

# **OWNER:**

POUDRE SCHOOL DISTRICT 2445 LAPORTE AVENUE FORT COLLINS, COLORADO 80521 PHONE: 970|490|3017 EMAIL: jlee@psdschools.org

Jason Lee Construction Project Manager

# **ARCHITECT:**

KALERT CONSULTING GROUP|LLC 2429 STONECREST DRIVE FORT COLLINS, COLORADO 80521 PHONE: 970|412|3049 EMAIL: tomkalert@gmail.com

Tom Kalert AIA Architect

# **ABBREVIATIONS:**

ACOUS.	ACOUSTICAL	MATL.	MATERIAL
A.F.F.	ABOVE FINISH FLOOR	MECH.	MECHANICAL
ARCH.	ARCHITECTURAL	MEP.	MECHANICAL, ELECTRICAL, PLUMBING
		MFR.	MANUFACTURER
BD.	BOARD	MIN.	MINIMUM
BLDG	BUILDING	MISC	MISCELLANEOUS
BLKG	BLOCKING	MTD	MOUNTED
BLKG.	BLUCKING	WITD.	MOUNTED
BOT.	BOLLOW	4	
BSMT.	BASEMENT	(N)	NEW
		Ν.	NORTH
C.J.	CONTROL JOINT	N.E.	NORTHEAST
CLG.	CEILING	N.I.C.	NOT IN CONTRACT
CLO	CLOSET	NTS	NOT TO SCALE
		11.1.5.	
		0.0	
COL.	COLUMIN	0.0.	ON CENTER
CONC.	CONCRETE	0.D.	OUTSIDE DIAMETER
CONST.	CONSTRUCTION	OPNG.	OPENING
CONT.	CONTINUOUS	OPP.	OPPOSITE
CPT.	CARPET	OPP.HD.	OPPOSITE HAND
	2	••••••	
DBI	DOUBLE	ΡI	
		P.LAIVI.	
DIA.	DIAMETER	۲.T.D.	PAPER TOWEL DISPENSER
DIM.	DIMENSION		
DIV'D.	DIVIDED	R.C.P.	REFLECTED CEILING PLAN
DN.	DOWN	R.D.	ROOF DRAIN
DR	DOOR	RFO'D	REQUIRED
		р Ц	
DWG.	DRAWING	к.п.	
		R.O.W.	RIGHT OF WAY
(E)	EXISTING		
EA.	EACH	S	SOUTH
E	EAST	S.E.	SOUTH EAST
E.J.	EXPANSION JOINT	SECT.	SECTION
FLFC	FLECTRICAL	SED	SEE ELECTRICAL DRAWINGS
ED.		5.L.D. с г	
EP.		Э.F.	SUGARE FOUT
EQ.	EQUAL	SHI.	SHEET
EQUIP.	EQUIPMENT	S.L.D.	SEE LANDSCAPE DRAWINGS
		S.M.D.	SEE MECHANICAL DRAWINGS
F.A.	FIRE ALARM	S.P.D.	SEE PLUMBING DRAWINGS
FCP	FIRE CONTROL PANEL	SPECS	SPECIFICATIONS
F D		S C D	SEE STRUCTURAL DRAWINGS
		5.5.D.	
FDN.	FOUNDATION	STOR.	STORAGE
F.F.	FINISH FLOOR	STRUCT.	STRUCTURAL
F.F.E.	FINISH FLOOR ELEVATION		
F.E.C.	FIRE EXTINGUISHER CAB.	TEMP.	TEMPERED
FIN.	FINISH	T & G	TONGUE AND GROOVE
FIXT	FIXTURE	тор	ΤΟΡ ΟΕ ΡΙ ΔΤΕ
гL.		T.U.W.	
F.U.F.	FACE OF FINISH	١.٢.	TOILET PARTITION
F.O.S.	FACE OF STUD	Т.О.	TOP OF
FR.	FRAME	TYP.	TYPICAL
FTG.	FOOTING		
		U.B.C.	UNIFORM BUILDING CODE
GA	GAUGE		UNDERWRITER'S LABORATORY
GALV	GALVANIZED		
GALV.		0.0.11.	UNLLOS UTHER WISE NUTED
טזט.	GTRSOM		
		V.C.T.	VINYL COMPOSITION TILE
HDR.	HEADER	VERT.	VERTICAL
HDWE.	HARDWARE	VEST.	VESTIBULE
HORIZ.	HORIZONTAL	V.I.F.	VERIFY IN FIELD
I.D.	INSIDE DIAMETER	W.	WEST
		\\/ /	WITH
INJUL.		VV /	
INT.	INTERIOR	w.c.	WATER CLOSET
		WD.	WOOD
JAN.	JANITOR	WDW.	WINDOW
JT.	JOINT	W/O	WITHOUT
		WT	WEIGHT
1 4 1/	ΙΔΥΔΤΩΡΥ		
		VD	VARD
		۲D.	τακυ
LT.	LIGHT		









# ADMINISTRATIVE RENOVATION PRESTON MIDDLE SCHOOL 4901 CORBETT DRIVE

# FORT COLLINS, COLORADO 80528

# **KEY PLAN AND CODE INFORMATION:**





# **DRAWING INDEX**:

# VICINITY MAP:











# **GENERAL NOTES:**

- CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS AND SHALL INFORM ARCHITECT AND OWNER OF ANT MAJOR DISCREPANCIES
- MECHANICAL MODIFICATION SHALL BE DESIGN-BUILD IN FIELD WITH Β. OWNER COORDINATION

# **DEMOLITION NOTES:**

- REMOVE EXISTING WALL REMOVE EXISTING DOOR, SALVAGE FOR REINSTALLATION - SEE NEW 2.
- PLAN REMOVE PORTION OF EXISTING WALL FOR INSTALLATION OF SALVAGED 3.
- DOOR SEE NEW PLAN REMOVE EXISTING CASEWORK - SALVAGE AND RETURN TO OWNER
- REMOVE EXISTING HOLLOW METAL CENTER MULLION AND GLAZING, 5. PREP FRAME FOR NEW SLIDING GLASS UNIT - SEE NEW PLAN
- REMOVE ALL EXISTING WIRE GLAZING, PREP FRAME FOR INSTALLATION 6. OF NEW GLAZING OR MAPES PANELS
- REMOVE EXISTING HOLLOW METAL CENTER MULLION THIS AREA, PREP 7. FRAME FOR NEW OPENING - SEE NEW PLAN
- REMOVE EXISTING SLIDING GLASS KIT, PREP FRAME FOR INSTALLATION 8. OF NEW FIXED GLAZING REMOVE HOLLOW METAL GLAZING STOPS AT NEW OPENING - SEE NEW 9.
- PLAN
- REMOVE EXISTING ELECTRICAL AND COM/DATA CHASE, SALVAGE 10. EXISTING DATA LINES ABOVE CEILING
- REMOVE EXISTING DATA PORT 1-F11, 1-D36, 1-F04, 1-F15 SALVAGE FOR 11. REINSTALLATION IN ADJACENT WALL - SEE NEW PLAN

# **KEY NOTES**:

- INFILL PORTION OF GYP. BD. WALL FROM REMOVAL OF EXISTING DOOR, 1. PROVIDE RUBBER BASE BOTH SIDES TO MATCH EXISTING, PATCH, REPAIR AND FINISH TO MATCH EXISTING
- INSTALL OWNER PROVIDED CARPET PATCH FROM REMOVAL OF 2. EXISTING WALL OR CASEWORK
- INSTALL NEW ACP CEILING TILES ABOVE FROM REMOVAL OF EXISTING 3. GYP. BD. CHASE, VERIFY EXTENT IN FIELD
- REINSTALL SALVAGED DOOR THIS LOCATION SEE DOOR JAMB DETAIL 4. 5. NEW 3-5/8" STUD WALL WITH 5/8" GYP. BD AND RUBBER BASE BOTH SIDES, FRAME TO UNDERSIDE OF EXISTING ACP CEILING, FINISH TO
- MATCH EXISTING PROVIDE NEW SUPPLY THIS ROOM - DESIGN BUILD IN FIELD WITH 6. OWNER
- NEW 24" DEEP CASEWORK WITH PLAM COUNTERTOP SEE ELEVATIONS 7. PROVIDE NEW GLAZING UNIT IN EXISTING HOLLOW METAL FRAME 8.
- PROVIDE NEW SOLID MAPES PANELS AT UPPER AND LOWER HOLLOW 9. METAL OPENINGS
- ACCESSIBLE PLAM COUNTERTOP AT 2' 10" MAX, PROVIDE (2) STEEL 10. WALL SUPPORTS AS SHOWN, VERIFY LOCATIONS IN FIELD
- 11. SERVICE COUNTERTOP AT NEW HOLLOW METAL OPENING, COORDINATE WITH NEW OVERHEAD SHUTTER ABOVE
- 12. NEW OFFICE COUNTERTOP AT 2' 6", PROVIDE STEEL WALL SUPPORTS AS REQUIRED
- NEW STEEL INFILL, WELD AND GRIND SMOOTH, PAINT TO MATCH 13. EXISTING
- OVERHEAD STEEL SHUTTER 14.
- PROVIDE J-BEAD TERMINATION PIECE AND SEALANT AT GYP. BD. TO 15. CMU OR ACP LOCATION 16. EXISTING MASONRY WALL, SHOWN FOR REFERENCE
- PROVIDE SEALANT BEAD, FULL PERIMETER, BOTH SIDES, TYPICAL 17.
- PROVIDE (2) 20 GA. METAL STUDS AT DOOR JAMB, TYPICAL 18.
- NEW OR EXISTING STUD WALL, SHOWN FOR REFERENCE SEE PLAN 19. EXISTING HOLLOW METAL WINDOW FRAME, PATCH AND REPAIR AS 20. NEEDED, PRIME AND PAINT IN ENTIRETY
- 21. PATCH AND REPAIR HOLLOW METAL FRAME, PROVIDE NEW METAL STOPS AS NEEDED, PAINT FRAME, INSTALL NEW SLIDING GLASS WINDOW KIT IN EXISTING 5' - 4" x 3' - 6" HOLLOW METAL OPENING, VERIFY IN FIELD
- NEW 18" DEEP CASEWORK WITH PLAM COUNTERTOP SEE ELEVATIONS 22. INSTALL SALVAGED DATA PORT 1-F11, 1-D36, 1-F04, 1-F15 AT THIS 23.
- LOCATION, PROVIDE COUNTERTOP GROMMET ABOVE 24. RELOCATE ALL EXISTING ELECTRICAL AND COM/DATA ITEMS ABOVE NEW COUNTERTOP HEIGHT



S

6.04.20



# **11 DOOR JAMB DETAIL** 3" = 1'-0"













**4 FRAME SECTION DETAIL** 





**3 NORTH FRAME ELEVATION** 

5 ENLARGED FRAME DETAIL





### **ENLARGED FLOOR PLAN** 1/2" = 1'-0"









3' - 6"

(7)

(23)





# **GENERAL NOTES**:

- CONTRACTOR TO FIELD VERIFY ALL EXISTING SITE CONDITIONS AND SHALL INFORM ARCHITECT AND OWNER OF ANT MAJOR DISCREPANCIES MECHANICAL MODIFICATION SHALL BE DESIGN-BUILD IN FIELD WITH Β.
- OWNER COORDINATION

# **DEMOLITION NOTES:**

- REMOVE EXISTING WALL REMOVE EXISTING DOOR, SALVAGE FOR REINSTALLATION - SEE NEW
- PLAN REMOVE PORTION OF EXISTING WALL FOR INSTALLATION OF SALVAGED
- DOOR SEE NEW PLAN REMOVE EXISTING CASEWORK - SALVAGE AND RETURN TO OWNER
- REMOVE EXISTING HOLLOW METAL CENTER MULLION AND GLAZING, PREP FRAME FOR NEW SLIDING GLASS UNIT - SEE NEW PLAN
- REMOVE ALL EXISTING WIRE GLAZING, PREP FRAME FOR INSTALLATION 6. OF NEW GLAZING OR MAPES PANELS REMOVE EXISTING HOLLOW METAL CENTER MULLION THIS AREA, PREP
- FRAME FOR NEW OPENING SEE NEW PLAN REMOVE EXISTING SLIDING GLASS KIT, PREP FRAME FOR INSTALLATION 8.
- OF NEW FIXED GLAZING REMOVE HOLLOW METAL GLAZING STOPS AT NEW OPENING - SEE NEW 9.
- PLAN REMOVE EXISTING ELECTRICAL AND COM/DATA CHASE, SALVAGE 10.
- EXISTING DATA LINES ABOVE CEILING
- REMOVE EXISTING DATA PORT 1-F11, 1-D36, 1-F04, 1-F15 SALVAGE FOR 11. **REINSTALLATION IN ADJACENT WALL - SEE NEW PLAN**

# **KEY NOTES:**

- INFILL PORTION OF GYP. BD. WALL FROM REMOVAL OF EXISTING DOOR, 1. PROVIDE RUBBER BASE BOTH SIDES TO MATCH EXISTING, PATCH, REPAIR AND FINISH TO MATCH EXISTING
- INSTALL OWNER PROVIDED CARPET PATCH FROM REMOVAL OF EXISTING WALL OR CASEWORK
- INSTALL NEW ACP CEILING TILES ABOVE FROM REMOVAL OF EXISTING GYP. BD. CHASE, VERIFY EXTENT IN FIELD
- REINSTALL SALVAGED DOOR THIS LOCATION SEE DOOR JAMB DETAIL NEW 3-5/8" STUD WALL WITH 5/8" GYP. BD AND RUBBER BASE BOTH SIDES, FRAME TO UNDERSIDE OF EXISTING ACP CEILING, FINISH TO MATCH EXISTING
- PROVIDE NEW SUPPLY THIS ROOM DESIGN BUILD IN FIELD WITH 6. OWNER
- NEW 24" DEEP CASEWORK WITH PLAM COUNTERTOP SEE ELEVATIONS
- PROVIDE NEW GLAZING UNIT IN EXISTING HOLLOW METAL FRAME PROVIDE NEW SOLID MAPES PANELS AT UPPER AND LOWER HOLLOW
- METAL OPENINGS ACCESSIBLE PLAM COUNTERTOP AT 2' - 10" MAX, PROVIDE (2) STEEL 10.
- WALL SUPPORTS AS SHOWN, VERIFY LOCATIONS IN FIELD SERVICE COUNTERTOP AT NEW HOLLOW METAL OPENING, 11.
- COORDINATE WITH NEW OVERHEAD SHUTTER ABOVE
- 12. NEW OFFICE COUNTERTOP AT 2' - 6", PROVIDE STEEL WALL SUPPORTS AS REQUIRED NEW STEEL INFILL, WELD AND GRIND SMOOTH, PAINT TO MATCH 13.
- EXISTING
- OVERHEAD STEEL SHUTTER 14. PROVIDE J-BEAD TERMINATION PIECE AND SEALANT AT GYP. BD. TO 15.
- CMU OR ACP LOCATION EXISTING MASONRY WALL, SHOWN FOR REFERENCE 16.
- PROVIDE SEALANT BEAD, FULL PERIMETER, BOTH SIDES, TYPICAL 17.
- PROVIDE (2) 20 GA. METAL STUDS AT DOOR JAMB, TYPICAL 18. NEW OR EXISTING STUD WALL, SHOWN FOR REFERENCE - SEE PLAN 19.
- EXISTING HOLLOW METAL WINDOW FRAME, PATCH AND REPAIR AS NEEDED, PRIME AND PAINT IN ENTIRETY
- PATCH AND REPAIR HOLLOW METAL FRAME, PROVIDE NEW METAL 21. STOPS AS NEEDED, PAINT FRAME, INSTALL NEW SLIDING GLASS WINDOW KIT IN EXISTING 5' - 4" x 3' - 6" HOLLOW METAL OPENING, VERIFY IN FIELD
- NEW 18" DEEP CASEWORK WITH PLAM COUNTERTOP SEE ELEVATIONS 22. INSTALL SALVAGED DATA PORT 1-F11, 1-D36, 1-F04, 1-F15 AT THIS 23. LOCATION, PROVIDE COUNTERTOP GROMMET ABOVE
- RELOCATE ALL EXISTING ELECTRICAL AND COM/DATA ITEMS ABOVE 24. NEW COUNTERTOP HEIGHT





DESCRIPTION			1. VERIFY JOB SITE CONDITION LAYOUT IS BASED ON BEST	NS AND DIMENSIONS BEFOF AVAILABLE INFORMATION.	RE BEGINNING CONTRACTOR	Work. Pi Shall fi	LANS AR ELD VER	E SCHEMA IFY EXISTI	ATIC IN NATU	JRE.
				NS.						
			2. NO PIPING, DUCTWORK, ETC	CUTTING PATCHING AND R	EPAIRING OF F	ERS. INISHES I	ROOF W	ALLS FTC		RED
EXISTING. VERIFY EXACT LOCATIO	N.		TO ACCOMMODATE THE NE	W WORK.				, LLO, LIO	., AO REQUI	
MEXISTING. VERIFY EXACT LOCATION	ON.		4. G.C. IS TO PATCH ANY OPEN	IINGS IN CORRIDORS REQU	IRED TO BE CO	ONSTRUC	TED TO L	IMIT THE T	FRANSFER O	)F
CTOR			SMOKE AND IN SMOKE BARF	RIERS AS REQUIRED TO MEI	ET CODE REQU	JIREMENT	S. SEE A	RCHITECT	TURAL	
TRACTOR			DRAWINGS FOR LUCATIONS	). ESPANSIBII ITY TA FIFI D VE			CONFIG			G
NCES			OF EXISTING SYSTEMS REQ	UIRED TO REMAIN IN OPERA	ATION DURING	THE PRO	JECT TO	PREVENT	DAMAGE	9
			DURING DEMOLITION AND P	HASING.						
			6. REMOVE ALL EXISTING EQU	IPMENT, DUCTWORK AND P	IPING THAT IS	NOT REQ	UIRED FO	)R A WOR	KING	
			I INSTALLATION.	TH OTHER TRADES PRIOR T		אכ				
PPOSED BLADE / ROUND - BUTTER	FLY		8. ALL CUTTING AND PATCHING	G SHALL BE CLOSELY COOF		H THE G.C				
FIGURE IS SIDE SHOWN-CLEAR INSI			9. ALL DIFFUSERS ARE 4-WAY	BLOW UNLESS INDICATED (	OTHERWISE OF	N THE DRA	WINGS.			
				LOWED ON RUNOUTS TO SU			. UTILIZE			18.4
			LENGTH OF 6'-0" MAY BE US	FD AT FACH CONNECTION				: EXPUSEL		ואו
( REGISTER			11. SEAL DUCTWORK AS CALLE	D OUT BELOW USING HARD	CAST DT TAPE	AND FTA	-20 ADHE	SIVE OR F	HARDCAST	
			AFG-1402 "FOIL GRIP" PER N	IANUFACTURERS INSTRUCT	TIONS. SEAL T	O SMACN/	A SEAL C	LASS A:		
JME UNIT				٨٥		2				
			LOW VELOCITY SUPPLY	(ROUND) TR	ANSVERSE AN	<u>»</u> ID LONGIT	UDINAL			
				(,						
			12. INSTALL BALANCE DAMPER	WITH STANDOFF AND LOCK	(ING QUADRAN	IT IN AN A	CCESSIB	LE LOCAT	ION AT EACH	+
TURN GRILLE				SERS, EXHAUST GRILLES, AI	ND RETURN GI	RILLES WE	IERE AIR	FLOW IS I	NDICATED, C	JR
			13. ALL PENETRATIONS THROU	GH FIRE RATED ASSEMBLIE	S SHALL BE FI	RE STOPP	PED BY T	HE TRADE	MAKING THI	E
			PENETRATION. REFER TO A	RCHITECTURAL DRAWINGS	AND SPECIFIC	CATIONS F	OR REQ	UIREMENT	ΓS.	
			14. DO NOT ROUTE PIPING OR D	OUCTWORK OVER ELECTRIC	CAL PANELS O	REQUIPM	ENT. PIP	ING OR DI	JCTWORK	_
AIR CONDITIONING UNIT				ROUGH ELECTRICAL ROOMS	S, TELECOM RC			)R EQUIPN	AENT ROOMS	З Ц
			DRAIN TO NEAREST APPRO	VING THAT ROOM. COORDI	QUIRED.	. FRUVID				1
NCY DRIVE			15. COORDINATE SIZE AND LOC	ATION OF ACCESS DOORS	IN CONSTRUC	TION REQ	UIRED FO	OR ACCES	S TO	
OOR (VERTICAL POSITION)			MECHANICAL EQUIPMENT W	/ITH G.C.			_			
ALL (HORIZONTAL POSITION)				ATION OF MECHANICAL EQU	UIPMENT PADS	S WITH G.(	Э.			
			18 ALL RECTANGULAR DUCTW	ORK DIMENSIONS ARE OUTS	SIDE SHEET MI	JS. FTAI DIMF	NSIONS		NER HAS BEI	FN
SMOKE DAMPER (VERTICAL POSIT	ON)		ACCOUNTED FOR IN LINED I	DUCT BUT WRAP INSULATIO	N HAS NOT BE	EN ACCO	UNTED F	OR IN WR/	APPED DUCT	Γ.
E/SMOKE DAMPER (HORIZONTAL PO)	SITION	)	REFER TO SPECS FOR INSU	LATION AND METAL DUCT S	CHEDULES.					
THERMOSTAT (TSTAT)		/	19. REFER TO ARCHITECTURAL	REFLECTED CEILING PLAN	S FOR EXACT I		OF ALL	CEILING M		{
				K BI ACK ANYWHERE VISIBI					R	
			21. COORDINATE ACCESS TO E	QUIPMENT AND VALVES INS	TALLED ABOV	E 'HARD' (	CEILINGS		ASONRY	
			CHASES WITH GENERAL CO	NTRACTOR. PROVIDE LOCH	KING ACCESS I	DOORS FC	OR INSTA	LLATION E	3Y	
			CONTRACTOR AS REQUIRED	D TO SERVICE CONCEALED	DAMPERS, VA	LVES AND	EQUIPM	ENT. CEIL	ING ACCESS	3
LE			CONTRACTOR	, SMOKE DAMPERS AND FIR	E SMOKE DAM	IPERS FUI	RNISHED	AND INST.	ALLED BY	
			22. CONTRACTOR TO INSTALL T	EMPORARY FILTERS OVER	ALL RETURN A	AND EXHA	UST GRII	LLES IN W	ORK AREA	
			DURING CONSTRUCTION.							
DUCT			23. THESE DRAWINGS ARE ACC	OMPANIED BY SPECIFICATI	ONS. REFER T	O SPECIF	ICATION	3 FOR FUF	₹THER	
CONNECTION	<b>SIZE</b>		24 REFER TO ARCHITECTURAL	DRAWINGS FOR LOCATION	S OF TEMPOR	ARY PART	TITIONS			
FIRE DAMPER	2		25. SQUARE THROAT NOT ALLO	WED ON RADIUS ELBOWS.			inono.			
600 (FD)										
LLE CALLOUT SYMBOL			LNOTE: NOT ALL MAY APPLY ON	PROJECT						
			AIR SYSTEM	PRESSURE CLASS	SEAL CLASS	LEAKAGE	CLASS			
		Ŕ				ROUND	RECT			
ACCESSORIES & REMARKS			LOW-PRESSURE SUPPLY	2 INCH WG (500 PA)	В	6	12			
					<u> </u>					
24x24 LAY-IN										
24x12 LAY-IN										

**GENERAL NOTES** 

- Y-IN XIMUM
- ٩ST
- EACH ED, OR
- G THE
- RK OOMS WITH
- S BEEN DUCT.
- DAIR
- CESS
- REA



MC
MC
M1

MATERIAL SIMILAR TO ADJACENT CONSTRUCTION. 10. WHERE EXISTING PIPING AND EQUIPMENT, ETC., THAT ARE TO BE UTILIZED IN THE COMPLETED PROGRAM CONFLICT WITH NEW CONSTRUCTION AND THE REQUIRED DEMOLITION. THEY SHALL BE RELOCATED AND RECONNECTED TO MAINTAIN THE DESIRED SERVICE.

0.	'		
10	T	E:	١



# **GENERAL DEMOLITION NOTES**

VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE ARCHITECT IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.

REMOVAL OF EXISTING FIXTURES AND EQUIPMENT WILL REQUIRE ISOLATING THE PIPING RISERS OR MAINS VIA SHUT-OFF VALVES. INSTALL NEW ISOLATION VALVES WHERE REQUIRED FOR COMPLETION OF WORK. REMOVAL OF EXISTING PLUMBING FIXTURES AND EQUIPMENT, ETC. WILL REQUIRE CAPPING AND SEALING EXISTING MAINS OR BRANCHES AS NECESSARY AND REQUIRED TO ALLOW THE REMAINING SYSTEMS TO FULLY OPERATE WITHOUT DEGRADATION.

 CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK, AND SHALL CLEAN THE AREAS OF AL CONSTRUCTION DIRT DAILY, AND UPON COMPLETION OF THE WORK.

5. ALL DRAINED PIPING RISERS AND MAINS SHALL BE REFILLED WITH PROPER FLUID AND PROPERLY VENTED BY THIS CONTRACTOR, ONCE NEW WORK HAS BEEN INSTALLED. COORDINATE WITH GENERAL CONTRACTOR THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS

ETC. AS REQUIRED FOR MECHANICAL DEMOLITION WORK. EXISTING PIPING AND EQUIPMENT, ETC., NOT TO BE UTILIZED IN THE COMPLETED BUILDING SHALL BE DISCONTINUE OR REMOVED AS REQUIRED. ALL ENDS OF DISCONTINUED PIPING SHALL BE CAPPED IN THE NEAREST WALL, CEILIN OR FLOOR SO THAT THEY ARE COMPLETELY CONCEALED. OPENINGS LEFT IN WALLS, CEILINGS, ETC., WHERE EQUIPMENT AND PIPE, ETC., ARE REMOVED AND NOT REPLACED, SHALL BE PATCHED NEATLY WITH SIMILAR

MATERIAL TO ADJACENT CONSTRUCTION. REFER TO DRAWINGS DELINEATING NEW WORK FOR ADDITIONAL INFORMATION REGARDING SYSTEMS OR PORTIONS OF SYSTEMS WHERE USE IS TO BE DISCONTINUED. EXISTING PIPING, FIXTURES AND EQUIPMENT THAT ARE NOT TO BE REUSED SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE OWNER IF THEY WISH TO RETAIN OWNERSHIP OF SAME. IF NOT, EQUIPMENT SHALL BECOM THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AS SOON AS PRACTICAL AND

DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS ALL CUTTING AND CHANNELING OF EXISTING BUILDING SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH

11. PORTIONS OF EXISTING SYSTEMS MAY BE SHOWN FOR CLARITY EVEN THOUGH IT MAY NOT BE NECESSARY TO MODIFY OR REVISE THEM. ALL EXISTING SYSTEMS ARE SHOWN BASED ON ORIGINAL OR REMODEL BUILDING DRAWINGS. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.

12. ALL WORK MUST BE COORDINATED AND SCHEDULED WITH THE OWNER AND OCCUPANTS OF THIS BUILDING SO AS TO PROVIDE THE LEAST AMOUNT OF DISRUPTION OF BUILDING ACTIVITIES AS POSSIBLE. MAINTAIN CONDITIONED SPACE FOR ALL OWNER OCCUPIED AREAS DURING CONSTRUCTION.

13. ALL ACCESSIBLE ABANDONED PIPING AND DUCTWORK SHALL BE REMOVED AND PROPERLY DISPOSED OF.

NOT ALL MAY APPLY TO PROJECT

### DRAWING SYMBOLS SECTIONS DETAILS EQUIPMENT -DETAIL NUMBER -SECTION LETTER CALLOUT 5 B –EQUIPMENT TYPE M3.6 M3.6-(FT=FAN TERMINAL) -SHEET NUMBER -SHEET NUMBER -UNIQUE I.D. WHERE DRAWN WHERE DRAWN (FAN TERMINAL NO. 1) -SECTION LETTER FT-1 -DETAIL NUMBER B--SHEET NUMBER SHEET NUMBER WHERE DRAWN M2.1 M3.6 WHERE DRAWN M2.1 M3.6 -TYPICAL EQUIPMENT -SHEET NUMBER -SHEET NUMBER NUMBER WHERE REFERENCE WHERE REFERENCED SHEET LIST

.0	MECHANICAL COVER SHEE
.1	SPECIFICATIONS
.0	FIRST FLOOR HVAC PLAN

G	KALERT   Consulting Group, LLC 2429 Stonecrest Drive Fort Collins, Colorado 80521	etor   412   5049 tomkalert@gmail.com
ED IG N IE T	47657 06/04/2020	
	SHEET CONTENTS MECHANICAL COVER SHEET	
CED	PRESTON MIDDLE SCHOOL 4901 CORBETT DRIVE FORT COLLINS, COLORADO 80528	THE IDEAS AND DESIGN INCORPORATED HEREON, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF KGG   LLC AND IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT PRIOR WRITTEN AUTHORIZATION OF KGG   LLC
LIANIS, P.A. ALLINS, CO 80524		REUSE OF DOCUMENT
PROFESSIONAL ENGINEERING CONSU 420 LINDEN ST, SUITE 110 FORT CC 970-232-9558 www.pec1.com	DESCRIPTION DESCRIPTION DESCRIPTION DESCRIPTION DATE DATE	REVISIONS

PER

FOR

ISSUE

SECTION 200500 - COMMON WORK RESULTS FOR FIRE PROTECTION, PLUMBING, AND MECHANICAL

# 1.1 GENERAL CONDITIONS

A. The General Conditions, Supplemental General Conditions, Special Conditions and General Requirements are part of this contract and shall be referred to as they apply to this section of the specifications.

### **1.2 EXAMINATION OF SITE**

A. Visit the site, inspect the existing conditions and check the drawings and specifications so as to be fully informed of the requirements for completion of the work. Lack of such information shall not justify an extra to the contract price.

### 1.3 SCOPE

- A. The Mechanical Work shall include labor, materials, and equipment to install systems as shown on plans and hereinafter specified. The installation shall include all labor, materials, tools, transportation, equipment, services and facilities, required for the complete, proper and substantial installation of all mechanical work shown on the plans, and/or outlined in these specifications. The installation shall include all materials, appliances, and apparatus not specifically mentioned herein or noted on the drawings but which are necessary to make a complete working installation of all mechanical systems.
- B. Show on prints in red ink all changes from original plans made during the
- installation. Return these prints to the Architect upon completion of the project.
- C. By bidding, this contractor acknowledges his understanding of the work to be done and agrees to install complete and workable systems.

### 1.4 CODES

- A. Execute work in compliance with all applicable Federal. State and Municipal laws, codes, ordinances, and local customs regarding the trade to perform the
- B. Codes shall govern in case of any direct conflict between codes and plans and specifications; except when plans and specifications require higher standards than those required by code. Variance from the plan and specifications made to comply with code must be approved by the Architect. If approved they shall be made with no increased cost to the Owner.
- C. In addition, the following published Standards and Regulations shall be
- adhered to as applicable to the work involved: Latest issue of the Local, State, and International Plumbing Codes
- Latest issue of the ASHRAE Guide
- Latest issue of the SMACNA Handbook
- Applicable NFPA Pamphlets
- Applicable ANSI Standards
- American Society of Mechanical Engineers Boiler Code
- American Society of Mechanical Engineers Unfired Pressure Vessel Code American Standards Association Code for Mechanical
- Occupational Safety and Health Act
- Current Editions of Uniform Building Code
- Latest issue of the State Air Pollution Control Regulations
- Rules of the State Boiler Inspection Department
- Americans with Disabilities Act

## 1.5 DEFINITIONS

- A. It shall be understood that the drawings and specifications complement one another and items specified shall also meet the criteria set forth on the drawings.
- B. Where any device or item is referred to in the singular sense (such as "the unit"), such reference applies to as many devices as are required to complete the installation as shown on the drawings.
- C. The term "work" shall mean all obligations imposed upon the Contractor by the 1.13 MATERIALS Contract Documents.

## **1.6 ABBREVIATIONS**

- ADA Americans with Disabilities Act
- AGA American Gas Association
- AISI American Iron and Steel Institute
- AMCA Air Moving and Conditioning Association, Inc.
- ANSI American National Standards Institute
- ASHRAE American Society of Heating, Refrigeration & Air-Conditioning Engineers, Inc.
- ASME American Society of Mechanical Engineers
- ASTM American Society for Testing and Materials
- AWWA American Water Works Association
- BPVC Boiler and Pressure Vessel Code of ASME
- CISPI Cast Iron Soil Pipe Institute
- NFPA National Fire Protection Association
- SMACNA Sheet Metal and Air-Conditioning Contractors National Association, Inc.
- UL Underwriters' Laboratories, Inc.
- ETL ETL Testing Laboratories, Inc.
- OSHA Occupational Safety and Health Administration
- 1.7 PERMITS
  - A. Obtain and pay for all licenses and permits, fees, inspection and certificates required for the execution of this work.
  - B. Pay fees and charges for connection to outside services and use of property. C. Deliver permits and certificates to the Architect for transmittal to the Owner.
- 1.8 RESPONSIBILITY
  - A. This contractor will be held responsible for any and all damage to any part of the building or to the work of other contractors, as may be caused through his operation.
  - B. The operation and maintenance of the New Mechanical Equipment during construction shall be the responsibility of this contractor until the acceptance of the building by the Owner.
  - C. The General Contractor shall pay for all fuel cost for operation of the equipment, unless indicated otherwise in the specifications.
  - D. This Contractor shall make all provisions for entry of equipment, installed under this Contract, to the installed location. This Contractor shall provide openings in existing construction if necessary. This Contractor shall do all repair necessary to restore the building to the original condition. During the period of entry of equipment and removal of trash, no disruption of the Owner's normal business shall occur.
- 1.9 WORK TO BE DONE BY GENERAL CONTRACTOR
  - A. Build in all openings, sleeves, chases, etc., for piping, as established, furnished and set by this contractor.

- B. Mechanical Contractor shall furnish bolts, brackets, hangers, etc., required for work established and arrange for General Contractor to build into concrete structure. General Contractor shall install all factory sleeved fire dampers, furnished by Mechanical Contractor, in walls and floors.
- C. Frame around and provide openings for ductwork, louvers, roof drains, etc. D. Build curb or install factory curb and provide flashing for roof mounted mechanical equipment. Provide heavy steel angle support under entire perimeter of roof curb for rooftop equipment. Metal deck and roof insulation shall be installed within the roof curb area of rooftop equipment for acoustical
- considerations. E. Provide lintels over wall openings.
- F. Build concrete base for equipment furnished and set by this contractor. G. Provide concrete housing for sewage ejector and sump pump basins. H. Paint all mechanical equipment so specified. Use paint which is specified by
- the Architect.
- I. Do excavation, provide moisture barrier, sand and/or gravel, tie down wire, and 1.18. a minimum thickness of 3" of lightweight concrete for installation of duct below grade. Mechanical Contractor shall furnish duct and set in place in preparation for concrete pour.
- 1.10 WORK TO BE DONE BY ELECTRICAL CONTRACTOR A. The Electrical Contractor shall provide all motor starters complete with auxiliary contacts where required for the function of this system unless specifically
  - noted otherwise on the plans or in these specifications. B. All required line voltage wiring for the mechanical control system shall be furnished and installed by the Electrical Contractor under supervision of the Control Manufacturer's representative.
  - equipment. Provide complete wiring for the equipment including all required interlocking. Provide complete wiring for power factor correction capacitors. furnished by the Mechanical Contractor for equipment so specified.
  - C. Check mechanical specifications to verify wiring requirements for motor driven D. The Electrical Contractor shall install the power factor correction capacitors
- 1.11 ELECTRICAL REQUIREMENTS BY MECHANICAL CONTRACTOR A. Mechanical Contractor shall furnish all motors, motor interlocking control
  - devices, certain magnetic starters, etc. B. Submittals shall include complete equipment wiring diagrams and temperature control drawings for all the equipment furnished.
  - C. Submittals shall show all wiring connections, starters, auxiliary contactors, interlocking selector switches, separate control voltage power supplies, for
  - each and every item of equipment, etc., requiring wiring. D. Provide one copy of Engineer approved shop drawings showing all wiring and 1.21 temperature control requirements of all mechanical equipment to the Electrical Contractor.

## 1.12 WORKMANSHIP AND COORDINATION

- A. Make installation substantially as shown on the plans. B. Pipe and duct routing and equipment location shown on the drawings are schematic in nature. Make alterations in location of apparatus or piping as
- C. Equipment service clearances, per equipment manufacturers' specifications, shall be maintained from general construction. No pipe or ductwork shall be installed within these clearances. No piping, coils, or ductwork shall be installed above electrical panels, starters or switch gear, or in elevator
- equipment rooms. D. Cooperate with other contractors in their installation of work. E. The ductwork shall take precedence over all pipe work except where it is
- necessary to maintain an even grade or specific slope on the piping.
- F. Use only experienced mechanics.

A. Material and equipment shall be new, of best quality and design and free from defects. A manufacturer's nameplate affixed in a conspicuous place will be required on each major component of equipment stating manufacturer's name, address and catalog number.

### 1.14 MATERIALS OF APPROVED EQUAL

- A. Where items of equipment and/or materials are specifically identified herein by a manufacturer's name, model or catalog number, only such specific items
- may be used in the base bid, except as hereinafter provided. B. Unless requests for changes in base bid specifications are received and approved and noted by addendum prior to the opening of bids, the successful
- contractor will be held to furnish specified item. C. After contract is awarded, changes in specifications shall be made only as defined under "Substitution of Equipment".
- 1.15 SUBSTITUTION OF EQUIPMENT
  - A. After execution of the contract, substitution of equipment of makes other than those specifically named in the contract documents will be approved by the Engineer only if the equipment named in the specifications cannot be delivered 1.26 FINAL INSPECTION to the job in time to complete the work in proper sequence to work of other contractors, due to conditions beyond control of the contractor.
  - B. Requests for substitutions must be accompanied by documentary proof of equality or difference in price and delivery, if any, in form of certified quotations
  - from suppliers of both specified and proposed equipment. C. The Owner shall receive all benefits of the difference in cost involved in any substitution, and the contract altered by change order to credit Owner with any savings so obtained.

### 1.16 SUBMITTALS

- A. Contractor shall send to the Architect for approval submittals on all equipment, accessories, and components. B. Where catalog cuts are used, mark them to indicate equipment, capacities.
- controls, fittings, valves, sizes, etc.
- C. Reference each item to applicable specification paragraph number and plan sheet number. Reference items not appearing in base specification to applicable alternate numbers, change order numbers, letters of authorization,
- D. All shop drawings shall be checked and signed by the mechanical contractor prior to submittal to the Engineer.
- E. Shop drawings submitted without contractor's signature or approval and verification will not be approved. Quantities will not be checked or verified. It is the contractor's responsibility to provide the proper quantities required to
- complete the job. F. Portions of the work requiring a shop drawing submittal shall not begin until the shop drawing has been approved by the Engineer. 1.1 DUCT INSULATION (EXTERNAL)
- G. Submit wiring diagrams for all mechanical equipment requiring field wiring clearly showing all required connections.

- may be required to conform to building construction without extra charge.

H. Engineer's acceptance of Compliance Submittals will not relieve Contractor from his responsibility for any deviations from the requirements of the Contract Documents unless Contractor has in writing called Engineer's attention to such deviation at the time of submission and Engineer has given written approval to the specific deviation, nor shall any acceptance by Engineer relieve Contractor from responsibility for errors or omissions in Compliance Submittals.

# 1.17 CUTTING AND PATCHING

- A. Notify the General Contractor in ample time, of the location of all chases, sleeves, and any other openings required in connection with the work of this contract.
- B. Cutting and patching made necessary because of failure to comply with the above shall be done by the General Contractor at the expense of the Mechanical Contractor.
- MUTILATION
- A. All mutilation of finishing initiated by installation of plumbing pipes, fixtures, etc., shall be properly pointed up by the respective finishing contractor and paid for by the Mechanical Contractor.
- 1.19 EXCAVATION AND BACKFILLING
  - A. Do all excavation required for water, gas, sewer, drainage, etc. B. Contractor shall do all shoring and bracing necessary per OSHA requirements to perform the work and as required for safety.
  - C. Backfill and tamp the earth around pipes and bring to required level.
  - D. Fill carefully to prevent future settlement. E. Backfill trenches under concrete floor, drive, or walks, with sand, crushed rock, or gravel, in manner to prevent future settlement. Backfilling of trenches shall be in conformance with requirements for earthwork in the Architectural Specifications.
  - F. Street and alley pavement surfaces damaged must be repaired to the satisfaction of the local authorities.

# 1.20 TESTING

- A. Furnish testing equipment and test all piping systems under methods and conditions as specified.
- B. Test for a period of not less than 12 hours in the presence of the Architect. C. Make all necessary replacements and repair and repeat tests until the entire
- system is approved and satisfactory.
- D. Test under pressure with liquid or gas as directed or specified.

# PAINTING

- A. All painting shall be done by the General Contractor.
- B. Painting shall be for the following items: all piping, ductwork, frame work, and all equipment not furnished with factory finish, etc., in all exposed areas of the building and/or as noted on the drawings. Omit painting of piping in tunnels and in concealed areas.

# 1.22 OPERATING INSTRUCTIONS

A. Prepare and submit to the Engineer for approval three (3) copies of operating instructions made in conjunction with Equipment Manufacturer's representative. Instruction shall contain equipment starting sequence, interlocks, controls, switches, etc. which affect the equipment operation. Place copies in maintenance instructions brochure.

# 1.24 MAINTENANCE INSTRUCTIONS

- A. Prepare a brochure in triplicate covering all systems and equipment furnished and installed under this contract. Each brochure shall include certified equipment drawings and/or catalog data as submitted, complete maintenance instructions, parts lists for each item of equipment, any special emergency operating instructions, all equipment warranties with starting dates identified, and a list of service organizations including addresses and telephone numbers.
- B. Brochures shall be bound in hard backed, three-ring binders with an index, sub-dividers and reinforced sheets.
- C. Label cover with the following: Project name and address
- Section of work covered by brochure, i.e., "Plumbing Heating, Ventilation, Air Conditioning", etc.
- Name and address of Architect, Engineer, Contractor. Telephone number of Contractor including night and emergency numbers.

D. Brochures shall be submitted to the Engineer for approval and delivery to the Owner.

# 1.25 LOOSE EQUIPMENT

A. All keys and special wrenches furnished with the equipment shall be kept in a safe place during construction and presented to the Owner at the completion of the project.

- A. Final inspection will be made upon written request from the Mechanical Contractor after the project is completed.
- B. Furnish a workman familiar with this project to accompany the Engineer on final inspection and have available ladders, drop cords, and other equipment as required to gain access to any portion of this system.
- C. This contractor and his principal sub-contractors shall be represented at the inspection by a person of authority responsible to demonstrate to the Engineer that his work conforms to the intent of the plans and specifications.
- D. Extra inspections made necessary by the Mechanical Contractor's failure to comply with the conditions as set forth above shall be charged to the contractor at the inspector's time both on the job and spent in travel between the office and the project site.

# 1.27 GUARANTEE

- A. Guarantee all work, material and equipment for a period of one year after date of final certificate of acceptance by the Architect
- B. During the year guarantee period the mechanical contractor shall be responsible for any defects which develop in the mechanical systems. Upon notification of a defect by the Architect, (s)he shall make immediate effort to correct it and shall notify the Architect when this work is completed. C. Repairs and/or replacements shall be made with no cost to Owner.

# SECTION 200700 - INSULATION

A. Manufacturers: Johns Manville - CertainTeed - Owens Corning - Knauf.

- B. Insulate externally all concealed round ducts and rectangular outdoor air ducts with .75 pound minimum density fiberglass ductwrap with a Foil-scrim Kraft vapor barrier applied with outward-clinching staples. The insulation is to have a minimum installed R-value of 4.2 for 1-1/2" thick insulation and 5.6 for 2" thick insulation when compressed 25%. Duct wrap thickness shall be 1-1/2" for supply and return ductwork located with-in the conditioned building space. Thickness shall be 2" for supply and return ductwork located with-in unconditioned building space and for all outdoor air ductwork.
- C. The duct insulation shall have Underwriters Laboratories flame spread rating not to exceed 25 - fuel contributed rating not to exceed 50 - smoke developed rating not to exceed 50.
- D. Insulation shall be continuous through partitions, coils, etc. Insulate fire damper sleeves to partitions.

# SECTION 230593 - AIR TEST AND BALANCE

- 1.1 SCOPE
  - A. The Mechanical Contractor shall procure the services of Lawrence H Finn & Associates, Jedi Balancing or another independent firm, fully certified with the National Environmental Balancing Bureau (NEEB). The firm shall test air moving equipment and air distribution and exhaust systems and to supervise the balance and adjustment of these systems. All work shall be done under direct supervision of a qualified and licensed Heating and Ventilating Engineer The mechanical contractor shall provide workmen of the proper trade to make adjustments to the systems as determined by the Engineer. The Contractor shall provide access as required, including any necessary scaffolding, and shall cooperate with testing laboratory personnel. All instruments used in this work shall be accurately calibrated and maintained in good working order. If requested the tests shall be conducted in the presence of the Mechanical Engineer responsible for the project and/or his representative. Air balance and testing shall not begin until the system has been completed and is in full working order. The Contractor shall put all heating, ventilating, and air conditioning systems and equipment into full operation 24 hours prior to the onset of testing and balancing and shall continue the operation of same during each working day until the completion of all test and balance work. The Contractor shall award the test and balance contract upon receipt of his contract to proceed with the air conditioning installation, to allow the Air Balance and Testing Engineer to schedule his work in cooperation with other trades involved and comply with completion date. Upon completion of the air conditioning system installation, the Air Balance and Testing Engineer shall perform the following tests, supervise adjustments and system modifications, and compile the test data as required for evaluation and approval. B. In addition to procuring the services of an air balancing engineer as hereinafter
  - specified the mechanical contractor shall: 1. Clean air filters, ductwork, coils, fans, etc. in the air system to remove all
  - construction dust and debris. 2. Start, lubricate and balance all fans. Change and/or adjust drive pulleys
  - on fans to give required capacity. 3. Supply and install all balancing dampers as required for final balancing as determined by the balancing engineer.
  - 4. Furnish workmen familiar with this project and of the proper trade to assist the balancing engineer in the air and water balancing. Also make available subject to request by the balancing engineer trained servicemen 1.4 FLEXIBLE DUCTS of the control and equipment suppliers to assist as needed during the testing of their portion of the project.
  - 5. Furnish plans, operating manuals, and shop drawings of all equipment installed for use by the Air and Water Balancing Agency.
  - 6. Have all systems in full operation a minimum of 24 hours before Balancing Engineer arrives on job.

# 1.2 AIR SYSTEM TEST AND BALANCE PROCEDURE

- A. Procedure:
- a. Bring all fans to design RPM. b. Bring air volume in each air handling system to the design air volume using pitot tube transverse method.
- c. Test and record fan motor data.
- d. Bring air diffusers and registers to design CFM. e. Make recommendations for system modifications and adjustments required to facilitate proper system balancing as determined by preceding
- f. Retest and readjust all system segments affected by system modifications.
- 1.3 DATA FILE

## A. Prepare complete data file on all equipment and devices tested indicating name plate data, design requirements and final operating conditions. Submit

a PDF of the final balance report to be distributed as follows: B. A data copy of the final TAB report shall be sent to the owner along with a printed copy inserted in the operation and maintenance manuals presented to the Owner.

# **1.4 INSTRUCTION**

**1.1 DEFINITIONS** 

- A. At the completion of the balancing, review the operating and maintenance brochures as supplied by the Mechanical Contractor supplement these instructions as determined through balancing experience. Meet with owners personnel to review proper operating procedures.
- B. Warranty that the system is set in accordance with values as established by the plans and specifications.

# SECTION 230800 - AIR DISTRIBUTION

FPM to 3,000 FPM.

deadhead rating.

greater deadhead rating.

**1.2 PERFORMANCE REQUIREMENTS** 

that are sized at 2,000 FPM or lower.

2" w.c. and less than 6" w.c. deadhead rating.

B. All work shall comply with the Mechanical Codes.

- Low Velocity Ductwork: Supply, return, make-up, and exhaust ductwork systems
- Medium Velocity Ductwork: Supply ductwork systems sized at greater than 2,000
- Low Pressure Ductwork: Ductwork connected to fan systems with a 2" w.c. or less
- Medium Pressure Ductwork: Ductwork connected to fan systems with greater than
- High Pressure Ductwork: Ductwork connected to fan systems with 6" w.c. or
- A. Duct construction, including sheet metal thicknesses, seam and joint construction, reinforcements, and hangers and supports, shall comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and performance requirements and design criteria indicated in "Duct Schedule"

- C. Structural Performance: Duct hangers and supports[ and seismic restraints] shall withstand the effects of gravity and seismic loads and stresses within limits and under conditions described in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" [and] [ASCE/SEI 7]
- D. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

# 1.3 SHEET METAL DUCT WORK CONSTRUCTION

- A. The work under this heading includes all sheet metal work as required to complete supply and exhaust systems including ducts, housings, ventilating hoods, exhaust hoods, louvers, dampers, grilles, diffusers, registers, access doors, access panels, etc.
- B. Duct material shall be galvanized steel unless noted otherwise on the drawings
- C. Seal ducts to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
- 1. Comply with SMACNA's "HVAC Duct Construction Standards Metal and Flexible."
- 2. Unconditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg (500 Pa) and Lower: Seal Class A
- 3. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch
- wg (500 Pa): Seal Class A.
- 4. Unconditioned Space, Exhaust Ducts: Seal Class A. 5. Unconditioned Space, Return-Air Ducts: Seal Class A.
- 6. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg (500 Pa) and Lower: Seal Class A.
- 7. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg (500 Pa): Seal Class A
- 8. Conditioned Space, Exhaust Ducts: Seal Class A. 9. Conditioned Space, Return-Air Ducts: Seal Class A.
- A. Make ductwork and installation in conformance with the applicable local Mechanical Code and Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) HVAC Duct Construction Standards (Latest Edition) amended as follows:
- 10. Seal all transverse joints, fittings, connections, and seams with Hardcast DT tape and FTA adhesive, Hardcast AFG-1402 "Foil-Grip" applied per manufacturers instructions, or brushed-on liquid based joint and seam sealant.
- 11. Make all branch connections with 45° entry clinch collar.
- 12. Round branch duct take-offs shall be high efficiency takeoffs (HETO), made with 45° entry clinched collar and rectangular to round transition. If damper is provided with HETO, it shall meet the requirements of the manual balance damper section below
- A. Use square type elbows with turning vanes for changes in direction and fittings for branch ducts. Radius elbows may also be used for duct changes in direction, refer to drawings.
- B. Offset ducts to clear pipes and obstructions.
- C. Patch all duct holes air tight after installation. D. All round ductwork shall be a minimum of 26 gauge sheet metal or heavier as
- required by SMACNA and the Mechanical Code. E. Duct Cleaning: Clean new and existing duct system(s) before testing, adjusting, and balancing.

- A. Outer Duct: Comply with SMACNA's "HVAC Duct Construction Standards -Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Flexible ducts Thermaflex Type MKE or equivalent, meeting amended code standards of NFPA and NEFU Pamphlet 90A with U.L. Fire rating of not over 25 flame spread and a developed smoke rating of not over 50. U.L. Standard 181 Class 1 woven and coated fiberglass supported by heliacally wound spring steel wire. 1" fibrous glass insulation. Aluminized vapor barrier film. Pressure rating of 10 inch wg positive and 2 inch wg negative. A maximum of six feet of flexible duct may be used for each connection to supply diffusers only, only above accessible ceilings.
- E. Accessories: Strap clamps with stainless steel band and cadmium plated hex screw to tighten band with worm-gear action.
- F. Installation: Duct connections to collars shall be made in accordance with the duct manufacturer's recommendations.

# 1.6 GRILLES, REGISTERS, AND DIFFUSERS

- A. Manufacturers: Carnes Titus Krueger Price B. Capacity: As indicated on drawings.
- C. Accessories: As scheduled on the drawings for finish, opposed blade dampers, borders, directional vanes, etc.
- 1.7 MANUAL VOLUME DAMPERS (UNDER 1500 FPM)
  - A. Manufacturers: Air Balance Inc. Ruskin Carnes Nailor Greenheck -Pottorff – Metalaire – Flexmaster USA – McGill Airflow or equivalent.
  - B. Features: 20 gauge min. galvanized steel blades 20 gauge min. galvanized steel frame with blade stops - noncorrosive bearings (Oilite or Nylon) rectangular dampers to have blade linkage concealed in frame - full width 3/8" minimum square cadmium plated steel axle shaft extending through frame manual locking quadrant bracketed 1-1/2" minimum from frame to allow for insulation.
  - C. Single blade dampers may be used for duct sizes of 12" high x 36" wide and less. Sizes greater than 12" high or 36" wide shall be multiple opposed blade dampers.

Ц

0

OR

E E E E

5

M0.1

CWH

06-04-2020





<sup>0' 4' 8' 12'</sup> **1/4" = 1'-0"** 

# (#) PLAN NOTES

- 1. EXISTING RETURN GRILLE TO BE



# MECHANICAL GENERAL NOTES

- 1. ALL RECTANGULAR DUCTWORK DIMENSIONS ARE OUTSIDE SHEET METAL DIMENSIONS. DUCT LINER HAS BEEN ACCOUNTED FOR IN LINED DUCT BUT WRAP INSULATION HAS NOT BEEN ACCOUNTED FOR IN WRAPPED DUCT. REFER TO SPECS FOR INSULATION AND METAL DUCT SCHEDULES.
- 2. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BEGINNING WORK. BRING ANY DISCREPANCIES FROM THE DRAWINGS AND NOTES TO THE OWNER'S REPRESENTATIVE IMMEDIATELY. MINOR CHANGES IN THE SCOPE OF THE DEMOLITION WORK SHALL NOT JUSTIFY AN ADDITIONAL COST.
- 3. CONTRACTOR SHALL PROVIDE PROTECTIVE PLASTIC DROP CLOTHS TO PROTECT THE EXISTING OCCUPIED AREAS AND EQUIPMENT FROM DUST AND DEBRIS DURING THE CONSTRUCTION WORK AND SHALL CLEAN THE AREAS OF ALL CONSTRUCTION DIRT DAILY, AND UPON COMPLETION OF THE WORK.
- 4. COORDINATE WITH THE OWNER THE REMOVAL AND REPLACEMENT OF ALL EXISTING CEILINGS, WALLS, ETC. AS REQUIRED FOR MECHANICAL DEMOLITION WORK.
- 5. ALL CUTTING AND CHANNELING OF EXISTING NON-STRUCTURAL ELEMENTS SHALL BE ACCOMPLISHED IN A NEAT AND WORKMANLIKE MANNER WITHOUT REMOVAL OF EXCESS MATERIALS. THIS CONTRACTOR SHALL PATCH AND REPLACE WITH MATERIAL SIMILAR TO ADJACENT CONSTRUCTION.
- 6. CUTTING OF STRUCTURAL MEMBERS IS NOT ALLOWED.
- 7. THIS CONTRACTOR SHALL GIVE FULL COOPERATION TO THE OWNER IN THE SCHEDULING AND PROCEDURE OF WORK AND SHALL TAKE EVERY PRECAUTION TO PREVENT DAMAGE FROM FREEZING TO EXISTING SYSTEMS.
- 8. RELOCATE EXISTING DUCTWORK, PIPING, ELECTRICAL CONDUITS, AND CABLING AS NECESSARY TO ACCOMPLISH FINAL INSTALLATION AS SHOWN.
- 9. CAP ALL EXISTING DUCTWORK SHOWN TO BE DISCONNECTED AND NOT RE-USED AT MAINS. ALL ACCESSIBLE ABANDONED PIPING SHALL BE REMOVED.
- 10. COORDINATE ROUTING OF PLUMBING AND HVAC PIPING WITH DUCTWORK, LIGHTS, ARCHITECTURAL CEILING AND STRUCTURAL ELEMENTS. PIPING SHALL RISE AND DROP, JOG OR OFFSET, AS REQUIRED TO AVOID CONFLICTS. DUCTWORK SHALL TAKE PRECEDENCE OVER ALL PIPING, EXCEPT WHERE GRADE MUST BE MAINTAINED FOR DRAINAGE.
- 11. ANY EXPENSES RISING FROM LACK OF COORDINATION SHALL BE AT CONTRACTOR'S EXPENSE. ALL DUCT AND PIPE ELEVATIONS SHOWN IN PARENTHESES ARE BOTTOM OF DUCT OR PIPE UNLESS INDICATED OTHERWISE ON PLANS.
- 12. ALL SUPPLY, RETURN, AND EXHAUST BRANCHES TO GRILLES, REGISTERS, AND DIFFUSERS SHALL HAVE A MANUAL BALANCE DAMPER.
- 13. CEILING PLENUM IS USED FOR RETURN AIR. KEEP PLENUM FREE OF COMBUSTIBLES, PVC PIPING, AND ANY OTHER MATERIALS NOT ALLOWED BY THE
- INTERNATIONAL FIRE CODE. 14. ALL NEW RETURN GRILLES TO HAVE A SOUND BOOT.



			KALERI   Consulting Group, LLC 2429 Stonecrest Drive Fort Collins, Colorado 80521	970   412   3049 tomkalert@gmail.com
	CON CON	OR AD 0 OR AD 0 06/04	657	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	SHEET CONTENTS	FIRST FLOOR HVAC PLAN		
		4901 CORBETT DRIVE	FORT COLLINS, COLORADO 80528	THE IDEAS AND DESIGN INCORPORATED HEREON, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF KCG   LLC AND IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT PRIOR WRITTEN AUTHORIZATION OF KCG   LLC
			2°	REUSE OF DOCUMENTS:
'0-232-9558 www.pec1.com	IPTION DATE			
	DESCR DRAWN CRS CHECKED		SHEET NO.	REVISIONS

	GENERA	L	NOTES
1.	ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) & THE AMERICANS WITH DISABILITIES ACT (ADA).	12.	LABEL THE FRONT OF EACH RECEPTACLE COVERPLATE WITH PANEL DESIGNATION AND CIRCUIT NUMBER USING CLEAR THERMAL TRANSFER (ELECTRONIC
2.	REFER TO RELATED ARCHITECTURAL, MECHANICAL, STRUCTURAL, AND CIVIL DRAWINGS FOR RELATED INFORMATION.		DYMO) LABELS WITH 1/8" HIGH BLACK LETTERS (OR CONTRASTING COLOR IF COVERPLATES ARE BLACK OR BROWN). LABELS SHALL BE SUITABLE FOR INDOOR/OUTDOOR USE. LABEL THE BACK OF EACH
3.	REFER TO THE SPECIFICATIONS FOR DATA NOT ON THE DRAWINGS.		LIGHT SWITCH COVERPLATE WITH PANEL DESIGNATION AND CIRCUIT NUMBER USING A FINE BLACK PERMANENT MARKER.
4.	E.C. SHALL REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND THERMOSTAT LOCATIONS.	13.	PROVIDE 18" LONG (MIN.) CONDUIT SLEEVES THRU ALL WALLS WHERE CABLES ARE INDICATED OR REQUIRED TO PASS THRU WALLS. PROVIDE BUSHINGS ON BOTH ENDS. SIZE CONDUIT FOR CABLES INSTALLED. AT CABLE TRAYS, PROVIDE ONE 4" CONDUIT SLEEVE FOR FACH 4" WIDTH OF
5.	COORDINATE OUTLET BOX LOCATIONS WITH MASONRY TO MINIMIZE CUTTING OF BRICK OR BLOCK.		CABLE TRAY. MAXIMUMS SHALL BE: $1^{\circ}C. = 10 \text{ CABLES}$
6.	ALL MOUNTING HEIGHTS TO CENTERLINE OF ITEM UNLESS OTHERWISE NOTED. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.		2 1/2 C. = 20 CABLES 3"C. = 30 CABLES 4"C. = 50 CABLES
7.	CONDUIT RUN W/CONDUCTORS AS INDICATED & GROUND WIRE SIZED PER N.E.C. 250.122. CONDUIT SIZE AS REQUIRED.	14.	LOCATE CABLE TRAYS 6" ABOVE CEILING. OFFSET TRAY UP AND OVER LIGHT FIXTURES AND DUCTWORK (FIELD VERIFY AND PROVIDE AS REQUIRED). IF PHYSICALLY IMPOSSIBLE TO RUN CABLE TRAY UP AND OVER, THEN
8.	WHEN INCREASED CONDUCTOR SIZES ARE SHOWN ON THE PLANS, THE LARGER CONDUCTOR SIZE SHALL BE USED THROUGHOUT THE LENGTH OF THE CIRCUIT, INCLUDING NEUTRAL AND GROUND.	15	PROVIDE CABLE SUPPORT HOOKS FROM STRUCTURE ABOVE, SIZED AND RATED FOR INSTALLED CABLES PLUS 25% SPARE. PROVIDE DIMMER PER THE SPECIFICATIONS
9.	"CT" INDICATED ADJACENT TO DEVICE INDICATES DEVICE MOUNTED ABOVE BACKSPLASH OF COUNTER TOP. VERIFY EXACT HEIGHT WITH ARCHITECTURAL PLANS AND ELEVATIONS.	10.	COORDINATE DIMMER TYPE AND WIRING WITH ASSOCIATED LIGHT FIXTURE DIMMING REQUIREMENTS (I.E. 3-WIRE, O-10V, ELECTRONIC OR MAGNETIC LOW VOLTAGE, ETC.) OR WITH LIGHTING CONTROL SYSTEM PROPRIETARY REQUIREMENTS (I.E. LUTRON, nLIGHT, DALI, ETC.) AS
10.	BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS WITH INDIVIDUAL NEUTRALS. A MAXIMUM OF THREE CIRCUITS (MAXIMUM OF THREE PHASE CONDUCTORS) MAY BE GROUPED IN A SINGLE CONDUIT. WHERE MULTIPLE CIRCUITS ARE LOCATED IN THE SAME RACEWAY, JUNCTION BOX OR ENCLOSURE, NEUTRALS SHALL BE MARKED OR LABELED TO INDICATE WHICH CIRCUIT THEY ARE ASSOCIATED WITH. SEE SPECIFICATION SECTION "LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES" FOR ADDITIONAL INFORMATION.		NECESSARY. 3-WIRE DIMMERS SHALL BE PROVIDED WITH A DEDICATED NEUTRAL FOR EACH CONTROL ZONE. 0-10V DIMMERS SHALL BE PROVIDED WITH DIM/ON/OFF CONTROL. COORDINATE PHASE CONTROL OF LED DRIVERS (I.E. REVERSE PHASE, FORWARD PHASE, ETC.) WITH LIGHT FIXTURE MANUFACTURER'S RECOMMENDATIONS. LOW VOLTAGE CONTROL WIRING IS NOT SHOWN ON PLANS FOR CLARITY, BUT SHALL BE PROVIDED AS REQUIRED.
11.	JUNCTION BOX OR RECEPTACLE FOR DRINKING FOUNTAINS SHALL BE LOCATED BEHIND THE EQUIPMENT SKIRT UNLESS OTHERWISE NOTED. COORDINATE CONNECTION TYPE AND LOCATION WITH EQUIPMENT PROVIDED.		
	COMMUNICA	TION	/ DATA
Τ1.	EACH DATA, TELEPHONE, VIDEO, OR OTHER SYSTEMS OUTLET REQUIRES 1"C. WITH PULL ROPE STUBBED 6" ABOVE NEAREST ACCESSIBLE CEILING UNLESS OTHERWISE NOTED ON PLANS. CONDUITS STUBBED UP ABOVE CEILINGS SHALL BE TURNED OUT 90 DEGREES. PROVIDE INSULATED BUSHINGS ON ALL CONDUITS. LABEL CONDUIT TO IDENTIFY ITS INTENDED USE (I.E. TELEPHONE, DATA, ETC.).	Т3.	PROVIDE QUANTITY AND TYPE OF JACKS PER THE DRAWINGS, SPECIFICATIONS AND DETAILS. PROVIDE JACK AND CABLE LABELING PER THE SPECIAL SYSTEM NOTES.
T2.	RUN CABLES CONTINUOUS FROM JACK TO ASSOCIATED SYSTEM PATCH PANEL IN CONDUIT, CABLE TRAY, OR J-HOOKS PER THE PLANS AND SPECIFICATIONS. NUMBER BESIDE CABLE SYMBOL INDICATES QUANTITY OF CABLES REQUIRED PER HOME RUN.		

# SPECIAL SYSTEM NOTES:

ALL SPECIAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH PSD'S SPECIFICATIONS BY PSD'S PREFERRED VENDORS AS NOTED BELOW:

STRUCTURED CABLING INTERFACE COMMUNICATIONS LYNX

STURGEON ELECTRIC

CONTRACTOR TO PROVIDE NETWORK WIRING, JACKS, AND INSTALLATION. ALL WIRING, JACKS, TESTING AND CERTIFICATION TO BE COMPLETED PER DIVISION 27 OF THE PSD TECHNICAL SPECIFICATIONS.

YMBOL		Ľ	DESCRIPTION	MOUNTING	T	Τ	SY	ΊМВС	)L	DESCRIPTION	Ν	IOUNTI	NG	
				COMMUN	IC	ATIO	N / [	DATA	١					
$\triangleright$	1-DATA ( NOTES T	DUTL 1 & 1	ET & JACK (GEN <sup>-</sup> 3)	18"AFF				₽		2-DATA OUTLETS & JACKS (GEN NOTES T1 & T3)		18"AFI	F	
►	1-VOICE NOTES T	OUT  1 & 1	LET & JACK (GEN <sup>-</sup> 3)	18"AFF			٢	$\Rightarrow$		3-DATA OUTLETS & JACKS (GEN NOTES T1 & T3)		18"AFI	F	
	1-VOICE/ JACKS (0	/1-DA GEN N	TA OUTLET & NOTES T1 & T3)	18"AFF			Ĥ	∌		4-DATA OUTLETS & JACKS (GEN NOTES T1 & T3)		18"AF	F	
₽	1-VOICE JACKS (	:/2-D/ GEN	ATA OUTLETS & NOTES T1 & T3)	18"AFF						2-VOICE/2-DATA OUTLETS & JACKS (GEN NOTES T1 & T3)		18"AF	F	
•	CABLE T	V OR TOR	VIDEO OUTLET & (GEN NOTES T1 & T3)	18"AFF			Ĥ	*		1-VOICE/3-DATA OUTLETS & JACKS (GEN NOTES T1 & T3)		18"AF	F	
	VOICE U DATA UT VIDEO C	TP CA P CA OAX	ABLE HOME RUN BLE HOME RUN CABLE HOME RUN	GEN NOTE T2 GEN NOTE T2 GEN NOTE T2	2 2 2	[	###	ŧ XX	(	### = TERMINATION ROOM XX = CABLE CONFIGURATION	S	SEE HC CABLI SCHEDU	)r. E Jle	
	FIBER C (MULTI I	)PTIC MODE	CABLE HOME RUN E)	GEN NOTE T	2			¢_2	<b>\</b>	FIBER OPTIC CABLE HOME RUN (SINGLE MODE)	GE	EN NOT	E T2	
				PEN WE	IG	HT L	EGE	END						
L DEVICES	S, LIGHT F ARE NEV	GHT FIXTURES, ETC., DRAWN IN DARK E NEW TO BE INSTALLED ALL DEVICES, LIGHT FIXTURES, ETC., DRAWN IN DARK DASHED LINES ARE EXISTING TO BE REMOVED							K					
Ð	NEW DI	JPLE	X GROUNDED RECEPTA	ACLE			DUPLEX GROUNDED REC TO BE REMOVED							
0	NEW LI	GHT I	FIXTURE				[_(	<u>)</u>	]	LIGHT FIXTURE TO BE REMOVED				
L DEVICES	S, LIGHT F ARE EXIS	-IXTU STIN(	IRES, ETC., DRAWN IN L G TO REMAIN	IGHT			ALL DAS	DEV SHED	/IC ) LI	ES, LIGHT FIXTURES, ETC., DRAWN IN INES ARE EXISTING TO BE RELOCATED	LIGH )	Т		
$\Rightarrow$	EXISTIN	IG DL	JPLEX GROUNDED REC	TO REMAIN				DUPLEX GROUNDED REC TO BE RELOCATED						
$\bigcirc$	EXISTIN	GHT FIXTURE TO REMAI	N				IIGHT FIXTURE TO BE RELOCATED							
SY	MBOL L	IST	IS FOR REFERENCI	E ONLY. AL	L	SYN	1BC	DLS	M	AY NOT BE USED ON THIS PROJ	IECI	Г		
21 <b>E</b>	<b>XIS</b> grd. bus	ST	. PANEL	: C1E	3					208Y/120 VOLTS, 3 P 125 AMP MAIN BKR, 1 10000 AIC LABELED	HASE FLUS	E, 4 WIR H MTD.	RE.	
	LOAD V. A.	LOAD TYPE	LOAD DESCRIPTION		P.	AMP SIZE	PHASE	AMP SIZE	P.	LOAD L DESCRIPTION T	OAD YPE	load V. a.	CIR( NO	
1	800	RCPT	EXISTING		1	20	А	20	1	EXISTING	RCPT	800	2	
3	800	RCPT	EXISTING		1	20	В	20	1	EXISTING	RCPT	800	4	
5	800	RCPT	EXISTING		1	20	C	20	20 1 EXISTING			800	6	
	800	KCPT			1	20	A	20	1			800	8	
9	000	KUPI DODT			1	20	C B	20	1			000 200	10	
12	800	RCPT			1	20 20		20 20		EXISTING		800	1/	
15	800	RCPT	FXISTING		1	20	R	20		FXISTING	RCPT	800	16	
	000				4		H	20	Ľ			000		

	VV/C	KD. RO2								
	circ No.	LOAD V. A.	load Type	LOAD DESCRIPTION	P.	AMP SIZE	PHASE	amp Size	P.	LOAD DESCRIPTION
	1	800	RCPT	EXISTING	1	20	Α	20	1	EXISTING
	3	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	5	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
	7	800	RCPT	EXISTING	1	20	А	20	1	EXISTING
	9	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	11	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
	13	800	RCPT	EXISTING	1	20	А	20	1	EXISTING
	15	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	17	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
	19	800	RCPT	EXISTING	1	20	А	20	1	EXISTING
	21	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	23	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
	25	800	RCPT	EXISTING	1	20	А	20	1	EXISTING
	27	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	29	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
	31	800	RCPT	EXISTING	1	20	А	20	1	EXISTING
	33	800	RCPT	EXISTING	1	20	В	20	1	EXISTING
	35	800	RCPT	EXISTING	1	20	С	20	1	EXISTING
3	37	800	MOTR	COILING DOOR	1	20	А	20	2	COPY MACHINE
	39			SPACE			В			
	41			SPACE			С			SPACE

1 ALL CIRCUIT BREAKERS AND LOADS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE. 2. UPDATE PANEL DIRECTORY WITH ALL CHANGES.

3. PROVIDE NEW CIRCUIT BREAKER OF MATCHING TYPE FOR NEW LOAD.



	SY	MBC	)		ST	
SYMBOL	DESCRIPTION	MOUNTING		SYMBOL	DESCRIPTION	MOUNTING
		ABBRE	EVIA	ATIONS		
NL	NIGHT LIGHT - WIRE AHEAD OF			AFF	ABOVE FINISHED FLOOR	
				AFG	ABOVE FINISHED GRADE	
EIVI WP	WEATHERPROOF			DF	DRINKING FOUNTAIN - SEE GENERAL NOTE 11	
СТ	COUNTERTOP (SEE GEN. NOTE 9)					
UON	UNLESS OTHERWISE NOTED					
W	WALL	CONDUIT				
×	EMERGENCY CIRCUIT		AN		CONDUIT HOME RUN 1 CIRCUIT	
/- <u>`</u>	MASTER/SLAVE FIXTURE WHIP	CEILING			2#12 & 1#12 GRD 1/2"C.	CLG/WALL
/····>	LOW VOLTAGE WIRING	CLG/WALL			CONDUIT HOME RUN, 2 CIRCUITS.	CLG/WALL
$\frown$	CDT RUN 2#12 & 1#12 GRD 1/2"C. OR CDT RUN AS NOTED ON PLAN	CLG/WALL		եհեթ	4#12 & 1#12 GRD 1/2"C.	
	CDT RUN 2#12 & 1#12 GRD 3/4"C.	FARTH/		X	6#12 & 1#12 GRD 1/2"C.	CLG/WALL
/ `	OR CDT RUN AS NOTED ON PLAN	FLOOR			CONDUIT HOME RUN, 2 CIRCUITS	CLG/WALL
<u> </u>	CONDUIT HOME RUN, 1 CIRCUIT.	CLG/WALL			PHASE CONDUCTORS/	
<u> </u>					- NEUTRAL CONDUCTOR (#12 UON)	
*	2#12 & 1#12 GRD 1/2"C.	CLG/WALL			- GROUND CONDUCTOR (#12 UON)	
	MISC. EQUIPMENT CONNECTION					
	CONDUIT SEAL OFF					
	LIG	HTING, SWITC	HE	S AND SENSO	RS	
	LIGHT FIXTURE & FIXTURE LETTER	CLG SURF/ RECESSED		<b>\$ \$</b> <sup>2</sup> <b>\$</b> <sup>3</sup> <b>\$</b> <sup>4</sup>	SWITCHES (1-POLE, 2-POLE, 3-WAY, 4-WAY)	46" AFF
н	STRIP LIGHT FIXTURE & FIXT LETTER	CEILING		\$K \$P \$T	SWITCHES (KEYED, PILOT, TIMER)	46" AFF
O <sub>A</sub> (A)	LIGHT FIXTURE & FIXTURE LETTER	CLG SURF/		a, b, c	INDICATES SWITCHING SCHEME	
Ø <sub>A</sub>		RECESSED		Š ċ1		46" AFF
	EXIT SIGN (SHADING DENOTES	VVALL		<u>\$1</u> \$2	ON/OFF SWITCH ON/OFF/0-10V DIMMING SWITCH	46" AFF 46" AFF
$\otimes$	EXIT FACE SIDE)	CEIL/WALL		\$ 3	DUAL TECH ON/OFF SENSOR	46" AFF
	LIGHT FIXTURE & FIXTURE LETTER	WALL		Š 4	16-SCENE WALL CONTROLLER	46" AFF
	FIXTURE WITH SHADED LAMP(S)	CLG SURF/ RECESSED		S⁵	DUAL TECH ON/OFF/0-10V DIM SW	46" AFF
╺╾ <sub>┥</sub> ╺┍═ѻ <sub>᠕</sub> ᢁ <sub>┥</sub> מ	EMERGENCY BATTERY LIGHT FIXT	CEIL/WALL		0 0-1	DUAL TECHNOLOGY SENSOR	CLG/WALL CLG/WALL
	COMB EXIT SIGN/EM BATTERY LIGHT	WALL		P <b>0</b> P <b>0</b> →	PIR SENSOR	CLG/WALL
•- ( •- (	LIGHT FIXTURE & FIXTURE LETTER	POLE		SP	SWITCHING POWER PACK	
M	1 RELAY PIR SENSOR	46" AFF		SE	UL924 SWITCHING POWER PACK	
2M 1D	2 RELAY PIR SENSOR	46" AFF 46" AFF		DF	DIMMING POWER PACK	
2D	2 RELAY DUAL TECH SENSOR	46" AFF		AV	AV SYSTEM/LIGHTING INTERFACE	
D	DIMMER (SEE GENERAL NOTE 15)	46" AFF				
PC	PHOTOCELL					
<u> </u>		P(	SW	ER		
ф Ф	SINGLE GROUNDED RECEPTACLE	18" AFF		<u> </u>	BRANCH CIRCUIT PANEL AND	72" TO TOP
	DUPLEX GROUNDED RECEPTACLE	CEILING			ELECTRICAL DISTRIBUTION EQUIP	
<b>+</b>	DOUBLE DUPLEX GROUNDED REC	18" AFF			EQUIPMENT - SEE EQUIPMENT	
•	GROUND FAULT DUPLEX REC	18" AFF			CONNECTION SCHEDULE	
<b>•</b>	GRD FAULT DOUBLE DUPLEX REC	18" AFF			CONDUIT SLEEVE (GEN NOTE 13)	
₽	TAMPER-PROOF DUPLEX REC	10 AFF 18" AFF			MOTOR	
Ó	TAMPER-PROOF GFCI DUPLEX REC	18" AFF			DISCONNECT SWITCH	
				\$ M	MANUAL STARTER	
$oxtimes_A oxtimes_A$	SPECIAL OUTLET (SEE	FLOOR/WALL				
	SPECIAL DEVICE (AS NOTED)				COMBINATION STARTER/DISC	
2	FEEDER DESIGNATION			R	RELAY	
1J	JUNCTION BOX - 1-GANG			• ••	PUSHBUTTON (1-BUTTON, 2-BUTTON)	46" AFF
	JUNCTION BOX - 2-GANG				BOX MOUNTED TRANSFORMER	
IF. TS	THERMOSTAT/TEMP SENSOR	46" AFF			GUNTAUTUR	
P	PLUG LOAD SENSOR	CEILING			PLUGMOLD SURFACE RACEWAY	WALL
Ĥ	HANDICAP DOOR PUSHBUTTON	36" AFF			BUSDUCT PLUG	
SY	MBOL LIST IS FOR REFERENCE	ONLY. ALL	S١	MBOLS MA	Y NOT BE USED ON THIS PROJE	СТ

	EL
SHEET NO.	
E0.0	ELECTRICAL COVER
E0.1	ELECTRICAL SPECIFIC
E1.0	ELECTRICAL PLANS

-----

LECTRICAL SHEET INDEX

SHEET TITLE

R SHEET FICATIONS

LLC G \_\_\_\_\_ KCG  $\circ$ \_\_\_\_ KALER SHEET CONTENTS ELECTRICAL COVER SHEET 80528 PRESTON MIDDLE SCHOO 4901 CORBETT DRIVE FORT COLLINS, COLORADO 80528 ANTS, P.A. LINS, CO 80524 OFESSIONAL ENGINEERING CONSULTA 0 LINDEN ST, SUITE 110 FORT COLL 0-232-9558 www.pec1.com 4201 U SHEET NO. E0.0 CHECKED SMS 06.04.20

PERMIT

FOR

ISSUED

ELECTRICAL SPECIFICATIONS

SECTION 16050 - BASIC METHODS AND REQUIREMENTS (ELECTRICAL)

PART 1 - GENERAL

- 1.1 GENERAL CONDITIONS
- A. THE GENERAL CONDITIONS, SUPPLEMENTARY GENERAL CONDITIONS, GENERAL REQUIREMENTS, AND SPECIAL CONDITIONS SHALL BE AND ARE HEREBY MADE A PART OF THIS SECTION OF THE SPECIFICATIONS.
- 1.2 EXAMINATION OF SITE
- A. VISIT THE SITE. INSPECT THE EXISTING CONDITIONS AND CHECK THE DRAWINGS AND SPECIFICATIONS SO AS TO BE FULLY INFORMED OF THE REQUIREMENTS FOR COMPLETION OF THE WORK.
- B. LACK OF SUCH INFORMATION SHALL NOT JUSTIFY AN EXTRA TO THE CONTRACT PRICE.
- 1.3 SCOPE
- A. THE ELECTRICAL WORK SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION. EQUIPMENT. SERVICES AND FACILITIES. REQUIRED FOR THE COMPLETE, PROPER AND SUBSTANTIAL INSTALLATION OF ALL ELECTRICAL WORK SHOWN ON THE PLANS, AND/OR OUTLINED IN THESE SPECIFICATIONS. THE INSTALLATION SHALL INCLUDE ALL MATERIALS, APPLIANCES, AND APPARATUS NOT SPECIFICALLY MENTIONED HEREIN OR NOTED ON THE DRAWINGS BUT WHICH ARE NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION OF ALL ELECTRICAL SYSTEMS.
- B. ALL OF THE ELECTRICAL RELATED WORK REQUIRED FOR THIS PROJECT (UNLESS SPECIFIED OTHERWISE) IS A PART OF THE ELECTRICAL CONTRACT PRICE AND IS NOT NECESSARILY SPECIFIED UNDER THIS DIVISION OF THE SPECIFICATIONS OR SHOWN ON THE ELECTRICAL DRAWINGS. THEREFORE, ALL DIVISIONS OF THE SPECIFICATIONS AND ALL DRAWINGS SHALL BE CONSULTED.
- C. THE DRAWINGS SHOWING THE LAYOUT OF THE WORK INDICATE THE APPROXIMATE LOCATIONS OF OUTLETS, APPARATUS, AND EQUIPMENT. THE DRAWINGS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE EXACT ROUTING OF CONDUITS, ETC. THE FINAL DETERMINATION AS TO THE ROUTING SHALL BE GOVERNED BY STRUCTURAL CONDITIONS AND OTHER OBSTRUCTIONS. THIS SHALL NOT BE CONSTRUED TO MEAN THE DESIGN OF THE SYSTEM MAY BE CHANGED. IT MERELY REFERS TO THE EXACT RUN OF A RACEWAY BETWEEN GIVEN POINTS. THE CONTRACTOR SHALL CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF ANY OUTLET, APPARATUS OR EQUIPMENT TO AVOID POSSIBLE INTERFERENCE AND PERMIT FULL COORDINATION OF ALL WORK. THE RIGHT TO MAKE ANY REASONABLE CHANGE (WITHIN 6"-0") IN THE LOCATION OF APPARATUS, OUTLETS, AND EQUIPMENT UP TO THE TIME OF ROUGHING-IN IS RESERVED BY THE ARCHITECT WITHOUT INVOLVING ANY ADDITIONAL EXPENSE TO THE OWNER.
- D. SHOW ON BLUE LINE PRINTS IN RED INK ALL CHANGES FROM ORIGINAL PLANS MADE DURING THE INSTALLATION. RETURN TWO (2) SETS OF RED MARKED DRAWINGS, SPECIFICATIONS AND ADDENDA, AS SET FORTH IN THE GENERAL CONDITIONS, TO THE ARCHITECT UPON COMPLETION OF THE PROJECT.
- E. PROVIDE SUBMITTALS IN ELECTRONIC FORM FOR LIGHT FIXTURES, PANELBOARDS, WIRING DEVICES. ETC.
- 1.4 CODES RULES AND REGULATIONS
- A. EXECUTE ALL WORK UNDER THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE STANDARD OF THE NATIONAL BOARD OF FIRE UNDERWRITERS AND WITH ALL LAWS. REGULATIONS AND ORDINANCES OF THE COUNTY, STATE, AND CITY.
- B. CODES SHALL GOVERN IN CASE OF ANY DIRECT CONFLICT BETWEEN CODES AND PLANS AND SPECIFICATIONS; EXCEPT WHEN PLANS AND SPECIFICATIONS REQUIRE HIGHER STANDARDS THAN THOSE REQUIRED BY CODE. VARIANCE FROM THE PLAN AND SPECIFICATIONS MADE TO COMPLY WITH CODE MUST BE APPROVED BY THE ARCHITECT. IF APPROVED THEY SHALL BE MADE WITH NO INCREASED COST TO THE OWNER.
- 1.5 PERMITS
- A. OBTAIN AND PAY FOR ALL LICENSES AND PERMITS, FEES, INSPECTION AND CERTIFICATES REQUIRED FOR THE EXECUTION OF THIS WORK.
- B. DELIVER PERMITS AND CERTIFICATES TO THE ARCHITECT TO BE TRANSMITTED TO THE OWNER.
- 1.6 **RESPONSIBILITY**
- A. THIS CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGE TO ANY PART OF THE BUILDING OR TO THE WORK OF OTHER CONTRACTORS, AS MAY BE CAUSED THROUGH HIS OPERATION.
- 1.7 WORK TO BE DONE BY GENERAL CONTRACTOR
- A. BUILD IN ALL OPENINGS SLEEVES, CHASES ETC., FOR CONDUIT AND EQUIPMENT AS ESTABLISHED, FURNISHED AND SET BY THIS CONTRACTOR. HE SHALL SEAL OR GROUT ALL OPENINGS AFTER THIS CONTRACTOR HAS INSTALLED HIS CONDUITS.
- 1.8 WORKMANSHIP AND COORDINATION
- A. MAKE INSTALLATION SUBSTANTIALLY AS SHOWN ON THE PLANS.
- B. MAKE ALTERATIONS IN LOCATION OF APPARATUS OR CONDUIT AS MAY BE REQUIRED TO CONFORM TO BUILDING CONSTRUCTION WITHOUT EXTRA CHARGE.
- C. MECHANICAL EQUIPMENT SERVICE CLEARANCES AND ELECTRICAL APPARATUS SERVICE CLEARANCES AS SPECIFIED IN THEIR RESPECTIVE MANUFACTURER'S PRODUCT DATA SHALL BE MAINTAINED FREE FROM CONDUIT.
- D. COOPERATE WITH OTHER CONTRACTORS IN THEIR INSTALLATION OF WORK.
- E. COMPLETE THE INSTALLATION IN A WORKMANLIKE MANNER. COMPLETELY
- CONNECTED AND READY TO GIVE PROPER AND CONTINUOUS SERVICE.
- F. USE ONLY EXPERIENCED LICENSED ELECTRICIANS.

1.9	NAMEPLATES

- A. ALL BRANCH CIRCUIT PANELBOARD DIRECTORIES SHALL BE UPDATED WITH CHANGES.
- B. DEVICE COVERS (RECEPTACLES, SWITCHES) SHALL BE LABELED NEATLY WITH A PERMANENT MARKER OR LABEL MAKER WITH PANEL & CIRCUIT NUMBER. (EX. L1A-10)
- C. ON THE COVER OF EACH JUNCTION BOX AND PULL BOX: THE CIRCUIT NUMBER(S) OF THE ENCLOSED CONDUCTORS ARE TO BE LEGIBLY WRITTEN WITH A BLACK PERMANENT INK BROAD TIP MARKING PEN AND THE SYSTEM IDENTIFICATION.
- D. PANELBOARD DIRECTORIES SHALL BE LABELED WITH THE ACTUAL FINISHED BUILDING ROOM NUMBERS FOR CIRCUIT IDENTIFICATION AND NOT THE ROOM NUMBERS FROM THE CONSTRUCTION PLANS. (UNLESS THEY ARE THE SAME)
- 1.10 MATERIALS
- A. MATERIAL AND EQUIPMENT SHALL BE NEW, OF BEST QUALITY AND DESIGN AND FREE FROM DEFECTS. A MANUFACTURER'S NAMEPLATE AFFIXED IN A CONSPICUOUS PLACE WILL BE REQUIRED ON EACH MAJOR COMPONENT OF EQUIPMENT STATING MANUFACTURER'S NAME, ADDRESS AND CATALOG NUMBER. ALL ITEMS USED ON THIS PROJECT SHALL BE OF ASBESTOS FREE MATERIAL
- B. WHERE ITEMS OF EQUIPMENT AND/OR MATERIALS ARE SPECIFICALLY IDENTIFIED HEREIN BY A MANUFACTURER'S NAME, MODEL OR CATALOG NUMBER, ONLY SUCH SPECIFIC ITEMS MAY BE USED IN THE BASE BID.
- 1.11 MANUFACTURER'S INSTRUCTIONS
- A. APPLY, INSTALL, CONNECT, ERECT, USE, CLEAN, AND CONDITION ARTICLES. MATERIALS AND EQUIPMENT AS DIRECTED BY THE MANUFACTURER.
- 1.12 CUTTING AND PATCHING
- A. NOTIFY THE GENERAL CONTRACTOR IN AMPLE TIME, OF THE LOCATION OF ALL CHASES, SLEEVES, AND ANY OTHER OPENINGS REQUIRED IN CONNECTION WITH THE WORK OF THIS CONTRACT.
- B. CUTTING AND PATCHING MADE NECESSARY BECAUSE OF FAILURE TO COMPLY WITH THE ABOVE SHALL BE DONE BY THE GENERAL CONTRACTOR AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
- C. WHEN IT IS NECESSARY FOR THE ELECTRICAL CONTRACTOR TO CUT BUILDING MATERIALS TO INSTALL HIS WORK, IT SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER MEETING WITH THE APPROVAL OF THE ARCHITECT.
- 1.13 MUTILATION
- A. ANY MUTILATION OF FINISHING INITIATED BY ELECTRICAL CONSTRUCTION SHALL BE PROPERLY CORRECTED BY THE RESPECTIVE FINISHING CONTRACTOR AND PAID FOR BY THE ELECTRICAL CONTRACTOR.
- 1.14 TESTING AND ADJUSTMENT
- A. WHEN INSTALLATION IS COMPLETE, TEST ALL ELECTRICAL CONDUCTORS TO INSURE CONTINUITY, FREEDOM FROM GROUNDS, AND INSULATION RESISTANCE VALUES.
- B. ALL FEEDERS AND BRANCH CIRCUITS SHALL BE MEGGER TESTED BETWEEN PHASE CONDUCTORS AND GROUND, USING A 1,000V MEGGER. TESTS SHALL BE MADE UPON COMPLETION OF ALL CONNECTIONS AND SPLICES AND INSERTION OF ALL OVERCURRENT DEVICES. TESTS SHALL INDICATE FREEDOM FROM SHORT CIRCUITS AND GROUNDS.
- 1.15 FINAL INSPECTION
- A. FINAL INSPECTION WILL BE MADE UPON WRITTEN REQUEST FROM THE GENERAL CONTRACTOR AFTER THE PROJECT IS COMPLETED: IN ACCORDANCE WITH THE SUPPLEMENTARY GENERAL CONDITIONS.
- 1.16 GUARANTEE
- A. GUARANTEE ALL WORK, MATERIAL AND EQUIPMENT FOR A PERIOD OF TWO YEARS AFTER DATE OF SUBSTANTIAL COMPLETION. PROVIDE WRITTEN DOCUMENTATION OF WARRANTY TO OWNER WITH RELEVANT CONTACT INFO.
- B. DURING THE YEAR GUARANTEE PERIOD THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEFECTS WHICH DEVELOP IN THE ELECTRICAL SYSTEMS. UPON NOTIFICATION OF A DEFECT BY THE GENERAL CONTRACTOR, THE ELECTRICAL CONTRACTOR SHALL MAKE IMMEDIATE EFFORT TO CORRECT IT AND SHALL NOTIFY THE ARCHITECT WHEN THIS WORK IS COMPLETED.

C. REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITH NO COST TO OWNER. END OF SECTION

# SECTION 16100 - BASIC MATERIALS

- 1.1 CONDUIT
  - A. MATERIALS:
  - 1. EMT TUBING SHALL BE ALLIED, REPUBLIC, LTV, OR EQUAL WITH U.L. APPROVED NATIONAL ELECTRIC CODE TYPE FITTINGS. INDENTER TYPE FITTINGS SHALL NOT BE USED. A GROUND WIRE SIZED PER N.E.C. ART. 250-122 SHALL BE PULLED IN EACH CONDUIT CONTAINING PHASE CONDUCTOR(S).
  - 2. LIQUID-TIGHT FLEXIBLE METAL CONDUIT: FLEXIBLE GALVANIZED STEEL TUBING COVERED WITH EXTRUDED LIQUID-TIGHT JACKET OF POLYVINYL CHLORIDE (PVC). PROVIDE CONDUIT WITH A CONTINUOUS COPPER BONDING CONDUCTOR SPIRAL BETWEEN THE CONVOLUTIONS. PROVIDE STEEL OR MALLEABLE IRON FITTINGS. CONNECTORS SHALL HAVE INSULATED THROATS.

**B. BUSHINGS AND LOCKNUTS:** 

- 1. BUSHINGS FOR TERMINATING CONDUITS SMALLER THAN 1-1/4-INCHES ARE TO HAVE FLARED BOTTOM AND RIBBED SIDES, WITH SMOOTH UPPER EDGES TO PREVENT INJURY TO CABLE INSULATION.
- 2. WHERE REQUIRED, BUSHINGS OF STANDARD OR INSULATED TYPE SHALL HAVE SCREW TYPE GROUNDING TERMINAL

- C. CONDUIT INSTALLATION:
- ALL EXPOSED CONDUITS SHALL BE ROUTED PARALLEL OR PERPENDIC BUILDING ELEMENTS.
- 2. CONDUIT SHALL BE INSTALLED TO THE REQUIREMENTS OF THE STRUC TO REQUIREMENTS OF ALL THE OTHER WORK ON THE PROJECT. CONE BE INSTALLED TO CLEAR ALL OPENINGS, DEPRESSIONS, PIPES, DUCTS, REINFORCING STEEL, ETC.
- 3. CONDUIT SHALL BE INSTALLED CONTINUOUS BETWEEN CONNECTIONS OUTLETS, BOXES AND CABINETS WITH A MINIMUM POSSIBLE NUMBER ( AND NOT MORE THAN THE EQUIVALENT OF 4-90 DEGREE BENDS BETWE CONNECTIONS. BENDS SHALL BE SMOOTH AND EVEN AND SHALL BE M WITHOUT FLATTENING CONDUIT OR FLAKING ENAMEL. RADIUS OF BEN BE AS LONG AS POSSIBLE AND NEVER SHORTER THAN THE CORRESPO TRADE ELBOW. LONG RADIUS ELBOWS SHALL BE USED WHERE NECES
- 4. CONDUITS SHALL BE SECURELY FASTENED IN PLACE WITH APPROVED HANGERS, AND SUPPORTS AS REQUIRED.
- 5. ALL WORK SHALL BE PROTECTED AGAINST DAMAGE DURING CONSTRU ANY WORK DAMAGED OR MOVED OUT OF LINE AFTER ROUGHING-IN SH REPAIRED AND RESET TO THE APPROVAL OF THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
- CONDUIT TERMINATIONS AT PANELBOARDS, JUNCTION BOXES, ETC., SH ALIGNED AND INSTALLED TRUE AND PLUMB. WOOD OR STEEL BUCKS ( TEMPLATES SHALL BE USED WHERE REQUIRED.
- 1.2 WIRES AND CABLES
- A. HARBIRSHAW, CRESCENT, SOUTHWIRE, GENERAL CABLE, AMERICAN, COMPANY OR EQUAL CODE GAUGE WIRE, FINISHED WITH FADELESS CO SOLUTION FOR NATIONAL ELECTRIC CODE SYSTEM OF COLOR CODING UNDERWRITER'S LABEL. WIRES SHALL BE SOFT ANNEALED STRANDED WITH PROPERTIES CONFORMING TO THE NATIONAL ELECTRIC CODE REQUIREMENTS. NO. 10 GAUGE AND LARGER SHALL BE STRANDED. NO CAN BE SOLID OR STRANDED.
- B. WIRE SMALLER THAN NO. 12 GAUGE SHALL NOT BE USED UNLESS SPEC CALLED FOR.
- C. WIRES FOR GENERAL USE WITHIN THE BUILDING SHALL BE TYPE THWN COMBINATION THHN/THWN EXCEPT WHERE CALLED FOR ON THE DRAW CONDUCTOR SIZES MUST BE AS SPECIFIED ON DRAWINGS REGARDLES INSULATION TYPE.
- D. A GROUND WIRE SIZED PER N.E.C. ART. 250-122 SHALL BE INSTALLED I CONDUIT CONTAINING PHASE CONDUCTORS.
- E. ALL CONTROL WIRING SHALL BE COPPER, SOLID OR STRANDED, #L4 GA. OR LARGER DEPENDING UPON CURRENT REQUIREMENTS. INSULATION TYPE FOR 90 DEGREE C. WHERE STRANDED CONDUCTORS ARE USED PROVIDE WITH SPADE TYPE INSULATED COPPER TERMINALS.
- F. ALL CONDUCTORS SHALL BE IDENTIFIED AT ALL TERMINATION POINTS AND IN ALL PULL AND JUNCTION BOXES BY THE FOLLOWING METHOD OF COLOR CODING. MEANS OF IDENTIFICATION SHALL BE PERMANENTLY POSTED AT EACH BRANCH CIRCUIT PANEL WITH A NAMEPLATE IDENTIFYING COLOR CODING WHERE MORE THAN ONE NOMINAL VOLTAGE SYSTEM IS IN THE SAME BUILDING.
- 208Y/120 VOLT SYSTEM:
- PHASE A BLACK PHASE B - RED
- PHASE C BLUE
- **NEUTRAL WHITE**
- **GROUND GREEN**
- G. ALL CONDUCTORS SIZE #8 AWG AND SMALLER SHALL HAVE COLORED INSULATION. WHERE CONDUCTORS WITH BLACK INSULATION ARE USED FOR THE LARGER WIRE SIZES (#6 AWG AND LARGER) COLOR CODING SHALL BE PROVIDED WITH TWO LAYERS-ONE HALF LAPPED OF NO. 35 COLORED SCOTCH VINYL ELECTRICAL TAPE.
- 1.4 WIRE CONNECTIONS
- A. ALL WIRES SHALL BE RUN IN CONDUIT, SHALL BE CONTINUOUS BETWEEN OUTLETS AND BOXES (WITH NO SPLICES OR TAPS IN CONDUITS). SPLICES AND TAPS FOR #6 AND LARGER CONDUCTORS SHALL BE WITH BLOCK TYPE WITH INSULATING JACKET OR SPLIT BOLT CONNECTORS, COVERED AND COMPLETELY INSULATED WITH A MINIMUM OF THREE HALF-LAPPED LAYERS OF SCOTCH NO. 33+ (105°C) PLASTIC ELECTRICAL TAPE OR BY APPROVED INSULATED FASTENER. ALL SPLICES AND TAPS HAVING IRREGULAR SURFACES SHALL BE PROPERLY PADDED WITH SCOTCHFIL PUTTY BEFORE APPLICATION OF INSULATING PLASTIC TAPE. SCOTCHLOK ELECTRICAL PRE-INSULATED SPRING PRESSURE CONNECTORS OR EQUAL MAY BE USED FOR UP TO #8 CONDUCTORS. CONNECTORS SHALL BE INSTALLED SO THAT ALL WIRES ARE PROPERLY INSULATED.
- 1.5 PULL AND JUNCTION BOXES
- A. PULL AND JUNCTION BOXES SHALL BE CODE GAUGE STEEL BOXES WITH HINGED. BOLTED OR SCREWED COVERS. BOXES SHALL BE FLUSH OR SURFACE MOUNTED AS SHOWN OR REQUIRED.
- B. PROVIDE JUNCTION AND PULL BOX AS REQUIRED FOR PULLING OF WIRE AS REQUIRED BY THE NEC. ALL BOXES SHALL BE CODE CONSTRUCTION WITH SCREW TYPE COVER AND SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS.
- 1.6 OUTLET BOXES
- A. J-BOXES IN BOILER ROOMS, MECH./ELECT. ROOMS, STORAGE ROOMS OR ABOVE CEILINGS SHALL BE A MINIMUM OF 2 1/8" DEEP 4" SQ. BOXES W/ COMBO 1/2" & 3/4" CONCENTRIC KO'S.

ULAR TO	A. REC	EPTACLES SHALL BE 20A COMMERCIAL GRADE. DUPLEX RECEPTACLES SHALL	(	) III
	BE E	EXTRA HEAVY-DUTY TYPE WITH NYLON FRONTS AND BACKS.		dn,
TURE AND DUIT SHALL	B. THE AND	GROUND WIRE SHALL BE PIGTAILED TO THE BOX WITH A 10/32 GREEN SCREW WRAPPED ON THE GROUNDING SCREW / YOKE OF THE DEVICE.		I G Gro Ig Gro <sup>nrive</sup>
,	C. MET	AL COVER PLATES SHALL BE USED ON ALL FLUSH DEVICES.		ultin rest D orado
то	D. SWI	TCHES SHALL BE EXTRA HEAVY-DUTY TYPE WITH NYLON FRONTS AND BACKS.		ONSI tonec s, Col
DF BENDS EEN	E. DEV REM	ICES SHALL BE PIGTAILED FROM BRANCH CIRCUIT FOR EASE OF DEVICE IOVAL OR REPLACEMENT.		RT C 2429 S Cort Collin 970
ADE	1.8 LIGH	TING FIXTURES AND LAMPS:		
DS SHALL NDING SARY.	A. INS <sup>-</sup> Sub To e	TALL LIGHTING FIXTURES. PROVIDE LAMPS AS INDICATED ON THE DRAWINGS. NO STITUTIONS ON LIGHTING FIXTURES EXCEPT AS APPROVED BY ENGINEER PRIOR BIDDING.		×
STRAPS,	B. VER INTE	IFY EXACT LOCATIONS OF FIXTURE OUTLETS SO AS TO CAUSE NO RFERENCE WITH PIPING, EQUIPMENT AND ARCHITECTURAL TREATMENT.		
	1.9 SUP	PORTING DEVICES		
	A. CON 3 FT. VER	DUITS SHALL BE SUPPORTED AT INTERVALS NOT GREATER THAN 10 FT., WITHIN OF ANY BEND AND EVERY OUTLET OR JUNCTION BOX. THIS SHALL APPLY ON TICAL BLINS AS WELL AS HORIZONTAL BLINS.		RADO LIGENCE
HALL BE				146043
JR	UNLE UNLE ENG SUP	ESS NOTED OTHERWISE ON DRAWINGS OR WRITTEN APPROVAL BY THE INEER. CONTRACTOR SHALL WORK WITH OTHER TRADES WHERE A COMMON PORT STRUCTURE IS PROVIDED AND HAS BEEN APPROVED BY ENGINEER	AND A	6/4/2020
J.S. RUBBER	C. ANC	HORS:		
S AND BEARING COPPER	1. ON S T	ILY ANCHORS THAT USE REMOVABLE BOLTS OR SCREWS ARE ALLOWED. CREW TYPE ANCHORS APPROVED FOR THE APPLICATION WILL BE THE ONLY YPE OF FASTENER ACCEPTED. ANCHORS SHALL BE USED AND APPROVED FOR		S
O. 12 GAUGE	U	SE PER MANUFACTURER INSTRUCTIONS. EXAMPLES LISTED.	ITS	NOI
		i. DRYWALL: MOLLY, E-Z (SCREW IN TYPE), TOGGLE BOLT AND OTHER.		CAT
CIFICALLY		<ul> <li>MASONRY, BLOCK, CONCRETE: PLASTIC, LEAD W/ MACHINE SCREW BOLT, DROP-IN AND OTHER.</li> </ul>	ONT	PECIFI
N, XHHW, OR VINGS. ALL SS OF		iii. NAIL IN OR PIN TYPE ANCHORS SHALL NOT BE USED TO MOUNT FIXTURES, STRAPS, BOXES, OR ANY DEVICE ASSOCIATED WITH THE ELECTRICAL SYSTEM.	HEET C	CTRICAL S
N EACH	END OF SE	ECTION	SF	ELE(



0528

 $\widetilde{\infty}$ 

0

Ō





∖a,b

0' 4' 8' 12'

1/8" = 1'-0"



# $\langle \# \rangle$

- **KEYED NOTES:**
- D1 LIGHT SWITCHES BEING REMOVED TO BE RELOCATED. CAPTURE EXISTING CIRCUITING FOR REUSE IN NEW LOCATION. ONE EXISTING TO REMAIN SWITCH WILL BE REWIRED TO NEW LIGHTING ZONE. ZONING DESIGNATIONS SHOWN FOR REFERENCE.
- D3 EXISTING DATA DEVICE TO BE REMOVED. EXISTING CABLING TO BE REMOVED BACK TO SOURCE SINCE NEW DATA LOCATION IS FURTHER FROM COM/DATA ROOM [C129]. PORT NUMBERS SHOWN FOR REFERENCE.
- D4 EXISTING DATA CABLING TO BE COILED UP AND ABANDONED ABOVE CEILING SPACE. PORT NUMBERS SHOWN FOR REFERENCE ONLY. D6 RECEPTACLE AND DATA DEVICES AT COUNTER TO BE RELOCATED UP
- APPROXIMATELY 10" TO ACCOMMODATE TALLER COUNTER.
- L1 RELOCATE EXISTING LIGHT SWITCHES TO NEW LOCATION AND RECONNECT TO EXISTING LIGHT FIXTURES IN SPACE. ZONING DESIGNATIONS SHOWN FOR REFERENCE.
- L2 CONNECT LIGHT FIXTURE TO EXISTING LIGHTING CONTROLS/CIRCUITING UTILIZED WITH ADJACENT LIGHT FIXTURE AS INDICATED.
- L3 REWIRE EXISTING LIGHT SWITCH TO CONTROL ZONE 'c' UTILIZING WIRING MADE AVAILABLE IN DEMOLITION.
- P1 PROVIDE 120V CONNECTION FOR COILING DOOR AND RACEWAYS/BOXES FOR CONTROLLER AS REQUIRED. WIRE PER MANUFACTURER'S INSTRUCTION. CONFIRM LOCATION OF SWITCH WITH OWNER PRIOR TO ROUGH-IN.
- P2 REINSTALL EXISTING RECEPTACLE AND DATA DEVICES AT APPROXIMATELY +46" TO BE ABOVE NEW COUNTER.
- T1 UTILIZE WIREMOLD DOWN EXISTING WALL FOR NEW DATA DEVICE. PULL NEW CABLES FROM COM/DATA ROOM [C129]. PORT NUMBERS SHOWN FOR REFERENCE. COORDINATE WITH OWNER I.T. STAFF.



# **DEMOLITION PLAN NOTES:**

- 1. DEMOLITION PLANS SHOW THE GENERAL EXTENT OF THE ELECTRICAL DEMOLITION WORK. THE ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT BEING REMOVED, SEE MECHANICAL PLANS. OWNER SHALL HAVE THE OPTION TO RETAIN REUSABLE ITEMS, SUCH AS COVERPLATES, RECEPTACLES, LIGHTS, PANELS, ETC. NOT BEING USED IN THE FINISHED WORK. COORDINATE WITH OWNER PRIOR TO STARTING DEMOLITION. PROPERLY AND LEGALLY DISPOSE OF ALL EQUIPMENT AND MATERIALS BEING REMOVED.
- 2. REMOVE ALL CONDUIT LEFT EXPOSED BY REMOVAL OF WALLS AND CEILINGS IN REMODELED AREAS. PLUG BOTH ENDS OF REMAINING CONDUIT IN WALL OR FLOOR WHERE CUT.
- 3. ELECTRICAL OUTLETS, ETC. POSSIBLY CONCEALED BY STORAGE SHELVING, CASEWORK, FURNITURE, ETC. ARE NOT SHOWN AND MAY REQUIRE REMOVAL.
- 4. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ALL OPENINGS IN EXISTING CONSTRUCTION AFTER REMOVAL OF EQUIPMENT, RACEWAY SYSTEMS, OUTLET BOXES, ETC.
- 5. WHERE EQUIPMENT AND OTHER DEVICES ARE BEING REMOVED, THE CIRCUITING SHALL BE REMOVED, IF POSSIBLE, BACK TO POINT OF SUPPLY. WHERE REQUIRED, CIRCUITING SHALL BE EXTENDED TO MAINTAIN CONTINUITY OF THE CIRCUIT OR OPERATION OF THE SYSTEM.
- 6. ALL DEVICES SHOWN DASHED ON THE DEMOLITION PLAN(S) SHALL BE REMOVED. UNLESS NOTED OTHERWISE.
- 7. PROVIDE MATCHING BLANK COVERPLATES WHERE DEVICES ARE BEING REMOVED FROM FLUSH-MOUNTED OUTLET BOXES IN EXISTING WALLS TO REMAIN.
- 8. FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO **BEGINNING WORK.**

# POWER AND LIGHTING PLAN NOTES:

- 1. BRANCH CIRCUITS ARE INDICATED AS ONE CIRCUIT HOME RUNS WITH INDIVIDUAL NEUTRALS. A MAXIMUM OF THREE CIRCUITS (MAXIMUM OF THREE PHASE CONDUCTORS) MAY BE GROUPED IN A SINGLE CONDUIT. WHERE MULTIPLE CIRCUITS ARE LOCATED IN THE SAME RACEWAY, JUNCTION BOX OR ENCLOSURE, NEUTRALS SHALL BE MARKED OR LABELED TO INDICATE WHICH CIRCUIT THEY ARE ASSOCIATED WITH.
- 2. A GROUND CONDUCTOR SIZED PER N.E.C. ARTICLE 250 IS REQUIRED IN ALL CONDUITS.
- 3. ALL PIPING, CONDUIT, AND OUTLET BOXES (ELECTRIC, TELEPHONE, COMPUTER, ETC.) IN FIRE RATED WALLS OR CEILINGS SHALL BE CONSTRUCTED OF NON-COMBUSTIBLE MATERIAL.



\_<del>| \_ \_ </del>►



RS

OR

SSUED