

RC Architects, Inc.

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Structural Engineer

HOLLINGSWORTH PACK 3801 South Congress Ave. Suite 110 Austin, Texas 78704 (512)275-6060 Contact: Chris Hewett, P.E. Pratik Khivansara, P.E.

Weifield Group Interior Finish Out - Full Package 2205 Downing Lane, Bldg. 2 (Existing Shell Bldg.) Leander, Texas 78641

	ARCHITECTURAL	
A1.0	COVER SHEET & PROJECT DATA	S0.0
A2.0	FIRST FLOOR PLAN	S1.0
A2.1	SECOND FLOOR PLAN	S2.0
A2.2	FIRST FLOOR REFLECTED CEILING PLAN	S 3.0
A2.3	SECOND FLOOR REFLECTED CEILING PLAN	
A2.4	FIRST FLOOR REFLECTED CEILING PLAN	
	ALTERNATE #1	
A2.5	SECOND FLOOR REFLECTED CEILING PLAN	
	ALTERNATE #1	
A2.6	ENLARGED FLOOR PLANS, INTERIOR	
	ELEVATIONS, WALL TYPES LEGEND	
A2.7	ENLARGED STAIR PLANS, INTERIOR	
	ELEVATIONS DECEDITION DECK MILL WODK	
A2.8	RECEPTION DESK MILLWORK	
A2.9	INTERIOR ELEVATIONS WITH MILLWORK	
A2.10	ROOM FINISH SCHED., DOOR & HARDWARE	
	SCHEDULE, DOOR & WINDOW TYPES	NOTE: TH
A3.0	WEST & EAST EXTERIOR ELEVATIONS	A CONCR
A3.1	NORTH & SOUTH EXTERIOR ELEVATIONS	STRUCTU
AS.1	SPECIFICATIONS	INTERIOR
0		

M.E.P. Engineer

CAPITAL CONSULTING ENGINEERS 7710 Rialto Blvd. Suite 100 Austin, Texas 78735 (512) 200-3820 Contact: Buckley Parks, P.E. (Electrical) Brian Hockman, P.E. (Mechanical, Plumbing)

Geotechnical Engineer

ECS Southwest, LLP 14050 Summit Drive Suite A-101 Austin, Texas 78728 (512) 837-8005 Contact: Connor Roman, P.E.

STRUCTURAL

STRUCTURAL NOTES FOUNDATION PLAN FOUNDATION SECTIONS TYPICAL DETAILS

IE EXISTING SHELL BLDG. IS ETE TILTWALL PERIMETER JRE WITH A PRE-ENGINEERED METAL FRAME AND ROOF.

MECHANICAL, ELECT., PLUMBING

M0.01 MECHANICAL COVER SHEET
M0.02 MECHANICAL SPECIFICATIONS
M0.03 MECHANICAL SCHEDULES
M0.04 MECHANICAL DETAILS
M1.01 MECHANICAL HVAC PLAN FIRS
M1.02 MECHANICAL HVAC PLAN SEC
M1.03 MECHANICAL / PLUMBING PLA
E0.01 ELECTRICAL COVER SHEET
E0.02 ELECTRICAL DETAILS
E0.03 ELECTRICAL ONE LINE & SCHEI
E2.01 FIRST FLOOR ELECTRICAL LIGH
E2.02 SECOND FLOOR ELECTRICAL L
E3.01 FIRST FLOOR ELECTRICAL POW
E3.02 SECOND FLOOR ELECTRICAL P
E3.03 ROOF ELECTRICAL POWER PLAI
P0.01 PLUMBING COVER SHEET
P0.02 PLUMBING SCHEDULES & DETA
P1.01 PLUMBING DWV PLAN - FIRST F
P1.02 PLUMBING DWV PLAN - SECONI
P2.01 PLUMBING DOMESTIC WATER -
P2.02 PLUMBING DOMESTIC WATER -
P3.01 PLUMBING RISER DIAGRAMS

General Contractor

Workman Commercial Services, Ltd. 1766 F.M. 967 Unit B Buda, Texas 78610 (512) 326-9293 Contact: Travis Thrift, President, CEO James Johnson, Project Manager

Weifield Group 1421 Wells Branch Pkwy. Suite 100 Pflugerville, Texas 78660 Contact: (512) 436-9204, Ext. 708

ST FLOOR COND FLOOR AN - ROOF

DULES **ITING PLAN JGHTING PLAN** VER PLAN OWER PLAN

AILS FLOOR D FLOOR FIRST FLOOR - SECOND FLOOR

CODE REVIEW

APPLICABLE CODES: ALL WORK UNDER THIS CONTRACT SHALL COMPLY WITH THE PROVISIONS OF SPECIFICATIONS & DRAWINGS AND SHALL SATISFY ALL APPLICABLE CODES, ORDINANCES, TEXAS ACCESSIBILIT TANDARDS AND REGULATIONS OF ALL GOVERNING BODIES INVOLVED. ANY MODIFICATIONS TO THE CONTRAC WORK REQUIRED BY SUCH AUTHORITIES AT THE EXPENSE OF THE LANDLORD / CONTRACTOR, AND SHALL BE SUBJECT TO THE RECEIPT OF AN AFFIDAVIT OR LETTER FROM THE GOVERNING BODY AND TENANT'S PRIOR APPROVAL, ALL PERMITS AND LICENSES NECESSARY FOR THE PROPER EXECUTION OF THE WORK SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR INVOLVED, APPLICABLE CODES INCLUDE, BUT ARE NOT LIMITED T THE FOLLOWING:

BUILDING; 2015 INTERNATIONAL BUILDING CODE LUMBING: 2015 INTERNATIONAL PLUMBING CODE MECHANICAL: 2015 INTERNATIONAL MECHANICAL CODE ELECTRICAL: 2014 NATIONAL ELECTRIC CODE ENERGY: 2015 INTERNATIONAL ENERGY CONSERVATION CODE FIRE: 2018 INTERNATIONAL FIRE CODE 2012 TEXAS ACCESSIBILITY STANDARDS

OPERATIONS BUILDING DATA:

- GROUP B FIRST FLOOR 7,972 S.F. / 100 = 80 OCCUPANTS A) OCCUPANCY CLASSES
- B) TYPE OF CONSTRUCTION:
- C) FIRE SUPPRESSION:
- D) BASIC ALLOWABLE AREA: E) GROSS BUILDING AREA:
 (FOOTPRINT)
- SECOND FLOOR 6,619 S,F. / 100 = 67 OCCUPANTS GROUP S-2 - 9,527 S.F. / 300 = 32 OCCUPANTS
- TYPE 2B (CONCRETE / PRE-ENGINEERED METAL BUILDING) FULLY SPRINKLED SYSTEM PROVIDED
- WALL MOUNTED FIRE EXTINGUISHERS PROVIDED NOT TO EXCEED 75' TRAVEL DISTANCE APART, NO HIGH PILE STORAGE, 26,000 S.F. PER FLOOR
- 17,499 SQ, FT, FIRST FLOOR 6,619 SQ, FT, SECOND FLOOR

















	3	4	5	6
S PIER / COL, LINE				
214 PM OFFICE 2X4 • 10'-0" A,F,F, (2) 213 SI 2X4 A,F,F, (2) 210 COR 210 COR X4 • 10'-0" A,F,F,(2)	ENIOR PM 212 SENIOR PM 212 SENIOR PM 211 PM OFFICE 2x4 • IO' O' AFF, (2) AFF, (2		O'-O' A,F,F,(2)	
SENIOR VDC 221 PCM OFFICE 4 • 10' -0" =,F. (2)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	LOW RAIL HT. WALLS HT. HT. WALLS HT. HT. WALLS HT. HT. WALLS HT. HT. WALLS HT. HT. WALLS HT. HT. HT. HT. HT. HT. HT. HT. HT. HT.	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	





S C A L E : 1/8'' = 1'-0''











ER OF 5/8" TYPE 'X' GYPSUM BOARD ON THE FINISH SIDE. ACES, U.N.O. TAPE, FLOAT, TEXTURE (EGGSHELL) ON THE FINISH SIDE. PAINT AS SPECIFIED. PROVIDE GYPSUM BOARD CONTROL JLATION AS SPECIFIED.	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK,
r, TEXTURE (EGGSHELL) ON THE FINISH SIDE, PAINT AS SPECIFIED, PROVIDE GYPSUM BOARD CONTROL JOINTS PER U.S. GYPSUM AS SPECIFIED,	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK.
DSURE SIDES, 'SUM BOARD CONTROL JOINTS PER U.S. GYPSUM RECOMMENDATIONS DECK" NOTE INDICATES WALL EXTENDING TO UNDERSIDE OF SECOND FLOOR DECK.	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK.
STANT GYP, BD, ON ANY WET EXPOSURE SIDES, DO NOT EXCEED THE UNBRACED LENGTH LIMITATIONS IONAL STUD BRACING OR HORIZONTAL WALL BRIDGING, REFER TO STUCTURAL ENGINEERING PLANS FOR BRIDGING IED, PROVIDE GYPSUM BOARD METAL CONTROL JOINTS PER U.S, GYPSUM TT INSULATION AS SPECIFIED, THIS IS TO BE A 2-HOUR FIRE WALL ASSEMBLY,	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK.
E RATED ASSEMBLY, E GYPSUM BOARD CONTROL JOINTS PER U.S. GYPSUM AS SPECIFIED. PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS.	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK.
JR OUT AS DEPICTED ON THE FLOOR PLAN WITH ONE LAYER OF TYPE 'X' GYPSUM BOARD ON THE FINISH SIDE, EXTEND FINISH SIDES, PAINT AS SPECIFIED, PROVIDE GYPSUM BOARD CONTROL JOINTS PER U.S. GYPSUM RECOMMENDATIONS,	EXTEND WALLS UP TO STRUCTURAL FLOOR AND ROOF DECKS ON BOTH THE FIRST AND SECOND FLOORS, UNLESS NOTED OTHERWISE, PROVIDE FIRE SEALANT AT ALL WALL PENETRATIONS AND AT DECK,

IBING FIXTURES / ACCESSORIES	RESTROOM NOTES
 AR - 36' LONG BOBRICK B-5806.99x36 STAINLESS STEEL WITH SNAP (INSTALL ONE • EACH H.C. STALL) MOUNT ON SIDE WALL •36' TO INE OF BAR, I2' MAX FROM ADJACENT SURFACE, GRAB BARS SHALL WITH ADA/TAS GUIDELINES FOR STRUCTURAL STRENGTH. AR - 42' LONGBOBRICK B-5806.99x42 STAINLESS STEEL WITH SNAP (INSTALL ONE • EACH H.C. STALL) MOUNT ON SIDE WALL •36' TO INE OF BAR, I2' MAX FROM ADJACENT SURFACE, GRAB BARS SHALL WITH ADA/TAS GUIDELINES FOR STRUCTURAL STRENGTH. B-2740 TOILET TISSUE HOLDER, SURFACE MOUNT, MOUNTING WITH FORWARD EDGE 36' MAX, FROM BACK WALL AND HORIZONTAL INE MIN. 19' A.F.F. B-43944 CONTURA SERIES RECESSED PAPER TOWEL DISPENSER 6 RECEPTACLE, MOUNTING HEIGHT 4'-6' TO PAPER NAPKIN OPENING B-43944 CONTURA SERIES RECESSED PAPER TOWEL DISPENSER 6 RECEPTACLE, MOUNTING HEIGHT 4'-6' TO PAPER NAPKIN OPENING B-43944 CONTURA SERIES RECESSED PAPER TOWEL DISPENSER 6 RECEPTACLE, MOUNTING HEIGHT 4'-6' TO PAPER NAPKIN OPENING B-43944 CONTURA SERIES RECESSED PAPER TOWEL DISPENSER 6 RECEPTACLE, MOUNTING HEIGHT 4'-6' TO PAPER NAPKIN OPENING B-43944 CONTURA SERIES NEED ON OF REFLECTIVE SURFACE PER NS. RY PER MEP, LAV, SHALL MEET ADA REQUIREMENTS WITH LAV RIM AT KNEE SPACE 29', LEVER TYPE HARDWARE, INSULATE EXPOSED PIPES (RE' W/ PREMANUFACTURED VINYL WRAP W/ LEVER OPERATED TO MEET ADA REQ. 20.05E (TOLET), PER MEP, TOLET SHALL MEET ADA REQUIREMENTS; DNITROLS SHALL BE OPPOSITE THE WALL, TOP OF SEAT SHALL BE 17' AND 19' A.F.F. PLUSH LEVER ON OPEN SIDE OF W.C. (TYP.) ING PORCELIN URINAL PER MEP, URINAL SHALL MEET ADA REQUIREMENTS, WITH TOP DING EDGE AT 17' A.F.F. D. ARTITIONS; BOBRICK COMPACT LAMINATE DURALINE SERIES 1080/IBO, TOP OF OVERHEAD 16' TALL FROM BOTTOM OF PARTITION, GRAPHITE GRAFIX 55-58, STANDARD 12', CLASS A, GAP FREE, IB26, SA63. AD3122603 ACCESSIBLE SINGLE COMPARTMENT SINK. FAUCET PER MEP. FLOOR SINK PER MEP. 	 CONTRACTOR TO PROVIDE & INSTALL BLOCKING FOR ALL RESTROOM FIXTURES, ACCESSORES, FIRE EXTINGUISHERS, MILLWORK, ETC., AS REQUIRED. RESTROOM TO HAVE WR GYPSUM BOARD CELING AT 9'-0' A.F.F., TAPE, FLOAT, TEXTRE AND PAINT PER ARCHITECT. ALL WALL DIMENSIONS ARE TO FACE OF GYPSUM WALL BOARD OR PLYWOOD (WAR FURNISH & INSTALL ADA SIGNAGE AT TOLET ROOMS TO MEET T.A.S. GUIDELNES, MOUNTING HEIGHT SHALL BE 60' A.F.F. TO THE & OF THE SIGN. MOUNT SIGN 6' FROM THE LOCKSET SIDE OF THE DOOR TO THE (INTERINE OF THE SIGN, SIGN SHALL MEET ALL REQUIREMENTS FOR ADA SIGNAGE. ALL FIXTURES/ACCESSORIES TO BE INSTALLED PER T.A.S. GUIDELNES. ALL DOOR HANDLES, PULLS, LOCK SETS, & OTHER OPERATING DEVICES SHALL HAVE A SHAPE THAT IS EASY TO GRAPP WITH ONE HAND & THAT DOESN'T REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE. LEVER-OPERATED MECHANISMS ARE ACCEPTABLE. HARDWARE FOR ACCESSBLE DOORS SHALL BE MOUNTED NO HIGHER THAN 44 A.F.F. OR LOWER THAN 30' A.F.F. DOORS W/ CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OR 70 DEGREES THE DOOR TAKES AT LEAST 3 SECONDS TO MOVE TO A POINT 3' FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR. THE MAXIMUM FORCE FOR PUSHING OR PULLING AN ACCESSIBLE DOOR SHALL BE 5 LBS, TYP. ALL RESTROOM WALLS ARE TO HAVE 5/8' WR, GYPSUM BOARD ON 3-5/8' METAL STUDS AT 16' O.C. PROVIDE ALL FR.P. TRIM PIECES, TOP, BOTTOM, SEAM AND INSDE CORNERS. PERMANENT RESTROOM SIGNS MUST COMPLY WITH T.A.S. REQUIREMENTS 703, 703.2 AND 703.5.

ROOM 100 RECEPTION

FIRST FLOOR VIEW

ROOM 112 STAIRS (A) - ENLARGED FLOOR PLAN

3/8" = 1'-0"

ROOM 112 STAIRS (A) - INTERIOR ELEVATION FROM

FLOOR TO FLOOR HEIGHT IS 14'-0"

2 ROOM 121 STAIRS (B) - ENLARGED FLOOR PLAN

FIRST FLOOR VIEW

3/8" = 1'-0"

THESE AND ALL MILLWORK DRAWINGS ILLUSTRATE DESIGN INTENT ONLY. MILLWORK SUB-CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND SUBMIT SHOP DRAWINGS FOR APPROVAL.

3/8" = 1'-0"

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JUNTER 2'-10"

B - LEFT SIDE FACE ELEVATION

2'-l0" CESSIBLE COUNTER ANDARI SK HEIG

3/8" = 1'-0"

C - RIGHT SIDE FACE ELEVATION

INTENT ONLY. MILLWORK SUB-CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND SUBMIT SHOP DRAWINGS FOR APPROVAL.

NO	ROOM		F	LOOR		BASE			WAL	LS			CEI	_ING			NOTE
		ED, SEALED CONCRETE	- TLES DOWN Y ARD ALLOWANCE	STAIR TREADS	JER BASE (TYPE TS) LIN, FT, ALLOWANCE	SE REQUIRED	FLOAT, EG-SHEL TEXTURE 8 DN GYPSUM BD,	FLOAT, EG-SHEL TEXTURE 8 DN W.R. GYPSUM BD.	LAS REINFORCED 5 TO 48' A.F.F.)X, PLYWOOD 5 TO IO' A,F,F, PAINTED		USPENDED CEILING, TEGULAR	JSPENDED CEILNG, TEGULAR RE RESISTANT	USPENDED CEILING, TEGULAR	USPENDED CEILNG, TEGULAR RE RESISTANT	O STRUCTURE ABOVE	
		POLISHE	CARPET GLUED \$41,00 /	RUBBER	4" RUBE \$1,40 /	NO BA		PAINT, PAINT (FIBERG	3/4" C.I PANELS		2'x2' SI	2'x2' SI MOISTU	2'x4' S	2'x4' S MOISTU	OPEN 1	
100	RECEPTION										$\left \right\rangle$						
101	EXEC, ADMIN, OFFICE							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left\langle \right\rangle$						
102								$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	\bigcirc						
103	SERVER RM,								$\left \right\rangle$	\bigcirc	\bigcirc						
101	COPY AREA									\bigtriangledown	\bigcirc						
106	LOCK CLOSET										\mathbf{X}						
107	LOCK CLOSET										$\left \right\rangle$						
108	HR OFFICE							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left\langle \right\rangle$						
109	CONF, ROOM							$\left \right\rangle$	$\left \right\rangle$	\bigotimes	\bigcirc						
111	MULTI-USE CORRIDOR								$\left \right\rangle$	\bigcirc	\bigcirc						
112	STAIRS (A)									$\left \right\rangle$	\bigcirc	N/A					
113	WOMENS										\square						
114	MENS									$\left \right\rangle$	$\left \right\rangle$						
115								$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left\langle \right\rangle$						
117	PM OFFICE SENIOR PM							$\left \right\rangle$	$\left \right\rangle$	\bigotimes	\bigcirc						
118	SENIOR PM									\bigcirc	\bigcirc						
119	PM OFFICE										\square						
120	APM MGR.							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left\langle \right\rangle$						
121	KIT STORAGE							$\left \right\rangle$	$\left \right\rangle$	\bigotimes	\bigcirc	N/A					
123	BREAK RM.									\bigcirc	\bigcirc						
124	LOCK CLOSET										$\left \right\rangle$						
125	JANITOR									$\left \right\rangle$	$\left\langle \right\rangle$						
126	OFFICE								$\left \right\rangle$	\bigotimes	\bigotimes						
128	PX OFFICE									\bigcirc	\bigcirc						
129	GS OFFICE										\mathbf{X}						
130	PRE-JOB OFFICE										$\left \right\rangle$						
131	SENIOR PM OFFICE							$\left \right>$		$\left \right\rangle$	$\left \right\rangle$						
132									$\left \right\rangle$	$\left \right\rangle$	\bigcirc						
133	H/K STORAGE										\bigcirc						
135	ELECTRICAL ROOM										\mathbf{X}						
136	SMALL TOOL STORAGE										\ge						
137	TOOL CAGE										$\left \right\rangle$						
138	FABRICATION SHOP FABRICATION							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$						
200	MGR, OFFICE										\land						
201	SMALL CONF, ROOM							\searrow	\sum	\mathbf{i}	\mathbf{i}						
202	SERVICE MGR, OFFICE										\mathbf{X}						
203	CORRIDOR										$\left \right\rangle$						
204	SERVER ROOM	-								$\left \right>$	$\left \right\rangle$						
205										$\left \right\rangle$	$\left \right\rangle$						
200	WOMEN										\bigcirc						$\langle T \rangle$
208	MEN						\mathbf{X}				\bigcirc						
209	CORRIDOR																
210	CORRIDOR										$\left \right\rangle$						
211	PM OFFICE							$\left \right>$	$\left \right>$	$\left \right>$	$\left \right\rangle$						
212	SENIOR PM							\bigotimes	\bigotimes	\bigotimes	\bigotimes						
213	PM OFFICE							\bigcirc	$\left \right\rangle$	$\left \right\rangle$	\bigcirc						
215	APM MGR.							\sum	$\left \right\rangle$	\searrow	$\left \right\rangle$						
216	STAIR (B)										\square						
217	CONFERENCE ROOM										$\left \right\rangle$						
218	FUTURE OFFICE VDC DIP							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$						
219 220	OFFICE SENIOR VDC							$\left \right\rangle$	$\left \right\rangle$	$\left \right\rangle$	\bigotimes						
220	OFFICE PCM OFFICE							$\left \right\rangle$	\bigotimes	\bigcirc	\bigcirc						
222	PCM OFFICE							\sum	\mathbf{k}	\sum	$\left \right\rangle$						
223	OPEN SMALL MEETING SPACE																
	I NOPTH				 												

ROOM FINISH SCHEDULE

KEYED ROOM FINISH NOTES

 $\langle \overline{ \tt l},
angle$ gypsum wall board to be green "wr" board type,

DOOR, DOOR FRAME AND HARDWARE SCHEDULE

					INAML	GLASS	HARDWARE / NOTES
2 3 4 5		EXISTIN	IG DOOR TO	REMAIN			REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR STOREFRONT DOORS,
3 (4) (5)	B	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN, EACES AND EDGES,	DARK BRONZE ALUMINUM	N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
	Â	SINGLE	3'-0 × 8'-0" × I-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
(5)	Â	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
	B	SINGI F	3'-0 x 8'-0" x -3/4"	FACES AND EDGES.	DARK BRONZE	Ν/Δ	1-1/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BY CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SUBJOERS, HOLD OFFICE
			2'-0 × 8'-0" × 1-3/4"	FACES AND EDGES, SOILID CORE WOOD	DARK BRONZE		1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BUTTS, ALL HARDWARE DARK BUTTS, ALL HARDWARE DARK BUTTH LEVERS, DOOR STOP,
			3-0 x 8-0 x 1-3/4	SOILID CORE WOOD	DARK BRONZE		CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP,
(7)	B	SINGLE	3'-0 × 8'-0" × I-3/4"	W/ HARDWOOD VEN, FACES AND EDGES, SOILID CORE WOOD	ALUMINUM DARK BRONZE		CLOSER, SILENCERS, HOLD OPEN, <u>1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE</u> CYLINDER OFFICE SET WITH LEVERS, DOOR STOP,
8	(A)	SINGLE	3'-0 x 8'-0" x -3/4"	W/ HARDWOOD VEN. FACES AND EDGES. SOILID CORE WOOD	ALUMINUM DARK BRONZE		CLOSER, SILENCERS, HOLD OPEN, <u>H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI</u> CYLINDER OFFICE SET WITH LEVERS, DOOR STOP,
	(A)	SINGLE	3'-0 x 8'-0" x l-3/4"	W/ HARDWOOD VEN. FACES AND EDGES.	DARK BRONZE	TEMPERED SIDELITE B	CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP,
	(A)	SINGLE	3'-0 x 8'-0" x -3/4"	W/ HARDWOOD VEN. FACES AND EDGES,		TEMPERED SIDELITE B	CLOSER, SILENCERS, HOLD OPEN. 1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS DOOR STOP
	A	SINGLE	3'-0 x 8'-0" x -3/4"	W/ HARDWOOD VEN, FACES AND EDGES,		TEMPERED SIDELITE A	CLOSER, SILENCERS, HOLD OPEN, 1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP.
(12)	B	SINGLE	3'-0 x 8'-0" x -3/4"	W/ HARDWOOD VEN. FACES AND EDGES.	ALUMINUM	N/A	SILENCERS, 1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER PASSAGE SET WITH LEVERS DOOR STOP
(13)	B	SINGLE	3'-0 × 8'-0" × I-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	DARK BRONZE ALUMINUM	N/A	SILENCERS, 11/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI
(14)	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN. FACES AND EDGES,	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI
(15)	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN. FACES AND EDGES,	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, 1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI
(16)	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, 1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI
(17)	A	SINGLE	3'-0 × 8'-0" × -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI
(18)	A	SINGLE	3'-0 × 8'-0" × -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
(19)	B	SINGLE	3'-0 × 8'-0" × -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
20	C	SINGLE	3'-0 x 7'-0" x -3/4"	HOLLOW METAL	HOLLOW METAL	N/A	11/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
21)		EXISTIN	IG DOOR TO	REMAIN			REPLACE EXISTING DOOR LOCK WITH ELECTRONIC
22	B	SINGLE	3'-0 x 8'-0" x l-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	N/A	CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
23	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
24)		EXISTIN	IG DOOR TO	REMAIN			H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI REPLACE EXISTING DOOR LOCK WITH ELECTRONIC
25)	A	SINGLE	3'-0 x 8'-0" x I-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
26	Â	SINGLE	3'-0 x 8'-0" x I-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
27)	A	SINGLE	3'-0 x 8'-0" x l-3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
28	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOILID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BI CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
29	A	SINGLE	3'-0 x 8'-0" x -3/4"	SOLID CORE WOOD W/ HARDWOOD VEN.	DARK BRONZE ALUMINUM	TEMPERED SIDELITE A	1-1/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
		EXISTIN	IG DOOR TO	REMAIN			REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS.
30							
<u>30</u> <u>31</u>	C	SINGLE	3'-0 x 7'-0" x -3/4"	HOLLOW METAL	HOLLOW METAL	N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
30 31 32	© ©	SINGLE	3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4"	HOLLOW METAL	HOLLOW METAL	N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
30 31 32 33	© © ©	SINGLE SINGLE SINGLE	3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4"	HOLLOW METAL HOLLOW METAL	HOLLOW METAL HOLLOW METAL HOLLOW METAL	N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE
30 31 32 33 34	© © © ©	SINGLE SINGLE SINGLE SINGLE	3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4" 3'-0 x 7'-0" x l-3/4"	HOLLOW METAL HOLLOW METAL HOLLOW METAL	HOLLOW METAL HOLLOW METAL HOLLOW METAL	N/A N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BU CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BU CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BU CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BU CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
30 31 32 33 34 35	© © ©	SINGLE SINGLE SINGLE E X I S T I N	3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4"	HOLLOW METAL HOLLOW METAL HOLLOW METAL REMAIN	HOLLOW METAL HOLLOW METAL HOLLOW METAL	N/A N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS,
30 31 32 33 34 35 36	© © ©	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N	3'-0 × 7'-0" × 1-3/4" 3'-0 × 7'-0" × 1-3/4" 3'-0 × 7'-0" × 1-3/4" 3'-0 × 7'-0" × 1-3/4" NG DOOR TO	HOLLOW METAL HOLLOW METAL HOLLOW METAL REMAIN	HOLLOW METAL HOLLOW METAL HOLLOW METAL	N/A N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS,
30 31 32 33 34 35 36 37	© © ©	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE	3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4" 3'-0 x 7'-0" x 1-3/4" NG DOOR TO NG DOOR TO 3'-0 x 7'-0" x 1-3/4"	HOLLOW METAL HOLLOW METAL HOLLOW METAL REMAIN REMAIN	HOLLOW METAL HOLLOW METAL HOLLOW METAL	N/A N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
30 31 32 33 34 35 36 37 38	© © ©	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE SINGLE	$3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 7'-0" \times 1-3/4"$ NGDOORTO NGDOORTO $3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL R E M A I N R E M A I N HOLLOW METAL SOLID CORE WOOD W/ HARDWOOD VEN.	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE	N/A N/A N/A N/A N/A TEMPERED SIDELITE B	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
$ \begin{array}{c} 30 \\ 31 \\ 32 \\ 33 \\ 34 \\ 35 \\ 36 \\ 37 \\ 38 \\ 39 \\ 39 \\ \end{array} $	© © © ©	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE SINGLE SINGLE	$3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL R E M A I N R E M A I N HOLLOW METAL SOILID CORE WOOD W/ HARDWOOD VEN. FACES AND EDGES. SOILID CORE WOOD W/ HARDWOOD VEN.	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE ALUMINUM	N/A N/A N/A N/A N/A TEMPERED SIDELITE B TEMPERED SIDELITE B	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
$ \begin{array}{c} 30\\ \hline 31\\ \hline 32\\ \hline 33\\ \hline 34\\ \hline 35\\ \hline 36\\ \hline 37\\ \hline 38\\ \hline 39\\ \hline 40\\ \hline \end{array} $	© © © © (C) (C) (A) (A) (B)	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE SINGLE SINGLE	$3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL REMAIN REMAIN REMAIN HOLLOW METAL SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE ALUMINUM	N/A N/A N/A N/A N/A TEMPERED SIDELITE B TEMPERED SIDELITE B	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, II/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. II/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
30 31 32 33 34 35 36 37 38 39 40 41	© © © © A & B B	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE SINGLE SINGLE SINGLE	$3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL R E M A I N R E M A I N HOLLOW METAL SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE ALUMINUM DARK BRONZE ALUMINUM	N/A N/A N/A N/A N/A TEMPERED SIDELITE B TEMPERED SIDELITE B N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
$ \begin{array}{c} 30\\ \hline 31\\ \hline 32\\ \hline 33\\ \hline 34\\ \hline 35\\ \hline 36\\ \hline 37\\ \hline 38\\ \hline 39\\ \hline 40\\ \hline 41\\ \hline 42\\ \hline \end{array} $	© © © © (C) (C) (C) (A) (A) (B) (B) (C)	SINGLE SINGLE SINGLE E X I S T I N E X I S T I N SINGLE SINGLE SINGLE SINGLE SINGLE	$3'-0 \times 7'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$ $3'-0 \times 8'-0" \times 1-3/4"$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL R E M A I N R E M A I N HOLLOW METAL SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOILID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE ALUMINUM DARK BRONZE ALUMINUM DARK BRONZE HOLLOW METAL	N/A N/A N/A N/A N/A TEMPERED SIDELITE B TEMPERED SIDELITE B N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS, CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN, H/2 PAIR PLAIN BEARING BUTTS, ALL HARDWARE DARK BE CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN,
$ \begin{array}{c} 30\\ \hline 31\\ \hline 32\\ \hline 33\\ \hline 34\\ \hline 35\\ \hline 36\\ \hline 37\\ \hline 38\\ \hline 39\\ \hline 40\\ \hline 41\\ \hline 42\\ \hline 43\\ \hline \end{array} $	© © © © (C) (C) (A) (A) (B) (B) (B) (C) (A)	SINGLE SINGLE SINGLE E X I S T I N SINGLE SINGLE SINGLE SINGLE SINGLE SINGLE	$3'-0 \times 7'-0' \times 1-3/4''$ $3'-0 \times 8'-0'' \times 1-3/4''$	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL R E M A I N R E M A I N HOLLOW METAL SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES, SOLID CORE WOOD W/ HARDWOOD VEN, FACES AND EDGES,	HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL HOLLOW METAL DARK BRONZE ALUMINUM DARK BRONZE ALUMINUM DARK BRONZE HOLLOW METAL DARK BRONZE HOLLOW METAL DARK BRONZE	N/A N/A N/A N/A N/A TEMPERED SIDELITE B TEMPERED SIDELITE B N/A N/A N/A N/A	CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. REPLACE EXISTING DOOR LOCK WITH ELECTRONIC LOCKSET FOR HOLLOW METAL DOORS. CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER PASSAGE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN. 11/2 PAIR PLAIN BEARING BUTTS. ALL HARDWARE DARK BA CYLINDER OFFICE SET WITH LEVERS, DOOR STOP, CLOSER, SILENCERS, HOLD OPEN.
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DARK BRONZE FINISH FOR PUSH, PULL, AND KICK ACCESSORIES

DOOR STOP TO BE FLOOR MOUNTED W/ DARK BRONZE FINISH

A.D.A. / T.A.S. APPROVED LEVER TYPE HARDWARE AT ALL DOORS. DOORS SHALL BE PROVIDED WITH PARALLEL, ADJUSTABLE CLOSERS THAT ARE SET TO RELEASE THE DOOR WITH A

FORCE NO GREATER THAN 5LBS IN THE DIRECTION OF EGRESS.

DOOR AND FRAME TYPES

FOR REFERENCE ONLY NO WORK ON THIS ELEVATION

RC Architects, Inc. 14620 Echo Bluff Austin, Texas 78737 (512) 913-0597 rickcanales.architects@gmail.co 1/16/25 ら X ΤE • ANDER Inc Ц • CtS H Archite JO FINISH RC GROUP WEIFIELD Revisions Date 1/16/25 Sheet A3.0

2 South Elevation - Bldg. 2

FOR REFERENCE ONLY NO WORK ON THIS ELEVATION

S C A L E : 1/8'' = 1'-0''

SECTION 00700 - GENERAL CONDITIONS

A, THE AMERICAN INSTITUTE OF ARCHITECTS STANDARD FORM, AIA DOCUMENT 201, LATEST EDITION, "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" IS HEREBY MADE A PART OF THESE CONSTRUCTION DOCUMENTS, THE GENERAL CONDITIONS APPLY TO EACH AND EVERY SECTION OF THESE SPECIFICATIONS AS WELL AS TO ALL THE WORK REQUIRED TO COMPLETE THIS PROJECT AS THOUGH INCLUDED HEREIN.

SECTION 01010 - SUMMARY OF THE WORK

- A, GENERAL CONTRACTOR'S RESPONSIBILITIES: I, EXCEPT AS SPECIFICALLY NOTED, PROVIDE AND PAY FOR: ALL LABOR, MATERIALS AND EQUIPMENT.
- TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY WATER AND UTILITIES REQUIRED FOR CONSTRUCTION,
- OTHER FACILITIES AND SERVICES NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK. 2. PAY ALL LEGALLY REQUIRED SALES, CONSUMER AND USE TAXES
- 3. SECURE AND PAY FOR, AS NECESSARY FOR PROPER EXECUTION AND COMPLETION OF THE WORK AND AS APPLICABLE:
- A, PERMITS THE OWNER WILL PAY FOR THE BASIC BUILDING PERMIT. ANY ADDITIONAL PERMITS REQUIRED FOR OTHER INCREMENTS OF THE WORK SHALL BE PAID BY THE GENERAL CONTRACTOR. B, GOVERNMENT FEES C, LICENSES
- 4, GIVE REQUIRED NOTICES ALL PARTIES HAVING JURISDICTION 5. COMPLY WITH ALL CODES, ORDINANCES, RULES AND REGULATIONS, ORDERS AND OTHER LEGAL REQUIREMENTS OF PUBLIC AUTHORITIES WHICH BEAR ON THE PERFORMANCE AND
- COMPLETION OF THE WORK, 6. PROMPTLY SUBMIT WRITTEN NOTICE TO ARCHITECT OF OBSERVED VARIANCE OF CONTRACT DOCUMENTS FROM LEGAL
- REQUIREMENTS, IT IS NOT THE CONTRACTOR'S RESPONSIBILITY TO MAKE CERTAIN THAT THE DRAWINGS AND SPECIFICATIONS COMPLY WITH APPLICABLE CODES AND REGULATIONS.
- 7. ENFORCE STRICT DISCIPLINE AND GOOD ORDER AMONG EMPLOYEES, DO NOT EMPLOY UNFIT PERSONS OR PERSONS NOT SKILLED IN THEIR ASSIGNED TASKS,
- B. CONTRACTOR'S USE OF PREMISES: I. CONFINE OPERATIONS AT SITE TO AREAS PERMITTED BY LAW, ORDINANCES, PERMITS, CONTRACT DOCUMENTS, THE OWNER OR
- ARCHITECT, 2, DO NOT UNREASONABLY ENCUMBER THE SITE WITH MATERIALS OR
- EQUIPMENT. 3. DO NOT LOAD STRUCTURE WITH WEIGHT THAT WILL ENDANGER
- THE STRUCTURE,
- 4. ASSUME FULL RESPONSIBILITY FOR PROTECTION AND SAFEKEEPING OF PRODUCTS STORED ON PREMISES,
- 5. MOVE ANY STORED PRODUCTS WHICH INTERFERE WITH
- OPERATION OF OWNER OR OTHER CONTRACTORS. 6. OBTAIN AND PAY FOR USE OF ADDITIONAL STORAGE OR WORK

AREAS NEEDED FOR THE OPERATION, SECTION 01340 - SHOP DRAWINGS

- A, SHOP DRAWINGS: CONTRACTOR SHALL REVIEW SHOP DRAWINGS AND PROJECT DATA PRIOR TO SUBMISSION TO ARCHITECT, SUBMITTALS MUST INCLUDE CONTRACTOR'S STAMP, INITIALED AND DATED. FAILURE TO STAMP AND INITIAL WILL RESULT IN REJECTION AND REQUIRE RESUBMISSION, CONTRACTOR'S RESPONSIBILITY FOR ERRORS AND OMISSIONS IN SUBMITTALS IS NOT RELIEVED BY ARCHITECT AND/OR ENGINEER'S REVIEW/APPROVAL, ARCHITECT/ENGINEER REVIEW WILL BE FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND WITH THE INFORMATION GIVEN IN THE DRAWINGS AND SPECIFICATIONS ONLY,
- B, ELECTRONIC SUBMITTALS FOR SHOP DRAWINGS WILL BE ACCEPTED. ELECTRONIC SUBMITTALS FOR PRODUCT DATA WILL BE ACCEPTED, UNLESS THE ARCHITECTS DEEMS IT NECESSARY TO RECEIVE HARD COPIES.

SECTION 01455 - TESTING AND INSPECTION SERVICES

- A, OWNER WILL EMPLOY AND PAY FOR SERVICES OF AN INDEPENDENT TESTING LABORATORY TO PERFORM CERTAIN TESTING AND INSPECTION. CONTRACTOR SHALL COOPERATE WITH THE TESTING LABORATORY TO FACILITATE PERFORMANCE OF ITS WORK,
- B. CONTRACTOR'S RESPONSIBILITIES: NOTIFY LABORATORY SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW FOR LABORATORY ASSIGNMENT OF PERSONNEL AND SCHEDULING OF TESTS. WHEN TESTS OR INSPECTIONS CANNOT BE PERFORMED AFTER SUCH NOTICE, REIMBURSE OWNER FOR LABORATORY PERSONNEL AND TRAVEL EXPENSES INCURRED DUE TO CONTRACTOR'S NEGLIGENCE, MAKE ARRANGEMENTS WITH

LABORATORY AND PAY FOR ADDITIONAL SAMPLES, TESTS OR INSPECTIONS

REQUIRED FOR CONTRACTOR'S CONVENIENCE.

SECTION 05120 - STRUCTURAL STEEL REFER TO STRUCTURAL DRAWINGS BY METAL BUILDING MAUFACTURER, AS IS APPLICABLE.

SECTION 05400 - LIGHT GAUGE METAL FRAMING

- THIS SECTION INCLUDES FORMED STEEL STUD EXTERIOR AND INTERIOR WALL FRAMING, ANCHORAGE AND ACCESSORIES,
- A. ACCOMPLISH THE WORK IN COMPLIANCE WITH THE LATEST APPLICABLE GUIDELINES OR RECOMMENDATIONS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, AMERICAN WELDING SOCIETY, METAL FRAMING MANUFACTURERS ASSOCIATION, METAL LATH/STEEL FRAMING ASSOCIATION AND STEEL STRUCTURES PAINTING COUNCIL.
- B. SYSTEM DESCRIPTION CONTRACT DOCUMENTS ESTABLISH OVERALL DESIGN INTENT AND STANDARD OF QUALITY BUT DO NOT NECESSARILY DESCRIBE TOTAL EXTENT OF THE WORK, STRUCTURAL DESIGN OF COLD FORMED METAL FRAMING INCLUDING SOME SIZES, PROFILES, DETAILS AND METHODS OF CONNECTION AND ATTACHMENT ARE THE CONTRACTOR'S RESPONSIBILITY, MAINTAIN DESIGN CONCEPT SHOWN AND MEET SPECIFIED PERFORMANCE CRITERIA WITHOUT ALTERING PROFILES AND ALIGNMENTS,
- C, PRODUCTS: PROVIDE MINIMUM 20 GA. (UNLESS NOTED OTHERWISE) STUDS IN SIZES INDICATED TO BE ROLLED FROM NEW SHEET STEEL, FINISHED G60 GALVANIZED, WITH CHANNEL PROFILE PUNCHED FOR UTILITY ACCESS. PROVIDE SYSTEM COMPATIBLE TRACKS. PROVIDE ALL BRACING, FURRING, BRIDGING, PLATES, GUSSETS, CLIPS, AND FASTENERS AS DETERMINED BY PERFORMANCE REQUIREMENTS, STUD SPACING PER PLANS, DO NOT EXCEED THE UNBRACED LENGTH SPECIFICATION OF ANY STUD MEMBER.
- D. ERECTION INSTALL COMPONENTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FASTEN TRACKS AT MAXIMUM 12 INCHES ON CENTER, PLACE STUDS AT SPACING INDICATED AND NOT MORE THAN 2 INCHES FROM ABUTTING WALLS AND AT EACH SIDE OF OPENINGS, CONNECT STUDS TO BOTTOM TRACK USING FASTENER METHOD, ERECT STUDS ONE PIECE FULL LENGTH. SPLICING NOT PERMITTED, INSTALL INTERMEDIATE STUDS ABOVE AND BELOW OPENINGS TO ALIGN WITH WALL STUD SPACING, ATTACH CROSS STUDS OR FURRING CHANNELS TO STUDS FOR ATTACHMENT OF FIXTURES ANCHORED TO WALLS,

S P E C I F I C A T I O N S

REFER TO STRUCTURAL DRAWINGS FOR SPECIFICATIONS AND NOTES. REFER TO DRAWINGS FOR MECHANICAL, ELECTRICAL & PLUMBING SPECIFICATIONS

SECTION 05500 - METAL FABRICATIONS

- THIS SECTION INCLUDES SHOP FABRICATED FERROUS METAL COMPONENTS GALVANIZED AND PRIME PAINTED, STEEL LADDERS, STEEL HANDRAILS AND RAILINGS; STEEL BOLLARDS; AND BAR GRATINGS.
- A, WORK SHALL BE ACCOMPLISHED IN COMPLIANCE WITH THE LATEST GUIDELINES AND RECOMMENDATIONS OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS, AMERICAN WELDING SOCIETY, NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS, AND THE STEEL STRUCTURES PAINTING COUNCIL,
- B. SHOP DRAWINGS FOR THIS WORK SHOULD INCLUDE DIMENSIONS, METAL THICKNESSES, FINISHES, JOINTS, ATTACHMENTS, AND RELATIONSHIP TO ADJACENT CONSTRUCTION. C. PROVIDE MATERIALS AND ACCESSORIES AS INDICATED IN THE DRAWINGS AND
- AS OTHERWISE REQUIRED TO COMPLETE THE WORK AS REQUIRED ABOVE. PRIMER AND TOUCH-UP FOR FERROUS METALS TO BE SSPC 15, TYPE 1, RED OXIDE, TOUCH-UP FOR GALVANIZING TO BE SSPC 20, TYPE I OR II, D. FABRICATION:
- I. FIT AND SHOP ASSEMBLE ITEMS IN LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE, FABRICATE ITEMS WITH JOINTS TIGHTLY FITTED AND SECURED, 2. GRIND EXPOSED JOINTS FLUSH AND SMOOTH WITH ADJACENT SURFACES.
- MAKE EXPOSED JOINTS BUTT TIGHT, FLUSH AND HAIRLINE. EASE EXPOSED EDGES TO SMALL UNIFORM RADIUS, 3. CONCEAL FASTENING WHERE POSSIBLE, EXPOSED MECHANICAL
- FASTENINGS SHALL BE COUNTERSUNK SCREWS OR BOLTS, UNOBTRUSIVELY LOCATED, CONSISTENT WITH DESIGN OF COMPONENT EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE,
- 4. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE OF FABRICATIONS, FABRICATE ANCHORS AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS FABRICATION, EXCEPT WHERE SPECIFICALLY NOTED,
- 5. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE OF FABRICATIONS.
- FABRICATE ANCHORS AND RELATED COMPONENTS OF SAME MATERIAL AND FINISH AS FABRICATION, EXCEPT WHERE SPECIFICALLY NOTED. 6. WELDING TO CONFORM TO AWS DI.I. USE WELDS FOR PERMANENT CONNECTIONS WHERE POSSIBLE, GRIND EXPOSED WELDS SMOOTH, TACK
- WELDS PROHIBITED ON EXPOSED SURFACES, E, FINISHES ON FERROUS METAL COMPONENTS AS NOTED IN THE DRAWINGS; GALVANIZED - ASTM A 123/A 123/M, TO 1.25 OUNCES PER SQUARE FOOT. PRIMED - SHOP PAINTED EXCEPT STEEL TO BE ENCASED IN CONCRETE AND SURFACES TO BE WELDED, PREPARE SURFACE AND APPLY PER MANUFACTURER'S RECOMMENDATIONS, MINIMUM DRY FILM THICKNESS - 2,0 MILS,
- F, EXECUTION: I. INSTALLATION - INSTALL ITEMS IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, INSTALL COMPONENTS PLUMB, LEVEL, AND RIGID, WELDING; AWS
- DI,I, GRIND AND FILL EXPOSED WELDS, FINISH SMOOTH AND FLUSH, INSTALL SLEEVED COMPONENTS WITH ANCHORING CEMENT, 2. ADJUSTING - CLEAN AND TOUCH-UP PRIMER PAINT AT WELDED AND ABRADED SURFACES WITH SAME PRODUCT AS APPLIED IN SHOP, CLEAN
- AND TOUCH-UP GALVANIZED COATINGS AT WELDED AND ABRADED SURFACES WITH ZRC GALVILITE GALVANIZING REPAIR COMPOUND, APPLIED PER MANUFACTURER'S RECOMMENDATIONS G. MATERIALS:
- I. STEEL GRATING (IF INCLUDED IN PLANS) GHB250 AS MANUFACTURED BY THE MCNICHOLS COMPANY, 1-800-237-3820, PRIME AND PAINT PER
- ARCHITECT 2. PIPE BOLLARDS - 6" DIAMETER PAINT GRIP GALVANIZED STEEL, EMBEDDED IN 12" DIAMETER 3,000 PSI CONCRETE 48" BELOW FINAL GRADE TO 48" ABOVE FINAL GRADE, FILL WITH CONCRETE AND PROVIDE A ROUNDED TOP OF CONCRETE
- 3. DUMPSTER GATE HINGES (IF INCLUDED IN PLANS) ROLLER BEARING HINGES, 3 PAIR PER GATE LEAF, ITEM #44-2100 AS MANUFACTURED BY THE KING SUPPLY COMPANY, 1-800-542-2379

SECTION 06100 - CARPENTRY

- A, PROVIDE ALL MATERIAL FOR COMPLETE INSTALLATION OF WOOD STUD WALLS, IF SHOWN ON THE PLANS, WOOD BLOCKING, WOOD FURRING, TELEPHONE AND/OR ELECTRICAL BACKBOARDS,
- ROOF CURBS (IF REQUIRED), SOFFITS, AND OTHER ITEMS INCLUDED IN THE DRAWINGS. B. WOOD USED AT ALL COPING, BLOCKING, AND NAILER LOCATIONS SHALL BE MCQ OR ACQ CEDAR-TONE PRESSURE-TREATED LUMBER, NO ARSENIC TYPE OR GREEN
- COLOR TREATED LUMBER IS ALLOWED C. DISCOLORATION OF WOOD CAUSED BY EXPOSURE TO SUNLIGHT AND/OR WATER SHALL BE GROUNDS FOR REJECTION, EXPOSED MARKINGS, INCLUDING STAMPS FROM THE MILL, WILL BE GROUNDS FOR REJECTION

SECTION 07123 - FIBROUS AND REFLECTIVE INSULATION

BATT WALL INSULATION SHALL MEET FEDERAL SPEC. HH-1-521F, TYPE III, MINERAL FIBER OR FIBERGLASS COMPOSITION, UNFACED, MINIMUM 'R'VALUE OF 19, REFER TO THE

DRAWINGS FOR SIZES, LOCATIONS, ETC. ROOF INSULATION SHALL BE R-30 MINIMUM AND MAY BE VINYL FACED MATERIAL AS PROVIDED BY THE METAL BUILDING MANUFACTURER,

CONCEALED AND EXPOSED BATT INSULATION SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAT 5 AND A SMOKE

DEVELOPED INDEX OF NOT MORE THAN ZERO, IN ACCORDANCE

R-VALUES OF ALL INSULATION TYPES SHALL BE DETERMINED IN ACCORDANCE WITH THE J.S. FEDERAL TRADE COMMISSION RULE,

SECTION 07700 - ROOF ACCESSORIES AND SPECIALTIES A, PIPE FLASHING SHALL BE SURE-WELD PRE-MOLDED PIPE FLASHING SW-8A AS

SECTION 07900 - SEALANTS

- BREAKERS AND ACCESSORIES REQUIRED, B. INSTALL IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- C. AT JOINTS IN CONCRETE FLOORS, INSTALL SONOLASTIC SLI SELF-LEVELING BY ARCHITECT FROM MANUFACTURER'S PALATE,
- CLASS A, NON SAG. MOVEMENT CAPABILITY OF PLUS 100 PERCENT AND MINUS 50 PERCENT, COLOR TO BE SELECTED BY ARCHITECT FROM MANUFACTURER'S PALATE,
- E, PROVIDE MINIMUM 20 YEAR WARRANTY INCLUDING COVERAGE FOR EXTERIOR SEAL, EXHIBIT LOSS OF ADHESION OR COHESION, OR DO NOT CURE.

SECTION 08110 - HOLLOW METAL DOORS, DOOR FRAMES AND HOLLOW METAL WINDOW FRAMES

- A. DOORS SHALL BE SDI 100, GRADE II, HEAVY DUTY, MODEL 1, FULL FLUSH COLD ROLLED STEEL CONFORMING TO ASTM A-366, INTERIOR FACE SHEETS SHALL BE OF NOT LESS THAN 16 GAUGE, EXTERIOR FACE SHEETS SHALL BE MINIMUM 16 GAUGE, ZINC COATED. FRAMES SHALL BE COMMERCIAL QUALITY, COLD ROLLED STEEL NOT LESS THAN 16 GAUGE, DOORS AND FRAMES SHALL BE FABRICATED WITH NO VISIBLE SEAMS, ALL JOINTS SHALL BE WELDED FULL, GROUND SMOOTH, SANDED AND PRIMED. CORE SHALL BE FOAMED-IN-PLACE POLYURETHANE,
- B, MINIMUM R VALUE OF 12,0 REQUIRED,
- C, DOOR OPERATION MUST CONFORM TEXAS ACCESSIBILITY STANDARDS, FOR DOORS WITH CLOSURES OPENING FORCE SHALL BE LESS THAN 5LBS,
- D. DOORS SHALL BE DESIGNED TO RECEIVE A FULLY MORTISED. _OCKSET AS SPECIFIED, REINFORCE DOORS TO RECEIVE CLOSERS

MANUFACTURED BY CARLISLE SYNTEC INCORPORATED OR APPROVED EQUAL. B, ROOF ACCESS LADDER: IF INDICATED IN THE PLANS, PROVIDE A LOCKABLE ROOF ACCESS LADDER, LOCATIONS TO BE CONFIRMED BY ARCHITECT, THE LADDER SHALL BE COMPRISED OF IX2 T.S. RAILS AND #6 REINFORCING STEEL FOR RUNGS. ALL TUBE STEEL TO RECEIVE CLOSURE PLATES, ALL WELDS TO BE CONTINUOUS AND GROUND SMOOTH, PAINT AS SPECIFIED, COLOR PER ARCHITECT.

A, PROVIDE AND INSTALL ALL SEALERS, PRIMERS, BACKUP MATERIALS, BOND

SEALANT, ASTM C 920, TYPE S, GRADE P, CLASS 25. COLOR TO BE SELECTED D. AT JOINTS AROUND WINDOW AND DOOR FRAMES, AND OTHER THAN CONCRETE FLOORS AND AS INDICATED IN THE DRAWINGS, INSTALL DOW CORNING 790 SILICONE BUILDING EXTERIOR SEALANT, ASTM C 920 CLASS, TYPE II, GRADE NS

SONNEBORNE ISONOLASTIC 150, NP-1 OR NP-2 WILL NOT BE ACCEPTED.

SEALERS AND ACCESSORIES THAT FAIL TO PROVIDE AIR AND WATER TIGHT

SECTION 08710 - FINISH HARDWARE (ALSO, REFER TO DOOR/HARDWARE SCHEDULE) A, IN ADDITION TO HARDWARE SCHEDULED BELOW, PROVIDE ALL NECESSARY STOPS, SILENCERS, WEATHER-STRIPPING, ETC, FOR A COMPLETE INSTALLATION.

- B, TYPICAL EXTERIOR HOLLOW METAL DOOR:
- I, ONE FULLY MORTISED LOCKSET, W/ ENTRANCE FUNCTION,
- 2, 'L' LEVERS ON 'LE-2' ESCUTCHEON,
- 3, FINISH SHALL BE US 26D U.O.N. 4, FIVE KEYS FOR EACH DOOR PLUS TWO MASTER KEYS,
- 5, THREE SILENCERS 6, WEATHER-STRIPPING AND WATER PROOF SWEEP
- 7, 1/2" HIGH THRESHOLD W/ MAX, 1:2 SLOPE PER T.A.S. REQUIREMENTS
- 8, PROVIDE 'R9120 SERIES' CLOSERS AS MANUFACTURED BY RUSSWIN 9. CLOSERS TO BE FULLY ADJUSTABLE TO MEET ACCESSIBILITY
- REQUIREMENTS 10, CLOSER UNIT TO BE PARALLEL ARM STYLE IN SILVER ALUMINUM LACQUER FINISH
- I. PROVIDE MORTISE ELECTRIC LOCKS IN LOCATIONS DESIGNATED ON THE DOOR/HARDWARE SCHEDULE,

SECTION 08800 - GLAZING

- A, FURNISH GLAZING MATERIALS IN ACCORDANCE WITH CPSG ARCHITECTURAL GLAZING STANDARD. FLOAT GLASS TO MEET FED, SPEC. KDD-G-451D, SUBMIT 12" X 12" SAMPLE OF EACH GLASS TYPE TO BE USED, INSTALL TEMPERED GLASS AT DOORS AND ADJACENT TO DOORS/ENTRANCES AS REQUIRED BY LAW. GLAZING IN HAZARDOUS HUMAN IMPACT LOCATIONS SHALL BE TESTED IN ACCORDANCE WITH CPSC 16 CFR 1201 OR ANSI Z97.1 PER SECTION 2406.2 OF 2012 I.B.C.
- B. GLASS TYPES: I. <u>GLASS IN EXTERIOR WINDOWS</u> ; I" THICK INSULATED GLASS PANELS, TYPE I TRANSPARENT FLAT, CLASS 1, LOW E, SHGC 0.31, U-VALUE .27
- 2, TEMPERED GLASS IN EXTERIOR WINDOWS : I" THICK INSULATED GLASS PANELS AT ALL HAZARDOUS LOCATIONS AS REQUIRED BY INTERNATIONAL BUILDING CODE, LOW E, SHGC 0.31, U-VALUE .27
- 3, INTERIOR TEMPERED GLASS IN WALLS : 1/4" THICK TEMPERED GLASS PANELS, CLEAR, C, ACCEPTABLE MANUFACTURER FOR EXTERIOR GLASS; GUARDIAN SNX 5123 CLEAR OR APPROVED EQUAL.
- D. U-FACTORS OF FENESTRATION PRODUCTS (WINDOWS, DOORS AND SKYLIGHTS) SHALL BE DETERMINED IN ACCORDANCE WITH NFRC 100 BY AN ACCREDITED, INDEPENDENT LABORATORY AND LABELED AND CERTIFIED BY THE MANUFACTURER,
- E, SOLAR HEAT GAIN COEFFICIENT OF FENESTRATION PRODUCTS (WINDOWS, DOORS AND SKYLIGHTS) SHALL BE DETERMINED IN ACCORDANCE WITH NERC 200 BY AN ACCREDITED, INDEPENDENT LABORATORY AND LABELED AND CERTIFIED BY THE MANUFACTURER.
- F. IN ACCORDANCE WITH NFRC 400 OR AAMA/WDMW/CSA 101/1.S.2/A440, WINDOWS, SKYLIGHTS, EXTERIOR SLIDING GLASS DOORS AND SWINGING DOORS MUST NOT EXCEED THEIR MAXIMUM AIR INFILTRATION RATE PER SECTION C402,4,3 AND TABLE C402,4,3 OF THE 2012 IECC,

SECTION 09500 - ACOUSTICAL CEILINGS

- A, MANUFACTURERS: ARMSTRONG WORLD INDUSTIES, INC, OR APPROVED EQUAL, B. ACOUSTICAL CEILING GRID - PRELUDE PLUS XL ALUMINUM 15/16" EXPOSED TEE.
- ACOUSTICAL CEILING TILE 24" × 24" OR 24" × 48" AS INDICATED IN THE PLANS OPTIMA 3251 LAY-IN SQUARE EDGE TEGULAR TILES, 9/16 INCH THICKNESS, WHITE SURFACE COLOR
- C. SUPPORT CHANNELS AND HANGERS: GALVANIZED STEEL, SIZE AND TYPE TO SUIT APPLICATION, SEISMIC REQUIREMENTS AND CEILING SYSTEM FLATNESS REQUIREMENTS SPECIFIED BELOW, PERIMETER MOLDINGS: SAME MATERIAL AND FINISH AS GRID, AT EXPOSED GRID, PROVIDE L-SHAPED MOLDING FOR MOUNTING AT SAME ELEVATION AS GRID,
- D, VERIFY EXISTING CONDITIONS BEFORE STARTING WORK, VERIFY THAT LAYOUT OF HANGERS WILL NOT INTERFERE WITH OTHER WORK, E, RIGIDLY SECURE SYSTEM, INCLUDING INCLUDING INTEGRAL ELECTRICAL AND MECHANICAL COMPONENTS, FOR A MAXIMUM DEFLECTION OF 1:360.
- F, LOCATE SYSTEM ON ROOM AXIS ACCORDING TO THE REFLECTED CEILING PLAN, ANY DEVIATIONS MUST BE APPROVED BY THE ARCHITECT,
- G, INSTALL AFTER ALL MAJOR ABOVE CEILING WORK IS COMPLETE, COORDINATE THE LOCATION OF HANGERS WITH OTHER WORK, HANG SUSPENSION SYSTEM INDEPENDENT OF WALLS, COLUMNS, DUCTS, PIPES, AND CONDUITS,
- H, SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6 INCHES OF EACH CORNER OR SUPPORT FIXTURES INDEPENDENTLY,
- I, PERIMETER MOLDINGS SHALL BE INSTALLED USING THE LONGEST PRACTICAL LENGTHS, OVERLAP AND RIVET CORNERS,
- J, TOLERANCES: MAXIMUM VARIATION FROM FLAT AND LEVEL SURFACE: 1/8 INCH IN 10 FEET, MAXIMUM VARIATION FROM PLUMB OF GRID MEMBERS CAUSED BY ECCENTRIC LOADS: 2 DEGREES.

SECTION 09900 - PAINTING

- A, CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND RELATED ITEMS REQUIRED TO COMPLETE THE WORK AS DESCRIBED IN THE DRAWINGS AND THESE SPECIFICATIONS, PAINT FAILURE IS LARGELY DUE TO POOR PREPARATION OF THE SURFACE TO BE PAINTED, FOR THIS PROJECT. THE GUIDE FOR SURFACE PREPARATION WILL BE SHERWIN WILLIAMS' A989 PAINTING AND COATING SYSTEMS FOR SPECIFIERS AND APPLICATORS, VARIOUS SURFACE PREPARATION TECHNIQUES ARE DESCRIBED FOR DIFFERENT MATERIALS AND SITUATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO
- ASCERTAIN THE CORRECT METHOD FOR PREPARING FOR THE SPECIFIC PAINT TO BE USED. THE SURFACES TO BE PAINTED AND THE FINISHES REQUIRED ARE AS FOLOWS:
- B, CONTRACTOR SHALL VERIFY ALL COATINGS DO NOT EXCEED THE VOC LIMIT OF GREEN SEAL GS-11 AS INDICATED IN THE AUSTIN ENERGY GREEN BUILDING COMMERCIAL PROGRAM. I, HOLLOW METAL DOORS AND FRAMES:
- APPLY A SINGLE COAT OF PROCRYL UNIVERSAL PRIMER AND TWO COATS OF SHER-CRYL HPA ACRYLIC PAINT AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY,
- 2, STEEL HANDRAILING, STAIR FRAMES AND TREAD PANS: APPLY A SINGLE COAT OF PROCRYL UNIVERSAL PRIMER AND TWO COATS OF INDUSTRIAL URETHANE ALKYD ENAMEL AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY,

3. INTERIOR WALLS: (IF SHOWN ON THE DRAWINGS)

- a, PRIMER PREPRITE 200 LATEX PRIMER, AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY
- b, TWO COATS PROMAR 200 INTERIOR ALKYD FINISH, AS MANUFACTURED BY THE SHERWIN-WILLIAMS COMPANY, COLOR PER ARCHITECT

SECTION 16720 - SECURITY ACCESS IF REQUIRED BY FIRE MARSHAL

- #3200 KNOX BOX SERIES 3200 KNOX-BOX, RECESSED MOUNTED WITH HINGED DOOR, WITH UL LISTED TAMPER SWITCHES, 1/4" PLATE STEEL HOUSING, 1/2" THICK STEEL DOOR WITH INTERIOR GASKET SEAL AND STAINLESS STEEL DOOR HINGE; COLOR SHALL BE DARK BRONZE, AS MANUFACTURED BY THE KNOX COMPANY, 1600 W. DEER VALLEY ROAD, PHOENIX, AZ, 85027, (800) 552-5669 LOCATE ADJACENT TO FIRE ROOM DOOR, COORDINATE WITH
- FIRE MARSHAL FOR FINAL LOCATION, #4100 KNOX BOX - SERIES 4100 KNOX-BOX, RECESSED MOUNTED, SINGLE LOCK MODEL, WITH UL LISTED TAMPER SWITCHES, 1/4" PLATE STEEL HOUSING, 1/2" THICK STEEL DOOR WITH INTERIOR GASKET SEAL AND STAINLESS STEEL DOOR HINGE, COLOR SHALL BE DARK BRONZE, AS MANUFACTURED BY THE KNOX COMPANY, 1600 W. DEER VALLEY ROAD, PHOENIX, AZ, 85027, (800) 552-5669
 - LOCATE ON BUILDING FACADE, COORDINATE WITH FIRE MARSHAL FOR FINAL LOCATION,

	GENERA	AL STRUC	rur A	AL NOTES
GENI	ERAL NOTES		S2	Structural steel shall be detaile
G1	Building Code: International Building Code (IBC), 2021 International Existing Building Code (IEBC), 2021		S3	All shop and field welding shal
G2	Gravity Load Design Data: Second Floor Dead Load	50 psf	S4	Shop connections shall be well
	Floor Live Load (Office + Partition, Reducible) Floor Live Load (Corridors, Reducible)	65 psf 80 psf	S5	All erection bolts shall be AST
GENI	ERAL CONDITIONS		S6	Design of connections shall be
GC1	The general contractor shall verify all dimensions and cond and shall be responsible for conditions of all work and mate furnished by subcontractors.	litions at the job site, erials, including those		of a registered engineer and s beam connections shall be ca member for the span shown a Ninth Edition.
GC2	Discrepancies and/or variations shall immediately be repo	orted to the architect.	S7	All welds shall be performed u
GC3	Details shown on drawings apply at all like conditions.	rdance with least	58	All structural steel, except emb
GC4	standards and to the applicable provisions of the governing	g building code.	30	rust-inhibitive paint.
GC5	The contract structural drawings and specifications represent structure. Unless otherwise indicated, they do not indicate construction. The contractor shall provide all measures neo- structure, workman, and other persons during construction	ent the finished the method of cessary to protect the	S9	Contractor shall furnish comple by the engineer, and structural part for shop drawing submitta
	include, but not be limited to bracing, shoring for construction for the building, shoring for the earth banks, forms, scaffold	on equipment, shoring ling, planning, safety	MET	AL DECK
	nets, support and bracing for cranes, gin poles, etc. The co and direct the work, and he shall be solely responsible for a	all construction means,	D2	All metal floor deck shall be 1. approved equal. Refer to spec
	methods, techniques, sequences, and procedures. Observely by the architect or the engineer shall not include inspection	vation visits to the site of the above items.	D3	All metal deck panels shall spa
GC6	These drawings show only representative and typical detail contractor. The drawings do not illustrate every condition.	ils to assist the All attachments,	D4	All metal roof deck shall receiv
	connections, fastenings, etc., shall be properly secured in o best practice, and the contractor shall be responsible for p	conformance with the roviding and installing	FOU	NDATIONS
000	them.	-	F1	Shallow foundations have bee 3,000 psf for spread footings /
GC7	The use of reproductions of these contract drawings by any subcontractor, erector, fabricator, or material supplier in lie shop drawings signifies his acceptance of all information s	y contractor, eu of preparation of shown herein as correct, prising due to any errors		geotechnical soils analysis rep prepared by ECS Southwest L
	that may occur hereon.	insing due to any errors	F2	Spread footing and continuous altered without approval by the
		AC1219 Duilding Code		
C1	Requirements for Structural Concrete and, except as modi Documents, shall conform to all requirements of ACI 301, S Structural Concrete.	ACI 318, Building Code ified by these Contract Specifications for		
C2	Concrete specifications shall be as follows:			
	Minimum compressive strength at 28 days (all concrete Air content (foundation concrete) Air content (floor slabs and tilt-wall panels, trowel-finish	e) 3,000 psi 4.5% ± 1.5% ed) 3% maximum		
	Portland cement shall conform to ASTM C150	Туре I / II		
C3	Normal weight concrete shall have a maximum unit weight for normal weight concrete shall conform to ASTM C33, wi aggregate size of 1-inch. Light weight concrete shall have of 110 pcf. Aggregates for light weight concrete shall confo	of 150 pcf. Aggregates th a nominal maximum a maximum unit weight orm to ASTM C330.		
C4	If Fly Ash is used, it shall conform to ASTM C618, Type "F' be a minimum 15% and maximum 25% by mass replacem	' or Type "C" and shall nent of Portland		
C5	Air Entraining admixtures shall not be used in concrete for panels, and any other concrete to receive a trowel-finish.	floor slabs, tilt-wall		
C6	See architectural and mechanical plans for verification of a openings, cast-in-place accessories, etc.	all depressions,		
C7	Job site conditions shall be verified by the contractor prior materials.	to the fabrication of		
C10	All construction joints shall be cleaned with laitance remove is placed. Construction joints below grade shall have water noted.	ed before new concrete rstops, unless otherwise		
C11	Concrete clear cover, unless noted otherwise on the drawi Concrete cast against and permanently exposed to ear Concrete exposed to earth or weather	ngs, shall conform to: rth 3''		
	No. 3 – No. 5 No. 6 and Larger	1½" 2"		
	Slabs on Grade (distance from top of slab)	11⁄2"		
CON	CRETE ANCHORS			
CA1	Shear Studs cast into concrete shall be Nelson fluxed head equal. Studs shall be automatically end welded in the shop welds shall be made in accordance with recommendations Welding Division, Lorain, Ohio. Headed studs shall be ma C1017, or C1020 cold drawn steel conforming to ASTM sp	ded studs or approved or in the field. All stud s of the Nelson Stud nufactured of C1015, pecification A108-58T.		
CA2	Expansion Anchors post-installed into concrete shall be Re Anchor, Hilti Kwik Bolt TZ, Simpson Wedge-All anchors or	ed Head Trubolt Wedge approved equal.		
CA3	Adhesive Anchors and Dowels post-installed into concrete 500 v3 epoxy, Simpson Set-XP epoxy or approved equal.	e shall use Hilti HIT-RE Anchors shall be ASTM		
CA4	Screw Anchors post-installed into concrete shall be Hilti HI Simpson Titen HD screw anchors, or approved equal.	US-EZ screw anchors,		
CA5	Locate existing reinforcement and prestressing tendons prexisting reinforcement or PT tendons. If the anchor or dowe avoid reinforcement or PT tendons, the engineer will determine the tendons of the engineer will determine the tendons of ten	rior to drilling. Do not cut el cannot be shifted to mine a new location.		
CA6	Install Anchors per manufacturer instructions, as included in The Contractor shall arrange an anchor manufacturer's rep onsite installation training for all anchoring products specifi	n the anchor packaging. resentative to provide ied.		

STRUCTURAL STEEL

S1 All wide-flange shapes shall be ASTM A992 (Fy=50 ksi), all tube shapes shall be ASTM A500, Grade B/C (Fy=50 ksi, rectangular shapes), all steel pipe columns shall be ASTM A53, Grade B (Fy=35 ksi), and all other steel shall be ASTM A36. Anchor bolts shall be ASTM F1554, Grade 36. Shear Studs shall be ASTM A29, Fu=65 ksi.

SPECIAL INSPECTIONS

detailed, fabricated, and erected in accordance with AISC	SI1	Special inspections and structural testing shall be provided by an independent agency employed by the Owner for the items identified in this section and in other areas of the approved construction plans and specifications, unless waived by the Building Official (see IBC Chapter 17).
g shall be executed by certified welders in accordance the American Welding Society specifications.	SI2	The names and credentials of the Special Inspectors to be used shall be submitted to the EOR, Owner and Building Officia for approval.
be welded unless noted otherwise. Field connections shall rawings.	SI3	Duties of the Special Inspector: a The Special Inspector shall review all work listed below for conformance with the approved construction plans and
e ASTM A307. All permanent bolts shall be ASTM A325.		specifications and the 2021 IBC. b. The Special Inspector shall furnish special inspection reports to the EOR. Contractor, Owner and Building Official of
hall be performed by the fabricator under the supervision and shall conform to AISC specifications. Non-composite		a weekly basis, or more frequently as required by the Building Official. All items not in compliance shall be brought to the immediate attention of the Contractor for correction, and if uncorrected, to the EOR and the Building Official.
own and the material specified in the AISC Handbook,		c. Once corrections have been made by the Contractor, the Special Inspector shall submit a final signed report to the Building Official stating that the work requiring special inspection was, to the best of the Special Inspector's knowledge in conformance with the approved construction plans and specifications as well as the applicable workmanship
med using E70 electrodes. All fillet welds shall be 1/4"		provisions of the 2021 IBC.
ot embedded items, shall be painted with one shop coat of	SI4	Duties and responsibilities of the Contractor: a. The Contractor shall submit a written statement of responsibility to the Owner and the Building Official prior to the commencement of work. In accordance with IBC 1704.4, the statement of responsibility shall contain acknowledgemer of the special inspection requirements contained within this "Statement of Special Inspections"
complete shop drawings of the structural steel for approval uctural drawings shall not be reproduced in whole or in ubmittals.		 b. The Contractor shall notify the responsible Special Inspector that work is ready for inspection at least one working day (24 hours minimum) before such inspection is required. c. All work requiring special inspection shall remain accessible and exposed until it has been observed by the Special Inspector.
be 1.5", 22 gage type VLI as manufactured by Vulcraft or	SI5	Please see the "Special Inspection Schedule" for the types, extents and frequency of specific items requiring special inspections and structural tests as part of this project.
		SPECIAL INSPECTION SCHEDULE
all span across a minimum of three joists or beams.		Areas requiring special inspection: Frequency Comments: Contin-uous Periodic
receive one shop cost of rust inhibitive point		CONCRETE CONSTRUCTION (IBC 1705.3)
receive one shop coal of rust minipline paint.		Verify size, clearances, splices and proper ties

been designed using an allowable soil bearing value of gs / grade beams in accordance with addendum to the report no 17:4984-A dated December 16, 2024 st LLP.

uous footing dimensions and/or locations may not be y the engineer.

SPECI	AL INSPECT	ION SCHEE	DULE
Areas requiring special inspection:	Freque	ncy Periodic	Comments:
CONCRET	E CONSTRU		C 1705.3)
Reinforcing steel placement		•	Verify size, clearances, splices and proper ties
Embedded bolts or plates		•	Prior to placement of concrete
Verify required design mix	•	•	Verify mix design meets strength and exposure requirements listed on approved plans
Concrete placement/sampling	•		Includes sampling for air, slump, strength and temperature tests
Inspect formwork		•	Verify shape, location and member dimensions
Post-installed anchors	•		In accordance with approved ICC-ES Report (periodic inspections allowed if stated in ES
STRUCTURAL STEEL CO		ON (IBC 17	05.2, 1705.11, 1705.12)
Prior to Welding (Table N5.4-1, AISC 360-10):			
Verify welding procedures	•	•	Verify type/grade of material
Welder identification system		•	Verify system in place to identify the welder for each joint/member
Fit-up of groove welds		•	Verify joint preparation, dimensions (alignment, gaps at root), cleanliness of steel surfaces, tack weld quality/location, and backing type and fit if
Access holes		•	applicable Verify configuration and finish
Fit-up of fillet welds		•	Verify dimensions (alignment, gaps at root), cleanliness of steel surfaces, and tack weld
		· ·	quality/location
During Welding (Table N5.4-2, AISC 360-10): Use of qualified welders			
Control and handling of welding consumables		 ▼ ▲ 	Verify packaging and exposure control
No welding over cracked tack welds		•	Verify wind speed presinitation and
Environmental conditions		•	temperature within limits
WPS followed		•	Verify items including welding equipment settings, travel speed, welding materials, shielding gas type/flow rate, preheat applied, interpass temperature maintained (min/max), and proper position (F, V, H, OH)
Welding techniques		•	Verify interpass and final cleaning, each pass within profile limitations, and quality of each pass
After Welding (Table N5.4-3, AISC 360-10): Welds cleaned		•	
Size, length and location of welds	•	•	
Welds meet visual acceptance criteria	•		Verify crack prohibition, weld/base-material fusion, crater cross section, weld profiles, weld
Arc strikes	•		size, undercut, and porosity
k-area	•		When welding of doubler plates, continuity plates or stiffeners has been performed in web k-area, visually inspect for cracks within 3 inches of k-area
Backing & welding tabs removed	•		Where required by construction documents or approved submittals
Repair activities	•		
Document acceptance/rejection of weld	♦		
CJP welds (Risk Category III & IV)		•	Ultrasonic testing shall be performed on all CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16 inch thick or greater
CJP welds (Risk Category II)		•	Ultrasonic testing shall be performed on 10% of CJP groove welds in butt, T- and corner joints subject to transversely applied tension loading in materials 5/16 inch thick or greater. Testing rate must be increased to 100% if > 5% of welds have unacceptable defects
Access holes (flange > 2")	•		Magnetic particle testing or penetrant testing of each location. Any crack found is unacceptable
Welded joints subject to fatigue	•		Radiographic or ultrasonic testing for all joints,
Other Steel Inspections (Table N5.7, AISC 360-	1 <u>0; Ta</u> bles J8	<u>-1 and</u> J10-	<i>1, AISC 341-10)</i>
Structural steel details		•	Verify compliance with the details shown in the construction documents and approved submittals
Anchor rods and/or embeds supporting structural steel		•	Inspector shall be on the premises during the placement of anchor rods and embeds. Verify location, diameter, grade, type, and length of element and the extent or depth of embedment prior to placement of concrete
Reduced beam sections (RBS)		•	Verify contour and finish as well as dimensional tolerances
Protected zones		•	Verify that no holes or unapproved attachments are made within the protected zone

employed by the Owner for the items ecifications, unless waived by the

ntractor, Owner and Building Official on ot in compliance shall be brought to the R and the Building Official.

ABBREVIATIONS LIST

	AND
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BOS	BOTTOM OF STEEL
вот	BOTTOM / BOTTOM OF
BRG	BEARING
CJ	CONSTRUCTION / CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
DIA. Ø	DIAMETER
(E)	EXISTING
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
ELEV	ELEVATION
EQ	EQUAL
EW	EACHWAY
FNDN	FOUNDATION
FIN FLR	FINISHED FLOOR
FTG	FOOTING
GA	GAGE
GC	GENERAL CONTRACTOR
GYP BD	GYPSUM BOARD
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
INFO	INFORMATION
JBE	JOIST BEARING ELEVATION
JT	JOINT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LEH	LONG EDGE HORIZONTAL
LEV	LONG EDGE VERTICAL
 11 H	
MAX	MAXIMUM
MAX MECH	MAXIMUM MECHANICAL
MAX MECH MFR	MAXIMUM MECHANICAL MANUFACTURER
MAX MECH MFR MIN	MAXIMUM MECHANICAL MANUFACTURER MINIMUM
MAX MECH MFR MIN MISC	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS
MAX MECH MFR MIN MISC MTI	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL
MAX MECH MFR MIN MISC MTL NTS	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE
MAX MECH MFR MIN MISC MTL NTS OC	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER
MAX MECH MFR MIN MISC MTL NTS OC OD	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER
MAX MECH MFR MIN MISC MTL NTS OC OD OPP	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PL PL PLF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PEF PL PLF PSF PSI	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI OTY	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PEF PL PLF PSF PSI QTY REF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PL PLF PSF PSI QTY REF REINF REINF REQD	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PL PLF PSF PSI QTY REF REINF REQD RTU	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEFL DECK INSTITUTE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REINF REQD RTU SDI SIM S.II	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEFL JOIST INSTITUTE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPFCS	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF CONCRETE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF CONCRETE TOP OF FOOTING
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PL PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF CONCRETE TOP OF FOOTING THICKNESS
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF CONCRETE TOP OF FOOTING THICKNESS TOP OF PIER
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP TOS	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OUTSIDE DIAMETER OUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF CONCRETE TOP OF FOOTING THICKNESS TOP OF PIER TOP OF STEEL
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REQD RTU SDI SJI SPECS STL TB TC TF THK TOP TOS TP	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OUTSIDE DIAMETER OUDS DE ACTUATED FASTENER POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF FOOTING THICKNESS TOP OF PIER TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF STEEL
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP TOS TP TRANS	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF FOOTING THICKNESS TOP OF PIER TOP OF STEEL TOP OF PANEL OR TOP PLATE TRANSVERSE
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP TOS TP TRANS (TYP)	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF FOOTING THICKNESS TOP OF PIER TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF PANEL OR TOP PLATE TRANSVERSE TYPICAL
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF PSF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP TOS TP TRANS (TYP) UON	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF FOOTING THICKNESS TOP OF PIER TOP OF STEEL TOP OF STEEL TOP OF STEEL TOP OF PANEL OR TOP PLATE TRANSVERSE TYPICAL UNLESS OTHERWISE NOTED
MAX MECH MFR MIN MISC MTL NTS OC OD OPP PAF PCF PEF PJ PLF PSF PSI QTY REF PSI QTY REF REINF REQD RTU SDI SIM SJI SPECS STL TB TC TF THK TOP TOS TP TRANS (TYP) UON VERT	MAXIMUM MECHANICAL MANUFACTURER MINIMUM MISCELLANEOUS METAL NOT TO SCALE ON CENTER OUTSIDE DIAMETER OPPOSITE POWDER ACTUATED FASTENER POUNDS PER CUBIC FOOT EFFECTIVE PRESTRESS FORCE PANEL JOINT PLATE POUNDS PER LINEAR FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH QUANTITY REFERENCE / REFER TO REINFORCING REQUIRED ROOF TOP UNIT STEEL DECK INSTITUTE SIMILAR STEEL JOIST INSTITUTE SPECIFICATIONS STEEL TOP OF BEAM TOP OF FOOTING THICKNESS TOP OF FIER TOP OF STEEL TOP OF PANEL OR TOP PLATE TRANSVERSE TYPICAL UNLESS OTHERWISE NOTED

GENERAL CONDITIONS	INSTALLATION	PRODUCT SPECIFICATIONS
CODE REQUIREMENTS 1. THE PUBLICATIONS AND STANDARDS OF THE FOLLOWING AUTHORITIES, IN ADDITION TO THOSE SPECIFIED IN RELATED SUPPLEMENTARY CONDITIONS, SHALL BE OBSERVED DURING CONSTRUCTION AND ARE REFERENCED IN THE DOCUMENTATION	GENERAL REQUIREMENTS 1. THE CONTRACTOR SHALL PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT. THE CONCRETE SHALL PROTRUDE 3" PAST THE EDGE OF THE ELECTRICAL EQUIPMENT ON ALL SIDES. THE CONCRETE PAD SHALL BE 6"	GENERAL REQUIREMENTS 1. COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS S RESPONSIBILITY OF PROVIDING EQUIPMENT THAT IS NEW, PROPERLY DESIGNATION OF THE CONTRACT DOCUMENTS OF THE DOCUMENT OF THE DOCUMENTS OF THE DOCUME
BY THE ABBREVIATIONS NOTED: 1.1. UNITED STATES OF AMERICA STANDARDS INSTITUTE - USASI	TALL AND CONTAIN A 1/2" CHAMFER ON ALL SIDES. PROVIDE A MINIMUM OF 3000 PSI CONCRETE AND #4 REBAR.2. ALL TERMINALS, LUGS AND BUS JOINTS SHALL BE TIGHTENED PER THE MANUFACTURER'S TORQUE RECOMMENDATIONS. THE	 FULL WORKING ORDER. IF CONFLICTS BETWEEN THE SPECIFICATIONS AND DRAWINGS OCCUR, THE AND INSTALLED, WHEN CONFLICTS EXIST. CONTRACTOR SHALL PROVIDE A
 1.2. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS - IEEE 1.3. NATIONAL ELECTRICAL CODE - NEC 	ELECTRICAL CONTRACTOR SHALL PROVIDE A LETTER TO THE ELECTRICAL INSPECTOR STATING WHEN IT WAS COMPLETED. 3. NO FOREIGN SYSTEMS SUCH AS PIPING, DUCT WORK, ETC SHALL BE INSTALLED ABOVE ELECTRICAL EQUIPMENT.	ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL EX CONTRACTOR'S FAILURE TO OBTAIN CLARIFICATION.
1.4. NATIONAL FIRE PROTECTION ASSOCIATION - NFPA	4. PROVIDE SLEEVES FOR PENETRATIONS THROUGH WALLS/FLOORS. SEAL ALL OPENINGS. USE FIRE-RATED SEALANT FOR OPENINGS IN RATED WALLS.	3. ALL ELECTRICAL EQUIPMENT ENCLOSURES SHALL BE 16 GAUGE SHEET ME CORROSION RESISTANT PAINT SYSTEM, PROVIDED WITH CONTINUOUSLY H
1.6. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION - NEMA	5. PERFORM GROUND PENETRATING RADAR SCAN BEFORE CUTTING EXISTING STRUCTURES. COORDINATE LOCATIONS WITH STRUCTURAL ENGINEER/ARCHITECT.	4. EQUIPMENT TO BE INSTALLED OUTDOORS SHALL HAVE NEMA 3R ENCLOSUF ENVIRONMENTS SHALL BE RATED FOR THE INTENDED USE.
1.7. CERTIFIED BALLAST MANUFACTURERS - CBM 1.8. AMERICAN SOCIETY FOR TESTING AND MATERIALS - ASTM	CONDUCTORS AND CABLES 1. ALL BUILDING WIRING SHALL BE INSULATED COPPER CONDUCTORS RUN FROM LOAD TO SOURCE INSIDE RACEWAY, CONTINUOUS	CONDUCTORS AND CABLES 1. THHN/THWN SOFT DRAWN, STRANDED COPPER, XHHW FOR UG, USE SOLID
 OCCUPATIONAL SAFETY AND HEALTH ACT - OSHA U.N.O., EQUIPMENT AND DEVICES SHALL BE MOUNTED PER ADA AND TAS REQUIREMENTS. 	 (WITHOUT SPLICES) BETWEEN JUNCTION AND PULL BOXES, AND EXPOSED INSIDE PANELS ONLY. 2. ALL SINGLE POLE CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR ROUTED TO THE SOURCE PANEL. 	RACEWAY AND BOXES
2.1. OPERABLE DEVICES (SWITCHES, CARD READERS, ETC) AT OR BELOW 48" AFF 2.2. RECEPTACLES, TELEPHONE AND DATA OUTLETS AT 18" AFE (15" MIN TO BOTTOM OF DEVICE), LINO	3. FIELD VERIFY WHETHER A NEUTRAL IS REQUIRED FOR ALL TWO AND THREE POLE CIRCUITS. FOR ALL LOADS EXCEPT MOTORS, A NEUTRAL IS ASSUMED TO BE REQUIRED UNLESS FIELD DETERMINED TO BE UNNECESSARY.	TRANSFORMERS
 THE CONTRACTOR SHALL COMPLY WITH THE MOST RECENTLY REVISED VERSIONS OF ALL APPLICABLE REQUIREMENTS OF LAWS, BULES REGULATIONS CODES AND ORDINANCES OF EEDERAL STATE AND LOCAL AUTHORITIES HAVING JURISDICTION AND ALL 	4. ALL POWER & CONTROL WIRING ROUTED THROUGH RETURN AIR PLENUMS SHALL BE PLENUM RATED.	1. ALL DRY-TYPE DISTRIBUTION TRANSFORMERS 15KVA AND LARGER SHALL C ENERGY STAR RATED.
EQUIPMENT AND MATERIALS SHALL COMPLY WITH SAID AUTHORITIES WHETHER INDICATED ON THE CONTRACT DOCUMENTS OR NOT. ALL WORK SHALL BE PERFORMED PER 2014 NEC, AND CITY OF LEANDER AMENDMENTS. MODIFICATIONS REQUIRED BY THE	 6. 120V, 20A. HOME RUNS LONGER THAN 100' AND 277V, 20A. HOME RUNS LONGER THAN 150' SHALL BE #10 MIN. 	PANELBOARDS 1. PROVIDE ALL PANELS WITH COPPER PHASE, NEUTRAL, GROUND BUSES; 42
ABOVE SAID AUTHORITIES HAVING JURISDICTION SHALL BE MADE WITHOUT ADDITIONAL CHARGE TO THE OWNER. SCOPE OF WORK	GROUNDING AND BONDING 1. ALL RACEWAYS AND CIRCUITS SHALL BE PROVIDED WITH A NEC 250 COMPLIANT GREEN GROUND CONDUCTOR.	2. ALL BRANCH CIRCUIT BREAKERS SHALL BE BOLT ON TYPE THERMAL MAGNE POLES, HACR RATED FOR MECHANICAL LOADS.
 THE SCOPE OF WORK SHALL INCLUDE COMPLETE PROVISIONS FOR ELECTRICAL POWER DISTRIBUTION TO ALL LIGHTING, DEVICES, APPLIANCES, AND EQUIPMENT SHOWN ON THE CONSTRUCTION DOCUMENTS. 	2. ALL EQUIPMENT SHALL BE PROPERLY BONDED. 5. LIPON COMPLETION OF THE WORK, ALL PARTS OF THE ELECTRICAL INSTALLATION SHALL BE MEGGER TESTED AND PROVED TO BE	 PROVIDE ADJUSTABLE TRIP SETTINGS FOR DISTRIBUTION BREAKERS. UNO: PROVIDE CONTINUOUSLY HINGED DOOR AND FRONT COVER LATCH AND KE
1.1. PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, ALL SUPPLIES, MATERIALS, EQUIPMENT, TOOLS AND LABOR. 1.2. PROVISIONS ALSO INCLUDE ALL MISCELLANEOUS MATERIALS REQUIRED TO COMPLETE THE WORK SHOWN INCLUDING. BUT	FREE OF UNWANTED GROUNDS AND OTHER DEFECTS.AT A MINIMUM. A GROUNDING ELECTRODE CONDUCTOR. SIZED PER NEC ARTICLE 250. SHALL BE CONNECTED FROM THE GROUND	WIRING DEVICES
NOT LIMITED TO, SUPPORTS, HANGERS, RACEWAYS, BOXES, SLEEVES, SEALS, EQUIPMENT PADS, WIRING CONNECTORS, TERMINALS, LABELS, SIGNS, AND MARKERS.	BUS OF THE SERVICE ENTRANCE DISCONNECT TO A 3/4"x10' COPPER CLAD STEEL GROUND ROD, TO THE BUILDING METAL COLD WATER AND GAS PIPING AT THE POINT OF ENTRANCE INTO THE BUILDING, STRUCTURAL STEEL, AND 20' OF BARE COPPER	 WIRING DEVICES SHALL BE COMMERCIAL GRADE (MIN), GROUNDING, AND R SURFACE MOUNTED RACEWAY FOR RECEPTACLES AND DATA OUTLETS SHALL BECE DESIGN WITH METAL BASE AND SNAP ON METAL COVER ASSEMBLE
1.3. THE CONSTRUCTION DOCUMENTS INCLUDE ALL PLANS, ELEVATIONS, DETAILS, DIAGRAMS, SCHEDULES, AND NOTES ON THE DRAWINGS AND THE WRITTEN SPECIFICATIONS INCLUDING ANY ITEMS MENTIONED IN EITHER THE SPECIFICATIONS OR ON	 ROUTING OF GROUNDING ELECTRODE CONDUCTORS SHALL BE IN METAL CONDUIT IN ALL LOCATIONS THAT ARE SUBJECT TO RUMINAL ADVISE OF SNULLENTAL DESTEDIORATION AUXILIARY STATEMENTS AND ADVISED AVAILABLE AV	BY 1.5" DEEP. DEVICE BRACKETS AND COVER PLATES THAT WILL ACCEPT D MOUNTING PLATES WITHOUT FIELD CUTTING MUST BE AVAILABLE FROM TH
THE DRAWINGS BUT NOT IN THE OTHER. 1.4. WHERE USED ON THE PLANS AND IN THE SPECIFICATIONS AND WHERE NOT SPECIFICALLY NOTED OTHERWISE, THE TERM	 PROVIDE A #4 GROUND FROM THE SERVICE ENTRANCE GROUND BUS TO ALL TELEPHONE SERVICE BOARDS AND 2000 AUX FROM THE SERVICE ENTRANCE GROUND BUS TO ALL TELEPHONE SERVICE BOARDS AND 	ENCLOSED SWITCHES AND CONTACTORS
"PROVIDE" AND THE TERM "INSTALL" SHALL MEAN FURNISH, INSTALL, CONNECT AND TEST. 1.5. UNLESS EXPLICITLY NOTED "BY OTHERS" OR "EXISTING", ALL ITEMS SHOWN GRAPHICALLY OR SPECIFIED BY NOTES AND	COMMUNICATIONS EQUIPMENT ROOMS AND TERMINATE AT A GROUND BUS. HANGERS AND SUPPORTS	AND OFF POSITIONS, FULLY HINGED DOOR THAT IS LOCKED WHEN ENERGIZ TO OPEN ENCLOSURE WHEN ENERGIZED.
DETAILS ON THE PLANS SHALL BE FURNISHED, INSTALLED, CONNECTED, AND TESTED AS NEEDED. 2. ADDITIONALLY, THE SCOPE OF WORK SHALL INCLUDE	 SUPPORT RACEWAYS USING GALVANIZED STEEL OR MALLEABLE IRON STRAPS; CHANNEL OR PIPE CLAMPS AS APPROPRIATE. PROVIDE SUPPORTS AT ALL BOXES, ELEC. EQUIP., LOADS, & AT CODE REQUIRED INTERVALS ALONG RACEWAYS. 	2. ENCLOSED MOTOR STARTERS SHALL HAVE REMOTE START SIGNAL INPUT, PRIMARY & SECONDARY FUSING, HAND-OFF-AUTO SELECTOR SWITCH, (2) N
2.1. APPLICATION FOR TEMPORARY AND PERMANENT ELECTRICAL SERVICE, PERMITTING, AND INSPECTION.2.2. TESTING AND COMMISSIONING.	3. GROUP RELATED RACEWAYS AND SUPPORT USING STEEL CHANNEL CONDUIT RACKS WITH 25% SPARE CAPACITY.	DRY CONTACTS. COORDINATE CPT VOLTAGE WITH CONTRACTOR PROVIDIN
2.3. EQUIPMENT RENTAL.	ETC.	1. ALL LIGHT FIXTURES/LAMPS SHALL BE UL LISTED AND CONFORM TO ALL AP 2. REFER TO LUMINAIRE SCHEDULE FOR FIXTURE BALLAST AND LAMP SPECIE
 2.4. LEIVIFORART CONSTRUCTION POWER AND LIGHTING. 2.5. PROVISIONS FOR MAINTAINING THE FUNCTIONALITY OF EXISTING TO REMAIN BUILDING COMMUNICATIONS, FIRE ALARM, SECURITY/ACCESS CONTROL BURLIC ADDRESS AND BELL SYSTEMS THAT WILL BE AFFECTED BY THE WORK. 	PROVIDE COMPLETE RACEWAY SYSTEMS FROM SOURCE TO ALL LOADS WITH DEDICATED SUPPORTS FOR EACH RACEWAY ELEMENT	PRIOR TO BID.
SECURITY/ACCESS CONTROL, PUBLIC ADDRESS, AND BELL SYSTEMS THAT WILL BE AFFECTED BY THE WORK.	 PROVIDE ALL REQUIRED BOXES & SUPPORTS FOR WIRING DEVICES, TELECOMMUNICATIONS, FIRE ALARM, ACCESS CONTROL, CONTROLS FOLIDMENT ALARMS, SENSORS, ETC. 	
1. PRODUCT DATA: SUBMIT CATALOG DATA SHOWING MANUFACTURER'S NAME AND CONTACT INFORMATION, ALL STANDARD FEATURES, AMPERAGE, VOLTAGE, AIC RATINGS, DIMENSIONS, WEIGHTS, LISTINGS & PRODUCT LABELS, MATERIAL TYPES, EINISHES AND CLEARLY INDICATING WHICH OPTIONAL FEATURES WILL BE DROVIDED.	 PROVIDE PULL BOXES AT APPROPRIATE LOCATIONS FOR ALL POWER AND SPECIAL SYSTEMS RACEWAYS WHETHER SHOWN ON PLANS OR NOT INSTALL IN CONCEALED ACCESSIBLE LOCATIONS 	
1.1. WHERE MULTIPLE SIZES ARE LISTED, INDICATE SIZES TO BE USED.	 DO NOT INSTALL RACEWAY WITH MORE THAN THE EQUIVALENT OF THREE NINETY DEGREE BENDS BETWEEN PULL POINTS. THE COMPLET DO VENUE OF THEORY OF THE COMPLETE THE COMPLET	
 WHERE MULTIPLE PRODUCTS ARE SHOWN ON THE SAME PAGE, INDICATE WHICH PRODUCTS TO BE USED. SHOP DRAWINGS (WHERE APPLICABLE): MANUFACTURER OR CONTRACTOR PREPARED DRAWINGS SHOWING ALL RELEVANT 	 THE CONDUIT ROUTING SHOWN ON THESE PLANS IS DIAGRAMMATIC. COORDINATE INTERIOR ROUTING WITH OTHER TRADES; STRUCTURE; NEW AND EXISTING UTILITIES, DUCTWORK, PIPING; AND 	RACEWAY AND BOX SPECIFICATIONS BY LOCATION
DIMENSIONS, WEIGHTS, ELECTRICAL & MECHANICAL CONNECTION REQUIREMENTS, CONDUIT ENTRY POINTS, ASSEMBLY REQUIREMENTS, LIFTING REQUIREMENTS, LIFTING POINTS, REQUIRED CLEARANCES. INCLUDE PLAN VIEWS & ELEVATIONS.	OTHER EXISTING CONDITIONS AS REQUIRED FOR A COMPLETE, CONFLICT FREE INSTALLATION. 7. COORDINATE SITE ROUTING WITH OTHER TRADES; STRUCTURE; NEW AND EXISTING BURIED UTILITIES, PAVED AREAS, CONDUIT	GENERAL REQUIREMENTS 1. PROVIDE RACEWAY AND BOXES AS SPECIFIED BELOW FOR POWER, LIGHTII
2.1. INCLUDE ALL RELEVANT ELECTRICAL DIAGRAMS INCLUDING SCHEMATIC AND INTERCONNECTION DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.	SLEEVES, AND LANDSCAPING BEFORE DIGGING TO AVOID CONFLICTS, DAMAGE, AND TO ALLOW FOR FUTURE INSTALLATIONS.8.ROUTE RACEWAYS PARALLEL AND PERPENDICULAR TO WALLS, FLOORS, AND CEILINGS.	 CONTROL/SECURITY, CONTROLS, AND OTHER SPECIAL SYSTEMS. PROVIDE RACEWAY AND BOXES FOR ALL EQUIPMENT; LIGHTING; WIRING DE FIRE ALARM FOUNDMENT, APPLIANCES, AND DEVICES: ACCESS CONTROL/SE
COORDINATION 1. ALL POWER OUTAGES SHALL BE COORDINATED IN WRITING WITH OWNER ONE (1) WEEK (MIN) PRIOR TO THE OUTAGE.	9. ROUTE EXPOSED CONDUIT PARALLEL AND TIGHT TO STRUCTURAL ELEMENTS. FOLLOW ALL SURFACE CONTOURS; DO NOT ROUTE IN FREE AIR FROM POINT TO POINT.	 SPECIAL SYSTEMS SHOWN ON PLANS. PROVIDE RACEWAY BOXES AT OTHER LOCATIONS AS REQUIRED FOR SPLICE
2. COOPERATE FULLY WITH THE OWNER OR HIS REPRESENTATIVE DURING CONSTRUCTION OPERATIONS TO MINIMIZE CONFLICTS AND TO FACILITATE OWNER USAGE SO AS NOT TO INTERFERE WITH THE OWNER'S OPERATIONS.	10. INSTALL RACEWAYS SO THAT IT DRAINS TO JUNCTION AND PULL BOXES TO AVOID MOISTURE TRAPS AT LOW POINTS; INSTALL JUNCTION BOX WITH DRAIN FITTING AT LOW POINTS IN CONDUIT SYSTEM.	AND COMPLIANCE WITH REGULATORY REQUIREMENTS. RACEWAY AND BO DIMENSIONED. PROVIDE RACEWAY TO COMPLETE WIRING SYSTEM.
3. THE DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW SWITCHES, POWER AND DATA OUTLETS, SPECIAL SYSTEMS COMPONENTS (FA, ACCESS CONTROL, A/V, ETC), ELECTRICAL EQUIPMENT, EQUIPMENT CONNECTIONS, REQUIRED RACEWAY,	11. INSTALL FITTINGS TO ACCOMMODATE EXPANSION AND DEFLECTION WHERE RACEWAY CROSSES SEISMIC, CONTROL, AND EXPANSION JOINTS.	UNDERGROUND: 1. PROVIDE WRAPPED RIGID STEEL CONDUIT WHERE ENTERING/EXITING SLAP
STRUCTURAL MECHANICAL, PLUMBING, FIRE PROTECTION, AND SPECIAL SYSTEMS PLANS TO IDENTIFY CONFLICTS AND AREAS THAT REQUIRE COORDINATION.	 INSTALL SUITABLE PULL STRING OR CORD IN EACH EMPTY RACEWAY, LABEL, AND CAP. CLOSE ENDS AND UNUSED OPENINGS IN SURFACE RACEWAYS, WIREWAY, BOXES, AND ENCLOSURES. 	 PROVIDE THICKWALL NONMETALLIC CONDUIT FOR STRAIGHT RUNS THAT A PROVIDE CAST METAL BOXES OR POLYMER CONCRETE BOXES. COORDINA PROVIDE POXES FOR UTILITY SERVICE CONDUIT OR CARLING REPUTILITY
 COORDINATE ELECTRICAL AND SPECIAL SYSTEMS EQUIPMENT ROUGH-IN WITH FURNITURE, MILLWORK, SIGNS, MECHANICAL AND PLUMBING SYSTEMS. SPRINKLER SYSTEMS. ARCHITECTURAL AND STRUCTURAL ELEMENTS. AND THE OWNER'S 	14. WHERE POSSIBLE, ALL CONDUIT ROUTED THROUGH ROOF STRUCTURE SHALL SHARE COMMON PENETRATIONS AS MECHANICAL DUCTWORK OR PIPING. COORDINATE WITH MECHANICAL CONTRACTOR.	 PROVIDE BOXES FOR UTILITY SERVICE CONDUIT OR CABLING PER UTILITY F NONMETALLIC HANDHOLES MAY BE USED FOR SITE LIGHTING AND CONTRO PROVIDE RIGID STEEL CONDUIT WITHIN 5 FT OF BUILDING FOUNDATION.
REPRESENTATIVE. MINOR CHANGES IN ELECTRICAL EQUIPMENT LOCATIONS AND LAYOUT THAT ARE REQUIRED BY SITE CONDITIONS OR ORDERED BY THE DESIGN TEAM PRIOR TO PERFORMANCE OF WORK SHALL BE MADE BY THE CONTRACTOR	15. ALL ROOF AND WALL PENETRATIONS SHALL BE FLASHED AND SEALED TO MAINTAIN THE FIRE RATING AND WATERPROOFING OF THE STRUCTURE PER THE MANUFACTURER OF THE MATERIAL'S RECOMMENDED PRACTICES.	IN CONCRETE 1. PROVIDE WRAPPED RIGID STEEL CONDUIT WHERE ENTERING OR EXITING O
 WITHOUT ADDITIONAL CHARGES TO THE OWNER. 5. MAINTAIN REQUIRED NEC WORKING SPACE AND DEDICATED EQUIPMENT SPACE AROUND ALL ELECTRICAL EQUIPMENT, 	 USE MULTI-GANG BOXES IN ALL POSSIBLE LOCATIONS. PAINT EXPOSED RACEWAYS AND BOXES TO MATCH THE SURFACE TO WHICH THEY ARE ATTACHED. 	 PROVIDE THICKWALL NONMETALLIC CONDUIT FOR STRAIGHT RUNS IN CON PROVIDE CAST METAL BOXES. NONMETALLIC MAY BE USED ONLY WITH EN USE CONCRETE TIGHT. MASONRY RATED BOXES AND FITTINGS WHERE INS
TRADES. IF CLEARANCE CANNOT BE PROVIDED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ROUGH-IN.	18. ALL CONDUIT SHALL HAVE AN NEC COMPLIANT GROUND AND AN INSULATED THROAT BUSHING IN PLACE FOR PULLING CONDUCTORS.	EXTERIOR ABOVE GRADE AND WET/DAMP INTERIOR LOCATIONS: 1. PROVIDE RIGID STEEL CONDUIT AND FITTINGS.
6. COORDINATE COLOR SELECTIONS FOR LUMINAIRES AND ALL DEVICE PLATES WITH ARCHITECT. QUALIFICATIONS	19. ALL CONNECTIONS TO MOTORS, INSTRUMENTS, MACHINES, AND EQUIPMENT SUBJECT TO MOVEMENT OR VIBRATION SHALL BE MADE USING LIQUID-TIGHT, FLEXIBLE METAL CONDUIT (LFMC), (3FT MAX).	PROVIDE CAST METAL OUTLET, JUNCTION, AND PULL BOXES, GASKETED, R. <u>CONCEALED DRY INTERIOR LOCATIONS:</u> <u>1 PROVIDE RIGID STEEL CONDUIT INTERMEDIATE METAL CONDUIT OR ELEC</u>
1. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SHOWN ON THE CONSTRUCTION DOCUMENTS WITH MINIMUM THREE YEARS DOCUMENTED EXPERIENCE	WIRING DEVICES	 PROVIDE SHEET-METAL BOXES. <u>EXPOSED DRY INTERIOR LOCATIONS:</u>
2. INSTALLER: A STATE LICENSED ELECTRICIAN WITH DOCUMENTED EXPERIENCE INSTALLING ALL EQUIPMENT SPECIFIED HERE IN SHALL DIRECTLY SUPERVISE ALL WORK. WHERE NOTED IN THE SPECIFICATIONS, REQUIRED BY CODE, OR REQUIRED BY THE MANUEACTURED, INSTALLER SHALL BE A MANUEACTURED TRAINED AND/OR CERTIFIED INSTALLER OF THE SPECIFIC PRODUCT.	 DUPLEX RECEPTACLES MOUNTED ON OPPOSITE SIDES OF A COMMON WALLS SHALL BE A MINIMUM OF 12" APART. (NO BACK TO BACK OUTLETS) TO REDUCE NOISE TRANSFER JUNCTION BOXES IN ADJACENT ROOMS SHALL NOT BE INSTALLED IN THE SAME 	 PROVIDE RIGID STEEL CONDUIT BELOW 10 FEET, AND RIGID STEEL, INTERM ABOVE 10 FEET. PROVIDE SHEET-METAL BOXES
TO BE INSTALLED.	WALL CAVITY. SEPARATE ALL JUNCTION BOXES BY AT LEAST ONE FRAMING MEMBER. 3. PROVIDE GFI RECEPTACLES & DIMMERS WITH DEDICATED NEUTRALS INDEPENDENT OF OTHER LOADS ON THE CIRCUIT.	
PERFORMED BY AN AGENCY WITH DOCUMENTED EXPERIENCE AND PROPERLY CALIBRATED, FULLY FUNCTIONING EQUIPMENT, THAT IS A MEMBER OF THE INTERNATIONAL ELECTRICAL TESTING ASSOCIATION OR IS A NATIONALLY RECOGNIZED TESTING	ENCLOSED SWITCHES AND CONTACTORS	
LABORATORY (NRTL), AND IS ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. QUALITY ASSURANCE	1. TO FACILITATE ON EINERINAND REFLACEMENT OF EQUIPMENT, PROVIDE ALL STARTERS AND DISCONNECTS WITH LOTO PROVISIONS. MOUNT STARTERS AND DISCONNECTS SERVING HVAC FOUNDMENT TO STRUCTURE AD IACENT TO FOUNDMENT SERVICE DATUES	
1. UNLESS OTHERWISE APPROVED, ALL EQUIPMENT SHALL BE NEW, PROPERLY DESIGNED, FROM A REPUTABLE MANUFACTURER MEETING THE SPECIFICATION QUALIFICATIONS, IN COMPLIANCE WITH THE SPECIFICATION REQUIREMENTS, AND IN FULL	THAN MOUNTING DIRECTLY TO THE EQUIPMENT. THIS INCLUDES U-CHANNEL SUPPORT AND 120V MAINTENANCE RECEPTACLE FOR ROOF MOUNTED EQUIPMENT. PROVIDE WORKING SPACE PER NEC REQUIREMENTS.	
2. WHERE TWO OR MORE ITEMS OF THE SAME CLASS OF EQUIPMENT ARE REQUIRED, THESE ITEMS SHALL BE PRODUCTS OF A	LIGHTING 1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LIGHT FIXTURE LOCATIONS AND OUTANTITIES	
MANUFACTURER UNLESS STATED IN THE TECHNICAL SECTION.	2. EXAMINE THE AREA OF INSTALLATION TO VERIFY ADEQUATE SPACE AND MOUNTING PROVISIONS ARE PROVIDED FOR THE SPECIFIED LUMINAIRE PRIOR TO ORDERING LUMINAIRES.	SPECIAL SYSTEMS NOTES 1. SPECIAL SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO TELECOMMUNICATION.
LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION AND MARKED FOR THE INTENDED USE. TESTING AGENCY SHALL BE UL UNLESS NOTED OTHERWISE OR PRE-APPROVED BY OWNER	3. VERIFY THAT LUMINAIRES WILL NOT INTERFERE WITH REQUIRED CLEARANCES FOR EQUIPMENT INCLUDING FILTER PULL SPACE, NEC WORKING SPACE IN FRONT OF DISCONNECTS, CONTROL PANELS, ETC.	SYSTEMS. 2. FOR SPECIAL SYSTEMS EQUIPMENT AND DEVICES SHOWN ON THE CONSTI-
AND AHJ. 4. ALL EQUIPMENT USED FOR TESTING SHALL BE IN FULL WORKING ORDER AND CALIBRATED PER THE MANUFACTURER'S	 COORDINATE EXIT LIGHT LOCATIONS WITH STRUCTURE AND BUILDING SYSTEMS TO INSURE EXIT SIGNS ARE VISIBLE. PROVIDE GROUND WIRE AND ONE NEUTRAL CONDUCTOR PER CIRCUIT IN ALL LIGHTING CONDUCT. 	RESPONSIBLE FOR POWER, RACEWAY/BOX/ENCLOSURES ROUGH-IN, AND SYSTEMS ARE PROVIDED BY A SPECIALIST CONTRACTOR. OWNER'S AGEN
RECOMMENDATIONS. DELIVERY AND STORAGE	6. LABEL ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING.	3. TELECOMMUNICATIONS: IT CABLING, JACKS, EQUIPMENT RACKS, NETWOR PROVIDED AND INSTALLED BY TELECOM CONTRACTOR. ALL OTHER WORK
1. STORE ALL ELECTIRCAL/SPECIAL SYSTEMS EQUIPMENT/MATERIALS IN CLEAN, DRY SPACE LOCATED ABOVE GRADE. PROTECT FROM DIRT, WATER, CONSTRUCTION DEBRIS, TRAFFIC, FREEZE, AND DETERIORATION FROM SUN LIGHT.	SHALL BE CONNECTED TO THE SWITCHED AREA LIGHTING CIRCUIT FOR NORMAL OPERATION AND AN UNSWITCHED CIRCUIT FROM THE SAME OCPD TO AUTOMATICALLY CONTROL POWER TRANSFER TO AN INTEGRAL BATTERY PACK FOR 90 MINUTES OF	 FIRE ALARMI: CONTROL PANELS, MODULES, NOTIFICATION APPLIANCES, INI MATERIALS SHALL BE PROVIDED BY SPECIALIST FIRE ALARM CONTRACTOR AUDIO/VIDEO: COORDINATE SCOPE WITH OWNER PRIOR TO BID
2. MAINTAIN FACTORY WRAPPING OR PROVIDE APPROPRIATE COVER FOR ALL LARGE ELECTRICAL EQUIPMENT. FOLLOW ALL MANUFACTURER RECOMMENDATIONS FOR HUMIDITY AND MAX/MIN TEMPERATURES FOR STORING ELECTRICAL EQUIPMENT.	EMERGENCY OPERATION WHEN LOSS OF NORMAL POWER IS SENSED ON THE UNSWITCHED CIRCUIT. PROVIDE A BATTERY STATUS INDICATOR MOUNTED IN A VISIBLE LOCATION.	 ACCESS CONTROL (SECURITY): COORDINATE SCOPE WITH OWNER PRIOR COORDINATE REQUIREMENTS FOR DATA ROOMS WITH OWNER'S INFORMA
IDENTIFICATION 1. PROVIDE APPROPRIATE LABELS AND WARNING SIGNS FOR ALL EQUIPMENT, WIRING DEVICES, CONDUCTORS, CABLES, BOX, AND	8. INSTALL FIXTURES PLUMB, SQUARE AND LEVEL WITH CEILINGS AND WALLS AND SECURE FIXTURES PER MANUFACTURER'S PRINTED INSTRUCTIONS.	 AT MINIMUM, THE FOLLOWING GENERAL PROVISIONS SHALL BE PROVIDED ELSEWHERE ON THE CONSTRUCTION DOCUMENTS: 8.1. 3/4", FIRE RATED, PLYWOOD SHEETS ON ALL WALLS OF IT CLOSETS UN
 ENCLOSURES. PROVIDE BURIED DETECTABLE WARNIGN TABLE FOR UNDERGROUND CONDUITS. CONDUCTOR TAGGING: TAG ALL CONDUCTORS AT MOTOR CONTROLS, PANELS, TERMINAL CABINETS AND JUNCTION BOXES. 	 ADJUST AIMABLE FIXTURES, CLEAN, AND PROVIDED ALL FIXTURES WITH LAMPS PRIOR TO OWNER OCCUPANCY. U.N.O., LIGHTING SWITCHES IN ROOMS SHALL CONTROL ONLY FIXTURES IN THAT ROOM. 	8.2. SERVICE CONDUITS BURIED IN SAND AT 18" WITH PULL STRING FROM
 AG CIRCUITS WHICH PASS THROUGH OTHER DEVICES SUCH AS LIGHTING CONTACTORS. PROVIDE A TYPED PANEL DIRECTORY FOR EACH PANEL PROVIDED OR MODIFIED FOR THIS PROJECT. DIRECTORY SHALL 	 WHEN MORE THAN ONE(1) LIGHTING SWITCH IS SHOWN AT A LOCATION THEY SHALL BE GANGED TOGETHER. LUMINAIRE WHIPS SHALL BE FLEXIBLE METAL CONDUIT, 6FT MAX. SECURE TO STRUCTURE WITH LISTED SUPPORTS 	8.3. DOUBLE GANG DEVICE BOX WITH SINGLE GANG REDUCER (AS NEEDED
IDENTIFY THE CIRCUIT NUMBER, LOADS SERVED, AND LOCATION OF LOADS BY ROOM NUMBER. MOUNT ON INSIDE OF EACH PANEL AND FILE THEM WITH THE OWNER WHEN THE WORK IS COMPLETED.	LIGHTING CONTROL REQUIREMENTS	SOME SPECIAL SYSTEMS EQUIPMENT MAY REQUIRE A DIFFERENT SIZE WITH RESPECTIVE SPECIALIST CONTRACTORS PRIOR TO ROUGH-IN.
 PROVIDE EACH PANEL WITH A MANUFACTURER PREPARED ARC FLASH HAZARD WARNING LABEL. ALL ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED BY MEANS OF 3"X1" (MIN)NAMEPLATES PERMANENTLY ATTACHED TO THE EQUIPMENT DI ATTACHED TO THE EQUIPM	SET SUCH THAT THE LUMINAIRES ARE SWITCHED OFF WHEN APPROPRIATE FC LEVEL IS MEASURED ON THE FLOOR (REGARDLESS OF THE FOOTCANDLES MEASURED AT THE OCCUPANCY SENSOR).	8.4. CONDUIT WITH PULL STRINGS FROM <u>ACCESSIBLE CEILING SPACE</u> TO A HOMERUN CONDUITS MAY BE COMBINED WHERE APPROVED BY SPEC WITH RESPECTIVE SPECIALIST CONTRACTORS PRIOR TO INSTALLATION
EQUIPMENT, PLATES SHALL BE METAL, PLASTIC, OR SIMILAR, BLACK WITH 1/4"h (MIN) ENGRAVED WHITE LETTERS. 6. JUNCTION AND PULL BOXES SHALL BE LABELED WITH PANEL NAME, CIRCUIT #, AND VOLTAGE.	2. INSTALL DIMMER SWITCHES ON THE LOAD SIDE OF OCCUPANCY SENSORS AND OTHER CONTROLS.	8.5. ALL ALARM PANELS (GAS, CHEMICAL, FIRE, SECURITY, ETC) SHOWN OF THREE(3)-1" CONDUITS ROUTED FROM THE PANEL TO ABOVE CEILING
 RECEPTACLES SHALL BE LABELED WITH THE PANEL NAME AND CIRCUIT #. USE WHITE LABELS WITH BLACK TEXT. FIRE ALARM, EMERGENCY/CRITICAL PWR, LIFE SAFETY LABELS, INCLUDING RECEPTACLES, SHALL BE COLOR CODED & 	LIGHTING CIRCUITS BY A SINGLE PHOTOCELL AND/OR ASTRONOMICAL TIME CLOCK WITH HOLIDAY PROGRAMING. PHOTOCELL SHOULD BE ROOF MOUNTED. COORDINATE MOUNTING LOCATION WITH ARCHITECT.	ROUTING AND ADDITIONAL REQUIREMENTS WITH SPECIALIST CONTACT 9. POWER LIMITED AND NON POWER LIMITED CABLE SHALL NOT SHARE COM THE SAME OPENING
ENGRAVED.	4. ALL LUMINAIRES IN ROOMS WITH BI OR DUAL LEVEL SWITCHING SHALL BE PROVIDED WITH MULTIPLE OR MULTILEVEL BALLASTS AND WIRED TO ALLOW FOR EVENLY REDUCED ILLUMINATION THROUGHOUT THE SPACE. UNO, SWITCH "a" SHALL CONTROL THE	
	OUTER LAMPS IN THE FIXTURES; SWITCH "b" SHALL CONTROL THE INNER LAMPS IN THE FIXTURES.	
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ABBREVIATIONS FACPFIRE ALARM CONTROL PANELMSB.MAIN SWITCH BOARDFLA.FULL LOAD AMPSMTD.MOUNTEDFSFLOW SWITCHMTSMANUAL TRANSFER SWITCHFSDFIRE SMOKE DAMPERMV.MEDIUM VOLTAGE A.AMPEREFACPFIRE ALARMACABOVE COUNTERFLA.FULL LOAD AAFF.ABOVE FINISHED FLOORFSFLOW SWITCAIC.AMP INTERRUPTING CAPACITYFSDFIRE SMOKEA/VAUDIO VISUALGFI.GROUND FAATSAUTOMATIC TRANSFER SWITCHGND.GROUNDBLDG.BUILDINGHOA.HAND-OFF-AC.CONDUITHP.HORSEPOWCKT.CIRCUITHPS.HIGH PRESSCMCONTROL MODULEHTR.HEATERCOA.CITY OF AUSTINJ-BOXJUNCTION BCONN.CONNECT OR CONNECTIONKCM.THOUSANDCT.CURRENT TRANSFORMERLOTOLOCK OUT TDIM.DIMENSIONLTG.LIGHT OR LIGHT OR LIGHTEA.EACHMCB.MAIN CIRCUECELECTRICAL CONTRACTORMCC.MOTOR CONEF.EXHAUST FANMCP.MOTOR CIRCU A. AMPERE N.I.C. NOT IN CONTRACT NTS. NOT TO SCALE PHASE OVERLOAD OVER HEAD ELECTRIC PULL STRING RECEPTACLE RIGID GALVANIZED STEEL SURGE PROTECTION DEVICE TAMPER SWITCH TRANSIENT V. SURGE SUPPRESSER

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EA.EACHMCB.MAIN CIRCUECELECTRICAL CONTRACTORMCC.MOTOR CONEF.EXHAUST FANMCP.MOTOR CIRCELEC.ELECTRIC, ELECTRICALMIN.MINIMUMEMER.EMERGENCYMH.METAL HALIIEPOEMERGENCY POWER OFFMLO.MAIN LUGS OEWC.ELECTRIC WATER COOLERMRSMOTOR RAT

AD AMPS	ľ
VITCH	ľ
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TYPICAL UNDERGROUND UNLESS NOTED OTHERWISE VOLTAGE

WATER HEATER WEATHER PROOF WEATHER RATED XFMR. TRANSFORMER

ALL NOT RELIEVE THE CONTRACTOR OF THE	\$ \$2	1 POLE, SINGLE THROW ROCKER SWITCH ALL 2 POLE, SINGLE THROW ROCKER SWITCH FIN	LIGHTING CONTROLS SHALL BE 20A, 120/277V, UNO.
HIGHER OLIALITY OF OLIANTITY SHALL BE PROVIDED	\$ 3 \$ 4	1 POLE, DOUBLE THROW 3-WAY ROCKER UNF 2 POLE, DOUBLE THROW 4-WAY ROCKER	INISHED AREAS: HEAVY DUTY, INDUSTRIAL GRADE TOGGLE SWITCH
VRITTEN REQUEST FOR CLARIFICATION FROM THE PENSES INCURRED AS A RESULT OF THE	\$⊳ DS	SLIDE DIMMER, COMMERCIAL GRADE DOOR FRAME SWITCH	VERIFY LOAD SERVED, MATCH RATING AND TYPE OF LOAD N.O. SWITCH TO TURN ON LIGHTS WHEN DOOR IS OPENED, MNT IN FRAME
AL (MIN). PROVIDED WITH MANUFACTURER'S	OS	SWITCH MOUNTED OCCUPANCY SENSOR	15A, 120/277V INFRARED & ULTRASONIC, PUSHBUTTON OVERRIDE, MNT IN SWITCHBOX, ADJUSTABLE DELAY & DAYLIGHT SENSING, SET AT 15 MIN.
NGÈD, LATCHING DOORS (UNO). ES MIN. EQUIPMENT IN CORROSIVE OR HAZARDOUS	ୖଔ	WALL/CEILING MOUNTED OCCUPANCY SENSOR	15A, 120/277V, INFRARED & ULTRASONIC, CEILING/WALL MOUNTED W/ADJ, GIMBAL, 110° COVERAGE, ADJUSTABLE DELAY & DAYLIGHT SENSE
	03	CEILING MOUNTED OCCUPANCY SENSOR	15A, 120/277V, INFRARED & ULTRASONIC, 360° (UNLESS NOTED 180°), 1000 SQ.FT, ADJUSTABLE DELAY & DAYLIGHT SENSE
OPPER FOR #10 & SMALLER, MIN SIZE #12	6	PHOTOCELL	AMPS/VOLTAGE/CONTACTS TO MATCH USE, SCREW CLAMP TERMINALS
			PROVIDE NORMAL POWER FROM AREA LTG CIRCUIT & EMERGENCY BACK-
ONFORM TO NEMA TP-1-2002 STANDARDS AND BE	<i>₩₩\$</i>	AREA LIGHTING CIRCUIT	SWITCH & GENERATOR BACKED LIFE SAFETY CIRCUIT 90 MIN BATTERY W/SELF DIAGNOSTICS, EDGE LIT GLASS IN FINISHED AREA
	Ŭ ↓ ↓		PROVIDE A MINIMUM 8 IN.Ø, 12 IN. DEEP CONCRETE PIER
ROVISIONS BREAKER MOUNTING SPACES (MIN).		TRACK LIGHTING FIXTURE	PROVIDE A MINIMUM 24 Ø, 8 FT. REINFORCED CONCRETE FOUNDATION
	POWEF	<u> </u>	
Y LOCK, METAL DIRECTORY FRAME.	SYMBOL	DESCRIPTION SPECIFICATIONS	THHN/THWN_SOFT DRAWN_STRANDED COPPER: USE SOUD #10.& SMALLER
TED FOR LOAD (20A MIN).		UNDERGROUND CIRCUIT WIRING UNDERGROUND ELECTRICAL SERVICE	XHHW, SOFT DRAWN, STRANDED COPPER; USE SOLID #10 & SMALLER UTILITY SERVICE FEEDER DUCT BANK
LL BE DUAL CHANNEL, METAL RACEWAYS, TWO BASE AND COVER SHALL BE A MINIMUM OF 4" WIDE	- OE-		UTILITY PROVIDER, MAINTAIN EASEMENT
RACEWAY MANUFACTURER.	Ø		PER UTILITY PROVIDER SPECIFICATIONS
/ITCHES WITH EXTERNAL HANDLE LOCKABLE IN ON	A−1 ⊲⊪,	HOMERUN TO PANELBOARD "A", CIRCUIT #1	PROVIDE 3 FT. MAX, FMC FROM COUPLING TO VIBRATING FOULP, TERMINAL
	φφ	2 POLE, 3 WIRE, 125V SINGLE RECEPT. 2 POLE, 3 WIRE, 125V DUPLEX RECEPT	20A COMMERCIAL GRADE, WHITE NYLON FACE & COVER. USE HEAVY DUTY, INDUSTRIAL GRADE IN MECHANICAL SPACE & INDUSTRIAL AREAS
DRMALLY OPEN AND (2) NORMALLY CLOSED AUX. G EQUIPMENT TO BE CONTROLLED.	↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	USB DEVICE RECEPTACLE	DEVICE RCPT W/ 2 USB PORTS (HUBBELL#USB20X2(X))
	_⊃ _{IC}	RECEPTACLE - DUPLEX, MOUNTING IN CEILING	DEDICATED #12 GROUND FROM PANEL TO RECEPT, GREEN W/YELLOW STRIP
CATIONS. SUBSTITUTIONS SHOULD BE APPROVED		GROUND FAULT INTERRUPTER	FEED THRU TYPE WITH INDICATOR LIGHT & RESET BUTTON
	₩P	WEATHERPROOF/WATER RESISTANT	PROVIDE W/ ENCLOSURE RATED WEATHERPROOF & WATER RESISTANT WHEN IN US
	₽ ₽		
		SPECIAL PURPOSE RECEPTACLE	ALL WIRING DEVICES SHOWN IN SQUARE BOX TO BE FLOOR OR CEILING MNT TYPE & RATINGS AS NOTED. VERIFY IF TWISTLOCK IS REQUIRED.
		JUNCTION BOX	CAST OR SHEET METAL BOX WITH COVER
	T	TRANSFORMER	COPPER, 2 WINDING, 3-PHASE DELTA TO WYE ON PAD WITH ISOLATORS
G, COMMUNICATIONS, FIRE ALARM, ACCESS		MOLDED CASE CKT BREAKER DRAWOUT CIRCUIT BREAKER, AIR TYPE DIGIT	INVERSE TIME THERMAL/MAGNETIC BOLT ON, ADJUSTABLE LSIG AS REQUIRED
VICES; COMMUNICATIONS EQUIPMENT AND OUTLETS; CURITY POINTS; CONTROLS POINTS; AND OTHER	ب ک ج	THERMAL OVERLOAD	ADJUSTABLE OVERLOAD, SIZE PER MOTOR FLA
ES, TAPS, WIRE PULLING, EQUIPMENT CONNECTIONS, ES ARE SHOWN IN APPROXIMATE LOCATIONS UNLESS		FUSED DISCONNECT SWITCH FUSE. HOLDER & PULLER	SEE ONE LINE SEE ONE LINE
		POTENTIAL TRANSFORMER	.5% ACCURACY, ENCLOSED
S OR GRADE; FOR ELBOWS 1" AND LARGER. E BURIED AND/OR IN CONCRETE.	Е	CURRENT TRANSFORMER	TORROIDAL OR RECTANGLE WINDOW, SINGLE RATIO, POLARITY MARKS
E WITH ENGINEER. ROVIDER'S SPECIFICATIONS			SEE ONE LINE MOTOR BY OTHERS, LINO: EC TO MAKE WIRING TERMINATIONS
SCIRCUITS	\$	MOTOR RATED TOGGLE SWITCH	20A, 277V, HP RATED, HEAVY DUTY, INDUSTRIAL, LOTO PROVISIONS AMPS/VOLTAGE/POLES TO MATCH LOAD, THERMAL OVERLOADS LOTO
DNCRETE; FOR ELBOWS 1" AND LARGER. RETE.	 CB	ENCLOSED CIRCUIT BREAKER	THERMAL MAGNETIC CIRCUIT BREAKER IN ENCLOSURE. PROVIDE WITH PROVISIONS FOR LOCK OUT CAPABILITIES
INEER APPROVAL. ALLED IN CONCRETE, STONE, BRICK, CMU.		DISCONNECT SWITCH	QUICK-MAKE/BREAK LOAD INTERRUPTER KNIFE SWITCH, HINGED METAL ENCLOSURE, EXTERNAL OPERABLE HANDLE, LOCABLE ON OR OFF.
TED NEMA 3R MIN.	N N	COMBINATION STARTER & DISCONNECT	PROVIDE INTEGRAL DISCONNECT FOR STARTERS, VFDS, ETC SHOWN WITH A DISCONNECT HANDLE
RICAL METALLIC TUBING.	\boxtimes	MAGNETIC STARTER - FVNR U.N.O.	N.O. & N.C. AUXILLARY CONTACTS, FUSED CPT, ADJUSTABLE OVERLOAD
DIATE METAL, OR ELECTRICAL METALLIC TUBING		MAGNETIC CONTACTOR	20A PER POLE, 120/277V, HOA SWITCH, HINGED METAL ENCLOSURE
	VFD GEN	VARIABLE FREQUENCY DRIVE GENERATION REMOTE ANNUNICATOR	RATINGS PER PLANS AND SPECIFICATIONS LCD DISPLAY, PUSHBUTTON CONTROLS
		SURGE PROTECTION DEVICE (TVSS)	UL 1449 TYPE 1, 20KA MIN, UNO
	COMMU SYMBOL	JNICATIONS DESCRIPTION SPECIFICATIONS	
		DATA OUTLET WALL & FLOOR MTD. DATA/VOICE OUTLET WALL & FLOOR MTD.	4X4 DEEP METAL BOX WITH SINGLE GANG REDUCER 1" CONDUIT FROM BOX TO ACCESSIBLE CEILING
		VOICE OUTLET WALL & FLOOR MTD. WIRELESS ACCESS POINT (ROUTER)	INSTALL FLOOR MOUNTED DATA IN FLOORBOX OR POKE THRU COORDINATE WAP REQUIREMENTS WITH OWNER
	S FS	SPEAKER OUTLET CEILING & WALL MTD.	COORDINATE SPEAKER REQUIREMENTS WITH OWNER
ONS, FIRE ALARM, AUDIO/VIDEO, ACCESS CONTROL	FIRE AL	_ARM DESCRIPTION SPECIFICATIONS	
UCTION DOCUMENTS, OR EQUIPMENT AND DEVICES WN. ELECTRICAL CONTRACTOR SHALL BE	ळ ज ि ज ि	AUDIO/VISUAL FIRE ALARM	ADDRESSABLE, HORN, XENON STROBE, ADJUSTABLE STROBE INTENSITY
IFRASTRUCTURE PROVISION EVEN IF SAID SPECIAL , OR UNDER SEPARATE CONTRACT.	⊠c	VISUAL STROBE FIRE ALARM	ADDRESSABLE, XENON STROBE, ADJUSTABLE STROBE INTENSITY
ING EQUIPMENT, AND PATCH PANELS WILL BE BY ELEC. CONTRACTOR IATING DEVICES, WIRING, BATTERIES, AND MISC	Ē	MANUAL PULL STATION	ADDRESSABLE, MANUAL, SINGLE ACTION, ADA COMPLIANT ALARM
UNDER THIS CONTRACT.	(FS) (Dor SD)		
TO BID TON TECHNOLOGIES REPRESENTATIVE (IT REP).	() or (HD)	AREA HEAT DETECTOR	ADDRESSABLE, RATE OF RISE & FIXED TEMP, SPOT TYPE, LED STATUS
LESS DIRECTED OTHERWISE BY IT REP. PAINT TO	 	DUCT MOUNTED SMOKE DETECTOR	ADDRESSABLE, SAMPLING TUBE, RELAY CONTACT, LOCATE 3FT FROM FAN BEFORE BRANCHES, LED STATUS INDICATOR
ERVICE DEMARC TO MAIN TELECOM ROOM.	FACP	FIRE ALARM PANEL	MODULAR, ADDRESSABLE, AUTOMATIC FA SYSTEM REMOTE MONITORING BATTERY BACKUP TO OPERATE FOR 24 HOURS FOLLOWED BY 5 MIN. OF
UTING.) AT EACH LOCATION SHOWN ON PLANS. NOTE THAT		FIRE ALARM EXTENSION PANEL	ALARM, LCD DISPLAY, PUSHBUTTON CONTROLS LCD DISPLAY, PUSHBUTTON CONTROLS
BOX. COORDINATE LOCATIONS AND SIZES FOR BOXES	MM		MOUNT IN J-BOX, SOLID COVER W/LABEL, 1/2" CONDUIT TO ACCESSIBLE CEILING
ALIST CONTRACTOR. COORDINATE CONDUIT SIZES	H	HOOD FIRE SUPPRESSION SYSTEM RELAY	
THE MEP PLANS SHALL BE PROVIDED WITH A MIN. OF ND A 20A, 120V CIRCUIT AT THE PANEL. COORDINATE	SS .Q.or[TS]	SUPERVISORY SWITCH	
OR. ON RACEWAYS OR ENTER JUNCTION BOXES THROUGH	or WF	WATER FLOW SWITCH	PADDLE SWITCH, ACTUATED BY WATER FLOW
	P	MOTORIZED SMOKE FIRE DAMPER	PROVIDE 120V PWR & FA MODULES AT DUCT
	AR	AREA OF REFUGE BUTTON	SPECIFIED BY ARCHITECT
	SYMBOL	DESCRIPTION SPECIFICATIONS	
	FS	FLOAT SWITCH PUSH BUTTON	AMPS/VOLTAGE/CONTACTS TO MATCH USE, SCREW CLAMP TERMINALS AMPS/VOLTAGE/CONTACTS TO MATCH USE, SCREW CLAMP TERMINALS
	R	RELAY	AMPS/VOLTAGE/CONTACTS TO MATCH USE, SCREW CLAMP TERMINALS
		THERMOSTAT TIMER SWITCH	BY MECHANICAL AMPS/VOLTAGE/CONTACTS TO MATCH USE, SCREW CLAMP TERMINALS
	ACCES SYMBOL	S CONTROL/SECURITY DESCRIPTION SPECIFICATIONS	
	7		J BOX, 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE OF SECURITY PANEL ("PZT" INDICATES PAN/ZOOM/TILT WITH DOME)
		DOOR CONTACT	1/2" CONDUIT FROM CONTACT IN DOOR FRAME TO ACCESSIBLE SPACE
	ES	ELECTRIC DOOR STRIKE ELECTROMAGNETIC DOOR HOLDER	1/2" CONDUIT FROM STRIKE AT LATCH TO ACCESSIBLE SPACE J BOX, 1/2" C. TO ACCESSIBLE CEILING, COORDINATE MOUNTING HEIGHT
		ELECTROMAGNETIC DOOR LOCK	WITH DOOR PROVIDER 1/2" CONDUIT FROM LOCK TO ACCESSIBLE SPACE
	EA	EXIT ALARM	
	GD HA	GLASS BREAK DETECTOR HOLD OPEN ALARM	J BOX, 1/2" C TO ACC. CEILING, COORDINATE LOCATION W/SEC CONTRACTOR ALARM WHEN DOOR LEFT OPEN
			J BOX, ½" C TO ACC. CEILING, COORDINATE LOCATION W/SEC CONTRACTOR
	DHD TSB	OVERHEAD DOOR CONTACT TOUCH SENSE BAR (CRASH BAR)	1/2" CONDULT FROM CONTACT TO ACCESSIBLE CEILING SPACE 1/2" CONDULT FROM EGRESS DOOR TO ACCESSIBLE CEILING SPACE

_ REA ER TRIP VHEN IN USE MNT ER JIRED VITH -AN **`** TOR TOR

SCALE: N.T.S.

EQUIPMENT	AMPERAGE	VOLTAGE	PH	DISCONNECT	ENCLOSURE	NOTE
DISCRIPTIION				TYPE	RATING	
CU-101	30	480	3	NF	3R	1-3, 8
CU-102	30	208	1	NF	3R	1-3, 8
CU-103	30	208	1	NF	3R	1-3, 8
CU-104	30	208	1	NF	3R	1-3, 8
CU-105	30	208	1	NF	3R	1-3, 8
CU-106	30	480	3	NF	3R	1-3, 8
CU-107	30	208	1	NF	3R	1-3, 8
CU-108	30	208	1	NF	3R	1-3, 8
CU-201	30	480	3	NF	3R	1-3, 8
CU-202	30	208	1	NF	3R	1-3, 8
CU-203	30	480	3	NF	3R	1-3, 8
CU-204	30	208	1	NF	3R	1-3, 8
CU-205	30	480	3	NF	3R	1-3, 8
CU-301	30	208	1	NF	3R	1-3, 8
CU-IT-1	30	208	1	NF	3R	1-3, 8
CU-IT-2	30	208	1	NF	3R	1-3, 8
FCU-101	30	208	3	NF	1	1-3, 6,
FCU-102	30	208	1	NF	1	1-3, 8
FCU-103	60	208	1	NF	1	1-3, 6,
FCU-104	60	208	1	NF	1	1-3, 8
FCU-105	60	208	1	NF	1	1-3, 6,
FCU-106	60	208	3	NF	1	1-3.8
FCU-107	60	208	1	NF	1	1-3. 6.
FCU-108	30	208	3	NF	1	1-3, 6,
FCU-201	60	208	3	NF	1	1-3, 6,
FCU-202	60	208	1	NF	1	1-3. 6.
FCU-203	30	208	3	NF	1	1-3. 6.
FCU-204	60	208	1	NF	1	1-3. 6.
FCU-205	60	208	3	NF	1	1-3 6
FCU-301	15	208	1	NF	1	1-3 5
FCU-IT-1	15	208	1	NF	1	1-3 5
FCU-IT-2	15	208	1	NF	1	1-3.5
F\0/H_1	15	208	1	NE	1	1_3 8
EWH-2	60	200	1	NE	1	1_3 8
	15	200	1	NE	1	1_4 8
EF-2	15	200	1	NE	1	1_4 P
⊑, - <u>∠</u> FF-3	15	200	1		י 30	1_2 7
	15	200	1		1	1 / C
	10	200 /20	2 I		3D I	1-4, C
	00	400	3		55	1-3, C

PROVIDE ALL DISCONNECTS WITH LOCK OUT TAG OUT PROVISIONS

. MOUNT DISCONNECTS TO STRUCTURE ADJACENT TO EQUIPMENT. DO NOT MOUNT TO EQUIPMENT. 3. REFER TO GENERAL NOTES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION

4. SPEED CONTROLLER IS INTEGRAL TO THE FAN. 5. FCU POWERED BY CU. PROVIDE WIRE AND CONDUIT PER NEC.

6. UNIT PROVIDED WITH DUCT SMOKE DETECTOR. INSTALL AND CONNECT TO FIRE ALARM SYSTEM. 7. UNIT PROVIDED WITH DISCONNECT. ELECTRICAL CONTRACTOR SHALL INSTALL.

ONE-LINE GENERAL NOTES:

- A. ALL EQUIPMENT SHOWN GRAYSCALE IS EXISTING TO REMAIN.
- B. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ELECTRICAL EQUIPMENT SHOWN AS NEW, UON
- C. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL COSTS ASSOCIATED WITH THE INSTALLATION OF THE NEW ELECTRICAL SERVICE WITH UTILITY AND INCLUDE IN BID.

	LUMINAIRE SCHEDULE											
TYPE	MANUFACTURER	CATALOG NO.		LAMPS		FIXTURE	VOLTS	MOUNTING	REMARKS			
			NO.	TYPE	WATTS	WATTS						
									2'x2' LED PANEL			
A	LITHONIA	CPX 2X2 3200LM 80CRI 35K SWL MIN10 ZT MVOLT	1	LED	30.1	30.1	UNV	RECESSED	ADD "E7W" FOR EMERGENCY BATTERY PACK 3500K LED PROVIDED			
									HIGH BAY LED WITH INTEGRAL OCCUPANCY MOTION SENSOR			
В	LITHONIA	CPHB 24000LM SEF GCL MD MVOLT GZ10 35K 70CRI LSXR6 DWH IBAC120	1	LED	132.76	132.76	UNV	SUSPENDED	ADD 'IE20WCPHE' FOR EMERGENCY BATTERY PACK 3500K LED PROVIDED			
									2'x4' LED PANEL			
C	LITHONIA	CPX 2X4 5000LM 80CRI 35K	1	LED	40	40	UNV	RECESSED	ADD "E7W" FOR EMERGENCY BATTERY PACK			
		SWL MIN10 ZT MVOLT							3500K LED PROVIDED			
									2'x4' LED PANEL			
C2	LITHONIA	CPX 2X4 7200LM 80CRI 35K	1	LED	56.57	56.57	UNV	RECESSED	ADD "E7W" FOR EMERGENCY BATTERY PACK			
		SWL MIN10 ZT MVOLT							3500K LED PROVIDED			
									RECESSED SPOT LIGHT			
D	TBD	TBD	1	LED	TBD	TBD	UNV	RECESSED				
									3000K LED PROVIDED			
X	LITHONIA	EDG 1 R EL	1	LED	3	3	UNV	SURFACE				
NOTES:												
1.	WHETHER INDICATED IN	I CATALOG NUMBER OR NOT, CONTRACTOR	TO PRO	VIDE ALL N	ECESSARY	ACCESSORIE	ES AND MO	UNTING HARDWA	ARE REQUIRED FOR A COMPLETE INSTALLATION.			
2.	EXIT LIGHTS AND EMERG	GENCY LUMINAIRES SHALL HAVE BATTERY F	PACK FC	DR 90 MINU	TES (MIN) C	F EMERGENO	CY OPERAT	ION AND VISIBLE	BATTERY STATUS INDICATOR			
3.	EXIT LIGHTS AND EMER	GENCY LUMINAIRES SHALL SWITCH TO BATT	ERY AL	JTOMATICA	lly upon s	SENSING PRIA	<i>i</i> ary powe	ER LOSS.				

-	D. PROVI	IDE ARC	FLASH LAE	BELING FO	R ALL NEW	EQUIPMEN	T AS REQI	JIRED PEF	RNEC					NO.	TYPE	WATTS	WATTS		MOONT				1.1		
		LE 110.1	6 AND NFP							A	LITHONIA	CPX 2X2	3200LM 80CRI 35K	1	LED	30.1	30.1	UNV	RECESS	2'x2' I SED ADD	_ED PANEL "E7W" FOR	EMERGE	NCY BA	TTERY	PACK
-	F. ALL G	ROUNDI	NG SHALL I		ORDANCE V	VITH NEC R	EQUIREM	ENTS.				SWL N	/IN10 ZT MVOLT							3500H				CCUPA	NCY MOTION SENSOR
15,535	G. REFEF	R TO SPE	CIFICATIO	NS, SCHEI	DULES, DET	AILS AND G		NOTES SHI	EET	В	LITHONIA	CPHB 24000L	M SEF GCL MD MVOLT	1	LED	132.76	132.76	UNV	SUSPEN	DED ADD	IE20WCPH		MERGEN	ICY BA	ITERY PACK
$\langle 1 \rangle$	FOR A	DDITION	AL SITE RE	EQUIREME	NTS.							GZ10 35K 70CF								2'x4' l	ED PRO	NDED			
SETS: #350 KCMIL,										С	LITHONIA	CPX 2X4 : SWL M	5000LM 80CRI 35K /IN10 ZT MVOLT	1	LED	40	40	UNV	RECESS	SED ADD 3500	"E7W" FOR < FD PRO\	EMERGE	NCY BA	TTERY	PACK
1 GND " C															. = 5	50.57	50.57		DEOEO	2'x4' l					
	ONE-	LINE	: KEY		JIES	<u><>>:</u>				C2	LITHONIA	CPX 2X4 SWL N	/200LM 80CRI 35K /IN10 ZT MVOLT	1	LED	56.57	56.57	UNV	RECES	3ED ADD 3500	"E7W" FOR < LED PRO\	EMERGE /IDED	NCY BA	HERY	РАСК
	1. UNLES			E UTILITY	COMPANY,			T LEVEL S	HALL		TBD		TBD	1		TBD	TBD		RECESS		ESSED SPO	T LIGHT			
	VARIO		TRANSFO	RMERS" (B	ASED ON W	ORST CAS		NCE) IN						•						3000	K LED PRON	/IDED			
	2 TRANS	SFORME	<u>ELECTRICA</u> R SECOND	ARY INSTA	ALLATION S	HALL COME	N Y WITH I	NFC		x	LITHONIA	E	DG 1 R EL	1	LED	3	3	UNV	SURFA		EXIT SIGN				
	240.21	(B)(2).								NOTES										CON	FRACTOR TO	CONFIR	RM MOUN	ITING C	ONFIGURATION
	3. PER TI EXTER	HE SHEL RIOR LUI	L BUILDING /INAIRES S	G CONSTR SHALL BE S	UCTION DO WITCHED E	CUMENTS, BY A CONTA	THE EXIS	ting Ntrollei) BY	1.	WHETHER INDICATED IN	I CATALOG NUMBE	R OR NOT, CONTRACTOR TO			ECESSARY A	ACCESSORII	ES AND MOU	NTING HAI	RDWARE RE		OR A COM	IPLETE II	NSTALI	_ATION.
	A 24 H CONT/	IOUR, 7 I ACTOR A	DAY ASTRO	NOMICAL	TIME CLOC	K WITH HOL ADJACENT	LIDAY SCH	IEDULING. L. ELECTR	ICAL	2.	EXIT LIGHTS AND EMERC	GENCY LUMINAIRE	S SHALL HAVE BATTERY P/ S SHALL SWITCH TO BATTE	ACK FC FRY AL	DR 90 MINUT	TES (MIN) OF	EMERGENO	CY OPERATIO	N AND VI	SIBLE BATTI	ERY STATU	SINDICAT	TOR		
	CONTI LIGHT:	RACTOR	SHALL AD T 10 PM.	JUST TIME	CLOCK TO	TURN LIGH	TS ON AT	DUSK AND)	4.	COORDINATE FIXTURE C	OLOR SELECTION		O PUR	CHASE.										
	LIGHT	0 011 7								5.	ALL OUTDOOR FIXTURE	TO BE FULL CUT-O	FF												
						F	4												LSEC1						
	TING (A): 60	00A				-	MIN		RATING: 65	KAIC				NG (A):	225					MINIMUM A		22 KAIC			
MAIN CIRCUIT BREA	ARER (A): 60 AGE (V): 48	00A 80 \	277					В MC	USSING: CO UNTING: SU	JRFACE			MAIN CIRCUIT BREAK	ER (A): GE (V):	МСВ 208					r	MOUNTING:	SURFACE	E		
	PHASE: 3 WIRE: 4						N	EMA ENCL LC	OSURE: NE	EMA 1 EFER TO PLANS	8		P	HASE: WIRE	3					NEMA EN	ICLOSURE:	NEMA 1 REFER T		s	
FEED	ER SIZE: R		ONE LINE	<u> </u>				FEI	D FROM: RE	EFER TO ONE L	INE		FEEDER	R SIZE:	REFER TO	ONE LINE	· · · · ·			F	ED FROM:	REFER T			
	c	скт со	NN. WIR	E GROUI		T AMP/	AMP/	CONDUIT	GROUND		скт					IN. WIRE	GROUNDC		RR BR ⊃/ AN	KR 1P/ CONDU		WIRE	CONN.	скт	
	N	1 1 27	AD SIZE	E SIZE	SIZE	POLE 20/1	POLE	SIZE	SIZE #10	SIZE LOAD	NO. SERVI	NG	SERVING)F	NO. LOA	D SIZE	SIZE #12	SIZE POI		DLE SIZE	SIZE	SIZE #12	LOAD	NO.	
1ST FLR LTG		3 15	70 #10) #10	3/4"	20/1 E	3 20/1	3/4"	#10	#10 2916	4 2ND FLR	LTG	RECEP 109 CONF ROC	DM	3 720	0 #12	#12	3/4" 20/	1 B 20)/1 3/4"	#12	#12	1440	4	RECEP 110 TRAINING
2ND FLR LTG CU-101		5 19 7 18	60 #10 84 #12	2 #10 2 #12	3/4" 3/4"	20/1 C	60/3 - 1	1 1/4" -	#10 -	#413296#413296	b WELDE 8 -	-K	RECEP 123/133/135 RECEP 128/129 OFFIC)E	5 720 7 144	0 #12 10 #12	#12 #12	3/4" 20/ 3/4" 20/	1 C 20 1 A 20)/1 3/4")/1 3/4"	#12	#12 #12	720 360	6 8	RECEP 110 TRAINING RECEP 113/114 MENS/WOMENS
		9 18	84 -	-	-		3 -	-	-	#4 13296	10 -		RECEP 1ST FLR 115/127 (CORR	9 108	30 #12	#12	3/4" 20/	1 B 20)/1 3/4"	#12	#12	900	10	RECEP 111/116 OFFICE
- CU-106		13 30	47 #12	2 #12	- 3/4"	- C	20/1	-	-	- 0	12 SPAR 14 SPAR	<u> </u>	RECEP 131/132 OFFICE	E	13 144	- #12 10 #12	#12 #12	3/4" 20/ 3/4" 20/	1 A 20	3/4)/1 3/4	#12	#12 #12	1440	14	RECEP 119/120 OFFICE
	· · · ·	15 30 17 30	47 - 47 -	-	-	- E	3 20/1 20/1	-	-	- 0 - 0	16 SPAR 18 SPAR	E	RECEP 100 RECEPTIC RECEP 101/102 OFFIC	DN CE	15 108 17 144	80 #12 10 #12	#12 #12	3/4" 20/ 3/4" 20/	1 B 20 1 C 20)/1 3/4")/1 3/4"	#12 #12	#12 #12	1080 1260	16 18	RECEP 138 FABRICATION SHOP RECEP 138 FABRICATION SHOP
CU-201		19 23	82 #12 82	2 #12	3/4"	15/3 A	20/1	-	-	- 0	20 SPAR	E F	RECEP 104 DED SERVER	ROOM	19 360	0 #12	#12	3/4" 20/	1 A 20)/1 3/4"	#12	#12 #12	900	20	RECEP 139 FABRICATION OFFICE
-		23 23 23	82 -		-	- C	20/1	-	-	- 0	24 SPAR	– E	RECEP 103 CORRIDO	R	23 360	- <u>#12</u> 0 #12	#12 #12	3/4" 20/	1 C 20		#12	#12 #12	1440	24	RECEP 139 OFFICE DEDICATED
CU-205		25 23 27 23	82 #12 82 -	∠ #12 	3/4"	15/3 A	20/1 3 20/1	-	-	- 0 - 0	26SPAR28SPAR	E	RECEP 106/107/108 HR OF RECEP GFCI 123/125/1	-FICE 135	25 126 27 900	0 #12 0 #12	#12 #12	3/4" 20/ 3/4" 20/	1 A 20 1 B 20	x1 3/4" x1 3/4"	#12 #12	#12 #12	1440 720	26 28	KECEP 139 OFFICE DEDICATED WORKSTATIONS 1ST FLR OPEN
- 		29 23 31 10	82 - 84 #17	- #10	-	- C	20/1	-	-	- 0	30 SPAR	E F	EF-1		29 15	5 #12 1 #12	#12	3/4" 20/	1 C 20)/1 3/4"	#12	#12 #12	720	30	WORKSTATIONS 1ST FLR OPEN
-		33 18	84 -	-	-	- E	3 20/1	-	-	- 0	34 SPAR	E	EF-3		33 125	5 #12	#12	3/4" 20/	1 B 20)/1 3/4"	#12	#12	720	34	WORKSTATIONS 1ST FLR OPEN
- SPARE		35 18 37 (84 -	-		- C 20/1 A	20/1 400/3			- 0 NF 79320	36 SPAR 38 225KVA X	E (FMR	EWH-1 (JANITOR 125	5)	35 125 37 125	50 #12 50 #12	#12	3/4" 20/	2 C 30 A)/3 3/4" 	#10	#10 #10	2880 2880	36 38	
SPARE SPARE		39 (41 () –	-	-	20/1 E	3 -		DIAGRAM	80106 73787	40 PANEL 42 -	- L	SIGN		39 500	0 #12 0 #12	#12	3/4" 20/	1 B		- #12	#10 #12	2880	40	
			C	ONNECTE	D LOAD		<u> </u>	DEN)			RECEP GFCI ROOF		43 720	0 #12 0 #12	#12	3/4" 20/	1 A 20)/1 -	-	-	0	44	SPARE
LIGHT	FING (VA)		A 646	В 0 4486	C 1960	3 PH 12906		A 8075	B 5608	C 3 PH 2450 16133			EWH-2 (REST 140) -		45 416 47 416	50 #6 50 #6	#10	1" 50/ 	2 B 20 C 20)/1 -)/1 -	-	-	0	46 48	SPARE SPARE
RECEPTA CONTINU	CLE (VA) DUS (VA)		2197 2970	74 1704 15 37060	5 15855 0 31455	54874 98220		21974 37131	17045 46325	15855 32437 39319 122775			CP-1 (JANITOR 125) SPARE)	49 20 51 0) #12	#12	3/4" 20/	1 A 20)/1 -)/1 -	-	-	0	50 52	SPARE SPARE
NON-CONTINU			0	0	0	0		0	0	0 0			SPARE		53 0	-	-	- 20/	1 C 20)/1 -	-	-	0	54	SPARE
KITCI	HEN (VA)		0	0 50876	0	0		0	0	0 0		WPERAGE	SPARE		55 0 57 0	-	-	- 20/	1 A 20 1 B 20)/1 -)/1 -	-	-	0	56 58	SPARE SPARE
ΤΟΤΑΙ	_ (KVA)		110	.7 109.	5 100.6	320.7		126.6	126.4 1	15.6 346.1	416.3	3	SPARE SPARE		59 0 61 0	-	-	- 20/ - 20/	1 C 20 1 A 20)/1 -)/1 -		-	0	60 62	SPARE SPARE
													SPARE		63 0 65 0	-	-	- 20/	1 B 20)/1 -	-	-	0	64	SPARE
													OF A RE		00 0	CON		DAD		<u> </u>	DEMAND LO	AD		00	
						LSE	C2						LIGHTIN	IG (VA))	A 0	<u>В</u> 0	C 3P	H	A 0	<u>В</u> 0	C 0	3 PH 0		NOTES:
	FING (A): 22	25					MINI		RATING: 22	KAIC				LE (VA) IS (VA))	21974 1250	17045 5910	15855 548 7160 143	74 20	21974 1563	17045	15855 8950	32437 17900		INCLUDES LOADS FROM PANEL
VOLT	AGE (V): 20	18						MO	JNTING: SU	RFACE			NON-CONTINUOL	JS (VA)	,)	0	0	0 0		0	0	0	0	r	
	PHASE: 3 WIRE: 4						NE	MA ENCLO LOO	OSURE: NE CATION: RE	MA 1 FER TO PLANS			KITCHE	EN (VA))	2900 0	2895	0 0	C.	3620 0	3615	4620 0	0		TOTAL DEMAND AMPERAGE
FEEDE	ER SIZE: RE	EFER TC	ONE LINE		-			FED	FROM: RE	FER TO ONE LI	NE		TOTAL	(KVA)		26.1	25.9	26.9 78	9	27.2	28.0	29.4	62.2		172.63
	СІ	кт сом	IN. WIRE	E GROUN	осомоціт	AMP/	AMP/ (ROUND V	VIRE CONN.	СКТ														
SERVING RECEP 217 CONF RO	OM 6	0. LOA 51 144	D SIZE	SIZE #12	SIZE 3/4"	POLE 20/1 A	POLE 20/1	SIZE 3/4"	SIZE \$	SIZE LOAD #12 1080	NO. SERVIN 62 RECEP 214/21	G 5 OFFICE						L	SEC3						
RECEP 218/219 OFF	CE 6	5 108	30 #12 30 #12	#12	3/4"	20/1 B	20/1	3/4" 3/4"	#12 #12	#12 1080 #12 540	64 RECEP 212/213		PANEL RATIN MAIN CIRCUIT BREAKE	IG (A): ER (A):	600 600						C RATING: 2 BUSSING: (22 KAIC COPPER			
RECEP 222/223 OFF	CE 6	57 108	30 #12 30 #12	#12	3/4"	20/1 A	20/1	3/4"	#12	#12 720	68 RECEP 209/210/223	3 CORRIDOR	VOLTAG PI	E (V): HASE	208 3						OUNTING: S	SURFACE			
ORKSTATIONS 2ND FLF	ROPEN 6 ROPEN 7	59 72 71 72	D #12 D #12	#12	3/4" 3/4"	20/1 B 20/1 C	20/1 20/1	3/4" 3/4"	#12 #12	#12 360 #12 540	70 RECEP 208/209 72 RECEP OPEN OFF	TOILE IS		WIRE:	4 9					L	OCATION: F	REFER TO			
/ORKSTATIONS 2ND FLF /ORKSTATIONS 2ND FLF	R OPEN 7 R OPEN 7	73 72 75 72) #12) #12	#12 #12	3/4" 3/4"	20/1 A 20/1 R	20/1 20/1	3/4" 3/4"	#12 #12	#12 360 #12 360	74 RECEP JANITOR	/ SERVER VER ROOM	FEEDER	SIZE:				BRK	R BRI						
ORKSTATIONS 2ND FL		77 108	80 #12	#12	3/4"	20/1 C	20/1	3/4"	#12	#12 720	78 RECEP 201 SM		SERVING		CKT CONN NO. LOAD	N. WIRE D SIZE		NDUIT AMP SIZE POLI	/ AM E POI	P/ CONDUI" _E SIZE	IGROUND SIZE	WIRE SIZE	CONN.	CKT NO.	SERVING
ORKSTATIONS 2ND FL	ROPEN 7	31 108	.0 #12 30 #12	#12	3/4"	20/1 A 20/1 B	20/1	3/4"	#12	#12 1250	82 EWH-1 (JANIT	OR 205)	CU-301		121 1248	3 #12 3 #12	#12	3/4" 20/2	A 30/	3 3/4"	#10	#10 #10	3600	122 124	FCU-101
ORKSTATIONS 2ND FLE	ROPEN 8	53 108 35 108	50 #12 50 #12	#12 #12	3/4" 3/4"	20/1 C 20/1 A	- 20/1	-	-	#12 1250 - 0	86 SPARE		FCU-102		125 2600) #10	#10	3/4" 30/2		-	-	#10	3600	126	
ORKSTATIONS 2ND FL	ROPEN 8	37 108	0 #12	#12	3/4" 3/4"	20/1 B	20/1	-	-	- 0	88 SPARE		- CU-102		127 2600 129 1248) #10 3#12	- #12	 3/4" 20/2	A 40/	∠ 3/4"	#10	#8 #8	3952 3952	128 130	
ORKSTATIONS 2ND FL	ROPEN 9		30 #12	#12	3/4"	20/1 A	20/1	-	-	- 0	92 SPARE		- FCI I_103		131 1248 133 4160	3 #12) #8	- #10		C 20/	2 3/4"	#12	#12 #12	1352 1352	132 134	CU-104
EF-2 CP-1(JANITOR 205) 9	93 18 95 20) #12) #12	#12	3/4" 3/4"	20/1 B	20/1	-	-	- 0 - 0	94 SPARE 96 SPARE		-		135 4160) #8	-		B 40/	2 3/4"	#10	#8	3952	136	FCU-105
SPARE	9	97 0	-	-	-	20/1 A	20/1	-	-	- 0	98 SPARE		CU-103		137 1248 139 1248	5 #12 3#12	#12	3/4 20/2 	A 20/	23/4"	- #12	#8 #12	3952 1248	138 140	 CU-105
SPARE	1	01 0	-	-	-	20/1 C	20/1	-	-	- 0	102 SPARE		FCU-107		141 3952 143 3952	2 #8 2 #8	#10	3/4" 40/2	B - C 45/	- 3 1"	- #10	#12 #6	1248 5400	142 144	- FCU-106
SPARE SPARE	10	03 0 05 0	-	-	-	20/1 A 20/1 B	20/1	-	-	- 0 - 0	104 SPARE 106 SPARE		CU-107		145 1248	3 #12 3 #12	#12	3/4" 20/2			-	#6	5400	146	-
SPARE SPARE	1(07 0 09 0	-	-	-	20/1 C	20/1	-	-	- 0 - 0	108 SPARE		CU-IT-1		147 1246 149 1664	4 #10	- #10	3/4" 25/2	C 30/	3 3/4"	- #10	#0 #10	3600	140	 FCU-108
SPARE		11 0 13 0	-	-	-	20/1 B	20/1	-	-	- 0	112 SPARE		- CU-IT-2		151 1664 153 1664	+ #10 + #10	- #10	3/4" 25/2	A - B -		-	#10 #10	3600 3600	152 154	
SPARE	1'	15 0 15 0	-	-	-	20/1 C 20/1 A	20/1	-	-	- 0 - 0	116 SPARE		- FCLL 202		155 1664	4 #10 > #Ω	- #10	3/4" 40/2	C 25/	2 3/4"	#10	#10 #10	1664	156	CU-108
SPARE SPARE	1 [.]	17 0 19 0	-	-	-	20/1 B 20/1 C	20/1 20/1	-	-	- 0 - 0	118 SPARE 120 SPARE		-		159 3952	2 #8	-		B 45/	3 1"	#10	#6	5040	160	FCU-201
		1	^			. <u>1</u> -	1		IAND LOAD	Сзоп			CU-202		101 1248 163 1248	5 #12 3 #12	#12	3/4 20/2	A	-	-	#6	5040 5040	162 164	
LIGHTI	ING (VA)		0	0	0	0		0	0		NOTES:		FCU-204		165 4160 167 4160)	#10 -	3/4" 40/2	B 45/ C -	3 1"	#10	#6 #6	5040 5040	166 168	FCU-205 -
RECEPTAC CONTINUC	CLE (VA) OUS (VA)		9540 0	6480 6480 6480	6840 1250	22860 2500		9540 0	6480 6 1563 ²	5840 16430 1563 3125			CU-204		169 1352	2 #12	#12	3/4" 20/2	A -	-	- #10	#6	5040	170	
			0	0	0 20	0 35		0	0 15	0 0			SPARE		171 1352 173 0	- #12	-	20/1	C _	J J/4" -	#1U -	#10 #10	3600	124	-
KITCH	IEN (VA)		0	0	20 0	0		0	0	0 0			SPARE SPARE		175 0 177 0	-	-	- 20/1 - 20/1	A - B 20/	-	-	#10 -	360 <mark>0</mark> 0	126 128	 SPARE
TOTAL	. (KVA)		9.5	7.7	8.1	25.4		9.5	8.1	8.4 19.6	54.38		SPARE		179 0	-		- 20/1	C 20/	1 -		-	0	130	SPARE
														=				с <u>з</u> рн	1	DI A	EIVIAIND LOA B	C	3 PH		
														G (VA) E (VA)		0 0	0 0	0 0 0 0		0 0	0 0	0 0	0 0	N	OTES:
														S (VA) S (VA)		28455 0	35310 2 0	28455 9222 0 0	D	35569 0	44138 n	35569 0	115275 ດ		
													HVAC/MOTO	R (VA)		24761	23106 2	22577 7044	4	25211	23556	23027	71794	Т	OTAL DEMAND AMPERAGE
												-	KITCHEI	и (VA)		U	U		_	0	υ	U	U		

	D. PROVIDE AR	C FLASH LABELING FOR ALL NEW EQUIPM	ENT AS REQUIRED PER NEC		MANOLACIONEN	GATALOG NO.	NO.	TYPE	WATTS	WATTS	VOLIO	MOONTINO				
PANEL PANEL PANEL 'H' 'LSEC2' 'LSEC1' 277//80V 120/208V 22	PANEL ARTICLE 110	.16 AND NFPA-70E.		A	LITHONIA	CPX 2X2 3200LM 80CRI 35K	1	LED	30.1	30.1	UNV	RECESSED	2'x2' LED PAN ADD "E7W" F	EL OR EMERGEN(CY BATTEF	₹Y PACK
271/400v 120/206v 22/206v 120/206v 3PH, 4W 3PH, 4W 3PH, 4W 3PH, 4W 600 A PNL 225A PNL 225A PNL 225A VL MI O MI O 225A VL 225KVA	20/2000 SPH, 4W 00A PNL DOA MCB F. ALL GROUNE	JING SHALL BE IN ACCORDANCE WITH NE(CREQUIREMENTS.			SWL MIN10 ZT MVOLT							3500K LED PF			PANCY MOTION SENSOR
MV-208Y/120V 3PH, 4W	4 15,535 G. REFER TO SE	PECIFICATIONS, SCHEDULES, DETAILS ANI	D GENERAL NOTES SHEET	В	LITHONIA	CPHB 24000LM SEF GCL MD MVOLT	1	LED	132.76	132.76	UNV	SUSPENDED	ADD 'IE20WC	PHE' FOR EME	RGENCY E	JATTERY PACK
		NAL SITE REQUIREMENTS.				GZTU 35K /UCRI LSXR6 DVVHTBACT2U							2'x4' LED PAN	<u>EL</u>		
2 SETS:	— 2 SETS: 4#350 KCMIL,			С	LITHONIA	CPX 2X4 5000LM 80CRI 35K SWI_MIN10 ZT MVOLT	1	LED	40	40	UNV	RECESSED	ADD "E7W" F 3500K LED PE	OR EMERGENC	Y BATTER	Y PACK
#3 GND 2-1/2" C	#1 GND 3" C			00					50.57	50.57			2'x4' LED PAN			
2.0	ONE-LIN	$\underline{E KEYED NOTES} \otimes \underline{:}$		C2		SWL MIN10 ZT MVOLT	1		56.57	56.57	UNV	RECESSED	3500K LED PF	OVIDED		IT PACK
	1. UNLESS SUP BE DETERMI	PLIED BY THE UTILITY COMPANY, THE FAU NED FROM TABLE 1 "SHORT-CIRCUIT CUR!	ILT CURRENT LEVEL SHALL RENTS AVAILABLE FROM	D	твр	TBD	1	LED	TBD	TBD	UNV	RECESSED	RECESSED S	POT LIGHT		
	VARIOUS SIZ BUSSMANN'S	E TRANSFORMERS" (BASED ON WORST C/	ASE IMPEDANCE) IN										3000K LED PF	ROVIDED		
	2. TRANSFORM	ER SECONDARY INSTALLATION SHALL CO	MPLY WITH NEC	x	LITHONIA	EDG 1 R EL	1	LED	3	3	UNV	SURFACE	LED EXIT SIG	۱N		
	240.21(B)(2).			NOTES:									CONTRACTOR	<u> TO CONFIRM</u>	MOUNTING	CONFIGURATION
	S. PER THE SHE EXTERIOR LU	JMINAIRES SHALL BE SWITCHED BY A CON	ITACTOR CONTROLLED BY	1. V		ATALOG NUMBER OR NOT, CONTRACTOR TO				ACCESSORI					LETE INSTA	ALLATION.
	CONTACTOR	AND TIME CLOCK ARE MOUNTED ADJACE	NT TO PANEL. ELECTRICAL	2. E 3. E	XIT LIGHTS AND EMERGEN	NCY LUMINAIRES SHALL HAVE BATTERY P NCY LUMINAIRES SHALL SWITCH TO BATTE	ERY AL	JR 90 MINU JTOMATICA	LLY UPON S	SENSING PRI	VARY POWE	R LOSS.	E BAITERT STA	TUS INDICATOR	ĸ	
	LIGHTS OFF	AT 10 PM.	SHIS ON AT DUSK AND	4. C	CORDINATE FIXTURE COL	OR SELECTION WITH ARCHITECT PRIOR TO BE FULL CUT-OFF	O PUR	CHASE.								
								005				LSEC1				
	MAIN CIRCUIT BREAKER (A): 600A		BUSSING: COPPE	ĒR		MAIN CIRCUIT BREAK	KER (A):	MCB				IVIII	BUSSIN	IG: 22 KAIC		
	VOLTAGE (V): 480 \ PHASE: 3	277	MOUNTING: SURFA	NCE 1		VOLTA(NGE (V): PHASE:	208 3				Ν	MOUNTIN IEMA ENCLOSUF	JG: SURFACE RE: NEMA 1		
	WIRE: 4		LOCATION: REFER	TO PLANS	IF	FEEDER	WIRE:	4 REFER TO)N: REFER TO I	PLANS ONE LINE	
_	SERVING NO. L	OAD SIZE SIZE SIZE POLE	POLE SIZE SIZE SIZE	LOAD	NO. SERVING	SERVING		NO. LOA	AD SIZE	SIZE	SIZE PC	PLE POLE	SIZE SIZE	SIZE I	LOAD NC). SERVING
	HIGH-BAY LTG 1 3 1ST FLR LTG 3 1	1/24 #10 #10 3/4" 20/1 1570 #10 #10 3/4" 20/1	A 20/1 3/4" #10 #10 B 20/1 3/4" #10 #10	2736 2916	2 1ST FLR LT 4 2ND FLR LT	G RECEP 126/127 OFFIC G RECEP 109 CONF ROC	CE DM	1 144 3 72	40 #12 0 #12	#12 #12	3/4" 20 3/4" 20	0/1 A 20/1 0/1 B 20/1	3/4" #12 3/4" #12	2 #12 2 #12	900 2 1440 4	RECEP 109 CONF ROOM
	2ND FLR LTG 5 1 CLI-101 7 4	960 #10 #10 3/4" 20/1 1884 #12 #12 3/4" 15/3	C 60/3 1 1/4" #10 #4	13296	6 WELDER	RECEP 123/133/135	5 CF	5 72	0 #12 40 #12	#12 #12	3/4" 20 3/4" 20)/1 C 20/1	3/4" #12 3/4" #12	2 #12 2 #12	720 6 360 P	RECEP 110 TRAINING
	- 9 1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	B #4	13296	10 - 12 -	RECEP 1ST FLR 115/127 (CORR	9 108	BO #12	#12	3/4" 20)/1 B 20/1	3/4" #12	<u>+ #12</u> <u>+ #12</u>	<u>900</u> 10	RECEP 111/116 OFFICE
	- 11 1 CU-106 13 3	004 - - - 3047 #12 #12 3/4" 15/3	A 20/1	0	IZ SPARE 14 SPARE	RECEP 130 OFFICE RECEP 131/132 OFFIC		11 90 13 14	u #12 40 #12	#12 #12	3/4" 20 3/4" 20	0/1 C 20/1 0/1 A 20/1	3/4" #12 3/4" #12	#12 2 #12	1440 12 1440 12	RECEP 11//118 OFFICE I RECEP 119/120 OFFICE
	- 15 3 - 17 3	<u>1047</u> 3047	B 20/1 - - - C 20/1 - - - -	0	16SPARE18SPARF	RECEP 100 RECEPTIC RECEP 101/102 OFFIC		15 108 17 144	30#1240#12	#12 #12	3/4" 20 3/4" 20	b/1 B 20/1 b/1 C 20/1	3/4" #12 3/4" #12	2 #12 2 #12	1080 16 1260 18	RECEP 138 FABRICATION SHOP RECEP 138 FABRICATION SHOP
	CU-201 19 2	.382 #12 #12 3/4" 15/3	A 20/1	0	20 SPARE	RECEP 104 DED SERVER	ROOM	19 36	0 #12	#12	3/4" 20	V1 A 20/1	3/4" #12 3/4" #12	#12	900 20	RECEP 139 FABRICATION OFFICE
	- 21 2 - 23 2		C 20/1 - - - A 20/1 - - - -	0	24 SPARE	RECEP 103 CORRIDO		23 36	0 #12 0 #12	#12 #12	3/4" 20	/1 C 20/1	3/4" #12 3/4" #12	<u> </u>	1440 24	RECEP 139 OFFICE DEDICATED
	CU-205 25 2 27 2	.382 #12 #12 3/4" 15/3 2382 - - - - -	A 20/1 B 20/1	0	∠b SPARE 28 SPARE	RECEP 106/107/108 HR OF RECEP GFCI 123/125/1	HICE	25 126 27 90	0 #12 #12	#12 #12	3/4" 20 3/4" 20	N1 A 20/1 N1 B 20/1	3/4" #12 3/4" #12	#12 2 #12	1440 26 720 28	WORKSTATIONS 1ST FLR OPEN
	- 29 2 CU-203 31 1	.382 1884 #12 #12 3/4" 15/3	C 20/1 A 20/1	0	30SPARE32SPARE	EF-1 EF-4		29 15 31 14	5 #12 4 #12	#12 #12	3/4" 20 3/4" 20)/1 C 20/1)/1 A 20/1	3/4" #12 3/4" #12	2 #12 2 #12	720 30 720 32	WORKSTATIONS 1ST FLR OPEN WORKSTATIONS 1ST FLR OPEN
	- 33 1	884	B 20/1	0	34 SPARE		5)	33 12	5 #12	#12	3/4" 20)/1 B 20/1	3/4" #12	<u>,</u> #12 , #10	720 34	WORKSTATIONS 1ST FLR OPEN
	SPARE 37		A 400/3 REFER TO ONE-LINE	79320	38 225KVA XFM		5)	35 125 37 125	50 #12 50 #12	-	- 20	- A -		#10	2880 36 2880 38	WELDER FUNIE EXTRACTOR
	SPARE 39 SPARE 41	0 - - 20/1 0 - - - 20/1	C - DIAGRAM	80106	40 PANEL L 42 -	SIGN SIGN		39 50 41 50	0 #12 0 #12	#12 #12	3/4" 20 3/4" 20	0/1 B - 0/1 C 20/1	 3/4" #12		2880 40 1000 42	2 RECEP REFRIGERATOR
		CONNECTED LOAD A B C 3 PH	DEMAND LOAD A B C	3 PH		RECEP GFCI ROOF EWH-2 (REST 140)	=	43 72 45 416	0 #12 30 #6	#12	3/4" 20 1" 50	0/1 A 20/1 0/2 B 20/1			0 44 0 46	SPARE
		6460 4486 1960 12906 21074 17045 15855 54874	8075 5608 2450	16133			<u>,</u>	47 416	30 #6 30 #12		-	- C 20/1			0 48	SPARE
	CONTINUOUS (VA)	29705 37060 31455 98220	37131 46325 39319) 32437) 122775		SPARE)	49 ∠0 51 0	J #12	#12 -	- 20	M1 A 20/1 M1 B 20/1		-	0 50	2 SPARE
	NON-CONTINUOUS (VA) HVAC/MOTOR (VA)	0 0 0 0 0 52516 50876 51352 15474?	0 0 0 59426 57376 57971	0 I 174773	TOTAL DEMAND AMP	ERAGE SPARE		53 0 55 0		-	- 20	0/1 C 20/1 0/1 A 20/1			0 54 0 5€	SPARE SPARE
			0 0 0	0		SPARE SPARE		57 0 59 0	-	-	- 20)/1 B 20/1)/1 C 20/1			0 58	SPARE
	IOTAL (KVA)	110.7 109.5 100.6 320.7	126.6 126.4 115.6	5 346.1	416.33	SPARE		61 0	-	-	- 20)/1 A 20/1			0 62	SPARE
						SPARE		65 0	-	-	- 20	V1 C 20/1			0 66	SPARE
									CO A	NNECTED LC	D AD C 31	РΗ	DEMAND A B	LOAD C	3 PH	
		LS					NG (VA) LE (VA))	0 21974	0 17045	0 (15855 548) 374	0 0 21974 1704	0 5 15855 (0 32437	NOTES: INCLUDES LOADS FROM PANEL
	MAIN CIRCUIT BREAKER (A): MLO			R			US (VA))	1250 0	5910 0	7160 143	320 1	1563 7388	3 8950 1 0	17900 0	LSEC2
DISCONNECT ENCLOSURE NOTES	PHASE: 3		NEMA ENCLOSURE: NEMA 1			HVAC/MOTO	OR (VA)	,)	2900	2895	3900 96	95	3620 3618	5 4620 1	11855	TOTAL DEMAND AMPERAGE
NF 3R 1-3, 8	WIRE: 4 FEEDER SIZE: REFER T	O ONE LINE	LOCATION: REFER FED FROM: REFER	TO PLANS TO ONE LINE	E)	26.1	25.9	26.9 78	5 8.9	27.2 28.0	 0 29.4	<u> </u>	- 172.63
NF 3R 1-3, 8 NF 3R 1-3, 8	CKT CC			CONN	кт		((()))			20.0						
NF 3R 1-3, 8 NF 3R 1-3, 8	SERVING NO. LC	AD SIZE SIZE SIZE POLE	POLE SIZE SIZE SIZE	LOAD N	IO. SERVING							LSEC3				
NF 3R 1-3, 8 NE 3R 1-3, 8	RECEP 217 CONF ROOM 61 14 RECEP 218/219 OFFICE 63 11	140 #12 #12 3/4 20/1 380 #12 #12 3/4" 20/1	A 20/1 3/4 #12 #12 B 20/1 3/4" #12 #12	1080 0	64 RECEP 212/213 O	FFICE PANEL RATIN	NG (A):	600 600				MIN				
NF 3R 1-3, 8	RECEP 220/221 OFFICE 65 10 RECEP 222/223 OFFICE 67 10	380 #12 #12 3/4" 20/1 380 #12 #12 3/4" 20/1	C 20/1 3/4" #12 #12 A 20/1 3/4" #12 #12	720	66 RECEP 211 OFF 68 RECEP 209/210/223 C	ORRIDOR	GE (V):	208				NI		3: SURFACE		
NF 3R 1-3, 8 NF 3R 1-3, 8	WORKSTATIONS 2ND FLR OPEN697WORKSTATIONS 2ND FLR OPEN717	20 #12 #12 3/4" 20/1 '20 #12 #12 3/4" 20/1	B 20/1 3/4" #12 #12 C 20/1 3/4" #12 #12	360 ⁻ 540 ⁻	70 RECEP 208/209 TC 72 RECEP OPEN OFFICE	DILETS	WIRE:	3 4				IND		N: REFER TO P	'LANS	
NF 3R 1-3, 8 NF 3R 1-3, 8	WORKSTATIONS 2ND FLR OPEN 73 7	20 #12 #12 3/4" 20/1 /20 #12 #12 3/4" 20/1	A 20/1 3/4" #12 #12 B 20/1 3/4" #12 #12	360	74 RECEP JANITOR/ S	ERVER FEEDER	R SIZE:	REFER TO	ONE LINE		BRH		FED FROM	1: REFER TO O	<u>NE LINE</u>	<u></u>
NF 3R 1-3, 8 NF 3R 1-3 8	WORKSTATIONS 2ND FLR OPEN 75 7 WORKSTATIONS 2ND FLR OPEN 77 1	#12 #12 5/4 20/1 380 #12 #12 3/4" 20/1 000 #10 #12 5/4" 20/1	C 20/1 3/4" #12 #12 C 20/1 3/4" #12 #12 A 20/1 2/4" #12 #12	720	78 RECEP 201 SML (N. WIRE		SIZE POI	P/ AMP/ E POI F		D WIRE CC	ONN. CKT	SERVING
NF 3R 1-3, 8 NF 3R 1-3 8	WORKSTATIONS ZND FLR OPEN 79 10 WORKSTATIONS 2ND FLR OPEN 81 10	700 #12 #12 3/4" 20/1 380 #12 #12 3/4" 20/1	A 201 3/4" #12 #12 B 20/2 3/4" #12 #12	1250	82 EWH-1 (JANITOR	(205) CU-301		121 124	8 #12 8 #12	#12	3/4" 20/	2 A 30/3	3/4" #10	#10 3	600 122	FCU-101
NF 1 1-3, 6, 8	WORKSTATIONS 2ND FLR OPEN8310WORKSTATIONS 2ND FLR OPEN8510)80 #12 #12 3/4" 20/1 080 #12 #12 3/4" 20/1	C - - #12 A 20/1 - - -	1250	84	FCU-102		125 2600	0 #12 0 #10	#10	3/4" 30/	2 C -		#10 3	600 124 000 126	-
ıv⊢ 1 1-3, 8 NF 1 1-3, 6, 8	WORKSTATIONS 2ND FLR OPEN 87 11 WORKSTATIONS 2ND FLR OPEN 80 11	J80 #12 #12 3/4" 20/1 080 #12 #12 3/4" 20/1	B 20/1	0	88 SPARE 90 SPARE	CU-102		127 2600 129 1248	u #10 8 #12	- #12	 3/4" 20/	A 40/2 2 B -	3/4" #10 	#8 3 #8 3	952 128 3952 130	FCU-104
NF 1 1-3, 8 NF 1 1-3. 6. 8	WORKSTATIONS 2ND FLR OPEN 91 10	380 #12 #12 3/4" 20/1 15 #10 #40 2/4" 20/1	A 20/1		92 SPARE			131 1248 133 4160	8 #12 0 #8	- #10	3/4" 40/	C 20/2 2 A -	3/4" #12	#12 1 #12 1	352 132 352 134	CU-104
NF 1 1-3, 8 NF 1 1-2 6 9	EF-2 93 CP-1(JANITOR 205) 95	13 #12 #12 3/4" 20/1 20 #12 #12 3/4" 20/1	□ ∠0/1 - - C 20/1 - -	0	94 SPARE 96 SPARE	-		135 416	0 #8 8 #10			B 40/2	3/4" #10	#8 3	952 136 952 136	FCU-105
NF 1 1-3, 6, 8	SPARE 97 SPARE 99	0 - - 20/1 0 - - - 20/1	A 20/1 B 20/1	0 9	98 SPARE 00 SPARE			139 1248	5 #1∠ 8 #12	#12 -		A 20/2	3/4" #12	#0 39 #12 1	248 140	CU-105
ıv⊢ 1 1-3, 6, 8 NF 1 1-3, 6, 8	SPARE 101 SPARE 103	$\frac{0}{0}$ 20/1 0 20/1	C 20/1	0 1	02 SPARE 04 SDADE	FCU-107		141 3952 143 3952	∠ #8 2 #8	#10	3/4" 40/ 	2 B - C 45/3	 <u>1"</u> #10	#12 1; #6 5	248 142 5400 144	FCU-106
NF 1 1-3, 6, 8 NF 1 1-3. 6. 8	SPARE 105	$\frac{1}{0}$ $\frac{1}{20/1}$	B 20/1		06 SPARE	CU-107		145 1248 147 1248	8 #12 8 #12	#12	3/4" 20/	2 A - B -		#6 5	400 146 5400 148	
NF 1 1-3, 6, 8	SPARE 107 SPARE 109	0 - - 20/1 0 - - 20/1	A 20/1	0 1 0 1	U8 SPARE 10 SPARE	CU-IT-1		149 166	4 #10	#10	3/4" 25/	2 C 30/3	3/4" #10	#10 3	600 150	FCU-108
NF 1 1-3, 5, 8	SPARE 111 SPARE 113	0 - - 20/1 0 - - - 20/1	B 20/1 - - - C 20/1 - - - -	0 1	12SPARE14SPARE	CU-IT-2		153 166	4 #10 4	#10	3/4" 25/	2 B -		#10 3	<u>600</u> 154	-
NF 1 1-3, 5, 8 NF 1 1-3, 8	SPARE 115		A 20/1	0 1	16 SPARE			155 1664 157 3952	4 #10 2 #8	- #10	 3/4'' 40/	C 25/2 2 A -	3/4" #10	#10 16 #10 1	664 156 664 158	CU-108
NF 1 1-3, 8 NF 1 1-4, 8	SPARE 119		C 20/1	0 1	20 SPARE			159 3952 161 1248	2 #8 8 #12	- #12	 3/4'' 20/	B 45/3 2 C -	1" #10 	#6 5	040 160 5040 162	FCU-201
NF 1 1-4, 8 NF 3R 1_3 7 8		A B C 3 PH	DEMAND LOAD A B C	3 PH		- FCLL204		163 1248 165 4160	8 #12 0 #8	- #10		A - 2 B 45/3	 1" #10	#6 5 #6 F	040 164 5040 166	- FCI I-205
NF 1 1-4, 8	LIGHTING (VA) RECEPTACLE (VA)	0 0 0 0 9540 6480 6840 22860	0 0 0 9540 6480 6840	0 16430	NOTES:	-		167 4160	- #0 0 #8	- -	 	C -		#6 5	040 168	-
ıN⊢ 3R 1-3, 8 NF 3R 1-3, 8		0 1250 1250 2500	0 1563 1563	3125		CU-204		109 1352 171 1352	∠ #12 2 #12	#12	3/4" 20/ 	∠ A - B 30/3	 3/4" #10	#6 5 ^r #10 3	040 170 3600 122	FCU-203
	HVAC/MOTOR (VA)	0 15 20 35	0 15 20	35 -	TOTAL DEMAND AMPE	RAGE SPARE SPARE		173 0 175 0	-	-	- 20/	1 C - 1 A -		#10 3/ #10 3	600 124 3600 126	
NS T. DO NOT MOUNT TO EQUIPMENT.		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0 0 0 Q5 Q1 Q4	0	EA 20	SPARE		177 0 179 0	-	-	- 20/	1 B 20/1			0 128	SPARE
IAL INFORMATION		0.0 1.1 0.1 20.4	J.J 0.1 0.4	ı J. 0	54.38			U U	CON		<u>- 20/</u>	<u>, 1~1 ~0/1 </u>	DEMAND L			
						LIGHTING	G (VA)		A 0	В 0	C 3 P 0 0	Н	A B 0 0	<u> </u>	<u>РН</u> 0	NOTES:
HALL INSTALL.							E (VA) IS (VA)		0 28455	0 35310 2	0 0 28455 922	20	0 0 35569 44138	0 35569 11	0 15275	
DIED ON PLANS.							IS (VA)		0 24761	0 23106 1	0 0	14	0 0	0 5 23027 7	0 17 <u>9</u> 4	
						KITCHEI	IN (VA)		0	0	0 0		0 0	0	0	
						TOTAL (I	KVA)		53.2	58.4	51.0 162	.7	60.8 67.7	58.6 1 7	87.1	519.27

8. ELECTRICAL CONTRACTOR TO MAKE FINAL CONNECTIONS AS NOTED ON PLANS.

1 ELECTRICAL LIGHTING PLAN - FIRST FLOOR

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

GENERAL NOTES:

- A. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL LIGHTING INSTALLATION REQUIREMENTS.
- ARCHITECTURAL ELEVATIONS AND RCP PRIOR TO INSTALLATION. VERIFY LOCATIONS AND MOUNTING METHODS AND MATERIALS THAT ARE UNCLEAR PRIOR TO ORDERING OR INSTALLING LUMINAIRES.
- C. CIRCUIT NUMBER AND FIXTURE TAG SHOWN ADJACENT TO EACH LUMINAIRE.
- D. CIRCUIT EXIT SIGNS (UNSWITCHED) WITH THE ADJACENT LIGHTING IN THE ROOM.
- E. UON, ALL CIRCUITS SHOWN ON THIS DRAWING WILL BE FED FROM PANEL

KEYED NOTES

- 1. LUMINAIRES SHOWN HATCHED OR TAGGED "XE" AND ALL EXIT SIGNS SHALL BE PROVIDED WITH INTEGRAL BATTERY PACKS FOR 90 MIN OF EMERGENCY OPERATION. PROVIDE WITH VISIBLE BATTERY STATUS INDICATOR. TYPICAL
- 2. HIGH-BAY LIGHTS SHALL BE PROVIDED WITH INTEGRAL SENSOR FOR CONTROLS. REFER TO LIGHTING FIXTURE SCHEDULE ON SHEET E0.3.
- 3. LOWER CASE LETTER ADJACENT TO LUMINAIRE INDICATES SWITCHLEG TO
- SERVE LUMINAIRE. 4. SWITCH SERVING LIGHTS ON SECOND FLOOR. SEE E2.02 FOR CONTINUATION.
- 5. PROVIDE SWITCH MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL ON/OFF CONTROL SWITCH AND DUAL RELAYS FOR LIGHTING AND EXHAUST FAN. TYPICAL.

LIGHTING CONTROLS SYMBOLS LEGEND \$os WALL MOUNTED OCCUPANCY SENSOR (DUAL TECH) \$^{vs} WALL MOUNTED VACANCY SENSOR WITH <u>DIMMING</u> CEILING MOUNTED OCCUPANCY SENSOR (DUAL TECH) OS CORNER MOUNTED OCCUPANCY SENSOR (DUAL TECH)

B. CONTRACTOR SHALL COORDINATE LUMINAIRE LOCATIONS WITH THE

1 ELECTRICAL LIGHTING PLAN - SECOND FLOOR

PLAN NORTH FOR THIS SHEET

GENERAL NOTES:

- A. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL LIGHTING INSTALLATION REQUIREMENTS. B. CONTRACTOR SHALL COORDINATE LUMINAIRE LOCATIONS WITH THE
- ARCHITECTURAL ELEVATIONS AND RCP PRIOR TO INSTALLATION. VERIFY LOCATIONS AND MOUNTING METHODS AND MATERIALS THAT ARE UNCLEAR PRIOR TO ORDERING OR INSTALLING LUMINAIRES. C. CIRCUIT NUMBER AND FIXTURE TAG SHOWN ADJACENT TO EACH
- LUMINAIRE.
- D. CIRCUIT EXIT SIGNS (UNSWITCHED) WITH THE ADJACENT LIGHTING IN THE ROOM.

KEYED NOTES

- 1. LUMINAIRES SHOWN HATCHED OR TAGGED "XE" AND ALL EXIT SIGNS SHALL BE PROVIDED WITH INTEGRAL BATTERY PACKS FOR 90 MIN OF EMERGENCY OPERATION. PROVIDE WITH VISIBLE BATTERY STATUS INDICATOR. TYPICAL
- 2. HIGH-BAY LIGHTS SHALL BE PROVIDED WITH INTEGRAL SENSOR FOR CONTROLS. REFER TO LIGHTING FIXTURE SCHEDULE ON SHEET E0.3.
- 3. LOWER CASE LETTER ADJACENT TO LUMINAIRE INDICATES SWITCHLEG TO SERVE LUMINAIRE.
- 4. PROVIDE SWITCH MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH INTEGRAL ON/OFF CONTROL SWITCH AND DUAL RELAYS FOR LIGHTING AND EXHAUST FAN. TYPICAL.
- 5. PER THE SHELL BUILDING CONSTRUCTION DOCUMENTS, THE EXISTING EXTERIOR LUMINAIRES SHALL BE SWITCHED BY A CONTACTOR CONTROLLED BY A 24 HOUR, 7 DAY ASTRONOMICAL TIME CLOCK WITH HOLIDAY SCHEDULING. CONTACTOR AND TIME CLOCK ARE MOUNTED ADJACENT TO PANEL. ELECTRICAL CONTRACTOR SHALL ADJUST TIMECLOCK TO TURN LIGHTS ON AT DUSK AND LIGHTS OFF AT 10 PM. CONTRACTOR T OVERIFY THE NUMBER AND LOCATION OF THE EXISTING EXTERIOR LUMINARES.

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

PLAN NORTH FOR THIS SHEET

GENERAL NOTES:

- A. FURNISH AND INSTALL ALL ITEMS, INCLUDING EVERY ARTICLE, DEVICE, OR ACCESSORY REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED, MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOSTING/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED PERMITS AND LICENSES. B. DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT NECESSARILY REFLECT ALL
- WORK REQUIRED TO COMPLETE PROJECT. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT WITHIN DESIGN INTENT AT NO ADDITIONAL COST TO OWNER OR TENANT. CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION IN CASES OF DOUBT.
- C. REFER TO SPECIFICATIONS. SCHEDULES. DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL ELECTRICAL EQUIPMENT AND SYSTEM INSTALLATION REQUIREMENTS.
- D. FOR FIRE ALARM WORK, A CONTRACTOR LICENSED PER STATE FIRE MARSHAL'S REQUIREMENTS MUST DO THE WORK AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL. CODE COMPLIANT FIRE ALARM DEVICES SHALL BE PROVIDED FOR FULL COVERAGE OF THIS SPACE IN STRICT ACCORDANCE WITH NFPA-72, AND ALL CITY, STATE, NATIONAL CODES AND STANDARDS, IFC. ALL FIRE ALARM DEVICES SHALL EXACTLY MATCH BUILDING STANDARD. E. REFER TO ELECTRICAL EQUIPMENT SCHEDULE FOR DISCONNECT AND CONTROLS
- REQUIREMENTS. F. SPECIAL REQUIREMENTS SUCH AS WATERPROOF (WP) AND ABOVE COUNTER (AC) ARE NOTED ADJACENT TO RECEPTACLES.
- G. CONTRACTOR SHALL PROVIDE POWER TO ALL ITEMS SHOWN FROM THE PANEL AND CIRCUIT NUMBERS THAT ARE SHOWN ADJACENT TO THE LOAD (RECEPTACLE, DISCONNECT, JBOX, EQUIPMENT CONNECTION POINT, ETC). SIZE CIRCUIT PER PANEL SCHEDULE. PROVIDE NEUTRAL AND GROUND, U.N.O.
- H. CONTRACTOR SHALL COORDINATE ALL WIRING DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.

KEYED NOTES 🐼:

- 1. EXISTING UTILITY METER AND PANEL.
- 2. EXISTING TELEPHONE/CABLE SERVICE BOXES.
- 3. FLUSH SERVICE FLOOR BOX WITH TWO DUPLEX RECEPTACLES, TWO HDMI PORTS AND TWO DATA MOUNTING PLATE RECESSED IN BOX WITH A SHARED ACCESS SPACE INSIDE. POWER AND DATA SHALL BE IN SEPARATE COMPARTMENTS ON OPPOSITE SIDES OF BOX. COORDINATE MOUNTING PLATES AND COMMUNICATIONS JACKS TO BE USED WITH OWNER'S COMMUNICATIONS REPRESENTATIVE. PROVIDE WITH COVER PLATE SUITABLE FOR FLOORING. COORDINATE FINAL LOCATION WITH LEG OF CONFERENCE TABLE. ROUTE 3/4" POWER AND 1-1/2" DATA CONDUITS TO TV WALL.
- 4. PROVIDE TWO(2) COMPARTMENT POWER/DATA POLE TO MATCH SYSTEM FURNITURE. STUB POLE 3" MIN ABOVE CEILING. ROUTE CONDUCTORS IN FMC TO POLE. PROVIDE CIRCUITS NOTED THROUGH POLE TO RECEPTACLES IN SYSTEM FURNITURE. COORDINATE LOCATION, POWER POLE PURCHASE, AND INSTALLATION OF CONDUCTORS WITH FURNITURE PROVIDER. PROVIDE DEDICATED NEUTRAL AND GROUND WITH EACH CIRCUIT AND MAKE ALL ELECTRICAL TERMINATIONS. COORDINATE CIRCUIT COUNT WITH FURNITURE PRIOR TO ROUGH-IN.
- 5. MOUNT EQUIPMENT TO STRUCTURE ABOVE CEILING ADJACENT TO LOAD TO BE SERVED, IN A VISIBLE AND ACCESSIBLE LOCATION, AND PROVIDED WITH WORKING SPACE. COORDINATE LOCATION WITH OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE GFCI RECEPTACLE MOUNTED BELOW DISCONNECT. RECEPTACLE SHALL BE CIRCUITED TO NEAREST GENERAL PURPOSE CIRCUIT.
- 6. INDOOR UNIT IS POWERED BY OUTDOOR UNIT. PROVIDE 3 #12'S IN 3/4" CONDUIT FROM INDOOR UNIT TO OUTDOOR UNIT. COORDINATE CONDUIT ROUTING WITH REFRIGERANT PIPING. PROVIDE RECEPTACLE MOUNTED BELOW UNIT FOR CONDENSATE PUMP. RECEPTACLE SHALL BE CIRCUITED TO NEAREST GENERAL PURPOSE CIRCUIT.
- 7. PROVIDE A GROUND LUG AND TERMINAL STRIP WITH A #4 ISOLATED GROUND CONDUCTOR BONDED TO THE GROUNDING ELECTRODE AT THE SERVICE ENTRANCE DISCONNECT.
- 8. LOCATION OF DATA RACK. FIELD COORDINATE FINAL LOCATION AND INSTALLATION WITH OWNER.
- 9. PROVIDE TWO(2) 2" CONDUITS FROM BUILDING TELECOM DEMARC TO INDICATED LOCATION, WITH PULL STRING. COORDINATE TERMINATION POINT WITH COMMUNICATIONS CONTRACTORS. REFER TO ARCHITECTURAL PLANS TO DETERMINE CONDUIT RUN LENGTHS AND ROUTING.
- 10. PROVIDE 3/4" FIRE RATED PLYWOOD BACKBOARD FOR MOUNTING COMMUNICATIONS EQUIPMENT. WIDTH OF PANEL SHALL BE COORDINATED WITH INFORMATION TECHNOLOGIES CONTRACTOR. PAINT TO MATCH WALL TO WHICH BOARD IS ATTACHED.
- 11. COORDINATE WITH MECHANICAL DRAWINGS FOR NEW THERMOSTAT LOCATIONS. 12. PROVIDE 60A/600V/3P/N1 DISCONNECT SWITCH FOR WELDER EQUIPMENT. COORDINATE INSTALLATION DETAILS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- 13. PROVIDE 30A/600V/3P/N1 DISCONNECT SWITCH FOR WELDER FUME EXTRACTOR. COORDINATE INSTALLATION DETAILS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
- 14. PROVIDE JUNCTION BOX AT 48" AFF FOR CARD READER. ROUTE 1/2" CONDUIT FROM J-BOX TO ACCESSIBLE CEILING. PROVIDE CONDUIT FROM ACCESSIBLE CEILING TO TOP OF DOOR FRAME FOR DOOR CONTACT SWITCH AND TO JAM FOR ELECTRIC STRIKE.RE: 5/E0.02.
- 15. MOUNT EQUIPMENT ON WALL ADJACENT TO LOAD TO BE SERVED, IN A VISIBLE AND ACCESSIBLE SPACE, AND PROVIDED WITH NEC REQUIRED CLEARANCES. COORDINATE LOCATION WITH OTHER TRADES PRIOR TO ROUGH-IN.
- 16. INSTALL RACEWAY AND PROVIDE (1) 3" ELECTRICAL SERVICE CONDUIT WITH PULL-STRING FROM INTERIOR OF BUILDING (AS INDICATED) TO FUTURE WORK AREAS. TERMINATE 4FT PAST WALL. INSTALL HIGH AND TIGHT AGAINST CEILING. COORDINATE FINAL ROUTING IN FIELD PRIOR TO ROUGH-IN. RE: 2/E0.02.
- 17. PROVIDE JUNCTION BOX FOR SIGN. COORDINATE EXACT LOCATION OF JUNCTION BOX WITH ARCHITECTURAL ELEVATIONS, TENANT & LANDLORD PRIOR TO ROUGH-IN.
- 18. PROVIDE DUCT MOUNTED SMOKE DETECTOR IN AIR DUCT OF HVAC UNIT. DUCT DETECTOR TO BE WIRED TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. PROVIDE DUCT DETECTOR WITH LED ALARM INDICATOR REMOTE MOUNTED TO BOTTOM OF CEILING BELOW UNIT SERVED. PROVIDE CONTROL POWER FOR DUCT DETECTOR FROM UNIT SERVED. COORDINATE REQUIREMENTS AND INSTALLATION WITH MECHANICAL CONTRACTOR AND INTERFACE WITH FIRE ALARM SYSTEM WITH FIRE ALARM CONTRACTOR.

FIRE ALARM DESIGN/BUILD NOTES

- a. PROVIDE A COMPLETE FIRE ALARM SYSTEM IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES.
- b. EXISTING FIRE ALARM PANEL SHOWN FOR REFERENCE FROM SHELL BUILDING CONSTRUCTION DOCUMENTS.
- c. PROVIDE RECESSED REMOTE ANNUNCIATOR PANEL, AS INDICATED.
- d. EC SHALL ADD ANNUNCIATION DEVICES TO THE SYSTEM PANEL.
- e. REFER TO THE SPECIFICATIONS AND ANY PERTINENT SHEET WORK NOTES ON THESE DRAWINGS FOR MORE INFORMATION.
- f. PROVIDE A COMPLETE SET OF FIRE MARSHAL APPROVED SHOP DRAWINGS TO THE ENGINEER PRIOR TO ROUGH-IN.
- g. CELLULAR DATA IS ACCEPTABLE.

S C A L E : 1/8" = 1'-0"

PLAN NORTH FOR THIS SHEET

GENERAL NOTES:

- A. FURNISH AND INSTALL ALL ITEMS, INCLUDING EVERY ARTICLE, DEVICE, OR ACCESSORY REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED, MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOSTING/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED PERMITS AND LICENSES. B. DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT NECESSARILY REFLECT ALL
- WORK REQUIRED TO COMPLETE PROJECT. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT WITHIN DESIGN INTENT AT NO ADDITIONAL COST TO OWNER OR TENANT. CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION IN CASES OF DOUBT.
- C. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL ELECTRICAL EQUIPMENT AND SYSTEM INSTALLATION REQUIREMENTS.
- D. FOR FIRE ALARM WORK, A CONTRACTOR LICENSED PER STATE FIRE MARSHAL'S REQUIREMENTS MUST DO THE WORK AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL. CODE COMPLIANT FIRE ALARM DEVICES SHALL BE PROVIDED FOR FULL COVERAGE OF THIS SPACE IN STRICT ACCORDANCE WITH NFPA-72, AND ALL CITY. STATE, NATIONAL CODES AND STANDARDS, IFC. ALL FIRE ALARM DEVICES SHALL EXACTLY MATCH BUILDING STANDARD. E. REFER TO ELECTRICAL EQUIPMENT SCHEDULE FOR DISCONNECT AND CONTROLS
- REQUIREMENTS. F. SPECIAL REQUIREMENTS SUCH AS WATERPROOF (WP) AND USB RECEPTACLES (D) ARE NOTED ADJACENT TO RECEPTACLES.
- G. CONTRACTOR SHALL PROVIDE POWER TO ALL ITEMS SHOWN FROM THE PANEL AND CIRCUIT NUMBERS THAT ARE SHOWN ADJACENT TO THE LOAD (RECEPTACLE, DISCONNECT, JBOX, EQUIPMENT CONNECTION POINT, ETC). SIZE CIRCUIT PER PANEL SCHEDULE. PROVIDE NEUTRAL AND GROUND, U.N.O.
- H. CONTRACTOR SHALL COORDINATE ALL WIRING DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.

KEYED NOTES 🐼:

- 1. PROVIDE FIRE RATED POKE THROUGH WITH TWO DUPLEX RECEPTACLES, TWO HDMI PORTS AND TWO DATA MOUNTING PLATES RECESSED IN BOX WITH A SHARED ACCESS SPACE INSIDE. POWER AND DATA SHALL BE IN SEPARATE COMPARTMENTS ON OPPOSITE SIDES OF BOX. COORDINATE MOUNTING PLATES AND COMMUNICATIONS JACKS TO BE USED WITH OWNER'S COMMUNICATIONS REPRESENTATIVE. PROVIDE WITH COVER PLATE SUITABLE FOR FLOORING. COORDINATE FINAL LOCATION WITH LEG OF CONFERENCE TABLE. ROUTE 3/4" POWER AND 1-1/2" DATA CONDUITS VIA PLENUM SPACE ON FLOOR BELOW TO TV WALL AND BACK UP THROUGH A COREDRILLED OPENING TO THE TV WALL BOX ON THE LEVEL OF CONSTRUCTION
- 2. PROVIDE TWO(2) COMPARTMENT POWER/DATA POLE TO MATCH SYSTEM FURNITURE. STUB POLE 3" MIN ABOVE CEILING. ROUTE CONDUCTORS IN FMC TO POLE. PROVIDE CIRCUITS NOTED THROUGH POLE TO RECEPTACLES IN SYSTEM FURNITURE. COORDINATE LOCATION, POWER POLE PURCHASE, AND INSTALLATION OF CONDUCTORS WITH FURNITURE PROVIDER. PROVIDE DEDICATED NEUTRAL AND GROUND WITH EACH CIRCUIT AND MAKE ALL ELECTRICAL TERMINATIONS. COORDINATE CIRCUIT COUNT WITH FURNITURE PRIOR TO ROUGH-IN. PROVIDE CREDIT TO TENANT IF CIRCUIT COUNT IS LESS THAN 4.
- 3. MOUNT EQUIPMENT TO STRUCTURE ABOVE CEILING ADJACENT TO LOAD TO BE SERVED. IN A VISIBLE AND ACCESSIBLE LOCATION, AND PROVIDED WITH WORKING SPACE. COORDINATE LOCATION WITH OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE GFCI RECEPTACLE MOUNTED BELOW DISCONNECT. RECEPTACLE SHALL BE CIRCUITED TO NEAREST GENERAL PURPOSE CIRCUIT.
- 4. INDOOR UNIT IS POWERED BY OUTDOOR UNIT. PROVIDE 3 #12'S IN 3/4" CONDUIT FROM INDOOR UNIT TO OUTDOOR UNIT. COORDINATE CONDUIT ROUTING WITH REFRIGERANT PIPING.
- 5. PROVIDE A GROUND LUG AND TERMINAL STRIP WITH A #4 ISOLATED GROUND CONDUCTOR BONDED TO THE GROUNDING ELECTRODE AT THE SERVICE ENTRANCE DISCONNECT.
- 6. PROVIDE 3/4" FIRE RATED PLYWOOD BACKBOARD FOR MOUNTING COMMUNICATIONS EQUIPMENT. WIDTH OF PANEL SHALL BE COORDINATED WITH INFORMATION TECHNOLOGIES CONTRACTOR. PAINT TO MATCH WALL TO WHICH BOARD IS ATTACHED.
- 7. COORDINATE WITH MECHANICAL DRAWINGS FOR NEW THERMOSTAT LOCATIONS. 8. PROVIDE ONE POWER AND ONE DATA JUNCTION BOX IN WALL AT THIS LOCATION FOR BRANCH CIRCUIT AND DATA/VOICE TO SERVE SYSTEM FURNITURE THAT IS PROVIDED
- WITH INTEGRAL RECEPTACLES. PROVIDE COVER PLATE WITH ANGLE CONNECTOR AND FLEXIBLE METAL CONDUIT (FMC) FROM EACH JUNCTION BOX IN WALL TO CONNECTION POINT ON FURNITURE, PROVIDE POWER CONDUCTORS, AND MAKE ALL ELECTRICAL TERMINATIONS. COORDINATE JUNCTION BOX LOCATION AND INSTALLATION OF CONDUCTORS WITH FURNITURE PROVIDER. COORDINATE CIRCUIT COUNT WITH FURNITURE PRIOR TO ROUGH-IN. PROVIDE (4) DEDICATED CIRCUITS ACROSS A MAXIMUM OF (8) WORKSTATIONS. PROVIDE DEDICATED NEUTRAL AND GROUND WITH EACH CIRCUIT. PROVIDE CREDIT TO TENANT IF CIRCUIT COUNT IS LESS THAN 4. PROVIDE 1-1/2" CONDUIT FOR DATA JUNCTION BOX.
- 9. 2ND FLOOR DATA RACK LOCATION.
- 10. PROVIDE DUCT MOUNTED SMOKE DETECTOR IN AIR DUCT OF HVAC UNIT. DUCT DETECTOR TO BE WIRED TO SHUT DOWN UNIT UPON DETECTION OF SMOKE. PROVIDE DUCT DETECTOR WITH LED ALARM INDICATOR REMOTE MOUNTED TO BOTTOM OF CEILING BELOW UNIT SERVED. PROVIDE CONTROL POWER FOR DUCT DETECTOR FROM UNIT SERVED. COORDINATE REQUIREMENTS AND INSTALLATION WITH MECHANICAL CONTRACTOR AND INTERFACE WITH FIRE ALARM SYSTEM WITH FIRE ALARM CONTRACTOR.
- 11. MOUNT EQUIPMENT ON WALL ADJACENT TO LOAD TO BE SERVED, IN A VISIBLE AND ACCESSIBLE SPACE, AND PROVIDED WITH NEC REQUIRED CLEARANCES. COORDINATE LOCATION WITH OTHER TRADES PRIOR TO ROUGH-IN.

FIRE ALARM DESIGN/BUILD NOTES

- a. PROVIDE A COMPLETE FIRE ALARM SYSTEM IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL CODES.
- b. EXISTING PANEL SHOWN FOR REFERENCE FROM SHELL BUILDING CONSTRUCTION DOCUMENTS.
- c. EC SHALL ADD ANNUNCIATION DEVICES TO THE SYSTEM PANEL.
- d. REFER TO THE SPECIFICATIONS AND ANY PERTINENT SHEET WORK NOTES ON THESE DRAWINGS FOR MORE INFORMATION.
- e. PROVIDE A COMPLETE SET OF FIRE MARSHAL APPROVED SHOP DRAWINGS TO THE ENGINEER PRIOR TO ROUGH-IN.
- f. CELLULAR DATA IS ACCEPTABLE.

1 ELECTRICAL POWER PLAN - ROOF

GENERAL NOTES:

- A. FURNISH AND INSTALL ALL ITEMS, INCLUDING EVERY ARTICLE, DEVICE, OR ACCESSORY REASONABLY NECESSARY TO FACILITATE EACH SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED, MATERIALS, LABOR, SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOSTING/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED PERMITS AND LICENSES.
- B. DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT NECESSARILY REFLECT ALL WORK REQUIRED TO COMPLETE PROJECT. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT WITHIN DESIGN INTENT AT NO ADDITIONAL COST TO OWNER OR TENANT. CONTRACTOR SHALL REQUEST ADDITIONAL INFORMATION IN CASES OF DOUBT.
- C. REFER TO SPECIFICATIONS, SCHEDULES, DETAILS AND GENERAL NOTES SHEET FOR ADDITIONAL ELECTRICAL EQUIPMENT AND SYSTEM INSTALLATION REQUIREMENTS.
- D. FOR FIRE ALARM WORK, A CONTRACTOR LICENSED PER STATE FIRE MARSHAL'S REQUIREMENTS MUST DO THE WORK AND SUBMIT SHOP DRAWINGS FOR REVIEW AND APPROVAL. CODE COMPLIANT FIRE ALARM DEVICES SHALL BE PROVIDED FOR FULL COVERAGE OF THIS SPACE IN STRICT ACCORDANCE WITH NFPA-72, AND ALL CITY, STATE, NATIONAL CODES AND STANDARDS, IFC. ALL FIRE ALARM DEVICES SHALL EXACTLY MATCH BUILDING STANDARD.
 E. REFER TO ELECTRICAL EQUIPMENT SCHEDULE FOR DISCONNECT AND CONTROLS
- REQUIREMENTS. F. SPECIAL REQUIREMENTS SUCH AS WATERPROOF (WP) AND USB RECEPTACLES (D) ARE NOTED ADJACENT TO RECEPTACLES.
- G. CONTRACTOR SHALL PROVIDE POWER TO ALL ITEMS SHOWN FROM THE PANEL AND CIRCUIT NUMBERS THAT ARE SHOWN ADJACENT TO THE LOAD (RECEPTACLE, DISCONNECT, JBOX, EQUIPMENT CONNECTION POINT, ETC). SIZE CIRCUIT PER PANEL SCHEDULE. PROVIDE NEUTRAL AND GROUND, U.N.O.
- H. CONTRACTOR SHALL COORDINATE ALL WIRING DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN.

KEYED NOTES 🐼:

- TOP OF RACK AND DISCONNECT SHOULD BE KEPT AT OR BELOW THE TOP OF THE EQUIPMENT SERVED BUT ABOVE 24" A.F.G. COORDINATE WITH ROOFING CONTRACTOR. ARCHITECT TO APPROVE MOUNTING METHOD BEFORE INSTALLATION.
- 2. MOUNT EQUIPMENT ON SLOTTED METAL U-CHANNEL RACK ADJACENT TO LOAD TO BE SERVED, AS LOW AS POSSIBLE, IN AN ACCESSIBLE LOCATION, AND PROVIDED WITH NEC REQUIRED WORKING SPACE. ANCHOR TO ROOF USING A 1 FT (MIN) HORIZONTAL BASE PIECE AND 45° ANGLED BRACING PIECE. COORDINATE WITH ROOFING CONTRACTOR.
- EXHAUST FAN SHALL BE SWITCHED BY A CONTACTOR CONTROLLED BY A 24 HOUR, 7 DAY ASTRONOMICAL TIME CLOCK WITH HOLIDAY SCHEDULING. CONTACTOR AND TIME CLOCK TO BE MOUNTED ADJACENT TO PANEL.

MECHANICAL LEGEND AND SYMBOLS

CD
——— HWS ———
HWR
cws
CWR
RS
RL
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CONDENSATE DRAIN HEATING WATER SUPPLY HEATING WATER RETURN CHILLED WATER SUPPLY CHILLED WATER RETURN REFRIGERANT SUCTION LINE REFRIGERANT LIQUID LINE REFRIGERANT HOT GAS LINE GATE VALVE BALL VALVE BUTTERFLY VALVE GLOBE VALVE TRIPLE DUTY VALVE SWING CHECK VALVE STRAINER FLEX CONNECTOR HOSE END DRAIN VALVE PRESSURE REDUCING VA SAFETY RELIEF VALVE UNION MOTORIZED T.C. VA/2-WAY MOTORIZED T.C. VA/3-WAY ECCENTRIC PLUG BALANCING VALVE VALVE IN RISER TEE UP TEE DOWN ELBOW UP ELBOW DOWN PIPE SIZE CHANGE MANUAL FLOW BALANCING VALVE (CIRCUIT SETTER) AUTOMATIC FLOW BALANCING VALVE PIPE GUIDE PIPE ANCHOR PRESSURE/TEMP. TEST PLUG DIAL THERMOMETER PRESSURE GAUGE W/ SNUBBER CONNECT NEW TO EXISTING

ELECTRIC THERMOSTAT ELECTRIC THERMOSTAT W/GUARD PNEUMATIC THERMOSTAT OR DDC TEMPERATURE SENSOR (JOB SPECIFIC PNEUMATIC RECESSED ASPERATING THERMOSTAT PNEUMATIC STAT W/GUARD ACOUSTICALLY LINED SHEET METAL DUCT MANUAL BALANCING DAMPER FLEX CONNECTOR ACCESS DOORS FIRE DAMPER FIRE/SMOKE DAMPER

MOTORIZED DAMPER TURNING VANE ELL

> 45° LOW-LOSS TAKE-OFF FITTING W/ DAMPER & FLEX DUCT 45° LOW-LOSS TAKE-OFF FITTING W/

DAMPER & RIGID ROUND DUCT

90° TEE TAKE-OFF FITTING

CONICAL 90° TEE TAKE-OFF FITTING

45° TEE TAKE-OFF FIITTING

45°-90° TEE TAKE-OFF FITTING

SUPPLY AIR DUCT (SINGLE LINE) RETURN AIR DUCT (SINGLE LINE) EXHAUST AIR DUCT (SINGLE LINE) DIFFUSER, REGISTER, OR GRILLE THROW PATTERN SHOWN ON DWGS.

X-X = AIR DEVICE DESIGNATION PER SCHEDULE, AIR FLOW (E.G., 100 CFM) EXISTING ITEMS

AIR DEVICE CALLOUT

DEMO ITEMS

NEW ITEMS

MECHANICAL ABBREVIATIONS

AFF ABOVE FINISHED FLOOR ACFM ACTUAL CFM AHU AIR HANDLING UNIT ANSI AMERICAN NATIONAL STANDARDS INSTITUTE AMP AMPERE (AMP.AMPS) APD AIR PRESSURE DROP APPROX APPROXIMATE BHP BRAKE HP, BOILER HP BTU BRITISH THERMAL UNIT MBH BTU PER HOUR (THOUSAND) CU FT CUBIC FEET CU IN CUBIC INCH CFM CUBIC FEET PER MINUTE SCFM CFM, STANDARD CONDITIONS DB DECIBEL DIA, Ø DIAMETER ID DIAMETER, INSIDE OD DIAMETER, OUTSIDE DBT DRY-BULB TEMPERATURE (E) EXISTING ÉÁT ENTERING AIR TEMPERATURE E.C. ELECTRICAL CONTRACTOR EDR EQUIVALENT DIRECT RADIATION EXP EXPANSION EWT ENTERING WATER TEMPERATURE FAHRENHEIT FPM FEET PER MINUTE FPS FEET PER SECOND FT FOOT OR FEET ΗZ FREQUENCY GA GAGE OR GAUGE GAL GALLONS G.C. GENERAL CONTRACTOR GPH GALLONS PER HOUR GPM GALLONS PER MINUTE GPD GALLONS PER DAY HD HEAD HGT HEIGHT ΗP HORSEPOWER RH RELATIVE HUMIDITY KILOWATT KW KWH KILOWATT HOUR

LAT LEAVING AIR TEMPERATURE LWT LEAVING WATER TEMPERATURE IF LINEAR FEET MAX MAXIMUM M.C. MECHANICAL CONTRACTOR MIN MINIMUM NEW (N) ŃÖ NORMALLY OPEN NC NORMALLY CLOSED N/A NOT APPLICABLE NIC NOT IN CONTRACT NTS NOT TO SCALE NO. NUMBER OBD **OPPOSED BLADE DAMPER** OA OUTSIDE AIR ΔP PRESSURE DIFFERENCE PH PHASE (ELECTRICAL) LBS POUNDS PSI POUNDS PER SQUARE INCH PSIA PSI ABSOLUTE PD PRESSURE DROP PSIG PSI GAUGE RELOCATED (R) RH **RELATIVE HUMIDITY** RA **RETURN AIR** RPM **REVOLUTIONS PER MINUTE** SH SENSIBLE HEAT SPEC SPECIFICATION SP VOL SPECIFIC VOLUME STD STANDARD SP STATIC PRESSURE SUCT SUCTION SUPPLY AIR SA TEMP TEMPERATURE ΔT TEMPERATURE DIFFERENCE T STAT THERMOSTAT TONS TONS OF REFRIGERATION T.C. TEMPERATURE CONTROL VAC VACUUM VAV VARIABLE AIR VOLUME VEL VELOCITY VOLT VOL VOLUME VFD VARIABLE FREQUENCY DRIVE WC WATER COLUMN WITH W/

WINTER: OUTDOOR DESIG INDOOR DESIGN: **BUILDING WALL & ROO** ROOF: U-VALUE = WALLS: U - VALUE FRONT GLASS: U - VALUE: SHADE COE INTERIOR LOADS BASE APPL 1. BUILDING CODE 2. FIRE CODE - 2015 3. ELECTRICAL CODE 4. MECHANICAL COL 5. PLUMBING CODE 6. OTHER - 2015 INTE

HVAC SYSTEM CONTR 4. TEMPERATURE

TEST, ADJUST AND BA

MECHANICAL DESIGN CRITERIA	GENERAL N
MECHANICAL DESIGN CONDITIONS: PROJECT LOCATION: LEANDER, TEXAS	1. FURNISH AND INSTALL ALL ITEMS NECESSARY TO PROVIDE FULLY AND THE EQUIPMENT SPECIFIED. ELEMENTS OF THE WORK SHALL SUPERVISION, SUPPLIES, EQUIPMENT, TRANSPORTATION, HOISTIN
SUMMER: OUTDOOR DESIGN: 98°F DB / 74°F WB INDOOR DESIGN: 75°F DB / 50% RH	2. DRAWINGS ARE SCHEMATIC IN NATURE AND DO NOT REFLECT ALI PROJECT. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR WITHIN DESIGN. CONTRACTOR SHALL REQUEST ADDITIONAL INFO
WINTER: OUTDOOR DESIGN: 17°F DB INDOOR DESIGN: 72°F DB BUILDING WALL & ROOF CONSTRUCTION INFORMATION:	3. ALL WORK SHALL COMPLY WITH THE MOST RECENT ADOPTED VER AND ORDINANCES OF ALL FEDERAL, STATE AND LOCAL AUTHORIT AND THE LOCAL ENFORCING AUTHORITY EXISTS, THE LOCAL ENFO TO THE DESIGN SHALL BE MADE WITHOUT ADDITIONAL COST TO T SHALL REPORT TO THE ARCHITECT/ENGINEER AND SECURE HIS A
ROOF: U-VALUE = 0.04 WALLS: U - VALUE = 0.05 FRONT GLASS: U - VALUE: 0.27	 4. WHERE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS EXC CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE PROVIDED TH
SHADE COEFF: 0.45 INTERIOR LOADS BASED ON ACTUAL LIGHTING, OCCUPANT AND EQUIPMENT LOADS.	5. BEFORE SUBMITTING BIDS, EACH CONTRACTOR SHALL PERFORM MET IN INSTALLING THE WORK, AND SHALL MAKE PROVISIONS FO PART OF THE CONTRACTOR TO COMPLY WITH THIS REQUIREMEN OMISSION OR FAULTY INSTALLATION OF ANY WORK COVERED BY
APPLICABLE CODES AND STANDARDS	6. MISUNDERSTANDING OF THE SCOPE OR AMOUNT OF WORK TO BE CONTACTOR, AND SHALL NOT RESULT IN ANY ADDITIONAL COST T CONTRACTOR AGREEMENT OF THE ITEMS AND CONDITIONS SPEC
 BUILDING CODE - 2015 IBC WITH CITY OF LEANDER AMENDMENTS FIRE CODE - 2015 IFC WITH CITY OF LEANDER AMENDMENTS ELECTRICAL CODE - 2014 NEC WITH CITY OF LEANDER AMENDMENTS. MECHANICAL CODE - 2015 IMC WITH CITY OF LEANDER AMENDMENTS PLUMBING CODE - 2015 IPC WITH CITY OF LEANDER AMENDMENTS OTHER - 2015 INCENTRAL ENERGY CONSERVATION CODE WITH CITY OF LEANDER 	THE CONTRACT DOCUMENTS, AND/OR REQUIRED BY THE NATURE ALL WORK SHALL BE CARRIED OUT IN A NEAT, WELL ORGANIZED N PERPENDICULAR TO THE PRIMARY LINES OF THE BUILDING. LOCA ALL WORK WITH ADEQUATE ACCESS FOR OPERATION AND MAINT MANUFACTURER'S CLEARANCES.
 OTHER - 2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH CITY OF LEANDER AMENDMENTS OTHER - LIFE SAFETY CODE (NFPA 101) 2015 EDITION OTHER - EDEDAL DEPARTMENT OF JUSTICE AMERICANS WITH DISABILITIES ACT AND TEXAS 	 ALL EQUIPMENT AND MATERIAL TO BE FURNISHED AND INSTALLEI ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION. AND
8. OTHER - FEDERAL DEPARTMENT OF JUSTICE AMERICANS WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS.	9. THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL NEW EC
2015 IECC ENERGY CODE COMPLIANCE	 THE FOLLOWING SUBMITTAL DATA SHALL BE FURNISHED AND SHA A. EQUIPMENT AND MATERIALS SHOP DRAWINGS B. COORDINATION DRAWINGS C. RECORD DRAWINGS D. OPERATING AND MAINTENANCE MANUALS F. FIRE STOP MATERIALS AND DETAIL
COMPLIANCE WITH 2015 IECC & 2016 CITY OF AUSTIN AMENDMENTS TO 2015 IECC.	11. THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL
EQUIPMENT SIZING AND PERFORMANCE: 1. LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH ASHRAE STANDARD 183 OR BY AN APPROVED COMPUTATIONAL PROCEDURE USING THE DESIGN PARAMETERS SPECIFIED IN CHAPTER 3 OF THE 2015 IECC.	THE STRUCTURE. PROVIDE ADDITIONAL RISES AND OFFSETS AS F CONDUIT, CABLE, ETC., IS FOUND TO BE IN CONFLICT WITH THE AF WHICH IS EITHER EXISTING OR SHOWN ON THE CONTRACT DOCU SHALL BE RELOCATED WITHOUT ADDITIONAL COST TO THE OWNE TRADES PRIOR TO INSTALLATION.
 EQUIPMENT HAS BEEN SELECTED PER 2015 IECC C403.2.2. VENTILATION AND THE ABILITY TO REDUCE OUTSIDE AIR TO IMC MINIMUMS SHALL BE PROVIDED PER 2015 IECC C403.2.6 	12. MATERIALS AND EQUIPMENT SHALL BE NEW AND IN GOOD CONDI- EQUIPMENT AND THE SPECIFIC NAMES INDICATED ARE INTENDED PERFORMANCE NECESSARY FOR THE PROPER FUNCTIONING OF FOUND TO HAVE FACTORY DEFECTS SHALL BE REPLACED OR REF OWNER/TENANT AND ENGINEER AT NO ADDITIONAL COST TO THE
 4. TEMPERATURE CONTROL SYSTEM SHALL HAVE A MINIMUM DEAD BAND OF 5°F AS REQUIRED 	13. DAMAGE CAUSED DURING CONSTRUCTION TO EXISTING MATERIA ADDITIONAL COST TO OWNER. RE-SUPPORT ANY REMAINING PIPI
 BY 2015 IECC SECTION C403.2.4.1.2. 5. HVAC SYSTEMS SHALL BE EQUIPPED WITH AUTOMATIC CONTROLS CAPABLE OF PROVIDING NIGHT SETBACK, SEVEN DIFFERENT DAILY SCHEDULES AND OPTIMUM START PER THE REQUIREMENTS OF 2015 JECC SECTION C403.2.2.4.2 	 BEING REMOVED. 14. THE WARRANTY PERIOD SHALL BE NO LESS THAN ONE (1) FULL YE AT LEAST ONE (1) FULL HEATING SEASON AND ONE (1) FULL COOL
 OUTSIDE AIR DAMPERS, EXHAUST OUTLETS AND RELIEF OUTLETS SHALL BE PROVIDED WITH DAMPERS THAT COMPLY WITH 2015 IECC SECTION C403.2.4.3. DAMPER SHALL AUTOMATICALLY CLOSE WHEN SYSTEM OR SPACES SERVED ARE NOT IN USE OR DURING 	A. ALL WORK INSTALLED SHALL BE FREE FROM ANY AND ALL DEFI B. ALL APPARATUS WILL DEVELOP CAPACITIES AND PERFORMANC C. THE SYSTEMS SHALL OPERATE WITHOUT MALFUNCTION.
WARM-UP, COOL-DOWN AND SETBACK. DAMPER MAXIMUM LEAKAGE RATE SHALL NOT EXCEED 4.0 CFM/SF AT 1" WATER GAUGE.	15. THE START OF THE CONTRACTOR'S WARRANTY PERIOD SHALL CO AS AGREED TO BY THE OWNER/TENANT.
 ALL DUCTWORK SHALL BE CONSTRUCTED AND SEALED IN ACCORDANCE WITH 2015 IECC SECTION C403.2.9. DUCTWORK INSTALLED ON THIS PROJECT IS CLASSIFIED AS LOW PRESSURE (BELOW 2" WATER GAUGE). BUCTWORK SHALL BE INSULATED TO THE APPROPRIATE R-VALUE AS LISTED IN THE 	16. AREAS OF THE EXISTING BUILDING WILL BE OCCUPIED DURING CO OTHER CONSTRUCTION OPERATIONS REQUIRED FOR WORK WHIC BUILDING OCCUPANTS SHALL NOT BE ACCEPTABLE. ALL AFTER-HO CONTRACTOR TO AVOID DISPURTION OF EXISTING OCCUPANTS W
SPECIFICATIONS ON THIS PROJECT. INSULATION SHALL COMPLY WITH 2015 IECC C403.2.9.	THE CONTRACTOR SHALL USE CONSTRUCTION METHODS AND MA INDOOR AIR QUALITY OF THE EXISTING OCCUPIED AREAS.
 EACH SUPPLY AIR DEVICE AND ZONE TERMINAL DEVICE SHALL BE EQUIPPED WITH MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 OF THE IMC. AIR SYSTEMS SHALL BE BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES THEN, FOR FANS WITH SYSTEM POWER GREATER THAN 1 HP, FAN SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. 	17. PORTIONS OF THE BUILDING WILL BE IN USE AND OCCUPIED DURI BUILDING SERVICES, UTILITIES, POWER, CHILLED WATER, FIRE PR WILL BE REQUIRED FOR THIS PROJECT MAY NOT BE DISRUPTED F REPRESENTATIVE OF BUILDING MANAGEMENT AND THE OWNER A MANAGER AND OWNER DESIGNATING A DATE, TIME, AND DURATIC OWNER FOR SUCH DISRUPTION. AN ADDITIONAL ADVANCE NOTIF BUILDING MANAGER AND OWNER PRIOR TO EACH DISRUPTION.
	18. THIS BUILDING MAY HAVE A STRUCTURAL SYSTEM UTILIZING POS DETERMINE THE EXISTING STRUCTURAL SYSTEM PRIOR TO CUTTI X-RAY ALL PENETRATIONS PRIOR TO CUTTING THE FLOOR SLAB.
	19. THIS CONTRACTOR SHALL SECURE ALL PERMITS, LICENSES AND I ALL FEES IN CONNECTION WITH SUCH PERMITS, LICENSES AND IN
	20. IN THE EVENT OF A CONFLICT BETWEEN DRAWINGS AND/OR SPEC REFLECTING THE GREATEST COST. THE CONFLICT SHALL BE BRC CLARIFICATION.
	21. PENETRATIONS THROUGH FLOORS OR FIRE-RATED CONSTRUCTION (UL 1479), AND THE LOCAL AUTHORITY HAVING JURISDICTION.
	22. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL S DRAWINGS PORTRAYING ACTUAL SITE CONDITIONS OF THE MECH WORK. SUBMISSION SHALL CONSIST OF ONE SET OF PAPER COP (CONTRACTOR SHALL UTILIZE OWNER'S LAYER STANDARDS IF EX
	23. IN THE EVENT THAT MATERIALS, PRODUCTS, AND/OR PROCESSES EMIT, ANY VOLATILE ORGANIC COMPOUNDS (VOC), FORMALDEHYI DETERMINED BY THE MANUFACTURER, A MATERIALS SAFETY DAT DRAWING PROCESS FOR REVIEW BY THE ARCHITECT/ENGINEER/ (
	24. THE CONTRACTOR SHALL TAKE NOTE THAT THE DRAWINGS ARE S LOCATIONS OF THE HVAC AND PLUMBING SYSTEMS. LOCATE ALL TO ENSURE PROPER FIT AND ACCESS TO ALL ITEMS.
	25. THE CONTRACTOR SHALL PROTECT THE WORK, EQUIPMENT, AND PERSONNEL, AND SHALL CORRECT ALL DAMAGE CAUSED WITHOU SHALL BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPM PROTECT ALL WORK AGAINST THEET, IN URY, OR DAMAGE, CARE

OTES

FUNCTIONING SYSTEMS AS INDICATED BY THE DESIGN INCLUDE, BUT ARE NOT LIMITED TO, MATERIALS, LABOR, IG/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED

WORK AND MATERIALS REQUIRED TO COMPLETE AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT RMATION AND DETAILS WHERE SCOPE IS UNCLEAR.

RSION OF ALL APPLICABLE LAWS, RULES, REGULATIONS IES. IF CONFLICT BETWEEN THE CONTRACT DOCUMENTS ORCING AUTHORITY SHALL APPLY. ANY MODIFICATIONS HE OWNER OR ARCHITECT/ENGINEER. THE CONTRACTOR PPROVAL BEFORE PROCEEDING WITH ANY

EED THE REQUIREMENTS OF THE CODES, THE IAT THEY ARE NOT IN CONFLICT WITH THE CODES.

SITE VISIT AND UNDERSTAND THE CONDITIONS TO BE THE CONDITIONS IN HIS FINAL BID. FAILURE ON THE SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE THE CONTRACT DOCUMENTS.

PERFORMED SHALL BE THE RESPONSIBILITY OF THE O THE OWNER. TENDER OF A PROPOSAL CONVEYS FULL FIED AND/OR INDICATED, SCHEDULED, OR IMPLIED ON OF THIS WORK.

IANNER. ALL SERVICES SHALL BE ROUTED PARALLEL AND TE ALL EQUIPMENT TO PROVIDE ACCESS AND ARRANGE ENANCE, AND TO MAINTAIN PROPER CODE AND

O ON THIS PROJECT SHALL BE UL OR ETL LISTED, IN SUITABLE FOR ITS INTENDED USE ON THIS PROJECT.

UIPMENT, CONTROLS, AND FIXTURES TO BE PROVIDED

LL INCLUDE BUT NOT BE LIMITED TO:

COORDINATE THE INSTALLATION OF DUCTWORK. PIPING. G CONSTRUCTION, AIR DISTRIBUTION EQUIPMENT, AND EQUIRED. IF, AFTER INSTALLED, NEW DUCTWORK, PIPING, CHITECTURE. STRUCTURE OR OTHER TRADE WORK. MENTS, THE DUCTWORK, PIPING, CONDUIT, CABLE, ETC. R/TENANT. COORDINATE ALL WORK WITH ALL OTHER

TION. THE COMMERCIALLY STANDARD ITEMS OF TO IDENTIFY STANDARDS OF QUALITY AND HE WORK, MATERIALS AND EQUIPMENT, WHICH ARE AIRED IN A MANNER ACCEPTABLE TO THE OWNER/TENANT.

S/EQUIPMENT WILL BE REPAIRED OR REPLACED AT NO NG OR DEVICES THAT WERE SUPPORTED BY WALLS

EAR, UNLESS SPECIFIED OTHERWISE AND SHALL INCLUDE NG SEASON. DURING THE WARRANTY PERIOD THE **ISFACTORY TO THE OWNER/TENANT:**

ECTS IN WORKMANSHIP AND/OR MATERIALS. E CHARACTERISTICS SPECIFIED.

MMENCE ON THE DATE OF "SUBSTANTIAL COMPLETION"

DNSTRUCTION OF THIS PROJECT. NOISY, DUSTY, AND/OR TH DISTURB OR CAUSE COMPLAINTS BY THE EXISTING OUR OR OVERTIME WORK REQUIRED BY THE ILL BE PROVIDED AT NO COST TO THE OWNER/TENANT TERIALS WHICH SHALL NOT ADVERSELY AFFECT THE

NG THE CONSTRUCTION PERIOD OF THIS PROJECT. ALL DTECTION, AND DOMESTIC COLD AND HOT WATER WHICH OR ANY REASON WITHOUT PRIOR COORDINATION WITH A ND A WRITTEN AUTHORIZATION FROM THE BUILDING IN THAT ARE APPROVED BY THE BUILDING MANAGER AND ICATION OF SEVEN (7) DAYS SHALL BE GIVEN TO THE

-TENSIONED CABLES. THE CONTRACTOR SHALL NG, DRILLING, OR CORING. THE CONTRACTOR SHALL

VSPECTIONS REQUIRED FOR HIS WORK, AND SHALL PAY SPECTIONS.

FICATIONS, THE CONTRACTOR SHALL PROVIDE PRICING UGHT TO THE ATTENTION OF THE ENGINEER FOR

ON SHALL BE FIRE RATED TO COMPLY WITH ASTM E-814

SUBMIT TO THE ENGINEER, A COMPLETE SET OF "AS BUILT" ANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION ES AND ONE SET OF CAD FILES IN AUTOCAD STING).

BEING PROPOSED FOR THIS PROJECT CONTAIN, OR MAY E FORMULATIONS, OR HAZARDOUS OUT-GASSING, AS SHEET SHALL BE SUBMITTED AS PART OF THE SHOP OWNER.

CHEMATIC IN NATURE AND INDICATE THE APPROXIMATE ITEMS IN THE FIELD. COORDINATE WITH OTHER TRADES

MATERIALS FROM DAMAGE BY HIS WORK OR HIS ADDITIONAL COST TO THE OWNER. THE CONTRACTOR IENT UNTIL FINAL ACCEPTANCE BY THE OWNER. PROTECT ALL WORK AGAINST THEFT, INJURY, OR DAMAGE. CAREFULLY STORE MATERIAL AND EQUIPMENT RECEIVED ON SITE WHICH IS NOT IMMEDIATELY INSTALLED. THE CONTRACTOR SHALL CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF DUST, DIRT, AND OBSTRUCTING MATERIAL

MECHANICAL GENERAL NOTES

- ALL EXISTING DUCTWORK AND PIPING SIZES AND LOCATIONS SHOWN ARE FROM EXISTING RECORDS, DOCUMENTS, AND SITE OBSERVATIONS. MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND SHALL INCLUDE IN HIS BID THE COST OF REPLACEMENT, REPAIR, RELOCATION, OR REMOVAL OF EXISTING MEP ITEMS AS REQUIRED TO COMPLETE THE INSTALLATION OF ALL MECHANICAL SYSTEMS SHOWN ON THESE DRAWINGS PRIOR TO SUBMITTING A BID.
- 2. THE CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND NEW TERMINAL UNITS ARE MOUNTED SO THAT ALL REQUIRED SERVICING AND MAINTENANCE CLEARANCES ARE MAINTAINED AT THE BOTTOM AND SIDES OF EACH UNIT. COORDINATE WITH ALL NEW ARCHITECTURAL WALLS TO STRUCTURE AND RELOCATE TERMINAL UNITS AS REQUIRED TO MAINTAIN PROPER CLEARANCES.
- 3. IT IS ACCEPTABLE TO REUSE EXISTING AIR DEVICES IF THEY MATCH THE SCHEDULED MANUFACTURER AND MODEL NUMBER, NECK SIZE AND PERFORMANCE INDICATED IN THIS DRAWING SET. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND TAKE INVENTORY OF EXISTING AIR DEVICES WITHIN THE SPACE PRIOR TO SUBMITTING A BID. ALL REUSED AIR DEVICES SHALL BE CLEANED AND REPAINTED AS REQUIRED TO RETURN TO "LIKE-NEW" CONDITIONS.
- 4. EXISTING TAKE-OFF CONNECTIONS MAY BE REUSED IF LOCATED WITHIN 3'-0" OF NEW CONNECTION SHOWN ON DRAWING. ALL TAKE-OFF CONNECTIONS NOT USED SHALL BE REMOVED AND DUCTWORK SHALL BE PATCHED WITH SHEET METAL, SEALED AND **RE-INSULATED TO MATCH EXISTING.**
- NO FAN POWERED TERMINAL UNITS SHALL HAVE SPRINKLER PIPING BLOCKING BOTTOM-MOUNTED ACCESS PANELS. OFFSET NEW AND EXISTING SPRINKLER PIPING AS REQUIRED. EXISTING FAN POWERED TERMINAL BOXES MOUNTED ABOVE OR ADJACENT TO WALLS WHERE ACCESS IS OBSTRUCTED SHALL BE RELOCATED AS REQUIRED.
- MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER MEP TRADES TO MAINTAIN A MINIMUM OF 9" CLEAR SPACE FOR TENANT EQUIPMENT, CABLE TRAY, WIRING, ETC.
- PROVIDE REMOTE DAMPER OPERATORS FOR ALL SPIN-IN DAMPERS LOCATED ABOVE INACCESSIBLE CEILINGS. OPERATORS SHALL BE ROTO-TWIST (OR APPROVED EQUAL) CABLE-TYPE OPERATORS, CONCEALED WITHIN DUCT RUN-OUT TO DEVICE, AND ACCESSIBLE FOR BALANCING FROM FACE OF AIR DEVICE. PROVIDE REQUIRED CABLE LENGTHS, MOUNTING CLIPS, AND ALL OTHER REQUIRED COMPONENTS FOR PROPER INSTALLATION AND OPERATION.
- PRIMARY AND SECONDARY DUCTWORK SHALL HAVE EXTERNAL INSULATION INSTALLED ON TOP SIDE OF DUCTWORK PRIOR TO HANGING DUCTWORK TO ALLOW DUCT TO BE SUSPENDED WITH INSULATION TIGHT TO STRUCTURE. DO NOT COMPRESS INSULATION.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING TO THE ENGINEER'S ATTENTION ANY WALLS THAT EXTEND FROM THE FINISHED FLOOR TO STRUCTURE AND REQUIRE RETURN AIR PATHWAYS. RETURN AIR BOOTS SHALL BE INSTALLED TO PROVIDE CROSS SECTIONAL AREA EQUIVALENT TO 500 FPM OF AIRFLOW BASED ON THE SUPPLY CFM TO THE ROOM ENCLOSED BY THE FULL HEIGHT WALLS.
- 10. FINAL LOCATION OF ALL NEW EQUIPMENT SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER PRIOR TO INSTALLATION.
- 11. ROOF PENETRATIONS SHALL BE PERFORMED TO MAINTAIN THE WARRANTY ON THE ROOF. COORDINATE PENETRATIONS WITH THE ROOF MEMBRANE MANUFACTURER.
- 12. MOUNT ALL TEMPERATURE CONTROL DEVICES 48" ABOVE FINISHED FLOOR TO THE CENTER OF THE DEVICE TO COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT ANSI A117.1.
- 13. DURING CONSTRUCTION, SEAL ALL OPEN DUCTS WITH PLASTIC TO PREVENT DUST/DIRT. CLEAN ALL INTERIOR DUCT SURFACES PRIOR TO DUCT INSTALLATION. ALL VAV TERMINAL UNIT FILTERS SHALL BE MAINTAINED DURING CONSTRUCTION AND REPLACED AT THE END OF CONSTRUCTION. PROVIDE CONSTRUCTION FILTERS OVER AIR HANDLING UNIT INTAKES AND MAINTAIN FILTER MEDIA DURING CONSTRUCTION. REPLACE ALL FILTERS AT END OF CONSTRUCTION. ALL RETURN AIR INTAKES TO MECHANICAL ROOM SHALL BE COVERED WITH FILTER MEDIA DURING CONSTRUCTION. REMOVE UPON COMPLETION.
- 14. SEAL ALL NEW AND EXISTING PIPE, CONDUIT, AND DUCT PENETRATIONS THRU FIRE RATED WALLS WITH FIRE CAULKING. FIRE CAULKING SHALL BE EQUAL TO 3M BRAND CP25WP FIRE CAULK. INSTALL CAULKING IN STRICT ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS AND WRITTEN INSTRUCTIONS AND IN ACCORDANCE WITH ALL APPLICABLE UL DETAILS.
- 15. CONTRACTOR SHALL MAINTAIN A SET OF CONSTRUCTION DOCUMENTS FOR THE SOLE PURPOSE OF INDICATING AS-BUILT CONDITIONS. SET SHALL NOT BE USED FOR ANY OTHER PURPOSE. AS-BUILT REVISIONS SHALL BE INDICATED USING RED PENCIL AND BE CLEARLY DRAWN AND LABELED TO BE LEGIBLE. ILLEGIBLE ENTRIES SHALL BE REVISED BY THE CONTRACTOR. PROVIDE AS-BUILT SET TO THE OWNER AT SUBSTANTIAL COMPLETION.
- 16. CONTRACTOR SHALL COMPLETE START-UP FORMS AND CHECK-OUT UTILIZING MANUFACTURER CERTIFIED START-UP TECHNICIANS. EQUIPMENT START-UP AND CHECK-OUT FORMS SHALL BE INCLUDED IN THE O&M MANUALS.
- . RADIUS ELBOWS 2 TIMES THE DUCT DIMENSION AND LARGER DO NOT REQUIRE SPLITTER VANES; PROVIDE SPLITTER VANES FOR ALL RADIUS ELBOWS 1.5 TIMES AND SMALLER. SPLITTER VANES SHALL BE LOCATED AND SECURED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."
- 18. RECTANGULAR ELBOWS SHALL INCORPORATE TURNING VANES. VANES SHALL BE SINGLE-THICKNESS GALVANIZED STEEL VANES SET IN GALVANIZED STEEL RUNNERS. VANES AND RUNNERS SHALL BE CONSTRUCTED AND SECURED IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE."

SHEET LIST

DRAWING	SHEET TITLE
M0.01	MECHANICAL COVER SHEET
M0.02	MECHANICAL SPECIFICATIONS
M0.03	MECHANICAL SCHEDULES
M0.04	MECHANICAL DETAILS
M1.01	MECHANICAL HVAC PLAN - FIRST FLOOR
M1.02	MECHANICAL HVAC PLAN - SECOND FLOOR
M1.03	MECHANICAL/PLUMBING ROOF PLAN

JOINT. WELD PINS ARE 10.5" ON CENTERS.

END OF SECTION

- PPROVED FOUAL 2. THOMAS & BETTS "TY-RAP" NYLON TIES OR APPROVED EQUAL
- 2.07 ADHESIVES/SEALANTS/COATINGS

A. ELASTOMERIC ADHESIVES: ARMACELL 520

SCHULLER NO. 57

B. <u>FIBERGLASS INSULATION ADHESIVE:</u> ADHESIVES SHALL COMPLY WITH ASTM C916, STANDARD SPECIFICATION FOR ADHESIVES FOR DUCT THERMAL INSULATION.

1. FOSTER (H.B. FULLER CO.) 85-20

SECTION 23 05 01 SCOPE OF WORK	 SCHEDULE OF SUBMITTAL DATA - SECTION 23 05 04 GENERAL DIVISION 20-28 MATERIALS AND METHODS - SECTION 20 05 05 START-UP, TESTING, ADJUSTING, AND BALANCING - SECTION 23 05 93 	A. DUCTWORK AND INSTALLATIO THE AUTHORITY HAVING JUR
PART 1 - GENERAL 1.01 RELATED DOCUMENTS	1.01 SCOPE	B. CONCEALED KITCHEN VENTIL MINIMUM)
 A. THE REQUIREMENTS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, DIVISION 1, DIVISION 20, AND DRAWINGS APPLY TO ALL WORK HEREIN. 	DUCT, HANGERS, SUPPORTS, SLEEVES, FLASHINGS, VENT FLUES AND ALL NECESSARY ACCESSORIES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.	C. EXPOSED: TYPE 304, STAINLE RANGE HOOD (18 GAGE MININ
1.02 SCOPE A. WORK INCLUDED: THE WORK INCLUDES BUT IS NOT LIMITED TO THE FOLLOWING SYSTEMS,	B. <u>RELATED SECTIONS</u> : OTHER DIVISION 20-28 SECTIONS CONTAIN REQUIREMENTS RELATED TO THE WORK OF THIS SECTION. THESE MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING SECTIONS:	2.08 MEDIUM PRESSURE SPIRAL SEAM
EQUIPMENT, AND SERVICES: 1. PACKAGED DX ROOFTOP EQUIPMENT WITH NATURAL GAS HEAT AND LIGHT COMMERCIAL DX HEAT PUMP SPLIT SYSTEMS.	 THERMAL INSULATION - SECTION 20 07 00 AIR TERMINAL UNITS - SECTION 23 36 00 AIR DISTRIBUTION DEVICES AND DAMPERS - SECTION 23 33 10 	A. MEDIUM PRESSURE DUCT SH SPECIFIED HEREIN AND IN AC
2. AIR DISTRIBUTION SYSTEM CONSISTING OF ALL ITEMS INDICATED ON THE DRAWINGS AND/OR SPECIFIED HEREIN, SUCH AS:	1.02 QUALITY ASSURANCE A. CODES AND STANDARDS	IN SECTION 2.02, PARAGRAPH FORMED AND WELDED FROM MINIMUM GAUGE OF DUCT AN
 A. SHEET METAL DUCTWORK B. GRILLES, REGISTERS, CEILING OUTLETS, DUCT INSULATION, ETC. C. ACOUSTICAL TREATMENT OF DUCTS 	1. DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CONSTRUCTION REQUIREMENTS SPECIFIED BY SMACNA, EXCEPT WHERE SMACNA REQUIREMENTS ARE EXCEEDED IN THESE SPECIFICATIONS	C. SPIRAL DUCT AND FITTINGS J PER MANUFACTURER'S PUBL
 D. SOUND ABSORBING SECTIONS 3. ENERGY MANAGEMENT AND AUTOMATIC TEMPERATURE CONTROL COMPONENTS CONSISTING OF ALL ITEMS INDICATED ON THE DRAWINGS AND/OR SPECIFIC HEREIN 	PART 2 - PRODUCTS	DUCT MANUFACTURER AND S D. DUCT CEMENTS FOR USE AT
A. ELECTRIC CONTROL DEVICES	2.01 SYSTEM REQUIREMENTS A. <u>SYSTEM CLASS</u> :	CEMENT OR AN APPROVED S RECOMMENDATIONS. DUCT S OR AN APPROVED SUBSTITUT COMPLETE DUCT SEAL.
B. ELECTRONIC CONTROL DEVICES C. COMPUTER CONTROL DEVICES D. VARIOUS RELAYS E. VALVES, DAMPERS, AND SENSORS	 ALL DUCTWORK UPSTREAM OF AIR TERMINAL UNITS SHALL BE CONSTRUCTED FOR STATIC PRESSURE CLASS BASED ON SCHEDULED EXTERNAL STATIC PRESSURE FROM APPLICABLE AIR HANDLING UNIT SCHEDULE. MATERIAL SHALL BE 2500 FPM CLASS GALVANIZED STEEL OF "LOCK FORMING" OLIALITY LINLESS OTHERWISE NOTED 	E. PROVIDE STANDARD 90-DEGR
 F. CONTROL SYSTEM WIRING 4. VENTILATING SYSTEMS CONSISTING OF ALL ITEMS INDICATED ON THE DRAWINGS AND/OR SPECIFIED HEREIN, SUCH AS: 	 ALL DUCTWORK DOWNSTREAM OF AIR TERMINAL UNITS, MULTIZONE SUPPLY DUCTWORK, AND SINGLE ZONE AIR HANDLING UNIT SUPPLY DUCTWORK SHALL BE BUILT TO +1" W.G., 2500 FPM CLASS STANDARDS, UNLESS NOTED OTHERWISE ON FAN 	PRODUCTS OF THE FOLLOWI 1. UNITED MCGILL
A. EXHAUST FANS B. DAMPERS, ETC.	SCHEDULE. ALL +1" CLASS DUCTWORK SHALL BE CONSTRUCTED OF "LOCK FORMING QUALITY" GALVANIZED SHEET METAL WITH A MINIMUM GAUGE NOT LESS THAN THAT SHOWN IN SMACNA STANDARDS. 3. ALL RETURN AND EXHAUST DUCTWORK SHALL BE BUILT TO -2" W.G., 2500 FPM CLASS	 GOWCO, INC. GRACO TD MECHANICAL
5. THE MECHANICAL SUBCONTRACTORS SHALL PARTICIPATE IN AND ASSIST IN THE OPERATION OF THE FIRE SAFETY VENTILATION EQUIPMENT AS REQUIRED DURING THE PERFORMANCE TESTING AND STARTUP OF THE DIVISION 28 FIRE DETECTION. ALARM	STANDARDS, UNLESS NOTED OTHERWISE ON FAN SCHEDULE.	PART 3 - EXECUTION 3.01 SUBMITTAL
AND COMMUNICATION SYSTEMS. 1.03 WORK OF OTHER DIVISIONS	A. ALL DUCTWORK SHALL BE CONSTRUCTED OF G60 COATED GALVANIZED STEEL OF ASTM STANDARDS A653 AND A924 GRADES.	A. DUCTWORK SHOP DRAWINGS AND SHALL BE COORDINATED DETAILS AND MATERIALS SHA
A. THE FOLLOWING IS A PARTIAL LIST OF WORK NOT INCLUDED IN DIVISION 23:1. ELECTRICAL CONNECTIONS TO MOTORS.	CARBON-STEEL SHEETS. COMPLY WITH ASTMA 1000/A 100/A 100/	B. DUCTWORK FABRICATION DR
PART 2 - PRODUCTS (NOT APPLICABLE) PART 3 - EXECUTION (NOT APPLICABLE)	D. THE INTERIOR SURFACE OF ALL DUCTWORK SHALL BE SMOOTH WITH NO SHEET METAL OR OTHER PARTS PROJECTING INTO THE AIR STREAM. ALL SEAMS AND JOINTS SHALL BE EXTERNAL. THE INSIDE OF ALL DUCTWORK SHALL BE THOROUGHLY CLEANED AND ALL FANS	BUILDING FLOOR PLANS AND TYPE, LOCATIONS OF TRANS' OFFSETS, DUCTWORK SPECI INFORMATION REQUIRED FOR
END OF SECTION SECTION 23 05 93	OPERATED TO REMOVE ANY DEBRIS PRIOR TO CONNECTION OF AIR DISTRIBUTION DEVICES. E. ALL DUCTWORK DIMENSIONS ON THE DRAWINGS ARE CLEAR INSIDE DIMENSIONS. REFER TO SECTION 20 07 00 FOR DUCTWORK LINER AND INSULATION	DUCTWORK. ALL FIRE AND FI DUCTWORK SHOP DRAWINGS HANDLING UNIT LOCATIONS S
START-UP, TESTING, ADJUSTING AND BALANCING PART 1 - GENERAL	F. ALL FLEXIBLE ROUND TAKE-OFFS TO AIR DISTRIBUTION DEVICES SHALL BE MADE WITH A SPIN-COLLAR WITH INTEGRAL MANUAL VOLUME DAMPER. SPIN-INS SHALL BE INSTALLED WITH TUEID DAMPER AVIS DADAU & TO AID ELOW.	C. DUCT FABRICATION DRAWING CONSTRUCTION PRIOR TO SU CERTIFIED ON EACH DRAWIN
1.01 RELATED DOCUMENTS A. THE REQUIREMENTS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, DIVISION	 G. <u>DUCTWORK LEAKAGE</u>: MAXIMUM ALLOWABLE DUCTWORK LEAKAGE, AS A PERCENTAGE OF AIR SYSTEM VOLUME, SHALL BE 2%. 	3.02 INSTALLATION A. INSTALL ALL DUCTWORK TIGH
 DIVISION 20, AND DRAWINGS APPLY TO ALL WORK HEREIN. REQUIREMENTS OF THE FOLLOWING DIVISION 20-28 SECTIONS APPLY TO THIS SECTION: 	 H. <u>DUCTWORK SEALING</u>: 1. ALL TRANSVERSE DUCT JOINTS, LONGITUDINAL SEAMS AND DUCT WALL PENETRATIONS 	MECHANICAL CONTRACTOR S CONSTRUCTION OR INSTALLA B. INSTALL DUCT MOUNTED SEN
 SCOPE OF WORK - SECTION 23 05 01 BASIC DIVISION 20-28 REQUIREMENTS - SECTION 20 05 03 GENERAL DIVISION 20-28 MATERIALS AND METHODS - SECTION 20 05 05 	 SHALL BE SEALED REGARDLESS OF DUCT PRESSURE CLASSIFICATION. SEALER SHALL BE RATED BY MANUFACTURER AND SHALL BE SUITABLE FOR USE AT THE SYSTEM STATIC PRESSURE CLASSIFICATION OF THE DUCTWORK APPLIED. DUCTWORK SEAL ANT SHALL BE HADDCAST "VERSA CPID 191" OR ADDROVED EQUAL 	09 16. FURNISH AND INSTALL COORDINATE LOCATION OF D AUTOMATIC TEMPERATURE C
1.02 SCOPE A. TESTING, ADJUSTING AND BALANCING OF ALL AIR SYSTEMS.	SEALANT SHALL BE SUITABLE FOR USE INDOORS AND OUTDOORS. SEALANT SHALL BE WATER BASED. SEALANT SHALL HAVE A FLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS. SEALANT SHALL BE LISTED IN	C. INSTALL DUCT TYPE SMOKE D INSTALL ACCESS DOORS AT E DETECTORS AND INSTALLATI
 B. HYDROSTATIC PRESSURE TESTING OF ALL PRESSURE PIPING SYSTEMS. C. SOUND MEASUREMENT OF FOURMENT OPERATING CONDITIONS 	ACCORDANCE WITH UL 181A OR UL 181B, AS REQUIRED IN THE INTERNATIONAL ENERGY CONSERVATION CODE. 4. DUCT SEALANT SHALL BE APPLIED PER MANUFACTURER'S INSTRUCTIONS. MINIMUM DRYING TIME SHALL BE ALLOWED PER MANUFACTURER'S INSTRUCTIONS. ADDITIONAL	D. FURNISH AND INSTALL ACCES COMBINATION FIRE/SMOKE D
1.03 RELATED SECTIONS	TIME FOR DRYING SHALL BE ALLOWED IN CLIMATES WHERE TEMPERATURE AND HUMIDITY MAY AFFECT THE CURING OF THE SEALANT. SEALANT SHALL BE ALLOWED TO COMPLETELY DRY AND HARDEN BEFORE AIR IS CIRCULATED THROUGH THE DUCTWORK. THE USE OF DUCT TAPE FOR SEALING OF METAL DUCTS IS PROHIBITED UNLESS THE	E. DUCTWORK SHALL BE THORO STARTUP. REFERENCE SECT F. INSTALL COMMERCIAL KITCHI
1.04 QUALITY CONTROL	TAPE IS PART OF, AND USED, IN CONJUNCTION WITH A MULTI-PART SEALING SYSTEM (I.E., ADHESIVE, TAPE, COATING, ETC.).	HOLD GREASE, AND SLOPED HOOD.
A. AN INDEPENDENT TEST AND BALANCE COMPANY CERTIFIED BY TABB, NEBB, OR OTHER ENGINEER APPROVED CERTIFICATIONS SHALL PERFORM AIR BALANCE TESTS ON THE PROJECT UNLESS STATED OTHERWISE.	A. <u>TRANSVERSE BEAD</u> : TRANSVERSE BEAD ALL FLAT SURFACES WHICH ARE MORE THAN 12" WIDE. TRANSVERSE BEADING SHALL BE ON 12" CENTERS AND SHALL BE MINIMUM OF 1/8"	MAXIMUM INTERVALS OF 12 F VERTICAL DUCTS, OR AS INDI SIDES OF DUCT A MINIMUM O
B. TESTING OF EQUIPMENT REQUIRING STARTING PROCEDURES MAY BE PERFORMED BY THE CONTRACTOR, WHERE MANUFACTURER REPRESENTATIVES ARE NOT REQUIRED. PART 2 - PRODUCTS - (NOT APPLICABLE)	 DEEP AT THE CENTER OF THE BEAD AND 3/8" WIDE AT THE BASE OF THE BEAD. DO NOT CROSS-BREAK NEGATIVE PRESSURE DUCTWORK. B. LONGITUDINAL SEAMS: ALL LONGITUDINAL SEAMS SHALL BE "PITTSBURGH LOCK" OR BUTTON 	H. DO NOT PENETRATE FIRE-RA CODES AND AUTHORITIES HA
PART 3 - EXECUTION	PUNCH SNAP LOCK AT CORNER SEAMS AND GROOVED (ACME) SEAM OR SEAM WELDED IN SIDES BETWEEN CORNERS. C. TRANSVERSE JOINTS: ALL TRANSVERSE JOINTS AND INTERMEDIATE REINFORCEMENT SHALL	3.03 LEAK TESTING A. DUCTWORK CONSTRUCTED T BE LEAK TESTED IN ACCORDA
A. BEFORE COMMENCING WORK, VERIFY THAT SYSTEMS ARE COMPLETE AND OPERABLE TO THE FOLLOWING EXTENT:	BE AS SHOWN IN SMACNA TABLES 1-4 THROUGH 1-9, AND FIGURE 1-4 WITH DRIVE SLIP CONNECTIONS (REINFORCED OR UN-REINFORCED AS REQUIRED) ON THE SHORT SIDES AND HEMMED "S" SLIP CONNECTIONS (REINFORCED OR UN_REINFORCED AS REQUIRED) ON THE LONG SIDES AND DRIVE CONNECTORS ARE ACCEPTABLE FOR UNE ON DUCTS WITH	1. CONTRACTOR SHALL TE PRESSURE TESTING FO
 EQUIPMENT IS OPERABLE AND IN A SAFE AND NORMAL CONDITION. TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE. PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT. 	PRESSURE CLASSIFICATION OF ±1" W.G. (MAXIMUM). AT THE CONTRACTOR'S OPTION, TRANSVERSE JOINTS MAY BE TRANSVERSE DUCT CONNECTORS BY ONE OF THE FOLLOWING MANUFACTURERS. THE PROPOSED GASKET MATERIAL, FLANGE, CORNER PIECE, AND	DEVIATIONS FROM THIS 2. DUCT SYSTEMS SHALL CLASSIFICATION AS DES
 ALL AIR FILTERS ARE CLEAN AND IN PLACE. IF REQUIRED, INSTALL TEMPORARY MEDIA IN ADDITION TO FINAL FILTERS. CORRECT FAN ROTATION. DAMPERS ARE IN PLACE AND OPEN. 	CONNECTION DETAILS SHALL BE SUBMITTED FOR REVIEW. 1. TRANSVERSE DUCT FLANGE (TDF OR TDC) 2. DUCTMATE EP12/11 PREFABRICATED GALVANIZED "DUCTMATE" SECTIONS	 MAXIMUM ALLOWABLE I THIS SECTION. B. DUCTWORK CONSTRUCTED T
 COIL FINS HAVE BEEN CLEANED AND COMBED. ACCESS DOORS ARE CLOSED AND DUCT END CAPS ARE IN PLACE. AIR OUTLETS ARE INSTALLED AND CONNECTED. DILCT SYSTEM LEAKAGE IS BELOW SPECIFIED LEVEL 	 MEZ INDUSTRIES 140 SERIES TRANSVERSE DUCT CONNECTORS EXANNO (NEXUS) WARD INDUSTRIES, INC. 	SHALL BE VISUALLY INSPECT 1. ENGINEER MAY REQUE: PARAGRAPH A. OF THIS
 B. REPORT ANY DEFECTS OR DEFICIENCIES NOTED DURING PERFORMANCE OF SERVICES TO ARCHITECT/ENGINEER. 	D. <u>PLENUMS</u> : SHEET METAL PLENUMS SHALL BE CONSTRUCTED AND REINFORCED IN ACCORDANCE WITH SMACNA STANDARDS. WHERE PLENUMS ARE CONNECTED TO LOUVERS, THE PLENUM BOTTOM SHALL BE WATERTIGHT, SLOPED AND SEALED TO DRAIN WATER TO THE OUTSIDE FACE OF THE BUILD DUC THEOLOGY THE FACE OF THE LOUVER	TO INSTALLATION OF DI BALANCE REPORT.
C. PROMPTLY REPORT ABNORMAL CONDITIONS IN MECHANICAL SYSTEMS OR CONDITIONS THAT PREVENT SYSTEM BALANCE.	E. <u>SUPPORT</u> : ALL DUCTWORK SUPPORTS SHALL BE PER TABLE 4-1 OF THE SMACNA MANUAL WITH ALL SUPPORTS DIRECTLY ANCHORED TO THE BUILDING STRUCTURE. SUPPORTS SHALL	D. IF REQUESTED BY THE ENGL
 D. IF, FOR DESIGN REASONS, SYSTEM CANNOT BE PROPERLY BALANCED, REPORT AS SOON AS OBSERVED. E. BEGINNING OF WORK MEANS ACCEPTANCE OF EXISTING CONDITIONS. 	 BE ON MAXIMUM 8'- 0" CENTERS WITH ADDITIONAL SUPPORTS AS REQUIRED TO PREVENT SAGGING. F. <u>FABRIC CONNECTIONS</u>: FLEXIBLE DUCT FABRIC CONNECTIONS SHALL BE INSTALLED ON THE 	AND/OR INSPECTION SO THA
	INLET AND OUTLET CONNECTIONS TO ALL POWERED AIR MOVING EQUIPMENT NOT CONNECTED WITH FLEXIBLE DUCT ATTACHED DIRECTLY TO INLET OR DISCHARGE PLENUM. A MINIMUM OF 1" OF SLACK SHALL BE ALLOWED IN ALL FLEXIBLE CONNECTIONS TO INSURE VIBRATION ISOLATION. FLEXIBLE FABRIC SHALL BE A MINIMUM OF 3 INCHES WIDE WITH	AIR DISTRIB
WHERE SPECIFIED OR REQUIRED, TO FULLY CHECK OUT AND START UP ALL EQUIPMENT AND SYSTEMS AS SPECIFIED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.	"GRIP-LOC" SEAM TO 24 GAUGE GALVANIZED METAL SIDE CONNECTORS A MINIMUM OF 3 INCHES WIDE EACH. FLEXIBLE CONNECTIONS ARE TO BE FABRICATED WITH DURO DYNE EXCELON "METAL-FAB" VINYL COATED 22 OZ. NYLON WITH 24 GAUGE GALVANIZED IRON SIDE CONNECTORS OF "APPROVED FOLIAL" PROVIDE LIV RATED CONNECTORS WHERE EXPOSED	1.01 RELATED DOCUMENTS
 C. LUBRICATION AND FLUID LEVELS SHALL BE CHECKED PRIOR TO EQUIPMENT START-UP. C. LUBRICATION AND FLUID LEVELS SHALL BE CHECKED PRIOR TO EQUIPMENT START-UP. 	TO SUNLIGHT. G. <u>SPLITTER DAMPERS</u> : INSTALL MANUAL SPLITTER DAMPERS IN SPLITS AND BRANCH TAKE OFFICIENT CONSTANT YOU UME AN FLOW SYSTEMS, AND WHERE SHOWN ON	A. THE REQUIREMENTS OF THE 1, DIVISION 20, AND DRAWING 1.02 SCOPE
3.03 TESTING PROCEDURES	DRAWINGS. SPLITTER DAMPERS SHALL BE MINIMUM 16 GAUGE GALVANIZED SHEET METAL AND SHALL BE 3/4 OF THE WIDTH OF THE SMALLEST TAKE-OFF BUT NO LESS THAN 6" LONG. DAMPERS SHALL HAVE 1/8" OF CLEARANCE TO THE DUCT IN WHICH THEY ARE INSTALLED.	A. <u>GENERAL</u> : FURNISH AND INS SPECIFIED, AND REQUIRED. I ACCESSORIES FOR INSTALLA
A. TESTS SHALL BE MADE DURING THE COURSE OF CONSTRUCTION AS SPECIFIED AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.	SPLITTER DAMPERS SHALL BE CONTROLLED BY ONE OR MORE CONTROL RODS. WHERE SPLITTERS ARE IN CONCEALED INACCESSIBLE LOCATIONS, SUBMIT PROPOSED CONTROL ROD DETAILS FOR APPROVAL.	B. <u>RELATED SECTIONS</u> : OTHER THE WORK OF THE SECTIONS
B. TEST SUBMITTALS SHALL INCLUDE A PRELIMINARY SUBMITTAL OF ALL PROPOSED TEST PROCEDURES AND RECORDING FORMS FOR ENGINEER'S REVIEW PRIOR TO ANY TESTING AND FOUR (4) COPIES OF ALL CERTIFIED TEST RESULTS AND COMPLETED REPORTING FORMS FOR APPROVAL	H. <u>TRANSITIONS</u> : DUCTWORK TRANSITIONS AND OFFSETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FIG. 2-7 OF THE SMACNA MANUAL. BRANCH TAPS: BRANCH TAPS, INCLUDING TAPS TO TERMINAL UNITS, SHALL BE 45° ENTRY	SECTIONS: 1. DUCTWORK AND SHEET
 C. <u>VIBRATION TESTING</u>: WHERE A PIECE OF EQUIPMENT EXHIBITS, IN THE ENGINEERS OPINION, EXCESSIVE NOISE OR VIBRATION, THE SERVICE OF A CERTIFIED ACOUSTIC CONSULTING ENGINEER OF USE OF TO PERCENTRY AND TO THE ACOUSTIC CONSULTING 	EXPANDED TAPS AND SHALL BE IN ACCORDANCE WITH FIG. 2-6 OF THE SMACNA MANUAL. TAPS TO TERMINAL UNITS MAY BE FLEXMASTER STO SIDE TAKEOFF FITTINGS. DOVETAIL JOINTS ON ROUND TAPS ARE NOT PERMITTED.	1.03 QUALITY ASSURANCE A. MANUFACTURERS: IF THEY C
EQUIPMENT OR SYSTEM INVOLVED. THE CONSULTING ENGINEER SHALL PROVIDE A WRITTEN REPORT CONCERNING THE NOISE AND VIBRATION OF THE EQUIPMENT OR SYSTEM INVOLVED AND THE CONTRACTOR INVOLVED SHALL MAKE CHANGES OR MODIFICATIONS AS	J. <u>TURNING VANES</u> : TURNING VANES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND IN ALL ABRUPT ELBOWS AND BENDS GREATER THAN 45°. FOR DUCTS LESS THAN 12" IN HEIGHT, SINGLE VANE BLADES MAY BE INSTALLED. FOR DUCTS 12" HIGH AND ABOVE, DOUBLE	PRODUCTS OF THE FOLLOWIN
RECOMMENDED BY THE CONSULTING ENGINEER. THE ABOVE SERVICES AND RETROACTIVE CORRECTIONS SHALL BE PROVIDED AT NO COST TO THE OWNER OR ARCHITECT/ENGINEER. D. REFRIGERANT LEAK TESTING: LEAK TEST AND CHECK REFRIGERANT SYSTEMS AT FINAL	AIRFOIL BLADES SHALL BE USED. TURNING VANES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FIGURES 2-3 AND 2-4 OF THE SMACNA MANUAL. K. <u>RADIUS ELBOWS</u> : RADIUS ELBOWS SHALL BE USED WHERE SHOWN ON THE DRAWINGS AND	A. KRUEGER B. METALAIRE C. NAILOR D. DRIEG COMBANY
ACCEPTANCE AND AT THE END OF THE WARRANTY PERIOD. REPAIR ANY LEAKS FOUND AND PROPERLY CHARGE AFFECTED SYSTEMS WITH REFRIGERANT. INSURE REFRIGERANT SYSTEMS ARE PROPERLY CHARGED AND FREE FROM LEAKS AT FINAL ACCEPTANCE AND AT THE END OF WARRANTY (1 YEAR FROM FINAL ACCEPTANCE)	MAY BE USED FOR ALL 45°AND 90° ELBOWS IF THEY FIT IN THE AVAILABLE SPACE, AND ALL ELBOWS 12" AND SMALLER. RADIUS ELBOWS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FIGURE 2-2 OF THE SMACNA MANUAL.	E. TUTTLE & BAILEY F. TITUS
E. <u>FIRE, SMOKE AND FIRE/SMOKE DAMPER TESTING</u> : PROVIDE FIRE, SMOKE AND FIRE/SMOKE DAMPER TESTING AND CERTIFICATION AS SPECIFIED IN SECTION 23 33 10.	 2.04 LOW VELOCITY ROUND DUCTWORK (BRANCH RUN-OUTS) A. RIGID ROUND LOW PRESSURE, LOW VELOCITY DUCTWORK MATERIAL, GAUGE, TRANSVERSE IOINTS AND SPIRAL SEAMS SHALL BE IN ACCORDANCE WITH SMACNA STANDARDS, WITH THE 	2. <u>DAMPERS:</u> A. AIR BALANCE, INC. B. AMERICAN WARMING AND VE
F. <u>FIRE ALARM SYSTEM INTERFACE</u> : PROVIDE TESTING, IN CONJUNCTION WITH THE FIRE ALARM SYSTEM FUNCTIONAL TESTING SPECIFIED IN SECTION 28 31 00, TO VERIFY THAT ALL FIRE ALARM RELATED HVAC CONTROL FUNCTIONS AND SHUTDOWNS OPERATED AS SPECIFIED IN	1. DRAW BAND TRANSVERSE JOINTS ARE NOT ACCEPTABLE.	C. GREENHECK D. NATIONAL CONTROLLED AIR E. RUSKIN MANUFACTURING CO F. SAFE-AIR
DIVISION 28, AND AS SHOWN ON THE DRAWINGS. G. <u>DUCT LEAKAGE</u> : MEDIUM PRESSURE LOW VELOCITY DUCT: DUCT LEAKAGE SHALL BE TESTED AND SHALL BE LESS THAN 5% OF THE PRESSURE UP TO 4" W.G. MAXIMUM DUCT PRESSURE	 MINIMUM DUGT/FITTING GAUGE SHALL BE 26 GAUGE. "ADJUSTABLE" ELBOWS AND FITTINGS ARE NOT ACCEPTABLE. ALL SEAMS SHALL BE "GROOVELOCK" AND SHALL BE SPIRAL SEAM. 	G. FLEXMASTER H. POTTORFF PART 2 - PRODUCTS
DUCTWORK FAILING THIS TEST SHALL BE REWORKED, RESEALED AND RETESTED BY THIS CONTRACTOR UNTIL IT PASSES THIS TEST.	 2.05 FLEXIBLE DUCTWORK A. <u>GENERAL</u>: FLEXIBLE DUCT SHALL BE USED WHERE FLEXIBLE DUCT CONNECTIONS ARE SHOWN ON THE DRAWINGS TO AIR DISTRIBUTION DEVICES AND TERMINAL UNITS MAXIMUM 	
AIR FLOW FOR EQUIPMENT; AND THE AIR FLOW FOR EACH AIR DISTRIBUTION DEVICE SHALL BE ADJUSTED TO WITHIN 5% OF DESIGN AIR FLOW. DESIGN AIR FLOW IS 95% OF THE VALUE INDICATED ON THE DRAWINGS. AIR HANDLING UNIT AND FAN VOLUMES SHALL BE ADJUSTED	LENGTH SHALL BE 4'-0" FOR TERMINAL UNITS AND 8'-0" FOR AIR DISTRIBUTION DEVICE CONNECTIONS. WHERE LONGER RUNS ARE REQUIRED, PROVIDE RIGID ROUND DUCTWORK.	A. <u>GENERAL</u> : PROVIDE AIR DIST CONSTRUCTED OF MATERIAL SCHEDULED, AND SHOWN. G PROVIDED WITH NEOPRENE (
 DI CHANGING FAN SPEED AND ADJUSTING VOLUME DAMPERS ASSOCIATED WITH THE UNIT. AIR DISTRIBUTION DEVICE VOLUME SHALL BE ADJUSTED USING THE SPIN-IN TAP DAMPER FOR FLEXIBLE DUCT CONNECTED DEVICES AND/OR THE DEVICE OBD FOR DUCT CONNECTED 	 INSULATED FLEXIBLE DUCT SHALL BE A FACTORY-FABRICATED ASSEMBLY CONSISTING OF A GALVANIZED STEEL OR SPIRAL ALUMINUM HELIX. 	ONE SCHEDULED IS USED, TH PERFORMANCE, NOISE LEVEL SUBMITTAL IS MADE. SELECT FOR THE ABOVE PERFORMAN
DEVICES. AIR DISTRIBUTION DEVICES SHALL BE BALANCED WITH AIR PATTERNS AS SPECIFIED. DUCT VOLUME DAMPERS SHALL BE ADJUSTED TO PROVIDE AIR VOLUME TO BRANCH DUCTS WHERE SUCH DAMPERS ARE SHOWN.	 INNER LINER SHALL BE A SMOOTH, AIRTIGHT CPE FILM. INSULATION SHALL BE FIBERGLASS WITH A MAXIMUM THERMAL CONDUCTANCE OF 0.167 BTUH/HR/SF/°F AT 75°F MEAN TEMPERATURE (R VALUE = 6). THE ASSEMBLY SHALL BE SHEATHED IN A REINFORCED METALIZED MYLAR VAPOR 	AT THE END OF THE THROW I FPM NOR LESS THAN 25 FPM. ASHRAE APPLICATIONS HANE
J. <u>AUTOMATIC TEMPERATURE CONTROL ADJUSTMENT</u> : ADJUST AND CALIBRATE ALL THERMOSTATS, DAMPERS, OPERATORS, CONTROLLERS, AND OTHER DEVICES, AS REQUIRED TO PUT THE TEMPERATURE CONTROL SYSTEM IN PROPER WORKING ORDER AS DESIGNED AND SPECIFIED	BARRIER OUTER JACKET WITH PERMEANCE NOT EXCEEDING 0.17 PERMS/SF AT 1" PRESSURE. C. STANDARDS: THE FLEXIBLE DUICT ASSEMBLY SHALL BE SUITABLE FOR A MINIMUM MODIFIELD	B. <u>SURFACE COMPATIBILITY</u> : AI COMPATIBLE WITH THE CEILI
K. <u>COMPLETION REPORTS</u> : BEFORE THE FINAL INSPECTION, BUT AFTER ALL TESTING, BALANCING AND ADJUSTING, THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND	PRESSURE OF +6" W.G. AND -4" W.G., AND SHALL BE LISTED CLASS I AIR DUCT BY THE UNDERWRITERS LABORATORY (UL-181) AT A FLAME SPREAD OF NOT OVER 25 AND A SMOKE DEVELOPED RATE OF NOT OVER 50. DUCTS SHALL ALSO COMPLY WITH NFPA STANDARD 90A.	AND SHALL BE PROVIDED WIT IN THE ACTUAL CONSTRUCTION FASTENING ON ALL SURFACE
DEVICES NECESSARY TO PREPARE A COMPLETION REPORT WITH THE FOLLOWING INFORMATION. 1. MOTOR DATA ON ALL MOTORS INSTALLED ON THE PROJECT. MOTORS SHALL BE LISTED	D. <u>CONNECTIONS</u> : ALL JOINTS AND CONNECTIONS SHALL BE MADE WITH 1/2" WIDE STAINLESS STEEL DUCT CLAMPS OR 100% NYLON SELF-LOCKING CLAMPS. REFER TO DETAILS ON DRAWINGS.	C. <u>FINISHES</u> : ALL CEILING AND V RESISTANT TREATED SURFAC UNLESS SPECIFIED OTHERWI THE FACTORY FINISH ON ALL
BY THE DEVICE ON WHICH THEY ARE INSTALLED, AND INFORMATION PROVIDED SHALL INCLUDE: A. HORSEPOWER	E. <u>INSTALLATION</u> : FLEXIBLE DUCTS SHALL BE SUPPORTED IN SUCH A MANNER TO PREVENT SAGS AND KINKS. BENDS IN ANY LENGTH OF FLEXIBLE DUCT SHALL NOT EXCEED A TOTAL TURNING OF 90°. EXTEND INSULATION AND OUTER JACKET OVER THE SECURED CLAMP AND	ARCHITECT/ENGINEER, THE D COORDINATING FIELD PAINTI DIVISION 23 CONTRACTOR SH DIVISION 25 CONTRACTOR SH
B. SPEED C. TYPE D. LOCATION E. RATED FULL CAD AMPERACE	TAPE DOWN TO THE SLEEVE/COLLAR TO MAINTAIN VAPOR BARRIER INTEGRITY. "R-VALUE" OF 6 MUST BE MAINTAINED THROUGH INSTALLATION. INSULATION ON FLEXIBLE DUCT SHALL NOT BE COMPRESSED.	OF AIR DEVICES SHALL BE TH ARCHITECT/ENGINEER'S DEC OF ALL PERFORATED PLATE I
E. RATED FULL LOAD AMPERAGE F. RATED VOLTAGE G. ACTUAL MEASURED AMPERAGE FOR EACH LEG H. ACTUAL MEASURED VOLTAGE FOR EACH LEG	F. <u>MANUFACTURERS</u> : IF IT COMPLIES WITH THESE SPECIFICATIONS, FLEXIBLE DUCTWORK OF THE FOLLOWING TYPES WILL BE ACCEPTABLE:	COMPONENTS SHALL BE FULI UNPAINTED STEEL PARTS.
1. BELT AND DRIVE DATA FOR ALL BELT DRIVEN EQUIPMENT INSTALLED ON THE PROJECT. DATA SHALL BE LISTED BY THE DEVICE ON WHICH THE BELTS AND DRIVE ARE INSTALLED AND INFORMATION PROVIDED SHALL INCLUDE: NUMBER OF BELTS SIZE OF BELTS SIZE	1. FLEXMASTER TYPE 8M 2. THERMAFLEX M-KE 2.06 ACCESS DOORS	AIR DIFFUSERS WHERE DIFFU WHERE SCHEDULED. WHERE CONNECTION TO ROUND SUP HAVE PATTERN CONTROL ST
AND TYPE OF DRIVE INSTALLED, MOTOR RPM AND DRIVEN DEVICE RPM.	A. PROVIDE FLEXMASTER "THE INSPECTOR SERIES" - SPIN DOOR FOR FIELD FABRICATION AND TAB DOOR FOR SHOP FABRICATION, OR APPROVED EQUAL DUAL WALL, INSULATED, ACCESS DOORS IN DUCTWORK AS REQUIRED FOR ACCESS TO FIRE SMOKE AND EIPE/SMOKE	OTHERWISE. PATTERN CONTROL BL OTHERWISE. PATTERN CONT ACCEPTABLE. PROVIDE CON SIZE SHALL BE AS SHOWN ON
SECTION 23 31 13 DUCTWORK AND SHEET METAL	DAMPERS, DUCT SMOKE DETECTORS, SAMPLING TUBES, HUMIDIFIERS AND OTHER DUCT MOUNTED DEVICES. DOOR SIZE SHALL NOT BE LESS THAN 2" IN DIAMETER SMALLER THAN THE DEPTH OF THE DUCT IN WHICH IT IS TO BE INSTALLED.	E. <u>REGISTERS AND GRILLES</u> : PF BLADE DAMPER OPERABLE FI INSTALLED IN INACCESSIBLE
PART 1 - GENERAL 1.01 RELATED DOCUMENTS	 2.07 PARTITION PENETRATION SLEEVES A. PROVIDE 22 GAUGE SHEET METAL SLEEVES IN ALL NON-DUCTED AIR PATH PARTITION 	DEFLECTION TYPE. RETURN AND MATCH THE FACE OF TH INDICATED. PROVIDE CONCE
A. THE REQUIREMENTS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS. DIVISION	FENETRATIONS SHOWN ON THE DRAWINGS WHERE RETURN AIR BOOTS (RAB), COMBINATION FIRE AND SMOKE DAMPERS (FSD) FIRE DAMPERS (FD) FTC: ARE NOT PROVIDED	2.02 AIR DISTRIBUTION DEVICES

1, DIVISION 20, AND DRAWINGS APPLY TO ALL WORK HEREIN. B. REQUIREMENTS OF THE FOLLOWING DIVISION 20-28 SECTIONS APPLY TO THIS SECTION:

SCOPE OF WORK - SECTION 23 05 01 2. BASIC DIVISION 20-28 REQUIREMENTS - SECTION 20 05 03

PARTITION CONTRACTOR. SLEEVES SHALL BE FABRICATED WITH 1/2" FLANGES, TURNED OUT ON ONE END SLEEVES SHALL EXTEND THROUGH WALL ON BOTH SIDES 2.09 KITCHEN EXHAUST DUCTWORK

COORDINATE LOCATION AND SIZE OF ALL PARTITION PENETRATION SI FEVES WITH THE

2.03 DAMPERS A. VOLUME BALANCING DAMPERS

A. SEE DRAWINGS FOR SCHEDULED DEVICES.

ON SHALL COMPLY WITH NFPA 96 AND ALL REQUIREMENTS OF RISDICTION. LATION EXHAUST SHALL BE CARBON-STEEL SHEET (16 GAUGE ESS STEEL WITH FINISH TO MATCH KITCHEN EQUIPMENT AND MS AND JOINTS. DUCTWORK HALL BE ROUND SPIRAL SEAM SHEET METAL CONSTRUCTED AS CORDANCE WITH SMACNA STANDARDS BE MANUFACTURED FROM GALVANIZED SHEET METAL OUTLINED H A. ALL FITTINGS SHALL BE FACTORY FABRICATED, MACHINE I GALVANIZED SHEET METAL WITH BUILT-IN COUPLINGS. THE ND FITTINGS SHALL BE 26 GAUGE. JOINTS SHALL BE ASSEMBLED, SUSPENDED, SEALED, AND TAPED LISHED ASSEMBLY AND INSTALLATION INSTRUCTIONS. DUCTWORK SUPPORTS SHALL BE AS RECOMMENDED BY THE SHALL NOT HAVE ANY SCREWS THROUGH THE DUCTWORK. COUPLINGS SHALL BE UNITED SHEET METAL UNI-WELD METAL UBSTITUTE AND SHALL BE USED PER THE MANUFACTURERS SEALER SHALL BE THE UNITED SHEET METAL UNI-CAST SYSTEM ITE UTILIZING AN ADHESIVE, TAPE AND COATING TO OBTAIN A REE CONICAL FITTINGS CONNECTIONS FOR BRANCH TAKEOFFS. COMPLY WITH THESE SPECIFICATIONS AND REQUIREMENTS, ING MANUFACTURERS WILL BE ACCEPTABLE: SHALL BE MADE AFTER JOB SITE MEASUREMENTS ARE MADE D WITH ALL OTHER TRADES. DUCTWORK CONSTRUCTION ALL BE SUBMITTED AND APPROVED PRIOR TO EABRICATION OF K SUBMITTAL SHALL INCLUDE DUCTWORK FABRICATION DATA ON DUCTWORK SPECIALTIES AND CONSTRUCTION DETAILS RAWINGS SHALL BE DRAWN TO SCALE ON 1/8" OR LARGER SCALE) SHALL INDICATE DUCT SIZES, DUCT MATERIAL, DUCT INSULATION VERSE JOINTS, FITTINGS, DUCTWORK BOTTOM ELEVATION. IALTIES. FIRE AND FIRE/SMOKE DAMPERS AND ALL OTHER R COORDINATION WITH OTHER TRADES AND FABRICATION OF IRE/SMOKE PARTITIONS SHALL BE CLEARLY DESIGNATED ON THE DETAIL DRAWINGS FOR MECHANICAL ROOMS AND AIR SHALL BE DRAWN TO 1/4" SCALE. GS SHALL BE COORDINATED WITH OTHER TRADES AND BUILDING UBMITTAL FOR APPROVAL, AND SHOP DRAWINGS SHALL BE SO GHT TO STRUCTURE UNLESS OTHERWISE NOTED. THE SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO THE ATION OF DUCTWORK. NSORS AND CONTROL DEVICES FURNISHED UNDER SECTION 23 L ACCESS DOORS AT EACH DUCT MOUNTED CONTROL DEVICE. DEVICES AND INSTALLATION REQUIREMENTS WITH THE CONTROL SUBCONTRACTOR. DETECTORS FURNISHED UNDER DIVISION 28. FURNISH AND EACH SAMPLING TUBE ASSEMBLY. COORDINATE LOCATION OF ION REQUIREMENTS WITH THE ELECTRICAL SUBCONTRACTOR. SS DOORS AT ALL FIRE DAMPERS, SMOKE DAMPERS, AND OUGHLY CLEANED, OR VERIFIED AS CLEAN PRIOR TO FAN TION 20 05 05 FOR RELATED ISSUES. IEN HOOD EXHAUST DUCTS WITHOUT DIPS AND TRAPS THAT MAY A MINIMUM OF 2 PERCENT TO DRAIN GREASE BACK TO THE PANEL ASSEMBLIES AT EACH CHANGE IN DIRECTION AND AT FEET (3.7 M) IN HORIZONTAL DUCTS, AND AT EVERY FLOOR FOR CATED ON DRAWINGS. LOCATE ACCESS PANEL ON TOP OR OF 1-1/2 INCHES (38 MM) FROM BOTTOM OF DUCT. ATED ASSEMBLIES EXCEPT AS ALLOWED BY APPLICABLE BUILDING AVING JURISDICTION.

O OPERATE AT +2" W.G. OR GREATER OR -2" W.G. OR LESS SHALL ANCE WITH THE FOLLOWING: EST DUCT FOR LEAKAGE IN ACCORDANCE WITH THE "SYSTEM OR LEAKS" PUBLICATION BY UNITED MCGILL CORPORATION R TESTING SHALL BE AS NOTED IN REFERENCED PUBLICATION. S SHALL NOT BE PERMITTEI BE PRESSURIZED TO 125% OF RATED SYSTEM PRESSURE SCRIBED IN SUBSECTION 2.01 OF THIS SECTION. LEAKAGE SHALL BE IN ACCORDANCE WITH SUBSECTION 2.02 OF TO OPERATE AT PRESSURES BETWEEN -2" W.G. AND +2" W.G.

FED FOR LEAKAGE. ST DUCTWORK LEAKAGE TEST, IN ACCORDANCE WITH S SUBSECTION IF IN HIS OPINION TESTING IS WARRANTED DUE OUCT SYSTEMS OR INFORMATION CONTAINED IN TEST AND

ND/OR INSPECTION SHALL BE PERFORMED PRIOR TO DUCTWORK INSULATION. NEER, CONTRACTOR SHALL SCHEDULE DUCT LEAKAGE TESTING T IT MAY BE WITNESSED BY ENGINEER.

SECTION 23 33 10 BUTION DEVICES AND DAMPERS

GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, DIVISION GS APPLY TO ALL WORK HEREIN.

STALL AIR DISTRIBUTION DEVICES AS SHOWN SCHEDULED. DEVICES SHALL BE COMPLETE WITH ALL REQUIRED MOUNTING ATION IN THE ACTUAL CONSTRUCTION AT THE INSTALLATION

DIVISION 20-28 SECTIONS CONTAIN REQUIREMENTS RELATED TO THESE MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING T METAL - SECTION 23 31 13

COMPLY WITH THESE SPECIFICATIONS AND REQUIREMENTS, ING MANUFACTURERS WILL BE ACCEPTABLE

ENTILATING COMPANY

AL REQUIREMENTS

TRIBUTION DEVICES OF THE SIZE, SHAPE, AND TYPE IS AND COMPONENTS AND WITH FINISHES AS SPECIFIED GRILLES, REGISTERS, AND CEILING DIFFUSERS SHALL BE OR SOFT FELT GASKETS. IF A MANUFACTURER OTHER THAN THE HE SIZES SHOWN ON THE DRAWINGS SHALL BE CHECKED FOR FACE VELOCITY, THROW, PRESSURE DROP, ETC., BEFORE THE TIONS SHALL MEET THE MANUFACTURER'S OWN PUBLISHED DATA NCE CRITERIA. THE THROW SHALL BE SUCH THAT THE VELOCITY IN THE FIVE FOOT OCCUPANCY ZONE WILL BE NOT MORE THAN 50 . NOISE LEVELS SHALL NOT EXCEED THOSE PUBLISHED IN THE

DBOOK FOR THE TYPE OF SPACE BEING SERVED (NC LEVEL) D NC 35. IR DISTRIBUTION DEVICES SHALL HAVE FRAMES FULLY ING WALL AND FLOOR SURFACES IN WHICH THEY ARE INSTALLED. TH ALL REQUIRED MOUNTING ACCESSORIES FOR INSTALLATION ION AT THE INSTALLATION LOCATION. PROVIDE CONCEALED

WALL MOUNTED AIR DEVICES SHALL HAVE CORROSION CES AND BE PAINTED WHITE OR OFF-WHITE WITH BAKED ENAMEL ISE AND ALL AIR DEVICES SHALL BE THE SAME COLOR. WHERE DEVICES IS NOT THE SAME AS DETERMINED BY THE DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR NG OF ALL AIR DEVICES BY THE DIVISION 9 CONTRACTOR. THE HALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH F WHITE OR OFF-WHITE AIR DEVICES. SPECIAL COLOR PAINTING

HE RESPONSIBILITY OF THE DIVISION 9 CONTRACTOR THE CISION ON WHITE COLOR COMPATIBILITY IS FINAL. THE INTERIOR DIFFUSERS SHALL BE PAINTED FLAT BLACK. ALL STEEL LY PHOSPHATIZED PRIOR TO PAINTING AND THERE SHALL BE NO

DE OPPOSED BLADE VOLUME CONTROL DAMPERS WITH SUPPLY USERS ARE INSTALLED ABOVE INACCESSIBLE CELLINGS AND E APPLICABLE. PROVIDE ADAPTERS WITH DIFFUSERS TO PERMIT PLY DUCT. PERFORATED PLATE SUPPLY AIR DIFFUSERS SHALL ADES INSTALLED IN THE DIFFUSER NECK UNLESS NOTED TROLLERS ATTACHED TO THE PERFORATED PLATE ARE NOT ICEALED FASTENING ON ALL CEILING DIFFUSERS. DEVICE NECK N THE DRAWINGS.

ROVIDE REGISTERS THAT CONTAIN A KEY-OPERATED OPPOSED ROM THE FACE SIDE WHERE REGISTERS ARE DUCTED AND SURFACES. SUPPLY AIR REGISTERS SHALL BE OF THE DOUBLE AIR GRILLES AND REGISTERS SHALL HAVE FIXED FACE BLADES HE SUPPLY AIR CEILING DIFFUSERS UNLESS OTHERWISE EALED FASTENING FOR ALL REGISTERS AND GRILLES.

1. BALANCING DAMPERS SHALL BE PROVIDED IN ALL ZONES OF MULTI-ZONE AIR HANDLING UNITS, BRANCH TAPS TO ALL AIR DEVICES, AND WHERE SHOWN ON THE DRAWINGS. EXCEPT FOR SPIN-IN TYPE, BALANCING DAMPERS SHALL CONSIST OF SINGLE BLADE DAMPERS ON RECTANGULAR DUCT UP TO 11" HIGH AND OPPOSED BLADE DAMPERS IN DUCTS 12" AND LARGER. SINGLE BLADE DAMPERS SHALL BE IN ACCORDANCE WITH FIG. BY ONE OF 2-11 OF THE SMACNA MANUAL AND OPPOSED BLADE DAMPERS SHALL BE IN ACCORDANCE WITH FIG. 2-12 OF THE SMACNA MANUAL. DAMPERS SHALL BE OF THE

FOLLOWING TYPES: B. SINGLE BLADE DAMPERS FOR RECTANGULAR DUCT SHALL BE RUSKIN MD35 SINGLE BLADE SERIES OR AN APPROVED EQUAL.

- C. OPPOSED BLADE DAMPERS FOR RECTANGULAR DUCT SHALL BE RUSKIN MD 35/OB OR LISTED MANUFACTURER APPROVED EQUAL.
- RIGID ROUND DUCT DAMPERS SHALL BE HAVE 26 GAUGE, G90 GALVANIZED DAMPER BLADE, 3/8" SQUARE DAMPER SHAFT SUPPORTED BY NYLON BEARINGS AND DURODYNE KR3 QUANDRANT ON AN ELEVATED PLATFORM. FLEXMASTER SLBO, OR APPROVED EQUAL
- SPIN-IN DAMPER FITTINGS SERVING INDIVIDUAL AIR DEVICES SHALL BE DACE MODEL SMD. WHERE REGULATORS ARE INSTALLED ON EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF PLATFORMS AT LEAST 1/4" HIGHER THAN THE INSULATION THICKNESS. DAMPER REGULATORS FOR CONCEALED ACCESSIBLE APPLICATIONS SHALL BE YOUNG VALCALOX 400 SERIES OR AN APPROVED EQUAL. WHERE REGULATORS ARE INSTALLED ON EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF PLATFORMS AT LEAS 1/4" HIGHER THAN THE INSULATION THICKNESS. WHERE REGULATORS ARE REQUIRED IN NON-ACCESSIBLE LOCATIONS, PROVIDE ACCESS DOORS OR YOUNG OR EQUAL EXTENSION RODS, COUPLINGS, 90° GEAR DRIVES, ETC., AS REQUIRED, AND YOUNG 301
- OR APPROVED EQUAL FLUSH MOUNTED REMOTE REGULATOR AS DIRECTED BY THE ARCHITECT AUTOMATIC DAMPERS: SEE SECTION "BUILDING CONTROL AND AUTOMATION SYSTEM" FOR REQUIREMENTS, INCLUDING BLANK-OFF AND TRANSITION PROVISIONS. PROVIDE ACCESS DOORS FOR DAMPERS AS REQUIRED.
- E. BACKDRAFT DAMPERS 1. FURNISH AND INSTALL BACKDRAFT DAMPERS WHERE INDICATED ON THE DRAWINGS. EACH DAMPER SHALL BE SIZED AS INDICATED ON THE DRAWINGS AND SHALL BE SUITABLE FOR INSTALLATION IN THE MOUNTING ARRANGEMENT SHOWN. BACKDRAFT DAMPERS MOUNTED IN ROOF CURBS SHALL BE SECURED TO GALVANIZED STEEL
- SUPPORT ANGLES FASTENED TO THE CURB. 2. BACKDRAFT DAMPERS SHALL BE HEAVY RELIEF TYPE SUITABLE FOR WALL AND DUCT MOUNTING OR INSTALLATION AT A FAN DISCHARGE. BACKDRAFT DAMPERS SHALL BE SIMILAR TO RUSKIN TYPE BD2-A1 FOR FACE VELOCITIES TO 1500 FPM AND RUSKIN TYPE BD2-A2 FOR FACE VELOCITIES TO 2500 FPM, OR LISTED MANUFACTURER APPROVED EQUAL AS FOLLOWS:
- DAMPER FRAME SHALL BE CONSTRUCTED OF AT LEAST 0.090" THICK ALUMINUM OR AT LEAST 18 GAUGE GALVANIZED STEEL. DAMPER FRAME SHALL BE ON CHANNEL CONSTRUCTION WHEN INSTALLED IN DUCTWORK OR HAVE A FRONT FLANGE WHEN INSTALLED IN A WALL DAMPER BLADES SHALL BE CONSTRUCTED OF AT LEAST 22 GAUGE EXTRUDED ALUMINUM SUITABLE FOR FACE VELOCITIES UP TO 1500 FPM AND AT LEAST 16 GAUGE EXTRUDED ALUMINUM FOR FACE VELOCITIES TO 2500 RPM. DAMPER BLADES SHALL HAVE NEOPRENE OR VINYL GASKETS RIVETED OR ROLLED INTO THE BLADE EDGE. EACH BACKDRAFT DAMPER
- SECTION SHALL BE FURNISHED WITH TIE BARS CONSTRUCTED OF AT LEAST 16-GAUGE ALUMINUM, FURNISH TWO TIE BARS ON DAMPER SECTIONS OVER 40 INCHES WIDE. DAMPER BEARING SHALL BE BRONZE OILITE, NYLON, OR CYCOLOY FURNISH BACKDRAFT DAMPERS WITH 2 X 2 MESH ALUMINUM BIRD SCREEN FOR REAR MOUNTING WHERE BACKDRAFT DAMPERS ARE MOUNTED IN OUTSIDE WALLS. DAMPER LEAKAGE SHALL NOT EXCEED 12 CFM PER SQUARE FOOT OF DAMPER FACE AREA AT 0.5 INCHES W.G. DIFFERENTIAL

PART 3 - EXECUTION 3.01 SUBMITTALS

- A. SHOP DRAWING SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: CUT SHEETS ON AIR DISTRIBUTION DEVICES AND DAMPERS SHOWING DIMENSIONS YPE, CONSTRUCTION MATERIALS, FEATURES, AND LISTING AGENCY DETAILS (UL, FM). PERFORMANCE DATA ON AIR DEVICES INCLUDING NOISE DATA, THROW VELOCITY/DISTANCE AND PRESSURE DROP.
- 3.02 INSTALLATION GENERAL: INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN ISTALLATION INSTRUCTIONS, APPLICABLE STANDARDS AND RECOGNIZED INDUSTRY PRACTICES.
 - LOCATION COORDINATION: WHERE AIR DISTRIBUTION DEVICES ARE INSTALLED IN ACOUSTICAL TILE AND OTHER CEILINGS THEY SHALL BE EITHER CENTERED ON TILE OR CEILING JOINTS AS DIRECTED BY ARCHITECT AT JOB SITE. COORDINATE LOCATION OF ALL CEILING AIR DEVICES WITH ARCHITECTURAL REFLECTED CEILING PLANS.
- DAMPERS: ALL FIRE, MOTORIZED AND RADIATION DAMPERS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH UL LISTED INSTALLATION PROCEDURES PROVIDED BY MANUFACTURER.
- BALANCING DAMPERS: INSTALL BALANCING DAMPERS A MINIMUM OF THREE FEET (3') UPSTREAM OF SUPPLY DIFFUSERS SERVED AND THREE FEET (3') DOWNSTREAM OF RETURN/EXHAUST DIFFUSERS SERVED.
- ACCESS DOORS: PROVIDE ACCESS DOORS IN DUCTWORK AND BUILDING CONSTRUCTION FOR DAMPERS AS REQUIRED. END OF SECTION

SECTION 23 34 10 FANS

PART 1 - GENERAL 1.01 RELATED DOCUMENTS

- A. THE REQUIREMENTS OF THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, DIVISION 1, DIVISION 20, AND DRAWINGS APPLY TO ALL WORK HEREIN. B. REQUIREMENTS OF THE FOLLOWING DIVISION 20-28 SECTIONS APPLY TO THIS SECTION:
- SCOPE OF WORK SECTION 23 05 01 2. START-UP, TESTING, ADJUSTING, AND BALANCING - SECTION 23 05 93 1.02 SCOPE
- A. FURNISH AND INSTALL AIR MOVING FANS AS SHOWN, SCHEDULED, AND SPECIFIED. 1.03 QUALITY ASSURANCE
- MANUFACTURERS: IF THEY COMPLY WITH THESE SPECIFICATIONS AND REQUIREMENTS, CTS OF THE FOLLOWING MANUFACTURERS WILL BE ACCEPTABLE: 1. <u>FANS</u>:
- GREENHECK COOK
- TWIN CITY D. AN APPROVED EQUAL
- PART 2 PRODUCTS 2.01 GENERAL FAN REQUIREMENTS
- PEED CONTROLLERS: ALL DIRECT DRIVE FANS SHALL BE FURNISHED WITH A SOLID-STATE REED CONTROLLER UNLESS OTHERWISE NOTED. SOLID-STATE SPEED CONTROLLERS SHALL BE MOUNTED ABOVE THE CEILING ADJACENT TO THE FAN BEING SERVED WHEN A SPECIFIC LOCATION IS NOT SHOWN.
- B. ALL FAN FACTORY RUN TESTED AND BALANCED PER AMCA 204-96.
- C. ALL FANS SHALL HAVE L-10-100,000 HR BEARINGS RATED AT OPERATING RPM.
- 2.02 DIRECT DRIVE CENTRIFUGAL ROOF FAN
- A. CENTRIFUGAL ROOF FAN EXHAUSTERS SHALL BE DESIGNED FOR ROOF MOUNTING, OF TYPE, SIZE, AND CAPACITY AS SCHEDULED.
- B. HOUSINGS SHALL BE ALUMINUM. PROVIDE BACKDRAFT DAMPER FAN DISCHARGE AS SCHEDULED, ROOF CURB AS SCHEDULED, INTEGRAL FAN SPEED CONTORLLER, THERMAL
- OVERLOAD PROTECTION, AND GALVANIZED BIRD SCREEN. C. MOTORS SHALL BE PERMANENT SPLIT-CAPACITOR, PERMANENTLY LUBRICATED, WITH
- GROUNDED CORD AND PLUG.
- D. PROVIDE JUNCTION BOX FOR ELECTRICAL CONNECTION ON HOUSING, AND RECEPTACLE FOR MOTOR PLUG-IN.
- E. PROVIDE TRANSITION FITTINGS AS INDICATED ON THE DRAWINGS, AS SCHEDULED, OR AS REQUIRED
- F. FANS SHALL BE GREENHECK MODEL G, OR APPROVED EQUAL.

PART 3 - EXECUTION 3.01 SUBMITTALS

- A. SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:
- 1. AMCA RATINGS FOR BOTH SOUND AND AIR PERFORMANCE.
- 2. PERFORMANCE CURVES WITH SELECTION POINT CLEARLY INDICATED. SPECIFIC SOUND POWER LEVELS RADIATED AND RADIATED SOUND POWER LEVELS AT
- DESIGN OPERATING CONDITIONS FOR EACH UNIT. PLOT THESE ON AN NC CRITERIA CURVE. UNIT DISCHARGE NOISE LEVELS AT DESIGN OPERATING CONDITION.
- 4. MOTOR DATA AS REQUIRED IN SECTION 20 05 13. 5. CATALOG CUT SHEETS CLEARLY INDICATING SIZES, MODEL NUMBERS AND
- ACCESSORIES. 6. ADDITIONAL INFORMATION AS REQUIRED BY SECTION 20 05 03, BASIC DIVISION 20-28 REQUIREMENTS.

3.02 INSTALLATION

- A. ALL FANS SHALL BE INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- B. REFER TO SECTION 23 05 93 FOR BALANCING REQUIREMENTS AND SECTION 20 05 48 FOR VIBRATION ISOLATION.

SECTION 23 81 26 SPLIT-SYSTEM AIR CONDITIONERS

PART 1 - GENERAL

END OF SECTION

- 1 01 RELATED DOCUMENTS A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 01 SPECIFICATION SECTIONS, APPLY TO THIS SECTION.
- 1 02 SCOP A. THIS SECTION INCLUDES SPLIT-SYSTEM AIR-CONDITIONING AND HEAT PUMP UNIT
- COMPRESSOR-CONDENSER COMPONENTS.
- 1.03 QUALITY ASSURANCE A. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.

PART 2 -PRODUCTS

2.01 MANUFACTURERS

- THE FOLLOWING: CARRIER TRANE 3. LENNOX 4. DAIKIN 5. OTHER MANUFACTURER'S WHERE APPROVED BY ENGINEER OF RECORD
- 2.02 EVAPORATOR-FAN COMPONENTS
- A. CHASSIS: GALVANIZED STEEL WITH FLANGED EDGES, REMOVABLE PANELS FOR SERVICING, AND INSULATION ON BACK OF PANEL. 1. INSULATION: FACED, GLASS-FIBER DUCT LINER. 2. DRAIN PANS: GALVANIZED STEEL, WITH CONNECTION FOR DRAIN; INSULATED.

INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING WITH ARI 210/240, AND WITH THERMAL-EXPANSION VALVE.
- ELECTRIC COIL: HELICAL NICKEL-CHROME, RESISTANCE-WIRE HEATING ELEMENTS WITH REFRACTORY CERAMIC SUPPORT BUSHINGS; AUTOMATIC-RESET THERMAL CUTOUT; BUILT-IN
- ONE-TIME FUSES IN TERMINAL BOX FOR OVERCURRENT PROTECTION. FAN: FORWARD-CURVED, DOUBLE-WIDTH WHEEL OF GALVANIZED STEEL; DIRECTLY
- CONNECTED TO MOTOR. FAN MOTORS: MULTITAPPED, MULTISPEED WITH INTERNAL THERMAL PROTECTION AND
- PERMANENT LUBRICATION. F. DISPOSABLE FILTERS: REFER TO SCHEDULE.
- 2.03 AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS A. CASING: STEEL, FINISHED WITH BAKED ENAMEL WITH REMOVABLE PANELS FOR ACCESS TO
- CONTROLS, WEEP HOLES FOR WATER DRAINAGE, AND MOUNTING HOLES IN BASE. PROVIDE RASS SERVICE VALVES, FITTINGS, AND GAGE PORTS ON EXTERIOR OF CASING. COMPRESSOR: HERMETICALLY SEALED WITH CRANKCASE HEATER AND MOUNTED ON VIBRATION ISOLATION. COMPRESSOR MOTOR SHALL HAVE THERMAL- AND
- CURRENT-SENSITIVE OVERLOAD DEVICES, START CAPACITOR, RELAY, AND CONTACTOR. COMPRESSOR TYPE: SCROLL. REFRIGERANT COIL: COPPER TUBE, WITH MECHANICALLY BONDED ALUMINUM FINS, COMPLYING
- WITH ARI 210/240, AND WITH LIQUID SUBCOOLER. HEAT PUMP COMPONENTS: REVERSING VALVE AND LOW-TEMPERATURE AIR CUT-OFF
- FAN: ALUMINUM-PROPELLER TYPE, DIRECTLY CONNECTED TO MOTOR. MOTOR: PERMANENTLY LUBRICATED, WITH INTEGRAL THERMAL-OVERLOAD PROTECTION. LOW AMBIENT KIT

MOUNTING BASE: POLYETHYLENE

- ACCESSORIES E. THERMOSTAT: LOW VOLTAGE WITH SUBBASE TO CONTROL COMPRESSOR AND EVAPORATOR
- F. AUTOMATIC-RESET TIMER TO PREVENT RAPID CYCLING OF COMPRESSOR. G. REFRIGERANT LINE KITS: SOFT-ANNEALED COPPER SUCTION AND LIQUID LINES FACTORY
- CLEANED, DRIED, PRESSURIZED, AND SEALED; FACTORY-INSULATED SUCTION LINE WITH FLARED FITTINGS AT BOTH ENDS.

EXECUTION 3.01 INSTALLATION

2.03

- A. INSTALL UNITS LEVEL AND PLUMB. B INSTALL GROUND-MOUNTING COMPRESSOR-CONDENSER COMPONENTS ON 4 INCH (100 MM)
- THICK, REINFORCED CONCRETE BASE: 4 INCHES (100 MM) LARGER ON EACH SIDE THAN UNIT CONCRETE, REINFORCEMENT, AND FORMWORK ARE SPECIFIED IN DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE." COORDINATE ANCHOR INSTALLATION WITH CONCRETE BASE. INSTALL GROUND-MOUNTING, COMPRESSOR-CONDENSER COMPONENTS ON POLYETHYLENE MOUNTING BASE
- INSTALL ROOF-MOUNTING COMPRESSOR-CONDENSER COMPONENTS ON EQUIPMEN SUPPORTS SPECIFIED. ANCHOR UNITS TO SUPPORTS WITH REMOVABLE, CADMIUM-PLATED FASTENERS.
- E. INSTALL AND CONNECT PRECHARGED REFRIGERANT TUBING TO COMPONENT'S QUICK-CONNECT FITTINGS. INSTALL TUBING TO ALLOW ACCESS TO UNIT.
- 3.02 CONNECTIONS PIPING INSTALLATION REQUIREMENTS ARE SPECIFIED IN OTHER RELATED SECTION DRAWINGS INDICATE GENERAL ARRANGEMENT OF PIPING, FITTINGS, AND SPECIALTIES.
- B. INSTALL PIPING ADJACENT TO UNIT TO ALLOW SERVICE AND MAINTENANCE. C UNLESS OTHERWISE INDICATED. CONNECT PIPING WITH UNIONS AND SHUTCEE VALVES TO ALLOW UNITS TO BE DISCONNECTED WITHOUT DRAINING PIPING. REFER TO PIPING SYSTEM

SECTIONS FOR SPECIFIC VALVE AND SPECIALTY ARRANGEMENTS. D. GROUND EQUIPMENT.

END OF SECTION

	OUTSIDE AIR INTAKE HOOD											
TAG	MANUFACTURER	MODEL	CFM	E.S.P. (IN.)	THROAT VELOCITY (FT/MIN)	THROAT AREA (SQ. FT.)	NOTES					
OAI-1	GREENHECK	GRSI-18	730	0.02	366	1.83	(1,2)					
OAI-2	GREENHECK	GRSI-16	520	0.02	352	1.45	(1,2)					
OAI-3	GREENHECK	GRSI-8	175	0.02	378	0.37	(1,2)					
ACCESSORIES:												

(2) PROVIDE WITH GALVANIZED BIRD SCREEN.

LOUVER SCHEDULE										
MARK MANUFACTURER MODEL SIZE (INCHES) TYPE MAX. CFM TOTAL S.P. (IN WG) FREE AREA (S.F.) VELOCITY (FT/MIN) NOTES										
L1	GREENHECK	ESD-435	28x20	EXHAUST	1200	0.07	1.66	722	1	
NOTES: (1) PROVIDE WITH MANUFACTURER'S INSECT SCREEN, MOUNTING ANGLES, AND SLEEVE.										

MARK	MFGR	MODEL	SERVICE LOCATION		FAN TYPE DRIVE TYPE		LOCATION FAN TYPE DF		AIR VOLUME	TOTAL STATIC PRESSURE (IN	ELECT	RICAL & V	VEIGHT	NOTES
							(CFM)	WG)	ELEC	HP	LBS			
EF-1, EF-2	GREENHECK	SP-B70	JANITOR	CEILING	CENTRIFUGAL	DIRECT	50	0.25	120/1	15W	10	(1,5)		
EF-3	GREENHECK	G-095-VG	RESTROOMS	ROOF	CENTRIFUGAL	DIRECT	750	0.5	120/1	1/6	33	(2-4)		
EF-4	GREENHECK	SP-A90	FAB RESTROOM	CEILING	CENTRIFUGAL	DIRECT	75	0.25	120/1	14W	13	(1,5)		

NOTES:

1) PROVIDE WITH SPRING HANGING ISOLATORS, GRAVITY BACKDRAFT DAMPER, INTEGRAL FAN SPEED CONTROLLER, DISCONNECT, INTERNAL THERMAL OVERLOAD PROTECTION. 2) PROVIDE WITH 12" ROOF CURB BY ROOF MANUFACTURER, GRAVITY BACKDRAFT DAMPER, INTEGRAL FAN SPEED CONTROLLER, THERMAL OVERLOAD PROTECTION, AND GALVANIZED BIRD SCREEN.

3) NEMA-3R DISCONNECT SWITCH PROVIDED WITH EQUIPMENT, WIRED BY EC. 4) COORDINATE WITH ELECTRICAL CONTRACTOR FOR WIRING MEANS. FAN SHALL BE WIRED TO OPERATE CONTINUOUSLY DURING BUSINESS HOURS. COORDINATE WITH OWNER.

5) COORDINATE WITH ELECTRICAL CONTRACTOR FOR WIRING MEANS. FAN SHALL BE INTERLOCKED WITH LIGHT SWITCH.

	AIR DEVICE SCHEDULE										
TAG	MANUFACTURER	MODEL	NOM. FACE SIZE (IN)	DUCT CONNECT. SIZE	MAX AIRFLOW (CFM)	MATERIAL	FINISH	MOUNTING			
SUPPLY				-			-	-			
S1	TITUS	OMNI	24x24	6"Ø	125	STEEL	WHITE	LAY-IN			
S2	TITUS	OMNI	24x24	8"Ø	250	STEEL	WHITE	LAY-IN			
S3	TITUS	OMNI	24x24	10"Ø	450	STEEL	WHITE	LAY-IN			
S4	TITUS	OMNI	24x24	12"Ø	625	STEEL	WHITE	LAY-IN			
S5	TITUS	300RS	10x8	8x6	135	STEEL	WHITE	SURFACE			
S6	TITUS	300RS	14x10	12x8	400	STEEL	WHITE	SURFACE			
RETURN											
R1	TITUS	PAR	12x24	10x22	750	STEEL	WHITE	LAY-IN			
R2	TITUS	PAR	24x24	22x22	1600	STEEL	WHITE	LAY-IN			
EXHAUS.	r i i i i i i i i i i i i i i i i i i i		•					1			
E1	TITUS	50F	24x24	6x6	150	ALUMINUM	WHITE	LAY-IN			
E2	TITUS	50F	24x24	8x8	250	ALUMINUM	WHITE	LAY-IN			
TRANSFE	ER										
T1	TITUS	350RL ³	10x10	8x8	185	STEEL	WHITE	SURFACE			
T2	TITUS	350RL ³	12x12	10x10	295	STEEL	WHITE	SURFACE			
Т3	TITUS	350RL ³	14x14	12x12	440	STEEL	WHITE	SURFACE			
T4	TITUS	350RL ³	16x16	14x14	610	STEEL	WHITE	SURFACE			
T5	TITUS	50F ³	24x24	8x8	250	ALUMINUM	WHITE	LAY-IN			
NOTES:	•		•	•	•		•	•			
(1) COOF	DINATE WITH ARCHIT	ECT AND GC FOR FINAL CC	LOR OF AIR DEVI	CE. PAINT AS REQUIF	RED.						

(2) AIR DEVICES FROM ALTERNATE MANUFACTURERS EQUAL TO SCHEDULED MODELS ARE ACCEPTABLE (PRICE, METAL AIRE, ETC.). (3) PROVIDE INSULATED SOUND BOOT PER PLANS AND DETAILS AT ALL TRANSFER AIR DEVICES.

					ļ	SPLIT SYSTEM SCHE	DULE						
TAG	FCU-101, -203	FCU-102	FCU-103	FCU-104	FCU-105	FCU-106	FCU-107	FCU-108	FCU-201,-205	FCU-202	FCU-204	FCU-301	FCU-IT-1,-2
AREA SERVED	OFFICE	OFFICE	OFFICE	BREAK RM	OFFICE	MULTIPURPOSE	CONFERENCE RM	OFFICE	OFFICE	CONFERENCE RM	OFFICE	FAB OFFICE	SERVER ROO
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	MITSUBISHI	MITSUBISH
MODEL	5TEM6D04A	5TEM6B02AV21	5TEM6D04AV31	5TEM6B02AV21	5TEM6B02AV21	5TEM6D07	5TEM6B02AV21	5TEM6B03AV21	5TEM6D05	5TEM6B02AV21	5TEM6B03AV21	MSZ-GX09NL	PKA-AL12NI
SIZE	3 TON	1.5 TON	2 TON	2 TON	1.5 TON	5 TON	2 TON	2.5 TON	3.5 TON	1.5 TON	2 TON	0.75 TON	1 TON
ТҮРЕ	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	MULTIPOSITION	WALL MOUNT MINI-SPLIT	WALL MOUNT MIN
WEIGHT (LBS)	144	117	144	117	117	174	117	117	144	117	117	27	28
ELECTRICAL			•	•		• • • •					-		
VOLTAGE/PH	208/60/3	208/60/1	208/60/1	208/60/1	208/60/1	208/60/3	208/60/1	208/60/3	208/60/3	208/60/1	208/60/1	208-240/60/1	208-240/60/
MCA (AMPS)	30.0	25.0	40.0	38.0	38.0	45.0	38.0	30.0	42.0	38.0	40.0		
MOCP (AMPS)	30	25	40	40	40	45	40	30	45	40	40	(NOTE 11)	(NOTE 11)
SUPPLY FAN SECTION											•		
E DESIGN AIRFLOW (CFM)	1200	600	800	800	600	2000	800	1000	1400	600	800	1200	1200
DESIGN OUTSIDE AIRFLOW (CFM)	115, 150	45	100	100	70	250	100	75	100, 200	45	75	0	0
$\stackrel{\text{DESIGN ESP (IN WTR)}}{\stackrel{\text{DESIGN ESP (IN WTR)}}{\text{DESIGN ESP ($	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	1/2	1/3	1/2	1/3	1/3	3/4	1/3	1/2	1/2	1/3	1/2	1/2	1/2
	172	1/0	112	1,0	1/0			172	172	1,0	172	112	172
		DX SPLIT HEAT PLIMP					DX SPLIT HEAT PLIMP	DX SPLIT HEAT PLIMP					
	105	105	105	105	105		105	105	105	105	105	105	105
	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	80.0 / 67.0	77.0/64.7	77.0/64.7
	32.3 / 24.5			21.2 / 16.4			21.2 / 16.4	24.1 / 18.5		17.0 / 12.8	21.0 / 16.4	22.3 / 24.5	77.07.04.7
	32.37 24.3	17.07 12.8	22.1717.7	21.27 10.4	17.07 12.8	17.07 12.8	21.27 10.4	24.1710.5	17.07 12.0	17.07 12.8	21.07 10.4	32.37 24.3	32.37 24.3
	47	17	17	17	17	47	17	17	47	17	17	47	
	17	11	14.2		11.0	17		17	11	11.0	1/	4/	— N/A
	20.4		14.2					17.4	11.9		14.0	10.9	
	9.2	7.5	1.5	1.5	7.5	1.5	1.5	7.5	7.5	7.5	7.5	9.2	
	000/00/0	000/00/4	000/00/4	000/00//	000/00/4	000/00/0	000/00/4		000/00/0	000/00/4	000/00/4		
VOLTAGE/PH	208/60/3	208/60/1	208/60/1	208/60/1	208/60/1	208/60/3	208/60/1	208/60/3	208/60/3	208/60/1	208/60/1	— N/A	N/A
	7.20	3.60	5.77	5.77	5.77	10.80	5.76	7.20	10.80	5.77	5.77		
NOTES / ACCESSORIES	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1-5)	(1,2,5,6)	(1,2,5,6)
TAG	<u>CU-101, -203</u>	CU-102	CU-103	CU-104	CU-105	CU-106	CU-107	CU-108	CU-201,-205	CU-202	CU-204	<u>CU-301</u>	CU-IT-1,-2
MANUFACTURER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	MITSUBISHI	MITSUBISH
MODEL	5TWA4036A4	5TWR4018A1	5TWR4024A1	5TWR5024A1	5TWR4018A1	5TWA4060A4	5TWR4024A1	5TWR5030A1	5TWA4042A4	5TWR4018A1	5TWR4024A1	MUZ-GX09NL	PUY-AK12N
WEIGHT (LBS)	222	174	174	174	174	251	174	174	251	174	174	84	112
			1	1		1	1			1	1		
5 NO./TYPE	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLL	1 / SCROLI
REFRIGERANT	R-454B		R-454B	R-454B	R-454B	R-454B			R-454B				
STAGES	1	1	1	1	1	1	1	11	11	1	1	1	11
	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0
EER2/SEER2	12.5 / 15.0	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	11.7 / 14.3	12.5 / 15.0	12.5 / 15.0
			1			1							
POWER	480/60/3	208/60/1	208/60/1	208/60/1	208/60/1	480/60/3	208/60/1	208/60/1	480/60/3	208/60/1	208/60/1	208/60/1	208/60/1
	6.8	12.0	13.0	13.0	12.0	11.0	13.0	16.0	8.6	12.0	13.0	12.0	16.0
MOCP	15	20	20	20	20	15	20	25	15	20	20	21	27
NOTES / ACCESSORIES	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-10)	(7-11)	(7-11)

NOTES / ACCESSORIES: (1) NEMA 1 DISCONNECT PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR (2) MANUFACTURER CONTROLS

(3) AUXILIARY DRAIN PAN WITH FLOAT SWITCH W/ AUTOMATIC SHUT DOWN UPON DETECTION OF WATER.

(4) FILTER RACK AND FILTER

(5) MANUFACTURER'S 7-DAY PROGRAMMABLE THERMOSTAT (6) INTERNAL CONDENSATE PUMP

(7) DEFROST CONTROL

(8) COORDINATE DISCONNECT SIZE AND REQUIREMENTS WITH ELECTRICAL CONTRACTOR.

ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL.

(9) PROVIDE LOCKING REFRIGERANT PORT CAPS (10) HAIL GUARDS, ANTI-SHORT CYCLE TIMER, HIGH PRESSURE SWITCH

(11) INDOOR UNIT POWERED THROUGH OUTDOOR UNIT.

(1) 12" PITCHED CURB BY ROOF MANUFACTURER. COORDINATE WITH ROOFING CONTRACTOR FOR PITCH AND ROOF CURB INSTALLATION.

EXHALIST FAN SCHEDLILE

OUTSIDE AIR INT	AKE		BUILDING EXHAUST	
TAG	AIR FLOW (CFM)	TAG	SERVICE	AIR FLOW (CFM)
FCU-101	115	EF-1	JANITOR	0
FCU-102	45	EF-2	JANITOR	0
FCU-103	100	EF-3	RESTROOMS	750
FCU-104	100			
FCU-105	70			
FCU-106	250			
FCU-107	100			
FCU-108	75			
FCU-201	100			
FCU-202	45			
FCU-203	150			
FCU-204	75			
FCU-205	200			
TOTAL OA (CFM)	1.425		TOTAL EXHAUST (CFM)	750
	, ,			
QUIRED MIN. VENTILATIO	N RATE (CFM)			1,425
AL BUILDING PRESSUR	ZATION (CFM)			675
LDING PRESSURIZATION	RATE (CFWSF)			0.04

	Office Space	
	Break Areas	
	Meeting/Conference	
	Lobby	
	Multipurpose	
	Storage	
	Corrridor	
		=
	EZ	=
	VOZ	=
	Room	Q
ECU-	.101	
100-	100 RECEPTION N	
	128-132 OFFICE	
	Total	
	Total	
FCU-	-102	
	124 CLOSET	
	126 OFFICE	
	127 CORRIDOR	
	Total	
FCU-	-103	
	115 CORRIDOR	
	127 CORRIDOR	
	lotal	
FCU-	-104	
	122 STORAGE	
	123 BREAK ROOM*	
	Total	
FCU-	-105	
	111 CORRIDOR	
	116-120 OFFICE	
	Total	
ECU	-106	
100-		
FCU-	-107	
	103 105 CORRIDOR	
	109 CONFERENCE*	
	Total	

*Intermittent occupancy reduced 50%

	Out	side air sha	ll be provid	ded in accord	ance wit
Rp	Pz	Ra	Az		
5	5	0.06	1,000		
5	25	0.12	1,000		
5	50	0.06	1,000		
5	5	0.06	1,000		
5	100	0.06	1,000		
5	2	0.06	1,000		
-	-	0.06	1,000		
,					
RpPz + RaAz					
0.8					
VDA / EZ					
Rp	Pz	Ra	Az	Vbz	Voz
(CFM/P)	(People)	(CFM/SF)	(SF)	(CFM)	(CFM)
5	1	0.06	383	28.0	35
5	5	0.06	648	63.9	80
	6		1,031.0		115
				Provided	115
E	0	0.06	40	0 E	2
5	0	0.06	42	2.5	3 25
5	0	0.06	251	20.1	25 7
0	1	0.06	384.0	5.5	7 35
	I		304.0	Provided	35 AE
				FIOVICEU	45
0	0	0.06	370	22.2	28
5	8	0.06	769	86 1	108
0	0	0.06	370	22.2	28
-	8	0.00	1.509.0		 163
	_		-,	Provided	100
5	0	0.06	73	4.4	5
5	20	0.06	630	137.8	86
	20		703.0		92
				Provided	100
0	0	0.06	184	11.0	14
5	5	0.06	575	59.5	74
	5		759.0		88
				Provided	70
5	30	0.06	743	194.6	122
	30		743.0		122
				Provided	250
_	-		• · · -		
0	0	0.06	213	12.8	16
5	10	0.06	328	69.7	44
	10		541.0	_	60
				Provided	100

F	Room	Qtv.	Rp	Pz	Ra	Az	Vbz
			(CFM/P)	(People)	(CFM/SF)	(SF)	(CFM)
1 00-100	00 RECEPTION S	1	5	1	0.06	350	26.0
1	01-102 OFFICE	1	5	2	0.06	416	35.0
1	06-107 CLOSET	1	5	0	0.06	59	3.5
1	08 OFFICE	1	5	1	0.06	173	15.4
Т	otal			4		998.0	
							Provided
FCU-201							
2	201 CONFERENCE*	1	5	2	0.06	117	17.0
2	202 OFFICE	1	5	1	0.06	168	15.1
2	218-222 OFFICE	1	5	5	0.06	660	64.6
2	23 CORRIDOR CONFERENCE	1	5	0	0.06	124	7.4
Т	otal			8		1,069.0	
					I	Provided	ļ
FCU-202							
2	217 CONFERENCE*	1	5	8	0.06	286	57.2
Т	otal			8		286.0	
							Provided
FCU-203			_	_			
2	206 112 STARS	1	0	0	0.06	238	14.3
2		1	5	8	0.06	794	87.6
2		1	5	0	0.06	315	18.9
2	223 CORRIDOR	1	5	0	0.06	411	24.7
I	otal			8		1,758.0	Dussidad
							Provided
rcu-204		1	5	5	0.06	575	59 5
2		1	0	0	0.00	1/9	89.0
Z T			Ū	5	0.00	724 0	0.0
·				Ũ		724.0	Provided
FCU-205							
2	203 209 OPEN OFFICE	1	5	6	0.06	555	63.3
2	203 CORRIDOR	1	0	0	0.06	495	29.7
2	209 CORRIDOR	1	0	0	0.06	510	30.6
2		1	5	6	0.06	490	59.4
Т	otal			12		2,050.0	
							Provided
					тот	AL OA R	EQUIRED
					тот	AL OA P	ROVIDED

OUTSIDE AIR CALCULATIONS

ASHRAE Standard 62.1-2022 as follows:

1 MECHANICAL HVAC PLAN - FIRST FLOOR

GENERAL NOTES

- A. REFER TO MECHANICAL COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING AND WALL MOUNTED AIR CONDITIONING SLOTS, DIFFUSERS, GRILLES, AND REGISTERS SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.
- F. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FINAL AIR DEVICE COLORS TO MATCH ARCHITECTURAL CEILING FINISHES.

KEYED NOTES

- 1. INSTALL FAN COIL UNIT AS SCHEDULED PER DETAILS. MAINTAIN ALL REQUIRED MANUFACTURER AND CODE REQUIRED CLEARANCES. ROUTE INSULATED REFRIGERANT PIPING LINE SET BETWEEN CONDENSING UNIT ON ROOF TO FCU PIPE CONNECTIONS. PROVIDE INTERNALLY LINED RETURN AIR MIXING BOX SIZED TO UNIT INLET CONNECTION AND INSTALL RETURN AIR DUCT SMOKE DETECTOR. UNIT SHALL SHUT DOWN UPON DETECTION OF SMOKE AND ALERT FIRE ALARM SYSTEM. INSTALL TRAP AT UNIT DRAIN CONNECTION PER DETAILS AND ROUTE 3/4" SLOPED AND INSULATED CONDENSATE DRAIN LINE (NOT SHOWN) FROM UNIT AND TERMINATE AT LAVATORY TAILPIECE OR MOP SINK PER PLAN NOTES.PROVIDE AND INSTALL IONIZATION SYSTEM (GPS #GPS-FC24-AC) IN UNIT FAN COMPARTMENT OR RETURN AIR PLENUM (VERIFY WITH EQUIPMENT). INSTALL AND WIRE TO UNIT LINE VOLTAGE (120V) WIRING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO OUTSIDE AIR CALCULATIONS FOR FURTHER INFORMATION.
- 2. ROUTE OUTSIDE AIR DUCT BRANCH AND CONNECT TO TOP OF RETURN AIR MIXING BOX. PROVIDE MANUAL VOLUME DAMPER AT DUCT CONNECTION. T&B CONTRACTOR SHALL ADJUST OA AND RETURN AIR DAMPERS TO PROVIDE AIR VOLUMES AS SCHEDULED.
- 3. ROUTE OUTSIDE AIR DUCT AND SPLIT SYSTEM REFRIGERANT PIPING DOWN FACE OF WALL IN WAREHOUSE. ROUTE DUCT/PIPING HORIZONTALLY INTO OVERHEAD SPACE AS HIGH AS POSSIBLE. REFER TO SHEET M1.02 FOR CONTINUATION.
- 4. ROUTE INSULATED 3/4" FCU CONDENSATE DRAIN LINE DOWN WALL AND TERMINATE AT LAVATORY TAILPIECE OR MOP SINK. UPSTREAM PIPING FROM FAN COIL UNITS NOT SHOWN FOR CLARITY.
- 5. INSTALL WALL MOUNTED FAN COIL UNIT AS SCHEDULED AT APPROXIMATELY 7'-0" A.F.F. ROUTE INSULATED REFRIGERANT PIPING LINE SET BETWEEN CONDENSING UNIT ON ROOF/OUTDOORS TO FCU PIPE CONNECTIONS. ALL INSULATED REFRIGERANT PIPING EXPOSED TO THE ELEMENTS SHALL BE PROVIDED WITH ALUMINUM METAL JACKET. PROVIDE CONDENSATE PUMP EQUAL TO LITTLE GIANT VCCA-20ULS AND ROUTE 3/4" INSULATED CONDENSATE OVERHEAD IN WAREHOUSE. SLOPE INSULATED CONDENSATE DRAIN LINE (NOT SHOWN) FROM UNIT AND TERMINATE AT NEAREST LAVATORY TAILPIECE OR MOP SINK PER PLAN NOTES. INSTALL WIRED THERMOSTAT AT 48" A.F.F. IN ROOM.
- 6. INSTALL CONDENSING UNIT PER DETAILS OUTDOORS AND ROUTE REFRIGERANT PIPING LINE SET THROUGH WALL TO FAN COIL UNIT IN OFFICE. ALL INSULATED REFRIGERANT PIPING EXPOSED TO THE ELEMENTS SHALL BE PROVIDED WITH ALUMINUM METAL JACKET.
- 7. INSTALL THERMOSTAT AT 48" A.F.F. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE EMPTY J-BOX AND CONDUIT FOR INSTALLATION. PROVIDE LOCKING COVER IF DEVICE DOES NOT INCLUDE LOCKOUT FEATURE.
- 8. INSTALL INTERNALLY LINED TRANSFER AIR DUCT AT APPROXIMATELY 12'-0" A.F.F. THROUGH WALL PER DETAILS. PROVIDE AND INSTALL PER THE FOLLOWING: (A) - 8x8 DUCT, T1 AIR DEVICE (B) - 10x10 DUCT, T2 AIR DEVICE

(C) - 12x12 DUCT, T3 AIR DEVICE (D) - 14x14 DUCT, T4 AIR DEVICE

- 9. INSTALL SUSPENDED EXHAUST FAN OVERHEAD PER DETAILS. ROUTE EXHAUST DUCT TO EXTERIOR WALL AS SHOWN AND TERMINATE AT WALL WITH APPROVED WALL JACK WITH BIRDSCREEN AND BACKDRAFT DAMPER.
- 10. INSTALL CEILING EXHAUST FAN PER DETAILS. ROUTE EXHAUST DUCT UP FACE OF WALL TO ROOF TERMINATION.
- 11. ROUTE 12"Ø EXHAUST DUCT FROM LOCATION OF WELDING STATION TO WALL MOUNTED LOUVER AS SCHEDULED. MAKE FINAL CONNECTION TO FUME EXTRACTOR PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. BASIS OF DESIGN: FUME DOG "BULLDOG-EX", 1200 CFM WALL MOUNTED EXTRACTOR.
- 12. INSTALL TRANSFER AIR GRILLE FOR RESTROOM EXHAUST. MOUNT ON WALL AT APPROXIMATELY 10'-0" A.F.F.

1 MECHANICAL HVAC PLAN - SECOND FLOOR

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

) PLAN NORTH FOR THIS SHEET

GENERAL NOTES

- A. REFER TO MECHANICAL COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. MECHANICAL CONTRACTOR SHALL VERIFY THAT LOCATION OF CEILING AND WALL MOUNTED AIR CONDITIONING SLOTS, DIFFUSERS, GRILLES, AND REGISTERS SHOWN ON THE DRAWINGS ARE ACCEPTABLE TO THE ARCHITECT PRIOR TO INSTALLATION.
- F. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL FINAL AIR DEVICE COLORS TO MATCH ARCHITECTURAL CEILING FINISHES.

KEYED NOTES

- 1. INSTALL FAN COIL UNIT AS SCHEDULED PER DETAILS. MAINTAIN ALL REQUIRED MANUFACTURER AND CODE REQUIRED CLEARANCES. ROUTE INSULATED REFRIGERANT PIPING LINE SET BETWEEN CONDENSING UNIT ON ROOF TO FCU PIPE CONNECTIONS. PROVIDE INTERNALLY LINED RETURN AIR MIXING BOX SIZED TO UNIT INLET CONNECTION AND INSTALL RETURN AIR DUCT SMOKE DETECTOR. UNIT SHALL SHUT DOWN UPON DETECTION OF SMOKE AND ALERT FIRE ALARM SYSTEM. INSTALL TRAP AT UNIT DRAIN CONNECTION PER DETAILS AND ROUTE 3/4" SLOPED AND INSULATED CONDENSATE DRAIN LINE (NOT SHOWN) FROM UNIT AND TERMINATE AT LAVATORY TAILPIECE OR MOP SINK PER PLAN NOTES. PROVIDE AND INSTALL IONIZATION SYSTEM (GPS #GPS-FC24-AC) IN UNIT FAN COMPARTMENT OR RETURN AIR PLENUM (VERIFY WITH EQUIPMENT). INSTALL AND WIRE TO UNIT LINE VOLTAGE (120V) WIRING PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. REFER TO OUTSIDE AIR CALCULATIONS FOR FURTHER INFORMATION.
- 2. ROUTE OUTSIDE AIR DUCT BRANCH AND CONNECT TO TOP OF RETURN AIR MIXING BOX. PROVIDE MANUAL VOLUME DAMPER AT DUCT CONNECTION. T&B CONTRACTOR SHALL ADJUST OA AND RETURN AIR DAMPERS TO PROVIDE AIR VOLUMES AS SCHEDULED.
- 3. CONNECT OUTSIDE AIR DUCT TO INTAKE HOOD ON ROOF WITH DUCT TRANSITION AS REQUIRED. PROVIDE DAMPER WITH MOTORIZED ACTUATOR AT DUCT BELOW ROOF WIRED TO CLOSE AFTER OCCUPIED HOURS.
- 4. ROUTE OUTSIDE AIR DUCT AND SPLIT SYSTEM REFRIGERANT PIPING DOWN FACE OF WALL IN WAREHOUSE. ROUTE DUCT/PIPING HORIZONTALLY INTO OVERHEAD SPACE AS HIGH AS POSSIBLE. REFER TO SHEET M1.01 FOR CONTINUATION.
- 5. ROUTE 3/4" FCU CONDENSATE DRAIN LINE DOWN WALL AND TERMINATE AT MOP SINK. UPSTREAM PIPING FROM FAN COIL UNITS NOT SHOWN FOR CLARITY.
- 6. INSTALL WALL MOUNTED FAN COIL UNIT AS SCHEDULED AT APPROXIMATELY 7'-0" A.F.F. ROUTE INSULATED REFRIGERANT PIPING LINE SET BETWEEN CONDENSING UNIT ON ROOF TO FCU PIPE CONNECTIONS. ROUTE 3/4" SLOPED AND INSULATED CONDENSATE DRAIN LINE (NOT SHOWN) FROM UNIT AND TERMINATE AT ADJACENT MOP SINK PER PLAN NOTES. INSTALL WIRELESS THERMOSTAT AT 48" A.F.F. IN ROOM.
- 7. INSTALL THERMOSTAT AT 48" A.F.F. COORDINATE WITH ELECTRICAL CONTRACTOR TO PROVIDE EMPTY J-BOX AND CONDUIT FOR INSTALLATION. PROVIDE LOCKING COVER IF DEVICE DOES NOT INCLUDE LOCKOUT FEATURE.
- INSTALL INTERNALLY LINED TRANSFER AIR DUCT AT APPROXIMATELY 12'-0" A.F.F. THROUGH WALL PER DETAILS. PROVIDE AND INSTALL PER THE FOLLOWING:

(A) - 8x8 DUCT, T1 AIR DEVICE (B) - 10x10 DUCT, T2 AIR DEVICE (C) - 12x12 DUCT, T3 AIR DEVICE (D) - 14x14 DUCT, T4 AIR DEVICE

- 9. INSTALL SUSPENDED EXHAUST FAN OVERHEAD PER DETAILS. ROUTE EXHAUST DUCT TO ROOF AS SHOWN. REFER TO SHEET M1.03.
- 10. CONNECT EXHAUST AIR DUCT TO FAN ON ROOF WITH DUCT TRANSITION AS REQUIRED. REFER TO SHEET M1.03.
- 12. INSTALL TRANSFER AIR GRILLE ON EACH SIDE OF RESTROOM WALL AT APPROXIMATELY 11'-0" A.F.F.

1 MECHANICAL/PLUMBING PLAN - ROOF

1 O

) PLAN NORTH FOR THIS SHEET SCALE: 1/8" = 1'-0"

GENERAL NOTES

- A. REFER TO MECHANICAL COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.

KEYED NOTES

- 1. INSTALL CONDENSING UNIT PER DETAILS WITHIN BUILDING ROOF EQUIPMENT LOADING ZONE. ROUTE REFRIGERANT PIPING LINE SET THROUGH WEATHERPROOF ROOF PENETRATION TO FAN COIL UNIT INDOORS. ALL INSULATED REFRIGERANT PIPING EXPOSED TO THE ELEMENTS SHALL BE PROVIDED WITH ALUMINUM METAL JACKET.
- 2. MECHANICAL/PLUMBING ROOF TERMINATION SHALL BE LOCATED NO LESS THAN 10'-0" FROM ANY EQUIPMENT VENTILATION AIR INTAKE (REPRESENTED WITH DASHED CIRCLE). CONTRACTOR SHALL COORDINATE WITH ENGINEER IF THIS REQUIREMENT CANNOT BE MET.
- 3. INSTALL OUTSIDE AIR INTAKE HOOD (OAI) AS SCHEDULED. COORDINATE WITH ROOFING CONTRACTOR FOR CURB INSTALLATION AND FLASHING REQUIREMENTS.
- 4. INSTALL EXHAUST FAN AS SCHEDULED ON ROOF. COORDINATE WITH ROOFING CONTRACTOR FOR CURB INSTALLATION AND FLASHING REQUIREMENTS.
- 5. PROVIDE APPROVED ROOF JACK FOR EXHAUST PENETRATION.

ROOF NOTE

 ALL ROOF PIPE PENETRATIONS, EQUIPMENT CURBS, AND DUCT TERMINATIONS SHALL BE COORDINATED WITH - AND PROVIDED BY - ORIGINAL ROOF MANUFACTURER.

CW	COLD WATER SUPPLY	FHV	FIRE HOSE VALVE	1.	
NPW	NON-POTABLE WATER	$\mathbf{\overline{v}}$	ALARM VALVE		AND THE EQU SUPERVISION
———HW———		•	DRY-PIPE VALVE	2.	DRAWINGS A
——————————————————————————————————————		₩	POST-INDICATOR VALVE		PROJECT. CO WITHIN DESI
CA	COMPRESSED AIR		DETECTOR CHECK VALVE	3.	ALL WORK SI
NG		×⊗	STANDPIPE BASE VALVE		AND ORDINA
——— F ———	FIRE MAIN, STANDPIPE	K)	FIRE DEPT. CONNECTION		SHALL REPO
s				4.	WHERE THE
v	PLUMBING VENT	× Å			CONTRACT D
PD	PUMP DISCHARGE		GLOBE VALVE	5.	BEFORE SUB
W	- SANITARY WASTE	ιΦι	BALL VALVE		OMISSION OF
GW	GREASE WASTE RAIN LEADER	$\overrightarrow{\mathbb{N}}$	CHECK VALVE	6.	MISUNDERST CONTACTOR
ORL		ф	BUTTERFLY VALVE		CONTRACTO THE CONTRA
FD 🕀	FLOOR DRAIN		PLUG VALVE	7.	
FS	FLOOR SINK	×	PRESSURE REGULATING VALVE		ALL WORK W
	ROOF DRAIN, OVERFLOW	函 函		8.	
WCO	WALL CLEAN OUT	k T			ACCORDANC
FC0 ()	FLOOR CLEAN OUT	<u>ه</u>	PNEUMATIC VALVE	9.	THE CONTRA AND INSTALL
-			SOLENOID VALVE	10.	THE FOLLOW
	DEMO PIPING AND EQUIPMENT	HXO 1 -	VALVE (IN-RISE)		A. EQUIPME B. COORDII
			STRAINER SLEEVE		D. OPERAT
\$	CONNECT TO EXISTING		GUIDE	11.	THE GENERA
		 	ANCHOR		CONDUIT, CA THE STRUCT
		ı	UNION		CONDUIT, CA WHICH IS EIT
		'x'	SHOCK ARRESTER AND SIZE ('X')		TRADES PRIC
		REVIATIO		- 12.	MATERIALS A
				-	PERFORMAN FOUND TO H
AFF AV	ABOVE FINISHED FLOOR ACID VENT	MIN MI NG NA	NIMUM ATURAL GAS	13	
AW BFF	ACID WASTE BELOW FINISHED FLOOR	(N) NE NO NO	EW DRMALLY OPEN (VALVE)		ADDITIONAL BEING REMO
CA CD	COMPRESSED AIR CONDENSATE DRAIN	OH ON ORL ON	/ERHEAD /ERFLOW RAIN LEADER	14.	THE WARRAN
C.I.N.H. CO	CAST IRON NO HUB CLEANOUT	(R) RE RIO RO	ELOCATED DUGH-IN ONLY		AT LEAST ON CONTRACTO
CKV CW CX	CHECK VALVE COLD WATER CONNECT TO EXISTING	RL RA SHT SH SCW SC	AIN WATER LEADER HEET DET COLD WATER		A. ALL WOF
DN DTL	PIPE DROP TO NEXT LEVEL DETAIL	SOC SH SOV SH	HUT OFF COCK (GAS) HUT OFF VALVE		C. THE SYS
(E) F FCO	EXISTING FIRE SERVICE FLOOR CLEANOUT	UG UN	RAP PRIMER NDERGROUND PE RISE TO NEXT LEVEL	15.	THE START C AS AGREED
FND GCO	FOUNDATION DRAIN GRADE CLEANOUT	US UN UTR UF	NDER SLAB P THRU ROOF	16.	
HW HWC	HOT WATER HOT WATER CIRCULATION	V VE VA VA VTP VE	ENT ALVE ENT THRU ROOF		X-RAY ALL PI
I.E. IRR	INVERT ELEVATION IRRIGATION	W W. WCO W.	ASTE ALL CLEANOUT	17.	THIS CONTRA
LPG LWCO	LIQUEFIED PETROLEUM GAS LOW WATER CUTOFF			18.	IN THE EVEN
				_	CLARIFICATIO
	PLUMBING DES	SIGN CRIT	ERIA	19.	PENETRATIO
GENERAL O	GUIDELINES:			20.	
ALL PLUMB	ING WORK AND MATERIALS SHALL	. COMPLY WITH TH	IE 2015 IPC WITH CITY OF		DRAWINGS P WORK. SUBN
<u>SANITARY I</u>	DRAINAGE AND VENT PIPING			01	
SIZE	ED PER TABLE 710.1(1) OF THE 201			21.	EMIT, ANY VC
DRAINAGE	FIXTURE UNITS	JN 704.1 OF THE 20	J15 IPC.		DRAWING PR
SIZE	ED PER TABLE 709.1 OF THE 2015 IF	PC.		22.	VERIFY LOCA
WATER SUP	PPLY FIXTURE UNITS			23.	PLUMBING E
SIZE WATER SU	ED PER TABLE E103.3(2) OF THE 20 <u>PPLY PIPE SIZING</u>	15 IPC.			NAMEPLATES MINIMUM OF
SIZE	ED PER TABLE E201.1 OF THE 2015	IPC.		24.	THE CONTRA
					TO ENSURE I
				25.	AFTER COMF
				26.	PERSONNEL,
					OWNER. PRO
					TEMPORARY MATERIAL. T
					FIREPROOFI

GENERAL NOTES	PLUMBING

ALL ALL ITEMS NECESSARY TO PROVIDE FULLY FUNCTIONING SYSTEMS AS INDICATED BY THE DESIGN IT SPECIFIED. ELEMENTS OF THE WORK SHALL INCLUDE, BUT ARE NOT LIMITED TO, MATERIALS, LABOR, PLIES, EQUIPMENT, TRANSPORTATION, HOISTING/RIGGING, STORAGE, UTILITIES, AND ALL REQUIRED ISES.

HEMATIC IN NATURE AND DO NOT REFLECT ALL WORK AND MATERIALS REQUIRED TO COMPLETE CTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT AS REQUIRED TO COMPLETE PROJECT NTRACTOR SHALL REQUEST ADDITIONAL INFORMATION AND DETAILS WHERE SCOPE IS UNCLEAR.

OMPLY WITH THE MOST RECENT ADOPTED VERSION OF ALL APPLICABLE LAWS, RULES, REGULATIONS OF ALL FEDERAL, STATE AND LOCAL AUTHORITIES. IF CONFLICT BETWEEN THE CONTRACT DOCUMENTS FORCING AUTHORITY EXISTS. THE LOCAL ENFORCING AUTHORITY SHALL APPLY. ANY MODIFICATIONS ALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER. THE CONTRACTOR THE ARCHITECT/ENGINEER AND SECURE HIS APPROVAL BEFORE PROCEEDING WITH ANY

REMENTS OF THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE CODES. THE ENTS SHALL TAKE PRECEDENCE PROVIDED THAT THEY ARE NOT IN CONFLICT WITH THE CODES.

G BIDS, EACH CONTRACTOR SHALL PERFORM A SITE VISIT AND UNDERSTAND THE CONDITIONS TO BE THE WORK, AND SHALL MAKE PROVISIONS FOR THE CONDITIONS IN HIS FINAL BID. FAILURE ON THE RACTOR TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE TY INSTALLATION OF ANY WORK COVERED BY THE CONTRACT DOCUMENTS.

G OF THE SCOPE OR AMOUNT OF WORK TO BE PERFORMED SHALL BE THE RESPONSIBILITY OF THE HALL NOT RESULT IN ANY ADDITIONAL COST TO THE OWNER. TENDER OF A PROPOSAL CONVEYS FULL EEMENT OF THE ITEMS AND CONDITIONS SPECIFIED AND/OR INDICATED, SCHEDULED, OR IMPLIED ON CUMENTS, AND/OR REQUIRED BY THE NATURE OF THIS WORK.

E CARRIED OUT IN A NEAT, WELL ORGANIZED MANNER. ALL SERVICES SHALL BE ROUTED PARALLEL AND THE PRIMARY LINES OF THE BUILDING. LOCATE ALL EQUIPMENT TO PROVIDE ACCESS AND ARRANGE EQUATE ACCESS FOR OPERATION AND MAINTENANCE, AND TO MAINTAIN PROPER CODE AND CLEARANCES.

D MATERIAL TO BE FURNISHED AND INSTALLED ON THIS PROJECT SHALL BE UL OR ETL LISTED, IN THE AUTHORITY HAVING JURISDICTION, AND SUITABLE FOR ITS INTENDED USE ON THIS PROJECT.

SHALL PROVIDE SUBMITTALS FOR ALL NEW EQUIPMENT, CONTROLS, AND FIXTURES TO BE PROVIDED

IBMITTAL DATA SHALL BE FURNISHED AND SHALL INCLUDE BUT NOT BE LIMITED TO: D MATERIALS SHOP DRAWINGS

DRAWINGS INGS

D MAINTENANCE MANUALS ERIALS AND DETAILS

TRACTOR AND ALL SUBCONTRACTORS SHALL COORDINATE THE INSTALLATION OF DUCTWORK, PIPING, TC., WITH LIGHTING FIXTURES, SPECIAL CEILING CONSTRUCTION, AIR DISTRIBUTION EQUIPMENT, AND ROVIDE ADDITIONAL RISES AND OFFSETS AS REQUIRED. IF, AFTER INSTALLED, NEW DUCTWORK, PIPING, TC., IS FOUND TO BE IN CONFLICT WITH THE ARCHITECTURE, STRUCTURE OR OTHER TRADE WORK, KISTING OR SHOWN ON THE CONTRACT DOCUMENTS, THE DUCTWORK, PIPING, CONDUIT, CABLE, ETC., ED WITHOUT ADDITIONAL COST TO THE OWNER/TENANT. COORDINATE ALL WORK WITH ALL OTHER NSTALLATION.

UIPMENT SHALL BE NEW AND IN GOOD CONDITION. THE COMMERCIALLY STANDARD ITEMS OF E SPECIFIC NAMES INDICATED ARE INTENDED TO IDENTIFY STANDARDS OF QUALITY AND CESSARY FOR THE PROPER FUNCTIONING OF THE WORK. MATERIALS AND EQUIPMENT WHICH ARE CTORY DEFECTS SHALL BE REPLACED OR REPAIRED IN A MANNER ACCEPTABLE TO THE D ENGINEER AT NO ADDITIONAL COST TO THE OWNER/TENANT.

URING CONSTRUCTION TO EXISTING MATERIALS/EQUIPMENT WILL BE REPAIRED OR REPLACED AT NO O OWNER. RE-SUPPORT ANY REMAINING PIPING OR DEVICES THAT WERE SUPPORTED BY WALLS

RIOD SHALL BE NO LESS THAN ONE (1) FULL YEAR, UNLESS SPECIFIED OTHERWISE AND SHALL INCLUDE JLL HEATING SEASON AND ONE (1) FULL COOLING SEASON. DURING THE WARRANTY PERIOD THE L GUARANTEE THE FOLLOWING IN A FORM SATISFACTORY TO THE OWNER/TENANT:

ALLED SHALL BE FREE FROM ANY AND ALL DEFECTS IN WORKMANSHIP AND/OR MATERIALS. S WILL DEVELOP CAPACITIES AND PERFORMANCE CHARACTERISTICS SPECIFIED. SHALL OPERATE WITHOUT MALFUNCTION.

CONTRACTOR'S WARRANTY PERIOD SHALL COMMENCE ON THE DATE OF "SUBSTANTIAL COMPLETION" THE OWNER/TENANT.

HAVE A STRUCTURAL SYSTEM UTILIZING POST-TENSIONED CABLES. THE CONTRACTOR SHALL ISTING STRUCTURAL SYSTEM PRIOR TO CUTTING, DRILLING, OR CORING. THE CONTRACTOR SHALL ATIONS PRIOR TO CUTTING THE FLOOR SLAB.

SHALL SECURE ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED FOR HIS WORK, AND SHALL PAY CTION WITH SUCH PERMITS, LICENSES AND INSPECTIONS.

CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE CONTRACTOR SHALL PROVIDE PRICING REATEST COST. THE CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR

ROUGH FLOORS OR FIRE-RATED CONSTRUCTION SHALL BE FIRE RATED TO COMPLY WITH ASTM E-814 LOCAL AUTHORITY HAVING JURISDICTION.

OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, A COMPLETE SET OF "AS BUILT" YING ACTUAL SITE CONDITIONS OF THE MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION N SHALL CONSIST OF ONE SET OF PAPER COPIES AND ONE SET OF CAD FILES IN AUTOCAD LL UTILIZE OWNER'S LAYER STANDARDS IF EXISTING).

MATERIALS, PRODUCTS, AND/OR PROCESSES BEING PROPOSED FOR THIS PROJECT CONTAIN, OR MAY E ORGANIC COMPOUNDS (VOC), FORMALDEHYDE FORMULATIONS, OR HAZARDOUS OUT-GASSING, AS E MANUFACTURER, A MATERIALS SAFETY DATA SHEET SHALL BE SUBMITTED AS PART OF THE SHOP FOR REVIEW BY THE ARCHITECT/ENGINEER/OWNER.

OF EXISTING VALVES LOCATED WITHIN SCOPE OF WORK. MODIFY EXISTING OR PROVIDE NEW MEANS REQUIRED BECAUSE OF NEW CONSTRUCTION.

ENT SHALL BE IDENTIFIED BY MEANS OF NAMEPLATES PERMANENTLY ATTACHED TO THE EQUIPMENT. _ BE BLACK SURFACE, WHITE CORE LAMINATED WITH ENGRAVED LETTERS. PLATES SHALL BE A G BY 1" WIDE WITH WHITE LETTERS 1/4" HIGH.

SHALL TAKE NOTE THAT THE DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE THE APPROXIMATE HVAC AND PLUMBING SYSTEMS. LOCATE ALL ITEMS IN THE FIELD. COORDINATE WITH OTHER TRADES R FIT AND ACCESS TO ALL ITEMS.

N OF INSTALLATION, BUT PRIOR TO SUBSTANTIAL COMPLETION, CONTRACTOR SHALL CERTIFY IN DUCTS AND MATERIALS INSTALLED AND PROCESSES USED DO NOT CONTAIN ASBESTOS OR **BIPHENYL (PCB).**

SHALL PROTECT THE WORK, EQUIPMENT, AND MATERIALS FROM DAMAGE BY HIS WORK OR HIS HALL CORRECT ALL DAMAGE THUS CAUSED WITHOUT ADDITIONAL COST TO THE OWNER. THE L BE RESPONSIBLE FOR ALL WORK, MATERIALS, AND EQUIPMENT UNTIL FINAL ACCEPTANCE BY THE ALL WORK AGAINST THEFT, INJURY, OR DAMAGE AND CAREFULLY STORE MATERIAL AND EQUIPMENT WHICH IS NOT IMMEDIATELY INSTALLED. THE CONTRACTOR SHALL CLOSE OPEN ENDS OF WORK WITH RS OR PLUGS DURING CONSTRUCTION TO PREVENT THE ENTRY OF DUST. DIRT. AND OBSTRUCTING NTRACTOR SHALL PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE DUE TO WATER, SPRAY-ON NSTRUCTION DEBRIS. ETC. IN A MANNER ACCEPTABLE TO THE ENGINEER AND/OR OWNER.

- HEIGHTS OF ALL PLUMBING FIXTURES.
- DRAINS.

FOOT, UNLESS OTHERWISE NOTED.

- WORK OF ALL OTHER TRADES. PROVIDE OFFSETS IN PIPING WHERE REQUIRED BY COORDINATION OF TRADES.
- ARCHITECT AND GENERAL CONTRACTOR PRIOR TO INSTALLATION.
- OUTSIDE AIR INTAKES.
- EQUIPMENT MANUFACTURER.
- 10. INSTALL PIPING AS HIGH AS POSSIBLE UNLESS OTHERWISE NOTED.
- AT JOBSITE.
- CRUSHING.
- 13. PIPING PENETRATIONS THROUGH PERIMETER BEAMS, FOUNDATION ON GRADE, AND STRUCTURAL PRIOR TO POUR.
- 14. PROVIDE DIELECTRIC UNIONS AT DISSIMILAR MATERIALS.
- SHALL BE SETON "SETMARK" OR EQUAL.
- 17. COORDINATE WORK COMPLETELY WITH ALL OTHER TRADES.
- WHERE IN DIRECT CONTACT WITH COPPER PIPING.
- WITH STANDARD PDI-WH 201. AIR CHAMBERS SHALL NOT BE ALLOWED.
- MOVEMENT.
- 21. ALL FLOOR PENETRATIONS MUST BE SEALED WITH FIRE CAULK.
- COMPACTION TEST.
- REQUIRED.
- WITH (2) 1" x 14 GA. GALVANIZED STRAPS. PROVIDE LAG BOLTS AND BLOCKING AS REQUIRED.
- CONNECTIONS LOCATED INSIDE OR OUTSIDE THE BUILDING.

FIRE SPRINKLER SYSTEM NOTES

THE ENTIRE BUILDING SHALL BE PROVIDED WITH A FULLY AUTOMATIC SPRINKLER SYSTEM AS SHOWN ON CONTRACT DOCUMENTS. DESIGN AND INSTALLATION ARE REQUIRED TO COMPLY WITH NFPA-13 AS ADOPTED BY THE LOCAL FIRE DEPARTMENT, AND ALL CITY, STATE, AND NATIONAL CODES AND STANDARDS.

THE SPRINKLER CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN TO DETERMINE EXACT LOCATIONS OF ALL SPRINKLER HEADS. SPRINKLER HEADS AND PIPING SHALL BE LOCATED TO AVOID CONFLICTS WITH DUCTWORK AND/OR LIGHTING FIXTURES.

SPRINKLERS LOCATED IN ACOUSTIC TILE CEILINGS SHALL BE ON CENTER. SPRINKLER BRANCH PIPING SHALL NOT BE LOCATED DIRECTLY BELOW FAN COIL UNITS OR OTHER MECHANICAL EQUIPMENT. BRANCH PIPING AND SPRINKLER HEADS SHALL BE LOCATED AS REQUIRED TO PROVIDE CLEAR SERVICE BELOW.

COORDINATE SPRINKLER LOCATIONS WITH ARCHITECT IN HIGH-FINISH AREAS AND IN HARD CEILINGS. INSTALL EXPOSED PIPING IN UNFINISHED AREAS AS HIGH AND INCONSPICUOUS AS POSSIBLE. PROVIDE CONVERAGE WITH UPRIGHT SPRINKLER HEADS SPACED AS REQUIRED FOR CODE COMPLIANT COVERAGE.

CONTRACTOR SHALL FURNISH. ACCORDING TO THE CONDITIONS OF THE CONSTRUCTION CONTRACT. SHOP DRAWINGS INCLUDING THE COMPLETE LAYOUT OF FIRE PROTECTION SYSTEMS TO THE AUTHORITIES HAVING JURISDICTION, LOCAL FIRE DEPARTMENT, THE OWNER'S INSURANCE CARRIER, AND LANDLORD FOR APPROVAL.

WATER DEMAND REQUIREMENTS AND PIPE SIZING SHALL BE BASED ON HYDRAULIC CALCULATION METHODS PERFORMED BY THE FIRE PROTECTION CONTRACTOR:

A. ALLOWANCE FOR SPRINKLER WATER DEMAND PLUS HOSE STREAM ALLOWANCE. THE SPRINKLER CONTRACTOR SHALL ALLOW A SAFETY FACTOR, EQUAL TO 10 PSIG OR 10 PERCENT, DEDUCTED FROM THE RESIDUAL FLOW TEST DATA).

APPLICABLE STANDARDS:

- NFPA 13: INSTALLATION OF SPRINKLER SYSTEMS NFPA 24: INSTALLATION OF PRIVATE SERVICE MAINS AND THEIR APPURTENANCES.
- D. NFPA 101: SAFETY TO LIFE FROM FIRE IN BUILDINGS AND STRUCTURES.

THE FIRE DEPARTMENT CONNECTION (FDC) SHALL BE PROVIDED WITH A KNOCK BOX BRAND LOCKING CAP.

GENERAL NOTES

REFER TO THE ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATIONS AND MOUNTING

2. REFER TO THE ARCHITECTURAL PLANS AND DETAILS FOR EXACT LOCATIONS OF ALL FLOOR

3. ALL SANITARY AND VENT PIPING SHALL BE ROUTED AT A SLOPE OF NOT LESS THAN 1/4" PER

4. THE PLUMBING CONTRACTOR SHALL COORDINATE EXACT ROUTING OF ALL PIPING WITH THE

. INSTALL ALL FLOOR DRAINS AND FLOOR SINKS SUCH THAT GRATING IS FLUSH WITH ADJACENT FLOORING SURFACE. FLOOR SHALL SLOPE TO DRAIN. COORDINATE ALL REQUIREMENTS WITH

6. THE PLUMBING CONTRACTOR SHALL CLEAN, FLUSH, AND DISINFECT ALL COLD WATER AND HOT WATER PIPING AND ALL FIXTURES PRIOR TO COMPLETION OF WORK.

7. VENTS THROUGH ROOF TO BE LOCATED A MINIMUM OF 15'-0" HORIZONTALLY AWAY FROM

8. FLOOR DRAINS NOT RECEIVING REGULAR-USE DRAINAGE ARE TO BE TRAP PRIMED.

9. PROVIDE BACKFLOW PREVENTION AS REQUIRED BY THE LOCAL CROSS CONNECTION CONTROL DEPT. STANDARDS WHERE NOT PROVIDED OR INADEQUATELY PROVIDED BY

11. VERIFY DIMENSIONS FROM ARCHITECTURAL DRAWINGS AND FROM ACTUAL MEASUREMENTS

12. PROVIDE SADDLES AND SHIELDS FOR SUPPORT OF INSULATED PIPING TO PREVENT

STRUCTURAL FLOORS SHALL BE SLEEVED. COORDINATE SLEEVE LOCATIONS AND SIZES WITH

15. PROVIDE ESCUTCHEONS AT ALL FINISHED WALL AND CEILING PIPING PENETRATIONS.

16. ALL PIPING SHALL BE IDENTIFIED AS TO TYPE OF USE, SERVICE, AND DIRECTION OF FLOW. LOCATE MARKERS AT EACH VALVE, AT ENTRIES TO WALLS, AND ON 20' CENTERS ON STRAIGHT RUNS OF PIPE. PROVIDE A FLOW ARROW AT EACH IDENTIFICATION MARKER. PIPE MARKERS

18. INSTALL PIPING FREE OF SAGS AND BENDS. PROVIDE NON-METALLIC COATED HANGERS

19. PROVIDE ENGINEERED WATER HAMMER ARRESTERS SIZED AND PLACED IN ACCORDANCE

20. PROVIDE FLEXIBLE EXPANSION FITTINGS SUITABLE FOR SANITARY (DWV) AND RAINWATER PIPING WHERE PIPING ENTERS EXPANSIVE SOILS TO ALLOW FOR 4" OF DIFFERENTIAL

22. MAKE ALL NECESSARY EXCAVATIONS, CUTTING OF PAVING, CONCRETE, ETC., REMOVAL OF UNUSABLE SPOIL MATERIAL, ALL BACKFILLING WITH STABILIZED FILL, AND PERFORM TEMPORARY PATCH PAVING REPAIRS NECESSARY FOR PROPER EXECUTION OF THE WORK. BACKFILL SHALL BE MECHANICALLY COMPACTED TO A DENSITY OF 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE STANDARD PROCTOR

23. PROVIDE MINIMUM 1" AIR GAP AT DRAIN DISCHARGE FOR ALL INDIRECT WASTE PIPING.

24. DISCHARGE PIPING FROM A DISHWASHER SHALL BE LOOPED UP AND SECURELY FASTENED TO THE UNDERSIDE OF THE COUNTER OR AN APPROVED DISHWASHER AIR-GAP FITTING IS

25. COMPRESSION TANKS SUPPLIED AT EACH WATER HEATER SHALL BE SECURED TO A WALL

26. AN ATMOSPHERIC VACUUM BREAKER OR OTHER APPROVED BACKFLOW PREVENTION DEVICE MUST BE INSTALLED ON ALL THREADED HOSE BIBB, WALL HYDRANT, OR FAUCET

WHICHEVER IS GREATER, IN THE HYDRAULIC CALCULATIONS (I.E. 10 PSIG OR 10 PERCENT SHALL BE

NFPA 51B: FIRE PREVENTION DURING WELDING, CUTTING, AND OTHER HOT WORK.

2015 IECC ENERGY CODE COMPLIANCE

REQUIREMENTS SPECIFIC TO WATER HEATING:

- HEAT TRAPS SHALL BE PROVIDED ON NONCIRCULATING WATER HEATING SYSTEMS ON BOTH INLET AND OUTLET CONNECTIONS. HEAT TRAPS MAY BE PRE-FABRICATED OR FIELD-FABRICATED BY CREATING A LOOP OR INVERTED U-SHAPED ARRANGEMENT ON THE INLET AND OUTLET PIPES. REFER TO WATER HEATER DETAIL.
- 2. PIPE INSULATION FOR THE SPECIFIED NONCIRCULATING SERVICE HOT WATER SYSTEM IS REQUIRED FOR ALL PIPING IN THE FOLLOWING CATEGORIES:
- a) THE FIRST 8' OF OUTLET PIPING FROM ANY CONSTANT-TEMPERATURE, NONCIRCULATING STORAGE SYSTEM. b) THE INLET PIPING BETWEEN THE STORAGE TANK AND A HEAT TRAP IN A
- NONCIRCULATING STORAGE SYSTEM.
- INSULATION SHALL COMPLY WITH PIPE INSULATION SPECIFICATIONS AS INDICATED ON THIS DRAWING PER TABLE C403.2.10.

GENERIC PLUMBING REQUIREMENTS:

- SERVICE WATER HEATING EQUIPMENT SHALL MEET MINIMUM FEDERAL EFFICIENCY REQUIREMENTS INCLUDED IN THE NATIONAL APPLIANCE ENERGY CONSERVATION ACT AND THE ENERGY POLICY ACT OF 1992, WHICH MEET OR EXCEED 2015 IECC AND ASHRAE 90.1 FOR ENERGY EFFICIENCY AND STANDBY LOSS.
- 2. WATER-HEATING EQUIPMENT SHALL BE PROVIDED WITH CONTROLS THAT ALLOW THE USER TO SET THE WATER TEMPERATURE TO 140°F.

PLUMBING PIPING & MATERIALS

DOMESTIC WATER PIPING

ABOVE GRADE: ASTM B88, TYPE L HARD DRAWN COPPER TUBING, WITH SOLDERED JOINTS, ASME B16.22, WROUGHT COPPER AND BRONZE FITTINGS, OR PRESSURE SEALED FITTINGS AND JOINTS COMPLYING WITH ASTM B584

BELOW GRADE: ASTM D1785, SCHEDULE 80 PVC, WITH SOLVENT WELDS.

VENT PIPING ABOVE CEILINGS

ALL VENT PIPING ABOVE CEILINGS SHALL BE SERVICE WEIGHT, NO-HUB CAST IRON PIPE AND DRAINAGE FITTINGS WITH HEAVY DUTY COUPLINGS.

WHEN CEILING CAVITY IS A RETURN AIR PLENUM, PROVIDE TRANSITION TO PVC WASTE AND VENT PIPING AS REQUIRED, PRIOR TO ENTERING PLENUM (IF APPLICABLE). PVC SHALL NOT BE EXPOSED IN A RETURN AIR PLENUM.

WASTE AND VENT PIPING

ABOVE GRADE: ASTM A74, HUBLESS CAST IRON, WITH CISPI 301 SPIGOT BEAD ENDS FOR COUPLING ASSEMBLY. ASTM D2665, SCHEDULE 40 PVC JOINED WITH SOLVENT WELDS.

BELOW GRADE: ASTM A74, CAST IRON, HUB AND SPIGOT TYPE, JOINED WITH ASTM C564 NEOPRENE COMPRESSION GASKETS.

ASTM D2665, SCHEDULE 40 PVC JOINED WITH SOLVENT WELDS.

DOMESTIC WATER VALVES

DOMESTIC WATER: BALL VALVES, 2" AND SMALLER, ASTM B 584, BRONZE BODY AND BONNET, 2-PIECE CONSTRUCTION, CHROME-PLATED BRASS BALL, FULL PORT, BLOWOUT PROOF, BRASS OR BRONZE STEM, TEFLON SEAT AND SEALS, STEM EXTENSION FOR VALVES INSTALLED IN INSULATED PIPING, AND THREADED ENDS.

SPRINKLER PIPING

ABOVE GRADE:

BLACK STEEL, SCHEDULE 10 WITH ROLLED GROOVE COUPLINGS OR SCHEDULE 40 WITH THREADED ENDS.

DRY PIPE: GALVANIZED, SCHEDULE 40, WITH THREADED FITTINGS.

SHEET LIST

DRAWING	SHEET TITLE
P0.01	PLUMBING COVER SHEET
P0.02	PLUMBING SCHEDULES & DETAILS
P1.01	PLUMBING DWV PLAN - FIRST FLOOR
P1.02	PLUMBING DWV PLAN - SECOND FLOOR
P2.01	PLUMBING DOMESTIC WATER PLAN - FIRST FLOOR
P2.02	PLUMBING DOMESTIC WATER PLAN - SECOND FLOOR
P3.01	PLUMBING RISER DIAGRAMS

			PLUMBING FIXTURE SCHE	DULE				
					CONNECTIO	NS (INCHES)		
TAG	DESCRIPTION	MANUFACTURER - MODEL	TRIM & ACCESSORIES	HW	CW	W	V	DESCRIPTION AND NOTES
CP-1	CIRCULATION PUMP	TACO #003-BC4	PROVIDE WITH TACO #265-3 DIGITAL TIMER AND AQUASTAT FOR PUMP CONTROL	1/2	-	-	-	1/40 HP, 120/1/60, 1 GPM @ 4 FT HEAD, BRONZE CONSTRUCTION. COORDINATE OPERATING TIMES WITH OWNER
EWH-1	ELECTRIC WATER HEATER	AO SMITH DEL-10-25	CONTAINMENT PAN, WATER HEATER STAND (HOLDRIGHT OR EQUAL), <u>XT-1</u> AS SCHEDULED	3/4	3/4	-	-	10 GALLON ELECTRIC WATER HEATER, 2.5 KW, 13 GPH @ 80°F RISE, SET AT 120°F DISCHARGE TEMPERATURE, 208/60/1
EWH-2	INSTANTANEOUS ELECTRIC WATER HEATER	CHRONOMITE M-40L/208-ADJ	-	1/2	1/2	-	-	INSTANTANEOUS ELECTRIC WATER HEATER, 208V, 40A, 8.32 KW, 0.35 ACTIVATION GPM, FIELD ADJUSTABLE TEMPERATURE, SET AT 110°F
FD-1	FLOOR DRAIN	JAY R. SMITH #2010	-	-	-	2	2	CAST IRON BODY, CLAMPING COLLAR, NICKEL BRONZE 6" GRATE, TRAP PRIMER CONNECTION
L-1	LAVATORY	KOHLER "SOHO" #K-2084-0	FAUCET: SLOAN OPTIMA #EAF-750-BAT-ISM-CP-0.35, TAILPIECE, TRAP, S.S. BRAIDED HOSES, 1/4 TURN ANGLE STOPS, WALL CARRIER, WALL ESCUTCHEONS	1/2	1/2	2	2	WALL MOUNT VITREOUS CHINA LAVATORY, DECK MOUNT SENSOR BATTERY POWERED FAUCET, 0.35 GPM AERATOR
MS-1	MOP SINK	FIAT #MSB2424	FAUCET: FIAT #830-AA, STAINLESS STEEL WALL PANELS, MOP HANGER	1/2	1/2	3	2	24"x24"x12" MOLDED STONE MOP SINK, CHROME PLATED SERVICE FAUCET WITH VACUUM BREAKER, WALL BRACE, PAIL HOOK, AND HOSE THREAD
SA-1	SHOCK ARRESTOR	JAY R. SMITH "HYDROTROL" #50_0	PROVIDE WALL/CEILING ACCESS PANEL WHERE APPLICABLE	-	*	-	-	FACTORY PRECHARGED WATER HAMMER ARRESTOR, *REFER TO MANUFACTURER LITERATURE FOR SIZING CRITERIA
SK-1	BREAK ROOM SINK	ELKAY 'LUSTERTONE' #LRAD312265	FAUCET: DELTA #9179-AR-DST, BASKET STRAINER, TAILPIECE, TRAP, SS SUPPLY LINES, 1/4 TURN ANGLE STOPS, WALL ESCUTCHEONS	1/2	1/2	2	2	ADA SINGLE BOWL DROP-IN SINK, 18 GAUGE S.S., SOUND DEADENING PADS, 1.8 GPM SINGLE HOLE DECK MOUNTED FAUCET WITH PULL DOWN SPRAYER
TP-1	TRAP PRIMER	PRECISION PLUMBING PRODUCTS #FVP- 1VB	-	-	1/2	-	-	1/2" COMPRESSION FITTING ON FLUSH VALVE TAILPIECE, CHROME PLATED, 1/2" COPPER LINE ROUTED TO FLOOR DRAIN TRAP PRIMER CONNECTION
U-1	URINAL	KOHLER "TEND" #K-20713-ET	FLUSH VALVE: KOHLER "TRIPOINT" #K-10949-SV-CP	-	3/4	2	2	ADA VITREOUS CHINA FLUSH VALVE URINAL, TOP SPUD MOUNT, 0.125 GPF BATTERY POWERED SENSOR FLUSH VALVE, MOUNT AT ADA HEIGHT AS REQUIRED
WB-1	REFRIGERATOR WALL BOX	IPS WATER TITE	-	-	1/2	-	-	WALL BOX WITH 1/4 TURN ANGLE STOP, WALL FLANGE, AND INTEGRAL WATER HAMMER ARRESTOR
WC-1	WATER CLOSET	AMERICAN STANDARD 'MADERA FLOWISE' #2858.128	FLUSH VALVE: SLOAN 'ROYAL' #111-1.28, SEAT: AMERICAN STANDARD #5901.100,W/ STAINLESS STEEL POSTS	-	1	4	2	FLOOR MOUNTED, VITREOUS CHINA, 1.28 GPF BATTERY OPERATED FLUSH VALVE, ELONGATED BOWL
wco	WALL CLEANOUT	JAY R. SMITH #4402C	-	-	-	-	-	STAINLESS STEEL COVER, REFER TO PLANS FOR SIZE
XT-1	EXPANSION TANK	AMTROL #ST-5C-DD	-	-	3/4	-	_	1.9 GALLON EXPANSION TANK, 0.5 GAL ACCEPTANCE VOLUME, CERTIFIED FOR POTABLE WATER USAGE

FLOOR DRAIN DETAIL SCALE: N.T.S.

1 PLUMBING DWV PLAN - FIRST FLOOR

) PLAN NORTH FOR THIS SHEET S C A L E : 1/8" = 1'-0"

GENERAL NOTES

- A. REFER TO PLUMBING COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. ALL SLAB PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE PIPE SLEEVE AND SEAL AND PACK ANNULAR SPACE WITH MINERAL WOOL. WHERE REQUIRED, PROVIDE FIRE CAULKING.
- F. REFER TO PLUMBING RISER DIAGRAMS AND PLUMBING FIXTURE SCHEDULE FOR PIPE AND FIXTURE CONNECTION SIZES NOT SHOWN ON THIS PLAN.

$\underbrace{\mathsf{KEYED}\ \mathsf{NOTES}}_{\mathsf{X}}$

- 1. CONNECT NEW 3" WASTE LINE TO EXISTING 6" WASTE MAIN BELOW SLAB.
- 2. CONNECT NEW 4" WASTE LINE TO EXISTING 4" CLEANOUT RISER. EXISTING FLOOR CLEANOUT SHALL BE REINSTALLED IN ITS ORIGINAL LOCATION.
- 3. ROUTE 1/2" TRAP PRIMER DRAIN LINE BELOW SLAB TO FLOOR DRAIN CONNECTION PER DETAILS.
- 4. COORDINATE SANITARY WASTE PIPE ROUTING WITH STRUCTURAL FOOTINGS.

2 ENLARGED PLAN

S C A L E : 1/4" = 1'-0"

|Drawn By

Checked By

PLUMBING DWV

PLAN - FIRST FLOOR

P1.01

24-132

LMI

BHK

GENERAL NOTES

- A. REFER TO PLUMBING COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. ALL SLAB PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE PIPE SLEEVE AND SEAL AND PACK ANNULAR SPACE WITH MINERAL WOOL. WHERE REQUIRED, PROVIDE FIRE CAULKING.
- F. REFER TO PLUMBING RISER DIAGRAMS AND PLUMBING FIXTURE SCHEDULE FOR PIPE AND FIXTURE CONNECTION SIZES NOT SHOWN ON THIS PLAN.

$\underbrace{\mathsf{KEYED}\ \mathsf{NOTES}}_{\mathsf{X}}$

1. ROUTE 1/2" TRAP PRIMER DRAIN LINE BELOW SLAB TO FLOOR DRAIN CONNECTION PER DETAILS.

2 ENLARGED PLAN

S C A L E : 1/4" = 1'-0"

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P1.02

1 PLUMBING DOM. WATER PLAN - FIRST FLOOR

GENERAL NOTES

- A. REFER TO PLUMBING COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. ALL SLAB PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE PIPE SLEEVE AND SEAL AND PACK ANNULAR SPACE WITH MINERAL WOOL. WHERE REQUIRED, PROVIDE FIRE CAULKING.
- F. REFER TO PLUMBING RISER DIAGRAMS AND PLUMBING FIXTURE SCHEDULE FOR PIPE AND FIXTURE CONNECTION SIZES NOT SHOWN ON THIS PLAN.

$\underline{\mathsf{KEYED}\ \mathsf{NOTES}}\ \langle \mathsf{X}\rangle$

- 1. INSTALL ELECTRIC WATER HEATER IN CONTAINMENT PAN ON ELEVATED PLATFORM PER DETAILS. ROUTE SEPARATE T&P AND PAN DRAIN LINES TO ADJACENT MOP SINK AND TERMINATE WITH AIR GAP.
- 2. INSTALL INSTANTANEOUS WATER HEATER BELOW LAV(S). REFER TO RISER DIAGRAM AND DETAILS.
- 3. ROUTE 1/2" COPPER TRAP PRIMER LINE FROM WATER CLOSET FLUSH VALVE RISER TO BELOW SLAB AND TO FLOOR DRAIN PER DETAILS. REFER TO DWV PLAN FOR CONTINUATION.
- 4. EXISTING FIRE SPRINKLER MAIN. AUTOMATIC WET PIPE SPRINKLER SYSTEM SHALL BE MODIFIED AS REQUIRED BY FIRE SPRINKLER CONTRACTOR TO SERVE BUILT OUT SPACE. REFER TO FIRE PROTECTION NOTES ON SHEET P0.01 FOR ADDITIONAL INFORMATION.

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

 $\underset{P2.01}{^{\text{FIRST FLOOR}}}$

GENERAL NOTES

- A. REFER TO PLUMBING COVER SHEET DRAWING FOR SYMBOLS, ABBREVIATIONS, SPECIFICATIONS, AND ADDITIONAL INFORMATION.
- B. DUE TO DRAWING SCALE IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL EXAMINE FIELD CONDITIONS AND FURNISH THE NECESSARY FITTINGS WHICH MAY BE REQUIRED TO COMPLETE THE INSTALLATION.
- C. FINAL LOCATION OF ALL NEW EQUIPMENT PRIOR TO EQUIPMENT INSTALLATION SHALL BE APPROVED BY BUILDING OWNER OR PROJECT MECHANICAL ENGINEER.
- D. MAINTAIN CODE REQUIRED AND MANUFACTURER'S RECOMMENDED CLEARANCES FOR ALL NEW EQUIPMENT.
- E. ALL SLAB PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE PIPE SLEEVE AND SEAL AND PACK ANNULAR SPACE WITH MINERAL WOOL. WHERE REQUIRED, PROVIDE FIRE CAULKING.
- F. REFER TO PLUMBING RISER DIAGRAMS AND PLUMBING FIXTURE SCHEDULE FOR PIPE AND FIXTURE CONNECTION SIZES NOT SHOWN ON THIS PLAN.

$\underline{\mathsf{KEYED}\ \mathsf{NOTES}} \langle \!\!\!\! \times \!\!\!\!\! \rangle$

- 1. CONNECT TO EXISTING SHELL BUILDING WATER STUB OUT AND ROUTE NEW CW PIPING AS SHOWN.
- 2. PROVIDE NEW 2" WATER STUB OUT WITH SHUTOFF VALVE AT EXISTING SHELL BUILDING CW MAIN AND ROUTE NEW PIPING AS SHOWN.
- 3. INSTALL ELECTRIC WATER HEATER IN CONTAINMENT PAN ON ELEVATED PLATFORM PER DETAILS. ROUTE SEPARATE T&P AND PAN DRAIN LINES TO ADJACENT MOP SINK AND TERMINATE WITH AIR GAP.
- DOMESTIC HOT WATER DOWN IN WALL TO SERVE BATHROOM LAVS. HOT WATER CIRCULATION LINE ROUTED UP ABOVE CEILING TO CIRCULATION PUMP. REFERENCE RISE DIAGRAM AND DETAILS.
- 5. ROUTE 1/2" COPPER TRAP PRIMER LINE FROM WATER CLOSET FLUSH VALVE RISER TO BELOW SLAB AND TO FLOOR DRAIN PER DETAILS. REFER TO DWV PLAN FOR CONTINUATION.

2 ENLARGED PLAN

S C A L E : 1/4" = 1'-0"

2 DOMESTIC WATER RISER DIAGRAM

SCALE: N.T.S.

