CT INNOVATIONS - COLT BUILDING

BID SET

120 Huyshope Ave - 4th Floor Hartford, CT 06106

STATE BUILDING CODE (IBC International Building Code 2015, as supplemented in 2018)

12.13.2019

SHEET NO.	DRAWING TITLE
<u>C0 00</u>	
G0.00	INFORMATION, ABBREVIATIONS
G1.00	GENERAL NOTES, SYMBOLS, GRAPHICS LEGEND
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D1 00	
D1.00	PARTIAL 4111 FLOOR DEMOLITION FLANS, DEMOLITION RET
A1.00	PARTIAL 4TH FLOOR CONSTRUCTION AND DIMENSION PLAN
A2.00	INTERIOR ELEVATIONS
A3.00	DOOR AND WINDOW SCHEDULES, DOOR DETAILS
A4.00	PARTIAL 4TH FLOOR REFLECTED CEILING PLAN
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E0 01	
E0.01	
E1.01	
LL.UI	

DRAWING INDEX

	APPLICABLE CODES: - 2015 INTERNATIONAL BUILDING CODE, 2018 CONNECTICUT - 2015 INTERNATIONAL FIRE CODE, 2018 CONNECTICUT SUF - 2010 AMERICANS WITH DISABILITIES ACT AND ASSOCIATE - 2009 ICC/ANSI A117.1 - ACCESSIBLE AND USABLE BUILDING - 2015 INTERNATIONAL PLUMBING CODE, 2018 CONNECTICU - 2015 INTERNATIONAL MECHANICAL CODE, 2018 CONNECTI - 2015 INTERNATIONAL ENERGY CONSERVATION CODE, 2017 - 2017 NATIONAL ELECTRICAL CODE NFPA 70, 2018 CONNECT - 2015 INTERNATIONAL EXISTING BUILDING CODE, 2018 CON	T SUPPLEMENT PLEMENT D GUIDELINES GS AND FACILITIES, 2018 CONNECTICUT SUPPLEN IT SUPPLEMENT CUT SUPPLEMENT 8 CONNECTICUT SUPPLEMENT TICUT SUPPLEMENT INECTICUT SUPPLEMENT	IENT	3	3.	EXIT
	- 2018 CONNECTICUT STATE FIRE SAFETY CODE Part I: ADMINISTRATIVE Part II: GENERAL Part III: NEW CONSTRUCTION, RENOVATION, OR CI 2015 INTERNATIONAL FIRE CODE Part IV: EXISTING BUILDING / OCCUPANCIES	HANGE OF USE		4	ŀ.	OCC
4						
1.	USE GROUP CLASSIFICATION (SECTION 304)	B (BUSINESS)				
2.	CONSTRUCTION TYPE (TABLE 503)					
	MINIMUM TYPE REQUIRED	IIB (ASSUMED)				
	ACTUAL TYPE PROVIDED	IIB				
3.	FIRE RESISTANCE RATINGS (TABLE 601)					
	STRUCTURAL FRAME	0	HR(S)			
	BEARING WALLS (EXTERIOR)	0	HR(S)	5	5.	FIRE
	BEARING WALLS (INTERIOR)	0	HR(S)			
	NON BEARING WALLS (EXTERIOR)	0	HR(S)			
	NON BEARING WALLS (INTERIOR)	0	HR(S)			
		0	HR(S)			
		N/A	HR(S)			
	TENANT SEPERATIONS	0	HR(S)			
		0	HR(S)			
		N/A	HR(S)			
		N/A	HR(S)			
RUI	EXIT ENCLOSURES	N/A	HR(S)			

MAXIMUM PROVIDED MON PATH OF TRAVEL (1013.3) MAXIMUM ALLOWABLE MAXIMUM PROVIDED UPANCY LOAD (TABLE 1004.1.2) USE GROUP CLASSIFICATION USABLE SQUARE FOOTAGE TOTAL OCCUPANT LOAD

USE GROUP CLASSIFICATION

MAXIMUM ALLOWABLE

PROTECTION SYSTEMS AUTOMATIC SPRINKLER SYSTEM PER 903.3.1.1

(i) 47

TITLE

EGRESS PLAN, CODE

, DEMOLITION KEY NOTES

OTES AND SYMBOL LIST

L NOTES AND SYMBOL LIST

NOTES, AND SYMBOL LIST



NOTE:

SPECIAL INSPECTIONS ARE REQUIRED FOR BUILDING COMPONENTS WHEN THE DESIGN OF THESE COMPONENTS IS REQUIRED TO BE PERFORMED BY A PROFESSIONAL ENGINEER. GC TO REVIEW DRAWINGS FOR AREAS INDICATED WHERE STRUCTURAL STEEL FRAMING, WELDING, COLD FORMED STEEL FRAMING, ETC IS REQUIRED AND/OR INDICATED TO BE DESIGNED BY 'DELEGATED DESIGN'. A STATEMENT OF SPECIAL INSPECTIONS WILL BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL DURING PERMIT APPLICATION.

INSPECTIONS SHALL BE PAID FOR BY THE OWNER. THE OWNER OR THEIR AGENTS SHALL EMPLOY AN APPROVED AGENCY TO PERFORM SPECIAL INSPECTIONS. SPECIAL INSPECTIONS MAY ONLY BE PERFORMED BY QUALIFIED SPECIAL INSPECTORS APPROVED BY THE BUILDING OFFICIAL. SPECIAL INSPECTION CONTRACTS WITH THE OWNER WILL BE HOURLY WITH AN ESTIMATED BUDGET SINCE THE INSPECTOR HAS NO CONTROL OVER THE QUALITY OF THE WORK, OR THE MEANS AND METHODS USED BY THE GENERAL CONTRACTOR IN THE INSTALLATION OF THE WORK; SPECIAL INSPECTIONS ARE NOT A SUBSTITUTE FOR THE GENERAL CONTRACTOR'S QUALITY CONTROL (QC) PROGRAMS.



OCCUPANCY / EGRESS LEGEND



AMENTA EMMA

ARCHITECTS



ALTERNATE SCHEDULE

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distribution pr	ACOUSTICAL TILE GLASS SECTION SAND
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ma Architect	EIFS MASONRY - CONC. BLOCK
4 PM Amenta / Em	GLASS ELEVATION PLYWOOD
12/13/2019 4:32:4 © Copyright	7 GRAPHICS LEGEND

	GENERAL NOTES
	THE TERM CONTRACTOR IS USED IN THESE NOTES TO IDENTIFY THE PARTY WHO IS CONTRACTED TO THE OWNER AND WHO CAUSES THE WORK OF THE CONTRACT TO BE PERFORMED EITHER BY HIS OWN FORCES OR BY OTHER CONTRACTORS RETAINED BY HIM
	THE CONTRACTOR SHALL DO THIS WORK IN ACCORDANCE WITH LOCAL LAWS AND ORDINANCES HAVING JURISDICTION. IN ADDITION TO THE THE BULDING PERMIT, THE CONTRACTOR SHALL OBTAIN ALL OTHER PERMITS AND APPROVALS AS REQUIRED BY LAW FOR THE COMPLETION OF THE WORK AND ISSUANCE OF A FULL CERTIFICATE OF OCCUPANCY.
	THE SUBMISSION OF A PROPOSAL BY THE CONTRACTOR WILL BE CONSTRUED AS EVIDENCE THAT A CAREFUL AND THOROUGH EXAMINATION OF THE SITE HAS BEEN MADE AND LATER CLAIMS FOR LABOR, MATERIALS OR EQUIPMENT REQUIRED OR FOR DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE, WILL NOT BE RECOGNIZED. IT SHALL ALSO CONSTITUTE A REPRESENTATION THAT THE CONTRACTOR HAS CHECKED AND VERIFIED ALL QUANTITIES, WORK AND MATERIALS INVOLVED AND THAT HE SHALL TAKE RESPONSIBILITY FOR
	BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK, EACH TRADE SHALL VERIFY ALL MEASUREMENTS IN THE FIELD AND SHALL BE RESPONSIBLE FOR THE CORRECTNESS OF SAME. NO EXTRA CHARGE OR COMPENSATION WILL BE ALLOWED ON ACCOUNT OF DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND THE MEASUREMENTS INDICATED ON THE DRAWINGS; ANY DISCREPANCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE ARCHITECT FOR CONSIDERATION AND CLARED ATION BEFORE PROCEEDING WITH THE WORK
	ALL OF THE ARCHITECT'S DRAWINGS AND CONSTRUCTION NOTES ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY EITHER WILL BE BINDING AS IF CALLED FOR BY ALL: ANY WORK SHOWN OR REFERRED TO ON ANY ONE DRAWING SHALL BE PROVIDED AS THOUGH SHOWN ON ALL DRAWINGS. WHENEVER AN ITEM IS SPECIFIED AND/OR SHOWN ON THE DRAWINGS BY DETAIL OR REFERENCE IT SHALL BE CONSIDERED TYPICAL FOR OTHER ITEMS WHICH ARE OBVIOUSLY INTENDED TO BE THE SAME EVEN THOUGH NOT SO DESIGNATED OR SPECIFICALLY NAMED BUT DO SERVE THE SAME FUNCTION.
	THE WORK TO BE PERFORMED CONSISTS OF FURNISHING ALL LABOR, EQUIPMENT, TOOLS, TRANSPORTATION, SUPPLIES, FEES, MATERIALS, AND SERVICES IN ACCORDANCE WITH THESE NOTES AND DRAWINGS AND PERFORMING ALL OPERATIONS NECESSARY TO CONSTRUCT AND INSTALL COMPLETE AND IN SATISFACTORY CONDITION THE VARIOUS MATERIALS AND EQUIPMENT AT THE LOCATIONS SHOWN. IT IS INTENDED THAT THE DRAWINGS INCLUDE EVERYTHING REQUISITE AND NECESSARY TO FINISH THE ENTIRE WORK PROPERLY, NOTWITHSTANDING THE FACT THAT EVERY ITEM NECESSARILY INVOLVED MAY NOT BE SPECIFICALLY MENTIONED OR SHOWN. ANY ITEM WHICH MAY BE REASONABLY CONSTRUED AS INCIDENTAL TO THE PROPER AND SATISFACTORY COMPLETION OF THE WORK IN ACCORDANCE WITH THE INTENT OF THESE NOTES AND DRAWINGS IS HEREBY INCLUDED.
	THE CONTRACTOR SHALL ABIDE BY AND COMPLY WITH THE TRUE INTENT AND MEANING OF THE DRAWINGS AND NOTES TAKEN AS A WHOLE AND SHALL NOT AVAIL HIMSELF OF ANY OBVIOUS ERRORS OR OMISSIONS, SHOULD ANY EXIST. SHOULD ANY ERROR OR DISCREPANCY APPEAR OR ANY DOUBT ARISE AS TO THE TRUE MEANING OF THE DRAWINGS OR NOTES, THE CONTRACTOR SHALL BRING SUCH ITEMS TO THE ATTENTION OF THE ARCHITECT BEFORE SUBMISSION OF PROPOSAL FOR EXPLANATION OR CORRECTION OF SAME. AFTER THE SUBMISSION OF PROPOSAL, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL SUCH ITEMS.
	THE CHARACTER AND SCOPE OF THE WORK ARE ILLUSTRATED BY THE DRAWINGS AND NOTES. TO INTERPRET AND EXPLAIN THE DRAWINGS OTHER INFORMATION DEEMED NECESSARY BY THE ARCHITECT WILL BE FURNISHED TO THE CONTRACTOR WHEN AND AS REQUIRED BY THE WORK, AND IT IS TO BE UNDERSTOOD THAT SAID ADDITIONAL INFORMATION OR DRAWINGS ARE TO BE OF EQUAL FORCE WITH THESE.
	FULL SIZE OR LARGE SCALE DETAILS OR DRAWINGS SHALL GOVERN SMALL SCALE DRAWINGS WHICH THEY ARE INTENDED TO AMPLIFY. DETAILS OR CONDITIONS INDICATED FOR A PORTION OF THE WORK BUT NOT CARRIED OUT FULLY FOR OTHER PORTIONS SHALL APPLY THROUGHOUT TO ALL SIMILAR PORTIONS EXCEPT AS OTHERWISE SPECIFICALLY NOTED. IN EVERY CASE THE GREATER QUANTITY, OR A MORE EXPENSIVE ITEM OR METHOD SHALL BE ASSUMED OVER A LESSER QUANTITY OR A LESS EXPENSIVE ONE AND DIMENSIONS SHALL BE FIGURED RATHER THAN DETERMINED BY RULE OR SCALE.
0	ALL PARTITIONS ARE DIMENSIONED TO THE FINISHED FACES OF WALLS. ALL PARTITION THICKNESSES SHOWN ARE NOMINAL DIMENSIONS.
2	TREATED. THE PROJECT HAS BEEN DESIGNED AND DETAILED FOR THE SPECIFIC MATERIALS AND EQUIPMENT
	SPECIFIED. NO SUBSTITUTIONS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ARCHITECT. IF THE SPECIFIED MATERIAL IS NOT AVAILABLE, THE CONTRACTOR SHALL PROPOSE AN ALTERNATE MATERIAL AND SHALL PROVIDE DRAWINGS, SAMPLES, SPECIFICATIONS, MANUFACTURER'S LITERATURE, PERFORMANCE DATA, ETC. IN ORDER THAT THE ARCHITECT CAN EVALUATE THE PROPOSED SUBSTITUTION. IF THE SUBSTITUTION AFFECTS A CORRELATED FUNCTION, ADJACENT CONSTRUCTION, OR THE WORK OF ANY OTHER CONTRACTOR OR TRADE, THE NECESSARY CHANGES AND MODIFICATIONS TO THE AFFECTED WORK SHALL BE SUBMITTED WITH THE SUBSTITUTION AND ACCOMPLISHED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. NO REQUESTS FOR SUBSTITUTES WILL BE ENTEDTAINED BY THE ADOLITECT DUE TO
3	CONTRACTOR'S FAILURE TO ORDER MATERIALS IN A TIMELY MANNER. THE STANDARD SPECIFICATIONS OF THE MANUFACTURERS APPROVED FOR USE IN THE PROJECT
	HEREIN WRITTEN OUT IN FULL, EXCEPT THAT WHEREVER THE DRAWINGS REQUIRE HEAVIER MEMBERS, BETTER QUALITY MATERIALS OR ARE OTHERWISE MORE STRINGENT, THESE STRINGENT REQUIREMENTS SHALL GOVERN.
4 5	COMPLY WITH ALL THE REQUIREMENTS OF THESE NOTES AND DRAWINGS. THE CONTRACTOR SHALL COORDINATE AND SUPERVISE THE WORK OF ALL SUB-CONTRACTORS. HE SHALL BE RESPONSIBLE FOR GIVING ALL TRADES SUCH INFORMATION, PLANS OR DETAILS AS MAY BE
6	REQUIRED FOR THE PROPER INSTALLATION AND COMPLETION OF THEIR WORK. THE CONTRACTOR SHALL SUBMIT ALL FABRICATION SHOP DRAWINGS, SAMPLES, AND FIXTURE CUTS FOR THE ARCHITECT'S REVIEW AS REQUIRED AND/OR INDICATED ON DRAWINGS. THE ARCHITECT'S REVIEW SHALL NOT BE CONSTRUED AS AN INDICATION THAT SUBMITTAL IS CORRECT OR SUITABLE
	NOR THAT WORK REPRESENTED BY SUBMITTAL COMPLIES WITH THE DRAWINGS, EXCEPT AS TO MATTERS OF FINISH, COLOR, AND OTHER AESTHETIC MATTERS. ACTION NOTED ABOVE DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY TO COORDINATE ALL TRADES AND TO CHECK QUANTITIES AND DIMENSIONS AGAINST CONDITIONS IN THE FIELD. CONTRACTORS AND ENGINEERS SHALL ASSUME RESPONSIBILITY FOR ALL ERRORS ON THEIR DRAWINGS.
7	ALL MATERIALS REQUIRED FOR THE PERFORMANCE OF THIS CONTRACT SHALL BE NEW AND OF THE BEST QUALITY OF KINDS SPECIFIED, ALL SUBJECT TO THE APPROVAL OF THE ARCHITECT. THE USE OF OLD OR SECOND-HAND MATERIALS IS STRICTLY FORBIDDEN. THE CONTRACTOR SHALL, IF REQUIRED, FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUALITY OF MATERIALS AND WORKMANSHIP. MATERIALS SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. UPON REQUEST, THE MANUFACTURER'S REPRESENTATIVE SHALL GO TO THE SITE
8	AND INSTRUCT THE MECHANICS IN THE USE OF THE MATERIALS OR SHALL SUPERVISE THEIR USE. THE CONTRACTOR SHALL PROVIDE BLOCKING AT ALL LOCATIONS FOR SCHEDULED WALL CABINETS
9	AND/OR TV WALL MOUNTING BRACKETS; REFER TO DRAWINGS FOR LOCATION. FOR THE EXECUTION OF THE WORK TO BE PERFORMED UNDER THIS CONTRACT AND FOR THE MANUFACTURE OR TRANSPORTATION OF ANY OF THE MATERIALS OR EQUIPMENT TO BE USED OR INSTALLED, THE CONTRACTOR SHALL EMPLOY ONLY SUCH LABOR THROUGHOUT AS WILL NOT INTERFERE WITH THE SPEEDY AND UNINTERRUPTED COMPLETION OF THE PROJECT. ALL WORK
0	SHALL BE DONE BY MECHANICS SKILLED IN THEIR TRADE AND SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER IN ACCORDANCE WITH THE BEST TRADE PRACTICES. ANY MATERIALS DELIVERED OR WORK PERFORMED, CONTRARY TO THE DRAWINGS AND SPECIFICATIONS AND APPROVED SHOP DRAWINGS, SHALL BE REMOVED BY THE CONTRACTOR AT HIS
1	OWN EXPENSE, AND THE SAME SHALL BE REPLACED WITH OTHER MATERIALS OR WORK SATISFACTORY TO THE ARCHITECT. THE CONTRACTOR SHALL ALSO ASSUME THE COST OF REPLACING THE WORK WHICH MAY BE DISTURBED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY AND ACCURATELY LAYING OUT THE
	WORK AND FOR THE LINES AND MEASUREMENTS HEREIN. HE SHALL ESTABLISH NECESSARY REFERENCE LINES AND PERMANENT BENCH MARKS FROM WHICH BUILDING LINES AND ELEVATIONS SHALL BE TAKEN. ELEVATION HEIGHTS OF ALL WORK INCLUDING BUT NOT LIMITED TO SOFFITS, CEILINGS, DOORS, HOLLOW METAL SHALL BE TRUE AND LEVEL WITHIN A MAXIMUM TOLERANCE OF 1/8" OVERALL THE ENTIRE PROJECT.

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			(N) (R)	NEW RELOCATED	JAN JC	JANITOR JANITOR'S CLOSET
			A: AC	AIR CONDITIONING	L LAB	
			ACC	ACCESSIBLE	LAM	LAMINATE
			ACT ADD	ACOUSTICAL CEILING TILE ADDITIONAL	LAV LB	LAVATORY POUND
			ADJ	ADJUSTABLE	LF	LINEAR FOOT
			AFF ALT	ABOVE FINISH FLOOR AI TERNATE	LLH LLV	LONG LEG HORIZONTAL
			ALUM	ALUMINUM	M	
_			APPROX ARCH	APPROXIMATE ARCHITECTURAI	MACH	MACHINE MAINTENANCE
		GENERAL NOTES	AV	AUDIO VISUAL	MATL	MATERIAL
			B BD	 BOARD	MAX MBI	Maximum Marbi F
)	22	FOR ALL PARTITIONS REFER TO PARTITION SYMBOLS ON DRAWINGS AND THE PARTITION TYPE	BLDG	BUILDING	MDF	MEDIUM DENSITY FIBERBOARD
		LOCATION OF RATED PARTITIONS, IF APPLICABLE.	BO BUR	BOTTOM OF BUILT-UP ROOFING	MDO	MEDIUM DENSITY OVERLAY PLYWOOD
	23	A. THE PREMISES AND THE JOB SITE SHALL BE MAINTAINED IN A REASONABLY NEAT AND ORDERLY CONDITION AND KEPT FREE FROM ACCUMULATIONS OF WASTE MATERIALS AND RUBBISH DURING	С		MECH	
		THE ENTIRE CONSTRUCTION PERIOD. REMOVE CRATES, CARTONS AND OTHER FLAMMABLE WASTE MATERIALS OR TRASH FROM THE WORK AREAS AT THE END OF EACH WORKING DAY.	CB CG	CATCH BASIN CORNER GUARD	MEP	PLUMBING
		B ELECTRICAL CLOSETS PIPE AND DUICT SHAFTS CHASES EURRED SPACES AND SIMILAR SPACES	CIP	CAST-IN-PLACE	MEZZ MER	MEZZANINE
		WHICH ARE GENERALLY UNFINISHED SHALL BE CLEANED AND LEFT FREE FROM RUBBISH, LOOSE	CJ	JOINT	MH	MANHOLE
)			CL	CENTER LINE	MIN MISC	MINUMUM MISCELLANEOUS
		C. CARE SHALL BE TAKEN BY WORKMEN NOT TO MARK, SOIL, OR OTHERWISE DEFACE FINISHED SURFACES. IN THE EVENT THAT FINISHED SURFACES BECOME DEFACED, THE CONTRACTOR IS	CLR	CLEAR	MM	MILLIMETER
		RESPONSIBLE FOR CLEANING AND RESTORING SUCH SURFACES TO THEIR ORIGINAL CONDITION. IF THIS IS NOT POSSIBLE, DAMAGED SURFACES SHALL BE REPLACED.	CMU	CONCRETE MASONRY UNIT	MO MTD	MASONRY OPENING MOUNTED
		D. CLEAN UP IMMEDIATELY UPON COMPLETION OF EACH TRADE'S WORK.	COL	COLUMN	MTG	MOUNTING
		E CLEAN AREAS OF THE BUILDING IN WHICH PAINTING AND FINISHING WORK IS TO BE PERFORMED	CONC	CONCRETE	N N	NOR I H
		JUST PRIOR TO THE START OF THIS WORK, AND MAINTAIN THESE AREAS IN SATISFACTORY	COORD	COORDINATE	NA	NOT APPLICABLE
			CORR CT	CORRIDOR CERAMIC TILE	NC NIC	NOISE CRITERIA NOT IN CONTACT
		F. THIS CLEANING INCLUDES THE REMOVAL OF TRASH AND RUBBISH FROM THESE AREAS, BROOM CLEANING OF FLOORS, THE REMOVAL OF ANY PLASTER, MORTAR, DUST AND OTHER EXTRANEOUS	CW	COLD WATER	NOM	
		MATERIALS FROM FINISH SURFACES, INCLUDING BUT NOT LIMITED TO, MISCELLANEOUS METAL, WOODWORK, PLASTER, GYPSUM DRYWALL, MASONRY, CONCRETE, MECHANICAL AND ELECTRICAL	D DFMO	DEMOLITION	NIS O	NOT TO SCALE
-		EQUIPMENT, PIPING, DUCTWORK, CONDUIT, AND SURFACES VISIBLE AFTER GRILLES, REGISTERS AND	DEPT	DEPARTMENT	00	
			DF DIA	DRINKING FOUNTAIN DIAMETER	OD OFCI	OUTSIDE DIAMETER/DIMENSION OWNER FURNISHED, CONTR
Г		MAY BE REQUIRED IN VARIOUS SECTIONS OF THE SPECIFICATIONS, THE PREMISES SHALL BE	DIM	DIMENSION		
		PREPARED FOR OCCUPANCY BY:	DISP DN	DISPENSER DOWN	OFOI	INSTALLED
		(i)A THOROUGH CLEANING THROUGHOUT INCLUDING WASHING OR CLEANING BY OTHER APPROVED METHODS OF ALL FLOORS AND SURFACES ON WHICH DIRT OR DUST HAS COLLECTED AND BY	DO	DOOR OPENING	OPP ORD	OPPOSITE OVERFLOW ROOF DRAIN
		WASHING GLASS, REMOVING ALL PAINT, PUTTY AND STAINS THEREFROM.	DP DR	DIMENSION POINT DOOR	OVHD	OVERHEAD
		(ii)PROVIDING AND MAINTAINING PROTECTION OF EXISTING AND INSTALLED PORTIONS OF THE WORK.	DS	DOWNSPOUT	P P.	 PAINT
		(iii)LEAVING ALL FIXTURES AND EQUIPMENT IN AN UNDAMAGED, BRIGHT, CLEAN, POLISHED	DW DWG	DISHWASHER DRAWING	PBD	PARTICLEBOARD
		CONDITION.	E		PC PERF	PRECAST CONCRETE PERFORATED
		(iv)CLEAN AND POLISH ALL HARDWARE, AND OTHER METAL WORK.	EA EFS	EACH EXTERIOR INSULATION &	PERIM	PERIMETER
		(v)FOR FINAL CLEANING, CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL CLEANING COMPANY TO ACCOMPLISH THE FOLLOWING: REMOVAL OF PUTTY STAINS AND PAINT	EIEQ	FINISH SYSTEM	PERP PL	PERPENDICULAR PLATE
		SPOTS, WASHING AND POLISHING OF GLASS, CLEANING AND POLISHING OF ALL EXPOSED FINISH	EJ	EXPANSION JOINT	PLAM	PLASTIC LAMINATE
		FLOORING POLISHED & BUFFED	EL	ELEVATION	PLF PR	POUNDS PER LINEAR FOOT PAIR
ł	24	THE CONTRACTOR SHALL KEEP THE ARCHITECT INFORMED OF THE PROGRESS OF HIS WORK. NO	ELEV	ELEVATOR	PREFAB	PREFABRICATED
r.		SHOULD UNINSPECTED WORK BE COVERED, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE,	EMERG FO	EMERGENCY	PROJ PSF	PROJECT POUNDS PER SQUARE FOOT
		HE SHALL PROPERLY REPAIR AND REPLACE ALL WORK INTERFERED WITH.	EQUIP	EQUIPMENT	PT	
	25 26	THE WORK IS SUBJECT TO INSPECTION BY THE ARCHITECT AND ACCEPTANCE BY THE OWNER.	EWC FXH	ELECTRICAL WATER COOLER EXHAUST	Q	
	27	ALL HVAC, PLUMBING, SPRINKLER AND ELECTRICAL LINES ARE TO BE COORDINATED SO THAT NO	EXIST	EXISTING	QT OTY	QUARRY TILE
_		BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO INSTALLATION.	EXT F	EXTERIOR 	R	RADIUS OR RISER
_	28	CONTRACTOR SHALL CONSULT WITH ELECTRICAL AND PLUMBING SUB-CONTRACTORS FOR LOCATIONS OF CONDUIT AND PIPES IN FOUNDATION. SLABS ON GRADE, AND EXTERIOR WALLS AND	FD		R RB	 RESILIENT BASE
	20	SHALL INSTALL WATERTIGHT PIPE SLEEVES AT THEIR RESPECTIVE LOCATIONS.	FE FEC	FIRE EXTINGUISHER	RCP	REFLECTED CEILING PLAN
	29	A SET OF THE INSTALLED IN THIS JOB SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO	FF&E	FURNITURE, FINISHES, &	RD REF	ROOF DRAIN REFERENCE
		COMPLETED WORK ARE TO BE COMPLETED, SIGNED AND SEALED, AND DELIVERED TO THE	FFEL	FINISH FLOOR ELEVATION	REINF	REINFORCED / REINFORCING
	30	ARCHITECT AND OWNER AT THE COMPLETION OF THE JOB. PROVIDE ADEQUATE BACKUP AND BLOCKING FOR ALL WALL OR CEILING MOUNTED FOUIPMENT	FHC FI	FIRE HOSE CABINET	REQD	REQUIRED REVISION/REVISED
		ARCHITECTURAL WOODWORK, HANDRAILS, LIGHTING OR OTHER MISCELLANEOUS ITEMS AS SHOWN	FND		RM	
-	31	SUBMITTALS THAT REQUIRE THE REVIEW OF THE ARCHITECT/ENGINEERING TEAM SHALL BE	F0 FP	FAGE OF FIRE PROTECTION	RWL	RAIN WATER LEADER
		SUBMITTED AS HARDCOPY AS WELL. A SEVEN (7) BUSINESS DAY PERIOD OF TIME WILL BE ALOTTED	FPG		S S	
		FOR ARCHITECT'S/ENGINEER'S REVIEW OF THE CONSTRUCTION SUBMITTAL, AND IT CANNOT BE GUARANTEED THAT AN EXPEDITED SCHEDULE CAN BE ACCOMMODATED.	FKIW	FIRE RETARDANT TREATED	SCHED	SCHEDULE
+	32	THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING OR OBTAINING SHOP DRAWINGS FROM THE SUBCONTRACTORS AND MANUFACTURERS. THE APPROVAL AND SUBMITTAL OR SHOP DRAWINGS TO	FT FURN	FEET FURNITURF	SF SIM	SQUARE FEET/FOOT SIMILAR
-		THE ARCHITECT REPRESENTS THAT THE CONTRACTOR HAS REVIEWED AND VERIFIED THE USE OF APPROPRIATE MATERIALS, PROPER FIELD MEASUREMENTS, FIELD CONSTRUCTION RECURRENTS	FWC	FABRIC WALLCOVERING	SP	STANDPIPE
E		AND HAVE COORDINATED THE INFORMATION CONTAINED IN THE SUBMITTAL. DEVIATIONS FROM THE	нwр G	FABRIC WRAPPED PANEL GROUND	SPEC SQ	SPECIFICATION
		REQUIRES SPECIFIC APPROVAL OF THE ARCHITECT. ARCHITECTURAL APPROVAL OF THE SHOP	G		SS	STAINLESS STEEL
		OMISSIONS, PER AIA DOCUMENT A201-2007 STANDARDS.	GA GALV	GAUGE / GAGE GALVANIZED	STL	STEEL
	33	ALL QUESTIONS TO THE ARCHITECT/ENGINEERING TEAM SHALL BE SUBMITTED AS REQUEST'S FOR INFORMATION (REI'S), WITH THE CONSTRUCTION MANAGER'S LETTERHEAD. THE CONSTRUCTION	GC		STOR	STORAGE
		MANAGER WILL PROVIDE A NUMBER TO THE RFI. A ONE (1) WEEK PERIOD OF TIME WILL BE ALOTTED		CONCRETE	T	
		WILL BE FROM THE CONSTRUCTION MANAGER TO THE ARCHITECT. THE ARCHITECT WILL	GFRG	GLASS RIBER REINFORCED GYPSUM	T&G T	TONGUE AND GROOVE
		SUB-CONTRACTOR IS TO CONTACT THE ARCHITECT OR ENGINEER WITH A QUESTION DIRECTLY; ALL	GL		TC	TOP OF CURB
		QUESTIONS TO THE ARCHITECTURE/ENGINEERING TEAM SHALL BE SENT THROUGH THE CONSTRUCTION MANAGER.	H	GTP30W WALLBOARD	TEL TO	TELEPHONE OR TELECOM TOP OF (SEE OTHER WORD)
	34	THIS SET OF DRAWINGS IS FOR ARCHITECTURAL WORK. MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DEVICES ARE SHOWN FOR COORDINATION PURPOSES ONLY GENERAL	HB	HOSE BIB HOLLOW CORE	TV	TELEVISION
-		CONTRACTOR IS RESPONSIBLE FOR ALL ENGINEERING AND FOR PROVIDING FINISHED MECHANICAL,	HCP	HANDICAPPED	IW TYP	TOP OF WALL TYPICAL
		CODES.	HDWD HDWR	HARDWOOD HARDWARF	U	
	35	CON I RACTOR TO INCLUDE IN HIS PRICING ALL ENGINEERING FOR MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION WORK TO COORDINATE WITH ARCHITECT'S DESIGN AND PROVIDE	HM	HOLLOW METAL (STEEL FRAME)	U.U.N. V	UNLESS UTHERWISE NOTED
		COMPLETE SYSTEMS.	HORIZ HR	HORIZONTAL HOUR	VCT	VINYL COMPOSTION TILE
			HVAC	HEATING, VENTILATION, AIR	VERT	VERTIGAL
			HW	HOT WATER	VIF	
5					VWC	VINTE TILE VINYL WALL COVERING
			טו IN	INGIDE DIAWETER	W	 WITHOUT
1				INCLUDED / INCLUDING	WC	WATER CLOSET
			INT	INTERIOR	WD WP	WOOD WORK POINT
			INV	INVERT	WR	WATER RESISTENT/REPELLANT

(E) EXISTING

J ------

-5 ABBREVIATIONS

		•	AMENTA EMMA
	<u>A 1.01</u>	SHEET NUMBER	ARCHITECTS
		Sheet Number Sequence Sheet Type	
		Discipline	
(ENLARGED PLAN / DETAIL IDENTIFICATION	
l		_Detail Number Sheet Number	
	1 A101		
	-	SECTION IDENTIFICATION	
	A3.07	_Detail Number Sheet Number	
		EXTERIOR ELEVATION IDENTIFICATION	
	A101 1-	_Elevation Number_ Sheet Number	-
	4	INTERIOR ELEVATION IDENTIFICATION	
	3 A101 1-	Elevation NumberSheet Number	
	2 G 3'-0" G		
	- ↓	DIMENSION TO CENTERLINE	
	* *	DIMENSION LINE	
		EXISTING CONSTRUCTION TO REMAIN	CT INNOVATIONS – COLT
		EXISTING CONSTRUCTION TO BE REMOVED	BUILDING
		NEW CONSTRUCTION	120 Huvshope
	Q	CENTERLINE	Ave - 4th Floor
	(101)	DOOR NUMBER	Hartford, CT
	A	WINDOW NUMBER	06106
		PARTITION TYPE	
		ROOM TAG	
	202A	Room Name Room Number	CONSOLTAINTS
	150 SF -	Room Area (If Displayed)	
		ELEVATION MARKER	
	EL: 100'-0"_	SPOT ELEVATION	
	6.0	ROOF PITCH	
	1	KEYED NOTE	
	<u> </u>	FURNITURE TAG	KEY PLAN
		NORTH ARROW	
		—— Plan North —— True North	
		DRAWING REVISION / REVISION NUMBER	
	Euro		
			N
	0)	COLUMN GRID TAG	
			PROJECT DATA
	GL	ACCESSIBLE ELEMENT	PROJECT NUMBER 19039 CURRENT SUBMISSION DATE 12.13.2019
			DRAWN NNM CHECKED TJQ
Г — — — — — — — — — — — — — — — — — — —		CLEAR FLOOR SPACES FOR	SCALE As indicated FILE REFERENCE C:\Users\nnm\Documents\19039 CT
		WHEELCHAIR: 2'-6" x 4'-0" AND 5'-0" DIAMETER	INNOVATIONS - COLT GATEWAY_CENTRAL_2019_nnm.rvt
			HISTORY OF SUBMISSIONS No. Date Description
	20 R @ 7 1/2	STAIR TAG	
	\rightarrow	DIRECTION OF DOWNWARD SLOPE	
	CEILING BASE		
	FLOOR		
			BID SET
	WALL CEILING	WALL FINISH TAG	
	~~~		SHEET TITLE
		FINISH TRANSITION TAG	
	XX		
	<b>F.E.C.</b>		GENERAL NOTES.
		SEMI RECESSED FIRE EXTINGUISHER	SYMBOLS, GRAPHICS
			LEGEND

G1.00.

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14 TYPICAL MOUNTING HEIGHTS EQUIPMENT

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	GENERAL DEMOLITION NOTES
1	DEMOLITION PLANS SHOW APPROXIMATE LAYOUT OF EXISTING PARTITIONS, DOORS, WINDOWS, FURNITURE, ETC. AND ARE NOT INTENDED TO REPRESENT AS-BUILT CONDITIONS. ALL INFORMATION MUST BE VERIFIED ON SITE.
2	ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH ANSI A10.6, THE STATE DEMOLITION CODE, THE CONSTRUCTION SAFETY AND HEALTH REGULATIONS AND REQUIREMENTS OF THE LOCAL AUTHORITIES. A FIRE WATCH SHALL BE PROVIDED AS REQUIRED.
3	NO BUILDING ELEMENTS SHALL BE LEFT IN A TEMPORARY CONDITION OR EXPOSED FOR AN EXCESSIVE OR UNREASONABLE AMOUNT OF TIME.
4	PARTITIONS AND OTHER ITEMS TO BE REMOVED ARE SHOWN DASHED. WHERE WALLS ARE TO BE REMOVED, SERVICES IN WALLS SHALL ALSO BE REMOVED OR RELOCATED. COORDINATE WITH MEP/FP, STRUCTURAL AND CIVIL. CONTRACTOR TO FIELD VERIFY ALL EXISTING ELECTRICAL FIXTURES & RECEPTACLES SCHEDULED TO REMAIN. REMOVE ANY DEVICES AND WIRING THAT DO NOT CORRESPOND WITH PROPOSED ELECTRICAL LAYOUT PLAN. REMOVE ALL ABANDONED ELECTRICAL WIRING FROM ABOVE CEILING & EXISTING WALLS THAT WILL REMAIN; REMOVE WIRING BACK TO PANEL OR NEXT LOGICAL JUNCTION BOX LOCATION.
5	PROVIDE NECESSARY BARRIERS AS REQUIRED TO SECURE SCOPE OF WORK AREA AT THE END OF EACH DAY.
6	ERECT AND MAINTAIN DUST PROOF PARTITIONS AS REQUIRED TO PREVENT SPREAD OF DUST, FUMES, AND SMOKE, ETC. TO OTHER PARTS OF THE BUILDING. ON COMPLETION, REMOVE PARTITIONS AND REPAIR DAMAGED SURFACES TO MATCH ADJACENT SURFACES.
7	IF DEMOLITION IS PERFORMED IN EXCESS OF THAT REQUIRED, RESTORE AFFECTED AREAS AT NO COST TO THE OWNER.
8	PROVIDE PROTECTION OF ADJACENT AREAS AND BUILDING COMPONENTS NOT TO BE DISTURBED, INCLUDING PATHS OF TRAVEL FROM SITE ENTRANCE TO SPECIFIC SCOPE OF WORK AREAS.
9	PROVIDE SUITABLE COVERED CONTAINERS TO RECEIVE DEBRIS. USE OF WATER SHALL BE LIMITED TO A LIGHT SPRAY TO PREVENT THE SPREAD OF DUST. NO BURNING OF MATERIALS SHALL BE PERMITTED.
10	PROVIDE AND MAINTAIN FIRE PROTECTION THROUGHOUT DEMOLITION AND CONSTRUCTION.
11	ANY ITEM NOT SPECIFICALLY IDENTIFIED, BUT REQUIRED TO BE REMOVED OR REPAIRED TO PREPARE THE BUILDING FOR NEW WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.
12	SCHEDULE ALL SHUTDOWNS OF UTILITIES IN OCCUPIED PORTIONS OF THE BUILDING WITH THE OWNER (AND LOCAL FIRE DEPARTMENT IF NECESSARY) PRIOR TO IMPLEMENTING.
13	SEE MEP/FP FOR ASSOCIATED DEMOLITION. CONTRACTOR SHALL COORDINATE DEMOLITION DRAWINGS AND NOTES WITH ALL DISCIPLINES.
14	REMOVE ALL EXISTING FINISH FLOORING DOWN TO EXISTING STRUCTURAL SLAB / FLOOR SUBSTRATE. REPAIR STRUCTURAL FLOOR / FLOORING SUBSTRATE AS REQUIRED TO PREPARE FOR SCHEDULED FLOORING SYSTEMS PER MANUFACTURER SPECIFICATIONS & REQUIREMENTS.
15	ANY ELECTRICAL, PHONE, THERMOSTAT, OR OTHER DEVICES & WIRING LOCATED WITHIN SCOPE OF WORK AREA SCHEDULED TO BE DEMOLISHED SHOULD BE RELOCATED OUT OF REACH FOR FURTHER DEMOLITION BY THEIR RESPECTIVE TRADES.
16	ALL PLUMBING NO LONGER IN USE SHALL BE REMOVED IN ITS ENTIREITY.
17	REMOVE EXISTING LIGHT FIXTURES, DIFFUSERS, ETC. AS REQUIRED DUE TO NEW LAYOUT. SAVE CEILING ITEMS FOR REUSE WHERE INDICATED. REFER TO REFLECTED CEILING PLAN FOR SCOPE OF WORK REGARDING NEW CEILING. SPRINKLER PIPING AND DUCTWORK SHALL BE MODIFIED AS REQUIRED TO ACCOMMODATE NEW LAYOUT.
18	REMOVE EXISTING PARTITIONS AS REQUIRED FOR SCHEDULED DOORS TO BE INSTALLED UNDER THE NEW SCOPE OF WORK; REFER TO CONSTRUCTION PLAN.
10	COORDINATE ALL REQUIRED CORE DRILLING & TRENCHING WITH POWER PLANS

# GENERAL DEMOLITION NOTES



1	REMOVE EXISTING DOOR, FRAME AND HARDWARE IN ITS ENTIRETY AND RETURN TO OWNER.
2	REMOVE PORTION OF EXISTING WALL AS REQUIRED FOR NEW TENANT DOOR.
3	REMOVE PORTION OF EXISTING WALL AS REQUIRED FOR NEW TENANT GLASS WALL AND GLASS ENTRY DOOR
4	REMOVE LOOSE AND SPALLING PAINT FROM EXISTING CEILING AND PREPARE AS REQUIRED FOR NEW PAINT FINISH
5	CHEMICALLY REMOVE EXISTING PAINT FROM EXISTING BRICK WALL. PREPARE WALL FOR NEW PAINT FINISH. PROVIDE ALTERNATE FOR SANDBLAST REMOVAL.

### AMENTA|EMMA ARCHITECTS

CONSULTANTS

### CT INNOVATIONS

### CT INNOVATIONS - COLT BUILDING 120 Huyshope Ave - 4th Floor Hartford, CT 06106

	N
PROJECT DAT	A
PROJECT NUMBER	19039
CURRENT SUBMISSION DATE	12.13.2019
	NNM P IO
SCALE	As indicated
FILE REFERENCE	C:\Users\nnm\Documents\19039_CT INNOVATIONS - COLT
	GATEWAY_CENTRAL_2019_nnm.rvt

#### HISTORY OF SUBMISSIONS



**BID SET** 

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SHEET TITLE 

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PARTIAL 4TH FLOOR DEMOLITION PLANS, DEMOLITION KEY NOTES



AEA KEYNOTES - DEMOLITION PLANS







#### **GENERAL CONSTRUCTION NOTES**

# GENERAL PARTITION NOTES

- FINISH. 10 PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL TOILET ROOMS AND KITCHEN AREAS WITH SINKS.
- ELEVATIONS AS REQUIRED.
- 9 ALL PANEL SURFACES EXPOSED TO VIEW, UNLESS OTHERWISE INDICATED, TO BE LEVEL 4

- PROVIDE METAL BACKING PLATES FOR WALL-MOUNTED ACCESSORIES & CONSTRUCTION. 8 TILE BACKER BOARD IS REQUIRED AT ALL TILE LOCATIONS. COORDINATE WITH FINISHES AND
- SEALED AIR TIGHT WITH ACOUSTICAL SEALANT.
- ALL NON-FIRE RATED PARTITIONS SHALL HAVE ALL PENETRATIONS AND INTERSECTIONS
- ORDER TO MAINTAIN FIRE RATINGS AS REQUIRED.
- AND RUNNERS SHALL BE SET IN 2 BEADS OF SEALANT OR AS REQUIRED BY MANUFACTURER. FIRESTOPPING SHALL BE PROVIDED FOR FOR ALL FIRE RATED WALL OR SLAB PENETRATIONS IN
- 5 FIRESTOP SHALL BE USED AT FIRE RATED PARTITIONS. RECESSED BOXES SHALL BE SEALED
- REQUIREMENTS ARE DESIGNATED BY DETAIL.
- MINIMUM REQUIREMENTS OF THE TESTED ASSEMBLY UNLESS MORE STRINGENT
- FIRE-RESISTANCE-RATED & STC-RATED PARTITIONS & STC-RATED SHALL CONFORM TO THE
- GYPSUM BOARD SHALL BE 5/8" THICK, U.O.N.
- PROVIDE 20 GAUGE METAL STUDS AT 16" O.C., U.O.N.
- REFER TO PARTITION TYPE DIAGRAMS, REFERENCED BY THE "PARTITION SYMBOL", INDICATING THE COMPONENTS AND ASSEMBLY OF EACH PARTITION.



**16** WOOD BASE SCALE: 3" = 1'-0"

PARTITION RE PARTITION TYPES



GLASS - SET IN FULL BED OF SEALANT

1/4" CONTINUOUS SEALANT JOINT 1" X 2" RECESSED STAINLESS STEEL CHANNEL - US26D FINISH, TYP. SECURE TO F.T. WOOD BLOCKING

### GLASS JAMB DETAIL AT CORNER SCALE: 3" = 1'-0"



9 PARTIAL 4TH FLOOR CONSTRUCTION PLAN SCALE: 1/8" = 1'-0"



 $\begin{pmatrix} 4 \\ A4.00 \end{pmatrix}$ -13 A3.00 TYP 10 A3.00 EQ 💻 🛛 EQ EQ EQ 3' - 0" 1' - 0 3/4" 3' - 0" 5' - 8 1/2" 5' - 8່ 1/2" 6 7/8" +VIF VIF 6 7/8"~ 8 TYP ELEVATION @ OFFICES - NORTH SCALE: 1/4" = 1'-0"











### AMENTA|EMMA ARCHITECTS

PAINTED GYP WALL, PT-1

PAINTED GYP WALL PT-2, TYP.

PAINTED GYP SOFFIT, PT-1 1/2" TH. ULTRACLEAR GLASS, TYP. - 1/4" CONTINUOUS SEALANT JOINT, TYP.

RUBBER BASE, RB-2

1 X 1 1/2" STAINLESS STEEL - SURFACE MOUNTED GLAZING CHANNEL

3' - 0"

LEVATION @ ENTRY DOOR SCALE: 1/4" = 1'-0"

4' - 8"



A2.00

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# 20 FRAME DETAILS SCALE: 3" = 1'-0"

# DOOR AND FRAME TYPES LEGEND



AEA DOOR AND FRAME SCHEDULE															
	DOOR		DOOR		OR		OOR		FF	RAME					
DOOR #	WIDTH	HEIGHT	TYPE	MATERIAL	TYPE	MATERIAL	HEAD DETAIL	JAMB DETAIL	HARDWARE SET	REMARKS					
401	3' - 0"	8' - 0"	В	WD	F1	HM	2/A3.00	2/A3.00	4	PROVIDE CARD READER					
402	3' - 0"	8' - 0"	А	GLASS	-	-	5/A3.00	6/A3.00	1	PROVIDE CARD READER					
403	3' - 0"	8' - 0"	A	GLASS	-	-	5/A3.00	6/A3.00	1	PROVIDE CARD READER					
404	3' - 0"	8' - 0" o' 0"	B	WD	F1	HM	2/A3.00	2/A3.00	2						
405 406	3 - 0 3' - 0"	0 - U 8' - 0"	B	WD	F1										
407	3' - 0"	8' - 0"	B	WD	F1	HM	2/A3.00	2/A3.00	2		• •				
408	3' - 0"	8' - 0"	B	WD	F1	HM	2/A3.00	2/A3.00	2						
409	3' - 0"	8' - 0"	В	WD	F1	HM	2/A3.00	2/A3.00	5						
410	3' - 0"	8' - 0"	В	WD	F1	HM	2/A3.00	2/A3.00	2						
411	3' - 0"	8' - 0"	В	WD	F1	HM	2/A3.00	2/A3.00	2		•				
412	3' - 0"	8' - 0"	B	WD	F1	HM	2/A3.00	2/A3.00	2						
413	3' - 0"	8' - 0"	B	WD	F1	HM	2/A3.00	2/A3.00	2						
414	3' - 0" 3' - 0"	8' - 0" 8' 0"	B	WD	FI	HM	Z/A3.00	2/A3.00	4	PROVIDE CARD READER					
	<u>NOTES:</u> 1. COORD	INATE ALL SE	CURITY E	QUIPMENT W/ TE	ENANT VEN	IDOR IN DOORS	, AND SCHEDULE REM	MARKS. PROVIDE POW	VER AS REQUIRED.		CT INNOVATIONS				
	4. ACCESS READEF SYSTEM 5. ALL HAP	S CONTROL S R. PROXIMITY A. RDWARE MUS	YSTEM TO READER	O RELEASE MAGI WILL RELEASE M RM TO BUILDING	LOCK. IMMI IAGLOCK A	EDIATE EGRESS	S ALWAYS ALLOWED. ESS. MAGLOCK SHAL	BY PUSH TO EXIT BUT L RELEASE UPON AC	TON/DOOR SENSOR. A	CCESS BY PROXIMITY AND SMOKE ALARM RER, KEYED TO MASTER.	CT INNOVATIONS – COLT BUILDING 120 Huyshope Ave - 4th Floor Hartford, CT 06106				
1	ENTRY GLA RTS88 X SIN PROVIDE SI PULLS: 2 EL MAGLOCK: 3 CARD READ (SEE NOTE - SET PATCH PIVOT OFFICE DOO LOCKSET: S HINGES: 2 F SILENCERS DOOR STOF	SS DOORS: IGLE ACTING NGLE POINT F MES G561-01- SECURITRON IOR: COORDIN 4) FITTINGS: UN DRS: CHLAGE ND1 2AIRS IVES 3P 2 ROCKWOOE	X INTEGR HOLD OPE 001 (5' - 0 DM62 SEF NATE WITH IIVERSAL 2 0S ATH 62 B1 631 (M/ FANDARD D DOME S	AL STOP N NIES 630 SECURITY VEN TOP AND BOTT (MATTE BLACK) TOP	DOR OM - )	<ul> <li>GLASS DOC CONCEALE INTEGRAL S PULLS: ELM FLOOR STC</li> <li>SERVER RC LOCKSET: S CLOSER: S/ CARD REAL VENDOR HINGES: 2 F SILENCERS DOOR STOI</li> </ul>	ORS: D CLOSER: DORMA R STOP EN / HOLD OPEN JES G561-01-001 (5'-0") OP: ROCKWOOD 441 62 OOM AND ENTRY DOC SCHLAGE ND80PD ATH STRIKE: HES SERIES 1 ARGENT 1431-P DER: CARD READER C PAIRS IVES 3PB1 630 : BUILDING STANDARI P: ROCKWOOD DOME	T588 X SINGLE ACTING 55 25 DRS: 1 626 006 OORD. W/ SECURITY D STOP	5 STORAGE R STOREROOI HINGES: 2 P CLOSER: CC NON-PUBLIC FLOOR STO SILENCERS:	DOM DOORS: A SET: CORBIN RUSSWIN CL3357 X AZD 626 AIRS IVES 3PB1 630 RBIN RUSSWIN DC5000 SERIES X MOUNT ON SIDE 689 P: ROCKWOOD 441 626 BUILDING STANDARD	CONSULTANTS				
DOC	<u>dr ha</u>	<u>RDW</u>	<u>ARE</u>	<u>NOTES</u>					1		 ■ KEY PLAN				
	<b>к</b> иста (		INC							ALIGN CEILINGS WITH FRAME EZY JAMB FRAME					

- SCREW FASTNERS @ PERFORATED STEEL STRIP SPACKLE FRAME SMOOTH TO GYP, SURFACE PER MANUFACTURER'S RECOMMENDATIONS PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN GYPSUM BOARD AS SCHEDULED IN CHECKED PARTITION TYPES ALIGN SCALE 2 (18) GAUGE MTL STUDS, AT JAMB (REPLACE STUDS WITH METAL RUNNER FILE REFERENCE AT HEAD) - ALIGN DOOR PLANE WITH WALL HISTORY OF SUBMISSIONS - SCHEDULED DOOR No. Date  $6 \frac{\text{GWB OPN'G @ GLASS DOORS (HEAD SIM.)}}{\text{SCALE: } 3" = 1'-0"} 2 \frac{\text{GALVANNEAL JAMB DETAIL (HEAD SIM.)}}{\text{SCALE: } 3" = 1'-0"}$ 



PLASTIC LAMINATE CLAD 3/4" PLYWOOD PANELS ON Z-CLIPS

MOUNTED ON 3/4" PLYWOOD **RE FINISH SCHEDULE** 

- 3/4" PLYWOOD — 2 1/2" METAL STUD FRAMING

### **BID SET**

SHEET TITLE

AMENTA EMMA

ARCHITECTS

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DOOR AND WINDOW SCHEDULES, DOOR DETAILS



19039

Author

Checker

As indicated

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GATEWAY_CENTRAL_2019_nnm.rvt

Descriptior

**INNOVATIONS - COLT** 

12.13.2019





	GENERAL REFLECTED CEILING PLAN NOTES
1	SCHEDULED CEILING HEIGHT SHALL BE MAINTAINED. EXISTING HVAC AND PLUMBING S SHALL BE MODIFIED AS REQUIRED TO MEET CEILING HEIGHTS.
2	ALL NEW OR RELOCATED SPRINKLER HEADS, RECESSED CAN LIGHT FIXTURES, ETC. SI RELOCATED WITHIN CENTER OF 2X2 OR 2X4 CEILING TILE UNLESS OTHERWISE NOTED
3	ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL WIRING AB
4	ALL CABLES MUST BE SUSPENDED OFF THE LAY-IN CEILING
5	CONTRACTOR TO NOTIFY ARCHITECT IF ANY DISCREPANCIES EXIST BETWEEN ARCHIT RCP AND ELECTRICAL WIRING PLAN.
6	WHERE NEW OR EXISTING CEILING TILES HAVE A TEGULAR EDGE, KERF ALL CUT CEILII TILES THAT PASS OVER PARTITIONS TO MATCH EXISTING EDGE DESIGN.
7	DESIGN SUSPENDED CEILING FRAMING SYSTEMS TO RESIST A LATERAL % OF THE WEI CEILING ASSEMBLY AND ANY FORCE OF 20 LOADS TRIBUTARY TO THE SYSTEM. USE A CEILING WEIGHT OF 5 POUNDS PER SQUARE FOOT TO DETERMINE THE LATERAL FORCE
8	WHERE CEILING LOADS DO NO EXCEED 5 POUNDS PER SQUARE FOOT AND WHERE PAI ARE NOT CONNECTED TO THE CEILING SYSTEM, THE FOLLOWING BRACING METHODS EMPLOYED:
	A. PROVIDE LATERAL SUPPORT BY FOUR WIRES OF MINIMUM NO. 12 GAUGE SPLAYED DIRECTIONS 90 DEGRESS APART, AND CONNECTED TO THE MAIN RUNNER WITHIN 2" O CROSS RUNN AND TO THE STRUCTURE ABOVE AT AN ANGLE NOT EXCEEDING 45 DEGR THE PLANE OF THE CEILING. PROVIDE THESE LATERAL SUPPORT POINTS 12 FEET ON O EACH DIRECTION, WITH THE FIRST POINT WITHIN 4' FROM EACH WALL.
	B. ALLOW FOR LATERAL MOVEMENT OF THE SYSTEM. ATTACH MAIN RUNNERS AND C RUNNERS AT TWO ADJACENT WALLS; MAINTAIN CLEARANCE BETWEEN THE WALL AND RUNNERS AT THE OTHER TWO WALLS.
	C. PROVIDE VERTICAL SUPPORT AS REQUIRED IN BUILDING CODES. IN ADDITION, VER SUPPORT ENDS OF RUNNERS WITH 8" OF DISCONTINUITIES SUCH AS MAY OCCUR WHE CEILING IS INTERRUPTED BY A WALL.
	D. SUPPORT LIGHT FIXTURES AND AIR DIFFUSERS DIRECTLY TO THE STRUCTURE ABO
9	CEILING HEIGHT SHALL BE 8'-0" A.F.F., U.O.N.
10	ALL CEILINGS SHALL BE CENTERED ON ROOMS, U.O.N.
11	ALL ACOUSTICAL CEILINGS SHALL BE TYPE ACT-1, PER THE FINISH SCHEDULE U.O.N.
12	EXISTING CEILING STRUCTURE AND BRICK WALLS SCHEDULED TO BE EXPOSED SHALL WITH A WHITEWASH. ARCHITECT TO APPROVE LEVEL OF WHITEWASH INTENSITY.
13	A SHOP DRAWING SHALL BE PROVIDED FOR THE LIGHTING FIXTURE LAYOUTS. DIMENS PROVIDED ON THE PLANS REPRESENT THE DESIGN INTENT AND WILL BE REVIEWED AF CONTRACTOR HAS VERIFIED THE FIFI D CONDITIONS.

NOTE: SEE ELECTRICAL DRAWINGS FOR FIXTURE TYPES AND WIRING

FIXTURE

SENSOR,

CEILING GRID CLIP MOUNTED LINEAR LED

DIRECT / INDIRECT PENDANT MOUNTED LED

PENDANT MOUNTED FIXTURES, REFER TO

LIGHTING FIXTURE SCHEDULE FOR TYPE

LIGHT SWITCH - CEILING MOUNTED OCCUPANCY

LIGHT SWITCH - THREE WAY - CEILING MOUNTED

RECESSED LED DOWNLIGHT

UNDER CABINET LED LIGHT FIXTURE

OCCUPANCY SENSOR,

LED EXIT SIGN, CEILING MOUNTED

0 0

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![](_page_7_Figure_4.jpeg)

![](_page_7_Figure_5.jpeg)

![](_page_8_Figure_0.jpeg)

9 TYP SECTION ABOVE REFRIGERATOR SCALE: 1" = 1'-0"

1X WOOD BLOCKING -

![](_page_8_Figure_2.jpeg)

![](_page_8_Figure_3.jpeg)

MOUNTING OF CABINETRY, COUNTERS, ETC. TYP

NOTE: TRADE CONTRACTOR TO PROVIDE FIRE TREATED WOOD BLOCKING AS REQUIRED FOR THE

# AMENTA EMMA

PAINT	
PT-1	GENERAL WALL PAINT SHERWIN WILLIAMS COLOR: HIGH REFLECTIVE WHITE SW 7757 FINISH: MATTE
PT-1A	SEMI GLOSS FOR DOOR FRAMES SHERWIN WILLIAMS COLOR: HIGH REFLECTIVE WHITE SW 7757 FINISH: SEMI GLOSS
PT-2	ACCENT WALL PAINT SHERWIN WILLIAMS COLOR: IRON ORE SW 7069 FINISH: MATTE
PT-2A	SEMI GLOSS FOR DOOR FRAMES SHERWIN WILLIAMS COLOR: IRON ORE SW 7069 FINISH: SEMI GLOSS
PT-3	ACCENT WALL PAINT SHERWIN WILLIAMS COLOR: GREAT FALLS SW 6495 FINISH: MATTE
PT-4	WHITE WASH PAINT FOR BRICK Sherwin Williams Color: TBD Finish: TBD
PT-5	ACCENT WALL PAINT SHERWIN WILLIAMS COLOR: ZIRCON SW 7667 FINISH: MATTE

/13/20 Copy

#### FINISH SCHEDULE

PROVIDE STRAIGHT BASE @ ALL LOCATIONS						
RB-1	MANUFACTURER: JOHNSONITE STYLE: 4" RUBBER BASE, 120' CONTINUOUS ROLL COLOR: 50 WHITE W					
RB-2	MANUFACTURER: JOHNSONITE STYLE: 4" RUBBER BASE, 120' CONTINUOUS ROLL COLOR: TA4 GATEWAY WG	_				
RB-3	MANUFACTURER: JOHNSONITE STYLE: 4" RUBBER BASE, 120' CONTINUOUS ROLL COLOR: 293 PEACOCK	_				
RB-4	MANUFACTURER: JOHNSONITE STYLE: 4" RUBBER BASE, 120' CONTINUOUS ROLL COLOR: TB3 DOVER CG					
WB-1	4" WOOD BASE PAINTED TO MATCH WALL					
WB-2	4" WOOD BASE TO MATCH LAMINATE PANEL	-				
WALL T	ILE					
WT-1	MANUFACTURER: CREATIVE MATERIALS CORP. PATTERN: BYTE, GLOSSY	_				

BASE

### COLOR: TEAL SOLID SURFACE

SS-2 MANUFACTURER: CAESARSTONE STYLE: QUARTZ COLOR: 4120 RAVEN

#### LAMINATE CARPET PL-1 MANUFACTURER: FORMICA INFINITI CPT-1 MANUFACTURER: TANDUS CENTIVA COLOR: COLORCORE2 909C-AN BLACK STYLE: GEOKNIT 10887 COLOR: OCEAN ISLE 42718 INSTALLATION: TILE PL-2 MANUFACTURER: TREEFROG COLOR: TEAK GROOVE 60816 MANUFACTURER: BENTLEY MILLS CPT-2 STYLE: OUTLIER 80U23 WINDOW TREATMENTS COLOR: PERIMETER 801681 INSTALLATION: TILE WS-1 MANUFACTURER: MECHOSHADE STYLE: TBD ACOUSTICAL CEILING ASSEMBLY COORD. W/ OWNER ACT-1 MANUFACTURER: ARMSTRONG TILE: ULTIMA TEGULAR METAL GRID: SUPRAFINE 9/16" EXPOSED TEE MTL-1 MANUFACTURER: MOZ DESIGNS SIZE: 2'X4' STYLE: LASER CUT ALUMINUM COLOR: WHITE INSTALLATION PATTERN: ASHLAR PATTERN: 3/16" DIA PERFORATIONS 5/16" STG. CTRS. COLOR: BLACK SAND ACT-2 MANUFACTURER: ARMSTRONG TILE: CALLA TEGULAR TILE GRID: SUPRAFINE 9/16" EXPOSED TEE, BLACK SIZE: 2'X4' MANUFACTURER: FLORIDATILE T-1 COLOR: BLACK STYLE: THINNER- AVENTIS COLOR: TITANIUM AT35

#### VCT

VCT-1 MANUFACTURER: ARMSTRONG SDT STYLE: EXCELON SDT SIZE: 12"X12" COLOR: ARMOR GRAY 51951

SIZE: 39"X39"

![](_page_9_Figure_8.jpeg)

#### 

**13** TILE TO CARPET TRANSITION SCALE: 12" = 1'-0"

### GENERAL FINISH NOTES

SCHEDULED CARPET

LEVELASTIC AS REQUIRED TO MATCH HEIGHTS

SCHLUTER SCHIENE ALUMINUM TRANSITION ANGLE

SCHEDULED TILE FLOORING

![](_page_9_Picture_26.jpeg)

- FLOOR SLAB

![](_page_9_Picture_28.jpeg)

9 4TH FLOOR - FINISH PLAN SCALE: 1/8" = 1'-0"

![](_page_9_Figure_30.jpeg)

### AMENTA EMMA ARCHITECTS

### CT INNOVATIONS

#### CT INNOVATIONS - COLT BUILDING 120 Huyshope Ave - 4th Floor Hartford, CT 06106

#### CONSULTANTS

KEY PLAN

PROJECT DATA PROJECT NUMBER 19039 CURRENT SUBMISSION DATE 12.13.2019 DRAWN Author CHECKED Checker SCALE As indicated FILE REFERENCE C:\Users\nnm\Documents\19039_CT INNOVATIONS - COLT GATEWAY_CENTRAL_2019_nnm.rvt HISTORY OF SUBMISSIONS No. Date Description **BID SET** 

SHEET TITLE

FINISH PLAN AND SCHEDULE, FLOORING DETAILS

![](_page_9_Picture_40.jpeg)

7	APPL	IANCE SCHEDULE
	SCALE:	1 1/2" = 1'-0"

EQUIP. TAG	ITEM	MANUFACTURER	MODEL#	SIZE WXHXD	FINISH
REF-1	REFRIGERATOR	BEKO	BBBF3019IMWECF	29 3/4" X 83 1/2" X 24"	GRAPHITE
DW-1	DISHWASHER	ASKO	DB1663THS	23 7/8" X 32 3/4"- 34 3/4" X 22"	STAINLESS STEE
MW-1	MICROWAVE	PANASONIC	NN-SD681S	20 11/16" X 12 1/4" X 16 5/16"	STAINLESS STEE

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12/13/2 © Cop}

INSTALL OUTLETS ON OPPOSITE SIDES OF PARTITIONS IN SEPARATE STUD CAVITIES. DO NOT INSTALL BACK-TO-BACK. PROVIDE MATCHING COVER PLATES, RECEPTACLES AND RELATED ITEMS. REPLACE EXISTING NON-MATCHING AS REQUIRED. PROVIDE ONE-PIECE TYPE GANG COVER PLATES, UNLESS OTHERWISE NOTED. ALL LIGHT SWITCHES SHALL BE LEVITON 5601-W DECORA AC QUIET ROCKER SWITCHES COLOR WHITE UNLESS OTHERWISE NOTED. ALL EXISTING SWITCHES SHALL BE RETROFITTED TO MATCH NEW SPECIFICATION. 2 ALL RECEPTACLES SHALL BE LEVITON 5325-W DECORA AC RECEPTACLES COLOR WHITE UNLESS OTHERWISE NOTED. ALL EXISTING RECEPTACLES SHALL BE RETROFITTED TO MATCH NEW SPECIFICATION. IDENTIFY DEDICATED OR ISOLATED GROUND ELECTRICAL OUTLETS WITH A RED DOT. 14 COORDINATE WITH CABLE VENDOR TO LOCATE CABLE TRAYS ABOVE CEILING AS REQUIRED.

- FINISHED FLOOR. SEE MOUNTING HEIGHTS INFORMATION. INDICATED DIMENSIONS ARE TO THE CENTER LINE OF OUTLET OR SWITCH, CLUSTER OF OUTLETS OR SWITCHES, UNLESS OTHERWISE NOTED.
- OCCUR TOGETHER, INSTALL BOTH ALIGNED HORIZONTALLY WITH CENTER LINE AT +3'-2" ABOVE
- MANUFACTURER TO ENSURE PROPER FIT AND FUNCTION. VERIFY MOUNTING REQUIREMENTS OF ELECTRICAL, TELEPHONE AND OTHER EQUIPMENT. GANG ADJACENT LIGHT SWITCHES AND COVER WITH A SINGLE PLATE. MOUNT STANDARD WALL OUTLETS, SWITCHES AND THERMOSTATS AT HEIGHTS REQUIRED BY ANSI GUIDELINES, UNLESS OTHERWISE NOTED. WHEN THERMOSTATS AND LIGHT SWITCH
- VENDOR TO CHECK AND VERIFY ALL MEASUREMENTS AND CONDITIONS IN THE FIELD PRIOR TO FINALIZING THE FURNITURE LAYOUT. VERIFY EQUIPMENT SPECIFICATIONS, POWER AND INSTALLATION REQUIREMENTS WITH
- VENDORS. FURNITURE SHOWN FOR DESIGN INTENT ONLY. COORDINATE WITH FURNITURE VENDOR ON FINAL FURNITURE LAYOUT AND ALL REQUIREMENTS PRIOR TO CONSTRUCTION. FURNITURE VENDOR SHALL BE RESPONSIBLE TO FURNISH AND HALL INSTALLED ALL FURNITURE, MOVABLE PARTITIONS & WORK STATIONS, FILE CABINETS, ETC. IT SHALL BE THE RESPONSIBILITY OF THE
- PRIOR TO CORING OR TRENCHING SLAB, REVIEW LOCATIONS WITH ARCHITECT AND COORDINATE LOCATIONS WITH OWNER. REVIEW ACCEPTABLE TIMES OF DAY TO EXECUTE THE WORK WITH THE OWNER, REGULAR TIME OR OVERTIME; INCLUDE IN THE BASE BID. COORDINATE INSTALLATION OF TELECOMMUNICATIONS, DATA AND SECURITY SYSTEMS WITH
- **GENERAL POWER PLAN NOTES**

15 COORDINATE ELECTRICAL REQUIREMENTS FOR ALL DOORS REQUIRING CARD READER ACCESS, OR THAT HAVE OTHER ELECTRICAL HARDWARE REQUIREMENTS. COORDINATE WITH SECURITY

### 4TH FLOOR – FURNITURE AND FLOOR CORE

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

![](_page_10_Figure_22.jpeg)

### AMENTA EMMA ARCHITECTS

### **CT INNOVATIONS**

#### CT INNOVATIONS - COLT BUILDING 120 Huyshope Ave - 4th Floor Hartford, CT 06106

#### CONSULTANTS

KEY PLAN

![](_page_10_Picture_29.jpeg)

![](_page_10_Picture_30.jpeg)

FURNITURE AND FLOOR CORE PLANS

#### SECTION 007000 GENERAL CONDITIONS

- 1. Conform work to the Contract Documents which include the Owner/Contractor Agreement, the Drawings, and all
- Addenda and Modifications issued by the Architect.
- 2. The General Conditions of the Contract is the American Institute of Architects (AIA), document A201, "General Conditions of the Contract for Construction," current edition, which is made part of the contract documents as if bound herein and shall be adhered to except as modified below. The Architect will provide a single copy of document upon 1.9 SPECIFICATION FORMATS AND CONVENTIONS reauest
- 3. G.C. shall furnish information on the Site Supervisor, Fire Guard and provde the Property Manager with all applicable licenses.

SECTION 007300 SUPPLEMENTARY CONDITIONS

- 1. No substitutions of materials or products will be made without approval of the Architect. Accompany substitution request with complete technical data and list changes this substitution would cause, including time, cost. etc.
- 2. As required by drawings or within specifications, shop drawings, product data, and samples will be submitted in triplicate for all products and materials prior to fabrication or installation of the work. All work shall be done in accordance with governing and applicable codes.
- 3. All work shall be done in accordance with manufacturers written recommendations and recognized acceptable standards of good practice.
- 4. Provide one (1) year warranty for material and workmanship except where more stringent requirements are asked for.
- 5. In case of an inconsistency between the drawings and specifications, the better quality or greater quantity of work shall be provided in accordance with the architect's interpretation.
- SECTION 011000 SUMMARY

#### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section. 1.2 SUMMARY
- A. This Section includes the following:
- Work covered by the Contract Documents.
- Work under other contracts. Owner-furnished products.
- Use of premises.
- Coordination with Occupants
- Requirements and Procedures Specification formats and conventions.
- Related Sections include the following:
- Division 1 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.
- 1.3 WORK COVERED BY CONTRACT DOCUMENTS
- A. Project Identification: CT INNOVATIONS COLT GATEWAY Project Location: <u>120 HUYSHOPE AVE - 4TH FLOOR</u>, HARTFORD, CT 06106
   B. Tenant: <u>CT INNOVATIONS</u>
- Architect: Amenta/Emma Architects, P.C.
- D. The Work consists all labor, material, and equipment required for the performance of all work shown within the contract documents and described within the specifications.
- 1.4 WORK UNDER SEPARATE CONTRACTS
- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate
- the Work of this Contract with work performed under separate contracts. B. Concurrent Work: Owner will award separate contract(s) for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.
- 1. Food Equipment Service Installation: Owner and owner's kitchen vendor shall be responsible for installation of all food service related installations. 1.6 USE OF PREMISES
- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other
- contractors on portions of Project. B. General: Contractor shall have limited use of adjacent tenant spaces for construction operations as indicated on Contract Documents, to be issued by The Building Owner.
- Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
- Limits: Confine constructions operations to areas prescribed by the Building Owner. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, other building tenants, and emergency vehicles at all times. Do not
- use these areas for parking or storage of materials. a. Schedule deliveries to minimize use of driveways and entrances.
- Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site. D. Owner Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to
- place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work. 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work
- to be occupied before Owner occupancy. Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.
- Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.
- On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.
- 1.7 COORDINATION WITH OCCUPANTS
- A. Partial Owner Occupancy: Building Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Building Owner during construction operations to minimize conflicts and facilitate Building Owner and adjacent tenant usage. Perform the Work so as not to interfere with Building Owner's and adjacent tenant operations. Maintain existing exits unless otherwise indicated.
- 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
- Provide not less than 72 hours' notice to Building Owner of activities that will affect the Building Owner's or adjacent tenant operations.
- 3. If shutdown of risers and mains for electrical, HVAC, sprinkler, and/or plumbing work is required, such work shall be supervised by the Building Owner's representative at the Contractor's expense. No work shall be performed in Base Building mechanical rooms without the Building Owner's approval and under the Building Owner's supervision at the Contractor's expense. Notice shall be given to the Building Owner no less that 48 hours prior to any shutdowns. Work in Adjacent Tenant Areas: This scope of work contains work that will require access to adjacent
- tenant spaces This work can only be done after normal business hours and at the discretion of the Building Owner. The Building Owner must be notified 72 hours in advance to arrange for access. A
- building representative must be present while the work is being performed. Such supervision shall be at the Contractor's sole expense. The contractor is responsible for cleaning of the space and shall be required to pay any additional
- charge that is imposed by the building's cleaning contractor. Contractor shall protect all existing adjacent Tenant or Building finishes (carpet, vinyl, doors, frames, ceilings, etc.) installed prior to commencement of their work. All adjacent Tenant or
- Building spaces will be maintained (cleaned, vacuumed, dusted, etc.) daily by the Landlord at the Contractor's expense. Contractor shall avoid the disturbance of other tenants. All noises that translate to other floors
- shall be prohibited during business hours.
- 1.8 REQUIREMENTS AND PROCEDURES
- A. Contractor shall have a Superintendent or Foreman on the Premises at all times. B. Contractor shall police the job at all times, continually keeping the Premises orderly and removing rubbish from the Premises. No storage of rubbish is to be permitted.
- C. Prior to construction, Contractor shall install filters at mechanical units and provide new filters after substantial completion.
- All equipment and installations must be equal to the standards of the building. Any deviation from Base Building Standards will be permitted only if indicated or specified on the plans and specifications and approved by the Building Owner.
- E. Contractor shall submit final "as-built" drawing sets showing all items of the Construction in full detail as
- 1. 2 copies to the Building Owner 1 copy to the Owner
- 1 copy to the Architect
- All work, other than work required within adajacent tenant spaces shall be completed during normal working hours (8:00 a.m. to 4:30 p.m.). If any other time is needed to perform work, then permission at least 24 hours in advance shall be required from the Building Owner. Contractor shall supply to the Building Owner the names of subcontractors, their employees, when they are expected to arrive in the building to perform work, time of material delivery, and what material is to be delivered.
- Employees of Contractor and Subcontractors shall use the facilities assigned to them by the Building Owner and no other unit within the Building. It will be the responsibility of the Contractor to see that the area is kept clean. H. Comply will manufacturer's instructions and recommendations to the extent that printed information is
- more detailed or stringent than the requirements contained directly within the contract documents.

SECTION 01100 SUMMARY (CONT'D) SECTION 012500 SUBSTITUTION PROCEDURES (CONT'D)

g. Scheduled date of fabrication.

- Job pricing must include complete construction clean-up.
- A. Specification Format: The Specifications are organized into Divisions and Sections using the 16-
- format and CSI/CSC's "MasterFormat" numbering system. 1. Section Identification: The Specifications use Section numbers and titles to help cross-refer
- in the Contract Documents. Sections in the Project Manual are in numeric sequence; however the sequence is incomplete because all available Section numbers are not used. Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the
- Specifications. B. Specification Content: The Specifications use certain conventions for the style of language and t intended meaning of certain terms, words, and phrases when used in particular situations. Thes conventions are as follows:
  - Abbreviated Language: Language used in the Specifications and other Contract Documents abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but stated, shall be inferred as the sense requires. Singular words shall be interpreted as plura plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
- 2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor.
- Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity describe responsibilities that must be fulfilled indirectly by Contractor or by others when so r a. The words "shall," "shall be," or "shall comply with," depending on the context, are impl
- where a colon (:) is used within a sentence or phrase. PART 2 - PRODUCTS (Not Used)
- PART 3 EXECUTION (Not Used)
- SECTION 012100 ALLOWANCES
- PART 1 GENERAL
- 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Condition Division 1 Specification Sections, apply to this Section. 1.2 SUMMARY
- A. This Section includes administrative and procedural requirements governing the following: Cost allowances.
- 1.3 SUBMITTALS A. Adjustments to the specified allowance quantity shall be in the form specified for Change Orders. B. Coordinate and process submittals for allowance items in same manner as for other portions of the
- 1.4 COORDINATION A. Coordinate allowance items with other portions of the Work. B. Items under allowance shall be selected by owner and architect and ordered by the contractor as
- 1.5 CASH ALLOWANCES
- A. Allowance shall include cost to Contractor of specific products and materials and shall include del unloading at project site, handling at project site (including uncrating and storage), labor (installing
- finishing), overhead and profit, applicable taxes, and any other expenses required to complete ins B. Should the purchase of any allowance item be less than the allowance, the owner shall receive a the difference. If the purchase price is greater, the contractor shall receive an extra to cover the d In case of an extra, no additions will be allowed for overhead and profit, handling, storage, or insta
- PART 2 PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installation ensure that each allowance item is completely integrated and interfaced with related work. B. Review condition of each column in the field with Architect to determine, which columns are to be

SECTION 012300 ALTERNATES

- SECTION 012500 SUBSTITUTION PROCEDURES
- PART 1 GENERAL

1.4 ACTION SUBMITTALS

- 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Conditions other Division 01 Specification Sections, apply to this Section.
- 1.2 SUMMARY A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:

1.5 QUALITY ASSURANCE

1.6 PROCEDURES

- 1. Division 01 Section "Allowances" for products selected under an allowance.
- Division 01 Section "Alternates" for products selected under an alternate.
- 3. Divisions 02 through 33 Sections for specific requirements and limitations for substitutions. 1.3 DEFINITIONS A. Substitutions: Changes in products, materials, equipment, and methods of construction from those
- by the Contract Documents and proposed by Contractor. 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed I

Maximonahin aboli he of the highest quality and shall be performed by superispand mechanics skilled in		
the applicable trade. Work shall be installed rigid, true, level, plumb, straight, and in alignment, fastened	2.1 SUBSTITUTIONS	<ul> <li>A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Architect f</li> </ul>
possible or indicated.	not later than 15 days prior to time required for preparation and review of related submittals.	<ol> <li>Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in propering Shep Drawings and Project record drawings.</li> </ol>
<ol> <li>J. Sob pricing must include complete construction clean-up.</li> <li>SPECIFICATION FORMATS AND CONVENTIONS</li> <li>A. Specification Formati. The Specifications are preprinted into Divisions and Sections using the 16 division</li> </ol>	are satisfied. If the following conditions are not satisfied, Architect will return requests without action,	<ul> <li>a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.</li> </ul>
A. Specification Format. The Specifications are organized into Divisions and Sections using the To-division format and CSI/CSC's "MasterFormat" numbering system.	<ul> <li>a. Requested substitution is consistent with the Contract Documents and will produce indicated</li> </ul>	and Project record drawings and shall not be used otherwise without written consent from the Architect
in the Contract Documents. Sections in the Project Manual are in numeric sequence; however,	<ul> <li>b. Requested substitution provides sustainable design characteristics that specified product</li> </ul>	<ul> <li>b. Digital Drawing Software Program: The Contract Drawings are available in Adobe PDF format.</li> <li>The following divided data files with a formic had for each generative divided for each generative dinter divided for each generative divided for each generative</li></ul>
<ol> <li>Division 1: Sections in Division 1 govern the execution of the Work of all Sections in the</li> </ol>	c. Substitution request is fully documented and properly submitted.	<ul> <li>c. The following digital data files will by furnished for each appropriate discipline:</li> <li>1) 1 PDF set of the Contract Documents.</li> </ul>
B. Specification Content: The Specifications use certain conventions for the style of language and the	<ul> <li>Requested substitution will not adversely affect Contractor's construction schedule.</li> <li>Requested substitution has received necessary approvals of authorities having jurisdiction.</li> </ul>	<ul> <li>B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.</li> <li>1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities.</li> </ul>
intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:	<ul> <li>Requested substitution is compatible with other portions of the Work.</li> <li>Requested substitution has been coordinated with other portions of the Work.</li> </ul>	<ul><li>that require sequential activity.</li><li>Submit all submittal items required for each Specification Section concurrently unless partial submittals for</li></ul>
<ol> <li>Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not</li> </ol>	<ul> <li>h. Requested substitution provides specified warranty.</li> <li>i. If requested substitution involves more than one contractor, requested substitution has been</li> </ul>	<ol> <li>portions of the Work are indicated on approved submittal schedule.</li> <li>Submit action submittals and informational submittals required by the same Specification Section as separate</li> </ol>
stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract	coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.	<ol> <li>packages under separate transmittals.</li> <li>Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be</li> </ol>
Documents indicates. 2. Imperative mood and streamlined language are generally used in the Specifications.	B. Substitutions for Convenience: Not allowed. PART 3 - EXECUTION (Not Used)	<ul> <li>delayed because of need to review submittals concurrently for coordination.</li> <li>a. Architect reserves the right to withhold action on a submittal requiring coordination with other submitta</li> </ul>
Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to	SECTION 012600 CONTRACT MODIFICATION PROCEDURES	until related submittals are received. C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review sh
describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted. a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied	PART 1 - GENERAI	commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
where a colon (:) is used within a sentence or phrase. ART 2 - PRODUCTS (Not Used)	1.1 RELATED DOCUMENTS A Drawings and general provisions of the Contract, including General and Supplementary Conditions	<ol> <li>Initial Review: Allow 5 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must</li> </ol>
ART 3 - EXECUTION (Not Used)	and other Division 1 Specification Sections, apply to this Section.	delayed for coordination. 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
ECTION 012100 ALLOWANCES	A. This Section specifies administrative and procedural requirements for handling and processing	<ol> <li>Resubmittal Review: Allow 5 days for review of each resubmittal.</li> <li>Sequential Review: Where sequential review of submittals by Architect's consultants. Owner, or other participant.</li> </ol>
ART 1 - GENERAL	<ul> <li>B. See Division 1 "Section 01210 - Allowances" for procedural requirements for handling and processing allowances</li> </ul>	indicated, allow 10 days for initial review of each submittal. 5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitte
RELATED DOCUMENTS     A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and     Drawings and general provisions of the Contract, including General and Supplementary Conditions and	1.3 MINOR CHANGES IN THE WORK A Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving	simultaneously to Architect and to Architect's consultants, allow 7 days for review of each submittal. Subm will be returned to Architect before being returned to Contractor.
Division 1 Specification Sections, apply to this Section. 2 SUMMARY	adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's	<ul> <li>D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.</li> <li>1 Indicate name of firm or entity that prepared each submittal on label or title block</li> </ul>
<ul> <li>A. This Section includes administrative and procedural requirements governing the following: <u>1. Cost allowances.</u></li> </ul>	1.4 PROPOSAL REQUESTS	<ol> <li>Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect</li> </ol>
<ul> <li>SUBMITTALS</li> <li>A. Adjustments to the specified allowance quantity shall be in the form specified for Change Orders.</li> </ul>	A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the	<ol> <li>Include the following information for processing and recording action taken:</li> <li>a Project name</li> </ol>
<ul> <li>B. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.</li> <li>4 COORDINATION</li> </ul>	<ol> <li>Proposal Requests issued by Architect are for information only. Do not consider them</li> </ol>	b. Date.
<ul> <li>A. Coordinate allowance items with other portions of the Work.</li> <li>B. Items under allowance shall be selected by owner and architect and ordered by the contractor as directed.</li> </ul>	<ol> <li>Instructions either to stop work in progress or to execute the proposed change.</li> <li>Within 2 weeks after receipt of Proposal Request, submit a quotation estimating cost</li> </ol>	d. Name of Autometer.
<ul> <li>5 CASH ALLOWANCES</li> <li>A. Allowance shall include cost to Contractor of specific products and materials and shall include delivery,</li> </ul>	adjustments to the Contract Sum and the Contract Time necessary to execute the change. a. Include a list of quantities of products required or eliminated and unit costs, with total	<ul> <li>Name of subcontractor.</li> <li>Name of manufacturer.</li> <li>Submittel number or other unique identifier, including revision identifier.</li> </ul>
unloading at project site, handling at project site (including uncrating and storage), labor (installing and finishing), overhead and profit, applicable taxes, and any other expenses required to complete installation.	amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.	<ul> <li>g. Submittal number of other unique identifier, including revision identifier.</li> <li>1) Submittal number shall use Specification Section number followed by a decimal point and then a</li> </ul>
<ul> <li>B. Should the purchase of any allowance item be less than the allowance, the owner shall receive a credit for the difference. If the purchase price is greater, the contractor shall receive an extra to cover the difference.</li> </ul>	<ul> <li>Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.</li> </ul>	sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after anoth decimal point (e.g., 061000.01.A).
In case of an extra, no additions will be allowed for overhead and profit, handling, storage, or installation.	<ul><li>c. Include costs of labor and supervision directly attributable to the change.</li><li>d. Include an updated Construction Schedule that indicates the effect of the change,</li></ul>	<ul> <li>h. Number and title of appropriate Specification Section.</li> <li>i. Drawing number and detail references, as appropriate.</li> </ul>
ART 2 - PRODUCTS (Not Used)	including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.	<ul><li>j. Location(s) where product is to be installed, as appropriate.</li><li>k. Other necessary identification.</li></ul>
ART 3 - EXECUTION	B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.	<ol> <li>Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect obs noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.</li> </ol>
A. Coordinate materials and their installation for each allowance with related materials and installations to	<ol> <li>Include a statement outlining reasons for the change and the effect of the change on the Work.</li> <li>Provide a complete description of the proposed change. Indicate the effect of the proposed</li> </ol>	<ul> <li>Submit three copies of submittal to concurrent reviewer in addition to specified number of copies to Architect.</li> </ul>
<ul> <li>B. Review condition of each column in the field with Architect to determine, which columns are to be repaired.</li> </ul>	change on the Contract Sum and the Contract Time.	<ol> <li>Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal an handling. Transmit each submittal using a transmittal form. Architect will return without review submittals</li> </ol>
	<ul> <li>purchases and credits to be made. If requested, furnish survey data to substantiate quantities.</li> <li>Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.</li> </ul>	received from sources other than Contractor. a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
r each alternate included in the Contract, coordinate related work and modify surrounding work as required to	<ol> <li>Include costs of labor and supervision directly attributable to the change.</li> <li>Include an updated Contractor's Construction Schedule that indicates the effect of the change.</li> </ol>	1) Project name. 2) Date.
nplete the project in accordance with Contract Documents. The Owner may accept or reject any or all	including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total fleat before requesting an extension of the Centrad Time.	<ul> <li>3) Destination (To:).</li> <li>4) Source (From:).</li> </ul>
m.	<ol> <li>Comply with requirements in Division 1 Section "Product Requirements" if the proposed change</li> <li>comply with requirements of any product or product requirements.</li> </ol>	5) Name and address of Architect. 6) Name of Contractor
	C. Proposal Request Form: Use AIA Document G709 for Proposal Requests.	<ul> <li>7) Name of firm or entity that prepared submittal.</li> <li>8) Names of subcontractor, manufacturer, and supplier.</li> </ul>
	<ul> <li>ALLOWANCES</li> <li>A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the</li> </ul>	<ul> <li>9) Category and type of submittal.</li> <li>10) Submittal purpose and description</li> </ul>
RELATED DOCUMENTS	difference between purchase amount and the allowance, multiplied by final measurement of work-in- place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes,	<ul> <li>10) Submittal purpose and description.</li> <li>11) Specification Section number and title.</li> <li>12) Specification paragraph number or drawing designation and generic name for each of multiple its</li> </ul>
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.	normal product imperfections, and similar margins. 1. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to	<ul> <li>12) Specification paragraph number of drawing designation and generic name for each of multiple its</li> <li>13) Drawing number and detail references, as appropriate.</li> <li>14) Indication of full or partial automitted</li> </ul>
A. Section includes administrative and procedural requirements for substitutions.	unit-cost allowances. 2. Owner reserves the right to establish the quantity of work-in-place by independent quantity	<ul> <li>14) Indication of full of partial submittal.</li> <li>15) Transmittal number, numbered consecutively.</li> <li>16) Submittal and transmittal distribution record.</li> </ul>
<ul> <li>B. Related Requirements:</li> <li>1. Division 01 Section "Allowances" for products selected under an allowance.</li> </ul>	survey, measure, or count. B. Submit claims for increased costs because of a change in scope or nature of the allowance	<ul><li>16) Submittal and transmittal distribution record.</li><li>17) Remarks.</li><li>10) Simular framework (https://www.second.org/10)</li></ul>
<ol> <li>Division 01 Section "Alternates" for products selected under an alternate.</li> <li>Divisions 02 through 33 Sections for specific requirements and limitations for substitutions.</li> </ol>	described in the Contract Documents. Submit claims within 21 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted	E. Options: Identify options requiring selection by Architect.
<ul> <li>DEFINITIONS</li> <li>A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required</li> </ul>	later than 21 days after such authorization. 1. Do not include contractor's or subcontractor's indirect expense in the Change Order cost	F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, rec relevant information, requests for data, revisions other than those requested by Architect on previous submittals
<ul><li>by the Contract Documents and proposed by Contractor.</li><li>1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project</li></ul>	amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.	deviations from requirements in the Contract Documents, including minor variations and limitations. Include sam identification information as related submittal.
conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.	<ol> <li>No change to contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.</li> </ol>	<ul> <li>G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.</li> <li>1. Note date and content of previous submittal.</li> </ul>
<ol><li>Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.</li></ol>	<ul> <li>1.6 CHANGE ORDER PROCEDURES</li> <li>A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of</li> </ul>	<ol> <li>Note date and content of revision in label or title block and clearly indicate extent of revision.</li> <li>Resubmit submittals until they are marked with approval notation from Architect's action stamp.</li> </ol>
ACTION SUBMITTALS A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication	Owner and Contractor on AIA Document G701. B. The Subcontractor's Overhead and Profit Limit for change orders shall be limited to 10% of the cost	<ul> <li>Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribu</li> </ul>
or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.	of work. 1.7 CONSTRUCTION CHANGE DIRECTIVE	on transmittal forms. I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that
<ol> <li>Substitution Request Form: Use CSI Form 13.1A.</li> <li>Documentation: Show compliance with requirements for substitutions and the following, as applicable:</li> </ol>	A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in	marked with approval notation from Architect's action stamp. PART 2 - PRODUCTS
<ul> <li>Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.</li> </ul>	the Work, for subsequent inclusion in a Change Order.	<ul> <li>SUBMITTAL PROCEDURES</li> <li>A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification</li> </ul>
<ul> <li>b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to</li> </ul>	designates method to be followed to determine change in the Contract Sum or the Contract Time	Sections. Types of submittals are indicated in individual Specification Sections. 1. Submit electronic submittals via email as PDF electronic files. Contractor has the option to submit all
accommodate proposed substitution. c. Detailed comparison of significant qualities of proposed substitution with those of the Work	<ul> <li>B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive</li> </ul>	submittals via email or via paper copies. Contractor's submission method shall remain consistent througho the length of the project.
specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design	<ol> <li>After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract</li> </ol>	<ul> <li>Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.</li> </ul>
characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.	PART 2 - PRODUCTS (Not Used) PART 3 - EXECUTION (Not Used)	<ol> <li>Action Submittals: Submit three paper copies of each submittal unless otherwise indicated. Architect will r two copies.</li> </ol>
<ul> <li>Product Data, including drawings and descriptions of products and fabrication and installation procedures.</li> </ul>	SECTION 013300 SUBMITTAL PROCEDURES	a. If submittal requires MEP or IT trades, submit one copy simultaneously to MEP or IT Consultant and copy Architect with 2 copies and transmittal indicating such.
<ul> <li>Samples, where applicable or requested.</li> <li>f. Certificates and qualification data, where applicable or requested.</li> </ul>	PART 1 - GENERAL	<ol> <li>Informational Submittals: Submit three paper copies of each submittal unless otherwise indicated. Archite will not return copies.</li> </ol>
<ul> <li>List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.</li> </ul>	<ul> <li>1.1 RELATED DOCUMENTS</li> <li>A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Divisi</li> </ul>	a. If submittal requires MEP or IT trades, submit one copy simultaneously to MEP or IT Consultant and copy Architect with 2 copies and transmittal indicating such.
<ul> <li>Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated</li> </ul>	01 Specification Sections, apply to this Section. 1.2 SUMMARY	<ol> <li>Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible preparing certification. Certificates and certifications shall be signed by an officer or other individual author</li> </ol>
<ul> <li>Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product</li> </ul>	A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.	to sign documents on behalf of that entity. B Product Data: Collect information into a single submittal for each element of construction and type of product or
or method of construction cannot be provided within the Contract Time, include letter from manufacturer on manufacturer's letterhead, stating date of receipt of purchase order, lack of	<ul> <li>B. Related Requirements:</li> <li>1 Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values</li> </ul>	equipment. 1 If information must be specially prepared for submittal because standard published data are not suitable for
availability, or delays in delivery.	<ol> <li>Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.</li> </ol>	use, submit as Shop Drawings, not as Product Data.
<ul> <li>cost mormation, including a proposal of change, in any, in the contract outl.</li> <li>contractor's certification that proposed substitution complies with requirements in the Contract</li> <li>Documents except as indicated in substitution request is compatible with related materials, and is</li> </ul>	<ol> <li>Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data</li> </ol>	<ol> <li>Include the following information, as applicable:</li> <li>Manufacturer's catalog cuts</li> </ol>
appropriate for applications indicated.	1.3 DEFINITIONS A Action Submittele: Written and graphic information and physical samples that require Architect's responsive action	<ul> <li>b. Manufacturer's product specifications.</li> <li>c. Standard color charte.</li> </ul>
necessary because of failure of proposed substitution to produce indicated results.	Action submittals are those submittals indicated in individual Specification Sections as "action submittals." B Informational Submittals: Written and graphic information and physical samples that do not require Architecte	<ul> <li>d. Statement of compliance with specified referenced standards.</li> <li>e. Testing by recognized testing agency.</li> </ul>
evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within seven days of receipt of a request for substitution.	responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections on "informational submittals."	<ul> <li>f. Application of testing agency labels and seals.</li> <li>a. Notation of coordination requirements.</li> </ul>
of receipt of additional information or documentation, whichever is later.	<ul> <li>C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device independent and display resolution independent fixed levent documents.</li> </ul>	<ul> <li>a. Availability and delivery time information.</li> <li>A. For equipment, include the following in addition to the choice, as applicables.</li> </ul>
<ul> <li>a. Forms of Acceptance: Unange Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.</li> </ul>	1.4 ACTION SUBMITTALS	<ul> <li>a. Wiring diagrams showing factory-installed wiring.</li> <li>b. Printed performance survey</li> </ul>
<ul> <li>Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.</li> </ul>	A. Submittal Schedule. Submittal schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when optibilities dates. Include additional time required for matching sector time.	<ul> <li>c. Operational range diagrams.</li> <li>d. Clearange arguined to other construction if not indicated and an indicated and and an indicated and an indi</li></ul>
A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related	Architect and additional time for handling and reviewing submittals required by those corrections.	<ol> <li>Greatances required to other construction, in not indicated on accompanying Shop Drawings.</li> <li>Submit Product Data concurrent with Samples.</li> <li>Submit Product Data in the following formation</li> </ol>
products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.	Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.	<ul> <li>a. Three paper copies of Product Data unless otherwise indicated. Architect will return two copies.</li> </ul>
A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.	Initial Submittal: Submit concurrently with Contractor's construction schedule. Include all submittals required for duration of construction. List those submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required code because of the submittals required to maintain orderly progress of the Work and those required to maintain orderly progress of the Work and the submittals required to maintain orderly progress of the Work and the submittals required to maintain orderly progress of the Work and the submittals required to maintain orderly progress of the work and the submittals required to maintain orderly progress of the Work and the submittals required to maintain orderly progress of the work and the submittals required to maintain orderly progress of the work and the submittals and the	<ul> <li>D. IT SUDMITTAL INVOLVES MEP OF LL trades, Submit one copy simultaneously to MEP or IT Consultant and copy Architect with two copies and transmittal indicating such.</li> </ul>
	<ol> <li>Format: Arrange the following information in a tabular format:</li> <li>Cohe shifted data for first submitted</li> </ol>	
	<ul><li>a. Scheduled date for first submittal.</li><li>b. Specification Section number and title.</li></ul>	
	<ul><li>c. Submittal category: Action; informational.</li><li>d. Name of subcontractor.</li></ul>	
	<ul> <li>e. Description of the Work covered.</li> <li>f. Scheduled date for Architect's final release or approval.</li> </ul>	_

SECTION 013300 SUBMITTAL PROCEDURES (CONT'D)

Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop ngs on reproductions of the Contract Documents or standard printed data. Preparation: Fully illustrate requirements in the Contract Documents. Include the following nformation, as applicable:	AIVIEINIA   EIVIIVIA ARCHITECT
<ol> <li>Identification of products.</li> <li>Schedules.</li> </ol>	
<ul> <li>Compliance with specified standards.</li> <li>Notation of coordination requirements.</li> </ul>	
<ul> <li>Notation of dimensions established by field measurement.</li> <li>Relationship and attachment to adjoining construction clearly indicated</li> </ul>	
<ul> <li>Seal and signature of professional engineer if specified.</li> </ul>	
sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 24 by 36 inches.	MANNA OF CONVERSION
Submit Shop Drawings in the following format: a. Three opague copies of each submittal. Architect will retain one copy; remainder will be	
returned. If submittal involves MEP or IT Consultant, submit one convisionultaneously to MEP or IT	
Consultant and copy Architect with two copies and transmittal indicating such.	
les: Submit Samples for review of kind, color, pattern, and texture for a check of these cteristics with other elements and for a comparison of these characteristics between submittal and	No. BA19
component as delivered and installed. Transmit Samples that contain multiple, related components such as accessories together in one	MUNUSED ARCH
submittal package.	
<ul> <li>Generic description of Sample.</li> </ul>	
<ol> <li>Sample source.</li> </ol>	
<ol> <li>Number and title of applicable Specification Section.</li> <li>Specification paragraph number and generic name of each item.</li> </ol>	
Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine	
inal acceptance of construction associated with each set.	
property of Contractor.	CIINNOVATIONS
Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same naterial to be used for the Work, cured and finished in manner specified, and physically identical with	
naterial or product proposed for use, and that show full range of color and texture variations	ct innovations – colt
abricated components; small cuts or containers of materials; complete units of repetitively used	
ndependent testing and inspection.	BOILDING
<ol> <li>Number of Samples: Submit two sets of Samples. Architect will retain one Sample set; remainder will be returned.</li> </ol>	120 Hushope
<ol> <li>Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated</li> </ol>	Ave - 4th Floor
<ol> <li>If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at load three sate of paired units that show</li> </ol>	Hartford, CT
approximate limits of variations.	06106
actor's Construction Schedule: Comply with requirements specified in Division 01 Section struction Progress Documentation."	00100
ation for Payment and Schedule of Values: Comply with requirements specified in Division 01 on "Payment Procedures."	
and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with	
out Submittals and Maintenance Material Submittals: Comply with requirements specified in Division	CONSULTANTS
ication Data: Prepare written information that demonstrates capabilities and experience of firm or	
<ul> <li>Include lists of completed projects with project names and addresses, contact information of ects and owners, and other information specified.</li> </ul>	
ng Certificates: Prepare written certification that welding procedures and personnel comply with ements in the Contract Documents. Submit record of Welding Procedure Specification and	
dure Qualification Record on AWS forms. Include names of firms and personnel certified.	
lies with requirements in the Contract Documents and, where required, is authorized by	
facturer for this specific Project. facturer Certificates: Submit written statements on manufacturer's letterhead certifying that	
facturer complies with requirements in the Contract Documents. Include evidence of manufacturing ience where required.	
ct Certificates: Submit written statements on manufacturer's letterhead certifying that product lies with requirements in the Contract Documents.	
ial Certificates: Submit written statements on manufacturer's letterhead certifying that material lice with requirements in the Contract Documents	
ial Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard	KEY PLAN
indicating and interpreting test results of material for compliance with requirements in the Contract nents.	
ct Test Reports: Submit written reports indicating that current product produced by manufacturer lies with requirements in the Contract Documents. Base reports on evaluation of tests performed by	
facturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a ded testing agency.	
n Data: Prepare and submit written and graphic information, including, but not limited to,	
nptions and other performance and design criteria and a summary of loads. Include load diagrams if	
able. Provide name and version of software, if any, used for calculations. Include page numbers.	
TOR'S REVIEW and Informational Submittals: Review each submittal and check for coordination with other Work of	<u>N</u>
ontract and for compliance with the Contract Documents. Note corrections and field dimensions. with approval stamp before submitting to Architect. <b>Submittals shall be returned without</b>	
tect's review if found otherwise, as indicated below.	
sout Procedures."	PROJECT DATA
on, submittal number, Specification Section title and number, name of reviewer, date of Contractor's	PROJECT NUMBER 19039
val, and statement certifying that submittal has been reviewed, checked, and approved for liance with the Contract Documents.	CURRENT SUBMISSION DATE 12.13.2019
ריא ארדוסא T'S ACTION א Submittals: Architect will review each submittal, make marks to indicate corrections or revisions r	DRAWN NNM CHECKED DIS
d, and return it. Architect will stamp each submittal with an action stamp and will mark stamp	SCALE 1:1
national Submittals: Architect will review each submittal and will not return it, or will return it if it does	FILE REFERENCE C:\Users\nnm\Desktop\CT INNOVATIONS\19039_CT INNOVATIONS -
I submittals prepared for a portion of the Work will be reviewed when use of partial submittals has	THE DISTRICT_SPECIFICATIONS ONLY
ed prior approval from Architect. iplete submittals are unacceptable, will be considered nonresponsive, and will be returned for	No. Date Description
mittal without review. ittals not required by the Contract Documents may be returned by the Architect without action.	
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#### SHEET TITLE

#### SPECIFICATIONS

#### SECTION 017300 EXECUTION SECTION 017300 EXECUTION H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequat PART 1 - GENERAL 1.1 RELATED DOCUMENTS number to securely anchor each component in place, accurately located and aligned with ot A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other portions of the Work. Where size and type of attachments are not indicated, verify size and Division 01 Specification Sections, apply to this Section. required for load conditions 1. Mounting Heights: Where mounting heights are not indicated, mount components at h 1.2 SUMMARY directed by Architect. A. Section includes general administrative and procedural requirements governing execution of the Work including, Allow for building movement, including thermal expansion and contraction. but not limited to, the following: Coordinate installation of anchorages. Furnish setting drawings, templates, and directi Construction layout installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with Installation of the Work. anchors, that are to be embedded in concrete or masonry. Deliver such items to Proje Cutting and patching. time for installation Progress cleaning. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicate Protection of installed construction joints for the best visual effect. Fit exposed connections together to form hairline joints. 6. Correction of the Work. B. Related Requirements: Hazardous Materials: Use products, cleaners, and installation materials that are not consider Division 01 Section "Summary" for limits on use of Project site. hazardous. 3.5 CUTTING AND PATCHING Division 01 Section "Submittal Procedures" for submitting surveys. A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Pro Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction. 1.3 DEFINITIONS cutting and patching at the earliest feasible time, and complete without delay. Cut in-place construction to provide for installation of other components or performance A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work. construction, and subsequently patch as required to restore surfaces to their original co B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or dam 1.4 INFORMATIONAL SUBMITTALS during installation or cutting and patching operations, by methods and with materials so as r A. Cutting and Patching Plan: Submit plan describing procedures at least 3 days prior to the time cutting and existing warranties. Temporary Support: Provide temporary support of work to be cut. patching will be performed. Include the following information: Protection: Protect in-place construction during cutting and patching to prevent damage. Place Extent: Describe reason for and extent of each occurrence of cutting and patching. protection from adverse weather conditions for portions of Project that might be exposed du Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements. and patching operations. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of Products: List products to be used for patching and firms or entities that will perform patching work. Dates: Indicate when cutting and patching will be performed. passage to adjoining areas is unavoidable, coordinate cutting and patching according to req Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching in Division 01 Section 'Summarv." procedures will disturb or affect. List services and systems that will be relocated and those that will be Existing Utility Services and Mechanical/Electrical Systems: Where existing services/system temporarily out of service. Indicate length of time permanent services and systems will be disrupted. a. Include description of provisions for temporary services and systems during interruption of permanent required to be removed, relocated, or abandoned, bypass such services/systems before cutt minimize interruption to occupied areas. services and systems. 1.5 QUALITY ASSURANCE Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and simila A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction operations, including excavation, using methods least likely to damage elements retained or construction. If possible, review proposed procedures with original Installer; comply with original nstaller's written recommendations. 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural 1. In general, use hand or small power tools designed for sawing and grinding, not hamm elements during cutting and patching. Do not cut and patch structural elements in a manner that could chopping. Cut holes and slots neatly to minimum size required, and with minimum dist adjacent surfaces. Temporarily cover openings when not in use. change their load-carrying capacity or increase deflection Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfac a. Existing exterior pre-fabricated wall system. 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a dia Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or core drill. Excavating and Backfilling: Comply with requirements in applicable Division 31 Section decreased operational life or safety. Operational elements include the following: a. Primary operational systems and equipment. required by cutting and patching operations. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be r b. Fire separation assemblies. Air or smoke barriers. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of or other foreign matter after cutting. Fire-suppression systems. Proceed with patching after construction operations requiring cutting are complete. Mechanical systems piping and ducts. H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operation Control systems. Communication systems. following performance of other work. Patch with durable seams that are as invisible as prac Provide materials and comply with installation requirements specified in other Sections, whe Fire-detection and -alarm systems. Conveying systems. applicable. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate the second Electrical wiring systems. physical integrity of installation. Operating systems of special construction. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restor Other Construction Elements: Do not cut and patch other construction elements or components in a retained adjoining construction in a manner that will minimize evidence of patching and manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other refinishing. a. Clean piping, conduit, and similar features before applying paint or other finishing construction elements include but are not limited to the following: Restore damaged pipe covering to its original condition. a. Water, moisture, or vapor barriers. Exterior Building Enclosure: Patch components in a manner that restores enclosure to Membranes and flashings. weathertight condition and ensures thermal and moisture integrity of building enclosure Sprayed fire-resistive material I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove pai Equipment supports. oils, putty, and similar materials from adjacent finished surfaces. e. Piping, ductwork, vessels, and equipment. 3.6 OWNER-INSTALLED PRODUCTS Noise- and vibration-control elements and systems. Site Access: Provide access to Project site for Owner's construction personnel. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, Coordination: Coordinate construction and operations of the Work with work performed by reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in construction personnel. Construction Schedule: Inform Owner of Contractor's preferred construction schedule a visually unsatisfactory manner. PART 2 - PRODUCTS Owner's portion of the Work. Adjust construction schedule based on a mutually agreea timetable. Notify Owner if changes to schedule are required due to differences in actua 2.1 MATERIALS A. General: Comply with requirements specified in other Sections. construction progress. Preinstallation Conferences: Include Owner's construction personnel at preinstallation B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use conferences covering portions of the Work that are to receive Owner's work. Attend materials that visually match in-place adjacent surfaces to the fullest extent possible. preinstallation conferences conducted by Owner's construction personnel if portions of If identical m ble or cannot be used use materials that when in match acceptable to Architect for the visual and functional performance of in-place materials. depend on Owner's construction. PART 3 - EXECUTION 3.7 PROGRESS CLEANING General: Clean Project site and work areas daily, including common areas. Enforce require 3.1 EXAMINATION strictly. Dispose of materials lawfully A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as Comply with requirements in NFPA 241 for removal of combustible waste materials an existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of 2. Do not hold waste materials more than seven days during normal weather or three days underground utilities, mechanical and electrical systems, and other construction affecting the Work. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm temperature is expected to rise above 80 deg F. sewer, and water-service piping; underground electrical services, and other utilities. 3. Containerize hazardous and unsanitary waste materials separately from other waste. containers appropriately and dispose of legally, according to regulations. Furnish location data for work related to Project that must be performed by public utilities serving Project a. Use containers intended for holding waste materials of type to be stored. site. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine Site: Maintain Project site free of waste materials and debris. C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary fo substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations. execution of the Work. Remove liquid spills promptly. 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before Where dust would impair proper execution of the Work, broom-clean or vacuum the en equipment and fixture installation. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed. area, as appropriate Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers. Installed Work: Keep installed work clean. Clean installed surfaces according to written ins manufacturer or fabricator of product installed, using only cleaning materials specifically Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions. recommended. If specific cleaning materials are not recommended, use cleaning materials not hazardous to health or property and that will not damage exposed surfaces. 3.2 PREPARATION Concealed Spaces: Remove debris from concealed spaces before enclosing the space. A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to before installing each product. Where portions of the Work are indicated to fit to other construction, verify freedom from damage and deterioration at time of Substantial Completion. dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials sewers or into waterways. Comply with local waste disposal requirements. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the During handling and installation, clean and protect construction in progress and adjoining ma Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for already in place. Apply protective covering where required to ensure protection from damage deterioration at Substantial Completion. information to Architect according to requirements in Division 01 Section "Project Management and Clean and provide maintenance on completed construction as frequently as necessary through Coordination." 3.3 CONSTRUCTION LAYOUT remainder of the construction period. Adjust and lubricate operable components to ensure of A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to without damaging effects. the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly. Limiting Exposures: Supervise construction operations to assure that no part of the constru B. General: Lay out the Work using accepted practices. completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleteric 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere exposure during the construction period. 3.8 PROTECTION OF INSTALLED CONSTRUCTION as needed to locate each element of Project. A. Provide final protection and maintain conditions that ensure installed Work is without damag Establish limits on use of Project site. deterioration at time of Substantial Completion. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required B. Comply with manufacturer's written instructions for temperature and relative humidity. dimensions. Inform installers of lines and levels to which they must comply. Check the location, level and plumb, of every major element as the Work progresses. SECTION 017700 CLOSEOUT PROCEDURES Notify Architect when deviations from required lines and levels exceed allowable tolerances. Close site surveys with an error of closure equal to or less than the standard established by authorities PART 1 - GENERAL having jurisdiction. 1.1 SUMMARY C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil A. This Section includes administrative and procedural requirements for contract closeout, placement, utility slopes, and rim and invert elevations. limited to, the following: D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column Inspection procedures. grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and Warranties. elevations for use with control lines and levels. Level foundations and piers from two or more locations. Final cleaning. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include B. See Division 1 "Section 01781 - Project Record Documents" for submitting Record Draw beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party Specifications, and Record Product Data. member, and types of instruments and tapes used. Make the log available for reference by Architect. See other Sections for specific closeout and special cleaning requirements for the Work 3.4 INSTALLATION 1.3 SUBSTANTIAL COMPLETION A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as A. Preliminary Procedures: Before requesting inspection for determining date of Substanti indicated complete the following. List items below that are incomplete in request. Make vertical work plumb and make horizontal work level. 1. Prepare a list of items to be completed and corrected (punch list), the value of iten Where space is limited, install components to maximize space available for maintenance and ease of reasons why the Work is not complete. removal for replacement Submit specific warranties, workmanship bonds, final certifications, and similar doc 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated. 3. Terminate and remove temporary facilities from Project site, along with mockups, B. Comply with manufacturer's written instructions and recommendations for installing products in applications and similar elements Complete final cleaning requirements, including touchup painting. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions 5. Touch up and otherwise repair and restore marred exposed finishes to eliminate vi required for product performance until Substantial Completion B. Inspection: Submit a written request for inspection for Substantial Completion. On rece Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess Architect will either proceed with inspection or notify Contractor of unfulfilled requirement prepare the Certificate of Substantial Completion after inspection or will notify Contractor

that expected during normal conditions of occupancy. E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

**2** ⊙ **-**

Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

certificate will be issued. 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2. Results of completed inspection will form the basis of requirements for Final Completion

7300 EXECUTION	SECTION 017700 CLOSEOUT PROCEDURES (CONT'D)	SECTION 017823
2300         EXECUTION           achment:         Provide blocking and attachment plates and anchors and fasteners of adequate size and ther to securely anchor each component in place, accurately located and aligned with other ions of the Work. Where size and type of attachments are not indicated, verify size and type uired for load conditions.           Mounting Heights:         Where mounting heights are not indicated, mount components at heights directed by Architect.           Allow for building movement, including thermal expansion and contraction.         Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.           tts:         Make joints of uniform width.         Where joint locations in exposed work are not indicated, arrange to fort heat visual effect. Fit exposed connections together to form hairline joints.           tardous Materials:         Use products, cleaners, and installation materials that are not considered ardous.           3 AND PATCHING         Tig and patching, General: Employ skilled workers to perform cutting and patching. Proceed with ing and patching and patching operations, by methods and with materials so as not to void sting warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged rg installation or cutting and patching operations.           sting Warranties.         Nemove, replace, patch, and repair materials and surfaces cut or damage. Provide tertorimate store provide terto from sof Project that might be exposed	<ul> <li>SECTION 017700 CLOSEOUT PROCEDURES (CONT'D)</li> <li>1.4 FINAL COMPLETION         <ul> <li>A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:</li></ul></li></ul>	2.3 OPERATION A. Content Specific operatin B. Descrip 1. Pr 2. Ma 3. Ec 4. Ec 5. Op 6. Lin 7. Pe 8. En 9. Cc C. Operatin shutdow sequend D. System installed E. Piped S 2.4 PRODUCT M A. Content source warrant B. Source match r Installer c. Product f A. Content source warrant B. Source match r Installer and title C. Product 1. Pr 2. Ma 5. Re D. Mainter procedu
In general, use hand or small power tools designed for sawing and grinding, not hammering and abapting. Out halos and alate methods designed for sawing and grinding, not hammering and	A. Geaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might demonstrate finished surfaces.	E. Repair I services
chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.	that might damage finished surfaces.	F. Warrant conditio
Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond- core drill.	<ul> <li>3.1 FINAL CLEANING</li> <li>A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local</li> </ul>	A. Content
Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.	laws and ordinances and Federal and local environmental and antipollution regulations. B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or	service warrant
Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture	unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.	B. Source identifie
or other foreign matter after cutting. Proceed with patching after construction operations requiring cutting are complete. ching: Patch construction by filling, repairing, refinishing, closing up, and similar operations	<ol> <li>Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:</li> <li>Clean Project site, vard, and grounds, in areas disturbed by construction activities, including</li> </ol>	name, a cross-re C. Manufac
wing performance of other work. Patch with durable seams that are as invisible as practicable. vide materials and comply with installation requirements specified in other Sections, where	<ul><li>landscape development areas, of rubbish, waste material, litter, and other foreign substances.</li><li>b. Sweep paved areas broom clean. Remove petrochemical spills, stains, putty stains, paint</li></ul>	mainten
licable. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate	spots, and other foreign deposits. c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.	D. Mainten instructi
physical integrity of installation. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and	<ul> <li>Remove tools, construction equipment, machinery, and surplus material from Project site.</li> <li>Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective</li> </ul>	E. Mainten lubrican with sta
refinishing. a. Clean piping, conduit, and similar features before applying paint or other finishing materials.	surfaces to their original condition. f. Remove debris and surface dust from limited access spaces, including roofs, trenches,	F. Spare P identifie
<ul> <li>Restore damaged pipe covering to its original condition.</li> <li>Exterior Building Enclosure: Patch components in a manner that restores enclosure to a</li> </ul>	manholes, and similar spaces. g. Sweep concrete floors broom clean in unoccupied spaces.	mainten G. Mainten
weathertight condition and ensures thermal and moisture integrity of building enclosure. aning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar,	<ul> <li>h. Clean, wash, and polish all glass.</li> <li>i. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace</li> </ul>	telephor H. Warrant
-INSTALLED PRODUCTS Access: Provide access to Project site for Owner's construction personnel.	evidence of repair or restoration. i. Leave Project clean and ready for use.	PART 3 - EXECU
ordination: Coordinate construction and operations of the Work with work performed by Owner's struction personnel.	<ul><li>k. Thorough cleaning of all surfaces.</li><li>I. Clean and polish all exposed finish hardware.</li></ul>	3.1 MANUAL PR A. Emerge
Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual	C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Broject site and disease of lawfully.	use by e B. Product
construction progress. Preinstallation Conferences: Include Owner's construction personnel at preinstallation	SECTION 017823 OPERATION AND MAINTENANCE DATA	C. Operatio
conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work	PART 1 - GENERAL	a syster D. Manufa
depend on Owner's construction. ESS CLEANING	1.1 SUMMARY A. This Section includes administrative and procedural requirements for preparing operation and	sheets p compon
neral: Clean Project site and work areas daily, including common areas. Enforce requirements otly. Dispose of materials lawfully. Comply with requirements in NEPA 2/1 for removal of compustible waste materials and debris	maintenance manuals, including the following: 1. Emergency manuals. 2. Operation manuals for systems, subsystems, and equipment	each ite Work ar
Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.	<ol> <li>3. Maintenance manuals for the care and maintenance of products, materials, finishes, systems and equipment.</li> </ol>	compon Coordin
Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.	4. See Divisions 2 through 16 Sections for specific operation and maintenance manual requirements for the Work in those Sections.	of comp 1. Do n
<ul> <li>a. Use containers intended for holding waste materials of type to be stored.</li> <li>b. Maintain Project site free of waste materials and debris.</li> <li>c. Access. Clean array where wath is in pregnant to the level of cleanlings pressed to the level of cleanlings.</li> </ul>	<ul> <li>1.2 SUBMITTALS</li> <li>A. Manual: Submit one copy of each manual in final form at least 15 days before final inspection.</li> <li>Architect will return copy with comments within 15 days after final inspection.</li> </ul>	F. Comply mainten
cution of the Work. Remove liquid spills promptly.	<ol> <li>Correct or modify each manual to comply with Architect's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Architect's comments.</li> </ol>	SECTION 017839
Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.	PART 2 - PRODUCTS 2.1 MANUALS, GENERAL	1.1 RELATED D
alled Work: Keep installed work clean. Clean installed surfaces according to written instructions of nufacturer or fabricator of product installed, using only cleaning materials specifically	A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.	other Di 1.2 SUMMARY
hazardous to health or property and that will not damage exposed surfaces.	<ul> <li>B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:</li> <li>1. Subject matter included in manual.</li> </ul>	A. This See the follo
osed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure dom from damage and deterioration at time of Substantial Completion.	<ol> <li>Name and address of Project.</li> <li>Name and address of Owner.</li> </ol>	1. Re 2. Re
ste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down vers or into waterways. Comply with local waste disposal requirements.	<ol> <li>Date of submittal.</li> <li>Name, address, and telephone number of Contractor.</li> <li>Name, and address of Architect</li> </ol>	B. See Div requiren
ady in place. Apply protective covering where required to ensure protection from damage or erioration at Substantial Completion.	<ol> <li>Name and address of Additional consultant as appropriate.</li> <li>Cross-reference to related systems in other operation and maintenance manuals.</li> </ol>	C. See Div those Se
an and provide maintenance on completed construction as frequently as necessary through the ainder of the construction period. Adjust and lubricate operable components to ensure operability	C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.	1.3 SUBMITTAL A. Record
out damaging effects. iting Exposures: Supervise construction operations to assure that no part of the construction,	D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and expression of one extension between the set of the set o	1. Nu a. Init me
npleted or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious osure during the construction period.	<ul> <li>and components of one system into a single binder.</li> <li>Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to</li> </ul>	cha
vide final protection and maintain conditions that ensure installed Work is without damage or erioration at time of Substantial Completion	hold label describing contents and with pockets inside covers to hold folded oversize sheets. a. Identify each binder on front and spine, with printed title "OPERATION AND	b. Fir 1)
nply with manufacturer's written instructions for temperature and relative humidity.	MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.	2) or B Decord
017700 CLOSEOUT PROCEDURES	<ol> <li>Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the eaction on each divider encourt of products and major components of equipment included in </li> </ol>	C. Record
GENERAL IMARY	une section on each divider, cross-referenced to Specification Section number and title of Project Manual. 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software	PART 2 - PRODU
I his Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:	<ul> <li>diskettes for computerized electronic equipment.</li> <li>Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.</li> </ul>	2.1 RECORD DF A. Record
<ol> <li>Marranties.</li> <li>Final cleaning.</li> </ol>	<ul> <li>If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.</li> </ul>	Drawing 1. Pre
See Division 1 "Section 01781 - Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.	b. It drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contexts, and drawing locations.	ins a.
See other Sections for specific closeout and special cleaning requirements for the Work in those Sections STANTIAL COMPLETION	<ul> <li>3. 2.2 EMERGENCY MANUALS</li> <li>A. Content: Organize manual into a separate section for type of emergency emergency instructions</li> </ul>	b.
complete the following. List items below that are incomplete in request.	and emergency procedures. B. Type of Emergency: Where applicable for each type of emergency indicated below, include	2. Ma
<ol> <li>reasons why the Work is not complete.</li> <li>Submit specific warranties, workmanship bonds, final certifications, and similar documents.</li> </ol>	instructions and procedures for each system, subsystem, piece of equipment, and component for fire, gas leak, water leak, power failure, and equipment failure.	COI CO 3 Ma
3. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.	<ul> <li>Emergency instructions: Describe and explain warnings, trouble indications, error messages, and</li> <li>' similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.</li> </ul>	for 4. No
<ol> <li>Complete final cleaning requirements, including touchup painting.</li> <li>Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.</li> </ol>	<ul> <li>D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required</li> </ul>	ide b. Format:
Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of itoms, either	sequences for electric or electronic systems.	DRAWIN 1. Re
on Contractor's list or additional items identified by Architect, that must be completed or corrected before		2. Re

#### OPERATION AND MAINTENANCE DATA(CONT'D)

- MANUAI S In addition to requirements in this Section, include operation data required in individual cation Sections and equipment descriptions, operating standards, operating procedures, ng logs, wiring and control diagrams, and license requirements.
- tions: Include the following: roduct name and model number.
- lanufacturer's name.
- quipment identification with serial number of each component
- puipment function. perating characteristics
- miting conditions.
- erformance curves.
- ngineering data and tests. omplete nomenclature and number of replacement parts.
- ting Procedures: Include start-up, break-in, and control procedures; stopping and normal wn instructions; routine, normal, seasonal, and weekend operating instructions; and required nces for electric or electronic systems.
- ns and Equipment Controls: Describe the sequence of operation, and diagram controls as
- Systems: Diagram piping as installed, and identify color-coding where required for identification.
- MAINTENANCE MANUAL Organize manual into a separate section for each product, material, and finish. Include information, product information, maintenance procedures, repair materials and sources, and
- ties and bonds, as described below. Information: List each product included in manual, identified by product name and arranged to manual's table of contents. For each product, list name, address, and telephone number of or or supplier and maintenance service agent, and cross-reference Specification Section number e in Project Manual.
- t Information: Include the following, as applicable:
- oduct name and model number
- lanufacturer's name. olor, pattern, and texture.
- laterial and chemical composition
- eordering information for specially manufactured products. nance Procedures: Include manufacturer's written recommendations and inspection
- ures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, pair instructions
- Materials and Sources: Include lists of materials and local sources of materials and related
- ties and Bonds: Include copies of warranties and bonds and lists of circumstances and
- ons that would affect validity of warranties or bonds. AND EQUIPMENT MAINTENANCE MANUAL
- : For each system, subsystem, and piece of equipment not part of a system, include source ation, manufacturers' maintenance documentation, maintenance procedures, maintenance and schedules, spare parts list and source information, maintenance service contracts, and ty and bond information, as described below.
- Information: List each system, subsystem, and piece of equipment included in manual, ed by product name and arranged to match manual's table of contents. For each product, list address, and telephone number of Installer or supplier and maintenance service agent, and
- eference Specification Section number and title in Project Manual. acturers' Maintenance Documentation: Manufacturers' maintenance documentation including nance instructions, drawings and diagrams for maintenance, nomenclature of parts and
- nents, and recommended spare parts for each component part or piece of equipment: nance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly
- tions, and adjusting instructions that detail essential maintenance procedures: nance and Service Schedules: Include service and lubrication requirements, list of required nts for equipment, and separate schedules for preventive and routine maintenance and service
- andard time allotment. Parts List and Source Information: Include lists of replacement and repair parts, with parts ed and cross-referenced to manufacturers' maintenance documentation and local sources of
- nance materials and related services. nance Service Contracts: Include copies of maintenance agreements with name and
- one number of service agent. ties and Bonds: Include copies of warranties and bonds and lists of circumstances and ons that would affect validity of warranties or bonds.

JTION

- REPARATION ency Manual: Assemble a complete set of emergency information indicating procedures for emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- t Maintenance Manual: Assemble a complete set of maintenance data indicating care and
- nance of each product, material, and finish incorporated into the Work. ion and Maintenance Manuals: Assemble a complete set of operation and maintenance data ing operation and maintenance of each system, subsystem, and piece of equipment not part of
- cturers' Data: Where manuals contain manufacturers' standard printed data, include only pertinent to product or component installed. Mark each sheet to identify each product or nent incorporated into the Work. If data include more than one item in a tabular format, identify em using appropriate references from the Contract Documents. Identify data applicable to the nd delete references to information not applicable.
- gs: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of nent parts of equipment and systems and to illustrate control sequence and flow diagrams. nate these drawings with information contained in Record Drawings to ensure correct illustration pleted installation.
- not use original Project Record Documents as part of operation and maintenance manuals. with Division 1 Section "Closeout Procedures" for schedule for submitting operation and nance documentation
- PROJECT RECORD DOCUMENTS

- OCUMENTS
- gs and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- ection includes administrative and procedural requirements for Project Record Documents, including
- ecord Drawings.
- ecord Specifications.
- ecord Product Data.
- vision 1 Section "Operation and Maintenance Data" for operation and maintenance manual
- visions 2 through 16 Sections for specific requirements for Project Record Documents of the Work in
- Drawings: Comply with the following:
- umber of Copies: Submit copies of Record Drawings as follows:
- itial Submittal: Submit two set(s) of plots from corrected Record CAD Drawings and two sets of arked-up Record Prints. Architect will initial and date each plot and mark whether general scope of hanges, additional information recorded, and quality of drafting are acceptable. Architect will return
- e set of plots and prints for organizing into sets, printing, binding, and final submittal.
- inal Submittal: Submit four set(s) of marked-up Record Prints, and the following: Record CAD Drawing Files and Plots: Two set(s).
- Copies printed from Record CAD Drawing Plots: Four. Plot and print each Drawing, whether not changes and additional information were recorded.
- Specifications: Submit four copies of Project's Specifications, including addenda and contract
- Product Data: Submit two copies of each Product Data submittal.

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Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop

- reparation: Mark Record Prints to show the actual installation where installation varies from that own originally. Require individual or entity who obtained record data, whether individual or entity is staller, subcontractor, or similar entity, to prepare the marked-up Record Prints.
- Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Record data as soon as possible after obtaining it. Record and check the markup before
- enclosing concealed installations.
- ark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical
- nditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the ontract Drawings.
- ark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes
- r different categories of the Work at same location. ote Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar
- entification, where applicable. Identify and date each Record Drawing; include the designation "PROJECT RECORD
- ING" in a prominent location ecord Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets.
- ind each set with durable paper cover sheets. Include identification on cover sheets.
- ecord Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
- 3. Identification: As follows: a. Project name.
- b. Date.
- c. Designation "PROJECT RECORD DRAWINGS."

e. Name of Contractor.

d. Name of Architect.

#### SECTION 017839 PROJECT RECORD DOCUMENTS (CONT'D)

2.2 RECORD SPECIFICATIONS A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that

- indicated in Specifications, addenda, and contract modifications. 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
- Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected. 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a
- record of selections made. 4. Note related Change Orders, Record Product Data, and Record Drawings where applicable.
- 2.3 RECORD PRODUCT DATA
- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
- 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later. 2. Include significant changes in the product delivered to Project site and changes in manufacturer's
- written instructions for installation
- Note related Change Orders, Record Specifications, and Record Drawings where applicable. 2.4 MISCELLANEOUS RECORD SUBMITTALS
- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- PART 3 EXECUTION 3.1 RECORDING AND MAINTENANCE
- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

#### SECTION 024119 SELECTIVE DEMOLITION

#### PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes
- Demolition and removal of selected portions of building or structure. Salvage of existing items to be reused or recycled.
- 1.2 DEFINITIONS
- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and
- deliver to Owner ready for reuse. C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled. 1.3 PREINSTALLATION MEETINGS
- A. Predemolition Conference: Conduct conference at Project site.
- 1.4 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For refrigerant recovery technician. B. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.
- 1.5 CLOSEOUT SUBMITTALS
- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- 1.6 QUALITY ASSURANCE
- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program. 1.7 FIELD CONDITIONS A. Owner and/or other Building Tenants will occupy portions of building immediately adjacent to selective
- demolition area. Conduct selective demolition so that Owner's and Building Tenant's operations will not be disrupted
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as
- practical. C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with
- selective demolition. D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work
- Hazardous materials will be removed by Owner before start of the Work. 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and
- Owner. Hazardous materials will be removed by Owner under a separate contract. Storage or sale of removed items or materials on-site is not permitted. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage
- during selective demolition operations. Maintain fire-protection facilities in service during selective demolition operations.
- 1.8 WARRANT
- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. PART 2 - PRODUCTS
- 2.1 PEFORMANCE REQUIREMENTS
- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.
- PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations. B. Survey existing conditions and correlate with requirements indicated to determine extent of selective
- demolition required. C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a
- written report to Architect. D. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during
- selective building demolition operations.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings. 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS
- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary.
- 2. Owner will arrange to shut off indicated services/systems when requested by Contractor.
- 3. Arrange to shut off indicated utilities with utility companies.
- 4. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
- 5. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
- a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material. b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible
- piping material.
- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean,
- and store equipment; when appropriate, reinstall, reconnect, and make equipment operational. e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove
- equipment and deliver to Owner. f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining
- ducts with same or compatible ductwork material. g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.

B. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction. 3.3 PREPARATION

- A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to
- people and damage to adjacent buildings and facilities to remain. B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

AMENTA

![](_page_12_Picture_155.jpeg)

### CT INNOVATIONS

#### ct innovations – coli BUILDING

120 Hushope Ave - 4th Floor

Hartford. CT 06106

CONSULTANTS

KEY PLAN

![](_page_12_Picture_162.jpeg)

HISTORY OF SUBMISSIONS

No. Date

Description

#### FOR CONSTRUCTION

#### SHEET TITLE

#### SPECIFICATIONS

- -

![](_page_12_Picture_169.jpeg)

ARCHITECTS


4	cluded: Miscellaneous supports, bangors and brassa	z.z Pi A.	Delegated Design: Engage a qualified professional engineer, as defined in Section Requirements " to design cold-formed steel framing
1. 2.	Miscellaneous supports, hangers and braces. Field drilling and installation.	B.	Requirements," to design cold-formed steel framing. Structural Performance: Provide cold-formed steel framing capable of withstanding
3. Standard	Shop Priming. ds:		<ol> <li>Design Loads: As indicated on Structural Drawings, or required by scope of v</li> <li>Definitional initial pairs forming curtains to without design loads without d</li> </ol>
1. 2.	AWS D1.1 - American Welding Society Structural Welding Code. American Institute of Steel Construction (AISC).		<ol> <li>Detection Limits: Design framing systems to withstand design loads without d following:</li> <li>Interior Load Bearing Well Framing: Heriorntal deflection of 1/260 of the</li> </ol>
3. Material:	NAAMM Manuals s:		a. Interior Load-Bearing Wall Framing: Horizontal deflection of 1/360 of the horizontal load of 5 lbf/sq. ft
1. 2.	Steel plates, shapes and bars: ASTM A36. Cold-formed steel: ASTM A-283, Grade B for plates, shapes and bars.		<ul> <li>Interior Non-Load-Bearing Framing: Horizontal deflection of 1/360 of the horizontal load of 5 lbf/sq. ft</li> </ul>
3. 4.	Bolts, nuts and washers: Type recommended for structural steel joints: ASTM A-307. Welding Materials: AWS D1.1, type recommended for materials being welded.		<ul> <li>Ceiling Joist Framing: Vertical deflection of 1/360 of the span for live load of the span.</li> </ul>
5.	Primer: Compatible with finish coats of paint, red lead, FS TT-P-86; Type II zinc chromate, alkyd type, as applicable for surfaces to be primed, and compatible with finish coats of paint. Coordinate with		<ol> <li>Design framing systems to provide for movement of framing members located building envelope without damage or overstressing, sheathing failure, connect</li> </ol>
6.	requirements of section 09900. Machine Screws: Federal Specification FS FF-S-92.		fasteners and anchors, or other detrimental effects when subject to a maximu change of 120 deg F.
7. 8.	Expansion Bolts: "Cinch" type, galvanized as manufactured by the Hiltibolt or approved equal. Dielectric Separator: Bituminous paint to prevent galvanic action.		<ol> <li>Design framing system to maintain clearances at openings, to allow for constr accommodate live load deflection of primary building structure as follows:</li> </ol>
9.	Grout: Non-shrink, non-metallic, pre-,mixed, factory-packaged, non-staining, non-corrosive, non-gaseous,	С	a. Upward and downward movement of 3/4 inch. Cold-Formed Steel Framing Standards: Unless more stringent requirements are inc
10	and exterior work as applicable to specific job condition.		comply with AISI S100, AISI S200, and the following:
TU.	be best quality, of type as required for specific usage.		2. Wall Studs: AISI S211.
Fabricali 1.	Verify dimensions at site prior to shop fabrication.	D	<ol> <li>Lateral Design: AISI S213.</li> <li>Eiro Designer Designer: Comply with ASTM E110: testing by a gualified testing as</li> </ol>
2. 3.	Fabricate items with joints neatly fitted and properly secured. Fit and shop assemble in largest practical sections, for delivery to site.	D	with appropriate markings of applicable testing agency.
4. 5.	Grind exposed welds smooth and flush with adjacent finished surfaces. Supply components required for proper anchorage of metal fabrications. Fabricate anchorage and		<ol> <li>Indicate design designations from UL's "Fire Resistance Directory" or fro qualified testing agency acceptable to authorities having jurisdiction.</li> </ol>
Erection	related components of same material and finish as metal fabrication.	2.3 C A.	DLD-FORMED STEEL FRAMING MATERIALS <u>Recycled Content of Steel Products</u> : Postconsumer recycled content plus one-half
1. 2.	Install items square and level, accurately fitted and free from distortion or defects. Make provision for erection stresses by temporary bracing. Keep work in alignment.	B.	content not less than 25 percent. Steel Sheet: ASTM A1003/A1003M, Structural Grade, Type H, metallic coated, of
3. 4	Replace items damaged in course of installation. Perform field welding in accordance with AWS D1 1		designation as follows: 1. Grade: As required by structural performance.
5. 6	After installation, touch-up welds and scratched and damaged prime painted surfaces.	С	2. Coating: G90or equivalent. Steel Sheet for Vertical Deflection Clips: ASTM A653/A653M, structural steel, zinc.
0. 7.	Grout anchors and inserts.	0	coating as follows:
<u>SECTIO</u>	N 054000 - COLD-FORMED METAL FRAMING	04.14	2. Coating: G90.
PART 1 1.1 RE	- GENERAL LATED DOCUMENTS	2.4 L( A.	Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicate
A.	Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.		πanges, and as tollows: 1. Minimum Base-Metal Thickness: 0.0538 inch
1.2 SU A	MMARY Section Includes:		<ol> <li>Flange Width: 1-5/8 inches or greater per Delegated Design Calculations.</li> <li>Section Properties: Per Delegated Design Calculations.</li> </ol>
<i>i</i> 1.	<ol> <li>Load-bearing wall framing.</li> <li>Interior non-load-bearing wall framing exceeding beight limitations of standard, ponetructural match</li> </ol>	B.	Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicate flanges, and as follows:
	<ol> <li>framing.</li> <li>Ceiling ioist framing</li> </ol>		<ol> <li>Minimum Base-Metal Thickness: Matching steel studs.</li> <li>Flange Width: 1-1/4 inches.</li> </ol>
-	4. Soffit framing.	C	Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to for depths indicated unpunched with stiffened flances, and as follows:
В.	<ol> <li>Section 055000 "Metal Fabrications" for miscellaneous steel shapes, masonry shelf angles, and</li> </ol>		<ol> <li>Minimum Base-Metal Thickness: 0.0538 inch.</li> <li>Elange Width: 1-5/8 inches or greater per Delegated Design Coloridations.</li> </ol>
	connections used with cold-formed metal framing. 2. Section 092116.23 "Gypsum Board Shaft Wall Assemblies" for interior non-load-bearing, metal-stud-	D	<ol> <li>Plange Width. 1-58 Incluss of greater per Delegated Design Calculations.</li> <li>Section Properties: Per Delegated Design Calculations</li> </ol>
	<ol> <li>framed, shaft-wall assemblies, with height limitations.</li> <li>Section 092216 "Non-Structural Metal Framing" for standard, interior non-load-bearing, metal-stud</li> </ol>	D	Steel Single- or Double-L Headers: Manufacturer's standard L-shapes used to form depths indicated, and as follows:
1.3 PR	framing, with height limitations and ceiling-suspension assemblies.		<ol> <li>Minimum Base-Metal Thickness: 0.0538 inch or greater as required per Deleg</li> <li>Top Flange Width: 1-5/8 inches.</li> </ol>
A.	Preinstallation Conference: Conduct conference at Project site.	2.4 IN	3. Section Properties: Per Delegated Design Calculations. TERIOR NON-LOAD-BEARING WALL FRAMING
A.	Product Data: For each type of product.	A.	Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicate flanges, and as follows:
D.	<ol> <li>Include layout, spacings, sizes, thicknesses, and types of cold-formed steel framing; fabrication; and feature and analysis details including machanical features.</li> </ol>		1. Minimum Base-Metal Thickness: 0.0428 inch.
	<ol> <li>Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging,</li> </ol>	D	<ol> <li>Section Properties: Per Delegated Design Calculations.</li> <li>Steal Track: Manufacturaria standard L shaped steal track of web depths indicate</li> </ol>
C.	splices, accessories, connection details, and attachment to adjoining work. Delegated-Design Submittal: For cold-formed steel framing, signed and sealed by a professional engineer	D.	unstiffened flanges, and as follows:
	<ol> <li>Engineering calculations and data shall be submitted verifying the framing assembly's ability to meet or</li> </ol>	0	<ol> <li>Plange Width: 1-1/4 inches.</li> <li>Plange Width: 0.1/4 inches.</li> </ol>
	exceed the specified design requirements of governing codes and authorities. In the event of a conflict between these requirements, the more stringent shall govern, as determined by the Architect. All	U.	and downward vertical displacement of primary structure through positive mechanic
	calculations shall be sealed and signed by a Professional Structural Engineer experienced in the design of this Work and licensed in the State in which the project is located. These calculations shall include, at		<ol> <li><u>Manufacturers:</u> Subject to compliance with requirements, available manufacture may be incorporated into the Work include, but are not limited to the following</li> </ol>
	a minimum, the following items: a. Steel framing, including built-up framing supporting windows against lateral and gravity loads.		a. <u>ClarkDietrich</u> . b. <u>MarinoWARE</u> .
	<li>All connections (member to member, and member to structure) shall be thoroughly examined and designed.</li>		c. <u>SCAFCO Steel Stud Company</u> . d. <u>Simpson Strong-Tie Co., Inc</u> .
	<ul> <li>Wall bridging shall be designed to provide resistance to minor axis bending and rotation of wall stude</li> </ul>	D	Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unp flanges, of web depth to contain studs while allowing free vertical movement, with f
	<ul> <li>d. Wall framing that does not have continuous sheathing applied to one side shall be checked for</li> <li>accurate the unsheathed for the second comparison f</li></ul>		horizontal loads and transfer them to the primary structure, and as follows:
	required.	F	<ol> <li>Flange Width: 1 inch plus twice the design gap for other applications.</li> <li>Double Deflection Tracks: Manufacturer's double deep-leg. Lishaped steel tracks.</li> </ol>
	<ol> <li>Engineering and Design. Provide the services of a Professional Engineer, registered in the State of Connecticut to design, engineer, and certify that the work of this section meets or exceeds the</li> </ol>	L.	and outer tracks; unpunched, with unstiffened flanges.
	requirements specified in this section. The engineer shall assume professional liability for the design of all cold formed metal framing components and their connections. Design decisions which affect visual		support horizontal loads and transfer them to the primary structure, and as fol
	<ul><li>characteristics shall be subject to the approval and modifications of the Architect.</li><li>3. Structural Performance Loads: Design cold formed metal framing and connections to support total loads</li></ul>		<ul> <li>a. Minimum Base-Metal Thickness: 0.0538 inch.</li> <li>b. Flange Width: 1 inch plus twice the design gap for other application</li> </ul>
	including dead load, live loads, earthquake loads, thermal loads, wind loads, and other loads as specified in the applicable building code.		<ol> <li>Inner Track: Of web depth indicated, and as follows:</li> <li>a. Minimum Base-Metal Thickness: 0.0538 inch.</li> </ol>
	<ol> <li>Allowable Connection Points: Connect cold formed metal framing to building structure only at locations approved by the building Engineer of Record and as indicated on the Contract Documents and approved</li> </ol>	F.	<ul> <li>Flange Width: Dimension equal to sum of outer deflection track flan Drift Clips: Manufacturer's standard bypass or head clips, capable of isolating wall</li> </ul>
	shop drawings. Any additional bracing of the structural steel or cold formed framing (as determined by the Engineer of Record) required by the cold form metal Contractor's request to attach to alternate		downward vertical displacement and lateral drift of primary structure through positiv to stud web and structure.
	locations shall be furnished and installed by the cold formed metal Contractor at no additional cost to the	2.6 C	EILING JOIST FRAMING Steel Ceiling Joists: Manufacturer's standard Cushaned steel sections of work don't
	<ol> <li>Owner.</li> <li>Provide moveable joints to accommodate the full range of manufacturing tolerances, field tolerances, the manufacturing tolerances.</li> </ol>	A.	enlarged service holes, with stiffened flanges, and as follows:
	inermal movement, wind and seismic movement, and floor and beam deflections. Joints shall accommodate the worst possible combination of effects so as to prevent internal stress, failure,	07 0	2. Flange Width: 1-5/8 inches, minimum.
1.5 INF	deterioration or failure of weather seals. FORMATIONAL SUBMITTALS	2.1 SI A.	Exterior Soffit Frame: Manufacturer's standard C-shaped steel sections, of web de
А. В.	Qualification Data: For testing agency. Welding certificates.		<ol> <li>Surrened rianges, and as follows:</li> <li>Minimum Base-Metal Thickness: 0.0538 inch or greater as required per Delegonation of the second second</li></ol>
С. D	Product Certificates: For each type of code-compliance certification for studs and tracks. Product Test Reports: For each listed product, for tests performed by a qualified testing agency	2.8 FI	<ol> <li>Flange Width: 1-5/8 inches, minimum.</li> <li>RAMING ACCESSORIES</li> </ol>
2.	<ol> <li>Steel sheet.</li> <li>Expansion anchors.</li> </ol>	A.	Fabricate steel-framing accessories from ASTM A1003/A1003M, Structural Grade, steel sheet, of same grade and coating designation used for framing members.
	<ol> <li>Power-actuated anchors.</li> <li>Mechanical fasteners</li> </ol>	B.	Provide accessories of manufacturer's standard thickness and configuration, unles follows:
	5. Vertical deflection clips.		<ol> <li>Supplementary framing.</li> <li>Bracing, bridging, and solid blocking</li> </ol>
-	<ol> <li>Figure 1 and the section clips</li> <li>Miscellaneous structural clips and accessories.</li> <li>Evaluation Deports: For populated cold formed start forming weak installed in the section of the s</li></ol>		<ol> <li>Web stiffeners.</li> <li>Anchor clins</li> </ol>
E.	fasteners, from ICC-ES or other qualified testing agency acceptable to authorities having jurisdiction.		5. End clips.
ι.ο QU Α.	Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.		<ol> <li>Foundation onpol.</li> <li>Gusset plates.</li> <li>Stud kinkors and know brocco.</li> </ol>
В.	Froduct Lests: Will certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation,		<ol> <li>Otdo Noters and Nice Diddes.</li> <li>Joist hangers and end closures.</li> <li>Hole minforming plate.</li> </ol>
C.	cnemical requirements, and metallic-coating thickness. Code-Compliance Certification of Studs and Tracks: Provide documentation that framing members are	0.0	10. Hole-reinforcing plates. 11. Backer plates.
	certified according to the product-certification program of the Certified Steel Stud Association or the Steel Stud Manufacturers Association.	2.9 AI A.	Steel Shapes and Clips: ASTM A36/A36M, zinc coated by hot-dip process accordin
D.	Welding Qualifications: Qualify procedures and personnel according to the following: 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."	В.	Anchor Bolts: ASTM F1554, Grade 36, threaded carbon-steel hex-headed bolts, ca hardened-steel washers; zinc coated by hot-dip process according to ASTM A153/
ρΔρτο	<ol> <li>AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."</li> <li>PRODUCTS</li> </ol>	C	Post-Installed Anchors: Fastener systems with bolts of same basic metal as fasten otherwise indicated; with working capacity greater than or equal to the design load
2.1 MA	NUFACTURERS		report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or ICC for the substrate.
A. <u>Mai</u> inco	inuracturers: Subject to compliance with requirements, available manufacturers offering products that may be orporated into the Work include, but are not limited to the following:		<ol> <li>Uses: Securing cold-formed steel framing to structure.</li> <li>Type: Terrup controlled expension eacher as a function.</li> </ol>
	<ol> <li><u>CEMCO; California Expanded Metal Products Co</u>.</li> <li><u>ClarkDietrich Building Systems</u>.</li> </ol>		<ol> <li>Type. Torque-controlled expansion anchor or adhesive anchor.</li> <li>Material for Exterior or Interior Locations and Where Stainless Steel Is Indicated to the standard standa</li></ol>
	<ol> <li>MarinoWARE.</li> <li>Nuconsteel, A Nucor Company.</li> </ol>	D	stainless-steel bolts, ASTM F593, and nuts, ASTM F594. Power-Actuated Anchors: Fastener systems with working capacity greater than or
	<ol> <li>Super Stud Building Products Inc.</li> <li>Telling Industries.</li> </ol>	E.	according to an evaluation report acceptable to authorities having jurisdiction, base Mechanical Fasteners: ASTM C1513, corrosion-resistant-coated, self-drilling, self-t
			1. Head Type: Low-profile head beneath sheathing: manufacturer's standard els
		F	Welding Electrodes: Comply with AWS standards.
		F.	Welding Electrodes: Comply with AWS standards.

ONTINUED)	<u>SECT</u>		05 40 00 - COLD-FORMED METAL FRAMING (CONTINUED)	SECTION
al engineer, as defined in Section 014000 "Quality	2.10 K A	4. 2	Galvanizing Repair Paint: ASTM A780/A780M. Cement Grout: Portland cement: ASTM C150/C150M. Type I: and clean: natural sand: ASTM C404. Mix at	0.0 0C
el framing capable of withstanding design loads within limits	-		ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration	В.
rawings, or required by scope of work.	C	С.	Nonmetallic, Nonshrink Grout: Factory-packaged, nonmetallic, noncorrosive, nonstaining grout, complying with ASTM C1107/C1107M, and with a fluid consistency and 30-minute working time.	
vizantal deflection of 1/260 of the well beight under a	[	).	Shims: Load-bearing, high-density, multimonomer, nonleaching plastic; or cold-formed steel of same grade	C
vizontal deflection of 1/300 of the wall height under a	E	Ξ.	Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to	U. D
	2.11 F	ABI	RICATION	D.
n of 1/360 of the span for live loads and 1/240 for total loads	F	۹.	Fabricate cold-formed steel framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written	E.
ment of framing members located outside the insulated ressing, sheathing failure, connection failure, undue strain on effects when subject to a maximum ambient temperature			<ol> <li>instructions, and requirements in this Section.</li> <li>Fabricate framing assemblies using jigs or templates.</li> <li>Cut framing members by sawing or shearing; do not torch cut.</li> <li>Fasten cold-formed steel framing members by welding screw fastening, clinch fastening, pneumatic pin</li> </ol>	F.
es at openings, to allow for construction tolerances, and to building structure as follows:			fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.	
4 inch. ore stringent requirements are indicated, framing shall			<ul><li>quality of welds, and methods used in correcting welding work.</li><li>b. Locate mechanical fasteners and install according to Shop Drawings, with screws penetrating</li></ul>	G.
ing:	F	2	joined members by no fewer than three exposed screw threads. 4. Fasten other materials to cold-formed steel framing by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift	H. 37 FI
Q: tasting by a gualified tasting agonay. Identify products	Ĺ	J.	fabricated assemblies by means that prevent damage or permanent distortion.	5.7 Li А.
9, testing by a qualified testing agency. Identity products lency.	C	J.	in 10 feet and as follows:	
rities having jurisdiction.			Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing	3.8 FI
er recycled content plus one-half of preconsumer recycled			<ol> <li>Squareness: Fabricate each cold-formed steel framing assembly to a maximum out-of-square</li> </ol>	A.
rade, Type H, metallic coated, of grade and coating	PART	3 -	EXECUTION	В. С.
ce.	3.1 E A	EXAI A.	/IINATION Examine substrates, areas, conditions, and abutting structural framing for compliance with requirements for	D. E.
653/A653M, structural steel, zinc coated, of grade and	E	3.	installation tolerances and other conditions affecting performance of the Work. Proceed with installation only after unsatisfactory conditions have been corrected.	3.9 RI
ce.	3.2 F A	PRE 1.	PARATION Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or	A.
	E	3.	tracks to structural members indicated to receive sprayed fire-resistive materials. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete	B.
teel studs, of web depths indicated, punched, with stiffened	C	C.	installation of cold-formed framing without reducing thickness of fire-resistive materials below that required to obtain fire-resistance ratings indicated. Protect remaining fire-resistive materials from damage. Install load-bearing shims or grout between the underside of load-bearing wall bottom track and the top of	END O
elegated Design Calculations. alculations.			foundation wall or slab at locations with a gap larger than 1/4 inch to ensure a uniform bearing surface on supporting concrete or masonry construction.	SEC
teel track, of web depths indicated, unpunched, with straight	Ľ	).	Install sealer gaskets at the underside of wall bottom track or rim track and at the top of foundation wall or slab at stud or joist locations. Install sealer gaskets at all locations where stud of joist framing is attached to	PAR [®]
steel studs.	3.3	NST	concrete surfaces. ALLATION, GENERAL	1.1
r's standard C-shapes used to form header beams, of web es, and as follows:	A E	ч. Ч. З.	Cold-formed steel framing may be shop or field fabricated for installation, or it may be field assembled. Install cold-formed steel framing according to AISI S200, AISI S202, and manufacturer's written instructions	1.2
h. elegated Design Calculations	(	;	unless more stringent requirements are indicated.	
alculations			<ol> <li>Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line ioints with maximum variation in plane and true position between fabricated panels not exceeding</li> </ol>	
the or areator as required for Delegated Design	г	h	1/16 inch.	
alquistisse	L	J.	securely fastened.	
alculations.			<ol> <li>Cut training members by sawing of shearing, do not cord cut.</li> <li>Fasten cold-formed steel framing members by welding, screw fastening, clinch fastening, or riveting.</li> <li>Wire trips of framing members is not normitted.</li> </ol>	1.3
			<ul> <li>a. Comply with AWS D1.3/D1.3M requirements and procedures for welding, appearance and quality</li> </ul>	1.4
n. elegated Design Calculations.			b. Locate mechanical fasteners, install according to Shop Drawings, and comply with requirements for	
alculations. teel track, of web depths indicated, unpunched, with	E	Ξ.	spacing, edge distances, and screw penetration. Install framing members in one-piece lengths unless splice connections are indicated for track or tension	
steel studs.	F	Ξ.	members. Install temporary bracing and supports to secure framing and support loads equal to those for which structure	
bypass or headclips, capable of accommodating upward			was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.	
ructure through positive mechanical attachment to stud web. equirements, available manufacturers offering products that	(	3.	Do not bridge building expansion joints with cold-formed steel framing. Independently frame both sides of joints.	
out are not limited to the following:	F	١.	Install insulation, specified in Section 072100 "Thermal Insulation," in framing-assembly members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing	
	L		work. Fasten hole-reinforcing plate over web penetrations that exceed size of manufacturer's approved or standard	1.5
ep-leg, U-shaped steel track; unpunched, with unstiffened	3.4 L	.OA	punched openings. D-BEARING WALL INSTALLATION	
ing free vertical movement, with flanges designed to support structure, and as follows:	A	۹.	Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:	PAR
h. ap for other applications.	E	3.	1. Anchor Spacing: Per Delegated Design Calculations . Squarely seat studs against top and bottom tracks, with gap not exceeding 1/8 inch between the end of wall-	2.1
deep-leg, U-shaped steel tracks, consisting of nested inner noes.			framing member and the web of track. Fasten both flanges of studs to top and bottom tracks. Space studs as follows:	
ical movement of inner track, with flanges designed to	C	;	1. Stud Spacing: 16 inches maximum, or closer as required by Delegated Design Calculations. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces	
0.0538 inch.	Г	י. ו	and similar configurations. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned	
follows: 0.0538 inch	5	, -	continuously reinforce track to transfer loads. Align floor and roof framing over stude according to AISI S200. Section C1. Where framing cannot be aligned	2.2
o sum of outer deflection track flange width plus 1 inch.			continuously reinforce track to transfer loads.	
f primary structure through positive mechanical attachment	(	Э.	Install headers over wall openings wider than stud spacing. Locate headers above openings. Fabricate	
need start another of web deaths indicated supplied with			angle connectors, web stiffeners, or gusset plates.	
aped steel sections, of web depins indicated, punched with d as follows:			<ol> <li>Frame wail openings with not less than a double stud at each jamb of frame. Faster jamb members together to uniformly distribute loads.</li> <li>Aster faster for the stude and is a student stude of the student stu</li></ol>	
n.			<ol> <li>Install tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.</li> </ol>	
shaped steel sections, of web depths indicated, with	F	1.	services, casework, heavy trim, furnishings, and bracing in stud traming indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.	
h or greater as required per Delegated Design.			recommendations and industry standards in each case, considering weight or load resulting from item	2.3
	L		supported. Install horizontal bridging in stud system, spaced vertically 48 inches maximum or closer as required by	
A1003/A1003M, Structural Grade, Type H, metallic coated on used for framing members.			Delegated Design Calculations . Fasten at each stud intersection. 1. Channel Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs	
hickness and configuration, unless otherwise indicated, as			with a minimum of two screws into each flange of the clip angle for framing members up to 6 inches deep.	
			<ol> <li>Strap Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud- track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges, and secure</li> </ol>	,
			solid blocking to stud webs or flanges. 3. Bar Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.	2.4
	J	I.	Install steel sheet diagonal bracing straps to both stud flanges; terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.	
	k	Κ.	Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.	
	3.5 II A	NTE \.	RIOR NON-LOAD-BEARING WALL INSTALLATION Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting	
	E	3.	structure. Fasten both flanges of studs to top and bottom track unless otherwise indicated. Do not fasten studs to	
oated by hot-dip process according to ASTM A123/A123M. carbon-steel hex-headed bolts, carbon-steel nuts, and flat.	-		deflection track. Space studs as follows: 1. Stud Spacing: 16 inches maximum, or closer as required by Delegated Design Calculations	
rocess according to ASTM A153/A153M, Class C.	C	С.	Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.	
r than or equal to the design load, according to an evaluation based on ICC-ES AC193 or ICC-ES AC308 as appropriate	[	<b>)</b> .	Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.	
			<ol> <li>Install single deep-leg deflection tracks and anchor to building structure.</li> <li>Install double deep-leg deflection tracks and anchor outer track to building structure.</li> </ol>	
or adhesive anchor. 1 Where Stainless Steel Is Indicated: Allow Crown 1			<ol> <li>Connect vertical deflection clips to studs and anchor to building structure.</li> <li>Connect drift clips to cold-formed steel metal framing and onchor to building structure.</li> </ol>	
ASTM F594.	E	Ξ.	Install horizontal bridging in wall studs, spaced vertically in rows indicated on Shop Drawings but not more than 48 inches anart. Eastern at each stud intersection.	
uthorities having jurisdiction, based on ICC-ES AC70.			<ol> <li>Channel Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.</li> <li>Strop Bridging: Combination of flat taut attack there a function and this hand the study of the s</li></ol>	
esistant-coateu, seit-uninny, seit-tapping, steel drill screws. hing; manufacturer's standard elsewhere.			2. Surap bruging. Combination of trat, taut, steel sneet straps of width and thickness indicated and stud- track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure actid blocking to stud up to a flat straps.	
	-	_	<ol> <li>Bar Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.</li> <li>Tap Bridging for Single Deflection Track leader leave of the installed installed according to manufacturer's written instructions.</li> </ol>	
	F		track. Install a combination of bridging and stud or stud-track solid blocking of width and thickness matching	
			studs, secured to stud webs or flanges. 1. Install solid blocking at centers indicated on Shop Drawings.	

G. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

SECTION 05 40 00 - COLD-FORMED METAL FRAMING (CONTINUED)

- DIST INSTALLATION Install perimeter joist track sized to match joists. Align and securely anchor or fasten track to supporting structure at corners, ends, and spacings indicated on Shop Drawings.
- Install joists bearing on supporting frame, level, straight, and plumb; adjust to final position, brace, and reinforce. Fasten joists to both flanges of joist track.
- 1. Install joists over supporting frame with a minimum end bearing of 1-1/2 inches. 2. Reinforce ends and bearing points of joists with web stiffeners, end clips, joist hangers, steel clip angles, or steel-stud sections.
- Space joists not more than 2 inches from abutting walls, and as follows:
- I. Joist Spacing: 16 inches maximum, or closer as required by Delegated Design Calculations.
- Frame openings with built-up joist headers, consisting of joist and joist track or another combination of
- connected joists if indicated. Install joist reinforcement at interior supports with single, short length of joist section located directly over interior support, with lapped joists of equal length to joist reinforcement.
- 1. Install web stiffeners to transfer axial loads of walls above. Install bridging at intervals indicated on Shop Drawings. Fasten bridging at each joist intersection as follows: 1. Joist-Track Solid Bridging: Joist-track solid blocking of width and thickness indicated, secured to joist
- 2. Combination Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and joist-track solid blocking of width and thickness indicated. Fasten flat straps to bottom flange of joists and secure solid blocking to joist webs.
- Secure joists to load-bearing interior walls to prevent lateral movement of bottom flange. Install miscellaneous joist framing and connections, including web stiffeners, closure pieces, clip angles,
- continuous angles, hold-down angles, anchors, and fasteners, to provide a complete and stable joist-framing assembly. RECTION TOLERANCES
- Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
- 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
- ELD QUALITY CONTROL Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- Field and shop welds will be subject to testing and inspecting.
- Testing agency will report test results promptly and in writing to Contractor and Architect.
- Cold-formed steel framing will be considered defective if it does not pass tests and inspections. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of
- replaced or additional work with specified requirements.
- PAIRS AND PROTECTION Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed coldformed steel framing with galvanized repair paint according to ASTM A780/A780M and manufacturer's written
- instructions. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed steel framing is without damage or deterioration at time of Substantial Completion.
- F SECTION 05 40 00

CTION 061000 ROUGH CARPENTRY

- RT 1 GENERAL RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- SUMMARY
- A. This Section includes the following:
- Wood blocking, cants, and nailers.
- Wood furring and grounds. 3. Plywood backing panels.
- 4. Rooftop equipment bases and support curbs.
- B. Related Sections include the following: 1. Division 6 Section "Finish Carpentry" for nonstructural carpentry items exposed to view and not specified in another Section.
- DEFINITIONS A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension. SUBMITTALS
- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by
- treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained. 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating
- plant that treated materials comply with requirements. Include physical properties of treated materials 3.4 PROTECTION based on testing by a qualified independent testing agency. 3. For products receiving a waterborne treatment, include statement that moisture content of treated
- materials was reduced to levels specified before shipment to Project site. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project: Preservative-treated wood
- 2. Fire-retardant-treated wood.
- DELIVERY, STORAGE, AND HANDLING
- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around _SECTION 062023 INTERIOR FINISH CARPENTRY stacks and under coverings.
- T 2 PRODUCTS WOOD PRODUCTS, GENERAL
- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
- 1. Factory mark each piece of lumber with grade stamp of grading agency. 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content
- specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber. Provide dressed lumber, S4S, unless otherwise indicated. WOOD-PRESERVATIVE-TREATED MATERIALS
- A. Preservative Treatment by Pressure Process: AWPA C2, except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX)
- 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review. Application: Treat items indicated on Drawings, and the following: 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in
- connection with roofing, flashing, vapor barriers, and waterproofing. Blocking, furring, and similar concealed members in contact with masonry or concrete. FIRE-RETARDANT-TREATED MATERIALS
- A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood). All fire
- treated material shall meet or exceed ASTM E84.
- Use treatment that does not promote corrosion of metal fasteners.
- Use Exterior type or Interior Type A, for all locations, where fire-retardent-treated material is indicated. B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency
- acceptable to authorities having jurisdiction.
- Application: Treat items indicated on Drawings, and the following:
- Concealed blocking. Plywood backing panels.
- MISCELLANEOUS LUMBER
- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
- Blocking.
- Nailers.
- Cants. Furring.
- Grounds.
- Utility shelving
- Rooftop equipment bases and support curbs. B. For items of dimension lumber size, provide Standard, Stud, or No. 3 grade lumber with 19 percent maximum moisture content of any species.
- C. For exposed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
- 1. Eastern white pine, Idaho white, Iodgepole, ponderosa, or sugar pine; Premium or 2 Common (Sterling) grade; NeLMA, NLGA, WCLIB, or WWPA.
- Mixed southern pine, No. 2 grade; SPIB.
- Hem-fir or hem-fir (north), Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA. 4. Spruce-pine-fir (south) or spruce-pine-fir, Select Merchantable or No. 1 Common grade; NeLMA,
- NLGA, WCLIB, or WWPA. D. For concealed boards, provide fire-retardant treated lumber with 19 percent maximum moisture content and
- any of the following species and grades: Mixed southern pine, No. 2 grade; SPIB.
- 2. Spruce-pine-fir (south) or spruce-pine-fir, Construction or 2 Common grade; NeLMA, NLGA, WCLIB, or For blocking not used for attachment of other construction Utility, Stud, or No. 3 grade lumber of any species
- may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and
- F. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.
- G. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

material and manufacture.

Wood Screws: ASME B18.6.1.

Lag Bolts: ASME B18.2.1.

washers.

PART 3 - EXECUTION

2.7 MISCELLANEOUS MATERIALS

3.1 INSTALLATION, GENERAL

otherwise indicated.

thickness.

indicated

otherwise indicated

3.3 WOOD FURRING INSTALLATION

finish work.

inches o.c.

END OF SECTION 06100

PART 1 - GENERAL

1.2 SUBMITTALS

1.3 QUALITY ASSURANCE

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

1.1 SUMMARY

and trim.

Power-Driven Fasteners: NES NER-272.

qualified independent testing and inspecting agency.

approved for use indicated by adhesive manufacturer.

A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for

D. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat

without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a

G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain,

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

A. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D 3498 that is

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless

other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and

Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items,

blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches

Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top

story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used,

provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal-

Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other

materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or

E. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

solid wood blocking or noncombustible materials accurately fitted to close furred spaces.

Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

H. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the

Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate

cut as required for true line and level of attached work. Coordinate locations with other work involved.

Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-

1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove

Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of

Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic

See Division 01 Section "Summary of Work" for interior woodwork not specified in this Section.

A. Forest Certification: For the following wood products, provide materials produced from wood obtained from

A. Lumber: DOC PS 20 and applicable grading rules of inspection agencies certified by ALSC's Board of

A. Lumber: Comply with performance requirements in AWPA C20, Interior Type A. Kiln dry after treatment to

B. Plywood: Comply with performance requirements in AWPA C27, Interior Type A. Kiln dry after treatment to

1. Species and Grade: Red Oak; Transparent Finish (Stain or Clear Finish); NHLA. Maximum moisture

1. Use wood glue that has a VOC content of 30 g/L or less when calculated according to 40 CFR 59,

1. Use adhesive that has a VOC content of 50 g/L or less when calculated according to 40 CFR 59,

content values in subparagraph below are based on ranges given for optimum moisture content in

forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles

2. See Division 06 Section "Interior Architectural Woodwork" for interior woodwork not specified in this

boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to

B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal- size furring vertically at 24

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-

registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless

members where opposite side will be exposed to view or will receive finish materials. Make tight connections

between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise

Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and

Use inorganic boron for items that are continuously protected from liquid water.

Use copper naphthenate for items not continuously protected from liquid water.

2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of

high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

treated, in thickness indicated or, if not indicated, not less than 1/2-inch nominal thickness.

wings, length as recommended by screw manufacturer for material being fastened.

similar supports to comply with requirements for attaching other construction.

Do not splice structural members between supports, unless otherwise indicated.

too small to use with minimum number of joints or optimum joint arrangement.

1. NES NER-272 for power-driven fasteners.

temporary grounds when no longer required.

comply with EPA-registered label.

A. This Section includes the following:

Section

Interior standing and running trim

A. Product Data: For each type of process and factory-fabricated product.

Related Sections include the following:

and Criteria for Forest Stewardship":

B. Softwood Plywood: DOC PS 1.

2.2 FIRE-RETARDANT-TREATED MATERIALS

Application: Where indicated.

2.3 STANDING AND RUNNING TRIM

A. Hardwood Lumber Trim:

C. Molding Patterns:

1. As indicated.

2.5 MISCELLANEOUS MATERIALS

1. Interior standing and running trim.

a maximum moisture content of 19 percent.

a maximum moisture content of 15 percent.

2. Maximum Moisture Content: 9 percent

a. Species: Poplar

2. Optional Material: Primed MDF

Subpart D (EPA Method 24).

Subpart D (EPA Method 24).

Hardwood Moldings: WMMPA HWM 2, P-grade.

b. Maximum Moisture Content: 9 percent.

A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

2.5 PLYWOOD BACKING PANELS

2.6 FASTENERS

![](_page_13_Picture_79.jpeg)

ARCHITECTS

### **CT INNOVATIONS**

#### CT INNOVATIONS - COLI BUILDING

120 Hushope Ave - 4th Floor Hartford. CT 06106

CONSULTANTS

KEY PLAN

FOR COLT.rvt

PROJECT NUMBER	19039
CURRENT SUBMISSION DATE	12.13.2019
DRAWN	Author
CHECKED	Checker
SCALE	As indicated
FILE REFERENCE	C:\Users\nnm\Desktop\CT
	INNOVATIONS\19039_CT INNOVATIONS -
	THE DISTRICT_SPECIFICATIONS ONLY

HISTORY OF SUBMISSIONS

PROJECT DATA

![](_page_13_Picture_88.jpeg)

### FOR CONSTRUCTION

SHEET TITLE

### SPECIFICATIONS

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PART 3 - EXECUTION 3.1 PREPARATION A. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours. 3.2 INSTALLATION, GENERAL A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment. 1. Scribe and cut interior finish carpentry to fit adjoining work. Countersink fasteners, fill surface flush, and sand where face fastening is unavoidable.

AWI's "Architectural Woodwork Quality Standards Illustrated."

B. Moldings for Opaque Finish (Painted): Made to patterns included in WMMPA WM 12.

Paneling Adhesive: Comply with paneling manufacturer's written recommendations.

Install to tolerance of 1/8 inch in 96 inches (3 mm in 2438 mm) for level and plumb. Install adjoining interior finish carpentry with 1/32-inch (0.8-mm) maximum offset. 3.3 STANDING AND RUNNING TRIM INSTALLATION

Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Cope at returns and miter at corners to produce tight-fitting joints. Use scarf joints for end-to-end joints.

#### SECTION 064023 INTERIOR ARCHITECTURAL WOODWORK

#### PART 1 - GENERAL

- 1.1 SUMMARY A. This Section includes the following:
- Architectural Woodwork.
- Cabinetwork
- Shop finishing of woodwork. B. Interior architectural woodwork includes wood furring, blocking, shims, and hanging strips unless
- concealed within other construction before woodwork installation
- 1.2 SUBMITTALS
- Product Data: For finishing materials and processes. B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
- C. Samples
- Submit three (3) samples of all architectural woodwork finishes; painted, lacquer and plastic
- laminate to Architect for review and acceptance prior to fabrication Woodwork Quality Standard Compliance Certificates: AWI Quality Certification Program
- certificates. E. Submit certification of fire-treated of wood stating name of fire-retardant materials used, and compliance with AWPA specification C1 and C20 for lumber and C27 for plywood.
- 1.3 QUALITY ASSURANCE
- Installer Qualifications: Fabricator of woodwork. B. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards.
- 1. Provide AWI Quality Certification Program labels and certificates for woodwork. C. Contractor shall have examined the job site in conjunction with Project Documents so as to be satisfied as to the conditions under which the work will be performed, including such matters as unloading
- facilities, location and size of elevators, equipment or facilities and any other conditons needed preliminary to and during the work.
- PART 2 PRODUCTS 2.1 MATERIALS
- A. Exposed P-Lam Wood Veneer: Provide the following match and assembly for continuous sequential use of flitches or each seperate expanse of matched work as indicated (i.e. panels, doors and casework): Horizontal Match: Book match.
- Vertical Match: End match.
- **3**. Assembly: Center match each assembly (Use even number of equal width pieces to make up
  - panel width) Wood substrate shall be 3/4" MDR plywood with veneer applied finish. Fabricate so that minimal joints are visible.
- B. Plastic Laminate: Plastic laminate color, manufacturer and finish as designated on finish plans, shall be of the following types for specific application, conforming to NEMA LD-3 and Architect approved samples. Adhesive: Contact Type, FS MM-A 130, as recommended by manufacturer to suit application.
- Horizontal Surfaces: General Purpose Type, nominal 0.050 inch. Vertical Surfaces: Vertical Surface Type, nominal 0.032 inch.
- Unexposed Surfaces: Balanced with 0.020 inch backing sheet.
- Bases: Specified purpose type, nominal 0.125 inch. Postformed countertops.
- Postforming Type: Nominal 0.040 inch. 6. Semi-exposed Surfaces: Cabinet Liner, low pressure polyester overlay, nominal 0.020 inch, unless
- noted to recieve plastic laminate on Drawings.
- 2.3 FIRE-RETARDANT-TREATED MATERIALS
- A. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Comply with performance requirements of AWPA C20 (lumber), AWPA C27 (plywood), and ASTM E84. Use Interior Type A. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Kiln-dry material after treatment.
- 2.4 MISCELLANEOUS MATERIALS . Adhesives, General: Do not use adhesives that contain urea formaldehyde.
- B. Cabinet hardware and related accessories shall be indicated on millwork details.
- 2.5 FABRICATION A. General: Complete fabrication to maximum extent possible before shipment to Project site. Where necessary for fitting at site, provide allowance for scribing, trimming, and fitting.
  - Interior Woodwork Grade: Premium. 2. Shop cut openings to maximum extent possible. Sand edges of cutouts to remove splinters and
  - burrs. Seal edges of openings in countertops with a coat of varnish.
- B. Plastic-Laminate or Opaque Finished Millwork: 1. Grade: Custom.
- 2.6 SHOP FINISHING
- A. Finish architectural woodwork at fabrication shop. Defer only final touchup, cleaning, and polishing until
- after installation B. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of
- woodwork. Apply two coats to back of paneling.
- PART 3 EXECUTION 3.1 PROTECTION
- A. Protect all architectural woodwork items during transit, delivery, storage and handling to prevent damage, soiling and deterioration. The Woodwork Contractor and General Contractor shall be jointly responsible. 3.2 INSTALLATION
- A. Woodwork Contractor shall notify the Architect in writing of any discrepancies between Drawings and field conditions and shall not proceed with the portion of Work in question until the discrepancies are clarified
- B. Before installation, condition woodwork to average prevailing humidity conditions in installation areas. Examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.
- C. Grade: Install woodwork to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
- D. Install woodwork level, plumb, true, and straight to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Shim as required with concealed shims.
- Scribe and cut woodwork to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.
- G. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Fill gaps, if any, between top of base and wall with plastic wood filler, sand smooth, and finish same as wood base if finished.
- H. Countertops: Anchor securely by screwing through corner blocks of supports into underside of countertop. Caulk space between backsplash and wall with sealant specified in Division 07 Section "Joint
- I. Just prior to Owner acceptance, remove protective covering, touch up as required, wipe clean, adjust and lubricate hardware, and check for proper operation of all items. Coordinate this with the General Contractor.

- SECTION 072100 THERMAL INSULATION
- PART 1 GENERAL 1.1 SUMMARY
- A. Section Includes: 1. Acoustical Batt insulation.
- 1.2 SUBMITTALS
- A. Product Data: For each type of product indicated. Product test reports.
- Research/evaluation reports.
- PART 2 PRODUCTS 2.1 GLASS-FIBER BLANKET INSULATION
- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering produ that may be incorporated into the Work include, but are not limited to, the following:
  - CertainTeed Corporation. Guardian Building Products, Inc.
  - Johns Manville.
- 4. Knauf Insulation.
- 5. Owens Corning. B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
- PART 3 EXECUTION 3.1 INSTALLATION, GENERAL
- A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.
- B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, snow at any time.
- C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions ar
- voids with insulation. Remove projections that interfere with placement. D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless r
- layers are otherwise shown or required to make up total thickness 3.2 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION
- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written
- instructions. If no specific method is indicated, bond units to substrate with adhesive or use mech anchorage to provide permanent placement and support of units. B. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members a to the following requirements:
- Use insulation widths and lengths that fill the cavities formed by framing members. If more one length is required to fill the cavities, provide lengths that will produce a snug fit between
- Place insulation in cavities formed by framing members to produce a friction fit between edge insulation and adjoining framing members.
- Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated protected from contact with insulation.
- 4. For metal-framed wall cavities where cavity heights exceed 96 inches (2438 mm), support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to of metal studs.
- SECTION 078413 PENETRATION FIRESTOPPING
- PART 1 GENERAL
- 1.1 RELATED DOCUMENTS A. Drawings and general provisions of the Contract, including General and Supplementary Condition and Division 1 Specification Sections, apply to this Section.
- 1.2 SUMMARY A. This Section includes through-penetration firestop systems for penetrations through fire-resistance rated constructions, including both empty openings and openings containing penetrating items.
- B. Related Sections include the following: Division 13 Sections specifying fire-suppression piping penetrations.
- Division 15 Sections specifying duct and piping penetrations.
- 3. Division 16 Sections specifying cable and conduit penetrations.
- 1.3 PERFORMANCE REQUIREMENTS A. General: For penetrations through fire-resistance-rated constructions, including both empty open
- and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage smoke and other gases, and maintain original fire-resistance rating of construction penetrated. B. Rated Systems: Provide through-penetration firestop systems with the following ratings determin
- ASTM E 814 or UL 1479: . F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but less than that equaling or exceeding fire-resistance rating of constructions penetrated.
- T-Rated Systems: For the following conditions, provide through-penetration firestop system T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed potential contact with adjacent materials in occupiable floor areas: a. Penetrations located outside wall cavities.
- b. Penetrations located outside fire-resistance-rated shaft enclosures.
- C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage provide products that, after curing, do not deteriorate when exposed to these conditions both dur
- and after construction. . For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resist
- through-penetration firestop systems
- 2. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to poss loading and traffic, provide firestop systems capable of supporting floor loads involved, either
- installing floor plates or by other means. 3. For penetrations involving insulated piping, provide through-penetration firestop systems not
- requiring removal of insulation.
- D. For through-penetration firestop systems exposed to view, provide products with flame-spread an smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84. E. For penetrations through construction designated to be smoke resistant, provide systems as desc
- 1.4 SUBMITTALS
- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each through-penetration firestop system, show each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item. Include firestop design designation of qualified testing and inspecting agency that evidences compliance requirements for each condition indicated.
- 1. Submit documentation, including illustrations, from a qualified testing and inspecting agency is applicable to each through-penetration firestop system configuration for construction and penetrating items.
- C. Through-Penetration Firestop System Schedule: Indicate locations of each through-penetration firestop system, along with the following information:
- Types of penetrating items.

1.5 QUALITY ASSURANCE

CTION 072100 THERMAL INSULATION	SECTION 078413 PENETRATION FIRESTOPPING (CONT'D)	SECTION 079200 JOINT SEALANTS
RT 1 - GENERAL SUMMARY	<ul> <li>1.6 DELIVERY, STORAGE, AND HANDLING</li> <li>A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages</li> </ul>	PART 1 - GENERAL 1.1 RELATED DOCUMENTS
A. Section Includes: 1. Acoustical Batt insulation.	number, shelf life if applicable, qualified testing and inspecting agency's classification marking applicable to Project,	A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
SUBMITTALS A Product Data: For each type of product indicated	B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or	<ol> <li>SUMMARY</li> <li>A. This Section includes joint sealants for the following applications, including those specified by</li> </ol>
B. Product test reports.	1.7 PROJECT CONDITIONS	reference to this Section: 1. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:
RT 2 - PRODUCTS GLASS-FIBER BLANKET INSULATION	A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system	<ul> <li>a. Control and expansion joints on exposed interior surfaces of exterior walls.</li> <li>b. Perimeter joints of exterior openings where indicated.</li> </ul>
<ul> <li>A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:</li> </ul>	B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural	<ul> <li>c. Tile control and expansion joints.</li> <li>d. Vertical joints on exposed surfaces of concrete walls and partitions.</li> </ul>
<ol> <li>CertainTeed Corporation.</li> <li>Guardian Building Products. Inc.</li> </ol>	1.8 COORDINATION	<ul> <li>Perimeter joints between interior wall surfaces and frames of interior doors and windows.</li> <li>Joints between plumbing fixtures and adjoining walls, floors, and counters.</li> </ul>
<ol> <li>Johns Manville.</li> <li>Knauf Insulation.</li> </ol>	<ul> <li>Coordinate construction of openings and penetrating items to ensure that through-penetration itrestop systems are installed according to specified requirements.</li> </ul>	g. Other joints as indicated. B. Related Sections include the following:
<ol> <li>Owens Corning.</li> <li>Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665. Type I: with maximum flame-spread and</li> </ol>	<ul> <li>B. Coordinate sizing of sleeves, openings, core-drilled noies, of cut openings to accommodate through- penetration firestop systems.</li> <li>Neith Qurada isonestical escape at least equal data is advance of through accommodate firestop.</li> </ul>	<ol> <li>Division 7 Section "Fire-Resistive Joint Systems" for sealing joints in fire-resistance-rated construction.</li> </ol>
smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.	system installations; confirm dates and times on days preceding each series of installations.	<ol> <li>Division 8 Section "Glazing" for glazing sealants.</li> <li>Division 8 Section "Aluminum Framed Entrances and Storefronts" for structural and other</li> </ol>
RT 3 - EXECUTION INSTALLATION, GENERAL	other construction until each installation has been examined by Owner's inspecting agency and building inspector, if required by outberitige basing juridiation	glazing sealants. 4. Division 9 Section "Gypsum Board Assemblies" for sealing perimeter joints of gypsum board
A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.	PART 2 - PRODUCTS	partitions to reduce sound transmission. 5. Division 9 Section "Ceramic Tile" for sealing tile joints.
B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.	A. Products: Subject to compliance with requirements, provide one of the through-penetration firestop	<ol> <li>Division 9 Section "Acoustical Panel Ceilings" for sealing edge moldings at perimeters of acoustical ceilings.</li> </ol>
C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.	1. A/D Fire Protection Systems Inc.	<ul><li>1.3 PERFORMANCE REQUIREMENTS</li><li>A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint</li></ul>
D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple	3. Hilti, Inc. 4. Johns Manville	seals without staining or deteriorating joint substrates. 1.4 SUBMITTALS
layers are otherwise shown or required to make up total thickness. INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION	5. Specified Technologies Inc. 6. 3M: Fire Protection Products Division	<ul> <li>A. Product Data: For each joint-sealant product indicated.</li> <li>B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants</li> </ul>
A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical	<ol> <li>Tremco; Sealant/Weatherproofing Division.</li> <li>USG Corporation.</li> </ol>	showing the full range of colors available for each product exposed to view. C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint
anchorage to provide permanent placement and support of units. B. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according	2.2 FIRESTOPPING, GENERAL A. Compatibility: Provide through-penetration firestop systems that are compatible with one another; with the	sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
to the following requirements: 1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than	substrates forming openings; and with the items, if any, penetrating through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based	D. SWRI Validation Certificate: For each elastomeric sealant specified to be validated by SWRI's Sealant Validation Program.
<ul><li>one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.</li><li>Place insulation in cavities formed by framing members to produce a friction fit between edges of</li></ul>	on testing and field experience. B. Accessories: Provide components for each through-penetration firestop system that are needed to	<ul> <li>E. Qualification Data: For Installer.</li> <li>F. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:</li> <li>Materials for installer to be taken and is is a sealant backback backback backback backback.</li> </ul>
<ol> <li>Insulation and adjoining framing members.</li> <li>Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated for or</li> </ol>	install fill materials and to comply with Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified	and adhesion with joint sealants.
<ol> <li>For metal-framed wall cavities where cavity heights exceed 96 inches (2438 mm), support</li> </ol>	testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:	<ol> <li>Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.</li> <li>C Eicld Test Perset Lest Est each electemeric scalent emplication</li> </ol>
unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of insulation to flanges	<ol> <li>Permanent forming/damming/backing materials, including the following:</li> <li>a. Slag-/rock-wool-fiber insulation.</li> </ol>	<ul> <li>Heid Test Report Log. For each elastoment sealant application.</li> <li>H. Product Test Reports: Based on comprehensive testing of product formulations performed by a gualified testing again and indicating that sealants comply with requirements.</li> </ul>
CTION 078413 PENETRATION FIRESTOPPING	<ul> <li>Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.</li> </ul>	I. Warranties: Special warranties specified in this Section.
RT 1 - GENERAL	<ul><li>c. Fire-rated form board.</li><li>d. Fillers for sealants.</li></ul>	<ul> <li>A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project</li> </ul>
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions	<ol> <li>Temporary forming materials.</li> <li>Substrate primers.</li> </ol>	<ul> <li>B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.</li> <li>C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers for</li> </ul>
SUMMARY A This Section includes through-penetration fireston systems for penetrations through fire-resistance-	4. Collars. 5. Steel sleeves.	testing indicated below, samples of materials that will contact or affect joint sealants. 1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques
rated constructions, including both empty openings and openings containing penetrating items.	<ul> <li>2.3 FILL MATERIALS</li> <li>A. General: Provide through-penetration firestop systems containing the types of fill materials indicated in the Through Department of the systems containing the types of fill materials indicated in the</li> </ul>	are required to obtain rapid, optimum adhesion of joint sealants to joint substrates. 2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims,
Division 13 Sections specifying fire-suppression piping penetrations.     Division 15 Sections specifying duct and piping penetrations.	referencing the types of materials described in this Article. Fill materials are those referred to in directories of	joint-sealant backings, secondary seals, and miscellaneous materials. 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
3. Division 16 Sections specifying cable and conduit penetrations. PERFORMANCE REQUIREMENTS	<ul> <li>B. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors</li> <li>and consisting of an outer metallic sloove lined with an intumescent strip, a radial extended flange.</li> </ul>	<ol> <li>For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.</li> </ol>
A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are	attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.	D. Product Testing: Obtain test results for "Product Test Reports" Paragraph in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month
produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.	exposure to moisture. D Fireston Devices: Factory-assembled collars formed from galvanized steel and lined with	period preceding the Notice to Proceed with the Work. 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C
<ul> <li>Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814 or UL 1479:</li> </ul>	intumescent material sized to fit specific diameter of penetrant. E. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet	1021 to conduct the testing indicated, as documented according to ASTM E 548.
<ol> <li>F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.</li> </ol>	bonded to galvanized steel sheet. F. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents.	<ol> <li>I est elastomeric joint sealants for compliance with requirements specified by reference to ASTM C 920, and where applicable, to other standard test methods.</li> </ol>
<ol> <li>T-Rated Systems: For the following conditions, provide through-penetration firestop systems with T-ratings indicated, as well as F-ratings, where systems protect penetrating items exposed to</li> </ol>	inorganic fibers, or silicone compounds. G. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on	<ol> <li>Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under sufficience and indeptotion bardings.</li> </ol>
potential contact with adjacent materials in occupiable floor areas: a. Penetrations located outside wall cavities.	one side. H. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers,	<ol> <li>Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.</li> </ol>
<ul> <li>D. Penetrations located outside fire-resistance-rated shaft enclosures.</li> <li>C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage,</li> </ul>	and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.	<ul> <li>E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:</li> </ul>
and after construction.	<ol> <li>Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives.</li> </ol>	<ol> <li>Locate test joints where indicated on Project or, if not indicated, as directed by Architect.</li> <li>Conduct field tests for each application indicated below:</li> </ol>
<ol> <li>To piping penetrations for planning and wet-pipe spinicle systems, provide moisture-resistant through-penetration firestop systems.</li> <li>For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible</li> </ol>	J. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.	<ul> <li>a. Each type of elastomeric sealant and joint substrate indicated.</li> <li>b. Each type of nonelastomeric sealant and joint substrate indicated.</li> </ul>
loading and traffic, provide firestop systems capable of supporting floor loads involved, either by installing floor plates or by other means	<ul> <li>K. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:</li> <li>A. Crade, Devrable (celf leveline) formulation for exercises in floore and other beimentel surfaces</li> </ul>	<ol> <li>Notify Architect seven days in advance of dates and times when test joints will be erected.</li> <li>Arrange for tests to take place with joint-sealant manufacturer's technical representativepresent.</li> </ol>
<ol> <li>For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.</li> </ol>	and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping,	a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.	conditions.	<ol> <li>For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for</li> </ol>
E. For penetrations through construction designated to be smoke resistant, provide systems as described above.	<ul> <li>A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required)</li> </ul>	opposite side. 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint
SUBMITTALS A. Product Data: For each type of product indicated.	type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance	substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is
B. Shop Drawings: For each through-penetration firestop system, show each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item. Include	characteristics for application indicated. PART 3 - EXECUTION	<ul> <li>obtained.</li> <li>6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive</li> <li>failure form testing in changes of other indications of neurophysical sectors.</li> </ul>
firestop design designation of qualified testing and inspecting agency that evidences compliance with requirements for each condition indicated.	<ul> <li>3.1 EXAMINATION</li> <li>A. Examine all penetrations of fire-rated assemblies and verify proposed firestop system is proper for</li> </ul>	considered satisfactory. Do not use sealants that fail to adhere to joint substrates during
<ol> <li>Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and remated is itema.</li> </ol>	actual construction. Modify schedule as required, and resubmit to architect. B. Examine substrates and conditions, with Installer present, for compliance with requirements for	<ul> <li>F. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and</li> </ul>
C. Through-Penetration Firestop System Schedule: Indicate locations of each through-penetration firestop system along with the following information:	opening configurations, penetrating items, substrates, and other conditions affecting performance of work.	execution:
<ol> <li>Types of penetrating items.</li> <li>Types of constructions penetrated including fire-resistance ratings and where applicable</li> </ol>	<ol> <li>Proceed with installation only after unsatisfactory conditions have been corrected.</li> <li>3.2 PREPARATION</li> </ol>	elastomeric joint sealants, which are specified by reference to this Section. G. Preinstallation Conference: Conduct conference at Project site to comply with requirements in
<ul><li>thicknesses of construction penetrated.</li><li>Through-penetration firestop systems for each location identified by firestop design designation of</li></ul>	<ul> <li>Surface cleaning. Clean out openings immediately before installing through-penetration firestop systems to comply with firestop system manufacturer's written instructions and with the following requirements:</li> </ul>	Division 1 Section "Project Management and Coordination." 1.6 PROJECT CONDITIONS
qualified testing and inspecting agency. D. Qualification Data: For Installer.	<ol> <li>Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems</li> </ol>	<ul> <li>A. Do not proceed with installation of joint sealants under the following conditions:</li> <li>1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant</li> </ul>
E. Product Certificates: For through-penetration firestop system products, signed by product manufacturer.	<ol> <li>Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration fireston systems. Remove loose particles</li> </ol>	<ul><li>manutacturer or are below 40 deg F.</li><li>When joint substrates are wet.</li></ul>
QUALITY ASSURANCE A. Installer Qualifications: A firm that has been approved by FMG according to FMG 4991, "Approval of	remaining from cleaning operation. 3. Remove laitance and form-release agents from concrete.	3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
Firestop Contractors." B. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and	B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to	4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.
construction condition indicated, through one source from a single manufacturer. C. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the	areas of bond; do not allow spillage and migration onto exposed surfaces. C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting	<ul> <li>A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace</li> <li>A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace</li> </ul>
<ol> <li>Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing</li> <li>Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing</li> </ol>	adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop	this Section within specified warranty period.
(Intertek Testing Services), or another agency performing testing and follow-up inspection	system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates. 3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION	<ul> <li>B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not</li> </ul>
<ol> <li>Through-penetration firestop systems are identical to those tested per testing standard referenced in "Part 1 Performance Requirements" Article Provide rated systems complying with the following</li> </ol>	A. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and while ad desuring formulation and the state of the state	comply with performance and other requirements specified in this Section within specified warranty period.
requirements: a Through-penetration firestop system products bear classification marking of qualified testing	B. Install forming/damming/backing materials and other accessories of types required to support fill	1. Warranty Period: Ten years from date of Substantial Completion. C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants
and inspecting agency. b. Through-penetration firestop systems correspond to those indicated by reference to through-	depths required to achieve fire ratings indicated.	from the following: 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's
penetration firestop system designations listed by the following: 1) UL in its "Fire Resistance Directory."	materials and other accessories not indicated as permanent components of firestop systems. C. Install fill materials for firestop systems by proven techniques to produce the following results:	written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
<ul> <li>D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division</li> <li>1 Section "Project Management and Coordination."</li> </ul>	<ol> <li>Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.</li> </ol>	<ol> <li>Disintegration of joint substrates from natural causes exceeding design specifications.</li> <li>Mechanical damage caused by individuals, tools, or other outside agents.</li> </ol>
	<ol> <li>Apply materials so they contact and adhere to substrates formed by openings and penetrating items.</li> </ol>	<ol> <li>Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.</li> </ol>
	<ol> <li>For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.</li> </ol>	
	<ul><li>3.4 FIELD QUALITY CONTROL</li><li>A. Inspecting Agency: Owner will engage a qualified, independent inspecting agency to inspect</li></ul>	
	through-penetration firestops. Independent inspecting agency shall comply with ASTM E 2174 requirements including those related to qualifications, conducting inspections, and preparing test reports.	
	<ul> <li>B. vvnere deticiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.</li> </ul>	
	<ol> <li>Proceed with enclosing through-penetration threstop systems with other construction only after inspection reports are issued and firestop installations comply with requirements.</li> <li>3.5. CLEANING AND PROTECTING</li> </ol>	
	<ul> <li>A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not</li> </ul>	
	damage materials in which openings occur. B. Provide final protection and maintain conditions during and after installation that ensure that through-	
	panetration fracton systems are without damage or detorioration at time of Substantial Completion. If despite such	

protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despi firestop systems immediately and install new materials to produce systems complying with specified requirements.

#### SECTION 079200 JOINT SEALANTS (CONT'D)

#### PART 2 - PRODUCTS 2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles. 2.2 MATERIALS, GENERAL
- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range. 2.3 ELASTOMERIC JOINT SEALANTS
- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquidapplied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- D. Single-Component Pourable Neutral-Curing Silicone Sealant Use for interior horizontal moving joints
- 1. Available Products:
- a. Dow Corning Corporation; 890-SL.
- Pecora Corporation; 300 Pavement Sealant (Self Leveling)
- c. Dow Corning Corporation; SL Parking Structure Sealant. 2. Type and Grade: S (single component) and P (pourable).
- 3. Class: 100/50. 4. Uses Related to Exposure: NT and T (traffic).
- 5. Uses Related to Joint Substrates: M, A, and O, as applicable to joint substrates indicated. a. Use O Joint Substrates: Galvanized steel ceramic tile and concrete.
- Use for all interior vertical moving joints
- 1. Products:
- a. Dow Corning Corporation; 790. b. GE Silicones; SilPruf LM SCS2700.
- c. Pecora Corporation; 864.
- d. Polymeric Systems Inc.; PSI-641.
- e. Sonneborn, Division of ChemRex Inc.; Omniseal. Tremco; Spectrem 3.
- 2. Type and Grade: S (single component) and NS (nonsag).
- Class: 50.
- 4. Use Related to Exposure: NT (nontraffic).
- 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O. a. Use O Joint Substrates: color anodic aluminum galvanized steel ceramic tile wood and concrete/precast concrete.
- 6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
- F. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant: Use for sealing around interior plumbing fixtures and ceramic tile
- Products:
- a. Dow Corning Corporation; 786 Mildew Resistant.
- b. GE Silicones; Sanitary SCS1700. c. Tremco; Tremsil 200 White.
- 2. Type and Grade: S (single component) and NS (nonsag).
- 3. Class: 25.
- 4. Use Related to Exposure: NT (nontraffic).
- 5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O. a. Use O Joint Substrates: anodic aluminum, ceramic tile, and plumbing fixtures.
- 2.4 SOLVENT-RELEASE JOINT SEALANTS
- A. Butyl-Rubber-Based Solvent-Release Joint Sealant: Comply with ASTM C 1085.
- Use for threshold setting bed 1. Products:
  - a. Bostik Findley; Bostik 300.
  - b. Fuller, H. B. Company; SC-0296.
- c. Fuller, H. B. Company; SC-0288.
- d. Pecora Corporation; BC-158.
- e. Polymeric Systems Inc.; PSI-301
- f. Sonneborn, Division of ChemRex Inc.; Sonneborn Multi-Purpose Sealant.
- g. Tremco; Tremco Butyl Sealant. 2.5 LATEX JOINT SEALANTS
- A. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.
- For interior non-moving joints
- B. Products:
- 1. Bostik Findley; Chem-Calk 600.
- 2. Pecora Corporation; AC-20+. 3. Schnee-Morehead, Inc.; SM 8200.
- 4. Sonneborn, Division of ChemRex Inc.; Sonolac.
- 5. Tremco; Tremflex 834.
- 2.6 ACOUSTICAL JOINT SEALANTS
- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
- 1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E90.
  - 2. Products: a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
  - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.
- 2.7 JOINT-SEALANT BACKING A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant
- manufacturer based on field experience and laboratory testing B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated,
- and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance: C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal,
- to control sealant depth, and to otherwise contribute to optimum sealant performance. D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.
- 2.8 MISCELLANEOUS MATERIALS
- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests. B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of
- sealants to joint substrates. C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.
- PART 3 EXECUTION
- 3.1 EXAMINATION A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance. B. Proceed with installation only after unsatisfactory conditions have been corrected.
- 3.2 PREPARATION
- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements: 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant
- adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost. 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a
- combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following[.]
- a. Concrete.
- b. Unglazed surfaces of ceramic tile. 3. Remove laitance and form-release agents from concrete.
- 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
- a. Metal.
- b. Glass.
- c. Porcelain enamel. d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with jointsealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

#### **AMENTA**|EMMA ARCHITECTS

![](_page_14_Picture_180.jpeg)

### **CT INNOVATIONS**

## CT INNOVATIONS - COLI

BUILDING

120 Hushope Ave - 4th Floor Hartford. CT 06106

CONSULTANTS

KEY PLAN 

> PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE FILE REFERENCE C:\Users\nnm\Desktop\CT INNOVATIONS\19039 CT INNOVATIONS -THE DISTRICT_SPECIFICATIONS ONLY

19039

Author

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FOR COLT.rvt

12.13.2019

HISTORY OF SUBMISSIONS

![](_page_14_Figure_189.jpeg)

#### FOR CONSTRUCTION

#### SHEET TITLE

#### SPECIFICATIONS

![](_page_14_Picture_194.jpeg)

#### SECTION 079200 JOINT SEALANTS (CONT'D)

- 3.3 INSTALLATION OF JOINT SEALANTS
- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and
- applications indicated, unless more stringent requirements apply. B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants
- as applicable to materials, applications, and conditions indicated.
- C. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint
- sealants in acoustical applications as applicable to materials, applications, and conditions indicated. D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
- 1. Do not leave gaps between ends of sealant backings.
- Do not stretch, twist, puncture, or tear sealant backings. 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials
- Install bond-breaker tape behind sealants where sealant backings are not used between sealants and
- backs of joints.
- F. Install sealants using proven techniques that comply with the following and at the same time backings are 1. Place sealants so they directly contact and fully wet joint substrates.
- Completely fill recesses in each joint configuration. 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum
- sealant movement capability. G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins,
- tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealant from surfaces adjacent to joints. 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor
- sealants or adjacent surfaces. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated. 4. Provide recessed joint configuration of recess depth and at locations indicated per Figure 5C in
- ASTM C 1193. a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- 3.4 FIELD QUALITY CONTROL
- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows: . Extent of Testing: Test completed elastomeric sealant joints as follows:
- a. Perform 10 tests for the first 1000 feet of joint length for each type of elastomeric sealant and ioint substrate.
- b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation. 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab
- in Appendix X1 in ASTM C 1193, as appropriate for type of joint-sealant application indicated. a. For joints with dissimilar substrates, verify adhesion to each substrate separately; do this by extending cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
- 3. Inspect joints for complete fill, for absence of voids, and for joint configuration complying with specified requirements. Record results in a field-adhesion-test log.
- 4. Inspect tested joints and report on the following:
- a. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion handpull test criteria.
- b. Whether sealants filled joint cavities and are free of voids.
- c. Whether sealant dimensions and configurations comply with specified requirements. 5. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion
- results and percent elongations, sealant fill, sealant configuration, and sealant dimensions. 6. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts
- original sealant. B. Evaluation of Field Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to
- joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements. 3.5 CLEANING
- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which ioints occur.
- 3.6 PROTECTION
- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

#### SECTION 081416 FLUSH WOOD DOORS

PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: 1. Factory finishing flush wood doors.
- 1.2 SUBMITTALS
- A. Product Data: For each type of door indicated. Include factory-finishing specifications. B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; location and extent of hardware blocking; and other pertinent data.
- Indicate dimensions and locations of mortises and holes for hardware.
- Indicate dimensions and locations of cutouts.
- Indicate doors to be factory finished and finish requirements. 4. Indicate fire-protection ratings for fire-rated doors.
- C. Samples: For factory-finished doors.
- 1.3 QUALITY ASSURANCE
- A. Quality Standard: In addition to requirements specified, comply with AWI's "Architectural Woodwork Quality Standards Illustrated."
- PART 2 PRODUCTS
- 2.1 MANUFACTURERS
- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following: . Masonite, Inc..
- 2. Marshfield Door Systems, Inc.
- 2.2 DOORS FOR OPAQUE FINISH
- A. Interior Solid-Core Doors: Mezzanine Level:
- Grade: Premium, with Grade A faces.
- Faces: Medium-density overlay.
- Core: Particleboard.
- 4. Construction: Five plies. Stiles and rails are bonded to core, then entire unit abrasive planed before veneering. 2.3 FABRICATION
- A. Factory machine doors for hardware that is not surface applied.
- 2.4 SHOP PRIMING A. Doors for Opaque Finish: Shop prime doors with one coat of wood primer specified in Division 09 Section "Interior Painting". Seal all four edges, edges of cutouts, and mortises with primer.
- 2.5 FACTORY FINISHING A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
  - 1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, and mortises.
- B. Finish doors at factory that are indicated to receive transparent finish. Field finish doors indicated to receive opaque finish.
- PART 3 EXECUTION
- 3.1 INSTALLATION
- A. Hardware: For installation, see Division 08 Section "Door Hardware." B. Installation Instructions: Install doors to comply with manufacturer's written instructions and the referenced
- quality standard, and as indicated. C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware.
- Seal edges of doors, edges of cutouts, and mortises after fitting and machining. 1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/8 inch (3.2 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to
- top of threshold unless otherwise indicated. D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

- SECTION 087100 DOOR HARDWARE
- PART 1 GENERAL 1.1 RELATED DOCUMENTS
- A. The general provisions of the contract, including General and Supplementary Conditions, and Division 1, General Requirements apply to the work specified in this Section. 1.2 DESCRIPTION OF WORK
- A. The extent of finish hardware includes furnishing of all builder's hardware to completely equip the building as shown on the drawings and specified herein: 1. Finish harware for all doors and frames.
- 2. Thresholds and weatherstripping.
- 1.3 SCHEDULE
- A. Prepare a complete hardware schedule from plans and specifications and be responsible for the correctness of quantities, sizes, and finishes; and hand of doors and bevel of locks. B. Submit schedule for approval in accordance with the requirements for shop drawings of the Supplementary General Conditions.
- 1.4 GENERAL
- A. Furnish paper templates for all hardware requiring preperation to door and door frame fabricators as required. Templates furnished to door amnufacturer shall show only those functions specially called for in the hardware schedule
- B. All locks shall be subject to a Master Key system. C. Provide two (2) keys to tenant and two (2) keys to the Building Owner
- SECTION 088000 GLAZING
- PART 1 GENERAL 1.1 RELATED DOCUMENTS
- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section. 1.2 SUMMARY
- A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section: Doors
- 2. Interior borrowed lites.
- 1.3 DEFINITIONS A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in
- referenced glazing publications. B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- 1.4 ACTION SUBMITTALS Product Data: For each glass product and glazing material indicated.
- B. Glass Samples: For each type of the following products; 12 inches (300 mm) square. 1. Fire-resistive glazing products.
- C. Glazing Accessory Samples: For gaskets, sealants and colored spacers, in 12-inch (300-mm) lengths. Install sealant Samples between two strips of material representative in color of the adjoining framing
- Glazing Schedule: List glass types and thicknesses for each size opening and location. Delegated-Design Submittal: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for
- their preparation 1.5 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For installers.
- B. Product Certificates: For glass and glazing products, from manufacturer. For glazing sealants, provide test reports based on testing current sealant formulations within previous 36-month period.
- C. Warranties: Sample of special warranties

SECTION 088000	GLAZING (CONT'D	)
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- 1.6 QUALITY ASSURANCE A. Installer Qualifications: A qualified installer who employs glass installers for this Project who are certified under the National Glass Association's Certified Glass Installer Program. B. Source Limitations for Glass: Obtain ultraclear float glass from single source from single manufacturer for each glass type. C. Source Limitations for Glazing Accessories: Obtain from single source from single manufacturer for each product and installation method. D. Glazing Publications: Comply with published recommendations of glass product manufacturers and
- organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of the SGCC or another certification agency acceptable to authorities having jurisdiction Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with
- which glass complies. F. Fire-Protection-Rated Glazing Labeling: Permanently mark fire-protection-rated glazing with certification label of a testing agency acceptable to authorities having jurisdiction. Label shall indicate manufacturer's name, test standard, whether glazing is for use in fire doors or other openings, whether or not glazing passes hose-stream test, whether or not glazing has a temperature rise rating of 450 deg F (250 deg C), and the fire-resistance rating in minutes.
- 1.7 DELIVERY, STORAGE, AND HANDLING A. Protect glazing materials according to manufacturer's written instructions. Prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes. 1.8 PROJECT CONDITIONS
- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes. PART 2 - PRODUCTS
- 2.1 GLASS PRODUCTS, GENERAL
  - A. Thickness: Where glass thickness is indicated, it is a minimum. Provide glass lites in thicknesses as needed to comply with requirements indicated. Thermal and Optical Performance Properties: Provide glass with performance properties specified, as indicated
  - in manufacturer's published test data, based on procedures indicated below: 1. For monolithic-glass lites, properties are based on units with lites of thickness indicated Visible Reflectance: Center-of-glazing values, according to NFRC 300.
- 2.2 GLASS PRODUCTS (ALL GLASS SHALL BE ULTRA-CLEAR)
- A. Float Glass: ASTM C 1036, Type I, Quality-Q3, Class I (clear) unless otherwise indicated.
- 2.3 GLAZING GASKETS A. Dense Compression Gaskets: Molded or extruded gaskets of profile and hardness required to maintain watertight seal, made from one of the following:
  - Neoprene complying with ASTM C 864.
  - EPDM complying with ASTM C 864. Silicone complying with ASTM C 1115.
  - 4. Thermoplastic polyolefin rubber complying with ASTM C 1115.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned neoprene, EPDM, silicone or thermoplastic polyolefin rubber gaskets complying with ASTM C 509, Type II, black; of profile and hardness required to maintain watertight seal.
- 1. Application: Use where soft compression gaskets will be compressed by inserting dense compression gaskets on opposite side of glazing or pressure applied by means of pressure-
- glazing stops on opposite side of glazing. Lock-Strip Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and zipper lock-strips, complying with ASTM C 542, black.
- 2.4 GLAZING SEALANTS
- A. General: 1. Compatibility: Provide glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units, and glazing channel substrates, under conditions of service and application, as demonstrated by sealant
- manufacturer based on testing and field experience. 2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range.
- B. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 100/50, Use NT.
  - <u>Products</u>: Subject to compliance with requirements, provide one of the following:
  - a. <u>Dow Corning Corporation; 790</u>.
  - Pecora Corporation; 890. Tremco Incorporated; Spectrem 1.
- Glazing Sealants for Fire-Rated Glazing Products: Products that are approved by testing agencies that listed and labeled fire-resistant glazing products with which they are used for applications and fireprotection ratings indicated.
- 2.5 GLAZING TAPES
- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based, 100 percent solids elastomeric tape; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
- AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure. B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both
- surfaces; and complying with AAMA 800 for the following types: AAMA 810.1, Type 1, for glazing applications in which tape acts as the primary sealant.
- 2. AAMA 810.1, Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.
- 2.6 MISCELLANEOUS GLAZING MATERIALS
- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5. D. Spacers: Elastomeric blocks or continuous extrusions of hardness required by glass manufacturer to
- maintain glass lites in place for installation indicated. E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Perimeter Insulation for Fire-Resistive Glazing: Product that is approved by testing agency that listed and labeled fire-resistant glazing product with which it is used for application and fire-protection rating indicated 2.7 FABRICATION OF GLAZING UNITS
- A. Fabricate glazing units in sizes required to fit openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing publications, to comply with system performance requirements.
- 2.8 MONOLITHIC GLASS TYPES
- A. Clear float glass, tempered as indicated on Drawings. Thickness: As indicated on Drawings.
- B. Patterned Wire Glass.
- 1. Thickness: 6.0 mm.
- PART 3 EXECUTION 3.1 EXAMINATION
- A. Examine framing, glazing channels, and stops, with Installer present, for compliance with the following: Manufacturing and installation tolerances, including those for size, squareness, and offsets at
  - Presence and functioning of weep systems.
  - Minimum required face and edge clearances.
- Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. 3.2 PREPARATION
- A. Clean glazing channels and other framing members receiving glass immediately before glazing.
- Remove coatings not firmly bonded to substrates. B. Examine glazing units to locate exterior and interior surfaces. Label or mark units as needed so that exterior and interior surfaces are readily identifiable. Do not use materials that will leave visible marks in
- the completed work. 3.3 GLAZING, GENERAL
- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
- B. Adjust glazing channel dimensions as required by Project conditions during installation to provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance. D. Apply primers to joint surfaces where required for adhesion of sealants, as determined by
- preconstruction testing. E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications,
- unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead. F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where length plus width is larger than 50 inches (1270 mm). 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install
- correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements. 2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant
- width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

- SECTION 088000 GLAZING (CONT'D)
  - H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
  - Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
  - J. Set glass lites with proper orientation so that coatings face exterior or interior as specified. K. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on
  - opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movemen
  - L. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.
- 3.4 TAPE GLAZING
- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops. B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make
- them fit opening. C. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover
- horizontal framing joints by applying tapes to jambs and then to heads and sills. D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints
- in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until right before each glazing unit is installed. F. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start
- gasket applications at corners and work toward centers of openings. 3.5 GASKET GLAZING (DRY)
- A. Cut compression gaskets to lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation. B. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints
- miter cut and bonded together at corners. Installation with Drive-in Wedge Gaskets: Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending
- stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer. D. Installation with Pressure-Glazing Stops: Center glass lites in openings on setting blocks and press firmly against soft compression gasket. Install dense compression gaskets and pressure-glazing stops, applying pressure uniformly to compression gaskets. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
- Install gaskets so they protrude past face of glazing stops.
- 3.6 CLEANING AND PROTECTION A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels
- and clean surfaces. B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove substances
- immediately as recommended in writing by glass manufacturer. C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for buildup of dirt, scum, alkaline deposits,
- or stains; remove as recommended in writing by glass manufacturer. D. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended in writing by glass manufacturer.

PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section. 1.2 SUMMARY
- A. This Section includes non-load-bearing steel framing members for the following applications: Interior framing systems (e.g., supports for partition walls, framed soffits, furring, etc.).
- Interior suspension systems (e.g., supports for ceilings, suspended soffits, etc.).
- B. Related Sections include the following: Division 7 Section "Building Insulation" for insulation associated with framing.
- 2. Division 9 Section "Gypsum Board" for cladding of metal framing.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. PART 2 - PRODUCTS
- 2.1 NON-LOAD-BEARING STEEL FRAMING, GENERAL
- A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
- 1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal, unless otherwise
- 2. Protective Coating: manufacturer's standard corrosion-resistant zinc coating, unless otherwise indicated
- 2.2 SUSPENSION SYSTEM COMPONENTS
- A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.1055-inch- diameter wire. B. Hanger Attachments to Concrete: 1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E 488 by an independent testing
- a. Type: Postinstalled, chemical anchor or expansion anchor. 2. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by
- testing according to ASTM E 1190 by an independent testing agency C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.162-inch diameter. D. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch
- and minimum 1/2-inch- wide flanges.
- Depth: As indicated on Drawings. E. Grid Suspension System for Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.
- 1. Products: Subject to compliance with requirements, provide one of the following: a. Armstrong World Industries, Inc.; Drywall Grid Systems.
- b. Chicago Metallic Corporation; 660-C Drywall Furring System.
- c. USG Corporation; Drywall Suspension System. 2.3 STEEL FRAMING FOR FRAMED ASSEMBLIES
- A. Steel Studs and Runners: ASTM C 645.
- Minimum Base-Metal Thickness: As indicated on Drawings.
- B. Slip-Type Head Joints: Where indicated, provide the following:
  - Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs. a. Products: Subject to compliance with requirements, provide one of the following:
  - 1) Steel Network Inc. (The); VertiTrack VTD Series.
- 2) Superior Metal Trim; Superior Flex Track System (SFT). C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated. Minimum Base-Metal Thickness: 0.027 inch.
- D. Cold-Rolled Channel Bridging: 0.0538-inch bare-steel thickness, with minimum 1/2-inch- wide flanges. Depth: 1-1/2 inches
- 2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches, 0.068-inch- thick, galvanized steel. 2.4 AUXILIARY MATERIALS

#### A. General: Provide auxiliary materials that comply with referenced installation standards. 1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and

- other properties required to fasten steel members to substrates. Isolation Strip at Exterior Walls: Provide the following:
- 1. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size. PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.
- 1. Proceed with installation only after unsatisfactory conditions have been corrected. 3.2 PREPARATION
- A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their

full strength. 1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

#### 3.3 INSTALLATION, GENERAL

- A. Installation Standard: ASTM C 754. 1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing
- B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab
- bars, toilet accessories, furnishings, or similar construction.
- C. Install bracing at terminations in assemblies.
- D. Do not bridge building control and expansion joints with non-load-bearing steel framing members.
- Frame both sides of joints independently.
- 3.4 INSTALLING SUSPENSION SYSTEMS A. Install suspension system components in sizes and spacings indicated on Drawings, but not less than those required by referenced installation standards for assembly types and other assembly
- components indicated. B. Isolate suspension systems from building structure where they abut or are penetrated by building
- structure to prevent transfer of loading imposed by structural movement. C. Suspend hangers from building structure as follows:
- Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system. a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces
- by bracing, countersplaying, or other equally effective means. 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members,
- install supplemental suspension members and hangers in the form of trapezes or equivalent devices a. Size supplemental suspension members and hangers to support ceiling loads within
- performance limits established by referenced installation standards. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye
- screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail. 4. Do not attach hangers to steel roof deck.
- 5. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
- 6. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
- 7. Do not connect or suspend steel framing from ducts, pipes, or conduit. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.
- Seismic Bracing: Sway-brace suspension systems with hangers used for support.
- F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.
- G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.5 INSTALLING FRAMED ASSEMBLIES

- A. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.
- B. Install studs so flanges within framing system point in same direction.
- C. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.
- 1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
- 2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs. a. Install two studs at each jamb, unless otherwise indicated.
- b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch clearance from jamb stud to allow for installation of control joint in finished assembly.
- c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure
- 3. Other Framed Openings: Frame openings other than door openings the same as required for door openings, unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
- 4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid
- 5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated. D. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch from the plane formed by faces of adjacent framing.

# AMENTA

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ARCHITECTS

### **CT INNOVATIONS**

# CT INNOVATIONS - COLI

BUILDING

120 Hushope Ave - 4th Floor Hartford. CT 06106

CONSULTANTS

KEY PLAN

![](_page_15_Picture_256.jpeg)

Description

19039

Author

1:1

Checker

HISTORY OF SUBMISSIONS

No. Date

#### FOR CONSTRUCTION

SHEET TITLE

#### SPECIFICATIONS

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SECTION 092900 GYPSUM BOARD	SECTION 092900 GYPSUM BOARD (CONT'D)	SECTION 096513 RESILIENT BASE AND ACCESSORIES	SECTION 096813 CARPET TILE
PART 1 - GENERAL 1.1 RELATED DOCUMENTS	2.5 AUXILIARY MATERIALS	PART 1 - GENERAL	3.3 INSTALLATION
<ul> <li>A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section</li> </ul>	A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.	1.1 SUMMARY A. Section Includes:	A. General: Comply with CRI 104, Section 14, Carpet Modules, and with carpet tile manufacturer's written installation instructions.
1.2 SUMMARY	<ul> <li>B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.</li> </ul>	1. Resilient base. 1.2 SUBMITTALS	<ul> <li>B. Installation Method: As recommended in writing by carpet tile manufacturer</li> <li>C. Maintain dye lot integrity. Do not mix dye lots in same area.</li> </ul>
1. Interior gypsum board.     B Related Sections include the following:	<ul> <li>Steel Drill Screws: ASTM C 1002, unless otherwise indicated.</li> <li>Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by</li> </ul>	<ul> <li>A. Product Data: For each type of product indicated.</li> <li>B. Samples: For each type of product indicated, in manufacturer's standard-size Samples but not less thar</li> </ul>	D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as
<ol> <li>Division 7 Section "Joint Sealants" for acoustical sealants installed in assemblies that incorporate avecum board</li> </ol>	combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool. E. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."	12 inches (300 mm) long, of each resilient product color, texture, and pattern required. 1.3 PROJECT CONDITIONS	<ul> <li>recommended by carpet tile manufacturer.</li> <li>Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable</li> </ul>
<ol> <li>Division 9 Section "Non-Load-Bearing Steel Framing" for non-structural framing and suspension</li> </ol>	<ul> <li>F. Thermal Insulation: As specified in Division 7 Section "Building Insulation."</li> <li>G. Vapor Retarder: As specified in Division 7 Section "Building Insulation."</li> </ul>	<ul> <li>Maintain ambient temperatures within range recommended by manufacturer in spaces to receive resilier products.</li> </ul>	t flanges, alcoves, and similar openings. F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by
3. Division 9 painting Sections for primers applied to gypsum board surfaces.	PART 3 - EXECUTION 3.1 EXAMINATION	<ul> <li>Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.</li> </ul>	repeating on finish flooring as marked on subfloor. Use nonpermanent, nonstaining marking device. G. Install pattern parallel to walls and borders.
1.3 SUBMITTALS A. Product Data: For each type of product indicated.	A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames and framing, for compliance with requirements and other conditions affecting performance.	C. Install resilient products after other finishing operations, including painting, have been completed. PART 2 - PRODUCTS	<ul> <li>3.4 CLEANING AND PROTECTION</li> <li>A. Perform the following operations immediately after installing carpet tile:</li> </ul>
<ul> <li>1.4 STORAGE AND HANDLING</li> <li>A. Store materials inside under cover and keep them dry and protected against damage from weather,</li> </ul>	B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.	2.1 RESILIENT BASE RB-1 A Resilient Base	<ol> <li>Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.</li> </ol>
condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent sagging.	C. Proceed with installation only after unsatisfactory conditions have been corrected.	1. Manufacturers:	<ol> <li>Remove yarns that protrude from carpet tile surface.</li> <li>Vacuum carpet tile using commercial machine with face-beater element.</li> </ol>
<ol> <li>PROJECT CONDITIONS</li> <li>A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's</li> </ol>	A. Comply with ASTM C 840. B. Install ceiling papels across framing to minimize the number of abutting end joints and to avoid abutting	<ul> <li>B. Resilient Base Standard: ASTM F 1861.</li> <li>Material Requirement: Type TS (rubber, yulcanized thermoset)</li> </ul>	<ul> <li>B. Protect installed carpet tile to comply with CRI 104, Section 16, "Protecting Indoor Installations."</li> <li>C. Protect carpet tile against damage from construction operations and placement of equipment and</li> </ul>
written recommendations, whichever are more stringent. B. Do not install interior products until installation areas are enclosed and conditioned.	end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than	<ol> <li>Material Requirement. Type To (tubber, valcanized thermosel).</li> <li>Manufacturing Method: Group I (solid, homogeneous).</li> <li>Style: See Drawinge.</li> </ol>	fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer
C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.	C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of onon space between panels. Do not force into place	C. Minimum Thickness: 0.125 inch (3.2 mm).	SECTION 099123 INTERIOR PAINTING
<ol> <li>Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.</li> </ol>	<ul> <li>D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or</li> </ul>	<ul> <li>E. Lengths: Coils in manufacturer's standard length.</li> <li>C. Outside Conserve lab formad.</li> </ul>	PART 1 - GENERAL 1.1 SUMMARY
<ol> <li>Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.</li> </ol>	edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than	G. Inside Corners: Preformed.	A. This Section includes surface preparation and the application of paint systems on the following interior
PART 2 - PRODUCTS 2.1 PANELS, GENERAL	E. Form control and expansion joints with space between edges of adjoining gypsum panels.	H. Colors and Patterns: See drawings. 2.2 INSTALLATION MATERIALS	1. Clay masonry.
A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated	F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.	A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.	<ol> <li>Wood and Simulated Wood.</li> <li>Gypsum board.</li> <li>Director</li> </ol>
2.2 INTERIOR GYPSUM BOARD A General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of	<ol> <li>Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.</li> </ol>	<ul> <li>Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.</li> </ul>	4. Plaster. 5. Steel.
gypsum board indicated and whichever is more stringent.	<ol> <li>Fit gypsum panels around ducts, pipes, and conduits.</li> <li>Where partitions intersect structural members projecting below underside of floor/roof slabs and</li> </ol>	C. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.	1.2 SUBMITTALS A. Product Data: For each type of product indicated.
following:	decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.	D. Floor Polish: Provide protective liquid floor polish products as recommended by resilient stair tread manufacturer.	<ul><li>B. Samples: For each finish and for each color and texture required.</li><li>C. Product List: Printout of current "MPI Approved Products List" for each product category specified in Part</li></ul>
a. American Gypsum Co. b. BPB America Inc.	G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim	PART 3 - EXECUTION 3.1 PREPARATION	2, with the proposed product highlighted. 1.3 QUALITY ASSURANCE
c. G-P Gypsum. d. Gold Bond	where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant	A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient	<ul> <li>A. MPI Standards:</li> <li>1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."</li> </ul>
e. Lafarge North America Inc. f. National Gypsum Company.	<ul> <li>H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flagges first</li> </ul>	<ul> <li>B. Concrete Substrates for Resilient Stair Treads and Accessories: Prepare according to ASTM F 710.</li> <li>Verify that substrates are dry and free of suring compounds, scalars, and hardeners.</li> </ul>	<ol> <li>Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.</li> </ol>
g. PABCO Gypsum. h. Temple.	3.3 APPLYING INTERIOR GYPSUM BOARD A Install interior gypsum board in the following locations:	<ol> <li>verify that substrates are dry and tree of curring compounds, sealers, and hardeners.</li> <li>Remove substrate coatings and other substances that are incompatible with adhesives and that contain a c</li></ol>	1.4 DELIVERY, STORAGE, AND HANDLING A. Store materials not in use in tightly covered containers in well-ventilated aroas with ambient tomocretures
i. USG Corporation. B. Regular Type:	<ul> <li>A. Install Interior gypsum board in the following locations:</li> <li>1. Regular Type: As indicated on Drawings.</li> <li>2. Or the Type: A statistic to be a statistication of the type of type of the type of type of type of the type of type</li></ul>	contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.	<ul> <li>continuously maintained at not less than 45 deg F.</li> <li>Maintain containers in clean condition, free of foreign metarials and residue.</li> </ul>
1. Thickness: 5/8 inch. 2. Long Edges: Tapered	<ol> <li>Ceiling Type: As indicated on Drawings.</li> <li>B. Single-Layer Application:</li> </ol>	<ol> <li>Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer.</li> <li>Moisture Testing: Perform tests recommended by manufacturer. Proceed with installation only after</li> </ol>	<ol> <li>maintain containers in clean condition, nee or foreign materials and residue.</li> <li>2. Remove rags and waste from storage areas daily.</li> <li>1.5. RECT CONDITIONS</li> </ol>
2.3 TRIM ACCESSORIES A Interior Trim: ASTM C 1047	<ol> <li>On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing, unless otherwise indicated.</li> </ol>	substrates pass testing. C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and	A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between
<ul> <li>A. Interior Trim: ASTM C 1047.</li> <li>1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced</li> </ul>	<ol> <li>On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.</li> </ol>	remove bumps and ridges to produce a uniform and smooth substrate.	<ul> <li>50 and 95 deg F.</li> <li>B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above</li> </ul>
galvanized steel sheet 2. Shapes:	<ul> <li>Stagger abutting end joints not less than one framing member in alternate courses of panels</li> </ul>	installed. 1 Move resilient products and installation materials into spaces where they will be installed at least 48	the dew point; or to damp or wet surfaces. 1.6 EXTRA MATERIALS
<ul><li>a. Cornerbead.</li><li>b. Bullnose bead.</li></ul>	3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.	<ul> <li>Nove resident products and installation.</li> <li>Success where they will be installed at reast 40 mounts in advance of installation.</li> </ul>	A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents
<ul> <li>LC-Bead: J-shaped; exposed long flange receives joint compound.</li> <li>L-Bead: L-shaped; exposed long flange receives joint compound.</li> </ul>	A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners	<ul> <li>Sweep and vacuum clean substrates to be covered by resilient products infinediately before installation.</li> <li>RESILIENT BASE INSTALLATION</li> </ul>	1. Quantity: Furnish an additional 1 gallon of each material and color applied.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound.	B. Interior Trim: Install in the following locations:	<ul> <li>Comply with manufacturer's written instructions for installing resilient base.</li> <li>B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other</li> </ul>	2.1 MANUFACTURERS
g. Curved-Edge Cornerbead: With notched or flexible flanges.	<ol> <li>Cornerbead: Use at outside corners.</li> <li>LC-Bead: Use at exposed panel edges.</li> </ol>	permanent fixtures in rooms and areas where base is required. C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent	A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:     1. Benjamin Moore & Co. (AURA)
A. General: Comply with ASTM C 475/C 475M.	<ol> <li>Curved-Edge Cornerbead: Use at curved openings.</li> <li>FINISHING GYPSUM BOARD</li> </ol>	pieces aligned. D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous conta	2.2 PAINT, GENERAL Ct A. Material Compatibility:
<ul> <li>B. Joint Tape.</li> <li>1. Interior Gypsum Wallboard: Paper.</li> </ul>	A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration.	with horizontal and vertical substrates. E. Do not stretch resilient base during installation.	<ol> <li>Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer,</li> </ol>
C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.	Promptly remove residual joint compound from adjacent surfaces. B Prefill open joints, rounded or beveled edges, and damaged surface areas	3.3 RESILIENT ACCESSORY INSTALLATION A Comply with manufacturer's written instructions for installing resilient accessories	<ul><li>based on testing and field experience.</li><li>For each coat in a paint system, provide products recommended in writing by manufacturers of</li></ul>
<ol> <li>Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.</li> </ol>	<ul> <li>C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.</li> <li>D. Gypsum Board Einish Levels: Einish pagels to levels indicated below:</li> </ul>	<ul> <li>B. Resilient Stair Accessories:</li> <li>1. Lice stair code page filler to fill paging substrates that do not conform to tread contours.</li> </ul>	topcoat for use in paint system and on substrate indicated. B. Colors: See drawings
<ol> <li>Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.</li> </ol>	<ol> <li>Gypselli Board i misri parels to levels indicated below.</li> <li>Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.</li> <li>Drimer and its application to surfaces are associated in other Division 0. Sections</li> </ol>	<ol> <li>Dise stall-tread-lose line to fill hosing substrates that do not contour to tread contours.</li> <li>Tightly adhere to substrates throughout length of each piece.</li> </ol>	2.3 PRIMERS/SEALERS A Interior Latex Primer/Sealer: MPL#50
<ul> <li>a. Use setting-type compound for installing paper-faced metal trim accessories.</li> <li>3. Fill Coat: For second coat, use drving-type, all-purpose compound.</li> </ul>	<ol> <li>Primer and its application to surfaces are specified in other Division 9 Sections.</li> <li>Level 5: At all panel surfaces to recieve wall covering.</li> </ol>	<ul> <li>3.4 CLEANING AND PROTECTION</li> <li>A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.</li> </ul>	<ul> <li>B. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems</li> </ul>
4. Finish Coat: For third coat, use drying-type, all-purpose compound.	<ul> <li>3.6 PROTECTION</li> <li>A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and</li> </ul>	B. Floor Polish: Remove soil, visible adhesive, and surface blemishes from resilient stair treads before applying liquid floor polish.	2.4 METAL PRIMERS
A. General: Provide auxiliary materials that comply with referenced installation standards and	other causes during remainder of the construction period. B. Remove and replace panels that are wet, moisture damaged, and mold damaged.	<ol> <li>Apply two coat(s).</li> <li>Cover resilient products until Substantial Completion.</li> </ol>	<ul> <li>A. Alkyd Anticorrosive Metal Primer: MPL#79.</li> <li>B. Cementitious Galvanized-Metal Primer: MPL#26.</li> </ul>
B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels	<ol> <li>Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.</li> </ol>	SECTION 096813 CARPET TILE	2.5 WOOD PRIMERS —— A. Interior Latex-Based Wood Primer: MPI #39.
C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.	<ol> <li>Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.</li> </ol>	PART 1 - GENERAL 1.1 SUMMARY	2.6 LATEX PAINTS A. Interior Latex (Eggshell): B.M Aura.
D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.	SECTION 095113 ACOUSTICAL PANEL CEILING	A. Section Includes: 1. Modular carpet tile.	2.7 ALKYD PAINTS A. Interior Alkyd (Eggshell): B.M Aura.
<ul><li>E. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."</li><li>F. Thermal Insulation: As specified in Division 7 Section "Building Insulation."</li></ul>	PART 1 - GENERAL 1.1 SUMMARY	1.2 SUBMITTALS A Product Data: For each type of product indicated	PART 3 - EXECUTION 3.1 EXAMINATION
<ul> <li>G. Vapor Retarder: As specified in Division 7 Section "Building Insulation."</li> <li>1.3 SUBMITTALS</li> </ul>	<ul> <li>A. This Section includes acoustical panels and exposed suspension systems for ceilings.</li> <li>1.2 SUBMITTALS</li> </ul>	<ol> <li>Include manufacturer's written data on physical characteristics, durability, and fade resistance.</li> <li>Include installation recommendations for each type of substrate</li> </ol>	A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
<ul> <li>A. Product Data: For each type of product indicated.</li> <li>1.4 STORAGE AND HANDLING</li> </ul>	A. Product Data: For each type of product indicated.	<ul> <li>B. Samples:</li> <li>Eullisize units of each color and pattern of floor tile required</li> </ul>	B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
A. Store materials inside under cover and keep them dry and protected against damage from weather, condensation, direct sunlight, construction traffic, and other causes. Stack panels flat to prevent	C. Product test reports.	<ol> <li>Exposed Edge, Transition, and Other Accessory Stripping: 12-inch- long Samples.</li> <li>Maintenance data</li> </ol>	2. Wood: 15 percent. 3. Gynsum Board: 12 percent
sagging.	<ul> <li>Maintenance data.</li> <li>1.3 QUALITY ASSURANCE</li> <li>Accuration Tracting Account Qualifications: An independent testing laboratory or an NV/LAB accuration.</li> </ul>	<ul> <li>D. Shop Drawings: Show the following:</li> </ul>	<ol> <li>Cypetitic Dercent.</li> <li>Paster: 12 percent.</li> <li>Vorify suitability of substrates including surface conditions and compatibility with existing finishes and</li> </ol>
<ul> <li>A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.</li> </ul>	A. Acoustical resting Agency Qualifications: An independent testing laboratory or an NVLAP-accredited i aboratory.	<ol> <li>Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.</li> </ol>	primers.
<ul> <li>B. Do not install interior products until installation areas are enclosed and conditioned.</li> <li>C. Do not install people that are until installation areas are enclosed and these that are maintenanced.</li> </ul>	<ul> <li>B. Seismic Standard: Comply with the following:</li> <li>1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.</li> </ul>	<ol> <li>Carpet tile type, color, and dye lot.</li> <li>Type of subfloor, type of installation and pattern of installation.</li> </ol>	<ul> <li>D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.</li> <li>1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.</li> </ul>
damaged.	<ul><li>1.4 EXTRA MATERIALS</li><li>A. Furnish extra materials described below that match products installed and that are packaged with protective</li></ul>	<ol> <li>Pattern type, location and direction.</li> <li>Transition details to other flooring materials.</li> </ol>	<ul> <li>3.2 PREPARATION AND APPLICATION</li> <li>A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting</li> </ul>
1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.	covering for storage and identified with labels describing contents. 1. Acoustical Ceiling Panels: Full-size panels equal to 2.0 percent of quantity installed.	E. Closeout Submittals: Maintenance Data for carpet tiles, including cleaning and stain-removal product and procedures and manufacturer's recommended maintenance schedule.	<ul> <li>Specification Manual" applicable to substrates indicated.</li> <li>B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and</li> </ul>
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.	<ol> <li>Suspension System Components: Quantity of each exposed component equal to 2.0 percent of quantity installed.</li> </ol>	1.3 PROJECT CONDITIONS A Comply with CRI 104 for temperature, humidity and ventilation limitations	incompatible paints and encapsulants. 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce
PART 2 - PRODUCTS 2.1 PANELS, GENERAL	PART 2 - PRODUCTS 2.1 ACOUSTICAL PANEL CEILINGS, GENERAL	B. Environmental Limitations: Do not deliver or install carpet tiles until spaces are enclosed and weathertight wet work in spaces is complete and dry, and ambient temperature and humidity.	paint systems indicated. C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller
<ul> <li>A. Size: Provide in maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.</li> </ul>	A. Acoustical Panel Standard: Comply with ASTM E 1264.	conditions are maintained at occupancy levels during the remainder of the construction period.	tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
2.2 INTERIOR GYPSUM BOARD A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of	<ul> <li>C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung,"</li> <li>unless otherwise indicated. Comply with coloring design requirements.</li> </ul>	adhesive and concrete slabs have pH range recommended by carpet tile manufacturer.	trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition
gypsum board indicated and whichever is more stringent. Manufacturers: Subject to compliance with requirements, provide products by one of the	<ol> <li>Anchors in Concrete: Expansion anchors fabricated from corrosion-resistant materials, with holes or</li> <li>Incorp for otherwise hongoes of time indicated and with constitution without for the second s</li></ol>	<ul> <li>E. Close spaces to traffic for 48 hours after floor tile installation.</li> <li>E. Lose spaces to traffic for 48 hours after floor tile installation.</li> </ul>	E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted
following: a American Gyosum Co	to five times that imposed by ceiling construction, as determined by testing per ASTM E 488 or ASTM	<ul> <li>F. Install floor tile after other finishing operations, including painting, have been completed.</li> <li>PART 2 - PRODUCTS</li> </ul>	3.3 INTERIOR PAINTING SCHEDULE
b. BPB America Inc.	<ul> <li>E 1512 as applicable, conducted by a qualified testing and inspecting agency.</li> <li>D. Wire Hangers, Braces, and Ties: Zinc-coated carbon-steel wire; ASTM A 641/A 641M, Class 1 zinc</li> </ul>	<ul><li>2.1 CARPET TILE</li><li>A. Products: Refer to finish plans for product information.</li></ul>	A. Clay-Masonry Substrates: 1. Latex System: MPI INT 4.1A.
d. Gold Bond	coating, soft temper. 1. Size: Select wire diameter so its stress at 3 times hanger design load (ASTM C 635, Table 1, "Direct	2.2 INSTALLATION MATERIALS A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended	<ul><li>a. Prime Coat: Interior latex matching topcoat.</li><li>b. Intermediate Coat: Interior latex matching topcoat.</li></ul>
e.     Lafarge North America Inc.       6     f.       National Gypsum Company.	Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) diameter wire.	hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products	L. c. Topcoat: Interior latex (Matte). B. Steel Substrates:
S     g.     PABCO Gypsum.       S     h.     Temple.	<ul> <li>E. Seismic perimeter stabilizer bars, seismic struts, and seismic clips.</li> <li>F. Metal Edge Moldings and Trim: 1" tapeable acoustical ceiling trim by Fry Reglet or approved equal.</li> </ul>	and subfloor conditions indicated, that complies with flammability requirements for installed carpet tile and is recommended by carpet tile manufacturer for releasable installation.	<ol> <li>Alkyd System: MPI INT 5.1E.</li> <li>a. First Coat: Oil-Based Enamel.</li> </ol>
B. Regular Type:	2.2 ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING:	C. Metal Edge/Transition Strips: Extruded aluminum with mill finish of profile and width shown, of beight required to protect exposed edge of carnet, and of maximum lengths to minimize running join	b. Second Coat: Oil-Based Enamel (semi-gloss) c. Third Coat: Oil-Based Enamel (satin)
<ul> <li>Thickness: 5/8 inch.</li> <li>Long Edges: Tapered.</li> </ul>	1. See Drawings.	<ul> <li>D. Rubber Divider / Transition Strips: Integrated rubber with profile and width shown, or height required to protect expressed edge of express of express to fragment lengths to minimize running initia.</li> </ul>	C. Metal Door Frames: a Prime Coat: Alkyd anticorrosive metal primer
2.3 TRIM ACCESSORIES A. Interior Trim: ASTM C 1047.	2.4 METAL SUSPENSION SYSTEM FOR ACOUSTICAL PANEL CEILING:	PART 3 - EXECUTION	b. Intermediate Coat: Interior alkyd matching topcoat.
1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced calvanized steel sheet	Armstrong World Industries, Inc.	A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements	D. Gypsum Board Substrates:
2. Shapes:	3.1 INSTALLATION	tor maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.	a. Prime Coat: Interior latex primer/sealer.
E     a.     Completedu.       E     b.     Bullnose bead.	A. Comply with ASTM C 636 and seismic design requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."	<ul> <li>B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:</li> <li>1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials</li> </ul>	<ul> <li>D. Intermediate Coat: Interior latex matching topcoat.</li> <li>C. Topcoat: Interior latex (Matte and eggshell) - reffer to drawings for locations.</li> </ul>
Z       c.       Lo-beau. J-snaped; exposed long flange receives joint compound.         d.       L-Bead: L-shaped; exposed long flange receives joint compound.	B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders.	that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.	E. Dressed Lumber and Wood Panel Substrates for Opaque Finish: Including finish carpentry and flush wood doors.
e. U-Bead: J-shaped; exposed short flange does not receive joint compound. f. Expansion (control) joint.	C. Suspend ceiling hangers from building's structural members, plumb and free from contact with insulation or other objects within ceiling plenum. Splay hangers only where required to miss obstructions: offset resulting	<ol> <li>Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.</li> <li>Proceed with installation only after unsatisfactory conditions have been corrected</li> </ol>	<ol> <li>Latex System: MPI INT 9.2A.</li> <li>a. Prime Coat: Interior latex primer/sealer.</li> </ol>
별 g. Curved-Edge Cornerbead: With notched or flexible flanges. 일 2.4 JOINT TREATMENT MATERIALS	horizontal forces by bracing, countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers	3.2 PREPARATION A. General: Comply with CRI 104. Section 6.2. "Site Conditions: Floor Preparation " and with carpot tile	<ul><li>b. Intermediate Coat: Interior latex matching topcoat.</li><li>c. Topcoat: Interior latex (satin).</li></ul>
A. General: Comply with ASTM C 475/C 475M. B. Joint Tape:	use trapezes or equivalent devices. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.	manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation	F. Plaster Substrates: 1 Later System: MPLINT 9.24
빈 1. Interior Gypsum Wallboard: Paper.	<ol> <li>Do not support ceilings directly from permanent metal forms or floor deck; anchor into concrete slabs.</li> <li>Do not strack bangers to stock deck take</li> </ol>	<ul> <li>B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to</li> </ul>	a. Prime Coat: Interior latex primer/sealer.
other compounds applied on previous or for successive coats.	<ul> <li>Do not attach hangers to steel deck tabs.</li> <li>D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary</li> </ul>	THI CRACKS, HOLES, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider and protrusions more than 1/32 inch unless more stringent	<ul><li>c. Topcoat: Interior latex (matte).</li></ul>
<ol> <li>Fromming: A open joints, rounded or beveled parter edges, and damaged surface areas, use setting-type taping compound.</li> <li>Embodding and Eirst Cost. For ambedding tapa and first cost or initiate features and this</li> </ol>	to conceal edges of acoustical panels. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension	requirements are required by manufacturer's written instructions. C. Remove coatings, including curing compounds, and other substances that are incompatible with	
flanges, use setting-type taping compound.	system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.	adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by carpet tile manufacturer.	
<ul> <li>a. Use setting-type compound for installing paper-faced metal trim accessories.</li> <li>3. Fill Coat: For second coat, use drying-type, all-purpose compound.</li> </ul>	E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.	D. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.	
✓ ■ 4. Finish Coat: For third coat, use drying-type, all-purpose compound.	F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.		

#### SECTION 123640 SOLID SURFACE COUNTERTOPS

#### PART 1 - GENERAL

- 1.1 SUMMARY A. This Section includes solid surface countertops.
- 1.2 QUALITY ASSURANCE A. Installer Qualifications: Fabricator of products.
- 1.3 PROJECT CONDITIONS
- A. Field Measurements: Verify dimensions of construction to receive stone countertops by field measurements before fabrication.

#### PART 2 - PRODUCTS

#### 2.1 SOLID SURFACE COUNTERTOPS

- A. See drawings for selection.2.2 ADHESIVES, GROUT, SEALANTS, AND STONE ACCESSORIES
- A. Water-Cleanable Epoxy Adhesive: ANSI A118.3.
- 1. Available Manufacturers: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following: 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. Custom Building Products.
- b. Laticrete International, Inc.
- c. MAPEI Corp. 2.3 SOLID SURFACE FABRICATION
- A. Select MATERIAL for intended use to prevent fabricated units from containing cracks, seams, and starts that
- could impair structural integrity or function. B. Fabricate countertops in sizes and shapes required to comply with requirements indicated, including details on Drawings and Shop Drawings. 1. Finish exposed faces of material to comply with requirements indicated. Provide matching finish on
- exposed edges of countertops, splashes, and cutouts. C. Comply with recommendations from manufacturer for installation. D. Nominal Thickness: Provide thickness indicated, but not less than 3/4 inch (20 mm). Gage backs to
- provide units of identical thickness. E. Splashes: Provide 3/4-inch- (20-mm-) thick backsplashes and end splashes, unless otherwise
- indicated.
- F. Joints: Fabricate countertops without joints. G. Cutouts and Holes:
- 1. Undercounter Fixtures: Make cutouts for undercounter fixtures in shop using template or pattern furnished by fixture manufacturer. Form cutouts to smooth, even curves. 2. Fittings: Drill countertops in shop for plumbing fittings, undercounter soap dispensers, and
- similar items.

#### PART 3 - EXECUTION

- 3.1 INSTALLATION OF COUNTERTOPS A. General: Install countertops over plywood subtops with full spread of water-cleanable epoxy adhesive. Review subtop requirements with manufacturer.
- B. Set stone to comply with requirements indicated on Drawings and Shop Drawings. Shim and adjust stone to locations indicated, with uniform joints of widths indicated and with edges and faces aligned
- according to established relationships. C. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Use power saws with diamond blades to cut stone. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for
- clearance. Ease edges slightly to prevent snipping. D. Install backsplash and end splash by adhering to wall with water-cleanable epoxy adhesive. Leave 1/16-inch (1.5-mm) gap between countertop and splash for filling with sealant. Use temporary shims
- to ensure uniform spacing. E. Apply sealant to gaps specified for filling with sealant; comply with Division 07 Section "Joint Sealants." Remove temporary shims before applying sealant.
- 3.2 ADJUSTING AND CLEANING A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
- B. Clean countertops not less than six days after completion of sealant installation, using clean water and soft rags. Do not use wire brushes, acid-type cleaning agents, cleaning compounds with caustic or harsh fillers, or other materials or methods that could damage stone.

#### AMENTA EMMA ARCHITECTS

![](_page_16_Picture_34.jpeg)

### CT INNOVATIONS

#### CT INNOVATIONS - COLT BUILDING

120 Hushope Ave - 4th Floor Hartford. CT 06106

CONSULTANTS

KEY PLAN

DRAWN

CHECKED

SCALE

![](_page_16_Picture_40.jpeg)

FOR COLT.rvt

HISTORY OF SUBMISSIONS

![](_page_16_Picture_42.jpeg)

### FOR CONSTRUCTION

#### SHEET TITLE

### SPECIFICATIONS

• •

![](_page_16_Picture_47.jpeg)

![](_page_17_Figure_0.jpeg)

![](_page_17_Picture_1.jpeg)

BEAM-COLUMN CONNECTION DETAIL Scale: 1" = 1'-0" 

#### STRUCTURAL STEEL NOTES

1. ALL DETAILING, FABRICATION, AND ERECTION SHALL CONFORM TO AISC 360-10 SPECIFICATIONS AND CODES. CONNECTIONS SHALL BE BOLTED OR WELDED UNLESS NOTED OTHERWISE. ALL CONNECTIONS SHALL BE DETAILED AND COMPLETED BY THE FABRICATOR IN ACCORDANCE WITH THE AISC SPECIFICATIONS AND CODES SHOWN IN THE REFERENCED STANDARDS SECTION OF THE GENERAL NOTES. ALL SHEAR, MOMENT, AND BRACING CONNECTIONS SHALL WITHSTAND ALLOWABLE REACTIONS, LOADS, AND MOMENTS INDICATED ON THE CONTRACT DOCUMENTS AND WITH ANY OTHER INFORMATION AND RESTRICTIONS INDICATED. A TABLE, KEY, OR OTHER LINKING INFORMATION SHALL BE PROVIDED TO CORRELATE ALL CONNECTION TYPES AND DETAILS WITH THEIR LOCATIONS IN THE SHOP AND ERECTION DRAWINGS.

2.	STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:	
	WIDE FLANGE SHAPES	ASTM A992
	CHANNELS, ANGLES, AND PLATES	ASTM A36/A572 GR 50
	HOLLOW STRUCTURAL SECTIONS (HSS) SQUARE AND ROUND	ASTM A500 GR B
	HIGH STRENGTH BOLTS	ASTM A325 OR A490
	ANCHOR BOLTS	ASTM F1554 GR 55
	COLUMN BASE PLATES	A572 GR 50

- 3. ALL STRUCTURAL STEEL CONNECTION BOLTS SHALL BE ASTM A325-N OR ASTM A490-N UNLESS NOTED OTHERWISE. ALL BOLTS IN RIGID (MOMENT) CONNECTIONS AND BRACE CONNECTIONS SHALL BE SLIP CRITICAL.
- 4. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW, CHECKED SHOP DRAWINGS SHOWING ALL FABRICATION DETAILS, FIELD ASSEMBLY DETAILS, AND ERECTION DRAWINGS FOR STRUCTURAL STEEL.
- 5. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE – STEEL" OF THE AMERICAN WELDING SOCIETY. ALL WELDS SHALL BE MADE WITH SERIES E70XX ELECTRODES EXCEPT FOR METAL DECK PUDDLE WELDS WHICH MAY BE E60XX. MINIMUM FILLET WELD SIZE SHALL COMPLY WITH ALL AISC REQUIREMENTS BUT IN NO CASE SHALL THE WELD BE LESS THAN ½."
- 6. THE STRUCTURAL STEEL CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE FRAME FOR WIND AND CONSTRUCTION LOADS.
- 7. THE MINIMUM NUMBER OF BOLTS PER CONNECTION SHALL BE TWO (2).
- 8. ALL BEAMS SHALL BE INSTALLED WITH THEIR NATURAL CAMBER UP, PROVIDE CAMBER AS INDICATED ON CONTRACT DRAWINGS. CAMBER INDICATED ON PLAN DRAWINGS IS THE REQUIRED CAMBER AT THE TIME OF ERECTION.
- 9. AFTER FABRICATION ALL STEEL SHALL BE CLEANED OF ALL RUST, LOOSE MILL SCALE, AND OTHER FOREIGN MATERIALS.
- 10. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR APPROVAL OF THE ARCHITECT.
- 11. CONTRACTOR SHALL PROVIDE ACCESS FOR INSPECTION OF ALL SHOP AND FIELD CONNECTIONS FOR PROPER MATERIALS AND WORKMANSHIP.

12. SEE ARCHITECTURAL DRAWINGS FOR PAINT AND FIREPROOFING REQUIREMENTS.

![](_page_17_Figure_17.jpeg)

# AMENTA EMMA

ARCHITECTS

### OWNER:

#### CT INNOVATIONS – COLT BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

#### CONSULTANTS

Thornton Tomasetti, Inc. 10 North Main Street, Suite 307 West Hartford, CT 06107-1901 T 212.367.2750 F 212.497.2488

KEY PLAN

![](_page_17_Picture_26.jpeg)

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE FILE REFERENCE

19039 10.08.2019 GF EB

#### HISTORY OF SUBMISSIONS

No.	Date	Description

#### PERMIT SET

SHEET TITLE

STRUCTURAL DETAILS

S1.01

	FIRE PROTECTION GENERAL NOTES
1.	ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
2.	THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED FIRE PROTECTION SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
3.	THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
4.	THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TOP DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5.	THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
6.	EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. ACCESS DOORS FOR FIRE RATED WALLS AND CEILINGS SHALL BE FURNISHED WITH A MINIMUM 1-1/2 HOUR LABEL "B" UL LISTED RATING OR GREATER AS REQUIRE BY THE ASSEMBLY RATING. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
7.	WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
8.	THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
9.	DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
10.	IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH AND EVERY SPRINKLER HEAD, ONLY THE SPRINKLER OR STANDPIPE MAIN ROUTING IS INDICATED TO AIDE IN COORDINATION WITH ALL TRADES. THE ENTIRE FIRE SUPPRESSION SYSTEM SHALL BE FULLY OPERATIONAL AND READY FOR BENEFICIAL USE BEFORE THE JOB IS CONSIDERED COMPLETE.
11.	REFER TO THE LATEST ARCHITECTURAL PLANS FOR CEILING CONSTRUCTION, ELEVATIONS, SECTIONS, DETAILS, LOCATIONS OF SOFFITS, CEILING POCKETS, STEPPED CEILING, SKYLIGHT, ETC. PROVIDE ADDITIONAL PIPING AND SPRINKLER HEADS AS THE CONDITIONS WARRANT.
12.	WHERE SPRINKLER HEADS ARE SHOWN ON CONTRACT DOCUMENTS, THEY ARE INDICATED FOR GENERAL COORDINATION PURPOSES ONLY AND DO NOT RELIEVE THE CONTRACTOR FROM FULL COMPLIANCE WITH APPLICABLE CODES AND GOOD INSTALLATION PRACTICE. THE CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL SPRINKLERS AS NECESSARY DUE TO OBSTRUCTION FOR A COMPLETE SPRINKLER SYSTEM PER NFPA #13.
13.	SPRINKLER HEAD LOCATIONS SHALL BE COORDINATED WITH THE LATEST ARCHITECTURAL REFLECTED CEILING PLANS, LIGHT FIXTURES, DIFFUSERS, SPEAKERS, SMOKE DETECTORS, MECHANICAL AND ELECTRICAL EQUIPMENT. INSTALL SPRINKLER HEADS BENEATH DUCTS AND CEILING MOUNTED EQUIPMENT MORE THAN 4 FEET WIDE. FULL SPRINKLER COVERAGE TO ACCOUNT FOR OBSTRUCTIONS IS THE RESPONSIBILITY OF THE INSTALLING PROFESSIONAL.
14.	SPRINKLER HEADS SHALL NOT BE INSTALLED DIRECTLY FROM THE BOTTOM OF HORIZONTAL SPRINKLER MAINS OR BRANCH LINES. ALL CONNECTIONS TO SPRINKLER HEADS SHALL BE MADE FROM THE TOP OR SIDES OF THE MAIN OR BRANCH LINES.
15.	BRANCH PIPING TO SPRINKLER HEADS SHALL BE A MINIMUM OF 1" DIA. WITH FULL SIZE REDUCING TEE OR LARGER. INSTALLATION OF REDUCING TEES LESS THAN 1" DIA. WILL NOT BE ALLOWED. INSTALLATION OF NIPPLES LESS THEN 1" DIA. WILL NOT BE PERMITTED.
16.	PROVIDE LISTED GUARDS WHERE SPRINKLER HEADS ARE SUBJECT TO DAMAGE OR INJURY. (GYMNASIUM, STAGE, MECHANICAL ROOMS, STORAGE ROOMS, UTILITY ROOMS, ETC.) OR ARE LOCATED BELOW 7'-6" ABOVE FINISHED FLOOR.
17.	INSTALL ALL PIPING WITH PROVISION FOR COMPLETE DRAINAGE. WET-PIPE SPRINKLER SYSTEM MAY BE INSTALLED LEVEL AND WITHOUT SLOPE.
18.	COORDINATE LOCATIONS OF FIRE DEPARTMENT CONNECTIONS AND FIRE PROTECTION SERVICE CONTROL VALVES, INSPECTOR TEST DRAINS VALVES WITH THE AUTHORITY HAVING JURISDICTION (FIRE MARSHAL) PRIOR TO INSTALLATION. INSTALL INSPECTOR TEST VALVES AT MAXIMUM 7'-0" ABOVE FINISHED FLOOR OR AS DIRECTED BY THE AHJ.
19.	ALL EQUIPMENT MAIN DRAINS AND INSPECTOR TEST DRAINS SHALL BE PIPED TO THE EXTERIOR OF THE BUILDING. PROVIDE CONCRETE SPLASH BLOCKS AT EACH DRAIN LOCATION TO AVOID SOIL EROSION OR OTHER DAMAGE.
20.	COORDINATE ALL FIRE PROTECTION EQUIPMENT REQUIRING POWER AND/OR CONNECTION TO THE FIRE ALARM SYSTEM WITH THE ELECTRICAL CONTRACTOR.
21.	FLOOR MOUNTED FIRE PROTECTION EQUIPMENT SHALL BE INSTALLED ON A 6" CONCRETE HOUSE-KEEPING PAD. COORDINATE SIZE AND FINAL LOCATION OF ALL CONCRETE PADS WITH THE STRUCTURAL ENGINEER. PADS SHALL BE MINIMUM 6" LARGER THAN THE EQUIPMENT IN BOTH HORIZONTAL DIRECTIONS.
22.	COORDINATE EXACT LOCATION OF FIRE PROTECTION SERVICE ENTERING THE BUILDING WITH THE SITE CONTRACTOR AND UTILITY DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL FOUNDATION WALL PENETRATIONS AND INVERT ELEVATIONS WITH THE GENERAL CONTRACTOR AND/OR CONSTRUCTION MANAGER BEFORE COMMENCING WORK.
23.	ALL FIRE PROTECTION PIPING SHALL HAVE SEISMIC BRACING IN ACCORDANCE WITH THE STATE BUILDING CODE, NFPA 13 AND THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS AND CALCULATIONS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.

![](_page_18_Figure_3.jpeg)

. @ 0 ![](_page_18_Picture_5.jpeg)

### FIRE PROTECTION LEGEND

NEW CONCEALED PENDENT SPRINKLER HEAD
UPRIGHT SPRINKLER HEAD AT CEILING TO REMAIN

OWNER:

CT INNOVATIONS - COLT BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

<b>RZ</b> Design Associates, Inc.
MECHANICAL, ELECTRICAL, AND
STRUCTURAL ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

HISTORY OF SUBMISSIONS

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19039

12/13/19 DMR GFL

Bid Set

SHEET TITLE

- -

FOURTH FLOOR FIRE PROTECTION PLAN

FP1.01.

SPRINKLER SYSTEM SPECIFICATIONS: 1. DESCRIPTION:

A. INSTALL NEW SPRINKLER SYSTEM WITH DROPS TO NEW GRID CEILING. B. WORK INCLUDES; INSTALL NEW PENDENT SPRINKLER HEADS IN GRID CEILINGS.

C. FURNISH ALL NECESSARY LABOR, MATERIAL, TOOLS, EQUIPMENT, APPURTENANCES, INSTRUMENTS, ETC., NECESSARY TO FULLY COMPLETE THE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND BOTH LOCAL AND STATE FIRE CODES AND N.F.P.A. #13.

2. CONTRACTOR'S RESPONSIBILITIES: A. ALL PERMITS AND FEES.

B. HOISTING, RIGGING, TRANSPORTATION COSTS AND INSTALLATION OF NECESSARY APPURTENANCES.

C. THE CONTRACTOR SHALL VISIT THE PREMISES AND NOTE ALL PERTINENT FACTS AND DETAILS INCLUDING CONDITIONS UNDER WHICH THE WORK MUST BE CARRIED OUT. NO ALLOWANCE WILL BE MADE FOR FAILURE TO HAVE DONE SO.

D. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE NOTIFICATION OF OUTAGE AND IMPAIRMENT TO THE EXISTING FIRE PROTECTION SYSTEMS TO GENERAL CONTRACTOR. BUILDING OWNER AND LOCAL AUTHORITIES. LEAVE SPRINKLER SYSTEM OPERATIONAL DURING

CONSTRUCTION TO GREATEST EXTENT POSSIBLE. E. HOLES - CUTTING AND PATCHING: CUTTING WILL BE BY CORE BORING, PATCHING WILL REQUIRE BOTH WATERPROOFING AND FIREPROOFING.

F.DRAWINGS ARE DIAGRAMMATIC; DO NOT SCALE DRAWINGS. MAKE SUCH DEVIATIONS AND OFFSETS AS NECESSARY TO MEET SPACE REQUIREMENTS. G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATER DAMAGE TO THE PROPERTY OF

THE OWNER, THE WORK OF OTHER TRADES, AND TO EXISTING BUILDING SYSTEMS DURING ALL PHASES OF THE WORK. 3. COORDINATION DRAWINGS

A. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.

B. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "NO EXCEPTIONS TAKEN" OR "MAKE CORRECTIONS NOTED" PRIOR TO BEING USED AS A BASIS FOR COORDINATION DRAWINGS. C. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS

COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE OTHER TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:

MECHANICAL SHEET METAL PLUMBING CONTRACTOR

ELECTRICAL WORK

MECHANICAL PIPING

VALVE.

D. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING ARE RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COST INCURRED BY OTHER TRADES.

E. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.

F.SUBMIT FINAL SIGNED COORDINATION DRAWING TO THE ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.

G. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND REINSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.

H. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUBCONTRACTORS. I. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF

THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO THE CONFLICTS WILL NOT BEAR ADDITIONAL COST. 4. INTERIOR PIPING:

A. STANDARD WEIGHT SCHEDULE 40 BLACK STEEL PIPE, ASTM A-795 OR A-53, WITH: 1. VICTUALIC STYLE 005 COUPLINGS AND FULL FLOW FITTINGS, ASTM A-47 AND A-536, IN SIZES 2" AND SMALLER. STANDARD SQUARE CUT GROOVES TO COUPLING MANUFACTURER'S SPECIFICATIONS.

2. MALLEABLE IRON THREADED FITTINGS 150 LB. ANSI B16.3, OR CAST IRON THREADED FITTINGS 250 LB. ANSI B16.4, IN ALL SIZES.

B. LIGHT WALL PIPE SCHEDULE 10, ASTM A-135, VICTUALIC STYLE 005 COUPLINGS AND FULL FLOW FITTINGS, ASTM A-47 AND A-536, IN SIZES 2-1/2" AND LARGER, WITH ROLLED GROOVES. NO CUT GROOVES OR THREADING WILL BE ALLOWED ON SCHEDULE 10. 5. SPRINKLER DROPS

FLEXHEAD COMMERCIAL CEILING SPRINKLER CONNECTIONS ALL 304 STAINLESS STEEL BRAIDED HOSE ASSEMBLY, HD-G60 GALVANIZED SHEET METAL BRACKET SYSTEM COMPATIBLE WITH LIGHT, MEDIUM AND HEAVY LOAD CEILING GRID SYSTEM PER ASTM C635 AND C636; FACTORY ASSEMBLED AND TESTED. FM APPROVED.

6. SPRINKLER HEADS: SPRINKLER HEADS SHALL BE VIKING, RELIABLE, VICTAULIC OR TYCO. EQUAL TO THE FOLLOWING MODEL NUMBER(S) AND TYPE(S):

A. TYCO MODEL TY3231 RECESSED PENDENT SPRINKLER, 1/2" ORIFICE, 155°F, CHROME PLATED FINISH WITH STYLE 10 CHROME PLATED ESCUTCHEON. 7. VALVES

VALVES SHALL BE MILWAUKEE, KENNEDY, NIBCO OR HAMMOND. EQUAL TO THE FOLLOWING MODEL NUMBER(S) AND TYPE(S): A. GLOBE VALVES: HAMMOND FIG. IB-413-T. UNION BONNET, TEFLON DISC, BRONZE GLOBE

B. BALL VALVES: HAMMOND FIG. 8501, BRONZE TWO PIECE BODY, BRASS STEM, CHROME PLATED BRASS BALL, TELFON SEATS AND STUFFING BOX RING, LEVEL HANDLE, THREADED END.

SIMILAR TO THOSE IN NFPA #13, APPENDIX A. D. BUILDING DESIGN CRITERIA: PROTECTION AREA LIMITATION 130 SQ.FT. SHALL BE HELD FULLY RESPONSIBLE.

9. PIPING SYSTEMS AVOID CONFLICT WITH THE ELECTRICAL CONDUITS, LIGHTING FIXTURES, OTHER PIPING, DUCTWORK AND EQUIPMENT OF OTHER TRADES. REQUIREMENTS OF NFPA #13. CAULKED AND RATED SEPARATIONS FIRESTOPPED. MANUFACTURERS RECOMMENDATIONS.

AND OIL. G. THREADED JOINTS SHALL BE MADE WITH TEFLON LIQUID JOINT COMPOUND APPLIED TO MALE THREADS ONLY.

10. INSTALLATION: A. SPRINKLER HEADS OF THE PROPER CONFIGURATION AND NUMBERS ARE TO BE INSTALLED

AS REQUIRED IN ACCORDANCE WITH REGULATIONS PERTAINING TO ORDINARY HAZARD OCCUPANCIES WITH SPECIAL ATTENTION TO THE RULES ON OBSTRUCTIONS. COMPLY WITH THE FULL REQUIREMENTS OF THE NFPA, LOCAL FIRE DEPARTMENT, STATE FIRE MARSHAL, FIRE INSURANCE COMPANY, RATING BUREAU AND OTHER AGENCIES HAVING JURISDICTION. B. WHERE FLEXIBLE SPRINKLER DROPS ARE USED THE MINIMUM BEND RADIUS SHALL BE 7 INCHES. THE CEILING SUPPORT BRACKETS SHALL BE ATTACHED TO THE MAIN TEE BAR RUNNER IN THE GRID, NOT THE CROSS SUPPORT RAILS. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS. C. SPRINKLERS WHICH ARE SO LOCATED AS TO BE SUBJECT TO MECHANICAL INJURY (IN EITHER UPRIGHT OR THE PENDANT POSITION) SHALL BE PROTECTED WITH APPROVED GUARDS D. INSTALL HEADS WITH TEFLON LIQUID JOINT COMPOUND APPLIED TO MALE THREADS ONLY E. SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILES EXCEPT WHERE

INDICATED OTHERWISE.

WITH NFPA #13. B. FURNISH TO THE RATING BUREAU, THE CERTIFICATE COVERING MATERIALS AND TESTS AS OUTLINED IN NFPA #13.

INSPECTION AND TEST BY THE RATING BUREAU. 12. <u>AS-BUILT DRAWING</u>S:

OF SYSTEMS WITHIN THIS DISCIPLINE. BE BOUND IN A COMPLETE AND CONSECUTIVE SET. REQUESTED BY THE OWNER.

WORK SHOWN AND WORK INSTALLED IN A NEAT AND ACCURATE MANNER. INDICATE THE FOLLOWING INSTALLED CONDITIONS: · MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND SIGNALING DEVICES LOCATED AND NUMBERED, ITEMS REQUIRED FOR MAINTENANCE LOCATED (I.E. LOW PT. DRAINS, UNIONS, FLOW AND PRESSURE SWITCHES, ETC.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVES TAG CHART.

· DOCUMENT ALL PIPING SIZES AND ELEVATIONS. INCLUDE PIPE LENGTHS AND/OR DIMENSION NOTING POSITION OF ALL SPRINKLER HEADS. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS AND ACTUAL EQUIPMENT AND

MATERIALS INSTALLED. F.ALSO SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT. INCLUDE MANUFACTURER'S MANUALS AND OPERATING INSTRUCTIONS.

A. THE COMPLETE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH RULES AND REGULATIONS PERTAINING TO ORDINARY HAZARD (NOT TO EXCEED 130 SQ.FT. PER HEAD SYSTEM TO BE HYDRAULICALLY CALCULATED; NOT SIZED AS PER PIPE SIZING SCHEDULE) OCCUPANCY AND COMPLY WITH FULL REQUIREMENTS OF THE REGULATORY AGENCIES. B. THE FIRE PROTECTION CONTRACTOR SHALL HAVE PREPARED BY A NICET LEVEL IV CERTIFIED SPRINKLER TECHNICIAN OR UNDER A P.E. WORK INSTALLATION DRAWINGS (SHOP DRAWINGS) AND SHALL SUBMIT THEM TO THE ENGINEER AND RATING BUREAU FOR APPROVAL. C. SHOP DRAWING SHALL INCLUDE ALL HYDRAULIC CALCULATIONS PREPARED ON FORMS

ORDINARY HAZARD GROUP II - 0.20 GPM/SF DENSITY OVER THE MOST REMOTE 1500 SQ.FT. E. BEFORE COMMENCING WORK, THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES, SO THAT NO POSSIBLE INTERFERENCE WILL OCCUR. IF, DUE TO INADEQUATE COORDINATION, EXTRA WORK IS ENTAILED, THE FIRE PROTECTION CONTRACTOR

A. SPECIAL CARE MUST BE TAKEN TO INSURE THAT PIPING ABOVE HUNG CEILINGS IS RUN TO MAINTAIN MAXIMUM HEADROOM AND CLEARANCE FOR ACCESS TO THE EQUIPMENT AND TO

B. THE PIPING SHALL BE SO ARRANGED THAT THE ENTIRE SYSTEM CAN BE FLUSHED AND DRAINED THROUGH ACCESSIBLE LOW POINTS. PROVIDE AUXILIARY DRAINS FOR WATER

TRAPPED IN SECTIONS OF PIPE. DRAIN PIPE SHALL BE GALVANIZED. C. RUN PIPING CONCEALED THROUGHOUT FINISHED SPACES, EITHER IN FURRED SPACES, SHAFTS, OR ABOVE FALSE CEILINGS. PIPE SIZE FOR DROPS TO SPRINKLER HEADS LOCATED BELOW SUSPENDED CEILINGS SHALL BE 1" MINIMUM. PIPING SHALL BE SUPPORTED PER

D. CHROME-PLATED ESCUTCHEONS SHALL BE USED ON ALL EXPOSED PIPING WHICH PENETRATES EITHER WALLS OR CEILINGS. ALL WALL PENETRATIONS SHALL BE SLEEVED AND E. VICTAULIC FITTINGS AND COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE

F.THE ENDS OF PIPES SHALL BE REAMED FREE FROM BURRS AND KEPT FREE OF SCALE, DIRT

11. <u>TESTING</u>: A. TEST ENTIRE SYSTEM AT 200 PSI FOR TWO (2) HOURS AFTER COMPLETION, IN ACCORDANCE

C. DURING AND AFTER COMPLETION, THE ENTIRE INSTALLATION SHALL BE SUBJECT TO

A. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS B. DRAWING SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE

DETAILS AS NECESSARY TO CLEARLY INDICATE THE INSTALLED CONDITION. DRAWINGS SHALL C. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS

COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. D. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS

E. PROVIDE A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN WORK, INCLUDE ALL CHANGES FOR AN ACCURATE RECORD. ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS. DOCUMENT ALL DEVIATIONS, BETWEEN THE

![](_page_19_Figure_58.jpeg)

![](_page_19_Figure_59.jpeg)

![](_page_19_Figure_60.jpeg)

# AMENTA EMMA

ARCHITECTS

- 3/8" ALL THREAD ROD

- NFPA ADJUSTABLE RING HANGER TOLCO FIG. 200

SPRINKLER BRANCH LINE -ROTATE NEW AND EXISTING OUTLETS UP TO VEWRTICAL WHEREVER POSSIBLE

### OWNER:

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

<b>RZ</b> Design Associates, Inc.
MECHANICAL, ELECTRICAL, AND
STRUCTURAL ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
D. (860) A26 A226

P: (860) 436-433 F: (860) 436-4450 www.rzdesignassociates.co

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

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19039

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GFL

12/13/19

Bid Set

SHEET TITLE

FIRE PROTECTION DETAILS AND SPECIFICATIONS

	ABBREVIATIONS
4	GENERAL SERVICE COMPRESSED AIR
A/AMP AC	AMPERE AIR COMPRESSOR
ACU	AIR CONDITIONING UNIT(S)
AD	ACCESS DOORS
AD AFF	AREA DRAIN ABOVE FINISHED FLOOR
\FG	ABOVE FINISHED GRADE
AHU AMB	AIR HANDLING UNIT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	
43 4V	ACID VENT (CHEMICAL)
AVTR	ACID VENT THRU ROOF
AVV BFW	BOILER FEED WATER
3HP	BRAKE HORSEPOWER
BSMT STU	BASEMENT BRITISH THERMAL LINITS
втин	BRITISH THERMAL UNITS/HOUR
CER/CEG	CEILING EXHAUST REG./GRILLE
CFM	CUBIC FEET PER MINUTE
CHWR	CHEMICAL FEED PUMPS CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
	CAST IRON
CLPS	CLEAN LOW PRESSURE STEAM
	CLEAN MEDIUM PRESSURE STEAM
	CLEANOUT
002	CARBON DIOXIDE
COMP	COMPRESSOR CONDENSATE PUMP
CRU	COMPUTER ROOM UNIT
	COOLING TOWER
CUH	CABINET UNIT HEATER
	COEFFICIENT, VALVE FLOW
2VV D	DEPTH
JB	DECIBEL
DCV	DIRECT CURRENT DOUBLE CHECK VALVE
DE	DEIONIZED PROCESS WATER
DEG or ° ור	DEGREE DISTILLED WATER
DIA	DIAMETER
	DOWN
DWG	DRAWING
EF FF	EXHAUST FAN
EHC	ELECTRICAL HEATING CABLES
ELEC	ELECTRICAL
ELEV ETP	ELECTRIC TRAP PRIMER
EUH	ELECTRIC UNIT HEATER
EVAP EWC	EVAPORATOR ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXH Exp	EXHAUST
=	FAHRENHEIT
FA	
-00 -D	FLOOR DRAIN
EDC	FIRE DEPARTMENT CONNECTION
-HC FM	FLOW METER
P	FIRE PUMP
-PM -PS	FEET PER MINUTE FEET PER SECOND
-S	FLOOR SINK
T T	FOOR OR FEET FIRE VALVE CABINET
G	GAS
GA CAL	GAUGE
GND	GROUND
GPH	GALLONS PER HOUR
эрм GRU	GREASE RECOVERY UNIT
GW	GREASE WASTE
H HD	HEIGHT HEAD
- IP	HORSEPOWER
HPG	HIGH PRESSURE GAS
HR	HOUR(S)
HT	HEAT
лік HUM	HUMIDIFIER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HVV	HUI WAIER

#### ABBREVIATIONS

HWRF

HWS

HX

ID

IEF

IW

KEF

KVA

KW

KWH

LA

LF

LG

LPC

LPS

LV

MA

MAGP

MAX

MBH

MFR

MIN

MPS

MV

N2

N2O

N.C.

N.O.

N/A

NIC

NTS

OA

OD

ORD

ORL

PH/Ø

PRESS

PRV

PSI

PVC

QTY

RD

REF

RM

RO

RPM

RTU

RV

SAC

SCP

SEP

SP

SP

SPEC

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SS

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STD

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VTR

WC

WG

WΗ WHA

WI WP

WTG

WV

W

TWR

TEMP

RPD/RPZ

MUAU

MECH

LAV

LBS/HR

IN WG

HOT WATER RETURN PUMP HOT WATER SUPPLY HEAT EXCHANGE INSIDE DIAMETER IN-LINE EXHAUST FAN INCHES INCHES OF WATER, GAUGE (PRESSURE) INDIRECT WASTE JOCKEY PUMP KITCHEN EXHAUST FAN KILOVOLT AMPERE KILOWATT KITCHEN WATER HEATER LENGTH LABORATORY COMPRESSED AIR LAVATORY POUNDS PER HOUR LINEAR FEET LABORATORY GAS LOW PRESSURE CONDENSATE LOW PRESSURE STEAM LABORATORY VACUUM MEDICAL COMPRESSED AIR MASTER ALARM GAS PANEL MAXIMUM BTU PER HOUR (THOUSAND) MECHANICAL MANUFACTURER MINIMUM MEDIUM PRESSURE STEAM MAKE UP AIR UNIT MEDICAL VACUUM NITROGEN NITROUS OXIDE NORMALLY CLOSED NORMALLY OPEN NOT APPLICABLE NOT IN CONTRACT NOT TO SCALE OXYGEN OUTSIDE AIR OUTSIDE DIAMETER OVERFLOW ROOF DRAIN OVERFLOW RAIN LEADER POLE PHASE PRESSURE PRESSURE REDUCING VALVE POUNDS PER SQUARE INCH POLYVINYL CHLORIDE QUANTITY ROOF DRAIN ROOF EXHAUST FAN ROOM **REVERSE OSMOSIS WATER** REDUCED PRESSURE DEVICE **REVOLUTIONS PER MINUTE** ROOF TOP UNIT RADON VENT RAIN LEADER SOIL SHOP AIR COMPRESSOR STEAM CONDENSATE PUMP SEWAGE EJECTOR PUMP STATIC PRESSURE SUMP PUMP SPECIFICATION SQUARE SOIL/STACK STORM STANDARD STEAM WATER HEATER IDENTIFICATION OF EQUIPMENT TEMPERATURE THERMOSTATIC MIXING VALVE TRAP PRIMER TEMPERED WATER TEMPERED WATER RETURN TYPICAL UNIT HEATER URINAL VENT VACUUM VELOCITY VARIABLE FREQUENCY CONTROLLER VERIFY IN FIELD VOLUME VENT THRU ROOF WASTE WATER CLOSET WIREGUARD WALL HYDRANT (HOSE BIBB) WATER HAMMER ARRESTER WIDTH WEATHERPROOF WALL TRANSFER GRILLE WASTE AND VENT COMBINATION

HWR

HOT WATER RETURN

PLUMBING SYMBOLS		
— W ——	WATER SERVICE	
	COLD WATER	
	HOT WATER	
	HOT WATER RECIRCULATING	
	VENT	
—ss——	SOIL OR WASTE ABOVE GRADE	
—ss——	SOIL OR WASTE BURIED	
—RV——	RADON VENT	
	COMBINATION WASTE & VENT	
—G——	GAS (NATURAL/PROPANE)	
—GW——	GREASE WASTE	
IW	INDIRECT WASTE	
-ORL	OVERFLOW RAIN LEADER	
—RL——	RAIN LEADER	
—SD——	STORM DRAIN	
	CONDENSATE DRAIN	
-EHC	ELECTRICAL HEATING CABLE	
$\mathbb{M}$	WATER METER ASSEMBLY	
G	GAS METER ASSEMBLY	
0	FLOOR DRAIN	
Ø	ROOF DRAIN	
TP	TRAP PRIMER	
ETP	ELECTRONIC TRAP PRIMER	

FITTINGS AND VALVES BALL VALVE DIRECTION OF FLUID FLOW GATE VALVE BUTTERFLY VALVE CALIBRATED BALANCING VALVE GAS COCK THERMOSTATIC MIXING VALVE _____X_____ SOLENOID VALVE DRAIN VALVE WITH HOSE END, CAP & CHAIN OR HOSE BIBB WALL HYDRANT ______ PIPE DROP WITH VALVE _______ TAKEOFF FROM BOTTOM OF MAIN PIPE UNION ------ PIPE ELBOW DOWN ————— PIPE TEE DOWN WALL CLEANOUT OR BLIND FLANGE "P" TRAP  $\overline{}$ ______ STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN BACKFLOW PREVENTER (2" AND SMALLER) -X-1-X-1-X-BACKFLOW PREVENTER (2 1/2" AND LARGER) WATER HAMMER ARRESTOR PIPE CAP OR CAPPED END OF PIPE ———— PIPE SLEEVE PIPE GUIDES AIR VENT PRESSURE RELIEF SAFETY VALVE  $\rightarrow$ A AQUASTAT TEMPERATURE SENSOR WITH SEPARABLE ______ SOCKET IN IMMERSIBLE WELL TEMPERATURE GAUGE WITH SEPARABLE ______ SOCKET IN IMMERSIBLE WELL THERMOMETER WITH SEPARABLE SOCKET IN IMMERSIBLE WELL PRESSURE GAUGE ..... FLEXIBLE CONNECTOR

- OWNER.
- INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- ADDITIONAL INFORMATION.
- TRADES BEFORE COMMENCING WORK.
- APPURTENANCES.
- WITH THE PROJECT DOCUMENTS OF ALL TRADES.
- FIELD AND ADJUST AS NECESSARY.
- FIXTURE.
- ACCORDANCE WITH THE PLUMBING CODE.
- RECOMMENDATION.
- THAT THIS WORK HAS BEEN COMPLETED.
- INSULATION AND THE LOCATION SHALL BE MADE INFILTRATION FREE.
- SERVICE CONNECTIONS, FACTORY START UPS AND INSTALLATION OF FIELD DEVICES.
- NECESSARY
- WASTE PIPING
- GAP OR TO A SINK DRAIN TAILPIECE.
- ISOLATION VALVES AND EXTEND SLOPED PRIMING LINE TO DRAIN TRAPS.
- THE ELECTRICAL CONTRACTOR.
- 22. ALL EXTERIOR EXPOSED GAS PIPING SHALL BE PRIMED AND PAINTED.
- LARGER THAN THE EQUIPMENT IN BOTH HORIZONTAL DIRECTIONS.

#### **PLUMBING GENERAL NOTES**

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.

2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED PLUMBING SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE

3. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND

4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TOP DETAILS, SCHEDULES AND SPECIFICATIONS FOR

5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE

6. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED. IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER

7. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).

8. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS, OFFSETS, ETC. AS REQUIRED TO INSTALL PIPING, EQUIPMENT, MAINTAINING PROPER CLEARANCES AND TO AVOID ANY CONFLICTS WITH OTHER TRADES, AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR

9. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE

10. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW INDIVIDUAL BRANCH PIPING TO EACH PLUMBING FIXTURE; ONLY THE BRANCH PIPING TO GROUPS OF FIXTURES IS INDICATED. EACH AND EVERY FIXTURE SHALL BE PROPERLY PIPED TO WATER, WASTE, AND VENT PIPING SYSTEMS. REFER TO THE PLUMBING SCHEDULES FOR INDIVIDUAL PIPE SIZES TO EACH

11. PROVIDE PROPER PIPING SYSTEM IDENTIFICATION LABELS, SLOPES FOR DRAIN PIPING, CLEANOUTS, HANGERS, ETC. IN

12. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES OR EQUIPMENT. ALL SUCH EQUIPMENT AND EQUIPMENT COLORS AND FINISHES SHALL BE COORDINATED WITH THE ARCHITECT. MOUNTING HEIGHTS SHALL BE APPROVED BY THE ARCHITECT.

13. INSTALL WATER HAMMER ARRESTORS (WHA) AT ALL QUICK CLOSING VALVES (FLUSH VALVES, SOLENOID VALVES, ETC.); SIZE SHALL BE BASED ON FIXTURE UNITS PER PDI STANDARDS AND INSTALLED PER MANUFACTURER'S

14. ALL PIPING, DRAINS, STRAINERS, FAUCETS, FAUCET AERATORS, FILTERS, ETC. SHALL BE THOROUGHLY CLEANED AND FLUSHED IMMEDIATELY BEFORE PROJECT COMPLETION. PROVIDE CERTIFICATION ON CONTRACTOR'S LETTER HEAD

15. DOMESTIC WATER DROPS AND RISERS INSTALLED IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF

16. BEFORE INSTALLATION, COORDINATE THE WORK WITH OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED

17. PIPE ALL CONDENSATE DRAINS FROM MECHANICAL EQUIPMENT COOLING COILS, BY GRAVITY (INTERIOR AIR HANDLING UNITS, FAN COIL UNITS, AC UNITS, ETC.) TO FLOOR DRAINS, JANITOR'S SINKS OR OTHER APPROVED LOCATION THROUGH AN AIR GAP. EACH CONDENSATE DRAIN SHALL BE TRAPPED AT THE EQUIPMENT DRAIN OUTLET, REFER TO TRAP DETAILS ON DRAWINGS. COORDINATE EXACT LOCATION OF EQUIPMENT WITH THE HVAC CONTRACTOR AND ADJUST AS

18. INSULATE ALL WASTE ABOVE SLAB RECEIVING CONDENSATE FROM EQUIPMENT INCLUDING "P" TRAPS AND BRANCH

19. ALL INDIRECT WASTE DRAINS SHALL BE PIPED TO FLOOR DRAINS, FUNNELS OR FIXED AIR GAP FITTINGS, THROUGH AIR

20. INSTALL TRAP PRIMERS OR TRAP GUARD SEALER FOR FLOOR DRAINS, HUB DRAINS AND FIXED AIR GAP FITTINGS, WHERE TRAP IS SUBJECT TO LOSS OF SEAL BY EVAPORATION, CONNECT TRAP PRIMER TO COLD WATER LINE. PROVIDE

21, COORDINATE ALL PLUMBING EQUIPMENT REQUIRING POWER, FOR EXACT LOCATION AND POWER REQUIREMENTS WITH

23. FLOOR MOUNTED PLUMBING EQUIPMENT SHALL BE INSTALLED ON A 6" CONCRETE HOUSE-KEEPING PAD. COORDINATE SIZE AND FINAL LOCATION OF ALL CONCRETE PADS WITH THE STRUCTURAL ENGINEER. PADS SHALL BE MINIMUM 6"

24. COORDINATE EXACT LOCATION OF PLUMBING SERVICES ENTERING THE BUILDING WITH THE SITE CONTRACTOR AND UTILITY DRAWINGS PRIOR TO INSTALLATION. COORDINATE ALL FOUNDATION WALL PENETRATIONS AND INVERT ELEVATIONS WITH THE GENERAL CONTRACTOR AND/OR CONSTRUCTION MANAGER BEFORE COMMENCING WORK.

25. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.

26. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.

# AMENTA|EMMA

ARCHITECTS

### OWNER:

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

### RZ Design Associates, In MECHANICAL, ELECTRICAL, AND

STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

19039
12/13/19
FSM

RHR

HISTORY OF SUBMISSIONS

![](_page_20_Picture_70.jpeg)

Bid Set

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SHEET TITLE

PLUMBING ABBREVIATIONS, GENERAL NOTES AND SYMBOL LIST

IT IS THE INTENT OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE FOLLOWING SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

ITEMS AND SERVICES NOT SHOWN ON THE DRAWINGS OR STATED IN THE SPECIFICATIONS, BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED. DRAWINGS INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR.

GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED.

THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES, EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION.

THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED AND PAY ALL APPLICABLE FEES. INCLUDED SHALL BE ANY UTILITY COST ASSOCIATED WITH ANY NEW OR MODIFIED SERVICES.

CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT'S GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS AS REFERENCED OR STATED.

#### CONNECTICUT CODES AND STANDARDS: 2015 INTERNATIONAL BUILDING CODE

2015 INTERNATIONAL ENERGY CONSERVATION CODE WITH AMENDMENTS 2015 INTERNATIONAL EXISTING BUILDING CODE 2015 INTERNATIONAL MECHANICAL CODE

2015 INTERNATIONAL PLUMBING CODE

2017 NATIONAL ELECTRICAL CODE (NFPA 70) 1CC/ANSI A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, AND ADMINISTRATIVE TASKS/DUTIES REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS OR SPECIFIED HEREIN.

STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE.

SEISMIC RESTRAINTS

THE PROJECT IS IN A SEISMIC ZONE AND ALL WORK SHALL BE INSTALLED, SUPPORTED, AND SEISMICALLY RESTRAINED IN ACCORDANCE WITH CURRENT SEISMIC REQUIREMENTS.

#### COORDINATION

CONTRACTOR IS REQUIRED TO OBTAIN COMPLETE SETS OF THE CONTRACT DOCUMENTS FOR COORDINATION WITH ALL OTHER TRADES.

#### SHOP DRAWINGS

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER INITIAL REVIEW AND APPROVAL, REVISED IF REQUIRED AND RESUBMITIED AS PER ENGINEER'S COMMENTS PRIOR TO CONSTRUCTION.

ACCEPTANCE OF DEVIATIONS OR SUBSTITUTIONS FROM BASE SPECIFIED ITEMS OR EQUIPMENT SHALL BE AT THE ENGINEERS DISCRETION, ANY CHANGES REQUIRED FOR ACCOMMODATION SHALL BE AT NO ADDITIONAL COST.

#### OWNER'S MANUAL AND AS BUILT DRAWINGS

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE AN OWNER'S MANUAL WITH AS-BUILT DRAWINGS REFLECTING INSTALLED CONDITIONS.

THE OWNER'S MANUAL SHALL CONSIST OF ALL DOCUMENTATION PROVIDED AS SHOP DRAWINGS, MANUALS PACKED WITH EQUIPMENT AND COMPLETE PARTS BREAKDOWN WITH PART NUMBERS AND DIAGRAMS. THE OWNER'S MANUALS SHALL BE IN A THREE RING BINDER. PROVIDE NAMES AND PHONE NUMBERS OF SUPPLY HOUSES WHERE PARTS MAY BE PURCHASED.

AS-BUILT DRAWINGS SHALL CONSIST OF FIELD MARK-UPS TO THE CONSTRUCTION DRAWINGS AND INCLUDE ANY ADDITIONAL DETAILS TO CLEARLY REFLECT INSTALLED CONDITIONS. ANY ISSUED OR SUPPLEMENTAL SKETCHES OR DIRECTIVES SHALL BE INCORPORATED INTO THE FINAL CONSTRUCTION MARK-UPS.

CONTRACTOR SHALL MAINTAIN, ON-SITE, A FIELD MARK-UP SET OF DOCUMENTS WHICH SHALL BE KEPT CURRENT WITH ANY CHANGES FROM THE ORIGINAL CONTRACT DOCUMENTS. THESE MARK-UPS ARE TO BE PROVIDED AS AS-BUILT DRAWINGS FOR COMPARISONS.

#### BASES, HANGERS AND SUPPORTS

THE CONTRACTOR SHALL PROVIDE, OR CAUSE TO BE PROVIDED BY ANOTHER CONTRACTOR, ALL REQUIRED BASES AND SUPPORTS FOR PIPING AND EQUIPMENT PROVIDED UNDER THESE SPECIFICATIONS.

PROVIDE ADJUSTABLE CLEVIS HANGERS FOR ALL SINGLE RUN PIPING. WHERE REQUIRED, OVERSIZE TO ACCOMMODATE INSULATION TO PASS THROUGH. PROVIDE INSULATION SHIELDS. WHERE POSSIBLE, GROUP PIPING TO ALLOW TRAPEZE HANGERS TO BE USED.

PROVIDE ALL ANCHORS, INSERTS AND BEAM CLAMPS REQUIRED FOR HANGERS AND SUPPORTS. IF ADDITIONAL STRUCTURAL MEMBERS OR SUPPORTS ARE REQUIRED, THE CONTRACTOR IS TO COORDINATE WITH THE STRUCTURAL CONTRACTOR FOR PROVISION OF THESE MEMBERS. ALL PIPING AND EQUIPMENT IS TO BE SECURELY FASTENED TO THE BUILDING STRUCTURE IN AN ACCEPTABLE MANNER.

ALL PIPING PASSING THROUGH WALLS AND FLOORS SHALL BE SLEEVED. THE SLEEVES SHALL HAVE AN INSIDE DIAMETER 1" LARGER THAN THE PIPE AND INSULATION, IF INSULATED. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.

#### PIPE SEALS AND FIRE-STOPS

SEAL ALL PIPING PASSING THROUGH FIRE AND/OR SMOKE RATED PARTITIONS, WALLS AND FLOORS WITH A UL LISTED, APPROVED AND TESTED FIRE AND/OR SMOKE SEALING MATERIAL EQUIVALENT TO THE RATING OF THE WALL, PARTITION OR FLOOR. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR COMPATIBILITY WITH WALL AND FLOOR CONSTRUCTION.

FOR INTERIOR PARTITIONS, WALLS AND FLOORS, SLEEVES SIZED TO ALLOW INSULATION TO PASS THROUGH CONTINUOUS WITH A MAXIMUM 1" ANNULAR SPACE BETWEEN THE INSULATION AND SLEEVE. SLEEVES TO BE CUT SMOOTH AND INSTALLED FLUSH WITH FINISHED WALLS AND 2" ABOVE FINISHED FLOORS. FILL THE ANNULAR SPACE WITH UL SEALING MATERIAL.

EQUIPMENT ACCESSIBILITY

LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED OR MAINTAINED IN FULLY ACCESSIBLE POSITION WITH ADEQUATE CLEARANCES TO PROVIDE SERVICE OR RFPAIR

ACCESS DOORS OR PANELS IN WALLS, CEILINGS OR FLOORS SHALL BE FIELD COORDINATED AND INSTALLED FOR ACCESS TO CONCEALED VALVES, EQUIPMENT OR DEVICES.

CLEANING AND PROTECTION AGAINST FOREIGN MATTER THE JOBSITE SHALL BE KEPT CLEAN AT ALL TIMES. CAP EXPOSED PIPING AND

COVER FLOOR DRAINS TO INSURE ADEQUATE PROTECTION AGAINST THE ENTRANCE OF FOREIGN MATTER.

AT COMPLETION OF THE PROJECT, ALL EQUIPMENT, FIXTURES, ETC. SHALL BE CLEANED.

OPERATING INSTRUCTIONS

UPON THE COMPLETION OF ALL WORK, TESTING AND ADJUSTING THE CONTRACTOR SHALL FURNISH PERSONNEL TO INSTRUCT THE OWNER'S REPRESENTATIVES IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE EQUIPMENT AND SYSTEMS FURNISHED.

GUARANTEES

IN ADDITION TO THE CONTRACTOR'S GUARANTEE, PROVIDE ALL APPLICABLE EXTENDED GUARANTEES FOR EQUIPMENT.

PLUMBING PIPING INSULATION

PROVIDE 1" GLASS FIBER INSULATION FOR ALL NEW COPPER PIPING (HOT AND COLD WATER), INCLUDES INSULATION FOR FITTINGS AND VALVES. INSULATION TO BE AS MANUFACTURED BY KNAUF, MANVILLE, OWENS-CORNING OR CERTAIN-TEED.

INSULATION TO HAVE A "K" VALUE OF 0.24 AT 75°F, FLAME SPREAD/SMOKE OF 5/50, MAX. 850°F RATING, VAPOR BARRIER WHITE KRAFT PAPER WITH GLASS FIBER YARN BONDED TO ALUMINIZED FILM.

AT ALL FITTINGS AND VALVES PROVIDE PRE-MOLDED PVC JACKET BY ZESTON. BEFORE INSTALLING INSULATION, ALL REQUIRED PIPING IS TO BE TESTED AND

APPROVED. INSULATION IS TO PASS CONTINUOUSLY THROUGH HANGERS, WALLS, SLEEVES AND

OTHER PIPE PENETRATIONS.

#### PLUMBING PIPING

PIPING MATERIAL SHALL BE AS FOLLOWS:

SANITARY/WASTE PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING. CISPI 301.

VENT PIPING ABOVE AND BELOW FLOOR SLAB - CAST IRON, HUBLESS, NEOPRENE GASKET, STAINLESS STEEL HEAVY DUTY CLAMP AND SHIELD COUPLING, CISPI 301.

WATER PIPING - COPPER, TYPE L, ASTM B88, SOLDER OR PRESS CONNECTIONS. BALL VALVES SHALL BE BRONZE, TWO PIECE, FULL PORT, EXTENDED LEVER HANDLE FOR INSULATION, CLASS 150-400 PSI WOG, AS MANUFACTURED BY MILWAUKEE, NIBCO OR APOLLO.

NO PIPING SHALL BE COVERED UNTIL TESTED AND APPROVED BY THE AUTHORITIES HAVING JURISDICTION.

INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT.

CONCEALED PIPING AND ACCESSORIES SHALL BE ARRANGED TO USE THE MINIMUM AMOUNT OF ACCESS DOORS AND PANELS.

PIPING SHALL BE RUN CONCEALED IN FURRED SPACES, CHASES, WALLS, ETC. CONTRACTOR SHALL OBTAIN PERMISSION TO RUN EXPOSED PIPING.

PROVIDE ISOLATION AND SHUT-OFF VALVES AT ALL BRANCH LINES AND EQUIPMENT. PROVIDE LISTED AND APPROVED DIELECTRIC FITTINGS WHEN JOINING DISSIMILAR

RUN ALL SANITARY AND WASTE PIPING AT A MINIMUM OF 1/8" PER FOOT FOR PIPING. SLOPE VENT PIPING TO DRAIN.

METALS. PIPE HANGERS SHALL BE PLACED ADJACENT TO MOTOR DRIVEN EQUIPMENT. HANGERS AND SUPPORTS SHALL BE AS FOLLOWS: COPPER PIPING

1/2" TO 1-1/4" AT MAXIMUM 6'-0" SPACING 1-1/2" TO 3" AT MAXIMUM 10'-0" SPACING

CAST IRON PIPING

1-1/2" TO 2" AT MAXIMUM 10'-0" SPACING 2-1/2" AND ABOVE AT MAXIMUM 5'-0" SPACING

WATER PIPING IS TO BE FLUSHED AND DISINFECTED IN ACCORDANCE WITH LOCAL AND STATE HEALTH REGULATIONS. AFTER FLUSHING AND DISINFECTING, THE WATER IS TO BE TESTED BY THE CONTRACTOR THROUGH AN INDEPENDENT LAB WITH A WRITTEN REPORT.

ALL NEW WATER, SANITARY, WASTE, AND VENT PIPING SHALL BE PRESSURE TESTED AS FOLLOWS:

SANITARY, WASTE, AND VENT PIPING - HYDROSTATIC TEST AT 10 FT HEAD FOR MINIMUM 4 HOURS. SUBMIT WRITTEN/SIGNED TEST RESULTS. WATER PIPING - HYDROSTATIC TEST AT 125 PSI OR 1-1/2 TIMES OPERATING

PRESSURE (WHICHEVER IS GREATER)FOR A MINIMUM 4 HOURS WITH MAXIMUM LOSS OF 2 PSI. SUBMIT WRITTEN/SIGNED TEST RESULTS. AIR TESTING WILL NOT BE ACCEPTABLE.

PLUMBING PIPING SPECIALTIES

CLEANOUTS IN INTERIOR FINISHED FLOORS SHALL HAVE A CAST IRON BODY WITH ANCHOR FLANGE, THREADED TOP ASSEMBLY AND ROUND GASKETED SCORED COVER. FOR FINISHED FLOORS PROVIDE DEPRESSED COVER TO ACCEPT FLOOR FINISH.

WATER HAMMER ARRESTORS SHALL BE STAINLESS STEEL CONSTRUCTION, BELLOWS TYPE, PRECHARGED. AIR CHAMBERS ARE NOT ACCEPTABLE. INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES, ON HOT AND/OR COLD WATER SUPPLIES TO NEW INDIVIDUAL FIXTURES OR IN BANKS OF FIXTURES.

Α

PLUMBING EQUIPMENT AND FIXTURES

ALL PLUMBING EQUIPMENT AND FIXTURES SHALL BE NEW, COMPLETE WITH ALL TRIM AS SPECIFIED. APPROVAL CERTIFICATION BY MASSACHUSETTS IS REQUIRED.

FOR ALL EQUIPMENT AND FIXTURES, INSTALL AS PER MANUFACTURER'S INSTRUCTIONS, AS REQUIRED BY CODE, AND IN COMPLIANCE WITH CONDITIONS FOR CERTIFICATION (IF ANY). RETAIN ALL INFORMATION, MANUALS AND PARTS DIAGRAMS PACKAGED WITH THE UNITS.

COORDINATE ALL RELATED ELECTRICAL WORK AND REQUIRED CONNECTIONS TO ACHIEVE AN OPERATIONAL SYSTEM. VERIFY THAT ELECTRICAL POWER HAS PROPER CHARACTERISTICS.

ALL EQUIPMENT SHALL BE UL TESTED AND APPROVED AND IF APPLICABLE SHALL HAVE NSF CERTIFICATION.

PLUMBING FIXTURES SHALL BE INSTALLED WITH TRIM, INCLUDING BUT NOT LIMITED TO, FAUCETS, CARRIERS, WATER SUPPLIES, SUPPLY STOPS, TRAPS, TAILPIECES, HARDWARE, HANGERS/SUPPORTS, AND FASTENING DEVICES.

PLUMBING FIXTURES AND TRIM SHALL BE OF THE MANUFACTURER LISTED ON THE DRAWINGS OR AN APPROVED EQUAL MEETING THE OPERATIONAL CHARACTERISTICS, FUNCTION, SIMILAR APPEARANCE AND QUALITY OF THE SPECIFIED ITEMS.

FOR ALL EXPOSED PIPING TO FIXTURES, PROVIDE CHROME PLATED PIPES, ESCUTCHEONS AT WALLS, SUPPLY TUBES AND SUPPLY STOPS. DRAIN PIPING SHALL BE MINIMUM 17 GA, CHROME PLATED CAST BRASS, P-TRAPS SHALL HAVE CLEANOUT PLUGS.

SEAL FIXTURES TO WALLS AND FLOOR WITH APPROVED SILICONE SEALANT, COLOR TO MATCH FIXTURE COLOR OR CLEAR.

UPON COMPLETION OF INSTALLATION OF PLUMBING EQUIPMENT AND FIXTURES, TEST TO DEMONSTRATE CAPABILITY AND COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND CODES. FOR ALL EQUIPMENT, REPAIR OR REPLACE ANY MALFUNCTIONING EQUIPMENT OR FIXTURES AND RETEST.

ADJUST WATER PRESSURES THROUGH VALVES OR STOPS TO OBTAIN PROPER FLOW RATES AND PRESSURES REQUIRED.

UPON COMPLETION OF INSTALLATION OF EQUIPMENT OR FIXTURES, THOROUGHLY CLEAN ALL EXPOSED SURFACES, TRIM AND PIPING, FLUSH STRAINERS AND VERIFY FINAL OPERATION.

PROVIDE ALL WARRANTIES AND GUARANTEES TO THE OWNER WITH ALL NAMES, ESTABLISHED DATES, AND ANY ADDITIONAL INFORMATION REQUIRED FOR ENFORCEMENT.

NATURAL GAS PIPING SYSTEM

UNLESS OTHERWISE NOTED ON THE PLANS, GAS PIPING SHALL BE AS FOLLOWS:

GAS PIPING TO BE SCHEDULE 40 BLACK STEEL WITH MALLEABLE IRON FITTINGS, ASTM A53.

PIPE THREADS TO BE TAPERED AND PIPING SHALL SLOPE TOWARDS EQUIPMENT WITH DRIPS AT LOW POINTS AND EQUIPMENT. ASME B1.20.1

ALL PIPING SHALL BE TESTED IN COMPLIANCE WITH THE NEW YORK STATE GAS CODE AND NFPA 54 WITH ALL DOCUMENTATION OF TESTS SIGNED BY CONTRACTOR. TEST WITH COMPRESSED AIR OR OTHER INERT GAS.

SLOPE PIPING UPWARDS AT A MINIMUM OF 1/4" IN 15'-0" HORIZONTAL PIPE RUN.

HANGERS AND SUPPORT SPACING SHALL BE AS FOLLOWS: ALL PIPE SIZES AT MAXIMUM 6'-0" SPACING

GAS CONNECTORS TO EQUIPMENT SHALL BE MADE WITH CCST OR OTHER CSA CERTIFIED/UL LISTED FLEXIBLE CONNECTORS.

ALL PIPING UP TO 2" SHALL BE THREADED, 2-1/2" AND LARGER SHALL BE WELDED. VALVING SHALL BE BALL VALVES (BRONZE BODY, BRASS STEM PTFE SEAT) FOR

PIPING UP TO 2" AND IRON BODY GAS COCKS (BRASS PLUG AND WASHER) FOR PIPING 2-1/2" AND LARGER. CSA CERTIFIED/UL LISTED.

ALL NEW GAS PIPING SHALL BE PAINTED WITH PRIMER AND TWO COATS YELLOW ENAMEL WITH PIPE LABELS SPACED AT MAXIMUM 6'-0" INTERVALS. LABELS TO INDICATE NATURAL GAS AND GAS PRESSURE.

# AMENTAIEMMA

ARCHITECTS

![](_page_21_Picture_107.jpeg)

**CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTAN	5		
<b>EXAMPLE 202</b> <b>EXAMPLE 203</b> <b>EXAMPLE 204</b> <b>EXAMPLE 204</b> <b>EXAMP</b>			
KEY PLAN			
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![](_page_22_Figure_1.jpeg)

# 1 PLUMBING FOURTH FLOOR PLAN

	PLUMBING FIXTURE SCHEDULE													
GENERA	<u>NOTES:</u>													
PIPE SIZE SUPPOR CLEARAN	PE SIZES SHOWN ARE FOR SUPPLY AND DRAINAGE ONLY. PROVIDE SUPPLIES WITH SCREWDRIVER STOPS, WALL ESCUTCHEON, 17-GAUGE SEMI-CAST "P"TRAPS WITH CLEANOUT PLUG, PLUMBING FIXTURE JPPORTS AND NECESSARY FITTINGS TOMAKE FINAL CONNECTION. REFER TO SPECIFICATION FOR EQUIVALENTS. NOTE: REFER TO ARCHITCTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES, LEARANCE BELOW SINKS AND LAVATORIES AND OFSET DRAIN LOCATIONS. OFFSET DRAINS SHALL BE OFSET LEFT REAR OR OFSET RIGHT REAR .													
TYPE	FIXTURE	ACCES	SIBILITY	MANUFACTURER	MODEL		COLD	НОТ	SAN	VEN	IT		REMARKS	
SK-1	SINK			COHLER VAULT 25"X22"X6" UNDER-MOUNT			1/2"	1/2"	2"	1 1/2	2" PF AF	OVIDE KOHLER FAUCET MODEL K-596 MATTE BLACK FINISH. COORDINATE MOUNTING W		
POINT OF USE WATER HEATER SCHEDULE														
						WAT	ER SIDE	EL	LECTR	RICAL	DATA			
		PIPE DIAMETER												
	ID			MANUFACTURE	R MODEL NO.	INLET	OUTLE	ET AM	IPS \	VOLT	PH	REMARKS		
			POU-1	EEMAX	EX3012	1/2"	1/2"	25	5	120V	1	LOCATED IN CABINET		

•

# AMENTA EMMA

### OWNER:

#### CT INNOVATIONS - COLT BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

<b>RZ</b> Design Associates, Inc.
MECHANICAL, ELECTRICAL, AND
STRUCTURAL ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

KEY PLAN

![](_page_22_Picture_11.jpeg)

19039 12/13/19 FSM RHR

#### HISTORY OF SUBMISSIONS

![](_page_22_Picture_13.jpeg)

#### Bid Set

• •

#### SHEET TITLE

• •

P1.01.

FOURTH FLOOR PLUMBING PLAN

#### **ABBREVIATIONS**

AC	AIR COMPRESSOR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AMB	AMBIENT
APROX	APPROXIMATE
AS	AIR SEPERATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
AVG	AVERAGE
AWT	AVERAGE WATER TEMPERATURE
BAS	
BUNG	
	COOLING COIL
CDS	
CFP	
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CLG	CEILING
CO	CLEANOUT
CO2	CARBON DIOXIDE
COMP	COMPRESSOR
COND	CONDENSER
CONV	CONVECTOR
CP	CONDENSATE PUMP
CPU	CENTRAL PROCESSING UNIT
СТ	COOLING TOWER
CU	CONDENSING UNIT
CU FT	CUBIC FEET
CUH	CABINET UNIT HEATER
CV	COEFFICIENT. VALVE FLOW
CV	CONSTANT VOLUME
D	DEPTH
DB	
dB	
DEG or °	DEGREE
DWG	
EAI	
EBB	ELECTRIC BASEBOARD RADIATION
EDR	
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATOR
EWB	ENTERING WET BULB TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
F	FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FD	FLOOR DRAIN
FD/SB	FIRE DAMPER WITH INTEGRAL SECURITY BARS
FM	
FOB	FLOW METER
	FLOW METER FLAT ON BOTTOM
FOF	FLOW METER FLAT ON BOTTOM FUEL OIL FILL
FOF FOR	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN
FOF FOR FOS	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY
FOF FOR FOS FOT	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP
FOF FOR FOS FOT FOV	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT
FOF FOR FOS FOT FOV FPM	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE
FOF FOR FOS FOT FOV FPM FPS	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND
FOF FOR FOS FOT FOV FPM FPS FS	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK
FOF FOR FOS FOT FOV FPM FPS FS FSD	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK EIRE(SMOKE DAMPER
FOF FOR FOS FOT FOV FPM FPS FS FSD FSD	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER EOOT OR EEET
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR
FOF FOR FOS FOT FOV FPM FPS FSD FSD FT G GA GAL GND GPH	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS DEP MINUTE
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH GPM CD	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE CRAINS
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GND GPH GPM GR	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GND GPH GPM GR H	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH GPM GR H/C	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH GPM GR H H/C HC	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEATING COIL
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GND GPH GPM GR H/C HC HD	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEATING COIL HEAD
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GND GPH GPM GR H H/C HD HP	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEAD HORSEPOWER
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GPH GPM GR H H/C HD HP HPC	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEAD HORSEPOWER HIGH PRESSURE CONDENSATE
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH GPM GR H/C HD HP HPC HPG	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEATING COIL HEAD HORSEPOWER HIGH PRESSURE CONDENSATE HIGH PRESSURE GAS
FOF FOR FOS FOT FOV FPM FPS FS FSD FT G GA GAL GND GPH GR H/C HC HD HPC HPS	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEATING COIL HEAD HORSEPOWER HIGH PRESSURE CONDENSATE HIGH PRESSURE GAS HIGH PRESSURE STEAM
FOF FOR FOS FOT FOV FPM FPS FS FSD FT GA GAL GPH GPM GR H/C HD HPC HPG HPS HR	FLOW METER FLAT ON BOTTOM FUEL OIL FILL FUEL OIL RETURN FUEL OIL SUPPLY FLAT ON TOP FUEL OIL VENT FEET PER MINUTE FEET PER SECOND FLOOR SINK FIRE/SMOKE DAMPER FOOT OR FEET GAS GAUGE GALLONS GROUND GALLONS PER HOUR GALLONS PER HOUR GALLONS PER MINUTE GRAINS HEIGHT HEATING/COOLING HEATING COIL HEAD HORSEPOWER HIGH PRESSURE CONDENSATE HIGH PRESSURE GAS HIGH PRESSURE STEAM HOUR(S)

HTHW HIGH TEMPERATURE HOT WATER

HTHWR	HIGH TEMPERATURE HOT WATER RETURN
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY
HTR	HEATER
HUM	
HW/R	HOT WATER RETURN
HWRP	HOT WATER RETURN PUMP
HWRR	HOT WATER REVERSE RETURN
HWS	HOT WATER SUPPLY
ΗХ	HEAT EXCHANGER
HZ	FREQUENCY (CYC, PER SEC.)
ID	INSIDE DIAMETER
IN	INCHES
IN WG	INCHES OF WATER, GAUGE (PRESS.)
	LABORATORY COMPRESSED AIR
LAT	
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LF	LINEAR FEET
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LV	LABORATORY VACUUM
LWT	LEAVING WATER TEMPERATURE
MA	MIXED AIR
MAU	
IVIAĂ MRU	
IVIDI ^{TI} MD	
MECH	MECHANICAI
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
N2	NITROGREN
N2O	NITROUS OXIDE
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
N.I.S. N/A	
NFC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
OA	OUTSIDE AIR
PCD	PUMPED CONDENSATE DRAIN (COOLING)
PCR	PUMPED CONDENSATE RETURN (STEAM)
PD	PRESSURE DROP
PH or Ø	PHASE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PI	
RG	REFRIGERANT GAS
RH	
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RM	ROOM
RPD	REDUCED PRESSURE DEVICE
RPM	REVOLUTIONS PER MINUTE
RTU	
S&R	
SA SCP	SUFFLI AIR STEAM CONDENISATE DI IMD
SD	
SP	STATIC PRESSURE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
T'STAT	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TEMP	
I Y P LILL	
V	
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WATT
W	
WB	

WPD

WWM

WATER PRESSURE DROP

WELDED WIRE MESH

**ABBREVIATIONS** 

	HVAC SYMBOLS	FIT	TINGS AND VALVES
	RECTANGULAR, FLAT OVAL OR	ø	BACKFLOW PREVENTOR
	AIR DUCT WITH ACOUSTICAL LINING		STRAINER OR STRAINER WITH BLOW-DOWN VALVE HOSE END, CAP AND CHAIN
		O	PIPE ELBOW UP OR PIPE TEE UP
			PIPE ELBOW DOWN
			PIPE TEE DOWN
	RETURN AIR DUCT UP	;	TAKEOFF FROM BOTTOM OF MAIN PIPE
			TAKEOFF FROM TOP OF MAIN PIPE
			IN-LINE EXPANSION COMPENSATOR
	EXHAUST AIR DUCT DOWN	<del></del>	PIPE ANCHOR
	TURNING VANES		
AD AD	ACCESS DOOR		UNION
	FLEXIBLE DUCT CONNECTION		PIPE GUIDES
$\odot$	CEILING SUPPLY DIFFUSERS	©	PUMP
	CEILING RETURN / EXHAUST GRILLE		DIRECTION OF FLUID FLOW
	HARD DUCTED DIFFUSER OR GRILLE WITH FULL	δ	VALVE ON RISER
	SIZE BOTTOM TAKE-OFF	^	VALVE ON DROP
<b>&gt;</b>	DIRECTION OF SUPPLY OR OUTDOOR AIRFLOW	<u> </u>	AIR VENT
_\	DIRECTION OF RETURN OR EXHAUST AIRFLOW	Ŷ	FLOW SENSOR
A	DOOR UNDERCUT		2-WAY CONTROL VALVE
. BDD		¥	3-WAY CONTROL VALVE
	BACK DRAFT DAMPER	6	BALL VALVE
VD		₽	CALIBRATED BALANCING VALVE
	VOLUME DAMPER		SHUT-OFF VALVE (SEE SPECIFICATIONS FOR APPLICATION TYPE)
	FIRE DAMPER		BUTTERFLY VALVE
FD/SB			CHECK VALVE
	FIRE DAMPER WITH INTEGRAL SECURITY BARS	ō	GLOBE VALVE
ĒS			
			PRESSURE REDUCING VALVE
	SMOKE DAMPER SYSTEM AND ASSOCIATED DEVICES PER		
	SPECIFICATIONS AND MEP DETAILS	&	OS&Y VALVE
M		¢	DRAIN VALVE WITH HOSE END, CAP & CHAIN OR WALL HYDRANT / HOSE BIBB
		M	
XXX	DESIGNATION (XXX)		MOTORIZED BUTTERFLY VALVE
xxx	RETURN PIPING, REFER TO ABBREVIATION LIST FOR DESIGNATION (XXX)	<u> </u>	PRESSURE RELIEF SAFETY VALVE
DS	DUCT SMOKE DETECTOR WITH REMOTE	——————————————————————————————————————	AQUASTAT
 ©P	DUCT STATIC PRESSURE SENSOR	Ţ	TEMPERATURE SENSOR WITH SEPARABLE SOCKET
 @	DIFFERENTIAL PRESSURE SENSOR		
VFD	VARIABLE FREQUENCY DRIVE	T T	SOCKET
AFS	AIR FLOW STATION		THERMOMETER WITH SEPARABLE SOCKET
SA	DUCT SOUND ATTENUATOR	ف 	IN IMMERSIBLE WELL
 (T)	ROOM THERMOSTAT	P	PRESSURE GAUGE
 	ROOM TEMPERATURE SENSOR	<del>*</del>	
	CARBON MONOXIDE SENSOR	P L	PRESSURE SENSOR WITH SYPHON (STEAM)
 	CARBON DIOXIDE SENSOR		
			DUCT SIZING
		20x12	RECTANGULAR DUCT
		20/12	FLAT OVAL DUCT
RC	VRF REMOTE CONTROL	20"ø	ROUND DUCT
	I		

- EXISTING CONDITIONS.

- DOCUMENTS.

- OF WORK.

#### HVAC DEMOLITION GENERAL NOTES

1. BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE

2. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS, CONNECTIONS AND DISRUPTIONS EFFECTING OTHER TRADES (MECHANICAL AND ELECTRICAL). INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.

3. DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.

4. REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID

5. THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTOR'S OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.

6. THE LOCATION OF EXISTING HVAC SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.

7. ALL EQUIPMENT, AND ASSOCIATED PIPING INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS, UP TO NEAREST EXISTING ACTIVE MAIN OR BRANCH LINE AND CAPPED AS CLOSE TO THE ACTIVE LINE AS POSSIBLE. NO EQUIPMENT, PIPING, OR CONDUIT SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.

8. ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY PIPING OR CONDUIT WHICH MUST REMAIN ACTIVE, HE SHALL IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.

9. ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.

10. PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS; THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.

11. THE CONTRACTOR SHALL OBTAIN EXISTING MECHANICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE 

REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.

- INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- ADDITIONAL INFORMATION.
- TRADES BEFORE COMMENCING WORK.
- APPURTENANCES.
- ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- ALL TRADES.
- FIELD AND ADJUST AS NECESSARY.
- GREATER.
- GREATER.
- SHAFT VENTS PER CODE REQUIREMENTS.
- FLOOR PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- SYSTEM SHALL BE THERMOSTATICALLY CONTROLLED. REVIEW THE PLANS AND SPECIFICATIONS OF ALL MEP TRADES FOR A COMPLETE SCOPE OF THE WORK.
- TO BEAM; PROVIDE ALL NECESSARY FITTINGS AND TRANSITIONS.
- INDICATED ON THE DOCUMENTS.
- DETAILED.
- 18. PROVIDE AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS.
- AIR, SMOKE VENTS, ETC.) EXCEPT DRYER, KITCHEN, AND FUME EXHAUST AND PROVIDE A MEANS TO CONTROL THE DAMPER OPERATION.
- 21. ALL SUPPLY RECTANGULAR 90° ELBOWS SHALL HAVE TURNING VANES.
- CONSULT THE DETAILS AND SPECIFICATIONS.
- 23. PROVIDE VOLUME DAMPERS ON ALL SUPPLY, EXHAUST, AND RETURN BRANCH DUCTS.
- 24. COORDINATE AND VERIFY LOCATIONS OF ALL ITEMS REQUIRING ACCESS WITH ARCHITECT IN FIELD., INCLUDING VALVES, VOLUME DAMPERS, FIRE DAMPERS, ETC.
- 25. ALL EQUIPMENT LOCATED ON THE ROOF THAT REQUIRES SERVICING SHALL BE LOCATED A MINIMUM 10'-0" FROM EDGE OF THE ROOF.
- IDENTIFY ON DUCTWORK SHOP DRAWINGS.
- LOCATIONS.
- 28. ALL THERMOSTATS LOCATED ON OUTSIDE WALL SHALL HAVE INSULATED PAD BEHIND. EQUIPMENT.
- 30. ALL TOILETS & BATHROOMS SHALL HAVE 3/4" UNDERCUT DOORS.
- SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC
- ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD. 33. PROVIDE PIPE EXPANSION COMPENSATION FOR THE VARIOUS PIPING SYSTEMS. SUBMIT ENGINEERED DETAILS FOR
- SHALL REVIEW THE INSTALLATION AND PROVIDE A REPORT OF THE FINDINGS.

. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE

2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED HVAC SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.

3. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND

4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TOP DETAILS, SCHEDULES AND SPECIFICATIONS FOR

5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND PIPING. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND PIPING INSTALLATION WITH ALL THE

6. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL VALVES AND DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER

WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE

8. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY PIPING, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL PIPING AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF

9. DO NOT INSTALL ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, OR THROUGH ELECTRICAL ROOMS, DATA ROOMS, ELEVATOR MACHINE ROOM, STAIRWELL OR STAIRWELL WALLS THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF ELECTRICAL EQUIPMENT IN THE

10. INSTALL SMOKE DETECTORS IN BOTH SUPPLY & RETURN AIR DUCTS FOR AIR HANDLING EQUIPMENT 2,000 CFM AND

11. PROVIDE SMOKE DAMPERS IN BOTH SUPPLY & RETURN AIR DUCTS FOR AIR HANDLING EQUIPMENT 15,000 CFM AND

12. PROVIDE SMOKE DAMPERS AND SMOKE DETECTORS AT DUCT PENETRATIONS OF SMOKE-BRRIERS, AND AT ELEVATOR

13. PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE-RATED CONSTRUCTION, INCLUDING WALLS, SHAFTS AND

14. PROVIDE AN AUTOMATIC TEMPERATURE CONTROL SYSTEM COMPLETE IN ALL REGARDS. ALL ZONES, VAV'S AND

15. PIPING SHALL BE SUPPORTED FROM STRUCTURE ABOVE. TO MAXIMIZE HEAD ROOM, INSTALL PIPING TIGHT TO BOTTOM OF BEAMS WHEN RUNNING PERPENDICULAR TO BEAM; INSTALL PIPING TIGHT TO FLOOR SLAB WHEN RUNNING PARALLEL

16. PROVIDE THROTTLING VALVES AND SHUT-OFF VALVES AS INDICATED IN SPECIFICATIONS IN ADDITION TO THOSE

17. INSTALL ALL EQUIPMENT VALVES AS REQUIRED BY MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS AND AS

19. PROVIDE PRESSURE RELIEF DOORS FOR AIR SYSTEMS, PER THE SPECIFICATIONS

20. PROVIDE MOTORIZED DAMPERS AT ALL PERMANENT OPENINGS (EXHAUST, SUPPLY, RELIEF, O.A. INTAKES, MAKE-UP

22. PROVIDE DUCT TAKE-OFF TYPES AND VOLUME DAMPERS PER THE SPECIFICATIONS AND DUCT TAKE-OFF DETAILS ON DRAWINGS. TAKE-OFFS SHOWN ON FLOOR PLANS DO NOT REPRESENT THE SPECIFIC TYPE OF TAKE-OFF REQUIRED;

26. ALL EXPOSED DUCTWORK SHALL BE FLAT, OVAL, OR ROUND. COORDINATE WITH ARCHITECT'S CEILING PLANS AND

27. ALL DUCTWORK AND PIPING CROSSING SEISMIC JOINTS SHALL ACCOMMODATE DIFFERENTIAL MOTION. REFER TO DETAILS AND SPECIFICATIONS FOR MORE INFORMATION. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR

29. ALL MOTORIZED DAMPERS SHALL BE WIRED BY ATC CONTRACTOR, COORDINATE VOLTAGE REQUIREMENTS WITH

31. ALL LOUVERS ARE SELECTED AND SCHEDULED BY ARCHITECT. LOUVER TAGS ARE SHOWN FOR COORDINATION ONLY. 32. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS

APPROVAL AND VERIFY INSTALLATION IS IN ACCORDANCE WITH THE CODE. THE CONTRACTOR'S CONSULTING ENGINEER

![](_page_23_Picture_95.jpeg)

### **OWNER**

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

![](_page_23_Picture_100.jpeg)

MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

10020
19029
12/13/19
,,

RHR

HISTORY OF SUBMISSIONS

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Bid Set

SHEET TITLE

MECHANICAL ABBREVIATIONS, GENERAL NOTES AND SYMBOL LIST

### MECHANICAL SPECIFICATIONS

#### **GENERAL**

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR. THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR OPERATION.

3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATIONS BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL ALL WORK AS REQUIRED BY JOB CONDITIONS. PWHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE INTENT OF THESE DOCUMENTS TO INCLUDE THE PROVISION AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS BY THE CONTRACTOR. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. DO NOT SCALE DRAWINGS. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS. DO NOT SCALE THE DRAWINGS.

6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND IN COORDINATION WITH ALL OTHER TRADES. ALL WORK SHALL BE DONE IN CONFORMANCE AND PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS

- CODES AND STANDARDS: CONNECTICUT BUILDING CODE AND ALL SUPPLEMENTS
- IBC 2015 INTERNATIONAL BUILDING CODE
- IEBC 2015 INTERNATIONAL EXISTING BUILDING CODE IMC 2015 INTERNATIONAL MECHANICAL CODE
- IMP 2015 INTERNATIONAL PLUMBING CODE
- IECC 2015 INTERNATIONAL ENERGY CONSERVATION CODE NEC 2017 NATIONAL ELECTRICAL CODE / NFPA 70
- NFPA NFPA-101 FIRE SAFETY CODE ICC/ANSI A117.1-2003 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIALS, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND

ADMINISTRATIVE TASKS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE

9. THE CONTRACTOR SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS RELATING TO THE WORK OF ALL DIVISIONS AND TRADES AND BECOME FULLY FAMILIAR AND INFORMED AS TO THE EXTENT AND CHARACTER OF WORK REQUIRED, AND ITS RELATIONSHIP TO THE REQUIREMENTS OF THIS DIVISION. INCLUDE ALL SUCH REQUIREMENTS AS PART OF THIS MECHANICAL WORK.

10. BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, AND SHALL BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE SITE AND EXISTING BUILDING AND THE CONTRACT DOCUMENTS.

#### PERMITS AND FEES

1. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL PERMITS; AND PAY ALL GOVERNMENT AND STATE SALES TAXES AND FEES WHERE APPLICABLE, AND OTHER COSTS. INCLUDING UTILITY CONNECTIONS OR EXTENSIONS IN CONNECTION WITH THE WORK, FILE ALL NECESSARY DRAWINGS, PREPARE ALL DOCUMENTS AND OBTAIN ALL NECESSARY APPROVALS OF ALL GOVERNMENTAL AND STATE DEPARTMENTS HAVING JURISDICTION, OBTAIN ALL REQUIRED CERTIFICATES OF INSPECTIONS FOR HIS WORK, AND DELIVER A COPY TO THE OWNER'S REPRESENTATIVE BEFORE REQUEST FOR ACCEPTANCE AND FINAL PAYMENT FOR THE WORK. REFER TO THE SUPPLEMENTARY GENERAL CONDITIONS FOR INFORMATION ON WAIVING OF PERMIT FEES.

#### ALTERATION WORK AND DEMOLITION

1.ALL EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES ETC... TO BE REMOVED, SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, DUCTWORK, PIPING, CONTROL DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITHOUT THE OWNERS APPROVAL. REMOVE ALL EXISTING COMPONENTS REQUIRED TO MEET THE FUNCTIONAL INTENT OF THE DESIGN DRAWINGS.

2. NO DEAD ENDS SHALL BE LEFT ON ANY DUCTWORK AND PIPING SYSTEMS UPON COMPLETION OF WORK. ALL DUCTWORK AND PIPING BEING REMOVED SHALL BE PROPERLY VALVED AND CAPPED AT THE MAINS.

3. ALL SYSTEMS SHALL BE LEFT IN WORKING ORDER TO THE SATISFACTION OF THE OWNER UPON COMPLETION OF ALL NEW WORK.

4. CONDUCT SELECTIVE DEMOLITION WORK IN A MANNER THAT WILL MINIMIZE NEED FOR DISRUPTION OF NORMAL OPERATIONS IN OTHER AREAS OF THE BUILDING. PROVIDE MINIMUM OF 48 HOURS ADVANCE NOTICE TO OWNER OF DEMOLITION OR SYSTEM SHUTDOWN ACTIVITIES THAT WILL AFFECT NORMAL OPERATIONS IN THE BUILDING OR REQUIRE THE INTERRUPTION OF UTILITY SERVICES.

5. DRAINING OF PIPING SYSTEMS: WHERE EXISTING PIPING SYSTEMS REQUIRE DRAINING OF FLUIDS FROM EQUIPMENT AND PIPING, ALL DRAINAGE SHALL BE DIRECTED BY HOSE OR PIPE TO SUITABLE, FREE FLOWING DRAINS OR SUITABLE CONTAINERS. DO NOT ALLOW EXCESSIVE FLUID/WATER BUILDUP ON FLOORS OR SITE AREA. ENSURE THAT EXISTING DRAINS ARE KEPT CLEAR OF DEBRIS TO PREVENT BLOCKAGES.

6. CERTAIN ITEMS OF EXISTING EQUIPMENT AND PIPING OR DUCTWORK MAY BE INDICATED FOR REMOVAL, RELOCATION OR ABANDONMENT. ITEMS NOTED FOR REMOVAL SHALL BE DISCONNECTED AND DISPOSED OF BY THE CONTRACTOR OR TURNED OVER TO THE OWNER IF THE OWNER SO REQUESTS. IF INSTRUCTED TO DISPOSE OF ITEMS, THE CONTRACTOR SHALL REMOVE THE ITEMS FROM THE PREMISES AND DISPOSE OF THEM IN A SAFE, LEGAL AND RESPONSIBLE MANNER AND LOCATION. ITEMS NOTED FOR RELOCATION ARE INTENDED FOR REUSE IN ANOTHER LOCATION AS DESIGNATED ON THE DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE THE MATERIAL FROM ITS PRESENT LOCATION, STORE THE MATERIAL IN A SAFE PLACE, AND REINSTALL THE MATERIAL IN ITS NEW LOCATION. QUESTIONS REGARDING THE SUITABILITY OF THE MATERIAL OR EQUIPMENT SHALL BE BROUGHT, IN WRITTEN FORM, TO THE ATTENTION OF THE OWNER/ENGINEER. ABANDONMENT SHALL BE DEFINED AS LEAVING IN PLACE ANY ITEM SO DESIGNATED AND SHALL INCLUDE PROPER PIPING OR DUCTWORK TERMINATION WITHIN ANY OCCUPIED OR OPEN AREA. ALL ■ABANDONED PIPES AND DUCTS SHALL BE DISCONNECTED AND CAPPED AT THEIR MAINS.

COORDINATION WITH OTHER DIVISIONS

1. ALL WORK SHALL BE CARRIED OUT IN CONJUNCTION WITH OTHER TRADES AND FULL COOPERATION SHALL BE GIVEN IN ORDER THAT ALL WORK MAY PROCEED WITH A MINIMUM OF DELAY AND INTERFERENCE. PARTICULAR EMPHASIS IS PLACED ON TIMELY INSTALLATION OF MAJOR APPARATUS AND FURNISHING OTHER CONTRACTORS, ESPECIALLY THE CONSTRUCTION MANAGER, WITH INFORMATION AS TO OPENINGS, CHASES, SLEEVES, BASES, INSERTS, EQUIPMENT LOCATIONS, PANELS, ETC., REQUIRED BY OTHER TRADES.

2. THE CONTRACTORS ARE REQUIRED TO EXAMINE ALL OF THE PROJECT DRAWINGS, INCLUDING THE SITE, ARCHITECTURAL, STRUCTURAL AND THOSE OF OTHER MECHANICAL AND ELECTRICAL TRADES AND MUTUALLY ARRANGE WORK SO AS TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES AND / OR EXISTING SYSTEMS AND EQUIPMENT. IN GENERAL, DUCTWORK, HEATING PIPING, SPRINKLER PIPING AND DRAINAGE LINES TAKE PRECEDENCE OVER WATER, GAS AND ELECTRICAL CONDUITS. THE ENGINEER SHALL MAKE FINAL DECISIONS REGARDING THE ARRANGEMENT OF WORK WHICH CANNOT BE AGREED UPON BY THE CONTRACTORS.

3. WHERE THE WORK OF THE CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO OR WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTORS WILL COOPERATE IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT.

SECTIONS OR SO AS TO CAUSE INTERFERENCE WITH WORK OF OTHER SECTIONS. THE NECESSARY CHANGES TO CORRECT THE CONDITION SHALL BE MADE BY THE CONTRACTOR CAUSING THE INTERFERENCE WITHOUT EXTRA CHARGE TO THE OWNER.

#### <u>SHUT DOWNS</u>

1. WHEN INSTALLATION OF A NEW SYSTEM REQUIRES THE TEMPORARY SHUTDOWN OF AN EXISTING OPERATING SYSTEM, THE CONNECTION OF THE NEW SYSTEM SHALL BE PERFORMED AT SUCH TIME AS DESIGNATED BY THE ENGINEER OR THE OWNER'S REPRESENTATIVE.

2. THE ENGINEER AND THE OWNER SHALL BE NOTIFIED OF THE ESTIMATED DURATION OF THE SHUTDOWN PERIOD AT LEAST THREE (3) DAYS IN ADVANCE OF THE DATE THE WORK IS TO BE PERFORMED.

3. WORK SHALL BE ARRANGED FOR CONTINUOUS PERFORMANCE WHENEVER POSSIBLE. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LABOR, INCLUDING OVERTIME IF REQUIRED, TO ASSURE THAT EXISTING OPERATING SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTIONS.

ELECTRICAL CONNECTIONS

1. UNLESS OTHERWISE SPECIFIED, ALL WIRING SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH DIVISION 26.

<u>DUCTWORK</u> 2. ALL POWER WIRING SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 26 COMPLETE FROM 1. DUCTWORK SHALL BE FABRICATED FROM HOT-DIPPED GALVANIZED STEEL SHEET CONFORMING TO POWER SOURCE TO MOTOR OR EQUIPMENT JUNCTION BOX INCLUDING POWER WIRING THROUGH THE STARTERS. ALL STARTERS NOT FACTORY MOUNTED ON EQUIPMENT SHALL BE MOUNTED UNDER ASTM A653, WITH G60 COATING. EXHAUST DUCTWORK SERVING TOILET/SHOWER SPACES SHALL BE THE SPECIFICATION SECTION FURNISHING THE STARTER. ALUMINUM SHEET ALLOY 3003-H14, ASTM B 209, ALUMINUM CONNECTORS AND BAR STOCK: ALLOY 6061-T6 OR OF EQUIVALENT STRENGTH

3. THE MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPERATURE CONTROL WIRING, INTERLOCK WIRING AND EQUIPMENT CONTROL WIRING FOR THE EQUIPMENT FURNISHED UNDER THIS DIVISION.

4. THE MECHANICAL CONTRACTOR SHALL FURNISH STARTERS AND/OR DISCONNECTS TO THE ELECTRICAL CONTRACTOR FOR EQUIPMENT PROVIDED. THE MECHANICAL CONTRACTOR SHALL HE FURNISHES.

#### SHOP DRAWINGS

4. INSULATED FLEXIBLE DUCTS SHALL BE FABRICATED FROM MULTIPLE LAYERS OF ALUMINUM LAMINATE 1. PRIOR TO DELIVERY TO THE JOBSITE AND SUFFICIENTLY IN ADVANCE TO ALLOW THOROUGH SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE WITH FIBERGLASS INSULATION AND REVIEW, THE CONTRACTOR SHALL SUBMIT, FOR REVIEW, DETAILED SHOP DRAWINGS OF ALL POLYETHYLENE VAPOR BARRIER. PRESSURE RATING SHALL BE 10 INCH W.G. POSITIVE AND 1.0 INCH W.G. EQUIPMENT AND MATERIAL SPECIFIED IN EACH SECTION AND COORDINATED DUCTWORK LAYOUTS. NEGATIVE. FLEXIBLE DUCTS SHALL NOT PASS THROUGH WALLS NOR EXCEED 8 FEET IN LENGTH. ALL DUCTWORK SHOP DRAWINGS, AUTOMATIC TEMPERATURE CONTROLS AND ALL DIAGRAMS AND SECURE TO DUCT TAP WITH CLAMP OR DRAWBAND. PROPERLY SUPPORT SO AS NOT TO SAG OR KINK. RISERS SHALL BE SUBMITTED IN HARD COPY FORMAT. NO MATERIAL OR EQUIPMENT MAY BE DELIVERED TO THE JOB SITE OR INSTALLED UNTIL THE CONTRACTOR HAS RECEIVED SHOP 5. JOINT SEALERS AND SEALANTS SHALL BE NON-HARDENING, WATER, MILDEW AND MOLD RESISTANT. DRAWINGS FOR THE PARTICULAR MATERIAL OR EQUIPMENT WHICH HAVE BEEN PROPERLY MAXIMUM FLAME SPREAD OF 25, SMOKE DEVELOPED OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM REVIEWED. E84.

2. SHOP DRAWINGS SHALL BE SUBMITTED WITHIN 30 DAYS AFTER AWARD OF CONTRACT BEFORE ANY 6. PROVIDE AIR FOIL TURNING VANES WHEN RECTANGULAR ELBOWS MUST BE USED. MATERIAL OR EQUIPMENT IS PURCHASED. THE CONTRACTOR SHALL SUBMIT FOR REVIEW COPIES OF ALL SHOP DRAWINGS TO BE INCORPORATED IN THE MECHANICAL CONTRACT. REFER TO THE 7. ACCESS DOORS SHALL BE PROVIDED UNDER THIS SECTION AS REQUIRED TO PROVIDE ACCESS TO GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS FOR THE QUANTITY OF COPIES FIRE AND SMOKE DAMPERS, CONTROLS, HUMIDIFIERS, COILS VALVES, ETC., WHICH ARE LOCATED IN REQUIRED FOR SUBMISSION. WHERE QUANTITIES ARE NOT SPECIFIED, PROVIDE SEVEN (7) COPIES DUCTS. FOR REVIEW.

3. PROVIDE SHOP DRAWINGS FOR ALL DEVICES SPECIFIED ON DRAWINGS IN EQUIPMENT SCHEDULES FURNISH AND INSTALL FLEXIBLE DUCT CONNECTORS TO ISOLATE FAN VIBRATION FROM THE DUCT AND FOR ALL SYSTEMS INCLUDING DUCTWORK, PIPING, CONTROLS, ETC., OR WHERE CALLED FOR SYSTEM. (EXCEPTION: AIR HANDLING UNITS WITH INTERNAL FAN VIBRATION ISOLATORS AND FLEXIBLE CONNECTORS INSTALLED BETWEEN FAN AND HOUSING.) ELSEWHERE IN THE SPECIFICATIONS. SHOP DRAWINGS SHALL INCLUDE MANUFACTURERS' NAMES, CATALOG NUMBERS, CUTS, WIRING AND PIPING DIAGRAMS AND OTHER SUCH DESCRIPTIVE DATA AS MAY BE REQUIRED TO IDENTIFY AND ACCEPT THE EQUIPMENT, CERTIFIED DIMENSIONAL DRAWINGS, 9. ACCESSORY DUCTWORK MATERIALS SUCH AS TAPES, SEALANTS, FASTENERS, ETC., SHALL COMPLY ACCURATE LAYOUT AND ARRANGEMENT DRAWINGS, LOCATIONS AND SIZES OF ALL CONNECTIONS, WITH NFPA 90A WITH A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE DEVELOPED AND EQUIPMENT WEIGHTS ALL PERFORMANCE DATA REQUIRED TO VERIFY THE EQUIPMENT'S RATING OF 50, AND SHALL BE SMACNA AND UL APPROVED. SUITABILITY SHALL BE CLEARLY PRESENTED. A COMPLETE LIST IN EACH CATEGORY (EXAMPLE: ALL DIFFUSERS) OF ALL SHOP DRAWINGS, CATALOG CUTS, MATERIAL LISTS, ETC., SHALL BE SUBMITTED **DUCTWORK INSULATION** TO THE ENGINEER AT ONE TIME. NO CONSIDERATION WILL BE GIVEN TO A PARTIAL SHOP DRAWING SUBMITTAL.

A. EQUIPMENT SHOP DRAWINGS SHALL CONTAIN FULL RANGE PERFORMANCE CURVES, GRAPHS, TABLES OR OTHER PERTINENT DATA WHICH CLEARLY INDICATES OPERATIONAL RANGE OF A GIVEN UNIT SIZE. COMPUTER GENERATED/PLOTTED CURVES OR INFORMATION, BASED SOLELY ON THE DESIGN PERFORMANCE, WILL NOT BE ACCEPTED.

B. ALL SUBMITTALS OF EQUIPMENT FURNISHED WITH MOTORS SHALL CONTAIN A COMPLETE DESCRIPTION OF THE MOTOR'S OPERATING CHARACTERISTICS (HORSEPOWER, VOLTAGE, PHASE, SERVICE FACTOR) AND THE NAMEPLATE MOTOR EFFICIENCY.

3. APPLY 1" ACOUSTICAL DUCT LINER AND LINER BOARD TO THE INSIDE OF DUCTS AND PLENUMS AS SHOP DRAWING SUBMITTAL SHEETS WHICH MAY SHOW ITEMS THAT ARE NOT BEING FURNISHED SPECIFIED AND AS CALLED FOR ON DRAWINGS. ACOUSTICAL LINER SHALL BE 2.0 PCF DENSITY WITH K SHALL HAVE THOSE ITEMS CROSSED OFF IN INK TO CLEARLY INDICATE WHICH ITEMS WILL BE VALUE OF 0.26 AT 75 DEG F, EQUAL TO MANVILLE PERMACOTE LINACOUSTIC-HP OR EQUIVALENT. FURNISHED AND WHICH WILL NOT BE FURNISHED.

4. ACCEPTANCE RENDERED ON SHOP DRAWINGS SHALL NOT BE CONSIDERED AS A GUARANTEE OF SUFFICIENT THICKNESS TO MEET THE REQUIREMENTS OF THE 2015 INTERNATIONAL ENERGY CODE: MEASUREMENTS OR BUILDING CONDITIONS. WHERE DRAWINGS ARE REVIEWED, REVIEW DOES NOT A. ALL CONCEALED SUPPLY AIR AND RETURN AIR DUCTWORK ABOVE CEILINGS WHETHER LINED OR MEAN THAT DRAWINGS HAVE BEEN CHECKED IN DETAIL; SAID APPROVAL DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM HIS RESPONSIBILITY OR NECESSITY OF FURNISHING MATERIAL OR UNLINED. PERFORMING WORK AS REQUIRED BY THE CONTRACT DRAWINGS AND SPECIFICATIONS. VERIFY AVAILABLE SPACE PRIOR TO SUBMITTING SHOP DRAWINGS. ACCEPTANCE OF SHOP DRAWINGS B. ALL OUTDOOR AIR DUCTWORK. SHALL NOT APPLY TO QUANTITY NOR RELIEVE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY C. ALL EXHAUST DUCTWORK ON COLD SIDE OF BACKDRAFT OR MOTORIZED DAMPERS. WITH INTENT OF DRAWINGS AND SPECIFICATIONS.

#### AS-BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS -BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY

2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND THE WORK INSTALLED.

B. MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND ASSEMBLY. NUMBERED. CONCEALED UNIONS LOCATED. AND WITH ITEMS REQUIRING MAINTENANCE LOCATED. (I.E. TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC...) VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.

C. EQUIPMENT LOCATIONS (EXPOSEED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.

D. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

E. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

#### HANGERS AND SUPPORT

1. SEISMIC RESTRAINT: PROVIDE SEISMIC RESTRAINT AND EXPANSION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH STATE AND LOCAL BUILDING CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT INDICATING ALL NECESSARY COMPONENT CUTS, PLAN LOCATIONS AND CALCULATIONS FOR A COMPLETE SYSTEM.

THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

4. IF THE WORK UNDER A SECTION IS INSTALLED BEFORE COORDINATING WITH OTHER DIVISIONS OR 2. PROVIDE ALL NECESSARY STRUCTURAL MEMBERS INCLUDING ADDITIONAL STRUCTURAL SUPPORT TO C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED. SUPPORT PIPING AND EQUIPMENT. HANGERS AND SUPPORTS SHALL BE OF AN APPROVED DESIGN NECESSARY TO SUPPORT DUCTWORK, PIPING EQUIPMENT AND TO KEEP IN PROPER ALIGNMENT AND PREVENT TRANSMISSION OF INJURIOUS THRUSTS AND VIBRATIONS. IN ALL CASES WHERE HANGERS, BRACKETS, ETC. ARE SUPPORTED FROM CONCRETE CONSTRUCTION. DO NOT WEAKEN CONCRETE OR PENETRATE WATERPROOFING. ALL HANGERS AND SUPPORTS SHALL BE CAPABLE OF SCREW ADJUSTMENT AFTER PIPING IS ERECTED. HANGERS SUPPORTING PIPING EXPANDING INTO LOOPS, BENDS, AND OFFSETS SHALL BE SECURED TO THE BUILDING STRUCTURE IN SUCH A MANNER THAT HORIZONTAL ADJUSTMENT PERPENDICULAR TO THE RUN OF PIPING SUPPORTED MAY BE MADE TO ACCOMMODATE DISPLACEMENT DUE TO EXPANSION. ALL SUCH HANGERS SHALL BE FINALLY ADJUSTED BOTH IN THE VERTICAL AND HORIZONTAL DIRECTION, AS REQUIRED. HANGERS IN CONTACT WITH COPPER OR BRASS PIPE SHALL BE DIELECTRIC, COMPATIBLE WITH COPPER AND BRASS ALLOY OR PROVIDED WITH FELT SLEEVE.

> 3. PROVIDE ADDITIONAL SUPPORT FOR DUCTWORK, PIPING AND EQUIPMENT WHEN DECK IS NOT CAPABLE OF SUPPORT.

4. BEAM CLAMPS - HANGERS SUPPORTED FROM STEEL SHALL BE CENTER LOADING BEAM CLAMPS FOR HANGERS SUPPORTING PIPING 2 INCHES FOR 2-1/2 INCHES AND LARGER, I BEAM CLAMPS SHALL BE FORGED STEEL. "C" CLAMPS ARE NOT TO BE USED.

5. PROVIDE AND INSTALL EXPANSION COMPENSATION FOR ALL PIPING. SUBMIT PLANS, CALCULATIONS AND EQUIPMENT DATA.

2. MANUFACTURED METAL DUCTWORK AND FITTINGS SHALL BE BY LINDAB, SEMCO OR UNITED McGILL CORP. FLAT OVAL AND ROUND DUCTS: MACHINE MADE FROM SPIRAL LOCKSEAM DUCT WITH LIGHT REINFORCING CORRUGATIONS; FITTINGS MANUFACTURED OF AT LEAST TWO GAGES HEAVER THAN METAL DUCT.

PROVIDE AND BE RESPONSIBLE FOR THE PROPER SIZED OVERLOAD HEATERS IN ALL STARTERS THAT 3. FABRICATE, SUPPORT, INSTALL AND SEAL IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION D. INSTALL HOT WATER AND CHILLED WATER PIPING TO ASME B31.9 REQUIREMENTS. STANDARDS - METAL AND FLEXIBLE, AND AS INDICATED. PROVIDE DUCT MATERIAL, GAUGES, REINFORCING AND SEALING FOR OPERATING PRESSURES INDICATED.

8. ON ALL AIR HANDLING EQUIPMENT INCLUDING AIR HANDLERS, ERV UNITS, UTILITY AND CABINET FANS

1. FACED FIBERGLASS DUCT WRAP SHALL BE APPLIED EXTERNALLY TO ALL CONCEALED DUCTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. DUCT WRAP TO BE 1.5 PCF DENSITY WITH K VALUE OF 0.27 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 100 OR EQUIVALENT.

2. APPLY RIGID BOARD INSULATION TO ALL EXPOSED DUCTWORK AND PLENUMS, ETC., BY USING MECHANICAL, WELD-TYPE PIN FASTENERS. FASTENERS SHALL BE SPOTTED NOT LESS THAN 3 INCHES FROM THE EDGE OF THE DUCT AND ON 12-INCH CENTERS THROUGHOUT THE AREA OF THE DUCT. RIGID BOARD INSULATION SHALL BE 6.0 PCF DENSITY WITH K VALUE OF 0.22 AT 75 DEG F, EQUAL TO OWENS CORNING TYPE 705 OR EQUIVALENT.

4. THE FOLLOWING DUCTS SHALL BE INSULATED WITH KRAFT FOIL FACED DUCT WRAP INSULATION IN

5. PROVIDE 1" ACOUSTICAL DUCT LINER ON FIRST 10' OF SUPPLY AIR DISCHARGE AND RETURN AIR INLET DUCTS OF ALL AIR HANDLING UNITS.

REGISTERS, GRILLES AND DIFFUSERS

AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A 1. REGISTERS, GRILLES AND DIFFUSERS SHALL BE AS SCHEDULED ON THE DRAWINGS. FINISH SHALL BE AS SELECTED BY THE ARCHITECT.

2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3. CHECK LOCATIONS OF OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY AND LIGHTING ARRANGEMENT. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF REGISTERS, GRILLS AND DIFFUSERS.

4. INSTALL DIFFUSERS TO DUCTWORK WITH AIR TIGHT CONNECTION.PAINT INSIDE OF DUCT CONNECTION TO REGISTERS AND DIFFUSERS BLACK FOR A DISTANCE OF 18" WHEREVER SHINY SHEETMETAL IS VISIBLE FORM THE OCCUPIED SPACE.

5. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, GRILLES AND REGISTERS, DESPITE WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER, GRILLE OR REGISTER

<u>PIPING</u>

1. HOT WATER SUPPLY AND RETURN & CHILLED WATER SUPPLY AND RETURN

A. PIPE: SCHEDULE 40 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED, THREADED OR GROOVED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS, ASTM B16.3 MALLEABLE IRON THREADED FITTINGS, OR GROOVED FITTINGS AND MECHANICAL COUPLINGS.

C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED OR GROOVED.

D. PIPING 2" AND SMALLER MAY BE ASTM B88 TYPE K DRAWN COPPER WITH SOLDERED FITTINGS OR COPPER PRESS FITTINGS.

2. LOW PRESSURE STEAM A. PIPE: SCHEDULE 40 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED OR THREADED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS OR ASTM B16.3 MALLEABLE IRON THREADED FITTINGS.

3. LOW PRESSURE CONDENSATE

A. PIPE: SCHEDULE 80 BLACK STEEL PIPE CONFORMING TO ASTM A53, WITH WELDED OR THREADED JOINTS.

B. FITTINGS: ASTM A234 WROUGHT STEEL WELDING TYPE FITTINGS OR ASTM B16.3 MALLEABLE IRON THREADED FITTINGS.

4. PIPING INSULATION:

EQUIVALENT TO OWENS CORNING ASJ-SSL II OR EQUIVALENT.

C. ALL INSULATION MATERIALS, INCLUDING JACKETS AND ADHESIVES, SHALL MEET THE REQUIREMENTS OF NFPA 90A, ACCORDING TO ASTM TEST E-84, NFPA 255 AND UL 723, HAVING A FLAME-SPREAD RATING OF NOT OVER 25, A SMOKE-DEVELOPED RATING OF NOT OVER 50 AND A FUEL-CONTRIBUTED RATING OF NOT OVER 50. 5. PIPING INSTALLATION

A. ALL PIPE CONNECTIONS SHALL BE INSTALLED TO ALLOW FOR FREEDOM OF MOVEMENT OF THE PIPING DURING EXPANSION AND CONTRACTION WITHOUT SPRINGING. SWING JOINTS, EXPANSION LOOPS AND EXPANSION JOINTS WITH PROPER ANCHORS AND GUIDES SHALL BE PROVIDED BY THE CONTRACTOR WHERE NECESSARY AND/OR WHERE SHOWN ON THE DRAWINGS. ANCHORS AND GUIDES SHALL BE SUBJECT TO THE REVIEW OF THE ENGINEER. PAY PARTICULAR ATTENTION TO PLASTIC PIPING WITH HIGH COEFFICIENTS OF EXPANSION.

B. REMOVE SCALE AND DIRT ON INSIDE AND OUTSIDE OF PIPE BEFORE ASSEMBLY.

C. AFTER COMPLETION, FILL, CLEAN AND TREAT SYSTEM. VENT AIR FROM SYSTEM.

E. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT, GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS.

F. PIPING SYSTEMS SHALL BE PERMANENTLY LABELED TO IDENTIFY FLUID INSIDE PIPES, DIRECTION OF FLUID FLOW AND APPROXIMATE WORKING PRESSURE. LABELING SYSTEM SHALL BE "OPTI-CODE" WITH "ARROWS ON A ROLL TAPE" PERMANENTLY AFFIXED TO PIPING AS MANUFACTURED BY SETON NAME PLATE CORP., OR AN ACCEPTED EQUIVALENT.

PIPING.

H. ANY EXPOSED, UNINSULATED PIPING LOCATED IN FINISHED AREAS WHERE PIPING PASSES THROUGH WALLS, FLOOR OR CEILING, SHALL BE CHROME-PLATED WITH CHROME-PLATED ESCUTCHEONS.

6. PIPE HANGERS AND SUPPORTS A. ALL HANGER, SUPPORT AND ANCHOR TYPES OR MODEL NUMBERS SPECIFIED HEREIN ARE BASED ON GRINNELL OR ACCEPTABLE EQUIVALENT. SUPPORTS SHALL CONFORM TO MSS-SP-69 AND ANSI B31.1. WIRE AND/OR STRAP HANGERS WILL NOT BE ACCEPTABLE.

B. ALTERNATE PIPING SUPPORT SYSTEMS MAY BE ACCEPTABLE BASED ON TYPE AND SIZE OF PIPING INSTALLED AND SUPPORT SYSTEM EMPLOYED. STRUT SYSTEMS SUCH AS B-LINE, UNI-STRUT, SUPER STRUT, ETC. WITH INTEGRAL PIPE CLAMPING AND SUPPORTING HARDWARE OR INNOVATIVE SUPPORT PRODUCTS MAY BE ACCEPTED. SUBMIT A DRAFT SUBMITTAL TO ENGINEER PRIOR TO OFFICIAL SUBMITTAL FOR APPROVAL TO DETERMINE ACCEPTABILITY OF ALTERNATIVE SUPPORT SYSTEMS.

C. IN NO CASE SHALL PIPING BE BOTTOM OR FLOOR SUPPORTED ON THREADED ROD ONLY. A MANUFACTURED SUPPORT / BASE SHALL BE EMPLOYED WHICH IS DURABLE AND SUITABLE RESISTANT TO THE EFFECTS OF CORROSION AND MINOR IMPACT

D. HANGERS FOR PIPE SIZES TWO (2") INCHES AND SMALLER SHALL BE LIGHT-DUTY, CLEVIS-TYPE HANGERS, #65. FOR COPPER PIPES TWO (2") INCHES AND SMALLER, USE CT-69 COPPER BAND HANGERS OR CT-65 COPPER PLATED CLEVIS.

E. HANGERS FOR PIPING OVER 2-1/2 INCHES SHALL BE GENERAL-DUTY, CLEVIS-TYPE HANGERS, #260. FOR COPPER SIZES 2-1/2 INCHES THROUGH 4 INCHES, USE CT-65. THESE HANGERS MAY BE USED FOR LARGER SIZES IN PLASTIC DRAINAGE PIPING. USE SADDLES OR INSULATION PROTECTORS FOR PLASTIC PIPE OR USE FEE & MASON FIGURE 108.

F.FOR INSULATED COLD AND/OR CHILLED WATER PIPING SYSTEMS, HANGERS SHALL BE SIZED FOR THE SPECIFIED INSULATION THICKNESS. PROVIDE NON-COMPRESSIBLE, FOAM-TYPE PIPE COVERING SADDLES OF THE REQUIRED THICKNESS AND A SHEET METAL HANGER SADDLE TO PREVENT CRUSHING OF INSULATION BY THE HANGER. INSULATED HOT WATER PIPING MAY BE INSTALLED WITH LINE- SIZE HANGERS. INSULATE AROUND HANGER.

G. VERTICAL RISERS SHALL BE SUPPORTED WITH RISER CLAMPS. FOR PIPES 2-1/2" AND SMALLER, USE FIGURE 261, FOR PIPES 3" THROUGH 8", USE RISER CLAMPS, FIGURE 261 WITH SHEAR LUGS WELDED TO PIPE, RISERS 10" AND LARGER, OR WHERE RISER CLAMP MUST BE HUNG FROM STRUCTURE ABOVE OR ON HIGH PRESSURE STEAM OR HIGH TEMPERATURE HOT WATER SYSTEMS USE A 4 OR 6 BOLT CLAMP, FIGURE 40.

H. UPPER ATTACHMENTS FOR PIPING IN WOOD CONSTRUCTION SHALL BE MALLEABLE IRON SIDE BEAM BRACKET. GRINNELL #202, WITH LEG BOLT INTO SIDE OF WOOD MEMBER OR APPROVED "SAMMY" TYPE SCREWS.

REFRIGERANT PIPING

1. DRAWN (RIGID) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, H58 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME B16.22 WROUGHT COPPER. JOINTS SHALL BE BRAZED WITH AWS A5.8 BCUP SILVER / PHOSPHORUS / COPPER ALLOY.

PHOSPHORUS / COPPER ALLOY.

3. INSULATION SHALL BE FLEXIBLE ELASTOMERIC. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE. 4. PIPING INSTALLATION

B. ROUTE PIPING IN AN ORDERLY MANNER, PARALLEL TO BUILDING STRUCTURE, AND MAINTAIN GRADIENT. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS. SLEEVE PIPING PASSING THROUGH PARTITIONS, WALLS AND FLOORS. SLOPE PIPING AND ARRANGE TO DRAIN AT LOW POINTS. TESTING, ADJUSTING AND BALANCING

1. AFTER COMPLETION OF THE WORK, BUT BEFORE SUBSTANTIAL COMPLETION, TEST, ADJUST AND BALANCE ALL AIR AND WATER SYSTEMS IN ACCORDANCE WITH EITHER AABC, NEBB, OR TABB STANDARDS.

2. TESTING AND BALANCING CONTRACTORS SHALL BE CERTIFIED BY EITHER AABC, NEBB OR TABB.

3. AIR HANDLING SYSTEMS SHALL BE BALANCED TO WITHIN PLUS OR MINUS 5 PERCENT OF DESIGN FOR SUPPLY SYSTEMS AND PLUS OR MINUS 10 PERCENT FOR RETURN AND EXHAUST SYSTEMS. 4. AIR OUTLETS AND INLETS SHALL BE BALANCED TO WITHIN PLUS 10 PERCENT AND MINUS 5 PERCENT OF DESIGN TO

SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN. 5. ADJUST HYDRONIC SYSTEMS TO WITHIN PLUS OR MINUS 10 PERCENT OF DESIGN.

6. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.

7. SUBMIT FINAL REPORT INDICATING DESIGN VERSUS FINAL PERFORMANCE; NOTABLE CHARACTERISTICS OF THE SYSTEM; DESCRIPTION OF SYSTEMS OPERATION SEQUENCE; TEST CONDITIONS; AND A LIST OF INSTRUMENTS USED. FINAL REPORT SHALL BE SUBMITTED PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT.

C. FITTINGS 2" AND UNDER SHALL BE THREADED, FITTINGS 2-1/2" AND OVER SHALL BE WELDED.

A. PROVIDE RIGID MOLDED, NONCOMBUSTIBLE FIBERGLASS PIPE INSULATION WITH WHITE KRAFT PAPER VAPOR BARRIER JACKET AND SELF-SEALING LAP JOINT AND BUTT STRIPS. INSULATION SHALL BE 1.5 PCF DENSITY WITH K VALUE OF 0.24 AT 75 DEG F. INSULATION SHALL BE RATED FOR OPERATING TEMPERATURES FROM 0 DEG F TO 850 DEG F AND BE

B. FITTINGS SHALL BE COVERED WITH FLEXIBLE FIBERGLASS INSULATION AND ZESTON PVC FITTING COVERS. INSULATION THICKNESS SHALL BE IN CONFORMANCE WITH THE 2015 INTERNATIONAL ENERGY CODE.

G. UNIONS ARE TO BE USED AT CONNECTIONS TO FIXTURES AND OTHER APPARATUS TO ALLOW EASY REMOVAL. PROVIDE ACCEPTABLE DIELECTRIC UNIONS OR ADAPTERS AT ALL CONNECTIONS BETWEEN FERROUS AND NON-FERROUS

I. PROVIDE HOSE BIB DRAINS WITH BRASS CAPS AT LOW POINTS OF PIPING RISERS FOR DRAINAGE

2. ANNEALED (SOFT) COPPER TUBE SHALL BE TYPE ACR, R410 RATED, ASTM B280, O60 TEMPER, CLEAN, DRY AND CAPPED. FITTINGS SHALL BE ASME 16.22 WROUGHT COPPER. JOINTS SHALL BE FLARED OR BRAZED WITH AWS A5.8 BCUP SILVER /

A. INSTALL REFRIGERATION PIPING IN ACCORDANCE WITH VRF SYSTEM MANUFACTURER'S INSTRUCTIONS AND ASME

#### AMENTA ARCHITECTS

OWNER

**CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

# RZ Design Associates

MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

19039 12/13/19 FSM

RHR

HISTORY OF SUBMISSIONS

Data

NU.	Date	Description
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SHEET TITLE

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	<u>GRIL</u>	LES, DIFFUSERS	AND REGISTER	S SCHED	ULE			AIVIENTA EIVIIVIA
		(BASE	D ON KRUEGER)					ARCHITECTS
SEE ARCHITECTURAL DRAWIN	NGS FOR CEILING TY	PES AND CONSTRUCT	ION. SIZE AND CFM IN	IDICATED ON	N MECHANICAL DRAWIN	IGS		
A - MODEL SHPCR , 4-WAY THROW	W (UNLESS SHOWN (	OTHERWISE), 24X24 M	ODULE SIZE, LAY-IN B	ORDER, STE	EL CONSTRUCTION,	WHITE FINISH.		
A1- MODEL PTBS, 2 SLOT, SLOT W	/IDTH 1 1/2", 48" LONG	G, INSULATION PLENU	/I, 12" RD PLENUM INL	ET, END CAF	PS AND T-BARS.			
B- MODEL SHPC, 4-WAY THROW	(UNLESS SHOWN OT	HERWISE), SURFACE	MOUNT FRAME, STEE	L CONSTRU	CTION, OPPOSED BLAD	E DAMPER, WHITE FINIS	н.	•
C - MODEL 5DMGDR DOUBLE DEF	LECTION, SURFACE	MOUNTED FRAME, ST	EEL CONSTRUCTION,	DAMPER / E	XTRACTOR, WHITE FIN	ISH.		
D - MODEL 800 DOUBLE DEFLECT	ION, SURFACE MOUN	NTED FRAME, STEEL C	ONSTRUCTION, DAM	PER / EXTRA	CTOR, WHITE FINISH.			
E - MODEL S-80 RETURN GRILLE,	0° FIXED LOUVERS, 3	3/4" BLADE SPACING,S	URFACE MOUNTED, S	TEEL CONS	TRUCTION, WHITE FINIS	SH.		
CEILING SUPPLY DIFFUSER TYPE A	CEILING SUPPLY DIFFUSER TYPE B	CEILING SUPPLY DIFFUSER TYPE C	RETURN/EXHA	UST	FLEIXBLE	DUCT SIZE		
			DIFFUSER					_
CFM NECK SIZE	NECK SIZE	NECK SIZE	NECK SIZ	ΣE	CFM	NECK SIZE		
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101 - 225 9 X 9					50 - 70	5"Ø		
401 - 625 15 X 15					101 - 150	8"Ø		
626 - 900 18 X 18					151 - 225	9"Ø		
					226 - 275	10"Ø		OWNER:
					276 - 400	12"Ø		
					401 - 500	14Ø		CT INNOVATIONS - COLT
					701 - 900	16"Ø 		BUILDING
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HP-2 BOSCH LVO60-3	HZC 175	2000 1.2 .75	b 25 40	208	3 IN FIRST FL	OOR VACANT SPACE.		
								<b>NZ</b> besign Associates, inc.
CONSTANT VOLUM	E ZONE DAMPE	R SCHEDULE						MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING
		REMARKS						750 OLD MAIN STREET SUITE 202
								ROCKY HILL, CT 06067 P: (860) 436-4336
ZD-1 RUSKIN ZDR25	14" RND PROV	/IDE THERMOSTAT MO 3-WIRE FLOATING POI	DEL Z200RT NT 24 VAC					F: (860) 436-4450 www.rzdesignassociates.com
ZD-2 RUSKIN ZDR25	14" RND ACTU PROV	IATOR. /IDE ALL OTHER REQU	IRED					
ZD-3 RUSKIN ZDR25	10" RND WOR	PONENTS TO MAKE A ( KING SYSTEM	COMPLETE					KEY PLAN
	5 12" PND							•
		DL	JCT SOUND ATT	ENUATOR	SCHEDULE			
					VERALL SIZE		BAND FREQUENCIES (Hz)	
TAG MANUFACTURER MO	DEL NO. TYPE	SYSTEM	(CFM) (in-wg	j) L	W H 63	125 250 500	000 2000 4000 8000 SERVES	
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				GRILLES, DI	FFUSER	S AND REG	ISTERS	SCHEDI	JLE								AMENTA EMMA	
																ARCHIT	ECTS	
SE				NG TYPES AND C		TION. SIZE AND												
A - M	ODEL SHPCR , 4-W	T. SLOT WI	OTH 1 1/2", 48"	LONG. INSULAT	SE), 24X24 I	JM. 12" RD PLF	LAY-IN BOR	END CAP	EL CONS	BARS.	WHILE FINIS	1.						
B- M	ODEL SHPC, 4-WA	Y THROW (L	JNLESS SHOW	VN OTHERWISE)	), SURFACE	E MOUNT FRAM	IE, STEEL C	CONSTRUC	CTION, O	PPOSED BLA	ADE DAMPER,	WHITE FINISH					•	
C - M	ODEL 5DMGDR DC	OUBLE DEFL	ECTION, SURI	FACE MOUNTED	FRAME, S	TEEL CONSTRI	JCTION, DA	MPER / EX	XTRACTO	DR, WHITE FI	INISH.							
D - M	ODEL 800 DOUBLE	DEFLECTIO	ON, SURFACE	MOUNTED FRAM	ME, STEEL	CONSTRUCTIC	N, DAMPER	R / EXTRAG	CTOR, W	HITE FINISH.								
E - M(	ODEL S-80 RETURI	N GRILLE, 0	° FIXED LOUVI	ERS, 3/4" BLADE	SPACING,	SURFACE MOU	INTED, STE	EL CONST	RUCTIO	N, WHITE FIN	NISH.						· ·	
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C	CFM NECK S	IZE	NECK SIZE	NECK	SIZE	Ν	IECK SIZE			CFM	NE	CK SIZE					•	
0	- 100 6 X 6	;	SEE PLANS	SEE P	PLANS	S	EE PLANS			0 - 45		4"Ø						
101	1 - 225 9 X 9	2								50 - 70		5"Ø						
401	1 - 625 15 X 1	5							1	)1 - 150		8"Ø						
626	6 - 900 18 X 1	8							1:	51 - 225		9"Ø						
									22	26 - 275 76 - 400		10"Ø 12"Ø						
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	CONSTANT	VOLUME	ZONE DA	MPER SCHE	DULE												MECHANICAL, ELECTRICAL, AND	
TAG			O SIZE	RE	EMARKS												SIRUCIURAL ENGINEERING 750 OLD MAIN STREET SUITE 202	
																	ROCKY HILL, CT 06067 P: (860) 436-4336	
ZD-1	RUSKIN	ZDR25		AND 3-WIRE FLC	DATING PO	INT 24 VAC											F: (860) 436-4450 www.rzdesignassociates.com	
ZD-2	RUSKIN	ZDR25	14" RND	PROVIDE ALL O	THER REQ TO MAKE A	UIRED COMPLETE												
ZD-3	RUSKIN	ZDR25	10" RND	WORKING SYST	ΓEM											•	KEY PLAN	
BPD	RUSKIN	ZBBD25	12" RND													_		
					D	UCT SOUN	D ATTEN	UATOR	SCHE	DULE								
TAG	MANUFACTUR	RER MOD	EL NO.	TYPE S	SYSTEM	AIRFLOW (CFM)	MAX PD (in-wg)	OV L	/ERALL S W	IZE	INSER10DN L0	DSS OCTAVE E 50 500 10	AND FREQUEN	NCIES (Hz) 4000 8000	SERVES			
SA-1	VIBRO-ACOUST	FICS CD-L	V-F2 CIR DIS	CULAR-SSIPATIVE	SUPPLY	825	0.09	36	14 ID	22 OD	5	21 39 5	53 60	60 46 C	ONFERENCI OOM			
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			HP-2 BPD	28x8	ZD-2	B-100												
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	E-8X8	E-22X		╶┨╴┨														
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TAG	MANUFACTURER	MODEL NO.	SIZE	REMARKS			
ZD-1	RUSKIN	ZDR25	14" RND	PROVIDE THERMOSTAT MODEL Z200RT AND 3-WIRE FLOATING POINT 24 VAC			
ZD-2	RUSKIN	ZDR25	14" RND	ACTUATOR. PROVIDE ALL OTHER REQUIRED			
ZD-3	RUSKIN	ZDR25	10" RND	COMPONENTS TO MAKE A COMPLETE WORKING SYSTEM			
BPD	RUSKIN	ZBBD25	12" RND				

	GRILLES, DIFFUSERS AND R	EGISTERS SCHEDULE				
	(BASED ON KR	JEGER)	_	ARCHITECTS		
SEE ARCHITECTURAL DRAWINGS FOR CEILIN	IG TYPES AND CONSTRUCTION. SIZE	AND CFM INDICATED ON ME	CHANICAL DRAWINGS			
A - MODEL SHPCR , 4-WAY THROW (UNLESS SHO	OWN OTHERWISE), 24X24 MODULE SI	ZE, LAY-IN BORDER, STEEL C	CONSTRUCTION, WHITE F	INISH.		
A1- MODEL PTBS, 2 SLOT, SLOT WIDTH 1 1/2", 48"	LONG, INSULATION PLENUM, 12" RD	PLENUM INLET, END CAPS AN	ND T-BARS.			
C - MODEL 5DMGDR DOUBLE DEFLECTION SUR	ACE MOUNTED FRAME STEEL CON	STRUCTION DAMPER / EXTR	ACTOR WHITE FINISH	ER, WHILE FINISH.		
D - MODEL 800 DOUBLE DEFLECTION SURFACE	MOUNTED FRAME STEEL CONSTRU		R WHITE FINISH			
E - MODEL S-80 RETURN GRILLE, 0° FIXED LOUV	ERS, 3/4" BLADE SPACING, SURFACE I	MOUNTED, STEEL CONSTRUC	CTION, WHITE FINISH.			
		0511110	,			• •
CEILING SUPPLY CEILING SUPP DIFFUSER TYPE A DIFFUSER TYPI	LY CEILING SUPPLY E B DIFFUSER TYPE C RE	TURN/EXHAUST DIFFUSER D	FLEIXBLE DUCT S	IZE		_
CFM NECK SIZE NECK SIZE			CFM	NECK SIZE	_	-
0 - 100 6 X 6 SEE PLANS	SEE PLANS	SEE PLANS	0 - 45	5"Ø	_	
226 - 400 12 X 12			71 - 100	6"Ø		
401 - 625 15 X 15			101 - 150	8"Ø	_	
626 - 900 18 X 18			151 - 225	9"Ø	_	
			226 - 275	10"Ø 12"Ø	_	
			401 - 500	14Ø	_	CT INNOVATIONS - COLT
			501 - 700	16"Ø		BUILDING
			701 - 900	18"Ø		
			901 - 1100	20"Ø	_	120 Huyshope
			1101 - 1300	22.0		Ave - 4th Floor
	AIR HANDLING UNIT S	CHEDULE				Hartford, CI 06106
OUT	SIDE LOW FANS	ELECTRICAL DATA				
TAG MANUFACTURER MODEL NO. (CI	SUPPLY IN FLOW ESP POWER IM) (CFM) (in-wa) (hp) M(		I REMARK	s		
HP-1 BOSCH LVO60-3HZC 132	2000 1.2 .75 25	40 208 3	LANDLORD SUPPIEI IN FIRST FLOOR VA	D. LOCATED CANT SPACE.		CONSULTANTS
HP-2 BOSCH LVO60-3HZC 175	2000 1.2 .75 25	40 208 3	LANDLORD SUPPIE IN FIRST FLOOR VA	D. LOCATED CANT SPACE.		<b>R7</b> Design Associates. Inc.
						MECHANICAL, ELECTRICAL, AND
	REMARKS					STRUCTURAL ENGINEERING 750 OLD MAIN STREET
TAG MANUFACTURER MODEL NO. SIZE						SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336
ZD-1 RUSKIN ZDR25 14" RND	PROVIDE THERMOSTAT MODEL Z200 AND 3-WIRE FLOATING POINT 24 VAC	RT				F: (860) 436-4450 www.rzdesignassociates.com
ZD-2 RUSKIN ZDR25 14" RND	ACTUATOR. PROVIDE ALL OTHER REQUIRED	_				
ZD-3 RUSKIN ZDR25 10" RND	WORKING SYSTEM	E			•	KEY PLAN
BPD RUSKIN ZBBD25 12" RND						
	DUCT SO	UND ATTENUATOR SC	HEDULE			
TAG MANUFACTURER MODEL NO.	TYPE SYSTEM (CFM)	V MAX PD OVERA (in-wg) L	NLL SIZE         INSER103           W         H         63         125	ON LOSS OCTAVE BAND           250         500         1000	FREQUENCIES (Hz)           2000         4000         8000         SERVES	
SA-1 VIBRO-ACOUSTICS CD-LV-F2 DIS	CULAR- SUPPLY 825 SIPATIVE SUPPLY	0.09 36 1	4 ID 22 OD 5	21 39 53	60 60 46 CONFERENCE ROOM	
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					D-110 HUDDLE 415	
BREAK AREA						
2                A1-	225 <b>1</b> 41-225 <b>1 `</b>	Δ1-225	417	10ø (T) (416)		Bid Set
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	419	8x8 TA- TYP. OF 4	E-8X8 E-8	X8 E-8X8		
E-22X22		TO HP-1(		HUDDLE HUDDLE 412		SHEET TITLE
HP-1 C-330	OPEN OFFICE	C-330	OFFICE A-125	E-8		•
				-95	A-125	
C-150 C-150 18X6 18X6	C-150 C-150 18X6 18X6	C-150 C-150 18X6 18X6				
		p				NECHANICAL DUCT AND PIPING PLAN

![](_page_25_Figure_10.jpeg)

![](_page_25_Figure_11.jpeg)

	ELECTRICAL SYMBO
	NOTE: ALL MOUNTING HEIGHTS GIVEN ARE TO CENTERLINE OF D
SYMBOL	DESCRIPTION
• •	PENDANT MOUNTED LIGHT FIXTURE
0 0	PENDANT MOUNTED LIGHT FIXTURE
	CEILING MOUNTED LIGHT FIXTURE
Ю	WALL MOUNTED LIGHT FIXTURE
0	SURFACE MOUNTED LIGHT FIXTURE
	RECESSED DOWN LIGHT FIXTURE
	RECESSED 2'X4' LIGHT FIXTURE
	DOUBLE FACE EXIT SIGN WITH BATTERY AND DIRECTIONAL ARROWS UNIVERSAL MOUNT
	EMERGENCY BATTERY UNIT WITH TWO DIRECTIONAL HEADS
<u> </u>	EMERGENCY REMOTE, WEATHERPROOF, WITH DOUBLE DIRECTIONAL HEADS
S	SINGLE POLE TOGGLE SWITCH
S ₃	THREE WAY TOGGLE SWITCH
S ₄	FOUR WAY TOGGLE SWITCH
Sκ	SINGLE POLE KEYED TOGGLE SWITCH
S _{3K}	THREE WAY KEYED TOGGLE SWITCH MOUNT
S _{4K}	FOUR WAY KEYED TOGGLE SWITCH MOUNT
S _T	THERMAL OVERLOAD SWITCH - MOUNT AT FRACTIONAL HP MOTORS
S _D	DIMMER SWITCH
S _{PS}	PROJECTION SCREEN SWITCH
S _{oc}	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH
	DOORBELL BUZZER/CHIME - MOUNT 7'-0" A.F.F.
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
	EMERGENCY ELECTRIC/GAS SHUTOEE PUSHBUTTON OPERATOR
	GROUNDED DUPLEX RECEPTACLE
⇒A	GROUNDED DUPLEX RECEPTACLE - MOUNT ABOVE COUNTER OR BACKSPLASH 42" A.F.F.
⇒c	GROUNDED DUPLEX RECEPTACLE - MOUNT AT CEILING
⇒ GFI	GROUNDED DUPLEX GFI RECEPTACLE
⇔wp	GROUNDED DUPLEX GFI RECEPTACLE "WEATHERPROOF WHILE IN-USE" COVER
⇒S	GROUNDED DUPLEX RECEPTACLE - STUB UP TO 24" A.F.F. ON 1" (MIN) RGS CONDUIT
⇒PM	VERTICAL PLUGMOLD WITH OUTLETS AT 12" O.C 5' LONG
⇒MW	GROUNDED GFI DUPLEX RECEPTACLE DEDICATED FOR MICROWAVE OVEN -
	VERIFY EXAC MOUNTING LOCATION
<b>+</b>	GROUNDED DOUBLE DUPLEX RECEPTACLE
=	GROUNDED 240V RECEPTACLE
== USB	GROUNDED GFI DUPLEX RECEPTACLE WITH INTERGRAL USB CHARGING PORT
	SPECIAL PURPOSE RECEPTACLE - MATCH NEMA CONFIGURATION OF EQUIPMENT SERVED
	FLOOR MOUNTED DEVICES AS LISTED ABOVE
PP	COMBINATION POWER/TEL/DATA POLE
$\overline{\nabla}$	TELEPHONE/DATA OUTLETS
WAP	WIRELESS ACCESS POINT (WAP - WIRLESS ACCESS POINT) INCLUDE CAT 5e CABLE
F	MANUAL FIRE ALARM PULL STATION - MOUNT AT 48" A.F.F.
Ĥ	HEAT DETECTOR
<u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u>	HEAT DETECTOR 200°
<u>(S)</u>	AREA SMOKE DETECTOR
<u> </u>	DUCT SMOKE DETECTOR
<u> </u>	
<u>е</u>	
RTS	
	EIRE ALARM VISUAL ONLY INDICATING LINIT - MOUNT AT 6'-6" A E E
R	
	FIRE ALARM ADDRESSABLE OUTPUT MODULE
	FIRE ALARM ADDRESSABLE INPUT MODULE
S _{VC}	SPEAKER VOLUME CONTROL
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM REMOTE ANNUNCIATOR PANEL
HGMP	HAZARDOUS GAS MONITOR PANEL FURNISHED BY DIV. 25, WIRED BY DIV. 26
ΗX	EMERGENCY "CALL-FOR-AID" BUZZER/LIGHT - MOUNT AT 7'-6" A.F.F.
SA	EMERGENCY "CALL-FOR-AID" SWITCH - MOUNT 48" A.F.F. WITH PULL CORD TO 6" A.F.F.

#### <u>1BOL LIST</u>

JEV L	TICE UNLESS NOTED						
	SYMBOL	DESCRIPTION					
	→ M/S	EMERGENCY SWITCH - MOUNT AT 48" A.F.F M=MASTER - S=SLAVE JUNCTION BOX					
	J _{TC}	JUNCTION BOX WITH 120V POWER FOR TEMPERATURE CONTROLS					
	$\mapsto$	JUNCTION BOX FOR CATV OUTLET WITH 1 1/4" CONDUIT TO CEILING					
	(j)	MOTOR					
		NON-FUSED DISCONNECT SWITCH					
		BRANCH CIRCUIT FEEDER					
		ELECTRICAL GROUND					
		FLEXIBLE EQUIPMENT CONNECTION					
		FIXED/HARD - WIRED EQUIPMENT CONNECTION					
	TC	TIMECLOCK					
	С	CONTACTOR					
		SECURITY SYSTEM CAMERA					
	DL	SECURITY SYSTEM DOOR LOCK					
	$\boxtimes$	SECURITY SYSTEM MOTION SENSOR					
	⊢CR	SECURITY SYSTEM CARD READER					
	DC	SECURITY SYSTEM DOOR CONTACT					
	KP	SECURITY SYSTEM KEY PAD					
	FS	FLOW SWITCH					
	TS	TAMPER SWITCH					
	PS	PRESSURE SWITCH					
	 ⊢(\$)	WALL MOUNTED SPEAKER					
	<u> </u>						
	I. ALL SYMBOLS M						
		ABBREVIATIONS					

	А	AMPERE	KW	KILOWATT
	AFF	ABOVE FINISHED FLOOR	MAU	MAKE-UP AIR UNIT
	AFG	ABOVE FINISHED GRADE	NL	NIGHT LIGHT
	AFI	ARC FAULT CIRCUIT INTERRUPTER	NLE	NEW LOCATION OF EXISTING
	AHU	AIR HANDLING UNIT	OHD	OVERHEAD DOOR ELECTRIC OPERATOR
	С	CONDUIT	Р	POLE
	СВ	CIRCUIT BREAKER	PE	PRIMARY ELECTRIC SERVICE
	СКТ	CIRCUIT	PH or Ø	PHASE
	CUH	CABINET UNIT HEATER	PNL	PANEL
	DAC	DOOR ACCESS CONTROLLER	PVC	POLYVINYL CHLORIDE CONDUIT
	EBB	ELECTRIC BASEBOARD	RAP	REMOTE ANNUNCIATOR PANEL
	EBU	EMERGENCY BATTERY UNIT	RGS	RIGID GALVANIZED STEEL CONDUIT
	EF	EXHAUST FAN	RLE	RELOCATE EXISTING
	EM	EMERGENCY POWERED	RTU	ROOFTOP UNIT
	EMT	ELECTRICAL METALLIC TUBING	SE	SECONDARY ELECTRIC SERVICE
	ETR	EXISTING TO REMAIN	Т	TELEPHONE SERVICE
	EWC	ELECTRIC WATER COOLER	TV	TELEVISION
	EWH	ELECTRIC WATER HEATER	ТХ	TRANSFORMER
	FA	FIRE ALARM	UNO	UNLESS NOTED OTHERWISE
	FACP	FIRE ALARM CONTROL PANEL	W	WIRE
	FMC	FLEXIBLE METALLIC TUBING	WAP	WIRELESS ACCESS POINT
	GFI	GROUND FAULT INTERRUPTER	WP	WEATHER PROOF
	IG	ISOLATED GROUND		
	JB	JUNCTION BOX		
1	KVA	KILOVOLT-AMP		

- OWNER.
- INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- ADDITIONAL INFORMATION.
- TRADES BEFORE COMMENCING WORK.

- PROJECT DOCUMENTS OF ALL TRADES.
- NOTED.
- UNLESS OTHERWISE NOTED. ALLOWED.
- INSTALL SAFETY DISCONNECT AS REQUIRED BY NEC.
- PROVIDED WITH GFCI PROTECTION, WHETHER INDICATED OR NOT.
- WHILE IN USE". LOCKS SHALL BE KEYED ALIKE.
- PENETRATING FIRE RATED WALLS AND FLOORS.
- 17. ELECTRICAL CONTRACTOR SHALL SEAL ALL CONDUITS PENETRATING EXTERIOR WALLS.
- ABOVE CEILINGS.
- ROUGHING OR INSTALLING OUTLETS.
- BY THE OWNER PRIOR TO ROUGHING OR INSTALLING OUTLETS.
- INSTALLATION OF OUTLETS.

- OR DEVICES LOCATED WITHIN STAIR ENCLOSURE.
- ON PLAN.
- AND THE ELECTRICAL SPECIFICATIONS.
- SHARE NEUTRAL CONDUCTORS.

- PENETRATED AND THE TYPE OF PROTECTION SYSTEM.
- AND INSTALLED AS NECESSARY FOR A COMPLETE SYSTEM.
- ETC. SWITCHING SCHEMES.
- LOCAL AUTHORITY HAVING JURISDICTION.

### ELECTRICAL GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.

2. THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED ELECTRICAL SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE

. THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND

4. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES BEFORE AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR

5. THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND CONDUITS. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND CONDUITS INSTALLATION WITH ALL THE

6. EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CEILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.

7. WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).

8. THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY CONDUITS, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL CONDUITS AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE

9. DO NOT INSTALL ANY ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, BELOW PIPING OR THROUGH MECHANICAL ROOMS, THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF MECHANICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.

10. ALL HOMERUNS SHALL BE 2#12, 1#12G., 3/4"C TO 20A-1P CIRCUIT BREAKER IN PANEL DESIGNATED UNLESS OTHERWISE

11. ALL 120 VAC (277 VAC) CIRCUITS EXCEEDING 150' IN LENGTH SHALL BE INCREASED TO 2#10, 1#10G, 3/4" CONDUIT

12. ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRALS. USE OF COMMON NEUTRALS WILL NOT BE

13. FIELD VERIFY WITH MANUFACTURER'S PROVIDED EXACT ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS OF ALL OPERATIONAL EQUIPMENT PRIOR TO MAKING ELECTRICAL POWER CONNECTION. FURNISH AND

14. RECEPTACLES LOCATED WITHIN 6' OF A WATER SOURCE, OR OUTSIDE, AND WHERE REQUIRED BY CODE SHALL BE

15. EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH "CAST ALUMINUM" LOCKABLE COVERS RATED "WEATHER-PROOF

16. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED SLEEVES AND FIRE STOP FOR CONDUITS AND CABLES

18. ALL WIRING SHALL BE IN CONDUIT, UNLESS OTHERWISE INDICATED. CONDUITS SHALL BE RUN CONCEALED IN NEW AND

19. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL LOCATIONS OF EQUIPMENT WITH DIV. 21, 22 AND 23 PRIOR TO

20. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER, ALL LOCATIONS OF EQUIPMENT BEING FURNISHED

21. REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND EXACT LOCATION OF DEVICES PRIOR TO ROUGHING OR

22. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF DUCT SMOKE DETECTORS WITH DIV. 23. DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR, INSTALLED BY DIV. 23. 23. ALL FIRE ALARM DEVICES LOCATED ON BUILDING EXTERIOR SHALL BE WEATHERPROOF RATED.

24. CONDUITS AND/OR WIRING SHALL NOT PENETRATE STAIR ENCLOSURES UNLESS SPECIFICALLY SERVING EQUIPMENT

25. WHERE INDICATED, PROVIDE FIXTURES WITH EMERGENCY BATTERY TO OPERATE LAMPS FOR 1 1/2 HOURS UPON LOSS OF NORMAL POWER. WIRE EMERGENCY BATTERY AND EXIT LIGHTS TO LINE SIDE OF AREA LIGHTING CIRCUIT.

26. DIRECTIONAL CHEVRONS SHALL CONFORM TO NFPA 5-10.4.1.2 AND SHALL BE IDENTIFIABLE AS A DIRECTIONAL INDICATOR AT A MINIMUM OF 40 FT. UNDER ALL SPACE CONDITIONS. PROVIDE DIRECTIONAL CHEVRONS AS INDICATED

27. BRANCH CIRCUIT WIRING IS SHOWN ON THE FLOOR PLANS. NUMERALS ADJACENT TO THE HOMERUN SYMBOLS FOR LIGHTING, RECEPTACLES, MOTORS, APPLIANCES, ETC. INDICATE THE CIRCUIT NUMBER TO WHICH THE ITEMS ARE TO BE CONNECTED. PROVIDE BRANCH CIRCUIT WIRING FOR ALL ITEMS SHOWN IN ACCORDANCE WITH THESE GENERAL NOTES

28. ALL 1 POLE, 15 AND 20 AMPERE BRANCH CIRCUITS SERVING RECEPTACLE OR LIGHTING SHALL BE 2 WIRE CIRCUITS PROVIDING AN INDIVIDUAL NEUTRAL CONDUCTOR FOR EACH UNGROUNDED (HOT) CIRCUIT CONDUCTOR. DO NOT

29. REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF CEILING MOUNTED DEVICES.

30. ALL EXPOSED CABLES OF ANY TYPE IN PLENUM CEILING SPACE SHALL BE PLENUM RATED.

31. CONTRACTOR SHALL PROVIDE ALL NECESSARY MISCELLANEOUS STEEL FOR THE SUPPORT OF ALL EQUIPMENT, PIPING, CONDUIT AND DUCTWORK. SUSPENDED FROM SLAB, STEEL, WALL OR TRUSSWORK.

32. ALL PENETRATIONS OF FLOORS AND WALLS (WHETHER OR NOT FIRE RESISTANCE RATED) SHALL BE PROVIDED WITH A THROUGH PENETRATION PROTECTION SYSTEM (FIRESTOPPING). EACH THROUGH - PENETRATION PROTECTION SYSTEM SHALL BE TESTED IN ACCORDANCE WITH ASTM E814 AND BE LISTED FOR THE TYPE OF FLOOR OR WALL ASSEMBLY

33. IT IS NOT THE INTENTION TO SHOW EVERY FITTING, HANGER, WIRE OR DEVICE, ALL SUCH ITEMS SHALL BE FURNISHED

34. SEE SPECIFICATION SECTION "ELECTRICAL IDENTIFICATION" FOR PROPERLY LABELING EQUIPMENT WIRING, BOXES,

35. CONTRACTOR SHALL DETERMINE THE QUANTITY OF CONDUCTORS REQUIRED FOR PROPER OPERATION OF ALL

36. PROVIDE ALL BONDING AND GROUNDING REQUIRED BY THE NATIONAL ELECTRIC CODE, NFPA 70 AND AS REQUIRED BY

37. ALL REQUIRED BONDING CONDUCTORS SHALL BE MINIMUM #8 SOLID INSULATED COPPER, PROVIDE ALL NECESSARY FITTINGS, JUNCTION BOXES, END FITTINGS, ETC., FOR A COMPLETE, CONTINUOUS INSTALLATION.

38. ALL BONDING/GROUNDING CONNECTIONS SHALL BE MADE BY LISTED CLAMP OR CONNECTORS AS REQUIRED BY ARTICLE 250 OF NFPA 70, THE NATIONAL ELECTRIC CODE (CURRENT ADOPTED EDITION).

39. SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE, THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.

# AMENTA EMMA

ARCHITECTS

### **OWNER**

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

RZ Design Associates, Ind

MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

19039 12/13/19 JJZ BJZ NONE

HISTORY OF SUBMISSIONS

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SHEET TITLE

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ELECTRICAL ABBREVIATIONS, GENERAL NOTES AND SYMBOL LIST

- **GENERAL PROVISIONS** A. GENERAL
- 1. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACT DOCUMENTS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT, ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE. AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.

- 2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO, AND BECOME A PART OF THIS DIVISION. THIS CONTRACTOR SHALL EXAMINE ALL SUCH DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
- 3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VERIFIED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT, AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
- 4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACT.
- 5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.
- 6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
- 7. EXAMINE THE WORK OF OTHER TRADES INSOFAR AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
- 8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
- 9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.
- B. VISIT TO THE SITE 1. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.
- C. CODE AND PERMITS
- 1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
- 2. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS. 3. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND
- CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK, REQUIRED BY THE FOREGOING AUTHORITIES. BEFORE FINAL PAYMENT OF THE CONTRACT IS ALLOWED, ALL CERTIFICATES SHALL BE DELIVERED TO THE ARCHITECT IN DUPLICATE. 4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES
- NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT. D. SHOP DRAWINGS SUBMITTALS
- 1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS. THE SHOP DRAWINGS OF THE FOLLOWING EQUIPMENT USING THE INDICATED NUMBERING SYSTEM AND TITLES, SHALL BE SUBMITTED THROUGH THE ARCHITECT TO THE ENGINEER AND THEN RESUBMITTED FOR FINAL APPROVAL, IF NECESSARY. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- a. WIRING DEVICES b. PANELBOARDS AND SAFETY SWITCHES INCLUDING FAULT CURRENT STUDY BASED ON EQUIPMENT BEING SUPPLIED.
- c. CONTACTORS, TIME SWITCHES AND PHOTOCELL d. LIGHTING FIXTURES
- e. SUPERVISORY ALARM SYSTEM
- 2. ALL SUBMITTED SHOP DRAWINGS (MANUFACTURERS "EQUIPMENT DESCRIPTIVE SHEETS OR VENDORS" PREPARED DRAWINGS) SHALL HAVE THE GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S "STAMP OF APPROVAL" INDICATING THAT THE ITEM SUBMITTED IS AS CALLED FOR ON THE PLANS AND SPECIFICATIONS, IS APPROVED BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR, THE DATE OF APPROVAL AND INITIALED BY THE PERSON APPROVING THE SUBMITTAL AND THE NAME OF THE COMPANY SUBMITTING SAID EQUIPMENT FOR APPROVAL.
- 3. SUBMIT BOUND BROCHURES COMPLETE WITH A TABLE OF CONTENTS. LOOSE OR STAPLED TOGETHER SHEETS ARE NOT ACCEPTABLE. ANY SUBMITTALS NOT IN BROCHURE FORM OR NOT AS SPECIFIED SHALL BE RETURNED AT THE CONTRACTOR'S EXPENSE FOR RESUBMITTAL.
- 4. ALL DESCRIPTIVE LITERATURE SHALL BE SUBMITTED IN A THREE (3) HOLE BROCHURE WITH A COVER IDENTIFYING THE FOLLOWING: a. NAME OF THE JOB.
- b. LOCATION OF THE JOB, ADDRESS, CITY AND STATE. c. NAME AND ADDRESS OF THE COMPANY SUBMITTING THE BROCHURES.
- d. DATE OF THE SUBMITTAL.
- 5. EVERY EFFORT SHALL BE MADE, IN CHECKING THE SHOP DRAWINGS, TO DETECT AND CORRECT ALL ERRORS, OMISSIONS AND INACCURACIES. FAILURE TO DO THIS WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER AND COMPLETE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- E. RECORD DRAWINGS 1. SUBMIT TO THE ARCHITECT ONE SET OF REPRODUCIBLE (MYLARS) ELECTRICAL DRAWINGS SHOWING THE RECORD CONDITIONS. F. STANDARDS AND SUBSTITUTIONS
- 1. WHEREVER THE WORDS "APPROVED BY", "APPROVED EQUAL", "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE OWNER AS THE APPROVING AGENCY. THE NAME OR MAKE OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD"
- 2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY THE CONTRACTOR MAY SUBMIT INFORMATION ON MATERIALS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
- 3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION AND EVALUATION AFTER THIS DATE.

- INCLUDING COST OF ALL ALLIED TRADES INVOLVED. 5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.

- 6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BEAR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE
- PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE. G. TESTING AND PLACING IN SERVICE 1. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE
- CONTRACTOR'S EXPENSE. 2. TESTS SHALL INCLUDE THE FOLLOWING: a. MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND EACH PHASE OF EVERY
- FEEDER UNDER FULL LOAD CONDITIONS. b. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND FOR EACH PHASE OF EACH SERVICE, OF EACH SEPARATELY DERIVED SYSTEM, AND AT EACH PANELBOARD OR TRANSFORMER)
- ELECTRODE.
- H. INTERFERENCES 1. BEFORE THE INSTALLATION OF ANY ITEM BEGINS, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT IT DOES NOT INTERFERE WITH CLEARANCES FOR THE ERECTION OF FINISH BEAMS, COLUMNS, PILASTERS, WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
- 2. IT SHALL BE THE DUTY OF THIS CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.
- I. QUALITY ASSURANCE 1. ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS. EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.
- BASIC ELECTRICAL MATERIALS AND METHODS A. NAMEPLATES
- 1. GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
- 2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE
- FASTENER. **B. MOUNTING ACCESSORIES**
- 1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT
- ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS. 2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.
- 3. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD. ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.
- C. EXECUTION
- CURRENT EDITION OF THE NEC. 2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
- 3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS
- INDICATED ON THE CONTRACT DRAWINGS. 4. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS,
- FLOORS OR CEILINGS. 5. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
- D. MATERIALS AND WORKMANSHIP 1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS
- SKILLED IN THE SEVERAL TRADES NECESSARY 2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY. 3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR
- SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE
- THE AREA OF OPERATION BROOM CLEAN. 4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL
- 5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE. E. SCOPE OF WORK
- 1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING ITEMS: a. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING ALL PANELS AND FEEDERS.
- b. COMPLETE BRANCH CIRCUIT WIRING SYSTEM. c. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM,
- HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
- d. LIGHTING FIXTURE INSTALLATION, INCLUDING ALL FLUORESCENT LAMPS. e. COMPLETE TELEPHONE AND COMMUNICATION CONDUIT SYSTEM INCLUDING PULL BOXES, OUTLET BOXES, AND CONDUIT AS SPECIFIED, SHOWN ON THE DRAWINGS AND REQUIRED BY THE LOCAL TELEPHONE COMPANY AND/OR OWNER. FROM EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST
- TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSED ELBOW. f. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.
- g. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
- h. EXIT LIGHT SYSTEM.
- i. WIRING DEVICES. LIGHTING CONTROLS.
- k. GROUNDING OF THE ELECTRICAL SYSTEM.
- I. IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS: 2. COLORS: a).FIRE ALARM SYSTEM: RED b).SECURITY SYSTEM: BLUE AND YELLOW.
  - c).TELECOMMUNICATION SYSTEM: GREEN AND YELLOW.

#### GROUNDING AND BONDING A. GROUND ALL EQUIPMENT PER N.E.C.

- B. ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZED PER N.E.C. IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY. C. AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITRY HAS
- BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION

- c. MEASURE THE GROUND RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATELY DERIVED SYSTEM'S GROUNDING
- d. MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.

1. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE

- WIRE AND CABLE
- A. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

- 208/120V SYSTEM=PHASE A BLACK; PHASE B RED; PHASE C BLUE; NEUTRAL WHITE; GROUND GREEN.
- 1. #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE 2. COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES. COLOR TAPE SHALL BE
- THE EQUAL OF 3M PRODUCTS SCOTCH #35. 3. CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE. ALUMINUM CONDUCTORS ARE NOT ALLOWED ON THIS PROJECT.
- B. INSULATION TYPE SHALL BE TYPE THWN FOR WIRE SIZES #8 AWG AND LARGER AND THHN OR THWN FOR #10AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.
- C. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS. D. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED.
- 1. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS I AND #16 FOR NEC CLASS II.
- E. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.
- F. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. G. INSTALL WIRING IN CONDUIT. CONCEALED WIRING IN WALLS OR ABOVE CEILINGS, OR EXPOSED IN UNFINISHED AREAS (WHERE NOT SUBJECT TO PHYSICAL DAMAGE) MAY BE RUN IN MC OR AC
- CABLE H. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS, "SCOTCHLOK" BY 3M OR B-CAP BY BUCHANAN.
- I. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES AS
- MANUFACTURED BY BURNDY OR T&B. J. INSULATE SPLICING CONNECTORS TO AT LEAST 200% OF THE WIRE INSULATION. USE
- PRE-STRETCHED TUBING CONNECTOR INSULATORS, 3M PST FOR #2 AND LARGER CONDUCTORS. K. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS.
- 1. CLEANOUT EACH CONDUIT SYSTEM BEFORE PULLING WIRE.
- L. FORM AND TIE ALL WIRING IN PANELBOARDS. M.THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS. N. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 3%.
- O.WIRE SIZES SHALL BE BASED ON THE 60 DEGREES C. AMPACITIES FOR WIRE SIZES NO. 14-1 A.W.G., AND 75 DEGREES C. AMPACITIES FOR WIRE SIZES #1/0 A.W.G. AND LARGER. P. CIRCUITS MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND
- CONDUIT SIZED PER CODE. UNDER NO CIRCUMSTANCE SHALL MORE THAN (8) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT.

#### RACEWAYS AND BOXES A. RACEWAYS

- 1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN CORROSION RESISTANT, RIGID, THREADED, METAL CONDUIT OR ELECTRICAL METALLIC TUBING (E.M.T.) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN.
- a. CONDUIT IN EXTERIOR WALLS, BELOW FLOOR SLAB, OR UNDERGROUND SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE. b. CARLON PVC TYPE 40 HEAVY WALL CONDUIT WITH GROUND WIRE MAY BE USED BELOW
- FLOOR SLAB OR UNDERGROUND IN LIEU OF RIGID, THREADED, GALVANIZED CONDUIT. PVC 40 CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL
- c. CONDUIT RUN EXPOSED TO THE WEATHER SHALL BE HEAVY WALL, METAL THREADED TYPE. d. PROVIDE BRANCH CIRCUIT CONDUCTORS THAT ARE TYPE THHN OR THWN AS REQUIRED. MC CABLE CAN BE USED FOR LIGHT FIXTURE TO LIGHT FIXTURE.
- 2. CONDUIT SIZE SHALL BE 3/4" MINIMUM.
- 3. CONDUIT SHALL BE SECURELY FASTENED IN PLACE. 4. ALL CONDUIT SHALL BE CONCEALED IN WALLS, FLOOR AND CEILINGS WHEREVER POSSIBLE. EXPOSED CONDUIT IN FINISHED AREAS WILL NOT BE PERMITTED. EXPOSED CONDUIT WILL BE PERMITTED IN UNFINISHED AREAS WITH THE SPECIFIC APPROVAL OF THE ARCHITECT.
- 5. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.
- 6. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED (TWO COATS) WITH HEAVY ASPHALTUM PAINT.
- 7. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE (NEC). 8. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT ABOVE LAY-IN CEILINGS PARALLEL OR
- PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1" OF ALL CHANGES IN DIRECTION.
- 9. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.
- 10.INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.
- 11.PROVIDE PITCHPOCKETS WHERE CONDUITS PENETRATE THE ROOF. 12.THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED
- METAL JOINTS. 13.INSTALL FIRE SEAL FITTINGS WHERE CONDUITS PENETRATE CONCRETE FLOOR SLABS OR MASONRY WALLS REQUIRED TO BE FIRE RATED.
- 14.HORIZONTAL PORTION OF CONDUIT EXPOSED ON THE ROOF AND FEEDING EQUIPMENT SHALL NOT BE MORE THAN 5'-0" UNLESS THE WRITTEN APPROVAL FROM ARCHITECT OR ENGINEER IS OBTAINED.
- B. PULL AND JUNCTION BOXES
- 1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION. AT JUNCTION POINTS, AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE
- INDICATED. 2. PROVIDE STEEL BOXES AND REMOVABLE COVERS OF CODE GAGE, HOT ROLLED SHEET STEEL, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE, FOR ABOVE GROUND WORK. FURNISH
- WEATHERPROOF BOXES WHEN INSTALLED ABOVE GROUND OUTSIDE. 3. PROVIDE CAST IRON BOXES, HOT DIPPED GALVANIZED INSIDE AND OUTSIDE WHERE SHOWN ON THE DRAWINGS. FURNISH REMOVABLE COVERS WITH GASKETS AND STAINLESS STEEL, BRASS
- OR BRONZE SCREWS. 4. PROVIDE CONCRETE BOXES FOR UNDERGROUND WORK UNLESS OTHERWISE INDICATED ON THE DRAWINGS. FURNISH STEEL FRAMES AND COVERS WITH THE COVER ATTACHED TO THE
- FRAME WITH HEXAGON HEAD, BRASS OR BRONZE CAP SCREWS, 3/8" DIAMETER. PROVIDE A RUBBER GASKET FOR SEALING BETWEEN THE COVER AND THE FRAME. PAINT THE COVER WITH TWO COATS OF HEAVY ASPHALTUM. C. OUTLET BOXES
- 1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR CONCEALED INTERIOR WORK.
- 2. USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK. AND FOR EXPOSED OR CONCEALED WORK IN WET, DAMP OR EXTERIOR LOCATIONS. 3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE x 2-1/2" DEEP WHERE WALL CONSTRUCTION
- PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE WIDTH MAY BE REDUCED TO 2-1/8" OR 1-1/2" UNDER SPECIAL CONDITIONS. 4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL x 1-1/2" DEEP (4-11/16"
- OCTAGONAL x 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES). 5. GANG BOXES SHALL BE ONE PIECE (MINIMUM), 2-1/8" DEEP.
- 6. PROVIDE CONCRETE-TIGHT FLOOR BOXES WITH ADJUSTABLE COVERS SET FLUSH AND LEVEL WITH THE FINISHED FLOOR, WITH OUTLETS AS INDICATED ON THE DRAWINGS. PROVIDE WIREMOLD #EFB6S SERIES BOXES WITH LEVELING SCREWS FOR ABOVE GRADE APPLICATIONS, AND WIREMOLD #EFB6S-OG FOR ON-GRADE APPLICATIONS. FLUSH TYPE COVERS AND OPENINGS TO SERVE OUTLETS USED. FURNISH FLUSH CAPS FOR CLOSING OFF BOX WHEN NOT IN USE
- 7. PROVIDE WIREMOLD EVOLUTION SERIES WALL BOX BEHIND ALL WALL MOUNTED FLAT SCREEN
- MONITORS. COORDINATE HEIGHT WITH ARCHITECT 8. FLUSH MOUNT BOXES IN ALL FINISHED WALLS. INSTALL THE PLASTER RINGS IN DRYWALLED PLASTERED WALLS AND RAISED COVERS AS REQUIRED IN WALLS WITH OTHER FINISHES SO THAT THE COVER PLATES FIT TIGHTLY AGAINST BOXES OR RINGS, 3/16" MAXIMUM GAPS ARE
- ALLOWED FOR NONCOMBUSTIBLE WALLS. 9. ADJUST LOCATION OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET A.D.A. REQUIREMENTS
- 10. SUPPORT ALL BOXES TO MAINTAIN PROPER ALIGNMENT AND RIGIDITY. 10. CLEAN BOXES OF ALL FOREIGN MATTER PRIOR TO THE INSTALLATION OR WIRING OF DEVICES.
- 11.MOUNTING HEIGHTS ON THE DRAWINGS ARE TO THE CENTERLINE OF THE BOX UNLESS OTHERWISE NOTED.

WIRING DEVICES

- - - NOTED:

    - WEATHERPROOF.

    - SAFETY SWITCHES

DRAWINGS.

# AMENTA EMMA

A. WIRING DEVICE COLOR SHALL BE WHITE, UNLESS OTHERWISE INDICATED. B. OCCUPANCY SENSOR SWITCHES SHALL BE 120/277 VOLT, DUAL TECHNOLOGY 0-10V DIMMING

WALL SWITCH OCCUPANCY SENSORS, WATTSTOPPER #DW-311. C. DIMMER SWITCHES SHALL BE WIDE SLIDE 0-10V PRESET DIMMER WITH INTEGRATED POWER PACK EQUAL TO PASS & SEYMOUR WS4FBL3PW. D. GENERAL SWITCHES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY PASS & SEYMOUR.

E. CEILING MOUNTED OCCUPANCY SENSORS SHALL BE LOW VOLTAGE DUAL TECHNOLOGY, WATTSTOPPER #DT-300. F. PROVIDE NEMA CONFIGURATION 5-20R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED

FOR 20 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS. G. RECEPTACLES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY PASS & SEYMOUR. H. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS. I. PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND WORKMANSHIP EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.

J. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE 1. FINISHED AREAS: WHITE, THERMOPLASTIC.

2. UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL, AS

APPROPRIATE FOR THE TYPE OF BOX. 3. EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKET,

4. TELEPHONE, COMMUNICATION, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND SWITCHES. ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE

WITH A COVER PLATE BY THIS CONTRACTOR. 5. WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVERPLATE. I. LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS OTHERWISE INDICATED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.

J. LOCATE RECEPTACLES APPROXIMATELY 1"-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE. THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL

A. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE. B. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS.

C. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE D. SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

E. ENCLOSURES SHALL BE NEMA 1 INDOORS AND NEMA 3R OUTDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS. F. MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR CUTLER-HAMMER. ALL SAFETY SWITCHES

SHALL BE BY ONE MANUFACTURER. G. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' & 6' LEVELS ABOVE THE FLOOR UNLESS

OTHERWISE INDICATED ON THE DRAWINGS. H. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.

#### DISTRIBUTION AND PANELBOARDS

A. PANELBOARDS 1. PANELBOARDS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT CIRCUIT AT THE

TERMINALS. 2. PANELBOARDS SHALL BE LABELED WITH PHENOLIC NAMEPLATES INSCRIBED AS INDICATED ON THE DRAWINGS. PROVIDE LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70E. 3. PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON THE DRAWINGS.

4. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION.

5. ALL BUS BARS SHALL BE RECTANGULAR TIN PLATED ALUMINUM.

6. SPACE, WHERE SHOWN IN PANEL SCHEDULES, DESIGNATES SPACE FOR FUTURE PROTECTIVE DEVICES AND SHALL INCLUDE BUS AND SUPPORT. 7. INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE

FINISHED FLOOR. 8. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE. 9. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S

STANDARDS 10. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT

CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL. 11. ALL BREAKERS SHALL BE BOLT-ON TYPE.

12. MANUFACTURE SHALL BE SQUARE D AS THE PREFERRED SWITCHGEAR.

#### LIGHTING FIXTURES

SCHEDULE.

A. NEW LIGHT FIXTURES SHALL BE AS LISTED IN THE LIGHTING FIXTURE SCHEDULE.

B. ALL LIGHTING FIXTURES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AS INDICATED ON THE LIGHTING FIXTURE SCHEDULE, INCLUDING LAMPS. LAMPS SHALL BE OF SAME MANUFACTURER FOR ALL TYPES.

C. ALL FIXTURES SHALL BEAR THE UNDERWRITER'S LABORATORIES LABEL AND SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. D. BALLASTS FOR LINEAR FLUORESCENT LAMPS SHALL BE AS LISTED IN THE LIGHTING FIXTURE

E. HIGH INTENSITY DISCHARGE BALLASTS SHALL BE CONSTANT WATTAGE TYPE.

F. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY SUPPORT MEDIA FOR ALL LIGHTING FIXTURES INCLUDING STRUCTURAL STEEL, ANGLE, RODS, ETC, IN GENERAL FLUORESCENT AND HIGH INTENSITY DISCHARGE FIXTURES SHALL BE SUPPORTED IN A MANNER ACCEPTABLE TO THE LOCAL INSPECTION AUTHORITIES. ALL FIXTURES SHALL BE FIRMLY SUPPORTED FROM BEAMS OR JOISTS.

1. PROVIDE ALL NECESSARY BACKING, BLOCKING AND SUPPORTS FOR WALL MOUNTED FIXTURES. 2. FIXTURES SHALL NOT BE SUPPORTED FROM ROOF DECK.

G. ALL FIXTURES SHALL BE U.L. LISTED AND APPROVED FOR THE PURPOSE INTENDED. H. RECESSED FIXTURES IN FIRE RATED CEILING OR SUPPLY AIR PLENUMS SHALL BE APPROVED FOR THE FIRE RATING OF THE CEILING. PROVIDE AIR-TIGHT GASKETS TO SEAL AROUND OPENINGS. I. ALL ADJUSTABLE FIXTURES SHALL BE AIMED AND ADJUSTED DURING EVENING HOURS TO THE SATISFACTION OF THE ARCHITECT.

#### OWNER:

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

CONSULTANTS

 ${f R}{f Z}$  Design Associates, In MECHANICAL, ELECTRICAL, AND

STRUCTURAL ENGINEERING 750 OLD MAIN STREET SUITE 202 ROCKY HILL, CT 06067 P: (860) 436-4336 F: (860) 436-4450 www.rzdesignassociates.com

KEY PLAN

PROJECT DATA PROJECT NUMBER CURRENT SUBMISSION DATE DRAWN CHECKED SCALE

HISTORY OF SUBMISSIONS

![](_page_27_Picture_188.jpeg)

Bid Set

SHEET TITLE

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ELECTRICAL

19039 12/13/19 JJZ

BJZ NONE

ARCHITECTS

### **LIGHTING FIXTURE NOTES**

- 1 1/2 HOURS UPON LOSS OF NORMAL POWER. SEE SCHEDULE.
- INDICATOR AT A MINIMUM OF 40 FT. UNDER ALL SPACE CONDITIONS. SEE DETAIL BELOW.

- 4. PROVIDE ERICO FASTENING PRODUCTS (CADDY) CAT. No. 515 OR 515A LIGHT FIXTURE SUPPORT CLIPS ON ALL RECESSED LIGHT FIXTURES. PROVIDE MINIMUM FOUR (4) PER FIXTURE.
- CHANNELS SPANNING AND SECURED TO THE CEILING TEES.
- 6. VERIFY ALL LIGHT FIXTURE FINISHES WITH ARCHITECT PRIOR TO PURCHASE.
- 7. VERIFY ALL LIGHT FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.

#### LIGHTING FIXTURE SCHEDULE

тург		NODEL	LAMPS		j	Γ,
	MANUFACIURER	MODEL	LUMENS	WATTAGE	LUMENS/WATT	1
A1	USAI	Z3SDL C 14M2 35KS 40 S WH NC1 UNV D6F	950 lm	14 W	68 lm/W	
B4	LUX ILLUMINAIRE	EOS2.0-R-G9-500-4-35K-8-1-UNV-S1-W	2000 lm	19 W	105 lm/W	
B8	LUX ILLUMINAIRE	EOS2.0-R-G9-500-8-35K-8-1-UNV-S1-W	4000 lm	38 W	105 lm/W	
C4	PEERLESS	EGRM4L LLP 4FT MSL4 80CRI 35K I1000LMF 300LMF MIN1 ZT 120 SCT NS SNS F2/72A C041 SLP	4888 lm	41 W	121 lm/W	
C12	PEERLESS	EGRM4L LLP 12FT MSL4 80CRI 35K I1000LMF 300LMF MIN1 ZT 120 SCT NS SNS F2/72A C041 SLP	14665 lm	121 W	121 lm/W	
D	USAI	BLSD5 16C3 35KS 50 S WH PJ2 UNV D6F PMB P2 36 WH	1475 lm	16 W	92 lm/W	
EM	LITHONIA	ELM2L	440 lm	5 W	88 lm/W	
F	BUZZISHADE	Pendant LED Globe Medium	1500 lm	19 W	79 lm/W	
G	LITHONIA	ZL1F L48 SMR 4500 MDD MVOLT 35K 80CRI WH	4500 lm	39 W	115 lm/W	
Н	VODE	707-Z2 SL 31FT ZZ ?? 0 RP AE 1 0 Z SO 35 S3 0 WH 0	24552 lm	205 W	120 lm/W	
UC	MP LIGHTING	L109S-AXW35HWF-MA	270 lm	6 W	45 lm/W	
XR	LITHONIA	EDGR 1 R EL		5 W		
XS	LITHONIA	EDG 1 R EL		5 W		

![](_page_28_Figure_12.jpeg)

1. TYPE 'EM' EMERGENCY FIXTURES AND TYPE 'X' EXIT SIGNS SHALL BE WIRED TO LINE SIDE OF AREA LIGHTING CIRCUIT TO SENSE LOSS OF NORMAL POWER AND PROVIDE CONTINUOUS TRICKLE CHARGE, AND SHALL OPERATE AT A MINIMUM OF

2. DIRECTIONAL CHEVRONS SHALL CONFORM TO NFPA 5-10.4.1.2 AND SHALL BE IDENTIFIABLE AS A DIRECTIONAL

![](_page_28_Picture_15.jpeg)

#### EXIT SIGN DIRECTIONAL INDICATOR

3. ALL FIXTURES TO BE LED WITH 0-10V DRIVERS STANDARD. ALL FIXTURES TO BE COLOR TEMPERATURE 3500°K..

5. IN ADDITION TO THE REQUIREMENTS OF THE IBC AND THE NEC, ALL RECESSED LIGHT FIXTURES SHALL BE PROVIDED WITH SUPPORT WIRES AT A MINIMUM OF FOUR (4) PER FIXTURE AND LOCATED NOT MORE THAN SIX (6") INCHES FROM EACH CORNER, EXTENDED AND ATTACHED TO THE BUILDING STRUCTURE. HANGER WIRES SHALL BE GALVANIZED CARBON STEEL, ASTM A641, SOFT TEMPER, PRE-STRETCHED WITH A YIELD STRESS LOAD OF AT LEAST THREE (3) TIMES DESIGN LOAD BUT NOT LESS THAN 12 GAUGE (0.106"). FOR ROUND FIXTURES OR FIXTURES SMALLER THAN THE CEILING GRID, PROVIDE A MINIMUM OF FOUR (4) WIRES PER FIXTURE AND LOCATE AT EACH CORNER OF THE CEILING GRID IN WHICH THE FIXTURE IS TO BE LOCATED. ADDITIONALLY, WHERE FIXTURES OF SIZES LESS THAN THE CEILING GRID ARE INDICATED TO BE CENTERED IN THE ACOUSTICAL PANEL, SUCH FIXTURES SHALL BE SUPPORTED WITH A MINIMUM OF TWO (2) 3/4" METAL

# AMENTA EMMA

![](_page_28_Picture_23.jpeg)

### OWNER:

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

#### CONSULTANTS

<b>RZ</b> Design Associates, Inc.
MECHANICAL, ELECTRICAL, AND
STRUCTURAL ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com

KEY PLAN

19039 12/13/19 JJZ BJZ AS INDICATED

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#### HISTORY OF SUBMISSIONS

PROJECT DATA

PROJECT NUMBER

DRAWN

SCALE

CHECKED

CURRENT SUBMISSION DATE

![](_page_28_Figure_32.jpeg)

#### Bid Set

- -

#### SHEET TITLE

FOURTH FLOOR LIGHTING PLAN

E1.01

![](_page_28_Figure_37.jpeg)

![](_page_29_Figure_0.jpeg)

![](_page_29_Figure_1.jpeg)

![](_page_29_Figure_2.jpeg)

### AMENTA|EMMA ARCHITECTS

### OWNER:

#### **CT INNOVATIONS - COLT** BUILDING

120 Huyshope Ave - 4th Floor Hartford, CT 06106

		STARTE	R TYPES				
	SPP			N WFR	CONSULTANTS		
	511						
		DISCONNE	CT TYPE	:5			
	FS		DESCRIPTIO	N	<b>MZ</b> besign Associates, inc.		
	. 0				MECHANICAL, ELECTRICAL, AND STRUCTURAL ENGINEERING		
		CONTRU			750 OLD MAIN STREET		
			DESCRIPTIO	N	SUITE 202 ROCKY HILL, CT 06067		
	1	DIV. 23 - THEIR	NOSTAT		P: (860) 436-4336 F: (860) 436-4450		
					www.rzdesignassociates.com		
		DISCONNEC	<b>T</b>		KEY PLAN		
		DISCONNEC					
_L		PE FURNISH		REMARKS			
F.	F	<u>S</u> DIV. 26	DIV. 26				
					- 		
	A.I.0 Ma Main MC	C. Rating: 10,000 hins Type: MCB his Rating: 225 A B Rating: 225 A	AMPS SYMN	IETRICAL	N N		
					PROJECT DATA		
					PROJECT NUMBER 19039		
ip	Туре	Circuit	Description	СКТ	CURRENT SUBMISSION DATE 12/13/19		
A		Conference Room	Lighting	2	_ DRAWN JJZ		
A		Office Recepts		6	_ CHECKED BJZ SCALE AS INDICATED		
A		Copier		8			
A		Dishwasher		10			
A		Refrigerator		12			
A A		Open Office Recents	pts	14			
Ā		Huddle/Tel Recen	ts	10			
A		Security Recept	:	20			
Α		Server Recept		22			
A		Server Recept		24			
Δ		HP-1		26 28			
• `				30			
Α		Microwave		32			
				34			
				36 38	-		
				40	-		
				42	Bid Set		
ST	= Shur	nt Trip Circuit Break Panel otal Conn. Load:	ker, HACR = I <b>Totals</b> 50149 VA 47686 VA	Heating, Air	SHEET TITLE • •		
	10	Total Conn.:	139.2 A		-		
	То	otal Est. Demand:	132.4 A				
					FOURTH FLOOR POWER PLAN		

• •

E2.01

	STARTER			DISCONNECT					
INSTALL	TYPE	FURNISH	INSTALL	TYPE	FURNISH	INSTALL	REMARKS		
DIV. 23	SPP	MANUF.	MANUF.	FS	DIV. 26	DIV. 26			
DIV. 23	SPP	MANUF.	MANUF.	FS	DIV. 26	DIV. 26			
Volts:	120/208 Wy	/e		A.I.C. Rat	ing: 10,000	AMPS SYMM	ETRICAL		
Phases:	3	Mains Type: MCB							
Wires:	4			Mains Rating: 225 A					
	MCB Rating: 225 A								

I	3	(	C	Poles	Trip	Туре	<b>Circuit Description</b>	С
				1	20 A		Conference Room Lighting	
1.1	1.1			1	20 A		Office Recepts	
		0.9	1.1	1	20 A Office Recepts			
				1	20 A Copier			
1.1	1.2			1	20 A		Dishwasher	1
		0.4	1.2	1	20 A		Refrigerator	1
				1	20 A		Open Office Recepts	1
1.1	1.1			1	20 A		Office Recepts	1
		1.1	0.9	1	20 A		Huddle/Tel Recepts	
				1	20 A		Security Recept	
2.9	2.9			1	30 A		Server Recept	2
		1.9	1.9	1	20 A		Server Recept	2
								2
2.5	2.5			3	40 A		HP-1	2
		2.5	2.5	]				3
				1	20 A		Microwave	3
1.2								3
								3
								3
								4
								4
18.6	kVA	14.4	kVA		1	1	1	I
 158	.5 A	120	.2 A	_				

Totals	Panel	Estimated Demand	or
		12260 VA	
50149 VA	Total Conn. Load:	3783 VA	
47686 VA	Total Est. Demand:	12600 VA	
139.2 A	Total Conn.:	3840 VA	
132.4 A	Total Est. Demand:	15203 VA	