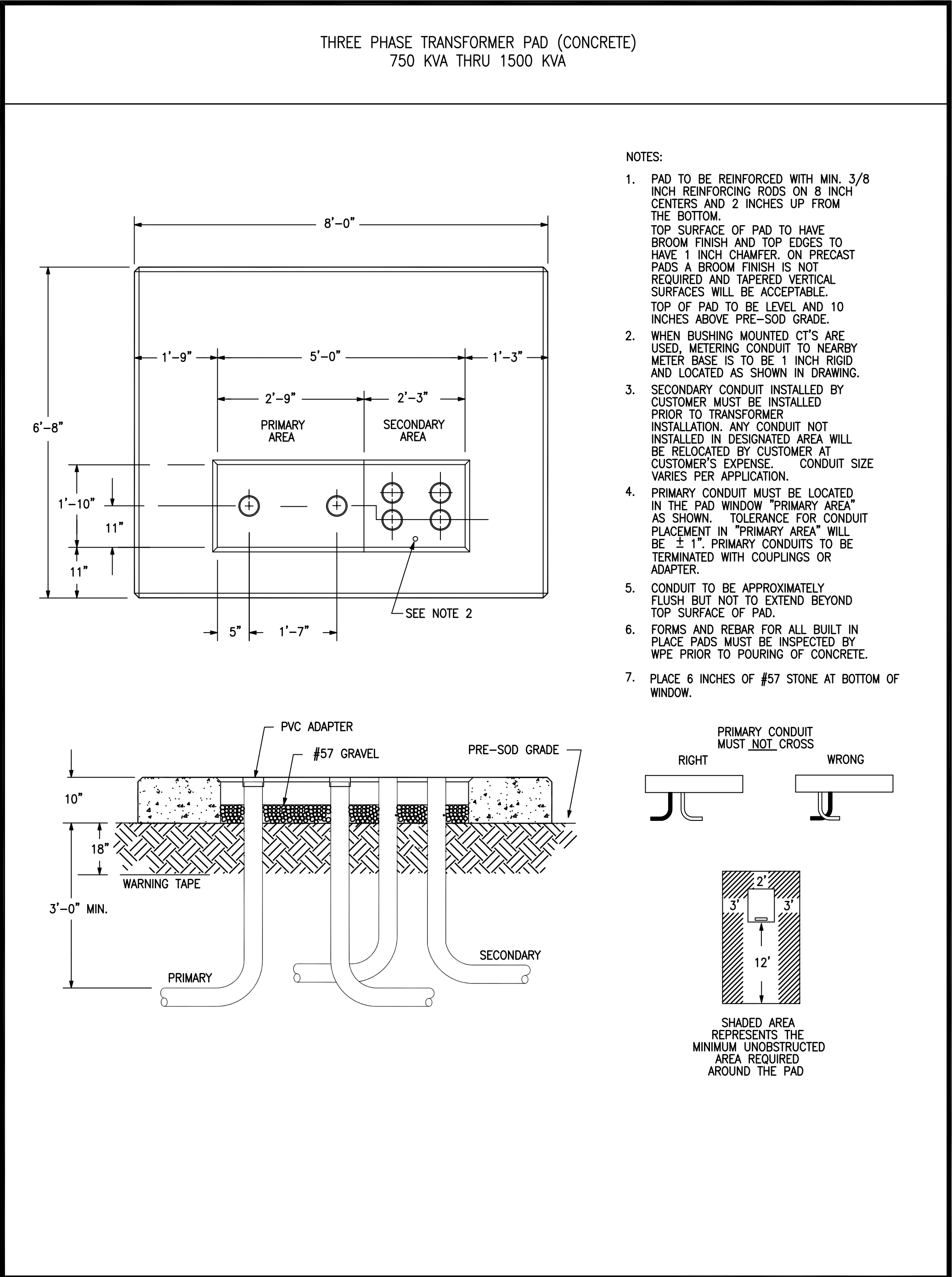
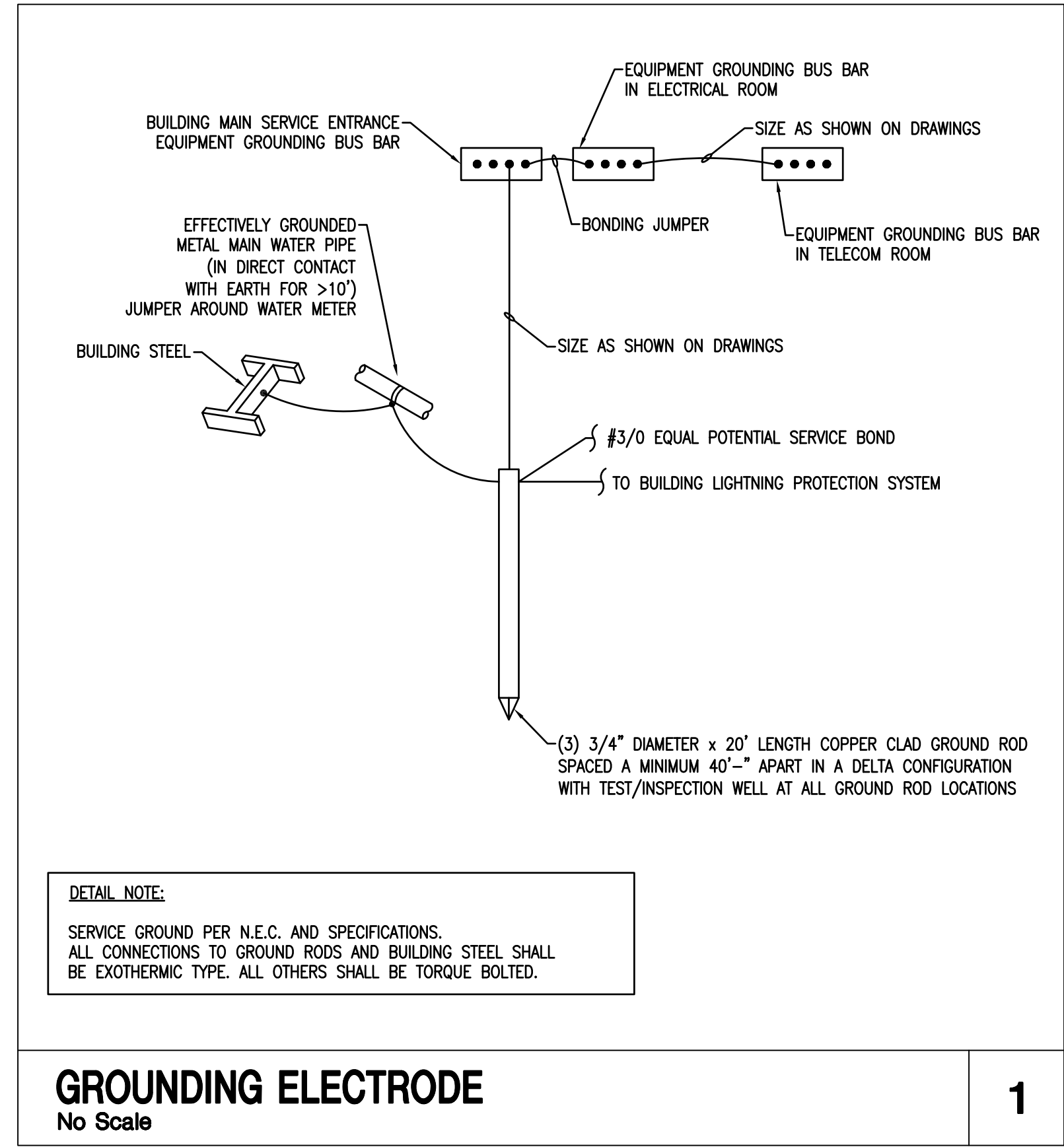
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AIC RATING:	K AMPS	MCB:	AMPS	LOCATION:																																																			
VOLTS L-L:		MLO:	225																																																				
VOLTS L-L:		S.E. RATED:	AMPS	NEMA TYPE:																																																			
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MANUFACTURER: SQ. D. MAIN OPTIONS REQUIRED PANEL NAME: PDU 4A-2		TYPE: NOOD		MOUNTING: SURFACE																																																			
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ARCHITECTURAL GROUP, INC.

5032 GODDARD AVENUE  
ORLANDO, FLORIDA 32804  
(407) 245-3660

FL LIC. # AA0002264  
PROJECT TITLE AND OWNERS NAME

**ORANGE COUNTY  
ISS - RCC EMERGENCY  
GENERATOR PROJECT  
A BUS REPLACEMENT**

4300 SOUTH JOHN YOUNG PARKWAY  
ORLANDO, FLORIDA 32805

**100% FOR CONSTRUCTION**

CONSULTANTS

SEAL AND SIGNATURE

JUSTIN L. MUNDELL P.E.  
FL LIC. # FL70700

REVISIONS

DRAWN BY

DJ/RV

CHECKED BY

JL

JOB NUMBER

1510

DATE

MAY 16, 2016

DRAWING TITLE

**ELECTRICAL  
DETAILS**

DRAWING NUMBER

**E8.1**



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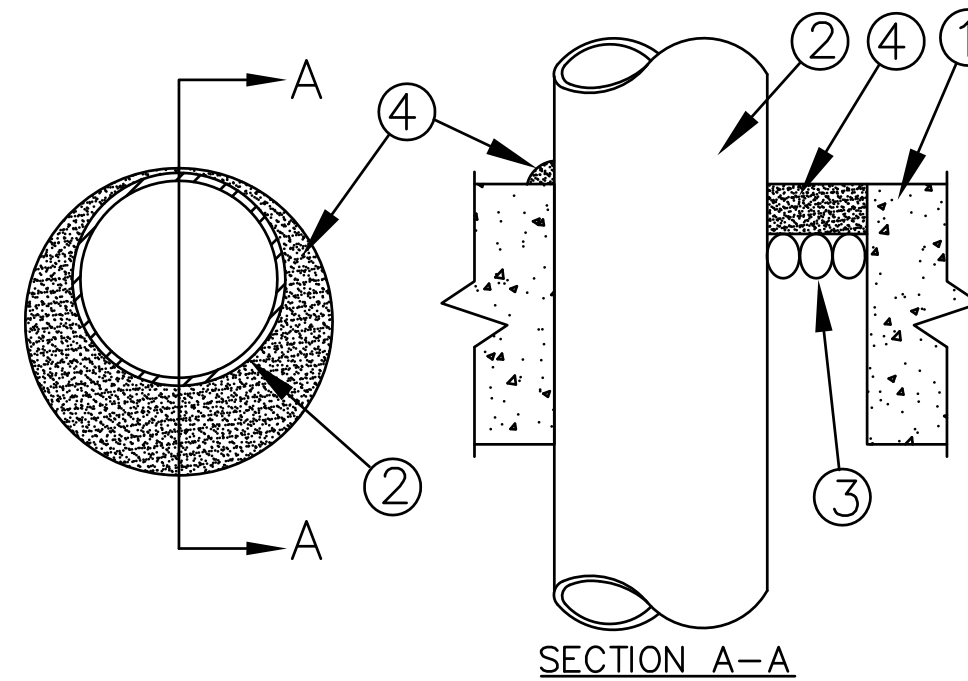
**ELECTRICAL  
DETAILS**

DRAWING NUMBER

# E8.2

SHEET OF  
COPYRIGHT © 2012 MRI ARCHITECTURAL GROUP, INC.

SYSTEM NO. C-AJ-1044  
JUNE 15, 2005  
F RATINGS - 2, 3, AND 4 HR (SEE ITEMS 2A AND 4)  
T RATING - 0 HR  
L RATING AT AMBIENT - 2 CFM/SQ FT  
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT  
W RATING - CLASS I (SEE ITEM 4)



3M Fire Protection Products | UL SYSTEM NUMBER: C-AJ-1044

1. FLOOR OR WALL ASSEMBLY - LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF OR 1600-2400 KG/M3) CONCRETE, EXCEPT AS NOTED IN TABLE UNDER ITEM 4, MIN THICKNESS OF SOLID CONCRETE FLOOR OR WALL ASSEMBLY IS 4-1/2 IN. (114 MM). FLOOR MAY ALSO BE CONSTRUCTED OF ANY MIN 6 IN. (152 MM) THICK UL CLASSIFIED HOLLOW CORE PRECAST CONCRETE UNITS WHEN FLOOR IS CONSTRUCTED OF HOLLOW CORE PRECAST CONCRETE UNITS, PACKING MATERIAL (ITEM 3) AND CAULK FILL MATERIAL (ITEM 4) TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF FLOOR, FLUSH WITH FLOOR SURFACE. WALL ASSEMBLY MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*, MAX DIAM OF OPENING IN SOLID LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR IS 32 IN. (813 MM). MAX DIAM OF OPENING IN FLOOR CONSTRUCTED OF HOLLOW-CORE PRECAST CONCRETE UNITS IS 7 IN. (178 MM).

SEE CONCRETE BLOCKS (CAZT) AND PRECAST CONCRETE UNITS (CFV) CATEGORIES IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

1A. STEEL SLEEVE (OPTIONAL, NOT SHOWN) - MAX 15 IN. (381 MM) ID (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 2 IN. (51 MM) ABOVE TOP OF FLOOR OR BEYOND EITHER SURFACE OF WALL. MAX 16 IN. (406 MM) ID (OR SMALLER) MIN 0.028 (0.71 MM) WALL THICKNESS (OR HEAVIER) GALVANIZED STEEL SLEEVE CAST OR GROUTED INTO FLOOR OR WALL ASSEMBLY. SLEEVE MAY EXTEND A MAX OF 1/2 IN. (13 MM) BEYOND EITHER SURFACE OF FLOOR OR WALL.

2. THROUGH PENETRANTS - ONE METALLIC PIPE, CONDUIT OR TUBING TO BE INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. MAX ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND EDGE OF THROUGH OPENING OR SLEEVE IS DEPENDENT ON THE PARAMETERS SHOWN IN ITEM 4. MIN ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS 0 IN. (0 MM) (POINT CONTACT). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

- A. STEEL PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE - NOM 30 IN. (762 MM) DIAM (OR SMALLER) CAST OR DUCTILE IRON PIPE.
- C. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) RIGID STEEL CONDUIT.
- D. CONDUIT - NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
- E. COPPER - TUBING NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER PIPE.
- F. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.

3. PACKING MATERIAL - POLYETHYLENE BACKER ROD OR NOM 1 IN. (25 MM) THICKNESS OF TIGHTLY-PACKED MINERAL WOOL BATT OR GLASS FIBER INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF CAULK FILL MATERIAL (ITEM 4).

4. FILLVOID OR CAVITY MATERIAL\* - CAULK OR SEALANT - APPLIED TO FILL THE ANNULAR SPACE FLUSH WITH TOP SURFACE OF FLOOR. IN WALL ASSEMBLIES, REQUIRED CAULK THICKNESS TO BE INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL, FLUSH WITH WALL SURFACE. AT POINT CONTACT LOCATION BETWEEN PENETRANT AND SLEEVE OR BETWEEN PENETRANT AND CONCRETE, A MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK SHALL BE APPLIED AT TOP SURFACE OF FLOOR AND AT BOTH SURFACES OF WALL. THE HOURLY F RATINGS AND THE MIN REQUIRED CAULK THICKNESSES ARE DEPENDENT UPON A NUMBER OF PARAMETERS, AS SHOWN IN THE FOLLOWING TABLE:

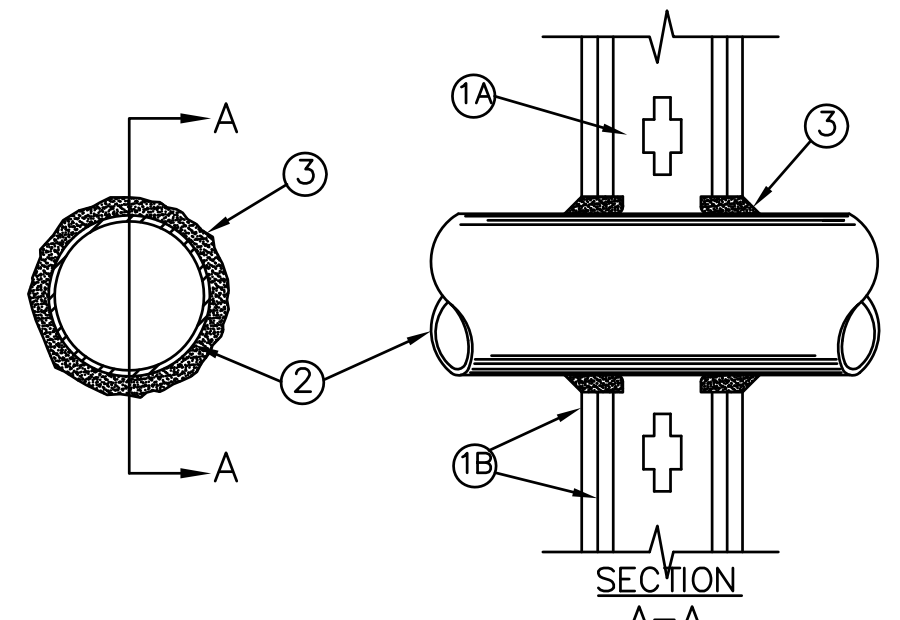
Min Roof or Wall Thick In. (mm)	Min Pipe, Tube or Conduit Diam In. (mm)	Max Annular Space In. (mm)	Min Caulk Thick In. (mm)	F Rating Hr
2-1/2 (64)	1/2-12 (13-305)	1-5/8 (35)	1/2 (13)	2
2-1/2 (64)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	2
4-1/2 (114)	1/2-6 (13-152)	1-5/8 (35)	1/4 (6)	2
4-1/2 (114)	1/2-12 (13-305)	1-1/4 (32)	1/2 (13)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	3
4-1/2 (114)	2-20 (508-762)	2 (51)	2 (51)	3
8-1/2 (140)	1/2-6 (13-152)	1-5/8 (35)	1 (25) (B)	4

(A) MIN 2 IN. (51 MM) THICKNESS OF MINERAL WOOL BATT INSULATION REQUIRED IN ANNULAR SPACE.  
(B) MIN 1 IN. (25 MM) THICKNESS OF MINERAL WOOL BATT INSULATION REQUIRED IN ANNULAR SPACE ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. MIN 1 IN. (25 MM) THICKNESS OF CAULK TO BE INSTALLED FLUSH WITH EACH SURFACE OF FLOOR OR WALL ASSEMBLY.

3M COMPANY - CP 25WB+ CAULK OR FB-3000 WT SEALANT. (NOTE: W RATING APPLIES ONLY WHEN FB-3000 WT SEALANT IS USED.)

\*BEARING THE UL CLASSIFICATION MARKING

\*NOTE W-L-1001  
THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2004 EDITION OF THE UL FIRE RESISTANCE DIRECTORY.



3M Fire Protection Products | UL SYSTEM NUMBER: W-L-1001

1. WALL ASSEMBLY - THE 1, 2, 3 OR 4 HR FIRE-RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:

- A. STUDS - WALL FRAMING MAY CONSIST OF EITHER WOOD STUDS (MAX 2 HR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER SPACED 16 IN. (406 MM) OC WITH NOM 2 BY 4 IN. (51 BY 102 MM) LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN 3-5/8 IN. (92 MM) WIDE BY 1-3/8 IN. (35 MM) DEEP CHANNELS SPACED MAX 24 IN. (610 MM) OC.
- B. GYPSUM BOARD\* - NOM 1/2 OR 5/8 IN. (13 OR 16 MM) THICK, 4 FT. (122 CM) WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE AS SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 26 IN. (660 MM).

2. THROUGH PENETRANT - ONE METALLIC PIPE, CONDUIT OR TUBING INSTALLED EITHER CONCENTRICALLY OR ECCENTRICALLY WITHIN THE FIRESTOP SYSTEM. THE ANNULAR SPACE BETWEEN PIPE, CONDUIT OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN OF 0 IN. (0 MM) (POINT CONTACT) TO MAX 2 IN. (51 MM). PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY. THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES, CONDUITS OR TUBING MAY BE USED:

- A. STEEL PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
- B. IRON PIPE - NOM 24 IN. (610 MM) DIAM (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOLE PIPE, NOM 12 IN. (305 MM) DIAM (OR SMALLER) OR CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE.
- C. CONDUIT - NOM 6 IN. (152 MM) DIAM (OR SMALLER) STEEL CONDUIT OR NOM 4 IN. (102 MM) DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING.
- D. COPPER TUBING - NOM 6 IN. (152 MM) DIAM (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING.
- E. COPPER PIPE - NOM 6 IN. (152 MM) DIAM (OR SMALLER) REGULAR (OR HEAVIER) COPPER PIPE.
- F. THROUGH PENETRATING PRODUCT\* - FLEXIBLE METAL PIPING - THE FOLLOWING TYPES OF STEEL FLEXIBLE METAL GAS PIPING MAY BE USED:

- 1. NOM 2 IN. (51 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
- OMEGA FLEX INC
- 2. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
- TITEXLEX CORP
- A BUNDO CO
- 3. NOM 1 IN. (25 MM) DIAM (OR SMALLER) STEEL FLEXIBLE METAL GAS PIPING. PLASTIC COVERING ON PIPING MAY OR MAY NOT BE REMOVED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

WARD MFG INC

3. FILLVOID OR CAVITY MATERIAL\* - CAULK OR SEALANT - MIN 5/8, 1-1/4, 1-7/8 AND 2-1/2 IN. (16, 32, 48 AND 64 MM) THICKNESS OF CAULK FOR 1, 2, 3 AND 4 HR RATED ASSEMBLIES, RESPECTIVELY, APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. MIN 1/4 IN. (6 MM) DIAM BEAD OF CAULK APPLIED TO GYPSUM BOARD/PENETRANT INTERFACE AT POINT CONTACT LOCATION ON BOTH SIDES OF WALL. THE HOURLY F RATINGS OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE.

THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

Max Pipe or Conduit Diam In. (mm)	F Rating Hr	T Rating Hr
1 (25)	1 or 2	0+, 1 or 2
1 (25)	3 or 4	3 or 4
4 (102)	1 or 2	0
6 (152)	3 or 4	0
12 (305)	1 or 2	0

\*WHEN COPPER PIPE IS USED, T RATING IS 0 HR.

3M COMPANY - CP 25WB+ CAULK OR FB-3000 WT SEALANT.

\*BEARING THE UL CLASSIFICATION MARKING

## EMT THRU CONCRETE PENETRATION DETAIL

SCALE: NOT TO SCALE

1

## EMT THRU GYP BOARD PENETRATION DETAIL

SCALE: NOT TO SCALE

2

1023 A2.1