

Orange County Animal Services Building 500 HVAC Renovation

PERMIT DOCUMENTS

November 03, 2016

Orange County Government

Capital Planning Division

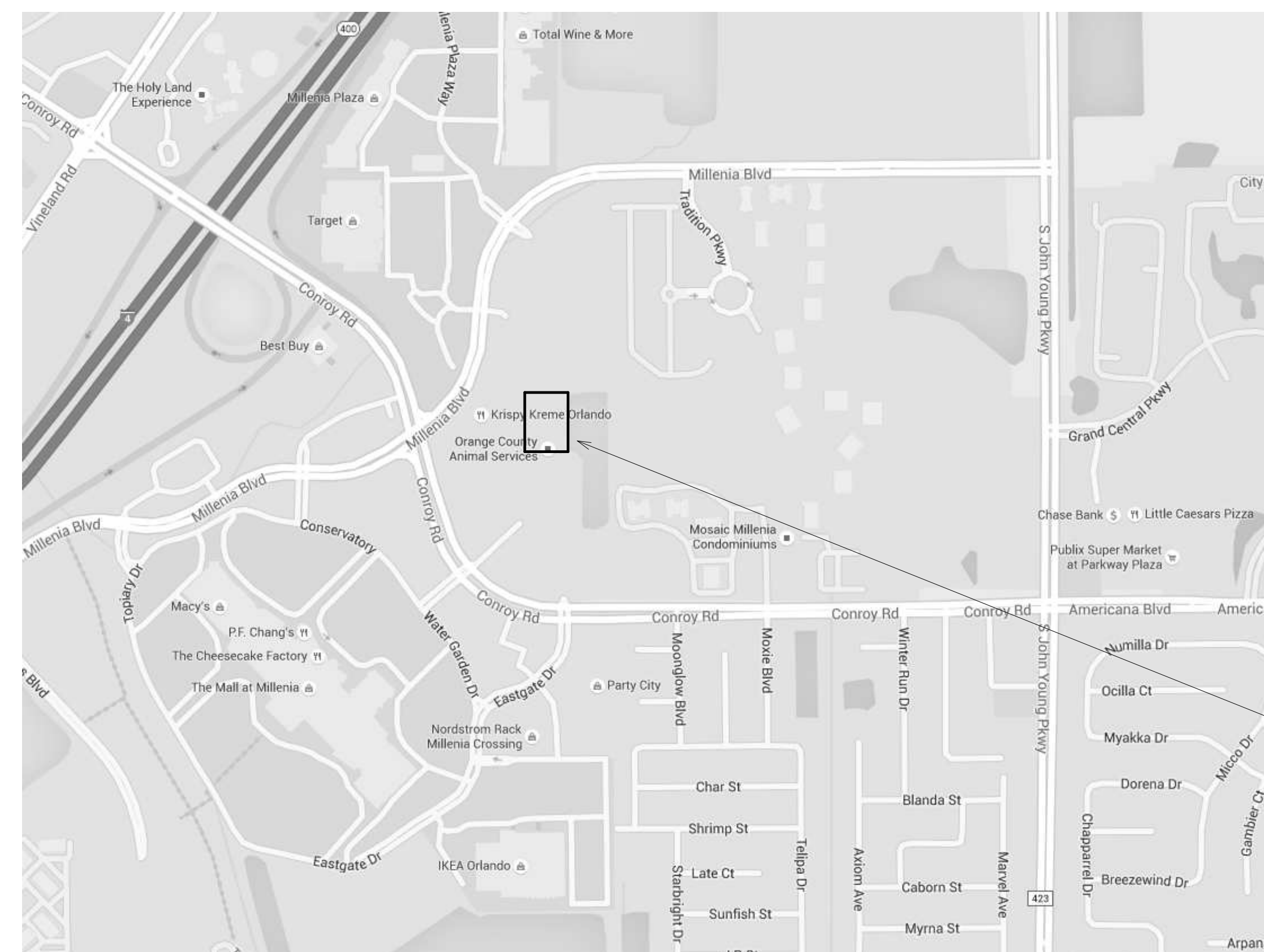
400 East South Street, Suite 500
Orlando, FL 32801

GENERAL SCOPE OF WORK

1. INSTALLATION OF CORE-FILL 500 INSULATION ON THE ENTIRE BUILDING ENVELOPE.
2. INSTALLATION OF FOAM ICYNENE TYPE INSULATION ON THE UNDERSIDE OF THE ENTIRE BUILDING ROOF.
3. BUILDING DEMOLITION AND RENOVATION AS OUTLINED BELOW:
 - REMOVE WINDOWS AND INSTALL DOORS FOR ADPOT 102/GROOMING 101.
 - REMOVE ROLLUP DOORS, INFILL WITH CMU AND FIXED UPPER WINDOWS FOR TRUCKPORT CANOPY 103.
 - STOREFRONT GLAZING AND FIXED UPPER WINDOWS FOR TRUCKPORT CANOPY 103.
4. REPLACEMENT OF EXISTING HVAC SYSTEM WITH NEW 100% DEDICATED OUTSIDE AIR UNIT, 5100 CFM, 208V/3PH FOR ANIMAL SERVICES BUILDING.
5. ALL EXISTING SUPPLY AND RETURN AIR DUCTWORK SERVING THE ENTIRE BUILDING WILL BE REMOVED AND REPLACED WITH EXTERNALLY INSULATED GALVANIZED STEEL SHEET METAL DUCTWORK. SELECTIVE DEMOLITION AND REPLACEMENT OF GYPSUM BOARD CEILING THROUGHOUT THE BUILDING.
6. THE NEW HVAC UNITS SHALL BE CONNECTED TO THE CAMPUS WIDE MAIN BUILDING AUTOMATION SYSTEM.
7. ALL WORK SHALL BE PERFORMED IN A MANNER AND SCHEDULE TO REDUCE DISRUPTION TO THE ANIMAL SERVICES OPERATION.
8. ELECTRICAL - PROVIDE NEW PANEL TO ACCOMMODATE ADDITIONAL HVAC EQUIPMENT IN ANIMAL SERVICES BUILDING 500. CONNECT NEW OR RECONNECT EXISTING CIRCUITS TO NEW HVAC EQUIPMENT.
9. INSTALLATION OF NEW TRENCH DRAIN IN TRUCKPORT / CANOPY AREA.

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Mechanical	
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M101	Mechanical Demo Plan
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PROJECT LOCATION

BOARD OF COUNTY COMMISSIONERS

MAYOR - TERESA JACOBS

DISTRICT 1 COMMISSIONER - S. SCOTT BOYD

DISTRICT 2 COMMISSIONER - BRYAN NELSON

DISTRICT 3 COMMISSIONER - PETE CLARKE

DISTRICT 4 COMMISSIONER - JENNIFER THOMPSON

DISTRICT 5 COMMISSIONER - TED EDWARDS

DISTRICT 6 COMMISSIONER - VICTORIA P. SIPLIN

PROJECT TEAM

architectural Rhodes+Britto Architects, Inc 605 East Robinson Street Suite 750 Orlando, FL 32801 Phone: (407) 648-7289 Fax: (407) 648-7289 contact: Maximiliano Brito	structural Base Consultants 4767 New Broad Street, #1018 Orlando, FL 32814 Phone: 407.377.7227 Cell: 407.405.3595	electrical RTM Engineering 952 S Semoran Blvd Suite 100 Winter Park, FL 32792 ph. (407) 678-2055 fax (407) 678-2088 contact: Mitesh Smart	mechanical RTM Engineering 952 S Semoran Blvd Suite 100 Winter Park, FL 32792 ph. (407) 678-2055 fax (407) 678-2088 contact: Mitesh Smart
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PROFESSIONAL SEALS

Mohamed Shalaby, RA, AIA Fl. Reg. No AR0094103	Laura Isabel Barbero Buffa, P.E. Lic No 74027	Maen Jauhary, P.E. P.E. Lic. No 76232	Dalrio A. Lewis, P.E. P.E. Lic. No 77571

GENERAL NOTES - FLOOR PLAN

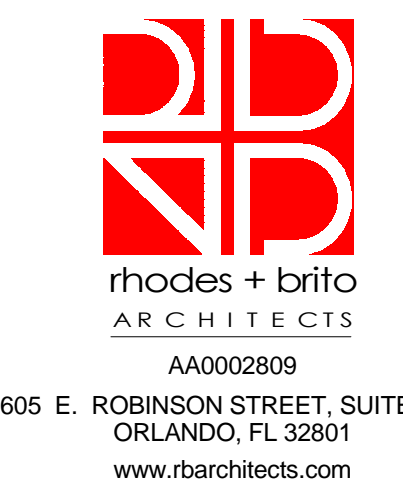
- A THESE DRAWINGS HAVE BEEN DEVELOPED FROM OBSERVED FIELD CONDITIONS AND MAY NOT REFLECT ALL HIDDEN CONDITIONS. THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND SHALL VERIFY THESE DRAWINGS WITH THE EXISTING FIELD CONDITIONS. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING CONDITIONS.
- B IT IS THE INTENT OF THIS FACILITY TO REMAIN OPERATIONAL FOR THE DURATION OF THIS PROJECT. ENSURE SAFETY OF ALL OCCUPANTS. DEMOLITION OF ITEMS WHICH MAY CREATE DUST, NOISE, OR CIRCULATION PROBLEMS SHOULD BE COORDINATED WITH OWNER PRIOR TO START OF WORK.
- C CONTRACTOR SHALL PROTECT ALL EXISTING ITEMS TO REMAIN FROM DAMAGE DURING DEMOLITION AND SHALL BEAR ALL COSTS OF REPAIRING, REFINISHING, REPLACING, ETC. ITEMS DAMAGED OR DESTROYED BY THE CONTRACTOR. CONFORM TO ALL APPLICABLE CODES FOR DEMOLITION AND NEW WORK. FOR ADDITIONAL GENERAL NOTES, LEGENDS, AND SCHEDULES REFER TO SHEET C301.
- E CONTRACTOR TO PROVIDE ENGINEERED SHOP DRAWINGS AND FL PRODUCT APPROVALS FOR REVIEW BY THE DESIGN TEAM PRIOR TO FABRICATION OF ALL ASSEMBLIES.
- F COORDINATE ALL SHUT-DOWNS IN UTILITY SERVICE WITH OWNER PRIOR TO PERFORMING SHUT-DOWNS IN UTILITY SERVICE.
- G CONTRACTOR SHALL PATCH, INFILL, AND SEAL WALLS WHERE AIR DUCTS AND UTILITIES THAT PENETRATE WALLS WAS REMOVED. ALL INFILL AND SEALANTS SHALL CONFORM WITH THE EXISTING FIRE WALL AND SMOKE RATING REQUIREMENTS.
- H CONTRACTOR SHALL COORDINATE WITH OWNER CONCERNING THE PROPER REMOVAL OF ALL DEBRIS ASSOCIATED WITH THE WORK.
- I MAINTAIN THE CONTINUITY OF CONSTRUCTION OF ALL FIRE-RATED ASSEMBLIES (I.E. DOORS, GYPSUM ENCLOSURES, SPRAYED FIRE PROOFING, ETC.) AT ALL EXISTING AND NEW LOCATIONS INCLUDING BUT NOT LIMITED TO STRUCTURAL COLUMNS, BEAMS, AND FLOOR SLABS.
- J ALL CORE DRILL LOCATIONS TO BE VERIFIED BY GC PRIOR TO DRILLING GC TO COORDINATE ALL FINAL CORE DRILL LOCATION WITH FURNITURE VENDOR.
- K CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO INFORM OWNER/ARCHITECT IF DISCREPANCIES BETWEEN EXISTING AND DRAWINGS.
- L IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB AND IMMEDIATELY NOTIFY ARCHITECT AND OWNER. HAZARDOUS MATERIAL SHALL BE REMOVED BY OWNER UNDER A SEPARATE CONTRACT.
- M CONTRACTOR TO ESTIMATE 50% HARD CEILING REMOVAL AND REPLACEMENT FOR BIDDING PURPOSES.



Client:



Consultants:



EOR Stamp:

KEYNOTE LEGEND

01	INSTALL NEW WINDOW, 4'-0" X 4'-0".
02	INSTALL NEW SINGLE PANE GLASS DOOR.
03	INSTALL NEW STOREFRONT WINDOWS.
04	INFILL WALL AS REQUIRED TO MATCH EXISTING ADJACENT PARTITION.
05	INSTALL NEW STOREFRONT DOOR WITH TRANSOM.
06	INSTALL CLERESTORY FIXED WINDOWS IN ENTIRE WIDTH OF OPENING.
07	INSTALL TRENCH DRAIN. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
08	PROVIDE SELF LEVELING CONCRETE AND SLOPE TOWARDS TRENCH DRAIN.
09	3.5" METAL STUD WALL - FLOOR TO CEILING - WITH MOISTURE RESISTANT GWD ON ONE SIDE. PROVIDE FRP - FLOOR TO CEILING - TO MATCH ADJACENT WALL COLOR.
10	PROVIDE EPOXY FLOORING WITH INTEGRAL BASE TO MATCH EXISTING FLOORING AT NEW CONSTRUCTION AREAS.
11	PROVIDE THROUGH WALL OPENING FOR MECHANICAL DUCT/WORK. REFER TO MECHANICAL DRAWINGS FOR SIZE AND STRUCTURAL DRAWINGS FOR OPENING REINFORCEMENT.
12	EXISTING DOOR TO REMAIN.
13	EXISTING WALL TO REMAIN.
14	MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION - REFER TO STRUCTURAL DRAWINGS FOR CONCRETE PAD REINFORCEMENT INFORMATION.
15	SPRAY OPEN CELL ICYNENE INSULATION TO UNDERSIDE OF ROOF IN ITS ENTIRETY - INSTALL PER MANUFACTURER'S RECOMMENDATIONS - TYP.
16	PATCH/REPAIR CEILING AS REQUIRED IN HATCHED AREA - SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. CONTRACTOR TO PROVIDE ACCESS PANELS IF REQUIRED - TYP.
17	EXISTING COLUMNS AND CANOPY SYSTEM - ITEMS NOT SHOWN ON SHEET A201 FOR VISUAL CLARITY. PROTECT EXISTING COLUMNS AND CANOPIES FROM DAMAGE DURING CONSTRUCTION.

DEMOLITION KEYNOTE LEGEND

D01	EXISTING WINDOW TO BE REPLACED WITH NEW WINDOW - PREPARE OPENING TO RECEIVE NEW WINDOW.
D02	REMOVE WINDOW IN ITS ENTIRETY; PREPARE OPENING FOR NEW DOOR.
D03	REMOVE OVERHEAD ROLL-UP DOOR IN ITS ENTIRETY; PREPARE AREA FOR NEW STOREFRONT.
D04	REMOVE OVERHEAD ROLL-UP DOOR IN ITS ENTIRETY; INFILL WALL AS REQUIRED - PREPARE OPENING TO RECEIVE NEW WINDOW.
D05	REMOVE DOUBLE DOOR IN ITS ENTIRETY; PREPARE AREA FOR NEW CONSTRUCTION.
D07	DEMOLISH SLAB TO PREPARE FOR PROPOSED TRENCH DRAIN.
D08	REMOVE CEILING AS REQUIRED TO RECEIVE NEW MECHANICAL - SEE MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.
D09	SIGN TO BE RELOCATED - CONFIRM WITH OWNER NEW LOCATION.

MOHAMED SHALABY AR94103

Project:
OC Animal Services Building 500 HVAC Renovation

Location:
2769 Conroy Rd, Orlando Fl, 32839

Issuance:
PERMIT DOCUMENTS

Revisions:

#	Date	Description

Date:
November 03, 2016

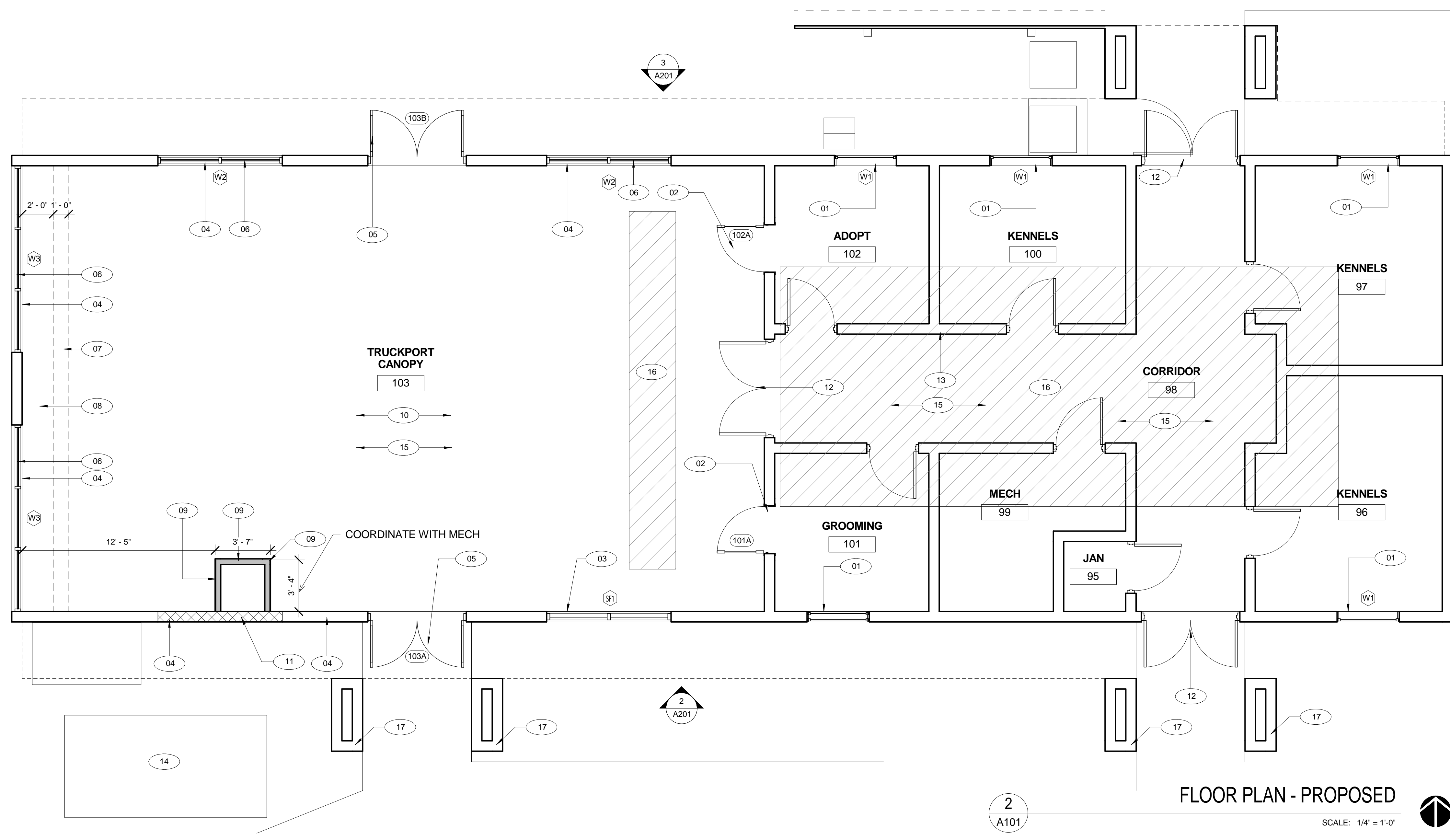
Project Number:
16.OC.026

Drawn By: LF
Checked By: AS

FIRST FLOOR PLAN

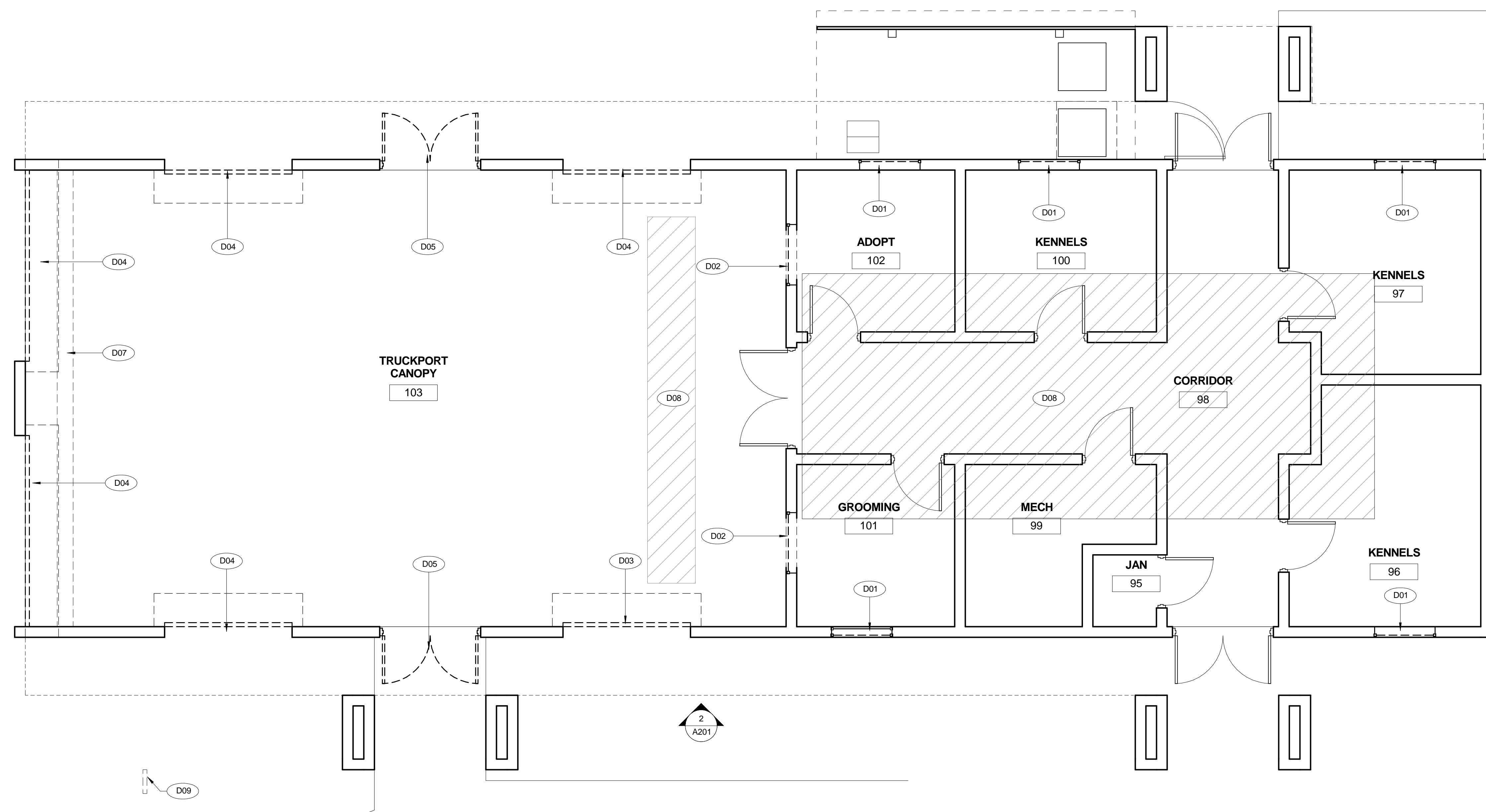
Sheet No.:

A101



FLOOR PLAN - PROPOSED

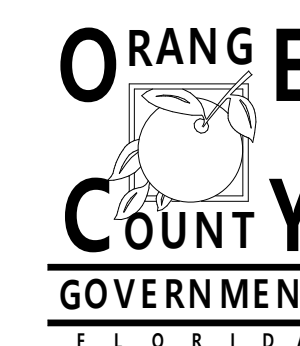
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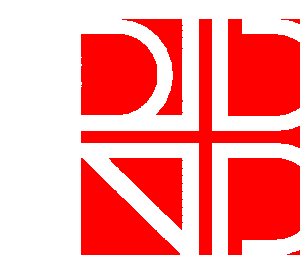
FLOOR PLAN - DEMOLITION

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

Client:



Consultants:



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605 E. ROBINSON STREET, SUITE 750
ORLANDO, FL 32801
www.rhodesandbrito.com

EOR Stamp:

MOHAMED SHALABY
AR94103

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Services
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HVAC
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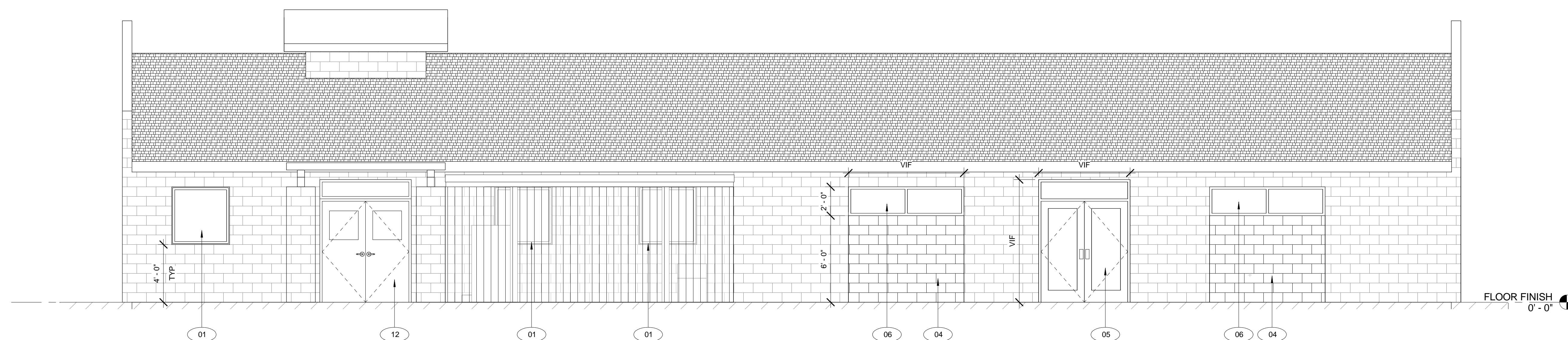
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16.OC.026

Drawn By: Author
Checked By: Checker

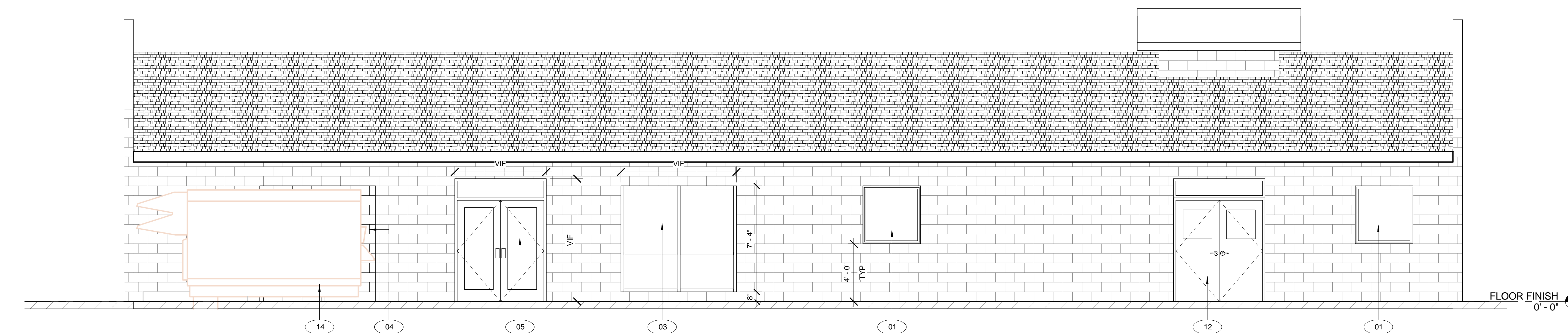
EXTERIOR
ELEVATIONS

Sheet No.:

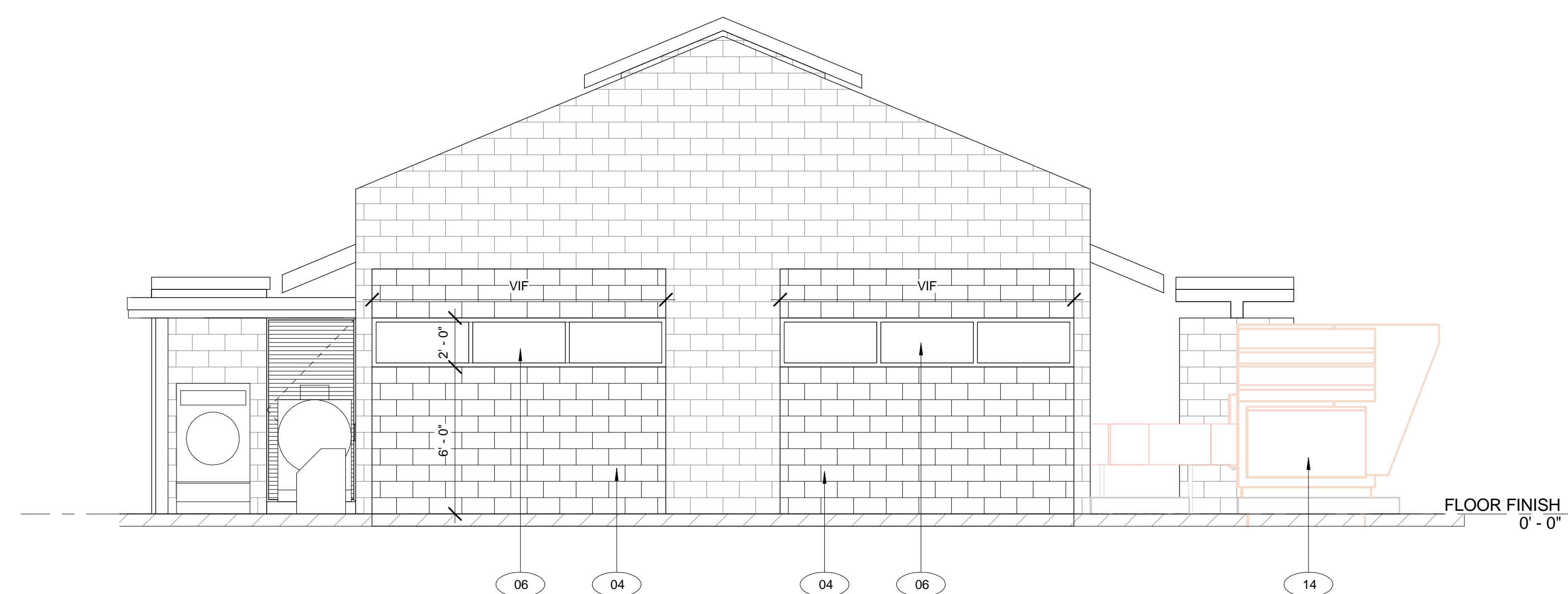
A201



3
A201
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



2
A201
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



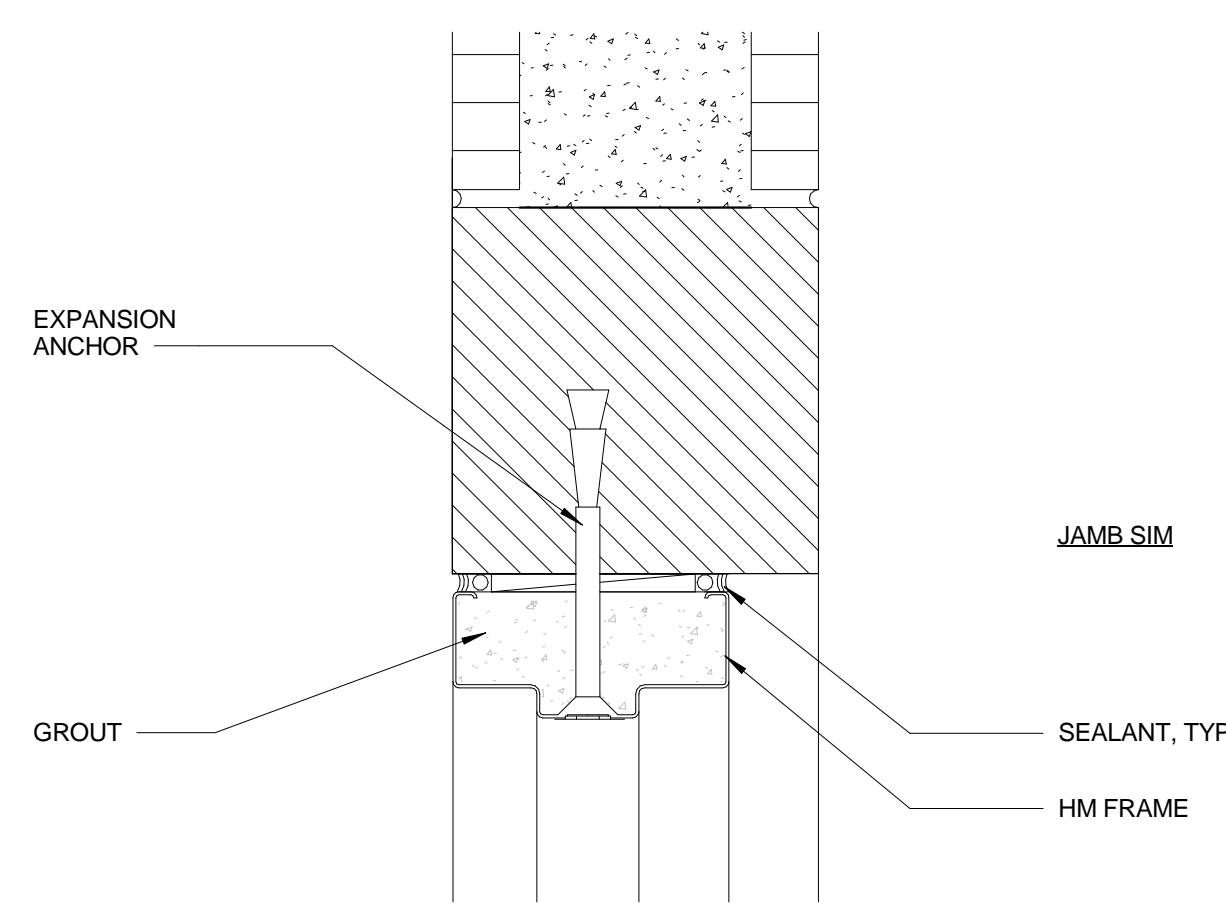
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WEST ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTE LEGEND

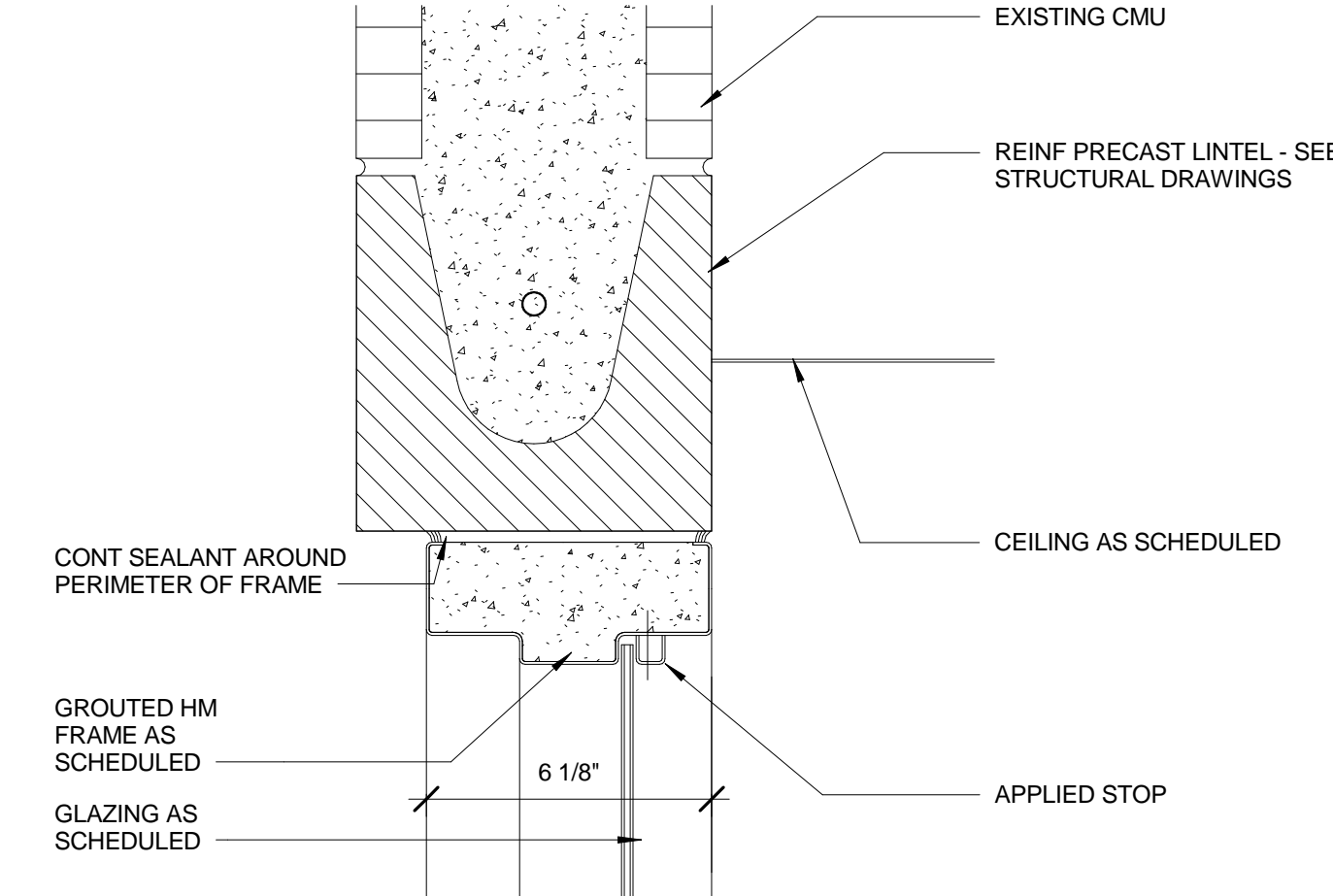
01	INSTALL NEW WINDOW, 4'-0" X 4'-0".
03	INSTALL NEW STOREFRONT WINDOWS.
04	INFILL WALL AS REQUIRED TO MATCH EXISTING ADJACENT PARTITION.
05	INSTALL NEW STOREFRONT DOOR WITH TRANSOM.
06	INSTALL CLERESTORY FIXED WINDOWS IN ENTIRE WIDTH OF OPENING.
12	EXISTING DOOR TO REMAIN.
14	MECHANICAL EQUIPMENT. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. REFER TO STRUCTURAL DRAWINGS FOR CONCRETE PAD REINFORCEMENT INFORMATION.

DOOR SCHEDULE														
MARK	ROOM NUMBER	ROOM NAME	DOOR SIZE	THICK	DOOR			TYPE	GLAZ	FRAME			HARDWARE	NOTES
					MATL	FINISH	RATING			MATL	GLAZ	FINISH		
102A	103	TRUCKPORT CANOPY	3'-0" x 7'-0"	1 3/4"	HM			B		F1			02	
101A	101	GROOMING	3'-0" x 7'-0"	1 3/4"	HM			B		F1			02	
103B	103	TRUCKPORT CANOPY	6'-0" x 7'-0"	1 3/4"	AL			D1	G1	F2			01	
103A	103	TRUCKPORT CANOPY	6'-0" x 7'-0"	1 3/4"	AL			D1	G1	F2			01	

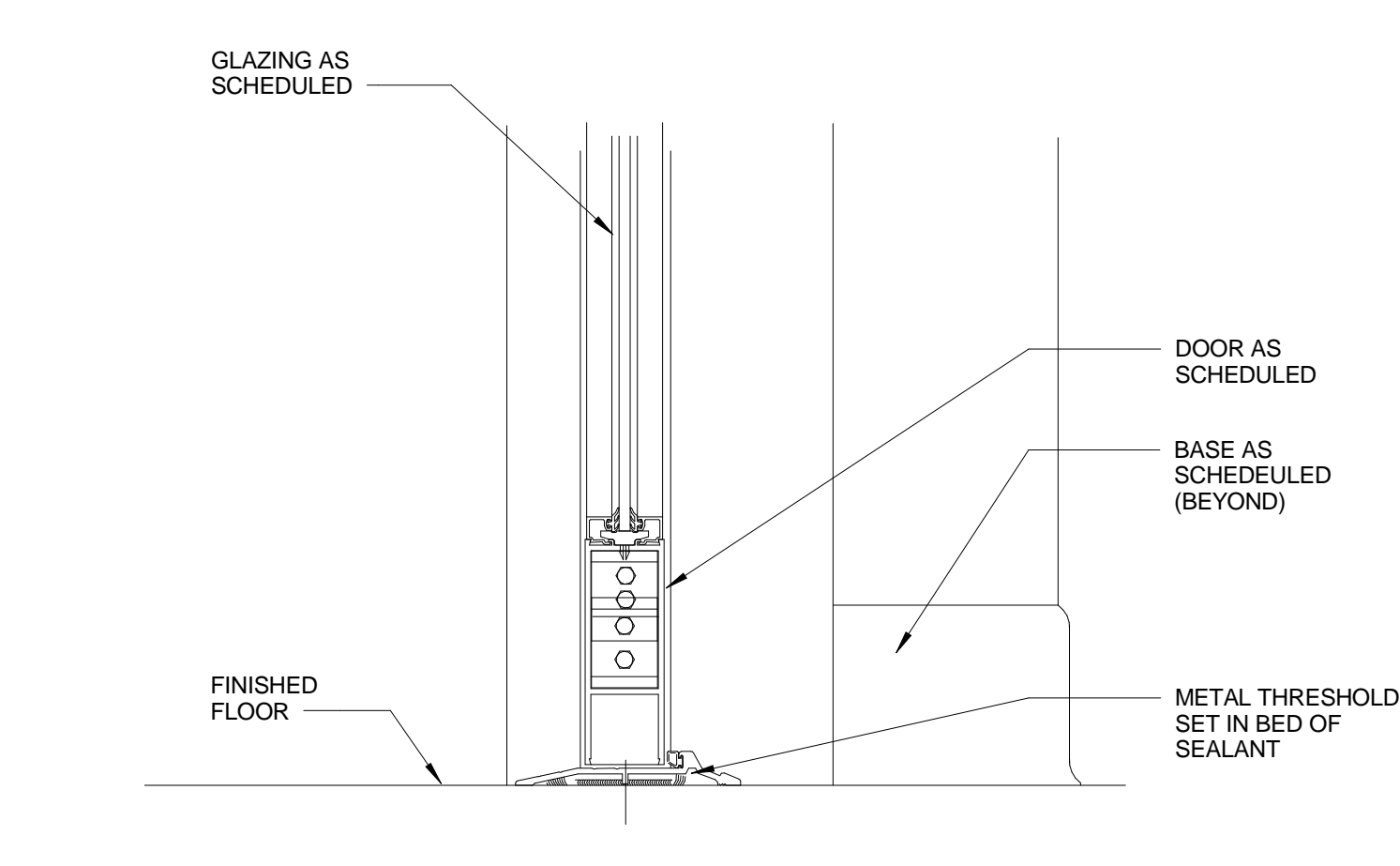
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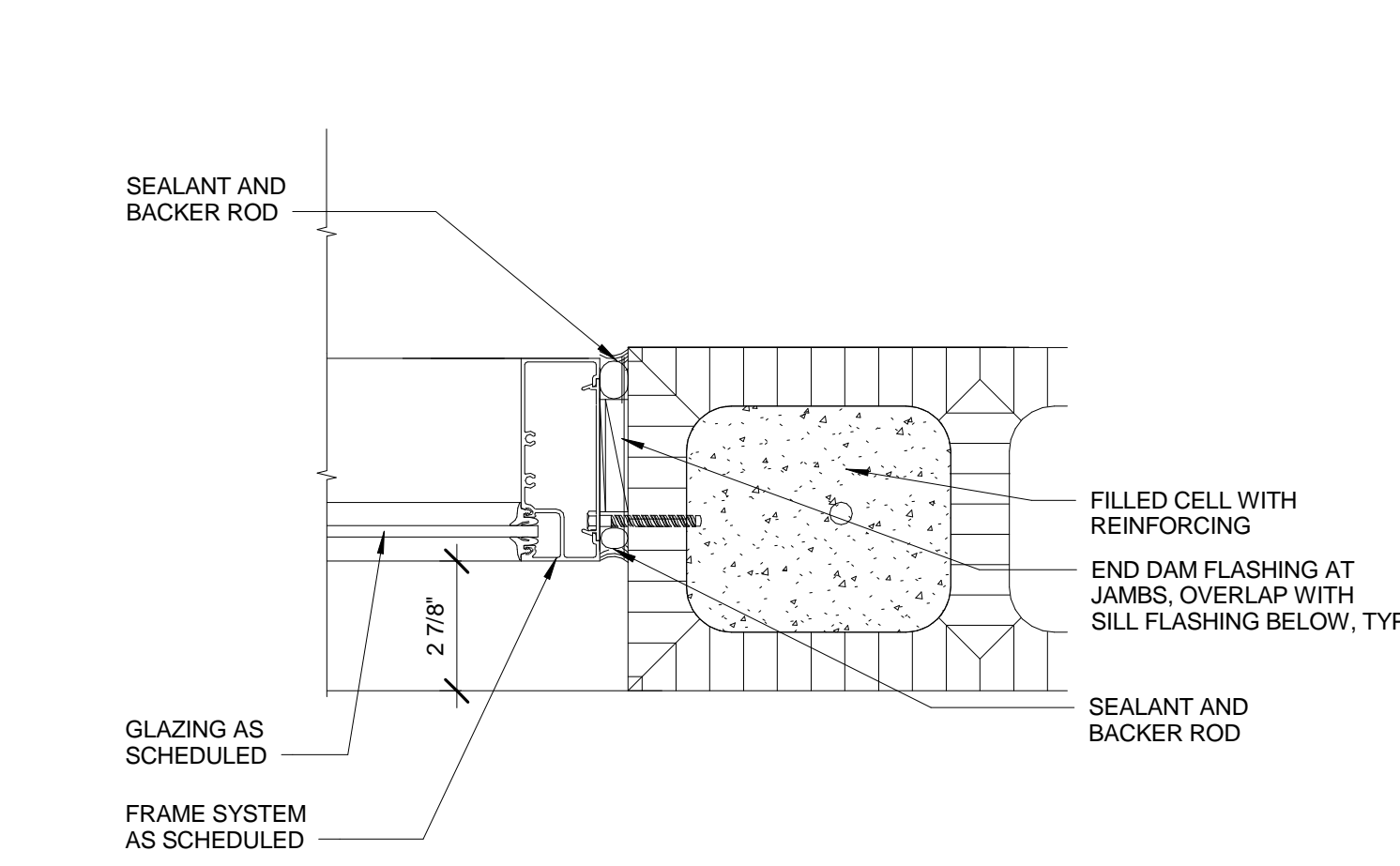
3
A601
HM HEAD AT CMU WALL
SCALE: 3" = 1'-0"



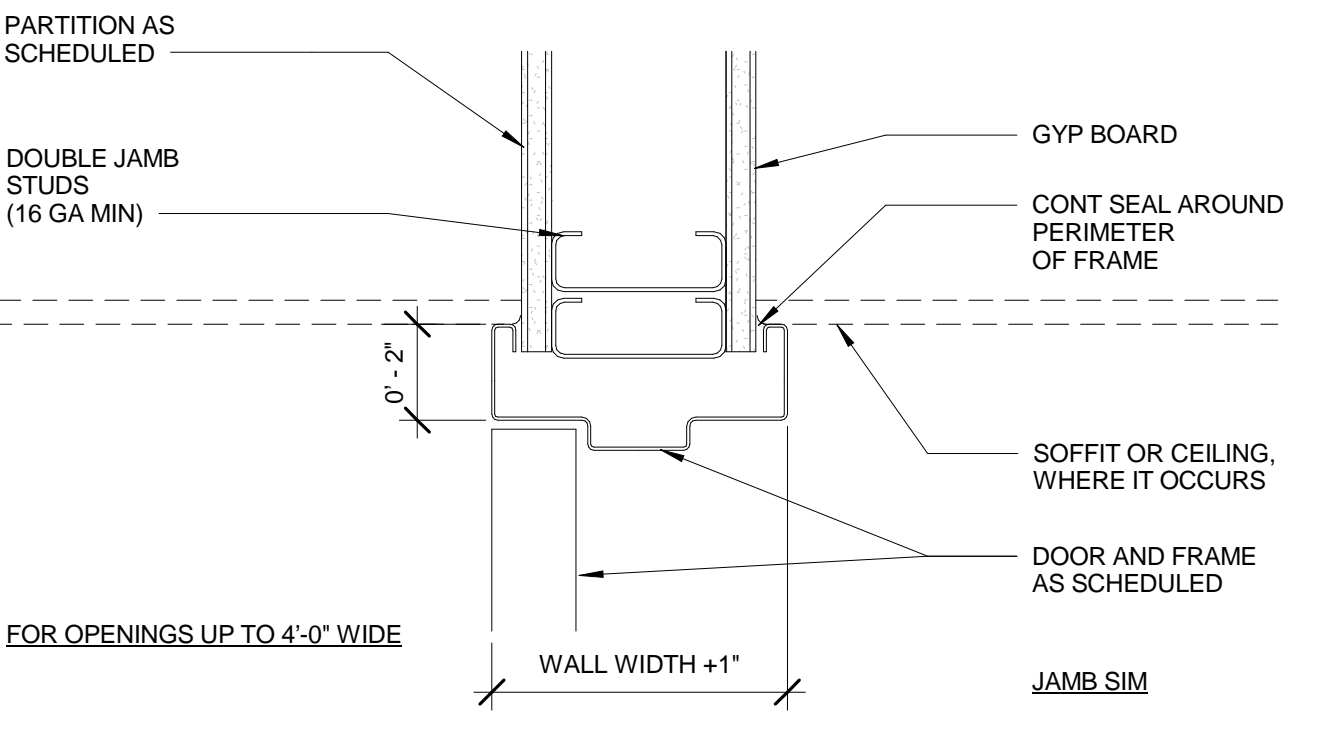
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A601
HM WINDOW HEAD AT CMU
SCALE: 3" = 1'-0"



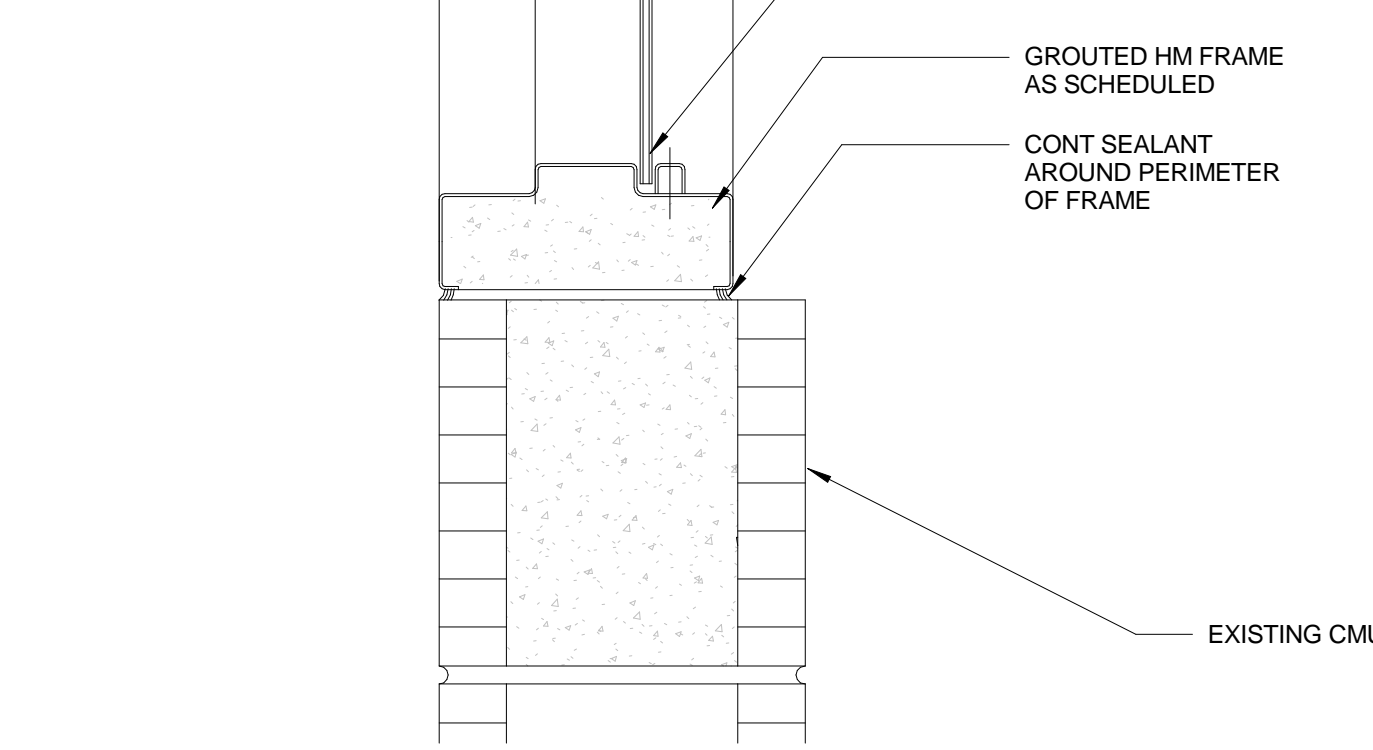
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A601
STOREFRONT DOOR THRESHOLD
SCALE: 3" = 1'-0"



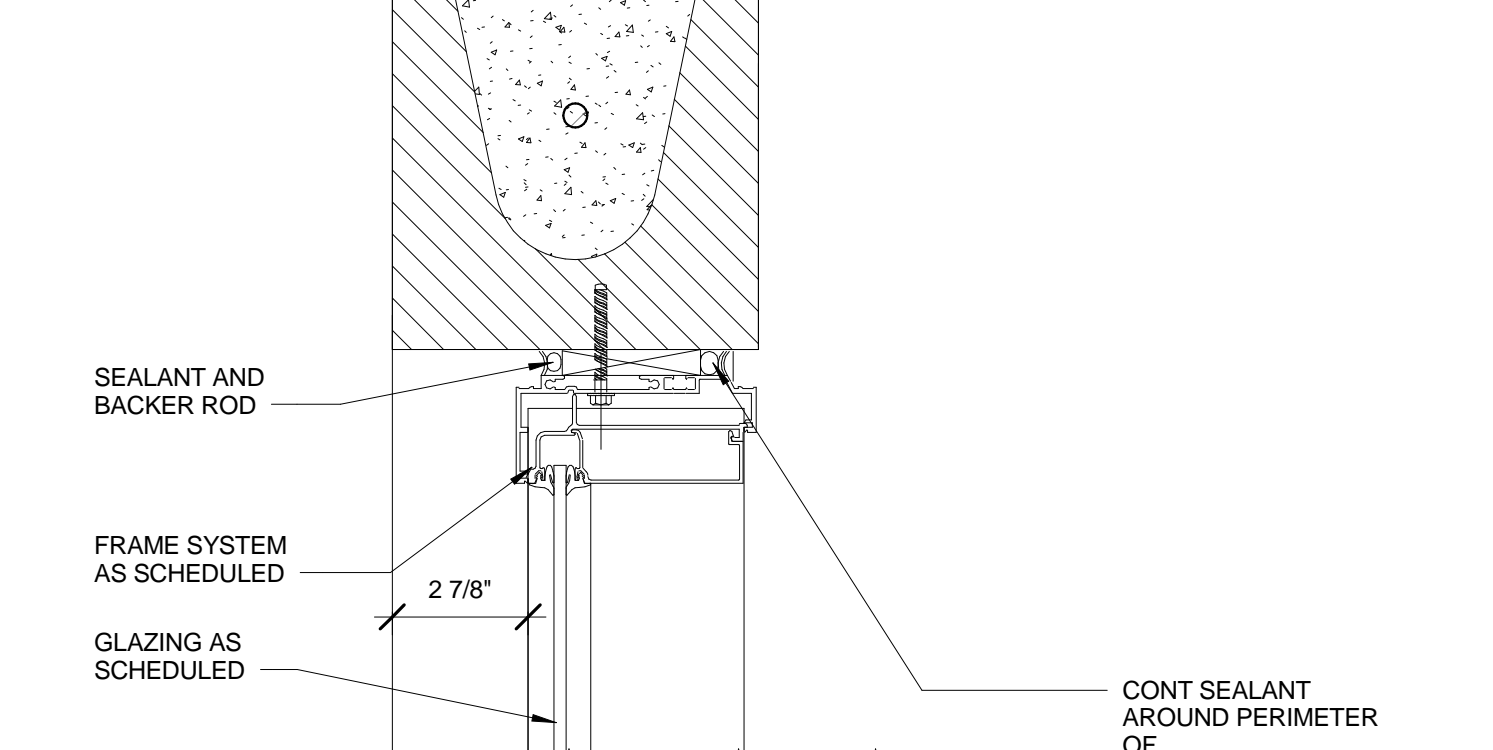
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A601
STOREFRONT JAMB
SCALE: 3" = 1'-0"



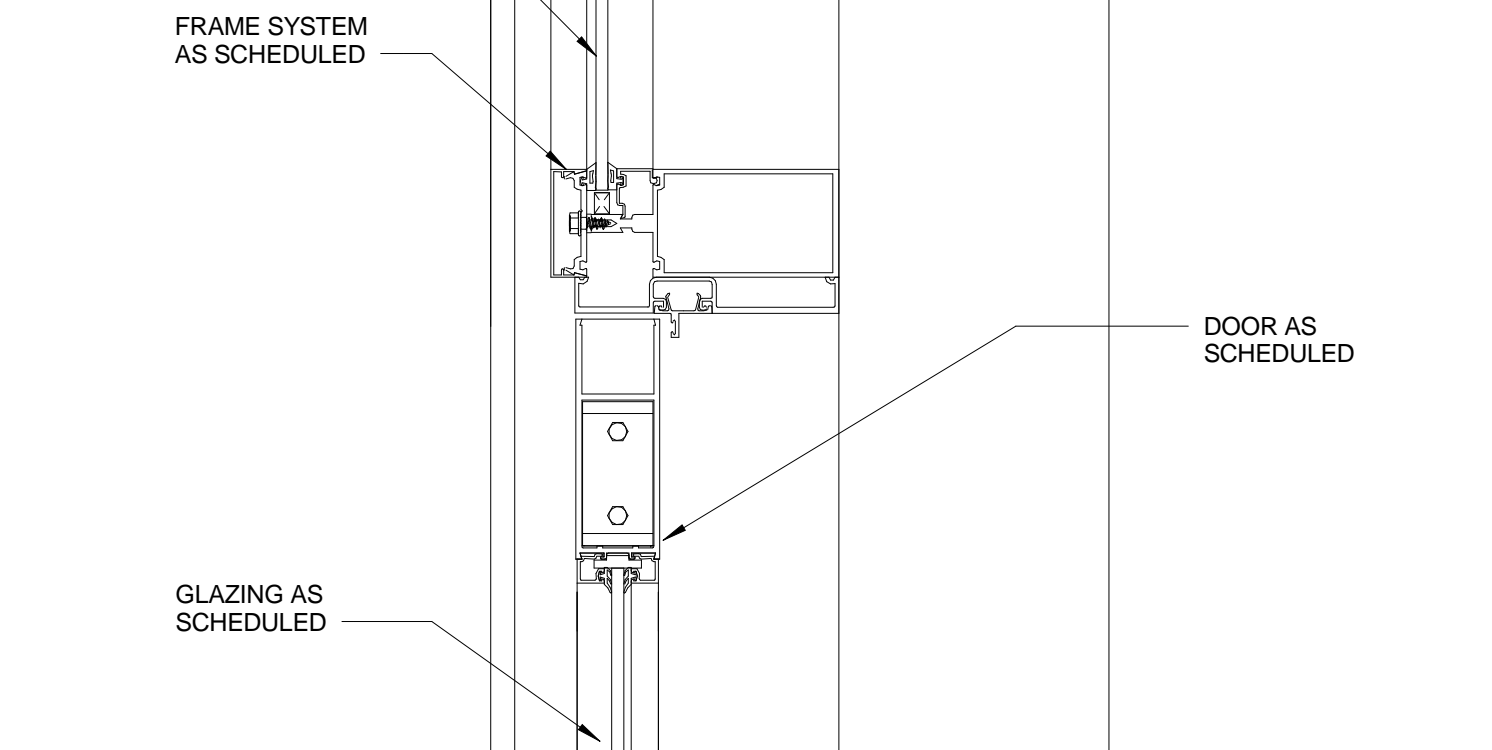
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A601
HM HEAD MTL STUD FRAMING
SCALE: 3" = 1'-0"



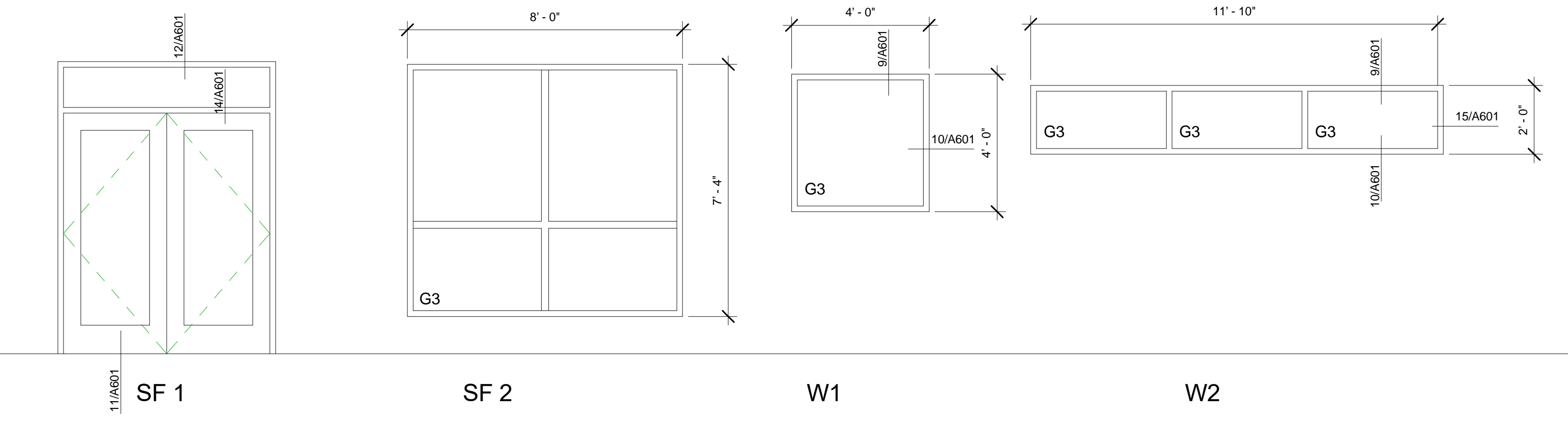
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A601
HM WINDOW SILL AT CMU
SCALE: 3" = 1'-0"



12
A601
STOREFRONT HEAD
SCALE: 3" = 1'-0"

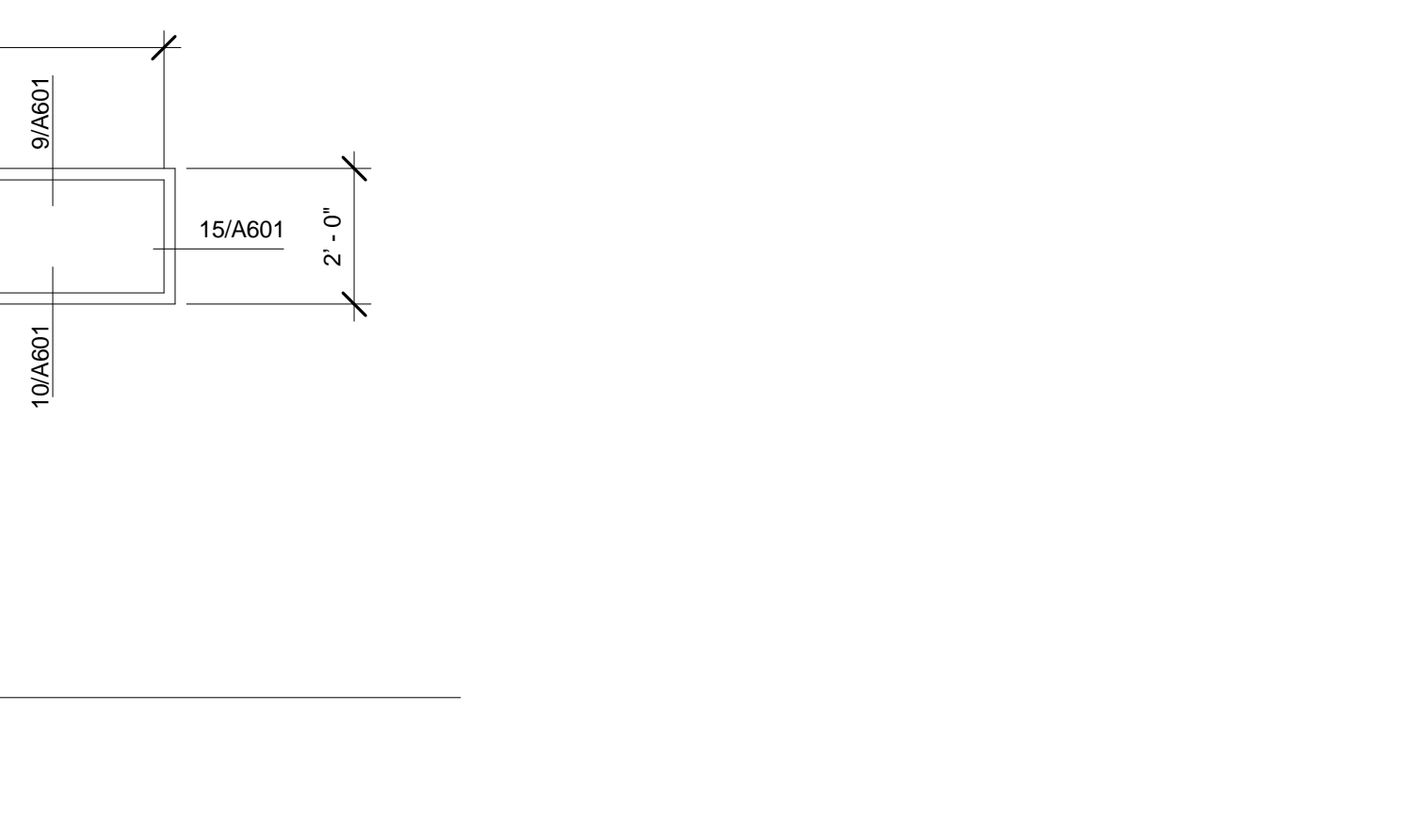


14
A601
STOREFRONT TRANSOM
SCALE: 3" = 1'-0"

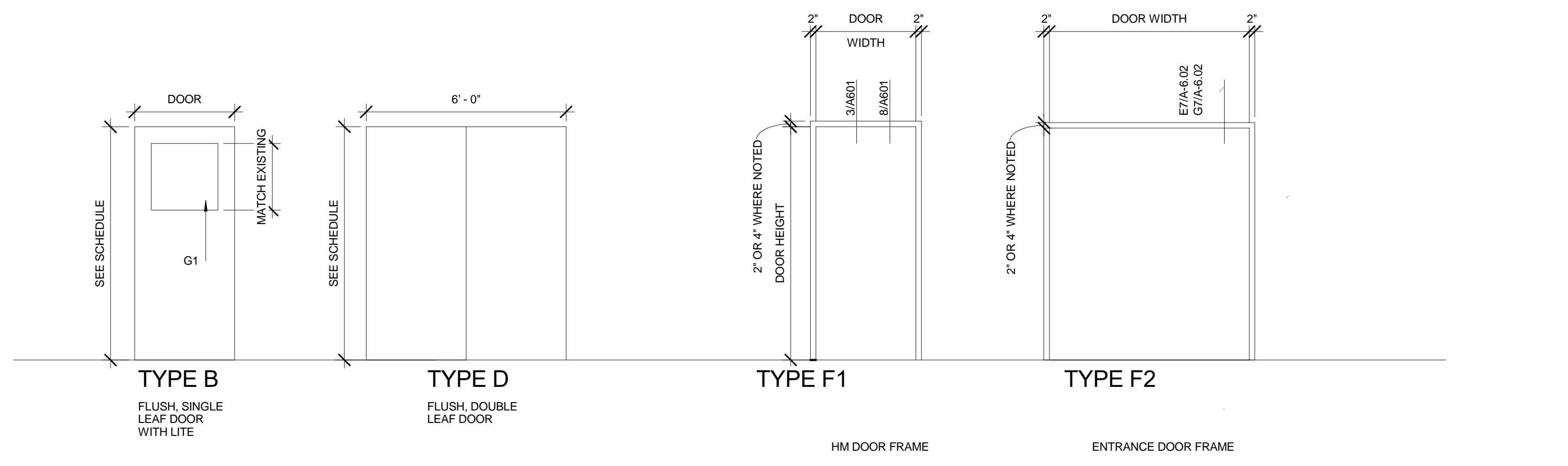


4
A601
WINDOW / STOREFRONT TYPES
SCALE: 3/8" = 1'-0"

NOTE: WINDOWS AND STOREFRONT SYSTEMS TO BE SIZED AND COORDINATED WITH EXISTING OPENING



15
A601
HM WINDOW JAMB AT CMU
SCALE: 3" = 1'-0"



1
A601
DOOR TYPE ELEVATIONS
SCALE: 3/8" = 1'-0"

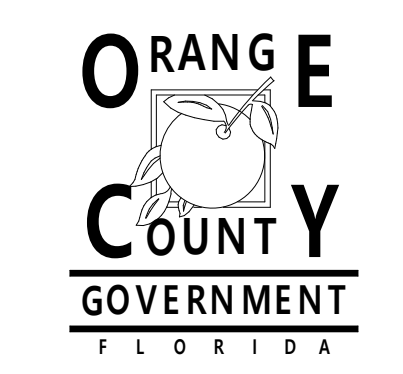
PRODUCT ACCEPTANCE DOCUMENTS	
FLORIDA PRODUCT APPROVAL / MIAMI-DADE NOA	
HM DOORS - SINGLE	FL#16365.2
OVERHEAD ROLL UP DOOR	FL#2211.1 R3
ALUMINUM STOREFRONT WINDOW SYSTEM	FL#10008.1 R2
ALUMINUM FRAMED STOREFRONT SYSTEM	FL#10008.1 R2
ENTRANCE DOOR, ENTRANCE DOOR AND TRANSOM	FL#10388 R2

DOOR MATERIAL ABBREVIATIONS	
AL	ALUMINUM
DBL	DOUBLE DOORS
HM	HOLLOW METAL DOOR/ OR FRAME
X	INDICATES LABEL, CLOSER OR ELECT. LOCK IS INCLUDED
N/A	NOT APPLICABLE
STL	STEEL
SC	SOLID CORE WOOD DOOR
CR	ACCESS CONTROL CARD READER
GL	GLAZING
STC	SOUND TRANSMITTING COEFFICIENT
FF	FACTORY FINISH
PNT	PAINTED

GLAZING MATERIAL TYPES	
G1	1/4" CLEAR TEMPERED GLASS
G2	1/2" CLEAR TEMPERED GLASS
G3	1" LOW-E GLASS

- GENERAL NOTES - DOORS**
- A ALL HARDWARE SHALL BE UNLOCKED IN THE DIRECTION OF EGRESS, REGARDLESS OF OTHER LOCK FUNCTIONS.
 - B ALL GLAZING SHALL BE SAFETY IMPACT GLASS TO COMPLY WITH FBC SECTION 2406.2
 - C CAULK DOOR JAMB AND HEADS WHERE GAPS EXCEEDS 1/16" TYPICAL.
 - D DOORS SHALL OPERATE FREELY WITHOUT BINDING.
 - E DOOR FRAMES SHALL BE SECURED RIGIDLY IN PLACE AND BRACED TO FLOOR AND STRUCTURE ABOVE TO PREVENT BREAK OUT TO PARTITIONS.
 - F DOOR UNDERCUTS SHALL BE KEPT TO A MINIMAL DIMENSION AND SHALL BE UNIFORM THROUGHOUT PROJECT, U.N.O
 - G INSTALLATION OF ALL DOORS AND HARDWARE SHALL MEET MIN. "ADA" REQUIREMENTS. IF ANY CONFLICTS ARISE, THE ITEM MUST BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO CONSTRUCTION.
 - H PROVIDE THREE JAMB ANCHORS AND ONE BASE ANCHOR PER JAMB AT GYPSUM WALLBOARD PARTITIONS, TYP.
 - I PROVIDE FRAME ROUGH OPENINGS AS RECOMMENDED BY FRAME MANUFACTURER.
 - J PROVIDE STANDARD DOOR FRAME PROFILES AS REQUIRED TO MEET ADJACENT CONDITIONS.
 - K PROVIDE ANCHORS AND ACCESSORIES AS REQUIRED (REQ.) FOR CONDITIONS AS RECOMMENDED BY THE MANUFACTURER (MFR.)
 - L ERECT ALL DOOR FRAMES AND ADJACENT WALLS TO CONFORM TO THE APPLICABLE PLAN CONFIGURATIONS. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLATION OF DOOR FRAMES AND ADJACENT WALLS.
 - M GC TO VERIFY CEILING HEIGHTS FOR ALL DOORS LEADING TO EXISTING CORRIDORS TO CONFIRM DOOR HEIGHTS.
 - N REFER TO FINISH SCHEDULE FOR ALL FINISH MATERIALS AND FINISH LOCATIONS
 - O ALL SURFACES EXPOSED TO VIEW ARE TO BE PAINTED PER SPECIFICATIONS
 - P ALL DOORS TO BE 1 3/4" THICK UNLESS NOTED OTHERWISE
 - Q REFER TO SPECIFICATIONS FOR DOOR AND FRAME MATERIALS AND REQUIREMENTS
 - R CONTRACTOR TO FIELD VERIFY ALL OPENING DIMENSIONS PRIOR TO WORK.
 - S DOOR AND FRAME RATING FOR ALL FIRE RATED DOORS SHALL BE 34 HR C LABEL.

Client:



Consultants:



EOR Stamp:

MOHAMED SHALABY AR94103

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Checked By: AS

DOOR & WINDOW SCHEDULE & DETAILS

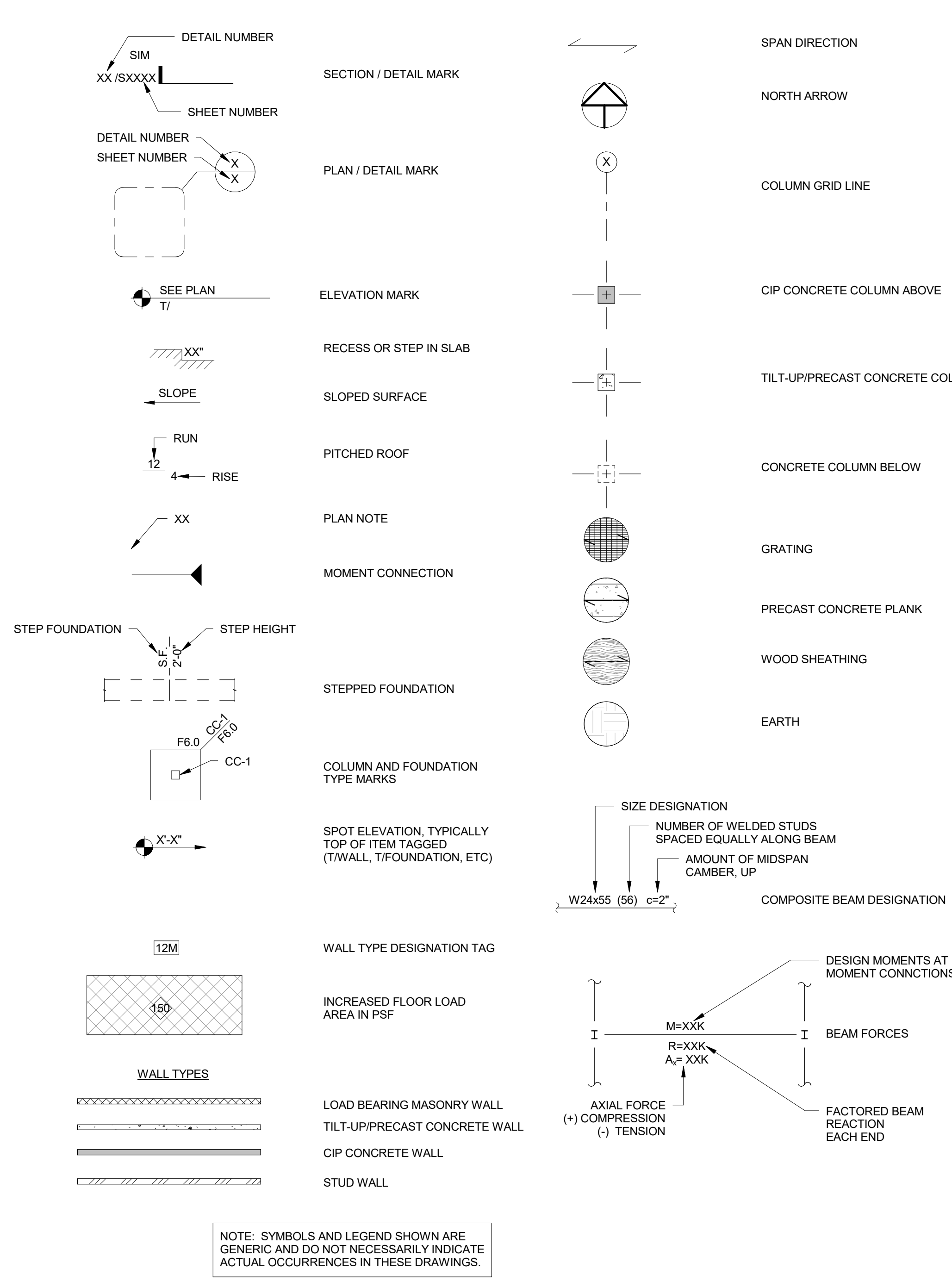
Sheet No.:

A601

STRUCTURAL ABBREVIATIONS

ABBREV	ABBREVIATION	LB	POUND
ACI	AMERICAN CONCRETE INSTITUTE	LGTH	LENGTH
ADD	ADDITIVE	LL	LIVE LOAD
ADNL	ADDITIONAL	LLH	LONG LEG HORIZONTAL
AFF	ABOVE FINISHED FLOOR	LLV	LONG LEG VERTICAL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LSH	LONG SIDE HORIZONTAL
ASIS	AMERICAN IRON AND STEEL INSTITUTE	LSV	LONG SIDE VERTICAL
ALT	ALTERNATE/ALTERNATIVE	LONG	LONG
ALUM	ALUMINUM	LSM	LAMINATED STRAND LUMBER
ARCH	ARCHITECTURE/ARCHITECTURAL	LWT	LIGHT WEIGHT
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	LVL	LAMINATED VENEER LUMBER
AWIS	AMERICAN WELDING SOCIETY	MATL	MATERIAL
B.O.	BOTTOM OF	MAX	MAXIMUM
BLDG	BUILDING	MBS	MASONRY BEAM
BLK	BLOCK	MECH	MECHANICAL
BM	BEAM	MET	METAL
BOT	BOTTOM	MFR	MANUFACTURE/MANUFACTURER
BP	BASE PLATE/BEARING PLATE	MID	MIDDLE
BRG	BEARING	MIN	MINIMUM
BTWN	BETWEEN	MISC	MISCELLANEOUS
C	CHANNEL	MO	MASONRY OPENING
CB	CONCRETE BEAM	MPH	MILES PER HOUR
CC	CONCRETE COLUMN	NGVD	NATIONAL GEODETIC VERTICAL DATUM
CF	CUBIC FEET (FOOT)	NIC	NOT IN CONTRACT
CJ	CAST IN PLACE	NO	NUMBER
CJ	CONTRACTION JOINT	NS	NEAR SIDE
CL	CENTERLINE	NTS	NOT TO SCALE
CL	CLEARANCE	OC	ON CENTERS
CM	CONCRETE MASONRY	OD	OUTSIDE DIAMETER
CMU	CONCRETE MASONRY UNIT	O.F.	OUTSIDE FACE
CO	COMPANY	OPNG	OPENING
COL	COLUMN	OPP	OPPOSITE
CONC	CONCRETE	OSB	ORIENTED STRAND BOARD
CONT	CONTINUOUS	P/C	PRECAST CONCRETE/PILE CAP
CONN	CONNECTION	PT	POST TENSIONED
CONST	CONSTRUCTION	PCB	PRECAST CONCRETE BEAM
COORD	COORDINATE	PC	PRECAST CONCRETE COLUMN
CSJ	CONSTRUCTION JOINT	PCF	POUNDS PER CUBIC FOOT
CTR	CENTER	PCC	PRE-ENGINEERED METAL BUILDING
CTD	CENTERED	PEN	PENETRATION
CY	CUBIC YARD	P.J.	PANEL JOINT CENTERLINE
DEPT	DEPARTMENT	PL	PLATE
DET	DETAIL	PLF	POUNDS PER LINEAR FOOT
DIA	DIAMETER	PLWG	PLUMBING
DIAG	DIAGONAL	PLY	PLYWOOD
DIM	DIMENSION	PREFAB	PREFABRICATED
DIST	DISTANCE	PSF	POUNDS PER SQUARE FOOT
DL	DEAD LOAD	PSI	POUNDS PER SQUARE INCH
DN	DOWN	PSL	PARALLEL STRAND LUMBER
DWG	DRAWING	PT	PRESSURE TREATED
EA	EACH	RD	ROOF DRAIN
EF	EACH FACE	REF	REFERENCE
EHPA	EMERGENCY HURRICANE PROTECTION AREA	REIN	REINFORCING
EJ	EXPANSION JOINT	REQD	REQUIRED
ELEC	ELECTRIC/ELECTRICAL	REV	REVISION
EL ELEV	ELEVATION	RTU	ROOF TOP UNIT
ENGR	ENGINEER	SB	SOFFIT BEAM
EOD	EDGE OF DECK	SCHED	SCHEDULE
EOS	ENGINEER OF RECORD	S.F.	SQUARE FEET
EQ SP	EDGE OF SLAB	SF	STRIP FOUNDATION
ES	EQUAL SPACED	SIM	SIMILAR
EW	EACH WAY	SPC	SPACING
EXIST	EXISTING	SPCS	SPECIFICATIONS
EXP	EXPANSION	SQ	SQUARE
EXT	EXTERIOR	SS	STAINLESS STEEL
F	FOUNDATION	STD	STANDARD
FD	FLOOR DRAIN	STIFF	STIFFENER
FDN	FOUNDATION	STL	STEEL
FF	FINISHED FLOOR	STRUCT	STRUCTURAL
FIN	FINISH	SYM	SYMMETRICAL
FIN GR	FINISH GRADE	T.O.	TOP OF
FLR	FLOOR	TB	TIE BEAM
FS	FAR SIDE	T&B	TOP AND BOTTOM
FT	FEET/FOOT	TDS	TURN DOWN SLAB
FTG	FOOTING	TE	THICKENED EDGE
GA	GAGE/GALVE	TEMP	TEMPERATURE
GALV	GALVANIZED	TENS	TENSION
GB	GRADE BEAM	THD	THREAD/THREADED
GC	GENERAL CONTRACTOR	THK	THICK
GEN	GENERAL	TOL	TOLERANCE
GL	GRID LINE	TRANS	TRANSVERSE
GS	GALVANIZED STEEL	TS	TUBE STEEL
HD	HOT DIPPED	T.S.	THICKENED SLAB
HDG	HOT DIPPED GALVANIZED	TYP	TYPICAL
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HSA	HEADED STUD ANCHOR	VERT	VERTICAL
HSS	HOLLOW STRUCTURAL SECTION	VOL	VOLUME
HT	HEIGHT	W	WIDE FLANGE SECTION
I	MOMENT OF INERTIA	WI	WITH
ID	INSIDE DIAMETER	W/O	WITHOUT
I.F.	INSIDE FACE	WD	WOOD
IN	INCH	WF	WALL FOOTING
INT	INTERIOR	WP	WATERPROOF
JST	JOIST	W.P.	WORKING POINT
JT	JOINT	WS	WELDED STUD
K	KIP (1000 LB)	WT	WELDED STRUCTURAL TEE SECTION
KLF	KIPS PER LINEAL FOOT	WWR	WELDED WIRE REINFORCEMENT
KSI	KIPS PER SQUARE INCH	@	AT DESIGNATION
KWY	KEYWAY	#	PLUS OR MINUS
		+	PLUS
		-	MINUS
		∠	ANGLE
		C.L.	CENTERLINE
		&	AND
		sk	SECTION MODULUS
		I	MOMENT OF INERTIA

STRUCTURAL SYMBOLS AND LEGEND



STRUCTURAL SHEET INDEX						
SHEET #	SHEET TITLE	100% DD SUBMITTAL	100% CD SUBMITTAL	CURRENT REVISION		
				REVISION NUMBER	DATE	DESCRIPTION
S001	ABBREVIATIONS SYMBOLS AND SHEET INDEX					
S002	STRUCTURAL GENERAL NOTES					
S301	SECTIONS & DETAILS					



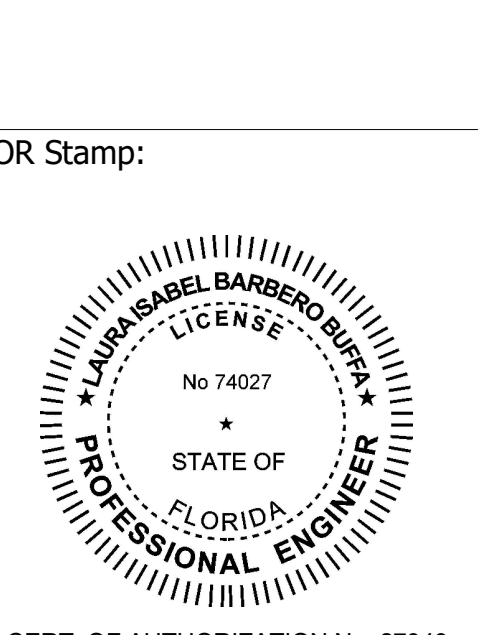
Consultant:



Consultants:



EOR Stamp:



CERT. OF AUTHORIZATION No. 27343
LAURA ISABEL BARBERO BUFFA
P.E. No. 74027

Project:
OC Animal Services
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PERMIT
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Date:
11.03.2016

Project Number:
16.OC.026

Drawn By: MR
Checked By: LBB

ABBREVIATIONS
SYMBOLS AND
SHEET INDEX

Sheet No.:

S001

TO THE BEST OF THE ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS COMPLY WITH THE FLORIDA BUILDING CODE 2014 WITH 2016 SUPPLEMENT.

GENERAL NOTES

- I. GENERAL**
- STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, SHOP DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE ALL ELEVATIONS AND DIMENSIONS, INCLUDING BUT NOT LIMITED TO THOSE FOR OPENINGS IN WALLS AND IN ROOF AND FLOOR SYSTEMS, WITH THE OTHER DISCIPLINES. THE GENERAL CONTRACTOR SHALL COMPARE ALL CONTRACT DRAWINGS AND REPORT ANY DISCREPANCY BETWEEN DISCIPLINES AND WITHIN A GIVEN DISCIPLINE TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
 - ALL DIMENSIONS, ELEVATIONS, AND ANY OTHER CONDITIONS OF ANY EXISTING STRUCTURES OR OTHER FEATURES SHALL BE VERIFIED BY THE GENERAL CONTRACTOR AND ANY DISCREPANCIES WITH THE CONTRACT DRAWINGS REPORTED TO THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
 - IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO SUBMIT TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS.
 - IF A CONFLICT EXISTS AMONG THE STRUCTURAL DRAWINGS, GENERAL NOTES, OR THE SPECIFICATIONS, THE STRICTEST REQUIREMENTS, AS INDICATED BY THE ENGINEER, SHALL GOVERN.
 - UNLESS OTHERWISE NOTED, DETAILS SHOWN ON ANY DRAWINGS ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS. DETAILS LABELED TYPICAL DETAILS ON THE DRAWINGS SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE SIMILAR OR SAME TO THOSE SPECIFICALLY DETAILED. THE APPLICABILITY OF THE DETAIL TO ITS LOCATION CAN BE DETERMINED BY THE TITLE OF DETAIL. SUCH DETAILS SHALL APPLY WHETHER OR NOT THEY ARE REFERENCED AT EACH LOCATION.
 - THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS AND FOR SAFETY PRECAUTIONS AND PROGRAMS. DURING THE CONSTRUCTION PROCESS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE INTEGRITY OF THE EXISTING STRUCTURE AND TO PROTECT FROM DAMAGE ANY PORTIONS THAT ARE TO REMAIN.
 - BASE CONSULTANTS, INC. SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSION OF THE CONTRACTOR OR THEIR FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - PERIODIC SITE OBSERVATION BY BASE CONSULTANTS, INC. IS SOLELY FOR THE PURPOSE OF DETERMINING IF THE WORK OF THE CONTRACTOR IS PROCEEDING IN ACCORDANCE WITH THE STRUCTURAL CONTRACT DOCUMENTS. THIS LIMITED SITE OBSERVATION SHALL NOT BE CONSTRUED AS EXHAUSTIVE OR CONTINUOUS TO CHECK THE QUALITY OR QUANTITY OF THE WORK.
 - ALL STRUCTURES REQUIRE PERIODIC MAINTENANCE TO EXTEND LIFESPAN AND TO INSURE STRUCTURAL INTEGRITY FROM EXPOSURE TO THE ENVIRONMENT. A PLANNED PROGRAM OF MAINTENANCE SHALL BE ESTABLISHED BY THE BUILDING OWNER. THIS PROGRAM SHALL INCLUDE SUCH ITEMS SUCH AS BUT NOT LIMITED TO PAINTING OF STRUCTURAL STEEL, PROTECTIVE COATING FOR CONCRETE, SEALANTS, CAULKED JOINTS, EXPANSION JOINTS, CONTROL JOINTS, SPALLS AND CRACKS IN CONCRETE, AND PRESSURE WASHING OF EXPOSED STRUCTURAL ELEMENTS EXPOSED TO A SALT ENVIRONMENT OR OTHER HARSH CHEMICALS.
 - 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 COST SAVINGS TO THE OWNER IS DOCUMENTED AND SUBMITTED WITH THE REQUEST.
 - THE MATERIAL OR PRODUCT HAS BEEN APPROVED BY THE INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS (ICBO) AND THE ICBO REPORT IS SUBMITTED WITH THE REQUEST.
 SUBMITTALS NOT SATISFYING THE ABOVE CRITERIA WILL NOT BE CONSIDERED. BASE CONSULTANTS RETAINS THE RIGHT TO REJECT ANY SUBSTITUTION REQUEST.
 - CONTRACTOR TO ISSUE REQUEST FOR INFORMATION (RFI) FOR ANY INFORMATION NOT CLEAR/NOT SHOWN IN THE DRAWINGS.
 - DO NOT SCALE DRAWINGS
 - STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE DESIGN OF STEEL STAIRS, HANDRAILS, CURTAIN/WINDOW WALL SYSTEMS, COLD FORMED METAL FRAMING OR OTHER SYSTEMS NOT SHOWN IN THE STRUCTURAL DRAWINGS. SUCH SYSTEMS SHALL BE DESIGNED, FURNISHED AND INSTALLED AS REQUIRED BY OTHER PORTIONS OF THE CONTRACT DOCUMENTS.
 - NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED OR OTHERWISE ALTERED UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL COSTS INCURRED BY ENGINEER OF RECORD FOR THE REVIEW.

II. DESIGN CRITERIA

- THE CONTRACT DOCUMENTS ARE BASED ON THE REQUIREMENTS OF THE
 - FLORIDA BUILDING CODE 2014 WITH 2016 SUPPLEMENT
- DESIGN WIND LOADS:

ULTIMATE WIND SPEED	136 MPH
RISK CATEGORY	II
EXPOSURE	C
INTERNAL PRESSURE COEFF	GCFI
	+0.85/-0.85

 ULTIMATE COMPONENTS AND CLADDING WIND LOADS - SEE LOAD TABLE ON THIS SHEET.
- 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.
- PROVISIONS SHALL BE MADE IN THE DETAILING, FABRICATION, AND ERECTION OF ALL CLADDING, PARTITIONS, WALLS, ETC. TO ACCOUNT FOR FLOOR TO FLOOR DEFLECTIONS AND LATERAL FRAME DEFLECTION.
- DESIGN LOAD FOR RESTROOM ACCESSORIES
GRAB BARS, TUB AND SHOWER SEATS, FASTENERS, AND MOUNTING DEVICES SHALL BE DESIGNED TO RESIST A CONCENTRATED LOAD OF 250 LBS AT ANY LOCATION AND IN ANY DIRECTION.

**ULTIMATE DESIGN WIND PRESSURE (PSF)
COMPONENTS AND CLADDING**

AREA	ZONE	TRIBUTARY AREA			
		10 SF	20SF	50 SF	100 SF
ROOF	ZONE 1	+23.2/-36.9	+21.2/-35.9	+18.1/-34.3	+16.4/-33.5
ROOF	ZONE 2	+23.2/-64.2	+21.2/-59.1	+18.1/-51.4	+16.4/-47.2
ROOF	ZONE 3	+23.2/-95.0	+21.2/-88.8	+18.1/-79.6	+16.4/-74.5
WALL	ZONE 4	+40.3/-43.7	+38.5/-41.9	+35.8/-39.2	+34.3/-37.7
WALL	ZONE 5	+40.3/-54.0	+38.5/-50.4	+35.8/-44.9	+34.3/-41.9

NOTES:

- ALL LOADS GIVEN IN THIS TABLE ARE ULTIMATE LOADS.
- THE "1" WIDTH FOR EDGE STRIPS SHALL BE 3'-0"
- NEGATIVE NUMBERS DENOTE WIND FORCES ACTING AWAY FROM THE SURFACE UNDER CONSIDERATION (I.E. SUCTION).
- DESIGN PRESSURE FOR COMPONENTS AND CLADDING SHALL NOT BE LESS THAN 16.0 PSF (ULTIMATE) ACTING IN EITHER DIRECTION NORMAL TO THE SURFACE.

III. CONCRETE

- CONCRETE SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
CONCRETE 28 DAY COMPRESSIVE STRENGTH AND DENSITY REQUIREMENTS:

USAGE	STRENGTH (PSI)	CONC. TYPE	COMMENTS
a. ALL CONCRETE NOT OTHERWISE SPECIFIED	3000	NWT	
- NWT = NORMAL WEIGHT CONCRETE
- ALL CONCRETE SHALL HAVE ALLOWABLE UNIT SHRINKAGE OF 0.03% AT 28 DAYS. (SEE ASTM C157)
- ALL SLABS TO RECEIVE MOISTURE SENSITIVE FLOOR COVERINGS SHALL HAVE MAXIMUM WATER/CEMENT RATIO OF 0.45.
- EXTERIOR CONCRETE SLABS SHALL HAVE 4% TO 6% ENTRAINED AIR
- ALL CONCRETE CONSTRUCTION SHALL CONFORM TO THE CURRENT "ACI MANUAL OF CONCRETE PRACTICE"
- PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, TYPE I OR II.
- ALL AGGREGATE FOR NORMAL WEIGHT CONCRETE SHALL MEET ASTM C 33.
- ALL REINFORCEMENT SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
 - ALL REINFORCING UNO. ASTM A615 GRADE 60
 - WELDED WIRE REINFORCEMENT (WWR):
 - SMOOTH WIRE: ASTM A 185 (65 KSI)
 - DEFORMED WIRE: ASTM A497 (70 KSI)
- REINFORCEMENT DETAILING:
 - REINFORCEMENT SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI 315.
 - PLACEMENT OF WELDED WIRE REINFORCEMENT:
WHEREVER WELDED WIRE REINFORCEMENT IS SPECIFIED AS REINFORCEMENT, IT SHALL BE CONTINUOUS ACROSS THE ENTIRE CONCRETE SURFACE AND NOT INTERRUPTED BY BEAMS OR GIRDERS 4" W/WR ONE CROSSWIRE SPACINGS PLUS 2".
 - REINFORCEMENT IN TOPPING SLABS:
PROVIDE WELDED SMOOTH WIRE REINFORCEMENT MINIMUM 6 X 6 W2.9 X W2.9 IN ALL TOPPING SLABS UNLESS SPECIFIED OTHERWISE ON THE DRAWINGS.
 - REINFORCEMENT IN HOUSEKEEPING PADS:
PROVIDE WELDED SMOOTH WIRE REINFORCEMENT 6 X 6 W2.9 X W2.9 MINIMUM IN ALL HOUSEKEEPING PADS SUPPORTING MECHANICAL EQUIPMENT WHETHER SHOWN ON THE DRAWINGS OR NOT UNLESS HEAVY REINFORCEMENT IS CALLED FOR ON THE DRAWINGS.
 - REINFORCING STEEL COVERAGE:
THE CONCRETE COVER FOR REINFORCEMENT LAYERS NEAREST TO THE SURFACE SHALL BE IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS OR ON THE DRAWINGS.
 - PROVIDE CORNER BARS AT ALL FOOTINGS AND WALL INTERSECTIONS TO MATCH HORIZONTAL REINFORCING SIZE AND SPACING. AT INTERSECTIONS OF CONTINUOUS SPREAD FOOTINGS EXTEND ALL BARS TO FAR SIDE OF INTERSECTING FOOTING.
 - REINFORCEMENT SHALL BE SECURELY PLACED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
 - PROVIDE DOWELS TO MATCH REINFORCEMENT SIZE AND SPACING INDICATED FOR ALL STRUCTURAL ELEMENTS, UNLESS OTHERWISE INDICATED.
 - SLABS AND BEAMS OR JOISTS SHALL BE CAST MONOLITHICALLY UNLESS OTHERWISE INDICATED.
 - CHAMFER ALL PERMANENTLY EXPOSED CONCRETE EDGES 3/4-INCH UNO.
 - ALUMINUM SHALL NOT BE EMBEDDED IN ANY CONCRETE.

IV. POST-INSTALLED ANCHORS

- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE DRAWINGS.
- CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER OF RECORD PRIOR TO USING POST-INSTALLED ANCHORS FOR MISSING OR MISPLACED CAST-IN-PLACE ANCHORS.
- CARE SHALL BE GIVEN TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE. CONTACT MANUFACTURER PRIOR TO ANCHOR INSTALLATION IF TRAINING IS REQUIRED.
- UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT REQUIRED TO SUPPORT THE INTENDED LOAD.
- SUBSTITUTION REQUESTS: FOR PRODUCTS OTHER THAN THOSE LISTED BELOW, SHALL BE SUBMITTED TO THE ENGINEER WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER SHOWING THAT THE SUBSTITUTED PRODUCT WILL ACHIEVE AN EQUIVALENT CAPACITY USING THE APPROPRIATE DESIGN PROCEDURE REQUIRED BY THE BUILDING CODE FOR REVIEW AND APPROVAL. BASE CONSULTANT'S RETAINS THE RIGHT TO REJECT ANY SUBSTITUTION REQUEST.
- ACCEPTABLE PRODUCTS ARE:
 - "CRACKED CONCRETE" MECHANICAL ANCHORS:
 - "HILTI KE-TZ" BY HILTI.
 - "CRACKED CONCRETE" ADHESIVE ANCHORS:
 - "HIT RESOQ-SD" BY HILTI.
 - "SET-XP STRUCTURAL EPOXY-TIE ANCHORING ADHESIVE" BY SIMPSON STRONG-TIE.
 - ADHESIVE ANCHORS:
 - "HIT HY-200 MAX" BY HILTI
 - "HIT RE 600" BY HILTI
 - "ACRYLIC-TIE" OR "SET EPOXY-TIE" WITH INSERT (RFB BOLTS OR REBAR)
 - SCREW ANCHORS:
 - "TITEN HD" BY SIMPSON STRONG-TIE.
 - "HUS-H" BY HILTI.

V. STRUCTURAL STEEL

- ALL HOT ROLLED STEEL PLATES, SHAPES, SHEET PILING, AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM SPECIFICATION A6-98A.
- STRUCTURAL STEEL SHALL BE AS FOLLOWS, U.N.O.:
 - ALL OTHER STRUCTURAL STEEL ASTM A36 FY = 36 KSI
 - CONNECTION MATERIALS:
 - ALL OTHER CONNECTION MATERIAL, U.N.O.: ASTM A36 UNLESS A HIGHER GRADE OF STEEL IS REQUIRED BY STRENGTH AND PROVIDED THE RESULTING SIZES ARE COMPATIBLE WITH THE CONNECTED MEMBERS
- STRUCTURAL STEEL SHALL MEET THE LATEST AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS"
- ALL STRUCTURAL STEEL SHALL BE SHIPPED WITH ONE COAT OF SHOP PRIMER EXCEPT THOSE MEMBERS THAT ARE GALVANIZED OR IN AREAS SCHEDULED TO RECEIVE FIRE PROOFING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AREAS TO BE FIRE PROOFED.

VI. MASONRY

- HOLLOW CONCRETE BLOCK MASONRY UNITS SHALL BE NORMAL WEIGHT WITH A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA AND 1000 PSI ON THE GROSS AREA (FM = 1500PSI) AND SHALL CONFORM TO ASTM C-90.
- ALL MORTAR FOR USE IN MASONRY SHALL CONFORM TO ASTM C-270, TYPE M OR S. ALL GROUT FOR USE IN MASONRY SHALL CONFORM TO ASTM C-476, MIN. 3000 PSI.
- ALL CMU TO BE LAID IN RUNNING BOND PATTERN.
- GROUT
 - MIX DESIGNS
 - FOR FILLING SPACES 4" OR LARGER IN BOTH HORIZONTAL DIRECTIONS, USE "COARSE GROUT" WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C1019. FOR FILLING SPACES LESS THAN 4" IN ONE OR BOTH HORIZONTAL DIRECTIONS, USE "FINE GROUT" PROPORTIONED PER ASTM C476.
 - USE 3000 PSI NORMAL WEIGHT CONCRETE FOR FILLING SPACES 10" AND LARGER IN BOTH DIRECTIONS. THE GROUT SHALL BE TESTED IN ACCORDANCE WITH ASTM C1019.
 - ALL GROUT MIX DESIGN SUBMITTALS SHALL INCLUDE THE RESULTS OF THE TESTS PERFORMED IN ACCORDANCE WITH ASTM C1019.
 - SLUMP RANGE AT POINT OF FINAL DISCHARGE: 8" TO 11".
 - LOW-LIFT GROUTING PROCEDURES SHALL BE USED FOR ALL FILLED-CELL MASONRY CONSTRUCTION.
 - IF HIGH-LIFT GROUTING PROCEDURES ARE FOLLOWED, PROVIDE CLEANOUTS AT EACH LOCATION.
 - GROUT POURS SHALL NOT EXCEED 5 FEET PER LIFT, UNLESS CLEANOUTS ARE PROVIDED IN THE BOTTOM COURSE OF EACH 5 FOOT LIFT.
 - MECHANICALLY VIBRATE ALL LIFTS IN EXCESS OF 1 FOOT. SHALL NOT BE STOPPED WITHIN 1-1/2" OF BED JOINT. TOTAL GROUT POUR SHALL NOT EXCEED 24 FEET WHEN GROUTING THE CELLS OF HOLLOW MASONRY.
 - PROVIDE CLEAN-OUTS FOR ALL GROUT POURS EXCEEDING 6 FEET.
 - GROUT FILL ALL CELLS AND ALL WALLS BELOW GRADE. SLUSH JOINT BETWEEN WYTHES.
- REINFORCEMENT
 - REINFORCING BARS TO MEET ASTM A-615, GRADE 60.
 - VERTICAL AND HORIZONTAL REINFORCING SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 40 BAR DIAMETERS.
 - HOLD VERTICAL BARS STRAIGHT AND TRUE AND ACCURATELY LOCATED IN WALL AS DETAILED. INSTALL REBAR POSITIONERS @ 4'-0" MAXIMUM THAT ARE DESIGNED TO HOLD REBAR IN PROPER LOCATION WITHIN THE GROUTED CELL.
 - PROVIDE #6 TRUSS TYPE JOINT REINFORCEMENT AT 16"OC FOR TYPICAL HORIZONTAL REINFORCING.
 - MINIMUM LAP OF ALL REINFORCEMENT SHALL BE 48 BAR DIAMETERS (EX.: 30" FOR #5 BARS AND 42" FOR #7 BARS). LONGER LAP LENGTHS MAY BE SHOWN IN DETAILS/SCHEDULES. DO NOT LAP VERTICAL REINFORCEMENT AT INTERSECTING BOND BEAMS. REINFORCEMENT SHALL BE CONTINUOUS THROUGH INTERSECTING BOND BEAMS.
 - PROVIDE HORIZONTAL REINFORCEMENT IN BED JOINTS EVERY OTHER COURSE (MAX. 18" SPACING). REINFORCEMENT SHALL BE TRUSS TYPE WITH 9 GAGE SIDE RAILS FABRICATED FROM HIGH-STRENGTH, COLD-DRAWN WIRE CONFORMING TO ASTM A82. TRUSSES SHALL BE GALVANIZED AFTER FABRICATION. ALSO PLACE THREE ROWS OF REINFORCEMENT @ 8" O.C. IMMEDIATELY ABOVE ALL WALL OPENINGS, AND AT THE TOPS OF WALLS. SIDE LAP RAILS A MINIMUM OF 6".
- CONTR. JOINTS
 - CONTROL JOINTS SHALL BE PROVIDED IN ALL CONCRETE MASONRY CONSTRUCTION AT LOCATIONS INDICATED ON THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. SPECIFIC CONTROL JOINT DETAILS ARE AS SHOWN IN THE ARCHITECTURAL DRAWINGS. IN ADDITION, PLACE JOINTS IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS:
 - MAXIMUM SPACING: 25 FEET
 - MAXIMUM LENGTH/HEIGHT RATIO: 2.0 TO 1
 - PLACEMENT GUIDELINES
 - AT ALL CHANGES IN WALL HEIGHT
 - AT ALL CHANGES IN WALL THICKNESS
 - AT ALL CHASES, RECESSES, AND PENETRATIONS
 - AT SIDES OF WALL OPENINGS:
 - OPENINGS SIX FEET OR LESS - ONE SIDE, AT THE END OF THE LINTEL
 - OPENINGS OVER 6 FEET - BOTH SIDES, AT THE ENDS OF THE LINTEL
 - HORIZONTAL WALL REINFORCING SHALL BE STOPPED EACH SIDE OF CONTROL JOINTS.
 - SEE ARCHITECTURAL DRAWINGS FOR SEALANT REQUIREMENTS AT CONTROL JOINTS.
- NOTES
 - PROVIDE SOLID GROUTED U-BLOCKS OR KNOCK-OUT BLOCK BOND BEAMS UNDER ALL WINDOW SILLS.

VII. SPECIALTY ENGINEERING REQUIREMENTS

THE FLORIDA STATE 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.

VIII. SUBMITTALS

- THE FOLLOWING SHOP DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S REVIEW:
 - MISCELLANEOUS STEEL
 - STRUCTURAL STEEL, SHOP AND ERECTION DRAWINGS
 - CONCRETE MIX DESIGNS
 - EMBEDDED ITEMS (PLATES, ANGLES, POST INSTALLED ANCHORS, BOLTS, ETC.) PRODUCT DATA
 - REINFORCING STEEL



105 S. Orange Blvd., Suite 101, Winter Park, FL 32789
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Client:

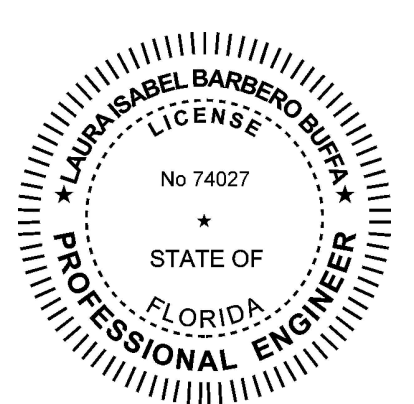


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CERT. OF AUTHORIZATION No. 27343
LAURA ISABEL BARBERO BUFFA
P.E. No. 74027

Project:
OC Animal Services
Building 500 HVAC
Renovation

Location:
2769 Conroy Rd,
Orlando FL, 32839

Issuance:
**PERMIT
DOCUMENTS**

Revisions:

#	Date	Description

Date:

11.03.2016

Project Number:
16.OC.026

Drawn By: MR	Checked By: LBB
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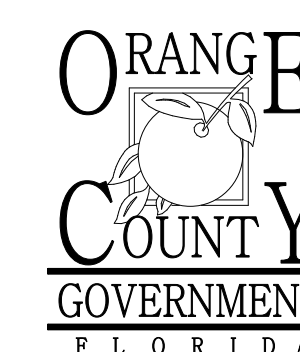
**STRUCTURAL
GENERAL
NOTES**

Sheet No.:

S002

TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE FLORIDA BUILDING CODE 2014 WITH 2016 SUPPLEMENT.

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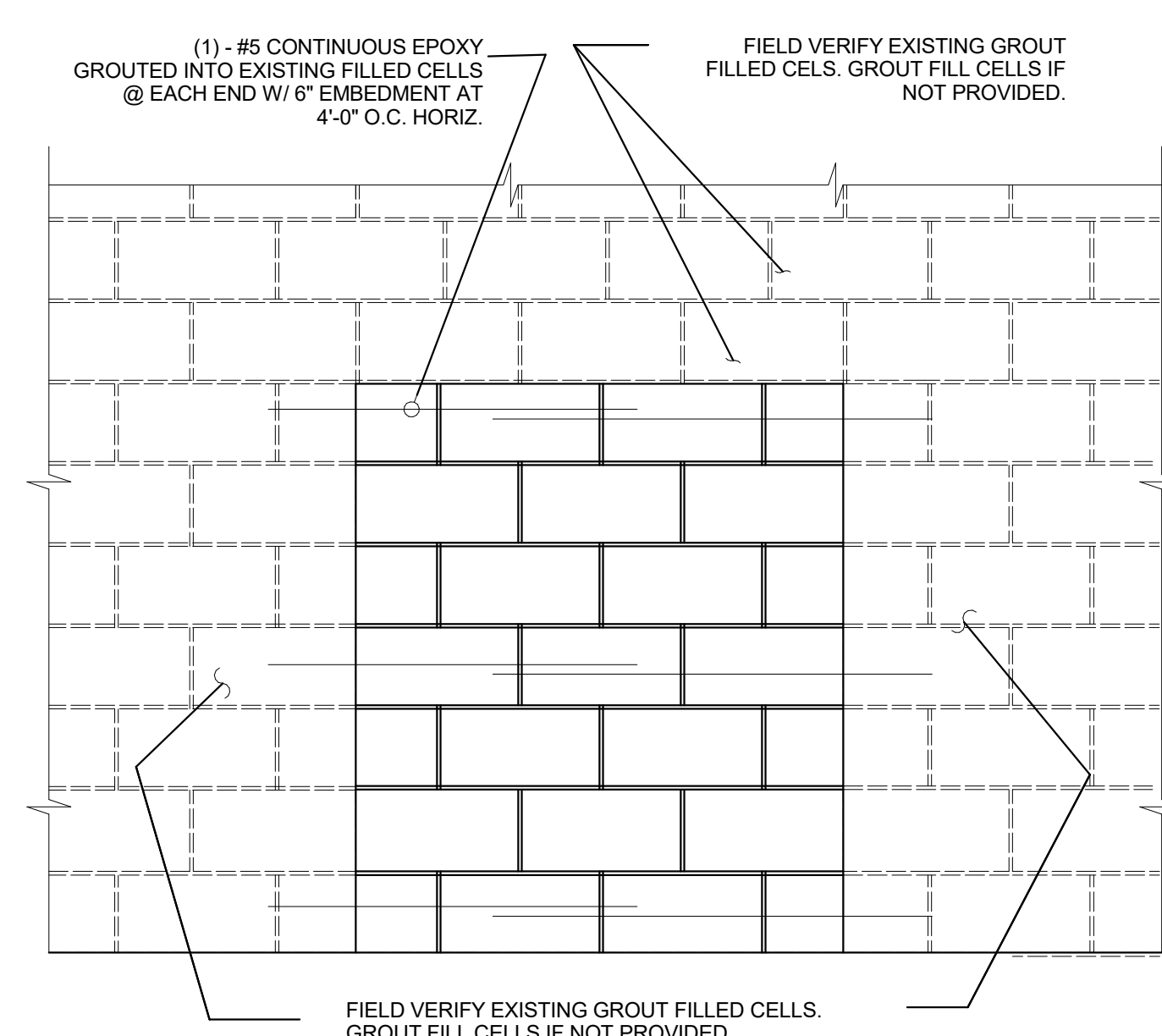
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Drawn By: MR
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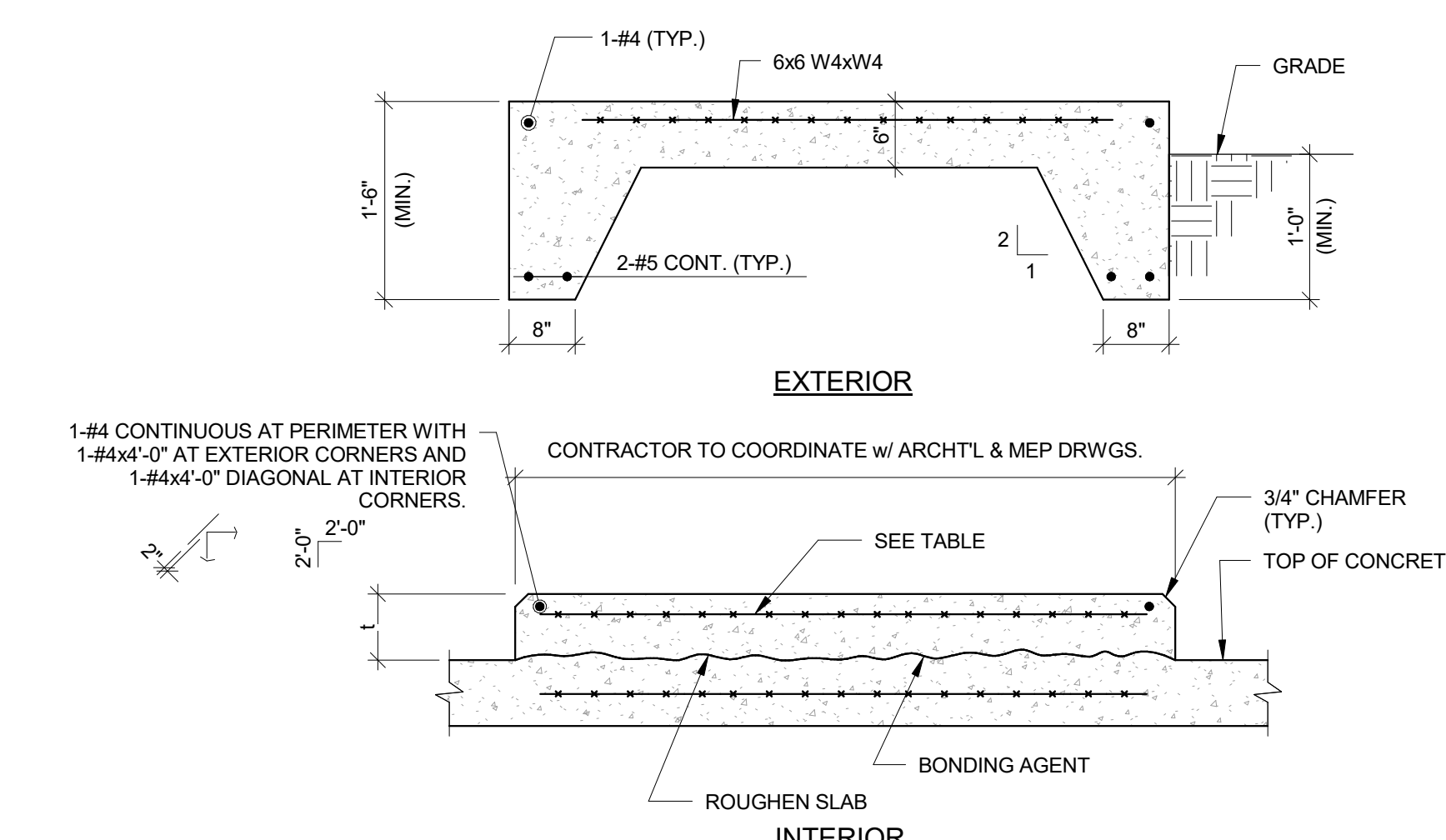
**SECTIONS &
DETAILS**

Sheet No.:

S301



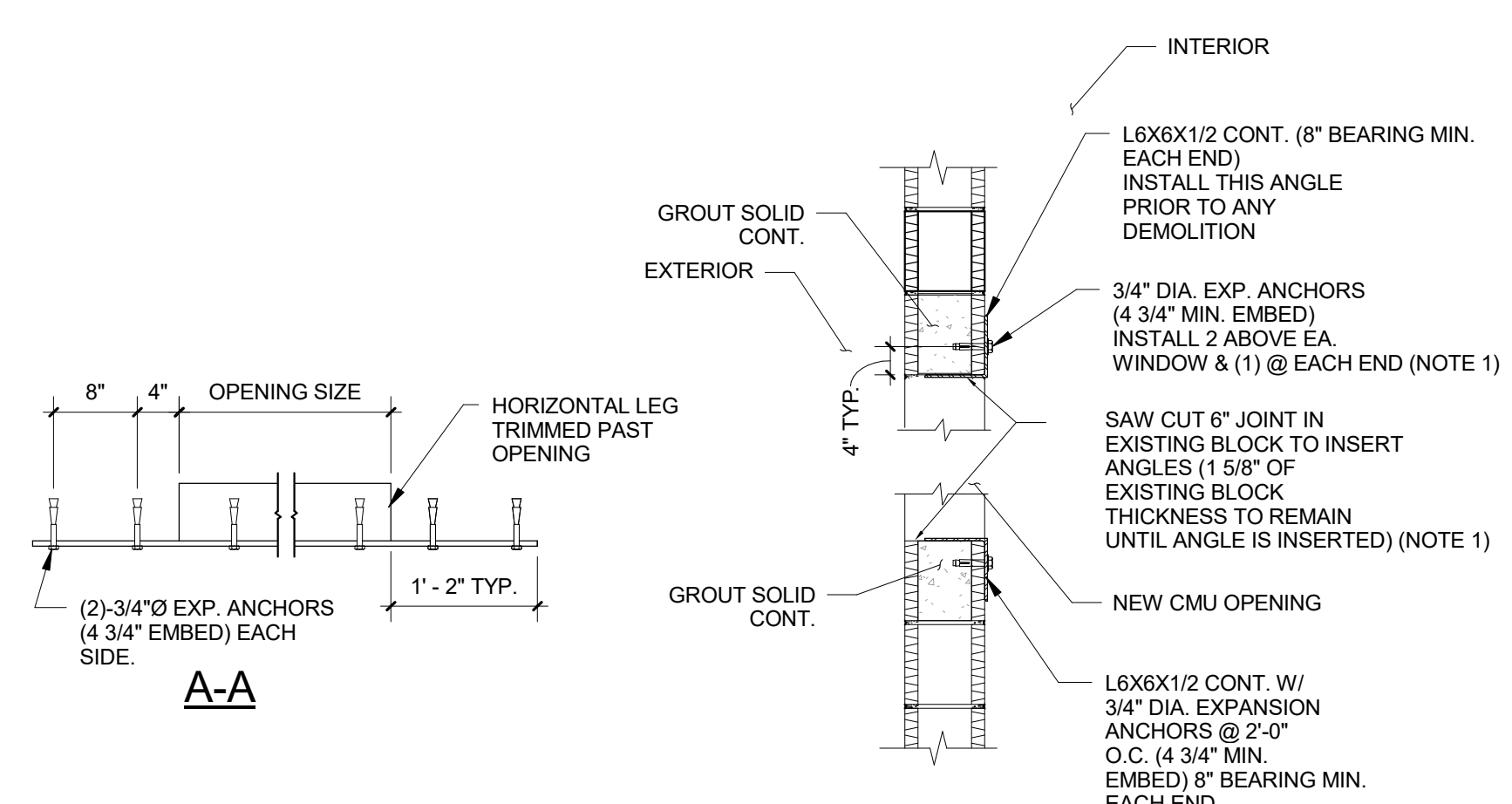
4 MASONRY INFILL
S301 3/4" = 1'-0"



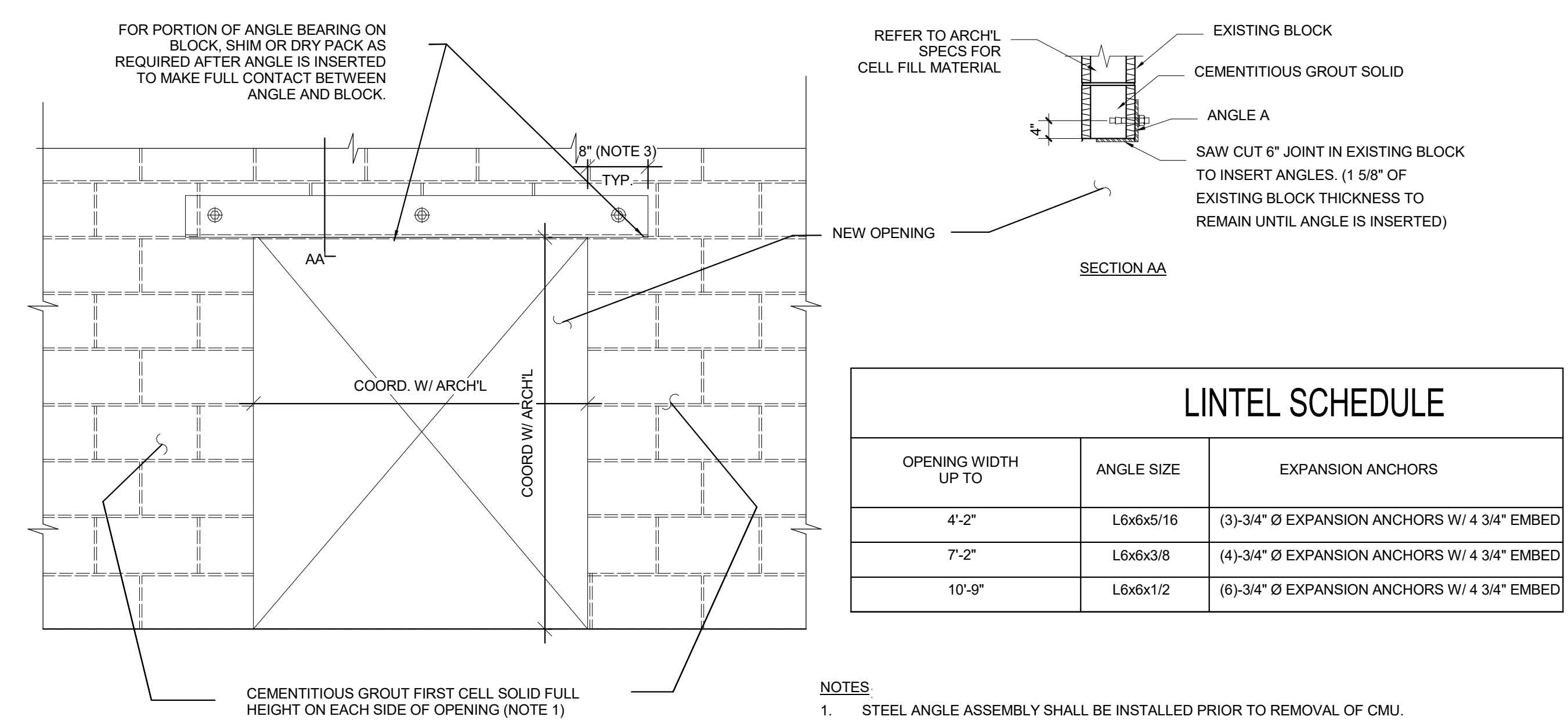
PAD THICKNESS	TOP REINFORCEMENT	BOTTOM REIN.
t <= 4"	6"x 6", W2.9 x W2.9	NONE
4" < t <= 6"	4"x 4", W4.0 x W4.0	NONE
6" < t <= 8"	4"x 4", W5.5 x W5.5	NONE
8" < t <= 12"	#4@12"EW	#3@18"EW
12" < t <= 16"	#4@12"EW	#4@12"EW

NOTES:
1. GENERAL CONTRACTOR TO COORDINATE WITH MECHANICAL DRAWINGS AND SPECIFICATIONS TO DETERMINE REQUIREMENTS FOR HOUSEKEEPING PADS OVER SLAB ON GRADE AND PROVIDE WHERE REQUIRED WHETHER SHOWN ON STRUCTURAL DRAWINGS OR NOT. COORDINATE DIMENSIONS AND OTHER SPECIAL REQUIREMENTS WITH EQUIPMENT MANUFACTURERS AS REQUIRED.

3 TYPICAL HOUSEKEEPING PADS
S301 3/4" = 1'-0"



2 STEEL ANGLE @ NEW CMU OPENING
S301 3/4" = 1'-0"



OPENING WIDTH UP TO	ANGLE SIZE	EXPANSION ANCHORS
4'-2"	L6x6x5/16	(3)-3/4" Ø EXPANSION ANCHORS W/ 4 3/4" EMBED
7'-2"	L6x6x3/8	(4)-3/4" Ø EXPANSION ANCHORS W/ 4 3/4" EMBED
10'-9"	L6x6x1/2	(6)-3/4" Ø EXPANSION ANCHORS W/ 4 3/4" EMBED

NOTES:
1. STEEL ANGLE ASSEMBLY SHALL BE INSTALLED PRIOR TO REMOVAL OF CMU.
2. PROVIDE 2 FILLED CELLS ON BOTH SIDES OF THE OPENING FOR OPENINGS WIDER THAN 10'-0".
3. * PROVIDE 12" BEARING AT EACH END FOR ANGLES OVER OPENINGS WIDER THAN 8'-0".
4. ANGLES INSTALLED ON INTERIOR SIDE OF WALL TYPICAL.

1 NEW OPENING IN CMU
S301 3/4" = 1'-0"

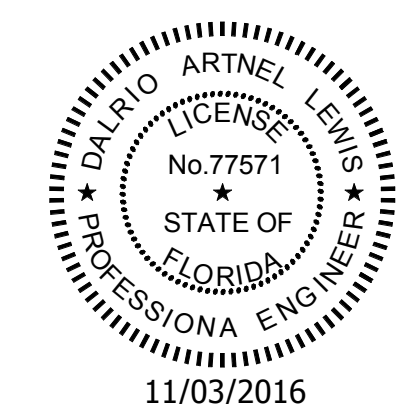
TO THE BEST OF THE ENGINEER'S KNOWLEDGE THE PLANS AND SPECIFICATIONS COMPLY WITH THE FLORIDA BUILDING CODE 2014 WITH 2016 SUPPLEMENT.

Client:



Consultants:

EOR Stamp:



Dairo A. Lewis, PE 77571 (FL)
11/03/2016

Project:

OC Animal Services Building 500 HVAC Renovation

Location:
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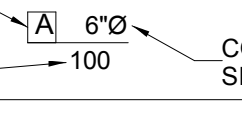




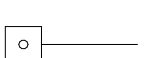


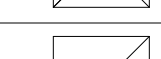

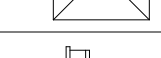



Drawn By: SE	Checked By: DL
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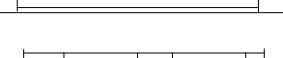


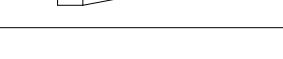

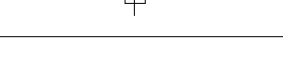


Mechanical General Information

Sheet No.:

M001

MECHANICAL GENERAL NOTES	
1.	APPLICABLE CODES: FLORIDA BUILDING CODE FIFTH EDITION (2014) INCLUDING MECHANICAL, PLUMBING, FUEL GAS, NEC 2011, SMACNA, ASHRAE, NFPA
2.	THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF A COMPLETE SYSTEM IN ACCORDANCE WITH THESE DRAWINGS, THE APPLICABLE BUILDING CODE AND ALL OTHER APPLICABLE STATE, COUNTY, AND LOCAL ORDINANCES AND THE LATEST EDITIONS OF THE FOLLOWING PUBLICATIONS: SMACNA, ASHRAE, NFPA 90A, 90B, 91, AND ANSI B-9.1 MECHANICAL REFRIGERATION.
3.	THE CONTRACTOR SHALL PAY ALL COSTS OF PERMIT, INSPECTIONS, AND ALL OTHER COSTS INCIDENTAL TO THE COMPLETION AND TESTING OF THIS WORK.
4.	THE CONTRACTOR SHALL VISIT THE SITE AND COORDINATE WITH ALL OTHER TRADES.
5.	THE CONTRACTOR SHALL SUPPLY THE ARCHITECT WITH "AS-BUILT" DRAWINGS. IF FIELD CHANGES ARE MADE, CONTRACTORS NEEDING DRAWING CHANGES FOR INSPECTION, SHALL SUBMIT CHANGES WITH SUFFICIENT TIME TO MAKE DRAWINGS CHANGES. THE CONTRACTOR WILL BE BILLED HOURLY FOR CAD CHANGES IF THE CHANGES WERE NOT PRE-APPROVED BY THE ENGINEER AND OWNER.
6.	THE CONTRACTOR SHALL SUBMIT FOR APPROVAL FIVE (5) COPIES OF MANUFACTURER'S DRAWINGS FOR EACH PIECE OF EQUIPMENT AND CONTROLS INCLUDED IN CONTRACT. CONTRACTOR SHALL ALSO SUBMIT OPERATION AND MAINTENANCE MANUALS FOR ALL EQUIPMENT TO THE OWNER. CONTRACTOR SHALL ALSO SUBMIT WITH MANUFACTURER SUBMITTALS A NOTICE TO OWNER FOR TRAINING. TRAINING SHALL BE PROVIDED BY THE CONTRACTOR FOR ALL EQUIPMENT AND CONTROLS WITH NECESSARY TIME TO ENSURE THE OWNER HAS UNDERSTOOD THE SYSTEM. MINIMUM TRAINING HOURS SHALL BE SCHEDULED AT 4 HOURS. ALL COSTS AND TIME OF TRAINING SHALL BE INCLUDED IN THE BID.
7.	ALL MATERIAL SHALL BE NEW OF U.S. MANUFACTURER OF GOOD QUALITY. ALL WORK SHALL BE PERFORMED AT INDUSTRY STANDARD QUALITY LEVEL BY CERTIFIED PROFESSIONALS. ALL EQUIPMENT SHALL BE UL OR ETL LISTED. DUCT SIZES SHOWN ARE INSIDE AIRFLOW DIMENSIONS. WHERE INTERNAL LINERS ARE USED, INSIDE DIAMETER OF DUCT SHALL COMPENSATE FOR INSULATION THICKNESS.
9.	ALL SUPPLY AND RETURN BRANCH TAKE-OFFS TO BE PROVIDED WITH MANUAL VOLUME DAMPERS. ALL ELBOWS AND TEES MUST BE FURNISHED IN TURNING VIEWS. PROVIDE MANUAL VOLUME DAMPERS AND EXTRACTOR AT ALL FLEX TAKE-OFFS.
10.	PROVIDE "CONSTRUCTION" AIR FILTERS IN ALL AIR MOVING EQUIPMENT AND ROUGHED IN AIR DEVICE BOOTS. FOR ALL ROUGHED IN FLEX RUN-OUTS PULL AND TRIM THE END SECTION OF THE OUTER FOIL FACE ONLY. SPIN SO THE FOIL CLOSES, SECURE WEATHER TIGHT WITH ZIP TIE TO PREVENT MOISTURE INTRUSION. PROVIDE NEW FILTERS FOR ALL AIR MOVING EQUIPMENT PRIOR TO START-UP. REPLACE ALL FILTERS PRIOR TO FINAL ACCEPTANCE BY OWNER. SUBMIT A NOTICE TO THE OWNER OF FILTER QUANTITIES, SIZES, AND LOCATIONS OF ALL FILTERS CHANGED.
11.	PROVIDE SMOKE DETECTORS WITH SERVICE ACCESS DOORS IN ALL SUPPLY AIR DUCTS FROM ALL AIR HANDLERS. ALL SMOKE DETECTORS SHALL BE BY SAME MANUFACTURER, COORDINATE VOLTAGE, ETC. WITH ELECTRICAL CONTRACTOR AND FIRE ALARM SYSTEM BEFORE ORDERING. UPON DETECTION, SMOKE DETECTORS SHOWN ASSOCIATED AIR MOVING EQUIPMENT AND ALL AIR MOVING EQUIPMENT SERVICING THAT AREA. WHERE NO FIRE ALARM SYSTEM IS INDICATED, MECHANICAL CONTRACTOR SHALL ALSO PROVIDE AND INSTALL REMOTE KEY SWITCH AND AUDIBLE VISUAL ALARM PER CODE.
12.	PROVIDE TYPE "B" STATIC FIRE DAMPERS WITH CURTAIN TOTALLY OUT OF AIR STREAM IN ALL DUCTS OR OPENINGS PENETRATING RATED WALLS AND FLOORS PER ARCHITECTURAL LIFE SAFETY PLANS AND MECHANICAL PLANS. PROVIDE TYPE "A" STATIC FIRE DAMPERS WITH CURTAIN IN AIR STREAM FOR ALL FIRE DAMPERS USED IN CONJUNCTION WITH CRILLER REGISTERS PENETRATING RATED WALLS AND FLOORS PER ARCHITECTURAL LIFE SAFETY PLANS AND MECHANICAL PLANS.
13.	THERMOSTAT LOCATION SHALL BE APPROVED BY THE OWNER AND ENGINEERS BEFORE INSTALLATION. INSTALL 48" A.F.F. PER A.D.A. REQUIREMENTS. INCLUDE ADD ALTERNATE TO PROVIDE ALL THERMOSTATS WITH LOCKING COVERS AND COORDINATE REQUIREMENTS WITH OWNER. PROVIDE A KEYMAP AT EACH THERMOSTAT WHICH SHOWS A FLOOR PLAN OF AREA BEING SERVED BY THE THERMOSTAT. INSTALL KEYMAP WITHIN A GLASS PICTURE FRAME AND MOUNT ON WALL. LABEL THERMOSTAT FOR AIR UNIT BEING SERVED.
14.	ALL INSULATION SHALL HAVE FIRE/SMOKE RATING LESS THAN 25/50
15.	PROVIDE MINIMUM OF 3" CLEARANCE IN FRONT OF ALL 120-240 VOLT PANELS AND 4" CLEARANCE IN FRONT OF ANY 480 VOLT PANEL. PROVIDE ADEQUATE SIDE CLEARANCES PER NEC.
16.	MECHANICAL PLANS IN GENERAL, ARE DIAGRAMMATIC IN NATURE, AND ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, PLUMBING, ELECTRICAL, AND STRUCTURAL PLANS AND SHALL BE CONSIDERED AS ONE SET OF DOCUMENTS. DUCT AND PIPING OFFSETS, BENDS, AND TRANSITIONS WILL BE REQUIRED TO PROVIDE AND INSTALL A COMPLETE FUNCTIONAL SYSTEM AND SHALL BE PROVIDED TO THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
17.	THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING, ORDERING, FABRICATING, OR INSTALLATION OF MATERIALS OR EQUIPMENT.
18.	ALL WORK SHALL BE DONE IN ACCORDANCE WITH FLORIDA BUILDING CODE FIFTH EDITION (2014), NFPA, ASHRAE, AND SMACNA DUCT CONSTRUCTION STANDARDS.
19.	ROUTE ALL DUCTWORK, PIPING, AND ACCESSORIES IN A MANNER TO AVOID BUILDING COMPONENTS STRUCTURE, AND LIGHTING. COORDINATE TRANSITIONS MADE TO MAXIMUM PRESSURE DROPS PER FAN AND PUMP MANUFACTURERS CURVES.
20.	WHERE REFRIGERANT LINES ARE INSTALLED, SIZE PER MANUFACTURER'S INSTRUCTIONS WITH RESPECT TO LENGTH AND FITTINGS TO BE INSTALLED IN PIPING.
21.	ALL DEBRIS SHALL BE PROPERLY DISPOSED OFF SITE. CLEAN UP SITE DAILY AFTER WORK IS COMPLETE. IF CLEAN UP IS PERFORMED BY OWNER'S REPRESENTATIVE AS A RESULT OF SUBCONTRACTOR NOT PERFORMING CLEAN UP OPERATIONS, OWNER WILL HAVE THE RIGHT TO CHARGE SUBCONTRACTOR FOR CLEAN UP LABOR.
22.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY SUPPORTING DEVICES FOR ALL ACCESSORIES INCLUDED WITHIN THIS CONTRACT.

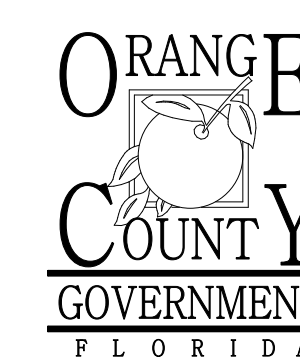
LEGEND	
SYMBOL	DESCRIPTION
	INDICATES DIRECTION OF AIRFLOW
	USE TO IDENTIFY SUPPLY, RETURN OR EXHAUST GRILLE VALUES AND TYPE
	COMBINATION TEMPERATURE SENSOR
	SMOKE DETECTOR
	OCCUPANCY SENSOR (DUAL TECHNOLOGY - IR/MOTION) CEILING MOUNTED.
	COMBINATION CARBON MONOXIDE SENSOR (MSA - Z-GARD DS)
	GREENHECK STATIC FIRE DAMPER WITH ACCESS DOOR SEE ARCHITECTURAL LIFE SAFETY PLANS FOR FIRE RATED WALL LOCATIONS
	GREENHECK FIRE-SMOKE DAMPER WITH ACCESS DOOR (24V ACTUATOR) SEE ARCHITECTURAL LIFE SAFETY PLANS FOR FIRE RATED WALL LOCATIONS
	CEILING SUPPLY DIFFUSER
	RETURN GRILLE OR DUCT DOWN/UP
	EXHAUST GRILLE OR DUCT DOWN/UP
	SIDEWALL EXHAUST GRILLE
	TERMINAL UNIT VARIABLE/CONSTANT AIR VOLUME
	TERMINAL UNIT VARIABLE/CONSTANT AIR VOLUME WITH ELECTRIC HEAT
	CONDENSATE PUMP WITH SAFTEY FLOAT SWITCH TO DE-ENERGIZE MAIN AC IN CASE OF OVERFLOW MODEL: LITTLE GIANT VCMA-15 OR EQUAL
THIS IS A GENERAL LIST OF SYMBOLS. ALL SYMBOLS MAY NOT BE USED ON A SPECIFIC PROJECT	

DUCTWORK LEGEND	
SYMBOL	DESCRIPTION
	FLEXIBLE DUCTWORK
	EXISTING EQUIPMENT OR DUCTWORK TO BE REMOVED.
	EXISTING DUCTWORK TO REMAIN
	NEW DUCTWORK
	MANUAL VOLUME DAMPER (MVD) MOTOR OPERATED DAMPER (MOD)
	ACCESS DOOR
	RADIUS ELBOW (R=1.5)
	VANED ELBOW
	BRANCH DUCT TAKE-OFF
	RISE OR DROP DIRECTION OF AIR FLOW
	CHANGE FROM RECTANGULAR TO ROUND DUCT ON SINGLE LINE DUCT
	CHANGE IN SIZE OF DUCTWORK (CONCENTRIC)
	CHANGE IN SIZE OF DUCTWORK (ECCENTRIC)
	SPIN IN FITTING WITH MANUAL VOLUME DAMPER
	PROPOSED BLADE CONTROL DAMPER WITH ACTUATOR
	PARALLEL BLADE CONTROL DAMPER WITH ACTUATOR
THIS IS A GENERAL LIST OF SYMBOLS. ALL SYMBOLS MAY NOT BE USED ON A SPECIFIC PROJECT	

ABBREVIATIONS			
AC	AIR CONDITIONING	F	FAHRENHEIT
ACH	AIR CHANGES PER HOUR	FA	FILTER ACCESS
AD	ACCESS DOOR	FACP	FIRE ALARM CONTROL PANEL
AF	ABOVE FINISHED FLOOR	FCU	FAN COIL UNIT
AG	ABOVE GRADE	FCU	FAN COIL UNIT
AHU	AIR HANDLING UNIT	FD	FIRE DAMPER
AI	ANALOG INPUT	FSD	FIRE SMOKE DAMPER
AQ	ANALOG OUTPUT	FL	FLOOR
AP	ACCESS PANEL	FLA	FULL LOAD AMPACITY
APPROX	APPROXIMATELY	FPF	FINS PER FOOT
BAS	BUILDING AUTOMATION SYSTEM	FPI	FINS PER INCH
BDD	BACK DRAFT DAMPER	FRM	FEET PER MINUTE
BFF	BELOW FINISHED FLOOR	FRM	FINS PER MINUTE
BHP	BRAKE HORSE POWER	FSD	FIRE/SMOKE DAMPER
BOD	BOTTOM OF DUCT	GPH	GALLONS PER HOUR
BOT	BOTTOM	GPM	GALLONS PER MINUTE
BTU	BRITISH THERMAL UNIT	H	HUMIDITY
CAP	CAPACITY	HC	HEATING COIL
CC	COOLING COIL	HP	HORSEPOWER
CD	CONDENSATE DRAIN	HHWR	HEATING HOT WATER RETURN
CFM	CUBIC FEET PER MINUTE	HWWS	HEATING HOT WATER SUPPLY
CHWR	CHILLED WATER RETURN	HZ	HERTZ
CHWS	CHILLED WATER SUPPLY	IN-H20	INCHES OF WATER
CLG	CEILING	KW	KILOWATT
CMU	CONCRETE MASONRY UNIT	LAT	LEAVING AIR TEMPERATURE
CONN	CONNECTION	LAT	LATENT
CT	COOLING TOWER	LD	LOUVERED DOOR
CU	CONDENSING UNIT	LPC	LOW PRESSURE CONDENSATE
DB	DRY BULB	LPS	LOW PRESSURE STEAM
DDC	DIRECT DIGITAL CONTROL	LRA	LOCKED ROTOR AMPS
DG	DOOR GRILLE	LVG	LEAVING
DI	DIGITAL INPUT	LWT	LEAVING WATER TEMPERATURE
DN	DOWN	MAX	MAXIMUM
DO	DIGITAL OUTPUT	MBH	1000BTU
DP	DEW POINT	MCA	MINIMUM CIRCUIT AMPACITY
DX	DIRECT EXPANSION	MEZZ	MEZZANINE
EA	EXHAUST AIR	MIN	MINIMUM
EAT	ENTERING AIR TEMPERATURE	MISC	MISCELLANEOUS
EA	EXHAUST AIR	NC	NORMALLY CLOSED
EER	ENERGY EFFICIENCY RATIO	NIC	NOT IN CONTRACT
EF	EXHAUST FAN	NO	NORMALLY OPEN
EG	EXHAUST GRILLE	NTS	NOT TO SCALE
EL	ELEVATION	OA	OUTSIDE AIR
ELEC	ELECTRICAL	OAI	OUTSIDE AIR INTAKE
ENT	ENTERING	OAL	OUTSIDE AIR LOUVER
EQUIP	EQUIPMENT	OC	ON CENTER
ESP	EXTERNAL STATIC PRESSURE	PD	PRESSURE DROP
ET	EXPANSION TANK	PKU	PACKAGE UNIT
EXH	EXHAUST	PH	PHASE
EXIST	EXISTING	POC	POINT OF CONNECTION
THIS IS A GENERAL LIST OF ABBREVIATIONS AND MAY NOT BE USED ON A SPECIFIC PROJECT. IF AN ABBREVIATION IS USED ON A PROJECT AND IS NOT REPRESENTED IN THIS LIST, CONTRACTOR SHALL SUBMIT A REQUEST FOR INFORMATION.			

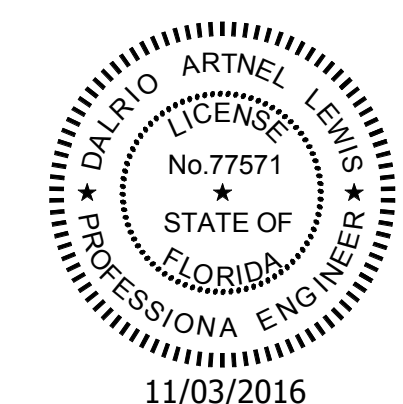
Building 500 Mechanical	
Sheet Number	Sheet Name
M001	Mechanical General Information
M101	Mechanical Demo Plan
M201	Mechanical New Plan
M301	Mechanical Schedules
M401	Mechanical Details

Client:



Consultants:

EOR Stamp:



Dairio A. Lewis, PE 77571 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

Location:
2769 Conroy Rd, Orlando
FL, 32839

Issuance:
PERMIT DOCUMENTS

Revisions:

#	Date	Description

Date:
11.03.2016

Project Number:
16.OC.026

Drawn By: SE	Checked By: DL
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Mechanical Demo Plan

Sheet No.:

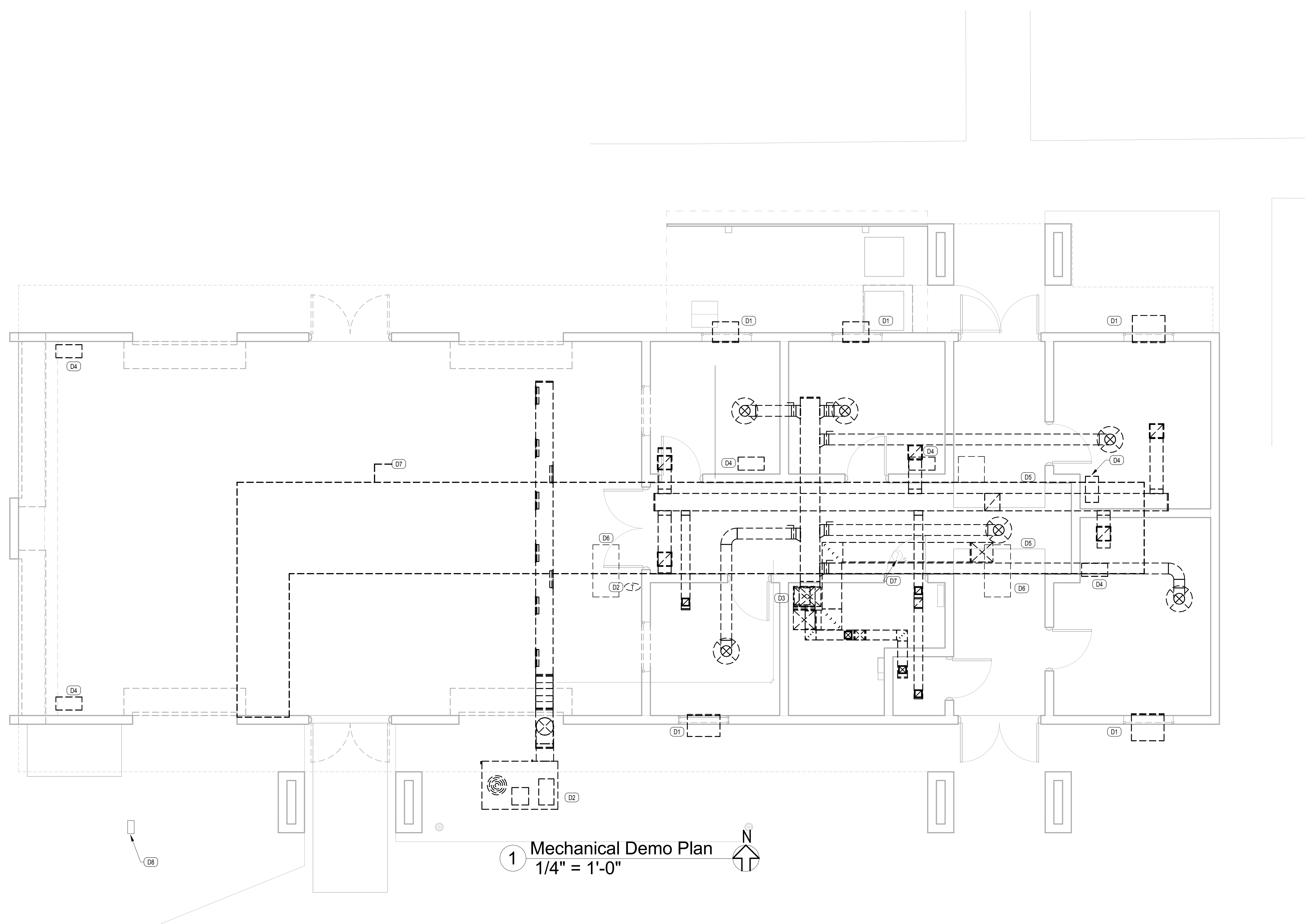
M101

GENERAL NOTES:

- REMOVE AND DISCARD ALL EXISTING HVAC COMPONENTS AS SHOWN ON DEMO PLANS UNLESS OTHERWISE NOTED. CAP, SEAL AND INSULATE DUCTWORK OR PREPARE FOR NEW WORK AS SHOWN ON NEW PLANS. PATCH AND SEAL BLDG ENVELOPE TO MATCH EXISTING.
- BUILDING SHALL REMAIN OPERATIONAL DURING AHU INSTALLATION.

KEY PLAN NOTES:

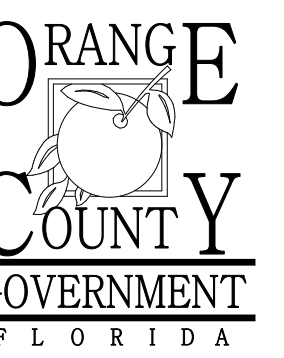
- D1 REMOVE AND DISCARD WALL MOUNTED AIR CONDITIONER INCLUDING: POWER, CD AND SUPPORTS.
- D2 REMOVE AND DISCARD GROUND MOUNTED PACKAGE UNIT INCLUDING: CONCRETE PAD, POWER, CONTROLS, DUCTWORK AND DUCT ACCESSORIES.
- D3 REMOVE AND DISCARD EXISTING EXHAUST FAN INCLUDING: POWER, DUCTWORK, SUPPORTS.
- D4 REMOVE AND DISCARD WALL MOUNTED UNIT HEATER INCLUDING POWER AND SUPPORTS.
- D5 EXISTING RA LOUVER PLENUM IN ATTIC TO REMAIN IN PLACE. REMOVE DUCT CONNECTION, CAP, SEAL AND PREPARE PLENUM FOR NEW MECHANICAL WORK.
- D6 EXISTING 2x4 ATTIC ACCESS TO REMAIN.
- D7 REMOVE AND REPLACE PORTION CEILING FOR DUCTWORK REMOVAL AND REPLACEMENT. TEMPORARILY SUSPEND ALL EXISTING LIGHTS, SMOKE DETECTOR AND HORN SPEAKERS. REINSTALL AT COMPLETION OF WORK.
- D8 REMOVE NO PARKING SIGN AND STORE. RELOCATE FOR COMPLETION OF WORK.



GENERAL NOTES:

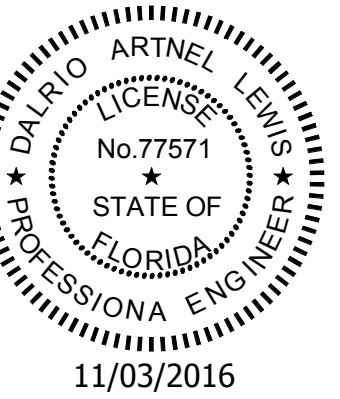
- BUILDING SHALL REMAIN OPERATIONAL DURING AHU INSTALLATION.
- PROVIDE REMOTE VOLUME DAMPERS FOR ALL SA DUCT CONNECTIONS. SEE SHEET 3M01 FOR MORE INFORMATION.

Client:



Consultants:

EOR Stamp:



11/03/2016
Dairo A. Lewis, PE 77571 (FL)

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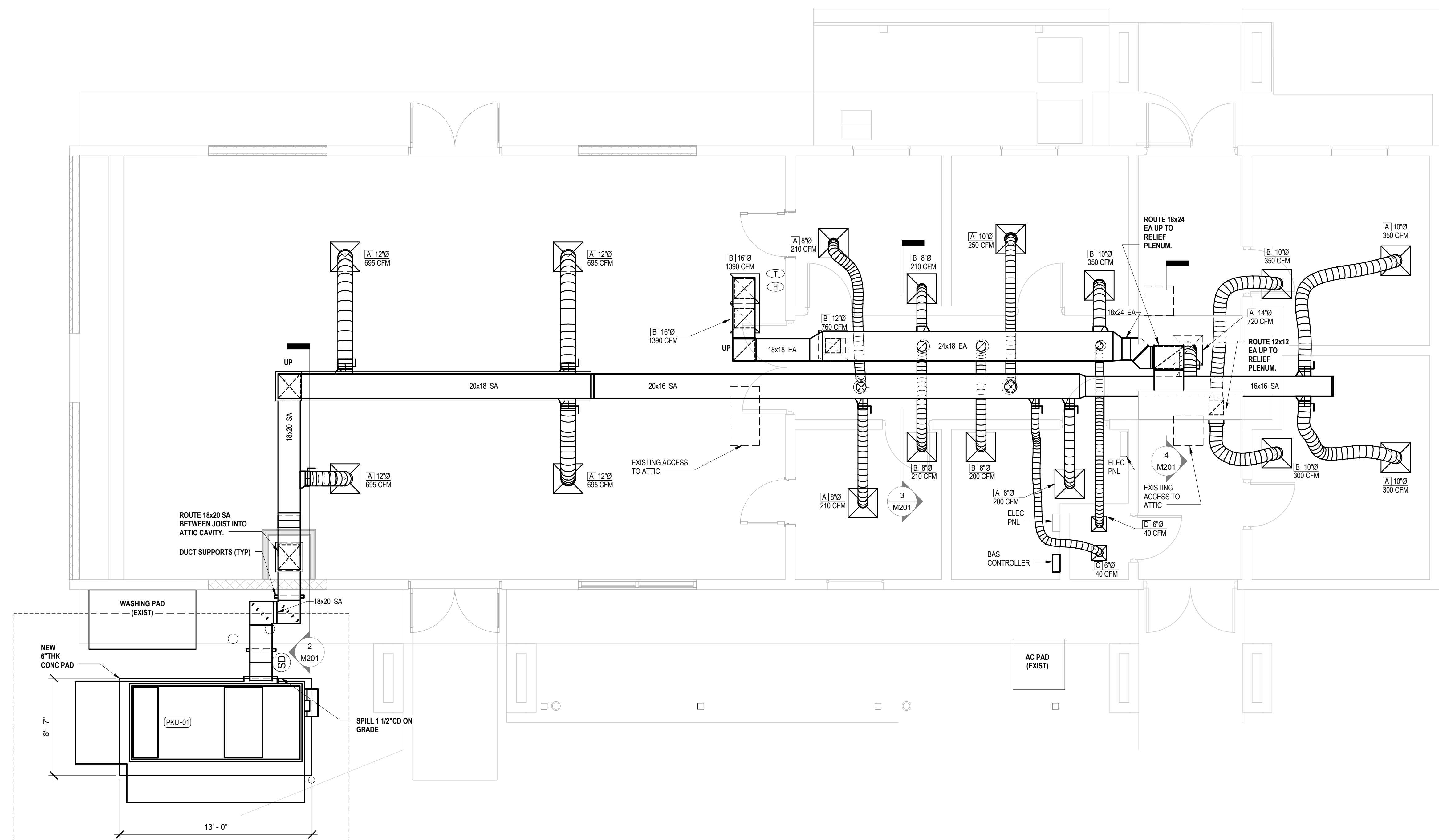
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Drawn By: SE
Checked By: DL

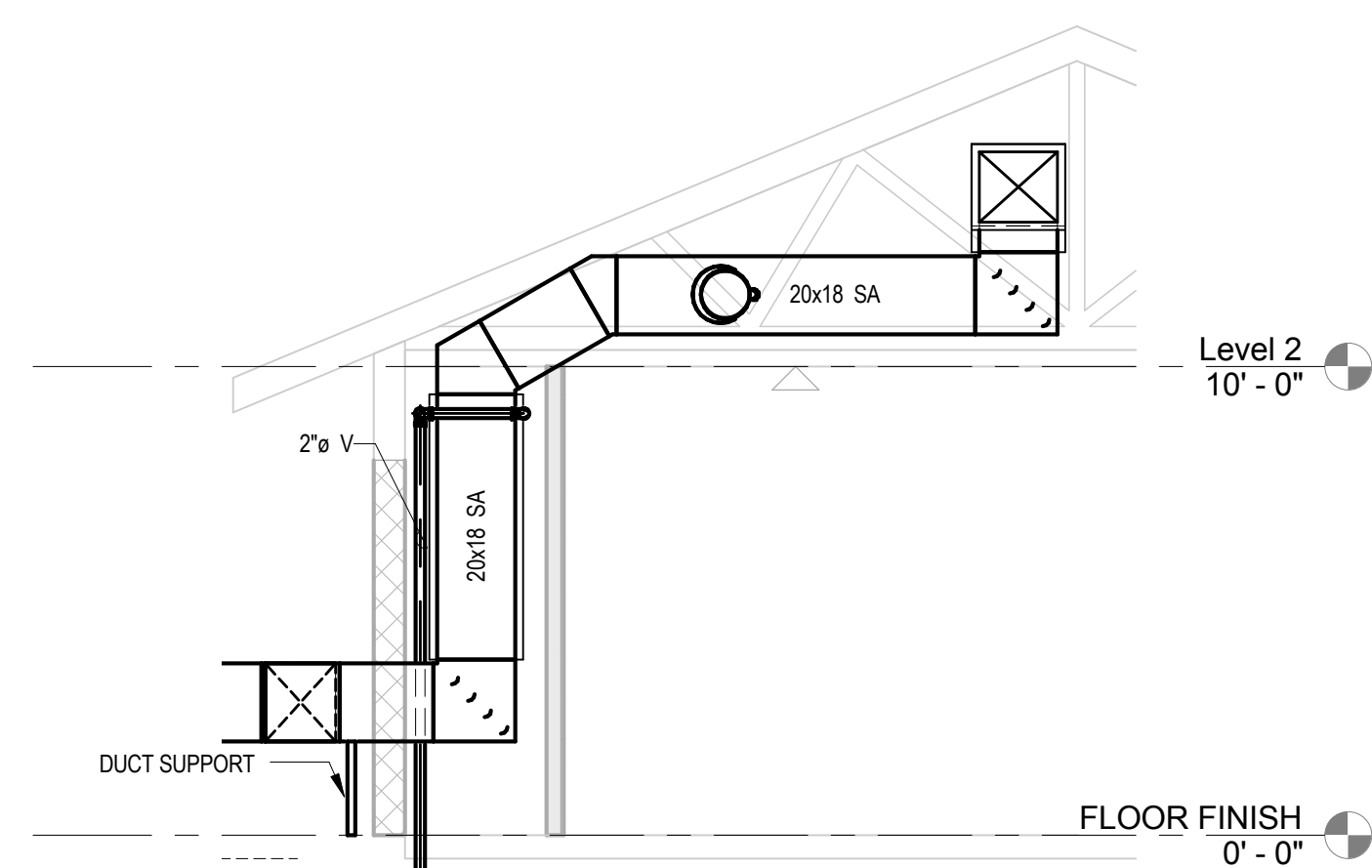
Mechanical New Plan

Sheet No.:

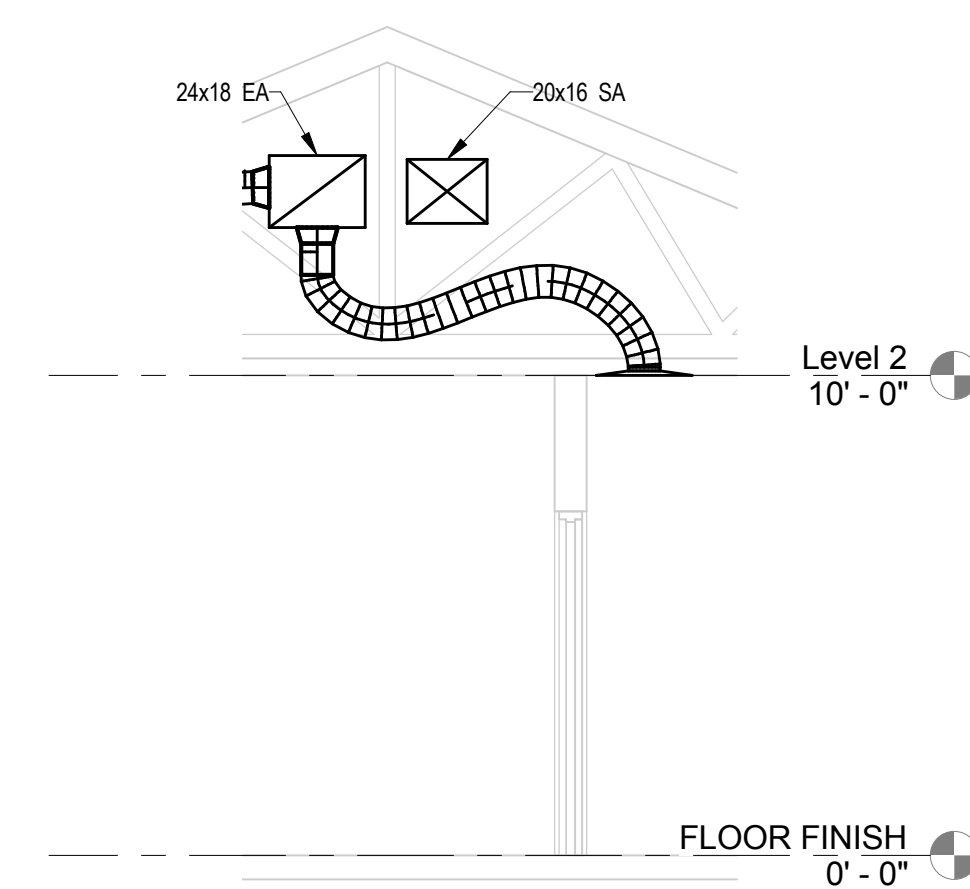
M201



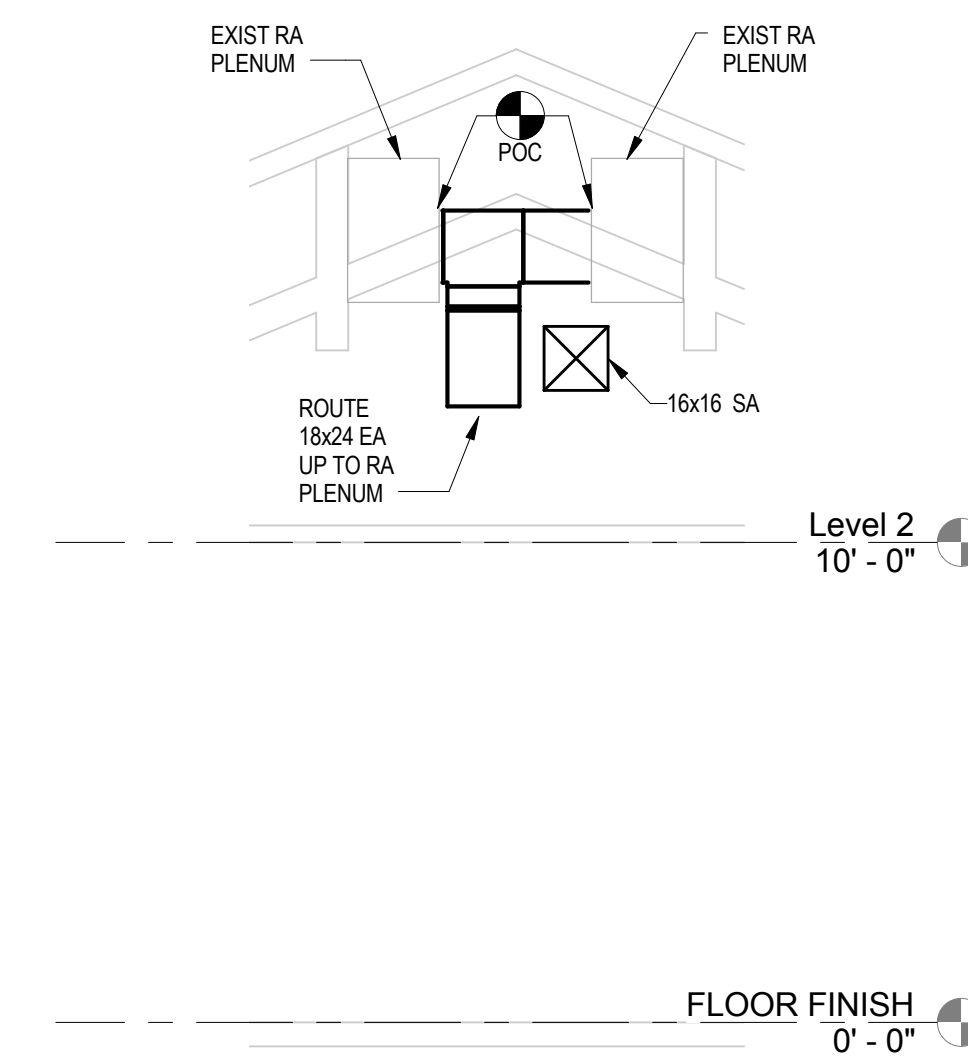
1 Mechanical New Plan
1/4" = 1'-0"



2 MECHANICAL SECTION 1
1/4" = 1'-0"

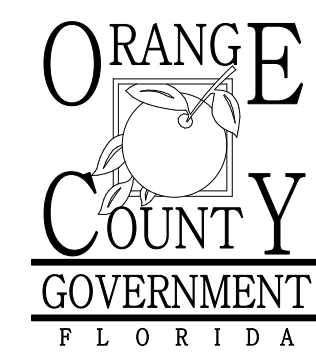


3 MECHANICAL SECTION 2
1/4" = 1'-0"



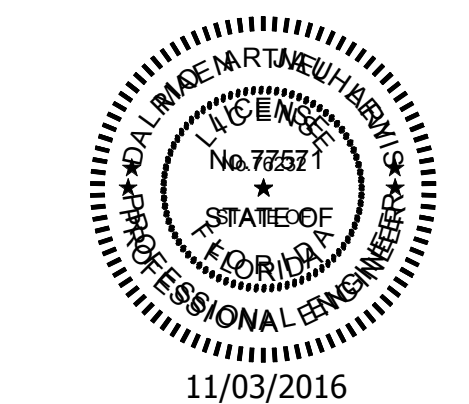
4 MECHANICAL SECTION 3
1/4" = 1'-0"

Client:



Consultants:

EOR Stamp:



11/03/2016

Dairo A. Lewis, PE 77571 (FL)

Project:

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Drawn By: SE
Checked By: DL

Mechanical Schedules

Sheet No.:

M301

ELECTRIC HEAT / DIRECT EXPANSION PACKAGE UNIT SCHEDULE

TAG	LOCATION	REFRIGERANT DATA		EER	DESIGN AIR TEMP.			COOLING				HEATING		FANMOTOR DATA				FILTER		ELECTRICAL DATA				WEIGHT (LBS)	MANUFACTURER / MODEL NO.	REMARKS							
		TYPE	CHARGE (LBS)		DB°F	WB°F	DB°F	GROSS (MBH)	SENSIBLE (MBH)	EAT (DB°F)	EAT (WB°F)	LAT (DB°F)	LAT (WB°F)	COMPRESSOR QTY	STAGES	CAPACITY (KW)	MAT (DB°F)	LAT (DB°F)	STAGES	SA (CFM)	OA (CFM)	HP	E.S.P. (IN W.C.)				TYPE	WIDTH	MCA	MOCP	V	PH	HZ
01	Ground	R-410A	40.42/58.81	11.3 (EER)	95	80	32	469.6	228.8	95	80	55	55	2	1	79.0	32	81	4	5100	5100	2	1.00	MERV-8	2	287	300	208	3	60	5400	TRANE / OAND480A3	ALL

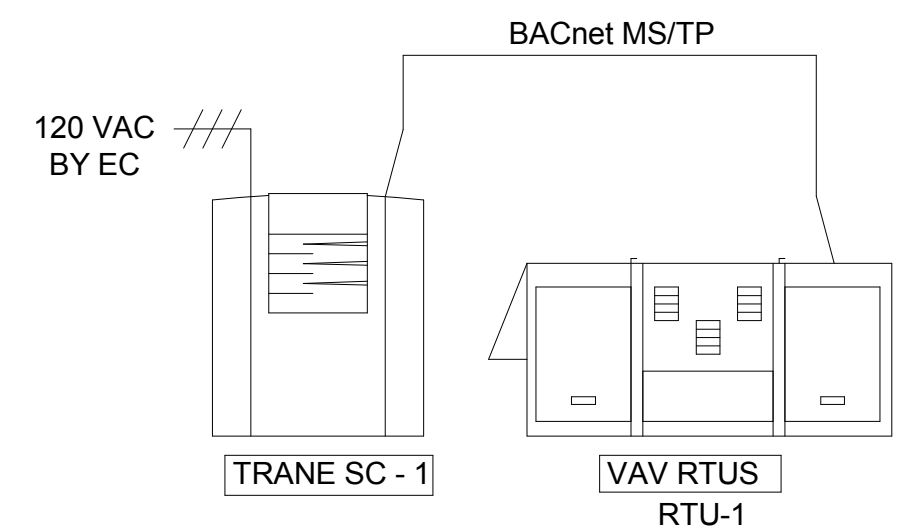
Unit Notes:

- PROVIDE GROUND MOUNTED HYBRID CURBS WITH WIND LOAD RESTRAINT BRACKETS WITH ENGINEERED WIND LOAD CALCULATIONS.
- COMPLETE COAT ON CONDENSER COIL.
- PROVIDE DIRECT DRIVE FAN W FACTORY INSTALLED VFD.
- PROVIDE MOTORIZED DAMPER ON OUTSIDE AIR INTAKE W 2-POSITION DAMPER - CONTROL THRU UNIT TO SHUT DOWN DURING UNOCCUPIED PERIODS. PROVIDE A WEATHERHOOD; DOWNTURNED HOOD.
- PROVIDE HORIZONTAL DISCHARGE UNIT.
- PROVIDE NON-FUSED DISCONNECT SWITCH.
- PROVIDE SCR MODULATING ELECTRIC HEATER.
- PROVIDE WITH STAINLESS STEEL DRAIN PAN.
- PROVIDE UNIT POWERED 115V GFI OUTLET.
- PROVIDE PAINTED EXTERIOR - HI-PRO POLY COATING.
- PROVIDE UNIT CONTROLS WITH BACNET CONNECTION.
- PROVIDE MERV-8 FILTER.
- PROVIDE 2" DOUBLE-WALL CONSTRUCTION
- PROVIDE HINGED ACCESS DOORS.
- PROVIDE CONDENSER HALL GUARDS.
- PROVIDE HOT GAS REHEAT
- PROVIDE SUPPLY AIR SMOKE DETECTOR IN SA DUCT (BY MECHANICAL CONTRACTOR).

Control Notes:

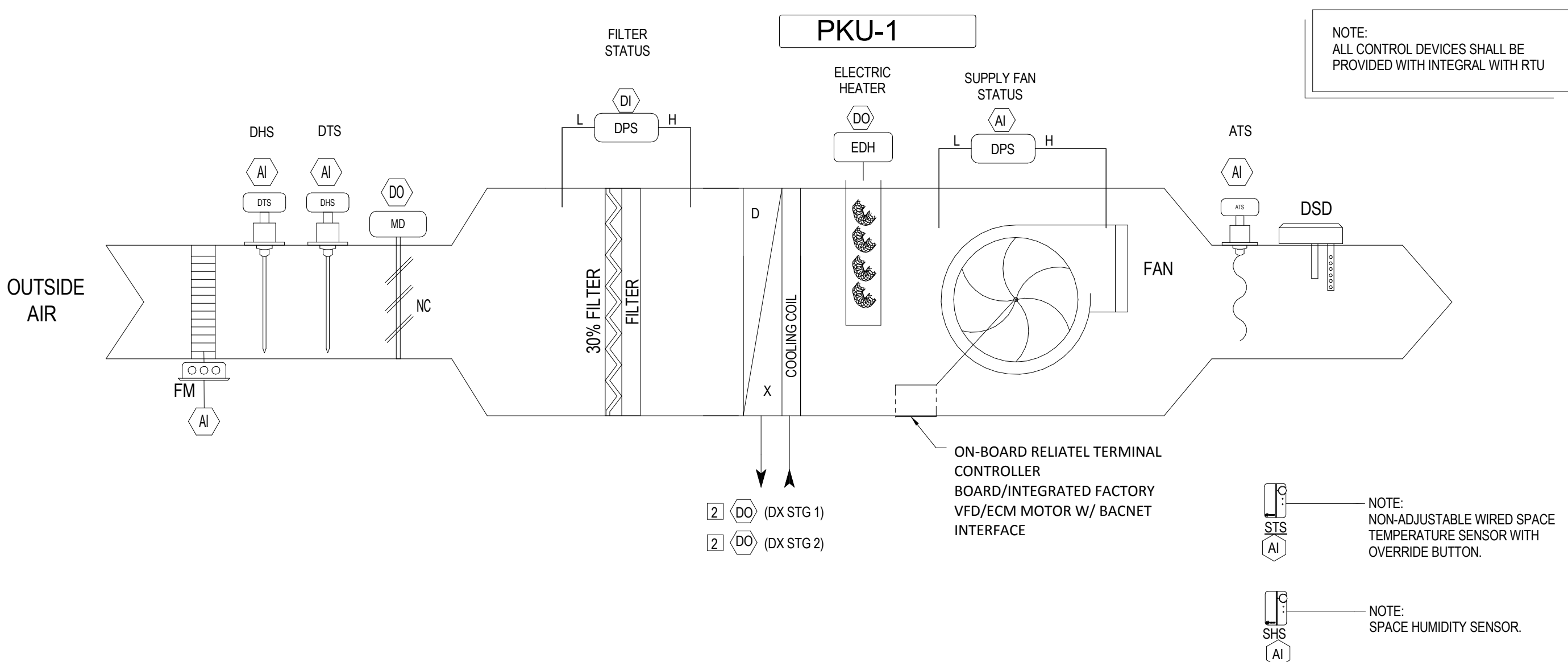
- SEE CONTROL SHEETS FOR MORE INFORMATION.
- MANUFACTURER SHALL PROVIDE THE FOLLOWING INTEGRAL WITH UNIT.
- PROVIDE CLOGGED FILTER SWITCH.
- PROVIDE FAN FAILURE SWITCH.
- OUTDOOR AIR FLOW MONITORING SYSTEM.
- OUTDOOR AIR TEMPERATURE/HUMIDITY SENSOR.

CONTROLS LEGEND					
SYMBOL	ABB.	DESCRIPTION	SYMBOL	ABB.	DESCRIPTION
	AHU	AIR HANDLING UNIT		EDH	ELECTRIC DUCT HEATER
	ATS	AVERAGING TEMPERATURE SENSOR		FLT	FILTER
	CO2	CARBON DIOXIDE SENSOR - WALL MOUNTED		FRT	FREEZE STAT
	CC	OCCUPANCY SENSOR (DUAL TECHNOLOGY - IR/MOTION), CEILING MOUNTED		CP	PROGRAMMABLE CONTROLLER
	CHW	CHILLED WATER VALVE		OTS	OUTSIDE TEMPERATURE SENSOR
	CSS	CURRENT SENSING SWITCH		SP	SURGE PROTECTION
	CSSR	CURRENT SENSING SWITCH WITH RELAY		SHS	SPACE HUMIDITY SENSOR
	CT	CURRENT TRANSMITTER		VFD	VARIABLE FREQUENCY DRIVE
	MD	MOTORIZED DAMPER		DSD	DUCT SMOKE DETECTOR
	DPS	DIFFERENTIAL PRESSURE SWITCH		-	DIGITAL INPUT POINT TO CONTROL PANEL
	DPT	DIFFERENTIAL PRESSURE TRANSMITTER		-	DIGITAL OUTPUT POINT FROM CONTROL PANEL
	DCO	DUCT CARBON DIOXIDE SENSOR		-	ANALOG INPUT POINT TO CONTROL PANEL
	SCO	SPACE CARBON DIOXIDE SENSOR		-	ANALOG OUTPUT POINT FROM CONTROL PANEL
	FM	AIR FLOW MONITORING STATION			
	TSO	OUTSIDE TEMP SENSOR			
	HSO	OUTSIDE HUMIDITY SENSOR			
	STS	SPACE TEMPERATURE SENSOR			
	FAN	FAN			
	DTS	DUCT TEMPERATURE SENSOR			
	DHS	DUCT HUMIDITY SENSOR			



BAS CONTROL DIAGRAM AND SYSTEM DESCRIPTION

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL BE A SUPERVISORY CONTROLLER ABLE TO COMMUNICATE VIA BACNET MS/TP TO ALLOW FOR SEAMLESS INTEGRATION WITH FUTURE EQUIPMENT EXPANSION.



SEQUENCE OF OPERATIONS

BUILDING AUTOMATION SYSTEM (BAS):
THE BUILDING AUTOMATION SYSTEM SHALL SEND THE AIR HANDLING UNIT SYSTEM OCCUPIED, UNOCCUPIED, OPTIMAL START/STOP, OCCUPIED OVERRIDE, AND DISCHARGE AIR TEMPERATURE SETPOINTS. IF COMMUNICATION IS LOST WITH THE BAS, THE AHU CONTROLLER SHALL OPERATE USING ITS DEFAULT MODES AND SETPOINTS.

THE CONTROLS FOR THE DEDICATED OUTDOOR AIR UNIT SYSTEM WILL FUNCTION AS FOLLOWS:

THIS PKU CIRCULATES OUTSIDE AIR TO THE CONDITIONED SPACES THROUGH A DISTRIBUTION SYSTEM OF DUCTWORK AND AIR DISTRIBUTION DEVICES.

OCCUPIED MODE
OPTIONAL SPACE TEMPERATURE AND/OR HUMIDITY SENSORS MUST BE INSTALLED, WIRED TO UNIT, CONFIGURED AS "INSTALLED" AT THE MAIN UNIT CONTROLLER.

STARTING SEQUENCE
THE UNIT IS PLACED IN OCCUPIED OPERATION VIA EITHER THE BAS OR BY CLOSING CONNECTION BETWEEN UNIT TERMINALS. THE UNIT MUST NOT BE IN LOCKOUT.

THE OUTDOOR AIR DAMPER WILL BE COMMANDED TO OPEN. THE DAMPER END SWITCH WILL CAUSE THE MAIN UNIT CONTROLLER TO INITIATE THE INDOOR FAN STARTING SEQUENCE BY SENDING A PRESET RUN SIGNAL. (FIELD ADJUSTABLE BETWEEN 50 PERCENT AND 100 PERCENT) TO THE INDOOR FAN VFD OR ECM. IF AFTER 30 SECONDS THE INDOOR FAN PROVING SWITCH DOES NOT PROVE THE INDOOR FAN ON, THE MAIN UNIT CONTROLLER WILL COMMAND THE INDOOR FAN OFF AND SIGNAL AN ALARM.

HEATING MODE
HEATING MODE IS ENABLED BASED ON OUTDOOR AIR HEATING SETPOINT (OAH), OCCUPIED SPACE HEATING SETPOINT, AND OCCUPIED SPACE COOLING SETPOINT. IF THE OUTDOOR AIR TEMPERATURE IS LOWER THAN THE OAHS THEN HEATING MODE SHALL BE ENABLED. IF THE OUTDOOR AIR TEMPERATURE IS ABOVE THE OAHS BUT THE UNIT IS NOT CALLING FOR COOLING OR DEHUMIDIFICATION THEN THE UNIT SHALL SWITCH BETWEEN HEATING AND COOLING MODE AS NECESSARY TO MAINTAIN AN AVERAGE TEMPERATURE OF THE OCCUPIED SPACE COOLING SETPOINT AND THE OCCUPIED SPACE HEATING SETPOINT.
DURING HEATING MODE THE MAIN UNIT CONTROLLER WILL MODULATE THE HEATING OUTPUT TO MAINTAIN THE OCCUPIED SPACE HEATING SETPOINT. MAXIMUM DISCHARGE AIR HEATING TEMPERATURE IS ADJUSTABLE BUT CANNOT EXCEED 90 DEGREES FAHRENHEIT FOR ELECTRIC HEAT. HOT GAS REHEAT IS DISABLED WHEN HEATING IS ENABLED.

DEHUMIDIFICATION MODE
DEHUMIDIFICATION MODE IS ENABLED ON OUTDOOR AIR DEWPOINT SETPOINT (OADS) OR SPACE DEWPOINT SETPOINT (SPDS). IF THERE IS NO CALL FOR HEATING MODE AND THE OUTDOOR AIR DEWPOINT IS ABOVE OR EQUAL TO THE OADS OR THE SPACE DEWPOINT IS ABOVE OR EQUAL TO THE SPDS THEN DEHUMIDIFICATION MODE SHALL BE ENABLED. DEHUMIDIFICATION MODE WILL REMAIN ACTIVE UNTIL THE SPACE OR OUTDOOR AIR DEWPOINTS RISE ABOVE THE SETPOINTS BY 2 DEGREES, OR IF HEATING MODE IS ENABLED. COMPRESSOR CONTROL IS BASED ON EVAPORATOR LEAVING AIR TEMPERATURE SETPOINT. WITH DEHUMIDIFICATION ENABLED, IF EVAPORATOR LEAVING AIR TEMPERATURE IS ABOVE SETPOINT FIRST STAGE DEHUMIDIFICATION (COMPRESSOR 1) WILL START. IF AFTER A 3 MINUTE DELAY THE EVAPORATOR LEAVING AIR TEMPERATURE IS STILL ABOVE THE SETPOINT, THE SECOND, THIRD, AND FOURTH STAGES OF DEHUMIDIFICATION (COMPRESSOR 2, 3, AND 4) WILL BE STAGED ON SEQUENTIALLY FOLLOWING INDIVIDUALLY 3 MINUTE MINIMUM DELAYS BETWEEN EACH CALL. DURING OPERATION IN DEHUMIDIFICATION MODE, THE MAIN UNIT CONTROLLER WILL ENABLE HOT GAS REHEAT AND IT WILL MODULATE TO MAINTAIN THE OCCUPIED SPACE COOLING SETPOINT.

HOT GAS REHEAT PURGE
FOLLOWING CONTINUOUS 30 MINUTE HOT GAS REHEAT OPERATION AT LESS THAN 100 PERCENT REHEAT ACTIVITY A PURGE CYCLE WILL BE INITIATED. DURING THE PURGE CYCLE, THE HOT GAS REHEAT SIGNAL IS SET AND HELD AT 100 PERCENT FOR A PERIOD OF 3 MINUTES. FOLLOWING THE PURGE CYCLE, NORMAL OPERATION RESUMES.

COOLING MODE
COOLING MODE IS ENABLED BASED ON OUTDOOR AIR COOLING SETPOINT (OACS), OCCUPIED SPACE HEATING SETPOINT, AND OCCUPIED SPACE COOLING SETPOINT. IF THE OUTDOOR AIR TEMPERATURE IS ABOVE THE OACS THEN COOLING MODE SHALL BE ENABLED. IF THE OUTDOOR AIR TEMPERATURE IS BELOW THE OACS BUT THE UNIT IS NOT CALLING FOR HEATING OR DEHUMIDIFICATION THEN THE UNIT SHALL SWITCH BETWEEN HEATING AND COOLING MODE AS NECESSARY TO MAINTAIN AN AVERAGE TEMPERATURE OF THE OCCUPIED SPACE COOLING SETPOINT AND THE OCCUPIED SPACE HEATING SETPOINT.
COMPRESSOR STAGING IS IDENTICAL TO DEHUMIDIFICATION HOWEVER THE CONTROL TEMPERATURE IS THE OCCUPIED SPACE COOLING SETPOINT. SHOULD THE SPACE TEMPERATURE BEGIN TO FALL TOO LOW THE HOT GAS REHEAT SHALL BE ENABLED AND MODULATE TO MAINTAIN THE OCCUPIED SPACE COOLING SETPOINT.

UNOCCUPIED MODE
STARTING SEQUENCE
INDOOR FAN PROVING SEQUENCE IS IDENTICAL TO OCCUPIED OPERATION.

HEATING MODE
UNOCCUPIED HEATING IS ENABLED BASED ON UNOCC SPACE HEATING SETPOINT. UNOCCUPIED HEATING IS ENABLED WHEN SPACE TEMPERATURE REACHES UNOCCUPIED SPACE HEATING SETPOINT TO + 2 DEGREES. THE SCR ELECTRIC HEAT WILL CONTINUE TO RAISE THE DISCHARGE AIR TEMPERATURE TO A MAXIMUM OF 90 DEGREES FAHRENHEIT AND CONTINUE TO SUPPLY HEATING 90 DEGREE FAHRENHEIT AIR TO THE SPACE UNTIL THE SPACE TEMPERATURE REACHES SETPOINT + 6 DEGREES. UNIT OPERATION IS DISCONTINUED WHEN UNOCCUPIED SPACE HEATING IS SATISFIED.

DEHUMIDIFICATION MODE
WHEN NO CALL FOR UNOCCUPIED HEATING EXISTS, UNOCCUPIED DEHUMIDIFICATION IS ENABLED BASED ON UNOCC SPACE DEWPOINT SETPOINT. DURING UNOCCUPIED DEHUMIDIFICATION OPERATION DEHUMIDIFICATION CAPACITY IS RESTRICTED TO 50 PERCENT (ONLY HALF OF THE COMPRESSORS ARE ALLOWED TO COME ON).

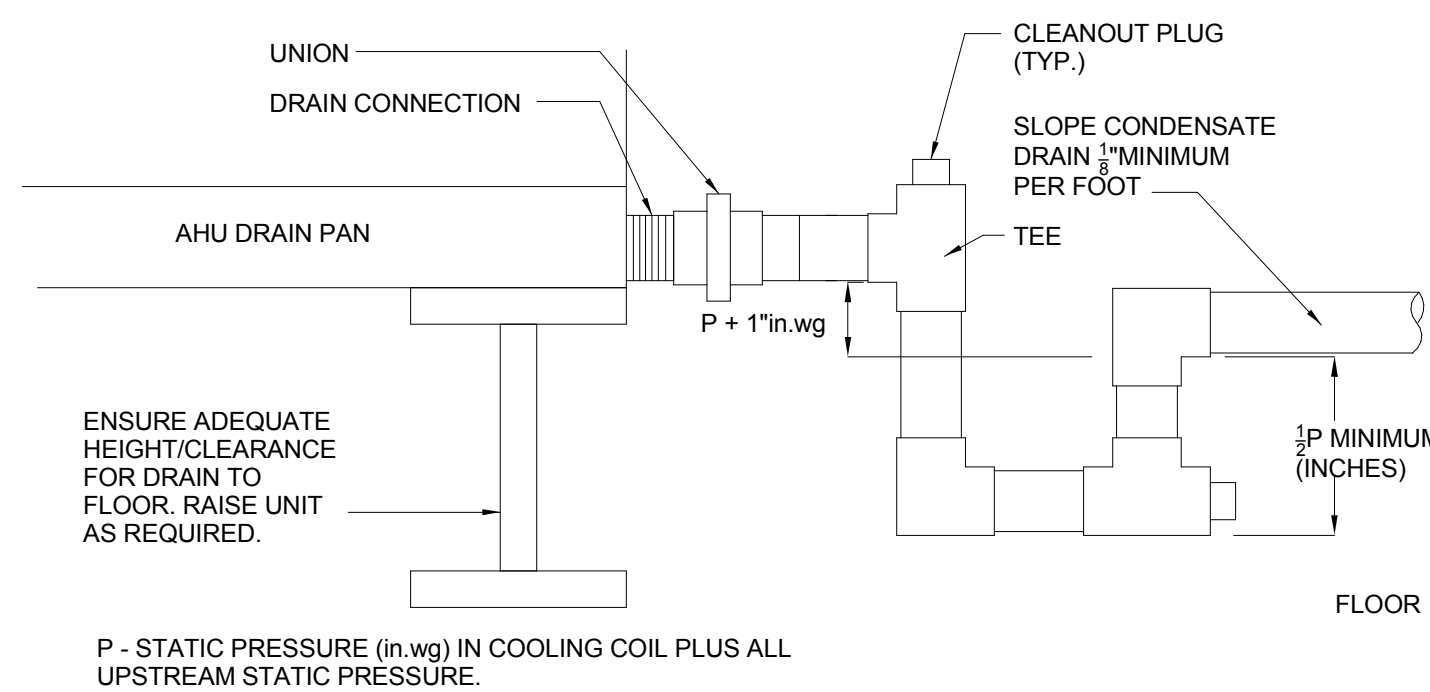
UNOCCUPIED DEHUMIDIFICATION IS ENABLED WHEN SPACE DEWPOINT REACHING UNOCC SPACE DEWPOINT SETPOINT -1 DEGREE. DEHUMIDIFICATION STOPS AT SETPOINT -1 DEGREE. UNIT OPERATION IS DISCONTINUED WHEN UNOCCUPIED SPACE DEHUMIDIFICATION IS SATISFIED.

COOLING MODE
WHEN NO CALL FOR UNOCCUPIED HEATING OR UNOCCUPIED DEHUMIDIFICATION EXISTS, UNOCCUPIED COOLING IS ENABLED BASED ON UNOCC SPACE COOLING SETPOINT. DURING UNOCCUPIED SPACE COOLING OPERATION COOLING CAPACITY IS RESTRICTED TO 50 PERCENT (ONLY HALF OF THE COMPRESSORS ARE ALLOWED TO COME ON). UNOCCUPIED COOLING IS ENABLED WHEN SPACE TEMPERATURE REACHES UNOCCUPIED SPACE COOLING SETPOINT -2 DEGREES. COOLING STOPS AT SETPOINT -2 DEGREES. UNIT OPERATION IS DISCONTINUED WHEN UNOCCUPIED SPACE IS SATISFIED.

FILTER STATUS
IF THE PRE-FILTER PRESSURE DROP EXCEEDS 0.75" W.G, A FILTER CHANGE ALARM SHALL BE GENERATED AT THE BAS.

FIRE ALARM SHUTDOWN
ON A SIGNAL FROM THE FIRE ALARM SYSTEM, THE AIR HANDLING UNIT WILL SHUT DOWN AND THE ASSOCIATED DUCT SMOKE DAMPERS WILL CLOSE. WHEN THE FIRE ALARM SYSTEM IS RESET, THE DUCT SMOKE DAMPERS SHALL OPEN PRIOR TO THE AIR HANDLING UNIT FAN STARTING.

SMOKE DETECTION
SMOKE DETECTORS IN THE SUPPLY AIR DUCT AND DOWN STREAM OF THE FILTERS IN THE SUPPLY DUCT WILL AUTOMATICALLY SHUT DOWN THE FAN AND WILL SEND A SIGNAL TO THE FIRE ALARM SYSTEM.



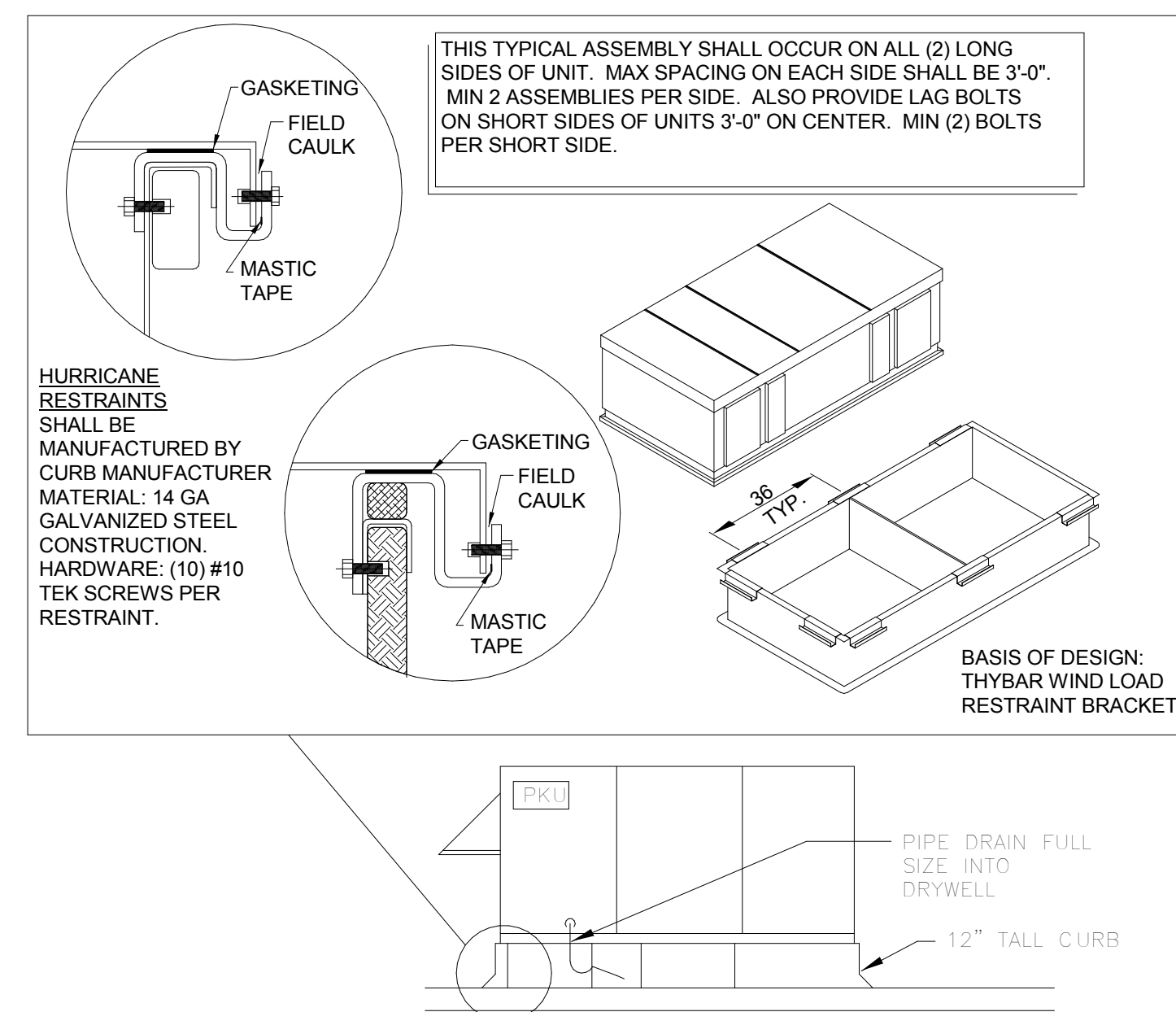
ENSURE ADEQUATE HEIGHT/CLEARANCE FOR DRAIN TO FLOOR. RAISE UNIT AS REQUIRED.

P = STATIC PRESSURE (in.wg) IN COOLING COIL PLUS ALL UPSTREAM STATIC PRESSURE.

GENERAL NOTES:

1. PRIOR TO ORDERING AHU, CONTRACTOR SHALL COORDINATE ALL BASE RAIL OR EQUIPMENT HEIGHTS TO OBTAIN PROPER CONDENSATE TRAP HEIGHTS AS ILLUSTRATED.
2. FILL CONDENSATE DRAIN TRAP PRIOR TO UNIT START-UP.
3. SIZE CONDENSATE DRAIN PIPING ACCORDING TO DRAWINGS. PIPE SIZE SHALL BE NO LESS THAN MANUFACTURER'S RECOMMENDED PIPE SIZE.

1 CONDENSATE TRAP DETAIL
NOT TO SCALE



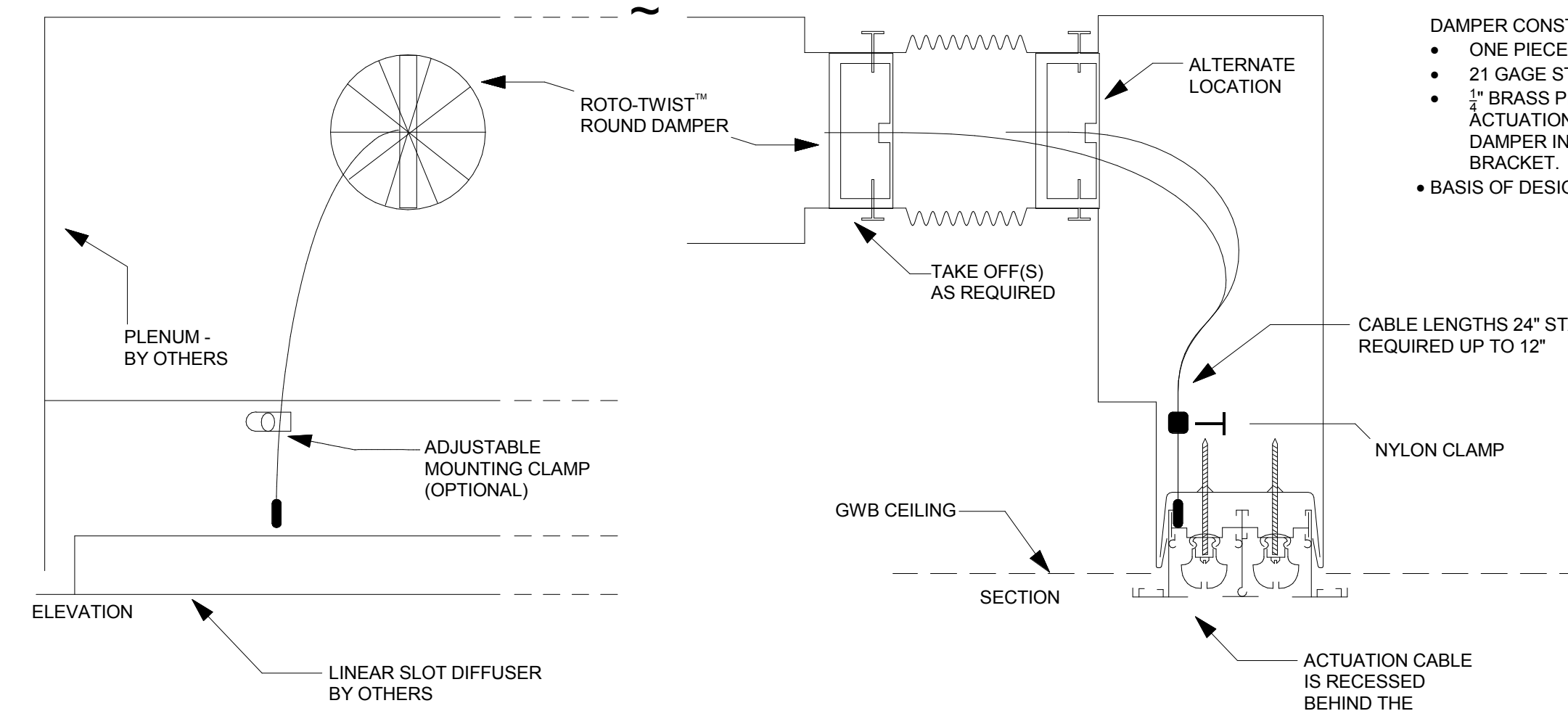
THIS TYPICAL ASSEMBLY SHALL OCCUR ON ALL (2) LONG SIDES OF UNIT. MAX SPACING ON EACH SIDE SHALL BE 3'-0". MIN 2 ASSEMBLIES PER SIDE. ALSO PROVIDE LAG BOLTS ON SHORT SIDES OF UNITS 3'-0" ON CENTER. MIN (2) BOLTS PER SHORT SIDE.

HURRICANE RESTRAINTS SHALL BE MANUFACTURED BY CURBS MANUFACTURER MATERIAL: 14 GA GALVANIZED STEEL CONSTRUCTION. HARDWARE: (10) #10 TEK SCREWS PER RESTRAINT.

PIPE DRAIN FULL SIZE INTO DRYWELL

12" TALL CURB

2 PACKAGE UNIT INSTALLATION AND HURRICANE REINFORCEMENT DETAIL
RATING UP TO 150 MPH WIND FORCE
NOT TO SCALE



DAMPER CONSTRUCTION:

- ONE PIECE DESIGN
- 21 GAGE STAINLESS STEEL
- 3" BRASS PLATED STEEL ROTARY ACTUATION CABLE FIXED AT THE DAMPER IN AN INTEGRAL SUPPORT BRACKET.
- BASIS OF DESIGN: MAT RT-150 SERIES

3 REMOTE AIR DAMPER DETAIL
NOT TO SCALE

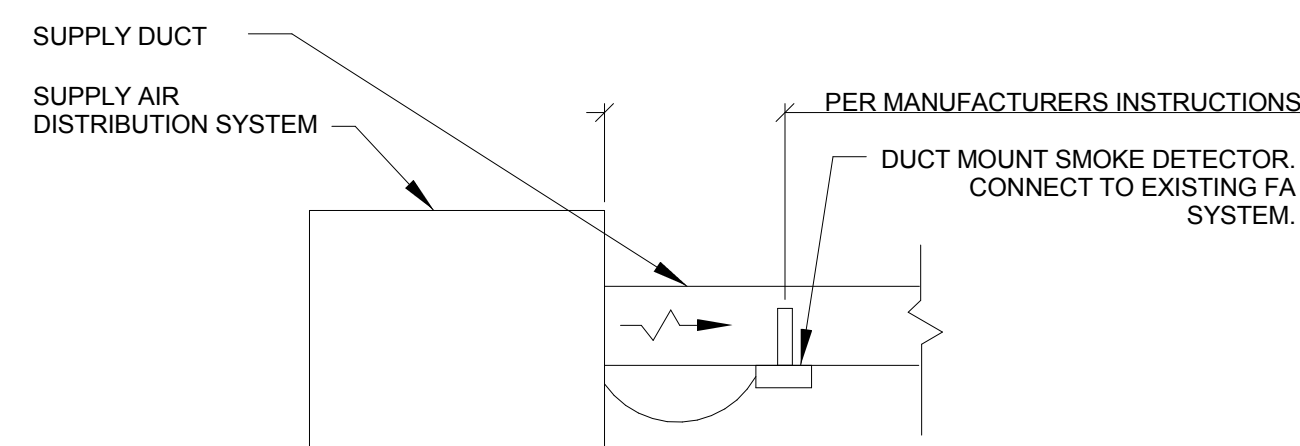
SMOKE DETECTOR SPECIFICATIONS

COMPANY: SIMPLEXGRINNELL (NO ACCEPTABLE SUBSTITUTIONS)

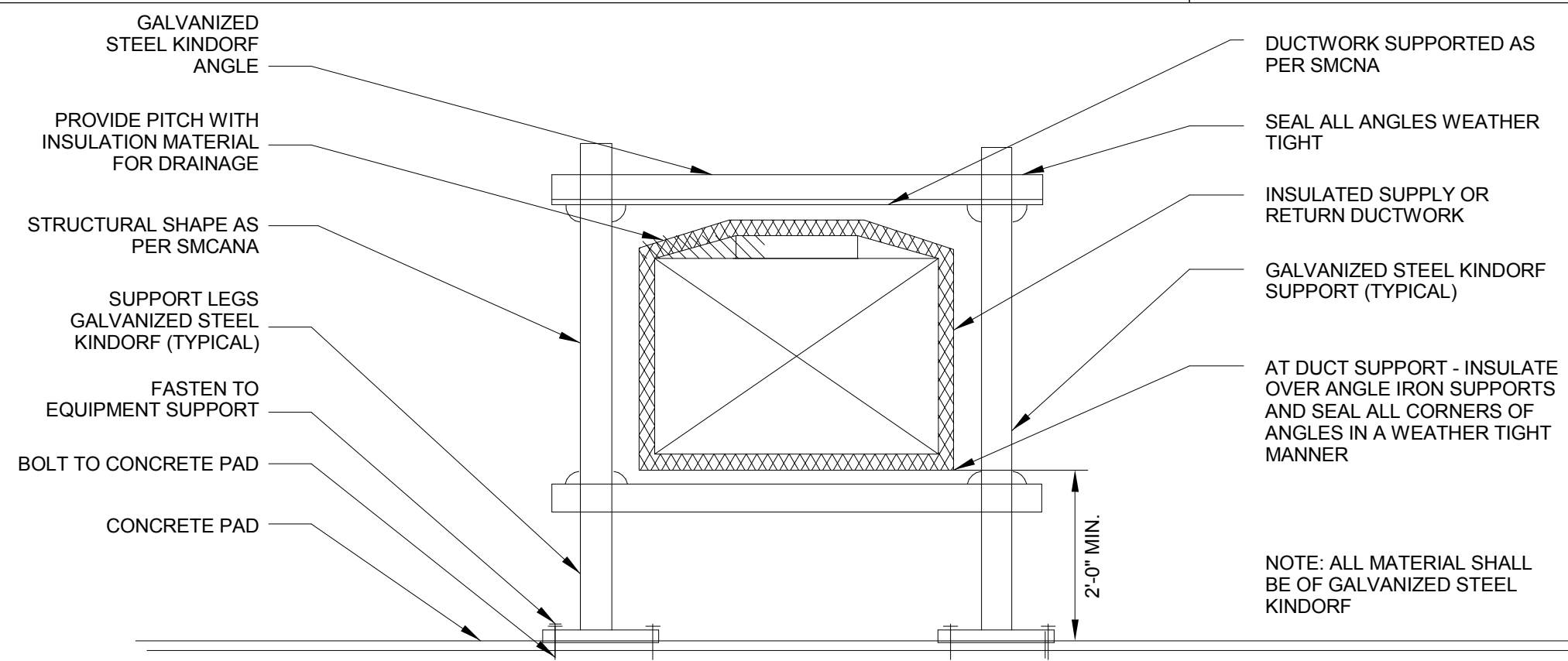
SMOKE DETECTOR TYPE: PHOTOELECTRIC 4 WIRE

GENERAL NOTES:

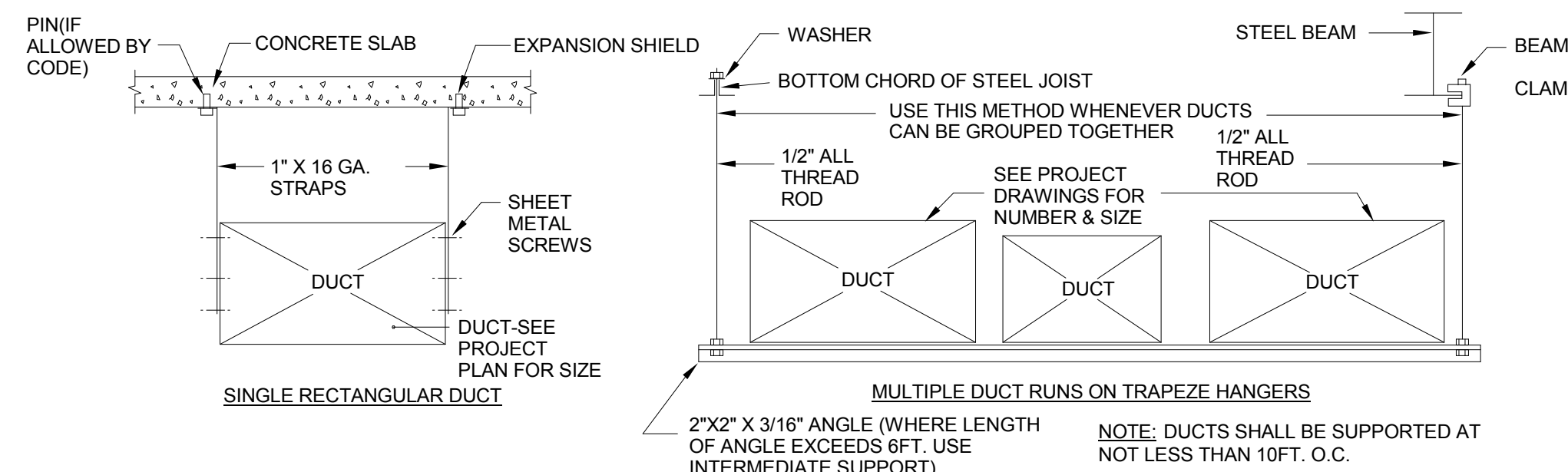
1. DUCT DETECTORS SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM AS A SUPERVISORY SIGNAL ONLY (WHERE APPLICABLE).
2. EACH DUCT DETECTOR CONNECTED TO THE FIRE ALARM, SHALL BE ON ITS OWN ZONE.



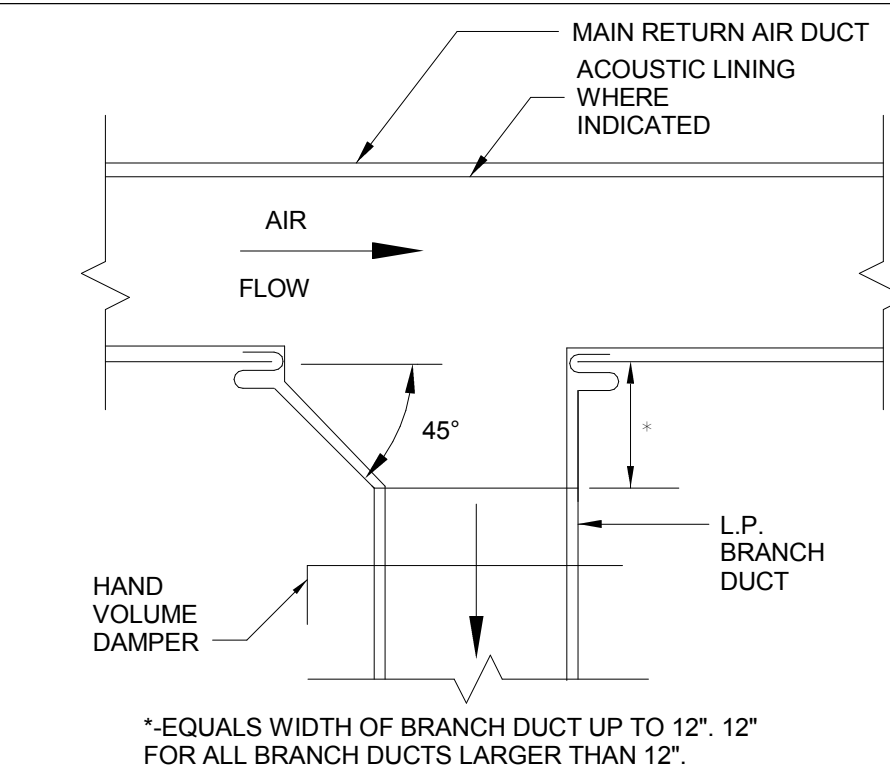
4 TYPICAL SMOKE DETECTOR MOUNTING DETAIL
NOT TO SCALE



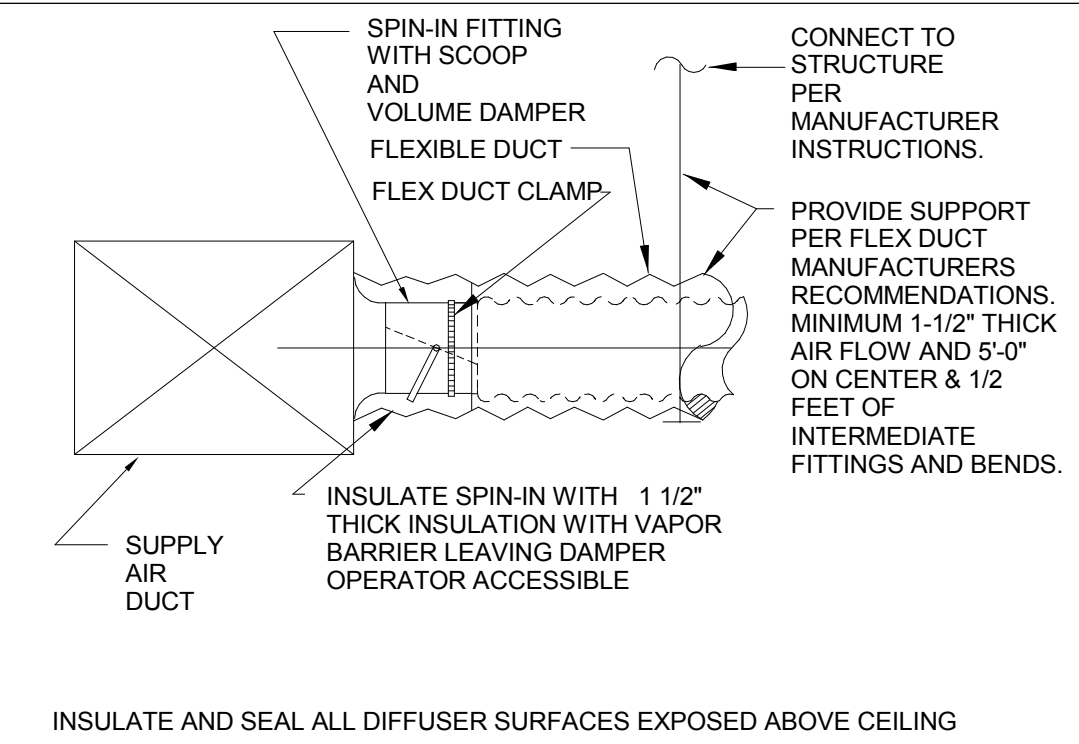
5 DUCT SUPPORT ON GRADE DETAIL
NOT TO SCALE



7 HANGER AND SUPPORT DETAILS FOR LOW PRESSURE DUCT WORK (UP THRU 2" WG)
(VARIOUS METHODS OF ATTACHMENT)
NOT TO SCALE

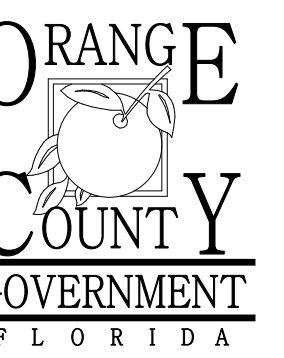


6 TYPICAL SUPPLY AIR BRANCH DUCT TAKEOFF
NOT TO SCALE



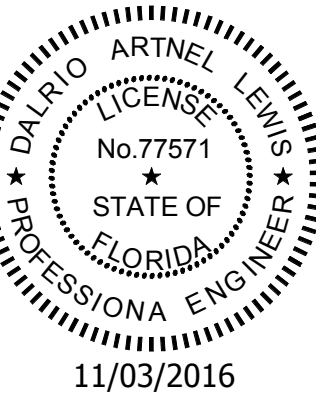
8 DUCT TAKEOFF DETAIL
NOT TO SCALE

Client:



Consultants:

EOR Stamp:



11/03/2016

Dairio A. Lewis, PE 77571 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

Location:
2769 Conroy Rd, Orlando FL, 32839

Issuance:
PERMIT DOCUMENTS

Revisions:

#	Date	Description

Date:

11.03.2016

Project Number:

16.OC.026

Drawn By:

SE

Checked By:

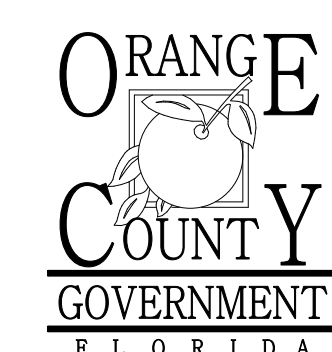
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Mechanical Details

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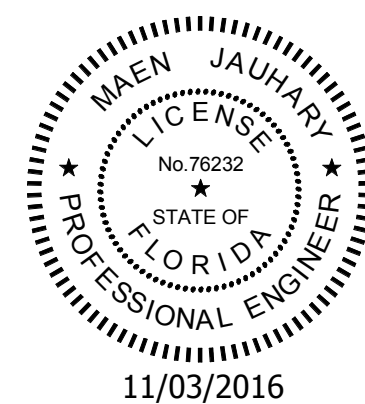
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Client:



Consultants:

EOR Stamp:



Maen Jaahary, PE 76232 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

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2769 Conroy Rd, Orlando FL, 32839

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Revisions:

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11.03.2016

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ME

Checked By:

MJ

Electrical General Information

Sheet No.:

E001

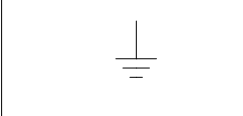
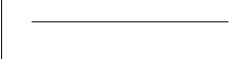
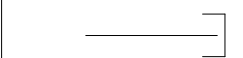



ELECTRICAL GENERAL NOTES

- THE ELECTRICAL WORK IS SUBJECT TO ALL OF THE PURCHASER'S TERMS, CONDITIONS AND SPECIFICATIONS, INCLUDING WORKMANSHIP.
- GENERAL WORK PRACTICES FOR ELECTRICAL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NECA 1 "STANDARD FOR GOOD WORKMANSHIP IN ELECTRICAL CONSTRUCTION" (ANSI).
- IT IS THE INTENT OF THESE ELECTRICAL DRAWING SHEETS TO CALL FOR FINISHED WORK; TESTED, AND READY FOR OPERATION. FOR THE ELECTRICAL WORK, "PROVIDE" IS AN ALL-INCLUSIVE TERM REQUIRING CONTRACTOR TO PROCURE, FABRICATE, FURNISH, INSTALL, MOUNT, WIRE, CONNECT AND SUPPLY ALL MATERIAL AND LABOR NECESSARY TO COMPLETE THE WORK TO THE ACCEPTANCE OF THE OWNER AND THE AUTHORITY HAVING JURISDICTION (AHJ).
- ALL MATERIAL PROVIDED BY THE CONTRACTOR SHALL BE NEW AND FREE OF DEFECTS, LISTED/LABELED FOR THE INTENDED PURPOSE BY UNDERWRITERS LABORATORY (UL) OR OTHER ORGANIZATION THAT IS ACCEPTABLE TO THE AHJ.
- ALL MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL INSPECT SITE FOR FIELD VERIFICATION OF ALL ASPECTS OF THE WORK PRIOR TO BIDDING.
- ALL DISCREPANCIES ON DRAWING SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING PRIOR TO SUBMISSION OF BIDS. CONTRACTORS SUBMISSION OF A BID CONSTITUTES ACCEPTANCE OF ALL CONDITIONS INCLUDING FIELD CONDITIONS.
- THE CONTRACTOR SHALL OBTAIN AND FURNISH ALL REQUIRED PERMITS AND ARRANGE FOR ALL REQUIRED INSPECTIONS. THE CONTRACTOR'S BID SHALL INCLUDE COST OF ALL REQUIRED PERMITS AND FEES, INCLUDING UTILITY FEES.
- THE ELECTRICAL SHEETS ARE DIAGRAMMATICAL IN NATURE AND INDICATE THE GENERAL LOCATION OF OUTLETS, EQUIPMENT, AND THE CIRCUIT ARRANGEMENT OF THE REQUIRED WIRING. ALTHOUGH THE DRAWINGS DO NOT NECESSARILY INDICATE THE ACTUAL ROUTES OF CONDUITS, WHERE INDICATED, THEY SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE WORK OF OTHER TRADES AND SPACE WILL PERMIT. WHERE CONDUIT RUNS ARE NOT SHOWN ON THE DRAWINGS, COORDINATE CONDUIT RUNS WITH THE WORK OF OTHER TRADES AND STRUCTURE. SIMPLIFY INSTALLATION WHEREVER POSSIBLE, BUT SUBJECT TO APPROVAL BY THE ARCHITECT FOR VISUAL AND STRUCTURAL REASONS. IT IS NOT WITHIN THE SCOPE OF THE DRAWINGS TO SHOW ALL NECESSARY OFFSETS, BENDS, PULL BOXES, AND OBSTRUCTIONS. THE DRAWINGS ARE NOT INTENDED TO BE SCALED. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS. IN CASE OF DISCREPANCY BETWEEN ELECTRICAL AND ARCHITECT SHEET SET FOR MOUNTING ELEVATIONS OR REFLECTED CEILINGS, FOLLOW ARCHITECT SHEETS.
- MAINTAIN ON THE JOB SITE, IN GOOD CONDITION, ONE SET OF UP-TO-DATE ELECTRICAL DRAWINGS, PROGRESSIVELY, NEATLY, LEGIBLY, AND EXACTLY RECORD ON THESE DRAWINGS THE LOCATION OF ALL CONCEALED CONDUIT RUNS AND ALL WORK WHICH IS INSTALLED DIFFERENTLY THAN IN THE LOCATION AND MANNER INDICATED ON THE DRAWINGS, ON COMPLETION OF THE WORK, THE DRAWINGS SHALL BE TURNED OVER TO THE ARCHITECT FOR APPROVAL AND POSSESSION AS A PERMANENT AND COMPLETE RECORD DOCUMENT OF THE ELECTRICAL WORK.
- WHEN FOLLOWED BY THE PHRASE "OR EQUAL", SPECIFIC MANUFACTURER'S PRODUCTS ARE USED AS A BASIS OF DESIGN. ALTERNATE PRODUCT MAY BE PROVIDED IF APPROVED "AS EQUAL" BY THE ENGINEER OF RECORD AND THE AHJ.
- FOR ALL ELECTRICAL & COMMUNICATIONS DEVICES AND CIRCUITS, CONTRACTOR SHALL FIELD VERIFY WITH OWNER AND COORDINATE WITH ALL OTHER TRADES FINAL LOCATION(S) PRIOR TO ROUGH IN.
- PRIOR TO FINAL ACCEPTANCE, CLEAN ALL SWITCHES, CABINETS, DEVICE PLATES, FIXTURES, AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT, AND ENSURE THAT ALL PANEL BOARD DIRECTORIES ARE IN PLACE AND COMPLETED OR REVISED AS REQUIRED BY THE WORK, AND THAT ALL MARKING AND IDENTIFICATION OF ALL EQUIPMENT, JUNCTION BOXES, AND OTHER ITEMS IS COMPLETED. REPAIR OR REPLACE, AS DIRECTED BY THE OWNER, ANY ITEMS DAMAGED DUE TO INSTALLATION OR RELOCATION OF EQUIPMENT OR DEVICES AT NO ADDITIONAL COST TO THE OWNER.
- UPON THE COMPLETION OF THE WORK, THE ENTIRE ELECTRICAL SYSTEM SHALL BE TESTED AND SHALL BE SHOWN TO BE IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL SYSTEMS READY FOR OPERATION AND TO HAVE AN ELECTRICIAN AVAILABLE TO OPERATE SAME IN ACCORDANCE WITH OR UNDER THE SUPERVISION OF THE ARCHITECT/ENGINEER AND OR AHJ. THE CONTRACTOR SHALL BE AVAILABLE TO ASSIST IN REMOVAL OF PANEL FRONTS, ETC. TO PERMIT INSPECTION AS REQUIRED.
- ALL WORK SHALL MEET OR EXCEED THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, NATIONAL ELECTRIC CODE (NFPA 70), LOCAL ORDINANCES AND THE AUTHORITY HAVING JURISDICTION.
- FLEXIBLE CONDUIT INSTALLED OUT OF DOORS, IN ANY MECHANICAL EQUIPMENT ROOM, OR IN NORMALLY WET AREAS SHALL BE LIQUID TIGHT FLEX WITH SUITABLE FITTINGS.
- COORDINATE WITH ALL MECHANICAL TRADES FOR SPACE REQUIREMENTS IN MECHANICAL ROOMS, CORRIDORS, SHAFTS, ABOVE CEILING, ETC. THIS INCLUDES SPACE ABOVE PANELS WHERE DUCTS AND PIPING ARE PROHIBITED.
- FOR EXACT LOCATIONS OF MECHANICAL EQUIPMENT, SEE MECHANICAL PLANS.
- PROVIDE CONDUIT EXPANSION FITTINGS WITH BONDING JUMPERS FOR ALL CONDUITS PASSING THROUGH EXPANSION JOINTS.

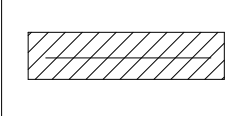
ABBREVIATIONS

A	AMPERE
AF	AMPERE FRAME
AFC	AVAILABLE FAULT CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFI	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLER UNIT (HVAC)
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AT	AMPERE TRIP
AWG	AMERICAN WIRE GAUGE
BKR	BREAKER
C	CONDUIT OR CONDUCTOR
CB	CIRCUIT BREAKER
CLG	CEILING
CO	CONDUIT ONLY
CPT	CONTROL POWER TRANSFORMER
CU	CONDENSING UNIT (HVAC), COPPER
DS	DISCONNECT (SAFETY) SWITCH
EC	EMPTY CONDUIT
EF	EXHAUST FAN
EL	EMERGENCY LIGHT (UNSWITCHED)
ELE	ELECTRICAL, ELECTRIC
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENT	ELECTRICAL NONMETALLIC TUBING
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FBC	FLORIDA BUILDING CODE
FDS	FUSED DISCONNECT (SAFETY) SWITCH
FLOUR	FLUORESCENT
FMC	FLEXIBLE METAL CONDUIT
FMT	FLEXIBLE METAL TUBING
GND	GROUND (ELECTRICAL)
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GWH	GAS WATER HEATER
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE LIGHT
HP	HORSE POWER
HPS	HIGH PRESSURE SODIUM LIGHT
HZ	HERTZ (ELECTRICAL)
ICCB	INSULATED CASE CIRCUIT BREAKER
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
LTG	LIGHT, LIGHTING
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MDP	MAIN DISTRIBUTION PANEL
MH	METAL HALIDE LIGHT, MAN HOLE
MLO	MAIN LUGS ONLY
N, NEUT	NEUTRAL (ELECTRICAL)
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSN.
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NL	NIGHT LIGHT
P	POLE
PB	PULL BOX
PCB	POWER CIRCUIT BREAKER
PH	PHASE (ELECTRICAL)
PNL	PANEL
PNLB	PANELBOARD
PVC	PLASTIC CONDUIT
PWR	POWER (ELECTRICAL)
RCPT	RECEPTACLE
RMC	RIGID METAL CONDUIT
RNC	RIGID NONMETALLIC CONDUIT
RTU	ROOF TOP UNIT (HVAC)
SD	SMOKE DETECTOR
SF	SUPPLY FAN
SH	SHIELDED
SW	SWITCH
SWBD	SWITCHBOARD
TEL	TELEPHONE
TTB	TELEPHONE TERMINAL BOARD
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UPS	UNINTERRUPTABLE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
V, VAC	VOLT, VOLT AC
W	WATT
WP	WEATHERPROOF
XFMR	POWER TRANSFORMER
NOT ALL ABBREVIATIONS ARE USED IN EVERY DESIGN	

CONDUIT RACEWAY & WIRING LEGEND

SYMBOL:	DESCRIPTION:
	RACEWAY CONDUIT CONCEALED ABOVE CEILING OR WITHIN WALL UNLESS OTHERWISE NOTED. EACH CIRCUIT SHALL CONSIST OF PHASE, NEUTRAL AND GROUND CONDUCTORS. EVERY CIRCUIT SHALL HAVE ITS OWN INDIVIDUAL NEUTRAL. FOR LIGHTING CIRCUITS PROVIDE REQUIRED SWITCH LEGS TO ACHIEVE SWITCHING INDICATED ON PLANS.
A-1-3	HOME RUN TO PANEL ALL HOMERUNS SHALL BE #10 AWG, 3/4", MINIMUM. WIRING HOME RUN: LETTER INDICATES PANEL NUMBER IS BRANCH CIRCUIT(S)
	GROUNDING CONDUCTOR.
	CONDUIT IN UNDER SLAB OR UNDERGROUND.
	CONDUIT CAP.
	CONDUIT FOR POWER.
	CONDUIT STUB-DOWN.
	CONDUIT STUB-UP.

RENOVATION/DEMO LEGEND

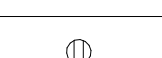
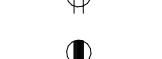



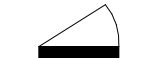

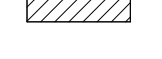


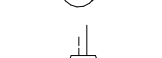



SYMBOL:	DESCRIPTION:
<E>	EXISTING TO REMAIN.
	EXISTING TO BE REMOVED.
<R>	EXISTING TO BE RELOCATED.

SUBMITTAL/ SHOP DRAWING DATA

PROVIDE 6-SETS (EACH) OF MANUFACTURER'S DATA, O&M MANUALS, ELECTRICAL DATA, DIMENSIONAL DATA AND CLEARANCES, CONNECTION DATA, COLOR SAMPLES (IF REQUIRED), AND TEST DATA FOR THE FOLLOWING:
DISCONNECT SWITCHES, CIRCUIT BREAKERS.

SHOP DRAWINGS MUST BE SUBMITTED AND APPROVED PRIOR TO ORDERING OF EQUIPMENT. ENGINEER WILL REQUIRE 7 WORKING DAYS TO REVIEW DRAWINGS. ANY ITEM FURNISHED AND/OR INSTALLED WITHOUT THE BENEFIT OF REVIEW AND ACCEPTANCE FOUND TO BE DEFICIENT SHALL BE SUBJECT TO REPLACEMENT AT THE DIRECTION OF THE ENGINEER AND AT THE CONTRACTOR'S SOLE EXPENSE. ENGINEER WILL REQUIRE DETAILED, COMPLETED SUBMITTALS. IF ENGINEER IS REQUIRED TO REVIEW SUBMITTAL DATA MORE THAN TWICE, THAN THE CONTRACTOR WILL BE CHARGED \$125 PER HOUR FOR ADDITIONAL ENGINEERING TIME TO RELEASE SUBMITTALS.

POWER PLAN LEGEND

SYMBOL:	DESCRIPTION:
	DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT 18" AFF UON.
	DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT 42" AFF OR ABOVE COUNTER.
	DUPLEX RECEPTACLE, NEMA 5-20R, MOUNT 18" AFF UON (GROUND FAULT CIRCUIT INTERRUPTED)
	JUNCTION BOX WITH BLANK PLATE; BRACKET INDICATES WALL MOUNTED.
	PANELBOARD (RECESSED FLUSH-MOUNTED UON).
	ELECTRICAL MAIN DISTRIBUTION PANELBOARD OR SWITCHBOARD
	MANUAL MOTOR STARTER, 125/277VAC, 20A, MOUNT 48" AFF UON.
	ELECTRICAL MOTOR; "F" DESIGNATES FAN
	SMOKE DETECTOR (NOT PART OF FIRE ALARM SYSTEM)
	SAFETY (DISCONNECT) SWITCH, NON-FUSED NUMBER = DISCONNECT RATING
	METER SOCKET, PROVIDE PER UTILITY COMPANY REQUIREMENTS.
	TRANSFORMER (NON-UTILITY)
	GROUND PULL BOX
	FAN SHUTDOWN RELAY
NOT ALL SYMBOLS ARE USED IN EVERY DESIGN	

CODE DISCLAIMERS

ELECTRICAL DESIGN IN ACCORDANCE WITH 2011 NATIONAL ELECTRIC CODE (NFPA-70) AS INCORPORATED BY THE 2014 FLORIDA BUILDING CODE AND 2014 EDITION OF THE FLORIDA FIRE PREVENTION CODE.

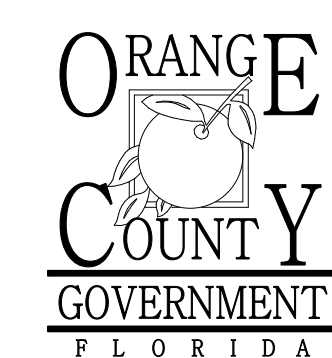
ALL MAIN FEEDERS HAVE BEEN SIZED FOR A MAXIMUM OF 2% VOLTAGE DROP AND ALL BRANCH CIRCUIT FEEDERS HAVE BEEN SIZED FOR A MAXIMUM OF 3% VOLTAGE DROP PER FBC-5TH EDITION.

Building 500 Electrical	
Sheet Number	Sheet Name
E001	Electrical General Information
E101	Electrical Demo Power Plan
E201	Electrical Site Plan
E202	Electrical New Power Plan and Panel Schedule

DEMO NOTES:

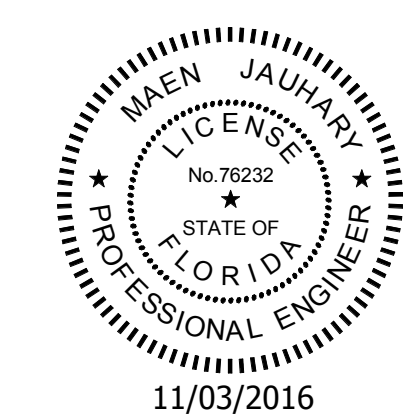
- D1 EXISTING AC UNIT TO BE REMOVED, REMOVE WIRING & CONDUIT BACK TO WALL, OUTLET OR TO SOURCE.
- D2 EXISTING EXHAUST FAN TO BE REMOVED, REMOVE WIRING & CONDUIT BACK TO PANEL BOARD, RELABEL CIRCUIT BREAKER AS SPARE.
- D3 EXISTING AC PACKAGING UNIT TO BE REMOVED, REMOVE WIRING & CONDUIT BACK TO PANEL BOARD, RELABEL CIRCUIT BREAKER AS SPARE.
- D4 EXISTING UNIT HEATER TO BE REMOVED, REMOVE WIRING & CONDUIT BACK TO PANEL BOARD, RELABEL CIRCUIT BREAKER AS SPARE.

Client:



Consultants:

EOR Stamp:



Maen Jauhari, PE 76232 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

Location:

2769 Conroy Rd, Orlando FL, 32839

Issuance:

PERMIT DOCUMENTS

Revisions:

#	Date	Description

Date:

11.03.2016

Project Number:

16.OC.026

Drawn By:

ME

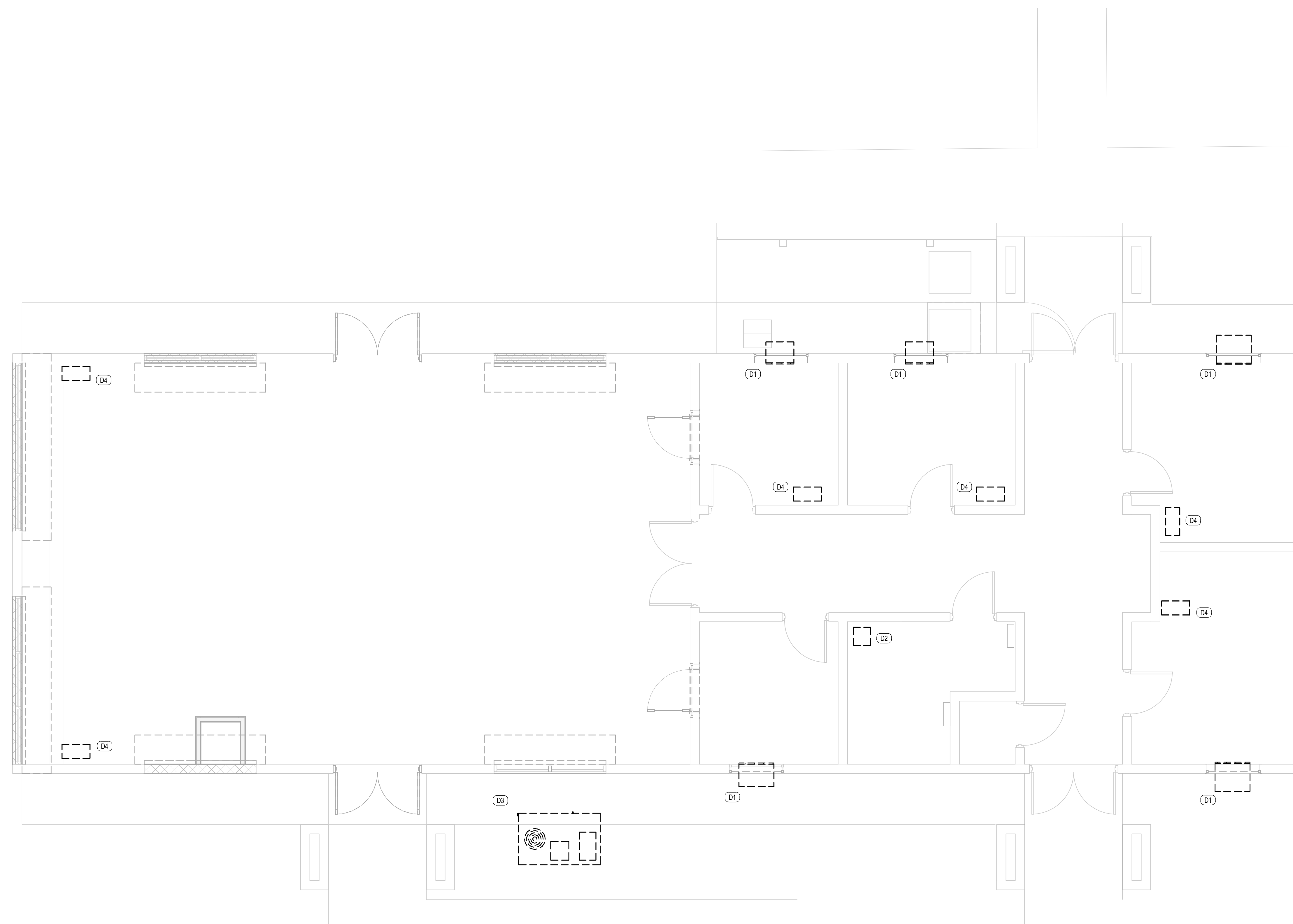
Checked By:

MJ

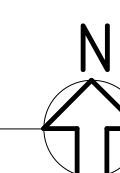
Electrical Demo Power Plan

Sheet No.:

E101



1 Electrical Demo Power Plan
1/4" = 1'-0"



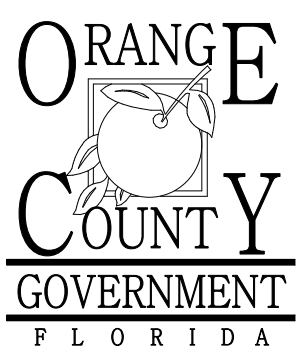
GENERAL NOTES:

1. CONTRACTOR SHALL VERIFY EXACT ROUTING OF CONDUIT PRIOR TO START OF WORK TO AVOID ANY SITE UTILITIES.

KEY PLAN NOTES:

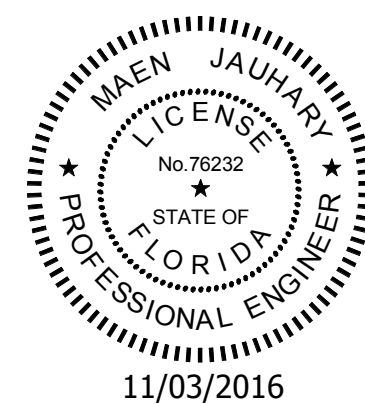
1. PROVIDE & INSTALL A 3P-300A CIRCUIT BREAKER IN EXISTING MDP TO FEED NEW PKU-1 UNIT.
2. VARIOUS LOCATIONS WILL REQUIRE CONDUITS ROUTED UNDER SIDEWALKS. CONTRACTOR RESPONSIBLE FOR MEANS AND METHODS OF ROUTING CONDUIT. FIELD VERIFY ALL LOCATIONS.

Client:



Consultants:

EOR Stamp:



11/03/2016
 Maen Jauhary, PE 76232 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

Location:
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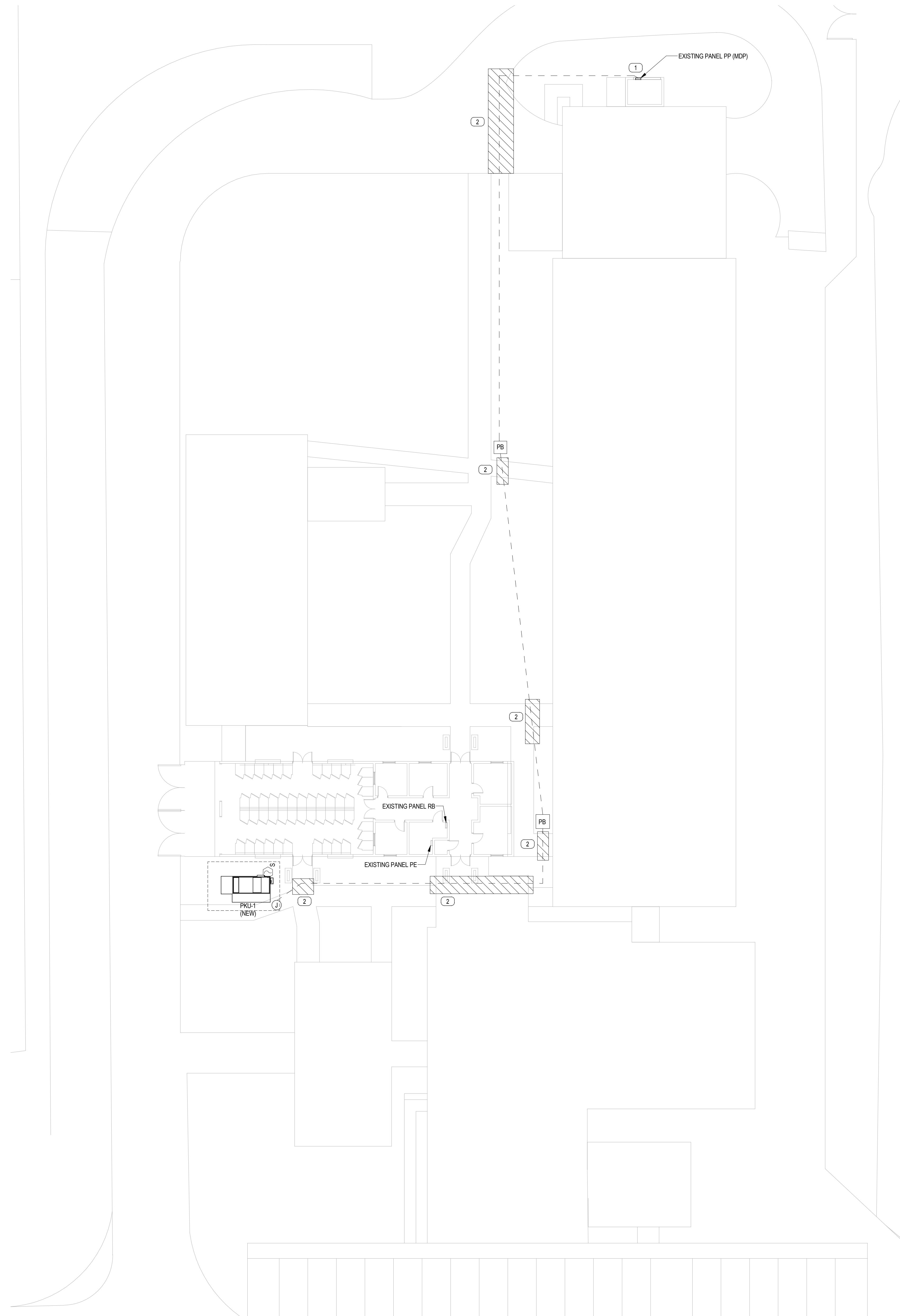
Project Number:
 16.OC.026

Drawn By: ME
 Checked By: MJ

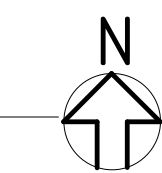
Electrical Site Plan

Sheet No.:

E201



1 Electrical Site Plan
 1/16" = 1'-0"



- 1 JUNCTION BOX FOR PKU-1, RUN (2) SETS OF 3-3000 KCMIL, #110G IN 3-1/2" PVC CONDUIT TO A NEW 3P-300A CIRCUIT BREAKER IN MDP. SEE SITE PLAN NEW UNIT TO HAVE A FACTORY INSTALLED DISCONNECT SWITCH & 120V RECEPTACLE.
- 2 CONNECT DUCT SMOKE DETECTOR TO NEAREST FIRE ALARM INITIATING DEVICE, WIRE RELAY TO SHUT DOWN FAN UPON A FIRE ALARM SIGNAL.
- 3 2#12, 1#12G, 3#4" TO NEAREST OUTSIDE RECEPTACLE 120V CIRCUIT.

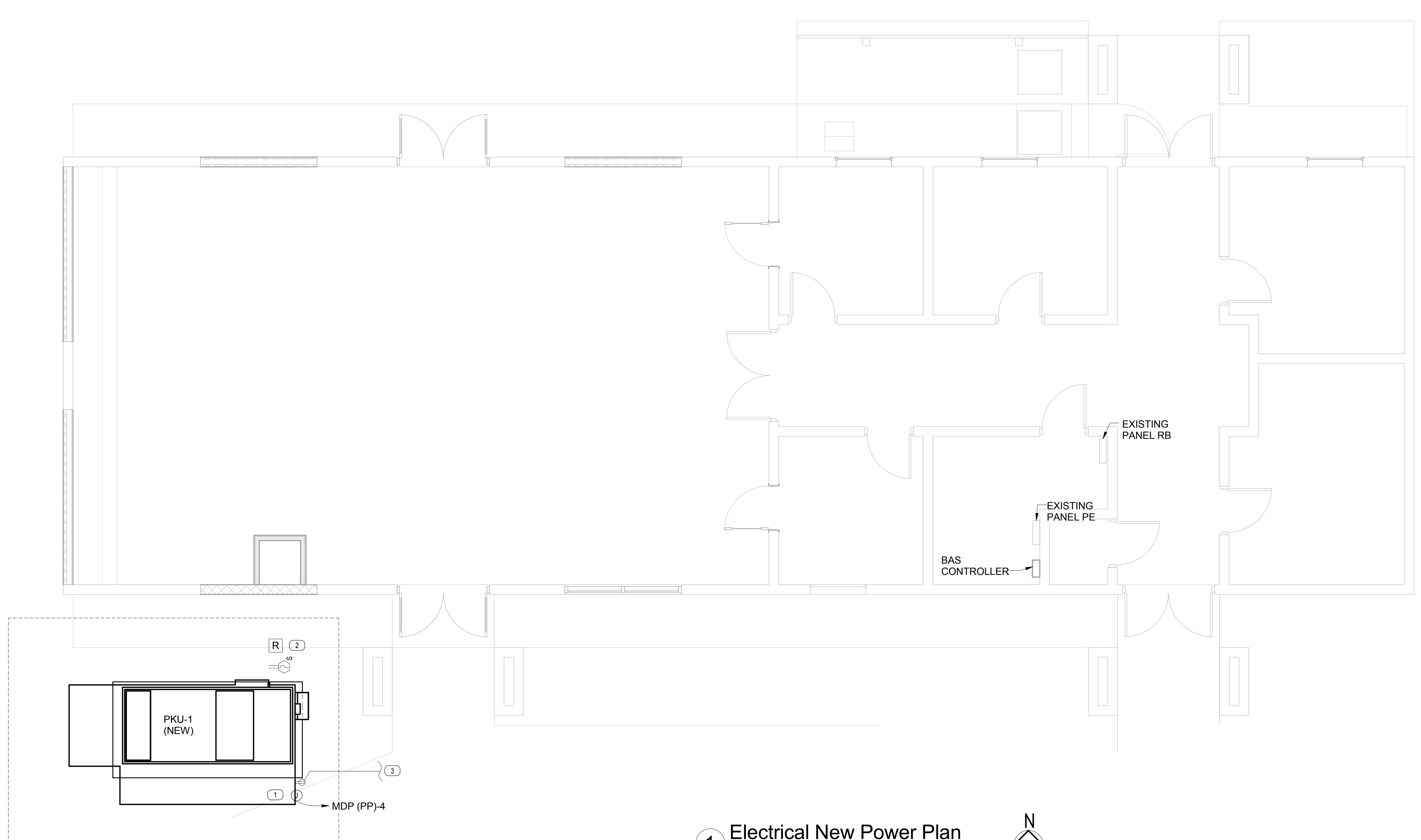
EXISTING PANEL PP (MDP)

UPDATED: 10/12/2016 9:29 am
ISSUED FOR: APPROVAL

CIRCUIT	LOAD SERVED	COND	PHASE	MDF	DND	BKR/DND	L1			L2			L3			BKR	COND	PHASE	REIT	DND	LOAD SERVED	CIRCUIT
							1	2	3	1	2	3	1	2	3							
1	SURGE																				PANEL PE	2
3	PANEL SPA																				PKU-1	4
5	SPACE																				PANEL H	6
7	PANEL BCD																				EXISTING LOAD	10
9	SPACE																				EXISTING LOAD	12
																					AC	14
																					PANEL RB	16

INTERRUPT RATING: 164242 164242 164242 FROM:

LOADS (N VA)	CONNECTED	DEMAND FACTOR	MINIMUM FEEDER	LOADS	CONNECTED	DEMAND FACTOR	MINIMUM FEEDER	REMAINING CONTINUOUS LOADS	0	1.25	0
LIGHTING	0	1.25	0	NON-SEASONAL MOTORS	0	1.0	0	NON-CONTINUOUS LOADS	345204	1.0	345204
RECEPTS TO 10 KVA	0	1.0	0	LARGEST MOTOR	0	0.25	0	DEMAND LOADS	0	1.0	0
SPACE HEATING	0	0.0	0	WATER HEATING	0	1.0	0	TOTAL CONNECTED LOAD	492.7	KVA	1368.7
AIR CONDITIONING	147522	1.0	147522	KITCHEN EQUIP.	0	1.0	0	MIN. FEEDER/PANEL CAP.	492.7	KVA	1368.7
								OVERALL DEMAND FACTOR	1.00		



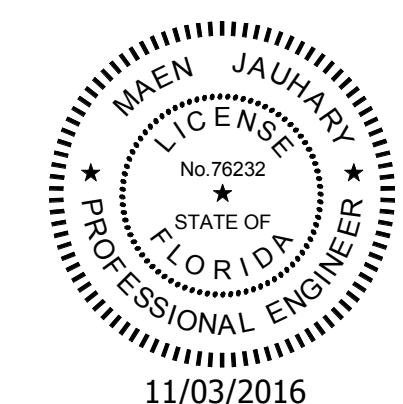
1 Electrical New Power Plan
1/4" = 1'-0" N

Client:



Consultants:

EOR Stamp:



Maen Jauhary, PE 76232 (FL)

Project:
OC Animal Services Building 500 HVAC Renovation

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11.03.2016

Project Number:
16.OC.026

Drawn By: ME Checked By: MJ

Electrical New Power Plan and Panel Schedule

Sheet No.:

E202

PLUMBING ABBREVIATIONS

A/E	ARCHITECT/ENGINEER
ACW	AUTOMATIC CLOTHES WASHER
ADA	AMERICANS WITH DISABILITIES ACT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
AST	AUTOMATIC SPRAY TAN UNIT
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BWV	BACKWATER VALVE
CI	CONTRACTOR INSTALLED
CD	CONDENSATE
CONN	CONNECTION
CONT	CONTINUOUS
CV	CHECK VALVE
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DN	DOWN
DSB	DOWN SPOUT BOOT
DWG	DRAWING
ECCO	EXTERIOR CLEAN OUT
F	DEGREES FAHRENHEIT
FBC	FLORIDA BUILDING CODE
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
GAL	GALLONS
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HR	HOUR
HW	HOT WATER
IR	INDIRECT RECEPTOR
MAX	MAXIMUM
MIN	MINIMUM
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NTS	NOT TO SCALE
OF	OWNER FURNISHED
PD	PUMP DISCHARGE
PDI	PLUMBING DRAINAGE INSTITUTE
PSIG	POUNDS PER SQUARE INCH
RM	ROOM
RSP	RE-CIRCULATING PUMP
SPC	STANDARD PLUMBING CODE
T & P	TEMPERATURE & PRESSURE
TPV	TRAP PRIMER VALVE
TYP	TYPICAL
UG	UNDERGROUND
W	WITH
WCO	WALL CLEAN OUT
WFU	WATER FIXTURE UNITS

SYMBOLS

SYMBOL	SYMBOL
	COLD WATER
	HOT WATER SUPPLY
	HOT WATER RETURN
	PURIFIED WATER
	WASTE OR SANITARY
	WASTE OR SANITARY BELOW GRADE
	VENT
	STORM PIPE
	STORM PIPE BELOW GRADE
	STORM OVERFLOW PIPE
	CONDENSATE DRAIN
	BALANCING VALVE
	CHECK VALVE
	HOSE BIBB/WALL HYDRANT
	PRESSURE REDUCING VALVE
	SHUT OFF VALVE
	DIRECTION OF FLOW
	REDUCER OR INCREASER
	TOP CONNECTION, 45 OR 90 DEGREES
	BOTTOM CONNECTION, 45 OR 90 DEGREES
	SIDE CONNECTION
	CAPPED OUTLET
	DROP IN PIPING
	RISE IN PIPING
	UNION
	SOLENOID VALVE
	WATER FLOW MEASURING DEVICE
	PRESSURE GAUGE
	VALVE IN RISER

Plumbing General Notes

- CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL WORK IN STRICT ACCORDANCE WITH THE 2014 FLORIDA BUILDING CODE AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
- CONTRACTOR SHALL VERIFY AND CORRECT AS REQUIRED TO MEET ALL CODES AND REGULATIONS ANY POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTION SPECIFIED IN PLUMBING FIXTURE SCHEDULE AND FIXTURES ACTUALLY INSTALLED ON THE SITE.
- ALL SANITARY PIPING 3" AND LARGER SHALL HAVE A 1/8" PER FOOT. ALL SANITARY PIPING SMALLER THAN 3" SHALL HAVE A SLOPE OF 1/4" PER FOOT UNLESS OTHERWISE NOTED.
- VENT PIPING SHOWN ON FLOOR PLANS IS ONLY INDICATIVE EXCEPT FOR VTR LOCATIONS.
- VALVES AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES.
- CONTRACTOR SHALL FIELD VERIFY ALL GIVEN MEASUREMENTS PRIOR TO LAYING AND CONNECTING ALL PIPING SYSTEMS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FIRE RATING AND WEATHERPROOFING INTEGRITY OF ALL PIPING PENETRATIONS.
- ALL WATER SUPPLY AND SANITARY LINES SHALL BE RUN AS CLOSE TO PLANS AS POSSIBLE WITH NO CHANGES IN SIZING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR ALL FIXTURES INCLUDED IN CONTRACT OR HEREIN SPECIFIED OTHERWISE.
- ALL FLOOR DRAINS SHALL BE PROVIDED WITH TRAP PRIMER AND FITTINGS UNLESS NOTED OTHERWISE.
- ROUTE ALL PIPING CONCEALED ABOVE CEILINGS, WITHIN WALLS, OR IN CHASES. PIPING EXPOSED SHALL BE SLOPED AND PAINTED TO MATCH ARCHITECTURAL FINISHES. PIPING IN MECHANICAL ROOMS MAY BE EXPOSED.
- SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURES, MOUNTING HEIGHTS, AND DIMENSIONS.
- CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
- CONTRACTOR SHALL ROUGH-IN ALL WASTES AND SUPPLIES TO SPECIAL EQUIPMENT ACCORDING TO MANUFACTURER'S SHOP DRAWINGS AND MAKE FINAL CONNECTIONS. ALL SUPPLIES SHALL BE VALVED. INSTALL VACUUM BREAKERS WHERE REQUIRED BY CODE.
- ALL WATER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE PLACED ON THE INTERIOR SIDE OF THE WALL, SO THAT WALL INSULATION CAN BE PLACED ON THE EXTERIOR SIDE OF THE PIPING.
- DO NOT PENETRATE WALL FOOTINGS WITH PIPING. COORDINATE WITH GENERAL CONTRACTOR TO DROP FOOTINGS AS REQUIRED TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY. ALL PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER.
- PIPING SHALL ESSENTIALLY BE ROUTED AND LOCATED AS INDICATED ON THE DRAWINGS. HOWEVER, ACTUAL PLACEMENT SHALL BE VERIFIED BY CONFIRMING EXACT LOCATION OF STRUCTURES AND OTHER UTILITIES IN THE FIELD AND BY CAREFUL LAYOUT PRIOR TO EXECUTION OF THE WORK. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND PIPING SHALL BE CONCEALED EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.

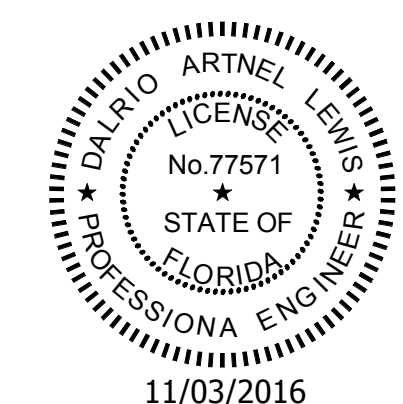


Client:



Consultants:

EOR Stamp:



11/03/2016

Dairo A. Lewis, PE 77571 (FL)

Project:

OC Animal Services Building 500 HVAC Renovation

Location:

2769 Conroy Rd, Orlando Fl, 32839

Issuance:

PERMIT DOCUMENTS

Revisions:

#	Date	Description

Date:

11.03.2016

Project Number:

16.OC.026

Drawn By:

Author

Checked By:

Checker

Plumbing General Information

Sheet No.:

P001

PLUMBING FIXTURE SCHEDULE							
PROJECT: BUILDING 500 HVAC REPLACEMENT							
DATE: 09/23/2016							
NOTES: 1. COORDINATE COLOR OPTIONS W/INT. DESIGN SHEETS PRIOR TO ORDERING. PRICE AS STANDARD COLOR OPTIONS. 2. SEE ARCHITECTURE SHEETS FOR MOUNTING HEIGHTS. (Where Applicable)							
FIXTURE TAG	DESCRIPTION & ACCESSORIES	MANUFACTURER	MODEL NUMBER	WASTE	VENT	CW	HW
TD-1	TRENCH DRAIN, 96" LONG SLOT DRAIN, 12" WIDE HEEL RATED. PROVIDE TRAP PRIMER VALVE. RESISTANT/EPHOXY COATED CRATE HIGH LOADING CAPACITY. PROVIDE NUMBER OF SECTIONS REQUIRED FOR ONE CONTINUOUS TRENCH DRAIN.	Zurn	Z882	4"	2"		
TPV	TRAP PRIMER VALVE	MIFAB	Mi-600			1/2"	
TPV	EXTERIOR CLEANOUT, NICKEL BRONZE.	ZURN	ZN-1402-BP-HD	4"			

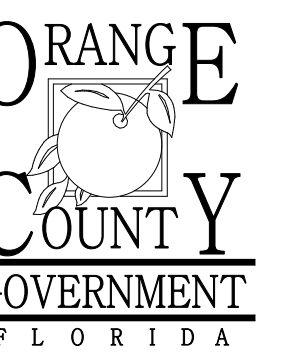
Plumbing Sheet Index	
Sheet Number	Sheet Name
P001	Plumbing General Information
P201	Plumbing New Plan

KEY NOTES

- 01 ROUTE NEW 2" VENT LINE ABOVE CLG. CONNECT TO EXISTING VENT RISER.
- 02 SAW CUT SIDEWALK AS SHOWN TO ROUTE NEW 4" SS PIPE. PATCH AND REPAIR SIDEWALK.
- 03 CONNECT TO EXISTING CW LINE ON EXTERIOR OF BUILDING.

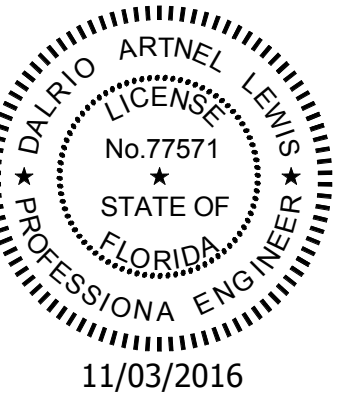


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Author

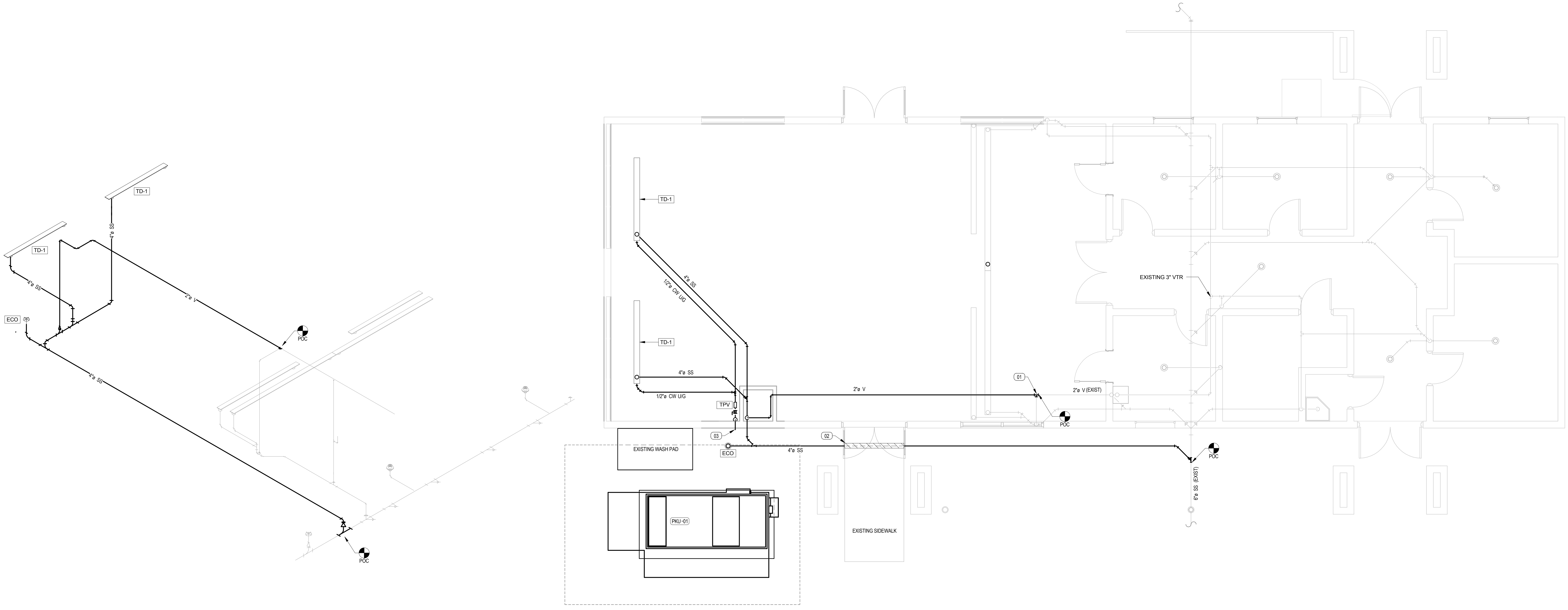
Checked By:

Checker

Plumbing New Plan

Sheet No.:

P201



2 Sanitary Isometric

1 Plumbing First Floor Plan
1/4" = 1'-0"