









GENERAL CONCEPT DESIGN (ACTUAL DESIGN MAY VARY)



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> BID SET 05 APRIL 2022

ABBREVIATIONS

ABV	Above	EA	Each	LAM	Laminate
AFF	Above Finish Floor	E	East	LAT	Lateral
ΔP	Access Panel	FOS	Edge of Slab	I AV	Lavatory
	Acoustical		Electric Electrical		Bound
ACOUS			Electric, Electrical		
ACT	Acoustic Celling The	EVVC		LH	Left Hand
AD	Acrylic Diffuser	EL	Elevation	LI	Light
AGGR	Aggregate	ELEV	Elevator	LWC	Light Weight Concrete
ALLOW	Allowance	ENCL	Enclosure	LTG	Lighting
ALT	Alternate	ENG	Engineering	LIN	Linear
		FO	Equal	IF	Linear Feet
	Anodized		Equinment		
ANOD	Anodized	EQUIP	Equipment	LINO	Linoieum
ARCH	Architect(ural)	EXH	Exhaust	LVR	Louver
A D	Area Drain	EXIST, EXTG	Existing	L PT	Low Point
ASPH	Asphalt	EJ	Expansion Joint		
AVG	Average	EXT	Exterior	MGR	Manager
		FOW	Face of Wall	MAN	Manual
D	Basa	ET	Fact	MED	Manufacturor
D					Manufacturer
BSMI	Basement	FIG	Figure	MFG	Manufacturing
BRG	Bearing	FIN	Finish	M.O.	Masonry Opening
BET	Between	FEC	Fier Extinguisher Cabinet	MATL, MAT'L	Material
BIT	Bituminous	FHC	Fire Hose Cabinet	MAX	Maximum
BLK	Block	FP	Fireproof(ing)	MECH	Mechanical
	Block		Flommable	MED	Modium
DLK G					
BD	Board	FLR	Floor	MEMB	Membrane
вот	Bottom	FD	Floor Drain	MTL	Metal
BTU	British Thermal Units	FLRG	Flooring	MEZZ	Mezzanine
BLDG	Building	FLOUR	Flourescent	MIN	Minimum
BUR	Built-up Roofing	FTG	Footing	MISC	Miscellaneous
BBD	Bulletin Board		Foundation	MTD	Mounted
DDD	Duileim Board	FDN	Foundation	IVIT D	Mounted
BO	By Others	6 4 4 4			
		GALV	Galvanize	NOM	Nominal
CAB	Cabinet	GA	Gauge	Ν	North
CR	Card Reader	GC	General Contractor	NIC	Not in Contract
CPT	Carpet	GEN	Generator	NTS	Not to Scale
	Ceiling	GL	Glass	NO	Number
OLG	Centry			NO	Number
	Center	GL COAT Glazed Co	baung	0	0.77
CL	Centerline	GYP	Gypsum	OFF	Office
C to C, C-C	Center to Center	GWB	Gypsum Wall Board	OC	On Center
CER	Ceramic			OPG	Opening
СТ	Ceramic Tile	HNDR	Handrail	OPP	Opposite
СНАМ	Chamfer	HDW/	Hardware		Outside Diameter
	Circle		Hand	00	Over all
CLR	Clear	HVAC	Heating, Ventilating & Air Conditioning	OVHD	Overnead
CLO	Closet	HT	Height	OBD	Overhead Bifold Door
CW	Cold Water	HM	Hollow Metal	OCD	Overhead Coiling Door
COL	Column	HOR. HORIZ	Horizontal	OCG	Overhead Coiling Grille
CONC	Concrete	HDG	Hot Din Galvanized		
CMU	Comercia Meconny Linit		Het Water	рт	Point
					Faille Deinted
					rameu
CJ	Construction Joint	IN	Inch	PR	Pair
CONT	Continue or Continuous	INCL	Include	PNL	Panel
CONTR	Contractor	INFO	Information	PKG	Parking
CG	Corner Guard	П	Inside Diameter	PTN	Partition
COPP	Corridor			DEDD	Perpendicular
		INGUL			
CUFI	Cubic Feet	INT	Interior	PLAM	Plastic Laminate
CFM	Cubic Feet per Minute			PL	Plate
		JAN	Janitor's Closet	PLMB	Plumbing
DEG	Degree	JT	Joint	PLYWD	Plywood
DEMO	Demolition. Demolish	JB	Junction Box	PVC	Polyvinyl Chloride
	Detail			PSF	Pounds per sa ft
	Diamatar	VIT	Kitahan		n ounus per synt. Deunde ner er in
DIA	Diameter				Founds per sq.in.
DIM	Dimension	KD	Knocked Down	PREFAB Pretabrica	ited
DW	Dishwasher	KO	Knock Out	PROJ	Project, Projection
DISP	Dispenser				
DR	Door			QTY	Quantity
DBI	Double			OT	Quarry Tile
				SCI .	addiny file
	Droin				
DK	Drain				
DWG	Drawing				

SYMBOLS



R RECD RECP REF REFR REG RFEC REINF REQ'D RET RA REV RH R.D. RM RO	Radius, Riser, Rubber Recieved Receptacle Reference Refrigerate, Refrigerator Register Recessed Fire Extinguisher Cabinet Reinforce Reinforced Plastic Paneling Required Returned Returned Return Air Revision Right Hand Roof Drain Room Rough Opening
SAN SND SCH SLD SECT SHT SIM SK SLT STC STC SPKR SPEC SQ SSS STND STL STL STL STR, STRUC SMFEC SUSP	Sanitary Sanitary Napkin Dispenser Schedule Sealed Section Sheet Similar Sketch Slate Sound Transmission Coefficient South Speaker Specification Square Stainless Steel Standard Steel Structural Surface Mounted FEC Suspend, Suspended
TEL TEMP THK THRU T&G T&B TOS T TYP	Telephone Tempered Thick Through Tounge and Groove Top and Bottom Top of Steel, Top of Slab Tread Typical
VB VIF VERT V VCT	Vapor Barrier, Vinyl Base Verify in Field Vertical Vinyl Vinyl Composition Tile
WC WP WD W/ W/O	Watercloser Waterproofing West, Wide Flange, Width Wood With Without

PARTITION TYPES: REFER TO A1.01 FOR ADDITIONAL DETAILS

ER OPERABLE GLASS WALL 1) Modernfold Acousti-Clear Acoustical Glass Wall System at (x. 29'-2"w x 8'-6"h** (with integral swing door) Manually operated, paired panel partition. Clear tempered glass. #17 steel track w/ heavy duty hangers, installed. Unistrut supports as required to hang track from existing overhead structure. VIF; provide engineered shop drawings. Acoustical Sound Rating 51 STC. Expandable closure panel. Bottom seals are automatically activated. Finish to be Clear Anodized Aluminum.
Fixed Wood End Panels Modernfold Acousti-Seal single panels, w/ wood veneer finish (Birch) - Coordinate required installation and location of wall shallow mounted electrical devices in Wd wall. Wood Finish Standard clear satin finish
GLASS WALL SYSTEM - glass entry sliding doors Manually operated Glass Doors - single panel sliding glass system with Floor locking Glass – single panel sliding glass system Metal Finish to be Clear Anodized Aluminum Powder Coat
finish
OUNTABLE EAST & WEST GLASS WALLS Two (2) Modernfold Acoustic Clear Acoustical Glass Wall Systems at approx. 58'-6"w x 8-6"h** Demountable single panels, Acoustic sound rating 51 STC Clear tempered glass Installation secures top edge to ceiling grid on east wall, top edge to soffit on west wall with Axiom Pocket for Motorized Lutron Sivoia QS Sun Shade - Coordinate as required. GC to furnish screen and coordinate installation with Modernfold.
Provide engineered shop drawings.
Metal Finish to be Clear Anodized Aluminum
ERED LAMINATED GLASS RAILING ASSEMBLIES 9BL56DCRL Mill Aluminum 9BL Series base shoe with 9/16" tempered, laminated glass, round glass cap by C.R. Laurence Co., Inc. Install 42" high - comply with current code.
Contact: Mark Rabinowitz Glass

- CLIMARK RADINOWILZ GIASS
- bids@rabglass.com PROVIDE SEALED ENGINEER SHOP DRAWINGS.

6 TYPICAL GWB PARTITION • 3 5/8" studs @ 24" O.C. max. w/ 1 layer 5/8" drywall on North side only; paint and 4" vinyl base according to building standards.

**ALL DIMENSIONS & CONDITIONS TO BE FIELD VERIFIED

DRAWING LIST				
DWG. NO.	DWG. NAME	90% REVIEW SET 09/10/2021	BID SET 05/27/2022	
ARCHITECTI	 JRAL			
CS	COVER SHEET	X	X	
G1.01	GENERAL PROJECT STANDARDS	X	X	
D1.01	DEMOLITION PLAN	X	X	
D2.01	RCP DEMOLITION PLAN	X	X	
A1.01	FLOOR PLAN	X	X	
A1.02	MODERNFOLD DETAILS			
F1.01	FURNITURE / MILLWORK PLAN			
A2.01	REFLECTED CEILING PLAN	X	X	
MCS	MECHANICAL COVER SHEET	X	X	
M1.0	MECHANICAL PLANS	X	X	
M2.0	MECHANICAL DETAILS	X	X	
M2.1	MECHANICAL DETAILS, SCHEDULE AND CONTROL		X	
M2.2	MECHANICAL SPECIFICATIONS & LEGEND	X	X	
ECS	ELECTRICAL COVER SHEET	X	X	
E1.0	ELECTRICAL PLANS	X	X	
E1.1	ELECTRICAL PLANS - PANEL KEY PLAN		X	
E2.0	ELECTRICAL SCHEDULES & DETAILS	X	X	
E3.0	LIGHTING/SHADE SCHEDULES & DIAGRAMS	X	X	
P1.0	PARTIAL FIRE PROTECTION PLAN, NOTES AND LEGEND		X	

GENERAL NOTES:

1. VERIFY ALL EXISTING CONDITIONS AND REVIEW ALL PROJECT REQUIREMENTS AND ALL DIMENSIONS AND CONDITIONS SHALL BE VERIFIED IN THE FIELD. THE ARCHITECT SHALL BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES.

2. REPORT ANY DISCREPANCIES TO ARCHITECT AND OWNER.

3. ALL WORK SHALL BE SCHEDULED AND IMPLEMENTED WITH MINIMAL DISRUPTION TO ADJACENT OCCUPIED AREAS. COORDINATE WITH PENNSYLVANIA CONVENTION CENTER WORK THAT MAY DISRUPT ADJACENT AREAS.

4. PROTECT EXISTING FINISHES DURING DEMOLITION & CONSTRUCTION; RESTORE ALL DAMAGED FINISHES TO "AS-NEW" CONDITION.

5. ALL MEANS OF EGRESS AND LIFE SAFETY ROUTES ARE TO REMAIN ACCESSIBLE DURING ALL PHASES OF CONSTRUCTION FIRE ALARM AND SMOKE DETECTION SYSTEMS SHALL REMAIN OPERATIONAL AT ALL TIMES.

6. CONTRACTOR SHALL PROVIDE INTERIM LIFE SAFETY SIGNAGE AS REQUIRED TO FACILITATE CONSTRUCTION, AND SHALL COORDINATE THIS WITH PENNSYLVANIA CONVENTION CENTER PRIOR TO IMPLEMENTATION.

7. PRIOR TO START OF WORK, PROVIDE TEMPORARY FLOOR TO CEILING PARTITIONS, DUST PROTECTION, TACK MATS, ETC., AS REQUIRED. COORDINATE ALL LOCATIONS WITH PENNSYLVANIA CONVENTION CENTER.

8. MAINTAIN ACCESS TO EXIT STAIRS AT ALL TIMES; FIRE PROTECTION SYSTEM TO REMAIN OPERATIONAL CONTINUOUSLY THROUGH ALL CONSTRUCTION PHASES.

9. THOROUGHLY CLEAN ALL AREAS AND SPACES USED TO ACCESS WORK AREA; AND BROOM CLEAN AT THE END OF EACH WORK DAY.

10. CONTRACTOR SHALL PROVIDE INDUSTRY STANDARD SHOP DRAWINGS, PRODUCT LITERATURE AND PHYSICAL SAMPLES FOR ALL SPECIFIED PRODUCTS. ALL SUBMITTALS MUST BE APPROVED BY PENNSYLVANIA CONVENTION CENTER IN WRITING PRIOR TO PURCHASE AND INSTALLATION.

11. REMOVE ALL MATERIALS IN A SAFE WORKMANLIKE MANNER AND DISPOSE OF PER ALL APPLICABLE CODES & SAFETY REQUIREMENTS.

12. PATCH ALL AREAS AFFECTED BY DEMOLITION. NEW SURFACES TO MATCH ADJACENT AREAS. RETURN TO CONDITION PRIOR TO START OF WORK ADJACENT AREA.

13. CONTRACTOR IS RESPONSIBLE TO 'X-RAY' CONCRETE FLOOR DECK PRIOR TO CUTTING AND/OR CORING PROCESS.

14. GC TO PROVIDE SEALED ENGINEERED SHOP DRAWINGS FOR THE FOLLOWING INSTALLATIONS: 6" x 6" STEEL POSTS, UPPER SUPPORT FOR MODERNFOLD SYSTEM, GLASS GUARDRAIL SYSTEM; GC TO FURNISH REQUIRED MATERIALS. ENGINEERED SHOP DRAWINGS SHALL COMPLY WITH MANUFACTURE PRODUCT DATA FOR WEIGHT LOADS, INCLUDING WEIGHT OF SUN SHADES ON WEST WALL.

15. GC TO PROVIDED ALLOWANCE FOR REMOVAL AND RELOCATION OF ANY PIPING, CONDUIT AND DUCTWORK IN CEILING SPACE ABOVE BOARDROOM.

16. SUBSTITUTIONS WILL NOT BE ACCEPTED.

KMA KELLY MAIELLO ARCHITECTS 1420 Walnut Street, 15th Floor Philadelphia, PA 19102 www.kmarchitects.com Pennsylvania Convention Center PHILADELPHIA 1101 Arch Street Philadelphia, PA 19107 Phone: 215-418-4742 www.paconvention.com CaVA Architects Interior Designer 2118 Locust Street Philadelphia, PA 19103 Phone: 215-732-8525 Dimitri J. Ververelli MEP Engineer 211 N. 13th Street Philadelphia, PA 19107 Phone: 215-496-0000 SUBMISSION NO: ISSUE: DATE: 1 90% Review Set 09.01.21 05.27.22 2 Bid Set 3 Bid Set Revised 07.15.22 4 Bid Set Revised 08.15.22 5 Bid Set Revised 11.11.22 6 Bid Set Revised 04.05.23 All conditions must be verified by the contractor at the site. Notify the Architect of any discrepancies before proceeding with the work. DO NOT SCALE DRAWINGS. © 2020 Kelly/Maiello Inc. PROJECT NO.: 17140 08/15/2022 DATE: SCALE: AS NOTED KDS DRAWN: DRAWING TITLE: GENERAL PROJECT STANDARDS

DRAWING NUMBER:

G1.01

DEMOLITION KEY NOTES

- REMOVE EXISTING RAILING PROVIDE OSHA FALL 1 PROTECTION AND SECURE AREA DURING CONSTRUCTION TO ELIMINATE ANY FALLING HAZARD.
- REMOVE ALL EXISTING WOODEN PEDESTALS IN 2 AREA OF WORK. CAP ALL UTILITIES TO BE USED FOR NEW WORK AND REMOVE TO SOURCE ANY REMAINING UTILITIES NOT NEEDED IN NEW WORK.
- REMOVE EXISTING FLOORING TO EXTENT SHOWN BY 3 HATCH OR AS NEEDED TO ACCOMMODATE NEW WORK.
- 4 COORDINATE ALL MATERIALS LEFT EXPOSED BY DEMO WITH NEW WORK AND PROTECT DURING DEMO WITH NEW WORK AND PROTECT DURING CONSTRUCTION.
- REMOVE EXISTING GWB CEILING AS SHOWN; VERIFY 5 ALL DIMENSIONS IN FIELD AND COORDINATE WITH NEW WORK.
- REMOVE EXISTING CEILING TILES, GRID, AND ALL 6 LIGHT FIXTURES, GRILLS, SPEAKERS, ETC. TO EXTENT SHOWN AND PREPARE FOR NEW WORK.
- 7 REMOVE EXISTING STUDS AND FEINOING FROM STORAGE AREA AND PREPARE SURFACES FOR NEW FENCE.
- CREATE NEW OPENING IN EXISTING BACK OF HOUSE 8 CORRIDOR WALL AND PREPARE FOR NEW DOOR AND FRAME.
- 9 REMOVE EXISTING WALLCOVERING TO POINT OF CONNECTION TO NEW SINGLE SIDED STUD WALL.
- 10 REMOVE EXISTING CEILING TILES & GRID OUTSIDE OF NEW BOARDROOM FOOTPRINT TO EXTENT SHOWN AND PREPARE GRID FOR NEW TILES.
- 11 CLEAN ALL GLASS. PAINT ALL SURFACES, INCLUDING WINDOW COMPONENTS, AT OVERLOOK EXTERIOR AND NEW WALL BEFORE INSTALLING NEW MODERNFOLD PARTITION, TYP. GC TO COORDINATE PAINT COLOR WITH PCC. APPLY SEALANT TO OPEN GAPS AT WINDOW PERIMETERS WHERE MISSING OR DAMAGED.
- TEMP. PARTITION FLOOR TO CEILING TYPICAL AT 12 PERIMETER LOCATIONS.



OVERLOOK STORAGE DEMOLITION PLAN Scale: 3/16" = 1'-0"

2



DEMOLITION KEY NOTES

- REMOVE EXISTING RAILING PROVIDE OSHA FALL 1 PROTECTION AND SECURE AREA DURING CONSTRUCTION TO ELIMINATE ANY FALLING HAZARD.
- 2 REMOVE ALL EXISTING WOODEN PEDESTALS IN AREA OF WORK. CAP ALL UTILITIES TO BE USED FOR NEW WORK AND REMOVE TO SOURCE ANY REMAINING UTILITIES NOT NEEDED IN NEW WORK.
- REMOVE EXISTING FLOORING TO EXTENT SHOWN BY 3 HATCH OR AS NEEDED TO ACCOMMODATE NEW WORK.
- 4 COORDINATE ALL MATERIALS LEFT EXPOSED BY DEMO WITH NEW WORK AND DROTECT STORE CONSTRUCTION.
- 5 REMOVE EXISTING GWB CEILING AS SHOWN; VERIFY ALL DIMENSIONS IN FIELD AND COORDINATE WITH NEW WORK.
- 6 REMOVE EXISTING CEILING TILES, GRID, AND ALL LIGHT FIXTURES, GRILLS, SPEAKERS, ETC. TO EXTENT SHOWN AND PREPARE FOR NEW WORK.
- 7 REMOVE EXISTING STUDS AND FENCING FROM STORAGE AREA AND PREPARE SURFACES FOR NEW FENCE.
- 8 CREATE NEW OPENING IN EXISTING BACK OF HOUSE CORRIDOR WALL AND PREPARE FOR NEW 2002 CORRIDOR WALL AND PREPARE FOR NEW DOOR AND FRAME.
- 9 REMOVE EXISTING WALLCOVERING TO FORM OF CONNECTION TO NEW SINGLE SIDED STUD WALL.
- 10 REMOVE EXISTING CEILING TILES & GRID OUTSIDE OF NEW BOARDBOOM FOOTBBINT TO EXTENT OF NEW BOARDROOM FOOTPRINT TO EXTENT SHOWN AND PREPARE GRID FOR NEW TILES.
- CLEAN ALL GLASS. PAINT ALL SURFACES, INCLUDING WINDOW COMPONENTS, AT OVERLOOK EXTERIOR AND NEW WALL BEFORE INSTALLING NEW MODERNFOLD PARTITION, TYP. GC TO COORDINATE PAINT COLOR WITH PCC. APPLY SEALANT TO OPEN GAPS AT WINDOW PERIMETERS WHERE MISSING OR DAMAGED.
- 12 TEMP. PARTITION FLOOR TO CEILING TYPICAL AT PERIMETER LOCATIONS

OVERLOOK CEILING DEMOLITION PLAN





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- NEW WORK KEY NOTES INSTALL NEW CARPET TILE IN AREA TO EXTENT INDICATED. TILE SELECTION TO BE CP-1:PATCRAFT I0597-GRAPHIC ARC 18X36 TILE IN 00460-ACUTE COLOR; COLLECTION: DECONSTRUCTED FORM, IN MONOLITHIC INSTALLATION PATTERN, TYP. CP-2: PATCRAFT I0584-SELVAGE; 12X48 TILE IN 00451DENIM-BLUE COLOR; COLLECTION: TEXTILE TECHNIQUE, IN HERRINGBONE INSTALLATION PATTERN. INCLUDE INTEGRATED DOOR IN OPERABLE PARTITION TO ALLOW ACCESS WHEN WALL IS CLOSED. COORDINATE FINAL LOCATION WITH ARCHITECT IN SHOP DRAWINGS. 3 ALL POWER AND SWITCHES TO BE RUN IN WALL SYSTEM AS SHOWN, TYP. COORDINATE WITH ELECTRICAL PLANS. INSTALL NEW FLOOR BOXES THROUGHOUT. COORDINATE $\langle 4 \rangle$ FINAL LOCATIONS WITH UTILITIES BELOW THE FLOOR, COORDINATE LOCATIONS WITH OWNER-PCCA, ELECTRICAL ENGINEER & ARCHITECT. NEW BOARDROOM TABLE BY OTHERS. 5 COORDINATE WIRING POKE-THRU LOCATIONS AND REQUIREMENTS WITH KMK AND FURNITURE VENDOR TO ACCOMMODATE CUSTOM FURNITURE POWER REQUIREMENTS. NEW ARMSTRONG LYRA (PB) 24"X24", WHITE CLASS A, 6 SQUARE EDGE TEGULAR, 0.95 NRC, 71% RECYCLED CONTENT WITH SUPRAFINE ML 9/16" EXPOSED TEE GRID, WHITE IN BOARDROOM. PROVIDE AXIOM PREMITER POCKET IN WHITE FOR MOTORIZED LUTRON CONTROLLED COMMERCIAL ROLLER SUN SHADES. SUN SHADES ALONG WEST WALL ONLY. PROVIDE LUTRON (OR MECHO SHADE) E-SCREEN PANELS. TWO SHADES PER BAY WITH 1% OPEN FABRIC. GC TO INSTALL, COORDINATE W/ MODERNFOLD AND PROVIDE APPROVED ENGINEERED DRAWINGS. EXTEND SOFFIT AS REQUIRED & PROVIDE ANGLE SUPPORT / UNISTRUT SUPPORTS FOR SUN SHADES PER MANUFACTURER RECOMMENDATIONS & SUPPORTED BY ENGINEERED SHOP DRAWINGS. PROVIDE 2 - 16'x20' WOOD CLOUDS BY ASI ARCHITECTURAL MICRO-PERF CEILING PANEL 4'X4' GRID, WITH TORSION SPRING MOUNTING SYSTEM WITH 1/4" REVEAL, MAPLE WOOD VENEER. GC TO PERFORM & COORDINATE CUT-OUTS WITH EC, PC, MC. PRE-INSTALLATION MEETING: REQUIRED TO REVIEW WITH ARCHITECT AND PCC PRIOR TO INSTALLATION, MANUFACTURER TO PROVIDE AND GC TO COORDINATE & ENSURE TORSION CUT-OUTS & PROVIDE THAT CEILING SYSTEM SUPPORTS ARE DESIGNED TO SUPPORT WEIGHT OF PANELS AND ALL ELECTRICAL AND AV COMPONENTS, ETC ADDED TO CEILING PANEL SYSTEM. NEW LUTORN CONTROLLED LIGHTING TO BE COORDINATED $\langle 9 \rangle$ WITH ELECTRICAL DRAWINGS. PROVIDE LUTRON CONTROLLED LIGHTS, SHADES, AND A/V (10 SYSTEM TIED INTO PCCA'S SYSTEM AND ABLE TO FUNCTION AS ONE ROOM OR DIVIDED INTO TWO. ANY CONCEALED SPRINKER HEADS THAT NEED TO BE (11) RELOCATED OR INSTALLED NEW ACCORDING TO NEW WORK TO BE INSTALLED IN THE CENTER OF CEILING TILES AND BE CONCEALED HEADS, TYP. PROVIDE NEW CONCEALED HEADS - WHITE FOR ACT. PROVIDE NEW CONCEALED HEADS - TYP. GWB SOFFIT WITH CONCEALED MODERNFOLD TRACK AT $\langle 12 \rangle$ 8'-6" A.F.F. AND PAINTED CEILING WHITE. (13) NEW 8'-0" HIGH CHAIN LINK FENCE Women's 465 SF
 - IN EXISTING WALL. HARDWARE TO BE BUILDING STANDARD (14 STORE ROOM LOCK. COORDINATE LOCKING FUNCTIONS WITH OWNER.

(C1)-

(C2)—

0

S

(C4)—

C5—

(C6)-

- CLEAN AND PAINT EXISTING WALL TO REMAIN AFTER $\langle 15 \rangle$ WALLCOVERING IS REMOVED. OVERLAY W/GWB IF REQUIRED.
- NEW ARMSTRONG LYRA (PB) 24"X24", WHITE CLASS A, $\langle 16 \rangle$ SQUARE EDGE TEGULAR, 0.95 NRC, 71% RECYCLED CONTENT TILES INSTALLED WITH SUPRAFINE 9/16" EXPOSED TEE GRID, WHITE. ALL EXISTING LIGHT FIXTURES TO BE CLEANED AND INSTALLED IN ORIGINAL LOCATIONS, TYP. PROVIDE NEW CEILING DIFFUSERS AT NEW CEILING LOCATIONS.
- PAINT ALL EXISTING GWB CEILING WHITE TO EXTENT 17 PAINT ALL SHOWN.
- (18) PROVIDE GWB WALL ON 16 GAUGE METAL STUDS IN FRONT OF EXISTING VENDOR STALLS; PAINT COLOR: TBD BY PCCA.
- PROVIDE MINIMUM STC 50 SOUND BATT INSULATION ON TOP OF ACT, ABOVE FOLDING PARTITION; MINIMUM 72" WIDE.
- (20) PROVIDE 3M PRIVACY FILM TO ALL WALLS WITHIN BOARDROOM; SELECTED FROM FULL RANGE OF MANUFACTURERS PATTERNS. PROVIDE COST FOR 3M SOLAR FILM ON WEST WALL - ALTERNATE CONTACT: MARK RABINOWITZ GLASS -BIDS@RABGLASS.COM





Scale: 3/16" = 1'-0"

2





REFER TO G1.01 FOR ADDITIONAL DETAILS











A1.02

	6		5		4
E					
		RCP LEGE	END		
		QA	RECESSED LU BRUCK LIGHTI BINA-R-3500K-	IMINAIRE FIXTURE - BY NG, 24-675MA-D-WH-WH	
		©В	4" DIA RECESS INTENSE LIGH #SD4DR-L2-35 IC430-HZ-SFW CTR IN CLG TI	SED CLG LED LIGHT - TING, MODEL -D-101-VOLT-FL-X- , LE TYP	
			SUPPLY AIR REGISTER		
D			RETURN AIR REGISTER		
			MOTORIZED L WEST WALL REFER TO MEP	UTRON SHADES ALONG DRAWINGS	
					AREA O
	NEW	WORK KEY NOTES			CONF
		INSTALL NEW CARPET TILE IN AREA TO EXTENT INDIC TILE SELECTION TO BE CP-1 :PATCRAFT I0597-GRAPH 18X36 TILE IN 00460-ACUTE COLOR; COLLECTION: DECONSTRUCTED FORM, IN MONOLITHIC INSTALLATI PATTERN, TYP. CP-2 : PATCRAFT I0584-SELVAGE; 12X48 TILE IN 00451DENIM-BLUE COLOR; COLLECTION: TEXTILE TECHNIQUE, IN HERRINGBONE INSTALLATION PATTE	CATED. IC ARC ION RN.		ROO
	2	INCLUDE INTEGRATED DOOR IN OPERABLE PARTITIO ALLOW ACCESS WHEN WALL IS CLOSED. COORDINAT FINAL LOCATION WITH ARCHITECT IN SHOP DRAWING	N TO FE GS.		
С	3	ALL POWER AND SWITCHES TO BE RUN IN WALL SYS AS SHOWN, TYP. COORDINATE WITH ELECTRICAL PL/	TEM ANS.		
	4	INSTALL NEW FLOOR BOXES THROUGHOUT. COORDI FINAL LOCATIONS WITH UTILITIES BELOW THE FLOOF COORDINATE LOCATIONS WITH OWNER-PCCA, ELEC ENGINEER & ARCHITECT. NEW BOARDROOM TABLE E OTHERS.	NATE R, TRICAL 3Y		
	5	COORDINATE WIRING POKE-THRU LOCATIONS AND REQUIREMENTS WITH KMK AND FURNITURE VENDOR ACCOMMODATE CUSTOM FURNITURE POWER REQUIREMENTS.	сто		
	6	NEW ARMSTRONG LYRA (PB) 24"X24", WHITE CLASS A SQUARE EDGE TEGULAR, 0.95 NRC, 71% RECYCLED CONTENT WITH SUPRAFINE ML 9/16" EXPOSED TEE G WHITE IN BOARDROOM.	A, GRID,		
В	(7)	PROVIDE AXIOM PREMITER POCKET IN WHITE FOR MOTORIZED LUTRON CONTROLLED COMMERCIAL RC SUN SHADES. SUN SHADES ALONG WEST WALL ONLY PROVIDE LUTRON (OR MECHO SHADE) E-SCREEN PA TWO SHADES PER BAY WITH 1% OPEN FABRIC. GC TC INSTALL, COORDINATE W/ MODERNFOLD AND PROVID APPROVED ENGINEERED DRAWINGS. EXTEND SOFFI REQUIRED & PROVIDE ANGLE SUPPORT / UNISTRUT SUPPORTS FOR SUN SHADES PER MANUFACTURER RECOMMENDATIONS & SUPPORTED BY ENGINEERED DRAWINGS.	OLLER Y. NELS. D DE T AS		
	8	PROVIDE 2 - 16'x20' WOOD CLOUDS BY ASI ARCHITEC MICRO-PERF CEILING PANEL 4'X4' GRID, WITH TORSIC SPRING MOUNTING SYSTEM WITH 1/4" REVEAL, MAPL WOOD VENEER. GC TO PERFORM & COORDINATE CUT-OUTS WITH EC, PC, MC. PRE-INSTALLATION MEE REQUIRED TO REVIEW WITH ARCHITECT AND PCC PR TO INSTALLATION, MANUFACTURER TO PROVIDE AND TO COORDINATE & ENSURE TORSION CUT-OUTS & PR THAT CEILING SYSTEM SUPPORTS ARE DESIGNED TO SUPPORT WEIGHT OF PANELS AND ALL ELECTRICAL AV COMPONENTS, ETC ADDED TO CEILING PANEL SY	TURAL DN .E STING: RIOR D GC ROVIDE D AND STEM.		
	9	NEW LUTORN CONTROLLED LIGHTING TO BE COORD WITH ELECTRICAL DRAWINGS.	INATED		
	(10)	PROVIDE LUTRON CONTROLLED LIGHTS, SHADES, AN SYSTEM TIED INTO PCCA'S SYSTEM AND ABLE TO FUNCTION AS ONE ROOM OR DIVIDED INTO TWO.	ND A/V		
	$\langle 11 \rangle$	ANY CONCEALED SPRINKER HEADS THAT NEED TO B RELOCATED OR INSTALLED NEW ACCORDING TO NEW WORK TO BE INSTALLED IN THE CENTER OF CEILING AND BE CONCEALED HEADS, TYP. PROVIDE NEW CONCEALED HEADS - WHITE FOR ACT. PROVIDE NEW CONCEALED HEADS - TYP.	BE N TILES /		
A	(12)	GWB SOFFIT WITH CONCEALED MODERNFOLD TRACH 8'-6" A.F.F. AND PAINTED CEILING WHITE.	K AT		
	13	NEW 8'-0" HIGH CHAIN LINK FENCE		PAINT ALL EXISTING GWB CEILING WHITE TO EXTENT	
	< <u>14</u> >	IN EXISTING WALL. HARDWARE TO BE BUILDING STAN STORE ROOM LOCK. COORDINATE LOCKING FUNCTION WITH OWNER.	NDARD DNS	SHOWN. PROVIDE GWB WALL ON 16 GAUGE METAL STUDS IN FRONT OF EXISTING VENDOR STALLS: PAINT COLOR: TRD BY DOCA	
	(15)	CLEAN AND PAINT EXISTING WALL TO REMAIN AFTER WALLCOVERING IS REMOVED. OVERLAY W/GWB IF REQUIRED.	۲ (19)	PROVIDE MINIMUM - STC 50 SOUND BATT INSULATION ON TOP OF ACT, ABOVE FOLDING PARTITION; MINIMUM 72" WIDE.	•
	(16)	NEW ARMSTRONG LYRA (PB) 24"X24", WHITE CLASS A SQUARE EDGE TEGULAR, 0.95 NRC, 71% RECYCLED CONTENT TILES INSTALLED WITH SUPRAFINE 9/16" EXPOSED TEE GRID, WHITE. ALL EXISTING LIGHT FIXT TO BE CLEANED AND INSTALLED IN ORIGINAL LOCAT TYP. PROVIDE NEW CEILING DIFFUSERS AT NEW CEIL LOCATIONS.	A, (20) TURES IONS, LING	PROVIDE 3M PRIVACY FILM TO ALL WALLS WITHIN BOARDROOM; SELECTED FROM FULL RANGE OF MANUFACTURERS PATTERNS. PROVIDE COST FOR 3M SOLAR FILM ON WEST WALL - ALTERNATE CONTACT: MARK RABINOWITZ GLASS - BIDS@RABGLASS.COM	
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SAMPLE LAYOUT OPTIONS - FOR INFORMATION ONLY MILLWORK LOCATIONS & FOLDING PARTITION AS NOTED



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GENERAL NOTES

- ALL OF THE FOLLOWING NOTES ARE GENERAL AND SOME MAY NOT APPLY TO THIS SPECIFIC PROJECT.
- THE SUBMISSION OF A PROPOSAL BY THE CONTRACTOR IS NOTIFICATION THAT THE CONTRACTOR HAS TOTALLY FAMILIARIZED HIMSELF WITH THE CONTRACT DOCUMENTS AND EXISTING SITE CONDITIONS AND HAS AGREED TO PROVIDE THE NECESSARY LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF EACH SYSTEM IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, SIZES, CLEARANCES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION AND ADVISE THE ENGINEER AND THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING
- THE DRAWINGS INDICATE ARRANGEMENTS AND APPROXIMATE SIZES AND RELATIVE LOCATIONS OF PRINCIPLE APPARATUS, EQUIPMENT, DEVICES AND SERVICES TO BE PROVIDED. DRAWINGS ARE DIAGRAMMATIC AND ARE GRAPHIC REPRESENTATION OF THE CONTRACT REQUIREMENTS TO BEST AVAILABLE STANDARDS AT THE SCALE INDICATED.
- . LAYOUT OF EQUIPMENT INDICATED ON THE DRAWINGS SHALL BE CHECKED AND COMPARED AGAINST ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES AND EXACT LOCATIONS DETERMINED USING APPROVED SHOP DRAWINGS OF SUCH EQUIPMENT. WHERE PHYSICAL INTERFERENCE OCCURS, CONSULT WITH ENGINEER AND PREPARE DATED, DIMENSIONED DRAWINGS COORDINATED WITH ALL OTHER TRADES. OBTAIN WRITTEN APPROVAL OF THE ENGINEER FOR SUCH DRAWINGS AND DISTRIBUTE SAME AS REQUIRED.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER AND ALL OTHER CONTRACTORS. CONTRACTOR SHALL ALSO SCHEDULE HIS WORK IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE SO THAT ALL OF HIS WORK CAN BE INSTALLED WITHOUT DELAYING THE PROJECT.
- ALL WORK SHALL COMPLY AND BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES, THE UNIFORM CONSTRUCTION CODE STATUTE, THE APPLICABLE INTERNATIONAL CODES (E.G. THE INTERNATIONAL MECHANICAL CODE, THE INTERNATIONAL BUILDING CODE) AS AMENDED AND ADOPTED BY THE LOCAL JURISDICTION. AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES AND REGULATIONS (CURRENT EDITIONS), THE NATIONAL ELECTRIC CODE, BUILDING STANDARDS, NFPA AND ALL OTHER AGENCIES AND AUTHORITIES HAVING JURISDICTION. REFER TO THE CODES AND STANDARDS TABLE FOR VERSIONS OF CODES.
- CONTRACTOR SHALL SECURE AND PAY ALL FEES AND PERMITS PERTAINING TO THE CONTRACT. GIVE ALL NOTICES, OBTAIN ALL PERMITS, AND PAY ALL GOVERNMENTAL TAXES, FEES, AND COSTS; FILE NECESSARY PLANS AND OBTAIN APPROVALS OF ALL GOVERNMENT DEPARTMENTS HAVING JURISDICTION; OBTAIN CERTIFICATES OF INSPECTION FROM AN NFPA APPROVED AGENCY FOR THE WORK AND DELIVER THE SAME TO THE OWNER WITH REQUEST FOR FINAL PAYMENT.
- ALL EQUIPMENT SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURERS' WRITTEN INSTRUCTIONS.
- ANY ITEM DEEMED NECESSARY OR RECOMMENDED, OR REQUIRED BY CODE, BY THIS TRADE CONTRACTOR TO ACHIEVE THE FUNCTION SHOWN, BUT NOT INDICATED HEREIN, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING IN WRITTEN "RFI" FORMAT. FAILURE TO IDENTIFY ITEMS DEEMED NECESSARY PRIOR TO BIDDING SHALL INDICATE TO THE ENGINEER AND OWNER THAT SAID ITEMS ARE INCLUDED IN THE CONTRACT PRICE.
- 10. ANY EXISTING POTENTIALLY HAZARDOUS MATERIALS ENCOUNTERED IN THE COURSE OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER FOR REMOVAL AND DISPOSAL.
- 1. CONTRACTOR SHALL BE RESPONSIBLE FOR WORKMEN'S IDENTIFICATION AND BADGING, SAFETY AND FIRE PROTECTION, BARRICADES, WARNING SIGNS, TRASH REMOVAL, CUTTING AND PATCHING. 12. SMOKING AT THE JOB SITE IS NOT ALLOWED.
- 13. ALL WORK AND SCHEDULING TO BE COORDINATED WITH OWNER. CONTRACTOR SHALL SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING AND PROTECTION OF MATERIALS. ALL EQUIPMENT AND MATERIALS SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. 15. CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT AND TRANSFER TO POINT OF
- INSTALLATION OF OWNER FURNISHED ITEMS. 6. FLAMMABLE MATERIALS MAY NOT BE STORED OR ALLOWED TO REMAIN OVERNIGHT WITHIN THE BUILDING. THIS INCLUDES, BUT IS NOT LIMITED TO, PAINTS, THINNERS, CLEANING AND RESTORATION PRODUCTS, RAGS OR BRUSHES, AND ANY TOOL THAT IS CAPABLE OF PRODUCING FLAME. SAWDUST, SCRAP LUMBER, SOAKED S, AND OTHER FLAMMABLE CONSTRUCTION DEBRIS MUST BE COLLECTED AT THE END OF EACH DAY AND
- MAINTAIN SUITABLE FIRE PROTECTION EQUIPMENT AT BUILDING SITE. AT MINIMUM, TYPE ABC FIRE EXTINGUISHERS SHALL BE PROVIDED WHERE WORK IS BEING PERFORMED WITH OPEN FLAME OR USING FLAMMABLE MATERIALS AND AN ADDITIONAL FIRE EXTINGUISHER SHALL BE PROVIDED TO THE WORKER PERFORMING THE WORK, TRAIN ALL WORKERS IN THE USE OF FIRE PROTECTION EQUIPMENT.

DISPOSED OF PROPERLY OUTSIDE OF THE BUILDING

- 18. ALL FIRE SAFETY REQUIREMENTS LISTED ABOVE ARE TO BE CONSIDERED MINIMUMS. CONTRACTOR IS RESPONSIBLE FOR TAKING OTHER MEASURES DEEMED NECESSARY BY THE CONTRACTOR TO PROTECT THE
- 19. CONTRACTOR SHALL SUBMIT SCHEDULE OF SUBMITTALS PRIOR TO SUBMITTING ANY SHOP DRAWINGS. THIS SCHEDULE SHALL IDENTIFY ALL PRODUCT DATA, DRAWINGS, ETC TO BE SUBMITTED FOR THIS PROJECT. INCLUDING THE ANTICIPATED DATE OF EACH SUBMISSION. CONTRACTOR SHALL SUBMIT (6) SETS OF SHOP DRAWINGS AND EQUIPMENT CUTS TO THE ENGINEER FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR STARTING ANY WORK, CONTRACTOR SHALL SUBMIT (3) PRINTS AND (1) REPRODUCIBLE OF ALL PIPING. DUCTWORK, FIRE PROTECTION, CONDUIT, AND CABLE TRAY FIELD INSTALLATION DRAWINGS FOR EACH SYSTEM TO BE INSTALLED. ANY WORK INSTALLED OR EQUIPMENT PURCHASED PRIOR TO RECEIPT OF ENGINEER-APPROVED SHOP DRAWINGS THAT REQUIRES CHANGES SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR
- 20. SUBMIT CATALOG INFORMATION, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS TO BE PROVIDED. THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS. NO SUBMISSION WILL BE ACCEPTED WITHOUT THE SIGNED APPROVAL OF THE CONTRACTOR. THE CONTRACTOR SHALL CHECK AND VERIFY ALL FIELD MEASUREMENTS.
- 21. INSTALLED SYSTEMS SHALL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION THAT IS OBJECTIONABLE TO THE ENGINEER OR OWNER. OBJECTIONABLE SOUND OR VIBRATION CONDITIONS SHALL BE CORRECTED IN AN APPROVED MANNER BY THE CONTRACTOR AT HIS EXPENSE.
- 22. FURNISH ACCESS DOORS AS REQUIRED FOR OPERATION AND MAINTENANCE OF CONCEALED EQUIPMENT, VALVES, CONTROLS, DAMPERS, ETC. ALL ACCESS DOORS SHALL BE COORDINATED WITH THE OWNER AND SHALL MATCH THE FIRE RATING OF THE PENETRATION AS REQUIRED. 23. ALL WORK FURNISHED UNDER THE CONTRACT SHALL BE GUARANTEED AGAINST ANY AND ALL DEFECTS IN
- WORKMANSHIP AND MATERIALS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. ANY DEFECTS OF WORKMANSHIP DEVELOPING DURING THIS PERIOD SHALL BE REMEDIED AND ANY DEFECTIVE MATERIAL SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNER.
- 4. CONTRACTOR SHALL NOTIFY ENGINEER OF ESTIMATED DATE OF COMPLETION OF ROUGH-IN WORK AND DATE OF BOTH WALL AND CEILING INSTALLATION. NOTIFICATION SHALL BE A MINIMUM OF ONE WEEK PRIOR TO DATE TO ENABLE ENGINEER TO SCHEDULE PRELIMINARY PUNCHLIST INSPECTION. CONTRACTOR SHALL SIMILARLY NOTIFY ENGINEER OF COMPLETION OF ALL WORK, INDICATING THE CONTRACTOR IS READY FOR THE ENGINEER TO PERFORM THE FINAL PUNCHLIST INSPECTION.
- 25. UPON COMPLETION OF ALL UNFINISHED OR FAULTY WORK NOTED IN ENGINEER'S FINAL PUNCHLIST, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER IN WRITING A LETTER OF COMPLETION CERTIFYING THAT ALL PUNCHLIST ITEMS HAVE BEEN COMPLETED AND ALL AS-BUILT PLANS, MANUALS, ETC. HAVE BEEN SUBMITTED.
- 26. ALL CHANGES MADE BY THE CONTRACTOR WHICH ARE NOT APPROVED BY THE DESIGN ENGINEER SHALL BE DONE AT THE LIABILITY OF THE CONTRACTOR. 27. CONTRACTOR SHALL RESTORE EXISTING SYSTEMS, DEVICES, FINISHES, ETC. DAMAGED OR ALTERED BY WORK
- TO ACCEPTABLE CONDITION AS DETERMINED BY THE OWNER OR ENGINEER. 28. EXISTING WORK THAT IS TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER OR DISPOSED OF AT THE OWNER'S DIRECTION. ALL WORK TO BE DISPOSED OF SHALL BECOME THE PROPERTY OF THE CONTRACTOR
- AND SHALL BE PROMPTLY REMOVED FROM THE SITE. ALL EQUIPMENT TO BE TURNED OVER TO THE OWNER SHALL BE DELIVERED TO ON SITE CENTRAL RECEIVING LOCATION DESIGNATED BY THE OWNER.
- 29. PROVIDE ALL NECESSARY REMOVAL OF EXISTING CEILING TILES AND REINSTALLATION OF CEILING TILES OR REPLACEMENT AS NEEDED TO ACCOMPLISH NEW WORK. PERFORM ALL NECESSARY CEILING WORK INCLUDING BUT NOT LIMITED TO REMOVAL, REINSTALLATION AND PROVIDING NEW CEILING TILES, CEILING GRID, T-BARS SUPPORTS, AND ALL APPURTENANCES.
- 30. GENERAL MECHANICAL NOTES PERTAIN TO ALL MECHANICAL DRAWINGS.
- 31. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN-LIKE MANNER.
- 32. REFERENCE ARCHITECTURAL, ELECTRICAL, PLUMBING AND STRUCTURAL DRAWINGS FOR COORDINATION. 33. PERFORM ALL RIGGING REQUIRED TO COMPLETE ALL WORK UNDER THIS CONTRACT. IF REQUIRED, THE
- CONTRACTOR SHALL DISASSEMBLE EQUIPMENT OR ITEMS FOR RIGGING AND/OR ACCESS INTO THE BUILDING. AFTER RIGGING IS COMPLETE, THE CONTRACTOR SHALL REASSEMBLE THE EQUIPMENT OR ITEMS.
- 34. THE CONTRACTOR SHALL REVIEW THE SITE AND ALL CLEARANCES TO VERIFY THE NEW EQUIPMENT CAN BE INSTALLED IN THE LOCATION SHOWN ON DRAWINGS. PROVIDE ANY NECESSARY SHIPPING SPLITS ON UNITS TO ALLOW THEM TO BE INSTALLED IN THE LOCATION SHOWN. REMOVE ANY NECESSARY OBSTRUCTIONS TO ALLOW FOR INSTALLATION OF EQUIPMENT AND REPAIR/REPLACE ONCE INSTALLATION IS COMPLETE. 35. PROVIDE MANUFACTURER DESIGNATED CLEARANCES FOR EQUIPMENT MAINTENANCE AND REPAIR.
- 36. MECHANICAL CONTRACTOR SHALL COORDINATE RELOCATION OF SPRINKLER AND PIPING WITH SPRINKLER CONTRACTOR AS REQUIRED FOR INSTALLATION OF NEW HVAC EQUIPMENT AND DUCTWORK.

GENERAL DEMOLITION NOTES

OTHER WORK.

- 1. DEMOLITION/RELOCATIONS: EACH TRADE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND RELOCATIONS OF SERVICES, EQUIPMENT AND MATERIAL RELATING TO THEIR RESPECTIVE TRADE.
- 2. THE CONTRACTOR SHALL REMOVE ALL WORK AS NOTED ON THE DRAWINGS. WHERE IT IS NOTED TO REMOVE EXISTING EQUIPMENT, DUCTWORK AND PIPING, ALL ASSOCIATED VALVES, FITTINGS, HANGERS, SUPPORTS INSULATION, CONTROLS, ELECTRICAL WORK, AND APPURTENANCES SHALL ALSO BE REMOVED, ADEQUATELY SUPPORT EXISTING DUCTWORK AND PIPING TO REMAIN. PROVIDE TEMPORARY CAPS ON EXISTING PIPING ENDS/DUCT OPENINGS WHERE SYSTEMS WILL REMAIN IN SERVICE PRIOR TO INSTALLATION OF NEW WORK. CAP AND SEAL EXISTING OPENINGS WHERE NOT REUSED AND PATCH INSULATION TO MATCH EXISTING. THE CONTRACTOR SHALL RELOCATE EXISTING WORK AS REQUIRED TO INSTALL NEW WORK. WHERE EXISTING WALLS, FLOORS OR CEILINGS ARE REMOVED, ALL HVAC SHALL BE PROTECTED FROM DAMAGE
- AND SUPPORTED AS REQUIRED. REPAIR ANY DAMAGE TO EXISTING TO REMAIN EQUIPMENT.
- 4. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL REVIEW WITH THE OWNER ALL MATERIALS TO BE REMOVED. SHOULD THE OWNER OPT TO KEEP ANY MATERIALS, THE CONTRACTOR SHALL REMOVE AND DELIVER THE PARTS TO THE OWNER ON THE SITE WHERE DIRECTED. OTHERWISE, ALL DEMOLISHED OR REMOVED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR, SHALL BE REMOVED FROM THE SITE, AND BE DISPOSED OF IN A LEGAL MANNER. 5. DEMOLITION SHALL INCLUDE REMOVAL OF ALL PARTS AND PIECES IN THEIR ENTIRETY BACK TO THE POINTS
- INDICATED OR IF NOT INDICATED BACK TO THEIR POINT OF SOURCE. WHERE CONDITIONS PROHIBIT TOTAL REMOVAL OF THE WORK. THE REMAINING PORTION SHALL BE CUT FLUSH WITH THE SURROUNDING SURFACE (CAPPED OR TERMINATED AS NOTED) BE REFINISHED IN AN APPROVED MANNER.
- 6. MAINTAIN EXISTING UTILITIES INDICATED OR WHERE REQUIRED TO REMAIN, KEEP IN SERVICE, AND PROTECT AGAINST DAMAGE DURING DEMOLITION OPERATIONS. DO NOT INTERRUPT EXISTING UTILITIES SERVING OCCUPIED OR USED FACILITIES. EXCEPT WHEN SCHEDULED WITH THE OWNER.
- 7. DO NOT REMOVE EXISTING STRUCTURAL WORK. DO NOT REMOVE OPERATIONAL ELEMENTS AND SAFETY-RELATED COMPONENTS IN A MANNER RESULTING IN A REDUCTION OF CAPACITIES TO PERFORM IN THE MANNER INTENDED OR RESULTING IN DECREASED OPERATIONAL LIFE, INCREASED MAINTENANCE, OR DECREASED
- . REMOVALS, DISCONNECTIONS, AND RELOCATIONS SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE INVOLVED AND SHALL BE EMPLOYED BY A CONTRACTOR LICENSED IN THE TRADE INVOLVED. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ACCEPTED TRADE PRACTICES. 9. PROVIDE ADEQUATE TEMPORARY SUPPORT FOR WORK TO REMAIN TO PREVENT FAILURE. DO NOT ENDANGER
- 10. PROTECTION: PROVIDE ADEQUATE PROTECTION WHERE REQUIRED FOR THE PRESENT BUILDING AND ITS CONTENTS. TEMPORARY DUSTPROOF BARRIERS AND BARRICADES SHALL BE ERECTED WHERE REQUIRED FOR PROTECTION OF PERSONNEL, PROTECTION FROM DUST AND DIRT, FOR SECURITY, FIRE AND WEATHER PROTECTIVE REASONS. CONTRACTOR SHALL TAKE EVERY PRECAUTION AGAINST FIRE BY EMPLOYING FIRE DEPARTMENT TYPE HOSES AND PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY OSHA AND/OR THE OWNER'S SURANCE UNDERWRITER. COMPLY WITH GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- 11. ALL EXISTING EQUIPMENT REQUIRED TO BE REUSED SHALL BE CLEANED. IN ALL INSTANCES WHERE CONTRACTOR FINDS THAT EXISTING EQUIPMENT IS DEFECTIVE TO THE POINT WHERE IT CANNOT BE PROPERLY RESTORED AND WILL NOT OPERATE PROPERLY, THEY SHALL REPORT THE SPECIFIC INSTRUMENTS OR EQUIPMENT TO THE DESIGN PROFESSIONAL FOR DIRECTIONS.
- 12. EXTREME CARE SHALL BE EXERCISED FOR ALL EXISTING ITEMS THAT ARE TO REMAIN IN SERVICE UNTIL NEW ITEMS ARE INSTALLED FOR THE SAME SERVICE. ALL SHUTDOWNS OF ANY SYSTEM SHALL BE COORDINATED WITH THE OWNER.
- 13. ALL WORK TO BE DEMOLISHED REQUIRING DISRUPTION TO EXISTING AREAS ON FLOORS ABOVE BELOW, OR ADJACENT TO THE CONTRACT AREA; EACH CONTRACTOR SHALL SCHEDULE EACH DISRUPTION WITH THE OWNER. WHERE DEMOLITION WORK WILL REQUIRE TEMPORARY REMOVAL OF EXISTING PIPING WHICH ARE TO REMAIN, THE OWNER SHALL DIRECT AND DEFINE PROCEDURES. NO WORK SHALL PROCEED WITHOUT OWNER'S
- 14. REMOVE AND REROUTE BY OFFSETTING AS REQUIRED ANY EXISTING PIPING RISERS, STACKS OR LATERAL PIPING TO REMAIN IN SERVICE AND BECOME EXPOSED DUE TO NEW FLOOR PLAN AND OR NEW CEILING LAYOUT.
- 15. WHERE DRAWINGS INDICATE THE DEMOLITION OF PIPING OR DUCTWORK, THE CONTRACTOR SHALL REMOVE ALL ABANDONED HANGERS AND SUPPORTS. PIPING AND/OR DUCTWORK SHALL BE CAPPED AND INSULATED WITH MATERIALS TO MATCH EXISTING.
- 16. THE CONTRACTOR SHALL REPAIR ALL PENETRATIONS OF ROOFS, WALLS AND FLOORS TO MATCH EXISTING OF WHICH ITEMS HAVE BEEN DEMOLISHED.
- 17. UNLESS NOTED OTHERWISE, THE CONTRACTOR SHALL REMOVE EQUIPMENT PADS/CURBS/ SUPPORTS FOR ALL FLOOR OR ROOF MOUNTED EQUIPMENT INDICATED TO BE REMOVED. REPAIR FLOORS AND ROOFS AS REQUIRED TO MATCH EXISTING. REMOVE HANGERS AND SUPPORTS FOR ALL SUSPENDED EQUIPMENT INDICATED TO BE REMOVED
- 18. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, THE CONTRACTOR SHALL REMOVE ALL DISCONNECTS, DRIVES, STARTERS, CONTACTORS, SWITCHES, CONTROLLERS, SENSORS, ACTUATORS, ETC. REMOVE EQUIPMENT POWER FEED WIRING AND CONDUIT COMPLETE BACK TO DISTRIBUTION PANEL. ALL CONTROLS CONDUIT, WIRING AND/OR PNEUMATIC TUBING SHALL BE REMOVED BACK TO A REASONABLE EXTENT.

GENERAL CONSTRUCTION NOTES

- ALL OF THE FOLLOWING NOTES ARE GENERAL AND SOME MAY NOT APPLY TO THIS SPECIFIC PROJECT. 1. THE CONTRACTOR SHALL SUBMIT DRAWINGS SHOWING COORDINATION OF ALL TRADES, INCLUDING, BUT NOT LIMITED TO: DUCTS, PIPING, CONDUIT, EQUIPMENT, FIXTURES, STRUCTURE, FRAMING AND ANY ITEMS PENETRATING THE CEILING AND ROOF. THE CONTRACTOR SHALL INCUR ALL EXPENSES RELATED TO A LACK O COORDINATION BETWEEN TRADES.
- 2. ALL MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND SHOW DESIGN INTENT ONLY. THE EXACT LOCATION AND SIZES OF ALL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR AND COORDINATED WITH THE DESIGN OFESSIONAL AND ALL OTHER TRADES. DUCTWORK AND PIPING SHALL BE SET UP AND DOWN AND OFFSET AS REQUIRED TO SUIT FIELD CONDITIONS.
- 3. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS RELATED TO THIS PROJECT. THERE MAY BE WORK REQUIRED OF THIS TRADE SHOWN ON OTHER TRADE DRAWINGS.
- 4. THE CONTRACTOR TO PROVIDE A FUNCTIONAL INSTALLATION AS INTENDED BY THE DESIGN PROFESSIONAL. 5. MECHANICAL CONTRACTOR SHALL ENSURE MINIMUM NEC CLEARANCES IN FRONT OF ALL ELECTRICAL PANELS
- AND GEAR.
- 6. ALL FLOOR MOUNTED HVAC EQUIPMENT SHALL BE INSTALLED ON 4" HIGH REINFORCED CONCRETE HOUSEKEEPING PADS PROVIDED BY THE G.C. UNLESS NOTED OTHERWISE. HOUSEKEEPING PAD SHALL BE MINIMUM 4" LARGER THAN EQUIPMENT ON ALL SIDES. UNLESS OTHERWISE REQUIRED BY EQUIPMENT MANUFACTURER.
- 7. MECHANICAL SCHEDULES DO NOT NECESSARILY INDICATE EQUIPMENT QUANTITIES. 8. MECHANICAL CONTRACTOR SHALL PROVIDE FLEXIBLE CONNECTIONS AT ALL DUCTWORK-TO-EQUIPMENT CONNECTIONS.
- 9. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-O" FROM POINT OF RIGID DUCT CONNECTION TO AIR TERMINAL. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEVIATIONS FROM THE CONTRACT DRAWINGS THAT ARE NOT APPROVED BY THE DESIGN PROFESSIONAL.
- 10. MECHANICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL MOUNTED THERMOSTATS AND HUMIDISTATS WITH THE DESIGN PROFESSIONAL AND/OR OWNER.
- 11. MECHANICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION, MOUNTING STYLE AND FINISH OF ALL GRILLES, REGISTERS, DIFFUSERS, ETC. WITH THE DESIGN PROFESSIONAL.
- 12. ALL SUSPENDED AND FLOOR MOUNTED EQUIPMENT SHALL BE FURNISHED WITH VIBRATION ISOLATION AS PER MECHANICAL SPECIFICATIONS.
- 13. DUCT MOUNTED SMOKE DETECTORS ARE FURNISHED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING FROM THE SMOKE DETECTOR'S ON-BOARD RELAY(S) TO THE EQUIPMENT CONTROLLERS/STARTERS/VFD'S FOR SHUTTING DOWN THE ASSOCIATED MECHANICAL EQUIPMENT AND ACTIVATION OF REQUIRED FIRE/SMOKE DAMPERS. THE MOKE DETECTOR SHALL BE TIED INTO THE FIRE ALARM SYSTEM AND REMOTE TEST STATIONS BY THE ELECTRICAL CONTRACTOR. THE DUCT DETECTOR SHALL BE SUPPLIED WITH THE APPROPRIATE SAMPLING TUBES O FIT THE INSTALLATION. COORDINATE INSTALL OF SMOKE DETECTORS WITH ELECTRICAL CONTRACTOR.
- 14. DUCT SIZES SHOWN ON PLANS REFER TO CLEAR INSIDE DIMENSIONS (CID) UNLESS NOTED OTHERWISE.
- 15. DIELECTRIC COUPLINGS SHALL BE USED WHERE DISSIMILAR METALS ARE JOINED.
- RETURNS/SUPPLIES, DUCTWORK, AIR TERMINALS, ETC.
- 17. PROVIDE ALL DUCTWORK AND PIPING TRANSITIONS/REDUCERS TO EQUIPMENT, COILS, ETC. AS REQUIRED THAT MAY NOT NECESSARILY APPEAR ON PLANS.
- 18. MECHANICAL CONTRACTOR SHALL INSULATE ALL DUCTWORK AND PIPING PER MECHANICAL SPECIFICATIONS, UNLESS OTHERWISE NOTED ON PLANS.
- 19. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SLAB OPENINGS, WALL OPENINGS, ROOF PENETRATIONS, BEAM PENETRATIONS AND CORING AS IT RELATES TO HIS WORK. CONTRACTOR SHALL SUBMIT SIZE AND LOCATION TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL.
- 20. ALL DUCTWORK AND PIPING PENETRATIONS OF FIRE RATED PARTITIONS, BARRIERS OR WALLS SHALL BE PROTECTED PER THE LATEST INTERNATIONAL MECHANICAL CODE (IMC). PROVIDE FIRE RATED SLEEVES AND SEALANT AS REQUIRED FOR ALL FIRE RATED PIPING PENETRATIONS. PROVIDE "UL" LISTED FIRE DAMPERS FOR ALL DUCTWORK PENETRATIONS OF FIRE RATED SURFACES AS SHOWN ON DRAWINGS. PROVIDE DUCTWORK SLEEVING AND CAULKING PER THE LATEST IMC AT FIRE RATED PENETRATIONS NOT PROTECTED BY A FIRE
- 21. PROVIDE P-TRAP OF SUFFICIENT SEAL DEPTH TO OVERCOME UNIT STATIC PRESSURE ON ALL AC CONDENSATE CONNECTIONS. EXTEND AC CONDENSATE PIPING FROM UNIT TO SPILL DIRECTLY INTO NEAREST HUB DRAIN, FLOOR DRAIN, AND/OR EXISTING ROOF DRAIN. SEE SPECIFICATIONS AND AC CONDENSATE DRAIN DETAIL. VERIFY LOCATION IN FIELD.
- 22. CONTRACTOR IS RESPONSIBLE FOR MATCHING PRESSURE RATINGS FOR ALL FLANGES, JOINTS, VALVES, EQUIPMENT AND ACCESSORIES REQUIRED FOR PIPING SYSTEMS TO THE PRESSURE CLASS OF THE EXISTING BUILDING SYSTEM.
- 23. PROVIDE LABELING OF ALL DEVICES AND EQUIPMENT.

ROUND DUCTWORK.

- 24. PROVIDE ACCESS PANELS FOR ALL EQUIPMENT LOCATED ABOVE HARD CEILINGS. 25. PROVIDE LINTELS AT ALL RECTANGULAR PENETRATIONS IN MASONRY BY DUCTWORK. PROVIDE SLEEVES FOR
- 26. ALL HOT WORK SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 51B.

- ALL OF THE FOLLOWING NOTES ARE GENERAL AND SOME MAY NOT APPLY TO THIS SPECIFIC PROJECT.

- 16. PROVIDE INSULATED BLANK-OFF/CAPS PANELS FOR ALL UNUSED PORTIONS OF LOUVERS, EQUIPMENT

GENERAL SPECIFICATIONS

REFER TO GENERAL NOTES, GENERAL DEMOLITION NOTES AND GENERAL CONSTRUCTION NOTES FOR ADDITIONAL REQUIREMENTS. 2. <u>SCOPE OF WORK</u>

- A. THE SCOPE OF WORK TO BE PERFORMED UNDER THIS CONTRACT SHALL CONSIST OF FURNISHING ALL LABOR AND FURNISHING AND INSTALLING ALL MATERIAL, EQUIPMENT, AND APPURTENANCES FOR THE MECHANICAL WORK ASSOCIATED WITH THE REVISIONS AS INDICATED ON THE DRAWINGS & SPECIFIED
- HEREIN. INCLUDING: DUCTWORK VAV BOXES
- AIR TERMINAL DEVICES FAN COIL UNIT CHILLED WATER PIPING
- AC CONDENSATE PIPING INSULATION
- AUTOMATIC TEMPERATURE CONTROLS BALANCING OF AIR SYSTEMS
- B. THE CONTRACTOR SHALL SUBMIT A PROPOSED SEQUENCE OF CONSTRUCTION PRIOR TO PERFORMING ANY WORK. THE SEQUENCE OF CONSTRUCTION WILL BE REVIEWED BY THE OWNER FOR THEIR COMMENTS. 3. <u>CONCURRENT WORK BY THE OWNER</u>
- A. THE OWNER RESERVES THE RIGHT TO HAVE OTHER CONTRACTORS PERFORM WORK IN OTHER AREAS OF THE COMPLEX SIMULTANEOUSLY WHILE THIS CONTRACTOR IS ENGAGED TO DO WORK. THIS CONTRACTOR AND THEIR PERSONNEL SHALL COOPERATE AND COORDINATE THE WORK TO BE PERFORMED WITH ALL OTHER CONTRACTORS WITH WHO THEY COMES IN CONTACT. IN NO WAY SHALL THIS CONTRACTOR INTERFERE WITH THE PROGRESS OF THE WORK.
- 4. DEFINITIONS
- THE WORD 'PROVIDE' WHEN USED IN THE SPECIFICATION AND DRAWINGS SHALL MEAN "FURNISH AND INSTALL". 5. VISIT THE SITE
- A. VISIT THE SITE AND VERIFY ALL CONDITIONS BEFORE SUBMITTING A PROPOSAL FOR THE WORK.
- B. THE CONTRACTOR SHALL CAREFULLY EXAMINE ALL DRAWINGS, SPECIFICATIONS, CONTRACT DOCUMENTS, AND THE SITE BEFORE SUBMITTING PROPOSAL FOR THIS WORK. THEY SHALL COMPARE THE SITE WITH DRAWINGS. SPECIFICATIONS, AND CONTRACT DOCUMENTS FOR ALL OTHER BRANCHES OF THE WORK AND INCLUDE IN THEIR BID ALL NECESSARY WORK TO COMPLETE THE INSTALLATION OF THE SYSTEMS DESCRIBED HEREIN.
- 6. <u>COORDINATION</u>
- A. THE SCHEDULING OF ANY WORK AFFECTING EXISTING INSTALLATIONS OR FACILITIES, SHALL BE COORDINATED WITH THE OWNERS' REPRESENTATIVE. SHUT-DOWN OF UTILITIES OR EQUIPMENT AFFECTING OPERATIONS OF ANY EXISTING PART OF THE BUILDING WILL NOT BE PERMITTED EXCEPT AS PROVIDED BELOW. ANY PREMIUM TIME OR ADDITIONAL COST TO COMPLY SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND CONSIDERED TO BE INCLUDED IN THE BID. SHUT-DOWN OF ANY OPERATING FACILITY OR SERVICES INCLUDING PLUMBING, REFRIGERATION, HEATING, AIR CONDITIONING, ELECTRICAL, OR OTHER NSTALLATIONS SHALL BE PRECEDED BY A WRITTEN REQUEST AT LEAST SEVEN CALENDAR DAYS PRIOR TO THE SHUT-DOWN
- B. ALL REQUIRED SHUT-DOWNS UNLESS OTHERWISE INSTRUCTED, SHALL BE DURING NIGHTS, HOLIDAYS, OR ON WEEKENDS. ANY TESTS WHICH ARE TO BE CARRIED OUT ON THE BUILDING FACILITIES AND ANY CONNECTIONS TO BE MADE IN THE BUILDING FACILITY WHICH WOULD INVOLVE A CHANGE IN THE SYSTEM OR LIABILITY TO THE SYSTEM OR INVOLVE A SHUT—DOWN IN LIGHT OR POWER. THE CONTRACTOR SHALL NOT PROCEED WITH SUCH OPERATIONS UNTIL HE HAS RECEIVED WRITTEN PERMISSION FROM THE OWNER.
- C. FABRICATE AND PREFAB AS MUCH OF THE NEW WORK AS POSSIBLE IN ORDER THAT ANY REQUIRED SHUT-DOWNS WILL BE KEPT AT A MINIMUM.
- 7. <u>GUARANTEE</u> GUARANTEE ALL MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER.
- 8. SHOP DRAWINGS
- SUBMIT TO OWNER, FOR APPROVAL, SHOP DRAWINGS OF ALL EQUIPMENT, MATERIALS, AND ACCESSORIES, INCLUDING
- SHEET METAL DUCTWORK VAV BOXES
- AIR TERMINALS DEVICES FAN COIL UNIT
- CHILLED WATER AND CONDENSATE PIPING MATERIALS AND VALVES AC CONDENSATE PUMP INSULATION
- AUTOMATIC TEMPERATURE CONTROLS BALANCING REPORT
- 9. <u>AS-BUILT DRAWINGS</u>
- THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS OF THE WORK PERFORMED. AT THE COMPLETION OF THE INSTALLATION, EACH TRADE WILL INCORPORATE ALL FIELD CHANGES ON THE AUTOCAD DATA BASE AND SUBMIT THREE (3) SETS OF PLOTTED PRINTS & A DATA DISK FOR RECORD PURPOSES. 10. PROTECTION
- A. CONTRACTOR SHALL PROPERLY PROTECT ALL WORK AND EQUIPMENT TO PREVENT OBSTRUCTION, DAMAGE. OR LOSS. ALL CONDUIT OPENINGS SHALL BE CLOSED WITH CAPS OR PLUGS DURING INSTALLATION. ALL EQUIPMENT SHALL BE TIGHTLY COVERED WITH APPROVED MATERIAL AND PROTECTED AGAINST DIRT, WATER OR MECHANICAL INJURY. AT FINAL COMPLETION, ALL WORK SHALL BE THOROUGHLY CLEANED AND DELIVERED IN PERFECT. UNBLEMISHED CONDITION.
- B. PROVIDE BARRICADES AND LIGHTS (IF REQUIRED) AROUND ALL WORK AREAS TO PROTECT PEDESTRIAN TRAFFIC AND TO PREVENT UNAUTHORIZED PEDESTRIAN ACCESS. PROTECTION SHALL MEET THE REQUIREMENTS OF THE LOCAL AND STATE REGULATIONS AND GOVERNMENT BODIES.
- C. ALL DAMAGE TO THE BUILDINGS, THEIR MECHANICAL AND ELECTRICAL SYSTEMS OR SURROUNDINGS, RESULTING FROM CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT THE WORK, SHALL BE REPAIRED OR REPLACED AS DIRECTED, AT NO ADDITIONAL COST OWNER, INCLUDING ANY WORK DAMAGED IN ORDER TO MAKE GOOD SUCH DEFECTS.
- 11. DEMOLITION REFER TO GENERAL DEMOLITION NOTES
- 12. <u>RIGGING</u> A. THE CONTRACTOR SHALL PERFORM ALL RIGGING REQUIRED TO COMPLETE ALL WORK UNDER THIS CONTRACT.
- B. THE CONTRACTOR SHALL PROVIDE REQUIRED TEMPORARY SUPPORTS, EQUIPMENT, ETC. REQUIRED FOR
- THE RIGGING OPERATIONS AND REMOVE SAME AFTER THE RIGGING IS COMPLETED. C. DISCONNECT AND REMOVE ANY PIPING, EQUIPMENT, LIGHT FIXTURES, ETC. REQUIRED TO INSTALL THE NEW WORK AND REINSTALL SAME AFTER THE WORK IS COMPLETED.
- D. PROTECT ALL FINISHED FLOOR SURFACES DURING THE RIGGING OPERATIONS.
- 13. CUTTING AND PATCHING A. THE CONTRACTOR SHALL PERFORM ANY CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF THE WORK.
- B. ALL HOLES FOR THE NEW PIPING AND CONDUIT SHALL BE CORE BORED.
- C. ALL PATCHING SHALL BE DONE TO MATCH THE ADJOINING SURFACES IN MATERIALS, TEXTURE, AND
- D. THE CONTRACTOR SHALL PATCH AND SEAL ALL WALLS, FLOORS, AND CEILING (DRYWALL, LAY-IN, ETC.) WHERE EXISTING ITEMS SUCH AS PIPING, HANGERS, SUPPORTS, ETC. ARE REMOVED UNDER THIS
- E. CONTRACTOR SHALL LEAVE THEIR WORK AT ALL TIMES IN A SAFE AND CLEAN CONDITION READY FOR OPERATION. 14. <u>SLEEVES</u>
- A. THE CONTRACTOR SHALL PROVIDE SLEEVES FOR ALL NEW PIPING THROUGH WALLS AND FLOORS.
- B. PIPE SLEEVES SHALL BE SCHEDULE 40 STEEL PIPE. SLEEVES SHALL BE ONE INCH (1") LARGER THAN THE DIAMETER OF THE PIPING OR INSULATED PIPING.
- C. SLEEVES THROUGH FLOORS SHALL EXTEND 1" ABOVE THE FINISHED FLOOR SURFACE.
- 15. FIRE RATED SEALANT
- A. UNLESS OTHERWISE INDICATED, THE CONTRACTOR SHALL IN ALL LOCATIONS NEW AND EXISTING CAULK THE SPACE BETWEEN THE SLEEVES AND THE PIPING (INSULATED OR NON-INSULATED) WITH UL APPROVED FIRESTOP SEALANTS AS MANUFACTURED BY HILTI CORPORATION, JOHNS MANVILLE, 3M, OR STI (SPECIFIED TECHNOLOGIES, INC.). SEALANT SHALL BE INTUMESCENT AND TESTED FOR USE IN UL TESTED SYSTEMS FOR FIRE AND SMOKE.
- B. ALL PRODUCTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

SUBMIT CAULK MANUFACTURER'S PRODUCT DATA FOR APPROVAL. 16. <u>BOLTS</u>

- BOLT-STUDS AND HEX-NUTS SHALL BE MADE OF CARBON STEEL BOLTING ASTM A-325 17. WELDING
- STANDARD PRACTICES ESTABLISHED BY THE AMERICAN WELDING SOCIETY.
- PROCEDURE AND FOR 2 HOURS AFTER END OF PROCEDURE.
- 18. MISCELLANEOUS STEEL WORK SUPPORTS FOR PIPING, CLOSED CIRCUIT COOLER, ETC.
- 19. RESTRICTIONS ON EARLY USE OF HVAC EQUIPMENT
- DEHUMIDIFYING THE BUILDING WHILE UNDER CONSTRUCTION. B. SHOULD A CONTRACTOR CHOOSE TO USE ANY COMPONENT OF THE PERMANENT HVAC SYSTEM (I.E.
- RATINGS AS SCHEDULED.
- C. SHOULD THE EARLY USE OF EQUIPMENT RESULT IN MANUFACTURER'S WARRANTY BEING VOID. THE
- OPERATION OF THE EQUIPMENT.

CONTRACTOR

- 21. IDENTIFICATION
- CODE STANDARDS FOR THE IDENTIFICATION OF SYSTEMS.
- CHARACTERISTICS (I.E. PRESSURE AND/OR TEMPERATURE).

LABELS, TEMPORARY COVERS, ETC.

22. CLEANING AND FINAL CLEANUP

AS DIRECTED

FURNISHED, OMITTING DUPLICATES.

DUCTS, CONDUITS, AND MANHOLES.

BOLT STUDS AND NUTS SHALL BE USED FOR ALL FLANGES AND FOR FLANGED EQUIPMENT CONNECTIONS.

A. ALL WELDING, SHOP OR FIELD, SHALL BE DONE BY A CERTIFIED LICENSED WELDER FOLLOWING B. DURING ALL FIELD WELDING A FIRE WATCH SHALL BE MAINTAINED DURING THE ENTIRE WELDING

A. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MISCELLANEOUS STEEL REQUIRED FOR THE INSTALLATION OF THE WORK UNDER THIS CONTRACT. WORK SHALL INCLUDE BUT NOT BE LIMITED TO B. UNLESS OTHERWISE INDICATED, ALL STRUCTURAL STEEL SHALL BE ASTM-A36 WITH HOT DIPPED GALVANIZED FINISH. WELDS SHALL BE FINISHED WITH TWO (2) COATS OF ZINC RICH PAINT.

A. THE HVAC EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL NOT BE OPERATED PRIOR TO THE COMPLETION OF CONSTRUCTION OF THE BUILDING FOR REASONS OTHER THAN TESTING AND BALANCING OF THE SYSTEMS, UNLESS SPECIFICALLY DIRECTED AND/OR APPROVED BY THE OWNER. THIS SPECIFICALLY PROHIBITS USE OF PERMANENT EQUIPMENT FOR THE PURPOSES OF VENTILATING, HEATING AND

CONDENSING UNITS, PUMPS, AIR HANDLERS. AIR CONDITIONERS. ETC.) FOR PURPOSES OTHER THAN STATED ABOVE, THEY SHALL ASSUME FULL RESPONSIBILITY FOR REPLACING OR REPAIRING ANY FOURPMENT MATERIAL OR FINISHES. DAMAGED AS A RESULT OF THE USE AND PAY ALL COSTS ASSOCIATED WITH THE ACTION REQUIRED TO MAKE THE EQUIPMENT "LIKE NEW" CONDITIONS AT THE END OF THE PROJECT. THIS INCLUDES CLEANING OF DUCTS AND COILS, PROVIDE MERV 9 FILTERS IN THE AIR HANDLING EQUIPMENT DURING OPERATION. REPLACEMENT OF MOTORS. EXTENSION OF WARRANTIES. PAYMENT OF DESIGN PROFESSIONAL FEES REQUIRED TO INVESTIGATE AND ENFORCE THIS REQUIREMENT AND THE CORRECTION OF ANY OTHER DETRIMENTAL CONDITIONS WHICH IS DETERMINED BY THE DESIGN PROFESSIONALS TO BE RELATED TO THE EARLY USE OF THE EQUIPMENT. PROVIDE FILTERS AT UNIT TURNOVER WITH MERV

CONTRACTOR SHALL ASSUME THE COST OF FURNISHING AN EQUIVALENT WARRANTY TO THE OWNER. D. SHOULD FAN MOTORS BE OPERATED DURING CONSTRUCTION, ANY MOTOR DETERMINED BY OWNER OR DESIGN PROFESSIONAL TO BE EXPOSED TO AIRBORNE CONSTRUCTION DUST, SUCH AS GENERATED BY DRYWALL SANDING, SHALL BE INSPECTED BY AN INDEPENDENT 3RD PARTY FOR DAMAGE. THE COSTS OF ALL REQUIRED CORRECTIVE ACTIONS SHALL BE BORNE BY THE CONTRACTOR RESPONSIBLE FOR THE

20. ELECTRICAL TECHNICAL PROVISIONS FOR MECHANICAL WORK

ALL ELECTRICAL WORK ASSOCIATED WITH THE PROJECT SHALL BE BY ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL COORDINATE REQUIREMENTS AND SCHEDULE WITH THE ELECTRICAL

A. ALL PIPING SYSTEMS SHALL BE LABELED TO COMPLY WITH OSHA AND ANSI/ASME A13.1-2007 COLOR

B. THE MARKING SYSTEM SHALL IDENTIFY THE CONTENTS, SIZE, DIRECTION OF FLOW, AND OPERATING

C. ALL VALVES AND CONTROLS SHALL BE LABELED USING PLASTIC I.D. TAGS SECURELY CONNECTED TO THE SPECIFIC ITEM USING BRASS CHAIN OR "S" HOOKS. THE CONTRACTOR SHALL PROVIDE A LIST OF EACH TAGGED ITEM AND ITS FUNCTION AND A VALVE CHART IN THE MAIN MECHANICAL ROOM.

D. ALL EQUIPMENT MUST BE IDENTIFIED USING PHENOLIC NAMEPLATES AND LABELED IN ACCORDANCE WITH THE NOMENCLATURE USED ON THE DRAWINGS AND COMPATIBLE WITH THE MIMS SYSTEM. E. LABELS SHALL BE PUNCHED AND ATTACHED TO EQUIPMENT WITH MECHANICAL FASTENERS

A. CONTRACTOR SHALL, AT ALL TIMES, KEEP THE PREMISES FREE OF ALL WASTE OR SURPLUS MATERIALS, RUBBISH, AND DEBRIS WHICH IS CAUSED BY THEIR EMPLOYEES OR RESULTING FROM THEIR WORK. ALL AREAS SHALL BE BROOM SWEPT CLEAN AT THE END OF EACH WORK DAY.

B. AFTER ALL EQUIPMENT HAS BEEN INSTALLED, CONTRACTOR SHALL REMOVE ALL STICKERS, RUST STAINS,

C. ALL FOREIGN MATTER SHALL BE BLOWN OUT OR FLUSHED OUT OF ALL DEVICES, CONDUITS, ETC.

D. IDENTIFICATION PLATES ON ALL EQUIPMENT SHALL BE FREE OF PAINT AND SHALL BE POLISHED.

E. CONTRACTOR SHALL CLEAN ALL CONDUIT, TUBING, EQUIPMENT, ETC. AT THE COMPLETION OF THEIR CONTRACT, AND ALL WORK SHALL BE TURNED OVER TO THE OWNER CLEAN AND IN PERFECT CONDITION, READY FOR SATISFACTORY SERVICE.

F. DURING THE PROGRESS OF THE WORK, CONTRACTOR SHALL REMOVE ALL OF THEIR RUBBISH, CRATING AND PACKING MATERIALS, METAL SCRAP, AND ANY AND ALL DEBRIS FROM THE BUILDING, NOT ALLOWING IT TO ACCUMULATE AND CAUSE FIRE AND ACCIDENT HAZARDS.

23. INSTRUCTIONS TO OWNER. OPERATING MANUALS. CATALOGS

A. THE CONTRACTOR SHALL FURNISH THREE SETS OF PRINTED OPERATING INSTRUCTIONS, MAINTENANCE INSTRUCTIONS, MAINTENANCE SERVICE SCHEDULES AND WIRING DIAGRAMS OF ALL CONTROL SYSTEMS. MOUNT AN ADDITIONAL COMPLETE SET OF OPERATING INSTRUCTIONS AND MAINTENANCE SERVICE SCHEDULES IN A METAL FRAME WITH A GLASS FRONT AND LOCATE IT ON THE WALL NEAR THE EQUIPMENT

B. THREE COPIES OF MANUFACTURER'S SPARE PARTS LIST COVERING EACH ITEM OF EQUIPMENT SHALL BE

C. THE CONTRACTOR SHALL FURNISH THREE SETS OF BINDERS INCLUDING ALL CATALOG CUTS AND SHOL DRAWINGS OF EQUIPMENT INSTALLED. ALL SHOP DRAWINGS SHALL BE AS APPROVED BY THE ENGINEER. IN ADDITION, THREE SETS OF RECORD DRAWINGS SHALL BE FURNISHED SHOWING ALL WORK AS ACTUALLY INSTALLED WITH DIMENSIONS FROM FIXED LOCATIONS INCLUDING ANY UNDERGROUND SITE WORK, PIPES,

D. THE CONTRACTOR SHALL FURNISH ONE SET OF ALL OF THE ABOVE IN ELECTRONIC FORMAT.

E. THE CONTRACTOR SHALL GIVE INSTRUCTIONS TO THE OWNER'S PERSONNEL WHO WILL OPERATE THE EQUIPMENT. SUCH INSTRUCTION TO COVER A PERIOD OF NOT LESS THAN EIGHT (8) HOURS. EQUIPMENT MANUFACTURER'S REPRESENTATIVES SHALL BE PRESENT DURING THE INSTRUCTION PERIOD. ADDITIONAL TIME, IF REQUIRED, SHALL BE SPENT TO FULLY PREPARE THE OWNER TO OPERATE AND MAINTAIN THI MECHANICAL AND ELECTRICAL SYSTEMS. INSTRUCTION DAYS ARE TO BE SCHEDULED BY THE ENGINEER.

CODES AND STANDARDS

COMM	COMMONWEALTH OF PA - DEPT. OF LABOR & INDUSTRY - UNIFORM CONSTRUCTION CODE		
2018	INTERNATIONAL BUILDING CODE WITH AMENDMENTS		
2018	INTERNATIONAL PLUMBING CODE WITH AMENDMENTS		
2018	INTERNATIONAL FUEL GAS CODE		
2018	INTERNATIONAL MECHANICAL CODE		
2017	NATIONAL ELECTRICAL CODE - NFPA 70		
2018	INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS		
2018	INTERNATIONAL EXISTING BUILDING CODE WITH AMENDMENTS		
2018	INTERNATIONAL FIRE CODE (IBC 2018 CHAPTER 35, REFERENCE TO IFC.)		
2021	ACCESSIBLE & USABLE BLDS & FACILITIES - IBC - CHAPTER 11 / A117.1		

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DEMOLITION NOTES

1 REMOVE EXISTING VAV AND ASSOCIATED APPURTENANCES. 2 REMOVE DUCTWORK, INSULATION, AND ASSOCIATED ACCESSORIES BACK TO POINT INDICATED.

3 REMOVE EXISTING RETURN GRILLE.





CONSTRUCTION NOTES COORDINATE FINAL POINT OF CONNECTION WITH OWNER. PROVIDE DIRT LEG ON BOTTOM CONNECTIONS. SEE DETAIL. PROVIDE OVERFLOW PAN AND MOISTURE SENSOR. MOUNT OVERFLOW PAN A MINIMUM OF 6" AFF. PROVIDE MOUNTING BRACKETS AND MOUNT TO WALL. REFER TO DETAIL FOR PUMP REQUIREMENTS.

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HANGER SPACING												
PIPE SIZE	UP TO 1"	11⁄4"	1½"	2*	2½"	3"	4"	5"	6"	8"	10"	12"
MAX ALLOWABLE SPACING (COPPER)	5'	7'	8'	8'	9'	10'	12'	13'	14'	16'	18'	19'
MAX ALLOWABLE SPACING (STEEL)	7'	7'	9'	10'	11'	12'	14'	16'	17'	19'	22'	23'

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CHILL	ED WATE	R, COND	ENSER WATER,	, & HOT \	WATER	(40°F TH	ROUGH 2	210 ° F) VAI	_VE SC	HEDULE (2"	& SMALLER)
SERVICE	VALVE TYPE	RATING	BODY & BONNET	BALL & STEM	SEAT & PACKING SEALS	LATCH-LOCK LEVER & NUT	DISC HOLDER	DISC	PACKING	BRAND	MODEL OR FIGURE NO.
SHUTOFF	THREADED OR SOLDER ENDS BALL	600 PSI CWP, 150 PSI STEAM	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	77C-140 OR 240 (SIZE)-04-10-27 A SERIES
SHUTOFF-GAUGE & INSTRUMENT ISOLATION	THREADED OR SOLDER ENDS BALL	600 PSI CWP, 150 PSI STEAM	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	77C-140 OR 240 (SIZE)-04-10-27 A SERIES
SHUTOFF	PRESS END BALL	250 PSI CWP	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	77W-140(SIZE)-10 50 SERIES
SHUFOFF-GAUGE & INSTRUMENT ISOLATION	PRESS END BALL	250 PSI CWP	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	77W-140(SIZE)-10 50 SERIES
LOW POINT DRAIN & HIGH POINT VENT	THREADED OR SOLDER ENDS BALL	600 PSI CWP, 150 PSI STEAM	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	70-140 OR 240 (SIZE)-04-27-HC SERIES
LOW POINT DRAIN & HIGH POINT VENT	PRESS END BALL	250 PSI CWP	2-PIECE, BRONZE	316 SS EXTENDED STEM & BALL	RPTFE	STAINLESS STEEL	N/A	N/A	N/A	APOLLO VALVES	77W-140(SIZE)-04-10-HC SERIES
CHECK	THREADED SWING CHECK W/ THREADED CAP	ANSI CLASS 150	BRONZE ASTM B-62 B-61	N/A	N/A	N/A	BRONZE ASTM B-62 OR BRONZE ASTM B-16	PTFE (15% GLASS FILLED)	N/A	CRANE ENERGY FLOW SOLUTIONS	141TF
BALANCING	THREADED OR SOLDER ENDS MANUAL BALANCING	300 PSI	AMETAL	AMETAL	EPDM	N/A	HANDWHEEL	AMETAL	N/A	VICTAULIC TOUR & ANDERSON	TA/IMI SERIES 78K, SERIES 786, SERIES 787
CHILL	ED WATE	R, COND	ENSER WATER,	, & HOT \	WATER	(40°F TH	ROUGH 2	210°F) VAI	VE SC	HEDULE (2½"	& LARGER)
					SEAT &		HANDWHEEL &				

SERVICE	VALVE TYPE	RATING	BODY & BONNET	STEM	SEAT & PACKING SEALS	LATCH-LOCK LEVER & NUT	HANDWHEEL & WORMGEAR ACTUATOR	DISC OR BALL	PACKING	BRAND	MODEL OR FIGURE NO.
SHUTOFF	FLANGED FULL PORT BALL	ANSI CLASS 150	STAINLESS STEEL ASTM A351—CF8M OR A276 TYPE 316 (BODY/RETAINER/BALL)	ASTM A276 TYPE 316SS	RPTFE & PTFE	316SS LEVER FOR 2½" GALV STEEL PIPE HANDLE FOR 3"	GEAR OPERATOR AND HANDWHEEL FOR 4"	ASTM A276 TYPE 316	N/A	APOLLO VALVES	87A-20X-01-MG (FOR 4") SERIES
SHUTOFF	HIGH PERFORMANCE BUTTERFLY FLANGED	ANSI CLASS 150	ASTM A216 CARBON STEEL, LUG PATTERN	ASTM A564 TYPE 630 STAINLESS STEEL	VIRGIN TFE & TFE VEE	N/A	4" & LARGER	ASTM A351 CF8M STAINLESS STEEL	TFE VEE	CAMERON WKM MB-1 DYNACENTRIC	(SIZE)-B5-113-02-S02-11- WG



SEE NO	15° MAX		- 3xD MIN SEE NOTE 2	FLEX DUCT
	B *	TERMINAL UNIT		
SEE NOT		CONTROLS MIN CLEAR	<u>MINIMUM CL</u> 1. 24,120,; 2. 277,480	EARANCES: 240,208V - 36" V - 42"
TERMINAL	UNIT DUCT	DETAI		

N.I.S. DETAIL NOTES:

- <u>INSTALLATIONS NOT IN COMPLIANCE WITH DETAIL SHALL BE CORRECTED BY</u> <u>CONTRACTOR AT NO ADDITIONAL COST TO OWNER.</u>
 PROVIDE A MINIMUM OF 3 DUCT DIAMETERS STRAIGHT DUCT AT INLET OF TERMINAL UNIT PRIOR TO ANY FLEX, TRANSITIONS, ELBOWS OR TAPS.
 WHERE DUCT TO INLET OF TERMINAL UNIT IS INDICATED TO BE LARGER THAN TERMINAL UNIT INLET. PROVIDE FLEX TO MATCH SIZE OF LARGER DUCT WITH TRANSITION TO INLET AFTER FLEX. REFER TO SPECIFICATIONS FOR MAX LENGTH OF FLEX.
- OF FLEX. 4. PROVIDE ACCESS DOOR IN UNDERSIDE OF DUCT, DOWNSTREAM OF TERMINAL UNITS WITH HOT WATER REHEAT COILS. DO NOT PROVIDE ACCESS DOOR
- DOWNSTREAM OF TERMINAL UNITS WITH ELECTRIC REHEAT COILS. 5. PROVIDE 5xA (WIDTH OF THE TERMINAL UNIT) OF STRAIGHT DUCT PRIOR TO ANY TAKE-OFFS OR ELBOWS.



FAN COIL UNIT CONTROL DIAGRAM



AC CONDENSATE PUMP DIAGRAM N.T.S.

SEQUENCE OF CONTROL

COOLING MODE - ON AN INCREASE IN SPACE TEMPERATURE ABOVE 78 DEGREES (ADJUSTABLE), CHILLED WATER CONTROL VALVE, V-CH SHALL OPEN AND FAN SHALL START.

MONITOR THE SPACE TEMPERATURE THROUGH THE SIEMENS BUILDING AUTOMATION SYSTEM.

MONITOR THE STATUS OF THE MOISTURE SENSOR UNDER THE AC CONDENSATE PUMP. SIGNAL AN ALARM THROUGH THE BAS ON DETECTION OF MOISTURE.





SUPPLY AIR BOOT CONNECTION

NOTES: INNER LINER OF FLEX DUCT CONNECTIONS TO BE BANDED AND OUTER LAYER SEALED WITH TAPE (OR SECOND BAND).



VAV BOX, COOLING ONLY, NO REHEAT N.T.S.

VARIABLE AIR VOLUME BOX, SEQUENCE OF CONTROL

- A. GENERAL
- 1. VAV BOXES SHALL OPERATE THROUGH NEW DIRECT DIGITAL CONTROLS AND THE EXISTING BUILDING AUTOMATION SYSTEM. EACH NEW VAV BOX WILL HAVE A NEW SIEMENS DXR CONTROLLER AND WILL BE PART OF THE SIEMENS TOTAL ROOM AUTOMATION SYSTEM. THE BUILDING AUTOMATION SYSTEM WILL MONITOR AND CONTROL THIS EQUIPMENT. EQUIPMENT SCHEDULES AND SETPOINTS WILL BE PROGRAMMED AT THE BAS AND WILL BE ADJUSTABLE.
- 2. THE BUILDING AUTOMATION SYSTEM (BAS) WILL MONITOR AND CONTROL THE VAV BOXES. EQUIPMENT SCHEDULES (OCCUPIED AND UNOCCUPIED MODE) AND SETPOINTS WILL BE DETERMINED AND PROGRAMMED AT THE BAS AND WILL BE ADJUSTABLE.
- 3. SPACE TEMPERATURE SENSORS, T, WILL BE PROVIDED WHERE INDICATED AND/OR NOTED. ALL NEW VAV BOXES WILL HAVE NEW SPACE TEMPERATURE SENSORS, REMOVE EXISTING AND PROVIDE NEW IN SAME LOCATION AS EXISTING UNLESS OTHERWISE INDICATED.
- 4. SPACE TEMPERATURE SENSORS WILL NOT BE ADJUSTABLE AT THE SENSOR.
- 5. DUCT MOUNTED TEMPERATURE SENSOR, T-1 SHALL MONITOR THE SUPPLY AIR TEMPERATURE.
- B. OCCUPIED MODE VAV BOX COOLING ONLY
- 1. UPON A FALL IN SPACE TEMPERATURE BELOW SETPOINT, THE BOX DAMPER SHALL MODULATE CLOSED TO THE MINIMUM CFM SETPOINT.
- 2. UPON A RISE IN THE SPACE TEMPERATURE, THE BOX DAMPER SHALL MODULATE FROM MINIMUM TO THE MAXIMUM CFM SETTING AS NECESSARY TO MAINTAIN THE SPACE
- TEMPERATURE SETPOINT. 3. THE MINIMUM AND MAXIMUM CFM SETTINGS SHALL BE HAS SCHEDULED.

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DUCTWORK SPECIFICATIONS

- A. THE CONTRACTOR SHALL TAKE NOTE THAT DUE TO THE LIMITED SPACE AVAILABLE SURROUNDING CERTAIN AREAS OF WORK, CLOSE COORDINATION OF THE WORK IS AN ABSOLUTE NECESSITY. THE CONTRACTOR SHALL SUBMIT DOUBLE-LINE DETAILED SHOP DRAWINGS IN $3/8^{\circ} = 1'-0^{\circ}$ Scale. PROPERLY IDENTIFYING EACH DUCT SECTION IN THE SEQUENCE TO BE ASSEMBLED IN THE FIELD INDICATING ALL TURNS IN DIRECTION OR ELEVATION, CLEARANCES WITH PIPING, BUILDING STRUCTURE, EQUIPMENT SUPPORTS, LIGHT FIXTURES, ETC. SHOP DRAWINGS SHALL ALSO ACKNOWLEDGE PIPING AND PIPE INSULATION, DUCT UPPORTS, AND STANDING SEAMS OF DUCTWORK. WHERE DUCT SECTIONS CROSS STANDING SEAMS OR FLANGES OF OTHER DUCTWORK OR EXTERNAL REINFORCEMENTS, THEY SHALL BE COORDINATED IN A MANNER TO AVOID UNNECESSARILY LOWERING THE LEVEL OF NEW DUCTWORK TO A LEVEL UNACCEPTABLE TO THE PROFESSIONAL.
- B. THE CONTRACTOR SHALL SUBMIT SHOP STANDARDS TO THE PROFESSIONAL FOR REVIEW. SUBMITTAL SHALL INCLUDE SHEET METAL ACCESSORIES AND COMPONENTS AS SPECIFIED HEREIN.
- 2. SHEET METAL DUCTWORK

1. SUBMITTALS

- A. ALL SHEET METAL WORK SHALL BE CONSTRUCTED OF STANDARD GAUGES OF GALVANIZED STEEL OR STAINLESS STEEL SHEETS WITH BRACING, REINFORCEMENT AND CONSTRUCTION DETAILS IN ACCORDANCE WITH THE LATEST ASHRAE HANDBOOK AND SMACNA "HVAC DUCT CONSTRUCTION STANDARDS", LATEST
- B. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR THE SPECIFIC DUTY OF THE SYSTEM AND THE SPECIFIC DUCT PRESSURE CLASSIFICATION AS SCHEDULED FOR THE PROJECT. WHERE NO SPECIFIC DUCT PRESSURE CLASS DESIGNATIONS ARE PROVIDED BY THE DESIGNER THE 2" STATIC PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THESE STANDARDS REGARDLESS OF THE VELOCITY WITHIN THE
- C. ALL DUCTWORK SHALL BE SEALED PER SMACNA DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE MANUAL WITH A SEAL CLASS AND LEAKAGE CLASS AS SCHEDULED. SEALANTS SHALL BE SILICONE BASED. WATER BASED SEALANTS ARE NOT
- D. PROVIDE ALL DUCTWORK OFFSETS AS REQUIRED TO INSTALL DUCT SYSTEMS. WHERE DUCTWORK IS TO BE TIGHT TO STRUCTURE OR OTHER OBSTRUCTIONS, CONSTRUCT WITH FLAT SEAMS.
- E. DUCTWORK SHALL BE ADEQUATELY SUPPORTED BY RODS, BANDS OR OTHER METHODS APPROVED BY ENGINEER.
- ALL DUCTWORK DIMENSIONS ARE CLEAR AIR PASSAGE, UNLESS NOTED OTHERWISE.
- G. SPLITS SHALL BE PROPORTIONAL BY AIRFLOW.
- H. FOR CHAMFERED FITTINGS FROM RECTANGULAR DUCT TO ROUND BRANCH DUCTS, PROVIDE DUCTMATE HIGH EFFICIENCY TAKEOFFS, WITH SEALED JOINTS. PROVIDE TAPERED HIGH EFFICIENCY TAKEOFFS WHERE RECTANGULAR DUCT HEIGHT IS NOT SUFFICIENT FOR STANDARD HIGH EFFICIENCY TAKEOFFS. PROVIDE TAKEOFFS WITH DAMPERS WHERE INDICATED.
- UNLESS NOTED OTHERWISE, PROVIDE AIRFOIL BLADE TURNING VANES ON ALL QUARE ELBOWS. VANES AND VANE SUPPORTS SHALL BE INSTALLED WITH LEADING AND TRAILING EDGES PARALLEL TO DUCT SIDES. VANES AND SUPPORTS SHALL BE H-E-P, TURNING VANES AND RAILS BY AERO/DYNE COMPANY OR EQUAL BY DUCTMATE L.C. WARD, OR APPROVED EQUAL. NO MITERED ELBOWS WITHOUT TURNING VANES SHALL BE ALLOWED UNLESS NOTED ON THE DRAWINGS.
- EXCEPT WHERE SQUARE ELBOWS ARE INDICATED ON THE DRAWINGS, BENDS IN LOW AND MEDIUM PRESSURE DUCTS SHALL BE MADE WITH A CENTER LINE RADIUS NOT LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT. IF. BECAUSE OF STRUCTURAL OF OTHER LIMITATIONS. THE CENTER LINE RADIUS MUST BE LESS THAN 1-1/2 THE DUCT WIDTH, INTERIOR GUIDE VANES SHALL BE PROVIDED. ALL SQUARE ELBOWS SHALL BE CONSTRUCTED WITH LOW LOSS, SINGLE THICKNESS EXTENDED TRAILING EDGE INTERIOR
- WHERE DUCTS OR FLUES ARE REDUCED OR INCREASED IN SIZE, THE SLOPE OF THE TAPERED SIDE SHALL NOT EXCEED 1 IN 5 AND MINIMUM LENGTH SHALL BE NOT LESS THAN 2 FEET. ATTENTION IS CALLED TO THIS REQUIREMENT PARTICULARLY WITH REGARD TO DUCTS CONNECTING TO SUPPLY AIR GRILLES.
- PROVISION SHALL BE MADE FOR THE INSTALLATION OF TEMPERATURE CONTROL SYSTEM DAMPERS SPECIFIED ELSEWHERE IN THE SPECIFICATION. DUCTS AND CASINGS SHALL BE REINFORCED WHERE NECESSARY FOR THE INSTALLATION OF CONTROL DEVICES, THERMOMETERS, AND SIMILAR EQUIPMENT, WHETHER FURNISHED UNDER THIS OR OTHER
- . FLEXIBLE DUCTWORK SHALL BE THERMAFLEX M-KC AS MANUFACTURED BY FLEXIBLE TECHNOLOGIES. FLEXIBLE DUCTWORK SHALL BE RATED FOR 10" POSITIVE AND 2 NEGATIVE STATIC PRESSURES. FLEXIBLE DUCTWORK SHALL NOT BE PERMITTED TO PENETRATE WALLS. PROVIDE GALVANIZED DUCT AT WALL PENETRATIONS AND SEAL AND SAFE WALL PENETRATIONS. MAXIMUM LENGTH ON FLEXIBLE DUCTWORK SHALL BE 5'-0". ALL FLEXIBLE DUCTWORK ELBOWS INCLUDING FLEX DUCT CONNECTIONS TO GRILLES AND DIFFUSERS SHALL BE REINFORCED WITH FLEXFLOW ELBOW SUPPORTS FOR REDUCED PRESSURE LOSSES.
- 4. AIR TERMINAL DEVICES SHALL BE AS SCHEDULED ON THE DRAWINGS BY TITUS OR EQUAL BY TUTTLE AND BAILEY, KRUEGER, OR PRICE.
- 5. BALANCING DAMPER
- . MODEL NUMBERS ARE BASED ON DURO DYNE AND RUSKIN TO ESTABLISH TYPE AND QUALITY UNLESS OTHERWISE NOTED.
- BALANCING DAMPERS SHALL BE INSTALLED IN DUCTS IN ALL BRANCHES FROM MAINS AND RISERS, AND IN THE BRANCHES TO OUTLET AND INLET GRILLE OPENINGS, VOLUME DAMPERS IN DIFFUSER NECKS ARE SPECIFIED WITH THE DIFFUSERS ELSEWHERE IN THE SPECIFICATION. EXCEPT WHERE LOCATED CLOSE BEHIND GRILLES OR FIRE DAMPERS AND EXCEPT WHERE OTHER DAMPERS ARE SPECIFIED, VOLUME DAMPERS IN DUCTS 12 INCHES OR LESS IN DEPTH SHALL BE SINGLE LEAF TYPE. DAMPERS IN DUCTS HAVING A DEPTH MORE THAN 12 INCHES AND DAMPERS LOCATED CLOSE BEHIND GRILLES AND FIRE DAMPERS, SHALL BE MULTIPLE OPPOSED BLADE TYPE. BLADES OF MULTIPLE DAMPERS SHALL BE OF WIDTHS TO SUIT THE SPACE LIMITATIONS, BUT NOT MORE THAN (INCHES WIDE. EXCEPT AS OTHERWISE SPECIFIED HEREIN, DAMPERS SHALL HAVE EXTERNAL ADJUSTING QUADRANTS. WHERE DUCTS ARE INSULATED, THE QUADRANTS SHALL BE BLOCKED OUT ON ZINC-COATED STEEL SUPPORT FINISHING FLUSH WITH INSULATION.
- THE DRAWINGS DO NOT ALWAYS INDICATE THE VOLUME DAMPERS; THEY SHALL BE INSTALLED IN ALL LOCATIONS REQUIRED AS SPECIFIED ABOVE. SPLITTER TYPE VOLUME DAMPERS SHALL NOT BE USED. ALL VOLUME DAMPERS SHALL BE CONSTRUCTED OF ZINC-COATED STEEL TWO GAUGE NUMBERS HEAVIER THAN HE DUCT IN WHICH THEY ARE INSTALLED AND SHALL BE REINFORCED FOR STIFFNESS SO AS TO BE FREE OF NOISE AND VIBRATION IF IN ANY POSITION DAMPERS SHALL BE RIGIDLY AND PERMANENTLY ATTACHED TO THEIR SHAFTS.
- 6. ACCESS DOORS
- . ACCESS DOORS SHALL BE INSTALLED IN DUCTS AND WHERE REQUIRED FOR ACCESS TO FIRE DAMPERS, FANS, REHEAT COILS, AND WHERE INDICATED. ACCESS DOORS SHALL BE SIZES AS LISTED ON DRAWINGS AND SHALL BE COMPLETE WITH HINGES, GASKETS, AND TIGHT CLOSING LATCHES.
- B. ACCESS DOORS 24 INCHES X 24 INCHES AND SMALLER SHALL BE OF A CONSTRUCTION AND THICKNESS THAT MATCH THE DUCTWORK WITH A GASKET
- a. CAM ACCESS DOORS 16 INCHES AND UNDER SHALL HAVE TWO LOCKS AND DOORS OVER 16 INCHES SHALL HAVE FOUR LOCKS. b. HINGED DOORS SHALL HAVE A CONTINUOUS PIANO TYPE HINGE. DOORS 16
- INCHES AND BELOW SHALL HAVE ONE LOCK AND DOORS OVER 16 INCHES SHALL HAVE TWO LOCKS.
- c. DOUBLE SKIN ACCESS DOORS SHALL HAVE BEEN TESTED TO 8 INCHES W.G. AND SHALL HAVE 1 INCH THICK FIBERGLASS. DOORS SHALL BE RATED FOR DUCT SYSTEM THEY ARE INSTALLED IN BUT NOT LESS THAN THE SYSTEM FAN STATIC PRESSURE.

DUCTWORK SCHEDULE											
SYSTEM	MATERIAL	PRESSUR E CLASS	SEAL CLAS S	LEAK CLAS S							
SUPPLY DUCTWORK UPSTREAM OF VAV BOXES	GALVANIZED	4"	A	6							
UPPLY DUCTWORK DOWNSTREAM OF VAV BOXES	GALVANIZED	2"	A	6							

BALANCING SCHEDULE

DESCRIPTION	AIRFLOW	HYDRONIC
VAV BOXES (NEW ONLY) AND ASSOCIATED DIFFUSERS	YES	NO
FAN COIL UNIT	NO	YES

PIPING SPECIFICATIONS

- A. REFER TO THE PIPING MATERIALS SCHEDULE FOR PIPING MATERIALS FOR SPECIFIC SYSTEMS.
- B. COPPER PIPING 2 INCHES AND SMALLER SHALL BE HARD DRAWN TYPE SEAMLESS COPPER TUBING PER ASTM B88. FITTINGS SHALL BE WROUGHT COPPER, PER ANSI B16.22.
- FITTINGS FOR COPPER PIPING SHALL BE MADE OF THE SAME WALL THICKNESS AND OF THE SAME MATERIAL AS THE PIPE TO WHICH THEY ARE ATTACHED. FITTINGS SHALL BE MADE FROM PURE COPPER MILL PRODUCTS PER ASTM B75 ALLOY C12200. MEETING DESIGN STANDARDS ANSI B16.22 AND MSS-SP-104. FITTINGS SHALL BE RATED FOR AN INTERNAL WORKING PRESSURE OF 250 PSI AT 200 DEGREES F. FITTINGS IN COPPER TUBING SHALL BE WROUGHT COPPER SOLDER JOINT FITTINGS OR PROPRESS PRESSURE FITTING SYSTEM AS MANUFACTURED BY VIEGA AS FOLLOWS:
- COPPER TUBING SHALL CONFORM TO ASTM B75 OR ASTM 88. 2) COPPER AND COPPER ALLOY FITTINGS SHALL CONFORM TO MATERIAL
- REQUIREMENTS OF ASME B16.18 OR ASME B16.22 AND PERFORMANCE CRITERIA OF IAPMO PS117. 3) SOLDER METAL SHALL CONFORM TO THE REQUIREMENTS OF ASTM B32. SOLDERING FLUXES SHALL CONFORM TO ASTM B813.
- PIPE THREADS SHALL CONFORM TO ASME B1.20.1. HANGERS AND SUPPORTS SHALL CONFORM TO MSS-SP-58.
- D. FOR WORK IN OCCUPIED SPACES ONLY, PROPRESS, PRESSURE FITTING SYSTEM AS MANUFACTURED BY VIEGA SHALL BE PERMITTED. SEALING ELEMENTS FOR PRESS FITTINGS SHALL BE EPDM. SEALING ELEMENTS SHALL BE FACTORY INSTALLED OR AN ALTERNATIVE SUPPLIED BY FITTING MANUFACTURER. PRESS END SHALL HAVE SC (SMART CONNECT) FEATURE DESIGN (LEAKAGE PATH). IN PRO PRESS ½ INCH TO 2 INCH DIMENSIONS, THE SMART CONNECT FEATURE SHALL ASSURE LEAKAGE OF LIQUIDS FROM INSIDE THE SYSTEM PAST THE SEALING ELEMENT OF AN UNPRESSED CONNECTION. THE FUNCTION OF THIS FEATURE SHALL BE TO PROVIDE THE INSTALLER QUICK AND EASY IDENTIFICATION OF CONNECTIONS WHICH HAVE NOT BEEN PRESSED PRIOR TO PUTTING THE
- SYSTEM INTO OPERATION. E. STEEL PIPING SHALL BE PER ANSI/ASME B31.1 CODE FOR PRESSURE PIPING, ASTM A-106 OR A-53 GRADE B, AND DIMENSION STANDARDS OF ANSI B36.10, SCHEDULE 40 ERW CARBON STEEL
- FITTINGS FOR STEEL PIPING 2 INCH AND SMALLER SHALL BE SCREWED OR WELDED TYPE. FITTINGS FOR STEEL PIPING 2-1/2 INCH AND ABOVE SHALL BE WELDED OR FLANGED TYPE AND SHALL BE SHORT OR LONG PATTERN SEAMLESS BUTT WELDED FITTINGS OF THE SAME WALL THICKNESS AND OF THE SAME MATERIAL AS THE PIPE TO WHICH THEY ARE ATTACHED. STEEL FITTINGS SHALL HAVE PRESSURE RATINGS (PSI) AS INDICATED OR AS REQUIRED TO MEET SYSTEM OPERATING PRESSURES.
- 1) SCREWED FITTINGS SHALL BE MALLEABLE CARBON STEEL; 150 LB. CLASS, BLACK, AND IN ACCORDANCE WITH ANSI B16.3, ANSI B1.20.1 AND ASTM A126 CLASS B.
- 2) ALL SCREWED CONNECTIONS SHALL BE ASSEMBLED WITH LUBRICANT APPLIED TO THE MALE THREADS ONLY.
- 3) FLANGED FITTINGS SHALL BE CAST IRON, SHORT BODY, CLASS 125 OR 250, BLACK AND IN ACCORDANCE WITH ANSI B16.1. GASKETS SHALL BE FULL FACE 1/8 INCH MINIMUM THICKNESS AS HERE-IN-AFTER SPECIFIED.
- 4) ALL FLANGE BOLTING SHALL BE ASTM A307 GRADE B HEAVY HEX BOLTS AND STUD BOLTS WITH ASTM A563 GRADE A HEAVY HEX NUTS. BOLT AND STUD LENGTH SHALL BE IN ACCORDANCE WITH ASME B16.5, TABLE 8. ALL BOLT THREADS SHALL BE LUBRICATED WITH ANTI-SEIZE THREAD COMPOUND. NEITHER STUDS NOR THREADED ROD SHALL BE USED.
- 5) ALL SLIP-ON FLANGES SHALL BE BACK-WELDED. 6) WELD FITTINGS SHALL BE FORGED STEEL SCHEDULE 40 UP TO 10 INCHES, BLACK, CLASS 150, AND IN ACCORDANCE WITH ANSI B16.9, ANSI B16.25, ASTM A234, ANSI B16.5, OR ANSI B16.11.
- G. ALL WELDING, SHOP AND FIFLD, SHALL BE DONE BY A CERTIFIED LICENSED WELDER FOLLOWING STANDARD PRACTICES ESTABLISHED BY THE AMERICAN WELDING SOCIETY DURING ALL FIELD WELDING A FIRE WATCH SHALL BE MAINTAINED
- H. WHERE CONNECTIONS ARE MADE BETWEEN STEEL PIPING OR FERROUS EQUIPMENT AND COPPER TUBING, PROVIDE A DIELECTRIC WATERWAY OR FLANGE WITH A GASKET OF INERT AND DI-ELECTRIC MATERIAL, TEFLON OR APPROVED
- a. DIELECTRIC WATERWAYS SHALL BE RATED AT 210 DEGREES F AT 250 PSI CONFORMING TO ANSI B16.39. PIPE THREADS SHALL CONFORM TO ANSI
- b. FLANGED FITTINGS SHALL BE RATED AT 175 PSI CONFORMING TO ANSI B16.42 (IRON) OR B16.24 (BRONZE). BOLTS SHALL BE PROVIDED WITH BOLT INSULATORS. FOR PRESSURE ABOVE 175 PSI THE CONTRACTOR SHALL PROVIDE 250 PSI FLANGES TO MATCH PIPING MATERIAL, WITH DI-ELECTRIC GASKET AND BOLT INSULATORS.
- c. FITTINGS SHALL BE CERTIFIED TO WITHSTAND A MINIMUM OF 600 VOLTS ON A DRY LINE WITH NO FLASHOVER. DRAWINGS DO NOT INDICATE ALL PIPING OFFSETS THAT MAY BE REQUIRED. NO PIPING, VALVES, JOINTS, OR FITTINGS SHALL BE ERECTED OVER ANY MOTORS,
- PANEL BOARDS, OR OTHER ELECTRICAL EQUIPMENT. J. UNLESS OTHERWISE INDICATED, PROVIDE MANUAL AIR VENTS IN ALL HIGH POINTS OF THE NEW PIPING AND DRAIN VALVES AT ALL LOW POINTS. VENTS AND
- DRAINS SHALL CONSIST OF A BALL VALVE AND 3/4" HOSE ADAPTER/CAP. K. WHEN CONNECTIONS ARE MADE TO EXISTING SYSTEMS PROVIDE ALL REQUIRED
- PIPING MODIFICATIONS, ADAPTERS, ETC. MISCELLANEOUS EXISTING PIPING WHICH IS REVISED SHALL BE DONE WITH
- MATERIALS THAT MATCH THE EXISTING. M. UNIONS FOR COPPER TUBING SHALL BE ANSI 125 LB. PATTERN, ALL BRONZE
- GROUND JOINT UNIONS WITH ENDS FOR SOLDERED JOINTS. N. PRESSURE TEST ALL EXISTING PIPING AND RISERS TO BE REUSED. REPAIR AND REPLACE AS NEEDED.
- O. ALL PIPING INSULATION SHALL BE AS SCHEDULED OR SPECIFIED.
- P. SPECIALITIES, AND APPURTENANCES FOR HYDRONIC SYSTEMS SHALL BE AS SCHEDULED OR SPECIFIED.
- Q. THE PIPE SYSTEMS UNLESS OTHERWISE INDICATED, SHALL NOT PITCH LESS THAN INDICATED ON THE SCHEDULE:
- 2. VALVES
- A. VALVES FOR THE VARIOUS PIPING SYSTEMS SHALL BE AN APPROVED EQUAL TO THE MANUFACTURER AND FIGURE NUMBERS SCHEDULED. FLEXIBLE CONNECTIONS
- A. FLEXIBLE CONNECTIONS IN STEEL PIPING SHALL BE METRAFLEX TYPE MLP FLEXIBLE CONNECTION (OR APPROVED EQUAL) WITH TYPE 321 STAINLESS STEEL INNER CORRUGATED HOSE, TYPE 304 OUTER BRAID, ASA 150# FLANGED ENDS AND MINIMUM WORKING PRESSURE OF 200 PSI.
- 4. PRESSURE GAUGES
- A. PROVIDE AND INSTALL ALL PRESSURE GAGES IN SUCH A MANNER AS TO BE
- EASILY READ FROM NORMAL OBSERVATION POSITIONS B. PROVIDE AN ISOLATION VALVE FOR EACH GAUGE (REFER TO VALVE SCHEDULE).
- C. ALL PRESSURE GAUGES UTILIZED FOR STEAM SERVICE SHALL BE EQUIPPED WITH A COIL SYPHON CONSTRUCTED OF 316 STAINLESS STEEL OR SEAMLESS SCHEDULE 80 CARBON STEEL. D. SELECT RANGE IN SUCH A MANNER THAT THE OPERATING PRESSURE IS AT THE
- MID-POINT OF THE SCALE. A. PRESSURE GAUGES SHALL BE WEISS #NF4UGYI MARSH #P0146 41/2" DIAMETER WITH SAFECASE MOLDED TURRET, 1/4" BOTTOM CONNECTION, 0-100 PSI RANGE
- 5. THERMOMETERS
- A. PROVIDE AND INSTALL ALL THERMOMETERS IN SUCH A MANNER AS TO BE EASILY READ FROM NORMAL OBSERVATION POSITIONS
- B. STEM LENGTH SHALL PROVIDE SUFFICIENT INSERTION TO EXTEND THRU INSULATION THICKNESS AND INTO THE FULL DEPTH OF THE THERMOWELL. THE THERMOWELL SHALL EXTEND INTO THE PIPE LINES NOT LESS THAN 50 PERCENT OF THE INSIDE PIPE DIAMETER IN WHICH INSTALLED. THERMOWELLS SHALL BE 316SS, SUPPLIED WITH THREADED STEPPED SHANK.
- C. THERMOMETERS SHALL BE WEISS STEM TYPE MODEL 9VS35 VARIABLE ANGEL LIQUID FILLED. THE CASE SHALL BE V SHAPED MOLDED OF POLYESTER 40 PERCENT GLASS/MINERAL REINFORCED CASE IN BLACK FINISH. A HEAVY GLASS PROTECTED WINDOW SHALL BE FIRMLY SEALED AGAINST RATTLES BY A SPRING
- D. STEM THERMOMETERS IN CHILLED WATER AND CONDENSER WATER SYSTEMS SHALL BE GRADUATED FROM ZERO DEGREES F TO 120 DEGREES F WITH 10 DEGREE INTERVALS AND ONE DEGREE DIVISIONS. HOT WATER AND DUAL TEMPERATURE SYSTEMS SHALL BE GRADUATED FROM 30 DEGREES F TO 240 DEGREES F WITH 10 DEGREE INTERVALS AND 2 DEGREE DIVISIONS.
- 6. HANGERS
- A. SUPPORT COMPONENTS SHALL CONFORM TO MANUFACTURER'S STANDARDIZATION SOCIETY SPECIFICATIONS SP-58 B. PIPE HANGERS SHALL BE LOCATED NEAR OR AT CHANGES IN PIPING DIRECTION
- AND CONCENTRATED LOADS. ALL HANGERS SHALL BE CLEVIS TYPE AND ARE TO HAVE VERTICAL ADJUSTMENTS FOR MAINTAINING THE PITCH OF PIPING. C. HANGER ROD SIZES SHALL BE AS FOLLOWS:
- <u>PIPE SIZE</u> MIN. HANGER ROD DIAMETER 1-1/2 INCHES AND SMALLER 3/8 INCH 2 THROUGH 3 INCHES 1/2 INCH 4 THROUGH 5 INCHES 5/8 INCH
- 6 INCHES 7/8 INCH D. HANGER SPACING SHALL BE AS FOLLOWS: <u>PIPE SIZE</u> MIN. HANGER SPACING
 - NOT OVER 6 FEET
- E. HANGERS AND SUPPORTS SHALL BE THE FOLLOWING GRINNEL NUMBERS AND ON
- 1-1/2 INCHES AND SMALLER 2 THROUGH 6 INCHES NOT OVER 10 FEET
- INSULATED PIPING SHALL BE SIZED TO FIT OUTSIDE INSULATION COVERING:

- 1/4" 'T' HANDLE BRASS GAUGE COCK FOR EACH GAUGE.

- AND COPPER ALLOY BOURDON TYPE BRAZED TO TIP AND SOCKET. PROVIDE A

- 1) FIG. 260 HANGER FOR INSULATED COPPER AND STEEL PIPING AND
- UNINSULATED STEEL PIPING 2) FIG. 191 PIPE SUPPORT WITH ADJUSTABLE PIPE STANCHION SADDLE WITH U-BOLT

7. GASKETS

- A. ALL GASKETS SHALL BE RING-TYPE OF 1/16" THICK NON-ASBESTOS SHEET MATERIAL SUITABLE FOR THE TEMPERATURES AND PRESSURES OF THE SERVICE INVOLVED
- B. GASKETS SHALL NOT BE REUSED OR REPAIRED IN ANY WAY. THEY SHALL BE REPLACED IF: 1) THEY ARE DAMAGED DURING INSTALLATION.
- 2) IF A FITTING MUST BE DISASSEMBLED AFTER IT HAS BEEN TIGHTENED.
- 3) IF THERE IS ANY LEAKAGE DURING A PRESSURE TEST (IF THE FITTING ITSELF IS SCORED OR DAMAGED, IT SHALL BE REPLACED), C. GASKET CEMENTS OR SEALERS SHALL NOT BE USED.

8. CLEANING AND TESTING

- A. TEST ALL NEW PIPING AT 1-1/2 TIMES THE SYSTEM'S OPERATING PRESSURE WITH A MINIMUM 150# HYDROSTATIC TEST WHICH SHALL HOLD TIGHT FOR A PERIOD OF TWO (2) HOURS. ALL LEAKS SHALL BE REPAIRED WITH NEW MATERIALS AND THEN RETESTED. SUBMIT TEST RECORDS FOR REVIEW. B. CLEAN AND FLUSH MODIFIED SECTIONS OF PIPING IN ACCORDANCE WITH
- RECOMMENDATIONS OF WATER TREATMENT CONTRACTOR. CLEAN AND REPLACE STRAINER SCREENS. C. FILL MODIFIED SECTIONS OF PIPING AND INTRODUCE WATER TREATMENT AS RECOMMENDED BY WATER TREATMENT CONTRACTOR.

9. IDENTIFICATION

- A. PROVIDE IDENTIFICATION AND FLOW ARROWS ON ALL NEW AND EXISTING PIPING. PIPE IDENTIFICATION SHALL BE BY SETON NAMEPLATE CORPORATION OR BRADY USA, INC. AND MANUFACTURED ON PRESSURE SENSITIVE VINYL SHEETS WITH SCREEN PRINTED LETTERS. COLORING SHALL BE PER ASME COLOR CODE. B. ALL EXISTING PIPING IN MECHANICAL ROOM SHALL BE PROVIDED WITH NEW
- LABELS ON OUTER JACKETING OF INSULATION INDICATING FLOW DIRECTION AND TYPE OF PIPING WHERE LABELING IS CURRENTLY MISSING (FIELD VERIFY LOCATIONS) C. PROVIDE DESCRIPTIVE ENGRAVED 1/16" THICK PLASTIC-LAMINATED LABEL WITH
- BLACK FACE AND WHITE LETTERS ON ALL EQUIPMENT BEING ADDED OR MODIFIED AND ON ALL NEW CIRCUIT BREAKERS. D. LABELS SHALL BE PUNCHED AND ATTACHED TO EQUIPMENT WITH MECHANICAL
- FASTENERS. 10. VALVE TAGS
- A. PROVIDE FOR EACH VALVE A 2" DIAMETER BRASS VALVE TAG ATTACHED TO THE VALVE WITH A BRASS HOOK AND JACK CHAIN, IDENTIFY FACH VALVE AND ADD SAME TO THE EXISTING VALVE CHARTS OR PROVIDE A NEW VALVE CHART WITH ALL VALVE DATA (VALVE NUMBER, SERVICE, SIZE, AND LOCATION).

BALANCING AND ADJUSTING OF THE HYDRONIC AND AIR SYSTEMS

- 1. PERFORM ALL AIR AND HYDRONIC BALANCING FOR THE SYSTEMS AND/OR AREAS LISTED IN THE BALANCING SCHEDULE.
- 2. ALL WORK SHALL BE PERFORMED BY SKILLED MECHANICS UNDER THE DIRECTION AND SUPERVISION OF THE CONTRACTOR FOR BALANCING AND ADJUSTING WHICH SHALL BE AN INDEPENDENT, CERTIFIED NEBB OR AABC CERTIFIED COMPANY NOT AFFILIATED WITH THE MECHANICAL CONTRACTOR
- 3. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS. 4. AIR SYSTEMS:
- A. MAKE AIR QUANTITY MEASUREMENTS IN MAIN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS SECTIONAL AREA OF DUCT.
- B. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS. C. ADJUST DISTRIBUTION SYSTEM TO OBTAIN UNIFORM SPACE TEMPERATURES FREE FROM OBJECTIONABLE DRAFTS.
- D. USE VOLUME CONTROL DEVICES TO REGULATE AIR QUANTITIES ONLY TO EXTENT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS. EFFECT VOLUME CONTROL BY USING VOLUME DAMPERS LOCATED IN DUCTS.
- E. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE SHEAVE DRIVE CHANGES TO VARY FAN SPEED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION. F. PROVIDE SYSTEM SCHEMATIC WITH REQUIRED AND ACTUAL AIR QUANTITIES
- RECORDED AT EACH OUTLET OR INLET. G. MEASURE STATIC AIR PRESSURE CONDITIONS ON AIR SUPPLY UNITS, INCLUDING FILTER AND COIL PRESSURE DROPS, AND TOTAL PRESSURE ACROSS FAN. MAKE
- ALLOWANCES FOR 50 PERCENT LOADING OF FILTERS. H. ADJUST OUTSIDE AIR AUTOMATIC DAMPERS, OUTSIDE AIR, RETURN AIR, AND EXHAUST DAMPERS FOR DESIGN CONDITIONS.
- 6. HYDRONIC SYSTEMS: A. ADJUST WATER SYSTEMS, AFTER AIR BALANCING, TO OBTAIN DESIGN QUANTITIES. B. ADJUST HYDRONIC DISTRIBUTION SYSTEMS BY MEANS OF BALANCING COCKS, VALVES, AND FITTINGS. DO NOT USE SERVICE OR SHUT-OFF VALVES FOR BALANCING UNLESS INDEXED FOR BALANCE POINT.
- C. TEST PUMPS AND ADJUST FLOW. RECORD THE FOLLOWING ON PUMPS REPORT SHEETS: (A) SUCTION AND DISCHARGE PRESSURE, (B) RUNNING AMPS AND BRAKE HÒRSEPOWER OF PUMP MOTOR UNDER FULL FLOW AND NO FLOW CONDITIONS. (C) PRESSURE DROP ACROSS PUMP IN FEET OF WATER AND TOTAL GPM PUMP IS HANDLING UNDER FULL FLOW CONDITIONS.
- D. WHERE AVAILABLE PUMP CAPACITY IS LESS THAN TOTAL FLOW REQUIREMENTS OR INDIVIDUAL SYSTEM PARTS, PROPORTIONAL BALANCING MUST BE PERFORMED. CONTRACTOR SHALL AFTER PERFORMING THE TAB PROCEDURES PLUG PIPING WATER TIGHT, PATCH DUCTWORK AIR TIGHT AND PATCH INSULATION AND RE-ESTABLISH INTEGRITY OF THE VAPOR BARRIER. MATERIALS USED SHALL BE IDENTICAL TO THOSE REMOVED, CUT OR DRILLED
- 8. BALANCING CONTRACTOR SHALL SUBMIT EQUIPMENT CALIBRATION REPORTS OF EQUIPMENT USED DURING BALANCING TO CERTIFY ACCURACY OF MEASUREMENTS. CALIBRATIONS REPORTS SHALL BE SUBMITTED WITH BALANCING REPORT. 9. SUBMIT A REPORT INDICATING ALL FINAL CONDITIONS.

AUTOMATIC TEMPERATURE CONTROLS SPECIFICATIONS

- 1. AUTOMATIC TEMPERATURE CONTROLS
- A. PRE-QUALIFIED BAS CONTRACTORS SHALL BE AS FOLLOWS:
- SIEMENS BUILDING TECHNOLOGIES 1450 UNION MEETING RD.
- BLUE BELL, PA 19422
- 847-215-1050 B. AUTOMATIC TEMPERATURE CONTROLS (ATC) SHALL BE AN EXTENSION OF THE EXISTING SYSTEM.
- C. THE SCOPE OF WORK SHALL INCLUDE CONTROLLERS, TEMPERATURE TRANSMITTERS, PRESSURE SWITCHES, CONTROL VALVES AND ALL WORK NECESSARY TO CONNECT THE NEW WORK TO THE EXISTING SYSTEM AND
- PROVIDE FEEDBACK TO THE NEW EQUIPMENT. THE WORK SHALL ALSO INCLUDE PROGRAMMING THE CENTRAL SYSTEM AND GENERATING GRAPHICS AS REQUIRED TO RECOGNIZE AND COMMUNICATE WITH THE NEW DEVICES. REFERENCE ALL CONTROL DIAGRAMS, SEQUENCE OF CONTROL, AND DEVICE SCHEDULES FOR ULL EXTENT OF ATC SCOPE OF WORK.
- . SEQUENCE OF CONTROL SHALL BE AS INDICATED ON THE DRAWINGS. . PERFORM ALL ELECTRICAL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. INDOOR CONTROL WIRING SHALL BE INSTALLED IN EMT. OUTDOOR CONTROL WIRING SHALL BE INSTALLED IN RIGID ALUMINUM CONDUIT. PROVIDE ALL LOW VOLTAGE CONTROL TRANSFORMERS.
- . EXISTING SAFETY CONTROLS SHALL REMAIN. G. SUBMIT COMPLETE AUTOMATIC TEMPERATURE CONTROL INSTALLATION SHOP DRAWINGS FOR REVIEW.



JAPAN ALL INTERNAL COMPONENTS OF AIR TERMINAL DEVICES

INSULATION SPECIFICATIONS

1. GENERAL REFER TO THE INSULATION SCHEDULE FOR INSULATION THICKNESS AND TYPE TO BE PROVIDED FOR SPECIFIC SYSTEMS AND LOCATIONS.

- 2. FIBERGLASS DUCT WRAP INSULATION A. PROVIDE MICROLITE XG FORMALDEHYDE FREE DUCT WRAP INSULATION. INSULATION SHALL BE A WHITE, LIGHTWEIGHT RESILIENT BLANKET MANUFACTURED FROM FIBERGLASS BONDED WITH THERMOSETTING ACRYLIC RESIN COMPLYING WITH ASTM C1290.
- B. INSULATION SHALL BE 1.5 POUNDS PER CUBIC FEET (PCF) WITH A FOIL-SCRIM-KRAFT (FSK) VAPOR BARRIER FACING COMPLYING WITH ASTM
- C1136S C. INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED RATING NOT GREATER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 AND UL 723 AND SHALL MEET NFPA 90A AND 90B STANDARDS.
- D. INSULATION SHALL BE GREEN BUILDING CERTIFIED FOR RECYCLED CONTENT, ENERGY STAR, LEED CREDITS, LEED-NC, AND SHALL MEET ES1350 REQUIREMENTS
- INSULATION SHALL HAVE A THERMAL CONDUCTIVITY (K) OF 0.27 BTU PER INCH PER HOUR PER SQUARE FEET AT 75 DEGREES F. MEAN TEMPERATURE PER ASTM C518.

3. FIBERGLASS PIPING INSULATION A. FIBERGLASS PIPING SHALL CONSIST OF 1LB. DENSITY FIBERGLASS INSULATION

- HAVING AN OUTER JACKET OF KRAFT PAPER BONDED TO ALUMINUM FOIL REINFORCED WITH FIBERGLASS YARN. THE LONGITUDINAL SEAMS OF THE JACKET SHALL OVERLAP AND BE SEALED USING THE FACTORY APPLIED PRESSURE SENSITIVE ADHESIVE. STAPLES ARE PROHIBITED. INSULATION THICKNESS SHALL NOT BE LESS THAN THOSE RECOMMENDED IN 2009 INTERNATIONAL ENERGY CONSERVATION CODE FOR THE INTENDED SERVICE OF THAT REQUIRED TO PRESENT THE FORMATION OF CONDENSATION OF THE REQUIRED TO ASSURE
- MAXIMUM SURFACE TEMPERATURE OF 80°F, WHICHEVER IS THE MOST STRINGENT. THE INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.23 BTU-IN./HR.-SQFT-*F AT A MEAN TEMPERATURE OF 75*F. B. ALL NON-SERVICE/MAINTENANCE RELATED FITTINGS (I.E. ELBOWS, TEE.S ETC.)
- SHALL BE INSULATED WITH PRE-MOLDED, LIGHT IMPACT, UV RESISTANT PVC COVERS. THE MINIMUM THICKNESS OF THE COVER WILL BE 30 MIL. FIBERGLASS INSULATION THICKNESS SHALL BE EQUAL TO THE REQUIRED THICKNESS OF THE ADJOINING PIPING. FOAM FILLED FITTINGS AND COVERS ARE PROHIBITED. FITTINGS REQUIRING SERVICE/MAINTENANCE ACCESS (I.E. UNIONS, SHUT-OFF
- VALVES, CHECK VALVES, BALANCING VALVES, ETC.) SHALL BE INSULATED WITH REMOVABLE RELISABLE COVERS WHICH LISE STRAPS AND BLICKLES TO SECURE THE COVER IN PLACE. PROVIDE THE INTERFACE BETWEEN THE REMOVABLE COVER AN THE ADJACENT PIPING INSULATION TO ASSURE A TIGHT INTEREACE WHICH PREVENTS HEAT LOSS AND THE FORMATION OF CONDENSATION. COVERS SHALL CONSIST OF INNER AND OUTER WALLS OF 304 SS 0.11" THICK MESH
- NYLON COATED 204SS 0.15" THREADED SEAMS, 304SS 1/8" THICK X 1/2" BUCKLES, PTFE/TEFLON BELTING AND 304SS I.D. TAGS. D. ALL INSULATION PROVIDE SHALL CONFORM TO ALL PERTINENT CODES INCLUDING ASTM E-84, UL 73 AND NFPA 255, AND SHALL NOT EXCEED A FLAME SPREAD
- OF 25, FUEL CONTRIBUTED 50 AND SMOKE DEVELOPED 50. E. PROVIDE AN 18LB. DENSITY MOLDED FIBERGLASS BLOCK, 12/2"WIDEX6"LONG, AND SHEETMETAL SADDLE AT EACH PIPE SUPPORT AND/OR HANGER POINT.
- 4. ELASTOMERIC PIPE INSULATION A. PROVIDE ARMACELL MODEL AP/ARMAFLEX FLEXIBLE CLOSED CELL ELASTOMERIC PIPE INSULATION IN TUBE FORM. INSULATION MAY BE PROVIDED WITH SELF-SEAL OR SELF-ADHESIVE OPTION AND SHALL MEET THE FOLLOWING
 - REQUIREMENTS a. INSULATION SHALL BE MANUFACTURED WITHOUT THE USE OF CFC, HFC, OR HCFC COMPOUNDS, FORMALDEHYDE AND FIBER FREE WITH LOW VOC'S AND SHALL BE PRODUCED WITH AN EPA APPROVED ANTIMICROBIAL PRODUCT PROTECTION FOR DEFENSE AGAINST MOLD FORMATION AND BE FUNGI AND BACTERIA RESISTANT PER UC 181, ASTM
 - G21/C1338 AND ASTM G22. b. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY (K) OF 0.25BTU PER INCH PER HOUR PER SQUARE FEET AT 75 DEGREES F. MEAN TEMPERATURE PER ASTM C177 OR C 518. WATER VAPOR PERMEABILITY
 - SHALL BE 0.05 PERM PER INCH PER ASTM E96 PROCEDURE A. INSULATION SHALL HAVE A MAXIMUM SERVICE TEMPERATURE OF 220 DEGREES F. FOR TUBES AND 180 DEGREES F. FOR SHEETS. INSULATION MAY BE PROVIDED ON PIPING WITH TEMPERATURES DOWN
 - TO MINUS 20 DEGREES F. FOR TEMPERATURE BELOW MINUS 20 DEGREES CONSULT MANUFACTURER. d. INSULATION SHALL HAVE A FLAME SPREAD RATING NOT GREATER THAN 25 AND A SMOKE DEVELOPED RATING NOT GREATER THAN 50 WHERE
- TESTED IN ACCORDANCE WITH ASTM E84. B. FITTING INSULATION SHALL BE FABRICATED FROM MITER-CUT PIECES OF
- INSULATION, OVERLAPPED AND SEALED TO ADJOINING INSULATION. . SEAMS AND JOINTS SHALL BE SEALED WITH ARMAFLEX 520 BLV ADHESIVE
- D. WHERE INSULATION IS EXPOSED AND IS TO HAVE A FINISHED APPEARANCE PROVIDE A 2-COAT ARMAFLEX WB FINISH. FINISH SHALL BE SEMI-GLOSS MEL DESIGNED FOR USE ON INSULATION FOR INDOOR AND OUTDOOR USE. FINISH SHALL BE ULTRAVIOLET AND OZONE RESISTANT.

V	ARIABL	E AIR	VOL	UME BOX	SCHEDULE
VAV NUMBER	ROOM SERVED	MAX AIRFLOW (CFM)	MIN AIRFLOW (CFM)	INLET/DISCHARGE S.P. (IN. W.G.)	BOX SIZE
76–1	MEETING ROOM	1500	530	0.8/0.4	SIEMENS ZH1-12
76–2	MEETING ROOM	1500	530	0.8/0.4	SIEMENS ZH1-12
76-3	LOBBY	1120	510	0.8/0.4	SIEMENS ZH1-10

1. VAV BOXES SHALL BE FURNISHED BY SIEMENS AND INSTALLED BY THE MECHANICAL

- CONTRACTOR 2. VAV BOXES SHALL INCLUDE THE FOLLOWING OPTIONS/FEATURES: CONTROL ENCLOSURE WITH DISCONNECT SWITCH
- SIEMENS CONTROLLER
- 1" THICK FIBER FREE LINING ACCESS DOOR ON BOTTOM

HVAC/PLUMBING THERMAL INSULATION SCHEDULE

DESCRIPTION	INSULATION TYPE	THICKNESS	COVERING/ JACKET	HEAT TRACE
SUPPLY AIR DUCTWORK	FIBERGLASS WRAP JOHNS MANVILLE MICROLITE TYPE 75	1½"	FSK	N/A
CHILLED WATER PIPING	RIGID FIBERGLASS JOHNS MANVILLE MICROLOK	1½"	ASJ W/ PVC FITTING COVERS	NO
AC CONDENSATE	RIGID FIBERGLASS JOHNS MANVILLE MICROLOK	1"	AP-T PLUS	NO

PROVIDE LABELS ON OUTER JACKETING OF INSULATION INDICATING FLOW DIRECTION AND

PIPING N	ATERIALS	SCHEDULE	
SYSTEM	SIZE RANGE	PIPING	SLOPE
CHILLED WATER PIPING	UP TO 2"	COPPER	1" IN 50'
CHILLED WATER PIPING	21/2" AND LARGER	SCHEDULE 40 STEEL	1" IN 50'
AC CONDENSATE	ALL SIZES	COPPER	1" IN 8'

2	PIPE	E FAN	1 C(DIL L	JNIT	. S(CHED	ULE	
			FAT	ΙΔΤ			HEAD		

2 PIPE FAN COIL UNIT SCHEDULE													
oom Rved	AIR FLOW (CFM)	FAN SPEED	MOTOR HP	EXT. S.P. (IN. WG.)	HEATING/ COOLING	EAT DB/WB F	LAT DB∕WB F	EWT	GPM	HEAD LOSS (FT WG)	CAPACITY (MBH)	ELECTRICAL V/PH/HZ	MANUFACTURER & MODEL NO.
ROOM	929	HIGH	¥12 (2)	0.0	COOLING	80/63	55/53	45 ° F	5.5	3.7	27.9	115/60/1	CARRIER 42CGB10BRCY8AYYC

OPTIONS / FEATURE • 4-ROW, 2-PIPE CONFIGURATION

UNIT NO.

FCU-AV AV

3-SPEED PSC MOTORS CABINET CONSTRUCTION WITH STAMPLED END SUPPLY AND BOTTOM RETURN GRILLES FOR FREE HANGING INSTALLATION

 1" THICK FILTER PROVIDE NEOPRENE ISOLATORS ON HANGING RODS

 $\overline{}$ \sim _____ _____ ____ \neg _____

<u>DE\</u> MIS

<u>EQU</u>



<u> </u>П



FORME MECHANICAL

REMOVED

VOLUME

DUCTWOR	κ
	EXISTING DUCTWORK TO BE REMOVE
	RETURN AIR OR MAKE-UP AIR
	EXHAUST AIR
-	SUPPLY AIR
\bigtriangledown	SUPPLY AIR OR OUTSIDE AIR
	DUCT/DIFFUSER
	RETURN AIR DUCT/ GRILLE
\square	EXHAUST AIR DUCT/ GRILLE
	CHAMFER CONNECTION WITH VOLUM
Ť	DAMPER
Ť	BELLMOUTH CONNECTION WITH VOLUME DAMPER
	FLEXIBLE DUCT
	RECTANGLE TO ROUND TRANSITION
	VOLUME DAMPER
	CAP DUCT
	DIRECTION OF FLOW
	BREAK LINE
	ECCENTRIC REDUCER/INCREASER
	FLEXIBLE CONNECTION
$\neg \neg$	-RISE IN DUCT
+-+	FIRE DAMPER WITH ACCESS DOOR
LAL	
<u> </u>	DUCTWORK ROOF SUPPORT
	DAMPER NUMBER
	MOTORIZED CONTROL DAMPER
Ŕ	
	CEILING DIFFUSERS (DUCTED)
	DIRECTIONAL BLOW CLIP IN
DEVICES	
SD	SMOKE DETECTOR
(TS)	TEMPERATURE SENSOR
Ŏ	THERMOSTAT
0	
MISC. DR/	AWING SYMBOLS
$\mathbf{\hat{\boldsymbol{\Box}}}$	CONSTRUCTION NOTE
ň	
Δ	REVISION NOTE
\frown —	Equipment type
\bigtriangledown —	EQUIPMENT NUMBER
\frown —	DETAIL NUMBER
\ominus —	REFERENCED DRAWING
××	
	SECTION NUMBER
	TO EXISTING
	EXTENT OF DEMOLITION
EX.	EXISTING TO REMAIN
(R)	EXISTING TO BE REMOVED
(ER)	EXISTING TO BE RELOCATED
(F)	FUTURE
(N)	NEW
ф	SQUARE FOOT
ø	DIAMETER
	•
LUUIPMENI	

	VARIABLE AIR VOLUME BOX
]	VARIABLE AIR VOLUME BOX WITH REHEAT COIL
7	FAN
)—	РИМР
]	AIR FLOW STATION

AB	BREVIATIONS
) TCS	ACCESS DOOR AIR FLOW CONTROL STATION
F	ABOVE FINISHED FLOOR
<u></u>	AIR FLOW MONITOR STATION
10 S	AIR HANDING UNIT
, SC	AIR SCOOP
S	BUILDING AUTOMATION SYSTEM
	BACKDRAFT DAMPER
1P)D	BOTTOM OF DUCT
Ū	BRITISH THERMAL UNIT
ÜΗ	BRITISH THERMAL UNIT PER HOUR
	CONDENSATE DRAIN
,)	
M	CUBIC FEET PER MINUTE
1	CHILLER
) NINI	
F	CHEMICAL SHOT FEEDER
J	CONDENSER UNIT
IH	CABINET UNIT HEATER
<u></u>	COEFFICIENT, VALVE FLOW
8 B	
G	DEGREES (FAHRENHEIT)
4	DIAMETER
Г	ENTERING AIR TEMPERATURE
	ELECTRICAL CONTRACTOR
	EXHAUST FAN
FV	
- *	EXHAUST REGISTER
U	ENERGY RECOVERY UNIT
т	ENTERING WATER TEMPERATURE
<u>п</u>	EXISTING
н т	EXHAUSI EXPANSION TANK
	FAHRENHEIT
	FLEXIBLE CONNECTION
U	FAN COIL UNIT
	FIRE DAMPER
S P	FACILITIES MANAGEMENT SYSTEM
ъ Т	FLAT ON TOP
1	FINS PER INCH
U	FAN POWERED UNIT
D	FIRE SMOKE DAMPER
<u>،</u>	GAUGE
LV	GALVANIZED
;)\	GENERAL CONTRACTOR
)	HORSEPOWER
	HERTZ
WG.	INCHES WATER GAUGE
	LEAVING AIR TEMPERATURE
R	LOUVER
Т	LEAVING WATER TEMPERATURE
H	THOUSAND BTU PER HOUR
,)D	MOTORIZED OPERATED DAMPER
A	MAKE UP AIR
	NORMALLY CLOSED
;	NUT IN CONTRACT
)	NORMALLY OPEN
S	NOT TO SCALE
1	UUTSIDE AIR INTAKE
l	POUNDS PER SQUARE INCH
	RETURN AIR
	RADIATION
٧U	RETURN FAN
	RETURN_GRILLE
	REHEAT COIL
	RETURN REGISTER
D	SMOKE CONTROL DAMPER
_	SMOKE DETECTOR
	SUPPLY FAN
	SUPPLY GRILLE
MP	TEMPORARY
	TRANSFER GRILLE
v	VARIABLE AIR VOLUME BOX
·	VOLUME DAMPER
	VERIFY IN FIELD
ט י	

NOTE: THIS IS A GENERAL MECHANICAL LEGEND, ALL SYMBOLS, ABBREVIATIONS AND LINE DESIGNATIONS MAY NOT APPEAR ON THE DRAWINGS. SEE EQUIPMENT SCHEDULES FOR EQUIPMENT DESIGNATIONS.

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All condif	ions must be verified by the co	ontractor
at the site discrepan	 Notify the Architect of any icies before proceeding with the SCALE DRAMINGS 	ne work.
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PROJEC	TNO.: 17140	DJVI: 1729A
DATE:		5991. 11 ZJA
SCALE:		
DRAWN:	G TITLE:	
	MECHANIC	AI
S	PECIFICATIO	NS &
	LEGEND	
DRAWIN	G NUMBER:	
	M2.2	

E						
			<u><u>E</u>l</u>	LECIRICAL LEGEND		
	MISC.	DRAWING SYMBOLS		<u>/DATA/AV</u>	POWER	2
	(#)	CONSTRUCTION NOTE	$\mathbf{\nabla}$	DATA BACKBOX – 4" SQUARE W/ RING	∕₩	SAME CIRCUIT/SWITCHED SEPARATE
	₩	DEMOLITION NOTE		AUDIO/VISUAL BACKBOX - 4" SQUARE W/ RING	/#	NO. OF HASH MARKS DENOTES NO.
	(#)	DIAGRAM/DETAIL NOTE		CABLE TV JACK - WALL MOUNTED	\frown	CIRCUIT HOMERUN
	E01A	KITCHEN EQUIPMENT TAG		CELLULAR TELECOMMUNICATIONS ANTENNA		LOW VOLTAGE WIRING
	<u>/</u> #\	REVISION TAG		AUDIO /VISUAL RACK		DENOTES VOICE/DATA HOMERUN
	(XX)	- EQUIPMENT TYPE		FLAT CODEEN TV WALL DOX	VD	DENOTES ISOLATED GROUND
		- EQUIPMENT NUMBER	₽₽	FLAT SCREEN IV WALL BUX		EXISTING BRANCH CIRCUIT PANELB
	<u>ABBRE\</u>	<u>/IATIONS</u>	FB#	FLOOR BOX (# DENOTES TYPE)		NEW BRANCH CIRCUIT PANELBOARD
	A	AMPS		VIDEO PROJECTOR CEILING MOUNTING KIT	N/	MOTOR CONNECTION
	ACI AF	Abuve counter top Amp frame or fuse			Ŀ	DISCONNECT SWITCH
	AS AT	AMP SETTING AMP TRIP	SWITCH	ling		FUSED DISCONNECT SWITCH
	ATC	AUTOMATIC TEMPERATURE CONTROLS	S	STANDARD LIGHT SWITCH		MOTOR STARTER
D	ATS BAS	automatic transfer switch Building automation system	S S	3-WAY LIGHT SWITCH	l≦r I∕i	ENCLOSED CIRCUIT BREAKER
	BCT CB	Below Counter Top Circuit Rreaker	S4	4-WAY LIGHT SWITCH	EWH]	ELECTRIC WATER HEATER
	C	CONDUIT	SLV	LOW VOLTAGE MOMENTARY SWITCH	VFD	VARIABLE FREQUENCY DRIVE
	CI CKT	Circuit integrity cable in conduit Circuit	SHD	HARD-WIRED/WIRELESS DIMMER SWITCH	SPD	SURGE PROTECTION DEVICE
	CS CT	COMBINATION MOTOR STARTER	She	HARD-WIRED/WIRELESS FAN SWITCH	EHC	ELECTRIC HEATING COIL
	DDBP	duplex domestic booster pump	Sм	MOTOR DISCONNECT SWITCH	Ð	HEAT TRACE JUNCTION BOX
	DIST DML	distribution Double main lugs	SPS	MOTORIZED PROJECTION SCREEN SWITCH	<u>(</u>)	HEAT TRACE THERMOSTAT
	DRP	DOMESTIC RECIRCULATING PUMP	Sms Sac	MOTORIZED SHADE SWITCH	EHD	ELECTRIC HAND DRYER
	DS E	DISCONNECT SWITCH Emergency		WIRELESS DIMMER SWITCH	ECM	
	EC	ELECTRICAL CONTRACTOR	Sws	WIRELESS 2-BUTTON LIGHT SWITCH		FRACTIONAL HP MOTOR RELAY
	EHH	Electric Handhole	Swt	WIRELESS ELV DIMMER SWITCH	0**	JUNCTION BOX TAGS (**)
	emh Emt	ELECTRIC MANHOLE ELECTRICAL METALLIC TUBING	Swf	WIRELESS 2-BUTTON APPLIANCE SWITCH	"UH"=UI "GFP"=(NIT HEATER "FCU"=FAN CO
	ERV	ENERGY RECOVERY VENTILATOR	SHS	HARD-WIRED/WIRELESS SWITCH	"WF"=W/ "GD"=G/	ATER FEATURE "FV"=FLUSH VA ARBAGE DISPOSAL "TPS"=TRAP PF
	ESN	luikon energy saver node Electric water cooler	Scs	COMPANION HARD-WIRED SWITCH (3/4-WAY)	"MP"=M" "FPU"=f	OTORIZED PARTITION "CUH"=CABINE TAN POWERED UNIT "FVT"=FLUSH V
	ex FCC	Existing Fire command center	S _{D1}	0-10V DIMMER SWITCH-LUTRON	"FH"=FL "LM"=LI" "0000 " (IME HOOD "SC"=SERVICE
	FDR	FEEDER	SD2	ELV DIMMER SWITCH-LUTRON	GWL =("CP"=C("\/A\/"-\/	GREEN WALL LIGHTING WDU =WASHDO DNDENSATE PUMP "TS"=TURNSTILI ARIARI E AIR VOLUME ROY
C	FPLP FTL	power limited fire alarm plenum Feed thru lugs	SD3	MLV DIMMER SWITCH-LUTRON	"PS"=M "MS"=M	DTORIZED PROJECTION SCREEN
	GFCI	Ground Fault circuit interrupter		5" TOUCH SCREEN WALL STATION		
	GRS	Galvanized Rigid Steel Conduit	QSDRP	LIGHTING CONTROL PANEL	RECEP	TACLES/DEVICES
	GWH HP	gas water heater Horsepower	05	DAYLIGHT SENSOR	Ф** "мw"=м	RECEPTACLE TAGS (**)
	LV	LOW VOLTAGE	PSR	PARTITION SWITCH - RECEIVER	"ACT"=A "CP"=C0	BOVE COUNTER "H"=HORIZONTA DNDENSATE PUMP "DW"=DISHWASH
	MAU MCC	Make-up air Unit Motor Control Center	PST	PARTITION SWITCH - TRANSMITTER	"WP"=W "LAV"=L	EATHERPROOF "SM"=SURFACE AVATORY REC "EWC"=WATER
	MPS Nac	NOTORIZED PROJECTION SCREEN		CONTACT CLOSURE INPUT/OUTPUT MODULE	"VEN"=V "AVR"=A	ENDING MACHINE "CWM"=CASEWO UDIO/VISUAL RACK "VDR"=VOICE/D
	N/E	NORMAL/EMERGENCY	QSPS	ROLLER SHADE CONTROL PANEL	"UCR"=\ "RWP"= "\\D"_\\A	JNDER COUNTER REF "FH"=FUME HO RECESSED WP IN USE "SWP"=SURFAC
	NF Nic	Non-Fused Not-In-contract		LIGHTING CONTROL AV INTERFACE MODULE	"ICE"=IC	E MACHINE "SPD"=SURGE
	NTS	NOT TO SCALE		CEILING MOUNTED SENSOR MODULE	♥**	SPECIAL NEMA DEVICE TAGS (**)
	ųs RAL	rigid Aluminum conduit	5B	5-BUTTON R/L LIGHTING CONTROL STATION	SR1- 6 SR2- L	-20R (208V.,1ø, 20A, STRAIGHT BLAD 14-30R (120/208V.,1ø, 30A, TWIST L
	SLC TOS	signaling line circuit Top of stair	GTD	GENERATOR TRANSFER DEVICE W/ 0-10V	SR3- L SR4- 1	5-20R (120V.,10, 20A, IWISI LOCK) 4-50R (120/240V.,10, 50A. STRAIGH ENOTES CONNECTION TO EMERCENCY
	TP	Twisted Pair		DIFASS RELAT		
	tps tsp	trap priming station Twisted shielded pair	LIGHTIN	NG FIXTURES	₩ M	
	UON	UNLESS OTHERWISE NOTED		2X4 LED RECESSED FIXTURE	π ⊕	DOUBLE DUPLEX RECEPTACLE (QU
В	VD	VOICE/DATA			•	DOUBLE DUPLEX GFCI RECEPTACLE
	VF (VIF)	Ventilation Fan Verify in Field		224 LED EMERGENCI FIATORE	•	USB + QUAD RECEPTACLE
	WP	WEATHERPROOF		2X2 LED RECESSED FIXTURE / EMERGENCY	Ŷ	USB + DUPLEX RECEPTACLE
	xfmr +42	ikansformer Denotes mounting height in inches		TRACK LIGHTING FIXTURE	Φ	EMERGENCY POWER DUPLEX RECEI
	(RE) (F)	denotes "relocated existing" denotes "existing to remain"		LINEAR LED FIXTURE	⊕ +48	EMERGENCY POWER QUAD RECEPT
	(R)	denotes "remove existing"		LINEAR EMERGENCY LIGHTING SECTION		CEILING MOUNT DEVICE - NEMA 5
	(ER) (N)	denotes "existing to be relocated" Denotes "New"		DECORATIVE LIGHT FIXTURE		CEILING MOUNT DEVICE - NEMA X
				LED EXIT SIGN		CORD REEL TYPE 'A, B, C, ETC.'
	VACAN	<u>CY SENSORS</u>		EMERGENCY LIGHTING REMOTE/BATTERY	@ @ @	PREWIRED WIREMOLD ALA3800-GBA
	SVD	VACANCY SENSOR SWITCH W/ 0-10V DIMMING		CONCEALED EMERGENCY LIGHT		
	Sv	VACANCY SENSOR SWITCH	000	EMERGENCY RECESSED DOWNLIGHT	<u>FIRE</u>	LARM
	М _{А∕В/С}	DUAL TECH HARDWIRED SENSOR – CEILING MTD "A" = 500 SQFT / 180 DEGREE	♥ ⌒ ♪	WALL SCONCE FIXTURES	SD	FIRE ALARM SMOKE DETECTOR
		"B" = 1000 SQFT / 180 DEGREE "C" = 2000 SQFT / 360 DEGREE	SECUR		HD	FIRE ALARM HEAT DETECTOR
	PP	OCCUPANCY SENSOR POWER PACK RELAY			F	FIRE ALARM MANUAL PULL STATION
	SP	OCCUPANCY SENSOR SLAVE PACK RELAY		SECURITY SYSTEM CAMERA		FIRE ALARM SPEAKER/STROBE
A	<u> </u>	WIRELESS VACANCY SENSORS		MAGNETIC LOCK / REQUEST TO EXIT		FIRE ALARM STROBE FIRE ALARM SMOKE DETECTOR
		"WC" = CEILING MOUNT SENSOR - 360" "WH" = WALL MOUNT - HALLWAY SENSOR		CARD READER / ELECTRIC STRIKE	SD _{SB}	W/ SOUNDER BASE
		"KW" = CORNER MOUNT SENSOR - 90" "WW" = WALL MOUNT SENSOR - 180"		EMERGENCY DOOR RELEASE		EIRE ALARM CONTROL /RELAY MODI
			PS	POWER SUPPLY		REMOTE TEST STATION
	SYSTEM	AS FURNITURE/SEATING	/ 🛞	DOOR CONTACT / MOTION DETECTOR	[MM]	FIRE ALARM MONITORING MODULE
	JM	mard—wired feed to systems furniture "W = Wall MTD / C = Ceiling MTD"		SECURITY SYSTEM ALARM HORN/STROBE		ELEVATOR RECALL SMOKE DETECTO
	P	POWER POLE "LETTER DENOTES TYPE"	DR	DOOR RELEASE CONTROL		CARBON MONOXIDE DETECTOR
	P	CONDUIT STUB WITH POWER WHIP TO SEATING		VIDEO INTERCOM MASTER / REMOTE STATION		SPEAKER/STROBE - CEILING MTD
		WALL BOX WITH POWER WHIP TO SEATING		ADA DOOR STATION / MOTORIZED DOOR MTR	Ô	CEILING MOUNTED STROBE
)) ×	MUTURIZED DOOR KEY SWITCH OPERATOR		CEILING MOUNTED SPEAKER
						NOTIFICATION APPLIANCE CIRCUIT P
						FIRE ALARM MAGNETIC DOOR HOLD

	GENERAL ELECTRICAL SPECIFICATIONS	GENERAL WIRING METHODS
	 ALL WORK SHALL COMPLY AND BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES, THE LATEST UNIFORM CONSTRUCTION CODE STATUTE, THE INTERNATIONAL CODES AS AMENDED AND ADOPTED BY PENNSYLVANIA, REGULATIONS, LOCAL CODES, THE NATIONAL ELECTRIC CODE, PCCA 	1. ALL CONDUCTOR INSULATION SHALL BE 90°C THHN/THWN. ALL FEEDERS AND BRANCH SHALL BE COPPER.
RATELY	BUILDING STANDARDS, NFPA, AND ALL OTHER AGENCIES HAVING JURISDICTION. OBTAIN ALL REQUIRED PERMITS AND PAY ALL REQUIRED FEES.	2. ALL LUGS SHALL BE U.L. LISTED FOR USE WITH COPPER OR ALUMINUM CABLE WHOSE BASED ON 75°C CONDUCTOR TEMPERATURE RATING.
NO. OF CIRCUITS	 ALL ELECTRICAL EQUIPMENT, MATERIALS, DEVICES, AND APPLIANCES SHALL BE LABELED AND LISTED BY A CERTIFIED TESTING LABORATORY. 	 ALL CIRCUITS TO BE 2#12, 1#12GND., UNLESS OTHERWISE NOTED. PROVIDE #10 AWG CONDUCTORS FOR ALL 120V., 20A BRANCH CIRCUITS EXCEEDING 90 FEET IN LENGTH.
	3. PROVIDE COMPLETE ELECTRICAL SYSTEMS AS INDICATED ON DRAWINGS AND SPECIFIED HEREIN. "PROVIDE" SHALL MEAN "FURNISH AND INSTALL". "OWNER" SHALL MEAN "THE PENNSYLVANIA CONVENTION CENTER AUTHORITY (PCCA)" OR THEIR REPRESENTATIVE "DESIGN TEAM AND OR	4. BRANCH CIRCUITS ARE DIAGRAMMATIC AND DO NOT REPRESENT ACTUAL PLACEMENT OF
	ENGINEER" SHALL MEAN "DIMITRI J. VERVERELLI, INC." OR THEIR REPRESENTATIVE.	 ALL DEVICES SHALL HAVE ADHESIVE LABELS ATTACHED TO FACEPLATE IDENTIFYING CIRC NUMBER(2)
N	4. REFERENCE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR COORDINATION AND OTHER WORK. 5. PROVIDE ALL MATERIALS AND LABOR FOR THE COMPLETE ELECTRICAL WORK AS SHOWN ON THE	NUMBER(S). 7. ALL BRANCH CIRCUIT WIRING IN FINISHED AREAS IS TO BE INSTALLED CONCEALED IN F
	DRAWINGS AND AS SPECIFIED. ANY APPLIANCE, DEVICE OR WORK INCIDENTAL OR NECESSARY TO MAKE THE WORK COMPLETE SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.	WALLS AND CEILINGS. 8. ALL OUTLET BOXES SHALL BE 4 INCH SQUARE GALVANIZED PRESSED STEEL WITH RAIS
ELBOARD DARD	6. GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL GOVERNMENTAL TAXES, FEES AND COSTS; FILE NECESSARY PLANS AND OBTAIN APPROVALS OF ALL GOVERNMENTAL DEPARTMENTS AND PUBLIC UTILITIES HAVING JURISDICTION; OBTAIN CERTIFICATES OF INSPECTION FROM AN NFPA APPROVED AGENCY FOR THE WORK AND DELIVER SAME TO THE OWNER WITH REQUEST FOR FINAL PAYMENT.	PLATES. BOXES FOR SINGLE DEVICES MAY BE 2" x 4" SINGLE SIZES. BOXES FOR LIGH FIXTURES SHALL 4" OCTAGON TYPE. EXTERIOR AND SURFACE MOUNT EXPOSED INTERIO SHALL BE CAST METAL WITH THREADED HUBS. PROVIDE SHALLOW BOXES IN FURRED-C
	7. VISIT THE SITE AND VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS AFFECTING THE WORK, PRIOR TO SUBMITTING BID. IN SUBMITTING THE BID THE CONTRACTOR VERIFIES AND ASSERTS THAT HE HAS VISITED THE SITE AND NO ADDITIONAL COST TO THE OWNER WILL BE INCURRED DUE TO THE CONTRACTOR'S FAILURE TO VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS SHALL BE IMMEDIATELY BROUGHT	ABOVE AT INTERVALS NOT GREATER THAN 6'-O" AND WITHIN 12" OF A DEVICE BACKBO TIME SHALL 'MC' CABLE OR CONDUIT BE SUPPORTED FROM FIXTURE HANGERS, CEILING HANGERS OR HVAC SUPPORTS. 'MC' CABLE SHALL NOT LAY ON TOP OF THE CEILING S
	TO THE ATTENTION OF THE ARCHITECT/ENGINEER.	11. GROUNDING SHALL BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AF
	BEST TRADE METHODS. 9. SUBMIT SHOP DRAWINGS ACCORDING TO THE GENERAL CONDITIONS AND OBTAIN APPROVAL BEFORE	12. ANY EQUIPMENT REQUIRING MORE THAN 15 AMPERES SHALL BE ON ITS OWN DEDICATE
	PURCHASE OR INSTALLATION OF WORK. 10. COORDINATE ALL RIGGING ACTIVITIES AND POWER SHUTDOWNS WITH THE OWNER'S REPRESENTATIVE AND OTHER TRADES. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL STAGING, RIGGING, HOISTING AND SERVICES NECESSARY FOR THE EPECTION AND DELIVERY OF THE ELECTRICAL	 SHARED NEUTRALS FOR BRANCH CIRCUITS WILL NOT BE PERMITTED. PROVIDE DEDICATE FOR EACH BRANCH CIRCUIT. 14. WIRE AND CABLE SHALL BE COPPER, 600 VOLT INSULATION TYPE THHN, UNLESS OTHE NOTED. WIRE SIZES #10 AND SMALLER SHALL BE SOLID, #8 AND LARGER SHALL BE S
	EQUIPMENT INTO THE BUILDING. 11. PRIOR TO FINAL ACCEPTANCE OF THE WORK SUBMIT A WRITTEN STATEMENT TO THE ARCHITECT	MINIMUM SIZE WIRE SHALL BE #12AWGBRANCH CIRCUITS CONNECTED TO VIBRATING E (MOTORS, AHU'S, FCU'S, CU'S ETC.) SHALL BE STRANDED.
	GUARANTEEING ALL EQUIPMENT AND WORK FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE. 12. LOCAL SWITCHES – HEAVY DUTY, SPECIFICATION GRADE, FLUSH TUMBLER, COLOR AS SELECTED BY	15. ALL RACEWAYS SHALL BE U.L. APPROVED. MINIMUM SIZE CONDUIT AND EMT SHALL BE 16. MC CABLE SHALL BE GALVANIZED SPIRAL STEEL ASSEMBLY WITH THHN WIRES INCLUDE
	ARCHITECT, QUIET OPERATION, 20A. 120/277V., SINGLE, 2-POLE, 3 OR 4 WAY AS REQUIRED. PROVIDE WEATHER-PROOF SWITCHES WHERE SHOWN.	APPROVED FITTINGS AND COUPLINGS BY AFC CO. CABLE SHALL HAVE GREEN INSULATE WIRE.
	13. DUPLEX RECEPTACLES – LEVITON EXTRA HEAVY DUTY, GROUNDING TYPE, 20 AMP, 125V. COLOR SHALL BE AS SELECTED BY ARCHITECT.	17. INTERIOR WIRING METHODS • FEEDERS - ELECTRICAL METALLIC TUBING (EMT). • PRANCH CIRCUITS - ELECTRICAL METALLIC TUBING (EMT) WHERE EXPOSED AND ME
	14. DUPLEX USB CHARGER RECEPTACLES: DECORA TAMPER-RESISTANT, GROUNDING TYPE, 20 AMP, 125V., 5A DC USB A/C, HUBBELL #USB8300AC. COLOR SHALL BE AS SELECTED BY ARCHITECT.	CABLE (MC) WHERE CONCEALED IN WALLS AND MAXIMUM 8' ABOVE ACCESSIBLE CE LIGHT FIXTURES.
R SUPPLY	15. GFCI RECEPTACLES SHALL BE LEVITON #G5362 OR EQUAL. 16. DEVICE PLATES — 302 STAINLESS STEEL, SINGLE OR MULTI-GANG TO MATCH DEVICE.	 VOICE/DATA/VIDEO – ELECTRICAL METALLIC TUBING (EMT), WHERE EXPOSED OR CO WALLS AND FLOORS. USE SURFACE RACEWAY WHERE INDICATED ON THE DRAWINGS. SECURITY – ELECTRICAL METALLIC TUBING (EMT), WHERE EXPOSED OR CONCEALED AND FLOORS. USE SURFACE RACEWAY WHERE INDICATED ON THE DRAWINGS. FIRE ALARM – ELECTRICAL METALLIC TUBING (EMT).
COIL UNIT	17. DIMMERS - REFERENCE THE ELECTRICAL LEGEND AND DETAILS FOR TYPES AND MODEL NUMBERS.	18. EXTERIOR WIRING BELOW GRADE
H VALVE P PRIMER STATION	MODEL NUMBERS.	 FEEDERS/BRANCH CIRCUITS – SCHEDULE 40 NON-METALLIC CONDUIT (PVC). PVC TRANSITION TO ABOVE GRADE/SLAB – RIGID STEEL GALVANIZED CONDUIT OR I ALUMINUM CONDUIT.
SINET UNIT HEATER SH VALVE XFMR ICE CARRIER	19. DEVICE LOCATIONS SHOWN ON DRAWINGS ARE DIAGRAMMATIC, COORDINATE EXACT LOCATION AND MOUNTING HEIGHT IN FIELD PRIOR TO ROUGH IN.	 PVC TRANSITION TO INSIDE BUILDING - RIGID STEEL GALVANIZED CONDUIT OR RIGII CONDUIT. RIGID ALUMINUM CONDUIT IN CONTACT WITH SOIL OR CONCRETE SHALL HAVE SUPP
SHDOWN UNIT	GENERALLY SHOW ONLY NEW WORK THAT IS REQUIRED. THE DRAWINGS DO NOT SHOW IN DETAIL HOW THE NEW WORK IS TO BE INSTALLED BECAUSE UNKNOWN OBSTRUCTIONS TO ITS INSTALLATION	CORROSION PROTECTION (BITUMASTIC PAINT, TAPE WRAPS APPROVED FOR THE PUR PVC COATED CONDUIT.)
	MAT BE DISCLOSED AS THE WORK PROGRESSES. PERFORM THE WORK INDICATED, AND PERFORM SUCH ADDITIONAL WORK AS MAY BE REQUIRED BUT IS NOT SPECIFICALLY SHOWN. PERFORM THIS WORK IN SUCH A MANNER AS TO OVERCOME ALL OBSTRUCTIONS AND DIFFICULTIES THAT ARE ENCOUNTERED AT NO ADDITIONAL EXPENSE TO THE OWNER	 19. EXTERIOR WIRING ABOVE GRADE FEEDERS - RIGID ALUMINUM CONDUIT. BRANCH CIRCUITS - RIGID ALUMINUM CONDUIT.
	21. NEW AND EXISTING WIRING PASSING THROUGH FIRE RATED PARTITIONS, FLOORS, AND CEILINGS:	20. USE LIQUID-TIGHT FLEXIBLE CONDUIT TO ALL EXTERIOR VIBRATING EQUIPMENT AND PUI
	BETWEEN THE SLEEVE AND WIRING/CONDUIT WITH U.L. APPROVED FIRESTOP PRODUCT AS MANUFACTURED BY HILTI, 3M, OR STI TO OBTAIN A U.L. LISTED FIRE RATED ASSEMBLY. ALL	21. PROVIDE CONDUCTOR PIG-TAIL REDUCERS OR OVERSIZED LUGS TO COMPENSATE FOR CONDUCTOR SIZE DUE TO VOLTAGE DROP.
RIGERATOR ONTAL MTD	PRODUCTS SHALL BE INSTALLED IN STRICT COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL EXISTING PENETRATIONS SHALL BE SEALED WITH A U.L. FIRE RATED ASSEMBLY.	22. FIELD COORDINATE LOCATION OF ALL CEILING MOUNTED DEVICES WITH LIGHT FIXTURES REGISTERS AND GRILLES.
WASHER ACE MTD	22. CONTRACTOR SHALL PROPERLY PROTECT ALL WORK AND EQUIPMENT TO PREVENT OBSTRUCTION, DAMAGE, OR LOSS. ALL CONDUIT OPENINGS SHALL BE CLOSED WITH CAPS OR PLUGS DURING INSTALLATION. ALL EQUIPMENT SHALL BE TIGHTLY COVERED WITH APPROVED MATERIAL AND	23. COORDINATE ALL DEVICE LOCATIONS WITH THE FURNITURE LAYOUT.
SEWORK MOUNTED	PROTECTED AGAINST DIRT, WATER, OR MECHANICAL INJURY. AT FINAL COMPLETION, ALL WORK SHALL BE THOROUGHLY CLEANED AND DELIVERED IN PERFECT, UNBLEMISHED CONDITION.	CEILING (ATC, ETC.), THE SENSOR SHALL BE PENDANT MOUNTED AT HEIGHT OF THE LI FIXTURES.
: HOOD RFACE WP IN USE TING RECEPTACLE	23. PROVIDE BARRICADES AND LIGHTS (IF REQUIRED) AROUND ALL WORK AREAS TO PROTECT PEDESTRIAN TRAFFIC AND TO PREVENT UNAUTHORIZED PEDESTRIAN ACCESS. PROTECTION SHALL MEET THE REQUIREMENTS OF THE LOCAL AND STATE REGULATIONS AND GOVERNMENT BODIES.	25. ALL EXPOSED LOW VOLTAGE WIRING FOR THE LIGHTING CONTROL SYSTEM TO BE INSTA CONDUIT.
GE PROTECTION	24. ALL DAMAGE TO THE BUILDING, MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS OR SURROUNDINGS, RESULTING FROM CONTRACTOR'S FAILURE TO ADEQUATELY PROTECT THE WORK SHALL BE REPAIRED OR REPLACED AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER, INCLUDING ANY WORK WORK DAMAGED IN OPERE TO MAKE COOD SUCH DEFECTS.	26. PROVIDE BRANCH CIRCUITS TO EACH VAV BOX FROM LOCAL UNSWITCHED NORMAL POW (OR AS SHOWN ON THE DRAWINGS). REFERENCE MECHANICAL DRAWINGS FOR EXACT LO AND QUANTITIES.
ST LOCK) CK)	25. ALL EQUIPMENT AND MATERIALS REMOVED AND NOT WANTED BY OWNER SHALL BECOME PROPERTY	27. PROVIDE ALL CODE REQUIRED DUCT MOUNTED SMOKE DETECTORS. REFERENCE MECHAN DRAWINGS FOR LOCATIONS.
CY SOURCE	26. SEAL AND PATCH ALL REMAINING HOLES, OPENINGS, ETC. TO MATCH THE ADJOINING SURFACES IN	28. CONTRACTOR SHALL ATTEND A MANDATORY FIELD MEETING TO COORDINATE THE THE EX LOCATIONS AND HEIGHTS OF FURNITURE, EQUIPMENT, AND DEVICES WITH THE OWNER A ARCHITECT PRIOR TO ROUGH—IN.
	27. ANY EXISTING POTENTIALLY HAZARDOUS MATERIALS ENCOUNTERED IN THE COURSE OF THE WORK	29. PROVIDE BRANCH CIRCUITS TO ALL OF THE AUTOMATIC TEMPERATURE CONTROL PANELS DEVICES.
(QUAD)	28. SMOKING AT THE JOB SITE IS NOT ALLOWED. FLAMMABLE MATERIALS MAY NOT BE STORED OR	30. FOR SMALL FRACTIONAL HP MOTORS PROVIDE LOCAL DISCONNECT SWITCH AND CONTRO CONTACTOR TO INTERFACE WITH THE ATC SYSTEM U.O.N. COORDINATE CONTROL VOLTAG
ACLE	ALLOWED TO REMAIN OVERNIGHT WITHIN THE BUILDING. THIS INCLUDES, BUT IS NOT LIMITED TO, PAINTS, THINNERS, CLEANING AND RESTORATION PRODUCTS, RAGS OR BRUSHES, AND ANY TOOL THAT IS CAPABLE OF PRODUCING FLAME. SAWDUST, SCRAP LUMBER, SOAKED RAGS, AND OTHER FLAMMABLE CONSTRUCTION DEBRIS MUST BE COLLECTED AT THE END OF EACH DAY AND DISPOSED OF PROPERLY OUTSIDE OF THE BUILDING.	MECH/ATC CONTRACTOR. 31. COORDINATE ALL DEVICE LOCATIONS WITH THE FURNITURE AND CASEWORK LAYOUT. REC AND IT JACKS SHALL BE MOUNTED IN THE OPEN AREA/LEG SPACE BENEATH THE DESI
	29. MAINTAIN SUITABLE FIRE PROTECTION EQUIPMENT AT BUILDING SITE. AT MINIMUM, TYPE ABC FIRE EXTINGUISHERS SHALL BE PROVIDED WHERE WORK IS BEING PERFORMED WITH OPEN FLAME OR USING ELAMMARIE MATERIALS AND AN ADDITIONAL FIRE EXTINGUISHER SHALL BE PROVIDED TO THE	32. CIRCUIT ALL EXIT SIGNS INTO LOCAL 277V NORMAL/EMERGENCY NIGHT LIGHT CIRCUIT.
ECEPTACLE	WORKER PERFORMING THE WORK. TRAIN ALL WORKERS IN THE USE OF FIRE PROTECTION EQUIPMENT. ALL FIRE SAFETY REQUIREMENTS LISTED ABOVE ARE TO BE CONSIDERED MINIMUM.	FLOOR / WALL / CEILING BOX SPECIFICATIONS
1A 5-20R	CONTRACTOR IS RESPONSIBLE FOR TAKING OTHER MEASURES DEEMED NECESSARY BY THE CONTRACTOR TO PROTECT THE BUILDING.	1. <u>TYPE 'FB1' – 8" FIRE RATED POKE-THRU</u> (RECESSED ACTIVATION)
A X-XXX	30. THE CONTRACTOR SHALL MAINTAIN AS-BUILT DRAWINGS OF THE WORK PERFORMED. AT THE COMPLETION OF THE INSTALLATION, EACH TRADE WILL INCORPORATE ALL FIELD CHANGES ON THE AUTOCAD DATA BASE AND SUBMIT THREE (3) SETS OF PLOTTED PRINTS & A DATA DISK FOR	FLOOR BOX: MODEL #8STC COVER: HEAVY DUTY ROUND SOLID SURFACE LID #8CTCHDBS
	RECORD PURPOSES. NO WALLS OR CEILINGS SHALL BE CLOSED PRIOR TO SITE OBSERVATION AND REVIEW BY THE OWNER.	DEVICE BRACKETS: (3) 1PTHA & (1) 5BLH & (1) 575CHA & (1) 8DIV / COOI & VD BRACKETS WITH OWNER RECEPTACLE: (2) NEMA 5–20R DUPLEX RECEPTACLES W/ (2) USB CHAR
-GBA (18"O.C.)	TELECOMMUNICATIONS NOTES	"A/V" CONDUIT(S): (2) 1" CONDUIT ROUTED TO ABOVE CEILING (MODEL #22CH. "V/D" CONDUIT(S): (1) 1" CONDUIT ROUTED TO ABOVE CEILING (MODEL #11010
	CABLING, CONDUIT, BACKBOXES, RACEWAYS, ETC. IN THE BID PROPOSAL. PROVIDE A COMPLETE TURNKEY TELECOMMUNICATIONS SYSTEM TO MATCH THE FACILITIES EXISTING SYSTEM.	2. VERIFY LOCATIONS OF FLOOR AND WALL BOXES WITH DESIGN PROFESSIONAL PRIOR TO
	2. COORDINATE ALL EQUIPMENT AND DEVICES WITH THE OWNERS'S TELECOMMUNICATIONS DEPARTMENT PRIOR TO BIDDING. INCLUDE ALL REQUIRED WORK IN THE BID PROPOSAL FOR A COMPLETE FULLY	CONTRACTOR SHALL REVIEW AND LOCATE BELOW FLOOR CONDITIONS FOR OBSTRUCTION TO PREFERRED FLOOR BOX LOCATIONS PRIOR TO CORING. SHOULD OBSTRUCTIONS BE ENCOUNTERED. PROVIDE TO THE DESIGN PROFESSIONAL A DIMENSIONED COORDINATION
TION	3. ALL CABLING SHALL BE CAT-6E 4-PAIR UTP WITH RJ-45 JACKS. OBSERVE ALL MANUFACTURER	INDICATING AREAS WITHOUT OBSTRUCTIONS WHERE FLOOR BOXES CAN BE LOCATED. 3. CONTRACTOR TO COORDINATE LOCATION OF FLOOR BOXES IN RELATION TO THE TABLE LEGS/SUPPORTS, FURNITURE LEGS SHALL NOT SIT OVER FLOOR BOXES, BOXES AND F
	 4. INSTALLATION SHALL COMPLY WITH ANSI/TIA/EIA 568C TELECOMMUNICATIONS CABLING STANDARD, COMMERCIAL BUILDINGS. TEST ALL COPPER UTP CABLES UTILIZING A PERMANENT LINK TEST WITH A 	 INDICATED ON DRAWINGS IN APPROXIMATE LOCATIONS UNLESS DIMENSIONED. ADJUST BUUP TO 10 FEET TO ACCOMMODATE INTENDED PURPOSE. 4. SET FLOOR BOXES LEVEL, READY TO RECEIVE COVERS AND FLANGES. 5. INSTALL BOXES AND FITTINGS TO PRESERVE FIRE RESISTANCE RATING OF SLABS AND (
	LEVEL III CABLE TESTER, PROVIDE TEST RESULTS TO OWNER. 5. PROVIDE ALL CABLING BACK TO LOCATION DETERMINED BY OWNER. MAKE ALL TERMINATIONS.	ELEMENTS, USING MATERIALS AND METHODS SPECIFIED ELSEWHERE IN THE CONSTRUCT DOCUMENTS. 6. ADJUST FLOOR BOX FLUSH WITH FINISH FLOORING MATERIAL. FOR OVERLAPPING FLANG
ror	6. ALL WIRING IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED IN CONDUIT.	THE FLANGE SHALL SIT TIGHT TO THE FINISH FLOOR MATERIAL (TILE/CARPET, ETC.). FOR FLANGELESS BOXES, TOP OF BOX SHALL SIT FLUSH WITH FINISH FLOOR MATERIAL (TIL
IODULE	7. ALL EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT. 8. CONTRACTOR SHALL PROVIDE ALL RACEWAYS, BOXES, CABLING DEVICES, TERMINATIONS, PATCH	VISIBLE GAPS BETWEEN THE BOX AND THE FLOORING CONTRACTOR; THERE SHALL VISIBLE GAPS BETWEEN THE BOX AND THE FLOORING MATERIAL. 7. PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE INSTALLATION; INCLUDING A
LE	PANELS, RACKS, GROUNDNG, TESTING, ETC. IN THEIR BID PROPOSAL. PROVIDE BACKBOXES AND CONDUIT PATHWAYS FOR ALL INFORMATION TECHNOLOGY SYSTEM DEVICES AND WIRING.	DEVICE MOUNTING PLATES FOR DEVICES FURNISHED AND INSTALLED BY OTHERS. PROVI EXTENSION RINGS, BARE CONCRETE/TERRAZZO RINGS, AND MUD CAPS AS REQUIRED F APPLICATION.
ECTOR	 WHERE CABLING PASSES THROUGH NEW OR EXISTING WALLS, PROVIDE STI EZPATH 44+ SERIES FIRE RATED PRE-MANUFACTURED CABLE PATHWAYS COMPLETE WITH BRACKETS AND RADIUS CONTROL MODULE. 	8. CLEAN INTERIOR OF BOXES TO REMOVE DUST, DEBRIS, AND OTHER MATERIAL. 9. COORDINATE FLOOR BOX FLANGE TYPE WITH FLOOR COVERING.
итD	10. FOR EACH WALL MOUNTED COMMUNICATION JACK PROVIDE A 4"x4"x2.125" BOX WITH SINGLE GANG	
	COORDINATE ALL DEVICE LOCATIONS WITH THE FURNITURE LINGUE STORES AND THE THE PROVIDER	
	11. COORDINATE ALL DEVICE LOCATIONS WITH THE FURNITURE LAYOUT, RECEPTACLES AND IT JACKS SHALL BE MOUNTED IN THE OPEN AREA/LEG SPACE BENEATH THE DESK. DEVICES TO BE MOUNTED 8" ON CENTER.	
II POWER SUPPLY	12. ALL RECESSED AND SURFACE MOUNTED BOXES SHALL BE FURNISHED WITH 1-1/4 INCH DIAMETER EMT FIXED TO THE TOP OF THE BOX (TYPICAL) AND TURNING OUT A MINIMUM OF 6 INCHES	
	ABOVE THE NEAREST ACCESSIBLE CEILING LEVEL. 13. BOTH OPEN ENDS OF THE EMT SHALL BE FURNISHED WITH A $1-1/4$ INCH DIAMETER SET SCREW	
	CONNECTOR AND THREADED NTLON BUSHING. 14. EACH LENGTH OF EMT SHALL BE FURNISHED WITH A PULL STRING EXTENDING AT LEAST 18-INCHES BEYOND FACH OPEN FND OF FMT	
	TO TRUTLE DETURD LANT OF END OF EMI.	

THWN. ALL FEEDERS AND BRANCH CIRCUITS	GENERAL FIRE ALARM NOTES 1. THIS SPECIFICATION DESCRIBES AN EXTENSION OF THE EXISTING FIRE ALARM SYSTEM FOR THE LIMITED RENOVATED AREAS OF THE EXISTING BUILDING. MANUFACTURER: SIEMENS	
PPER OR ALUMINUM CABLE WHOSE AMPACITY IS	 THE SYSTEM SHALL BE IN FULL COMPLIANCE WITH NATIONAL AND LOCAL CODES. THE SYSTEM SHALL INCLUDE ALL REQUIRED HARDWARE, RACEWAYS, INTERCONNECTING WIRING AND 	
ERWISE NOTED. PROVIDE #10 AWG EXCEEDING 90 FEET IN LENGTH.	SOFTWARE TO ACCOMPLISH THE REQUIREMENTS OF THIS SPECIFICATION AND THE CONTRACT DRAWINGS, WHETHER OR NOT SPECIFICALLY ITEMIZED HEREIN.	KELLY MAIELLO ARCHITECTS
LL IDENTIFY CIRCUIT NUMBERS.	SINGLE MANUFACTURER, ENGAGED IN THE MANUFACTURING AND SALE OF FIRE DETECTION DEVICES FOR OVER TEN YEARS, UNLESS OTHERWISE NOTED TO REUSE EXISTING.	1420 Walnut Street, 15th Floor Philadelphia, PA 19102
ED TO FACEPLATE IDENTIFYING CIRCUIT	5. THE SYSTEM AS SPECIFIED SHALL BE SUPPLIED, INSTALLED, TESTED AND APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION, AND TURNED OVER TO THE OWNER IN AN OPERATIONAL CONDITION.	www.kmarchitects.com
ANIZED PRESSED STEEL WITH RAISED COVER 4" SINGLE SIZES. BOXES FOR LIGHTING SURFACE MOUNT EXPOSED INTERIOR BOXES IDE SHALLOW BOXES IN FURRED-OUT WALLS.	6. PROVIDE AUDIBLE ALARMS IN ALL AREAS THROUGHOUT THE RENOVATED SPACE. THE AUDIBLE ALARM NOTIFICATION DEVICES SHALL PROVIDE A SOUND PRESSURE LEVEL OF 15 DBA ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5 DBA ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS, WHICHEVER IS GREATER, IN EVERY SPACE WITHIN THE RENOVATED AREA. MINIMUM SOUND PRESSURE LEVEL SHALL BE 70 DBA, EXCEPT FOR MECHANICAL EQUIPMENT ROOMS WHICH SHALL BE MINIMUM 90 DBA.	
UPPORTED FROM THE BUILDING CONSTRUCTION D WITHIN 12" OF A DEVICE BACKBOX. AT NO D FROM FIXTURE HANGERS, CEILING GRID IOT LAY ON TOP OF THE CEILING SYSTEM.	7. THE CONTRACTOR SHALL INCLUDE IN HIS WORK, WITHOUT EXTRA COST TO THE OWNER, ANY LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS, IN ADDITION TO CONTRACT DOCUMENTS, IN ORDER TO MEET THE FUNCTIONAL INTENT AND COMPLY WITH ALL APPLICABLE CODES, LAWS, ORDINANCES, RULES AND REGULATIONS, WHETHER OR NOT INDICATED IN THE CONSTRUCTION DOCUMENTS.	Pennsylvania Convention Center
LESS THAN 20 AMPERES. THE NATIONAL ELECTRICAL CODE ARTICLE 250.	8. PROVIDE STROBES RATED 15/30/45/60/75 CD UNLESS OTHERWISE NOTED. SELECTION OF CANDELA RATINGS ARE THE RESPONSIBILITY OF THE FIRE ALARM VENDOR AND CONTRACTOR. THE CANDELA RATING OF EXISTING DEVICES BEING RE-USED SHALL BE REVIEWED AND VERIFIED FOR	
S SHALL BE ON ITS OWN DEDICATED CIRCUIT.	THE LAYOUT SHOWN ON THE DRAWINGS. PROVIDE NEW ADDITIONAL DEVICES OR MODIFY LAYOUT AS REQUIRED TO MEET APPLICABLE CODES AND STANDARDS.	
ULATION TYPE THHN. UNLESS OTHERWISE	 STROBES SHALL BE MOUNTED 80" ABOVE FINISH FLOOR OR 6" BELOW CEILING, WHICH EVER IS LOWER. MANUAL BUILL STATIONS SHALL BE MOUNTED A MINIMUM 42" ABOVE EINISHED FLOOR AND A 	
OLID, #8 AND LARGER SHALL BE STRANDED. RCUITS CONNECTED TO VIBRATING EQUIPMENT NDED.	10. MANUAL PULL STATIONS SHALL BE MOUNTED A MINIMUM 42 ABOVE FINISHED FLOOR AND A MAXIMUM OF 48" ABOVE FINISHED FLOOR TO CENTER OF DEVICE.	
SIZE CONDUIT AND EMT SHALL BE ¾"	MIST AND STEAM. 12. FIELD COORDINATE LOCATION OF ALL CEILING MOUNTED DEVICES WITH LIGHT FIXTURES AND HVAC	1101 Arch Street
EMBLY WITH THHN WIRES INCLUDED, OR WITH ABLE SHALL HAVE GREEN INSULATED GROUND	REGISTERS AND GRILLES. 13. ALL FIRE ALARM CABLE SHALL BE SOLID COPPER CABLE INSTALLED IN EMT.	Philadelphia, PA 19107 Phone: 215-418-4742
	14. THE CONTRACTOR IS RESPONSIBLE FOR SIZING ALL WIRE AND CABLE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, NFPA, AND VOLTAGE DROP.	www.paconvention.com
IG (EMT) WHERE EXPOSED AND METAL CLAD MAXIMUM 8' ABOVE ACCESSIBLE CEILINGS TO	15. PROVIDE CODE REQUIRED SIGNAGE AT EACH FIRE ALARM PULL STATION.	CaVA Architects
NG (EMT), WHERE EXPOSED OR CONCEALED IN HERE INDICATED ON THE DRAWINGS. , WHERE EXPOSED OR CONCEALED IN WALLS	COMPLETE FUNCTIONAL SYSTEM INTEGRATED WITH THE EXISTING BUILDING SYSTEM. 17. SYSTEMS MUST BE PROTECTED AND MAINTAINED DURING DEMOLITION AND CONSTRUCTION.	Interior Designer 2118 Locust Street
dicated on the drawings. IT)	18. THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID PROPOSAL ALL COSTS INCURRED BY THE FIRE ALARM VENDOR AND FOR ALL EQUIPMENT AND DEVICES.	Philadelphia, PA 19103 Phone: 215-732-8525
N-METALLIC CONDUIT (PVC).) STEEL GALVANIZED CONDUIT OR RIGID	19. FURNISH BATTERY CALCULATIONS AND DRAWINGS FOR THE NEW SYSTEM.	DIMITRI J. VERVERELLI, INC.
TEEL GALVANIZED CONDUIT OR RIGID ALUMINUM	21. PROVIDE ACCESSIBLE WALL MOUNTED TEST/STATUS STATIONS FOR ALL NEW AND DUCT MOUNTED SMOKE DETECTORS.	PHILADELPHIA, PENNSYLVANIA
E WRAPS APPROVED FOR THE PURPOSE, OR	22. ALL DUCT MOUNTED SMOKE DETECTORS CONCEALED ABOVE ACCESSIBLE CEILINGS SHALL HAVE THEIR LOCATION IDENTIFIED ON THE CEILING GRID.	
	23. LABEL ALL FIELD DEVICES, I.E. DETECTORS AND MODULES, WITH A PRINTED DEVICE ADDRESS.	
IOR VIBRATING EQUIPMENT AND PUMP MOTORS.	25. CONDUIT COMPRESSION CONNECTORS AND COUPLINGS ARE TO BE INSULATED STEEL.	
ED DEVICES WITH LIGHT FIXTURES AND HVAC	WIRING DEVICE LOCATION & COORDINATION	
ITURE LAYOUT.	 THIS CONTRACTOR SHALL EXAMINE ALL ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS, ELEVATIONS, AND DETAILS BEFORE LOCATING OUTLETS. OUTLETS SHALL BE PLACED AS REQUIRED TO HARMONIZE WITH MOLDINGS, PANELS, ETC. OUTLET LOCATIONS SHALL NOT BE OBTAINED FROM SCALE DIMENSIONS ON ELECTRICAL DRAWINGS BUT FROM MEASUREMENTS ON ARCHITECTURAL PLANS AND/OR DETAILS. 	
NG CONTROL SYSTEM TO BE INSTALLED IN	2. IF AN OUTLET IS INSTALLED BY THIS CONTRACTOR IN SUCH A LOCATION AS TO BE OUT OF PROPER RELATION TO BEAMS, WALLS, OR OTHER DETAILS OF THE BUILDING, ITS LOCATION SHALL BE CORRECTED BY, AND AT THE EXPENSE OF THIS CONTRACTOR, AT THE DIRECTION OF THE DESIGN PROFESSIONAL	
I LOCAL UNSWITCHED NORMAL POWER SOURCE	 VERIFY OUTLET BOXES ARE INSTALLED AT PROPER HEIGHT. VERIFY WALL OPENINGS ARE NEATLY CUT AND COMPLETELY COVERED BY WALL PLATES. 	
CHANICAL DRAWINGS FOR EXACT LOCATIONS	5. VERIFY BRANCH CIRCUIT WIRING INSTALLATION IS COMPLETED, TESTED, AND READY FOR CONNECTION TO WIRING DEVICES.	
ETING TO COORDINATE THE THE EXACT	 TAKE STEPS TO INSURE THAT DEVICES AND THEIR BOXES ARE PROTECTED. DO NOT PLACE WALL FINISH MATERIALS OVER DEVICE BOXES AND DO NOT CUT HOLES FOR BOXES WITH ROUTERS THAT ARE GUIDED BY RIDING AGAINST OUTSIDE OF THE BOXES. KEEP OUTLET BOXES EREE OF PLASTER DRYWALL JOINT COMPOLIND MORTAR CEMENT. 	SEAL
TIC TEMPERATURE CONTROL PANELS AND	CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES.	
. DISCONNECT SWITCH AND CONTROL .O.N. COORDINATE CONTROL VOLTAGE WITH THE	 INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE. INSPECT EACH WIRING DEVICE FOR DEFECTS. OPERATE EACH WALL SWITCH WITH CIRCUIT ENERGIZED AND VERIFY PROPER OPERATION. VERIFY EACH RECEPTACLE DEVICE IS ENERGIZED. TEST EACH RECEPTACLE DEVICE FOR PROPER POLARITY. TEST EACH GFCI RECEPTACLE DEVICE FOR PROPER OPERATION. ADJUST DEVICES AND WALL PLATES TO BE FLUSH AND LEVEL. 	
ITURE AND CASEWORK LAYOUT. RECEPTACLES REA/LEG SPACE BENEATH THE DESK. DEVICES	CONDUCTOR VOLTAGE DROP NOTES	SUBMISSION
EMERGENCY NIGHT LIGHT CIRCUIT.	1. BRANCH CIRCUITS SHALL BE INCREASED IN SIZE TO LIMIT VOLTAGE DROP TO 3%. FEEDERS SHALL BE INCREASED IN SIZE TO LIMIT VOLTAGE DROP TO 2%. IN NO CASE SHALL THE VOLTAGE DROP FROM SOURCE TO LOAD EXCEED 5%.	NO: ISSUE: DATE: 0 BID SET 05.27.22
PECIFICATIONS	2. FEEDER AND BRANCH CIRCUITS MAY BE SHOWN OVERSIZED TO LIMIT VOLTAGE DROP AND MAY NOT BE ABLE TO BE TERMINATED ON THE STANDARD LUGS OR DEVICE TERMINALS, CONTRACTOR SHALL	1 BID SET REVISED 07.15.22 2 BID SET REVISED 08.24.22
ED ACTIVATION)	AT NO TIME SHALL THE NEW CONDUCTORS BE LESS THAN THE OVER-CURRENT DEVICE LONG-TIME RATING. AT NO TIME SHALL CONDUCTOR STRANDS BE REMOVED FOR TERMINATING IN SMALLER LUGS.	3 BID SET REVISED 11.11.22
(1) 575CHA & (1) 8DIV / COORDINATE AV	3. FOR BRANCH CIRCUITS, TRANSITION FROM OVERSIZED CONDUCTORS TO DEVICES/RECEPTACLES SHALL BE MADE WITHIN 10 FEET OF DEVICE OR RECEPTACLE.	
TO ABOVE CEILING (MODEL #22CHA) TO ABOVE CEILING (MODEL #1101CHA)	AUDIO/VISUAL SYSTEM NOTES 1. ALL AUDIO/VISUAL CABLING AND DEVICES WILL BE FURNISHED AND INSTALLED BY OTHERS. CONTRACTOR TO PROVIDE ALL BACKBOXES AND CONDUIT PATHWAYS.	
H DESIGN PROFESSIONAL PRIOR TO ROUGH-IN. DOR CONDITIONS FOR OBSTRUCTIONS RELATED ORING. SHOULD OBSTRUCTIONS BE VAL A DIMENSIONED COORDINATION PLAN LOOR BOXES CAN BE LOCATED.	2. THE ELECTRICAL ROUGH-IN (RACEWAY/BOX) REQUIREMENTS ASSOCIATED WITH THE AUDIO VIDEO SYSTEMS ARE SHOWN WITHIN THE "AV" DRAWING SET. ALL ELECTRICAL ROUGH-IN WORK INCLUDING BACKBOXES, CONDUIT, STUB-UP CONDUIT, RACEWAYS AND RELATED APPURTENANCES AS DEFINED WITHIN THE AV DRAWING SET, INCLUDING RACEWAYS AND BACKBOXES IN CASEWORK, SHALL BE	All conditions must be verified by the contractor
BOXES IN RELATION TO THE TABLE OVER FLOOR BOXES. BOXES AND FITTINGS ARE & UNLESS DIMENSIONED. ADJUST BOX LOCATION DSE.	3. IN THE EVENT OF CONFLICTING PROVISIONS BETWEEN THE ELECTRICAL CONSTRUCTION DOCUMENTS, THE AUDIO/VISUAL CONSTRUCTION DOCUMENTS, OR THE OWNER'S REQUIREMENTS, THE MORE STRINGENT WILL APPLY AT NO ADDITIONAL COST	at the site. Notify the Architect of any discrepancies before proceeding with the work.
RS AND FLANGES. ISISTANCE RATING OF SLABS AND OTHER ED ELSEWHERE IN THE CONSTRUCTION	 COORDINATE LOCATION AND MOUNTING HEIGHTS OF ALL AUDIO/VISUAL SYSTEM DEVICES WITH THE DESIGN PROFESSIONAL PRIOR TO ROUGH-IN. 	DO NOT SCALE DRAWINGS. © 2020 Kelly/Maiello Inc.
MATERIAL. FOR OVERLAPPING FLANGE BOXES, MATERIAL (TILE/CARPET, ETC.). FOR RECESSED WITH FINISH FLOOR MATERIAL (TILE, BARE DORING CONTRACTOR: THERE SHALL BE NO	5. DEVICES, CONDUIT/EMT, AND JUNCTION BOX CONFIGURATIONS AND LOCATIONS SHOWN IN ELEVATION AND PLAN ARE CONCEPTUAL REPRESENTATIONS ONLY. CONTRACTOR SHALL COORDINATE WITH THE OWNER'S AUDIO/VISUAL CONTRACTOR PRIOR TO ROUGH-IN.	PROJECT NO.: 17140 DJVI: 1729A
G MATERIAL. MPLETE INSTALLATION; INCLUDING APPROPRIATE AND INSTALLED BY OTHERS. PROVIDE	6. ALL CONDUIT/EMT SHALL BE PROVIDED WITH PULL STRING AND NYLON BUSHINGS AT EACH FITTING.7. DEVICE BACKBOX SIZES SHALL BE COORDINATED WITH THE OWNER'S AUDIO/VISUAL CONTRACTOR.	DATE: SCALE:
S, AND MUD CAPS AS REQUIRED FOR THE	8. COORDINATE FLOOR BOX LOCATION AND TYPE OF SERVICES WITH THE AV CONTRACTOR. SHOULD THE ELECTRICAL CONTRACTOR FIND THAT ONE OR MORE OF THE LOCATIONS SHOWN, CANNOT BE	DRAWN:
COVERING.	REGARDING LOCATIONS AS WELL AS OPTIONS FOR RELOCATING THE PROBLEM LOCATIONS.	DRAWING TITLE:
	COMMONWEALTH OF PA - DEPT OF LAROR & INDUSTRY LINIFORM CONSTRUCTION CODE	ELECTRICAL COVER
	2018 INTERNATIONAL BUILDING CODE WITH AMENDMENTS	SHEET
	2018 INTERNATIONAL PLUMBING CODE WITH AMENDMENTS 2018 INTERNATIONAL FUEL GAS CODE	

2018 INTERNATIONAL MECHANICAL CODE

NATIONAL ELECTRICAL CODE - NFPA 70

INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS

INTERNATIONAL FIRE CODE (IBC 2018 CHAPTER 35, REFERENCE TO IFC.)

ACCESSIBLE & USABLE BLDS & FACILITIES - IBC - CHAPTER 11 / A117.1

INTERNATIONAL EXISTING BUILDING CODE WITH AMENDMENTS

2017

2018

2018

2018

2021

DRAWING NUMBER:

ECS



- (B) PROVIDE NEW CONVENIENCE RECEPTACLE NEXT TO PANEL. CIRCUIT #RP4C3-14.

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	KELL 1420 W Philade www.k	Y MAIELLO ARC /alnut Street, 15th Fl elphia, PA 19102 marchitects.com	CHITECTS oor
		Pennsylvan Convention PHILADELPH	ia Center //
		1101 Arch Street Philadelphia, PA 19 Phone: 215-418-47 www.paconvention.	t 107 /42 com
	CaVA A Interior De 2118 Loce Philadelph Phone: 21	Architects esigner ust Street nia, PA 19103 15-732-8525	
		DIMITRI J. VERVE Consulting en Philadelphia, pen	RELLI, INC. Iqineers Ngylvania
		· ·	
		SEAL	
		SUBMISSIO	N
	<u>NO:</u>		DATE:
	1	BID SET REVISED	07.15.22
	23	BID SET REVISED BID SET REVISED	08.24.22
	All conditi at the site discrepan	ons must be verified by the co Notify the Architect of any cies before proceeding with th SCALE DRAWINGS.	ontractor ne work.
	© 2020 K	elly/Maiello Inc.	
		r NO.: 17140	DJVI: 1729A
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	DRAWN:		
		ECTRICAL P	LANS
	DRAWING	G NUMBER: E1_0	
		- IV	



KMV				
KELLY MAIELLO ARCHITECTS 1420 Walnut Street, 15th Floor Philadelphia, PA 19102 www.kmarchitects.com				
Pennsylvania Convention Center PHILADELPHIA				
1101 Arch Street Philadelphia, PA 19107 Phone: 215-418-4742 www.paconvention.com				
CaVA Architects Interior Designer 2118 Locust Street Philadelphia, PA 19103 Phone: 215-732-8525				
DIMITRI J. VERVERELLI, INC. CONSULTING ENGINEERS PHILADELPHIA, PENNSYLVANIA				
SEAL				
SUBMISSION				
NO: ISSUE: DATE: 0 BID SET 05.27.22 1 BID SET REVISED 07.15.22 2 BID SET REVISED 08.24.22 3 BID SET REVISED 11.11.22				
All conditions must be verified by the contractor at the site. Notify the Architect of any discrepancies before proceeding with the work. DO NOT SCALE DRAWINGS. © 2020 Kelly/Maiello Inc.				
PROJECT NO.: 17140 DJVI: 1729A DATE: SCALE: DRAWN:				
DRAWING TITLE: ELECTRICAL PLANS PANEL KEY PLAN				
DRAWING NUMBER:				

					ORMA	۱L				
NEW	PANEL	RP4C3	VOLTAGE: 208/ MAINS: 100A	/120V.,3ø,4W ,M.L.O.		,	NEUTRAL BUS SIZE: 100% INTERRUPTING RATING: 100KAIC SERIES			
СКТ	СКТ	BKR	CIRCUIT DESCRIPTION	LOAD VA		Ά	CIRCUIT DESCRIPTION	BKR	СКТ	СКТ
NO.	LOAD	SIZE	AND/OR LOCATION	ØA	øB	øC	AND/OR LOCATION	SIZE	LOAD	NO.
1	1200	20/1	AC RACK QUAD REC	2400			LECTURE RM TECH FACILITY PANEL REC 1	20/1	1200	2
3	1200	20/1	AC RACK QUAD REC		2400		LECTURE RM TECH FACILITY PANEL REC 2	20/1	1200	4
5	1200	20/1	AC RACK QUAD REC			2400	LECTURE RM TECH FACILITY PANEL REC 3	20/1	1200	6
7	1200	20/1	AC RACK QUAD REC	2400			LECTURE RM TECH FACILITY PANEL REC 4	20/1	1200	8
9	720	20/1	LECTURE ROOM WALL QUAD REC		1920		LECTURE RM TECH FACILITY PANEL REC 5	20/1	1200	10
11	720	20/1	LECTURE ROOM WALL QUAD REC			1920	LECTURE RM TECH FACILITY PANEL REC 6	20/1	1200	12
13	180	20/1	OVERLOOK LECTURE RM SHADES	360			STORAGE RM REC & CONDENSATE PUMP	20/1	180	14
15	1200	20/1	OVERLOOK LECTURE RM FLOOR BOXES		1580		FCU-AV	15/1	380	16
17	500	20/1	OVERLOOK LECTURE RM FLOOR BOXES			500	SPARE	20/1	0	18
19	1080	20/1	OVERLOOK LECTURE RM FLOOR BOXES	1080			SPARE	20/1	0	20
21	1080	20/1	OVERLOOK LECTURE RM FLOOR BOXES		1080		SPARE	20/1	0	22
23	1080	20/1	OVERLOOK LECTURE RM FLOOR BOXES			1080	SPARE	20/1	0	24
25	1080	20/1	OVERLOOK LECTURE RM FLOOR BOXES	1080			SPARE		0	26
27	0	20/1	SPARE		0			60/3	0	28
29	0	20/1	SPARE			0			0	30
31	0		SPARE	0			SPARE		0	32
33	0	30/3			0			15/3	0	34
35	0	1				0			0	36
37	0		SPARE	0			SPARE		0	38
39	0	50/3			0			20/3	0	40
41	0	1				0			0	42
			TOTAL/PHASE (VA):	7320	6980	5900	*20/1* = 5mA GFCI BKR **20/1	** = 30r	nA GFCI BK	R
			LOAD FROM SUBPANELS (VA):	0	0	0	-20/1 - = CKT BKR HANDLE TIE ST +20/1 + - AFCI BKR >20/1	= SHU	INT TRIP B	KR Cl
			TOTAL (VA):		20200		[20/1] = CKT BKR HANDLE LOCK T	= TAN	DEM BKR	
RECEPTACLE:FIRST 10KVA © 100% DEMAND=10,000 VA XRECEPTACLE:REMAINDER © 50% DEMAND=9,820 VA XLIGHTING:TOTAL © 100% DEMAND=0 VA XMECHANICAL:TOTAL © 100% DEMAND=0 VA XKITCHEN:TOTAL © 65% DEMAND=0 VA XEV CHARGER:TOTAL © 125% DEMAND=0 VA XELLCTRICHEATTOTAL © 125% DEMAND=0 VA XELLCTRICHEATTOTAL © 125% DEMAND=0 VA X				$ \begin{pmatrix} 100\% = & 10,000 \text{ VA} \\ 50\% = & 4,910 \text{ VA} \\ 100\% = & 0 \text{ VA} \\ 100\% = & 380 \text{ VA} \\ 65\% = & 0 \text{ VA} \\ 125\% = & 0 \text$			BUSSING: ALUMINUM TIN PLATED COPPER ENCLOSURE: TYPE 1 TYPE 3R/4X STAINLESS STEEL MOUNTING: SURFACE FLUSH LUGS: SUBFEED DOUBLE MAIN MAIN: BREAKER LUGS ONLY			
			TOTAL DEMAN TOTA	ID LOAD =	= 15,2 =	290 VA 42 A	SAFETY: IEC 60529 IP2X FINGER BA	RRIERS	vi	

EXISTING PANEL 'MDP4C-2' 208/120V.,3ø, 4W., 350A MCB

EX P	ANEL EL	.P4B3	VOLTAGE: 480/ MAINS: 60A.	/277V. ,M.C.B.	,3ø,4W	'	NEUTRAL BUS SIZE: 10 INTERRUPTING RATING: 10	0% OKAIC	SERIES	
CKT NO.	CKT LOAD	BKR SIZE	CIRCUIT DESCRIPTION AND/OR LOCATION	L۱ ØA	DAD V ØB	′A ØC	CIRCUIT DESCRIPTION AND/OR LOCATION	BKR SIZE	CKT LOAD	CKT NO.
1	1200	20/1	EX LTS-OVERLOOK BAR	2400			EX LTS-OVERLOOK	20/1	1200	2
3	1200	20/1	EX UNKNOWN		1568		LTS/VAV-OVERLOOK LECTURE ROOM	20/1	368	4
5	1200	20/1	EX LTS-CONCOURSE TRUSSES			1200	SPARE	20/1	0	6
7	1200	20/1	EX LTS-CONCOURSE TRUSSES	2400			EX LTS-STAIR EST 11	20/1	1200	8
9	1200	20/1	EX LTS-CONCOURSE TRUSSES		2400		EX LTS-STAIR EST 11	20/1	1200	10
11	1200	20/1	EX UNKNOWN			2400	EX LTS-CORRIDOR/RM 303B	20/1	1200	12
13	1200	20/1	EX UNKNOWN	6200			EX PANEL ELP3A		5000	14
15	1200	20/1	EX UNKNOWN		6200			30/3	5000	16
17	1200	20/1	EX UNKNOWN			6200			5000	18
			TOTAL/PHASE (VA):	11000	10168	9800	$*20/1^* = 5mA GFCI BKR$ $**20/1$ $-20/1^- = CKT BKR HANDLE TIE$ ST	** = 30n = SHL	nA GFCI BK JNT TRIP B	(R KR
			TOTAL (VA):	0	30968	Ū	+20/1+ = AFCI BKR > 20/1 [20/1] = CKT BKR HANDLE LOCK T	< = DU/ = TAN	AL AFCI/GFO IDEM BKR	CI
RECE RECE LIGHT MECH KITCH EV C ELEC PLUS	PTACLE: PTACLE: ING: IANICAL: IEN: HARGER: IRIC HEAT 25% OF L	10kVA © 100% DEMAND = 0 VA X INDER © 50% DEMAND = 0 VA X . © 100% DEMAND = 30,968 VA X . © 100% DEMAND = 0 VA X . © 100% DEMAND = 0 VA X . © 105% DEMAND = 0 VA X . © 125% DEMAND = 0 VA X . © 125% DEMAND = 0 VA X . © 125% DEMAND = 0 VA X OTOR LOAD: = 0 VA X TOTAL DEMAN TOTAL TOTAL	$ \begin{pmatrix} 100\% = & 0 \ VA \\ 50\% = & 0 \ VA \\ 100\% = & 30,968 \ VA \\ 100\% = & 0 \ VA \\ 65\% = & 0 \ VA \\ 65\% = & 0 \ VA \\ 125\% = & 0 \ VA \\ 125\% = & 0 \ VA \\ 25\% = & 0 \ VA \\ 25\% = & 0 \ VA \\ ND \ LOAD = & 30,968 \ VA \\ AL \ AMPS = & 37 \ A \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$			BUSSING: ALUMINUM TIN PLATED ENCLOSURE: TYPE 1 TYPE 3R/43 MOUNTING: SURFACE FLUSH LUGS: SUBFEED DOUBLE MAI MAIN: BREAKER LUGS ONLY TRIM: DOOR-IN-DOOR HINGED FR SAFETY: IEC 60529 IP2X FINGER BA	COPPER X STAINLE IN RONT TRII	SS STEEL		









2 METALLIC SLEEVE

3 METALLIC CONDUIT/EMT 4 FIRESTOP SYSTEM



 \bigcirc

SYSTEM NO. C-AJ-1318 F RATING - 2 HR T RATING - 0 HR

1 FLOOR OR WALL ASSEMBLY (4) PACKING MATERIAL

2 METALLIC SLEEVE 3 metallic conduit/emt (4) FIRESTOP SYSTEM

UL SYSTEM NO. CAJ-1215 3, 4 HR. F RATING

 \bigcirc

<u>FLOOR</u>





SINGLE LINE DIAGRAM

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				N	ORM	۹L				
EX P	ANEL LF	°4B3	VOLTAGE: 480, MAINS: 1004	/277V. ,M.C.I	,3ø,4W B.	1	NEUTRAL BUS SIZE: 10 INTERRUPTING RATING: 10	0% 0KAIC	SERIES	
СКТ	СКТ	BKR	CIRCUIT DESCRIPTION	L	OAD V	/A	CIRCUIT DESCRIPTION	BKR	СКТ	СКТ
NO.	LOAD	SIZE	AND/OR LOCATION	ØA	øΒ	ØC	AND/OR LOCATION	SIZE	LOAD	NO.
1	1500	20/1	EX LTS-CORRIDOR	3000			EX LTS-MEN/WOMEN/STORAGE	20/1	1500	2
3	1500	20/1	EX LTS-CORRIDOR		3000		EX LTS-BM FIXTURES CONCOURSE	20/1	1500	4
5	1500	20/1	EX LTS-BM FIXTURES CORRIDOR			3000	EX LTS-STORE RM 76E008	20/1	1500	6
7	1500	20/1	EX LTS-BM FIXTURES CORRIDOR	3000			EX LTS-MTG ROOM 300/302	20/1	1500	8
9	1500	20/1	EX EMERGENCY RELAY		3000		EX LTS-MTG ROOM 303	20/1	1500	10
11	1500	20/1	EX UNKNOWN			3000	EX LTS-AM FIXTURES CONCOURSE	20/1	1500	12
13	1500	20/1	EX LTS-BM FIXTURES CORRIDOR	3000			EX LTS-AM FIXTURES CONCOURSE	20/1	1500	14
15	1500	20/1	EX LTS-BM FIXTURES CORRIDOR		3000		EX LTS-AM FIXTURES CONCOURSE	20/1	1500	16
17	1500	20/1	EX LTS-AM FIXTURES CORRIDOR			3000	EX UNKNOWN	20/1	1500	18
19	1500	20/1	EX LTS-AM FIXTURES CORRIDOR	3000			EX UNKNOWN	20/1	1500	20
21	1500	20/1	EX UNKNOWN		3000		EX UNKNOWN	20/1	1500	22
23	1500	20/1	EX UNKNOWN			3000	EX UNKNOWN	20/1	1500	24
25	296	20/1	LTS-OVERLOOK LECTURE ROOM	1796			EX UNKNOWN	20/1	1500	26
27	296	20/1	LTS-OVERLOOK LECTURE ROOM		1796		EX LTS-BOTTOM OF 63 TO 76 ESCALATOR	20/1	1500	28
29	0	-/1	SPACE			0	SPACE	-/1	0	30
			TOTAL/PHASE (VA):	13796	13796	12000	*20/1* = 5mA GFCI BKR **20/1	** = 30r	nA GFCI BK	R
			LOAD FROM SUBPANELS (VA):	0	0	0	+20/1 = CKI BKR HANDLE IIE SI+20/1 = AFCI BKR >20/1	= SHU	AL AFCI/GF	KR Cl
			TOTAL (VA):		39592		[20/1] = CKT BKR HANDLE LOCK T	= TAN	idem BKR	
RECE RECE LIGHT MECH KITCH EV C ELEC PLUS	PTACLE: PTACLE: ING: ANICAL: IEN: HARGER: IRIC HEAT 25% OF L	FIRST REMAI TOTAL TOTAL TOTAL TOTAL ARGEST M	10KVA © 100% DEMAND = 0 VA X INDER © 50% DEMAND = 0 VA X © 100% DEMAND = 39,592 VA X © 100% DEMAND = 0 VA X © 65% DEMAND = 0 VA X © 125% DEMAND = 0 VA X OTOR LOAD: = 0 VA X TOTAL DEMAN = 0 VA X	(100%) 50% (100%) (100%) (55%) (125%)	= 39,5 =	0 VA 0 VA 592 VA 0 VA 0 VA 0 VA 0 VA 592 VA 48 A	BUSSING: ALUMINUM TIN PLATED ENCLOSURE: TYPE 1 TYPE 3R/42 MOUNTING: SURFACE FLUSH LUGS: SUBFEED DOUBLE MA MAIN: BREAKER LUGS ONLY TRIM: DOOR-IN-DOOR HINGED FR SAFETY: IEC 60529 IP2X FINGER BA	COPPER X STAINLE IN RONT TRI ARRIERS	iss steel	

BRANCH CIRCUIT DESCRIPTIONS AND NUMBERING WERE DERIVED FROM EXISTING PANEL SCHEDULES AND SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ACCURACY OF EXISTING CIRCUIT DIRECTORY BY TRACING OUT EXISTING CIRCUITS, FIELD VERIFY SOURCE, AND PROVIDE NEW TYPED PANEL SCHEDULES INDICATING NEW AND EXISTING CIRCUITS.





TARTERS AN PANELBOARD MOTION DETI BREAK DETE TELEVISION

	V	OLT	AGE	DR	OP	SCH	IEDU	JLE	(1ø)		
					AM	IPERAGE	: (6A T	HRU 16	jA)			
		6	7	8	9	10	11	12	13	14	15	16
AWG				N	IAXIMUN	I LENGT	HOFO	CIRCUIT	IN FEE	Г		
# 12		150	135	117	104	93	85	78	72	57	62	58
# 10		250	220	186	165	150	135	125	115	105	100	90
# 8		400	350	295	260	235	215	200	180	165	155	145
# 12		365	310	270	240	215	200	180	165	155	145	135
# 10		580	500	430	380	340	310	285	265	245	230	215
# 8		890	775	680	600	545	495	453	420	385	365	340
# 12		270	230	200	180	162	145	135	125	115	110	100
# 10		450	380	320	285	255	235	215	200	185	170	160
#8		675	600	510	455	410	370	340	315	290	270	255
	AwG #12 #10 #8 #12 #10 #8 #12 #10 #8	AWG #12 #10 #8 #12 #10 #8 #12 #10 #8	VOLT 6 AWG #12 #12 #10 #10 #10 #12 #8 400 #12 365 #10 580 #8 890 #12 270 #10 450 #8 675	VOLTAGE Image: Participation of the system Awg Image: Participation of the system Awg Image: Participation of the system Awg Image: Participation of the system #12 150 135 #10 250 220 #8 400 350 #12 365 310 #10 580 500 #8 890 775 #12 270 230 #10 450 380 #11 450 380 #8 675 600	VOLTAGE DR 6 7 8 AWG 6 7 8 AWG 135 117 #12 150 135 117 #10 250 220 186 #8 400 350 295 #12 365 310 270 #12 365 500 430 #12 365 510 430 #10 580 500 430 #10 580 500 430 #8 890 775 680 #12 270 230 200 #12 270 380 320 #12 270 230 200 #12 270 380 320 #10 450 380 510	VOLTAGE DROP 6 7 8 9 6 7 8 9 AWG 7 8 9 AWG 17 8 9 4WG 15 135 117 104 #12 150 135 117 104 #10 250 220 186 165 #8 400 350 295 260 #12 365 310 270 240 #12 580 500 430 380 #10 580 500 430 380 #8 890 775 680 600 #12 270 230 200 180 #12 270 230 200 180 #110 450 380 320 285 #8 675 600 510 455	VOLTAGEDROPSCH678910AWG678910AWGVVVVV41215013511710493#10250220186165150#8400350295260235#12365310270240215#10580500430380340#10580500430380340#8890775680600545#12270230200180162#11450380320285255#8675600510455410	VOLTAGEDROPSCHEDU67891011AWG	VOLTAGEDROPSCHEDULE67891011126789101112AWG1112AWG135117104938578#12150135117104938578#10250220186165150135125#8400350295260235215200#12365310270240215200180#10580500430380340310285#8890775680600545495453#10450380320285255235215#8675600510455410370340	VOLTAGEDROPSCHEDULE(1)AWG578910111213AWGVVVVVV111213AWGVVVVVV111213AWGVVVVVV111213AWGVVVVVV111213AWGVVVVVV1213#1215013511710493857872#10250220186165150135125115#8400350295260235215200180#12365310270240215200180165#10580500430380340310285265#8890775680600545495453420#12270230200180162145135125#10450380320285255235215200#8675600510455410370340315	VOLTAGEDROPSCHEDULE(1\$)AWG	VOLTAGE DROP SCHEDULE (1\$)SCHEDULE (1\$)SCHEDULE (1\$)SCHEDULE (1\$)67891011121314156789101112131415AWGSCHEDULT VETURE#12150135117104938578725762#10250220186165150135125115105100#8400350295260235215200180165155145#10580500430380340310285265245230#8890775680600545495453420385365#112270230280285235235215200185115116#112580500430380340310285265245230#112580500430580500516162145135125115116#112580500430580500516545495453420385365#112590500500180500510180512145135155155#112510510510510

GENERAL FIRESTOPPING NOTES 1. CONTRACTOR SHALL FIRE STOP AND SEAL ALL EXISTING OPENINGS AND ALL NEW OPENINGS RESULTING FROM THE ELECTRICAL WORK.

- 2. CLEAN SUBSTRATE SURFACES OF DIRT, DUST, GREASE, OIL, LOOSE MATERIAL, OR OTHER MATTER AFFECTING BOND OF FIRESTOPPING MATERIAL. REMOVE INCOMPATIBLE MATERIALS AFFECTING BOND. PROVIDE BACKING MATERIALS TO ARREST LIQUID MATERIAL LEAKAGE.
- 3. PROVIDE MATERIAL AT FIRE RATED CONSTRUCTION PERIMETERS/OPENINGS AND AT LOCATIONS CONTAINING PENETRATING SLEEVES, PIPING, DUCTWORK, CONDUIT AND OTHER ITEMS. APPLY PRIMER WHERE RECOMMENDED BY MANUFACTURER FOR TYPE OF FIRESTOPPING MATERIAL AND SUBSTRATE INVOLVED, AND AS REQUIRED FOR COMPLIANCE WITH REQUIRED FIRE RATINGS.
- 4. APPLY FIRESTOPPING MATERIAL IN SUFFICIENT THICKNESS TO ACHIEVE REQUIRED FIRE AND SMOKE RATING. COMPRESS FIBERED MATERIAL TO MAXIMUM 40 PERCENT OF ITS UNCOMPRESSED SIZE. PLACE FOAMED MATERIAL IN LAYERS TO ENSURE HOMOGENOUS DENSITY, FILLING CAVITIES AND SPACES. PLACE SEALANT TO COMPLETELY SEAL JUNCTIONS WITH ADJACENT DISSIMILAR MATERIALS. PLACE INTUMESCENT COATING IN SUFFICIENT COATS TO ACHIEVE RATING REQUIRED.



GYPSUM BOARD PARTITION PENETRATION FIRE-STOP ASSEMBLY DETAILS FOR CONDUIT, EMT, & CABLE N.T.S. (CONTRACTOR SHALL REFERENCE AND COMPLY WITH APPLICABLE DETAILS FOUND AT "HTTP://PRODUCTSPEC.UL.COM/INDEX.PHP?TYPE=FIRESTOP")

ELECTRICAL DEVICE	MOUNTING HEIGHT SCHEDULE
DEVICE	MOUNTING HEIGHT
LIGHT SWITCHES, WALL MOUNTED OCCUPANCY SENSORS	44" TO CENTERLINE OF BOX.
WALL MOUNTED EXIT SIGNS	90" CENTERLINE OF SIGN OR CENTERED IN WALL AREA BETWEEN TOP OF DOOR AND CEILING.
PENDANT MOUNTED FIXTURES	REFERENCE FIXTURE SCHEDULE
RECEPTACLES	16" TO BOTTOM OF BOX U.O.N.
RECEPTACLES – ABOVE COUNTER	42" TO BOTTOM OF BOX U.O.N.
RECEPTACLES - REFRIGERATORS/VENDING	54" TO BOTTOM OF BOX U.O.N.
SPECIAL OUTLETS OR RECEPTACLES	16" TO BOTTOM OF BOX OR AS NOTED ON DRAWINGS.
VOICE/DATA OUTLETS	16" TO BOTTOM OF BOX. EXCEPTION: 44" MAXIMUM TO TOP ABOVE COUNTERS WHICH ARE 20"-25"D
TELEPHONE OUTLETS - WALL TYPE	54" TO DIAL CENTER (NON-ACCESSIBLE). 48" TO HIGHEST OPERABLE PART (ACCESSIBLE).
FIRE ALARM MANUAL PULL STATIONS	MINIMUM 42" ABOVE FINISHED FLOOR AND A MAXIMUM OF 48" ABOVE FINISHED FLOOR TO CENTER OF DEVICE NOT MORE THAN 5'-0" FROM EXIT
FIRE ALARM HORNS, BELLS, STROBES, ETC.	STROBES SHALL BE MOUNTED SUCH THAT THE ENTIRE LENS IS NOT LESS THAN 80" AND NOT GREATER THAN 96" ABOVE FINISH FLOOR OR 6" BELOW CEILING, WHICH EVER IS LOWER.
WALL MOUNTED REMOTE INDICATOR LIGHT FOR DUCT MOUNTED SMOKE DETECTORS	80" TO CENTERLINE OF DEVICE OR 6" BELOW CEILING, WHICHEVER IS LOWER.
INTERCOM STATION	48" TO CENTERLINE OF BOX.
THERMOSTATS	54" TO HIGHEST OPERABLE PART (SIDE ACCESS) 48" TO HIGHEST OPERABLE PART (FORWARD ACCESS).
TEMPERATURE/HUMIDITY SENSORS	60" TO CENTERLINE OF BOX.
STARTERS AND DISCONNECT SWITCHES	5'-0" TO CENTERLINE FROM FINISHED FLOOR.
PANELBOARDS	6'-6" TO TOP CIRCUIT BREAKER (MAXIMUM)
MOTION DETECTORS, CAMERAS, AND GLASS BREAK DETECTORS	COORDINATE WITH SECURITY SYSTEMS VENDOR/MANUFACTURER
TELEVISION AND CABLE TV OUTLETS	16" TO BOTTOM OF BOX. U.O.N.

1. ALL DIMENSIONS ARE CONSIDERED FROM FINISHED FLOOR AND, UNLESS NOTED OTHERWISE, AND SHALL NOT VARY. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND MAY BE ADJUSTED TO CONFORM WITH ARCHITECTURAL REQUIREMENTS AS LONG AS NO CODE RESTRICTION IS VIOLATED.

2. OUTLETS INSTALLED LOWER THAN 15" AFF (FORWARD REACH) AND 9" AFF (SIDE REACH) ARE IN VIOLATION OF ADA.

3. EXIT SIGNS SHALL NOT BE INSTALLED SO THAT IT BLOCKS FIRE ALARM VISUAL DEVICES. 4. CONTRACTOR SHALL COORDINATE ALL THE ABOVE MOUNTING HEIGHTS WITH THOSE SHOWN ON THE ARCHITECTURAL PLANS PRIOR TO ROUGH-IN.

INDIVIDUAL ROOMS/AREAS SHALL BE SEALED AIR-TIGHT FOR BALANCING THE HVAC AIR DISTRIBUTION SYSTEM.



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 INSTALLATION. ELECTRICAL CONTRACTOR SHALL PROVIDE WIRE TYPES, INTER-CONNECTIONS AND DEVICES PER MANUFACTURER'S RECOMMENDATIONS FOR FULLY OPERATIONAL LIGHTING CONTROL SYSTEMS. CONTRACTOR AND/OR CONTROL MANUFACTURER'S CERTIFIED TECHNICIANS AND DEVICES PER MANUFACTURER'S RECOMMENDATIONS FOR START-UP, COMMISSION AND PROGRAM THE NEW CONTROL SYSTEMS IN ORDER TO PROVIDE LABOR AND MATERIALS AS REQUIRED TO INSPECT, START-UP, COMMISSION AND PROGRAM THE NEW CONTROL SYSTEMS IN ORDER TO PROVIDE LABOR AND MATERIALS AS REQUIRED TO INSPECT, START-UP, COMMISSION AND PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHEN OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, OR PHOTOSENSORS ARE INSTALLED, AT A MINIMUM, THE PROCEDURES OUTLINED IN ASHRAE 90.1–2016 9.4.3 "FUNCTIONAL TESTING" SHALL BE PERFORMED. THE INDIVIDUALS RESPONSIBLE FOR THE FUNCTIONAL TESTING SHALL NOT BE DIRCTLY INVOLVED IN ETHER THE DESIGN OR CONSTRUCTION OF THE PROJECT AND SHALL PROVIDE DOCUMENTATION CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET OR EXCEED ALL DOCUMENTED PERFORMANCE CRITERIA. ELECTRICAL CONTRACTOR TO PROVIDE WITH THEIR SUBMITTAL: DATA SHEETS FOR ALL SYSTEM COMPONENTS WITH CATALOG NUMBERS ANNOTATED, SINGLE-UNE DIAGRAM, SEQUENCE OF OPERATIONS, AND A COMPLETE BILL OF MATERIALS FOR REVIEW BY DESIGN PROFESSIONAL PRIOR TO RELEASE OF ORDER. PROVIDE ASSOCIATED POWER PACKS AND CONTROL WIRING. PROVIDE ADDITIONAL POWER PACKS WHERE MORE THAN 3 SENSORS CONTROL ONE ZONE OF LIGHTING (MAX 3 SENSORS PER POWER PACK). PROVIDE SLAVE RELAYS WHERE REQUIRED TO CONTROL SULLY FANS AND TASK LIGHTING. SLAVE RELAYS SHALL BE WIRED IN PARALLEL WHERE MULTIPLE TOILET ROOM ZONES CONTROLS ONLY ONE REMOTE EXHAUST FAN. LIGHTING SLAVE RELAYS SHALL BE WIRED IN PARALLEL WHERE MULTIPLE TOILET ROOM ZONES CONTROLS ONLY ONE REMOTE EXHAUST FAN. 		
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LIGHTING FIXTURE GENERAL NOTES		
1. FURNISH AND INSTALL A COMPLETE SYSTEM OF LIGHTING FIXTURES INSTALLED IN PLACE, INCLUDING LAMPS, WIRED AND CONNECTED AND		
LEFT IN A SATISFACTORT OPERATING CONDITION, AT TIME OF FINAL APPROVAL BY THE DESIGN PROFESSIONAL ALL FIXTURES SHALL BE CLEAN AND ANY BALLASTS DRIVERS OR LED MODILLES SHALL BE REPLACED AT NO ADDITIONAL CHARGE		
 CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND FULLY WORKING LIGHTING SYSTEM WITH ALL NECESSARY COMPONENTS, ACCESSORIES, LED MODULES, DRIVERS, AND TRANSFORMERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS TO MEET THE SPECIFICATIONS AND DESIGN INTENT HEREIN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE ALL NECESSARY EQUIPMENT, SPECIALTIES, AND APPURTENANCES ARE INCLUDED REGARDLESS OF THE PRODUCT SPECIFICATION. 	_ · _	
3. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING MOUNTING COMPATIBILITY AND PLENUM CLEARANCE OF ALL LIGHTING FIXTURES AND SHALL NOTIFY THE DESIGN PROFESSIONAL OF ANY CONFLICTS WITH STRUCTURE, HVAC OR PLUMBING PRIOR TO THE ORDERING OF THE EQUIPMENT IN QUESTION. ANY CONFLICT WILL BE VERIFIED IN FIELD WITH THE DESIGN PROFESSIONAL.		
4. ALL LIGHTING FIXTURES, LAMPS AND RELATED DEVICES FURNISHED UNDER THIS CONTRACT SHALL CARRY THE APPROVAL LABEL OF UL OR ETL FOR THE SPECIFIC APPLICATION IN WHICH THEY ARE USED.		
5. THE STATEMENT "FINISH TO BE SELECTED BY DESIGN PROFESSIONAL" SHALL BE INTERPRETED TO MEAN THAT THE FINISH OF THE LUMINAIRE SHALL MATCH THE APPEARANCE OF A PAINT CHIP, COLOR NUMBER, OR METAL SWATCH FURNISHED BY THE DESIGN PROFESSIONAL DURING THE SUBMITTAL REVIEW PROCESS.		
6. WHITE L.E.D.'S SHALL MEET, AT A MINIMUM, CHROMATICITY STANDARDS SET BY ANSI/NEMA/ANSLG C79.377-2011. L.E.D. LUMEN MAINTENANCE SHALL BE MEASURED IN ACCORDANCE WITH IESNA LM-80 STANDARDS. PHOTOMETRIC TESTING FOR SOLID STATE LUMINAIRES SHALL BE IN ACCORDANCE WITH IESNA LM-79 STANDARDS		
7. CONTRACTOR SHALL CONFIRM FIXTURE VOLTAGES, CEILING TRIMS, AND MOUNTING HARDWARE ARE COMPATIBLE WITH THEIR APPLICATION AS DETERMINED BY THE DESIGN PROFESSIONAL PRIOR TO ORDERING FIXTURES.		
8. CONTRACTOR SHALL SELECT, FURNISH AND INSTALL THE CORRECT SIZE OF SECONDARY WIRING FROM REMOTE TRANSFORMERS AND/OR REMOTE BALLASTS AS REQUIRED TO KEEP VOLTAGE DROP IN THE SECONDARY WIRING BELOW 3% OF RATED VOLTAGE.	 	
9. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT FOR FOCUSING OF ADJUSTABLE FIXTURES AND PRESETTING OF LIGHTING CONTROL SYSTEMS. FOCUSING AND PRESETTING SHALL BE DONE IN THE PRESENCE OF THE DESIGN PROFESSIONAL. CONTRACTOR SHALL FOCUS LIGHTING AFTER DARK IF DIRECTED BY THE OWNER'S REPRESENTATIVE. UNLESS OTHERWISE NOTED, CONTRACTOR SHALL PROVIDE AT LEAST ONE DAY OF A FACTORY—TRAINED AND CERTIFIED TECHNICIAN TO PROVIDE WARRANTY START UP AND PROGRAMMING FOR ALL LIGHTING CONTROL SYSTEMS AND PROGRAMMABLE LIGHTING FIXTURES.		
 10. CONTRACTOR SHALL PROVIDE THE FOLLOWING WITH THEIR BID: A. THE UNIT PRICE FOR EACH LIGHTING FIXTURE TYPE LISTED WITHIN THE LIGHTING FIXTURE SCHEDULE. THE UNIT PRICE SHALL BE FOR ONE OF THE LISTED MANUFACTURER'S FOR THAT PARTICULAR FIXTURE. THE MANUFACTURER SHALL BE IDENTIFIED. SUBSTITUTIONS FOR FIXTURES PROVIDED BY MANUFACTURERS NOT LISTED IN THE SCHEDULE ARE NOT ACCEPTABLE. SEE BELOW FOR REQUIREMENTS ASSOCIATED WITH SUBMITTING LIGHTING FIXTURE SUBSTITUTIONS. 		
 B. THE TOTAL QUANTITY OF EACH FIXTURE TYPE WITH THE EXTENDED COST FOR THAT QUANTITY. 10. WITHIN 21 DAYS OF CONTRACT AWARD, THE CONTRACTOR SHALL FURNISH SUBMITTALS FOR ALL SPECIFIED LIGHTING FIXTURES FOR REVIEW BY THE DESIGN PROFESSIONAL. THE SUBMITTALS SHALL INCLUDE LUMINAIRE CATALOG CUTS, SUBMITTAL SHEETS, OR MANUFACTURERS SHOP DRAWINGS INDICATING THE FOLLOWING: 	Feed-tt	vorm nroug Sircu 1B3-2 1B3-2
 MANUFACTURER'S NAME AND COMPLETE CATALOG NUMBER FIXTURE TYPE, DIMENSIONS AND FINISHES FIXTURE PHOTOMETRIC TEST DATA FROM AN INDEPENDENT TEST LABORATORY FIXTURE ACCESSORIES, COMPONENTS, AND HARDWARE WHEN SPECIFIED LAMP TYPE, QUANTITY, WATTAGE, LUMEN OUTPUT, RATED LIFE, COLOR TEMPERATURE, COLOR RENDERING INDEX AND BEAM SPREAD AS APPLICABLE BALLAST/DRIVER TYPE AND FIXTURE VOLTAGE 		
SUBMITTALS FOR LIGHTING FIXTURES MOUNTED WITHIN ARCHITECTURAL COVES OR CASEWORK, VARIABLE LENGTH FIXTURES, AND FOR NON-STANDARD, OR CUSTOM FIXTURES, SHALL ALSO INCLUDE SCALED DRAWINGS SHOWING THE LAYOUT AND DIMENSIONS OF ALL FIXTURE		
11. LIGHTING FIXTURE SUBSTITUTION REQUESTS MUST BE SENT TO AND RECEIVED BY THE DESIGN PROFESSIONAL FOR REVIEW 14 DAYS PRIOR TO BID DATE. FAILURE TO SUBMIT WITHIN THIS DEADLINE SHALL CONSTITUTE A GUARANTEE THAT THE SPECIFIED FIXTURES WILL BE SUPPLIED. THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:		
 A. SIX HARD COPIES OF THE SUBMITTALS REQUIRED ABOVE FOR BOTH THE SPECIFIED FIXTURE AND THE PROPOSED SUBSTITUTION. B. ONE NON-RETURNABLE WORKING SAMPLE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S). C. ONTRACTORYO STATEMENT, INDICATING THE EFFECT OF THE OURDITIETION, ON THE CONSTRUCTION CONFIDENTIAL CONTRACTORY OF THE PROPOSED SUBSTITUTE OF THE PROPOSED SUBSTITUTE FIXTURE WITH CORD & PLUG CONNECTION FOR 120 VOLT OPERATION, AND SPECIFIED LAMP(S). 		
 C. CONTRACTOR'S STATEMENT INDICATING THE EFFECT OF THE SUBSTITUTION ON THE CONSTRUCTION SCHEDULE COMPARED TO THE SCHEDULE WITHOUT THE APPROVAL OF THE PROPOSED SUBSTITUTION. D. CONTRACTOR'S CERTIFICATION STATING THAT THE PROPOSED SUBSTITUTION CONFORMS TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS IN EVERY RESPECT AND IS APPROPRIATE FOR THE APPLICATIONS INDICATED IN THE DOCUMENTS. E. CONTRACTOR'S CERTIFICATION STATING THAT ANY MODIFICATIONS TO ANY BUILDING SYSTEM OR EQUIPMENT THAT MAY RESULT FROM THE PROPOSED LIGHTING FIXTURE SUBSTITUTION WILL BE DESIGNED AND CONSTRUCTED AT THE CONTRACTOR'S EXPENSE 		
 F. CONTRACTOR'S WAIVER OF RIGHTS TO ADDITIONAL PAYMENT OR TIME THAT MAY BECOME NECESSARY SHOULD THE PROPOSED SUBSTITUTION FAIL TO PERFORM IN A MANNER THAT MATCHES THE SPECIFIED FIXTURE. G. CONTRACTOR-NET UNIT PRICE FOR THE SPECIFIED FIXTURE AND FOR THE PROPOSED SUBSTITUTE FIXTURE. 		
THE DESIGN PROFESSIONAL SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL OF THE DESIGNER'S TIME ASSOCIATED WITH THE REVIEW OF THE PROPOSED FIXTURE SUBSTITUTION(S). PAYMENT SHALL BE MADE IN ADVANCE OF THE REVIEW, BASED ON THE DESIGNER'S ESTIMATE OF THE REQUIRED TIME. THE PAYMENT SHALL BE BASED ON THE DESIGNER'S STANDARD HOURLY RATES FOR THE PERSONNEL INVOLVED IN THE REVIEW.		
12. THE LIGHT FIXTURES DESIGNATED EMERGENCY SHALL BE UNSWITCHED; EXCEPT FOR FIXTURES SHOWN CONNECTED TO A UL 924 RELAYS.		
14. CONTRACTOR SHALL CHECK THE TYPE OF CEILING WHERE RECESSED FIXTURES ARE INSTALLED TO BE SURE THE PROPER TYPE OF MOUNTING HARDWARE IS ORDERED AND TO DETERMINE IF A LAY-IN TYPE FIXTURE OR OTHERWISE IS REQUIRED OR IF PLASTER RINGS ARE REQUIRED. HE SHALL BE RESPONSIBLE TO SEE THAT THE PROPER TYPE FIXTURE IS INSTALLED TO SUITE THE CEILING CONDITION AND MOUNTING DEPTH.		-
15. REFLECTORS, REFLECTOR CONES AND VISIBLE TRIM OF ALL LIGHTING FIXTURES SHALL NOT BE INSTALLED UNTIL COMPLETION OF PLASTERING, CEILING TILE WORK, PAINTING AND GENERAL CLEAN-UP. THEY SHALL BE CAREFULLY HANDLED TO AVOID SCRATCHING OR FINGERPRINTING AND SHALL BE. AT THE TIME OF ACCEPTANCE BY OWNER. COMPLETELY CLEAN.		
16. FIXTURE HOUSING AND DOOR FRAMES SHALL BE FULLY SEALED AGAINST LIGHT LEAKAGE. LIGHT LEAKS BETWEEN CEILING TRIMS OF RECESSED LIGHTING EQUIPMENT AND THE CEILINGS WILL NOT BE PERMITTED. RECESSED FIXTURE OPENINGS CUT INTO THE GENERAL CONSTRUCTION SHALL NOT BE LARGER THAN THE FIXTURES TRIM RING. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIXTURE CUTTING AND PATCHING.		0.5
17. SUPPORT LUMINAIRES INDEPENDENT OF CEILING FRAMING. 18. INSTALL SURFACE MOUNTED LUMINAIRES PLUMB AND ADJUST TO ALIGN WITH BUILDING LINES AND WITH EACH OTHER. SECURE TO PREVENT		QS Cor
MOVEMENT. 19. PROVIDE LOW VOLTAGE OCCUPANCY SENSORS AS SHOWN ON THE DRAWINGS. PROVIDE ASSOCIATED POWER PACK RELAYS AND AUXILIARY BELAYS AS REQUIRED FOR A CONDUCTE FUNCTIONAL SYSTEM	ST)F
RELATS AS REQUIRED FOR A COMPLETE FUNCTIONAL SYSTEM. 20. ALL EMERGENCY LIGHT VOLTAGE SENSING CIRCUIT SHALL BE TIED INTO THE LOCAL LIGHTING CIRCUIT AHEAD OF ALL SWITCHING DEVICES. 21. CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING WITH THE CEILING. PROVIDE STRUCTURAL SUPPORTS FOR THE RIGID ATTACHMENT OF THE FIXTURE, SECURE FIXTURE SO THAT IT DOES NOT MOVE OR TWIST WHEN INSTALLING REMOVING OR PELAMPING FIXTURES SHALL PLIN		<u></u>
TRUE AND PARALLEL WITH THE CEILING SYSTEMS. 22. ALL REMOTE POWER SUPPLIES AND DRIVERS LOCATED ABOVE ACCESSIBLE CEILINGS SHALL BE PLENUM RATED OR MOUNTED IN A METALLIC	SCALE: NO	NE
ENCLOSURE. 22. ALL LOW VOLTAGE POWER AND CONTROL WIRING LOCATED ABOVE CEILINGS SHALL BE PLENUM RATED.		
	TYPE	

F

)	CCUPANCY-VACANCY SENSOR GENERAL NOTES
	MANUFACTURERS: LUTRON WIRED AND WIRELESS
•	PROVIDE NEW OCCUPANCY SENSORS AS SHOWN TIED INTO EXISTING AND NEW LIGHT FIXTURE BRANCH CIRCUITS. PROVIDE ASSOCIATED POWER PACKS AND CONTROL WIRING. PROVIDE ADDITIONAL POWER PACKS WHERE MORE THAN 3 SENSORS CONTROL ONE ZONE OF LIGHTING (MAX 3 SENSORS PER POWER PACK)
•	PROVIDE SLAVE RELAYS WHERE REQUIRED TO CONTROL EXHAUST FANS AND TASK LIGHTING. SLAVE RELAYS SHALL BE WIRED IN PARA WHERE MULTIPLE TOILET ROOM ZONES CONTROLS ONLY ONE REMOTE EXHAUST FAN.
•	THE DESK SHOULD BE WITHIN THE MINOR MOTION COVERAGE AREA OF A SENSOR (TURNING A PAGE IN A BOOK IS AN EXAMPLE OF MINOR MOTION).
	THE DOOR SHOULD BE IN CLEAR VIEW OF A SENSOR.
,	FOR IN-WALL OR WALL-MOUNTED SENSORS, VERIFY THAT TALL FURNITURE SUCH AS A BOOKCASE WILL NOT OBSTRUCT THE VIEW OF ROOM.
•	VERIFY THAT ANY IN-WALL OR WALL-MOUNTED SENSOR'S VIEW OF THE ROOM ISN'T BLOCKED BY THE DOOR WHEN IT'S OPEN.

DO NOT MOUNT SENSORS CLOSE TO AIR VENTS, AS THE VIBRATION AND AIR FLOW CAN REDUCE THE EFFECTIVENESS OF THE SENSOR



C24

						LIG	HTING FIXTU	RE SCHEDULE
DESCRIPTION	MOUNTING TYPE	CEILING TYPE	Mounting Height	VOLTS	LAMP TYPE	SYSTEM WATTS	BASIS OF DESIGN MANUFACTURER	BASIS OF DESIGN CATALOG NO.
4" DIAMETER LED DOWNLIGHT	RECESSED	ATC	CEILING	120/277	LED 1500 LUMENS 3500K / 80 CRI	14	INTENSE	SD4DR-L2-35-D101-XX-FL-IC430-HZZ-S
24" ROUND DECORATIVE FIXTURE WITH WHITE TRIM AND WHITE BEZEL	RECESSED	REFERENCE ARCHITECT'S DRAWINGS	REFERENCE ARCHITECT'S DRAWINGS	120/277	LED 3790 LUMENS 3500K / 80 CRI	42	BRUCK	BINA-R-RD-35K-24-1050-D-WH-WH
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1	SYSTEM & NETWORK INTEGRATION CONSULTATION	A CONSULTATIVE VIS INTEGRATION PROCI FOLLOWING THIRD P
2	ONSITE SCENE & LEVEL TUNING	AN ONSITE VISIT WIT PROGRAMMING OF S
1	CUSTOMER-SITE SOLUTION TRAINING	A VISIT AT 6 MONTHS SYSTEM. IN ADDITION THE SCENE LEVEL P
1	COMMERCIAL SYSTEMS 2-YEAR LIMITED WARRANTY	A 2-YEAR SYSTEM W FIRST-AVAILABLE RE

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	1101 Arch Stree	t								
	Philadelphia, PA 19 Phone: 215-418-47	107 742								
	www.paconvention.	com								
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FIRE PROTECTION GENERAL NOTES ALL OF THE FOLLOWING NOTES ARE GENERAL AND SOME MAY NOT APPLY TO THIS

- SPECIFIC PROJECT. 1. THE SUBMISSION OF A PROPOSAL BY THE CONTRACTOR IS NOTIFICATION THAT THE CONTRACTOR HAS TOTALLY FAMILIARIZED HIMSELF WITH THE CONTRACT DOCUMENTS AND EXISTING SITE CONDITIONS AND HAS AGREED TO PROVIDE THE NECESSARY LABOR AND MATERIAL FOR THE COMPLETE INSTALLATION OF EACH SYSTEM IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH ALL AUTHORITIES HAVING
- JURISDICTION. 2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, SIZES, CLEARANCES AND LOCATIONS PRIOR TO THE START OF CONSTRUCTION AND ADVISE THE ARCHITECT/ENGINEER AND THE OWNER OF ANY DISCREPANCIES BEFORE PERFORMING THE WORK.
- 3. THE DRAWINGS INDICATE ARRANGEMENTS AND APPROXIMATE SIZES AND RELATIVE LOCATIONS OF PRINCIPLE APPARATUS, EQUIPMENT, DEVICES AND SERVICES TO BE PROVIDED. DRAWINGS ARE DIAGRAMMATIC AND ARE A GRAPHIC REPRESENTATION OF THE CONTRACT REQUIREMENTS TO BEST AVAILABLE STANDARDS AT THE SCALE
- 4. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER AND ALL OTHER CONTRACTORS. CONTRACTOR SHALL ALSO SCHEDULE HIS WORK IN ACCORDANCE WITH THE CONSTRUCTION SCHEDULE SO THAT ALL OF HIS WORK CAN BE INSTALLED WITHOUT DELAYING THE PROJECT.
- 5. ALL WORK SHALL COMPLY AND BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE CODES, THE LATEST UNIFORM CONSTRUCTION CODE STATUTE, THE APPLICABLE INTERNATIONAL CODES AS AMENDED AND ADOPTED BY THE LOCAL JURISDICTION, AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES AND REGULATIONS (CURRENT EDITIONS), THE NATIONAL ELECTRIC CODE, BUILDING STANDARDS, NFPA AND ALL OTHER AGENCIES AND AUTHORITIES HAVING JURISDICTION.
- 7. ANY ITEM DEEMED NECESSARY OR RECOMMENDED, OR REQUIRED BY CODE, BY THIS TRADE CONTRACTOR TO ACHIEVE THE FUNCTION SHOWN, BUT NOT INDICATED HEREIN, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING IN WRITTEN "RFI" FORMAT. FAILURE TO IDENTIFY ITEMS DEEMED NECESSARY PRIOR TO BIDDING SHALL INDICATE TO THE ENGINEER AND OWNER THAT SAID ITEMS ARE INCLUDED IN THE CONTRACT PRICE.
- REMOVAL AND DISPOSAL
- REMOVAL, CUTTING AND PATCHING.
- 10. SMOKING AT THE JOB SITE IS NOT ALLOWED. 11. CONTRACTOR SHALL SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER. ALL SHUTDOWNS SHALL BE KEPT TO A MINIMUM.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING AND PROTECTION OF MATERIALS REQUIRED TO COMPLETE ALL WORK UNDER THIS CONTRACT. ALL MATERIALS SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT.
- 13. CONTRACTOR SHALL PROVIDE LABOR TO RECEIVE, UNLOAD, STORE, PROTECT AND TRANSFER TO POINT OF INSTALLATION OF OWNER FURNISHED ITEMS. 14. FLAMMABLE MATERIALS MAY NOT BE STORED OR ALLOWED TO REMAIN OVERNIGHT
- WITHIN THE BUILDING. THIS INCLUDES, BUT IS NOT LIMITED TO, PAINTS, THINNERS, CLEANING AND RESTORATION PRODUCTS, RAGS OR BRUSHES, AND ANY TOOL THAT IS CAPABLE OF PRODUCING FLAME. SAWDUST, SCRAP LUMBER, SOAKED RAGS, AND OTHER FLAMMABLE CONSTRUCTION DEBRIS MUST BE COLLECTED AT THE END OF EACH DAY AND DISPOSED OF PROPERLY OUTSIDE OF THE BUILDING 15. MAINTAIN SUITABLE FIRE PROTECTION EQUIPMENT AT BUILDING SITE. AT MINIMUM,
- TYPE ABC FIRE EXTINGUISHERS SHALL BE PROVIDED WHERE WORK IS BEING PERFORMED WITH OPEN FLAME OR USING FLAMMABLE MATERIALS AND AN ADDITIONAL FIRE EXTINGUISHER SHALL BE PROVIDED TO THE WORKER PERFORMING THE WORK. TRAIN ALL WORKERS IN THE USE OF FIRE PROTECTION EQUIPMENT.
- 16. ALL FIRE SAFETY REQUIREMENTS LISTED ABOVE ARE TO BE CONSIDERED MINIMUMS. CONTRACTOR IS RESPONSIBLE FOR TAKING OTHER MEASURES DEEMED NECESSARY BY THE CONTRACTOR TO PROTECT THE BUILDING.
- 17. CONTRACTOR SHALL SUBMIT SCHEDULE OF SUBMITTALS PRIOR TO SUBMITTING ANY SHOP DRAWINGS. THIS SCHEDULE SHALL IDENTIFY ALL PRODUCT DATA, DRAWINGS, ETC TO BE SUBMITTED FOR THIS PROJECT, INCLUDING THE ANTICIPATED DATE OF EACH SUBMISSION. CONTRACTOR SHALL SUBMIT (6) SETS OF SHOP DRAWINGS AND EQUIPMENT CUTS TO THE ENGINEER FOR APPROVAL PRIOR TO PURCHASING EQUIPMENT OR STARTING ANY WORK. CONTRACTOR SHALL SUBMIT (3) PRINTS AND (1) REPRODUCIBLE OF ALL PIPING, DUCTWORK, FIRE PROTECTION, CONDUIT, AND CABLE TRAY FIELD INSTALLATION DRAWINGS FOR EACH SYSTEM TO BE INSTALLED. ANY WORK INSTALLED OR EQUIPMENT PURCHASED PRIOR TO RECEIPT OF ENGINEER-APPROVED SHOP DRAWINGS THAT REQUIRES CHANGES SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.
- 18. SUBMIT CATALOG INFORMATION, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS TO BE PROVIDED. THE CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS. NO SUBMISSION WILL BE ACCEPTED WITHOUT THE SIGNED APPROVAL OF THE CONTRACTOR. THE CONTRACTOR SHALL CHECK AND VERIEY ALL FIELD MEASUREMENTS
- 19. INSTALLED SYSTEMS SHALL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT SOUND OR VIBRATION THAT IS OBJECTIONABLE TO THE ENGINEER, ARCHITECT OR OWNER. OBJECTIONABLE SOUND OR VIBRATION CONDITIONS SHALL BE CORRECTED IN AN APPROVED MANNER BY THE CONTRACTOR AT HIS EXPENSE.
- 20. ALL WORK FURNISHED UNDER THE CONTRACT SHALL BE GUARANTEED AGAINST ANY AND ALL DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. ANY DEFECTS OF WORKMANSHIP DEVELOPING DURING THIS PERIOD SHALL BE REMEDIED AND ANY DEFECTIVE MATERIAL SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNER
- 21. CONTRACTOR SHALL NOTIFY ENGINEER OF ESTIMATED DATE OF COMPLETION OF ROUGH-IN WORK AND DATE OF BOTH WALL AND CEILING INSTALLATION. NOTIFICATION SHALL BE A MINIMUM OF ONE WEEK PRIOR TO DATE TO ENABLE ENGINEER TO SCHEDULE PRELIMINARY PUNCHLIST INSPECTION. CONTRACTOR SHALL SIMILARLY NOTIFY ENGINEER OF COMPLETION OF ALL WORK, INDICATING THE CONTRACTOR IS READY FOR THE ENGINEER TO PERFORM THE FINAL PUNCHLIST
- 22. UPON COMPLETION OF ALL UNFINISHED OR FAULTY WORK NOTED IN ENGINEER'S FINAL PUNCHLIST, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER IN WRITING A LETTER OF COMPLETION CERTIFYING THAT ALL PUNCHLIST ITEMS HAVE BEEN COMPLETED AND ALL AS-BUILT PLANS, MANUALS, ETC. HAVE BEEN SUBMITTED.
- 23. ALL CHANGES MADE BY THE CONTRACTOR WHICH ARE NOT APPROVED BY THE DESIGN ENGINEER SHALL BE DONE AT THE LIABILITY OF THE CONTRACTOR. 24. CONTRACTOR SHALL RESTORE EXISTING SYSTEMS, DEVICES, FINISHES, ETC. DAMAGED
- ARCHITECT AND/OR ENGINEER. 25. EXISTING WORK THAT IS TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER OR DISPOSED OF AT THE OWNER'S DIRECTION. ALL WORK TO BE DISPOSED OF SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROMPTLY REMOVED FROM THE SITE. ALL EQUIPMENT TO BE TURNED OVER TO THE OWNER SHALL BE DELIVERED TO ON SITE CENTRAL RECEIVING LOCATION DESIGNATED BY THE OWNER.
- 26. ALL WORK AND SCHEDULING TO BE COORDINATED WITH OWNER. 27. PROVIDE ALL NECESSARY REMOVAL OF EXISTING CEILING TILES AND REINSTALLATION OF CEILING TILES OR REPLACEMENT AS NEEDED TO ACCOMPLISH NEW WORK. PERFORM ALL NECESSARY CEILING WORK INCLUDING BUT NOT LIMITED TO REMOVAL, REINSTALLATION AND PROVIDING NEW CEILING TILES, CEILING GRID, T-BARS SUPPORTS, AND ALL APPURTENANCES.
- 28. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN-LIKE MANNER. 29. REFERENCE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND STRUCTURAL DRAWINGS

FOR COORDINATION.

- 6. CONTRACTOR SHALL SECURE AND PAY ALL FEES AND PERMITS PERTAINING TO THE
- 8. ANY EXISTING POTENTIALLY HAZARDOUS MATERIALS ENCOUNTERED IN THE COURSE OF THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER FOR
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR WORKMEN'S IDENTIFICATION AND BADGING, SAFETY AND FIRE PROTECTION, BARRICADES, WARNING SIGNS, TRASH

OR ALTERED BY WORK TO ACCEPTABLE CONDITION AS DETERMINED BY THE OWNER,

FIRE PROTECTION NOTES AND SPECIFICATIONS 1. SCOPE OF WORK

- A. PROVIDE ALL MATERIALS AND LABOR FOR THE COMPLETE FIRE PROTECTION WORK AS SHOWN ON THE CONTRACT DRAWINGS AND AS SPECIFIED HEREIN. ANY WORK INCIDENTAL OR NECESSARY TO MAKE THE WORK COMPLETE SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE TO THE OWNER.
- B. THE CONTRACTOR SHALL SUBMIT A PROPOSED SEQUENCE OF CONSTRUCTION PRIOR TO PERFORMING ANY WORK. THE SEQUENCE OF CONSTRUCTION WILL BE REVIEWED BY THE OWNER FOR THEIR COMMENTS.
- C. ALL WORK SHALL BE DONE ACCORDING TO THE LATEST EDITION OF THE NFPA, LOCAL CODES AND AUTHORITIES HAVING JURISDICTION AND THE OWNER'S STANDARDS.
- D. WITHOUT LIMITING THE WORK IT SHALL CONSIST OF THE FOLLOWING:
- DEMOLITION / RELOCATIONS SPRINKLER HEAD RELOCATIONS -REPLACE ALL EXISTING HEADS WITHIN AREAS BEING RENOVATED WITH CONCEALED PENDANT HEADS. ALL NEW SPRINKLER HEADS SHALL BE CONCEALED PENDANT HEADS.
- E. NOTE THAT CONSTRUCTION IS TO BE PERFORMED IN EXISTING FACILITIES AND THAT THE DRAWINGS GENERALLY SHOW ONLY NEW WORK THAT IS REQUIRED. DRAWINGS DO NOT SHOW IN DETAIL HOW THE NEW WORK IS TO BE NSTALLED BECAUSE UNKNOWN OBSTRUCTIONS TO ITS INSTALLATION MAY E DISCLOSED AS THE WORK PROGRESSES. PERFORM THE WORK INDICATED, AND PERFORM SUCH ADDITIONAL WORK AS MAY BE REQUIRED BUT IS NOT SPECIFICALLY SHOWN. PERFORM THIS WORK IN SUCH A MANNER AS TO OVERCOME ALL OBSTRUCTIONS AND DIFFICULTIES THAT ARE ENCOUNTERED AT NO ADDITIONAL EXPENSE TO THE OWNER.
- F. ANY ITEM DEEMED NECESSARY OR RECOMMENDED OR REQUIRED BY CODE BY THIS TRADE CONTRACTOR TO ACHIEVE THE FUNCTION SHOWN BUT NOT INDICATED HEREIN, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER PRIOR TO BIDDING IN WRITTEN 'RFI' FORMAT. FAILURE TO IDENTIFY ITEMS DEEMED NECESSARY PRIOR TO BIDDING SHALL INDICATE TO THE ARCHITECT, ENGINEER AND OWNER THAT SAID ITEMS ARE INCLUDED IN THE CONTRACT PRICE.
- 2. CONCURRENT WORK BY THE OWNER
- A. THE OWNER RESERVES THE RIGHT TO HAVE OTHER CONTRACTORS PERFORM WORK IN OTHER AREAS OF THE COMPLEX SIMULTANEOUSLY WHILE THIS CONTRACTOR IS ENGAGED TO DO WORK. THIS CONTRACTOR AND HIS PERSONNEL SHALL COOPERATE AND COORDINATE THE WORK TO BE PERFORMED WITH ALL OTHER CONTRACTORS WITH WHO HE COMES IN CONTACT. IN NO WAY SHALL THIS CONTRACTOR INTERFERE WITH THE PROGRESS OF THE WORK. 3. <u>VISIT THE SITE</u>
- A. VISIT THE SITE, VERIFY ALL MEASUREMENTS AND FIELD CONDITIONS AFFECTING THE WORK, PRIOR TO SUBMITTING BID. THE CONTRACTOR SHALL SUBMIT IN WRITING TO THE OWNER THAT HE HAS VISITED THE SITE. NO ADDITIONAL COST TO THE OWNER WILL BE INCURRED DUE TO THE CONTRACTOR'S FAILURE TO VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS SHALL MMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER.
- 4. <u>GUARANTEE</u> A. PRIOR TO FINAL ACCEPTANCE OF THE WORK SUBMIT A WRITTEN STATEMENT TO THE OWNER GUARANTEEING ALL EQUIPMENT AND WORK FOR ONE (1) YEAR FROM DATE OF ACCEPTANCE.
- 5. ALL FIRE PROTECTION WORK SHALL COMPLY WITH ALL REQUIREMENTS OF THE LATEST EDITION OF NFPA-13 AND ALL LOCAL CODE REQUIREMENTS.
- 6. THE FIRE PROTECTION CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS RELATED TO THIS PROJECT. THESE FIRE PROTECTION DOCUMENTS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE SCOPE OF THE PROJECT
- 7. THE COMPLETE FIRE PROTECTION SYSTEM SHALL BE HYDRAULICALLY DESIGNED AND INSTALLED THROUGHOUT THE ENTIRE PROJECT AREA IN ACCORDANCE WITH APPLICABLE NFPA STANDARDS, LOCAL AUTHORITY HAVING JURISDICTION AS WELL AS ANY OWNER REQUIREMENTS. DESIGN DENSITIES ARE AS FOLLOWS: LIGHT HAZARD .10 GPM PER SQ. FT. OVER THE MOST REMOTE 1500 SQ. FT. AREA INCLUDING A 250 GPM HOSE STREAM ALLOWANCE. ORDINARY HAZARD .15 GPM PER SQ. FT. OVER THE MOST REMOTE 2500 SQ. FT. AREA INCLUDING 250 GPM HOSE STREAM ALLOWANCE.
- 8. ALL HYDRAULIC CALCULATIONS SHALL BE PROVIDED WITH A 10 PSI SAFETY FACTOR. SPRINKLER SHOP DRAWINGS. HYDRAULIC CALCULATIONS AND PRODUCT DATA SHALL BE SUBMITTED FOR APPROVAL PRIOR TO BEGINNING WORK. NO WORK SHALL COMMENCE UNTIL APPROVAL FROM THE ENGINEER, AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE CARRIER HAVE BEEN OBTAINED. ALL SPRINKLER SUBMITTALS SHALL FOLLOW NFPA-13 REQUIREMENTS STATED IN CHAPTER 23-PLANS AND CALCULATIONS. REVIEW OF CONTRACTOR'S SPRINKLER SUBMITTALS BY THE ENGINEER SHALL BE IN STRICT COMPLIANCE TO CHAPTER 23 REQUIREMENTS. SPRINKLER CONTRACTOR SHALL SUBMIT APPROVED PLANS AND CALCULATIONS FROM THE AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE CARRIER TO THE ENGINEER PRIOR TO ENGINEER'S FINAL SUBMITTAL APPROVAL. NO
- 10. ALL FIRE PROTECTION PIPING AND RELATED ITEMS SHALL BE SPECIFICALLY LISTED FOR FIRE PROTECTION SERVICE AS WELL AS FM APPROVED.

VARIATIONS OF THE ABOVE REQUIREMENTS WILL BE ENTERTAINED.

- 11. THE FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE FIRE PROTECTION WORK WITH THE CONTRACT DOCUMENTS FOR THE GENERAL
- CONSTRUCTION, MECHANICAL AND ELECTRICAL TRADES. 12. THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE ALL WORK EFFORTS THROUGH THE GENERAL CONTRACTOR IN ACCORDANCE WITH AN APPROVED PROJECT SCHEDULE.
- 13. FIRE PROTECTION/SPRINKLER WATER SUPPLY PIPING SHALL NOT BE ROUTED OVER ELECTRICAL PANELS AND/OR ELECTRICAL EQUIPMENT.
- 14. FIRE PROTECTION CONTRACTOR SHALL PROVIDE SPRINKLER HEADS AND APPURTENANCES IN REQUIRED QUANTITIES, THAT MAY DIFFER FROM THE CONSTRUCTION DOCUMENTS,TO PROVIDE COMPLETE COVERAGE AS STATED HEREAFTER.
- 15. ISOLATE, DRAIN AND REFILL EXISTING PIPING SYSTEM AS REQUIRED TO ACCOMMODATE NEW SYSTEM INSTALLATION.
- 16. SCHEDULE ALL SHUTDOWNS THAT AFFECT UTILITIES AND PORTIONS OF THE BUILDING THAT MUST REMAIN IN OPERATION WITH THE OWNER, OWNER'S INSURANCE COMPANY AND THE LOCAL FIRE DEPARTMENT.
- 17. FIRE PROTECTION CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS RELATED TO THIS PROJECT. THERE MAY BE WORK REQUIRED OF THIS TRADE SHOWN ON OTHER TRADE DRAWINGS.
- 18. ALL EXISTING AND NEW SPRINKLER PIPING AND HEADS SHALL BE REVISED AND OR INSTALLED AS NOT TO INTERFERE WITH EXISTING OR NEW ABOVE CEILING IMPROVEMENTS. ALL EXISTING AND NEW SPRINKLER PIPING SHALL BE AT ELEVATIONS TO COINCIDE WITH CEILING HEIGHTS AS PER THE ARCHITECTURAL DRAWINGS.
- 19. CLEANING AND FINAL CLEAN UP
- A. CONTRACTOR SHALL, AT ALL TIMES, KEEP THE PREMISES FREE OF ALL WASTE OR SURPLUS MATERIALS, RUBBISH AND DEBRIS WHICH IS CAUSED BY HIS EMPLOYEES OR RESULTING FROM HIS WORK. ALL AREAS SHALL BE BROOM SWEPT CLEAN AT THE END OF EACH WORK DAY.
- B. AFTER ALL EQUIPMENT HAS BEEN INSTALLED, CONTRACTOR SHALL REMOVE ALL STICKERS, RUST STAINS, LABELS, TEMPORARY COVERS, ETC.
- C. CONTRACTOR SHALL LEAVE HIS WORK AT ALL TIMES IN A SAFE AND CLEAN CONDITION READY FOR OPERATION.
- D. CONTRACTOR SHALL CLEAN ALL CONDUIT, TUBING, EQUIPMENT, ETC. AT THE COMPLETION OF HIS CONTRACT, AND ALL WORK SHALL BE TURNED OVER TO THE OWNER CLEAN AND IN PERFECT CONDITION, READY FOR SATISFACTORY SERVICE.
- E. DURING THE PROGRESS OF THE WORK, CONTRACTOR SHALL REMOVE ALL OF HIS RUBBISH, CRATING AND PACKING MATERIALS, METAL SCRAP AND ANY AND ALL DEBRIS FROM THE BUILDING, NOT ALLOWING IT TO ACCUMULATE AND CAUSE FIRE AND ACCIDENT HAZARDS.

LIFE SAFETY NOTES

TEMPORARY SPRINKLER PROTECTION IS REQUIRED IN OPEN CEILING AREAS UNDER CONSTRUCTION OR UNDER ANY OTHER CONSTRUCTION SITUATION IN WHICH CEILING SPRINKLER PROTECTION CANNOT BE MAINTAINED DURING THE CONSTRUCTION PERIOD.

WHERE TEMPORARY SPRINKLER PROTECTION IS REQUIRED, THE SPRINKLER INSTALLER SHALL REMOVE PENDENT HEADS AND DROPS AND INSTALL 1" SPRIGS OFF THE SAME OUTLETS WITH UPRIGHT HEADS FOR TEMPORARY PROTECTION DURING THE CONSTRUCTION PERIOD. HYDRAULIC CALCULATIONS SHALL BE BASED ON NFPA REQUIREMENTS.



SHEET NOTE

(2) SPRINKLER HEAD NOT IN SCOPE OF WORK.

SPRINKLER LEGEND

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1 FLOOR TO CEILING GLAZING. PROVIDE SPRINKLER WATER CURTAIN.

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WE EXISTING PENDANT SPRINKLER HEAD

CATE EXISTING PENDANT SPRINKLER HEAD TO NEW LOCATION

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All conditions must be verified by the contractor at the site. Notify the Architect of any	
uscrepancies before proceeding with the work. DO NOT SCALE DRAWINGS.	
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PARTIAL FIRE PROTECTION PLAN	
NOTES AND LEGEND	
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