



JONESBORO, AR - STORE #790 TORNADO REBUILD OF AN EXISTING ULTA STORE

TO THE INTERIOR THIN AN EXISTING	1. IF EX	SIGNIFICANT DI XISTING BUILDIN	SCREPANCIES OR CO G IMPAIR THE ABILIT	ONFLICTS IN THE DET	AILS OR DIMENSION ARISE NORK AS DESCRIBED AND	E, OR IF UNFORESEEN (D/OR DETAILED. THEN R	CONDITIONS IN THE EPORT SUCH		AP	PLICABLE CODE	S						DR	AWI	NG INDEX	
THE INTEGRITY OF THE	2. DC	O NOT SCALE DF	AWINGS- WRITTEN D	DIMENSIONS TAKE PR	ECEDENT.			BUILD	ING:	2012 INTERNATIONAL BUILDING	CODE			RE	VISION			SHEET		
LITY FOR SAME. THE	3. AL 4. AL	LL THINGS SHOV LL WALL CONST	VN ARE NEW AND PRO RUCTION FACING RES	OVIDED BY TENANT G STROOM AREAS MUS	GENERAL CONTRACTOR UN T UTILIZE MOISTURE RESI	NLESS OTHERWISE NO ISTANT GYPSUM BOAR	TED. D.	MECH	ANICAL:	2010 AR MECHANICAL CODE					(07/13/20	07/01/20	#		
NS AND INTEGRITY,	5. AL	LL DOORS TO BE	KEYLESS IN DIRECT	ION OF EGRESS.				PLUM	BING:	2006 AR PLUMBING CODE						•	•	CS1.0	COVER SHEET	
ICABLE LOCAL CODES	o. DC NC	OURS SHALL HA	VE A 5 SECOND MININ	NUM GLUSING TIME F	RUM 901-121 OPEN. MAXIN	MUM EFFORT TO OPER	ATE DOORS SHALL	ELEC	FRICAL:	2017 NATIONAL ELECTRICAL CO	DE					•	٠	CS2.0	RESPONSIBILITY SCHEDULE	u r 6 G, G, C
T THAT OF THE	A.	5.0 L.B.F. (22.2 N		RS WITHOUT CLOSU	RES.			LIFE S	AFETY:	2012 AR FIRE PREVENTION COL	DE VOL I & II					•	۲	CS3.0	VENDOR CONTACTS & SUBMITTALS	c t 1 66 1 67 1 6 1 1 6 1 1 1 1 1 1 1 1 1 1
TO THE INTERIOR	ь. С.	15 L.B.F. (67 N) F	OR ALL OTHER DOOF	κο. RS.				ACCE	ssibility:	2003 ICC/ANSI A117.1: AMERICA	N NATIONAL STANDA	RDS				•		HC1.1	ACCESSIBILITY DETAILS	bad, te vad, te 47.6
HELL BUILDING.	7. DO	OORS INDICATE) AS PART OF THE RE	EQUIRED MEANS OF E	EGRESS SHALL HAVE HARI	DWARE WHICH IS REAL	DILY OPERABLE	ENER	GY CONSERVATION:	2014 AR ENERGY CODE						•	•	A1.0	EGRESS PLAN	
SCALE	8. AL	LL WALL AND CE	ILING FINISHES TO BI	E CLASS B OR BETTE	R, FLAME SPREAD 26-75 W	WITH MAXIMUM SMOKE	DEVELOPED OF									•	•	A1.1	FIXTURE PLAN AND SPECIFICATIONS	a r a
NONE	45 9. AL	50. LL INTERIOR TRI	M TO BE CLASS C. FL	AME SPREAD 76-200	WITH MAXIMUM SMOKE DE	EVELOPED OF 450.		OCCU	PANCY LOAD CALCULATIONS							•	٠	A2.0	DIMENSION PLAN AND DETAILS	
	10. FL		S TO HAVE A FLAME	SPREAD RATING NOT	TO EXCEED 75			GROS	S AREA:	10,000 S.F.						•	•	A2.1	ENLARGED SALON PLAN	t a SS
PARKING	11. AL 12. PF	ROVIDE FIRE EX	E INTERIOR FINISH AN	ND TRIMITEMS ARE T QUIRED PER APPLICA	BLE CODES AND COORDIN	NATE EXACT LOCATION	LE BASE. I WITH FIRE	MERC	ANTILE AREA:	8,131 SQ.FT./30 SQ.FT. PER PER	SON = 272					•	•	A2.3	WALL TYPES, STUD FRAMING & BLOCKING I	ETAILS
PLATE PLASTIC LAMINATE	12 DE	ARSHAL.						BUSIN	ESS AREA:	1,384 SQ.FT./100 SQ.FT. PER PE	RSON = 14					•	•	A2.4	DOOR & HARDWARE SCHEDULES	+
PLUMBING	13. FF 14. AL	LL EXTERIOR WO	ORK AND BUILDING SI	HELL WORK, INCLUDI	NG THE STRUCTURAL INTE	EGRITY OF EXTERIOR	WALLS, AND ROOF,	STAG	NG AREA:	485 SQ.FT./300 SQ.FT. PER PER	SON = 2					•	•	A3.1	REFLECTED CEILING PLAN AND DETAILS	
PLYWOOD PANEL	AN TH	ND ITS ABILITY T	O SUPPORT THE TEN	IANTS AWNING AND/C	OR SIGNAGE OR ANY OTHI	ER ELEMENTS, IS THE F	RESPONSIBILITY OF	TOTA	_ OCCUPANCY:		288 PERSC	DNS				•	•	A3.2	ARCH AND VALANCE LIGHTING PLAN AND D	
POINT OF SALE	DF	RAWINGS. THIS	SHALL INCLUDE VER	IFICATION OF ANY EX	ISTING CONDITIONS AND I	BUILDING STRUCTURE	THAT IS A PART OF		ם ווו ום							•	٠	A3.3	DETAILS	
PAIR PREPARATION/PREPARED	TH 15. SI	HE LANDLORD'S	WORK AS DESCRIBE	ED IN THE LEASE AGR	EEMENT BETWEEN ULTA ANN NE ANN NE ANN E ANN NE A I ANN NE ANN	AND LANDLORD. URPOSES AND DOES N	IOT IMPLY OR		DUILD		113					•	٠	A4.1	FLOOR FINISH PLAN, SCHEDULE & SPECIFIC	
POUNDS PER	DE	ESCRIBE ANY ME	EANS, METHODS, OR	DETAILS PERTAINING	TO INSTALLATION OF THE	E AWNING OR SIGNAGI	E. IT SHALL BE	DESC	RIPTION	CODE SECTION	REQUIREMENTS					•	٠	A6.1	INTERIOR ELEVATIONS	
POUNDS PER	AN	NY AND ALL STR	UCTURAL CONSIDER	ATIONS SHALL BE CC	ORDINATED BETWEEN TH	I ALL THE SIGN UNDER	OR, LANDLORD,	USE G	ROUP:	IBC CHAPTER 3, SECTION 309	M (MERCANTILE)					•	٠	A6.2	INTERIOR ELEVATIONS	
SQUARE INCH PART/ POINT	AN AV	ND HIS DESIGN	PROFESSIONALS. TH	E AWNING/SIGN CON	TRACTOR SHALL SUBMIT S			NUMB	ER OF STORIES:		1					•	٠	A6.3	INTERIOR ELEVATIONS & ENLARGED TOILET RO	OM PLAN
POLY VINYL CHLORIDE	RE	EVIEW ONLY PRI	OR TO AWNING/SIGN	FABRICATION.	IND DESIGN DIMENSIONS I	TO THE OWNERT OR D	ESIGN INTENT	CONS	TRUCTION TYPE:	IBC TABLE 601	TYPE II-B (EXIST. N	NO CHANGE)				•	٠	A6.4	INTERIOR ELEVATIONS	
PAVEMENT QUANTITY	16. SF	PRINKLER WORK	WHERE NEW OR WH	ERE MODIFICATIONS	S TO EXISTING SYSTEMS A	RE REQUIRED BY CODI	E OR CONTRACTOR TIE	FIRE S	SPRINKLERS:	IBC SECTIONS 507.4	FULLY SPRINKLER	RED				•	•	A7.1	EXTERIOR ELEVATION	
RETURN AIR	SF	PRINKLER AND F	IRE ALARM INTO BAS	E BUILDING FIRE PRO	DTECTION SYSTEM.			SEISM	IIC CATEGORY:		D					•	•	A7.2	EXTERIOR ELEVATION	
ROOF DRAIN	17. G. 18. RE	.C. TO INSURE TI EFER TO FIXTUR	HAT PROPER ENVIRO E MANUAL FOR INFO	INMENTAL CONDITION RMATION ON ALL FIX	NS ARE MET FOR THE INST TURES.	TALLATION OF ALL INTE	RIOR FINISHES.	TENA	NT AREA:	IBC SECTION 507.4	10,000 S.F. AREA C	DF WORK				•	•	A8.1	CONSTRUCTION DETAILS	
	19. NC	O ELEMENTS AR	E TO BE ATTACHED T	O OR SUPPORTED F	ROM THE ROOF DECK OR I	BOTTOM CHORD OF RC	OOF JOISTS.	OCCU	PANT LOAD:		288 PERSONS					•	•	A8.2	CONSTRUCTION DETAILS	
REQUIRED	20. G 21. VE	ERIFY ALL EXIST	ING CONDITIONS PRI	IOR TO ANY CONSTRUCTION EQU	JCTION OR FABRICATION.	IF DIFFERENT THAN SH	IOWN, NOTIFY	NUMB	ER OF EXITS:	IBC TABLE 1006.3.1	2 REQUIRED					•	•	A8.3	CONSTRUCTION DETAILS	
ROOM ROUGH OPENING	22 AI		ECT IMMEDIATELY F	OR MODIFICATION OF	F DRAWINGS.		CTS ALL				2 PROVIDED					•	٠	F1.1A	WALL FIXTURE DETAILS	
RESTROOM	ST	TRUCTURAL, ME	CHANICAL, ELECTRIC	COORDINATE THEIR	SPECTS ARE NOT IN THE S	SCOPE OF THESE DRAV	VINGS. THEREFORE,	EXIT	VIDTH:	IBC TABLE 1005.3.2	57.6" REQUIRED					•	•	F1.1B	WALL FIXTURE DETAILS	
ROOF TOP UNIT SANITARY	AL TH	LL REQUIRED MA	TERIALS AND WORK	MAY NOT BE INDICATION DOCU	TED. IT IS THE CONTRACTO	OR'S RESPONSIBILITY 1 S AND NUMBERS OF AL	O COORDINATE				108" PROVIDED					•	•	F1.1C	FIXTURE ELEVATIONS	
	NC	OT BE COMPLET	ELY INDICATED IN TH	IE ARCHITECTURAL D	RAWINGS. THE RESPECTIV	IVE CONTRACTOR SHAL	L VERIFY THEIR	MAX.	TRAVEL DIST.:	IBC TABLE 1017.2	250-FT. MAX.					•	٠	SP1	SPECIFICATIONS	THE ABOVE DRAWINGS AND SPECIFICATIONS
SECTION	23. T⊦	HE CONTRACT D	OTHER DISCIPLINES. OCUMENTS DO NOT I	INDICATE THE METHO	DD OF CONSTRUCTION. TH	HE CONTRACTOR SHALL	L PROVIDE ALL	REQU	RED PLUMBING FIXTURES		•					•	۲	SP2	SPECIFICATIONS	AND IDEAS, DESIGNS AND ARRANGEMENTS REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF THIS OFFICE: AND
SERVICE SEVER	ME	EASURES NECES			RING CONSTRUCTION. SUC	CH MEASURES SHALL II	NCLUDE, BUT NOT				MALE	FEMALE				•	٠	SP3	SPECIFICATIONS	NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN THE
STOREFRONT	ME	ETHODS, TECHN	IQUES, SEQUENCES	OR SAFETY PROCED	URES DURING CONSTRUC	CTION.	TOR S WILANS,	LAVA	ORIES:	IBC TABLE 2902.1	1 REQUIRED 1	REQUIRED				•	۲	SP4	SPECIFICATIONS	OTHER THAN THE SPECIFIC PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND
SHEET SIMILAR											1 PROVIDED 1	PROVIDED				•	٠	SP5	SPECIFICATIONS	DEVELOPED WITHOUT THE WRITTEN CONSENT OF THIS OFFICE. VISUAL CONTACT WITH THESE DRAWINGS OR SPECIFICATIONS SHALL
SAWCUT JOINT								TOILE	TS:	IBC TABLE 2902.1	1 REQUIRED 1	REQUIRED				•	٠	SP6	SPECIFICATIONS	CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.
SMALL											1 PROVIDED 1	PROVIDED				•	٠	SP7	VINYL FLOOR TILE SPECIFICATIONS	WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED
SPRINKLERS SQUARE								DRINK	(ING FOUNTAIN:	IBC TABLE 2902.1	1 REQUIRED									AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS
SQUARE FEET											1 PROVIDED (HI-LC	D)				•	٠	M-1	MECHANICAL REFLECTED CEILING PLAN	OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
STAINLESS STEEL STANDARD								SERV	CE SINK:	IBC TABLE 2902.1	1 REQUIRED						۲	M-2	ENLARGED REFLECTED CEILING PLAN	SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH EARDICATION
STEEL STATION											1 PROVIDED					•	•	M-3	MECHANICAL SCHEDULES AND DETAILS	
STRUCTURE/-AL																•	•	M-4	MECHANICAL SPECIFICATIONS	© 2020 ROBERT G. LYON & ASSOCIATES, INC.
SUPPLY/-IED SUSPENDED																•	٠	M-5	MECHANICAL SPECIFICATIONS	
	_		RAI NC	TES			SCALE	4_		III DING SUMMAR	v L	SCALE				•	•	P-1	PLUMBING PLANS AND NOTES	
TOP AND BOTTOM							NONE					NONE				•	•	P-2	SANITARY ISOMETRIC	
TONGUE AND GROOVE TEMPERED	SYM	IBOL [DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	V	Ch A				-			•	•	P-3	WATER ISOMETRIC	BEAUTY
TENANT GENERAL		4						. FB	E Nettileton Ave	E Netlieton Ave E No	miero					•	•	P-4	PLUMBING SCHEDULES & SPECIFICATIONS	
THROUGH		# S	ECTION TAG-		ELEVATION	<u>/#</u>	WALL TYPE	• U	abite	Blvd	Are					•	•	P-5	PLUMBING DETAILS	III TA #790
		$\frac{\pi}{XX}$ S	EE DWG. AS	#	TAG-SEE	#	TAG-SEE	.0	Buffalo Wild Wing	IS Plops St	Woodfie					•	•	P-6	PLUMBING SPECIFICATIONS	3031 E. HIGHLAND DRIVE
LABORATORIES			OTED	AX.X	DWG. AS			* ×	Walmart 🕞 🔍 🗘	Trock 01 2 Kingsbury St	2 Edgefte ³					•	•	P-7	PLUMBING SPECIFICATIONS	JONESBORO, AR 72401
UNLESS NOTED OTHERWISE	_				NOTED				Forest Home Rd Forest Home R	Baswell St St						•	•	E0-1	ONE LINE DIAGRAM & LIGHTING SCHEDULE	
ULTRAVIOLET						XXX SQ. FT.	DOOM		Stor	The Mall at Turtle Creek Lateral Temporarily closed Number	4 Vikiga					•	•	E0-2	PANEL SCHEDULES	
VOLT/ VOLTAGE VAPOR BARRIER			ETAIL TAG- FE DWG AS		SEE EINISH		NUMBER TAG		Size Ch	ick-fil-A 🔍 🦉 🙆 Bact Bu	Winter	C.Hon				•	•	E0-3	ROOF PLAN & ARCH LIGHTING ELEVATIONS	
		$\frac{\#}{(N)}$ N	OTED	#	LEGEND		NOMBERTAO	Rank of Arr	arics (with	with the second se	17 S R Fakture And	AND TO DO				•	•	E1-1	FLOOR PLAN - LIGHTING	COVER SHEET
VINTE COMPOSITION TILE		(.X)			·			Drive-thr	u services)	n Italian Chuck E. Chee	ise 😡 🚽 🖁	Cain g	0			•	•	E2-1	FLOOR PLAN - ELECTRICAL DIMENSIONS	
VENT PIPE						•		d Dr		(49) Highland Drive	Jim's Pawn Shop	Ŷ				•	•	E2-2	FLOOR PLAN - POWER	
WIDE		E	LEVATION		DOOR TAG-		REVISION	araway	Swood D	Jan Timme S	$\neg \Lambda$	9 9 97				•	•	E3-1	FLOOR PLAN - LOW VOLTAGE WIRING	
WITH/WITHOUT WALL BASE	1 1115	В	ENCHMARK	\frown	SEE	^	TAG	Rd	Improvement	my Sports						•	•	E3-2	FLOOR PLAN - VOICE/DATA AND SECURITY	DRAWN BY
WHITE BOX CONTRACTOR		('-X"		(#)	HARDWARE	_#\		Grant Ave	¥ + Outo	Sun Ave		Griffin St ট্র ট্রু School S	ε.			•	•	E4-1	ELECTRICAL SPECIFICATIONS	DV
WOOD					SCHEDULE				Parkwoog	Parkwood Rd		Dev								CHECKED BY
WINDOW WATER HEATER								cowier Ave	Starbuck	S Parkwood Rd										DF
WORK		K	EY NOTE /					нор 👰		Fairview Dr	war have	Viera St								JOB NUMBER
WATERPROOF WEIGHT	[[#]	R	ESTROOM							Meador Rd PP	La La	$\langle \rangle$	\vdash] 20406
WELDED WIRE FABRIC			AG					- 4	Race St. Plato's Closet	(49) Race St	Allen Park									
									litton Corden	Autor De	Contrainty Genter Y									SHEEI NAME
SCALE		C/VV					SCALE					SCALE		יסח	\ <u>\</u> \\\		וחבי	 V	Ş	CALE CS10
NONE	-	ואו גס <mark>ן</mark>					NONE	-				NONE	-	URA	VVIIN		NDC/	^		

ECEIVE, UNLOAD AND		BID ALTERNATES			
OWNER SUPPLIED GLASS	ITEM	REMARKS			
ATE WITH OWNER). G.C. TO OF PACKAGING MATERIALS.	ELECTRICAL FLOOR OUTLETS	G.C. TO PROVIDE COST TO ADD (1) ADDITIONAL FLOOR OUTLET, PRIOR TO FINISH FLOOR. COST TO INCLUDE UP TO 10 LINEAL FEET OF ELECTRICAL TRENCHING.		RGL	
RIPTION OF SHELF ES ON SHEET A-1.1	ELECTRICAL FLOOR OUTLETS	G.C. TO PROVIDE COST TO ADD (2-5) ADDITIONAL FLOOR OUTLETS, PRIOR TO FINISH FLOOR. COST TO INCLUDE UP TO 10 LINEAL FEET OF ELECTRICAL TRENCHING.		rgla solutions	5, inc.
	MOISTURE RESISTANT BARRIER	G.C. TO PROVIDE COST FOR A CEMENT BASED PRODUCT ONLY TO COVER THE ENTIRE SALES FLOOR. SUPPLY AND INSTALL AN MRB AND A TOP COAT OF CEMENTITIOUS BASED PRODUCT PER MANUFACTURER'S INSTRUCTIONS. SMOOTH, FLAT AND READY		p: 847.671.745 f: 847.671.4200 www.rgla.com	2
		TO ACCEPT FLOOR FINISHES.		REVISIONS:	DATE:
			LL	& ULTA REVIEW	07/01/2020
			PEI	RMIT ISSUE	07/02/2020

BID ISSUE

07/13/2020

				DIVISION OF WORK					
DESCRIPTION	DOES EXIST. LANDLORD ULTA G.C. ULT/ NOT TO ELIEN INST ELIEN INST ELIEN		DESCRIPTION	DOES EXIST. LANDLORD ULTA G.C. ULTA	REMARKS	DESCRIPTION	DOES EXIST. LANDLORD ULTA G.C. ULTA	REMARKS	
DIVISION 01: GENERAL REQUIREMENTS			DIVISION 09: FINISHES	APPLY REMAIN FORM. I INST. FORM. I INST. FORM. I INST.		DIVISION 15: MECHANICAL	APPLY REMAIN FORM. INST. FORM. INST. FORM. INST.		RGLA
		REFER TO GENERAL NOTES			SEE A2.0 AND REFERENCE LANDLORD SHELL DRAWINGS. DETERMINE FINISH CONDITION FROM LANDLORD'S WORK, G.C. TO PROVIDE FIRE SAFING TO MAINTAIN	ROOF TOP UNITS/HVAC EQUIPMENT		SEE MECHANICAL DRAWINGS AND NOTES INCLUDES GAS PIPING. ALSO, SEE	
DIVISION 02: SITE WORK		SLAB CUTS AS REQUIRED AND AS NOTED. SEE TRENCHING DETAIL 6/A8.3. REMOVAL	DEMISING PARTITION		MARSHAL INSPECTOR. REPAIR DEMISING PARTITION AFTER INSTALLING BLOCKING TO MAINTAIN REQUIRED FIRE RATING			SEE MECHANICAL DRAWINGS AND NOTES. ALSO, SEE LANDLORD SHELL	
DEMOLITION		OF EXISTING GYPSUM BOARD FOR IN WALL BLOCKING INSTALLATION. LANDLORD PROVIDING DEMOLITION OF ALL EXISTING TENANT ITEMS NOT BEING REUSED BY	METAL STUD / GYPSUM BOARD FURRING ON MASONRY PERIMETER		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY. SEE ALSO A2.0 G.C. TO REMOVE EXISTING GYPSUM BOARD AS REQUIRED TO PROVIDE IN WALL MILLWORK	- ROOF DRAINAGE		DRAWINGS FOR REFERENCE ONLY.	rgla solutions, inc.
SITE WORK		ULIA, REFER TO LANDLORD SHELL DRAWINGS FOR REFERENCE.			BLOCKING AND REPLACE GYPSUM BOARD.	CONDENSATE DRAINAGE		SEE MECHANICAL DRAWINGS FOR LOCATIONS AND NOTES. ALSO, SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY.	Schiller Park, IL 60176 p: 847.671.7452
PLYWOOD BARRICADES		TEMPORARY - AS REQUIRED BY LL	METAL STUD / GYPSUM BOARD (INTERIOR PARTITION WALLS)		SEE A2.0	HVAC DISTRIBUTION		SEE MECHANICAL DRAWINGS FOR LOCATIONS AND NOTES. ALSO, SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY. LANDLORD PROVIDING METAL DUCT	f: 847.671.4200 www.rgla.com
		LANDLORD PROVIDED 4" CONCRETE SLAB ON GRADE WITH 6X6-W2.9 (42#) MESH	FURRED GYPSUM BOARD ON MASONRY WALLS / CONCRETE ACOUSTICAL CEILING TILE		AS REQUIRED SEE A3.1 FOR LOCATIONS AND NOTES. PROVIDE (1) CASE OF ACT FOR ATTIC STOCK			DROPS FOR TENANT CONNECTION.	
		OVER COMPACTED GRANULAR FILL. THE SLAB SHALL BE LEVEL TO WITHIN 1/8 INCH TOLERANCE IN 10 FEET, SMOOTH, AND READY TO ACCEPT TENANTS INTERIOR	PORCELAIN TILE		SEE A4.1 FOR LOCATIONS	WASHER DRYER VENTS		L.G.C. ALSO, SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY.	REVISIONS: DATE: LL & ULTA REVIEW 07/01/2020
CONCRETE SLAB		FLOOR FINISHES. SEE ENGINEERING SHEETS AND ADDITIONAL DETAILS FOR UNDER-SLAB DISTRIBUTION PROVIDED BY G.C. UNDER THIS PERMIT.	VINYL STRIP FLOOR TILE VT-3		SEE A4.1 FOR LOCATIONS. PROVIDE REMAINING VT-3 (NO GLUE ON BACK) FOR ATTIC STOCK. G.C. TO PROVIDE 3 YEARS INSTALLATION WARRANTY. SEE SHOP DRAWING	GAS WATER HEATER INTAKE AND EXHAUST, 6" TYPE B VENT AND ROOF PENETRATION		SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY.	PERMIT ISSUE 07/02/2020
		ULTA G.C. PROVIDING NEW SLAB AT TRENCH AREAS. SEE TRENCHING DETAIL 6/A8.3. G.C. TO MAKE SLAB LEVEL, SMOOTH, SEALED AND READY TO ACCEPT	VINYL FLOOR TILE VT-8 AND VT-9		SEE A4.1 FOR LOCATIONS, PROVIDE REMAINING VINYL TILE FOR ATTIC STOCK	ONE 10" ROUND DUCT WITH ROOF CAP MODEL GREENHECK #GRS-10.		SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY.	BID ISSUE 07/13/2020
			WALL BASE (ALL PERIMETER WALL FIXTURES)		SEE A4.1 FOR LOCATIONS, PROVIDE REMAINING WALL BASE FOR ATTIC STOCK	ONE 10" DIAMETER EXHAUST VENT WITH GOOSE-NECK TERMINATION.		SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY.	
CONCRETE RECEIVING PAD/LOADING DOCK		REFERENCE LANDLORD SHELL DRAWINGS.	— WALL BASE (ALL WALLS AND COLUMNS)		SEE A4.1 FOR LOCATIONS, PROVIDE REMAINING WALL BASE (NO GLUE ON BACK) FOR ATTIC STOCK			SEE PLUMBING DRAWINGS FOR LOCATIONS AND NOTES. ALSO, SEE LANDLORD	
			WALL BASE ADHESIVE		SEE A4.1 FOR WALL BASE LOCATIONS	WATER SUPPLY STUB IN TO SPACE		DRAWINGS FOR REFERENCE. LANDLORD TO PROVIDE 2" WATER SERVICE STUBBED AT REAR OF SPACE TIGHT TO STRUCTURE WITH 50 TO 60 GPM (90 GPM MAX) FLOW, BACK	
MASONRY WALL		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY	WALL COVERING VINYL		SEE ELEVATIONS FOR LOCATIONS	WATER SUPPLY DISTRIBUTION		SEE PLUMBING DRAWINGS FOR LOCATIONS AND NOTES	
DIVISION 05: METALS			PAINTING EXTERIOR FACADE		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY			SEE PLUMBING DRAWINGS FOR LOCATIONS AND NOTES. ALSO, SEE LANDLORD SHELL DRAWINGS FOR REFERENCE ONLY LANDLORD TO PROVIDE 4" SANITARY	
STRUCTURAL FRAMING SYSTEMS		BUILDING STRUCTURAL SYSTEMS.	PAINTING OF INTERIOR GYPSUM BOARD AT STOREFRONT		SEE ELEVATIONS FOR LOCATION, PROVIDE (1) FULL GALLON OF EACH COLOR FOR ATTIC STOCK.	SANITARY STUB IN TO SPACE		SEWER LINE AT REAR OF SPACE, THE INVERT SHALL BE NO HIGHER THAN 43" BELOW FINISHED FLOOR.	
STEEL LINTELS, H-FRAMES, RTU-CURBS, MISC. FABRICATION.		SEE GENERAL NOTES ON SHEET CS-1. SEE LANDLORD DRAWINGS FOR REFERENCE	PAINTING INTERIOR PARTITIONS		SEE ELEVATIONS FOR LOCATION, PROVIDE (1) FULL GALLON OF EACH COLOR FOR	SANITARY ROOF VENTS		LL TO PROVIDE TWO SANITARY ROOF VENTS IN WHICH G.C. IS TO CONNECT TO.	1125 1176 200
REINFORCEMENT FOR HVAC EQUIPMENT		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY						SEE LANDLORD DRAWINGS FOR REFERENCE ONLY SEE PLUMBING DRAWINGS FOR LOCATIONS & NOTES. G.C. TO PROVIDE UI TA PROJECT	5 c t u 3 c t u 1L 60 671 7. 671 4: rgla c
DIVISION 06: WOOD AND PLASTICS			PAINTING INTERIOR DOORS AND FRAMES/WINDOW FRAMES		ATTIC STOCK.	SANITARY SEWER ROUGH-INS FOR PLUMBING FIXTURES		MANAGER WITH ROD AND SCOPE VIDEO SCOPE OF SEWER LINES TO LANDLORD'S MAIN PRIOR TO CONSTRUCTION START AND TURNING SPACE OVER TO ULTA, COPY OF	Bark, 847.: www
ROUGH CARPENTRY FINISH CARPENTRY		AS APPLICABLE TO EACH CONTRACTORS SCOPE OF WORK AS APPLICABLE TO EACH CONTRACTORS SCOPE OF WORK	PERIMETER WALL FIXTURES FRP PANELS		SEE ELEVATIONS FOR LOCATIONS MOP BASIN - SEE ELEVATIONS FOR LOCATIONS	TOILET, URINAL, ELECTRIC WATER COOLERS		VIDEO TO BE PROVIDED TO PROJECT MANAGER AT TIME OF PUNCHLIST. SEE PLUMBING DRAWINGS FOR LOCATIONS & NOTES PLUMBING FIXTURE SCHEDULE	ar c River f
MILL WORK			WINDOW SHADES			RESTROOM SINKS		SEE PLUMBING DRAWINGS FOR LOCATIONS & NOTES, PLUMBING FIXTURE SCHEDULE	5100 SOC
RESTROOM TRIM AND MOLDINGS		SEE NOTES ON SHEETS ET 14 AND ET 18	METAL PANELS AT INTERIOR STOREFRONT			SINKS IN MILLWORK		SEE PLUMBING DRAWINGS FOR LOCATIONS & NOTES, PLUMBING FIXTURE SCHEDULE	L B B
BLOCKING FOR PERIMETER WALL FIXTURES IN SALES AREA		FOR SURFACE MOUNTED CLEATS SEE SHEETS F1.1A AND F1.1B	TOILET ROOM ACCESSORIES		SEE A6.3 DETAILS FOR LOCATION AND SCHEDULE	GAS LINE STUB IN FOR WH		DRAWINGS FOR REFERENCE ONLY. LANDLORD TO PROVIDE APPROPRIATELY SIZED LOW PRESSURE GAS LINE STUB INTO SPACE FOR WATER HEATER. G.C. TO	+
		LANDLORD PROVIDING 5/8" EXTERIOR GRADE PLYWOOD BLOCKING AT FRONT AND SIDE EXTERIOR WALL SIGNS.			SEE A6.3 DETAILS FOR LOCATION AND SCHEDULE			VERIFY LOCATION OF INCOMING STUB IN FIELD.	
WALL BLOCKING FOR EXTERIOR WALL SIGNS		ULTA G.C. TO VERIFY WITH KIEFFER IF LOCATION OF PLYWOOD IS SUFFICIENT, IF NOT, ULTA G.C. TO PROVIDE ADDITIONAL BLOCKING AS REQUIRED.	EXTERIOR SIGNS		FOR FULL SCOPE OF WORK REFER TO A7.1 AND E1.1	-		SEE LANDLORD SHELL DRAWINGS FOR REFERENCE. LANDLORD TO PROVIDE FULLY FUNCTIONING UNITS CONNECTED TO THE GAS AND ELECTRIC SERVICE AND OPERATIONAL AND DOWERED UP AS OF THE REMISES DELIVERY DATE. THE	
DIVISION 07: THERMAL AND MOISTURE CONTROL			LED LETTER SET FOR INTERIOR MALL ENTRY		LED LETTER SET FOR INTERIOR MALL ENTRY FURNISHED BY ULTA VENDOR (KIEFFER SIGNS), INSTALLED BY LANDLORD G.C., FINAL ELECTRICAL WIRING AND	UTILITIES TO ROOF TOP UNITS		LANDLORD SHALL COORDINATE AND SCHEDULE A FACTORY START-UP FOR EACH HVAC UNIT AT THE APPLICABLE TIME, G.C. TO COORDINATE FACTORY START UP	
ROOF INSULATION		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY			CIRCUITING BY ULTA G.C. FABRIC LIGHT BOX FURNISHED BY ULTA MILLWORK VENDOR (SEE CS3.0 FOR			SCHEDULE WITH LANDLORD IF REQUIRED AFTER COMPLETED DUCTWORK INSTALLATION.	
ROOF ACCESS AND LADDER		LOCATION WITH ONSITE MALL MANAGEMENT.	CLINIQUE LIGHT BOX AND FABRIC GRAPHIC PANEL		CONTACT). INSTALLED BY G.C. FINAL ELECTRICAL WIRING AND CIRCUITING BY ULTA G.C. FABRIC GRAPHIC PANEL FURNISHED BY ULTA AND INSTALLED BY G.C.	GAS / ELECTRIC WATER HEATER			2
INSULATION IN EXTERIOR PERIMETER WALLS AND DEMISING WALLS INSULATION IN INTERIOR PARTITION WALLS		SEE LANDLORD DRAWINGS FOR REFERENCE ONLY SEE A2.0 FOR LOCATIONS	CASH COUNTER/RECEPTION DESK SALES AREA FIXTURES		SCRIBE TOE KICK BASE TO FLOOR	SHAMPOO SINKS			
ROOF PATCHING		AS REQUIRED, BY LANDLORD APPROVED CONTRACTOR	INTERIOR SIGNAGE AND GRAPHICS (NON-ILLUMINATED)			4		LANDLORD WILL PROVIDE BUILDING WITH A COMPLETE AUTOMATIC FIRE SPRINKLER SYSTEM THROUGHOUT TIGHT TO THE UNDERSIDE OF ROOF STRUCTURE MIN 15' A F E AND TURNED UP HEADS AT THE TIME OF LANDLORD	
DIVISION 08: DOORS, WINDOWS AND GLASS			INTERIOR SIGNAGE (ILLUMINATED) RECEIVING ROOM SHELVING, UPRIGHTS AND BRACKETS			SPRINKLER MAIN AND SPRINKLER SYSTEM		TURNOVER. G.C. TO PREPARE SPRINKLER SYSTEM DRAWINGS AND SUBMIT FOR SEPARATE PERMIT AS REQUIRED FOR MODIFICATION TO SYSTEM TO	
EXTERIOR DOORS, FRAMES AND HARDWARE		SEE DOOR AND HARDWARE SCHEDDEES. SEE LANDLORD DRAWINGS FOR REFERENCE ONLY.	SOUND SYSTEM AND SPEAKERS		REFER TO ELECTRICAL FOR G.C. SCOPE OF WORK	-		ACCOMMODATE INTERIOR TENANT LAYOUT.	
INTERIOR DOORS, FRAMES AND HARDWARE		LANDLORD PROVIDING INTERIOR VESTIBULE DOOR (IF REQUIRED BY CODE). ALL OTHER INTERIOR DOORS BY ULTA G.C. SEE DOOR HARDWARE SCHEDULES AND	SALON FIXTURES/SEATING/WALL/CABINETS OFFICE FIXTURES. SHELVING. UPRIGHTS AND BRACKETS			REWORK OF SPRINKLER SYSTEM INCLUDING DESIGN, HEADS AND		PER LOCAL REQUIREMENTS, G.C. TO PREPARE SPRINKLER DRAWINGS AND SUBMIT FOR SEPARATE PERMIT AS REQUIRED FOR MODIFICATION TO SYSTEM	
EXTERIOR STOREFRONT GLAZING		1" INSULATED CLEAR GLASS IN CLEAR ANODIZED ALUMINUM FRAMES PROVIDED BY	SAFE		SECURELY ADHERE TO FLOOR, COORDINATE W/ INSTALLATION INSTRUCTIONS & ULTA	ACCESSORIES		ATO ACCOMMODATE INTERIOR TENANT LAYOUT. G.C. TO SUBMIT SPRINKLER DRAWINGS TO ULTA FOR REVIEW.	
			COFFEE MAKER REERIGERATORS		C-17 FURNISHED BY G.C. C-10 FURNISHED BY TENANT	DIVISION 16: ELECTRICAL			THE ABOVE DRAWINGS AND SPECIFICATIONS AND IDEAS, DESIGNS AND ARRANGEMENTS REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF THIS OFFICE: AND
INTERIOR STOREFRONT GLAZING		ONLY.			COMPLY WITH LOCAL CODE/FIRE MARSHAL REQUIREMENTS. G.C. MUST PURCHASE	SERVICE/MAIN/SUB-PANELS / TRANSFORMERS		REFERENCE.	NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN THE CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC PROJECT FOR
DOOR VISION PANELS WITH ONE WAY MIRRORS/GLAZING		SEE DOOR AND HARDWARE SCHEDULES			CS3.0.	ADD'L SUB-PANELS DISTRIBUTION, J-BOXES, WIRING AND OUTLETS		SEE ENGINEERING DRAWINGS FOR NOTES	WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE WRITTEN CONSENT OF THIS OFFICE. VISUAL CONTACT WITH THESE DRAWINGS OR SPECIFICATIONS SHALL
STOREFRONT MODIFICATION		SEE PLANS AND ELEVATIONS	LOCKERS		SECURELY ADHERE TO WALL. COORDINATE W/ INSTALLATIONS INSTRUCTIONS & ULTA	UNDERGROUND CONDUIT AND J-BOXES		SEE ENGINEERING DRAWINGS FOR NOTES	CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS. WRITTEN DIMENSIONS ON THESE DRAWINGS
VESTIBULE SYSTEM, SOFFIT ABOVE, DOORS AND HARDWARE		COORDINATE WITH LIGHTING VENDOR. SEE CS3.0 FOR VENDOR CONTACT	- SALON TIP BOX		TO BE LOCATED NEAR THE TOP INSIDE EDGE OF THE CABINET DOOR WITHIN THE CONCIERGE DESK AND CASHWRAP. SEE SHEET F1.1C.	FLOOR BOXES		SEE ENGINEERING DRAWINGS FOR NOTES. SEE SPECIALITY LIGHTING GROUP VENDOR CONTACT INFORMATION ON CS3.0	SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS: CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS
INTERIOR ENTRY ARCH PORTAL		INFORMATION.	DRAWING STORAGE TUBE		4" DIAMETER CAPPED PVC TUBE LOCATED NEAR ELECTRICAL PANELS	UNDERGROUND WIRING AND BOXES		SEE ENGINEERING DRAWINGS FOR NOTES	OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS MUST BE SUBMITTED TO THIS
INTERIOR ENTRY ARCH DOORS AND HARDWARE		SEE DOOR AND HARDWARE SCHEDULES	EXTERIOR AWNINGS		SEE SHEET A7.1	WIRING AND J-BOXES FOR FIXTURES		SEE ENGINEERING DRAWINGS FOR NOTES	OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION.
			WALL STORAGE SYSTEM		SEE INTERIOR ELEVATIONS OF STAGING AREA. STORAGE SYSTEM TO BE ORDERED AT START OF CONSTRUCTION.	STOREFRONT SIGNAGE		SEE ENGINEERING DRAWINGS FOR NOTES	ାକ ଅଧ୍ୟଥା ମୟାନ SOLUTIONS, INC. © 2020 ROBERT G. LYON & ASSOCIATES, INC.
			SKINBAR WALL SET		G.C. TO PROVIDE IN-WALL BLOCKING.			SEE LANDLORD DRAWINGS FOR REFERENCE	
			SKINBAR LIGHT BOX		LIGHT BOX FURNISHED BY ULTA MILLWORK VENDOR (SEE CS3.0 FOR CONTACT), INSTALLED BY G.C., FINAL ELECTRICAL WIRING AND CIRCUITING BY ULTA GC.	WIRING AND J-BOX/HARDWIRE BOX FOR INTERIOR LIGHTING AND TIMERS		SEE ENGINEERING DRAWINGS FOR NOTES	
I F	EGEND		MAC LIGHT BOX & FABRIC GRAPHIC PANEL		FABRIC LIGHT BOX FURNISHED BY ULTA MILWORK VENDOR (SEE CS3.0 FOR CONTACT), INSTALLED BY G.C., FINAL ELECTRICAL WIRING AND CIRCUITING BY			SEE ENGINEERING DRAWINGS FOR NOTES	BEAUTY
					ULTA G.C. FABRIC GRAPHIC PANEL SUPPLIED BY ULTA AND INSTALLED BY G.C. FABRIC LIGHT BOX FURNISHED BY ULTA MILWORK VENDOR (SEE CS3.0 FOR			SEE ENGINEERING DRAWINGS FOR NOTES SEE ENGINEERING DRAWINGS FOR NOTES. ALSO, SEE LANDLORD SHELL	ULTA #790
			LANCOME LIGHT BOX & FABRIC GRAPHIC PANEL		CONTACT), INSTALLED BY G.C., FINAL ELECTRICAL WIRING AND CIRCUITING BY ULTA G.C. FABRIC GRAPHIC PANEL SUPPLIED BY ULTA AND INSTALLED BY G.C.	POWER REQUIREMENTS FOR MECHANICAL EQUIPMENT		DRAWINGS FOR REFERENCE. LANDLORD TO WIRE UNITS TO HIGHER VOLTAGE AND PROVIDE APPROPRIATE BREAKERS.	3031 E. HIGHLAND DRIVE
INCLUDED IN THIS SCOPE OF WORK".	IY SCHEDULE IS UNDER A SEPARATE PERMIT A					WEATHER PROOF RECEPTACLE AT EACH HVAC UNIT		CONDUIT AND WIRE BY G.C.	
						FIRE ALARM SYSTEM		AS REQUIRED BY LANDLORD AND LOCAL CODES. G.C. TO PREPARE FIRE ALARM DRAWINGS AND SUBMIT FOR SEPARATE PERMIT. REFER TO ELECTRICAL DRAWINGS	
WEEKEND OF STOCKING. SEE VENDOR CONTAC	CT INFORMATION ON CS3.0 SHEET.								PROJECT SPECIFICATIONS
2. G.C. TO CONTACT LANDLORD REPRESENTATIVE SHEET FOR LANDLORD CONTACT INFORMATION	E FOR LANDLORD REQUIRED CONTRACTORS. SI N.	=E COVER				CHECKPOINT SECURITY SYSTEM		NOTES FOR MORE INFORMATION	AND DIVISION OF WORK
3. G.C. TO FURNISH AND INSTALL TENANT SPACE A 4. G.C. TO VERIEV SIZE AND SHAPE OF TENANT SE	ADDRESS PER LANDLORDS' REQUIREMENTS. PACE BEFORE LAYING OUT STORE					SECURITY SYSTEM (GENERAL)		CONDUIT BY G.C. IF REQUIRED BY CODE. REFER TO ELECTRICAL DRAWINGS AND NOTES FOR MORE INFORMATION.	
5. G.C. TO PROVIDE 3/4" PLYWOOD PROTECTION L	UNDER ALL DEBRIS BOXES AND STORAGE CON					CONDUIT, J-BOXES, COVERPLATES FOR SOLIND SYSTEM		CONDUIT BY G.C. IF REQUIRED BY CODE. REFER TO ELECTRICAL DRAWINGS AND	
PERFORM PROFESSIONAL CLEANING AND FLOO	CITEST WALK THROUGH, PRIOR TO STORE OPEN OR CLEANING THE WEDNESDAY BEFORE THE FF								
OPENING. 7. G.C. TO TOUCH UP PAINT PRIOR TO STORE OPF	NING.					CONDUIT, J-BOXES, COVERPLATES FOR TELEPHONES		CONDULT BY G.C. IF REQUIRED BY CODE. REFER TO ELECTRICAL DRAWINGS AND NOTES FOR MORE INFORMATION.	DF
8. G.C. TO USE ULTA VENDOR FOR FINAL CONSTRU-	UCTION DUMPSTERS. SEE VENDOR CONTACT I	NFORMATION				CONDUIT, SECURITY SYSTEM, J-BOXES COVERPLATES		CONDUIT BY G.C. IF REQUIRED BY CODE. REFER TO ELECTRICAL DRAWINGS AND NOTES FOR MORE INFORMATION.	
9. G.C. TO PROVIDE PHOTOGRAPHS TO ULTA CON	STRUCTION MANAGER. SEE REQUIRED PHOTO					TELEPHONE SERVICE CONDUIT STUB			
PROVIDED TO CM PRIOR TO WALLS BEING ENCL	AVE A DATE STAMP. ALL PHOTOS SHALL BE TAP LOSED AND MIRRORS BEING INSTALLED TO ENS								
INSTALLATION.									



SHOP DRAWING/PRODUCT SUBMITTAL	AND INSPE	CTION REQL	JIREMENTS		ATE sys
SUBMITTAL ITEM	DESIGNED AND/OR DESIGNATED BY:	SUBMITTAL REVIEWED BY:	INSPECTION REQUIRED/BY:	SUBMITTAL ITEM	PE
ALUM. STOREFRONT / WINDOW MULLION SYSTEM	ARCHITECT	ARCHITECT	NO		<u> </u>
CONDUCT AAMA 501.2 - QUALITY ASSURANCE AND DIAGNOSTIC WATER LEAKAGE FIELD CHECK OF INSTALLED STOREFRONTS, CURTAIN WALLS, AND SLOPED GLAZING SYSTEMS. TEST SHALL BE PERFORMED BY AN INDEPENDENT THIRD PARTY TESTING AGENCY WITH RESULTS SUBMITTED TO ULTA. TESTING PERFORMED BY	ARCHITECT	ULTA	INDEPENDENT TEST AGENCY	FIRE SPRINKLER SHOP DRAWINGS	
A STOREFRONT/GLAZING INSTALLATION CONTRACTOR WILL NOT BE ACCEPTED BY ULTA. AAMA 501.2 TEST BY ULTA G.C. FOR AS-IS STORES (ANY STOREFRONT MODIFICATION, HURRICANE/HIGH WIND AREAS AND WET CLIMATE). AAMA 501.2 TEST BY LANDLORD WHEN: NEW STOREFRONT BY LL HURRICANE/HIGH WIND AND WET CLIMATE				FIRE ALARM DRAWINGS / EQUIP. SPECIFICATIONS	
			NO	- BUILDING SIGNAGE	
SECURITY GRILLES		(LOSS PREVENTION)	NU	STORFFRONT WINDOW	<u> </u>
CANOPIES / AWNINGS	ULTA VENDOR	ULTA	NO	GRAPHICS @ HANGING	
INTERIOR / EXTERIOR PAINT	ARCHITECT	ARCHITECT	NO	FRAMES	
CONTRACTOR SHALL CONDUCT CONCRETE SLAB MOISTURE VAPOR EMISSION, IN-SITU RELATIVE HUMIDITY AND PH (ALKALINITY) TESTING ON ALL CONCRETE SLABS SCHEDULED TO BE COVERED WITH A FLOOR COVERING OR COATING. CONCRETE SLAB MOISTURE AND PH TESTING SHALL BE PERFORMED UTILIZING ASTM F 710 - STANDARD PRACTICE FOR PREPARING CONCRETE FLOORS TO RECEIVE RESILIENT FLOORING, ASTM F1869 - STANDARD TEST	ARCHITECT	ULTA	NATIONAL ACCOUNT VENDOR - INDEPENDENT TESTING AGENCY RECOMMENDED 3RD PARTY CONCRETE SLAB MOISTURE	LOW VOL	ΓAG sys
METHOD FOR MEASURING MOISTURE VAPOR EMISSION RATE OF CONCRETE SUBFLOOR USING ANHYDROUS CALCIUM CHLORIDE AND ASTM F 2170 - STANDARD TEST METHOD FOR DETERMINING RELATIVE HUMIDITY IN CONCRETE FLOOR SLABS USING IN SITU PROBES USING RAPID RH® RELATIVE HUMIDITY AND TEMPERATURE SENSOR KIT AS MANUFACTURED BY WAGNER METERS (800) 634-9961, OR EQUAL. CONCRETE SLAB MOISTURE AND PH TESTING			AND PH TESTING: <u>IFTI - INDEPENDENT FLOOR TESTING & INSPECTION, INC.</u> 2300 CLAYTON ROAD SUITE 1240	SUBMITTAL ITEM	P
SHALL BE PERFORMED BY THE APPROVED NATIONAL ACCOUNT VENDOR, IFTI - INDEPENDENT FLOOR TESTING & INSPECTION, INC.: JENNIFER ARMSTRONG, 800-490-3657 x217, ulta.spec@ifti.com. AT COMPLETION OF TESTING AND REPORTING, THE MOISTURE TEST REPORT SHALL BE FORWARDED TO ULTA'S CONSTRUCTION PROJECT MANAGER AND CONTRACTOR. TESTING PERFORMED BY FLOORING INSTALLATION CONTRACTOR SHALL NOT BE ACCEPTED BY			CONCORD, CA 94520 CONTACT: JENNIFER ARMSTRONG TEL:800.490.3657 X 217. ulta spec@iffi com	MUSIC SYSTEM	
BE REMEDIATED WITH ARDEX MC RAPID. SEE ARDEX CONTACT INFORMATION ON THIS SHEET.				EAS SYSTEM	
STOREFRONT SIGNAGE	ULTA VENDOR	ULTA	NO		
OFFICE STORAGE FRAMING	STRUCT. ENGINEER	ULTA/AHJ	TESTING LAB		
IF REQUIRED BY CODE, G.C. TO HIRE AN INDEPENDENT STRUCTURAL ENGINEER OR TESTING AGENCY TO INSPECT THE OFFICE FRAMING TO MET THE STANDARDS SET FORTH FOR THE CONSTRUCTION OF THE OFFICE WALLS SUPPORTING THE PLATFORM. LETTER OF COMPLIANCE TO BE FORWARDED TO ULTA/AHJ.				TELEPHONE / DATA	
				IF INSPECTIONS ARE REQU	JIRED
POST CONSTRUCTION AS BUILTS	G.C.	ULTA	NO	MUST CALL IN FOR AND BE	E PRE
HVAC EQUIPMENT CUT SHEETS	MECH. ENGINEER	MECH. ENGINEER	NO	SE	ISM
HVAC AIR BALANCE REPORT	MECH. ENGINEER	MECH. ENGINEER	INDEPENDENT TEST AGENCY		
RODDING AND SCOPE OF SANITARY SYSTEM	G.C.	ULTA	INDEPENDENT TEST AGENCY	G.C. TO SEE MECHANICAL	, PLUI
METAL STUD FRAMING	ARCHITECT	ARCHITECT	NO	ADDITIONAL SEISMIC REQ	UIRE
- SUBMITTAL REQUIREMENTS / NOTES					
NOTE: G.C. IS TO COORDINATE THE SHIPMENT, DELIVER	RY. AND INS	TALLATION (OF ALL ITEMS TO BE FURNISH	ED BY OWNER AND	ר וט
ACRYLIC PANEL: COLUMN COVER:	EAS:		FLOOR BOXES:	MILLWORK:	
			<u> </u>		

CREATIVE CONCEPTS CONTACT: BRYAN KOESTNER (P) 630-940-0500

BACKROOM EQUIPMENT:

GRAINGER CONTACT: JEFF GARDNER (P) 312-519-7209 EMAIL: jeff.gardner@grainger.com **LOCKERS, 4-WHEEL CARTS, LADDERS, BABY CHANGING TABLE, AND WET/DRY SHOP VAC

BRACKETS AND GRAPHIC TRACK:

FHC MARKETING CONTACT: KELLY MARTIN (P) 773-724-3004 EMAIL: kmartin@fhcmarketing.com ** METAL BRACKETS FOR GONDOLA SHELVES -RECEIVED BY G.C./INSTALLED BY STORE ** UNIWEB GONDOLA "ALLIED PANELS" BRACKETS **W-8 SHELVING AND LED LIGHTING

CCTV, BURGLAR & FIRE ALARMS: VECTOR SECURITY CONTACT: DUSTIN REAGAN

13555 WELLINGTON CENTER CIRCLE, SUITE 123 GAINSVILLE, VA 20155 (C) 703-848-5342 EMAIL: dcreagan@vectorsecurity.com

CEILING TILE:

ARMSTRONG CONTACT: BETH RINEHART (P) 1-800-442-4212 EMAIL: armstrongcsa@armstrongceilings.com

CLEANER: CLEANWAY (P) 631-288-6300 (P) 800-332-6996

MOONLIGHT MOLDS CONTACT: JAMES SPENCER 13720 S. WESTERN AVE. UNIT A GARDENA, CA 90249 (P) 310-538-9142 (F) 310-538-9717

EMAIL: james@moonlightmolds.com COLUMN COVER (ALTERNATE):

FORMGLAS PRODUCTS LTD. 181 REGENIA ROAD VAUGHAN, ONTARIO L4L 8M3 (P): 416-635-8030 EMAIL: estimating@formglas.com www.formglas.com

CONCRETE LEVELING AGENT: ARDEX CONTACT: LINDA ZIGMAN NATIONAL ACCOUNTS SPECIALISTS (P) 312-218-6893 EMAIL: linda.zigman@ArdexAmericas.com

OR

MAPEI CONTACT: KATHLEEN MCGINLEY (P) 630-808-9944 EMAIL: kmcginley@mapei.com

CONSTRUCTION DUMPSTERS:

WASTE MANAGEMENT C&D TEAM (REQUIRED FOR FINAL DEBRIS BOX) (P) 800-796-9696 ENTER ZIPCODE AND A LIVE REPRESENTATIVE WILL **FIRE EXTINGUISHERS**: BE READY TO TAKE YOUR CALL THIS PHONE LINE IS AVAILABLE 24/7/365 EMAIL: wmsscdteam@wm.com

DOOR HARDWARE:

LOCKNET CONTACT: KORY CHANDLER (P) 800-887-4307 X175 EMAIL: koryc@locknet.com 24 HOUR SERVICE (P) 800-353-2562 EMAIL: service@locknet.com

CHECKPOINT CONTACT: ALLEN BEAM 101 WOLF DRIVE THOROFARE, NJ 08086 (P) 937-522-5118 EMAIL: abeam@checkpt.com

ELECTRICAL EQUIPMENT:

GRAYBAR 1-800-784-6059

ENERGY MANAGEMENT SYSTEM:

NOVAR CONTACT: CODY HATCH (P) 216-682-1482 (C) 216-372-7827 EMAIL: cody.hatch@honeywell.com

EQUIPMENT RENTAL: UNITED RENTALS

CONTACT: TOM PARETI STRATEGIC ACCOUNT MANAGER (C) 630-774-9896 EMAIL: tpareti@ur.com

EXTERIOR SIGNS:

KIEFFER CONTACT: STEVE BORN 585 BOND STREET LINCOLNSHIRE, IL 60069 (P) 847-415-5712 EMAIL: sborn@kieffersigns.com

COMMERCIAL FIRE, INC. CONTACT: ERIC FABERT 2465 ST. JOHNS BLUFF RD. S. JACKSONVILLE, FL 32246 (P) 800-241-1277 x285 EMAIL: eric.fabert@commercialfire.com

SPECIALTY LIGHTING GROUP CONTACT: JESSICA RIVEIRA 74 PICKERING STREET PORTLAND, CT 06480 (P) 860-767-0110 x212 EMAIL: jkr@sslighting.com

GLASS:

DILLMEIR GLASS CONTACT: MALENY ALARCON (P) 800-325-0596 x229 EMAIL: malarcon@dillmeierglass.com **PROVIDES ALL GLASS SHELVES THAT WILL REQUIRE A LIFT TRUCK

GONDOLA "ALLIED PANELS":

UNIWEB, INC. CONTACT: KARINA RAMIREZ 222 S PROMENADE AVE. CORONA, CA 92879 (P) 800-486-4932 x131 EMAIL: karinar@uniwebinc.com

IT INSTALLER:

CPT NETWORKS CONTACT: KEN VANOMERRING 1062 THORNDALE AVE. BENSENVILLE, IL 60106 (P) 630-735-7006 EMAIL: ulta@cptnetworks.com

LIGHTS / LIGHT BULBS:

SPECIALTY LIGHTING GROUP CONTACT: JESSICA RIVEIRA 74 PICKERING STREET PORTLAND, CT 06480 (P) 860-767-0110 x212 EMAIL: jkr@sslighting.com

CAP CONTACT: ROBERT BARCA

455 McCORMICK BLVD. COLUMBUS, OH 43213 (P) 614-863-3363 EMAIL: rbarca@cap-associates.com

RODGERS WADE CONTACT: BARRY SHIVER 1401 3RD S.W. PARIS, TX 75460 (P) 903-783-3655 EMAIL: ultateam@rodgerswade.com

** WALL CLEATS (2 DAYS PRIOR TO FIXTURE DELIVERY)

**PERIMETER WALL FIXTURES AND ARCHES, INCLUDING THE SALON ARCH **CASHWRAP, SALON, CONCIERGE, COLOR LIBRARY, MANAGERS OFFICE, TREATMENT ROOM, BACK ROOM STANDARDS AND SHELVES **GONDOLA (SALES FLOOR FIXTURES) **HAIR DRYER BOX FIXTURES, PCA SHOP, NESTING, PROMO, FRAGRANCE AND CHI TABLES, ID BOUTIQUE, NAIL BAR AND MISCELLANEOUS PRODUCT DISPLAYS GONDOLA "ALLIED PANELS": **BACKROOM SHELVES AND STANDARDS INCLUDING, 12" X 48" METAL, 20" X 48" METAL, 121

HANG ROD, 48". INTERIOR MANUFACTURING GROUP INC. CONTACT: CHRISTA SCHLOSSER 974 LAKESHORE ROAD EAST MISSISSAUGA, ON L5E 1E4 (P) 905-278-9510x240 (C) 647-210-3079

EMAIL: christa.schlosser@imgmfg.com ** MAC, CLINIQUE, LANCOME FIXTURES (IF APPLICABLE)

MUSIC:

PLAYNETWORK CONTACT: KIMBERLEY BOHREN 8727 148TH AVE. NE REDMOND, WA 98052 (P) 425-629-4516 EMAIL: kbohren@playnetwork.com

				REQUIRED CONSTRUCTIO	N PHOTOGRAP	HS		
				PHOTOGRAPHS	DATE SENT TO	O CPM		
				"FOR NEW CONSTRUCTION" SITE WORK, PARKING AREAS IN FRONT OF STORE AND SHOW BOTH SIDE TENANTS			RGL	
				IN-WALL BLOCKING AT MILLWORK FIXTURES				
				IN-WALL BLOCKING - VALANCE BRACKETS				
YSTEM IS F	REQUIRED BY A	HJ)		IN-WALL BLOCKING - MIRRORS, INCLUDING J-CHANNEL INSTALLATION			5100 River Ro	ad, Ste 125
PERMIT A	S REQUIRED	SUBMIT WIT	H ARCH DWG	IN-WALL BLOCKING - TOILET ROOM ACCESSORIES			p: 847.671.74 f: 847.671.420 www.rgla.com	52)0
YES	NO	YES	NO	CONTINUOUS PLYWOOD AT BACKSIDE OF VALANCE				DATE
•			•	CEMENT BOARD IN TOILET ROOM AND MOP BASIN			LL & ULTA REVIEW	07/01/2020
•			•	IN-CEILING CONTINUOUS BLOCKING AT ALU TRACK			BID ISSUE	07/02/2020
•			•	TOILET ROOMS THE SATURDAY PRIOR TO OPENING				
•			•	EXTERIOR SIGNS, INCLUDING PYLON - DAY AND NIGHT				
	RMITS / SU	JBMITTAL	S	WIRING AT EAS - STORE ENTRANCE AND TOILET ROOM CORRIDOR				
				ROOFTOP EQUIPMENT - IF FURNISHED AND INSTALLED BY G.C.				
PERMIT A	S REQUIRED	INSPECTION	IS REQUIRED	WALL BASE AT COLUMNS AND CORNERS				
YES	NO	YES	NO	WALL COVERING WHERE VALANCE MEETS ADJACENT WALL			DC. t u r e te 125 60176 7452	a com
•		•		HANGING ALU FRAMES ALONG STOREFRONT TO VIEW ALIGNMENT			BS, 1 11 t e c 20ad, St 20ad, St 20ad, St 20ad, St 20ad, St	847.071 www.rgl
•				ALL FLOOR TRANSITIONS AS INDICATED ON A4.1			Ciat a r c h River l chiller F	
				ARDEX MATERIAL BEING USED			S ⁵¹⁰⁽	
•		•		VAPOR BARRIERS AND DOWELS AT TRENCHE - MINIMUM OF 3 LOCATIONS, NOT ADJACENT.	S			
RED, THE V	ENDOR WHO P	ULLED THE PE	Ermit	COMPLETED EXHAUST FAN DUCT WORK			+	
RESENT F	OR EACH INSPE	ECTION.		COVE LIGHTS INSTALLED ON UNISTRUT				
MIC RE	QUIREME	NTS		STRUCTURAL STUDS FOR OFFICE FRAMING SHOWING STUD GAUGE, STAMP AND			g. ly	
LUMBING A REMENTS.	AND ELECTRIC	AL DRAWINGS	FOR	CONNECTIONS.			ert	
						SCALE	qo	
						N.T.S.		
LTA'S \	ENDORS.	VENDOF	R CONTAC	TS ARE AS FOLLOWS:				
	NEW STORE INS	STALLATION / BRE	AK FIX SUPPORT:	PORCELAIN TILE CLEANER: TILE	GROUT:			
	CPT NETWORKS CONTACT: KEN	S VAN OMMERING		(TEXSPAR PLUS) MAP WATER LEGGE COMPANY CON	EI TACT: KATHLEEN MCGINLEY			

1062 W. SOUTH THORNDALE AVE. BENSENVILLE, IL 60106 (P) 630-735-7000 (C) 630-735-7006 EMAIL: ulta@cptnetworks.com

PAINT:

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-10 REFRIGERATOR IN STAGING UTA G.C. X-306 BENEFIT LINEAR BOUTIQUE -13 SHELVING NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-300 BENEFIT LINEAR BOUTIQUE -14 SHELVING NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-304 TESTER TABLE -15 SHELVING NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-304 INPULSE TOWER -16 SHELVING NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-304 INPULSE TOWER -17 NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-346 INPULSE TOWER -17 NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-346 INPULSE TOWER -17 NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-346 INPULSE TOWER -17 NISTAL 12*TREATER HEAVY WEIGHT DOUBLE SLOT UPRIGHTS UTA G.C. X-340 INPULSE TOWER -11 UDRO KOUNTER REFRIGERATOR INTENT ADT REFRIGERATOR G.C. X-340 INTENT ADT REFRIGERATOR INT	ULTA	A	G.C.		a,	
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C-35ROLLING HAIR DRYER AND CHAIRINTAG.C.X.46FRAGRANCE FEATUREC-39ROLLING CLIMAZON AND CHAIRULTAG.C.X.49FRAGRANCE ETAGEREC-42AESTHETICIAN CHAIRULTAG.C.X.52CLARINS WALL BOUTIQUEC-43SHAMPOO BOWL WITH 48° WIDE CABINETSULTAG.C.X.53BARE WALL BOUTIQUEC-45SKIN SINKInternational Control Contr	ULTA	A	G.C.			TOE KICK BASE
C-39ROLLING CLIMAZON AND CHAIRULTAG.C.X49FRAGRANCE ETAGEREC-42AESTHETICIAN CHAIRULTAG.C.X-52CLARINS WALL BOUTIQUEC-43SHAMPOO BOWL WITH 48" WIDE CABINETSULTAG.C.X-53BARE WALL BOUTIQUEC-44SKIN SINKImage: Strate of the strate	ULTA	A	G.C.			
C-42 AESTHETICIAN CHAIR ULTA G.C. X-52 CLARINS WALL BOUTIQUE C-43 SHAMPOO BOWL WITH 48" WIDE ULTA G.C. X-53 BARE WALL BOUTIQUE C-45 SKIN SINK ULTA G.C. X-54 GONDOLA BOUTIQUE C-46 SERVER CUBE ILTA SYSTEMS X-54-LH LEFT HAND GONDOLA BOUTIQUE C-48 DEMO STATION ILTA G.C. X-54-RH RIGHT HAND GONDOLA BOUTIQUE	ULTA	A	G.C.	<u>م</u> [ត ខ	33" HIGH ADA COUNTEF
C-43 SHAMPOO BOWL WITH 48" WIDE ULTA G.C. X-53 BARE WALL BOUTIQUE C-45 SKIN SINK ULTA G.C. X-54 GONDOLA BOUTIQUE C-46 SERVER CUBE ULTA SYSTEMS X-54-H LEFT HAND GONDOLA BOUTIQUE C-48 DEMO STATION ULTA G.C. X-54-RH RIGHT HAND GONDOLA BOUTIQUE	ULTA	A	G.C.	⅃৺	Y	1/A6.1. FOR POWER RO
C-45 SKIN SINK ULTA G.C. X-54 GONDOLA BOUTIQUE C-46 SERVER CUBE ULTA SYSTEMS X-54-LH LEFT HAND GONDOLA BOUTIQUE C-48 DEMO STATION ULTA G.C. X-54-RH RIGHT HAND GONDOLA BOUTIQUE	ULTA	Α	G.C.	1	י ז	DRAWINGS
C-46 SERVER CUBE ULTA SYSTEMS X-54-LH LEFT HAND GONDOLA BOUTIQUE C-48 DEMO STATION ULTA G.C. X-54-RH RIGHT HAND GONDOLA BOUTIQUE	ULTA	A	G.C.	1	L	
C-48 DEMO STATION ULTA G.C. X-54-RH RIGHT HAND GONDOLA BOUTIQUE	ULTA	A	G.C.	┨┌긃	، ה	
	ULTA	A	G.C.	┨└╯	_ 、	
C-49 CHARGING STATION ULTA G.C. X-55 BARE MINERALS GLORIFIER	ULTA	A	G.C.	-	ŀ	
C-50 SKINCARE CHAIR UTLA G.C. X-55-MG BARE MINERALS GLORIFIER	ULTA	A	G.C.	┨┍╤	л ·	
C-51 DERMALOGICA CAB ULTA G.C. X-54-38 BENEFIT LINEAR BOUTIQUE	ULTA	Δ	<u></u>	<u> </u> 8	<u>ין</u> (
CH-1 30" HIGH ALUMINUM BAR STOOL ULTA G.C. A-30"L DENERTI BEAUT BAR GUNUULA LEFT		 А		1	t	
CUAI-3 CUAI-4 Cline and the sector and		А	G.C.	1	(JASHWKAP, SEE ELECT
OTHER ULIA G.C. X.58 BARE MINERALS LINEAR CLIM-RA CHANEL MAKELIP TABLE III TA C.O. X.58 BARE MINERALS LINEAR		A	G.C.	1,		
DT DRYER RESUMED ULTA 0.0. X-59 BARE MINERALS LINEAR HYGIENE STAND	ULTA	A	G.C.	19	<u>п</u> (STORAGE ABOVE OFFIC
FR-12 OFFICE CHAIR III TA G.C. X-60-W BATH AND BODY TABLE		A	G.C.	1_	_	
FR-14 LOUNGE CHAIR III TA ICC X-61 BENEFIT 2-BAY GONDOLA	ULTA	A	G.C.	10	<u>)</u> /	ALIGN
FR-15 BREAK TABLE ULTA G.C. X-62 BENEFIT WAX STATION	ULTA	A	G.C.	1		
FR-16 BREAK TABLE ULTA G.C. X-63 SKINBAR GONDOLA	ULTA	A	G.C.] [11	<u>1</u> F	RESTROOM EAS WALL
FR-17 MOBILE STATION ULTA G.C. X-65-W BENEFIT BACKWALL	ULTA	A	G.C.	1^{-1}		
LWF-1 SALON LICENSE FRAME (18x22) ULTA G.C. X-66 BENEFIT DOUBLE WAX STATION	ULTA	A	G.C.	1 [12	2] {	SECURITY BOLLARDS
LWF-2 SALON LICENSE FRAME (18X22) ULTA G.C. X-67 BENEFIT GONDOLA	ULTA	A	G.C.	┛╩	_ `	······································
M1 PRESTIGE MIRROR ULTA G.C. X-68-PL BENEFIT PAD LINER	ULTA	A	G.C.	112	য় (
M2 WALL DISPLAY HYGIENE UNITS ULTA G.C. X-69 BENEFIT WAX STATION	ULTA	A	G.C.	_ <u>⊔</u> 3	기 (
M4 ULTA BEAUTY COLLECTION MIRROR ULTA G.C. X-70 BENEFIT GONDOLA	ULTA	A	G.C.	1	ŀ	
M-205 COFFEE BAR SINK AND FAUCET PROVIDED BY G.C. ULTA G.C. X-F1 FRAGRANCE GONDOLA 1 BAY	ULTA	A	G.C.	4		
M-206 DOUBLE RESTROOM VANITY SINK AND FAUCET PROVIDED BY G.C. ULTA G.C. X-F2A FRAGRANCE GONDOLA 2 BAY A	ULTA	A	G.C.	4		
M-207 SINGLE RESTROOM VANITY SINK AND FAUCET PROVIDED BY G.C. ULTA G.C. X-F2B FRAGRANCE GONDOLA 2 BAY B	ULTA	A	G.C.	4		
M-213 MANGERS OFFICE COUNTER TOP AND VERIFY SIZES WITH MILLWORKER ULTA G.C. X-F3 FRAGRANCE GONDOLA 3 BAY	ULTA	A	G.C.	1		
M-229 GLASS STORAGE CABINET ULTA G.C. Y-1-L-W MASS GENERAL, PCA AND PRO ENDCAP	ULTA	A	G.C.	┨Г		
M-513 MILLWORK CORNER FILLER TO BE ASSEMBLED IN FIELD. ULTA G.C. Y-3-W PRESTIGE ENDCAP	ULTA	A	G.C.	4	Αl	LOWABLF
M-524-W NESTED TABLE ULTA G.C. Y4-L-W CW MASS COSMETICS ENDCAP LOW	ULTA	A	G.C.	┨┝		
M-525-W TIERED PROMO ULTA G.C. Y-6 PRO NAIL ENDCAP	ULTA	A	G.C.	┨└	SAL	.ES/RETAIL AREA
M-530 ETAGERE ULTA G.C. Y-7-W GONDOLA ENDCAP WITH SHELVES		A	G.C.	\mathbf{H}^{\dagger}	SAL	-ON AREA
PK-1 KIEHLS SKIN WALL ULTA G.C. Z-1A SERVICE COUNTER GATE	ULTA	A	G.C.	┨╞	SLIF	PORT AREA STAGING, OFFI
PK-2 KIEHLS SKIN CARE GONDOLA ULTA G.C. 2-28 ISTYLING, CUTTING, COLOR AND Z-20 WASHING STATIONS WITH ARCH SINK AND FAUCET PROVED BY G.C.	ULTA	A	G.C.	」⊢	י∩ד	
PY-1A LANCOME WALL FIXTURE ULTA G.C. Z-3E CONCIERGE DESK		A	G.C.	1⊦	101	
PY-2A LANCOME PAD FIXTURE ULTA G.C. Z-4 SIDEWRAP	ULTA	A	G.C.]	ARE	EAS ARE NOT TO BE US
PY-28 LANCOME PAD FIXTURE ULTA G.C. Z-7-L-5B-UW CASHWRAP 5 BAY LEFT	ULTA	A	G.C.]	PLU	IMBING FIXTURES. ETC
PY-3A LANCOME SKINCARE ISLAND ULTA G.C. Z-7-R-5B-UW CASHWRAP 5 BAY RIGHT	ULTA ULTA ULTA	A	G.C.]	000	CUPANCY CALCULATIO
Z-ESS-WALL SKIN BAR WALL UNIT	ULTA ULTA ULTA ULTA	A	G.C.	┨└		
Z-SLW-9 MILLWORK - PARTIAL HEIGHT SALON LOW MILLWORK FIXTURE FURNISHED BY MILLWORK VER IMALI	ULTA ULTA ULTA ULTA ULTA		G.C.	1		
TTALL A4.1 FOR SPECIFICATIONS	ULTA ULTA ULTA ULTA ULTA ULTA JDOR AND JASE, SEE ULTA	A		-		
	ULTA ULTA ULTA ULTA ULTA IDOR AND JASE, SEE ULTA	A		┢		

ED / ADJUSTED FIXTURE PLANS RECEIVED FROM ULTA, WILL E THE FIXTURE LAYOUT INDICATED ON THIS SHEET. PLEASE CHITECT IF ANY CONFLICTS OCCUR.

FIXTURE MANUAL FOR INFORMATION ON ALL FIXTURES. ONTRACTOR TO RECEIVE, UNLOAD AND INSTALL THE ARRAY ORDER VSISTS OF 25 PALLETS OF STORE EQUIPMENT. **OWNER SUPPLIED FIXTURES..**

DWING FIXTURES WILL RECEIVE GLASS SHELVES: W-4B, W-4B-S, -S, X-1A-L-W, X-1B-L-W, X-2A-L-W, X-2B-L-W, X-10L-W, AND X-10H.

513 PANELS TO ADJACENT WALLS AS REQUIRED. L OWNER FIXTURES THAT NEED TO BE PLUGGED INTO OUTLETS, HE HEIGHTS OF THE ILLUMINATED ARCH FIXTURES AS REQUIRED IN THE CEILING ELEVATION BY CUTTING DOWN THE BASE TO DATE THE UNEVEN FLOOR SLAB. VERIFY WITH MILLWORK

URER. THE ROLL-AROUND CARTS (6 ROLL-AROUND CARTS TYP. PER HELVES ARE TO BE 12" O.C.

TAGERE UNITS AND STORE THEM IN THEIR ASSIGNED STORAGE

S/SEAMS TO BE CAULKED WHERE MILLWORK MEETS WALL U.N.O., LOR: WHITE

). BOUTIQUE END CAP SHELVES TO BRACKETS.

RNISH AND INSTALL STANDARDS, BRACKETS, AND J-HOOKS FOR JRE STORAGE IN STAGING. SEE INTERIOR STAGING ELEVATIONS. UN DIMENSIONS ARE SHOWN FOR REFERENCE ONLY. CONFIRM LLWORK DIMENSIONS WITH FIXTURE MANUFACTURER. STALL OWNER FURNISHED FIRST AID KITS IN SALON AND STAGING.

TE WITH ULTA CONSTRUCTION MANAGER FOR EXACT LOCATION. MS AND JOINTS IN FIXTURES USING WHITE CAULK. CAULK FOPS TO CABINETS. ORDINATE FINAL SHELF LOCATION WITH STORE SET TEAM AND

VAGER. AND F1.1B SHEET FOR PERIMETER FIXTURE DETAILS.

8 & AP54) PLACEMENT NOTES

LL ALLIED PANELS S - ALL ALLIED PANELS

ATORS - ALL ALLIED PANELS PANELS

IED PANEL AT OUTSIDE END

S - ALL ALLIED PANELS

- ALL ALLIED PANELS - NO DIVIDER PANELS PANEL

' OF MASS COSMETICS ON THE WALL THE GO IN THAT LINEAR WILL ALWAYS BE ALMAY THOSE BRANDS, THE OUTRIGGERS THAT GO WALL DO NOT GO ON THOSE SECTIONS DUE BEING USED BY THE VENDOR.

EY NOTES:

F M-513 WITH FACE OF VALANCE.

IENTS. SEE SHEET A3.1 FOR DETAILS.

ENTS. SEE SHEET A4.1 FOR DETAILS.

INSTALLING PERIMETER WALL FIXTURES FROM THIS POINT.

OLID SURFACE TOPS TO BE JOINED, FUSED AND FINISHED I EXPERIENCED SOLID SURFACE CONTRACTOR. CASHWRAP AND BACKWRAP INSTALLATION ONLY - SCRIBE (ICK BASE TO FLOOR AND INSTALL SECONDARY BASE AFTER

COUNTER WITH 30" WIDE ACCESSIBLE SIDE APPROACH. SEE WER ROUGH-INS, SEE DETAIL 1/F1.1C AND ELECTRICAL

COUNTER. FOR POWER ROUGH-INS, SEE DETAIL 2/F1.1C CAL DRAWINGS.

RDINATE CASHWRAP LOCATION WITH CONDUIT STUBS AND EQUIREMENTS. LOCATE CONDUIT TIGHT TO SIDE OF SEE ELECTRICAL DRAWINGS FOR ROUGH-IN PLAN.

OVE OFFICE, SEE A8.2.

AS WALL MOUNTED SECURITY DEVICE

LL J-BOX WITH DIMMER SWITCH FOR LIGHTING. SEE 3/F1.1C CAL SHEETS FOR DETAILS.

BLE FINISH AREA

8,131 S.F. 744 S.F. STAGING, OFFICE, RESTROOMS, DISPENSARY, 1,125 S.F. 10,000 S.F.

AREA/S.F.

TO BE USED FOR CALCULATING OCCUPANCY, EXITING, RES, ETC. FOR USE BY ULTA ONLY. SEE CS1.0 FOR CULATIONS



JRE PLAN







5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847.671.4200 www.rgla.com

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1/4"=1'-0"





	100/101-S	TOREFR	ONT E	NTRY		106-COAT	CLOSET	/ 107	-CLOSET	
	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #
	CVR EXIT DEVICE	EXIST.	-	ADAMS RITE	8600-36-US32D-MEC	TRACK	1	-	JOHNSON	100
	ESCUTCHEON	EXIST.	-	ADAMS RITE	8650-US32D	TOP PIVOT SET	1	-	JOHNSON	107
	MORTISE CYLINDER	EXIST.	-	EXIST.	BEST 7 PIN SFIC COMPATIBLE, SEE DOOR SCHEDULE REMARKS	DOOR HANGER	1	-	JOHNSON	1125
	BUTTS	EXIST.	-	EXIST.	4 1/2" X 4 1/2" B.B. W/NON REMOVABLE PINS	TRACK STOP	1	-	JOHNSON	1155
	PULL	EXIST.	-	ROCKWOOD	RM3131	PANEL HINGE	1-1/2 PR.	_	JOHNSON	1703
	CLOSER/	2 EXIST.	-	EXIST.	TOP JAMB MOUNTING	BOTTOM PIVOT	1	_	JOHNSON	1706
		FXIST	<u> </u>	РЕМКО	#255A SET ON MORTAR BED	BOTTOM PIVOT	1	_	JOHNSON	1011
	WEATHER	FXIST	<u> </u>	FXIST			1			1808
	STRIP		<u> </u>							22
	102-WOM	EN'S IOI		103-MEN'S IC	NLE I			-	JOHNZON	
	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL # 1 EA 1502 4 1/2" X 4 1/2" (MIDDLE)	108-OFFIC	Æ			
	BUTTS	1-1/2 PR.	US26-D	MCKINNEY	2 EA MPB79 4 1/2" X 4 1/2" (TOP AND BTM.)	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #
		1	626	YALE	PRIVACY LOCKSET AU5402LN	BUTTS	1-1/2 PR.	US26-D	MCKINNEY	2 EA MPB79 4 1/2" X 4 1/2"
	STOP	1	US26D	ROCKWOOD	440	LOCKSET	1	626	YALE	ENTRANCE LOCKSET B-A
	CLOSER	1	689	DORMA	7414-ARP-SNB	STOP	1	US26D	ROCKWOOD	440
	KICKPLATE	1	US32-D	ROCKWOOD	K1050, 10" HIGH X 34" WIDE - ON PATH OF TRAVEL SIDE	VISION PANEL	1	ONE WAY	-	12" x 28" ONE WAY GLASS TEMPERED GLASS
	104-WASH	HER/DRY	ER			CLOSER	1	689	DORMA	7414-ARP-SNB
	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #	KICKPLATE	2	US32-D	ROCKWOOD	K1050, 10" HIGH X 34" WIE
	TRACK	1	-	JOHNSON	100					
	TOP PIVOT SET	2	-	JOHNSON	107			EINIGH		MODEL #
	DOOR HANGER	2	<u> </u>	JOHNSON	1125	BUTTS	1-1/2 PR.	SS	FXIST	
	TRACK STOP	2	<u> </u>	JOHNSON	1155		EACH	0.0.		HEAVY DUTY SPEC. WITH
		3 PR	<u> </u>		1703			-	-	BOLTS. 1609 STRIKE IN COMPLIANCE WITH AN
					1705		EXIST.	-	-	117.A4.13B
ALE	BOTTOM PIVOT		-	JOHNSON	1706	DOOR SWEEPS	EXIST.	-	-	-
T.S.	BRACKET	2	-	JOHNSON	1011	WEATHERSTRIP	EXIST.	-	-	GASKETING AND SILL SW
	DOOR ALIGNER	2 1	-	JOHNSON	1808	RAINHOOD	EXIST.	-	-	-
O BE	DOOR KNOB	2	-	JOHNSON	33	VIEWER	EXIST.	SILVER	ASD	#DS238 ONE WAY VIEWEI
IONS.	105-EXTE	RIOR EX	IT			KICKPLATE	EACH LEAF-	S.S.	-	K1050, 10" HIGH X 34" WIE
	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #	FLUSH BOLT	1 PR. EXIST.	S.S.	-	MTD. ON INACTIVE LEAF
VOOD	BUTTS	EXIST.	S.S.	-	4 1/2" X 4 1/2" HEAVY DUTY	SILENCERS	AS NEEDED	_	ROCKWOOD	608
92 3. OOD	PANIC DEVICE	1	-	LOCKNET	SECURITECH TRIDENT LOCKNET CONTACT: JEFF CARROLL 800.887.4307 x239	PANIC DEVICE	CONTACT LOCKNET	-	LOCKNET	SECURITECH TRIDENT LOCKNET CONTACT: JEFI 800.887.4307 x239
TYPES	CLOSERS	EXIST.	ALUM.	-	HEAVY DUTY SPEC. WITH THRU BOLT	DOOR HOLDER	2	US26-D	ROCKWOOD	461L KICKDOWN STOP 4-
	WEATHERSTRIF	P EXIST.	-	-	GASKETS AND SILL SWEEPS		1	_	EDWARDS	156G SERIES WITH TRAN
S. SEE	THRESHOLD	EXIST./ 1	_	EXIST.	IN COMPLIANCE WITH ANSI CABO				SIGNALING/ TRINE	TRINE 65P
NS					117.A4.13B	110-STAG	ING			
	KICKPLATE	EXIST.	S.S.S.	-	K1050, 10" HIGH X 34" WIDE - PUSH SIDE	ITEM	QUANTITY	FINISH	MANUFACTURER	MODEL #
AI F	-					BUTTS	1-1/2 PR.	US26-D	MCKINNEY	1 EA 1502 4 1/2" X 4 1/2" (N 2 EA MPB79 4 1/2" X 4 1/2"
T.S.						LOCKSET	1	626	YALE	PASSAGE LOCKSET AU54
ATE						VISION PANEL	1	ONE	-	12" x 28" ONE WAY GLASS
UNTING						STOP	1	US26D	ROCKWOOD	440
ESS						KICKPLATE	2	US32-D	ROCKWOOD	K1050. 10" HIGH X 34" WIE
AI.						CLOSER	1	689	DORMA	7414-ARP-SNB
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	ROOM	FLOO	DR		WAI	LS			CEIL	ING	
MARK	LOCATION	FINISH	BASE	NORTH	EAST	SOUT	гн	WEST	FINISH	HEIGHT	REMARKS
101	SALES	PT-6/VT-3	WB-1	P-1	WC-5/WC-6	WC-5/W	VC-6	WC-5/WC-6	GYP. BD. P-1/	12'-0" / 11'-0"	ALIGN WALL COVERING AT BACKING MATERIAL CHANGES, CORNERS, AND WHERE SOFEIT/VALANCE ABUITS AD IACENT WALLS FILLER PARELS
102	MEN	PT-2	PT-2	WC-5/PT-2, PT-7	WC-5/PT-2, PT-7	WC-5/PT-2	2, PT-7	WC-5/PT-2, PT-7	GYP. BD. P-1	9'-0"	
103	WOMEN	PT-2	PT-2	WC-5/PT-2, PT-7	WC-5/PT-2, PT-7	WC-5/PT-2	2, PT-7	WC-5/PT-2, PT-7	GYP. BD. P-1	9'-0"	
104	WASHER/DRYER	VT-3	WB-2	P-1	P-1	P-1		P-1	ACT-2	11'-0"	
105	SHAMPOO/DRYING	VT-3	WB-1	WC-5	WC-5	WC-	.5	WC-5	ACT-1	10'-0"	ALIGN WALL COVERING AT BACKING MATERIAL CHANGES, CORNERS, AND WHERE SOFEITAVALANCE ABUTS AD IACENT WALLS FILLER DANELS
106	CORRIDOR	VT-3	WB-1	WC-5	WC-5	WC-	5	WC-5	ACT-1	9'-0"	
107	COAT CLOSET	VT-3	WB-2	P-1	P-1	P-1		P-1	ACT-2	9'-0"	
108	CLOSET	VT-3	WB-2	P-1	P-1	P-1		P-1	ACT-2	9'-0"	
109	OFFICE	VT-8	WB-2	P-1	P-1	P-1		P-1	GYP. BD. P-1	8'-0"	
110	SALON	PT-12	WB-1	WC-5	WC-5		.5	WC-5	ACT-1	11'-0"	ALIGN WALL COVERING AT BACKING MATERIAL CHANGES, CORNERS,
111		VT-8/VT-9	WB-2	P-1	P-1	P-1		P-1	ACT-2	13'-0"	AND WHERE SOFFIT/VALANCE ABUTS ADJACENT WALLS/FILLER PANELS
		PECIFICATION. (SEE I	FINISH SPECS. C	N A4.1)	· · · PT -	PORCELA	IN TILE	ACT - ACOUS	TICAL CLG. TILE	PL - PLASTIC LA	I AMINATE P - PAINT
	FI				WD	- WOOD		WB - WALL B	ASE	WC - WALL CO	/ERING VT - VINYL TILE
2		NISH SCHE	DULE								NONE
KE,	MATERIAL DESCRIPTION	MFG.		SPECIFICATIO	DNS	FLAN ANI DEVE	ie Sprea D Smoke Elopmen	D T	NOTES		REMARKS
ACT	-1) ACOUSTIC TILE	ARMSTRONG	DUNE - SECON 15/16" ANGLEE	ND LOOK - #2712 - 2) TEGULAR WITH PI	4" X 48" X 3/4" RELUDE 15/16"	CL/	ASS A 25 AND 50	SEE VENDO ACCOUNT	R INFO ON CS3.0 FC	OR ULTA NATIONAL	
ACT	-2) ACOUSTIC TILE	ARMSTRONG	CORTEGA-#76 PRELUDE XL 1	9-24" X 48" X 5/8" W 5/16" EXPOSED TE	ITH E SYSTEM (WHITE)	CL/	ASS A 25 AND 50	SEE VENDO ACCOUNT	R INFO ON CS3.0 FC	DR ULTA NATIONAL	
(P-	PAINT	BENJAMIN MOORE	REGAL SELEC READY MIX: C TEL: 773-597-8	T - PEARL 550 FINIS OLOR: WHITE 1698, CONTACT: JAS	SH SON WALKER		N/A	FINISH GYPSUM (550) FINISH ON SEMI GLOSS (55	BOARD WITH PRIMER AN WALLS & FLAT (547) FINIS 1) ON DOOR FRAMES & TF	D PAINT TO FLOOR PEARL H ON SOFFITS & CEILINGS RIM. SEE DOOR SCHEDULI	ALTERNATE PAINT: PPG PAINTS COLOR: PPG1011-1 PACIFIC PEARL, PRIMER (6-4900Xi SPEEDHIDE), WALLS (82-400 MANOR HALL SATIN), SOFFIT/CEILINGS (82-500 MANOR HALL S/G) TEL. (314) 393-7807; CONTACT SHANE GLASCOCK
(P-6	PAINT	BENJAMIN MOORE	ULTRA SPEC S READY MIX: C EGG SHELL FI	SCUFF-X OLOR: WHITE NISH			N/A	APPLY TO COLU APPLY BENJAMI METAL SUBSTR/ DRIED, APPLY (2 SEE VENDOR CO	MN ENCLOSURES, STAGII N MOORE ULTRA SPEC PF NTE, USE DTM PRIMER). A OCATS OF P-6 PRIOR TC NTACT INFO ON SHEET C	NG DOOR AND FRAME. RIMER N534 (FOR ANY FTER PRIMER HAS DINSTALLATION OF WB-1. SS3.0.	ALTERNATE PAINT: PPG PAINTS COLOR: PPG1011-1 PACIFIC PEARL, PRIMER (17-921 SEAL GRIP), METAL PRIMER (90-712 DTM PRIMER),FINISH (16-310 WB1 PRE-CAT EPOXY EGGSHELL) TEL. (314) 393-7807; CONTACT SHANE GLASCOCK
(P-7	PAINT	SHERWIN WILLIAMS	SW 7071 GRA	Y SCREEN, SEMI-GL	OSS FINISH		N/A	SEE DOOR T LOCATIONS.	YPES ON DETAIL 2	'A2.4 FOR	ALTERNATE PAINT: PPG PAINTS COLOR: PPG1012-4 GRAY FROST, DOORS (82-500 MANOR HALL SEMI-GLASS) TEL. (314) 393-7807; CONTACT SHANE GLASCOCK
(PT-	2 PORCELAIN TILI	GRANITI FIANDRE	860539 PEZZA SETTING MAT GROUT COLO 12" X 12" X 3/8 TEL. 312-342-4	TO BIANCO (MATTE ERIAL: ARDEX X5, R: MAPEI 27 SILVER " NOMINAL, 30 CM X 1689 CONTACT: NOP	E) R K 30 CM REEN SCHERTLER		N/A	1/8" GROUT (TILE CLEANE TILE. SEE VE SHEET CS3.0	JOINT G.C. TO USE ER IN THEIR FINAL (ENDOR CONTACT IN).	TEXSPAR PLUS CLEANING OF THE IFORMATION ON	TILE FURNISHED BY ULTA, INSTALLED BY G.C., SETTING MATERIALS AND GROUT PROVIDED BY G.C., ALSO SEE SPECIFICATION SHEETS.
(PT-	6 PORCELAIN TILI	E GRANITI FIANDRE	866539 PEZZA SETTING MAT GROUT COLO 24" X 24" X 3/8 TEL. 312-342-4	TO BIANCO (MATTE ERIAL: ARDEX X5, R: MAPEI 27 SILVER " NOMINAL, 60 CM > 1689 CONTACT: NOF	O BIANCO (MATTE) RIAL: ARDEX X5, : MAPEI 27 SILVER NOMINAL, 60 CM X 60 CM 389 CONTACT: NOREEN SCHERTLER			1/8" GROUT TILE CLEANE TILE. SEE VE SHEET CS3.0	JOINT G.C. TO USE ER IN THEIR FINAL (ENDOR CONTACT IN).	TEXSPAR PLUS CLEANING OF THE IFORMATION ON	TILE FURNISHED BY ULTA, INSTALLED BY G.C., SETTING MATERIALS AND GROUT PROVIDED BY G.C., ALSO SEE SPECIFICATION SHEETS.
(PT-	7 PORCELAIN TILI	E GRANITI FIANDRE	861999 PEZZA SETTING MAT GROUT COLO 3" X 12" X 3/8" TEL. 312-342-4	999 PEZZATO BIANCO (MATTE) TING MATERIAL: ARDEX X5, OUT COLOR: MAPEI 27 SILVER 12" X 3/8" . 312-342-4689 CONTACT: NOREEN SCHERTLER			N/A	1/8" GROUT JOIN THEIR FINAL CLE INFORMATION O (COLOR: SILVER WALLPAPER	T G.C. TO USE TEXSPAR ANING OF THE TILE. SEE N SHEET CS3.0. G.C. TO U TO TOP OF BULLNOSE V	PLUS TILE CLEANER IN VENDOR CONTACT ISE MAPEI KERACAULK S IHERE IT MEETS THE	TILE FURNISHED BY ULTA, INSTALLED BY G.C., SETTING MATERIALS AND GROUT PROVIDED BY G.C., ALSO SEE SPECIFICATION SHEETS.
PT-	2 PORCELAIN TILI	E DAL TILE	STYLE #:EX09. SETTING MAT GROUT COLO 24" X 24" X 3/8 TEL. 630-306-1	24241P (EXHIBITION ERIAL: ARDEX X5, R: MAPEI 47 CHARC " NOMINAL, 59.50 C 550 CONTACT: LYN	I 09 TWILL) COAL M X 59.50 CM IN MILLS		N/A	1/8" GROUT JOIN THEIR FINAL CLE INFORMATION O (COLOR: SILVER WALLPAPER	T G.C. TO USE TEXSPAR ANING OF THE TILE. SEE N SHEET CS3.0. G.C. TO L TO TOP OF BULLNOSE V	PLUS TILE CLEANER IN VENDOR CONTACT ISE MAPEI KERACAULK S /HERE IT MEETS THE	TILE FURNISHED BY ULTA, INSTALLED BY G.C., SETTING MATERIALS AND GROUT PROVIDED BY G.C., ALSO SEE SPECIFICATION SHEETS.
(VT-	3 VINYL FLOOR TILE	AMTICO	SPACIA LIMED 4.5" X 36" X 2.5) WOOD NATURAL S 5MM	SS5W2549	CLAS	SS 1 - <45	0			VINYL TILE AND ADHESIVE FURNISHED BY ULTA, INSTALLED BY G.C.
(VT-	8 VINYL FLOOR TILE	MANNINGTON	MANNINGTON C120 STERLIN	GROOVE G GRAY - 12" X 12"	X .08"	CLAS	SS 1 - <45	0			VINYL TILE AND ADHESIVE FURNISHED BY ULTA, INSTALLED BY G.C.
(VT-	9 VINYL FLOOR TILE	MANNINGTON	MANNINGTON C103 POPPY F	GROOVE RED - 12" X 12" X .08	11	CLAS	SS 1 - <45	0			VINYL TILE AND ADHESIVE FURNISHED BY ULTA, INSTALLED BY G.C.
(W-	1 WINDOW SHADI	ROLL-A-SHADE	CHAIN CLUTC STYLE 4400; 3 WHITE MECH/	H ROLLER SHADE; % OPENNESS; COL NICALLY FASTENE	PHIFER SHEERWEA\ OR: CHALK WHITE W D FASCIA.	/E /ITH		SEE VENDO ACCOUNT	R INFO ON CS3.0 FC	DR ULTA NATIONAL	ULTA TO PROVIDE ON ALL STOREFRONT EXCEPT TRANSOM AND VESTIBULE
WB	1) RUBBER BASE	MANNINGTON	PREMIUM EDO NUMBER 8174	GE TYPE TP, 4" WAL GR; COLOR: SILVEF	L COVE MOLDING, R METALLIC	CLAS	SS 1 - <45	G.C. TO SCR PERIMETER CONTINUOU	IBE THE 4" BASE TO SALES AREA FIXTU S ROLLED PRODUC) FIT UNDER THE Res. USE CTS.	WALL BASE FURNISHED BY ULTA, INSTALLED BY G.C. ADHESIVE PROVIDED BY G.C. INSTALLATION TO BE COMPLETED BY PROFESSIONAL RUBBER BASE INSTALLER. SEE PERIMETER FIXTURE BASE DETAIL 8/A8.3.
WB	2 RUBBER BASE	MANNINGTON	PREMIUM EDG NUMBER 9424	GE TYPE TP, 4" WAL GR; COLOR: BEDRO	L COVE MOLDING, DCK	CLAS	SS 1-<45		UOUS ROLLED PRO	DDUCTS.	WALL BASE FURNISHED BY ULTA, INSTALLED BY G.C. ADHESIVE PROVIDED BY G.C. INSTALLATION TO BE COMPLETED BY PROFESSIONAL RUBBER BASE INSTALLER.
WC.	5 COVERING	DESIGN TEX	CUSTOM PRO PRODUCT#439	DUCT 'SILVER VINY 9-20152 PROJECT #	L WALLCOVERING' 439/2001595	CLA A	ASS A - 20 AND 60	SEE VENDO	R INFO ON CS3.0 FC	OR ULTA NATIONAL	FURNISHED BY ULTA. INSTALLED BY G.C.
WC	6 VINYL WALL COVERING	DESIGN TEX	CUSTOM PRO PRODUCT#439	DUCT 'WHITE VINYL 9-20157 PROJECT #	- WALLCOVERING' 439/2001595	CLA A	ASS A - 20 AND 60	SEE VENDO ACCOUNT	R INFO ON CS3.0 FC	OR ULTA NATIONAL	FURNISHED BY ULTA. INSTALLED BY G.C.
WF	2 WINDOW FILM	3M COMMERCIAL GRAPHICS DIVISION	FASARA - OPA	QUE WHITE - SH2N	IAOW						WINDOW FILM TO BE APPLIED TO WINDOWS ON THE INTERIOR SURFACE OF GLASS, PRIOR TO INTERIOR ADJACENT WALL CONSTRUCTION, WHEN APPLICABLE. PROVIDE A SAMPLE OF WINDOW FILM TO LANDLORD REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION. SEE EXTERIOR ELEVATIONS.
(WF-	3 WINDOW FILM	3M COMMERCIAL GRAPHICS DIVISION	CUSTOM - OR	ANGE POP - #VT4-3	630-3317			SEE VENDO ACCOUNT. F	R INFO ON CS3.0 FO URCHASE FROM K	DR ULTA NATIONAL IEFFER SIGNS.	WINDOW FILM TO BE APPLIED TO WINDOWS ON THE INTERIOR SURFACE OF GLASS, PRIOR TO INTERIOR ADJACENT WALL CONSTRUCTION, WHEN APPLICABLE. PROVIDE SAMPLE OF WINDOW FILM TO LANDLORD REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION. SEE EXTERIOR ELEVATIONS.
1	FINISH SF	PECIFICAT	ONS	_		_		_	_	_	SCALE

REMARKS

GENERAL NOTES:

- REFER TO FINISH SCHEDULE FOR FLOOR COVERING [1] START TILE AT CENTER OF CIRCLE. TILE IS SHOWN FOR FIELD RUN AND PATTERN ONLY. REFER TO COLOR AND FINISH SCHEDULE FOR
- MATERIAL SPECIFICATIONS. PROVIDE WB-1 AT WALLS AND COLUMN ENCLOSURES.
- SHEET AND PAINT MANUFACTURER SPECIFICATIONS. PAINT ALL SURFACES FLOOR TO CEILING, INCLUDING
- INSTALLATION. ALL METAL SURFACES TO BE PAINTED WITH LOW GLOSS OIL BASE PRIMER AND OIL BASE FINISH
- COATS IN COLOR INDICATED ON DRAWING. PAINT ON ALL GYPSUM BOARD SURFACES TO BE APPLIED WITH A HEAVY KNAP ROLLER.
- GROUT TO BE SEALED PER MANUFACTURER'S RECOMMENDATIONS. CLEAN SEALER OFF THE ADJACENT FLOOR FINISHES.
- ENSURE PROPER ENVIRONMENTAL CONDITIONS ARE MET FOR THE INSTALLATION OF ALL INTERIOR FINISHES.
- SEE DETAIL 9/A-8.2 FOR INSTALLATION AT CONCRETE CONTROL JOINTS. FOR TILE CONTROL JOINTS, FOLLOW TILE MANUFACTURER'S
- RECOMMENDATIONS. FLOOR FINISHES TO CONTINUE UNDER GYPSUM BOARD. GYPSUM BOARD TO BE HELD UP FROM FLOOR SLAB. SEE DETAIL 8/A8.2. IF GYPSUM BOARD DOES NOT ALLOW FINISH UNDERNEATH, HOLD FLOOR FINISH AS TIGHT AS POSSIBLE TO GYPSUM
- BOARD TRANSITION STRIPS TO BE MITERED AT

- INTERSECTIONS CUT PORCELAIN TILE WITH A WATER JET. DO NOT
- CUT PORCELAIN TILE ON SITE. G.C. TO TOUCH UP PAINT PRIOR TO STORE OPENING. . G.C. TO PROVIDE TWO LAYERS OF CRAFT PAPER OVER ALL TILE AND GROUT ON FLOORS. TAPE DOWN AND STAGGER SEAMS BY HALF THE PAPER WIDTH
- ON THE SECOND LAYER. FLOOR COVERINGS ARE TO BE SLIP RESISTANT THROUGHOUT THE MEANS OF EGRESS.
- G.C. TO INSPECT CONDITION OF EXISTING FLOOR SLAB AND PATCH/REPAIR SURFACE IMPERFECTIONS. IF FLOOR LEVELING IS REQUIRED, ARDEX MUST BE USED AND IT MUST BE INSTALLED BY AN ARDEX LEVEL MASTER ELITE OR ARDEX CHOICE CONTRACTOR INSTALLER. SEE VENDOR CONTACT INFORMATION ON SHEET CS3.0. G.C. TO PROVIDE WARRANTY LETTER ON ARDEX CORPORATE LETTERHEAD. A MINIMUM OF A 5 YEAR WARRANTY MUST BE PRESENTED.
- SEE SHEET CS3.0 FOR CONCRETE SLAB MOISTURE TEST REQUIREMENTS. TESTING PERFORMED BY FLOORING INSTALLATION CONTRACTOR WILL NOT BE ACCEPTED.



(2.5)-

NOTE: THESE FIGURES ARE FOR ULTA REFERENCE ONLY AND ARE APPROXIMATES. G.C. TO PERFORM TAKE OFFS AND SUBMIT TO ULTA.

ROOM#	ROOM NAME	floor Finish	AREA
101	SALES	VT-3	7,440 SQ. FT.*
101	SALES	PT-6	485 SQ. FT.* 2
102	MEN (FLOOR & WALLS)	PT-2	186 SQ. FT.*
103	WOMEN (FLOOR & WALLS)	PT-2	186 SQ. FT.*
102 & 103	RESTROOM WALL BORDER TILE	PT - 7	21 SQ. FT.*
104	WASHER/ DRYER	VT-3	16 SQ. FT.*
105	SHAMPOO/ DRYING	VT-3	261 SQ. FT.*
106	CORRIDOR	VT-3	85 SQ. FT.*
107	COAT CLOSET	VT-3	6 SQ. FT.*
108	CLOSET	VT-3	6 SQ. FT.* 1
109	OFFICE	VT-8	52 SQ. FT.*
110	SALON	PT-12	388 SQ. FT.*
111	STAGING	VT-9	63 SQ. FT.*
111	STAGING	VT-8	393 SQ. FT.*

- CUT PORCELAIN TILE WITH A WATERJET. DO NOT CUT PORCELAIN TILE ON SITE.
- ALL PAINTED AND WALL COVERING SURFACES SHALL BE PRIMED. SEE ARCHITECT'S SPECIFICATION SHEET AND PAINT MANUFACTURER SPECIFICATIONS JETAIL 8A/A8.2.

WALL BASE FURNISHED BY ULTA, INSTALLED BY G.C. ADHESIVE PROVIDED BY G.C. INSTALLATION TO BE COMPLETED BY PROFESSIONAL RUBBER BASE INSTALLER. FURNISHED BY ULTA. INSTALLED BY G.C. FURNISHED BY ULTA. INSTALLED BY G.C. WINDOW FILM TO BE APPLIED TO WINDOWS ON THE INTERIOR

NONE

A FINISH PLAN AND ESTIMATED TILE AREAS

1 FRONT EXTERIOR ELEVATION

HATCH ON LOWEST PORTION N STOREFRONT DENOTES WF-2, SEE A4.1 FOR SPECIFICATION 80'-0" EXISTING STOREFRONT	FAC BY U OF AND 2	Store Hours Ce of glass f Lta (signage /inyl to the f " (horizontal	DECAL APPLI URNISHED AN VENDOR). PL IEIGHT OF DO LLY) FROM DO	ED TO INSIDE ID INSTALLED ACE CENTER OR HANDLES OR MULLION				
					NOTE 1. 2. 3. 4. 5. 6.	EXTERIOR ELEN POWER CONNE VENDOR (KIEFF G.C. TO VERIFY MANAGER OF A IN BID. G.C. TO CAULK G.C. TO CAULK G.C. TO PATCH THE OPENING S PROVIDED BY S	/ATION SIGNAGE CTION FOR SIGN ER SIGNS) PRIOF QUALITY OF EXIS NY AREAS REQU AROUND WALL P REPAIR AND PAI SOON AND NOW (SIGN VENDOR.	FOR REFERE NEEDS TO B TO ROUGH STING EXTEF IRING WORK ENETRATION INT EXTERIO DPEN BANNE

	5.	CONSTRUCTION BANNERS ARE TEMPORA
1	4.	RE-ATTACH WITH TAPE TO ALU FRAMES A
	3.	ATTACH THE BANNERS TO THE STORE FF
	2.	SEND DIGITAL PICTURES TO ULTA ONCE
		WINDOW. VERIFY WITH ULTA CONSTRUC
·	1.	WINDOW CONSTRUCTION BANNERS FUR
	NOTE:	

RNISHED BY ULTA, INSTALLED BY G.C. G.C. TO INSTALL WINDOW CONSTRUCTION BANNERS ALTERNATELY ON EVERY STOREFRONT CTION MANAGER PRIOR TO INSTALLATION.

E BANNERS ARE INSTALLED (WEEK 1). FRONT WINDOWS USING THE TAPE ON THE FRONT OF THE BANNERS. REPEAT THE LAYOUT PATTERN UNTIL WINDOWS ARE COVERED. AFTER FINAL CLEANING.

RARY AND ARE REMOVED PRIOR TO STORE OPENING. PLICABLE TO MALL STOREFRONT. COORDINATE BARRICADE GRAPHICS WITH ULTA.

JCTION BANNER NOTES

ILLUMINATED SIGNAGE BY OTHERS UNDER SEPARATE PERMIT. SIZE AND SIGNAGE TYPE PER ULTA SIGN VENDOR, LANDLORD SIGNAGE CRITERIA, AND LOCAL CODE. SIGNAGE AREA SHOWN IS PROTOTYPICAL SIZE AND IS FOR REFERENCE PURPOSES ONLY. ALSO, SEE ELECTRICAL DRAWINGS.

- G.C. SHALL INSTALL 8" HIGH (OR AS REQUIRED BY THE AHJ / LANDLORD) WHITE ADDRESS NUMBERS (FURNISHED BY ULTA) APPLIED TO INSIDE FACE OF GLASS. G.C. SHALL ORDER VINYL NUMBERS FROM GFX. SEE VENDOR CONTACT INFORMATION ON CS3.0.

EXISTING AWNINGS PROVIDED BY LANDLORD UNDER SEPARATE PERMIT, TYPICAL. SHOWN FOR REFERENCE ONLY.

#18 EXTERIOR CAMERA (ENTRY VIEW). G.C. TO FURNISH AND INSTALL EMT CONDUIT WITH PULL STRING AS REQUIRED. COORDINATE CONDUIT REQUIREMENTS AND EXACT LOCATION WITH VENDOR AND LANDLORD. REFER TO ELECTRICAL DRAWINGS FOR POWER REQUIREMENTS.

OR REFERENCE ONLY.

IEEDS TO BE WITHIN 6 FT. FROM SIGN. G.C. TO COORDINATE SIGN AND AWNING INSTALLATION WITH ULTA SIGN TO ROUGH-IN. SEE CS3.0 SHEET FOR SIGN VENDOR CONTACT INFO.

TING EXTERIOR FINISHES, FOR EXAMPLE; PATCH AND REPAIR AREAS OF FINISHES. NOTIFY ULTA CONSTRUCTION RING WORK. IF AREAS OF EXTERIOR FINISH WORK ARE REQUIRED SEPARATE OUT THIS COST WITH EXPLANATION

NETRATIONS CREATED BY SIGN INSTALLATIONS. CAULK COLOR TO MATCH EXTERIOR FINISH.

FEXTERIOR TO MATCH EXISTING. PEN BANNERS WILL BE FURNISHED BY ULTA AND INSTALLED BY G.C. G.C. TO REFER TO INSTALLATION GUIDELINE

5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847.671.4200 www.rgla.com

DATE:

07/01/2020

07/02/2020

REVISIONS:

LL & ULTA REVIEW

PERMIT ISSUE

SCALE

NONE

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THE ABOVE DRAWINGS AND SP AND IDEAS, DESIGNS AND ARR	ECIFICATIONS ANGEMENTS
REMAIN THE PROPERTY OF THI NO PART THEREOF SHALL BE C DISCLOSED TO OTHERS OF USE	S OFFICE: AND OPIED, ED IN THF
CONNECTION WITH ANY WORK OTHER THAN THE SPECIFIC PRI WHICH THEY HAVE BEEN PREP	OR PROJECT OJECT FOR ARED AND
DEVELOPED WITHOUT THE WRI OF THIS OFFICE. VISUAL CONT THESE DRAWINGS OR SPECIFIC	TTEN CONSENT ACT WITH CATIONS SHALL
CONSTITUTE CONCLUSIVE EVIL ACCEPTANCE OF THESE REST	DENCE OF RICTIONS.
WRITTEN DIMENSIONS ON THE SHALL HAVE PRECEDENCE OVE DIMENSIONS: CONTRACTORS S	SE DRAWINGS ER SCALED HALL VERIEY
AND BE RESPONSIBLE FOR ALL AND CONDITIONS ON THE JOB / OFFICE MILST BE NOTIFIED OF	DIMENSIONS AND THIS ANY
VARIATIONS FROM THE DIMEN CONDITIONS SHOWN BY THESE SHOP DETAILS MUST BE SUBSY	SIONS AND DRAWINGS.
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© 2020 RGLA SOLUTIONS, INC.	S INC
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SHEET NAME

A7.1

SCALE

1/4"=1'-0"

1 FRONT EXTERIOR ELEVATION

SCALE NONE

2. POWER CONNECTION FOR SIGN NEEDS TO BE WITHIN 6 FT. FROM SIGN. G.C. TO COORDINATE SIGN AND AWNING INSTALLATION WITH ULTA SIGN

MANAGER OF ANY AREAS REQUIRING WORK. IF AREAS OF EXTERIOR FINISH WORK ARE REQUIRED SEPARATE OUT THIS COST WITH EXPLANATION

THE OPENING SOON AND NOW OPEN BANNERS WILL BE FURNISHED BY ULTA AND INSTALLED BY G.C. G.C. TO REFER TO INSTALLATION GUIDELINE

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REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020
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EXTERIOR ELEVATIONS

DRAWN BY
AM
CHECKED BY
DF
JOB NUMBER
20406
SHEET NAME
A7.2

SCALE

1/4"=1'-0"

SECTION 01010 - SUMMARY OF WORK apply to the methods and devices used in the execution of the work. I GENERAI SECTION 01039 - COORDINATION AND MEETINGS A. The Project consists of Tenant build-out within an existing Landlord owned building. 1. Project Location: As described on Cover Sheet. 1. PART 1 GENERAL 1.1 SECTION INCLUDES 2. Tenant: As described on Cover Sheet 3. Contract documents, dated 07/01/2020, were prepared for this Project by RGLA. A. Coordination. C. The Specifications following are generic, performance requirement type for general extend of work on B. Field engineering. systems performance, and set forth the intent of the Tenant, Ulta Salon, Cosmetics, Fragrance for materials C. Cutting and patching and services to be provided to develop a complete and ready to operate tenant space. 1.2 COORDINATION A. Coordinate scheduling, submittals, and Work of the various Sections of specifications to assure efficient D. Submit the number or samples specified in individual specification Sections; one of which will be retained The Work will be constructed under a single prime contract. All construction procedures used must meet or exceed all national, state, O.S.H.A., and local codes. and orderly sequence of installation of interdependent construction elements, with provisions for Separate Contract: The Tenant, Ulta, Salon, Cosmetics, Fragrance has awarded a separate contracts accommodating items installed later. for construction operations that will be conducted simultaneously with work under this Contract. That B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibility for installing, connecting delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Contract includes the following: 1. Contract: Separate contracts are awarded for signage, display fixtures, security and alarms. Refer to to, and placing in service, such equipment. C. Coordinate space requirements and installation of mechanical and electrical work which are indicated B. Identify conflicts between manufacturers' instructions and Contract Documents. 1.8 section N and O for additional information. diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; MANUFACTURER'S CERTIFICATES G. Cooperate with separate contractors so that work under those contracts may be carried out smoothly, place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other without interfering with or delaying work under this Contract. I. Not Assigned. installations, for maintenance, and for repairs. The Work will be conducted in a single phase. D. In finished areas, conceal pipes, ducts, and wiring within the construction. Coordinate locations of J. Contractor Use of Premises: During construction the Contractor shall have full use of premises, including fixtures and outlets with finish elements. use of the site. The Contractor's use of premises is limited only by the Tenant's right to perform work or E. Coordinate completion and clean up of Work of separate Sections in preparation for Substantial employ other contractors on portions of the Project. Completion I. General Contractor shall contact Landlord to verify the times that he may work, routes of access and F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and areas of use, storage, etc. including deliveries, and secure written approval of same prior to work start. Work not in accordance with Contract Documents, to minimize disruption of Owner's activities. 2. Bidders are to better acquaint themselves with conditions under which they will work at project site and 1.3 FIELD ENGINEERING A. Employ a Land Surveyor registered in the State of the project location and acceptable to the Owner and A. Not used. ocate all utilities before beginning work. K. Use of the Site: Limit use of premises to areas indicated. Do not disturb portions of the site beyond the Architect/Engineer areas indicated. B. Owner will locate and protect survey control and reference points. 1. Allow for Owner/Landlord and adjacent tenant occupancy and use by the public. C. Control datum for survey is that established by Owner provide survey. 2. Keep driveways and entrances clear. Do not use these areas for parking or material storage. Schedule D. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized deliveries to minimize on-site storage of materials and equipment. Delivery schedule shall be approved by engineering survey practices. E. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations B. References. _andlord and locations of the Work are in conformance with the Contract Documents. ... Use of the Existing Building: Maintain building weather tight. Repair damage caused by construction. Protect the building and its occupants during construction. Contractor shall provide barricades as necessary 1.4 CUTTING AND PATCHING so as to prevent public access to unsafe conditions and construction site. Work must be secured each A. Employ skilled and experienced installer to perform Cutting and patching. B. Submit written request in advance of cutting or altering elements which affects: evening, or when construction is not preformed, to ensure that patrons/public do not have access to dangerous conditions. Structural integrity of element M. Partial Tenant Occupancy: The Tenant reserves the right to occupy and to place and install equipment 5. Integrity of weather-exposed or moisture-resistant elements. in completed areas of the tenant lease area prior to Substantial Completion. Placing equipment and partial 6. Efficiency, maintenance, or safety of element. occupancy do not constitute acceptance of the Work. 7. Visual gualities of sight-exposed elements. I. General Contractor is to apply for and obtain a Certificate of Occupancy from building officials prior to 8. Work of Owner or separate contractor. Tenant occupancy C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to: 2. Mechanical and electrical systems shall be operational and required inspections and tests completed prior 1. Fit the several parts together, to integrate with other Work. to partial Tenant occupancy. Upon occupancy, the Tenant will operate and maintain systems serving Uncover Work to install or correct ill-timed Work occupied portions of the lease area. Remove and replace defective and non-conforming Work. 3. The Tenant will be responsible for maintenance and custodial service for occupied portions of the lease 4. Remove samples of installed Work for testing. 5. Provide openings in elements of work for penetrations of mechanical and electrical Work. N. Products Ordered in Advance: The Tenant has negotiated purchase orders with suppliers of material and D. Execute work by methods which will avoid damage to other Work, and provide proper surfaces to equipment to be incorporated into the Work. Purchase orders are assigned to the Contractor. Receiving, receive patching and finishing. handling, storage, and installation costs are included in the Contract Sum. E. Cut rigid materials using masonry saw or core drill. Tenant Supplied Items. The Work includes providing support systems to receive Tenant's equipment, and F. Restore Work with new products in accordance with requirements of Contract Documents. mechanical and electrical connections. G. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces. 1. The Tenant will arrange for and deliver shop drawings, product data, and samples to the Contractor. H. Maintain integrity of wall, ceiling, or floor construction completely seal voids. 2. The Tenant will arrange and pay for delivery according to the Contractor's Construction Schedule. I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; 3. Contractor shall submit a construction schedule to Tenant/Landlord prior to work start. for an assembly, refinish entire unit 4. The Contractor will inspect items delivered for damage. J. Identify any hazardous substance or condition exposed during the Work to the Architect/Engineer for 5. If items are damaged, defective, or missing, the Tenant will arrange for replacement. decision or remedy. Verify and locate all, buried or hidden, utilities prior to any sawcutting or coring. 6. The Tenant will arrange for field services and for the delivery of warranties to the Contractor. 2.1. PART 2 PRODUCTS 7. The Contractor shall designate delivery dates in the Contractor's Construction Schedule. A. Not Used. 3. The Contractor shall review shop drawings, product data, and samples and return them noting 3.1.PART 3 EXECUTION discrepancies or problems anticipated in using the product. A. Not Used. 9. The Contractor is responsible for receiving, unloading, and handling Tenant furnished items at the site. 10. The Contractor is responsible for protecting items from damage, including exposure to the elements. The SECTION 01150 - ENVIRONMENTAL PROCEDURES Contractor shall repair or replace items damaged as a result of his operations. A. General Environmental Concerns: Project requires maximum environmentally conscious work feasible 1.2 PRODUCTS (Not Applicable) within limits specified, available materials, equipment, and products. 1.3 EXECUTION END OF SECTION 01010 B. Special Environmental Definitions 1. Environmental Pollution and Damage: Presence of chemical physical, or biological elements or agents SECTION 01019 - CONTRACT CONSIDERATIONS which could: I.GENERAL a. Adversely affect human health or welfare. 1.1. SECTION INCLUDES b. Unfavorably alter ecological balances important to human life, affect other species of importance to A. Schedule of Values. humanity Application for Payment. c. Degrade the utility of the environment for aesthetic, cultural or historical purposes. . Change procedures. 2. Class III Landfill: Landfill that accepts non-hazardous waste such as household, commercial, and 1.2 RELATED SECTIONS industrial waste, including construction, remodeling, repair, and demolition operations. 3. Construction and Demolition Waste: Solid wastes such as building materials, packaging, rubbish, debris, B. Section 09640 - Wood Flooring Section 01300 - Submittals: Schedule of Values. 8. Section 01600 - Material and Equipment: Product substitutions and alternates. and rubble resulting from construction, remodeling, repair, and demolition operations. 4. Chemical Waste: Petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, 1.3 SCHEDULE OF VALUES A. Submit typed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. organic chemical, and inorganic chemical wastes. Contractor's standard form or electronic media printout will be considered. C. Special Environmental Submittals: Comply with general requirements specified in Section 01300 for B. Submit Schedule of Values in duplicate within 20 days after date of Owner-Contractor Agreement. submittals and with following special requirements. D. Special Recycling Requirements: C. Format: Identify each line item with number and title of the major specification Section. 1. Implement recycling program as required that includes separate collection of waste materials Include in each line item, the amount of Allowances specified in this Section. . Include separately from each line item, a directly proportional amount of Contractor's overhead and E. Environmental Controls: Comply with federal, state, and local regulations pertaining to water, air, solid waste, chemical waste, sanitary waste, sediment and noise pollution. . Revise schedule to list approved Change Orders, with each Application For Payment. F. Protection of Natural Resources: Preserve the natural resources within Project boundaries and outside limits of permanent work performed under Contract in existing condition or restore to an equivalent or 1.4 APPLICATIONS FOR PAYMENT A. Submit three copies of each application on AIA Form G702 - Application and Certificate for Payment. improved condition upon completion of Work. 3. Content and Format: Utilize Schedule of Values for listing items in Application for Payment. G. Hazardous Materials: If hazardous materials are discovered Client Landlord are to immediately notified C. Payment Period: 30 days.: Waiver of Lien to Date. for remediation. **1.5 CHANGE PROCEDURES** A. The Architect/Engineer will advise of minor changes in the Work not involving an adjustment to Contract SECTION 01300 - SUBMITTALS Sum/Price or Contract Time as authorized by AIA A201, 1987 Edition, Paragraph 7.4 by issuing 1 PART 1 GENERAL supplemental instructions on AIA Form G710. **1.1 SECTION INCLUDES** B. The Architect/Engineer may issue a Notice of Change which includes a detailed description of a A. Submittal procedures. proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for B. Construction progress schedules. executing the change with a stipulation of any overtime work required. Contractor will prepare and submit an C. Shop drawings. estimate with seven days. Product data C. The Contractor may propose a change by submitting request for change to the Architect/Engineer, E. Samples. describing the proposed change and its full effect on the Work, including a complete breakdown indicating F. Manufacturers' instructions. labor and materials costs. Include a statement describing the reason for the change, and the effect on the G. Manufacturers' certificates. Contract Sum/Price and Contract Time with full documentation. Document any requested substitutions in **1.2 RELATED SECTIONS** accordance with Section 01600. A. Section 01019 - Contract Considerations: Schedule of Values. D. Stipulated Sum/Price Change Order: Based on Notice of Change and Contractor's fixed price quotation B. Section 01400 - Quality Control: Manufacturers' field services and reports. or Contractor's request for a Change Order as approved by Architect/Engineer. Section 01700 - Contract Closeout: Contract warranty and manufacturer's certificates closeout E. Construction Change Directive: Architect/Engineer may issue a directive, on AIA Form G714 submittal Construction Change Directive signed by the Owner, instructing the Contractor to proceed with a change in 1.3 SUBMITTAL PROCEDURES the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and A. Transmit each submittal with AIA Form G810. designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the B. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic F. Time and Material Change Order: Submit itemized account and supporting data after completion of C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), change, within time limits indicated in the Conditions of the Contract. Architect/Engineer will determine the and specification Section number, as appropriate. change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents. G. Maintain detailed records of work done on Time and Material basis. Provide full information required for dimensions, adjacent construction Work, and coordination of information, is in accordance with the evaluation of proposed changes, and to substantiate costs for changes in the Work. requirements of the Work and Contract Documents. E. Schedule submittals to expedite the Project, and deliver to Architect/Engineer at business H. Change Order Forms: AIA G701 Change Order. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in address. Coordinate submission of related items. the Conditions of the Contract. F. Identify variations from Contract Documents and Product or system limitations which may be 1.6 ALTERNATES detrimental to successful performance of the completed Work. A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. G. Provide space for Contractor and Architect/Engineer review stamps. Architect's review will commence Accepted Alternates will be identified in Owner-Contractor Agreement. upon receipt of contractor reviewed and stamped submittals. Submittals received without such General B. Coordinate related work and modify surrounding work as required. Contractor review will be returned not reviewed. . PART 2 PRODUCTS H. Revise and resubmit submittals as required, identify all changes made since previous submittal. . Not Used. I. Distribute copies of reviewed submittals to concerned parties Instruct parties to promptly report any 3. PART 3 EXECUTION inability to comply with provisions. A. Insurance: Contractor shall, prior to commencement of work, Certificates of Insurance naming Owner, 1.4 CONSTRUCTION PROGRESS SCHEDULES Architect, Construction Manager (if any), Landlord (if any) and their agents as Additional Insured, for the A. Submit initial progress schedule in duplicate within 20 days after date of Owner-Contractor Agreement coverages below: for Architect/Engineer review. 1. Public Liability including Contractor's Protective Liability, covering explosion and collapse, completed B. Revise and resubmit as required operations coverages (covering a period of at least two years after the date acceptance of the work by Owner), and broad form blanket contractual liability coverage, and shall insure against any and all claims for first work day of each week.

bodily injury, including death resulting therefrom and damage to the property of other and arising from its D. Show complete sequence of construction by activity, identifying Work of separate stages and other operations under the Contract, whether such operations are performed by such Contractors, or by anyone directly or indirectly employed by any of them.

2. Workman's Compensation and Employer's Liability Insurance as required by any Employee Benefit Acts A. Submit in electronic format. or other statuses applicable where the work is to be performed as will protect Owner's Contractors from B. After review, reproduce and distribute in accordance with Article on Procedures above and for Record iability under aforementioned.

3. Comprehensive Automobile Liability Insurance, including the ownership, maintenance, and operation of 1.6 PRODUCT DATA

any automotive equipment owned, hired and non-owned. 4. Personal injury and Property Damage.

5. Umbrella Liability Coverage: Contractor agrees to hold aforesaid parties harmless on all O.S.H.A. and Federal and State worker safety requirements, and shall fully comply with all such requirements as they

Documents described in Section 01700 - Contract Closeout.

1.5 SHOP DRAWINGS

logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect/Engineer. Electronic format preferred.

contracto

B. Mark to identify applicable products, models, options, and other data. Supplement manufacturers'

during normal occupancy. These temperature and humidity levels should be maintained for 48 hours prior 4. Change Orders and other Modifications to the Contract. C. After review, distribute in accordance with Article on Procedures above and provide copies for Record and during test period. When a building is not under HVAC control, a recording hygrometer or data logger 5. Reviewed shop drawings, product data, and samples. Documents described in Section 01700 - Contract Closeout. shall be in place recording conditions during the test period. A transcript of this information must be included B. Record information concurrent with construction progress. 1.7 SAMPLES A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts with the test report and attachment devices. Coordinate sample submittals for interfacing work B. The number of in-situ relative humidity test sites is determined by the square footage of the facility. D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction. B. Submit samples of finishes from the full range of colors selected, textures, and patterns for The minimum number of tests to be placed is equal to 3 in the first 1,000 sq.ft. and 1 per each additional E. Delete Architect/Engineer title block and seal from all documents. Architect/Engineer's selection. 1,000 square feet. C. Include identification on each sample, with full project information. F. Submit owner required documents to Owner in format required by owner with claim for final Application C. Determine the thickness of the concrete slab, typically from construction documents. D. Utilizing a roto-hammer, drill test holes to a depth equal to 40% of the concrete thickness*, i.e. 2" deep by Architect/Engineer 1.7 OPERATION AND MAINTENANCE DATA for a 5" thick slab, or 1 1/2" deep for a 4" thick slab. Hole diameter shall not exceed outside diameter of the A. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch text pages to Owner, three ring binders 1.2 SUMMARY **1.8 MANUFACTURER'S INSTRUCTIONS** probe by more than 0.04". Drilling operation must be dry. A. When specified in individual specification sections, submit manufacturers' printed instructions for with durable covers. E. Vacuum and brush all concrete dust from test hole. F. Insert a relative humidity probe (sensor) to the full depth of test hole. Place cap over probe. G. Permit the test site to acclimate, or equilibrate for 1-2 hours prior to taking relative humidity readings. Subdivide the binder contents with page dividers, organized as described below; with tab titling clearly H. Remove the cap, insert the cylindrical reading device, and press button on the device to obtain reading printed under plastic tabs. C. When specified in individual specification sections, submit manufacturers' certificate to from the in-situ probe D. Contents: Prepare a Table of Contents for each volume, with each Product or system description Architect/Engineer for review, in quantities specified for Product Data. I. Read and record temperature and relative humidity at the test site. D. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference * Elevated structural slab (not poured in pans) should be tested at a depth equal to 20% of its thickness. identified, type on white paper. E. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, date, affidavits, and certifications as appropriate. 3.02 Quantifying pH level. E. Certificates may be recent or previous test results on material or Product, but must be acceptable to Subcontractors, and major equipment suppliers. A. At or near the relative humidity test site perform pH test. Architect/Engineer F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification 1. Place several drops of water onto the concrete surface to form a puddle approximately 1" in diameter 2. PART 2 PRODUCTS section. For each category, identify names, addresses, and telephone numbers of Subcontractors and 2. Allow the water to set for approximately 60 seconds A. Not Used. 3. Dip the pH paper into the water and remove immediately, compare color to chart provided by paper 3. PART 3 EXECUTION G. Part 3: Project documents and certificates, including the following: supplier to determine pH reading 1. Shop drawings and product data B. Record and report results. 2. Air and water balance reports. SECTION 01400 - QUALITY CONTROL C. Flatness/Levelness Testing: Comply with ASTM E1155, but provide a minimum of one line of sampling in 3. Certificates. PART 1 GENERAL two perpendicular directions through each structural bay. 4. Photocopies of warranties. 1.1 SECTION INCLUDES 1. Perform testing using a "Dipstick Profiler" within 72 hours of concrete placement. A. Quality assurance and control of installation. 2. Concrete coming from Tenant's Criteria or which fails required Quality Assurance testing, including Flatness/Levelness requirements, shall be removed and replaced at Tenant's discretion. Copy of submittal C. Manufacturers' field services and reports. Flatness/Levelness Test is required to be submitted to Tenant as part of the Project Close Out I. Submit final volumes revised, within 15 days after final inspection to Owner. 1.2 RELATED SECTIONS Requirements. A. Section 01300 - Submittals: Submission of Manufacturers' Instructions and Certificates 1.8. WARRANTIES B. Section 01600 - Material and Equipment: Requirements for material and product quality. A Provide duplicate notarized copies 01500 CONSTRUCTION FACILITIES 1.3 QUALITY ASSURANCE/CONTROL OF INSTALLATION A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and A. Temporary Power: Provide power service and lighting required for operations, with branch wiring and of Contents and assemble in three ring binder with durable cover. workmanship, to produce Work of specified quality. distribution boxes located to allow service and lighting by means of construction-type power cords. C. Submit prior to final Application for Payment. B. Comply fully with manufacturers' instructions, including each step in sequence. B. Noise, Dust and Pollution Control: Provide materials and equipment necessary to comply with C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Landlord and local requirements for noise, dust and pollution control. days after acceptance, listing date of acceptance as start of warranty period. Architect/Engineer before proceeding. C. Barriers and Enclosures: Provide environmentally safe barriers as may be required to protect adjacent 1.9 SPARE PARTS AND MAINTENANCE MATERIALS D. Comply with specified standards as a minimum quality for the Work except when more stringent properties from damage from operations: and as required by governing authorities and/or Landlord. tolerances, codes, or specified requirements indicate higher standards or more precise workmanship. A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual D. Cleaning: Control accumulation of waste materials and rubbish; recycle or dispose of off-site at intervals Perform work by persons qualified to produce workmanship of specified quality. specification Sections. approved by Landlord and complying with special environmental procedures specified in Section 01150. F. Secure Products in place with positive anchorage devices designed and sized to withstand stresses B. Deliver to Project site; obtain receipt prior to final payment. . Signs: No signage shall be allowed. vibration, physical distortion or disfigurement. 2.0 PART 2 PRODUCTS F. Removal and Cleaning: Remove construction facilities, clean and repair damage, in excess of Contract 1.4 REFERENCES A. Not used. requirements, caused by operations or use of temporary facilities. A. Conform to reference standard by date of issue current on date of Contract Documents. 3.0 PART 3 EXECUTION B. Obtain copies of standards when required by Contract Documents. A. Not used. C. Should specified reference standards conflict with Contract Documents, request clarification for SECTION 01650 - STARTING OF SYSTEMS Architect/Engineer before proceeding. 1.PART 1 GENERAL D. The Contractual relationship of the parties to the Contract shall not be altered from the Contract SECTION 02070 - SELECTIVE DEMOLITION 1.1 SECTION INCLUDES Documents by mention or inference otherwise in any reference document. 1.1 GENERAL A. Starting systems. 1.5 MANUFACTURERS' FIELD SERVICES AND REPORTS A. Definitions: As follows: B. Demonstration and instructions. A. When specified in individual specification Sections, require material or Product suppliers or 1. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and C. Testing, adjusting, and balancing. remain the Landlord's property. installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as 1.2 RELATED SECTIONS 2. Remove and Salvage: Items indicated to be removed and salvaged remain the Landlord's property. applicable, and to initiate instructions when necessary. A. Section 01400 - Quality Control: Manufacturers field reports. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and B. Individuals to report observations and sit decisions or instructions given to applicators or installers that B. Section 01700 - Contract Closeout: System operation and maintenance data and extra materials. deliver to Owner's designated storage area. are supplemental or contrary to manufacturers' written instructions 1.3 STARTING SYSTEMS C. Submit report in duplicate within 30 days of observation to Architect/Engineer for review. A. Coordinate schedule for start-up of various equipment and systems. store and protect against damage. Reinstall items in locations indicated. 2. PART 2 PRODUCTS 4. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective A. Vapor Retarder: Polyethylene sheet, ASTM E1745, Class C, 10 mil B. Notify Owner seven days prior to start-up of each. A. Not Used. 3. PART 3 EXECUTION C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, A. Not Used. during selective demolition and then cleaned and reinstalled in their original locations. belt tension, control sequence, or other conditions which may cause damage. D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the B. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to SECTION 01450 - CONCRETE SLAB MOISTURE AND pH TESTING remain the Landlord's property, demolished materials shall become the Contractor's property and shall be equipment or system manufacturer. Part 1 - General removed from the site with further disposition at the Contractor's option. E. Verify wiring and support components for equipment are complete and tested. 1.01 Section Includes F. Execute start-up under supervision of responsible manufacturer's representative in accordance with A. Provide concrete slab moisture vapor emission in-situ relative humidity and surface pH (alkalinity) improvements that might be misconstrued as damage caused by selective demolition operations. manufacturers' instructions. testing on all concrete slabs specified to be covered with floor coverings or resinous coatings. D. Record drawings at Project closeout according to Division 1 Section "Contract Closeout." G. When specified in individual specification Sections, require manufacturer to provide authorized 1.02 Related Sections esentative to be present at site to inspect, check and approve equipment or system installation prior to 1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical A. Section 09620 - Specialty Flooring start-up, and to supervise placing equipment or system in operation. H. Submit a written report in accordance with Section 01400 that equipment or system has been properly E. Regulatory Requirements: Comply with governing EPA notification regulations before starting C. Section 09650 - Resilient Flooring installed and is functioning correctly. selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. D. Section 09660 - Static Control Flooring 1.4 DEMONSTRATION AND INSTRUCTIONS F. Landlord will occupy portions of the building immediately adjacent to selective tenant demolition area. E. Section 09670 - Fluid Applied Flooring Conduct selective demolition so that Landlord's operations will not be disrupted. Provide not less than 72 A. Demonstrate operation and maintenance of Products to Owner's personnel one week prior to date of hours notice to Landlord of activities that will affect Landlord operations. F. Section 09680 - Carpet Substantial Completion. B. For equipment or systems requiring seasonal operation, perform demonstration for other season within G. Landlord assumes no responsibility for actual condition of buildings to be selectively demolished. 1.03 References H. Storage or sale of removed items or materials on-site will not be permitted. • ASTM F-1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete six months 1.2 PRODUCTS (Not Applicable) Subfloor Using Anhydrous Calcium Chloride. C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with ASTM F-2170-11 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Owners' personnel in detail to explain all aspects of operation and maintenance. 1.3 EXECUTION Using In-Situ Probes D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and A. Survey the condition of the building to determine whether removing any element might result in • ASTM F-710-11 - Standard Practice for Preparing Concrete Floor and Other Monolithic Floors to shutdown of each item of equipment at agreed-upon times, at equipment location. structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during Receive Resilient Flooring. E. Prepare and insert additional data in operations and maintenance manuals when need for additional selective demolition • ICRI Guideline 03732 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, data becomes apparent during instruction. B. Perform surveys as the Work progresses to detect hazards resulting from selective demolition 1.5 TESTING, ADJUSTING, AND BALANCING and Polymer Overlays. activities 1.04 Submittals A. Contractor will appoint, employ, and pay for services of an independent firm to perform testing, adjusting C. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations A. At completion of testing, Owner's National Moisture Testing Vendor shall submit a Certified Moisture and balancing. B. The independent firm will perform services specified in Mechanical sections. D. Utility Requirements: Locate, identify, shut off, disconnect, and seal or cap off indicated utility services Test Report to Architect, General Contractor, and Tenant's Construction Project Manager. Report shall include the following: serving building to be selectively demolished. C. Reports will be submitted by the independent firm to the Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the 1. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections A. Executive Summary requirements of the Contract Documents. B. Moisture and pH Test Report 2.PART 2 PRODUCTS E. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, C. Test Site Floor Plan flammables, or other dangerous materials before proceeding with selective demolition operations. A. Not Used. D. Test Site Photographs F. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before 3.PART 3 EXECUTION E. Test Result Mapping Diagram and during selective demolition operations. A. Not Used. F. Risk Assessment and Repair Option Chart G. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, B. Information furnished in Moisture Test Report shall not be used to modify requirements unless walks, and other adjacent occupied and used facilities. SECTION 01700 - CONTRACT CLOSEOUT otherwise specified or directed by Tenant. 1.05 Quality Assurance 1. PART 1 GENERAL and site improvements to remain. Ensure safe passage of persons around are of demolition. Erect A. Digital "Reader" and calibrated relative humidity sensors 1.1 SECTION INCLUDES temporary barricades and/or covered passageways as required to prevent injury to persons. 1. Factory-calibrated "Smart Sensors" using Touch-n-Sense™ technology. A. Closeout procedures. 1. Provide temporary weather protection, during interval between demolition and removal of existing B. Final cleaning. 2. NIST-traceable factory calibration B. Wide range pH paper, and distilled or de-ionized water. C. Adjusting. to structure or interior areas 1.06 Scheduling and Sequencing 2. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during D. Project record documents. A. Provide access for and cooperate with Tenant's National Account Vendor: selective demolition operations E. Operation and maintenance data. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field 1. IFTI - Independent Floor Testing & Inspection, Inc. Contact: Jennifer Armstrong (800) 490-3657 x217. F. Warranties. Cover and protect furniture, furnishings, and equipment that have not been removed. I. Erect and maintain dust proof partitions and temporary enclosures to limit dust and dirt migration and to Email: ulta.spec@ifti.com G. Spare parts and maintenance materials. 2. No substitutions or alternate testing company is permitted. separate areas from fumes and noise. 1.2 RELATED SECTIONS J. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and B. Ensure that the building is enclosed and at service conditions or within ASTM range for at least 48 A. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning. prevent movement, settlement, or collapse of building to be selectively demolished. hours prior to testing. B. Section 01650 - Starting of Systems: System start-up, testing, adjusting, and balancing. 1. Maintain ambient temperatures of not less than 65°f or more than 85°f in spaces to receive testing for 1.3 CLOSEOUT PROCEDURES 48 hours prior to commencement of and during testing. Comply with governing environmental protection regulations. A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and 2. Maintain relative humidity between 40 and 60 percent in spaces to receive testing for 48 hours prior to that Work is complete in accordance with Contract Documents and ready for Owner's inspection. commencement of and during testing. M. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition B. Provide submittals to Owner that are required by governing or other authorities. C. Notify Tenant's National Account Vendor no less than 10 working days prior to commencement of operations. Return adjacent areas to condition existing before start of selective demolition. C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and testing. Tenant's National Account Vendor will require no more than 4 working days for testing on Site and N. Demolish and remove existing construction only to the extent required by new construction and as sum remaining due to Owner. will issue Moisture Testing Report no more than 3 working days after completion of testing. indicated 1.4 FINAL CLEANING D. Notify Tenant's National Account Vendor when the building is enclosed and temperature and relative A. Execute final cleaning prior to final inspection. humidity meet the requirements for testing. demolition operations 1. In the event that a return trip by Tenant's National Account Vendor is required as a result of contractor's B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and P. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials. failure to achieve the specified temperature and humidity criteria, then the contractor shall be responsible for foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces. Submit a horizontal bar chart with separate line for each major section of Work or operation, identifying paying all associated costs which shall be billed accordingly by Tenant's National Account Vendor to the C. Clean equipment and fixtures to a sanitary condition. remain in a manner that eliminates evidence of patching and refinishing. D. Replace filters of operating equipment. E. Testing shall take place after allowing new concrete to dry for minimum of 28 days. Testing is to E. Clean debris from roofs, gutters, downspouts, and drainage systems. one finished area into another. Provide a flush and even surface of uniform color and appearance. commence no less than 3 and no more than 6 weeks prior to the scheduled flooring installation. F. Clean site: sweep paved areas, rake clean landscaped surfaces. Part 2 - Products G. Remove waste and surplus materials, rubbish, and construction facilities from the site. appearance 2.01 - Manufacturers 1.5 ADJUSTING T. Disposal: Promptly dispose of demolished materials. Do not allow demolished materials to A. Rapid RH® relative humidity and temperature sensor kit as manufactured by Wagner Meters (800) A. Adjust operating Products and equipment to ensure smooth and unhindered operation. accumulate on-site 634-9961, or equal. 1.6 PROJECT RECORD DOCUMENTS 1. Do not burn demolished materials. B. pH test paper as manufactured by Micro Essential Laboratory, or equal. 2. Dispose of demolished materials at designated spoil areas on Landlords's property. A. Maintain on site, one set of the following record documents; record actual revisions to the Work: Part 3 - Execution 3. Transport demolished materials off Landlords's property and legally dispose of them. 1. Contract Drawings 3.01 - Quantification of Relative Humidity at 40% of Concrete Thickness 2. Specifications. U. Sweep the building broom clean on completion of selective demolition operation.

A. The test site should be maintained at the same temperature and humidity conditions as those anticipated 3. Addenda.

standard data to provide information unique to this Project.

- C. Specifications: Legibly mark and record at each Product section description of actual Products installed.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of
- H. Submit one copy of completed volumes in final form 7 days prior to final inspection. This copy will be
- B. Execute and assemble documents from Subcontractors, suppliers, and manufacturers. Provide Table
- 3. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse;
- demolition. When permitted by the Owner, items may be removed to a suitable, protected storage location
- C. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site
- to maintain continuity of service to other parts of the building before proceeding with selective demolition.
- H. Conduct demolition operations to prevent injury to people and damage to adjacent buildings, facilities,
- construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs
- K. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt.
- .. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- O. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective
- Q. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to
- R. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend S. Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform

V. It is assumed that all hazardous materials have been removed prior to contractor's work start. If during the course of demolition, any additional hazardous materials are discovered, contractor is not to disturb those materials and notify Owner and Landlord immediately. Owner will retain and pay for hazardous material removal, however it shall be the responsibility of the General Contractor to coordinate this work.

SECTION 03300 - CAST-IN-PLACE CONCRETE 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.
- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
- 1. Slabs-on-grade, infill patching slabs over utility trenches and general floor patching.
- 2. Slab on grade, miscellaneous cast-in-place concrete 1.3 DEFINITIONS
- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash (per ASTM C 618, Class F or C in maximum quantity of 15%) and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.
- 1.4 QUALITY ASSURANCE A. Installer Qualifications: A qualified installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance, qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94/C 94M requirements for production facilities and equipment and ACI 117, "Specifications for Tolerances for Concrete Construction and Materials." 1.5 DELIVERY, STORAGE, AND HANDLING
- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and returned after final inspection, with Owner comments. Revise content of documents as required prior to final damage. Avoid damaging coatings on steel reinforcement.
 - B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants. PART 2 - PRODUCTS
 - 2.1 FORMWORK
 - A. Furnish formwork and form accessories according to ACI 301.
- B. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints. D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 15 1. Exterior grade plywood suitable for concrete forms complying with DOC PS 1, metal, or other approved panel materials.
 - C. Rough-Formed Finished Concrete: Plywood, lumber, metal, least two edges and one side for tight fit. D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
 - E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
 - F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal 2.2 STEEL REINFORCEMENT
 - A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed plain-steel bars, cut bars true to length with ends square and free of burrs.
 - B. Plain-Steel Wire: ASTM A 82, as drawn
 - C. Plain Steel Welded Wire Fabric: ASTM A185, fabricated from as-drawn steel wire into flat sheets. Minimum reinforcement of 6x6-W1.4xW1.4 WWF, ASTM A185-65ksi 2.3 REINFORCEMENT ACCESSORIES
 - A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete
 - 2.4 RELATED MATERIALS

 - B. Flexible Waterstops: Rubber, CE CRD-C 513, or PVC, CE CRD-C 572. C. Self-Expanding Strip Waterstops: Rectangular or trapezoidal strip, butyl rubber with sodium bentonite of
 - other hydrophylic material. D. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or
 - self-expanding cork
 - E. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene. F. Epoxy-Bonding Adhesive: ASTM C 881, two-component epoxy resin, of class and grade to suit requirements.
 - 2.5 CONCRETE MIXTURES, GENERAL
 - A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - B. Portland Cement: ASTM C 150 Types I & II C. Normal Weight Aggregate: ASTM C 33, uniformly graded, not exceeding 1-1/2" (38-MM) nominal size.
 - D. Aggregate: ASTM C 33, uniformly graded, from a single source.
 - E. Water: ASTM C 94 and potable. F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 2.5 to 4.5 percent, ASTM C 260.

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REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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3031 E. HIGHLAND DRIVE JONESBORO, AR 72401

SPECIFICATIONS

DRAWN BY
DV
CHECKED BY
DF
JOB NUMBER
20406
SHEET NAME

2.6 CONCRETE MIXTURES FOR BUILDING ELEMENTS moisture-retaining-cover curing, or curing compound. A. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows: 4. Cure and seal floors and slabs with a curing and sealing compound according to manufacturer's I. Minimum Compressive Strength: minimum 4000 psi (27.6 MPa) at 28 days or match existing (only if written instructions 3.9 FIELD QUALITY CONTROL 2. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent. A. Testing Agency: Engage a qualified independent testing and inspecting agency see CS-3 for additional requirements 3. Slump: 4 inches (100 mm). B. Testing Agency: Tests will be performed according to ACI 301, and additional requirements as 3. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and indicated in these drawings, CS-3, Specifications and manufacturer requirements. General contractor ASTM C 1116, and furnish batch ticket information. shall coordinate and arrange with appropriate parties, Village, etc., and coordinate with the Owner's Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to Construction Manager all such testing. ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer. 3.10 REPAIRS 2.7 ADMIXTURES A. Defective Concrete: Repair and patch defective areas when approved by Architec/Ownert. Remove No calcium chloride or chloride-ion producing admixture shall be used in any concrete. and replace concrete that cannot be repaired and patched to requirements of these drawings. A. Air-Entraining Admixture: ASTM C 260. Water-Reducing Admixture: ASTM C 494, Type A. END OF SECTION 03300 High-Range, Water-Reducing Admixture: ASTM C 494, Type F Water-Reducing and Accelerating Admixture: ASTM C 494, Type E SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT (ARDEX) E. Water-Reducing and Retarding Admixture: ASTM C 494, Type D. PART 1 - GENERAL 2.8 FABRICATING REINFORCEMENT **1.1 RELATED DOCUMENTS** A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice." A. Drawings, general provisions of the Contract, and other related construction documents such as 2.9 CURING MATERIALS Division 01 specifications apply to this Section A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to 1.2 SUMMARY fresh concrete. A. This Section includes a cement-based self-leveling underlayment formulated with a special blend of Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet. polymers used to level and smooth interior concrete, terrazzo, ceramic & quarry tile, metal, wooden C. Clear, Solvent-Borne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B. substrates, and non-soluble adhesive residue on concrete prior to the installation of finished flooring on PART 3 - EXECUTION all grade levels 3.1 FORMWORK 1. ARDEX K-15® Premium Self-Leveling Underlayment A. Design, construct, erect, shore, brace, and maintain formwork according to ACI 301. 2. ARDEX P 51[™] Primer Support vertical, lateral, static, and dynamic loads, and construction loads that might be applied 3. ARDEX P 82[™] Ultra Prime intil structure can support such loads. 4. ARDEX E 25[™] Resilient Emulsion Construct formwork so concrete members and structures are of size, shape, alignment, elevation B. Related Sections include the following: and position indicated, within tolerance limits of ACI 117. 1. Section 03 30 00, Cast-In-Place Concrete . Construct forms tight enough to prevent loss of concrete mortar. 2. Section 07 26 19, Topical Moisture Vapor Mitigation Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide 3. Division 09 Flooring Sections crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for 1.3 REFERENCES nclined surfaces steeper than 1.5 horizontal to 1 vertical. A. ASTM C 109M, Compressive Strength Air-Cure Only . Install keyways, reglets, recesses, and the like, for easy removal. B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars 2. Do not use rust-stained steel form-facing material. C. ASTM E84, Surface Burning Characteristics of Building Materials F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations D. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use E. ASTM F1869, Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Ca Chloride strike-off templates or compacting-type screeds. G. Chamfer exterior corners and edges of permanently exposed concrete. F. ASTM 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring H. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and 1.4 SUBMITTALS other debris just before placing concrete. A. Product Data: Submit manufacturer's product data and installation instructions for each material and . Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and product used. Include manufacturer's Material Safety Data Sheets. maintain proper alignment. B. Qualification Data: For Installer J. Coat contact surfaces of forms with form-release agent, according to manufacturer's written 1.5 QUALITY ASSURANCE instructions, before placing reinforcement. A. Installation of the ARDEX product must be completed by a factory-trained applicator, such as an 3.2 VAPOR RETARDER ARDEX LevelMaster® Elite or Choice Contractor, using mixing equipment and tools approved by the A. Install, protect, and repair vapor-retarder sheets according to ASTM E 1643; place sheets in position manufacturer. Contact ARDEX for a list of certified installers. See Ardex contact information on CS3.0 with longest dimension parallel with direction of pour. sheet. B. Lap joints 4 inches and seal with manufacturer's recommended tape. B. Product must have a hydraulic cement-based inorganic binder content as the primary binder which 3.3 EMBEDDED ITEMS includes portland cement per ASTM C150: Standard Specification for Portland Cement and other specialty hydraulic cements. Gypsum-based products are not acceptable. A. Place and secure anchorage devices and other embedded items required for adjoining work that is C. Manufacturer Experience: Provide products of this section by companies which have successfully attached to or supported by cast-in-place concrete. Use Setting Drawings, templates, diagrams, instructions, and directions furnished with items to be embedded. specialized in production of this type of work for not less than 10 years. Contact Manufacturer Representative prior to installation 3.4 STEEL REINFORCEMENT 1.6 WARRANTY ARDEX K15® installed as part of a floor system, shall be installed in conjunction with A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting the recommended ARDEX Tile & Stone Installation Materials or WW HENRY Flooring Adhesive, as reinforcement. appropriate, to provide the ARDEX SystemOne 10-year comprehensive warranty. 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing 1.7 DELIVERY, STORAGE AND HANDLING concrete. A. Deliver products in original packaging, labeled with product identification, manufacturer, batch 3.5 JOINTS number and shelf life. A. General: Construct joints true to line with faces perpendicular to surface plane of concrete. B. Store products in a dry area with temperature maintained between 50° and 85° F (10° and 29° C) B. Construction Joints: Locate and install so as not to impair strength or appearance of concrete, at and Protect from direct sunlight. locations indicated or as approved by Architect. C. Handle products in accordance with manufacturer's printed recommendations Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such 1.8 PROJECT CONDITIONS as column pedestals, foundation walls, grade beams, and other locations, as indicated. A. Do not install material below 50° F (10° C) surface and air temperatures. These temperatures must 3. ASTM C 219 - Standard Terminology Relating to Hydraulic Cement. . Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX D. Contraction (Control) Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning Technical Service Department. concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of PART 2 - PRODUCTS the concrete thickness. 2.1 HYDRAULIC CEMENT UNDERLAYMENT E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or A. Hydraulic Cement-based Self-Leveling Underlayment asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint. 3.6 CONCRETE PLACEMENT 1. Acceptable Products: a. ARDEX K 15®; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, Pa A. Comply with recommendations in ACI 304R, ASTM C 94, ASTM C 1116 and ACI 301, for measuring, 15001 USA, (724) 203-5000, www.ardex.com nixing, transporting, and placing concrete. . Deposit concrete continuously and avoid segregation. Deposit concrete in forms in horizontal layers i. Primer Standard Porous Concrete: ARDEX P 51™ Primer no deeper than 24 inches (600 mm), avoiding cold joints, and in depths not to exceed formwork design ii. Primer Non-porous substrates, ceramic & quarry tile, non-water soluble adhesive residue, concrete treated with silicate compounds, metal, and wooden subfloors: ARDEX P 82™ Ultra Prime 2. Consolidate concrete with mechanical vibrating equipment. iii. Additive: ARDEX E 25[™] Resilient Emulsion 3. Screed and initial-float concrete floors and slabs using bull floats or darbies to form a uniform and 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° open-textured surface plane, free of humps or hollows, before excess moisture or bleedwater appears on F+/-3°F (23° C+/-3°C) and 50% +/-5% relative humidity: the surface. Do not further disturb slab surfaces before starting finishing operations. a. Application: Barrel Mix or Pump 4. Floors to be level to within $\frac{1}{8}$ " tolerance in 10 feet, smooth and sealed. Verify intended floor finish. Do b. Flow Time: 10 minutes not seal concrete surface where sealer would interfere with floor coating. Comply with floor finish c. Initial Set: Approx. 30 minutes manufacturer specifications. d. Final Set: Approx. 90 minutes 3.7 FINISHING FLOORS AND SLABS e.Compressive Strength: 4100 psi at 28 days, ASTM C109M. A. Finish formed surfaces as follows: f. Flexural Strength: 1000 psi at 28 days, ASTM C78. . Apply rough-formed finish, defined in ACI 301, to concrete surfaces indicated or not exposed to public g. VOC: 0 g/l, calculated SCAQMD 1168 2.2 WATER: Water shall be clean, potable, and sufficiently cool (not warmer than 70°F). 2. Apply smooth-formed finish, defined in ACI 301, to concrete surfaces indicated and exposed to public 2.3 ALTERNATE UNDERLAYMENTS: When appropriate and when technical criteria are met for each view or to be covered with a coating or covering material applied directly to concrete, such as underlayment, ARDEX K10, K13, K60 and V1200 are also approved underlayments for use on Ulta waterproofing, dampproofing, veneer plaster, or painting. projects. Alternate underlayments must meet technical requirements of conditions and moisture Do not apply rubbed finish to smooth-formed finish. mitigation system being used (if any). . Apply smooth-rubbed finish to smooth-formed finished concrete surfaces indicated or exposed to PART 3 - EXECUTION public view. 3.1 PREPARATION B. Finishing Floors and Slabs: Comply with recommendations in ACI 302.1R for screeding, A. Concrete Subfloors: Prepare substrate in accordance with manufacturer's instructions. estraightening, and finishing operations for concrete surfaces. 1. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to . Scratch Finish: Apply scratch finish, defined in ACI 301, to surfaces indicated and to surfaces to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, receive concrete floor topping or mortar setting beds for ceramic or quarry tile, portland cement terrazzo, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically and other bonded cementitious floor finishes clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and 2. Float Finish: Apply float finish, defined in ACI 301, to surfaces indicated, to surfaces to receive trowel solvents are not acceptable. finish, and to surfaces to be covered with fluid-applied or sheet waterproofing, built-up or membrane 2. All cracks in the subfloor shall be repaired to minimize telegraphing through the underlayment. oofing, or sand-bed terrazzo 3. Substrates shall be inspected in accordance with ASTM F1869 or ASTM F2170 and corrected for 3. Trowel Finish: Apply a trowel finish to surfaces indicated and to surfaces exposed to view or to be moisture or any other conditions that could affect the performance of the underlayment or the finished covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or floor covering. For areas where moisture vapor emissions exceed the limits required by the floor covering another thin film-finish coating system manufacturer refer to Section 07 26 19, Topical Moisture Vapor Mitigation Systems and install the a. After applying float finish, apply first trowel finish and consolidate concrete by hand or power-driven appropriate ARDEX Moisture Control System. trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in . Joint Preparation: texture and appearance. Grind smooth any surface defects that would telegraph through applied 1. Moving Joints - honor all expansion and isolation joints up through the underlayment. A flexible coatings or floor coverings sealing compound such as ARDEX ARDISEAL[™] Rapid Plus may be installed. b. Finish and measure surface so gap at any point between concrete surface and an unleveled 2. Saw Cuts and Control Joints - fill all non-moving joints with ARDEX ARDIFIX™ Joint Filler or ARDEX freestanding 10-foot- (3.05-m-) long straightedge, resting on two high spots and placed anywhere on SD-F™ FEATHER FINISH® as recommended by the manufacturer the surface, does not exceed the following: C. Wooden subfloors: must be clean and free of all foreign matter. Sand to bare wood then vacuum to 1) 1/8 inch (3.2 mm). remove all dust. Re-nail any loose boards exhibiting movement. 4. Trowel and Fine-Broom Finish: Apply a partial trowel finish, stopping after second troweling, to D. Metal subfloors must be clean and free of all rust and foreign matter. Where required, a corrosive surfaces indicated and to surfaces where ceramic or quarry tile is to be installed by either thickset or resistant coating should be applied and allowed to dry before priming. thin-set method. Immediately after second troweling, and when concrete is still plastic, slightly scarify E. Cutback and other non-water soluble adhesive residues must be wet scraped to a thin, surface with a fine broom. well-bonded laver 5. Broom Finish: Apply a broom finish to exterior concrete, brooming with fiber-bristle broom F. Non-porous subfloors such as ceramic and quarry tile as well as terrazzo should be clean and free perpendicular to main traffic route, to platforms, steps, and ramps, and elsewhere as indicated. of all waxes and sealers. If necessary, clean by mechanical methods such as shot blasting or other. 6. Verify intended floor finish. Do not seal concrete surface where sealer would interfere with floor 3.2 APPLICATION OF ARDEX K 15®: coating. Comply with floor finish manufacturer specifications. A. Examine substrates and conditions under which materials will be installed. Do not proceed with 3.8 CONCRETE PROTECTION AND CURING installation until unsatisfactory conditions are corrected. General: Protect concrete from excessive cold or hot temperatures. Comply with ACI 306.1-1990 for B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect cold-weather protection and with recommendations in ACI 305R-1990 for hot-weather protection adjacent areas from contact due to mixing and handling of materials. during curing C. Priming: . Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause 1. Primer for standard absorbent concrete subfloors: Mix ARDEX P-51 1:1 with water and apply evenly excessive moisture loss with a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to

2. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

3. Cure formed and unformed concrete for at least seven days by moisture curing,

is dry. Primer coverage is approximately 400 to 600 sq. ft. per gallon. 2. Primer for extremely absorbent concrete subfloors: Make an initial application of ARDEX P-51mixed with 3 parts water using a soft push broom. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry thoroughly before proceeding with the standard application of primer as described

above for standard absorbent concrete. 3. Primer for non-porous subfloors, wooden or metal subfloors, or cutback and other non-water soluble adhesive residues over concrete: Prime with ARDEX P-82 Ultra Prime. Mix Part A (red) with Part B (white) and apply with a short-nap or sponge paint roller, leaving a thin coat of primer no heavier than a thin coat of paint. Do not leave any bare spots. Remove all puddles and excess primer. Allow to dry to a clear, slightly tack film (minimum 3 hours, maximum 24 hours). Underlayment shall not be installed until

primer is dry. Primer coverage is approximately 200 to 400 square feet per gallon. 4. Minimum drying time for ARDEX P-82 Ultra-Prime over cutback adhesive is 18 hours. D. Mixing: Comply with manufacturer's printed instructions and the following.

1. Add 7 quarts (6.5 L) of clean potable water per two 55-pound bag.

2. Mix using a ½" (650 rpm) low speed heavy-duty mixing drill with an ARDEX T-1 mixing paddle. Do not overwater 3. Aggregate mix: For areas to be installed over 1 1/2" thick, aggregate may be added to reduce material costs. Mix ARDEX K 15[®] with water first, then add from 1/3 up to 1 part by volume of washed, well graded pea gravel aggregate (1/8" to 1/4" or larger). Do not use sand. Note: The addition of aggregate

will diminish the workability of the make it necessary to install a finish coat to obtain a smooth surface. Ardex recommends a ¼" application of ARDEX K 15® neat to be installed as the finish coat. 4. For pump installations, ARDEX K 15® shall be mixed using the ARDEX Levelcraft Automatic Mixing Pump. Start the pump at 210 gallons of water per hour, and then adjust to the minimum water reading that still allows self-leveling properties. Do not overwater. Check the consistency of the product on the floor to ensure a uniform distribution of the sand aggregate at both the top surface and bottom of the

E. Application: Comply with manufacturer's printed instructions and the following.

1. ARDEX K 15[®] must be installed at a minimum thickness of 1/8" over the highest point in the floor, which typically results in an average thickness of ¹/₄" over the entire floor. ARDEX K 15® can be installed up to 1 ½" over large areas neat, and up to 5" with the addition of proper aggregate. ARDEX K 15[®] can also be featheredged to match existing elevations.

2. Pour or pump the liquid ARDEX K 15® and spread in place with the ARDEX T-4 Spreader. Use the ARDEX T-5 Smoother and featheredge and touch-up. Wear non-metallic cleats to avoid leaving marks in the liquid ARDEX K 15[®].

3. Wood subfloors require the use of the mesh-reinforced ARDEX K15® + E25™ Resilient Emulsion Underlayment System. After priming, install 3.4 galvanized diamond metal lath by stapling to the wooden subfloor approximately every 6 inches to center

4. Metal subfloors require the use ARDEX K15® + E25[™] Resilient Emulsion Underlayment System. 5. Steel subfloors require that the substrate first be primed with an anti-corrosive paint. After thorough drying of the paint, prime the surface with ARDEX P82[™] Ultra Prime. F. Curing

1. ARDEX K15® can be walked on in 2-3 hours. Moisture-insensitive tiles such as ceramic quarry and porcelain can be installed after 6 hours. Underlayment can accept all other finish floor covering materials after 16 hours at 70°F and 50% relative humidity. For resinous systems such as epoxy and polyurethane floors please contact the ARDEX Technical Services Department. 3.4 FIELD QUALITY CONTROL

A. Where specified, field sampling of the Ardex underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.5 PROTECTION

A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

SECTION 035416 - HYDRAULIC CEMENT UNDERLAYMENT (MAPEI)

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Hydraulic cement underlayments and surface preparation

1.2 RELATED SECTIONS

A. Section 03300 - Cast-In-Place Concrete. 1.3 REFERENCES

A. ASTM International (ASTM):

1. ASTM C 109/C 109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2 inch [50-mm] Cube Specimens).

2. ASTM C 150/C 150M - Standard Specification for Portland Cement.

4. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials. 5. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.

1.4 SUBMITTALS

A. Submit under provisions of Section 013000. B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.

2. Storage and handling requirements and recommendations.

3. Installation methods.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.

B. Installer Qualifications: Minimum 5 year experience installing similar products. C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.

2. Do not proceed with remaining work until workmanship is approved by Architect.

Refinish mock-up area as required to produce acceptable work.

1.6 WARRANTY

A. The MAPEI products listed in this specification, installed as part of a Tile & Stone or Floor Covering Installation System, installed within their shelf life and according to the products Technical Data Sheets qualify for MAPEI's Best-Backed Warranty Program; Tile & Stone Installation Systems 10-Year Commercial System Limited Warranty or Floor Covering Installation Systems 10-Year Limited Warranty.

1.7 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to starting work of this section. 1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

B. Handling: Handle materials to avoid damage.

1.9 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits

1.10 SEQUENCING

A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

dry to a clear, thin film (min. 3 hours, max. 24 hours). Underlayment shall not be applied until the primer

A. Acceptable Manufacturer: MAPEI Corporation, 1144 E. Newport Center Drive, Deerfield Beach, FL 33442, USA. Toll-Free Tel.: 1-800-992-6273. Fax: 954-246-8805. Email: TechServiceRequests@mapei.com. Web: www.mapei.us.

B. Acceptable Manufacturer: MAPEI Inc., 2900 Francis-Hughes, Laval, QC, H7L 3J5, Canada. Toll-Free Tel.: 1-800-361-9309. Fax: 450-901-0196. Email: TServicesCA@mapei.com. Web: www.mapei.ca. C. Requests for substitutions will be considered in accordance with provisions of Section 016000.

D. Substitutions: Not permitted.

2.2 HYDRAULIC CEMENT UNDERLAYMENTS

A. Reduced Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied from feather edge to 2 inches (52 mm). 1. Product: Subject to compliance with requirements, provide MAPEI, Ultraplan Easy.

B. High-Performance, Quick-Setting, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied from feather edge to 1-1/2 inches (38 mm). 1. Product: Subject to compliance with requirements, provide MAPEI, Ultraplan 1 Plus.

- C. Quick-Setting, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied in minimum uniform thickness of 1/8 inch to 1 inch (3 mm to 25 mm). 1. Product: Subject to compliance with requirements, provide MAPEI, Novoplan 2 Plus.
- D. Reduced-Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement product that can be applied in minimum uniform thickness of 1/8 inch to 1 inch (3 mm to 25 mm).

1. Product: Subject to compliance with requirements, provide MAPEI, Novoplan Easy Plus. E. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3 to 6 mm); or coarse sand as recommended

by underlayment manufacturer 1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.

F. Water: Potable and at a temperature of not more than 70°F (21°C).

G. Reinforcement: For underlayment applied to wood substrates, provide galvanized metal lath or other corrosion-resistant reinforcement recommended in writing by underlayment manufacturer.

H. Primer: Product of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

- 1. High-Performance, 100 Percent-Solids Epoxy Primer:
- a. Product: Subject to compliance with requirements, provide MAPEI, Primer E. 2. Advanced-Technology Acrylic Latex Primer for Concrete:
- a. Product: Subject to compliance with requirements, provide MAPEI, Primer L
- 3. All-Purpose Primer for Self-Leveling Underlayments: a. Product: Subject to compliance with requirements, provide MAPEI, Primer T.
- 4. Water-Based Epoxy Primer:
- a. Product: Subject to compliance with requirements, provide MAPEI, Primer WE 2.3 ACCESSORIES
- A. FLEXIBLE SEALANTS

1. Professional-grade, 100%-silicone sealant specifically formulated for heavy traffic expansion and movement joints, horizontal and vertical complying with ASTM standards; shore A hardness (ASTM C661), joint movement (ASTM C920), elongation at break (ASTM D412), flexibility (ASTM C734) and passes weatherability (Accelerated Weathering Tester QUV).

a. Product: Subject to compliance with requirements, provide MAPEI, Mapesil T. B. CRACK REPAIR / JOINT FILLER

- 1. Two-component, high-modulus, epoxy bonding agent with sand broadcast.
- a. Product: Subject to compliance with requirements, provide MAPEI, Planibond EBA.
- 2. Two-part, 100% solids, moisture-tolerant, semi-rigid epoxy joint filler.
- a. Product: Subject to compliance with requirements, provide MAPEI, Planibond JF.
- 3. High-Performance, Fiber-Reinforced Skimcoating Compound. a. Product: Subject to compliance with requirements, provide MAPEI, Planiprep SC.
- PART 3 EXECUTION
- 3.1 EXAMINATION

A. Examine substrates, with Installer present, for conditions affecting performance of the Work. B. Proceed with application only after unsatisfactory conditions have been corrected. 3.2 PREPARATION

A. General: Prepare and clean substrate according to manufacturer's written instructions. 1. Treat nonmoving substrate cracks according to manufacturer's written instructions to prevent cracks from telegraphing (reflecting) through underlayment.

- 2. Fill substrate voids to prevent underlayment from leaking.
- 3. Do not install over moving control joints (with active cracks) or over expansion joints.

B. Concrete Substrates: Mechanically remove, according to manufacturer's written instructions, laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants that might impair underlayment bond.

1. Moisture Testing: Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates do not exceed a maximum moisture-vapor-emission rate of 5 lbs. of water/1000 sq. ft. (2,27 kg of water/100 sq. m) in 24 hours.

2. Concrete slabs exceeding 5 lbs. (3,63 kg) in MVER should be treated with a moisture vapor reduction product. Refer to MVE Moisture Vapor Emissions Technical Data Sheets at www.mapei.us for information.

C. Wood Substrates: Mechanically fasten loose boards and panels to eliminate substrate movement and squeaks. Sand to remove coatings that might impair underlayment bond and remove sanding dust. 1. Install underlayment reinforcement recommended in writing by manufacturer.

D. Metal Substrates: Mechanically remove, according to manufacturer's written instructions, rust, foreign matter, and other contaminants that might impair underlayment bond. Apply corrosion-resistant coating compatible with underlayment if recommended in writing by underlayment manufacturer.

E. Nonporous Substrates: For ceramic tile, quarry tile, and terrazzo substrates, remove waxes, sealants, and other contaminants that might impair underlayment bond, and prepare surfaces according to manufacturer's written instructions.

F. Adhesion Tests: After substrate preparation, test substrate for adhesion with underlayment according to manufacturer's written instructions.

3.3 APPLICATION

- A. General: Mix and apply underlayment components according to manufacturer's written instructions. 1. Close areas to traffic during underlayment application and for time frame after application
- recommended in writing by manufacturer.

2. Coordinate application of components to provide optimum adhesion to substrate and between coats. 3. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.

B. Apply primer over prepared substrate at manufacturer's recommended spreading rate.

underlayment manufacture

3.4 PROTECTION

1.1 GENERAL

code - steel.

1.2 PRODUCTS

surface blemishes.

otherwise indicated.

C or D.

B. Steel and Iron: As follows:

1. Plates, Shapes, and Bars: ASTM A 36/A 36M.

3. Cold-Formed Tubing: ASTM A 500.

hot-dip galvanized per ASTM F2329.

performance requirements of FSTT-P-664.

C. Aluminum: As follows:

type, grade, & class req'd.

percent zinc dust by weight.

5. Gray-Iron Castings: ASTM A 48, Class 30.

1. Extrusions: ASTM B 221 (ASTM B 221M), alloy 6063-T6.

2. Rolled Tread Plate: ASTM B 632 (ASTM B 632M) Pattern 1, allov 6061-T6.

D. Fasteners: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for

emit a "hollow" sound when tapped.

C. Apply underlayment to produce uniform, level surface.

1. Feather edges to match adjacent floor elevations.

SECTION 05500 - METAL FABRICATIONS

B.Submittals: In addition to product data, submit the following:

2. Samples, materials and finishes as may be requested by Architect.

Program and designated as an AISC Certified Plant, Category Sbd.

3. For structural steel fabrication: AISC Certification for steel fabrication is required.

D. Cure underlayment according to manufacturer's written instructions. Prevent contamination during

A. Protect underlayment from concentrated and rolling loads for remainder of construction period.

1. Shop drawings detailing fabrication and erection, including templates for anchor bolt placement.

a.Fabricators Qualifications: A qualified fabricator who participates in the AISC Quality Certification

A. General: Provide materials selected for their surface flatness, smoothness, and freedom from

2. Rolled Floor Plates: ASTM A 786/A 786M/Rolled from plate complying with ASTM A36/A, 36M, Grand

4. Pipe: ASTM A 53, standard weight (schedule 40), unless otherwise indicated. Paint black, unless

6. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either ASTM A 47 (ASTM A

47M) malleable iron or ASTM A 27/A 27M cast steel. Provide bolts, washers, and shims as required,

electrodeposited zinc coating, for exterior use or where built into exterior walls. Select fasteners for the

E. Shop Primer for Ferrous Metal: Fast-curing, lead- and chromate-free, universal modified-alkyd

primer with good resistance to corrosion, compatible with finish paint systems, and complying with

F. Galvanizing Repair Paint: High-zinc-dust-content paint, with dry film containing not less than 94

G. Concrete Fill: Comply with requirements of Division 3 Section "Cast-in-Place Concrete" for

normal-weight concrete with a minimum 28-day compressive strength of 3,000 psi (20 MPa).

b. Welding Qualifications: Qualifying procedures and personnel according to AWS D1.1, structural welding

application and curing processes. E. Do not install floor coverings over underlayment until after time frame recommended in writing by

F. Remove and replace underlayment areas that evidence lack bond with substrate, including areas that

H. Nonshrink, Metallic Grout: Factory-packaged, ferrous-aggregate grout complying with ASTM C 1107. I. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout

J. Fabrication, General: Form from materials of type, size, thickness, and shapes indicated. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Reassemble items in shop to greatest extent possible.

1. Shear and punch metals cleanly and accurately. Remove sharp or rough areas and ease exposed

2. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds and surfaces smooth and blended. 3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where

4. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise

K. Rough Hardware: Furnish custom-fabricated bolts, plates, anchors, hangers, dowels, and other miscellaneous steel and iron shapes for supporting and anchoring woodwork.

L. Loose Bearing and Leveling Plates: Provide for steel items bearing on masonry or concrete, as

M. Loose Steel Lintels: Fabricate from shapes and to sizes indicated.

complying with ASTM C 1107.

impairing work.

concrete.

other work.

applicable.

painting.

"Power Tool Cleaning."

or similar construction.

repair paint.

1.1 GENERAL

1.2 PRODUCTS

1.3 EXECUTION

bottom of sleeve

possible. Locate joints where least conspicuous.

1. Galvanize, unless otherwise indicated.

1. Galvanize after fabrication.

Galvanize after fabrication

not more than 24 inches (600mm) o.c.

metal items not indicated to be galvanized.

sleeve solidly with nonshrink, nonmetallic grout.

paint with same material as used for shop painting.

1. Cast Aluminum: Heavy coat of bituminous paint.

2.Extruded Aluminum: Two coats of clear lacquer.

SECTION 06100 - ROUGH CARPENTRY

metal framing anchors, and construction adhesives.

A. Submittals: Submit the following:

installing, and finishing treated materials.

agency approved by ALSC's Board of Review.

percent. Treat indicated items and the following:

drying and discard damaged or defective pieces.

c. Species: Hem-fir; NLGA, WCLIB, or WWPA.

agency acceptable to authorities having jurisdiction.

masonry or concrete.

following species:

sinale member use.

a. Species: Southern pine; SPIB.

d. Species: Douglas fir south; WWPA.

D. Fire-Retardant-Treated Materials:

where otherwise indicated

indicated. Drill plates to receive anchor bolts.

N. Shelf and Relieving Angles: Fabricate to sizes indicated for attachment to support framing. Provide slotted holes to receive 3/4-inch (19-mm) bolts, spaced not more than 6 inches (150 mm) from ends and

1. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place

2. Galvanize shelf angles to be installed on exterior concrete. O. Miscellaneous Framing and Supports: Provide as required to complete the Work but not included with structural steel framework. Fabricate as indicated and required to receive adjacent construction. Fabricate from structural steel of welded construction. Drill and tap to receive hardware, hangers, and similar items. Include anchors for building into other work, spaced not more than 24 inches (600 mm) o.c.

P. Miscellaneous Steel Trim: Fabricate from steel shapes, plates, and bars of profiles shown with continuously welded joints, and smooth exposed edges. Miter corners and use concealed field splices wherever possible. Provide cutouts, fittings, and anchorages; coordinate assembly and installation with

Q. Pipe Bollards: Fabricate from Schedule 80 steel pipe capped with 1/4-inch (6.4-mm) steel plate. 1. Fabricate sleeves for bollards from steel pipe with 1/4-inch- (6.4-mm-) thick steel plate welded to

R. Finish metal fabrications after assembly. Comply with NAAMM "Metal Finishes Manual for Architectural and Metal Products" for recommendations on application of finishes. Shop-prime ferrous

1. Hot-dip galvanize items indicated to be galvanized. Comply with ASTM A 153 or ASTM A 123 as

2. Preparation for Shop Priming: Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3

3. Apply shop primer per requirements of SSPC-PA 1 "Paint Application Specification No. 1" for shop

A. Installation, General: Perform cutting, drilling, and fitting required for installing metal fabrications. Set units accurately in location, alignment and elevation with edges and surfaces level, plumb, and true. 1. Fit exposed connections accurately together and weld, unless otherwise indicated. Do not weld, cut, or abrade the surfaces of galvanized units that are intended for bolted connections.

2. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry

B. Set loose items on cleaned bearing surfaces using wedges or other adjustable devices. After the items have been positioned and plumbed, tighten the anchor bolts and pack space with grout. 1. Use nonshrink, metallic grout in concealed locations where not exposed to moisture; use nonshrink,

nonmetallic grout in exposed locations, unless otherwise indicated. C. Anchor bollards in concrete with pipe sleeves preset into concrete. Fill space between bollard and

1. Fill bollards solidly with concrete, mounding top surface.

D. Touch up shop paint after erection. Clean field welds, bolted connections, and abraded areas and

E. For galvanized surfaces, clean welds, bolted connections, & abraded areas, & apply galvanizing

F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood or dissimilar with the following:

2. Material certificates for dimension lumber specified to comply with minimum allowable unit stresses. 3. Wood treatment data, including chemical treatment manufacturer's instructions for handling, storing,

A. Lumber, General: Comply with DOC PS 20 and with applicable grading rules of inspection agencies certified by the American Lumber Standards Committee's (ALSC) Board of Review. Provide dressed lumber, S4S, with each piece factory marked with grade stamp of inspection agency.

1. Provide lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.

B. Wood-Preservative-Treated Materials: Comply with applicable requirements of AWPA C2 (lumber) and AWPA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection

1. Pressure treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m). After treatment, kiln-dry lumber and plywood to a maximum moisture content of 15

a. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

b. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with c. Wood framing members less than 18 inches (460 mm) above grade. d. Wood floor plates installed over concrete slabs directly in contact with earth.

2. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces. Inspect each piece of lumber or plywood after

3. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect the finishes. C. Dimension Lumber: Provide dimension lumber of grades indicated according to the ALSC National

Grading Rule (NGR) provisions of the inspection agency indicated. 1. Framing Other than Non-Load-Bearing Partitions: Provide Construction or No. 2 grade and any of the

b. Species: Douglas fir-larch; NLGA, WCLIB, or WWPA.

2. Framing Other than Non-Load-Bearing Partitions: Provide any species and grade with a modulus of elasticity of at least 1,300,000 psi (8950 MPa) and an extreme fiber stress in bending of at least 850 psi (5.9 MPa) for 2-inch nominal (38 mm-actual) thickness and 12-inch nominal (286-mm actual) width for

1. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood). a.Use Exterior type for exterior locations and where indicated.

b.Use Interior Type A, High Temperature (HT) for enclosed roof framing, framing in attic spaces, and

2. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting

a.For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency. 3. For exposed items to indicated to receive a stained or natural finish, use formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.

E. Miscellaneous Lumber: Provide No. 3 or Standard grade lumber of any species for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, and similar members.

F. Air-Infiltration Barrier: Air retarder complying with ASTM E 1677; made from polyolefins; either cross-laminated films, woven strands, or spunbonded fibers; coated or uncoated; with or without perforations to transmit water vapor but not liquid water; and with minimum water-vapor transmission of 10 perms (575 ng/Pa x s x sq. m) when tested according to ASTM E 96, Procedure A.

G. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.

1. Power-Driven Fasteners: CABO NER-272.

2. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers. H. Metal Framing Anchors: Provide galvanized steel framing anchors of structural capacity, type, and

size indicated and as follows: 1. Research or Evaluation Reports: Provide products for which model code research or evaluation

reports exist that are acceptable to authorities having jurisdiction and that evidence of compliance of metal framing anchors for application indicated with building code in effect for Project. 2. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis, and demonstrated by comprehensive testing performed by a qualified independent testing agency.

3. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653, G60 (ASTM A 653M, Z180) coating designation; structural, commercial, or lock-forming quality, as standard with manufacturer for type of anchor indicated.

I. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch (25-mm) nominal thickness, compressible to 1/32 inch (0.8mm); selected from manufacturer's standard widths to suit width of sill members indicated.

J. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 that is approved for use with type of construction panel indicated by both adhesive and panel manufacturers. K. Telephone and Electrical Equipment Backing Panels: DOC PS 1, exterior, AC where exposed to view, [Exterior, C-C Plugged, where acceptable to owner/landlord] [fire-retardant treated where required,] in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness. 1.3 EXECUTION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. B. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.

C. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. CABO NER-272 for power-driven staples, P-nails, and allied fasteners. Published requirements of metal framing anchor manufacturer.

3. "Recommended Nailing Schedule" of referenced framing standard and with AFPA's "National Design Specifications for Wood Construction."

4. "Table 23-I-Q--Nailing Schedule" of the Uniform Building Code.

5. "Table 2305.2--Fastening Schedule" of the B.O.C.A. National Building Code where applicable. 6. "Table 1705.1--Fastening Schedule," of the Standard Building Code.

7. "Table 2304.9.1--Fastening Schedule," of the International Building Code.

D. Use hot-dip galvanized or stainless-steel nails where rough carpentry is exposed to weather, in

ground contact, or in area of high relative humidity

E. Countersink nail heads on exposed carpentry work and fill holes with wood filler. F. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise

G. Air-Infiltration Barrier: Cover sheathing with air-infiltration barrier to comply with manufacturer's written instructions

1. Apply air-infiltration barrier to cover upstanding flashing with 4-inch (100-mm) overlap. a. All manufacturers of air barrier, installation and flashing products are to provide letters of compatibility for these products in combination with each other.

SECTION 06200 - FINISH CARPENTRY

PART 1 - GENERAL (Not Applicable PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber Standards: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1. C. Hardwood Plywood: HPVA HP-1.

2.2 STANDING AND RUNNING TRIM A. Exterior Lumber Trim: Smooth-textured Clear Heart, western red cedar, Grade A, western red cedar,

B & B. southern vellow pine. B. Exterior Primed Hardboard Trim: High-temperature cured, high-resin, wood fiber composite; factory primed; and recommended by manufacturer for exterior use.

1. Product Data for engineered wood products, underlayment, insulating sheathing, air-infiltration barriers, C. Interior Trim: Painted Trim C Select, eastern white pine; B & Btr. Select or Supreme, Idaho white, odgepole, ponderosa, or sugar pine, Stained Trim rift-sawn, clear, kiln-dried red oak selected for compatible grain and color.

rgla solutions, inc. 5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847 671 7452 f: 847 671 4200 www.rgla.com

SECTION 06400 - CUSTOM CASEWORK	Service Department.	1.F Cc
Field Installation: 1. Install casework plumb, level, true and straight with no distortions. Shim as required using concealed	2.1 TOPICAL MOISTURE VAPOR EMISION SYSTEM	4.
shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level and with no variations in flushness of adjoining surfaces. Scribe and cut to fit adjoining work. Anchor to blocking or directly to substrates without	 A. One-Coat Moisture Control System for Concrete to Receive ARDEX Underlayments and Toppings Acceptable Products: 	5. (M
distortion so that cabinet doors fit openings properly and are accurately aligned. Adjust hardware to center doors in openings and to provide free operation. Anchor countertops securely to base units and other	a.ARDEX MC™ RAPID; Manufactured by ARDEX Engineered Cements: 400 Ardex Park	6. 5
support systems as indicated.	Drive, Aliquippa, Pa 15001 USA 724-203-5000 1. Performance and Physical Properties: Meet or exceed the following values for material cured at 70°	1.3
1. Repair damaged and defective casework where possible to eliminate defects, where not possible to	F+/-3°F (21° C+/-3°C) and 50% +/-5%relative humidity:	1.4
repair, replace casework. Clean, lubricate and adjust hardware for smooth operation. 2. Do not deliver or install woodwork until building is enclosed, wet work is complete, and HVAC system is	b. Material Requirements on CSP 3 Prepared Concrete: Max 270 sq. ft. per mixed unit for 10 mils	А. В.(
operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period	c. Permeability (ASTM E96): ≤0.06 perms	C.
	e. Working Time: 20 minutes	D. E./
SECTION 07210 - BUILDING INSULATION	f. Pot Life: 20 minutes	F.(
 GENERAL Submittals: Product Data for each type of insulation product specified. 	g. VOC: 0g/L, calculated SCAQMD 1113 h. Walkable: Minimum of 4 hours	G. н
B. Fire-Test-Response Characteristics: Provide insulation and related materials with the	i. Prime and Install Underlayment: Minimum 4 hours, maximum 24 hours	II. . (
fire-test-response characteristics indicated as determined by testing identical products per ASTM E 84, ASTM E 119, or ASTM E 136 by UL or another testing and inspecting agency acceptable to authorities	2.2 HYDRAULIC CEMENT UNDERLAYMENT	J.(
naving jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency. C. All manufacturers of vapor barrier, insulation and flashing products, are to provide letters of	1. Acceptable Products:	к.u L.(
compatibility for these products in combination with each other.	a.ARDEX K 15®; Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, Pa 15001 USA (724) 203-5000 www.ardexamericas.com	М.
 PRODUCTS General: Provide insulating materials that comply with requirements and with referenced standards. 	i. Primer: ARDEX P 82™ Ultra Prime	N. O.
1. Preformed Units: Sizes to fit applications indicated; selected from manufacturer's standard thickness,	 Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity: 	1.{
Motris, and lengths. 3. Polyisocyanurate Board Insulation: Rigid, cellular polyisocyanurate thermal insulation faced on both	a.Application: Barrel Mix or Pump	A. Si
sides with aluminum foil to comply with requirements indicated below:	b.Flow Time: 10 minutes	В.
C. Unfaced Mineral-Fiber Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing) of	d.Final Set: Approx. 90 minutes	in C.
ype described below:	e.Compressive Strength: Minimum 4100 psi at 28 days, ASTM C109M.	to
2. Mineral-Fiber Type: Fibers manufactured from glass.	f. Flexural Strength: 1000 psi at 28 days, ASTM C78. g.VOC: 0 g/l. calculated SCAOMD 1113	D. E.
. Mineral-Fiber Type: Fibers manufactured from slag or rock wool.	2.3 ALTERNATE UNDERLAYMENTS: When appropriate and when technical criteria are met for each	F.
. Surrace-Burning Characteristics: Maximum flame-spread and smoke-developed indices of 25 and 50, espectively.	underlayment, ARDEX K10, K13, K60 and V1200 are also approved underlayments for use on Ulta projects. Alternate underlayments must meet technical requirements of conditions and moisture mitigation	G. н
P. Faced Mineral-Fiber Blanket Insulation: ASTM C 665, Type III, Class A (blankets with reflective rapor-retarder membrane facing and flame spread of 25 or less); with foil-scrim-kraft foil-scrim or	system being used (if any). 2.4 WATER: Water shall be clean notable, and sufficiently cool (not warmer than 70°F).	of
bil-scrim-polyethylene vapor-retarder membrane on 1 face.	2.5 CRACK REPAIR: As required to provide a sound, solid substrate to accept the moisture control	і. Л
. Mineral-Fiber Type: Fibers manufactured from glass.	system: 1. ARDEX ARDIFIX™ Two-Part. Low Viscositv Rigid Polyurethane	К.
ating of 0.13 perm (7.5ng/Pa x s x sq. m) and vapor retarded tape: pressure -sensitive tape of type	2. ARDEX ARDISEAL™ RAPID PLUS Fast Setting Semi-Rigid Joint Sealant	Mi L
. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to	PART 3 - EXECUTION	by
ubstrates indicated without damaging insulation and substrates. Verify compatibility of manufacturer of sulation.	 A. Concrete Subfloors: Prepare substrate in accordance with manufacturer's instructions. 	M Po
1.3 EXECUTION	1. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to	N B
Installation, General: Comply with insulation manufacturer's written instructions applicable to products nd application indicated.	dirt, curing compounds and any substance that might act as a bond breaker before application.	M
Install insulation that is undamaged, dry, unsoiled, and has not been exposed at any time to ice and	2. Mechanical preparation of the surface is required to obtain a minimum ICRI concrete surface profile of 3 (CSP 3). This substrate preparation must be by mechanical means, such as shot blasting.	0 P
low. . Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around	3. The concrete must have a minimum tensile strength of at least 150 psi for areas to receive normal foot	Sı
bstructions and fill voids with insulation. Remove projections that interfere with placement.	traffic, and 200 psi for area of heavy commercial traffic when tested in accordance with ASTM C1583. The concrete surface can be damp, but must be free of standing water.	Q C
hown or required to make up total thickness.	4. Prior to beginning the installation, measure the relative humidity within the concrete (ASTM F2170). For	R.
B. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation inchors.	 If the concrete substrate is too uneven to provide a uniform film thickness of the ARDEX 	S. T
 Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place 	MC™ RAPID (typically CSP 6 or higher), the substrate can be pre-smoothed using ARDEX K 301™ Self-Leveling Exterior Concrete Topping or ARDEX MRP™ Moisture Resistant Patch.	U.
oxes and similar items penetrating objects and vapor retarders. Repair tears or punctures immediately	3.2 APPLICATION OF ARDEX MC™ RAPID:	V. W
erore concealment by other work.	A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.	X.
iysical abuse, sunlight (UV) and other causes.	B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and bandling of materials	1.(
ECTION 072619 - TOPICAL MOISTURE VAPOR MITIGATION SYSTEM (ARDEX)	C. Mixing: Comply with manufacturer's printed instructions and the following.	A. B.
ART 1 - GENERAL	1. Each individual 22lb. unit contains separate, pre-measured quantities of hardener (Part B) and the resin (Part A). After opening each container, stir the individual components thoroughly before blending. The	С
1 RELATED DOCUMENTS	hardening agent (Part B) is added to the resin (Part A).	D. F
I, Division 03, and Division 09 specifications that apply to this Section	2. Pour all of the hardener into the resin portion and stir thoroughly for a minimum of 3 minutes using a low speed drill and an epoxy mixing paddle. Once mixed, pour some of the epoxy back into the hardener	L. 1.
2 SUMMARY	container, stir for 10 seconds, and then pour all of the contents back into the resin container. Mix for an additional 30 seconds before applying.	A
mulated to suppress excessive moisture vapor emissions in new or existing concrete prior to installing	D. Application: Comply with manufacturer's printed instructions and the following.	B. ₁
אטבא Underlayment. ARDEX MC™ RAPID One-Coat Moisture Control System	 Apply the first coat of freshly mixed ARDEX MC[™] RAPID to the prepared concrete surface in a uniform direction at an application rate of up to 270 sq. ft. per unit to achieve a coating thickness of 10 mils. Use a 	ı. 2.
. ARDEX P 82™ Ultra Prime	short-nap paint roller or notched squeegee for smoother surfaces, and a longer nap roller for more uneven substrates. To minimize the potential for pinhole formation, work the ARDEX MCT RAPID into the surface	3.
ARDEX ARDIFIX™ Two-Part, Low Viscosity Rigid Polyurethane ARDEX ARDISEAL™ RAPID PLUS East Satting Somi Digid Joint Scalant	with the roller to ensure maximum penetration. ARDEX MC [™] RAPID can also be worked into the surface with a painthrush for hard to reach proce and compare. Once the creating compare to the surface	С. П
ARDEX K15, V1200, K60, K13 or K10 Self Leveling Underlayments	a minimum of 4 hours (max. 24 hours). It is not necessary to re-test the substrate for moisture emissions	bı
ARDEX MRP™ Moisture Resistant Patch	prior to installing the floor covering. 2. For ARDEX Underlayment applications of 1/2" or less, prime the surface of the ARDEX MC™ RAPID with	E. 1
. Related Sections include the following: Section 03 30 00, Cast-In-Place Concrete	ARDEX P 82 [™] Ultra Prime. Allow the AREX P 82 [™] Ultra Prime to dry	2.
Division 09 Flooring Sections	3. For ARDEX Underlayment applications greater than ¼" (6mm), or if the ARDEX MC™ RAPID was not	3.
3 REFERENCES	worked into the surface sufficiently enough to prevent pinholes, a third coat with sand broadcast is needed. No ARDEX P82™ Ultra Prime in required.	4. F
. ASTM F2110 - Relative number of Concrete Floor Slabs Using In situ Probes ASTM F1869 - Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride	a. Working at a 90° angle to the direction the first coat was applied; apply the ARDEX MC [™] RAPID at a	1.
ASTM 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring	excess of fine sand (less than 1/50 of an inch in grain size or 98.5% passing sieve size #35 or #30)	1.
. ASTM C1583 - Standard Test Method for Tensile Strength of Concrete Surfaces and the Bond Strength r Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension	consistently over the entire area. Note: When broadcasting sand use a NIOSH approved dust mask in conformance with OSHA	A
ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials	requirements regarding the handling of sand. Do not stand or walk on the freshly applied epoxy when broadcasting the sand	B
ASTM D1308 - Chemical Resistance of Finishes ASTM F3010-13-Two-Component Resin Based Membrane-Forming Mojeture Mitigation Systems for	b.Once an area has been completely covered with sand, the surface of the sand can be walked on, being	th C
se Under Resilient Floor Coverings.	careful not to expose the epoxy at any time. Use approximately 1 lb. of sand per square foot of area. Once the sand broadcast is complete, avoid all traffic over the surface for a minimum of 4 hours	D
4 SUBMITTALS	c. After 4 hours, broom sweep and vacuum the surface to remove all loose sand. The clean, prepared	a
oduct used. Include manufacturer's Material Safety Data Sheets.	surrace or the sand is the priming system for the ARDEX Underlayment. No additional priming is required.	1.
Qualification Data: For Installer 5 QUALITY ASSURANCE	d.Following the application of MC RAPID and primer or sand broadcast, install the ARDEX Underlayment, such as ARDEX K 15® Premium Self-Leveling Concrete Underlayment, or Topping in accordance with	A R
. Installation of the ARDEX product must be completed by a factory trained applicator, such as an	printed instructions found in the corresponding technical brochure.	B
RUEX LevelMaster Elite® or ARDEX Choice Contractor, using mixing equipment and tools approved by e manufacturer. Contact ARDEX for a list of certified installers. See Ardex contact information on CS3.0	e.It is not necessary to re-test the substrate for moisture emissions prior to installing the coating or floor covering.	C
ieet. Manufacturer Experience: Drovide products of this section by companies which have successfully	3.3 FIELD QUALITY CONTROL	a ח
becialized in production of this type of work for not less than 5 years. Contact Manufacturer	A. Where specified, field sampling of the ARDEX products is to be done by taking an entire unopened bag/unit of the product being installed to an independent testing facility to perform testing. There is no	1.
epresentative prior to installation. 6 WARRANTY	in-situ test method applicable for this system.	A.
Certified applicator must file a pre-installation checklist with the manufacturer and receive written	3.4 PROTECTION A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from	рг В
ontirmation of the approval to proceed in order to obtain the extended 10-year ARDEX MC™ RAPID /arranty.	abuse by other trades by the use of plywood, Masonite or other suitable protection course.	C
7 DELIVERY, STORAGE AND HANDLING	SECTION 072619 - TOPICAL MOISTURE VAPOR MITIGATION SYSTEM (MAPEI)	1.
د. بعانات products in original packaging, labeled with product identification, manufacturer, batch number and shelf life.		2.
	PART 1 - GENERAL	~
B. Store products in a dry area with temperature maintained between 50° and 85° F (10° and 29° C) and Protect from direct sunlight.	PART 1 - GENERAL 1.1 RELATED DOCUMENTS Drawings, general provisions of the Contract, and other related construction documents such as Division	3.I 4.I

1.2 SUMMARY

A. Work includes Moisture Vapor Emission (MVE) Control System (Topical Moisture Vapor Mitigation

Control System will protect finish flooring from moisture and pH Alkalinity.

System) to prepare surface of concrete to receive moisture sensitive adhesives and floor coverings. MVE

1.8 PROJECT CONDITIONS A. Do not install material below 50° F (10° C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from the ARDEX Technical

in writing by MVE control systems manufacturer, but not less than 50°F (10°C) or more than 90°F (32°C) terior rated, no moisture limit, trowel grade mortars to repair concrete prior to application of MVE 3.Ion Chromatography (IC) analysis which is the analysis of water-soluble CL, SO4, K & Na 0-4 mm BTC I. Verify with Manufacturer regarding minimum time to install ceramic tile, or non-breathable floor coverings and not less than 40 or more than 60 percent air relative humidity for 48 hours before, during installation, on self-leveler. trol coating. and for 48 hours after installation, unless longer period is recommended in writing by manufacturer. 3.10 CLEANUP 3.3 SURFACE PREPARATION tatic and dynamic concrete crack repair materials. C. Install MVE control systems where concrete surface temperature will remain a minimum of °5F (3°C) luid-applied, resin-based, membrane-forming coating to control the moisture vapor emission rate A. Clean and prepare concrete substrate according to MVE control system manufacturer's written A. Use soap with water or use denatured alcohol to clean equipment before MVE Control System cures to higher than the dew point for ambient temperature and relative humidity conditions in installation areas for ER) of interior [suspended concrete slabs][slab on grade][light weight slabs]. instructions to ensure adhesion of systems to concrete. a hardened state. Cured material can only be removed mechanically. 48 hours before installation, during installation, and for 48 hours after installation unless longer period is ond promoting primer for non-absorbent substrate to receive cementitious underlayments. B.For direct application of epoxy MVE control coating without mechanical profiling, concrete must be 3.11 PROTECTION - MVE CONTROL SYSTEM recommended in writing by manufacturer. porous, have a CSP of #2 to #3, and be in pristine condition with no contamination present. elf-leveling floor underlayment. A. Protect the surface of the cured MVE control system from traffic and damage until covered by floor 1.12 PRE-INSTALLATION CONFERENCE: Conduct conference at [Project site] [Off site address] . Mechanically remove coatings and other substances that are incompatible with MVE control systems finish. Protection may include plywood, or other suitable protection board. JNIT PRICE ALTERNATE A. Discuss Contract Document Requirements, moisture tests, manufacturer recommendations, installer's and that contain soap, wax, oil, or silicone, using mechanical methods recommended in writing by MVE RELATED SECTIONS recommendations, scheduling, and protection of work from damage by other trades. control systems Manufacturer. Do not use solvents. Do not acid etch. Mechanically remove troweled CSP 1 SECTION 07512 - ROOFING SYSTEM REPAIR 03 30 00 Cast-In-Place Concrete. B.Attendance required by: Contractor, Floor Installer, Manufacturer's Representative, Independent testing finish. Concrete surface must be mechanically profiled using dustless, engineer-approved methods to agency, Concrete Subcontractor, Ready Mix supplier. obtain a CSP of #2 to #3. General: When penetration of the existing roofing system is required to accommodate new construction, 3 39 23 Membrane Concrete Curing. perform necessary roofing system repair. C. Objective of conference is: 1. [Method One: Achieve ICRI 310.2R Minimum CSP 3 by shot blasting using apparatus that abrades the 03 54 16 Hydraulic Cement Underlayment concrete surface with shot, contains the dispensed shot within the apparatus and recirculates the shot by 1. Review methods and procedures Coordination 07 16 00 Cementitious and Reactive Waterproofing vacuum pickup. Shot-blast with spherical steel shot SAE size range 230 - 300 as necessary to produce the Before starting work, verify with the Tenant's Construction Manager and the Landlord the following: 2. Tour job site representative areas to inspect and discuss condition of substrate 26 00 Vapor Retarder required profile. Remove all residual shot with a magnet. Use a handheld grinder to CSP 2 only in areas 1. Existing roof system materials and installation methods. 3. Review concrete finishing requirements 30 00 Tiling. that cannot be reached with bead blasting]. 2. Repair work responsibilities and warranty requirements. 4. Review and finalize construction schedule 2.[Method Two: Achieve ICRI 310.2R Minimum CSP 2 by diamond grinding that abrades the concrete 09 33 00 Stone Tiling. Qualifications:Repair work shall be performed only by an experienced roofing installer approved or 5. Review required inspections, testing, certifications, material usage procedures surface. Remove all dust by vacuuming with high-efficiency particulate air (HEPA) filter]. 09 60 00 Flooring. licensed by the existing roofing system materials manufacturer; with not less than five years of D. Excessively weak, soft, dusty, cracked, or uneven surfaces may not be suitable substrates and may 6. Review environmental restrictions and forecasts 62 00 Specialty Flooring. successful experience installing and repairing roofing systems similar to this projects existing roofing require additional concrete removal techniques such as scarification and then patching prior to application 7. Record content of conference including attendance and topics. 64 00 Wood Flooring. of the MVE Control System. D. Furnish record of pre-installation conference to all parties who are affected by MVE control systems 65 00 Resilient Flooring. Materials: Provide and install only materials approved and recommended by the roofing manufacturer for E.Asbestos abated slabs may have hydrophobic organic compounds in the capillaries of the concrete work repairing the existing roofing system. which will be a bond break for coatings. Microscopic petrographic examination according to ASTM C856 to 66 00 Terrazzo Flooring. PART 2 - PRODUCTS evaluate the concrete condition, potential deleterious substances and suitability for shot-blasting and Installation: Inspect roof surface conditions with roof manufacturer's representative to verify extent and 09 67 00 Fluid Applied Flooring 2.1 MANUFACTURERS location of any other repairs required to ensure a watertight roofing system upon completion of the repair coating adhesion. 09 68 00 Carpeting. work. Make necessary repairs. Match existing roof slope, insulation materials and roofing membrane A. Acceptable Manufacturer: MAPEI Corporation, 1144 E. Newport Center Drive, Deerfield Beach, FL F.Reinforcing fibers that become visible after shot blasting must be removed and vacuumed leaving no 09 97 00 Special Coatings. materials, except as otherwise approved by the existing roofing system manufacturer to accommodate 33442, USA. Toll-Free Tel.: 1-800-992-6273. Fax: 954-246-8805. Email: fibers exposed above the concrete surfaces. new construction and repair work. Install curb flashing furnished by mechanical and electrical trades for REFERENCES - Current versions at Bid Date TechServiceRequests@mapei.com. Web: www.mapei.us. G. Do not install MVE Control System if substrate testing reveals unacceptable conditions. new roof top equipment. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete 2.2 MVE SYSTEM H. Ensure that all old adhesives, contaminants, curing compounds, oils, silicates, dust and other bond floor Using Anhydrous Calcium Chloride. A. Components of MVE Control System from single source manufacturer. Do not mix products from breakers are completely removed. SECTION 07710 - MANUFACTURED ROOF SPECIALTIES STM F 2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using different manufacturers. Subject to compliance with requirements, provide the following: I. Remove dust and debris by broom sweeping and then vacuuming with High Efficiency Particulate Air tu Probes. PART 1 - GENERAL 1. Concrete Repair Mortar: Minimum compressive strength after 4 hours > 1650 psi and after 28 days > (HEPA) filter. Do not use sweeping compound as they contain oils and wax that would contaminate the 4000psi when tested in accordance with ASTM C109 / C109M. Repair mortar to be exterior rated with no ASTM 1907 - Standard Practices for Determining the Moisture-Related Acceptability of Concrete Floors concrete surface and inhibit bond of MVE Control System. 1.1 SECTION REQUIREMENTS eceive Moisture- Sensitive Finishes. moisture limitations for use to repair concrete prior to application of MVE control system. J. After shot blasting, repair damaged and deteriorated concrete according to MVE control system A. Submit Product Data, Shop Drawings, and color Samples. ASTM E 96 - Standard Test Method for Water Vapor Transmission of Materials a.Product: Subject to compliance with requirements, provide MAPEI, Planiprep[®] MRS. manufacturer's written instructions. B. Provide products that comply with applicable requirements of SMACNA's "Architectural Sheet Metal STM 4541B - Pull-Off Strength of Coatings. b.Product: Subject to compliance with requirements, provide MAPEI, Mapecem[®] Quickpatch with K.Prior to application of MVE Control Epoxy Coating, fill substrate surface depressions, ruts, spalls and Manual," unless otherwise indicated. Planicrete[®] UA additive. other irregularities with exterior grade patch: STM C109 - Standard Test Method for the Compressive Strength of Hydraulic Cement Mortars. PART 2 - PRODUCTS 2.Crack Repair Resin for static non-moving joints: 1. Product: Subject to compliance with requirements, provide MAPEI, Planiprep[®] MRS. ASTM C1708 - Standard Test Method for Self-Leveling Mortars Containing Hydraulic Cement. 2.1 ROOF SPECIALTIES a. Product: Subject to compliance with requirements, provide MAPEI, Epojet ^{IIII} LV or MAPEI, Planibond[®] 2.Product: Subject to compliance with requirements, provide MAPEI, Mapecem[®] Quickpatch with MAPEI, ASTM F2873 - Standard Practice for the Installation of Self-Leveling Underlayment and the Preparation A. Aluminum coping system manufactured by Peterson Aluminum Co. Berridge, or Architect Approved EBA. Thickening with sand is acceptable. urface to Receive Resilient Flooring. Planicrete[®] UA additive 3. Crack Repair for dynamic movement joints: L. Do not skimcoat entire concrete slab prior to application of epoxy MVE control system. STM D5125 - Standard Test Method for Viscosity of Paints and Related Materials by ISO Flow Cups. B. Finish: As noted or as selected from manufacturers standard colors. a. Product: Subject to compliance with requirements, provide MAPEI, Mapeflex¹¹ P1 SL one-Component, M. Allow concrete to off-gas after bead blasting for a minimum of 24 hours but no more than 48 hours to STM E1155 - Standard Test Method for Determining FF (Floor Flatness) and FL (Floor Levelness). PART 3 - EXECUTION avoid contamination by other trades. Failure to wait may result in the epoxy coatings ability to perform as Self-Leveling Elastomeric Polyurethane Sealant. STM F3010 - Standard practice for Two-Component Resin Based Membrane-Forming Moisture 3.1 INSTALLATION an MVE control due to pin-holing, blisters and fish-eyes. 4.MVE Control System: pation System for use Under Resilient Floor Covering. A. Coordinate with installation of roof decks and other substrates to produce a watertight assembly 3.4 CRACK PREPARATION a.Epoxy Coating component of the MVE Control System when MVER is up to MVER is up to 25 lbs. per CI 503.1R, ASTM C1583 - Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials capable of withstanding inward and outward loading pressures, and thermal and lateral loads. Isolate 1,000 square feet (9.07 kg per 92.9 m²) per 24 hours: ASTM F3010 qualified, fluid-applied, two A. Consult with an experienced engineer to determine the appropriate substrate repair procedures and Direct Tension (Pull-off Method). metals from dissimilar metals or corrosive substrates using bituminous coatings or other means of component, 100% solids epoxy resin, low viscosity, penetrating, one-coat membrane forming system; joint treatment methods. Engineer to address contraction as well as potential expansion, movement and ASTM D7234 - Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using permanent separation formulated for application on concrete substrates to reduce MVER to level required for installation of floor isolation joints. Cracks or de-bonding in the MVE control system that results from substrate movement are able Pull-Off Adhesion Tester. covering indicated, including adhesives not required to be warranted ASTM C1583/ACI 503.1R - Standard Test Method for Tensile Strength of Concrete Surfaces and the SECTION 07720 - ROOF ACCESSORIES Product: Subject to compliance with requirements, provide MAPEI, Planiseal[®] VS. B.Record location of cracks, both static and dynamic, on shop drawings. d Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off PART 1 - GENERAL Performance for Relative Humidity ASTM F2170: up to 100% RH. C. Do not apply MVE control system across substrate expansion, isolation, and other dynamic moving **1.1 SECTION REQUIREMENTS** ioints 3) VOC Content SCAQMD Rule No 1168: < 50 g per L ASTM 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. A. Submit Product Data, Shop Drawings, and color Samples. D. Mechanically prepare non-moving control and construction joints with a diamond 4) Viscosity: < 250 cps RI (International Concrete Repair Institute) Guide 310.2R - Selecting and Specifying Concrete crack-chasing/concrete-cutting blade. Overcut joint width to obtain a sound, clean edge. Clean cracks or PART 2 - PRODUCTS ace Preparation for Sealers, Coatings, Polymer Overlays and Concrete Repair. 5) Pull Off / Bond Strength / Concrete Adhesion ASTM D7234: > 1000 psi (6.90 mPa) at 28 days with joints with oil-free compressed air and dustless high-efficiency particulate air (HEPA) filter vacuum to failure in concrete substrate 2.1 ROOF ACCESSORIES (as indicated on drawings) RFCI - Recommended Work Practices for Removal of Resilient Floor Coverings, Resilient Floor completely remove contaminants (follow ACI RAP Bulletin 2, "Crack Repair by Gravity Feed with Resin"). 6) Permeability ASTM E96-05: < 0.1 perm at > 10 mil Dry Film Thickness ering Institute. A. Prefabricated Curbs and Equipment Supports E.Pre-filling static thin random drying shrinkage cracks (less than 0.01 inch (0.25 mm) width and not ACI 504 R-90 - Guide to Sealing Joints in Concrete Structures. 7) Reduction of Moisture Vapor Transmission ASTM E96: > 96% at 10 mil DFT. 1. Provide units with cant strips where applicable and base profile coordinated with roof membrane vertically displaced) is not required. Apply MAPEI, Planiseal[®] VS normally over areas of thin shrinkage ACI 302.1 - Guide for Concrete Floor Slab Construction. requirements and with roof insulation thickness and roof deck slope. cracked concrete. Alkali Resistance ASTM D1308: No affect up to pH 14 at 14 days. CI 302.2 - Guide for Concrete Slabs that Receive Moisture- Sensitive Flooring Materials. F.Fill static cracks (narrower than 1/8 inch (3 mm) and not vertically displaced) with MVE Crack Repair B. Roof Hatches 9) Relative Humidity Resistance ASTM 2170: Resists up to 100% RH. Resin. Prefill cracks with 20 to 30 sieve size silica sand and apply MAPEI, Epojet[™] LV. ASTM D1308 - Chemical Resistance of Finishes C. Heat-and-Smoke Vents 5.Bond Promoting Primer over non-absorbent MVE Control Epoxy Coating to receive up to 3/8 inch G. Fill static cracks (wider than 1/8 inch (3 mm) and not vertically displaced) with high-modulus epoxy thickness of Self-Leveling Underlayment: D. Metal Grating Roof Walkway System United States Green Building Council (USGBC) LEED certification or other sustainability certification. MAPEI, Planibond[®] EBA; thickened with silica sand to create an epoxy mortar. a.Product: Subject to compliance with requirements, provide MAPEI, Primer T PART 3 - EXECUTION South Coast Air Quality Management District (SCAQMD) 1168. H. Should contraction, control or saw-cut joint dormant joints appear not filled flush to top of surface after 6.Bond Promoting Primer over non-absorbent MVE Control Epoxy Coating to receive over 3/8 inch 3.1 INSTALLATION ASTM C856 Standard Practice for Petrographic Examination of Hardened Concrete. installation of MVE Crack Repair Resin, fill static non-moving joints with high-modulus MAPEI, Planibond[®] thickness of Self-Leveling Underlayment: DEFINITIONS EBA epoxy. Fill joints full-depth and flush to surface. A. Installation: Unless otherwise indicated, install roof accessory items according to construction details a.Product: Subject to compliance with requirements, provide MAPI, Primer E^{III} with sand broadcast. NRCA's "Roofing and Waterproofing Manual." Coordinate with installation of roof deck, vapor barriers, roof I. Fill dynamic joints with self-leveling polyurethane sealant MAPEI, Mapeflex™ P1 SL. Do not span MVE: Moisture Vapor Emission. Consult Manufacturer insulation, roofing, and flashing to ensure combined elements are secure, waterproof, and weathertight. movement joint with self-leveling underlayment nor flooring. VER: Moisture Vapor Emission Rate (measured in pounds / 1000 sf / 24 hours). Verify compatibility for all products and materials used in combination with each other. 7.Self-Leveling Underlayment to be shrinkage compensated to smooth and flatten floors. Minimum J.Reinforcing fibers that become visible after crack preparation must be removed and vacuumed leaving no RH: Relative Humidity (measured in percentage). compressive strength after 7 days > 2000 psi, and after 28 days > 3500 psi when tested in accordance with fibers exposed above the concrete surface. ASTM C109 / C109M: VOC: Volatile Organic Compound (measured in grams/Liter). 3.5 PROTECTION - OTHER SURFACES a.High-Performance, Quick-Setting, Hydraulic Cement Underlayment: Polymer-modified, self-levelina. SP: Concrete Surface Profile defined by ICRI. A. Protect walls, floor openings, electrical openings, door frames, and other obstructions during the hydraulic cement product that can be applied from 1/16 inch to 1-1/2 inches (1.5 mm to 38 mm). ACTION SUBMITTALS 1) Product: Subject to compliance with requirements, provide MAPEI, Ultraplan[®] 1 Plus. Comply with provisions of Section 01 30 00. b.Reduced-Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic 3.6 INSTALLATION MVE CONTROL SYSTEM - EPOXY oduct Data: Manufacturer's data sheets on each product to be used, including: cement product that can be applied from featheredge to 2 inches (5 cm). A. General: Install MVE control system according to ASTM F3010 and manufacturer's written instructions eparation instructions and recommendations. to product a uniform, monolithic surface free of surface deficiencies such as pin holes, fish eyes and voids. 1) Product: Subject to compliance with requirements, provide MAPEI, Ultraplan[®] Easy. orage and handling requirements and recommendations. B.Adjust application methods per manufacturer's written instruction as determined by site conditions, c. Quick-Setting, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic cement stallation methods. product that can be applied in minimum uniform thickness of 1/8 inch to 1 inch (3 mm to 25 mm). presence of sub-slab vapor barrier, concrete mix design, lightweight aggregates, suspended slab vs slab on grade, and age of concrete. Manufacturer's Safety Data Sheets (SDS). Product: Subject to compliance with requirements, provide MAPEI, Novoplan[®] 2 Plus. C. Refer to the Safety Data Sheet (SDS) for details on handling and safety equipment. Shop Drawings: Details of construction and relationship with adjacent construction. Indicate location of d.Reduced-Preparation, Hydraulic Cement Underlayment: Polymer-modified, self-leveling, hydraulic D. Mixing: Mix in accordance with Manufacturer's instructions. Mix only full units. Strictly follow minimum cement product that can be applied in minimum uniform thickness of 1/8 inch to 1 inch (3 mm to 25 mm). ding movement joints mixing time. 1) Product: Subject to compliance with requirements, provide MAPEI, Novoplan[®] Easy Plus. ED Design Submittals: E.In a single coat application, apply MVE control system epoxy to manufacturer's recommended rate with 8. Final skim coat as needed prior to installing floor finish: oduct Data indicating VOC content of coatings. no less than dry film thickness of 10 mils minimum to achieve design perm rating. Apply with notched a.Product: Subject to compliance with requirements, provide MAPEI, Planiprep[™] SC. boratory Test Results indicating compliance with low-emitting materials squeegee or notched trowel and back roll with 3/8 nap roller. Adjust application rate depending on job site PART 3 - EXECUTION concrete conditions including porosity and profile. anufacturer's product data indicating no urea-formaldehyde content. 3.1 EXAMINATION F.Cure MVE Control System components according to the manufacturer's written instruction. Prevent ocumentation showing test results measuring VOC content according to SQAQMD Rule No 1113. contamination or other damage during curing processes A. Allow at least 7 days after placement of concrete to begin this Work arranty G. After curing, examine MVE control system for surface deficiencies. Repair surface deficiencies VE Control System Manufacturers [10 year] [Lifetime] Warranty. B.Examine substrates and conditions for compliance with requirements for maximum moisture RH according to manufacturer's written instructions. content ASTM F2170, and/or MVE ASTM F1869 per the floor covering manufacturer. NFORMATIONAL SUBMITTALS 3.7 FIELD QUALITY CONTROL C. Verify slab has not been contaminated. A. Inspect MVE Control System to ensure that all voids and pinholes are filled/sealed before moving on to Qualification Data: Dates that Contractor's on-site personnel received training by the moisture vapor D. Perform water bead test and photographically record contact angle of water bead meniscus to the floor the next flooring phase. Do so by filling any voids and/or shaving off the tops of any bubbles and reapplying rol svstem manufacturer to ensure concrete is hydrophilic a thin coating of MVE Control System over the surface. Verify no bond break present. ubmit list of at least three similar projects performed by the Contractor within the previous three years E.Record alkalinity testing per ASTM F710. 3.8 INSTALLATION OF PRIMER FOR SELF-LEVELER used the same products and similar moisture vapor control system and self-leveling underlayment. F.Record ambient air RH, dew point and temperature. A. Self-Leveling Underlayment up to 3/8 inch thickness: Apply MAPEI, Primer T[™] to epoxy MVE control Pre-Installation Moisture Vapor Test Reports. G. Record slab temperature. system and allow primer to dry completely Field Quality Control Reports including Moisture Vapor Tests and Bond Strength Pull Tests on coatings H. Concrete substrates must be structurally sound, solid, and meet industry standards as defined in ACI B.Self-Leveling Underlayment over 3/8 inch thickness: Apply MAPEI, Primer E^{™fArial|b0|i0|c0|p34}; to epoxy repair mortars. Committee 201 Report "Guide to Durable Concrete" MVE control system and broadcast 20/30 sieve clean washed kiln dried sand to rejection. After 24 hours, DELIVERY, STORAGE, AND HANDLING I. Notify Architect of out of tolerance conditions that will affect Work. Proceed with installation only after vacuum non-bonded sand unsatisfactory conditions have been corrected. Installation of moisture control system indicates 3.9 INSTALLATION OF SELF-LEVELING UNDERLAYMENT Deliver and store products in manufacturer's unopened original packaging until ready for installation. acceptance of surfaces and conditions. ord product codes and batch numbers and shelf life. A. Read all installation instructions thoroughly before installation. **3.2 PREPARATION TESTING** ore products in a dry area with temperature maintained between 50°F and 85°F (10°C and 29°C) B.Before installation, close doors and windows, and turn off HVAC systems to prevent drafts during A. Pre-installation Testing by independent Testing Agency: [Owner will engage] [Engage] a qualified protect from direct sunlight. application and until the floor cures. Protect areas from direct sunlight. testing agency to perform tests. Testing performed by an ICRI Concrete Moisture Testing Technician -Store and dispose of solvent-based materials, and materials used with solvent-based materials, in C. Make sure concrete substrate and ambient room temperatures are between 50°F and 95°F (10°C and ordance with requirements of local authorities having jurisdiction. 35°C) before application. In large applications, allow for indirect air circulation to dissipate humidity created B.Alkalinity Testing: Perform pH testing according to ASTM F710. Install MVE control system in areas by leveler application. Temperatures must be maintained within this range for at least 72 hours after the Handle products in accordance with manufacturer's printed recommendations. where pH readings are less than [7.0][x] and in areas where pH readings are greater than [9.0][x]. installation of self-leveler. In cooler conditions, use indirect auxiliary heaters to maintain ambient and QUALITY ASSURANCE C. Moisture testing: Conform to ICRI test standards for three tests in the first 1000 sq. ft. and one test per substrate temperatures within the required range. For temperatures above 85°F (29°C), follow ACI Manufacturer Qualifications: Minimum 5 years manufacturing concrete resurfacing and rehabilitatior 1000 sq. ft. after that. Perform no fewer than three tests in each installation area and with tests evenly hot-weather application guidelines to ensure a successful installation. Water to be clean, potable, and cool, lucts. Employs factory trained personnel who are available for product knowledge training. spaced in installation to best represent the widest range of conditions. not warmer than 70°F. Conventional piston, rotor-stator or underlayment-type pumps may be used for 1. Perform Anhydrous Calcium Chloride Test: ASTM F1869. Install MVE Control system in locations where application of self-leveling over large areas. staller Qualifications: Minimum 5 years installing moisture vapor emission control systems. concrete substrate MVER exceeds [three] [x] lbs. of water / 1000 sq. ft. / 24 hours (1.36 kg water / 92.9 D. Strictly follow manufacturer's mixing instructions for exact water cement ratios, mixing times, speed and Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application sq. m / 24 hours). type of mixing blade. Mix full unit quantities, if working from bulk containers (i.e. super sacks), mixer must kmanship. 2.Perform Internal Relative Humidity Testing: ASTM D2170. Install MVE Control System in locations where be able to accommodate entire unit of unmixed product. Self-leveler is a calcium aluminate quick setting, nish areas designated by Architect. fast drying shrinkage compensated product when mixed correctly. Overwatering will cause shrinkage and concrete substrate RH exceeds [80%] [85%][90%][95%][100%]. o not proceed with remaining work until mockup is approved by Architect. potential delamination. D. Bond Testing: Install minimum 100 sq. ft. (9.29 sq. m) test area of complete assembly of MVE Control efinish mock-up area as required to produce acceptable work. E.Maintain continuous flow of wet material to avoid trapping air or creating a cold joint. System bonded to prepared concrete substrate. Proceed with installation if tensile bond strength on MVE ockup will be basis for quality control evaluation on remainder of Work. Control System is greater than 200 psi (1.38MPa) in heavy commercial traffic and 150 psi for normal foot F.Maintaining a wet edge throughout placement. Quickly pour or pump self-leveler onto properly traffic when tested in accordance with ASTM C1583. FIELD CONDITIONS prepared and primed surface in ribbon pattern.

A. Environmental Limitations: Comply with MVE control systems manufacturer's written instructions for substrate and ambient temperature, but not less than 50°F (10°C) and not more than 90°F (32°C) at least 48 hours before use

B.Maintain ambient air temperature and relative humidity in installation areas within range recommended

1. X Ray Diffraction (XRD) analysis which includes the evaluation of the concrete solids via energy dispersive x-ray analysis (EDXA) 0-4 mm BTC Profile - (Below Top of Core Surface). 2.Infra-red (IR) spectroscopy which is the organic chemical analysis, 0-4 mm BTC profile.

E.Concrete Core Test

G. Spread self-leveler with gauge rake to desired depth. Break surface tension of material with smoother or needle roller to allow self-leveler to flow. Apply at 3/16 inch minimum thickness. H. Apply self-leveler to flatness of 1/8 inch in 10 feet.

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REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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SPECIFICATIONS

DRAWN BY
DV
CHECKED BY
DF
JOB NUMBER
20406
SHEET NAME

SP3

SECTION 07840 - FIRESTOPPING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submit Product Data and product certificates signed by manufacturer certifying compliance with specified requirements.

3. Provide firestopping systems with fire-resistance ratings indicated by reference to UL designations as listed in its "Fire Resistance Directory," or to designations of another testing agency acceptable to authorities having jurisdiction.

C. Provide through-penetration firestopping systems with F-ratings indicated, as determined according to ASTM E 814, but not less than the fire-resistance rating of the constructions penetrated.

D. Provide through-penetration firestopping systems with T-ratings as well as F-ratings, as determined according to ASTM E 814, where indicated.

For exposed firestopping, provide products with flame-spread ratings of less than 25 and smoke-developed ratings of less than 450, as determined according to ASTM E 84.

PART 2 - PRODUCTS 2.1 FIRESTOPPING

A. As indicated on drawings.

PART 3 - EXECUTION 3.1 INSTALLATION

A. Install firestopping systems to comply with manufacturer's written instructions and with requirements isted in the testing agency's directory for the indicated fire-resistance rating. Furnish installer certifies, from installer indicating penetration fire stopping has been installed in compliance with requirements and manufacturer's written recommendations.

. Penetrations in all fire resistant rated walls

2. Penetrations in horizontal assemblies.

3. Penetrations in smoke barriers.

SECTION 07900 - JOINT SEALANTS

1.1 GENERAL

A. Preconstruction Joint Sealant-Substrate Tests: Submit substrate materials representative of actual joint surfaces to joint sealant manufacturer for laboratory testing of joint sealants for adhesion to primed and unprimed substrates and for compatibility with joint substrates and other joint-related materials. 3. Submittals: In addition to product data submit the following:

. Samples of each type and color of joint sealant required.

2. Certified test reports for joint sealants evidencing compliance with requirements.

1.2 PRODUCTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions, as demonstrated by testing and field experience.

B. Colors: Provide color indicated of exposed joint sealants or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.

C. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant 3. Factory Priming for Field-Painted Finish: Where field painting after installation is indicated, apply of base polymer indicated complying with ASTM C 920 requirements.

. One-Part, Nonsag Polysulfide Sealant: Type S; Grade NS; Class 12-1/2; Uses T, M, G, A, and O. 2. One-Part, Mildew-Resistant Silicone Sealant: Type S; Grade NS; Class 25; Uses NT, G, A, and O; formulated with fungicide; intended for sealing interior joints with nonporous substrates exposed to high humidity and temperature extremes.

D. Butyl Sealant: Manufacturer's standard one-part, nonsag, solvent-release-curing, polymerized butyl sealant complying with ASTM C 1085 and formulated with minimum of 75 percent solids to be nonstaining, paintable, and have a tack-free time of 24 hours or less.

E. Acrylic-Emulsion Sealant: One-part, nonsag, mildew-resistant, paintable, acrylic-emulsion sealant complying with ASTM C 834.

Silicone-Emulsion Sealant: Product complying with ASTM C 834 and, except for weight loss neasured per ASTM C 792, with ASTM C 920, that accommodates joint movement of not more than 25 percent in both extension and compression for a total of 50 percent.

G. Acoustical Sealant: Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies per ASTM E 90.

H. Acoustical Sealant for Concealed Joints: Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic rubber sealant recommended for sealing interior concealed joints to reduce ransmission of airborne sound.

. Tape Sealant: Solvent-free, butyl-based tape sealant with a solids content of 100 percent formulated to be nonstaining, paintable, and nonmigrating in contact with nonporous surfaces with or without reinforcement thread to prevent stretch and packaged on rolls with release paper on one side.

Preformed Foam Sealant: Preformed, precompressed, open-cell, high-density urethane foam sealant npregnated with a nondrying, water-repellent agent; in precompressed size and in roll or stick form to fit oint widths indicated; permanently elastic, mildew-resistant, nonmigratory, nonstaining, compatible with oint substrates and other joint sealants; and as follows:

. Impregnating Agent: Manufacturer's standard.

2. Density: Manufacturer's standard.

3. Backing: Pressure-sensitive adhesive factory applied to one side, with protective wrapping. K. Sealant Backings, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; approved for applications indicated by sealant manufacturer based on field experience

and laboratory testing. 1. Plastic Foam Joint Fillers: Preformed, compressible, resilient, nonwaxing, nonextruding strips of plastic foam of material indicated below, and of size, shape, and density to control sealant depth and otherwise

contribute to producing optimum sealant performance. a. Open-cell polyurethane foam.

b. Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, nonoutgassing in

unruptured state.

c. Proprietary, reticulated, closed-cell polymeric foam, nonoutgassing, with a density of 2.5 pcf and tensile strength of 35 psi per ASTM D 1623, and with water absorption less than 0.02 gram/cubic centimeter per ASTM C 1083.

d. Any material indicated above . Elastomeric Tubing Joint Fillers: 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 -26 deg

= (-32 deg C). 3. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer

for preventing bond between sealant and joint filler or other materials at back of joint.

... Primer: As recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated.

1.3 EXECUTION

A. General: Comply with joint sealant manufacturer's instructions applicable to products and applications ndicated. Clean (and/or prime) joints in accordance with manufacturers recommendations prior to start of application of joint sealant. Comply with ASTM C1193 for use of joint sealants as applicable to materials, applications and conditions indicated.

3. Sealant Installation Standard: Comply with ASTM C 1193.

. Acoustical Sealant Application Standard: Comply with ASTM C919 for use of joint sealants in acoustical applications.

D. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs 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. 1. 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.

3. Provide concave joint profile per Figure 8A in ASTM C1193, unless otherwise indicated. END OF SECTION 07901

SECTION 08110 - STEEL DOORS AND FRAMES

1 GENERAL

A. Submit Product Data for each type of door and frame

specified.

B. Quality Assurance: Comply with ANSI/SDI 100.

C. Fire-Rated Door Assemblies: NFPA 80, identical to assemblies tested per ASTM E 152, and labeled and listed by UL, Warnock Hersey, or another testing and inspecting agency acceptable to authorities having jurisdiction.

1.2 PRODUCTS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amweld Building Products, Inc.

2. Ceco Door Products.

3. Fenestra Corp.

4. Kewanee Corp.

5. Republic Builders Products.

Steelcraft.

B. Hot-Rolled Steel Sheets: ASTM A 569 (ASTM A 569M).

C. Cold-Rolled Steel Sheets: ASTM A 366 (ASTM A 366M), commercial quality, or ASTM A 620 (ASTM A 620M), drawing quality.

D. Galvanized Steel Sheets: ASTM A 526 (ASTM A 526M), commercial quality, or ASTM A 642 (ASTM A 642M), drawing quality, with A 60 or G 60 (Z 180 or ZF 180) coating designation, mill phosphatized. E. Steel Doors: Provide 1-3/4-inch- (44-mm-) thick doors of materials and ANSI/SDI A250.4, A250.8 and ANSI/SDI 100 grades and models specified below, or as indicated on Drawings or schedules:

1. Interior Doors: Level II, heavy-duty, Model 2, seamless design, minimum 0.0478-inch- (1.2-mm-) thick cold-rolled steel sheet faces.

2. Exterior Doors: Level III, extra heavy-duty, Model 2, seamless design, minimum 0.0635-inch- (1.6-mmthick galvanized steel sheet faces.

F. Frames: Provide frames for doors, sidelights, borrowed lights, and other openings that comply with ANSI/SDI 100; fabricate to be rigid, neat in appearance, and free from defects, warp, or buckle. 1. For interior frames provide units of the knock-down type, formed from 0.0478- inch- (1.2-mm-) thick cold-rolled steel for openings 48 inches (1220 mm) or less in width and from 0.0598-inch- (1.5-mm-) thick

steel for openings over 48 inches (1220 mm) in width. 2. For exterior frames provide units with mitered or coped and continuously welded corners, formed fron 0.0635-inch- (1.6-mm-) thick galvanized steel sheet.

3. Door Silencers: 3 on strike jambs of single-door frames and 2 on heads of double-door frames

G. Tolerances: Comply with SDI 117.

H. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either coldor hot- rolled steel sheet

I. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to SDI 107.

J. Glazing Stops: Minimum 0.0359-inch- (0.9-mm-) thick steel or 0.040-inch- (1-mm-) thick aluminum 1. Provide nonremovable stops on outside of exterior doors and on secure side of interior doors for glass in

2. Provide screw-applied, removable, glazing beads on inside of glass in doors. K. Finishes, General: Comply with NAAMM's "Metal Finishes Manual" for recommendations relative to applying and designating finishes.

1. Apply primers and organic finishes to doors and frames after fabrication.

L. Galvanized Steel Sheet Finishes: Comply with SDI 112 and the following:

1. Surface Preparation: Clean surfaces with nonpetroleum solvent so that surfaces are free of oil or other contaminants. After cleaning, apply a conversion coating of the type suited to the organic coating applied over it. Clean welds, mechanical connections, and abraded areas, and apply galvanizing repair paint specified to comply with ASTM A 780.

2. Galvanizing Repair Paint: SSPC-Paint 20, high-zinc-dust-content paint with dry film containing not less than 94 percent zinc dust by weight.

air-dried primer specified below immediately after cleaning

M. Steel Sheet Finishes: Comply with SSPC-PA 1, "Paint Application Specification No. 1."

1. Surface Preparation: Solvent-clean surfaces according to SSPC-SP 1. Remove mill scale and rust to comply with SSPC-SP 5 (White Metal Blast Cleaning) or SSPC-SP 8 (Pickling).

2. Pretreatment: Immediately after surface preparation, apply a conversion coating suited to organic coating applied over it. 3. Factory Priming for Field-Painted Finish: Apply shop primer that complies with ANSI A224.1 acceptance

criteria, is compatible with finish paint systems indicated, and has capability to provide a sound foundation for field-applied topcoats. Apply primer immediately after surface preparation and pretreatment. 1.3 EXECUTION

A. General: Install steel doors, frames, and accessories according to Shop Drawings, manufacturer's data, and as specified

B. Placing Frames: Comply with provisions of SDI 105, unless otherwise indicated. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set.

1. Except for frames located in existing concrete, masonry, or gypsum board assembly construction, place frames before constructing enclosing walls and ceilings and after finish flooring installation. 2. Install at least 3 anchors per jamb adjacent to hinge location on hinge jamb and at corresponding heights

on strike jamb. 3. Install fire-rated frames according to NFPA 80.

C. Door Installation: Fit hollow-metal doors accurately in frames, within clearances specified in ANSI/SDI 100.

1. Fire-Rated Doors: Install with clearances specified in NFPA 80. D. Prime Coat Touchup: Immediately after erection, sand smooth any rusted or damaged areas of prime

coat and apply touchup of compatible air-drying primer. E. Protection Removal: Immediately before final inspection, remove protective wrappings from doors and frames.

1. Shop drawings indicating location and size of each door, elevation of each kind of door, details of

a. NWWDA Quality Standard: I.S.1-A, "Architectural Wood Flush Doors," of the National Wood

b.AWI Quality Standard: "Architectural Woodwork Quality Standards" of the Architectural

c. WIC Quality Standard: "Manual of Millwork" of the Woodwork Institute of California.

A. Manufacturers Qualifications: A qualified manufacturer that is certified for chain of custody by an

FSC-accredited certification body. Subject to compliance with requirements, provide doors by one of the

construction, location and extent of hardware blocking, and other pertinent data.

2. Samples of actual materials in small sections for each face material and finish.

b.Extra heavy Duty: public restrooms, exits, staging entrance.

Faces: Medium-density overlay over standard thickness hardwood face veneers.

5. Bonding: Stiles and rails bonded to core, then entire unit abrasive planed before veneering.

C. Fire Rated Doors: Doors complying with NFPA-80 that are listed and labeled by a qualified testing

E. Shop prime exposed portions of doors for paint finish with one coat of wood primer specified in

A. Install wood doors to comply with manufacturer's instructions and referenced quality standard and as

Align and fit doors in frames with uniform clearances and bevels. Machine doors for hardware. Sea

. Shop Primer: Zinc-dust, zinc-oxide primer paint complying with performance requirements of FS

A. System Performance Requirements: Comply with structural performance, air infiltration, and water

SECTION 08410 - ALUMINUM ENTRANCES AND STOREFRONTS

END OF SECTION 08110

SECTION 08211 - FLUSH WOOD DOORS

1.1 GENERAL

A. Submittals: In addition to product data, submit the following:

B. Quality Standards:

2. Performance Grade:

1.2 PRODUCTS

following (or approved equal):

3. Mohawk Flush Doors, Inc.

1. Algoma Hardwoods Inc.

2. Fenestra Corporation.

4. Weyerhauser Co.

2. Grade: Premium.

3. Construction: 7 plies.

4. Core: Glued-block core.

1. Comply with the following standards:

Woodwork Institute

Window and Door Association

a.Heavy Duty unless otherwise indicated.

c. Standard Duty: Closet, Washer/Dryer Closet.

B. Interior Solid Core Doors for Opaque Finish: As follows:

agency, for fire protection rating where indicated

1. In sizes indicated for job-site fitting.

Division 9 Section "Painting."

1.3 EXECUTION

TT-P-641, Type II.

1.1 General:

indicated

D. Fabricate flush wood doors to comply with following requirements.

cut surfaces after fitting and machining and pretreatment.

methods indicated. B. Accessibility Requirements: Entrance to comply with ADA/ABA Accessibility Guidelines: US Architectural and Transportation Barriers Compliance Boards, American's with Disability Act (ADA) and Architectural Barriers Act (ABA) Accessibility Guidelines for buildings and facilities, and ANSI A117.1,

current version C. Thermal Movement: Provide for expansion and contraction resulting from an ambient temperature range of 180 deg F (100 deg C) without buckling, joint seal failure, undue stress on structural elements, damaging loads on fasteners, reduction of performance, or stress on glass. Doors shall function normally

over specified range. 1. Wind Loads: Provide assemblies capable of withstanding pressures of 20 psf inward and outward,

acting normal to plane of the wall. D. Structural Performance: Test in accordance with ASTM E 330. There shall be no glass breakage or permanent damage to fasteners, anchors, hardware or actuating mechanism or permanent deformation of framing members in excess of 0.2 percent of their clear span.

1. Deflection Normal to the Plane of the Wall: Test pressure shall be wind load specified. Deflection shall D. Set sill members in bed of sealant, or with joint fillers or gaskets. not exceed 1/175 of clear span, when subjected to uniform load deflection test.

2. Deflection Parallel to the Plane of the Wall: Test pressure shall be 1.5 times wind pressure. Deflection of members carrying full dead load shall not exceed amount that will reduce glass bite below 75 percent of design dimension or edge clearance between member and fixed glass or other fixed member above to less than 1/8 inch. Clearance between the member and operable door or window shall be at least 1/16 inch. 3. Wind loads as per local jurisdictional and code requirements.

Seismic loads, where applicable.

5. Windbone, debris, impact resistance, where applicable.

E. Air Infiltration: Not more than 0.06 CFM per sq. ft. of fixed area (excluding operable door edges) when tested in accordance with ASTM E 283 at inward test pressure differential of 1.57 psf.

F. Water Penetration: No uncontrolled water penetration (excluding operable door edges) when tested in accordance with ASTM E 331 at an inward test pressure differential of 6.24 lbf per sq. ft. G. Condensation Resistance: Provide units showing condensation resistance factor (CRF) of not less

than 45 when tested in accordance with AAMA 1503. H. Thermal Transmittance: Provide U-value of not more than 0.65 BTU/(hr x sq. ft. x deg F) at 15-mph

exterior wind velocity when tested in accordance with AAMA 1503. I. Submittals: Submit the following:

1. Product Data: Include fabrication methods, data on finishing, hardware and accessories and surface

maintenance recommendations. 2. Shop Drawings: Include layout, installation details, 1/4-inch scale elevations, detail sections of

composite members, anchors and reinforcement, hardware mounting heights and glazing details.

3. Hardware schedule organized into sets. Include item and manufacturer's name and designation of each item required

4. Samples: Pairs of samples of each finish on 12-inch-long sections. Where normal color variations are anticipated, include sets indicating full range of color variations.

5. Certified test reports showing systems have been tested and comply with requirements.

J. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for

installation of units required for this project and an installer who has completed installations similar to those 1. Butts and Hinges: Bommer, Cal Royal, Hager*, McKinney, H. Soss, Stanley, Roton. required and whose work has resulted in a record of successful in-service performance. K. Manufacturer's Qualifications: A firm experienced in manufacturing systems similar to those indicated

and has a record of successful in-service performance.

L. Design Criteria: Drawings indicate size, profile, and dimensional requirements and are based on specific types and models indicated. Aluminum entrance and storefront by other manufacturers may be considered provided deviations do not change the design concept.

1.2 Products:

A. Aluminum Members: Alloy and temper recommended; comply with ASTM B 221 for extrusions, ASTM Ives*, Quality, Triangle Brass. B 209 for sheet or plate, and ASTM B 211 for bars, rods, and wire. Kawneer screw spline B. Carbon Steel Reinforcement: Comply with ASTM A 36 for structural shapes, plates and bars, ASTM

A 611 for cold-rolled sheet and strip, or ASTM A 570 for hot-rolled sheet and strip. C. Glazing Materials: Comply with "Glass and Glazing" section.

D. Panel Core Material: Rigid, closed-cell polyurethane insulation.

E. Fasteners: Aluminum, nonmagnetic stainless steel, zinc plated steel, or material warranted to be non-corrosive and compatible with aluminum components, hardware, anchors, and other components. 1. Do not use exposed fasteners except for application of hardware. For hardware, use Phillips flat-head

machine screws that match finish of member or hardware being fastened. F. Concealed Flashing: 0.0179-inch (26 gage) minimum dead-soft stainless steel, or 0.026-inch-thick

minimum extruded aluminum of alloy and type selected for compatibility with other components. G. Brackets and Reinforcements: High-strength aluminum; where use of aluminum is not feasible provide nonmagnetic stainless steel or hot-dip galvanized steel complying with ASTM A 123.

H. Concrete/Masonry Inserts: Cast iron, malleable iron, or hot-dip galvanized steel complying with ASTM

Compression Weatherstripping: Replaceable molded neoprene gaskets complying with ASTM D 2000 or molded PVC complying with ASTM D 2287. J. Sliding Weatherstripping: Replaceable wool, polypropylene, or nylon woven pile weatherstripping, with

nylon fabric or aluminum strip backing, complying with AAMA 701.2.

K. Hardware: Heavy-duty units required for operation; finish to match door.

1. Ball-Bearing Butts: 5-knuckle, 2-bearings, steel ball bearing butts sized to comply with ANSI A156.1, Grade 1; 2 butts for doors 7 feet 6 inches or less, 3 butts for taller heavier doors.

2. Non-removeable Pins at all exterior door locations: Provide set screw in hinge barrel that, when

tightened into a groove in hinge pin, prevents removal of pin while entrance door is closed. 3. Surface-Mounted Overhead Closers: Modern type with cover, for hinge side installation. Comply with ANSI A156.4, Grade 1. Comply with recommendations for closer size. Include the following:

a. Hold-open arm.

b. Delayed-action closing.

c. ADA, ANSI A117.1 for accessible entrances.

4. Door Stop: Floor or wall mounted, as appropriate, with integral rubber bumper; comply with ANSI A156.16, Grade 1.

Cylinders are supplied under another Division 8 Section.

6. Thumb-Turns: Inside thumb-turn cylinders of cast aluminum alloy.

7. Deadlocks: Mortised maximum security deadlock, with minimum 1-inch-long pivoted bolt and stainless steel strike box; comply with ANSI A156.5, Grade 1. 8. Deadlatches: Mortise-type deadlatch with stainless steel strike box; comply with ANSI A156.5, Grade 1.

9. Lever Handles: Cast aluminum alloy inside units.

10. Panic Hardware: Concealed-rod type actuated by full-width crash bar. Comply with UL 305. 11. Push-Pull Plates: Aluminum push-pull plates of style indicated.

12. Thresholds: Extruded aluminum in mill finish, with anchors and clips, coordinated with pivots and

floor-concealed closers. 13. Silencers: At locations without weatherstripping, provide neoprene silencers on stops to prevent metal-to-metal contact.

L. Framing System: Fabricate from extruded aluminum members of size and profile indicated. Include reinforcing. Provide for flush glazing from the exterior without projecting stops. Shop-fabricate and

pre-assemble. Provide frame sections without exposed seams.

1. Infill Panels: Flush-laminated panels of thickness indicated, with core material laminated with waterproof glue between two sheets of aluminum.

M. Stile-and-Rail Type Entrance Doors: Provide tubular frame members, fabricated with mechanical joints using heavy inserted reinforcing plates and concealed tie-rods or j-bolts.

1. Glazing: Fabricate to facilitate replacement of glass or panels, without disassembly. Provide snap-on extruded aluminum glazing stops with exterior stops anchored for nonremoval.

2. Design: Provide 1-3/4-inch-thick doors of design indicated.

a. Medium stile (3-1/2-inch nominal width).

N. Fabrication: Fabricate components to designs, sizes and thicknesses indicated and comply with indicated standards. Sizes and profiles are indicated on the drawings.

1. Thermal-Break Construction: Fabricate framing with an integrally concealed, low conductance thermal barrier, between exterior materials and interior members to eliminate direct metal-to-metal contact. O. Prefabrication: Complete fabrication, assembly, finishing and hardware application before shipment to

the Project. Disassemble only as necessary for shipment and installation. 1. Do not drill and tap for surface-mounted hardware items until time of installation.

2. Preglaze door and frame units to greatest extent possible.

P. Welding: Comply with AWS recommendations. Grind exposed welds smooth. Restore mechanical

Q. Reinforcing: Install reinforcing for hardware and as necessary for performance requirements, sag resistance and rigidity.

R. Dissimilar Metals: Separate dissimilar metals with bituminous paint, suitable sealant, nonabsorptive plastic or elastomeric tape or gasket between surfaces. Do not use coatings containing lead. S. Continuity: Maintain accurate relation of planes and angles, with hairline fit of contacting members. T. Fasteners: Conceal fasteners wherever possible.

maintain watertight seal: U. Provide finger guards of collapsible neoprene or PVC gasketing securely anchored into frame at hinge-jamb of center-pivoted doors. 1. Neoprene, ASTM C 864. V. Finishes: Comply with NAAMM "Metal Finishes Manual" for recommendations relative to application 2. EPDM, ASTM C 864.

and designations of finishes. Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes. W. Class I Color Anodized Finish: AA-M12C22A42/A44. Comply with AAMA 606.1 or AAMA 608.1

1. Color: Clear Anodized

1.3 Execution:

A. Examine substrates for compliance with requirements, installation tolerances, and conditions that affect

installation. Correct unsatisfactory conditions before proceeding. B. Installation: Comply with manufacturer's instructions. Set units plumb, level, and true to line, without

warp or rack of framing members, doors, or panels. Install in proper alignment and relation to established lines and grades. Provide support and anchor securely in place.

C. Drill and tap frames and doors and apply surface-mounted hardware.

E. Refer to "Glass and Glazing" Section for installation of glass and other panels glazed into doors and framing

F. Adjust hardware to function properly.

G. Clean completed system after installation. Avoid damage to coatings.

H. Clean glass after installation. Comply with "Glass and Glazing" Section for cleaning and maintenance END OF SECTION 08410

SECTION 08710 - DOOR HARDWARE

1.1 GENERAL

A. Submit samples of hardware items, showing each required finish from each manufacturer (for acceptance of color and texture only).

B. Submit final hardware schedule organized by "hardware sets," to indicate specifically the product to be furnished for each item required on each door.

1. Furnish templates to each fabricator of doors and frames as required for hardware preparation.

2. Provide keying schedule. Verify keying and master keying requirements with tenant/landlord/owner a reauired. C. For fire-rated openings provide hardware tested and listed by UL or FM (NFPA Standard 80). On panic

exit devices provide UL or FM label indicating "Fire Exit Hardware."

1.2 PRODUCTS

A. Number Designations: Numbers indicating hardware items are ANSI/BHMA standard number designations

B. Manufacturers: Subject to compliance with requirements, provide products by manufacturers for various products listed below. An asterisk (*) following manufacturer's name designates manufacturer whose products are indicated in Hardware Schedule. Such products are listed in the schedule by specific reference to manufacturer's catalog numbers. Except as otherwise indicated, products of equivalent quality, design, and function by other listed manufacturers may be used, subject to approval of Architect.

2. Key Control System: Key Control Systems, Telkee. Verify with Owner.

Cylinders and Locks: Arrow, Best, Corbin & Russwin, Falcon, Sargent, Schlage*, Yale. 4. Exit/Panic Devices: Adams Rite, Arrow, Corbin & Russwin, Dor-O-Matic, Locknet*, Monarch, Precisior Reed, Sargent, Von Duprin*, Yale.

5. Overhead Closers: Arrow, Corbin & Russwin, Dorma, LCN*, International Door Closers, Monarch,

Norton. Rixon-Firemark, Sargent, Yale. 6. Door Control Devices: Baldwin, Brookline, Builders Brass, Corbin & Russwin, Glynn-Johnson, Hager

7. Door Trim Units: Baldwin, Brookline, Builders Brass, Hager, Ives, Triangle Brass.

8. Kick, Mop, and Armor Plates: Baldwin, Brookline, Corbin & Russwin, Hager, Hiawatha, Ives Triangle Brass*

9. Door Stripping and Seals: Hager, National Guard, Pemko, Reese, Sealeze, Ultra, Zero.

10. Thresholds: Hager, National Guard, Pemko*, Reese, Sealeze, Zero.

11. Automatic Drop Seals : Hager, National Guard, Pemko, Reese, Zero.

SECTION 08800 - GLAZING

specified requirements

Category II materials.

1.2 PRODUCTS

as indicated below:

requirements indicated

1. Insulating Glass Certification Council (IGCC).

1. Class 1 (clear) unless otherwise indicated.

C. Heat-Treated Float Glass Products: As follows

a. Kind HS where indicated.

b. Kind FT where indicated.

with other materials they will contact.

800 for products indicated below:

3. National Certified Testing Laboratories (NCTL).

2. Associated Laboratories, Inc. (ALI).

1.1 GENERAL

A. System Performance Requirements: Provide glazing systems capable of withstanding normal thermal movement, wind loading, and impact loading, without failure including loss or glass breakage attributable to: defective manufacture, fabrication, and installation; deterioration of glazing materials; and other defects B. Steel Framing Components for Suspended and Furred Ceilings: Provide components complying with

1. Glass Design: Provide glass lites in the thicknesses and strengths (annealed or heat-treated) to meet or 1. Wire Ties: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.062 inch (1.6 mm) thick. exceed the following criteria based on analysis of Project loads and in-service conditions: a. Minimum glass thickness, nominally, of lites in exterior walls is 6.0 mm (0.23 inch).

b. Minimum glass thicknesses of lites composed of annealed or heat-treated glass are selected so

c. Provide safety glazing in all hazardous locations as defined by code requirements. Provide

C. Product certificates signed by glazing materials manufacturers certifying that their products comply with

the worst-case probability of failure does not exceed the following:

labeling at all tempered and/or safety glazing locations.

(except black) for each type of sealant or gasket exposed to view.

were tested for compatibility and adhesion with glazing sealants.

sealants were tested for compatibility with other glazing materials.

indicated, except where more stringent requirements are indicated.

A. Float Glass: ASTM C 1036, Type I, Class as indicated below, and Quality q3:

horizontal process where indicated as tongless or free of tong marks.

Section applicable to glass products comprising lites of insulating glass units.

dehydrated space between lites, unless otherwise indicated.

compliance with other requirements of ASTM C 920 for uses indicated.

adhesive on both surfaces, and complying with AAMA 800 for product 810.5.

U-values are expressed as Btu/hour x sq. ft. x deg F.

1) 8 lites per 1000 for lites set vertically or not over 15 degrees off vertical and under wind action.

B. Submittals: In addition to product data, submit 12-inch-square samples of each type of glass

indicated, except for clear monolithic glass products, and 12-inch-long samples of each color required

D. Compatibility and adhesion test reports from sealant manufacturer indicating that glazing materials

E. Compatibility test report from insulating glass edge sealant manufacturer indicating glass edge

F. Glazing Publications: Comply with published recommendations of glass product manufacturers,

"FGMA Glazing Manual," and publications of AAMA, LSGA, and SIGMA as applicable to products

G. Safety Glass: Products complying with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for

B. Heat Treated Float Glass, Fabrication: Fabricate heat-treated float glass by the following method:

1. Vertical (tong-held) or horizontal (roller-hearth) process, at manufacturer's option, except provide

1. Uncoated, Clear, Heat-Treated Float Glass: ASTM C 1048, Condition A, Type I, Class 1, Quality q3, kind

Sealed Insulating Glass Units: Preassembled units complying with ASTM E 774 and with other

2. Performance characteristics designated for coated insulating glass are nominal values based on

manufacturer's published test data for units with lites 6.0 mm (0.23 inch) thick and nominal 1/2-inch

1. For properties of individual glass lites making up units, refer to requirements specified elsewhere in this

Elastomeric Glazing Sealants: Products complying with ASTM C 920 requirements indicated on each

Elastomeric Glazing Sealant Product Data Sheet at the end of this Section, in colors indicated, compatible

1. Additional Movement Capability: Provide products, when tested per ASTM C 719, with the capability to

withstand the specified percentage change in the joint width existing at time of installation and remain in

F. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape, with or without spacer

H. Dense Compression Gaskets: Molded or extruded, gaskets of material indicated below, complying with

standards referenced with name of elastomer indicated below, and of profile and hardness required to

G. Expanded Cellular Glazing Tape: Closed-cell, polyvinyl chloride foam tape, factory coated with

I. Soft Compression Gaskets: Extruded or molded closed-cell, integral-skinned gaskets of material indicated below, complying with ASTM C 509, Type II, black, and of profile and hardness required to

3. Silicone, ASTM C 1115.

maintain watertight seal:

Neoprene

2. EPDM.

3. Silicone.

requirements.

1.3 EXECUTION

Glazing Manual."

including weld splatter.

manufacture

1.1 GENERAL

having jurisdiction

1.2 PRODUCTS

1. Grid Suspension Assemblies:

b. Chicago Metallic Corp.

2. Gypsum Board and Related Products:

b. Georgia-Pacific Corp.

ASTM C 754 for conditions indicated.

(11.1-mm-) wide flanges, and as follows:

exterior soffits and where indicated

indicated

indicated.

exterior walls

thickness, unless otherwise indicated

exterior walls.

cementitious backer units

and in width to accommodate depth of studs.

following configuration:

requirements

d. United States Gypsum Co.

c. USG Interiors, Inc.

a. Domtar Gypsum.

a. Armstrong World Industries, Inc.

5. Any material indicated above.

Thermoplastic polyolefin rubber.

5. Any material indicated above.

Thermoplastic polyolefin rubber, ASTM C 1115.

J. Miscellaneous Glazing Materials: Products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials involved for glazing application indicated, and with a proven record of compatibility with surfaces contacted in installation. K. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing publications as required to comply with system performance

1. Clean cut or flat grind vertical edges of butt-glazed monolithic lites in a manner that produces square edges with slight kerfs at junctions with indoor and outdoor faces.

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, except where more stringent requirements are indicated, including those in "FGMA

B. Protect glass from edge damage during handling and installation.

C. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites. D. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics. E. Protect glass from contact with contaminating substances resulting from construction operations

F. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents and vandalism, during construction period.

G. Wash glass on both faces in each area of Project not more than 4 days prior to date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass

H. Lock Strip Gasket Glazing: Comply with ASTM C 716 and gasket manufacturer's printed recommendations. Provide supplementary wet seal and weep system unless otherwise indicated.

SECTION 09250 - GYPSUM BOARD ASSEMBLIES

A. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency. B. Fire-Test-Response Characteristics: Where fire-resistance- rated gypsum board assemblies are indicated, provide gypsum board assemblies that are identical to assemblies tested for fire resistance according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following

d. Worthington Steel Company (formerly National Rollinzeg Mills).

c. National Gypsum Co.; Gold Bond Building Products Division

2. Wire Hangers: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper, 0.162-inch (4.1-mm)

Hanger Rods: Zinc coated or protected with rust-inhibitive paint.

Flat Hangers: Zinc coated or protected with rust-inhibitive paint. 5. Channels: Cold-rolled steel, 0.0598-inch (1.5-mm) minimum thickness of base metal and 7/16-inch-

a. Carrying Channels: 2 inches (50.8 mm) deep, 590lb/1000 feet (88 kg/100 m), unless otherwise

b. Furring Channels: 3/4 inch (19.1 mm) deep, 300lb/1000 feet (45 kg/100 m), unless otherwise

d. Finish: Rust-inhibitive paint, unless otherwise indicated. e. Finish: ASTM A 653, G 60 (ASTM A 653M, Z 180) hot-dip galvanized coating for framing for

6. Steel Studs for Furring Channels: ASTM C 645, in depth indicated and with 0.0179-inch (0.45-mm) minimum base metal thickness, unless otherwise indicated a. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating for

framing for exterior soffits and ceiling suspension members in areas within 10 feet (3 m) of 7. Steel Rigid Furring Channels: ASTM C 645, hat shaped, 0.0179-inch (0.45-mm) minimum base metal

a. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, Z 90) hot-dip galvanized coating for framing for exterior soffits and ceiling suspension members in areas within 10 feet (3 m) of

8. Steel Resilient Furring Channels: Standard product fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M) to form 1/2-inch- (12.7-mm-) deep channel of the

a. Single- or Double-Leg Configuration: Asymmetric-shaped channel with face connected to a single flange by a single-slotted leg (web) or hat-shaped channel, with 1-1/2-inch- (38.1-mm-) wide face connected to flanges by double-slotted or expanded-metal legs (webs). 9. Grid Suspension System for Interior Ceilings: ASTM C 645, manufacturer's standard direct-hung system.

C. Steel Framing for Walls and Partitions: Provide steel framing members complying with the following

1. Protective Coating: ASTM A 653, G 40 (ASTM A 653M, attached to and within 10 feet (3 m) of exterior

2. Steel Studs and Runners: ASTM C645/ASTM C754, in depth indicated and with 0.0179-inch (0.45-mm) minimum base metal thickness, unless otherwise indicated. a. Provide 0.0329-inch (0.84-mm) minimum base metal thickness for head runner, sill runner, jamb,

and cripple studs at door and other openings b. Provide 0.0329-inch (0.84-mm) minimum base metal thickness in locations to receive

3. 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

a.Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

 Dietrich Metal Framing; SLP-TRK Slotted Deflection Track. 2) MBA Building Suppliers; FlatSteel Deflection Track, Slotted Deflecto Track.

3) <u>Steel Network Inc. (The)</u>; VertiClip SLD, VertiTrack VTD Series.

Superior Metal Trim; Superior Flex Track System (SFT).

5) Telling Industries; Vertical Slip Track, [Vertical Slip Track II] rod as recommended by tape and glass manufacturers for application indicated, and complying with AAMA 4. Steel Rigid Furring Channels: ASTM C 645, hat shaped, in depth indicated and with 0.0179-inch (0.45-mm) minimum base metal thickness, unless otherwise indicated.

> 5. Furring Brackets: Serrated-arm type, adjustable, fabricated from corrosion-resistant steel sheet complying with ASTM C 645, minimum thickness of base (uncoated) metal of 0.0329 inch (0.84 mm), designed for screw attachment to steel studs and steel rigid furring channels used for furring. 6. Steel Resilient Furring Channels: Manufacturer's standard product designed to reduce sound

transmission, fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M) to form 1/2-inch- (12.7-mm-) deep channel of the following configuration:

a. Single- or Double-Leg Configuration: Asymmetric-shaped channel with face connected to a single flange by a single-slotted leg (web) or hat-shaped channel, with 1-1/2-inch- (38.1-mm-)

wide face connected to flanges by double-slotted or expanded-metal legs (webs). 7. Z-Furring Members: Manufacturer's standard Z-shaped furring members with slotted or nonslotted web, fabricated from steel sheet complying with ASTM A 653 (ASTM A 653M) or ASTM A 568 (ASTM A 568M); with a minimum base metal (uncoated) thickness of 0.018 inch (0.45 mm), face flange of 1-1/4 inch (31.8 mm), wall-attachment flange of 7/8 inch (22.2 mm), and of depth required to fit insulation thickness indicated.

D. Fasteners for Metal Framing: Type, material, size, corrosion resistance, holding power, and other properties required to fasten steel framing and furring members securely to substrates involved; complying with the recommendations of gypsum board manufacturers for applications indicated. E. Gypsum Board Products: Types indicated in maximum lengths available that will minimize end-to-end butt joints in each area indicated to receive gypsum board application.

- 1. Gypsum Wallboard: ASTM C36/C36M-01, in thickness indicated.
- a. Type: Regular for vertical surfaces, unless otherwise indicated. b. Type: Type X where required for fire-resistance-rated assemblies.
- c. Type: Sag-resistant type for ceiling surfaces
- d. Edges: Tapered.
- e. Proprietary Gypsum Board Products: Subject to compliance with requirements, provide one of the following products where proprietary gypsum wallboard is indicated:) Gyprock Fireguard C Gypsum Board; Domtar Gypsum.
- 2) Firestop Type C; Georgia-Pacific Corp.
- 3) Fire-Shield G; National Gypsum Co.; Gold Bond Building Products Division.
- 4) SHEETROCK Brand Gypsum Panels, FIRECODE C Core; United States Gypsum Co.
- 5) SHEETROCK Brand Gypsum Panels, ULTRACODE Core; United States Gypsum Co. 1. Gypsum Wallboard: ASTM C 36, in thickness indicated.
 - a. Type: Regular for vertical surfaces, unless otherwise indicated.
- b. Type: Type X where required for fire-resistance-rated assemblies.
- c. Type: Sag-resistant type for ceiling surfaces.
- d. Edges: Tapered.
- e. Proprietary Gypsum Board Products: Subject to compliance with requirements, provide one of the following products where proprietary gypsum wallboard is indicated:
-) Gyprock Fireguard C Gypsum Board; Domtar Gypsum. 2) Firestop Type C; Georgia-Pacific Corp.
- 3) Fire-Shield G; National Gypsum Co.; Gold Bond Building Products Division.
- 4) SHEETROCK Brand Gypsum Panels, FIRECODE C Core; United States Gypsum Co.
- 5) SHEETROCK Brand Gypsum Panels, ULTRACODE Core; United States Gypsum Co.
- 2. Exterior Gypsum Soffit Board: ASTM C 931, with manufacturer's standard edges, in thickness indicated. a. Type: Regular, unless otherwise indicated.
- 3. Water-Resistant Gypsum Backing Board: ASTM C 630, in thickness indicated. a. Type: Regular, unless otherwise indicated.
- F. Cementitious Backer Units: ANSI A118.9 and C1325, in maximum lengths available to minimize end-to-end butt joints with manufacturer's standard edges.
- G. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM (1047, formed metal or plastic, with metal complying with the following requirement:
- 1. Steel sheet zinc coated by hot-dip process or rolled zinc.
- H. Accessories for Exterior Installations: Cornerbead, edge trim, and control joints formed from steel sheet zinc coated by hot-dip process or rolled zinc complying with ASTM C 1047.

J. Joint Treatment Materials: Provide joint treatment materials complying with ASTM C475/C475M and the recommendations of both the manufacturers of sheet products and of joint treatment materials for each application indicated.

- 1. Joint Tape for Gypsum Board: Paper reinforcing tape, unless otherwise indicated. a.Use pressure-sensitive or staple-attached, open-weave, glass-fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated.
- b.Use pressure-sensitive or staple-attached, open-weave, glass-fiber reinforcing tape with compatible joint compound where recommended by manufacturer of gypsum board and joint treatment materials for application indicated
- 2. Joint Tape for Cementitious Backer Units: As recommended by cementitious backer unit manufacturer.

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REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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DRAWN BY
DV
CHECKED BY
DF
JOB NUMBER
20406
SHEET NAME

6. Wood Framing: Install gypsum board panels over wood framing, with floating internal corner construction. A. Colors 3. Setting-Type Joint Compounds for Gypsum Board: Factory-packaged, job-mixed, chemical-hardening powder products formulated for uses indicated. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members, or provide control joints to counteract wood shrinkage. a. For prefilling gypsum board joints, use formulation recommended by gypsum board manufacturer. 7. Where STC-rated gypsum board assemblies are indicated, seal construction at perimeters, behind b. For filling joints and treating fasteners of water-resistant gypsum backing board behind base for control and expansion joints, openings, and penetrations with a continuous bead of acoustical sealant ceramic tile, use formulation recommended by gypsum board manufacturer. including a bead at both faces of the partitions. Comply with ASTM C 919 and manufacturer's c.For topping compound, use sandable formulation. recommendations for location of edge trim and closing off sound-flanking paths around or through gypsum . Drying-Type Joint Compounds for Gypsum Board: Factory-packaged vinyl-based products complying board assemblies. with the following requirements for formulation and intended use. 8. Space fasteners in gypsum panels according to referenced gypsum board application and finishing a.Ready-Mixed Formulation: Factory-mixed product. standard and manufacturer's recommendations. I) All-purpose compound formulated for both taping and topping compounds. a.Space screws a maximum of 12 inches (304.8 mm) o.c. for vertical applications. 5. Joint Compound for Cementitious Backer Units: Material recommended by cementitious backer unit 9. Space fasteners in panels that are tile substrates a maximum of 8 inches (203.2 mm) o.c. manufacturer. 10. Install cementitious backer units to comply with ANSI A108.11. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, 11. Install glass-mat, water-resistant gypsum backing board panels to comply with manufacturer's nonstaining latex sealant complying with ASTM C 834 that is effective in reducing airborne sound installation instructions. ransmission through perimeter joints and openings in building construction as demonstrated by testing 12. Install water-resistant gypsum backing board panels at showers, tubs, and where indicated. Install with representative assemblies according to ASTM E 90. Provide sealants that have VOC content of 250g/l or 1/4-inch (6.4-mm) open space where panels abut other construction or penetrations. ess when calculated according to 40 CFR 59, supart D (EPA Method 24). 13. Acoustical Tile Base: Where gypsum panels form the base for adhesively applied acoustical tile, install Acoustical Sealant for Concealed Joints: Manufacturer's standard nondrying, nonhardening, gypsum wallboard panels with tapered edges taped and finished to produce a flat surface. nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound. 14. Curved Surfaces: M. Miscellaneous Materials: Provide auxiliary materials for gypsum board construction that comply a. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch- (300-mm-) long straight sections at ends of curves and tangent to with referenced standards and recommendations of gypsum board manufacturer. I. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot-grouting hollow metal door b. For double layer construction, fasten base layer to studs with screws 16 inches (400 mm) o.c. rames. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaces 2. Fastening Adhesive for Wood: ASTM C557, as recommended by manufacturer. 12 inches (300 mm) o.c. 3. Fastening Adhesive for Metal: Special adhesive recommended for laminating by manufacturer gypsum 15. Single-Layer Fastening Methods: Apply gypsum panels to supports as follows in accordance with panels to steel framing. manufacturers installation instructions and specifications: 4. Steel drill screws complying with ASTM C 1002 for the following applications: a. Fasten with screws a. Fastening gypsum board to steel members less than 0.033 inch (0.84 mm) thick. b. Fasten to wood supports with single nailing. b. Fastening gypsum board to wood members. c. Fasten to wood supports with double nailing. c.Fastening gypsum board to gypsum board. d. Fasten to wood supports with adhesive and supplementary nails or screws. 5. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 6. Multilayer Fastening Methods: Apply base layers of gypsum panels and face layer to base layers as to 0.112 inch (0.84 to 2.84 mm) thick. 3. Steel drill screws of size and type recommended by unit manufacturer for fastening cementitious backer a. Fasten both base layers and face layers separately to supports with screws. b. Fasten base layers with screws and face layer with adhesive and supplementary fasteners. 7. Gypsum Board Nails: ASTM C 514. c. Fasten base layers to wood supports with nails and face layer with adhesive and supplementary 8. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated. fasteners 9. Foam Gaskets: Closed-cell vinyl foam adhesive-backed strips that allow fastener penetration without Direct-Bonding to Substrate: Where gypsum panels are indicated as directly adhered to a foam displacement, 1/8 inch (3.2 mm) thick, in width to suit metal stud size indicated. substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum 10. Thermal Insulation: Material indicated below, of thickness and width to fill voids formed by Z-furring board manufacturer's recommendations, and temporarily brace or fasten gypsum panels until fastening members: adhesive has set. a. Unfaced mineral-fiber blanket insulation to comply with ASTM C 665 for Type I. Exterior Soffits and Ceilings: Apply exterior gypsum soffit board panels perpendicular to supports, b. Extruded-polystyrene board insulation to comply with ASTM C 578 for Type IV, and with with end joints staggered over supports. Install with 1/4-inch (6.4-mm) open space where panels abut other B. External stages and the stages are stages about the stages and the stages are stages about the stages are stages are stages about the stages are stages are stages about the stages are stages about the stages are flame-spread and smoke-developed ratings of 75 and 450, respectively, according to ASTM E 84. construction or structural penetrations. Fasten with corrosion-resistant screws. . Polyethylene Vapor Retarder: ASTM D 4397, thickness and maximum permeance rating as follows: Installing Trim Accessories: For trim accessories with back flanges, fasten to framing with the same fasteners used to fasten gypsum board. Otherwise, fasten trim accessories according to accessory a.4 mils (0.1 mm), 0.19 perms (10.9 ng/Pa x s x sq. m.) manufacturer's directions for type, length, and spacing of fasteners. 12. Vapor Retarder Tape: Pressure-sensitive tape of type recommended by vapor retarder manufacturer 1. Install cornerbead at external corners. for sealing joints and penetrations in vapor retarder. 2. Install edge trim where edge of gypsum panels would otherwise be exposed. Provide edge trim type with C. Field. 1.3 EXECUTION face flange formed to receive joint compound, except where other types are indicated. Install steel framing to comply with ASTM C 754 and with ASTM C 840 requirements that apply to a. Install LC-bead where gypsum panels are tightly abutted to other construction and back flange framing installation. can be attached to framing or supporting substrate. I. Examine all areas and substrates including welded hollow metal frames and framing, with installer b. Install L-bead where edge trim can only be installed after gypsum panels are installed. present, for compliance with requirements and other conditions affecting performance. Proceed with nstallation only after unsatisfactory conditions have been corrected. Comply with ASTM 840. c. Install U-bead where indicated. 2. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to d. Install aluminum trim and other accessories where indicated. support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar e. Install control joints at locations indicated. construction. f. Install control joints according to ASTM C 840 and manufacturer's recommendations and in 3. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed specific locations approved by Architect for visual effect. by structural movement. Finishing Gypsum Board Assemblies: Treat gypsum board joints, interior angles, flanges of a. Where building structure abuts ceiling perimeter or penetrates ceiling. cornerbead, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as b. Where partition framing and wall furring abut structure, except at floor. required to prepare gypsum board surfaces for decoration. 4. Do not bridge building control and expansion joints with steel framing or furring members. Independently 1. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound. frame both sides of joints with framing or furring members as indicated. 2. Apply joint tape over gypsum board joints, except those with trim accessories having flanges not requiring both direction Installing Steel Framing for Suspended and Furred Ceilings: As follows: . Sway-brace suspended steel framing with hangers used for support. 3. Apply joint tape over gypsum board joints and to flanges of trim accessories, except those with trim having flanges not intended for tape, as recommended by trim accessory manufacturer. 2. Install suspended steel framing components in sizes and at spacings indicated, but not less than that required by the referenced steel framing installation standard. 4. Levels of Gypsum Board Finish: Provide the following levels of gypsum board finish per GA-214/ASTM C840. 3. Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets a. Level 1 for ceiling plenum areas, concealed areas, and where indicated, unless a higher level of vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track. finish is required for fire-resistance-rated assemblies and sound-rated assemblies. 4. For exterior soffits, install cross-bracing and additional framing to resist wind uplift according to details on b. Level 2 where panels form substrates for tile and where indicated. Drawings. c. Level 4 for gypsum board surfaces, unless otherwise indicated. Installing Steel Framing for Walls and Partitions: Install steel studs and furring at spacings d. Level 5 for gypsum board surfaces, as indicated on drawings. Level 5 - The highest quality finish ndicated. is the most effective method to provide a uniform surface and minimize the possibility of joint I. Where studs are installed directly against exterior walls, install asphalt felt strips or foam gaskets between photographing and of fasteners showing through the final decoration. This level of finish is required where gloss, semi-gloss or enamel are specified, or when flat joints are specified over an vitreous plum studs and wall. untextured surface, or where critical lighting conditions occur. The prepared surface shall be 2. Extend partition framing full height to structural supports or substrates above suspended ceilings, except coated with a drywall primer prior to the application of final decoration. All joints and interior where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors angles shall have tape embedded in joint compound and immediately wiped with a joint knife or and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum trowel, leaving a thin coating of joint compound over all joints and interior angles. Two separate onard coats of joint compound shall be applied over all flat joints and one separate coat of joint 3. Cut studs 1/2 inch (13 mm) short of full height to provide perimeter relief. compound applied over interior angles. Fastener heads and accessories shall be covered with 4. For STC-rated and fire-resistance-rated partitions that extend to the underside of floor/roof slabs and three separate coats of joint compound. A thin skim coat of joint compound shall be trowel applied decks or other continuous solid structural surfaces to obtain ratings, install framing around structural and to the entire surface. Excess compound is immediately sheared off, leaving a film or skim coating other members extending below floor/roof slabs and decks, as needed, to support gypsum board closures of compound completely covering the paper. As an alternative to a skim coat, a material needed to make partitions continuous from floor to underside of solid structure. Seal construction at manufactured especially for this purpose may be applied. The surface must be smooth and free of perimeters, openings, joints, etc. with a continuous bead of acoustical sealant in accordance with tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the manufactures requirements. application of the final decoration. 5. Frame door openings to comply with GA-219, and with applicable published recommendations of gypsum 5. For Level 4 gypsum board finish, embed tape in joint compound and apply first, fill (second), and finish board manufacturer, unless otherwise indicated. (third) coats of joint compound over joints, angles, fastener heads, and accessories. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects and ready for 6. Frame openings other than door openings to comply with details indicated or, if none indicated, as decoration. required for door openings. Install framing below sills of openings to match framing required above door 6. Where Level 2 gypsum board finish is indicated, embed tape in joint compound and apply first coat of 7. Install Z-furring members and thermal insulation as indicated and to comply with requirements of joint compound. nanufacturer's directions. 7. Where Level 1 gypsum board finish is indicated, embed tape in joint compound. 3. Install polyethylene vapor retarder where indicated to comply with the following requirements: 8. Finish exterior gypsum soffit board using setting-type joint compounds to prefill joints and embed tape, a. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in and for first, fill (second), and finish (third) coats, with the last coat being a sandable product. Smooth each coat before joint compound hardens to minimize need for sanding. Sand between coats and after finish place with mechanical fasteners or adhesives. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose mineral-fiber insulation. a.Painting exterior gypsum soffit board after finish coat has dried is specified in another Division 9 b. Seal vertical joints in vapor retarders over framing by lapping not less than 2 wall studs. Fasten vapor retarders to framing at top, end, and bottom edges, at perimeter of wall openings, and at lap joints; space fasteners 16 inches (400 mm) o.c. 9. Finish cementitious backer units to comply with unit manufacturer's directions. c. Seal joints in vapor retarders caused by pipes, conduits, electrical boxes, and similar items END OF SECTION 09250 penetrating vapor retarders with vapor retarder tape. d. Repair any tears or punctures in vapor retarder immediately before concealing it with the SECTION 09300 - TILE installation of gypsum board or other construction. 1.1 General Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ANSI Tile Standards: Comply with ANSI A137 Standard Specification for Ceramic Tile and ANSI ASTM C 840 and GA-216. 108 series of tile installation standards included under "American National Standard specifications for the I. Install sound-attenuation blankets, where indicated, prior to installing gypsum panels unless blankets are Installation of Ceramic Tile." readily installed after panels have been installed on one side. TCNA Installation Guidelines: TCNA "Handbook for Ceramic, Glass and Stone Tile Installation"; 2. Install ceiling board panels across framing to minimize the number of abutting end joints and to avoid comply with TCNA installation methods indicated. abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less Performance Requirements: than one framing member. 1. Dynamic Coefficient of Friction: For tile installed on walkways surfaces, provide products with the 3. Spot grout hollow metal door frames for solid-core wood doors, hollow metal doors, and doors over 32 nches (813 mm) wide. Apply spot grout at each jamb anchor clip and immediately insert gypsum panels following values as determined by testing identical products per ASTM C1028: nto frames. a. Level Surfaces: Minimum 0.42 dynamic coefficient of friction. 4. Form control and expansion joints at locations in accordance with ASTM C840, or as indicated and as b. Step Treads: Minimum 0.42 dynamic coefficient of friction. detailed, with space between edges of adjoining gypsum panels, as well as supporting framing behind c. Ramp Surfaces: Minimum 0.42 dynamic coefficient of friction. gypsum panels. 2. Manufacturer shall verify compliance and submittal documentation for all materials installed on all walking 5. Isolate perimeter of nonload-bearing gypsum board partitions at structural abutments, except floors, as surfaces detailed. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with Submittals: With manufacturer's product data and installation instructions for tile work, submit J-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting samples of each type, color, and texture of tile mounted on 12-inch- square backing with joints grouted. structural surfaces with acoustical sealant. 1.2 Products

	A. Colors, Textures, and Patterns: For tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, comply with the following requirements	C. Handle products in accordance with manufacturer's printed recommendations.1.6 PROJECT CONDITIONS	1. High Performance Cement Tile Grout: Fast-setting sanded polymer-modified grout, ANSI A118.7 and ISO 13007 CG2WAF; Compressive Strength: When tested in accordance with ÅSTM C109 at 110 percent	A. Prior to the installation of the finish flooring from abuse by other trades by the use of plywood, Masonite or other suitable protection course.	
	 Provide selections made by Architect from manufacturer's full range of standard colors, textures, and patterns for products of type indicated. 	A. Maintain temperature in tile areas at not less than 50°F (10°C) or more than 85°F (29°C) during installation and for at least 7 days after completion, upless otherwise indicated in the product	flow; a.MAPEI, Ultracolor Plus FA	SECTION 09306 - WATERPROOFING & CRACK ISOLATION COMPOUND (MAPEI)	
	B. Sizes and Thickness: As indicated or, if not indicated, as selected by Architect from manufacturer's standard sizes and thicknesses.	instructions and/or in ANSI A108 installation standards.	b.Color: #104 Timberwolf.	PART 1 - GENERAL	RGLA
	C. Tile Grade: "Standard Grade" unless otherwise indicated.	1.7 WARRANTY The ARDEX products as specified herein qualify for the 10 year ARDEX SYSTEM ONE Extended Warranty	and 25 mm) wide.	Refer to Section 09305 (MAPEI) Part 1 General PART 2 - PRODUCTS	
	D. Unglazed Ceramic Mosaic Tile: Factory-mounted flat file and as indicated on finish schedule to comply with manufacturers requirements.	Program. PART 2 - PRODUCTS	d.Applications: Use for all tile for which a different grout is not specified. 2.Premium Epoxy Mortar and Grout: For grout joints from 1/16 inch to 3/8 inch (1.5 mm to 10 mm), ANSI	A. Acceptable Products Manufactured by: 1 Acceptable Manufacturer: MAREL Corporation, 1144 E. Nowport Conter Drive, Deerfield Reach, El	
	E. Glazed Ceramic Mosaic Tile: Provide factory-mounted flat tile as indicated on finish schedule to comply with manufacturers requirements.	2.1 SETTING MORTAR	A118.3, ISO 13007 R2 and RG, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.	33442, USA. Toll-Free Tel.: 1-800-992-6273. Fax: 954-246-8805. Email: KMcGinley@mapei.com. Web:	rgla solutions, inc.
	F. Trim Shapes: Same material, size, color, and texture as field tile.G. Marble Thresholds: ASTM C503, with a minimum abrasion resistance of 10 per ASTM C1353 or	A. Acceptable Products Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA 15001 USA, (724) 203-5000, www.ardexamericas.com :	a.Product: Subject to compliance with requirements, provide MAPEI, Kerapoxy CQ. b Applications: All interior and exterior tile: joints between 1/16 inch and 3/8 inch (1.5 mm and 10	2.1 WATERPROOFING/CRACK ISOLATION MEMBRANE	5100 River Road, Ste 125
	ASTM C241and with honed finish.	 ARDEX X 5[™] Thin Set Mortar (No Substitutions) Performance and Physical Properties: Meet or exceed the following values for material cured at 70° 	mm) wide.	A. General: Manufacturer's standard product that complies with ANSI A118.10 and ANSI A118.12 for performance and is recommended by the manufacturer for the application indicated. Include reinforcement	p: 847.671.7452 f: 847.671.4200
	2. Description: Match Architect's sample as indicated on finish schedule.	F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:	1. Floor Skimming, Coating and Patching: Per MAPEI recommendations.	B. Products:	www.rgla.com
	 Elastomeric Sealants: Manufacturer's standard chemically curing, elastomeric sealants of base polymer indicated that comply with requirements of Division 7 Section "Joint Sealers" 	2.2 GROUT & CAULK	a.Acceptable Product: MAPEI, Planiprep SC. b.Acceptable Product: MAPEI, Planitop 330 Fast.	1.MAPEI, Mapelastic AquaDefense.	
	including ASTM C 920 as referenced by Type, Grade, Class, and Uses. 1.One-Part Mildew-Resistant Silicone Sealants: ASTM C 920, Type S, Grade NS, Class 25,	 A. Acceptable Products Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive, Aliquippa, PA 15001 USA (724)203-5000, <u>www.ardexamericas.com</u> 	2.Flexible Sealant: Professional-grade, 100%-silicone sealant specifically formulated for heavy traffic expansion and movement joints, beirgental and vertical complying with ASTM standards; shore A hardness	73°F (21°C) and 50% relative humidity: Meets or Exceeds ANSI A 118.10 & ANSI A 118.12.	REVISIONS: DATE: LL & ULTA REVIEW 07/01/2020
	Uses T1, T2, NT, I, M, G, A, and O (for use in joints in traffic and nontraffic areas).	ARDEX FL [™] Sanded Grout; Color: Silver Shimmer (No Substitutions)	(ASTM C661), joint movement (ASTM C920), elongation at break (ASTM D412), flexibility (ASTM C734) and passes weatherability (Accelerated Weathering Tester OLIV)	2.Coats: 2, DFT 20 mils.	PERMIT ISSUE 07/02/2020
	water-resistant coating on both faces, complying with the following requirements:	$F+/-3^{\circ}F$ (21° C+/-3°C) and 50% +/-5% relative humidity:	a.Product: Subject to compliance with requirements, provide MAPEI, Mapesil T.	 Dry Time: 1st coat - When dark green and dry to touch. Accepts Tile: After 2nd coat - About 30 to 50 minutes (when dark green and dry to touch). 	BID ISSUE 07/13/2020
 J. Barray S. Barray S. S. Sandar J. S. Sandar J. S. Sandar J. S	both faces and lightweight concrete core composed of portland cement and expanded ceramic aggregate: fabricated in panels 7/16-inch thick by 36 inches wide, weighing 3.2 - 3.8 psf.	2.Working Time: 30 minutes	3.Grout Release and Sealers: a.Acceptable Product: MAPEI, UltraCare Grout Release.	5. VOC Content: 0 g/L (calculated).	
<text></text>	J. Miscellaneous Materials: Provide the following materials as recommended by manufacturer as	3.Open to Traffic: 90 minutes C ARDEX SX Caulk - color to match grout	b. Acceptable Product: MAPEI, UltraCare Penetrating SB Stone, Tile & Grout Sealer.	6.Flood Test: Cure at least 12 hours at 73°F (23°C) and 50% relative humidity. 2.2 GROUT:	
	1. Temporary Protective Coating: Where applicable, provide protective coating to protect		 MIXES Proportion and mix materials in accordance with manufacturer's most current written instructions and 	A. Products: 1 MAPEL: Kerapovy CO. Color #104 Timberwolf	
 C. A. S. A.	exposed surfaces of tile against adherence of mortar and grout, as recommended by manufacturer compatible with tile and mortar/grout products.	<u>SECTION 09305 - TILE AND STONE SETTING MATERIALS AND ACCESSORIES</u> (MAPEI)	applicable ANSI standards. PART 3 - EXECUTION	B. To be used in locations utilizing MAPEI, Mapelastic AquaDefense, instead of sanded grout.	
	 K. Crack Isolation Membrane: 1. General: Installing Contractor is required to field inspect substrate prior to tile installation for 		1. Examine surfaces to receive tilework and conditions under which tile will be installed.	C. Performance and Physical Properties: Meet or exceed the following values for material cured at 73°F (23°C) and 50% relative humidity.	
	acceptable surfaces and provide crack isolation membrane as recommended by manufacturer to achieve proper tile installation results.	 Tile and stone setting mortars and adhesives. 	reference tile installation standard and manufacturer's printed instructions.	D. Industry Standards: ANSI A118.3, ISO 13007 R2/RG.	
	2. Provide Manufacturer's standard product that complies with ANSI A118.12 for standard performance and is recommended by the manufacturer for the application where required	 Grout for tile and stone. Self-leveling underlayment, skimcoating and patching. 	 B. INSTALLATION 1. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI 	2.3 SELF-LEVELING UNDERLAYMENT & PATCH (as required)	
	Include reinforcement and accessories recommended by manufacturer.	4. Waterproofing membrane.	A108 Series for the materials being used. 2. Install tile using TCNA methods specified on the drawings.	A. Products: 1.MAPEI. Ultraplan 1 Plus.	000 000 000 000
	A. Examine substrates, areas and conditions where tile will be installed, with installer present,	5.Crack isolation membrane. B. RELATED SECTIONS	3. Floor Tile install in accordance with TCNA method F205 and F125 Full.	2.MAPEI, Planiprep SC.	c t u ste 1 71 74 71 42 gla c
 M. Son State Stat	for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile. Proceed with installation only after unsatisfactory conditions	1. Section 093000 - Tile: Ceramic tile materials.	 Wall Tile install in accordance with TCNA method W244C, W224F, W245, W246 Install expansion and control joints in accordance with TCNA method EJ171. 	A. Products:	ark, late www.r
	have been corrected. B. Extend tile work into recesses and under or behind equipment and fixtures, to form a complete	C. REFERENCES	C. GROUTING	1.MAPEI, Planiseal VS or Planiseal VS Fast.	
 Martin Martin Mar	covering without interruptions, except as otherwise shown. Terminate work neatly at obstructions, edges and corners without disrupting pattern or joint alignments. Accurately form	 ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile. ASTM C 150 - Standard Specification for Portland Cement. 	2. Clean sanding water, dust, and foreign substances from joints to be grouted.	3.1 PREPARATION	DC I a 00 Ri Schild
 Martines Martines<	intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-in items for straight aligned joints.	3. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; Tile Council of North America.	 Clean and dry tile surfaces. After grouting, remove all grout residue promptly. 	 A. Subfloors: Prepare substrate in accordance with manufacturer's instructions. 1.Prior to proceeding please refer to ANSI A 108.01 "General Requirements for Subsurface" and the 	SS 51 a l
	covers overlap tile.	4. ISO 13007 - International Standards Organization; classification for Grout and Adnesives. D. SUBMITTALS	D. PROTECTION 1. Floore, Destant from all traffic for at least 70 hours of the installation	TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for detailed information. Substrate and ambient temperatures must be a minimum of 50°F (10°C).	
	C. Field-Applied Temporary Protective Coating: Contractor to verify and coordinate with tile manufacturer methods to prevent adhesion or staining of exposed tile surfaces by grout and	 Submit under provisions of Section 01300. Manufacturer's technical information for each product specified 	a. Do not step on floor for at least 24 hours; if traffic is unavoidable after that, use plywood stepping	2. All subfloors must be clean and completely free of all contaminants, including dust, oil, grease, wax, sealers, paint, varnish, etc. Prepare floor as required by mechanical means. Do not use chemicals to clean	
 L. S. Solar A. So	comply with manufacturers recommendations and installation instructions. 3. Protection: When recommended by tile manufacturer, apply a protective coat of neutral	3. Samples: Color charts for selection of grout.	boards. b. Protect from heavy traffic for at least 7 days after installation.	the floor.	IO
 J. S. J. Solar Schemen and Sc	protective cleaner to completed tile walls and floors. Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent damage and wear.	 4. Installation Instructions: Manufacturer's printed instructions for each product. E. QUALITY ASSURANCE 	c. When fast-setting materials are used to allow faster occupancy, comply with the manufacturer's recommendations.	recommendations.	
 Market of Market of Mar	D. At "wet areas," install cementitious backer units and treat joints to comply with manufacturer's instructions for type of application indicated.	1. Provide tile grout, setting materials, additives, and factory-prepared polymer modified mortars from the same manufacturer.	2. Walls: Protect from impact, vibration and heavy hammering on adjacent and opposite walls for at least 14 days after installation unless manufacturer's instructions allow a shorter period	 Joint Preparation 1. Dynamic Moving Joints - Expansion joints must be provided over existing moving joints and cracks, 	
 Junch and and and and and and and and and and	E. Installation: Comply with ANSI A108.1 and 108.4 through A108.10, as applicable for type of tile, setting materials, grout, and methods of installation indicated. Comply with manufacturer's	F. DELIVERY, STORAGE AND HANDLING	3. Protect from food products and chemicals which can cause staining for at least 14 days.	and where substrate materials change composition or direction per ANSI A108 AN-3.7. a. Products:	
	instructions for application of proprietary materials.	 Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. 	Protect from freezing and total water immersion for at least 21 days after installation.END OF SECTION	1)MAPEI, Mapeflex P1 SL. 2 Static non-moving joints (Saw Cuts and Control Joints) - As recommended by the manufacturer	2
	completed.	 Prevent damage or contamination to materials by water, freezing, foreign matter or other causes. a. Do not use frozen materials unless specifically allowed by manufacturer. 		a. Products:	
	when adjoining tile on floor, base, walls and trim are the same size. Lay out tile work and center fields in both directions within each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint	b. Deliver and store materials on site at least 24 hours before work begins.	SECTION 09500 - WATERFROOFING & CRACK ISOLATION COMPOUND (ARDEX) PART 1 - GENERAL	1)MAPEI, Epojet LV or Planibond EBA. Thickening with sand is acceptable. 3.2 APPLICATION OF WATERPROOFING AND CRACK ISOLATION MEMBRANE	
 And a state of the state of the	widths.	G. PROJECT CONDITIONS	Refer to Section 09305 (Ardex) Part 1 General PART 2 - PRODUCTS	A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.	
 de la particulation de la particu	G. Expansion, Control, Contraction, and Isolation Joints: As indicated, or as in accordance with TCNA Handbook Method EJ171. Keep joints free of adhesive and grout.	 Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations. 	A. Acceptable Products Manufactured by ARDEX Engineered Cements: 400 Ardex Park Drive,	 B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials. 	
 B. Law of the control description o	 Seal tile joints with elastomeric sealants to comply with Division 7 Section "Joint Sealers." Sealing tile joints is specified in Division 7 section "Joint Sealers." 	 Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide build-up. Maintain temporatures at not less than 50 days E (10 days C) in tiled areas during installation and for 7 	Aliquippa, PA 15001 USA, (724) 203-5000, www.ardexamericas.com: 2.1 ARDEX 8+9™	C. Install Waterproofing and Crack Isolation Membrane.	
 A. Source state and a state is a state and a state and	H. Cleaning: Upon completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter. Use only recommended cleaners by the tile and grout manufacturer's and only	days after completion, unless higher temperatures are required by referenced installation standards or manufacturer's written instructions	A. Performance and Physical Properties: Meet or exceed the following values for material cured at 70° F+/-3°F (21° C+/-3°C) and 50% +/-5% relative humidity:	 Reference ANSI A108.13 Installation of Waterproofing Membranes and ANSI A108.17 Installation of Crack Isolation Membrane. 	
 I. Marchangen and March	after determining that cleaners are safe to use by testing on samples of the tile and other surfaces to be cleaned.	PART 2 - PRODUCTS	1. Meets or Exceeds ANSI A 118.10 & ANSI A 118.12	Comply with manufacturer's printed instructions for mixing of material, installation, and cure. For questions, contact:	
 And a proper sector of a proper sector	1. Remove latex-portland cement grout residue from tile as soon as possible.	 A. MANUFACTURERS 1. Acceptable Manufacturer: MAPEI Corporation, 1144 E. Newport Center Rd., Deerfield Beach, FL 33442; 	2. Pot Lite: 45 Minutes 3. Coats: 2	a. MAPEI Technical Services Department at (800) 992-6273.	THE ABOVE DRAWINGS AND SPECIFICATIONS AND IDEAS, DESIGNS AND ARRANGEMENTS REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF THIS OFFICE: AND
 And starting and s	2. Origiazed the may be cleaned with acid solutions only when permitted by the and grout manufacturer's printed instructions but no sooner than 14 days after installation. Protect metal surfaces, cast iron, and vitreous plumbing fixtures from effects of acid cleaning. Flush surface with clean water before and after	USA. Toll-Free Tel: 800-992-6273; Fax: 954-246-8805. Email: TechServiceRequests@mapei.com. Web: <u>www.mapei.us</u>	4. Dry Time: 1 hr coat 1, 2-hr coat 2 5. Accents Tile: Within 90 minutes	1. Install tiles following the general office outline procedure set forth in ANSI A108.5.	NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN THE CONNECTION WITH ANY WORK OR PROJECT
 All All All All All All All All All All	cleaning.	 Acceptable Manufacturer: MAPEI, Inc., 2900 Francis-Hughes, Laval, QC, H7L 3J5; Canada Toll-Free Tel: 1-800-361-9309. Fax: 450-901-0196. Email: <u>TServicesCA@mapei.com</u>; Web: www.mapei.ca. 	6. VOC Content: 0 g/L (calculated)	Comply with manufacturer's printed instructions for mixing of material, installation, and cure. For questions, contact:	WHICH THEY HAVE BEEN PREPARED AND DEVELOPED WITHOUT THE WRITTEN CONSENT OF THIS OFFICE. VISUAL CONTACT WITH
 Market and Scheme and Sc	manufacturer that is acceptable to brick and grout manufacturer. Trap and remove coating to prevent it from	3. Substitutions: Not permitted.	 Flood Test: Begin 4 hours after second coat has been applied 2.2 ARDEX WA Epoxy Adhesive & Grout, Color #19 Silver Shimmer 	a.MAPEI Technical Services Department at (800) 992-6273.	THESE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS.
 Index def is def is defined and is def	4. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken unbonded, or	1. Setting Mortar for Large Module Tile and Stone: Large and Heavy Tile polymer-modified	 A. To be used in locations utilizing ARDEX 8+9 instead of sanded grout B. Performance and Physical Properties: Meet or exceed the following values for material cured at 70°. 	A. Where required, contact manufacturer for field sampling methods and procedures.	WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS: CONTRACTORS SHALL VERIFY
Section 4000000000000000000000000000000000000		single-component mortar complying with ANSI A118.4H or better and ISO 13007 C2S1 or better; a.MAPEI, Ultralite Mortar, ANSI A118.4HTE, ANSI A118.11, ANSI A118.15HTE, and ISO 13007	$F+/-3^{\circ}F$ (21° C+/-3°C) and 50% +/-5% relative humidity:	 3.4 PROTECTION A. Prior to the installation of the finish flooring from abuse by other trades using plywood, Masonite or 	AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND
Market UP Note	SECTION 09305 - TILE AND STONE SETTING MATERIALS AND ACCESSORIES	C2TES1P1 or, b.MAPEI, Ultraflex LFT, ANSI A118.4HTE, ANSI A118.11, ANSI A118.15 HTE, and ISO 13007	2.3 ARDEX K15 & ARDEX FEATHER FINISH (UNDERLAYMENT & PATCH) as required	other suitable protection course.	CONDITIONS SHOWN BY THESE DRAWINGS. SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING
 Additional status of a status	Part 1 - GENERAL	C2TES1P1 or, c. Applications: Interior wall and floor installations.	2.4 ARDEX MC™ Moisture Control Systems (RAPID or ULTRA) as required PART 3 - EXECUTION		© 2020 RGLA SOLUTIONS, INC.
Disk display Display </td <td> 1.1 RELATED DOCUMENTS A. Drawings, general provisions of the Contract, and other related construction documents such as </td> <td>2. Fast-Setting Thin-Set and Large and Heavy Tile Mortar: Latex modified hydraulic cement mortar;</td> <td>3.1 PREPARATION</td> <td></td> <td>© 2020 ROBERT G. LYON & ASSOCIATES, INC.</td>	 1.1 RELATED DOCUMENTS A. Drawings, general provisions of the Contract, and other related construction documents such as 	2. Fast-Setting Thin-Set and Large and Heavy Tile Mortar: Latex modified hydraulic cement mortar;	3.1 PREPARATION		© 2020 ROBERT G. LYON & ASSOCIATES, INC.
 A determine the determine the page product access to the page	Division 01 specifications apply to this Section 1.2 SUMMARY	a.اسمح بتاري الماسطيان System two-component system, of nydraulic mortar and flexible liquid polymer additive complying with ANSI A118.4F, ANSI A118.11, ANSI A118.15F, and ISO 13007 C2ES2P2 or	 Subilious. Frepare substrate in accordance with manufacturer's instructions. Prior to proceeding please refer to ANSI A 108.01 "General Requirements for Subsurface" and the TONUL "the track of the Tonus of the Ton		
 And the ACC product as system is address in the second as the asset in the second as the aset in the second as the aset in the second as the as	A. This Section includes materials for the preparation of substrates and materials for the installation of tile and stone finishes to include setting materials and grouts	b.MAPEI, Ultraflex LFT Rapid, A118.4HTF, ANSI A118.11, ANSI A118.15HTF, and ISO 13007	TCNA's "Handbook for Ceramic Tile Installation" for detailed information. Substrate and ambient temperatures must be a minimum of 50°F (10°C).		
Teles Coduce solute signed services 2.3.3.6.12 yes Decembers of usame services (in services) 3.3.3.6.12 yes Decembers of usame services (in services) 1.3.3.6.12 yes Decembers of Usame services) 1.3.3.6.12 yes Decembers of Usame services (in services) 1.3.3.6.12 yes Decembers of Usame services)	B. Complete ARDEX product and system installation details are provided in their corresponding	c. Applications: Interior wall and floor installations.	All subfloors must be clean and completely free of all contaminants, including dust, oil, grease, wax, sealers, paint, varnish, etc. Prepare floor as required by mechanical means. Do not use chemicals to clean		BEAUTY
1/Detro	Technical Brochure available at <u>www.ardexamericas.com</u> . C. Related Sections include the following:	3.Modified Dry-Set Cement Mortar for standard size tile (less than 15 inches - all sides); a MAPEL Ultraflex 2. ANSI A118 4E. ANSI A118 11. and ISO 13007 C2EP1.	the floor. 3. Install cementitious patch and underlayment as required and in accordance with manufacturer's		LU TA 4 700
Last Hardback C SELF-APELAC UNDERVANTION Long Journes - Expendion Long Journes - Expendion <td< td=""><td>7.Division 09 Tile & Stone Sections</td><td>b. Applications: Interior wall and floor installations.</td><td>recommendations.</td><td></td><td>3031 E. HIGHLAND DRIVE</td></td<>	7.Division 09 Tile & Stone Sections	b. Applications: Interior wall and floor installations.	recommendations.		3031 E. HIGHLAND DRIVE
1. A Hat Addition (Dy-Set Connect Materia initiality (for yound in precise and preparation (for yound in precise and precise and preparation (for yound in precise and preparati	A. AMERICAN NATIONAL STANDARDS INSTITUTE (A.N.S.I.)	C. SELF-LEVELING UNDERLAYMENT 1. Self-Leveling Fast Track Underlayment: Pre-blended cementitious, for fast track floor covering	1. Moving Joints - Expansion joints must be provided over existing moving joints and cracks, and where substrate materials change composition or direction per ANSI A108 AN-37. A flexible sealing compound		JONESBORO, AR 72401
 A. 173 tigs Performance Convert Condu to Tile Instabilition<td> A-118.4 Modified Dry-Set Cement Mortar A-118.11 EGP Latex-Portland Cement Mortar. </td><td>installation, for use in dry interior applications. a.Acceptable Product: MAPEI, Ultraplan 1 Plus, fast setting; for over cured concrete, exterior</td><td>such as ARDEX ArdiSeal™ Rapid Plus may be installed.</td><td></td><td></td>	 A-118.4 Modified Dry-Set Cement Mortar A-118.11 EGP Latex-Portland Cement Mortar. 	installation, for use in dry interior applications. a.Acceptable Product: MAPEI, Ultraplan 1 Plus, fast setting; for over cured concrete, exterior	such as ARDEX ArdiSeal™ Rapid Plus may be installed.		
A. A 100 Undersite deguinements for substrites and Presentations for Undersites for Substrites for Substrites and Presentations for Undersites for Substrites and Presentations for Undersites for Substrites and Presentations for Undersites for Substrites for Undersites for Undersit	3. A-118.7 High Performance Cement Grouts for Tile Installation	grade plywood, 1/16 inch to 1 1/2 inch (1.5 mm to 38 mm).	2. Saw Cuts and Control Joints - In all non-moving joints with ARDEX ArdiFix *** Joint Filler, as recommended by the manufacturer.		
6. A 126 3 brait alloan of Carrent Twint Twint Dy-Set Portiand Carrent Montar or Lakez Portiand Carrent Montar Or Lake Data Montar Portiand Carrent Montar Portiand Monta	 A-108.01 General Requirements for Subsurfaces and Preparations by Other Trades A-108.10 Installation of Grout in Tilework 	eveling underlayment featheredge to 2 inches (50 mm), over cured concrete, exterior grade plywood, and adhesives residues.	 3.2 APPLICATION OF WATERPROOFING AND CRACK ISOLATION COMPOUND A. Examine substrates and conditions under which materials will be installed. Do not proceed with 		SPECIFICATIONS
B TLE COUNCIL OF NORTH AMERICA, INC. 1. Handbook for Cearrie Tile Installation 1. Handbook for Cearie Tile Installatin Installation <td< td=""><td>A-108.5 Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar</td><td>c.Primer: MAPEI, Primer T or MAPEI, Primer L.</td><td>installation until unsatisfactory conditions are corrected. B Coordinate installation with adjacent work to ensure proper sequence of construction. Protect</td><td></td><td></td></td<>	A-108.5 Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar	c.Primer: MAPEI, Primer T or MAPEI, Primer L.	installation until unsatisfactory conditions are corrected. B Coordinate installation with adjacent work to ensure proper sequence of construction. Protect		
A. Comparison and additional transmission and services is additionable frontice. MAPEL, Navoplan 2 Plus, normal-setting, polymer-modified, for our cured concrete, extering and polymer-modified for our cured concrete, externel (TVA) 203-5000. 1 Solumer and setting and polymer and false and polymer and false and polymer and false and polymer and false and and set (TVA) and the and polymer and and tradition of material, installation, and cure. For questions, contact manufacturer's pointed instructions for mixing of material, installation, and cure. For questions, contact manufacturer's pointed instructions for mixing of material, installation, and cure. For questions, contact manufacturer's polymer and tradition and false and polymer and false and polymer and false and polymer and false and polymer and and polymer and polyme	B. TILE COUNCIL OF NORTH AMERICA, INC.	2.3en-Levening Underlayment: Pre-biended cementitious, for thicknesses from feather edge, for use in dry interior applications.	adjacent areas from contact due to mixing and handling of materials.		
11S0 1007 - Ceramic Tile-Grouts & Adhesives b. Acceptable Product: MAPEL, Novoplan Easy Plus, reduced surface preparation Membrane Membrane Membrane 0	C. INTERNATIONAL STANDARDS ORGANIZATION (ISO)	a.Acceptable Product: MAPEI, Novoplan 2 Plus, normal-setting, polymer-modified; for over cured concrete, exterior grade plywood, 1/8 inch to 1 inch (3 mm to 25 mm).	 C. Install Waterproofing and Crack Isolation Compound 1. Reference A-108.13 Installation of Waterproofing Membranes and A-108.17 Installation of Crack Isolation 		
A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Material Safety Data Sheets. gradeplywood, and achesives residues. gradeplywood,	1.ISO 13007 - Ceramic Tile-Grouts & Adhesives 1.4 SUBMITTALS	b.Acceptable Product: MAPEI, Novoplan Easy Plus, reduced surface preparation self-leveling underlayment 1/8 inch to 1 inch (3 mm to 25 mm), over cured concrete. exterior	Membrane 2. Comply with manufacturer's printed instructions for mixing of material, installation, and cure. For		
B. Qualification Data: For Installer D. WATERPROOF AND CRACK ISOLATION MEMBRANE 1. Install tiles following the greater for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI 118.10 an ANSI A118.10. 1. Install tiles following the greater for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater of file outling procedures to for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing an ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater of file outling procedures to for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater of file outling procedures to for mkire; pervide diguid-rubber; extremely guick-drying, premium waterproofing ack-isolation membrane, IAPMO-listed, ANSI A118.10. 1. Install tiles following the greater of file outling procedures to for mkire; pervide contact manufacturer for field sampling methods and procedures. 1. Install tiles following the greater of file outling procedures. 2. Weter reguid	A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used. Include manufacturer's Material Safety Data Speets	gradeplywood, and adhesives residues.	questions, contact the ARDEX Technical Services Department at (724) 203-5000.		DF
1.5 DELIVERY, SI ORAGE AND HANDLING 1.Fuid-Applied Membrane: Advanced liquid-tubber; extremely quick-drying, premium waterproofing and stellal. Comply with manufacturer's printed instructions, for mixing of material, installation, and cure. For questions, contact the ARDEX Technical Services Department at (724) 203-5000. 20406 A. Deliver products in original packaging, labeled with product identification, manufacturer, bach and shelf life. a. Product: Subject to compliance with requirements, provide MAPEI, Mapelastic AquaDefense. a. Product: Subject to compliance with requirements, provide MAPEI, Mapelastic AquaDefense. 3. FIELD QUALITY CONTROL sietET NAME 29°C) and protect from direct sunlight. E. GROUT MATERIALS GROUT MATERIALS 3.4 PROTECTION SietET NAME SietET NAME	B. Qualification Data: For Installer	D. WATERPROOF AND CRACK ISOLATION MEMBRANE	 Install tiles following the general office outline procedure set forth in ANSI A108.5. 		JOB NUMBER
number and shelf life. a.Product: Subject to compliance with requirements, provide MAPEI, Mapelastic AquaDefense. 3.3 FIELD QUALITY CONTROL A. Where required, contact manufacturer for field sampling methods and procedures. 29°C) and protect from direct sunlight. E. GROUT MATERIALS 3.4 PROTECTION	1.5 DELIVERY, STORAGE AND HANDLINGA. Deliver products in original packaging, labeled with product identification, manufacturer, batch	1. Fluid-Applied Membrane: Advanced liquid-rubber; extremely quick-drying, premium waterproofing and crack- isolation membrane, IAPMO-listed, ANSI A118.10 and ANSI A118.12.	Comply with manufacturer's printed instructions for mixing of material, installation, and cure. For questions, contact the ARDEX Technical Services Department at (724) 203-5000.		20406
29°C) and protect from direct sunlight. E. GROUT MATERIALS 3.4 PROTECTION	number and shelf life. B. Store products in a dry area with temperature maintained between 50° and 85°F (10° and	a.Product: Subject to compliance with requirements, provide MAPEI, Mapelastic AquaDefense.	3.3 FIELD QUALITY CONTROL A Where required, contact manufacturer for field sampling methods and procedures		SHEET NAME
	29°C) and protect from direct sunlight.	1) With MAPEI, Reinforcing Fabric.	A. Where required, contact manufacturer for new sumpling methods and procedures.	•	
		1) With MAPEI, Reinforcing Fabric. E. GROUT MATERIALS	3.4 PROTECTION		SP5

- 1.5 DELIVER A. Deliv
- number and s

a. Product: Subject to compliance with requirements, provide HENRY 430 ClearPro SECTION 09510 - ACOUSTICAL PANEL CEILINGS 2. Cove Base Adhesive 1 GENERAL Acceptable a. Product: Subject to compliance with requirements, provide HENRY 440 Cove Base Adhesive A. Submittals: In addition to product data for each type of acoustical panel and suspension system equired, submit the following: One set of 12-inch- (300-mm-) long samples of exposed suspension system 1.3 EXECUTION members, including moldings, for each color and system type required. A. Examine areas where installation of tiles will occur, with Installer present, to verify that substrates and manufacture 3. Seismic Standard; in areas subject to seismic zones: Provide acoustical tile ceilings designed and conditions are satisfactory for tile installation and comply with tile manufacturer's requirements. nstalled to withstand the effect of earthquake motions according to the following: 1. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 before beginning installation. 4. Do not ins . Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E580 2. For wood subfloors verify that underlayment surface is free of surface irregularities and substances with 5. Prior to pri 2. Acoustical Installation contractor to verify and comply with requirements of authorities having jurisdiction. potential to interfere with adhesive bond, show through surface, or stain tile. . UBS Standard 25-2, "Metal Suspension Systems for Acoustical Tile and for Lay-in Panel Ceilings". 3. Proceed with installation only after substrate passes testing according to floor tile manufacturer's written need to be 4. ASCE 7. "Minimum Design Loads for Building and Other Structures": Section 9. " Earthquake Loads". recommendation. 7. For all ne B. Preparation: Comply with manufacturer's installation specifications to prepare substrates indicated to 5. Special Inspections: Engage a qualified special inspector to perform the following special inspections before appli receive tile. where required by governing authority: C. Installation: Comply with tile manufacturer's installation directions and other requirements indicated a. Compliance of seismic design. 8. Where the 1. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tile widths at primer to mai 1.2 PRODUCTS opposite edges of room are equal to one another and are not less tha one-half of a tile. . Acoustical Tile Products: Subject to compliance with requirements, provide the following: 2. Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufacturerd and R-35 prior to . Suspension system and acoustic panels as listed in finish legend within drawings. packaged. 3. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply a. Lay tiles with grain running in one direction. C. Adhesiv with ASTM E 1264 classifications as designated by types, acoustical ratings, and light reflectances, unless b. Lay tiles in basket weave pattern with grain direction alternating between reversed in adjacent otherwise indicated. 1. Provide th I. Mounting Method for Measuring Noise Reduction Coefficient (NRC): Type E-400 (plenum mounting in c. Lay tiles in pattern with respect to location of colors, patterns and sizes as indicated on Drawings. the same ma which face of test specimen is 15-3/4 inches [400 mm] away from the test surface) per ASTM E 795. 2. Test Method for Ceiling Attenuation Class (CAC): Where acoustical tile ceilings are specified to have a 3. Where demountable partitions and other items are indicated for installing on top of finished tile floor, install 2. Do not dilu tile before these items are installed. CAC, provide units identical to those tested per ASTM E 1414 by a qualified testing agency. Water-Felted, Mineral-Base Tiles: Type III, Form 2 acoustical tiles per ASTM E 1264, with painted finish, D. Install metal edge strips where indicated, using countersunk stainless steel anchors. problems ma complying with pattern and other requirements indicated on drawings. E. Cleaning: D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements: reduce the i 1. Clean resilient tile floors after installation and 4 days prior to date scheduled for inspections intended to establish date of Substantial Completion 1. Zinc-Coated Carbon Steel Wire: ASTM A 641 (ASTM A 641M), Class 1 zinc coating, soft temper. Apply protective polish according to floor tile manufacturer's directions. 2. Size: Select wire diameter so that its stress at 3 times the hanger design load (ASTM C 635, Table 1, and Sure Gr Direct Hung) will be less than the yield stress of wire, but provide not less than 0.106-inch- (2.69-mm-) 3. Comply with manufacturer's written instructions for cleaning, protecting and polishing floor tile. 469-8100) diameter wire. and Ultra™ E. Sheet-Metal Edge Moldings and Trim: Type and profile indicated, or if not indicated, manufacturer's SECTION 09660 - RESILIENT WALL BASE AND TILE FLOORING (MAPEI D. Wallcove standard moldings for edges and penetrations that fit acoustical tile edge details and suspension systems 1.1 GENERAL indicated; formed from sheet metal of same material and finish as that used for exposed flanges of suspension system runners. A. Submittals: In addition to product data, submit the following. . Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Samples of each type, color, and pattern of resilient base and floor tile. a. Armstrong World Industries, Inc. 2.Maintenance data for resilient base and floor tile, to be included in Operating and Maintenance Manual 2. Cut rolls i specified in Division 1. b. Chicago Metallic Corporation. B.Extra Materials: Deliver to Owner not less than one box for each 50 boxes or fraction thereof, of c. USG Interiors, Inc. Fire-Resistance-Rated Suspension System: Provide manufacturer's standard metal suspension each class, wearing surface, color, pattern, and size of resilient base and floor tile installed. systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 1.2 PRODUCTS equirements: A. Available Products: Subject to compliance with requirements, resilient floor tiles that may be 4. If the wallo 1. Direct-Hung, Double-Web Suspension System: Main and cross runners roll formed from and capped with incorporated in the work include, but are not limited to, the products specified in the drawings. pre-painted or electrolytic zinc-coated, cold-rolled steel sheet; other characteristics as follows: should be us B.Products: Subject to compliance with requirements, provide one of the products specified in the a. Structural Classification: Heavy-duty system. drawings b. Access: Upward, with initial access openings of size indicated or, if not indicated, as selected by C. Vinyl Composition Floor Tile: Products complying with ASTM F 1066, Composition 1 (nonasbestos All wallcow Architect from opening sizes approved for the fire-resistance-rated assembly indicated. Locate formulated), and with requirements specified in Vinyl Composition Floor Tile Product shown on drawings. initial access openings throughout the ceiling within each module formed by main runners and D. Rubber Wall Base: Products complying with FS SS-W-40, Type I, and with requirements specified in the 7. If paste do cross runners, and make additional access available through progressively removing remaining Rubber Wall Base Product shown on the drawings. to wash the acoustical tiles. E.Rubber Accessories: Products complying with requirements shown on the drawings. since vinvl w . Manufacturers: Subject to compliance with requirements, provide products by one of the following: F.Concrete Slab Primer: Nonstaining type recommended by flooring manufacturer. a. Armstrong World Industries, Inc. 1. All-Purpose Primer. Avoid bur b. Chicago Metallic Corporation. a.Product: Subject to compliance with requirements, provide MAPEI, Primer T. c. USG Interiors, Inc. 9. Use a sea G. Trowelable Underlayments and Patching Compounds: Portland-cement-based formulation provided or Maintenance stock: At time of completion, provide two packages of each type of acoustic panels to approved by tile manufacturer for applications indicated. owner for future replacement. 1. High-Performance, Fiber-Reinforced Skimcoating Compound. 1.3 EXECUTION a.Product: Subject to compliance with requirements, provide MAPEI, Planiprep SC. A. General: Install acoustical tile ceilings to comply with publications referenced below per manufacturer's Adhesives (Cements): Water-resistant type recommended by tile manufacturer to suit resilient floor tile between the instructions and CISCA "Ceiling Systems Handbook." products and substrate conditions indicated. after the first 1. Standard for Ceiling Suspension System Installations: Comply with ASTM C636/C636M. 1. Premium Clear, Thin-Spread VCT Adhesive. 11. If any of 2. CISCA Recommendations per "Ceiling Systems Handbook" for Acoustical Ceilings: Comply with CISCA a.Product: Subject to compliance with requirements, provide MAPEI, Ultabond ECO 711. take precede 'Recommendations for Direct-Hung Acoustical Tile and Lay-In Panel Ceilings." mium Wall-Base Adhesive. Suspend ceiling hangers as follows a.Product: Subject to compliance with requirements, provide MAPEI, Ultrabond ECO 575. . Secure wire hangers to ceiling suspension members and to supports above. Connect hangers either END OF SEC I. Edge Strips: Vinyl of width shown, of height required to protect exposed edge of tiles, and in maximum directly to structures or to inserts, eye screws, or other devices that are secure, that are appropriate for substrate, and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures. available lengths to minimize running joints. 2. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from 1.3 EXECUTION hangers, unless otherwise shown; and provide hangers not more than 8 inches (200 mm) from ends of each A. Examine areas where installation of tiles will occur, with Installer present, to verify that substrates and 1.1 GENER conditions are satisfactory for tile installation and comply with tile manufacturer's requirements. A. This Sec 3. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, 1. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 before beginning installation: and surfaces countersplaying, or other equally effective means. Where width of ducts and other construction within ceiling 2.For wood subfloors verify that underlayment surface is free of surface irregularities and substances 1. Surface p plenum produces hanger spacing that interfere with location of hangers at spacing required to support with potential to interfere with adhesive bond, show through surface, or stain tile. standard suspension-system members, install supplemental suspension members and hangers in form of 3. Proceed with instillation only after substrate passes testing according to floor tile manufacturer's B. Paint ex rapezes or equivalent devices. or material is written recommendation 2. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical tiles. B.Preparation: Comply with manufacturer's installation specifications to prepare substrates indicated D. Install suspension system runners so they are square and securely interlocked with one another. to receive tile. C. Painting Remove and replace dented, bent, or kinked members. C. Installation: Comply with tile manufacturer's installation directions and other requirements indicated. parts, and la . Install acoustical tiles in coordination with suspension system. Place splines or suspension system 1. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tile widths at 1. Labels: I flanges into kerfed edges so that tile-to-tile joints are closed by double lap of material. opposite edges of room are equal to one another and are not less than one-half of a tile. . Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around 2.Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufactured and D. Submitta penetrations through tile. packaged. 2. Hold tile field in compression by inserting leaf-type, spring-steel spacers between tile and moldings, a.Lay tiles with grain running in one direction. spaced at 12 inches (305 mm) o.c. b.Lay tiles in basket weave pattern with grain direction alternating between reversed in adjacent 3. Fabricate access units for special suspension system access members and tile units modified as required to allow for removal of access units. c.Lay tiles in pattern with respect to location of colors, patterns, and sizes as indicated on Drawings. 4. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touch up of minor finish damage. Remove and replace 3. Where demountable partitions and other items are indicated for installing on top of finished tile floor, install iles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate tile before these items are installed. evidence of damage. D. Install metal edge strips where indicated, using countersunk stainless steel anchors. END OF SECTION 09510 E.Cleaning: 3. Samples 1. Clean resilient tile floors after installation and 4 days prior to date scheduled for inspections intended to SECTION 09660 - RESILIENT WALL BASE AND TILE FLOORING (ARDEX) establish date of Substantial Completion. 2. Apply protective polish according to floor tile manufacturer's directions. .1 GENERAL 3.Comply with manufacturer's written instructions for cleaning, protecting and polishing floor tile. Submittals: In addition to product data, submit the following: . Samples of each type, color and pattern of resilient base and floor tile. 2. Maintenance data for resilient base and floor tile, to be included in Operation and Maintenance Manual SECTION 09720 - WALL COVERING specified in Division 1 Painted V 1.1 GENERAL B. Extra Materials: Deliver to Owner not less than one box for each 50 boxes or fraction thereof, of each If at any time during the installation a product or installation issue should be discovered - immediately contact 3) Ferrous M class, wearing surface, color, pattern and size of resilient base and floor tile installed. your distributor or dealer for further directions, additional instructions and/or resolution to address issue 1.2 PRODUCTS before proceeding. After installing the first 3 strips of any wallcovering immediately confirm quality. Once E. Applicator A. Available Products: Subject to compliance with requirements, reslient floor tiles that may be again, make sure the product is correct, that there are no quality or product issues with the wallcovering. applications s Should a quality issue or question arise, please call the Designtex installation HOTLINE at 1-800-797-4949, construction ncorporated into the work include, but are not limited to, the products specified in the drawings. Option 1, Ext. 8349 between the hours of 8 a.m to 5 p.m EST. Designtex will not take responsibility for any F. Single-Sc 3. Products: Subject to compliance with the requirements, provide one of the products specified in the quality issues raised after the first 3 strips are cut and installed. drawings. Before installing any wallcovering, verify compliance and acceptable conditions, for any moisture problems G. Field Sar . Vinyl Composition Floor Tile: Products complying with ASTM F 1066, Composition 1 (nonasbestos that could have an effect on mold and mildew growth after the wallcovering is installed. Do not install any formulated), and with requirements specified in Vinyl Composition Floor Tile product shown on drawings. prepared sa wallcovering if the walls appear to have any moisture damage or if the building appears to have moisture 1. Final acce D. Rubber Wall Base: Products complying with FS SS-W-40, Type 1, and with requirements specified in infiltration problems. If you are uncertain if moisture problems are present, contact the manufacturer and the Rubber Wall Base Product shown on the drawings. general contractor for the standard of care and best application or finish for that area and that design of a 2. The Owner E. Ruber Accesssories: Products complying with requirements shown on the drawings. building. Designtex will not take responsibility for any quality issues if moisture problems are not addressed and substrate before installation. You should also refer to the Mold Handbook authored by the Wallcovering Association H. Deliver r F. Concrete Slab Primer: Nonstaining type recommended by flooring manufacturer. with respect to considerations for specifying vinyl wallcovering in various climates and for various building bearing many . Primer: For substrates as follows: designs. The handbook can be located at: http://www.wallcoverings.org/MOLDbook.pdf I. Store mate a. Non-porous substrates such as epoxy coating systems and metal: ARDEX P82 UltraPrime A. Before Installing: b. Gypsum: ARDEX P 51 Primer . Inspect each piece upon receipt. Immediately make claim with the carrier if the pieces are damaged. Trowelable Underlayments and Patching Compounds: Self-Drying, Cement-Based Finish Underlayment 2. Check to see that you have received what was ordered and that the rolls all have the same style and run J. Project Conditions: Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds . Product: Subject to compliance with requirements and site conditions: ARDEX Feather Finish numbers Adhesives (Cements): Water-resistant type recommended by tile manufacturer to suit resilient floor tile 3. If the material is to be stored, make sure the pieces are kept in a temperature controlled, dry area, and not K. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air products and substrate conditions indicated. crushed.

B. Surface Preparation:

. Clear VCT Floor Adhesive

and wallcovering installation 2. Acceptable hanging surfaces must be clean, smooth, dry and structurally intact.	A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:	2nd coat: MoorGard Latex House Paint (103)
 Any mildew must be removed from the walls and surfaces treated to inhibit further mildew growth. In 	 Manufacturers: Subject to compliance with requirements, available manufacturers offering products that 	d. Stucco:
numid, mold, and mildew prone areas use Zinsser Plus Mildew Proof Commercial Wallcovering System or manufacturer approved equal that offers protection against the growth of mildew. More extensive moisture	a. Benjamin Moore & Co.	1st coat: Moore's Acrylic Masonry Sealer (066)
problems may require additional steps before installation. 4 Do not install wallcovering unless temperature above 55 degrees Fabrenbeit is maintained	b. Sherwin-Williams Company	2nd coat: MoorGard Latex House Paint (103) 3rd coat: MoorGard Latex House Paint (103)
 5. Prior to priming, seal damaged drywall facing paper prior to skim coating. 	B. Paint Materials, General: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as	e.Unit Masonry (Concrete block):
Note: Crayon, pen markers, ink, screw and nail heads, and heavy pencil marks, and stains need to be sealed with a stain-killer prior to priming	demonstrated by the manufacturer, based on testing and field experience.	1st coat: Moorcraft Super Craft Latex Block Filler (28
7. For all new or refinished wall surfaces, a water-based wallcovering primer should be applied to surface	types specified. Paint material containers not displaying manufacturer's product identification will not be	3rd coat: MoorGard Latex House Paint (103)
before application of wallcovering. Use a wallcovering primer that dries to a solid color to help conceal drywall joints	acceptable. 1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is	2. Interior Surfaces: (refer to finish schedule on sheet A-4.1)
8. Where there is a color contrast between the wall surface and the wallcovering, it is always best to tint the	not intended to imply that products named are required to be used to the exclusion of equivalent products of	a. Wood (painted): 1st_coat Moorcraft Super Spec Latex Enamel Under
9. Glossy and non-porous surfaces should be primed with a coat of an adhesion promoting primer such as	substitutions.	2nd coat Moorcraft Super Spec Latex Semi-Gloss E
R-35 prior to installation of wallcovering.	D. Colors: Provide color selections made by the Architect from the manufacturer's full range of standard colors.	3rd coat: Moorcraft Super Spec LatexSemi-Gloss En
 Verify and comply with all manufacturer's installation instructions and specifications. C. Adhesive Application: 	1.3 EXECUTION	 b. Drywall: 1st coat Moorcraft Super Spec Latex Enamel Under
1. Provide the use of a good quality heavy duty "clear" vinyl adhesive as made by Zinsser and Roman as	A. Examination: Examine substrates and conditions under which painting will be performed for compliance with requirements. Do not begin application until unsatisfactory conditions have been corrected	2nd coat Moorcraft Super Spec Latex Pearl Finish (2
recommenced by wallcovering manufacturer. It's always advantageous to use a primer and adnesive from the same manufacturer.	B. Coordination: Review other Sections in which primers are provided to ensure compatibility of the total	3rd coat Moorcraft Super Spec Latex Pearl Finish (2
2. Do not dilute adhesive.	systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.	1st coat Moorcraft Super Craft Latex Block Filler (28
3. In mildew prone environments, use of a mildew inhibitor is recommended. More extensive moisture problems may require additional steps before installation.	1. Notify the Architect about anticipated problems using the materials specified over substrates primed by	2nd coat Moorcraft Super Spec Latex Pearl Finish (2
4. New vapor permeable primers and adhesives are now available to wallcovering installers, which could reduce the risk of mold for all types of wallcoverings, versus the use of traditional primers and adhesives	C. Preparation: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures,	3rd coat Moorcraft Super Spec Latex Pearl Finish (2
Verify recommended product with manufacturer of wallcovering. Examples of such newly available	and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if pecessary to completely paint the items and	1st coat IronClad Latex Low Lustre Metal and Wood
and Sure Grip V.P. Primer such as described in their attached flyer (www.zinsser.com tel. 732	adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled	2nd coat Impervex Latex High Gloss Metal and Woo
469-8100) and Roman Decorating Products" Ultra™ Plus Mildew System, specifically Ultra™ Plus Primer and Ultra™ Plus Adhesive (www.romandecoratingproducts.com tel.800 488-6117)	D. Cleaning: Clean substrates of substances that could impair the bond of the various coatings. Remove	3rd coat Impervex Latex High Gloss Metal and Wood
D. Wallcovering Installation: Verify and comply with manufacturer's current written installation instructions,	oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces	1st coat IronClad Latex Low Lustre Metal and Wood
 Determine whether the pattern match is random, straight across, or drop match. Measure the wall height, 	E. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's	2nd coat Impervex Latex High Gloss Metal and Woo
allowing for pattern match, add 4 inches, and then cut the wallcovering. It will overlap onto the ceiling and the	instructions for each particular substrate condition and as specified.	3rd coat Impervex Latex High Gloss Metal and Wood f. Ceilings (drywall):
2. Cut rolls in sequential order starting with the highest number working down to the lowest number. Make	 Cementitious Materials: Prepare cementitious surfaces to be painted. Remove efflorescence, chalk, dust, 	1st coat Moorcraft Super Spec Latex EnamelUnderco
certain that the run numbers are separated at break points such as corners. Number panels and headers as they are cut from the roll and apply to the wall in the same sequence.	dirt, grease, oils, and release agents. Roughen to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.	2nd coat Moore's Muresco Ceiling Paint (258)
3. Any wallcovering design that does not have specific direction or horizontal match, could be installed by	a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.	g. Wood Doors (painted):
the first 3 strips, we strongly suggest reversing alternate strips.	b. Determine alkalinity and moisture content of surfaces. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.	1st coat IronClad Latex Low Lustre Metal and Wood
4. If the wallcovering is table trimmed, use of a straight-edge and a razor is recommended. A fresh blade should be used on each cut. "Span off" cutting tools are not recommended	3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and	2nd coat IronClad Latex Low Lustre Metal and Wood
5. The "overlap and double cut" method is an alternative method of installation with many fabric backed vinyl	a. Scrape and clean small. drv. seasoned knots and apply a thin coat of white shellac or other	examples of various systems.
wallcoverings. 6 All wallcoverings should be trimmed 2" to 4" on each edge to ensure best appearance.	recommended knot sealer before applying primer.	R. Clean-up: During the progress of the work, remove from and rags at the end of each work day. Upon completion of pa
 7. If paste does get on the vinyl wallcovering, clean it off immediately with warm water and blot dry with 	b. Prime, stain, or seal wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.	damaged paint-spattered surfaces. Remove spattered paint a
clean lint free towel. Use a soft bristle brush to clean if necessary. Change this water frequently. Be certain to wash the ceiling and the baseboard to remove any paste residue. Do not leave any overlap at the seams	c. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer	
since vinyl will not adhere to itself. Seams should be vertical, have a tight fit, and free from air and paste bubbles. Seams should not be located closer than 6" to corners.	 Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop-coated; remove oil, 	SECTION 10260 - SPECIALTY WALL PANELS
8. Avoid burnishing the face of the material. Use a wallcovering brush or a plastic scraper to smooth the	grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.	A. Provide surface preparation of substrate wall surfaces ar indicated on the drawings, as specified herein and as needed
wallcovering onto the wall. 9 Use a seam roller to flatten the edges at the seams, ceilings and baseboards. Use light pressure. Do not	a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean	with manufacturer's installation instructions, recommendation
press hard enough to remove the adhesive from underneath the wallcovering.	5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so that the surface is	0.090" thick x 4' wide "Marlite FRP", #P-100 White or equa
10. After installing the first 3 strips of any wallcovering immediately conform quality of product. Once again, make sure the product is correct, that there are no quality or product issues with the wallcovering. Should a	free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods	reinforced plastic paneling (ASTM D5319). If required per l A: UL classified flame-spread less than 20, fuel contributed
quality issue or question arise please call our installation HOTLINE at 1-800-797-4949, Option 1, Ext. 8349 between the hours of 8 a.m to 5 p.m EST. Designtex will not take responsibility for any guality issues raised	F. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions.	ASIM E-84.
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Paint back sides of access panels and removable or hinged covers to match exposed surfaces. H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable and before subsequent surface deterioration. Allow sufficient ti	 ASTM E-84. C. Panel Fitting: Position panels with 1/8" gap between each panel and divise expansion and contraction and extend 6 inches above ceiling pipes, electrical fittings and other projections. Use carbide methods as recommended by manufacturer. Prefit each pathemethods as required to flash off scontact between panel and wall. E. Panel Moldings: Provide one-piece matching trim and panel moldings at all edges of panels. Install moldings with continuous bead of N installation of panels. Seal joints between moldings and be Remove excess sealant immediately. F. Stainless Steel Wall Panels: 18 and 24 gauge, as schedul panels in sheets as large as possible. All flush and corner jour to straight true lines. Exposed fasteners to be stainless stee G. Clean all panels and protect from damage. Refer to manufo not use abrasive cleaners. SECTION 10522 - FIRE EXTINGUISHERS, CABINE 1.1 GENERAL A. Submittals: Submit the following: 1. Product Data: Include rough-in dimensions, details showit trim to surrounding construction, door hardware, cabinet type panel style, and materials. B. Coordination: Verify that cabinets are sized to accommodindicated, as well as wall depth requirements may be require C. UL-Listed Products: Fire extinguishers shall be UL listed classification of extinguisher
 quality issue or question arise please call our installation HOTLINE at 1-800-797-4949, Option 1, Ext. 8349 between the hours of 8 a.m to 5 p.m EST. Designtex will not take responsibility for any quality issues raised after the first 3 strips are cut and installed. 11. If any of the above conflicts with manufacturer's written instructions, manufacturer written instruction shall take precedence. 12. It is the responsibility of the installer to verify and comply with manufacturer's installation instructions and provide a complete and acceptable finished product. END OF SECTION 09900 - PAINTING 11. GENERAL A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces. 1. Surface preparation, priming, and finish coats specified are in addition to shop-priming and surface treatments. B. Paint exposed surfaces whether or not colors are designated in the schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically indicated from standard colors or finishes available. C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels. 1. Labels: Do not paint over Underwriters Laboratories, Factory Mutual, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates. D. Submittals: Submit the following: 1. Product data for each paint system specified, including block fillers and primers. a. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use. b. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification. <	 F. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using. Use only thinners approved by the paint manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film. Prioride finish coats that are compatible with primers used. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until previous coat has cured. 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Paint back sides of access panels and removable or hinged covers to match exposed surfaces. Application Procedures: Apply paints and coatings by brush, roller, spray or other applicators according to manufacturer's directions.<td> ASIM E-84. C. Panel Fitting: Position panels with 1/8" gap between each panel and divise expansion and contraction and extend 6 inches above ceiling pipes, electrical fittings and other projections. Use carbide methods as recommended by manufacturer. Prefit each pathetic services where solvent vapors cannot be adequately ventil a notched trowel. Before adhesive skins over, set panels in panels where solvent vapors cannot be adequately ventil a notched trowel. Before adhesive skins over, set panels in panelacturer installation instructions as required to flash off scontact between panel and wall. E. Panel Moldings: Provide one-piece matching trim and panel moldings at all edges of panels. Install moldings with continuous bead of N installation of panels. 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Paint surfaces behind permanently fixed equipment or furniture as indicated on drawings. 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces. 8. Scheduling Painti	 ASIM E-84. C. Panel Fitting: Position panels with 1/8" gap between each panel and divisexpansion and contraction and extend 6 inches above ceilipipes, electrical fittings and other projections. Use carbide methods as recommended by manufacturer. Prefit each patheta an other the solvent vapors cannot be adequately ventil a notched trowel. Before adhesive skins over, set panels in manufacturer installation instructions as required to flash officient of the other the solvent panel and wall. E. Panel Moldings: Provide one-piece matching trim and panel moldings at all edges of panels. Install moldings with continuous bead of 1 installation of panels. Seal joints between moldings and be Remove excess sealant immediately. F. 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Multipurpose Dry Chemical Type: UL-rated minimum 2-A steel container.
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Exposed fasteners to be stainless stee G. Clean all panels and protect from damage. Refer to man Do not use abrasive cleaners. SECTION 10522 - FIRE EXTINGUISHERS, CABINIT 1.1 GENERAL A. Submittals: Submit the following: Product Data: Include rough-in dimensions, details showit trim to surrounding construction, door hardware, cabinet type panel style, and materials. Coordination: Verify that cabinets are sized to accommod indicated, as well as wall depth requirements may be require C. UL-Listed Products: Fire extinguishers as proved by Fac rating, and classification of extinguisher surely. Prov Chemical Type: UL-rated 10-B:C, 5-Ib nominal capac 2. Multipurpose Dry Chemical Type: UL-rated minimum 2-A: steel container. B. Mounting Brackets: Provide brackets of sizes required foin plated finish. C. Cabinet Construction: Box with trim, frame, door, and has style indicated. Weld joints and grind smooth. Miter and weld: 1. Fire-Rated Cabinets: UL listed with UL listing mark with fit 2. Cabinet Type
 quality issue or question arise please call our installation HOTLINE at 1-800-797-4949, Option 1, Ext 8349 between the hours of 8 an the 5 pm EST. Designtex will not take responsibility for any quality issues raised after the first 3 strips are cut and installed. 11. If any of the above conflicts with manufacturer's written instructions, manufacturer written instruction shall ake precedence. 12. It is the responsibility of the installer to verify and comply with manufacturer's installation instructions and provide a complete and acceptable finished product. END OF SECTION 09900 - PAINTING 11. GENERAL A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces. 12. Surface preparation, priming, and finish coats specified are in addition to shop-priming and surface treatments. B. Paint exposed surfaces whether or not colors are designated in the schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not designated, the Architect will select from standard colors or finishes available. C. Painting is not required on prefnished items, finished metal surfaces, concealed surfaces, operating parts, and labels. Labels: Do not paint over Underwriters Laboratories, Factory Mutual, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates. D. Submittals: Submit the following: Product data for each paint system specified, including block fillers and primers. a. Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material argonesed native science, finish spatem, and application. Identify each material by the manufacturer's catalog number and general classification. c. Cretification by the manufacturer's technical informa	 F. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions. 1. Stim material before application to produce a mixture of uniform density, stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using. 2. Use only thinners approved by the paint manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Do not paint over dirt, rust, scale, grease, moisture, sourded surfaces, or conditions detrimental to formation of a durable paint film. 3. Paint colors, surface treatments, and finishes are indicated in the schedules. 2. Provide finish coats that are compatible with primers used. 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until previous coat has cured. Sand between applications where sanding is required to produce an even smooth surface. Tint each undercoat a lighter shade to facilitate identification of each coat if mulpile coats of same material are to be applied. Thu duracroats to match color if topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat. 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint unil paint film is of uniform films, color, and appearance. 5. Paint surfaces behind novable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind novable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or fumiture as indicated on drawings. 7. Paint back sides of access panels and coatings by brush, roller, spray or other applicators according to manufacturer's directions. 1. Scheduling Painting. Apply paints and coatings by brush, roller, spray or other applicators ac	 ASTM E-84. C. Panel Fitting: Position panels with 1/8" gap between each panel and divisexpansion and contraction and extend 6 inches above cellipipes, electrical fittings and other projections. Use carbide methods as recommended by manufacturer. Prefit each papel. D. Install panels by using Marlite #C-375 adhesive complyin adhesives where solvent vapors cannot be adequately ventil a notched trowel. Before adhesive skins over, set panels in manufacturer installation instructions as required to flash off contact between panel and wall. E. Panel Moldings: Provide one-piece matching trim and panel moldings at all edges of panels. Install moldings with continuous bead of <i>t</i> installation of panels. 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Mounting Brackets: Provide fire extinguishers as recommonating indicated: Weld joints and grind smooth. Miter and weld 1. Fire-Rated Cabinets: UL listed with UL listing mark with fi C. Cabinet Type: Suitable for containing the following: a. Fire extinguisher. C. Cabinet
 quality issue or question arise please call our installation HOTLINE at 1-800-797-4949, Option 1, Ext. 8349 between the hours of 8 am to 5 pm EST. Designtex will not take responsibility for any quality issues raised after the first 3 strips are cut and installed. 11. If any of the above conflicts with manufacturer's written instructions, manufacturer written instruction shall take precedence. 12. It is the responsibility of the installer to verify and comply with manufacturer's installation instructions and provide a complete and acceptable finished product. END OF SECTION 09720 SECTION 09900 - PAINTING 11. GENERAL A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces. B. Paint exposed surfaces whether or not colors are designated in the schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not designated, the Architect will select from standard colors or finishes available. C. Painting is not required on prefinished items, finished metal surfaces, concelled surfaces, operating parts, and labels. L. Bubels: Do not paint over Underwriters Laboratories, Factory Mutual, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates. D. Submittals: Submit the following: Product data for each paint system specified, numbratical information including label analysis and instructions for handing, storage, and application of teach material proposed for use. List each material and cross-reference the specific coating, finish system, and application. If each material proposed for use. Submittals: Submit the following: Product data for each paint system specified, number and general classification. Certification by the manufacturer's catalog number and general classification. <l< td=""><td> F. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions. 1. Sim material before application to produce a mixture of uniform density: sim arequired during application. Do not sits uniface limit in material. Remove film and, if necessary, strain material before using. 2. Use only thinners approved by the paint manufacturer and only within recommended limits. 3. Opplication: Apply paint according to manufacturer and only within recommended limits. 4. Paint colors, surface treatments, and finishes are indicated in the schedules. 2. Provide finish coats that are compatible with primers used. 3. The number of coats and the film thickness required are the same regardless of the application method. Do not pay succeeding coats until previous coat has cured. Sand between applications where sanding in ground a coats fundercoats, stains, or rother conditions show through final coat of paint until paint films of uniform finish, odor, and appearance. 4. Apply additional coats if durecces is, stains, or other conditions show through final coat of paint until paint films are undercoats to distinguish each separate coat. 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint films are underecated in the same as similar exposed surfaces. Paint curates beinind prevable equipment or fumiture as indicated on drawings. 7. Aint surfaces beinind movable equipment and fumiture the same as similar exposed surfaces. Paint and surface deteriors in Adverse spares and anticates are paine and exposed surfaces. Paint and sufficient films are as coating as boards are there application and the same as similar exposed surfaces and the subscient and paint and pain</td><td> ASTM E-84. C. 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Paint exposed surfaces whether or not colors are designated in the schedules, except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not designated, the Architect will select from standard colors or finishes available. C. Painting is not required on prefinished items, finished metal surfaces, concelled surfaces, operating parts, and labels. 1. Labels: Do not paint over Underwriters Laboratories, Factory Mutual, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates. D. Submittals: Submit the following: 1. Provide the manufacturer's technical information including label analysis and instructions for handing, storage, and application of each material placeolog runker and general classification. c. Certification by the manufacturer stephole control. finish system, and application. Identify each material to the scale colory dutuel, or other code-required labels or equipment name, identification, performance rating on romenclature plates.<	 F. Materials Preparation: Carefully mix and prepare paint materials according to manufacturer's directions. 1. Stir material before application to produce a mixture of uniform density, stir as required during application. Do not stir sufface limit and standing applications applications. Apply paint according to manufacturer and only within recommended limits. 2. Use only thinners approved by the paint manufacturer and only within recommended limits. 3. Poplication: Apply paint according to manufacturer and only within recommended limits. 4. Point colors, surface treatments, and finishes are indicated in the schedules. 2. Provide finish coats that are compatible with primers used. 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until previous coat has cured. Sand between applications where sanding is required to produce an even smooth surface. Thin teach undercoat in distinguish each separate coat. 4. Apply additional coats if durenceats, stalins, or other conditions show through final coat of paint until paint film so fundercoats, stalins, or other conditions show through final coat of paint until paint film surfaces behind permanent) fixed equipment or furniture as indicated on drawings. Paint back sides of access parels and removable or thinged covers to match exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture as indicated on drawings. Paint back sides of access parels and removable or thinged covers to match exposed surfaces. Paint and store and apply apply and acceltage by brush, roller, spray or other applicators according to manufacturer's dreptodiate identification of exandiate treated and the applied. Paint back sides of acces, they paints and coatings by brush, roller, spray or other applicators according to manufacturer's recommended by the manufacturer's recommended by the manufacturer's	 ASIM E-84. C. Panel Fitting: Position panels with 1/8" gap between each panel and divise expansion and contraction and extend 6 inches above ceiling pipes, electrical fittings and other projections. Use carbide methods as recommended by manufacturer. Prefit each papel. Install panels by using Marlite #C-375 adhesive complyin adhesives where solvent vapors cannot be adequately ventil a notched trowel. Before adhesive skins over, set panels in panufacturer installation instructions as required to flash off: contact between panel and wall. E. Panel Moldings: Provide one-piece matching trim and panel moldings at all edges of panels. Install moldings with continuous bead of finistallation of panels. Seal joints between moldings and be Remove excess sealant immediately. F. Stainless Steel Wall Panels: 18 and 24 gauge, as schedul panels in sheets as large as possible. All flush and corner jot to straight true lines. Exposed fasteners to be stainless stee G. Clean all panels and protect from damage. Refer to man Do not use abrasive cleaners. SECTION 10522 - FIRE EXTINGUISHERS, CABINI 1.1 GENERAL A. Submittals: Submit the following: 1. Product Data: Include rough-in dimensions, details showit im to surrounding construction, door hardware, cabinet type panel style, and materials. B. Coordination: Verify that cabinets are sized to accommod indicated, as well as wall depth requirements may be require C. UL-Listed Products: Fire extinguishers approved by Fac rating, and classification of extinguisher surely. D. FM-Listed Products: Fire extinguishers approved by Fac rating, and classification of extinguisher surely. Dry Chemical Type: UL-rated 10-B:C, 5-lb nominal capace Multipurpose Dry Chemical Type: UL-rated minimum 2-A: steel container. Mounting Brackets: Provide brackets of sizes required for in plated finish. C. Cabinet Construction: Box with trim, frame, door, and ha style indicated. Weld joints and gri

b. Galvanized Metal:

c. Concrete:

1st coat IronClad Latex Low Lustre Metal & Wood Enamel (363)

2nd coat: Moore's IMC DTM Acrylic Semi-Gloss (M29)

3rd coat:Moore's IMC DTM Acrylic Semi-Gloss (M29)

rags and waste dail 85 percent, or at temperatures less than 5 deg F (3 deg C) above the dew point, or to damp or wet surfaces.

temperatures are between 50 deg F (10 deg C) and 90 deg F (32 deg C). L. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air

temperatures are between 45 deg F (7 deg C) and 95 deg F (35 deg C).

1. Site conditions: For best results, finished lighting should be in place at the time of wall

preparation 1.2 PRODUCTS

1st coat: Moorcraft Super Craft Latex Block Filler (285)

Filler (285)

el Undercoater & Primer Sealer (253) Gloss Enamel (276) Bloss Enamel (276)

Undercoater & Primer Sealer (253) Finish (277) Finish (277)

iller (285) Finish (277) Finish (277)

d Wood Enamel (363) and Wood Enamel (309) nd Wood Enamel (309)

d Wood Enamel (363) and Wood Enamel (309) nd Wood Enamel (309)

Undercoater & Primer Sealer (253)

Wood Enamel (363)

nd Wood Enamel (363) t systems as required. See the Basic Section for

ve from site, discarded paint materials, rubbish, cans tion of painting work, clean window glass and other s after completion of work of other trades.

rfaces and installation of wall protection elements, where nendations, procedures and installation sequence.

or equal USDA accepted, semi-rigid fiberglass ntributed 0, and smoke developed less than 200, per C. Surface-Mounted Roll Paper Towel Dispensers: Provided by Ulta and installed by G.C. Fabricate of cast

and division bar of moldings to allow for normal carbide-tipped power saws to cut panels or other ach panel belore installing

ely ventilated) to back of panels for 100% coverage, with anels in position and press against wall. Comply with 3. Gripping Surfaces: Manufacturer's standard nonslip texture. lash off solvents. Apply adequate pressure to make full 4. Heavy-Duty Size: Outside diameter of 1-1/2 inches.

gs at all joints between panels and at top and bottom bead of Marlite Silicone Sealant MS-250 during and between molding and adjacent finish material.

ess steel. r to manufacturer's specific cleaning recommendations. 1.3 EXECUTION

CABINETS, AND ACCESSORIES

Is showing mounting methods, relationships of box and inet type and materials, trim style, door construction,

commodate type and capacity of extinguishers

JL listed with UL listing mark for type, rating, and

d by Factory Mutual Research Corporation for type,

recommended by Owner's surety for each cabinet and

al capacity, in enameled steel container.

uired for type and capacity of extinguisher indicated,

and weld perimeter door frames.

cient depth to suit trim style.

unted directly on wall. ed, and ground smooth. m and perimeter door frame overlapping surrounding all return at outer edge.

Kind FT, and Class as follows:

a. Class 1 (clear).

standard of material indicated, coordinated with cabinet

1. Enameled Steel: Hollow construction with tubular stiles and rails 2. Door Glazing: Fully tempered float glass complying with ASTM C 1048, Condition A, Type I, Quality q3,

3. Identify fire extinguisher in cabinet with FIRE EXTINGUISHER lettering applied to door. Provide lettering

to comply with authorities having jurisdiction for letter style, color, size, spacing, and location. a. Application Process: Silk screen. E. Identify bracket-mounted extinguishers with FIRE EXTINGUISHER in red letter decals applied to wall surface. Letter size, style, and location to comply with authorities having jurisdiction. F. Door Style: Manufacturer's standard design. Full-Glass Panel: Float glass, 1/8 inch thick. G. Door Hardware: Provide door-operating hardware of proper type for cabinet type, trim style, and door material and style indicated. Provide lever handle with cam-action latch, or exposed or concealed door pull and friction latch. Provide concealed or continuous-type hinge permitting door to open 180 degrees. H. Cabinet Finishes: Comply with NAAMM "Metal Finishes Manual." Protect exposed finishes from damage by application of temporary strippable covering prior to shipment. I. Steel Cabinet Finishes: Solvent-clean surfaces to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust from uncoated steel. 1. Baked-Enamel Finish: Immediately after cleaning and pretreatment, apply a two-coat baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint manufacturer's instructions for application and baking to achieve a minimum dry film thickness of 2.0 mils. a. Color and Gloss: Manufacturer's standard designations. Paint the following: 1) Exterior of cabinet except for surfaces indicated to receive another finish 2) Interior of cabinet. 1.3 EXECUTION A. Installation: Follow manufacturer's printed instructions. B. Install at heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities. 1. Prepare wall recesses for cabinets as required by type and size of cabinet and style of trim and to comply with manufacturer's instructions. 2. Fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb. C. Comply with NFPA 10 for extinguisher placement. D. Fire-Rated Fire Protection Cabinets, where applicable, comply with ASTM E814 for fire resistance rating of walls where they are installed. SECTION 10800 - TOILET AND BATH ACCESSORIES 1.1 GENERAL A. Submittals: Manufacturer's product data for each toilet accessory item specified, including details of construction relative to materials, dimensions, gages, profiles, mounting methods, specified options, and finishes. 1.2 PRODUCTS A. Manufacturers: Subject to compliance with requirements, provide toilet accessories by one of the followina: 1. American Specialties, Inc. Bobrick Washroom Equipment, Inc. 3. McKinney/Parker. B. Materials, General: Fabricate toilet accessory items from the following materials and according to requirements specified for individual accessory items: 1. Stainless Steel: AISI Type 302/304, with polished No. 4 finish, 0.034-inch (22-gage) minimum thickness, unless otherwise indicated. 2. Sheet Steel: Cold-rolled, commercial quality ASTM A1008/A1008M, 0.04-inch (20-gage) minimum ed paint and clean damaged finish surfaces. Touch-up thickness, unless otherwise indicated. Surface preparation and metal pretreatment as required for applied 3. Galvanized Steel Sheet: ASTM A653/A653M, G60. 4. Mirror Glass: Nominal 6.0-mm (0.25-inch) thick plate glass conforming to ASTM C1503, Type I, Class 1, Quality q2, and with silvering, electro-plated copper coating, and protective organic coating. s needed for a complete and proper installation. Comply 5. Galvanized Steel Mounting Devices: ASTM A153, hot-dip galvanized after fabrication. 6. Fasteners: Screws, bolts, and other devices of same material as accessory unit, or of galvanized steel where concealed 7. Keys: Provide universal keys for access to toilet accessory units requiring internal access for servicing, ired per local codes, use Marlite #P-100 FR White, Class resupply, etc. Provide a minimum of six keys to Owner's representative.

> aluminum with satin finish. D. Single Roll Toilet Tissue Dispenser: Provided by Ulta and installed by G.C. Size to accommodate core

type tissue to 5" diameter roll. ove ceiling line. Allow not less than 1/8" gap around E. Stainless Steel Grab Bars: Provide grab bars with wall thickness not less than .050 inch (18 gage) and as follows:

1. Mounting: Concealed, manufacturer's standard flanges and anchorages

F. Stainless Steel Angle-Framed Mirror Units: Fabricate frame with angle shapes not less than 0.05 inch (18 gage), with square corners mitered, welded, and ground smooth. Provide in No. 4 satin polished finish. G. Fabrication: Only a maximum 1-1/2-inch diameter, unobtrusive stamped manufacturer logo, as approved by Architect, is permitted on exposed face of toilet or bath accessory units. On either interior surface not exposed to view or back surface, provide additional identification by means of either a waterproof, printed label or a stamped nameplate, indicating manufacturer's name and product model number.

scheduled on the drawings, #4 Brushed Finish. Install H. Surface-Mounted Toilet Accessories, General: Except where otherwise indicated, fabricate units with corner joints to be lapped. Break all corners and edges tight seams and joints, exposed edges rolled. Hang doors or access panels with continuous stainless steel piano hinge. Provide concealed anchorage wherever possible.

> A. Installation: Install toilet accessory units according to manufacturers' printed installation instructions, using fasteners appropriate to substrate as recommended by unit manufacturer. Install units plumb and level, firmly anchored in locations and at heights indicated.

and level, firmly anchored in locations and at heights indicated. Verify and comply with A.D.A.A.G. (American's with Disabilities Act Accessibility Guidelines), accessibility guidelines and local governing authorities having jurisdiction.

. Secure mirrors to walls in concealed, tamperproof manner with special hangers, toggle bolts, or screws. Set units plumb, level, and square at locations indicated, in accordance with manufacturer's instructions for type of substrate involved.

2. Adjust toilet accessories for proper operation and verify that mechanisms function smoothly. Replace damaged or defective items.

3. Clean and polish all exposed surfaces strictly according to manufacturer's recommendations after removing temporary labels and protective coatings.

SECTION 11400 - EQUIPMENT & FURNISHING INSTALLATION WORK INCLUDED: A. Install Owner supplied equipment and furnishings, where shown on the drawings, as specified herein, and as needed for a complete and proper installation. Coordinate for delivery, receive at the site, unload, protect, set-in-place and coordinate final connections.

B. Related Work: Plumbing and electrical work required in connection with the retail equipment is included num 2-A:10-B:C, 2-1/2-lb nominal capacity, in enameled in other sections of these specifications or as specified on plumbing and mechanical drawings. C. Quality Assurance: In addition to complying with requirements of governmental agencies having

jurisdiction, installation of all retail equipment shall comply with: Underwriters Laboratory (UL) for items with electrical components ANSI standards for vacuum breakers and air gaps National Fire Prevention , and hardware to suit cabinet type, trim style, and door Association (NFPA) National Electrical Manufacturers Association (NEMA)

D. Coordination: Verify and coordinate rough-in locations of electrical and plumbing connections. Examine k with fire-resistance rating of wall where it is installed. and inspect rough-in services and installation of floor, ceiling or other conditions under which the equipment is to be installed. Verify and coordinate all voltage requirements of owner provided equipment as compatible with building system. Verify that dimensions of such items are acceptable before installation of the work. Do not proceed until unsatisfactory conditions have been corrected.

E. Installation: Set each item of non-mobile and portable equipment securely in place, leveled and adjusted to correct height. Anchor to supporting substrate where indicated and where required for sustained operation and use without shifting or dislocation. Conceal anchorages where possible

F. Adjust and Clean: Test each item of operational equipment to determine that it is operating properly. Coordinate repair or replacement of equipment found to be defective with the equipment supplier. Remove protective coverings, if any and clean items, ready for use.

rgla solutions, inc.

5100 River Road. Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847 671 4200 www.rgla.com

REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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DRAWN BY
DV
CHECKED BY
DF
JOB NUMBER
20406
SHEET NAME
SP6

PREPARATION OF SUB-FLOORS:

Mannington Commercial suggests that you reference the current ASTM F710, "Standard Practice of Preparing Concrete Floors to Receive Resilient Flooring" and contact one or more of the following or other Note: Trowel dimensions are width x depth x spacing. Coverage is approximate and may vary depending on moisture suppressant system suppliers for assistance:

Ardex (724) 203-5000 www.ardex.com

Koester American Corp. (757) 425-1206 www.koesterusa.com

Mapei (800) 426-2734 www.mapei.com Uzin Ltd. (800) 505-4810 www.ufloorsystems.com

Subfloor Preparation

Careful subfloor preparation is vital for an excellent floor appearance and good tile adhesion. The subfloor (30°C). Protect from freezing. must be smooth, firm, flat, clean, dry, free from defects and fit for purpose. A suitable smoothing compound should be used to ensure that no irregularities show through to the surface of the finished floor. In all cases, the subfloor must meet the moisture and pH requirements before installation.

Below and On-grade concrete subfloors must have a suitable vapor retarder properly installed beneath the slab. Crawlspaces and basements directly beneath the new floor installation should be maintained with a relative humidity +/- 10% of the room relative humidity where the flooring is installed. This can be accomplished by proper ventilation and air circulation or using a dehumidifier. Always follow other manufacturers' written recommendations for the use and installation of their proprietary surface preparation materials.

Record site conditions, test results and corrective action(s). Mannington Commercial requires written documentation of site conditions, test results and corrective action(s) before processing claims. Subfloor must be clean (free of dirt, sealers, curing, hardening or parting compounds or any

substance that may stain or prevent adhesion), smooth, flat, sound, fit for purpose, free of movement, excessive moisture and high alkalinity.

Slick surfaces such as power troweled concrete shall be profiled to allow for a mechanical bond between the adhesive and subfloor.

4. Remove existing resilient floor covering, 100% traces of old adhesives, paint or other contaminants by scraping, sanding, grinding, shot blasting or scarifying the substrate. The use of adhesive removers or solvents in the abatement or removal of existing or old adhesives is prohibited and may void the warranty. WARNING: ASBESTOS & SILICA - Refer to the current Resilient Floor Covering Institute (RFCI) document "Recommended Work Practices for Removal of Existing Resilient Floor Coverings" for guidance.

5. Perform corrective actions necessary for elevated moisture or high alkalinity conditions. Surface Flatness for all Subfloors: The surface shall be flat to 1/8" in 10 ft (3 mm in 3 m). Bring high spots level by sanding, grinding etc. and fill low spots. Smooth surface to prevent any irregularities or roughness from telegraphing through the new flooring.

Leveling and Patching:

a. For concrete subfloors, use only high quality Portland cement based materials (minimum 3000 psi compressive strength according to ASTM C109). Mix with water only, do not use latex. Caution: Do not lightly skim coat highly polished or slick power troweled concrete surfaces. A thin film of floor patch will not bond to a slick subfloor and may become a bond breaker causing tiles to release at the interface of the subfloor and patching material.

Wood subfloors require an underlayment (double layer construction) with a minimum total thickness

1" (25 mm). Use minimum 1/4" (6 mm) thick APA rated "underlayment grade" plywood with a fully sanded face or other underlayment panel that is appropriate for the intended usage. Install and prepare panels and seams according to the manufacturers' instructions.

B. Installation Procedures

Before starting the Spacia installation, ensure the following are satisfactorily completed. Start of flooring installation indicates acceptance of current subfloor conditions and full responsibility for completed work. Acclimation: Acclimate tiles (keep cartons flat), adhesive, jobsite and subfloor to a stable condition between

64°-81° F (18°-27° C) and 50% +/- 10% RH for a minimum of 48 hours before and after installation. Flooring Materials: Check quantity of Spacia tile and adhesive are sufficient for area to be installed.

Check tile for visual defects before installation. Installation of flooring acknowledges acceptance of materials. Expansion joints, isolation joints, or other moving joints are incorporated into concrete floor slabs in order to permit movement without causing random cracks in the concrete. These joints must be honored and not be filled with underlayment products or other materials, and floor coverings must not be laid over them. Expansion joint covering

systems should be detailed by the architect or engineer based upon intended usage and aesthetic considerations.

Surface cracks, grooves, depressions, control joints or other non-moving joints, and other rregularities shall be filled or smoothed with high guality Portland cement based patching or underlayment compound for filling or smoothing, or both. Patching or underlayment compound shall be moisture, mildew, and alkali-resistant, and shall provide a minimum of 3000 psi compressive strength after 28 days, when tested in accordance with Test Method C 109 or Test Method C 472, whichever is appropriate.

AMTICO High Moisture PS Adhesive Specifications

AMTICO High Moisture PS Adhesive offers the following benefits:

- Very low volatile organic compounds (VOC)
- Meets California SCAQMD Rule 1168 & Section 01350 Requirements
- Solvent-free non-flammable non-staining
- Extended working time (up to 3 hours) High tack and bond strength
- Excellent plasticizer resistance
- Protected against bio-degradation and mold growth Freeze-thaw stable to 10°F (5 cycles)

This adhesive should be used for bonding Amtico and Spacia tile floor coverings to APA registered

underlayment grade plywood, terrazzo, existing well adhered tile, radiant heated subfloors where surface temperature do not exceed 85°F (29.40°C); and above, on, or below grade concrete in the absence of hydrostatic pressure, excessive moisture or alkalinity.

Preparation

Sub-floors must be sound, smooth, dry and free from any contamination which will affect adhesion. Concrete subfloors must be fully cured, clean, free from curing agents, excessive relative humidity (maximum 93% per ASTM F-2170) and or excessive moisture vapor emissions (maximum 10 lbs./1000 SF/24 hrs. per ASTM F-1869). Concrete must have a 5.0 to 12.0 ph (ASTM F-710). If necessary, a suitable moisture suppressant system should be applied to the sub-floor. On grade and below-grade concrete subfloors must have an approved vapor retardant membrane (ASTM E-1745) which is properly installed (ASTM E-1673). Wooden sub-floors should be overlaid with a suitable APA "underlayment grade" sanded face, exterior AC or BC plywood with a minimum ¹/₄" (6mm) thickness. Tiles, adhesive and sub-floor should be allowed to stabilize to a temperature between 64°F (18°C) and 81°F (27°C), for a period of 48 hours before, during and 24 hours after installation. Tiles must be stored flat.

Amtico PS Adhesive is not designed to be used over floors with Moisture Vapor Emission (VE) from water of intrusion or hydrostatic pressure.

It is designed for slabs with high vapor emission from the water of hydration, or initial mixing. Amtico PS Adhesive should not be used on concrete slabs that do not have a vapor retardant membrane properly placed above the sand layer and next to the concrete.

nstallation

Apply the adhesive to the substrate using the recommended trowel. Holding the trowel at an angle of 600, spread the adhesive evenly over an area of sub-floor that can be covered within the 3 hour working time. Wait until the adhesive has tacked up, which is usually about 15 minutes depending on site conditions, before placing the tiles in position. Press tiles firmly into position to obtain contract, paying particular attention to the tile edges. Pails of adhesive must be resealed with lid after use.

Finishing

After the tile have been placed in the adhesives, roll the floor within the 3 hour working time with a minimum 100 lbs (45 kg) roller to ensure complete contact with the adhesive. Remove any adhesive from the face of the tile with a cloth moistened with denatured alcohol. The finished floor should be protected from point loads and heavy traffic for 24 hours after installation. Tiles may be damp-mopped 24 hours after installation.

Trowel Recommendation and Approximate Coverage Porous Substrates Actual size notch:

¹/₁₆" X ¹/₃₂" x ¹/₃₂" U-Notch (1.6mm x 0.8mm x 0.8mm) 200-250 sq. ft./gal. (600-800 sq. ft/4gal.)

Non-porous Substrates Actual size notch: $\frac{1}{16}$ " X $\frac{1}{32}$ " x $\frac{5}{64}$ " U-Notch

(1.6mm x 0.8mm x 2mm) 300-350 sq.ft./gal. (1,200-1,400 sq.ft./4gal.)

type, condition, and porosity of substrate and the angle at which the trowel is held. Trowel illustrations shown above are not a 100% scale.

Sizes

1 gallon, 4 gallons Shelf life

2 years when stored in original unopened containers at temperatures between +50°F (12°C) and + 86°F

rgla solutions, inc.

5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847 671 7452 f: 847.671.4200 www.rgla.com

REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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HVAC GENERAL NOTES

- 1. HVAC SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES.
- 2. ALL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED IRON SHEET METAL AND BE FABRICATED ACCORDING TO THE S.M.A.C.N.A. LOW VELOCITY DUCT MANUAL AND ASHRAE HANDBOOK EQUIPMENT VOLUME, 1988. ALL ELBOWS SHALL HAVE PROPER RADIUS, OR HVAC CONTRACTOR SHALL PROVIDE DOUBLE THICKNESS, AIRFOIL TURNING VANES REQUIRED BY S.M.A.C.N.A. NO SQUARE THROAT ELBOWS SHALL BE INSTALLED WITHOUT DOUBLE THICKNESS TURNING VANES.
- 3. THE HVAC CONTRACTOR SHALL INSTALL HVAC SYSTEMS AS SHOWN, NOTED AND SPECIFIED. EQUIPMENT MAY NOT BE SUBSTITUTED UNLESS WRITTEN APPROVAL BY THE ARCHITECT, ENGINEER, OR OWNER'S REPRESENTATIVE IS OBTAINED. ANY CHANGES TO THE DUCTWORK LAYOUT WILL NECESSITATE SUBMISSION OF SHEET METAL SHOP DRAWINGS FOR ENGINEER'S REVIEW. ANY UNAUTHORIZED CHANGES WILL BE REMOVED AT THE CONTRACTOR'S EXPENSE, IF DEEMED NECESSARY BY ARCHITECT, ENGINEER, OR OWNER'S REPRESENTATIVE.
- 4. THE HVAC CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATION WITH ARCHITECT/OWNER'S REPRESENTATIVE IN FIELD AND OTHER TRADES. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND HEIGHTS.
- 5. ALL DUCT CONNECTIONS TO EQUIPMENT SHALL BE LOADED TYPE VINYL, VIBRATION ELIMINATION CONNECTIONS, (F.C.) FLEXIBLE CONNECTIONS.
- 6. ALL DUCTWORK TRANSITIONS SHALL BE (FOT) "FLAT ON TOP" UNLESS OTHERWISE SPECIFIED ON PLAN.
- 7. ALL DUCTWORK AND PIPING SHALL BE ROUTED ABOVE THE SUSPENDED CEILING SPACE UNLESS OTHERWISE NOTED ON THE PLANS.
- 8. ALL OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 10'-0" AWAY FROM EXHAUST DISCHARGE OPENINGS AND PLUMBING VENT STACKS.
- 9. ALL BRANCH SUPPLY DUCTS SHALL HAVE (VD) MANUAL VOLUME DAMPERS INSTALLED FOR BALANCING.
- 10. ALL NEW SHEET METAL SUPPLY AND RETURN AIR RECTANGULAR/ SQUARE DUCTWORK SHALL BE INSULATED WITH 1-1/2" THICK DUCT LINER. DUCT LINER SHALL BE FASTENED TO INSIDE OF DUCTWORK AS PER MANUFACTURER'S DIRECTIONS AND S.M.A.C.N.A. "DUCT LINER APPLICATION STANDARD". SIZE OF DUCTS SHALL BE INCREASED FOR DUCT LINER INSULATION. SIZES SHOWN ON PLAN ARE INSIDE FREE AREA. ALL NEW SUPPLY, RETURN AND OUTSIDE AIR ROUND/OVAL DUCTWORK SHALL BE INSULATED WITH 2" THICK FLEXIBLE INSULATION, 1 PCF DENSITY FOIL REINFORCED KRAFT FACING. DUCT WRAP SHALL BE FASTENED TO DUCTWORK AS PER MANUFACTURER'S DIRECTIONS. ROUND/OVAL SUPPLY AND RETURN DUCTWORK EXPOSED TO VIEW AND LOCATED IN THE CONDITIONED SPACE SHALL NOT BE INSULATED. ALL INSULATION R-VALUES SHALL CONFORM TO ENERGY CODE. REGARDLESS OF THE DUCT SYSTEMS INDICATED ABOVE, PROVIDE RECTANGULAR LINED DUCTWORK FOR THE FIRST 15 LINEAR FEET DOWNSTREAM OF THE SUPPLY AIR UNIT, DUCTWORK BEYOND 15 LF OF THE SUPPLY AIR UNIT TO BE LINED IF RECTANGULAR OR WRAPPED IF ROUND/OVAL. CONTRACTOR MAY SUBSTITUTE EQUIVALENT SIZED SPIRAL ROUND DUCTWORK IF SPACE IS AVAILABLE AND WITH APPROVAL FROM THE ULTA CONSTRUCTION MANAGER.
- 11. CORE-DRILL OR SAW-CUT EXISTING WALL, ROOF, ETC. AS REQUIRED FOR PIPING OR DUCTWORK AND FIRE-STOP OPENING AROUND PIPE OR DUCTWORK. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.
- 12. WHEREVER FOUNDATION WALLS, OUTSIDE WALLS, ROOFS, ETC. ARE CUT FOR INSTALLATION OF SYSTEMS. THEY SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND SEALED WEATHER TIGHT. WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES.
- 13. THE MECHANICAL SYSTEMS SHALL BE COMPLETE WITH ALL NECESSARY APPURTENANCES FOR A COMPLETE OPERATING SYSTEM.
- 14. HVAC CONTRACTOR SHALL INSTALL ALL CONTROL WIRING AS REQUIRED. THERMOSTATS SHALL BE AS SCHEDULED WITH THE EQUIPMENT. PROVIDE TRANSFORMERS AS REQUIRED.
- 15. PROVIDE UL APPROVED FIRE DAMPERS FOR ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, CEILINGS, AND FLOORS. INSTALL FIRE DAMPERS AS PER MANUFACTURER'S DIRECTIONS AND AS PER UL GUIDELINES.
- 16. HVAC CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES SHOWN ON PLAN. BALANCING CONTRACTOR SHALL USE DUCT MOUNTED MANUAL DAMPERS FOR AIR SYSTEM BALANCING. USE OF TERMINAL DAMPER IS NOT ACCEPTABLE.

AFE

CD

<u>DG</u>

<u>FC</u>

<u>NC</u>

LEGE

ABOVE FINISHED FLOOR CONDENSATE DOOR GRILLE, SEE ARCH. DWG'S. EXHAUST AIR FAN <u>ETR</u> EXISTING TO REMAIN FLEXIBLE CONNECTION <u>F0B</u> FLAT ON BOTTOM <u>F0T</u> FLAT ON TOP <u>MOD</u> MOTOR OPERATED CONTROL DAMPER NEW CONNECTION TO EXISTING <u>NTS</u> NOT TO SCALE ROOF TOP HVAC UNIT <u>RTU</u> SENSOR THERMOSTAT ARCH ARCHITECT OR ARCHITECTURAL BLD'G BUILDING B.H.P BRAKE HORSEPOWER COL. COLUMN CONST'N CONSTRUCTION

	// .
ND	
DET.	DETAIL
DN.	DOWN
DWG.	DRAWIN
E.A.T.	ENTERI
E.E.R	ENERG
E.S.P	EXTERN
E.T.R	EXISTIN
GA.	GAUGE
L.A.T.	LEAVIN
MT'D	MOUNT
NIC	NOT IN
REQ'D	REQUIF
T.S.P.	TOTAL
ΤV	TURNIN
UCD	UNDER
VD	VOLUM
W.C.	WATER
W/ /	WITH

ø

MEC

S<u>DEVICE</u>

 $\square \neg \neg$

TURNS.

DOWN DRAWING ENTERING AIR TEMPERATURE ENERGY EFFICIENCY RATIO EXTERNAL STATIC PRESSURE EXISTING TO REMAIN GAUGE LEAVING AIR TEMPERATURE MOUNTED NOT IN CONTRACT REQUIRED TOTAL STATIC PRESSURE TURNING VANE UNDERCUT DOOR VOLUME DAMPER WATER COLUMN WITH

DIAMETER/ROUND

ECHANICAL SYMBOLS							
MANUAL VOLUME DAMPER (VD) WITH LOCKING HAND QUADRANT HANDLE AND AIR—TIGHT END BEARINGS							
SENSOR WITH DEVICE CONTROLLED MOU	JNTED ON WALL.						
DUCT MOUNTED SMOKE DETECTOR							
TYPICAL SUPPLY DIFFUSER.	NECK SIZE TYPE CFM						
TYPICAL RETURN OR EXHAUST GRILLE.	NECK SIZE TYPE CFM						

$\langle 1 \rangle$	CONNECT 28x18 ROOFTOP UNIT <u>I</u> RISER.
2	CONNECT 28×18 ROOFTOP UNIT <u>I</u> RISER.
$\langle 3 \rangle$	CONNECT 28×18 ROOFTOP UNIT <u>I</u> RISER.
4	CONNECT 28×18 ROOFTOP UNIT <u>I</u> RISER.
5	SMOKE DETECTO DETECTOR HEAD FOR ALL DUCT
6	18"ø CONNECTIC AND AIR DEVICE
	TEMPERATURE S DRAWINGS. SENS CONTRACTOR. E/ NOT LOCATE CO LOCATE THE SEI FROM THE FROM FIXTURES. CONT CONFLICT. COOR TO ARCH. COOR

	TEN
UNIT	ROOMS S
<u>RTU-1</u>	101
<u>RTU-2</u>	101
<u>RTU-3</u>	101, 102
<u>RTU-4</u>	109, 111

	EXIS
1.	CONTRACTOR S DOCUMENTING SERVE AS GUI INFORMATION T NEW EQUIPMEN
2.	REFER TO THE THAT ARE BEIN WIRING, ANCHO RELOCATED, CO

THE CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND FULLY ACQUAINT
THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES
INVOLVED IN ACCOMPLISHING THE NEW WORK. PROBLEMS, DISCREPANCIES
OR INFORMATION NEEDED SHALL BE SUBMITTED TO THE
ARCHITECT/ENGINEER IN WRITING PRIOR TO SUBMITTING A PROPOSAL. THE
SUBMISSION OF PROPOSAL WILL INDICATE THAT THE CONTRACTOR HAS
FULLY UNDERSTOOD AND HAS INCLUDED ALL COSTS FOR THIS PROJECT.

AIRFOIL TURNING VANES, TYPICAL FOR ALL SQUARE

- 30. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL EXISTING CONDTIONS
- ARE SERVING.
- 32. PROVIDED MEANS FURNISH AND INSTALL.
- ARCHITECTURAL DRAWINGS.

RETURN AIR DUCTWORK LAYOUT. IMMEDIATELY.

DISCREPANCIES IMMEDIATELY.

5'-0" LONG.

FROM SUBSTANTIAL COMPLETION.

AND SUBJECT TO INSPECTION.

- THAN 3' OFF THEIR DEMISING WALLS.
- 28. MOUNT REMOTE SENSORS AT 60" ABOVE FINISH FLOOR UNLESS NOTED OTHERWISE.
- 29. CONTRACTOR SHALL VERIFY AVAILABLE DEPTH FOR DUCTWORK PRIOR TO DUCTWORK FABRICATION.
- RESOLUTION.

20. ALL CONTRACTOR FABRICATED AND MANUFACTURER FABRICATED COMPONENTS OF THE OUTSIDE AIR, SUPPLY AIR, RETURN AIR AND EXHAUST SYSTEMS SHALL BE CONSTRUCTED AND INSTALLED AIR-TIGHT. THE INSTALLED SYSTEMS SHALL BE PRESSURE TESTED AS SPECIFIED. PIPE OPENINGS IN SYSTEM COMPONENT SHALL HAVE SHEET METAL BAFFLES, SET IN SEALANT, TO PREVENT LEAKAGE.

21. DRAWINGS FOR HVAC WORK ARE DIAGRAMMATIC, SHOWING THE GENERAL LOCATION, TYPE, LAYOUT AND EQUIPMENT REQUIRED. THE DRAWINGS SHALL NOT BE SCALED FOR EXACT MEASUREMENTS. REFER TO MANFACTURER'S STANDARD INSTALLATION DRAWINGS FOR EQUIPMENT CONNECTIONS AND INSTALLATION REQUIREMENTS AS REQUIRED. FURNISH AND INSTALL DUCTWORK, CONNECTIONS, ACCESSORIES, OFFSETS AND MATERIALS NECESSARY TO FACILITATE THE SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED. THE WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES AND ORDINANCES

22. FLEX DUCT: PROVIDE FACTORY ASSEMBLED CLASS 1 AIR DUCT (UL 181) WITH FIBERGLASS INSULATION AND REINFORCED OUTER PROTECTIVE COVER/VAPOR BARRIER. FLEX DUCT SHALL MEET NFPA 90A WITH FLAME SPREAD UNDER 25, SMOKE DEVELOPED UNDER 50, AND SHALL BE RATED FOR 2" W.C. PRESSURE AND 0 TO 250 DEGREE TEMPERATURE. MAXIMUM LENGTH SHALL BE PER CODE AND NOT TO EXCEED

23. ALL MECHANICAL EQUIPMENT ELECTRICAL'S & STRUCTURAL REQUIREMENTS SHALL BE COORDINATED WITH OTHER TRADES PRIOR TO PURCHASE AND INSTALLATION OF THE UNITS. NOTIFY ARCHITECT/ENGINEER WITH

24. GENERAL CONTRACTOR TO REROUTE FIRE SPRINKLER PIPING IF REQUIRED FOR THE NEW SUPPLY AIR AND

25. ULTA CEILING SPACE IS NOT PLENUM RATED AND SHALL NOT BE USED AS A RETURN AIR PLENUM. 26. PRIOR TO CONSTRUCTION, FIELD VERIFY CEILING SPACE AVAILABILITY TO RUN DUCTWORK AGAINST EXISTING BUILDING STRUCTURAL CONDITION AND CEILING HEIGHT. NOTIFY ARCHITECT/ENGINEER WITH DISCREPANCIES

27. ALL LOW VOLTAGE WIRING OR CABLING SHOULD RUN ADJACENT TO THE PERIMETER SOFFITS NOT MORE

PRIOR TO SUBMITTING HIS BID. NO ADDITIONAL COMPENSATION WILL BE MADE FOR ANY EXTRAS DUE TO CONTRACTOR'S FAILURE TO VISIT THE JOBSITE AND/OR PREDETERMINE ALL EXISTING CONDITIONS BEFORE SUBMITTING HIS BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER FOR

31. MECHANICAL CONTRACTOR SHALL TAG EACH INDIVIDUAL REMOTE SENSOR WITH THE ROOFTOP UNIT THEY

33. PAINT PORTION OF DUCTWORK VISIBLE THRU GRILLE, DIFFUSER, LOUVER, ETC. WITH FLAT BLACK PAINT. 34. REMOTE SENSORS, KEY PADS, ETC. ARE NOT TO BE MOUNTED ON MILLWORK. COORDINATE LOCATION WITH

PLAN NOTES

SUPPLY DUCT TO DUCT DROP FROM LANDLORD PROVIDED <u>RTU-1</u>. PROVIDE TURNING VANE ELBOWS AT BOTTOM OF

RETURN DUCT TO DUCT DROP FROM LANDLORD PROVIDED <u>RTU-1</u>. PROVIDE TURNING VANE ELBOWS AT BOTTOM OF

SUPPLY DUCT TO DUCT DROP FROM LANDLORD PROVIDED RTU-2. PROVIDE TURNING VANE ELBOWS AT BOTTOM OF

RETURN DUCT TO DUCT DROP FROM LANDLORD PROVIDED <u>RTU-2</u>. PROVIDE TURNING VANE ELBOWS AT BOTTOM OF

OR PER CODE PROVIDED BY LANDLORD. PROVIDE EXTRA SMOKE FOR REPLACEMENT INSTALLATION AT SUBSTANTIAL COMPLETION SMOKE DETECTORS.

ON W/ V.D. IN NECK. PROVIDE DUCTWORK, VOLUME DAMPER

SENSOR LOCATION FOR RTU, TAG NUMBER INDICATED ON THE ISOR FURNISHED WITH RTU AND INSTALLED BY EMS EACH REMOTE SENSOR TO BE LABELED WITH ZONE SERVED. DO DLUMN MOUNTED SENSORS FACING THE FRONT OF THE STORE, INSORS ON THE SIDE OR BACK OF THE COLUMN WHEN VIEWED INT OF THE STORE. DO NOT ATTACH SENSORS TO STORE FACT ARCHITECT IF THERE APPEARS TO BE A FIXTURE RDINATE SENSOR LOCATIONS SO SENSORS ARE NOT ATTACHED RDINATE SENSOR LOCATIONS WITH ARTWORK, GRAPHICS, ETC.

MPERATURE ZONES

SERVED

2, 103, 105, 106, 110

NOTE: MECHANICAL CONTRACTOR SHALL STENCIL THE ROOFTOP UNITS. STENCIL SHALL INDICATE STORE NAME, SPACE NUMBER AND EQUIPMENT DESIGNATION IN LETTERING A MINIMUM OF 2 INCHES IN HEIGHT.

TING CONDITIONS NOTES

SHALL BE RESPONSIBLE FOR FIELD SURVEY AND OF EXISTING SYSTEMS. THESE CONTRACT DRAWINGS SHALL IDANCE FOR THE CONTRACTOR ALONG WITH FIELD SURVEY TO INSTALL THE DISTRIBUTION SYSTEMS REQUIRED FOR THE ENT AND DEVICES.

ARCHITECTURAL DRAWINGS FOR WALLS, CEILINGS, ETC. NG REMOVED. ALL EXISTING SYSTEMS INCLUDING PIPING, ORING, ETC. THAT ARE EXPOSED SHOULD BE REMOVED OR OORDINATE WITH LANDLORD.

MECHANICAL PLAN

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

5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847 671 4200 www.rgla.com

DATE:

07/01/2020

07/02/2020

07/13/2020

REVISIONS:

LL & ULTA REVIEW

PERMIT ISSUE

BID ISSUE

SHEET NAME

M-1

2050002918 AR. CORPORATE NUMBER: 484

12/31/20

12/31/20

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

				MIN		COOLING CAPACITY		HEATING COIL						
ANUFACTURER	STATUS	NOMINAL	SUPPLY	OA	ESP	EAT	TH	SH	GAS INPUT		MIN.	MIN. NUMBER	SUPPLY	PHAS
AND MODEL		TONS	CFM	AIR	(IN)	(DR\MR)	(MBH)	(MBH)	(МВН)	(MBH)	EFFICIENCY	OFSTAGES	FAN HP	
NNOX LGH152U4E	EXTG BY LL	12.5	4,160	1,030	1.00	80/67	141.9	11.7	360	288	0.8	2	3.75	3
NNOX LGH152U4E	EXTG BY LL	12.5	4,160	1,030	1.00	80/67	141.9	11.7	360	288	0.8	2	3.75	3
NNOX LGH122U4E	EXTG BY LL	10	3,200	725	1.00	80/67	113.9	77.1	240	192	0.8	2	3.75	3
NNOX LGH060U4E	EXTG BY LL	5	1,750	175	1.00	80/67	57.3	40.1	150	120	0.8	2	1.00	3
B, FLEXIBLE CONNECTORS AND ACOUSTIC LINED SHEET METAL DUCT DROPS					ACTORY IN	STALLED CO	RROSION P	ROTECTIO	N (EPOXY COAT	ING) WHEN LOCA	ED WITHIN 10	LENNOX NATION	AL ACCOU	NTS CUS
ELOW DECK FOR TENANT CONNECTION.					LES OF CO	ASTLINE OR	AS REQUIR	ED BASED	ON LOCAL CON	DITIONS.		FOR QUOTATION	IS AND ORD	ERS CO
ED SENSIBLE HIGH P	CS • A	• ATTACH ROOFTOP UNITS TO CURB FOR EARTHQUAKE OR HURRICANE ZONE PER THE LOCAL 972-497-5112, EMA							IAIL LENNO	XNATION				
	CC	CODES. <u>FOR EQUIP</u>							FOR EQUIPMENT	WITH FACT	FORY IN			
ED POWER EXHAUST FAN.					SMOKE DETECTOR TEST STATIONS. FOR TECHNICAL								SUPPORT (CONTAC
E KIT.					• INSTALL FACTORY FURNISHED ITEMS SHIPPED LOOSE FOR FIELD INSTALLATION. (HOLD FOR N							(HOLD FOR NEXT	r ava i lable	E CONSI
WITH MODEL REMOTE SENSOR #94L60.					• FOLLOW MANUFACTURERS PUBLISHED PROCEDURE FOR TEMPORARY OPERATION OF RTU'S NATIONALACCO						JNTSTECHN	√ICALSU		
ENSER COIL HAIL GUARDS.) MAINTAIN	WARRANTY.						FOR PARTS ORD	ER CONTAC	CT: COM
AND FACTORY INSTALLED NON-FUSED DISCONNECT.					BURGLAR B	ARS AT DUCI	DROP COI	NECTION '	TO CURB.			PROCEDURES C	ONTACT: EN	JAIL LN
ED UNPOWERED GFI WEATHERPROOF CONVENIENCE OUTLET.					STRUCTUR/	AL REINFORC	EMENT AS	NECESSAR	RY.			FOR CREDIT/BILL	ING ISSUES	S CONTA
ED SMOKE DETECTORS WIRED BY ELECTRICAL CONTRACTOR. SMOKE					CONDENSA	TE PIPE ROU	TED AND TE	RMINATED	PER CODE.			EMAIL LENNOXN	ATIONALAC	COUNTS
IOUNTED IN SUPPLY AND RETURN AIR DUCT OR AS REQUIRED BY LOCAL CODE.				CODE.								FOR GENERAL A	CCOUNT NE	EDS IF
JP												MANAGER, PHON	NE 614-305-4	1387, EM
BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S												FOR FACTORY S	TARTUP CO	NTACT:
														VNIACO
SECTION 15050 BASIC MATERIALS AND METHODS

PART 1 – GENERAL

- 1.01 DESCRIPTION THIS SECTION DEFINES THE GENERAL PROVISIONS WHICH ARE COMMON TO ALL SECTIONS OF DIVISION 15 B. FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT; FABRICATE, AND INSTALL COMPLETE AND IN PLACE, ALL THE FIXTURES, EQUIPMENT AND SYSTEMS AS SHOWN ON THE DRAWINGS, SPECIFIED HEREIN, AND AS REQUIRED FOR A OMPLETE AND OPERABLE INSTALLATION. C. THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES AND CHARGES REQUIRED FOR THIS WORK.
- 1.02 DRAWINGS AND SPECIFICATIONS A. DESIGN DRAWINGS: THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE GENERALLY DIAGRAMMATIC. AN CHANGES FROM THE GENERAL ROUTING SHOWN ON THE DRAWINGS SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND THE BUILDING CONSTRUCTION SHALL BE DONE WITHOUT ADDITIONAL CHARGE TO THE OWNER. B. SHOP DRAWINGS: SHOP DRAWINGS SHALL BE SUBMITTED FOR EACH AND EVERY ITEM OF MANUFACTURED MATERIAL
- AND EQUIPMENT. C. RECORD DRAWINGS:
- 1. THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL CONCEALED PIPES, DUCTS, VALVES, CONDUITS, ETC. IN ADDITION, HE SHALL RECORD, IN A SPECIAL SET OF CONTRACT DRAWINGS, ALL CHANGES AND DEVIATIONS FROM THE DESIGN DRAWINGS THAT OCCURRED DURING THE INSTALLATION OF THE WORK 2. AT COMPLETION OF THE JOB, THESE DRAWINGS ILLUSTRATING CHANGES OR DEVIATIONS SHOWING BY DIMENSION AND
- LOCATION THE EXACT POSITION OF ALL CONCEALED PIPES, VALVES, ETC., SHALL BE DELIVERED TO THE ARCHITECT/ENGINEER, D. SPECIFICATIONS - REFER TO THE FOLLOWING GENERAL SPECIFICATIONS AS THEY ARE A PART OF ALL SECTIONS OF DIVISION 15 DIVISION 1 - GENERAL REQUIREMENTS; REGARDING BUT NOT LIMITED TO: ALTERATION PROJECT PROCEDURES,
- SUBMITTALS, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS, CLEANING DURING CONSTRUCTION, AND PRODUCT OPTIONS AND SUBSTITUTIONS. 2. DIVISION 2 - SITEWORK; REGARDING BUT NOT LIMITED TO: SELECTIVE DEMOLITION, EARTHWORK, EXCAVATION AND
- BACKFILLING 3. DIVISION 3 - CONCRETE; REGARDING BUT NOT LIMITED TO: CAST-IN-PLACE CONCRETE, FORMWORK AND RFINFORCEMENT
- E. IT IS THE INTENTION OF THIS SPECIFICATION SECTION THAT ALL ITEMS OF MATERIAL AND EQUIPMENT HEREIN SPECIFIED OR SHOWN ON THE DRAWINGS FOR EACH SECTION SHALL BE FURNISHED BY THE CONTRACTOR FOR THAT SECTION, AND INSTALLED BY THAT CONTRACTOR. UNLESS IT IS SPECIFICALLY STATED IN THE SECTION SPECIFICATION. OR SHOWN ON THE DRAWINGS. THAT ANY ITEM OF MATERIAL OR EQUIPMENT IS TO BE FURNISHED BY THE CONTRACTOR OF A SECTION AND INSTALLED BY THE CONTRACTORS OF OTHER SECTIONS, OR FURNISHED BY OTHER SECTION CONTRACTORS AND INSTALLED BY THE CONTRACTOR OF THE SECTION.

1.03 CHASES AND RECESSES A. ALL CHASES, RECESSES AND MAJOR MASONRY OPENINGS AS SHOWN ON THE DRAWINGS WILL BE PROVIDED BY THE ARCHITECTURAL TRADES.

1.04 LUBRICATION A. PRIOR TO TESTING, ALL EQUIPMENT SHALL BE PROPERLY LUBRICATED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ONE SET OF TOOLS NECESSARY FOR LUBRICATION SHALL BE DELIVERED TO OWNER. AFTER PROPER LUBRICATING, ALL UNITS SHALL BE STARTED AND SUCCESSFULLY OPERATED BY THE CONTRACTOR IN THE PRESENCE OF THE ARCHITECT AND/OR ENGINEER. B. EXCEPT FOR SMALL ELECTRICAL MOTORS WHICH UNDER NEMA STANDARDS ARE EQUIPPED WITH LIFETIME LUBRICATION, ALL BEARINGS ON LARGE MOTORS AND MECHANICAL EQUIPMENT SHALL BE EQUIPPED WITH LUBRICATOR FITTINGS EXTENDED TO THE EXTERIOR OF THE HOUSING.

1.05 POWER WIRING

- A. MOTORS UP TO AND INCLUDING 1/3 H.P. SHALL BE 120 VOLT, 60 HERTZ, SINGLE PHASE AND MOTORS 1/2 H.P. AND LARGER SHALL BE BUILT FOR 460 VOLTS, 60 HERTZ, THREE PHASE; UNLESS OTHERWISE INDICATED PER DRAWING SCHEDULES, PLANS AND DETAILS.
- B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE COMBINATION MAGNETIC STARTERS WITH H.O.A. SWITCH FOR EACH ITEM OF THREE PHASE EQUIPMENT AND UNFUSED DISCONNECTS FOR EACH ITEM OF SINGLE PHASE EQUIPMENT, EXCEPT WHERE
- STARTERS ARE FURNISHED AS A PART OF WIRED EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL DO ALL POWER WIRING INCLUDING CONNECTIONS TO THE MOTORS FURNISHED BY THE
- D. REFER TO SECTION 15900 FOR THE WIRING TO BE PERFORMED BY THE TEMPERATURE CONTROL CONTRACTOR AND THE ELECTRICAL CONTRACTOR AS THEY RELATE TO TEMPERATURE CONTROLS.
- 1.06 FLUSHING AND TESTING A. ALL NEW WATER PIPING SYSTEMS SHALL BE FLUSHED USING WATER.
- B. ALL OPEN SYSTEMS, CONDENSATE DRAINAGE, ETC., SHALL BE TESTED WITH WATER, AT A HEAD OF FIVE (5) FEET ABOVE FINISHED FLOOR OR GRADE C. ALL PIPING SYSTEMS SHALL BE TESTED. IF LEAKS OCCUR, THE PIPE OR FITTING SHALL BE REMOVED AND REPLACED
- AND THE SYSTEM RETESTED. D. PIPING SHALL NOT BE BACKFILLED OR INSULATED UNTIL TESTED. TESTS MUST BE OBSERVED BY THE ARCHITECT/ENGINEER

1.07 GUARANTEE A. IN ADDITION TO GUARANTEE PROVISIONS OF THE GENERAL CONDITIONS, ALL REFRIGERANT COMPRESSORS SHALL HAVE AN EXTENDED WARRANTY OF FOUR (4) YEARS BEYOND THE FIRST YEAR FOR REPLACEMENT OF PARTS AND LABOR TO REPAIR.

- 1.08 SUPPORTS A. CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLES, CHANNELS, PLATES, OR BEAMS REQUIRED FOR THE SUPPORT OF THE EQUIPMENT OF EACH SECTION, WHETHER SHOWN ON THE DRAWINGS OR NOT.
- B. FURNISH AND INSTALL ALL RODS, AUXILIARY STRUCTURAL STEEL FRAMES, ATTACHMENTS, BRACKETS AND PLATFORMS REQUIRED FOR SUPPORT OF EQUIPMENT FROM OVERHEAD CONSTRUCTION FOR THE RESPECTIVE SECTION. C. VERTICAL PIPE RISERS SHALL BE ANCHORED MIDWAY OF THEIR HEIGHT, AND SHALL BE SUPPORTED AT EACH FLOOR BY
- 1-1/2" X 1/4" BAR CLAMPS ATTACHED TO PIPES AND RESTING ON THE FLOOR CONSTRUCTION. D. HORIZONTAL PIPING SHALL BE SUPPORTED BY ADJUSTABLE, WROUGHT, CLEVIS TYPE HANGERS, FEE & MASON, ELCEN, OR
- CRAWFORD. WHERE PARALLEL PIPES ARE INSTALLED AT THE SAME LEVEL, PROVIDE TRAPEZE HANGERS; THE VARIOUS TRADES SHALL COOPERATE IN THE JOINT USE OF SUCH HANGERS. PIPE HANGERS SHALL BE OF SIZE TO SUIT PIPE COVERING PROTECTION SADDLES
- E. PIPES SHALL BE SUPPORTED ONLY FROM THE STRUCTURAL MEMBERS OF THE BUILDING. THEY SHALL BE SUPPORTED AT SUCH INTERVALS AS WILL PREVENT SAGGING, AND SO THAT EXCESSIVE LOADS WILL NOT BE PLACED UPON ANY ONE SUPPORT. SPACING AND ROD SIZES SHALL BE AS FOLLOWS: MINIMUM ROD SIZE PIPE SIZE MAXIMUM SPACING
- 6'-0" AND AT ALL TURNS 3/8" 1/2" 3/4" 1" 7'-0" AND AT ALL TURNS 3/8" 9'-0" AND AT ALL TURNS 1-1/4", 1-1/2", 2" 3/8"
- 10'-0" AND AT ALL TURNS F. HANGER RODS SHALL BE FULL-DIAMETER STEEL WITH THREADED ENDS FOR FIELD CUTTING AND THREAD EXTENDING AS REQUIRED. WHERE THREADED ROD IS SHORTER THAN 6" IT SHALL BE DIPPED IN RUST RESISTANT PAINT PRIOR TO
- INSTALLATION. G. AT THE CONTRACTOR'S OPTION, HANGER RODS SHALL BE CONTINUOUS THREADED STEEL WITH GALVANIZED FINISH. H. HANGER RODS SHALL NOT BE BENT OR ALTERED IN ANY MATTER AND SHALL BE INSTALLED PLUMB AND TRUE. THE ROD
- SUPPORTING THE HANGER SHALL BE NO LONGER THAN 1/2" BELOW THE LOWER NUT. I. ALTERNATE WIRE ROPE HANGER SYSTEM (CONTRACTOR OPTION)
- A. GENERAL: AT THE OPTION OF THE CONTRACTOR AND IF APPROVED BY AUTHORITIES HAVING JURISDICTION, WIRE ROPE SYSTEM FOR DUCTWORK MAY BE USED IN LIEU OF CONVENTIONAL HANGERS. HANGER SYSTEMS SHALL BE APPROVED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS (HVAC-DCS) WITH A MINIMUM LOAD SAFETY FACTOR OF 5:1. B. WIRE ROPE HANGER SYSTEM AND LOCKING DEVICES TO BE ONE OF THE FOLLOWING MANUFACTURED SYSTEMS:
- 1. DUCTMATE INDUSTRIES, CHARLEROI, PA-CLUTCHER MECHANICAL HANGER SYSTEM WITH ZINC COATED STEEL AIRCRAFT QUALITY ROPE (FIELD CUT TO LENGTH). LOCKING DEVICE TO BE CLUTCHER CAST ZINC HOUSING WITH STAINLESS STEEL SPRINGS. 2. GRIPPLE, INC., BATAVIA, IL-HANG FAST WIRE ROPE HANGING SYSTEM WITH ZINC GALVANIZED STEEL WIRE ROPE. STANDARD LENGTHS OF 5, 10, 15, AND 30 FT WITH A PERFORATED LOOP AT ONE END. LOCKING DEVICE TO BE GRIPPLE ZINC
- HOUSING WITH STAINLESS STEEL SPRINGS. 3. ERICO, INC., SOLON, OH-CADDY SPEED LINK UNIVERSAL SUPPORT SYSTEM WITH GALVANIZED STEEL AIRCRAFT QUALITY WIRE ROPE. AVAILABLE IN 3.3, 6.6 9.9, 16.4, AND 32.8 FT. LENGTHS WITH FACTORY HOOK AT ONE END. LOCKING DEVICE TO BE ERICO STAINLESS STEEL HOUSING WITH ALL STEEL LOCKING DEVICE.

1.09 EQUIPMENT IDENTIFICATION A. ALL MECHANICAL EQUIPMENT SHALL BE CLEARLY IDENTIFIED WITH 2" HIGH STENCILED LETTERS, PAINTED ON THE EQUIPMENT (I.E. "RTU-1"). THIS INCLUDES EXTERIOR EQUIPMENT WHERE THE PAINT SHALL BE WEATHER RESISTANT. PART 2 - PRODUCTS

2.01 DESCRIPTION

- A. THIS PART DEFINES THE PIPE AND FITTINGS TO BE USED FOR ALL SERVICES INSTALLED UNDER DIVISION 15 B. REFER TO THE DRAWING LEGENDS AND SYMBOL SCHEDULES FOR DEFINITION OF THE DESIGNATORS USED IN THE FOLLOWING SPECIFICATION 2.02 PIPE AND FITTINGS RELATED TO SECTION 15800
- A. CONDENSATE DRAIN PIPING
- . PIPING SHALL BE SCHEDULE 40, ASTM 53 OR ASTM 120, GALVANIZED PIPE AND FITTINGS. 2. POLYVINYL CHLORIDE (PVC), SCHEDULE 40, PIPE AND FITTINGS, ASTM D2665; WITH PRIMER AND SOLVENT CEMENT JOINTS MAY BE USED IF ACCEPTABLE TO LOCAL AUTHORITIES HAVING JURISDICTION. A. NO CELLULAR CORE OR FOAMED PIPING WILL BE PERMITTED.

2.03 ACCESS DOORS A. PROVIDE 24" X 24" ACCESS DOORS MANUFACTURED AS AN INTEGRAL UNIT COMPLETE WITH ALL PARTS AND READY FOR INSTALLATION AS MANUFACTURED BY ONE OF THE FOLLOWING: BIRMINGHAM ORNAMENTAL.

- 3. MILORD, DIVISION OF INRYCO. B. PROVIDE FLUSH PANEL DOORS, EXCEPT PROVIDE RECESSED PANEL DOORS WHERE ACCESS DOORS OCCUR IN PLASTER OR
- ACOUSTICAL TILE GLUED TO GYPSUM LATH. . PROVIDE UL "B" LABELED UNITS WHERE ACCESS DOORS OCCUR IN HOUR RATED-CONSTRUCTION PROVIDE SCREW DRIVER OPERATED CAM LOCKS OF NUMBER REQUIRED BY SIZE OF DOOR.
- PROVIDE ANCHORAGE APPROPRIATE TO CONSTRUCTION.
- PART 3 EXECUTION 3.01 CUTTING AND PATCHING
- A. ALL CUTTING, REPAIRING, FITTING AND REFINISHING OF IN PLACE CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THE WORK OF A SECTION SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR OF THE SECTION, EXCEPT AS SPECIFICALLY SHOWN ON THE DRAWINGS OR HEREINAFTER SPECIFIED. B. WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES.
- 3.02 OPERATING INSTRUCTIONS A. THE CONTRACTOR FOR THE SECTION SHALL, WHEN DIRECTED BY THE ARCHITECT/ENGINEER. PROVIDE THE OWNER WITH A COMPETENT TRADESMAN TO INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE EQUIPMENT HE HAS INSTALLED. B. PROVIDE COPIES OF OPERATING INSTRUCTIONS, EQUIPMENT MANUALS, AND CONTROL DIAGRAMS PER DIVISION-1
- CONTRACT CLOSE-OUT C. CONTROL DIAGRAMS AND WRITTEN INSTRUCTIONS SHALL BE FRAMED UNDER GLASS.
- 3.03 CODES AND STANDARDS A. PIPING AND APPURTENANCES INSTALLED UNDER THIS DIVISION OF THE SPECIFICATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING, WHERE APPLICABLE: ANSI CODES FOR PRESSURE PIPING ANSI STANDARDS FOR PIPE AND FITTING
- B. IN ADDITION, THE WORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.
- 3.04 WORK CLEANLINESS A. CONTRACTOR SHALL KEEP STORED MATERIALS, STORAGE AREAS, AND INSTALLED SYSTEMS FREE OF DIRT AND DEBRIS. B. ALL EXPOSED ENDS OF INCOMPLETE OR UNCOVERED WORK SHALL BE TEMPORARILY PLUGGED AS EACH PHASE OF PIPING WORK AND DUCTWORK IS COMPLETED. C. PIPING, DUCTWORK AND EQUIPMENT TO BE PAINTED (EXPOSED TO VIEW IN COMPLETED STRUCTURE) SHALL BE CLEANED
- BY REMOVING RUST, PLASTER, AND DIRT BY WIRE BRUSHING. GREASE, OIL AND SIMILAR MATERIALS SHALL BE REMOVED BY WIPING WITH CLEAN RAGS AND SUITABLE SOLVENTS. D. MOTOR, PUMPS, FANS AND OTHER ITEMS WITH FACTORY FINISH SHALL BE REMOVED OF GREASE AND OIL AND LEAVE
- WITH ALL SURFACES CLEANED AND POLISHED.

- 3.05 ARRANGEMENT AND ALIGNMENT

- LOSED UNTIL TESTING IS COMPLETED
- BEFORE FINAL CONNECTIONS ARE FABRICATED
- FOR PROPER EXPANSION AND DRAINAGE.
- PASSAGEWAYS. PIPING SHALL BE INSTALLED TO PROVIDE WORKING CLEARANCE FOR OPERATION AND MAINTENANCE.
- 3.06 MODIFICATIONS AND INTERFERENCES MEMBERS, ETC., ARE CALLED FOR TO BE FURRED OR CLOSED-IN.
- THEM AT HIS OWN EXPENSE, TOGETHER WITH ALL BILLS OF MATERIAL. 3.07 PIPE CLEARANCES
- 3.08 DRAINAGE AND VENTING

3.09 PIPE AND FITTINGS SPECIFICALLY DESIGNATED OTHERWISE, SUCH AS "O.D." FOR TUBING.

- B. FULL LENGTHS OF PIPE SHALL BE USED WHEREVER POSSIBLE. SHORT LENGTHS OF PIPE WITH COUPLINGS WILL NOT BE PERMITTED

- FLUSH BUSHINGS. STREET ELBOWS OR FIELD-FABRICATED REDUCERS
- OF SAME SCHEDULE AS CONNECTED PIPE. 3.10 REDUCING FITTINGS
- 3.11 CONNECTIONS TO EQUIPMENT AND SPECIALTIES A. PIPING SYSTEMS SHALL BE INSTALLED COMPLETE TO EQUIPMENT CONNECTIONS OR TERMINAL USE POINTS. THE PIPE.
- 3.12 DIELECTRIC CONNECTIONS

3.13 PIPE SI FFVFS

- INSULATION FOR INSULATED SERVICES.
- FLOORS D. SLEEVE CONSTRUCTION:
- INTERIOR WALLS: FILL THE SPACE BETWEEN OUTSIDE OF PIPE OR INSULATION AND THE INSIDE OF THE SLEEVE OR
- FRAMED OPENING WITH FIBER GLASS.
- FLOORS, ESCUTCHEONS SHALL FIT OVER THE SLEEVES.
- SUBMIT THROUGH PENETRATION PROTECTION SYSTEMS FOR ALL FIRE RATED ASSEMBLIES TO THE LOCAL AUTHORITIES AND THE ARCHITECT/ENGINEER FOR REVIEW.

3.14 SCREWED JOINTS A. CUT THREADS FULL AND CLEAN WITH SHARP DIES. LEAVE NOT MORE THAN THREE PIPE THREADS EXPOSED AT EACH CONNECTION. D. USE JOINT SEALANT OR TAPE ON MALE THREADS ONLY.

SECTION 15250

INSULATION

- PART 1 GENERAL 1.01 RELATED DOCUMENTS
- PART 2 PRODUCTS
- 2.01 INSULATION COLD PIPING

- D. JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING TYPE.
- 2.02 REFRIGERANT SUCTION PIPING
- A. INSULATION SHALL BE 1/2" THICKNESS OF FLEXIBLE FOAMED PLASTIC. 2.03 INSULATION - AIR SYSTEM COMPONENTS
- BY CERTAINTEED. OWENS/CORNING AND KNAUF
- 2.04 INSULATION DUCTWORK
- BY OWENS/CORNING, CERTAINTEED OR KNAUF.
- C. REFER TO SECTION 15800 FOR LINED DUCTS.

PART 3 - EXECUTION

3.02 PIPE HANGER SHIELDS

HANGER SHIELD.

3.01 INSULATED PIPING SYSTEMS A. PROVIDE INSULATION ON PIPING SYSTEMS AS FOLLOWS: REFRIGERANT SUCTION PIPING

A. ALL PIPING SHALL BE ARRANGED AND ALIGNED IN ACCORDANCE WITH THE DRAWINGS. ELEVATIONS AS GIVEN MUST BE HELD. FLOOR ELEVATIONS WHERE GIVEN ARE TO HIGH POINTS OF FLOOR. DIMENSIONS MUST BE HELD AS CLOSELY AS POSSIBLE. ALL DIMENSIONS ARE TO BE FIELD CHECKED FOR ACCURACY BEFORE PIPE IS FABRICATED. B. INSTALL ALL PIPING STRAIGHT AND DIRECT AS POSSIBLE, GENERALLY FORMING RIGHT ANGLES WITH, OR RUNNING PARALLEL WITH, WALLS OR ADJACENT PIPING. ALL PIPING SHALL BE NEATLY SPACED WITH RISERS AND DROPS RUNNING PLUMB AND C. RUN PIPING IN WALL CHASES, PIPE SHAFTS, HUNG CEILINGS, RECESSES, ETC., WHERE SAME ARE PROVIDED. DO NO RUN SERVICE PIPING IN FLOOR SLAB FILL UNLESS SPECIFICALLY SO NOTED ON DRAWINGS. PIPING SHALL NOT BE COVERED OR DRAWINGS, IN GENERAL, ARE MADE TO SCALE. ALL DIMENSIONS SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR E. DRAWINGS FOR SMALL PIPING ARE, IN GENERAL, DIAGRAMMATIC AND THE EXACT LOCATION OF THESE LINES SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD MEASUREMENTS TAKEN BY HIM. THE ACTUAL ARRANGEMENT OF THE SMAL SIZE PIPING. WHEN ERECTED. SHALL FOLLOW THE GENERAL LOCATIONS SHOWN ON THE DRAWINGS AS FAR AS PRACTICABLE INSTALLATION MADE IN THIS WAY SHALL BE NEAT IN APPEARANCE AND CONVENIENT TO OPERATE, AND SHALL PROVIDE F. INSTALLATION OF PIPING SYSTEMS SHALL BE COORDINATED WITH OTHER WORK TO AVOID BLOCKING BUILDING OPENINGS, LIGHT FIXTURES. ETC. PIPING SHALL NOT INTERFERE WITH ACCESS TO VALVES OR EQUIPMENT AND SHALL NOT OBSTRUCT

A. CONTRACTOR SHALL CAREFULLY CHECK AND BECOME FAMILIAR WITH THE ARCHITECTURAL STRUCTURAL FLECTRICAL AND ALL MECHANICAL DRAWINGS AND DETAILS, AND MAKE NOTE OF ALL LOCATIONS WHERE WALLS, PARTITIONS, CEILINGS, STRUCTURAL B. MODIFICATIONS TO THE ARRANGEMENT OF THE PIPING SYSTEM MAY BE REQUIRED TO SUIT STRUCTURAL CONDITIONS, OI TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES. CONTRACTOR SHALL FURNISH ALL OFFSETS, ADDITIONAL FITTINGS, ETC., AS REQUIRED TO MEET INSTALLATION CONDITIONS WHETHER DETAILED ON THE DRAWINGS OR NOT C. ANY QUESTIONABLE INFORMATION IN THE SPECIFICATIONS OR ON THE DRAWINGS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH FABRICATION OR ERECTION OF THE PARTS AFFECTED. IF, IN THE OPINION OF THE CONTRACTOR, ANY ADDITIONAL DETAIL DRAWINGS ARE NECESSARY, HE SHALL PREPARE

A. INSTALL PIPING TO PROVIDE MINIMUM CLEARANCE OF AT LEAST ONE INCH BETWEEN EXTREME PROJECTIONS OF PIPING, FLANGES, FITTINGS, VALVES, ALLOWING FOR INSULATION, PIPE EXPANSION AND THE LIKE.

A. WHERE LINES ARE PURPOSELY PITCHED FOR DRAINAGE OR VENTING, AN ACCURATE GRADE SHALL BE MAINTAINED. LINES SHALL BE SUPPORTED IN SUCH A MANNER AS TO PREVENT DEFLECTION OF THE PIPING SUFFICIENT TO POCKET THE LINES.

A. ALL PIPE SIZES REFERRED TO IN THESE SECTIONS SHOULD BE INTERPRETED AS IPS (IRON PIPE SIZE) UNLESS

C. ALL PIPE SHALL BE CUT TO EXACT MEASUREMENT TO BE INSTALLED WITHOUT FORCING (EXCEPT WHERE COLD SPRINGING IS SPECIFICALLY CALLED FOR). AFTER CUTTING, ENDS SHALL BE REAMED AND CLEANED TO ELIMINATE FOREIGN MATTER. CUTTING OR OTHER WEAKENING OF THE BUILDING STRUCTURE TO FACILITATE PIPING INSTALLATION WILL NOT BE PERMITTED E. ALL PIPE AND FITTINGS SHALL BE MARKED BY THE MANUFACTURER IN ACCORDANCE WITH THE MARKING SECTIONS OF HE STANDARDS TO WHICH REFERENCE IS MADE IN THIS SPECIFICATION MANUAL. STANDARD MARKING SYSTEM FOR VALVES, FITTINGS, FLANGES AND UNIONS OF THE MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY.

F. MAKE ALL CHANGES IN SIZE AND DIRECTION OF PIPING WITH FITTINGS. DO NOT USE BENDS, MITER FITTINGS, FACE OR G. CLOSE NIPPLES SHALL NOT BE PERMITTED; USE ONLY SHOULDER NIPPLES. SHOULDER NIPPLE WITH SHOULDER LENGTH LESS THAN 1-1/2" SHALL BE OF HEAVY WALL PIPE; NIPPLES HAVING SHOULDER LENGTH OF 1-1/2" OR GREATER SHALL BE

A. USE ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS WHERE REQUIRED TO PREVENT POCKETING OF

B. PIPING SHALL BE FABRICATED CAREFULLY AND ACCURATELY TO MEET CONNECTIONS ON EQUIPMENT WITHOUT SPRINGING C. PROVIDE UNIONS OR FLANGES AT ALL PIPING CONNECTIONS TO EQUIPMENT, ETC., AT ALL LOCATIONS AS SHOWN ON THE DRAWINGS, AND GENERALLY AS REQUIRED TO DISCONNECT PIPING FROM EQUIPMENT AND APPARATUS. ARRANGE CONNECTIONS O THAT THE EQUIPMENT SERVED MAY BE REMOVED WITHOUT DISTURBING THE PIPING. WHERE VALVES SERVE TO ISOLATE EQUIPMENT OR SPECIALTIES. THE UNIONS OR FLANGES SHALL BE LOCATED BETWEEN VALVES AND EQUIPMENT OR SPECIALTIES. UNIONS SHALL GENERALLY BE USED FOR PIPE SIZES 2" AND SMALLER AND FLANGES FOR PIPE SIZES 2-1/2" AND LARGER.

A. PROVIDE DIELECTRIC FITTINGS BETWEEN FERROUS AND COPPER PIPING.

A. PROVIDE ALL PIPE OPENINGS THROUGH WALLS, PARTITIONS AND SLABS WITH SLEEVES HAVING AN INTERNAL DIAMETER AT LEAST 1" LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE FOR UNINSULATED LINES OR OF THE THICKNESS OF THE B. INSTALL SLEEVES THROUGH INTERIOR WALLS AND PARTITIONS FLUSH WITH FINISHED SURFACES; SLEEVES THROUGH OUTSIDE WALLS ARE TO PROJECT 1/2" ON OUTSIDE OF THE FINISHED WALL. FLOOR SLEEVES ARE TO PROJECT 2" ABOVE FINISHED SET SLEEVES IN PLACE BEFORE POURING CONCRETE OR SECURELY FASTEN AND GROUT IN WITH CEMENT.

. INTERIOR PARTITIONS: NO. 22 GAUGE GALVANIZED SHEET STEEL WITH SOLDERED JOINT. . INTERIOR MASONRY WALLS AND FLOORS: SCHEDULE 40 GALVANIZED STEEL PIPE.

F. EXTERIOR WALLS: PACK WITH OAKUM, SEAL WITH LEAD AND WATERTIGHT MASTIC OR ASPHALT PROVIDE ESCUTCHEONS ON BOTH SIDES OF THE PENETRATION THROUGH THE STRUCTURE FOR ALL PIPES EXPOSED TO VIEW

ASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS, WHETHER OR NOT INSULATED. FOR PIPES PASSING THROUGH H. FIRE-STOPPING SHALL BE PROVIDED AT ALL OPENINGS TO INCLUDE THE ANNULAR SPACE AROUND DUCTS. PIPING CONDUITS, ETC. AND SHALL BE U.L. RATED MATERIALS AND METHODS PER THE ARCHITECTURAL SPECIFICATION SECTIONS.

REAM ENDS OF PIPE AFTER THREADING AND BEFORE ASSEMBLY, TO REMOVE BURRS.

A. SECTION 15050, "BASIC MATERIALS AND METHODS", APPLIES TO THE WORK SPECIFIED IN THIS SECTION.

A. INSULATION FOR DRAINAGE PIPING SYSTEMS (COOLING COIL CONDENSATE) SHALL BE 1" THICK GLASS FIBER.

B. GLASS FIBER INSULATION SHALL BE UL RATED, NONCOMBUSTIBLE, SECTIONAL PIPE INSULATION OF HEAVY DENSITY GLASS FIBER WITH ALL SERVICE JACKET HAVING A COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. INSULATION SHALL BE AS SUPPLIED BY CERTAINTEED. OWENS/CORNING. OR KNAUF

C. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHESIVE AND COATING DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFACTURER'S STAMP OR LABEL ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND.

E. PROVIDE HALF ROUND GALVANIZED 18 GAUGE SHEET METAL HANGER SHIELDS. SHIELDS SHALL BE 12" LONG FOR PIPE SIZES UP TO 3", 18" FOR PIPE SIZES OVER 3" AND UP TO 6", AND 24" LONG FOR PIPE SIZES OVER 6".

A. INSULATION SHALL BE 2" THICKNESS OF SEMI-RIGID BOARD, 3 PCF DENSITY, FOIL REINFORCED KRAFT FACING. B. BOARD SHALL BE UL RATED, NONCOMBUSTIBLE GLASS FIBER, 25 FLAME SPREAD, 50 SMOKE DEVELOPED, AS MANUFACTURED

C. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHESIVE AND COATING DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFACTURER'S STAMP OR LABEL ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND

A. INSULATION SHALL BE 2" THICKNESS OF FLEXIBLE INSULATION, 1 PCF DENSITY, FOIL REINFORCED KRAFT FACING, HAVING A COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. INSULATION SHALL BE AS SUPPLIED

B. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHESIVE AND COATING DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFACTURER'S STAMP OR LABEL ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND.

2. CONDENSATE DRAIN PIPING, AS PER COLD PIPING.

A. EACH CONTRACTOR INSTALLING HOT OR COLD PIPING SHALL SET THE PIPING UP ON WOOD BLOCKING AT EACH HANGER. B. THE WOOD BLOCKING THICKNESS SHALL BE THE SAME AS THAT OF THE PIPE INSULATION.

C. THIS CONTRACTOR SHALL REPLACE THE WOOD BLOCKING WITH A FULL SECTION OF HEAVY DENSITY PIPE INSULATION AND A

3.03 INSTALLATION, GENERAL - COLD PIPING

- A. ALL SURFACES MUST BE CLEAN AND DRY AND PIPE LINES TESTED BEFORE APPLYING PIPE INSULATION. IF COVERING IS APPLIED AT THE PIPE COVERER'S OPTION PRIOR TO TESTING, AND DEFECTS IN COVERED WORK APPEAR AT OR BEFORE THE TIME OF INSPECTION AND TESTS, THE COVERING MUST BE REMOVED, AND AFTER DEFECTS HAVE BEEN CORRECTED, MUST BE REINSTALLED WITHOUT EXPENSE TO THE OWNER.
- B. COVERING SHALL BE DRY WHEN INSTALLED AND BEFORE AND DURING THE APPLICATION OF ANY FINISH. SURFACES OF COVERING SHALL BE SMOOTH, EVEN AND SUBSTANTIALLY FLUSH WITH ADJACENT PIPE COVERING.
- C. MANUFACTURER'S APPLICATION INSTRUCTIONS FOR ALL MATERIALS SHALL BE FOLLOWED.
- D. INSULATION SHALL NOT BE APPLIED OVER PIPE PLUGS, BLIND NIPPLES, NAMEPLATES, INSPECTION STAMPS, OR IDENTIFICATION E. INSULATOR MUST EXERCISE EXTREME CAUTION IN THE STORAGE OF FLAMMABLE ADHESIVES AND DURING THEIR APPLICATION. 3.04 INSULATION OF PIPING - COLD PIPING
- A. BUTT JOINTS FIRMLY TOGETHER. OVERLAP SEAM SHALL BE DOWNWARD ON SIDE OF PIPE, SEALED TIGHT AND SMOOTH. STAPLE OVERLAP ON 6" SPACING.
- B. INSTALL BUTT STRIPS WITH 2" OVERLAP DOWNWARD STAPLE END OF OVERLAP.
- C. INSULATION SHALL BE FASTENED WITH 9/16" FLARE TYPE STAPLES.
- D. SEAL OVER STAPLES WITH VAPOR-BARRIER MASTIC, CHILDERS NO. CP-32 (WHITE).

3.05 INSULATION OF FITTINGS, VALVES, ETC. - COLD PIPING

- A. VALVES AND FITTINGS 3" AND LESS SHALL BE INSULATED BY WRAPPING WITH PRE-CUT FIBER GLASS BLANKET INSULATION AND SECURING WITH JUTE TWINE. A PREFORMED, MOLDED PVC JACKET COVER SHALL BE INSTALLED OVER THE BLANKET INSULATION. THE JACKET SHALL BE FASTENED WITH STAINLESS STEEL TACKS AND BUTT STRIPS OVERLAPPING ONTO THE ADJOINING PIPE INSULATION. A VAPOR-BARRIER MASTIC, CHILDERS NO. CP-32 (WHITE), SHALL BE USED TO SEAL THE JACKET THROAT AND JACKET TO THE PIPE INSULATION PRIOR TO TACK AND BUTT STRIP INSTALLATION.
- B. FLANGES SHALL BE INSULATED WITH NESTING PIPE INSULATION. THE FLANGE INSULATION SHALL EXTEND NOT LESS THAN 2" OVER THE ADJACENT PIPE INSULATION ON EACH SIDE OF THE FLANGE. INSULATION ON PIPES IS TO BE STOPPED SHORT OF FLANGES TO PERMIT REMOVAL OF FLANGE BOLTS. THE FLANGE INSULATION SHALL BE APPLIED IN SUCH A MANNER THAT IT MAY BE REMOVED WITHOUT DAMAGE TO THE ADJACENT PIPE INSULATION.
- C. UNIONS SHALL BE COVERED WITH NESTING PIPE INSULATION AS SPECIFIED FOR FLANGES.
- D. STRAINERS SHALL BE INSULATED AS DESCRIBED ABOVE FOR SMALL VALVES AND FITTINGS. CLEAN-OUT PLUGS SHALL BE LEFT ACCESSIBLE SO THAT THE INSULATION IS NOT DAMAGED BY THEIR REMOVAL. E. WHEREVER NESTING SIZE SECTIONAL COVERING IS USED, IT SHALL BE CUT TO FIT IN A NEAT WORKMANLIKE MANNER WITH ALL JOINTS BUTTED AND HELD SECURELY IN PLACE WITH JUTE OR GLASS FIBER TWINE. JOINTS SHALL BE POINTED UP WITH
- INSULATING CEMENT PRIOR TO RECEIVING SURFACE FINISH. F. FITTINGS, VALVES, STRAINERS, WHERE VAPOR-BARRIER JACKET OR CLOTH TAPE HAS BEEN FITTED FOR NESTED/MITERED APPLICATIONS, AND COLOR DAMAGED JACKETS SHALL BE SEALED AND PAINTED WITH CHILDERS NO. CP-32 (WHITE) AT THE RATE OF 85-100 SQ. FT. PER GALLON.

3.06 INSTALLATION - REFRIGERANT PIPING

- A. INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR 40EF PIPING.
- B. PROVIDE TWO (2) COATS OF WEATHER RESISTANT PAINT FOR EXTERIOR INSTALLATIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS 3.07 INSULATED DUCT SYSTEMS
- A. PROVIDE INSULATION ON THE SUPPLY AND RETURN DUCTWORK SYSTEMS, EXCEPT WHERE DUCTWORK IS INDICATED TO BE LINED. B. PROVIDE INSULATION ON THE OUTSIDE AIR DUCTWORK OF ALL SYSTEMS FROM THE PLENUM OR HOOD INTAKE TO THE HVAC UNIT, EXCEPT WHERE DUCTWORK IS INDICATED TO BE LINED.
- C. PROVIDE INSULATION ON THE EXHAUST AIR DUCTWORK OF ALL SYSTEMS FROM THE SYSTEM EXHAUST AIR CONTROL DAMPER TO THE EXHAUST AIR PLENUM OR HOOD DISCHARGE, EXCEPT WHERE DUCTWORK IS INDICATED TO BE LINED.
- D. PROVIDE INSULATION ON THE OUTSIDE AIR INTAKE AND EXHAUST AIR DISCHARGE AIR PLENUMS. 3.08 INSTALLATION, GENERAL - DUCTS
- A. NO INSULATION SHALL BE APPLIED UNTIL THE DUCTWORK HAS BEEN TESTED AND PROVEN TIGHT.
- B. ALL DUCTWORK SHALL BE CLEANED OF OIL, GREASE, LOOSE DIRT, AND OTHER FOREIGN MATTER BEFORE THE INSULATION IS APPLIED.
- C. EXPOSED ENDS OF INSULATION SHALL BE BEVELED TO THE INSULATED SURFACE, AND THE JACKET AND/OR VAPOR BARRIER SHALL BE SEALED TO THE SURFACE.
- D. CUTOUTS IN THE INSULATION FOR NAMEPLATES AND EQUIPMENT TAGS SHALL HAVE ALL EDGES TAPERED TO THE SURFACE, AND THE JACKET AND/OR VAPOR BARRIER SEALED
- F. SPECIAL CARE MUST BE TAKEN IN APPLYING INSULATION AROUND SUCH ACCESSORIES AS REHEAT COILS. FLEXIBLE CONNECTIONS, ACCESS DOORS, ETC., TO ALLOW REMOVAL OF THESE ITEMS WITHOUT IN ANY WAY REMOVING THE INSULATION OR BREAKING THE VAPOR SEAL.
- 3.09 INSTALLATION DUCTS
- A. INSULATION WRAP SHALL BE APPLIED TO THE DUCT WITH 6" WIDE BANDS OF ADHESIVE ON 12" CENTERS. THE ADHESIVE SHALL HAVE A FLAME SPREAD INDEX OF 25 OR LESS. WELDING TYPE FASTENERS SHALL BE APPLIED TO THE BOTTOM OF DUCTS OVER 18" IN WIDTH. THE FASTENERS SHALL BE A MAXIMUM OF 12" ON CENTERS AND PLACED CLOSE TO BUTT ENDS OF THE INSULATION. THE PINS SHALL BE CUT OFF FLUSH WITH THE FASTENER WASHER.
- B. ALL JOINTS, CRACKS AND BREAKS, INCLUDING HOLES FOR THE FASTENERS, IN THE VAPOR BARRIER SHALL BE SEALED WITH A VAPOR BARRIER MASTIC, CHILDERS NO. CP-32 (GRAY) AND VAPOR BARRIER JACKET MATERIAL. BREAKS IN THE VAPOR BARRIER CAUSED BY THE ATTACHMENT OF TUBING OR OTHER EQUIPMENT SHALL ALSO BE SEALED. VAPOR BARRIER LAPS SHALL BE SEALED WITH ADHESIVE, CHILDERS NO. CP-82. NO STAPLES SHALL BE USED TO SECURE THE VAPOR BARRIER LAPS. C. WHERE PINS ARE USED, APPLY VAPOR SEAL PATCHES USING ADHESIVE OVER THE PINS.

3.10 INSULATION - AIR SYSTEM COMPONENTS

- A. PROVIDE INSULATION ON THE EXTERIOR SURFACES OF SUPPLY SYSTEM COMPONENTS CONVEYING MECHANICALLY COOLED AIR EXCEPT WHERE SUCH COMPONENTS ARE INDICATED TO BE LINED. B. INSULATED COMPONENTS SHALL INCLUDE FILTER SECTION, SUPPLY FAN, RETURN FAN, DISCHARGE CONE, COIL SECTION AND
- ATTENUATOR SECTION. 3.11 INSTALLATION - AIR SYSTEM COMPONENTS
- A. BOARDS SHALL BE APPLIED USING MECHANICAL FASTENERS. FASTENERS SHALL BE LOCATED NOT LESS THAN 3" FROM EACH EDGE OR CORNER OF THE BOARD. PIN SPACING ALONG THE PANELS NO GREATER THAN 12" ON CENTERS.
- B. APPLY ROUND VAPOR SEAL FSK PATCHES USING ADHESIVE OVER THE PINS. C. ALL INSULATION EDGES AND BUTT JOINTS ARE TO BE SEALED WITH JOINT SEALING TAPE, TYPE FSK, 5" WIDE, USING
- ADHESIVE, CHILDERS NO. CP-82.
- SECTION 15800
- AIR DISTRIBUTION PART 1 - GENERAL
- 1.01 RELATED DOCUMENTS

D. FINISH PINS WITH PLASTIC CAPS

- A. SECTION 15050 BASIC MATERIALS AND METHODS APPLIES TO THE WORK SPECIFIED IN THIS SECTION. B. IN ADDITION, THE FOLLOWING SECTIONS APPLY: 15250, 15900 AND 15990
- 1.02 AIR SYSTEMS A. PROVIDE HEATING AND COOLING SYSTEMS. B. PROVIDE VENTILATING SYSTEMS
- . PROVIDE EXHAUST SYSTEMS.
- 1.03 SHOP DRAWINGS A. PROVIDE 1/4" SCALE SHOP DRAWINGS FOR ALL DUCT SYSTEMS.
- PART 2 PRODUCTS
- 2.01 HVAC UNITS (LANDLORD PROVIDED) A. PROVIDE PACKAGE HEATING, COOLING AND VENTILATING UNIT AND ACCESSORIES PER DRAWING SCHEDULE, PLANS, AND DETAILS. B. HEATING SECTION SHALL BE GAS BURNER. C. COOLING SECTION SHALL BE SELF-CONTAINED REFRIGERATION SYSTEM WITH DIRECT-EXPANSION COIL.
- 2.02 AIR FILTERS A. PROVIDE EACH SYSTEM CENTRAL AIR FILTERS AND ACCESSORIES PER DRAWING SCHEDULES, PLANS AND DETAILS. B. PROVIDE TWO (2) SETS OF FILTERS FOR EACH SYSTEM.
- 2.03 PLENUM LINING A. PROVIDE SYSTEMS PLENUMS WITH FIBERGLASS LINING WHERE SHOWN ON THE DRAWING PLANS AND ELEVATIONS. B. LINER SHALL BE 2" THICK, 3 PCF OR 6 PCF DENSITY AS INDICATED, SEMI RIGID BOARD BONDED WITH THERMOSETTING RESIN AND COATED ONE SIDE WITH FIRE RESISTANT COATING.
- C. LINER SHALL HAVE MINIMUM 9.0 FT2 HR F/BTU THERMAL RESISTANCE. D. LINER SHALL BE SUPPLIED BY OWENS-CORNING, CERTAINTEED OR KNAUF.
- 2.04 EXHAUST FAN A PROVIDE ROOF MOUNTED FANS WITH ACCESSORIES PER DRAWING SCHEDULE PLANS AND DETAILS B. PROVIDE IN-LINE DUCT MOUNTED PANS WITH ACCESSORIES PER DRAWING SCHEDULE, PLANS AND DETAILS. 2.05 GRILLES AND DIFFUSERS
- A. PROVIDE GRILLES AND DIFFUSERS PER DRAWING SCHEDULE, PLANS AND DETAILS.
- 2.06 FLUES A. PROVIDE FLUES AND ACCESSORIES FOR THE DOMESTIC WATER HEATERS OF SECTION 15400. B. FLUES SHALL BE OF THE CLASS, MODEL AND WITH THE ACCESSORIES AS DESCRIBED IN LEGENDS ON DRAWINGS RELATING TO THE ABOVE SECTIONS.
- 2.07 MOTOR OPERATED DAMPERS A. PROVIDE MOTOR OPERATED DAMPER PER DRAWING SCHEDULE, PLANS AND DETAILS.

2.08 FIRE DAMPERS A. PROVIDE FIRE DAMPERS PER DRAWING SCHEDULE, PLANS, DETAILS AND WHERE REQUIRED BY CODE. 2.09 CURBS

- A. PROVIDE CURBS FOR ALL ROOF OPENINGS. 3. CERTAIN ITEMS OF EQUIPMENT SHALL HAVE CURBS FURNISHED BY THE EQUIPMENT MANUFACTURER. C. ALL OTHER OPENINGS SHALL HAVE INSULATED, PREFABRICATED CURBS OF GALVANIZED STEEL CONSTRUCTION, PATE OR THY-CURB. D. CURBS SHALL BE SIZED TO FIT EQUIPMENT BASE.
- 2.10 FLEXIBLE DUCTWORK
- A. PROVIDE FLEXIBLE DUCTWORK PER DRAWING PLANS AND DETAILS. B. FLEXIBLE DUCTS SHALL CONFORM TO U1-181 AND WITH A FLAME SPREAD RATING NOT OVER 25 AND A SMOKE DEVELOPED RATING NO HIGHER THAN 50. MAXIMUM LENGTH SHALL BE 6'-O" WHEN FULLY EXTENDED. ACCEPTABLE FLEXIBLE DUCTWORK CONNECTORS ARE AS FOLLOWS: FLEXMASTER MODEL NO. TL-M;
- FLEXMASTER MODEL NO. 4-M THERMAFLEX MODEL NO. M-KC TECHNAFLEX MODEL NO. 57K
- 2.11 FLEXIBLE CONNECTIONS

A. PROVIDE 1 LB. DENSITY LOADED VINYL FLEXIBLE CONNECTORS FOR ALL ITEMS OF ROTATING FAN EQUIPMENT.

2.12 PREFABRICATED DUCTWORK A. PROVIDE PREFABRICATED ROUND AND OVAL DUCTWORK WITH SPIRAL OR LONGITUDINAL SEAMS.

DUCI CONSTUCTION	N FOR 2" W.C.			
DUCT DIAMETER	SPIRAL SEAM	GAUGE	ONGITUDINAL SE	AM GAUGE
(INCHES)	GALV. STEEL	ALUM.	GALV. STEEL	ALUM.
UP TO 14"	26	.025"	24	.032"
15" TO 26"	24	.032"	22	.040"
28" TO 36"	22	.040"	20	.050"
38"TO 50"	20	.050"	18	.063"
52" TO 60"	18	.063"	16	.071"

B. SLEEVES, COLLARS, FITTINGS, ETC. SHALL BE OFF A WALL THICKNESS NOT LESS THAN THAT SPECIFIED FOR LONGITUDINA SEAM STRAIGHT DUCT UNLESS CERTIFIED TESTING DATA INDICATES SUITABILITY AND IS SUBMITTED TO ENGINEER FOR REVIEW.

2.13 DIFFUSER PLENUMS A. PROVIDE DIFFUSER PLENUMS AS SHOWN ON DRAWING PLANS AND DETAILS.

- 2.14 DUCT LINING PROVIDE DUCTWORK WITH FIBERGLASS LINING WHERE INDICATED ON THE DRAWINGS. B. LINING SHALL BE 1.5 INCH THICK, 2.0 PCF DENSITY, FLEXIBLE, WITH FIRE RESISTANT COATING TO BOND THE AIR SIDE SURFACE OF THE FIBERS. C. LINING SHALL HAVE MINIMUM 3.8 FT2 HR F/BTU THERMAL RESISTANCE. D. FIRE HAZARD CLASSIFICATION - ASTM E-84-70 TEST METHOD, 25 FLAME SPREAD, 50 SMOKE DEVELOPED.
- F. LINING SHALL BE SUPPLIED BY OWENS-CORNING, CERTAINTEED OR KNAUF.

2.15 VIBRATION ISOLATION A. PROVIDE VIBRATION ISOLATION FOR ALL FAN EQUIPMENT PER DRAWING PLANS AND DETAILS.

PART 3 - EXECUTION

3.01 HVAC UNITS (LANDLORD PROVIDED) A. UNITS SHALL BE MOUNTED ON STRUCTURAL MEMBERS PROVIDED AS PART OF THE BUILDING STRUCTURAL SYSTEM OF PREFABRICATED EQUIPMENT SUPPORTS, SEE DRAWINGS DETAILS AND LEGENDS. B. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OF THIS SECTION TO PROVIDE CERTIFIED DIMENSIONS ON EACH UNIT TO THE STRUCTURAL CONTRACTOR FOR PROPER DESIGN OF THE STRUCTURAL MOUNTING C. UNITS SHALL BE SEPARATE FROM THE BUILDING STRUCTURAL SYSTEM WITH 95 % EFFICIENT ISOLATORS EITHER BY INTERNAL OR EXTERNAL ISOLATORS.

3.02 FILTERS A. INSTALL FILTER HOUSINGS IN SYSTEM PLENUMS AND PROVIDE TRANSITIONS OR BAFFLES TO PREVENT AIR BY-PASS. B. INSTALL FILTERS BEFORE ANY SYSTEM IS PUT IN OPERATION.

- 3.03 PLENUM LINING A. ADHERE LINER WITH A FULL COAT OF ADHESIVE AND MECHANICAL FASTENERS. B. EXPOSED EDGES SHALL BE FINISHED WITH TROWEL APPLIED MASTIC TO PREVENT ANY POSSIBILITY OF EROSION. MASTIC TO HAVE SAME FIRE HAZARD CLASSIFICATION AS LINER.
- 3.04 EXHAUST FANS A. FASTEN ROOF MOUNTED FANS TO CURBS SIX (6) INCHES ON CENTERS USING HEX HEAD SCREWS AND WASHERS. B. MOUNT IN-LINE FANS TO DUCTWORK WITH VIBRATION ISOLATION SUPPORTS.
- 3.05 GRAVITY DAMPERS A. WHERE GRAVITY DAMPERS ARE INSTALLED THIS CONTRACTOR SHALL LUBRICATE THE HINGES AND BE RESPONSIBLE FOR OPERATION IN USE. 3.06 GRILLES AND DIFFUSERS
- A. INSTALL ACCESSORY DAMPERS IN THE FULL OPEN POSITION. B. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO ASSURE THAT ALL DAMPERS ARE FULL OPEN BEFORE AIR BALANCING IS PERFORMED.
- 3.07 ACCESS DOORS A. INSTALL ACCESS DOORS IN THE BUILDING CONSTRUCTION WHERE SHOWN ON THE DRAWING PLANS AND WHERE REQUIRED TO ACCESS CONCEALED FOUIPMENT. B COORDINATE INSTALLATION WITH THE GENERAL CONTRACTOR
- 3.08 FLUES A. SUBMIT DRAWINGS FROM THE MANUFACTURER OF THE FLUE SYSTEM INCLUDING CONNECTIONS TO THE EQUIPMENT, FLUE SUPPORTS, ROOF PENETRATION AND FLUE CAP. B. DO NOT ORDER FLUES UNTIL DRAWINGS ARE APPROVED.
- 3.09 MOTOR OPERATED DAMPER A. DAMPERS, WHETHER FURNISHED BY THIS CONTRACTOR OR THE CONTROL CONTRACTOR, SHALL BE INSTALLED SQUARE TO THE UCT OR CONSTRUCTION. B. DAMPERS SHALL BE MANUALLY TESTED TO ASSURE FREE AND EASY MOVEMENT. . ADJUST DAMPER BLADES FOR FULL CLOSURE
- 3.10 FIRE DAMPERS
- A. INSTALL DAMPERS IN SLEEVE PER DRAWING NOTE. B. RELEASE DAMPER LINKAGE AND TEST FOR FREE FALLING CLOSURE BEFORE AND AFTER INSTALLATION. C. RECONNECT LINKAGE. 3.11 CURBS
- A. CURBS SHALL BE TAPER TYPE AND MATCH THE PITCH OF THE ROOF. COORDINATE INSTALLATION OF CURBS WITH THE GENERAL CONTRACTOR. INSTALL STEEL PLATES AND ACCESSORIES AS REQUIRED FOR DUCTWORK OR EQUIPMENT CONNECTIONS C. GENERAL CONTRACTOR WILL PROVIDE SHIMMING LEVEL OF CURBS, FASTENING OF CURBS TO ROOF CONSTRUCTION AND ROOF FLASHING
- 3.12 DIFFUSER PLENUMS A. PLENUMS WILL BE RECEIVED WITH FACTORY APPLIED FINISH. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO PROTECT THAT FINISH B. IF IN THE OPINION OF THE ARCHITECT'S SITE INSPECTOR THE FINISH IS NOT ACCEPTABLE WHEN READY TO BE TURNED OVER TO THE OWNER, THE DAMAGED PLENUM SECTIONS WILL BE REMOVED AND REPLACED
- 3.13 FLEXIBLE DUCTWORK A. APPLY MASTIC DUCT SEALANT TO RIGID DUCT AND DEVICE TO WHICH CONNECTION IS BEING MADE BEFORE INSTALLING
- FLEXIBLE DUCT. B. FASTEN ALUMINUM TYPE FLEXIBLE DUCTWORK WITH #8 SCREWS MINIMUM 6" ON CENTER. COAT SCREWS WITH MASTIC SEALER AFTER TIGHTENING C. FASTEN REINFORCED VINYL TYPE FLEXIBLE DUCTWORK WITH DRAWBAND TYPE COMPRESSION FASTENERS.
- D. APPLY TWO LAYERS OF NASHAU #357 DUCT TAPE OVER JUNCTURE OF FLEXIBLE DUCTWORK TO DEVICE OR RIGID DUCTWORK, AND THE INSULATION SLEEVE TO DEVICE, RIGID DUCTWORK OR BUTTING TO TO OTHER INSULATION.
- 3.14 FLEXIBLE CONNECTIONS A. APPLY MASTIC DUCT SEALANT TO RIGID DUCT AND DEVICE TO WHICH CONNECTION IS BEING MADE BEFORE INSTALLING FLEXIBLE DUCT B. APPLY CLAMPS, BOTH ENDS, OF THE SCREW DRIVE TIGHTENING TYPE
- C. COAT CLAMP AND JUNCTURE WITH MASTIC SEALER AFTER TIGHTENING.
- 3.15 PREFABRICATED DUCTWORK A. WHERE CONNECTIONS IN OVAL AND ROUND DUCTS ARE NOT MADE UP WITH FLANGES, A MALE END COUPLING SHALL BE USED. "UNITED" DUCT SEALER. OR APPROVED EQUAL. SHALL BE APPLIED TO THE MALE END BEFORE INSERTION OR IMMEDIATELY AFTER IT IS STARTED. APPROXIMATELY 1/2 INCH. PUSH FITTING OR PIPE TO COUPLING BEAD STOP. DRILL AND INSTALL SOLID POP RIVETS, AS REQUIRED, A MINIMUM OF 1/2 INCH FROM THE COUPLING BEAD STOP, AFTER OTHER END OF COUPLING IS INSERTED, SEALED AND RIVETED AS ABOVE, APPLY DUCT SEALER IN A MINIMUM OF 2" WIDE BAND, MAKING SURE RIVET HEADS AND THE JOINT GAP ARE COVERED. APPLY A SINGLE WRAP OF NASHUA NO. 357. OF APPROVED EQUAL, DUCT TAPE OVER THE WET SEALER. DO NOT APPLY SEALER OVER THE TAPE. SAMPLES OF THE DUCT SEALER AND TAPE, INCLUDING SPECIFICATION SHEETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL
- B. WHERE DUCTWORK IS EXPOSED IN OCCUPIED AREAS, IT SHALL BE INSTALLED NEAT AND CLEAN. FRAGMENTED ENDS, I.E., FIELD CUTS WILL NOT BE ACCEPTED. ALL SUCH DUCTWORK SHALL BE FIELD MEASURED AND FACTORY CUT TO LENGTH. SEALANT WILL BE APPLIED ONLY TO THE INTERIOR SURFACES OF CONNECTING PIECES. ANY SEALANT EXPOSED SHALL BE REMOVED WITH THE PROPER SOLVENT
- 3.16 SHOP FABRICATED DUCTWORK A. DUCTWORK SHALL BE INSTALLED AND SEALED ONLY IN ACCORDANCE WITH THE NOTE ON THE DRAWINGS. ANY OTHER PROCEDURE WHETHER RECOMMENDED BY THE MANUFACTURER OR NOT IS UNACCEPTABLE B. SEALANT SHALL BE APPLIED TO JOINTS AND SEAMS DURING FABRICATION. NOT AT THE SITE INSTALLATION. C. WHERE DUCTWORK IS EXPOSED IN OCCUPIED AREAS, IT SHALL BE INSTALLED NEAT AND CLEAN. FRAGMENTED ENDS, I ., FIELD CUTS WILL NOT BE ACCEPTED. ALL SUCH DUCTWORK SHALL BE FIELD MEASURED AND SHOP CUT TO LENGTH SEALANT WILL BE APPLIED ONLY TO THE INTERIOR SURFACES OF CONNECTING PIECES. ANY SEALANT EXPOSED SHALL BE REMOVED WITH THE PROPER SOLVENT.
- 3.17 DUCT LINING A. LINING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR 2000 FPM. B. A FULL COAT OF ADHESIVE SHALL BE USED WHETHER RECOMMENDED OR NOT. EDGES SHALL BE FINISHED WITH TROWEL APPLIED MASTIC.



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MECHANICAL SPECIFICATIONS

DRAWN BY
IJB
CHECKED BY
RCB
JOB NUMBER
20406



WWW.HENDERSONENGINEERS.COM 2050002918

AR. CORPORATE NUMBER: 484 12/31/20

M-4

SHEET NAME

3.18 DUCTWORK A. PROVIDE DUCTWORK SYSTEMS PER DRAWING PLANS AND DETAILS. B. THE FOLLOWING DUCT SYSTEMS SHALL BE CONSTRUCTED FOR 2" W.C. 1. ALL SUPPLY AIR DUCTWORK. 2. ALL RETURN AIR DUCTWORK.

- ALL EXHAUST DUCTWORK.
 DUCT CONSTRUCTION FOR 2" W.C.
 ALL DUCTWORK SHALL BE NEAT, ACCURATE, MECHANICALLY TIGHT AND RIGIDLY CONSTRUCTED. OFFSETS OF EXPOSED DUCTWORK SHALL BE MADE ON SIDE OPPOSITE TO WALLS AND CEILINGS, UNLESS OTHERWISE SHOWN OR SPECIFIED. ALL UNINSULATED PANELS WIDER THAN 12 INCHES SHALL BE CROSS-BROKEN.
 DUCTWORK SHALL BE CONSTRUCTED OF NEW SHEETS OF LOCK-FORMING QUALITY. ENDS OF ALL SHEETS WHICH ARE NOT DEFECTLY SOLITIONER SHALL BE SO TRIMMED IN SHOP BEFORE LAYOUTLIS BEGUIN. CALIGES SHALL BE NOT LESS THAN THOSE
 - PERFECTLY SQUARE SHALL BE SO TRIMMED IN SHOP BEFORE LAYOUT IS BEGUN. GAUGES SHALL BE NOT LESS THAN THOSE SHOWN AS FOLLOWS:

 LARGEST DIMENSION (INCHES)
 GALV. STEEL GAUGE

 UP TO 12
 26

 1 TO 30
 24
- 31 TO 60 22 61 TO 90 A. ALL CASINGS AND PLENUM CHAMBERS SHALL BE CONSTRUCTED OF 18 GAUGE MATERIAL, WITH STANDING SEAMS, AND FRAMED WITH 1–1/2" X 1–1/2" X 1/8" GALVANIZED ANGLES. B. ALL DUCTWORK EXPOSED TO OUTSIDE WEATHER SHALL BE AN 18 GAUGE REGARDLESS OF DIMENSIONS.
- LONGITUDINAL SEAMS OF RECTANGULAR DUCTWORK SHALL BE EITHER PITTSBURGH LOCK, DOUBLE OR GROOVED. ONLY ONE TYPE OF SEAM SHALL BE USED IN EACH RUN OF DUCT. LONGITUDINAL SEAMS OF ROUND DUCT SHALL BE GROOVED. BUTTON PUNCH SNAP LOCK SEAMS MAY BE USED WHEN INSTALLED WITH SEALANT IN JOINT AND SHEETMETAL SCREWS
- INSTALLED THRU JOINT PER SMACNA STANDARDS. 4. TRANSVERSE JOINTS OF RECTANGULAR DUCT SHALL BE AS FOLLOWS: A. LESS THAN 18 INCHES – POCKET, BAR OR S SLIP AND DRIVE SLIPS.
- A. LESS THAN 18 INCHES POCKET, BAR OR S SLIP AND DRIVE SLIPS.
 B. B.19 TO 24 INCHES 3/4 INCH POCKET OR BAR SLIP AND DRIVE SLIP.
 5. DRIVE SLIPS SHALL BE USED ON SHORT SIDES OF TRANSVERSE DUCT JOINTS IF SIDE IS LESS THAN 24 INCHES. METAL AND
- GAUGE OF S SLIPS AND DRIVE SLIPS SHALL BE SAME AS DUCT. ENDS OF DRIVE SLIPS SHALL BE BENT OVER AT LEAST 1/2 INCH AT CORNERS. BAR SLIPS SHALL BE FASTENED WITH SHEET METAL SCREWS ON 12 INCH CENTERS. CORNERS OF ALL BAR SLIP JOINTS SHALL BE FOLDED OVER AND RIVETED. POCKET SLIPS SHALL BE RIVETED TO DUCT ON 6 INCH CENTERS, AND CORNERS SHALL BE OVERLAPPED AND RIVETED. 6. ALL FASTENERS, SUCH AS SHEET METAL SCREWS, MACHINE SCREWS, OR RIVETS SHALL BE CADMIUM—PLATED FOR GALVANIZED
- DUCT.
 ALL DUCTS OVER 18 INCHES WIDE SHALL BE PROVIDED WITH TRANSVERSE STIFFENERS OF EITHER JOINT SLIPS OR BRACING ANGLES ON CENTERS OF NOT OVER 4'-O" FOR DUCTS UP TO 60" WIDE ON THE LONG SIDE AND NOT OVER 2'-O" FOR DUCTS WITH LONG SIDE EXCEEDING 60" WIDTH.
 8. FITTINGS SHALL BE CONSTRUCTED AS DETAILED ON THE DRAWINGS.
- WHERE IT IS NECESSARY BECAUSE OF STRUCTURAL REASONS TO CHANGE SHAPES OF DUCTS, THE ARCHITECT WILL BE NOTIFIED IMMEDIATELY FOR RESIZING OR REROUTING. EQUIVALENT AREAS MUST BE MAINTAINED.
 WHERE RADIUS ELBOWS OR TAKEOFFS ARE INDICATED, THE INSIDE RADIUS SHALL NOT BE LESS THAN THREE-QUARTERS OF THE WIDTH OF THE DUCT OR TAKEOFF. WHERE DIVERGING CHANGES ARE MADE IN DUCT SIZES IN THE DIRECTION OF THE AIR
- FLOW, THEY SHALL BE AT A SLOPE OF 1 IN 4. 11. ALL TRANSVERSE JOINTS SHALL BE SEALED. USE LIQUID SEALANT ON FLAT SURFACE

SECTION 15950 AUTOMATIC TEMPERATURE CONTROLS

PART 1 – GENERAL

- 1.01 RELATED WORK SPECIFIED ELSEWHERE A. IN ADDITION, THE FOLLOWING SECTIONS APPLY: 15050, AND 15800.
- 1.02 DESCRIPTION OF WORK A. SEQUENCE OF OPERATION IS HEREBY DEFINED AS THE MANNER AND METHOD BY WHICH CONTROLS FUNCTION. REQUIREMENTS FOR EACH TYPE OF CONTROL SYSTEM OPERATION ARE SPECIFIED IN THIS SECTION. B. OPERATING EQUIPMENT, DEVICES AND SYSTEM COMPONENTS REQUIRED FOR CONTROL SYSTEMS ARE SPECIFIED IN OTHER
- DIVISION-15 CONTROLS' SECTIONS OF THESE SPECIFICATIONS. C. THIS SECTION DEFINES THE INSTALLATION OF THE AUTOMATIC TEMPERATURE CONTROLS REQUIRED AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER SPECIFIED. 1.03 DEFINITIONS
- A. ATC IS AUTOMATIC TEMPERATURE CONTROLS. B. OPEN FOR MOTORIZED DAMPERS, THE POSITION OF THE BLADES THAT CREATES THE MAXIMUM FREE AREA POSSIBLE
- OF THE DAMPER WHICH ALLOWS PASSAGE OF AIR. C. CLOSE FOR MOTORIZED DAMPERS, THE POSITION OF THE BLADES THAT PREVENTS ANY PASSAGE OF AIR. D. MAXIMUM FOR MOTORIZED DAMPERS, THE POSITION OF THE BLADES OTHER THAN OPEN WHERE THE BLADES ARE
- ADJUSTED TO GIVE THE REQUIRED MAXIMUM CFM. E. MINIMUM FOR MOTORIZED DAMPERS, THE POSITION OF THE BLADES OTHER THAN CLOSE WHERE THE BLADES ARE
- ADJUSTED TO GIVE THE REQUIRED MINIMUM CFM. F. ENABLED SHALL BE THE CONDITION WHERE THE EQUIPMENT IS ENERGIZED AND/OR OTHERWISE ACTIVATED TO A
- STAND-BY STATE AWAITING CONTROL SIGNALS FROM THE ATC SYSTEM. G. DISENABLED SHALL BE THE CONDITION WHERE THE EQUIPMENT IS DE-ENERGIZED.
- H. ON SHALL BE THE CONDITION WHERE THE EQUIPMENT IS OPERATING AND PRODUCING THE DESIRED EFFECT. I. OFF SHALL BE THE CONDITION WHERE THE EQUIPMENT IS NOT OPERATING AND IS STANDING BY IN AN IDLE STATE.

PART 2 – PRODUCTS 2.01 CONTROL SYSTEMS

A. AUTOMATIC TEMPERATURE CONTROL COMPONENTS SHALL BE ELECTRIC AND ELECTRONIC AS SHOWN ON THE DRAWING. B. THE ATC SYSTEM SHALL CONSIST OF ALL NECESSARY THERMOSTATS, TRANSMITTERS, RECEIVER-CONTROLLERS, DAMPER OPERATORS, RELAYS, CONTROL PANELS, THERMOMETERS, GAUGES, TIME CLOCKS, AND ALL ACCESSORIES AND ELECTRIC WIRING TO FULFILL THE INTENT OF THIS SPECIFICATION.

2.02 CONTRACTOR A. THE CONTROL SYSTEM SHALL BE SUPERVISED AND INSTALLED BY COMPETENT CONTROL MECHANICS AND ELECTRICIANS REGULARLY EMPLOYED BY THIS CONTROL CONTRACTOR.

- 2.03 WORK TO BE PERFORMED BY OTHER TRADES
 A. THE FOLLOWING INCIDENTAL WORK SHALL BE PROVIDED BY THE MECHANICAL CONTRACTORS UNDER THE SUPERVISION OF THE ATC CONTRACTOR AND ELECTRICAL CONTRACTOR.
 1. THE MECHANICAL CONTRACTOR SHALL:
 - A. INSTALL ALL AUTOMATIC DAMPERS. B. ASSEMBLE MULTIPLE SECTION DAMPERS WITH REQUIRED INTER-CONNECTING LINKAGES AND EXTEND REQUIRED
 - NUMBER OF SHAFTS THROUGH DUCT FOR EXTERNAL MOUNTING OF DAMPER MOTORS. C. PROVIDE NECESSARY SHEET METAL BAFFLE PLATES TO ELIMINATE STRATIFICATION AND PROVIDE AIR VOLUMES SPECIFIED. LOCATE BAFFLES BY EXPERIMENTATION AND AFFIX AND SEAL PERMANENTLY IN PLACE ONLY AFTER
 - STRATIFICATION PROBLEM HAS BEEN ELIMINATED. D. PROVIDE ACCESS DOORS THROUGH DUCTS FOR SERVICE TO CONTROL EQUIPMENT.
- E. INSTALL DUCTSTATS. F. INSTALL SMOKE DETECTORS.

2.04 ELECTRICAL WIRING A. ALL ELECTRIC WIRING AND WIRING CONNECTIONS REQUIRED FOR THE INSTALLATION OF THE ATC, HEREIN SPECIFIED, SHALL BE PROVIDED BY THE ATC CONTRACTOR UNLESS SPECIFICALLY SHOWN ON THE ELECTRICAL DRAWINGS OR CALLED FOR IN THE ELECTRICAL SPECIFICATIONS. ALL WIRING SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 16000 – ELECTRICAL OF THE SPECIFICATION.

2.05 SHOP DRAWINGS A. SHOP DRAWINGS OF THE FOLLOWING ARE REQUIRED: 1. ALL ATC CONTROL COMPONENTS.

- ATC SYSTEM DIAGRAMS COORDINATED TO INCLUDE PROVISION FOR FUTURE INTERFACE WHERE SPECIFIED.
 CONTROL DRAWINGS WITH DETAILED COMPONENT AND WIRING DIAGRAMS, INCLUDING BILL OF MATERIAL AND DESCRIPTION OF OPERATION FOR ALL SYSTEMS. DRAWINGS SHALL BY 22" X 34" STANDARD SIZE AND SHALL BE MADE FROM 22" X 34"
- REPRODUCIBLE MYLARS. 4. PANEL LAYOUTS AND NAMEPLATE LISTS FOR ALL LOCAL PANELS, WITH PANEL DIMENSIONS. 5. DATA SHEETS FOR ALL CONTROL SYSTEM COMPONENTS.
- 2.06 CONTROL DAMPERS

A. REFER TO THE DAMPER SCHEDULES ON THE DRAWINGS FOR DAMPERS TO BE FURNISHED BY THE CONTRACTOR OF THIS SECTION.
 B. DAMPERS SHALL BE LOW LEAKAGE, OPPOSED BLADE, GALVANIZED STEEL CONSTRUCTION.
 2.07 CONTROL DEVICES

- A. ELECTRONIC PROGRAMMABLE THERMOSTAT:
 1. THE ELECTRONIC PROGRAMMABLE THERMOSTAT SHALL CONSIST OF THERMISTOR TYPE OF RESISTANCE TEMPERATURE DETECTOR WITH A HIGH REFERENCE RESISTANCE AND BUILT-IN RECALIBRATION MEANS. OR THE THERMOSTAT SHALL CONSIST OF SOLID-STATE PLATINUM RESISTANCE TEMPERATURE DETECTOR WITH A HIGH REFERENCE RESISTANCE. THE THERMOSTAT SHALL BE PROGRAMMABLE AT THE FACE AND HAVE MINIMUM TWO (2) SETTINGS PER DAY, SEVEN (7) DAY PROGRAMMING STEPS AND SKIP-A-DAY FEATURES. THE PROGRAMMABLE INFORMATION SHALL BE MAINTAINED INDEFINITELY, AND THE TIME OF DAY AND DAY OF WEEK SHALL BE MAINTAINED FOR MINIMUM EIGHT (8) HOURS DURING POWER FAILURE. EACH THERMOSTAT SHALL ALSO HAVE AN INTEGRAL 5 MINUTE TIME DELAY BETWEEN STAGING TO THE REFRIGERATION SYSTEM COMPRESSORS.
- 2.08 CONTROLLED DEVICES A. DAMPER OPERATORS FOR ALL AUTOMATIC DAMPERS SHALL BE UNIDIRECTIONAL SPRING RETURN TYPE. PROVIDE ALL DAMPERS FOR NORMALLY CLOSED POSITION. DAMPER OPERATORS SHALL BE INSTALLED OUTSIDE OF THE DUCTWORK AND CONNECTED TO AN EXTENDED SHAFT. VOLTAGE SHALL BE 24 VOLTS, 1 PHASE.

2.09 SUPERVISION A. THE AUTOMATIC TEMPERATURE CONTROL INSTALLER SHALL SUPERVISE THE COMPLETE INSTALLATION OF ALL TEMPERATURE CONTROL DEVICES.

2.10 INSTRUCTIONS

- A. UPON COMPLETION OF THE PROJECT, THE ATC CONTRACTOR SHALL:
 1. COMPLETELY ADJUST, READY FOR USE, ALL THERMOSTATS, CONTROLLERS, VALVES, DAMPER OPERATORS, RELAYS, TIME CLOCKS, ETC., PROVIDED UNDER THIS SECTION. IN ADDITION, CALIBRATE EACH INSTRUMENT AND CONTROL LOOP, AND
- INDICATE THE SETTINGS FOR EACH CONTROLLER ON THE "AS-BUILT" DRAWINGS. 2. FURNISH MINIMUM TWO (2) MANUALS CONSISTING OF COMPLETE APPROVED SUBMITTAL DATA COVERING THE FUNCTION
- AND OPERATION OF THE ENTIRE ATC SYSTEM ON THE PROJECT FOR THE USE OF THE OWNER'S OPERATING PERSONNEL. A TEMPERATURE CONTROL TECHNICIAN SHALL BE PROVIDED FOR INSTRUCTION PURPOSES DURING THE GUARANTEE PERIOD, AFTER AN INITIAL SESSION OF 8 HOURS. 3. THE ATC CONTRACTOR SHALL PROVIDE THE SERVICES OF A QUALIFIED TECHNICIAN FOR THE SYSTEM START-UP AND AIR BALANCING PERIODS.
- 2.11 GUARANTY A. THE AUTOMATIC TEMPERATURE CONTROL CONTRACTOR SHALL GUARANTY ALL MATERIALS AND LABOR TO BE FREE OF DEFECTS OF ANY KIND FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE ENGINEER AND OWNER. ANY DEFECTS FOUND DURING THIS PERIOD SHALL BE REPAIRED OR REPLACED BY THE ATC CONTRACTOR AT NO EXPENSE TO THE OWNER.

PART 3 - EXECUTION

- 3.01 TEMPERATURE CONTROL

 A. PROVIDE A COMPLETE SYSTEM OF TEMPERATURE AND OPERATING CONTROLS, WIRING, CONDUIT, PIPING AND DEVICES AS REQUIRED FOR THE SEQUENCES DESCRIBED IN SEQUENCE OF OPERATION.

 3.02 SEQUENCE OF OPERATION

 A. HVAC UNITS PROVIDE MATERIALS AND LABOR TO INSTALL PROGRAMMABLE WALL THERMOSTAT WITH REMOTE
 - TEMPERATURE SENSORS. 1. PROGRAMMABLE THERMOSTAT SHALL BE CONFIGURABLE PROGRAMMABLE COMMERCIAL THERMOSTAT WITH ON-AUTO FAN
 - CONTROL, AND HEAT-OFF-COOL-AUTO SYSTEM SWITCHING SWITCHES. 2. INSTALL THERMOSTAT WHERE SHOWN ON PLANS, 60" ABOVE FLOOR OR AS REQUIRED BY LOCAL CODES AND/OR ADA. 3. INSTALL REMOTE TEMPERATURE SENSORS WHERE SHOWN ON PLANS, 60" ABOVE FLOOR OR AS REQUIRED BY LOCAL CODES AND (OR ADA
 - CODES AND/OR ADA. 4. PROVIDE INITIAL SETTING AND PROGRAMMING OF WALL THERMOSTAT IN ACCORDANCE TO THE OWNER'S BUSINESS SCHEDULE.
 - THERMOSTAT SHALL CYCLE HVAC UNIT HEATING AND COOLING SYSTEMS.
 HVAC UNIT FAN SHALL RUN CONTINUOUSLY DURING OCCUPIED PERIODS.
 HVAC UNIT FAN AND HEATING SYSTEM SHALL CYCLE TO MAINTAIN NIGHT SET BACK TEMPERATURES.
 - B. EXHAUST FANS
 1. INTERLOCK EXHAUST FAN MOTOR WITH SUPPLY FAN MOTOR IN ASSOCIATED HVAC UNIT. HVAC UNIT SUPPLY FAN ON, EXHAUST FAN ON; HVAC UNIT SUPPLY FAN OFF, EXHAUST FAN OFF.
 2. PROVIDE CONDUITS, WIRING, RELAYS, ETC. AND LABOR TO ACCOMPLISH THE INTERLOCK.

SECTION 15900 TEST AND BALANCE MECHANICAL SYSTEM SPECIFICATIONS

PART 1 – GENERAL

1.01 SUMMARY

A. SECTION INCLUDES TESTING, ADJUSTING, AND BALANCING OF AIR, WATER, AND REFRIGERATION SYSTEMS AND MEASUREMENT OF FINAL OPERATING CONDITION OF HVAC SYSTEMS.

1.02 REFERENCES

- A. AABC (ASSOCIATED AIR BALANCE COUNCIL) NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE.
- B. NEBB (NATIONAL ENVIRONMENTAL BALANCING BUREAU) PROCEDURAL STANDARDS FOR TESTING, ADJUSTING, AND BALANCING OF ENVIRONMENTAL SYSTEMS.
 C. TABB (TESTING, ADJUSTING AND BALANCING BEUREAU) – INTERNATIONAL STANDARD FOR ENVIRONMENTAL SYSTEMS
- 1.03 SUBMITTALS

BALANCE.

- A. TEST REPORTS: THE TAB REPORT SHALL BE IN THE FORMAT OF THE AABC NATIONAL STANDARD REPORT OR THE NEBB CERTIFIED REPORT FORMS AS PUBLISHED IN THEIR MOST CURRENT EDITIONS.
- B. FURNISH FOUR COPIES OF REPORTS, COMPLETE WITH TABLE OF CONTENTS PAGE AND INDEXING TABS AND WITH COVER IDENTIFICATION AT FRONT, IDENTIFIED TO CORRESPOND WITH DATA SHEETS, AND INDICATING THERMOSTAT LOCATIONS.
- C. INCLUDE A COPY OF AABC NATIONAL PROJECT PERFORMANCE GUARANTY, COPY OF NEBB CERTIFICATE OF CONFORMANCE CERTIFICATION OR TABB QUALITY ASSURANCE PROGRAM FOR ENVIRONMENTAL SYSTEMS BALANCE.
- 1.04 QUALITY ASSURANCE
- A. PERFORM WORK IN ACCORDANCE WITH AABC NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION, TOTAL SYSTEM BALANCE OR NEBB PROCEDURAL STANDARDS FOR TESTING, BALANCING, AND ADJUSTING OF ENVIRONMENTAL SYSTEMS.
- 1.05 QUALIFICATIONS
- A. THE TESTING, ADJUSTING, AND BALANCING (TAB) OF ALL WORK SHALL BE PERFORMED BY AN INDEPENDENT CONTRACTOR THAT IS CURRENTLY LICENSED BY AABC OR NEBB. THE COMPANY SHALL SPECIALIZE IN TAB OF SYSTEMS SPECIFIED IN THIS SECTION AND SHALL HAVE A MINIMUM THREE YEARS DOCUMENTED EXPERIENCE CERTIFIED BY AABC OR NEBB.
- B. PERFORM WORK UNDER SUPERVISION OF AABC CERTIFIED TEST AND BALANCE ENGINEER OR NEBB CERTIFIED TESTING, BALANCING, AND ADJUSTING SUPERVISOR EXPERIENCED IN PERFORMANCE OF THIS WORK AND LICENSED AT PLACE WHERE PROJECT IS LOCATED.
- 1.06 TIMING
- A. THE COMPLETE TAB REPORTS SHALL BE PROVIDED TO THE OWNER NO LATER THAN ONE (1) WEEK PRIOR TO CONSTRUCTION END DATE.

PART 2 - PRODUCTS

NOT USED

PART 3 – EXECUTION

- 3.01 HVAC CONTRACTOR RESPONSIBILITIES
- A. THE HVAC CONTRACTOR SHALL VERIFY THAT THE HVAC SYSTEMS ARE COMPLETE AND OPERABLE BEFORE TAB WORK IS STARTED. THE HVAC CONTRACTOR SHALL BE PRESENT DURING THE TESTING, ADJUSTING, AND BALANCING OF THE HVAC SYSTEM TO PROVIDE ASSISTANCE TO THE TAB CONTRACTOR. REQUIREMENTS INCLUDE THE FOLLOWING:
- 1. SYSTEMS ARE STARTED AND OPERATING IN SAFE AND NORMAL CONDITION. 2. TEMPERATURE CONTROL SYSTEMS ARE INSTALLED COMPLETE AND OPERABLE.
- ALL BALANCING DEVICES AND HVAC EQUIPMENT ARE ACCESSIBLE.
 PROPER THERMAL OVERLOAD PROTECTION IS IN PLACE FOR ELECTRICAL EQUIPMENT.
- NEW AIR FILTERS ARE INSTALLED JUST PRIOR TO AIR BALANCE AND IMMEDIATELY AFTER PROJECT IS COMPLETE.
 DUCT SYSTEMS ARE CLEAN OF DEBRIS.
 FANS ARE ROTATING CORRECTLY.
- 8. FIRE AND VOLUME DAMPERS ARE IN PLACE AND OPEN. 9. AIR COIL FINS ARE CLEANED AND COMBED.
- 10. ACCESS DOORS ARE INSTALLED AND CONNECTED 11. AIR OUTLETS ARE INSTALLED AND CONNECTED.
- DUCT SYSTEM LEAKAGE IS MINIMIZED.
 DUCT SYSTEMS ARE FLUSHED, FILLED, AND VENTED.
- 14. PUMPS ARE ROTATING CORRECTLY. 15. PROPER STRAINER BASKETS ARE CLEAN AND IN PLACE OR IN NORMAL POSITION.
- 16. SERVICE AND BALANCING VALVES ARE OPEN.
- B. IF THE TAB CONTRACTOR DETERMINES THAT A FAN SHEAVE OR BELT REPLACEMENT IS NEEDED TO MEET THE BALANCING REQUIREMENTS, THEN THE HVAC CONTRACTOR SHALL REPLACE THE FAN SHEAVE/BELT AS REQUIRED. THE HVAC CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF THE REPLACEMENT WORK.

3.02 INSTALLATION TOLERANCES

A. ALL AIR SYSTEMS MUST BE BALANCED WITHIN PLUS OR MINUS 10% OF DESIGN.

- 3.03 ADJUSTING A. VERIFY RECORDED DATA REPRESENTS ACTUAL MEASURED OR OBSERVED CONDITIONS.
- B. PERMANENTLY MARK SETTINGS OF VALVES, DAMPERS, AND OTHER ADJUSTMENT DEVICES ALLOWING SETTINGS TO BE RESTORED. SET AND LOCK MEMORY STOPS.
- C. AFTER ADJUSTMENT, TAKE MEASUREMENTS TO VERIFY BALANCE HAS NOT BEEN DISRUPTED. IF DISRUPTED, VERIFY CORRECTING ADJUSTMENTS HAVE BEEN MADE.
- D. LEAVE SYSTEMS IN PROPER WORKING ORDER, REPLACING BELT GUARDS, CLOSING ACCESS DOORS, CLOSING DOORS TO ELECTRICAL SWITCH BOXES, AND RESTORING THERMOSTATS TO SPECIFIED SETTINGS.
- E. AT FINAL INSPECTION, RECHECK RANDOM SELECTIONS OF DATA RECORDED IN REPORT, RECHECK POINTS OR AREAS AS SELECTED AND WITNESSED BY OWNER.
- 3.04 AIR SYSTEM PROCEDURE
- A. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO OBTAIN REQUIRED OR DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES (AT SITE ALTITUDE).
- B. MAKE AIR QUANTITY MEASUREMENTS IN MAIN DUCTS BY PITOT TUBE TRAVERSE OF ENTIRE CROSS SECTIONAL AREA OF DUCT.
- C. MEASURE AIR QUANTITIES AT AIR INLETS AND OUTLETS.
- D. ADJUST DISTRIBUTION SYSTEM TO OBTAIN UNIFORM SPACE TEMPERATURES FREE FROM OBJECTIONABLE DRAFTS.
- E. USE VOLUME CONTROL DEVICES TO REGULATE AIR QUANTITIES ONLY TO EXTENT ADJUSTMENTS DO NOT CREATE OBJECTIONABLE AIR MOTION OR SOUND LEVELS. EFFECT VOLUME CONTROL BY USING VOLUME DAMPERS LOCATED IN
- F. VARY TOTAL SYSTEM AIR QUANTITIES BY ADJUSTMENT OF FAN SPEEDS. PROVIDE SHEAVE DRIVE CHANGES TO VARY FAN SPEED. VARY BRANCH AIR QUANTITIES BY DAMPER REGULATION.

3.05 REPORTS

- A. REFER TO PLANS FOR EQUIPMENT DESIGN DATA SCHEDULES
- B. REPORT FORMS. 1. TITLE PAGE:
- A. NAME OF TESTING ADJUSTING, AND BALANCING AGENCY
- B. ADDRESS OF TESTING, ADJUSTING, AND BALANCING AGENCY C. TELEPHONE AND FACSIMILE NUMBERS OF TESTING, ADJUSTING, AND BALANCING AGENCY D. AABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF CONTRACTOR
- E. PROJECT NAME
- F. PROJECT LOCATION G. PROJECT ARCHITECT
- H. PROJECT ENGINEER I. PROJECT CONTRACTOR
- J. PROJECT ALTITUDE K. DATE TAB WAS PERFORMED
- 2. SUMMARY COMMENTS:
- A. COPY OF CERTIFICATE OF CONFORMANCE WITH NATIONAL STANDARDS (AABC OR NEBB) FOR THIS PROJECT B. ACTUAL SPACE TEMPERATURES WITH CORRESPONDING THERMOSTAT SET POINTS FOR EACH UNIT C. DESIGN VERSUS FINAL PERFORMANCE
- D. NOTABLE CHARACTERISTICS OF SYSTEM E. DESCRIPTION OF SYSTEMS OPERATION SEQUENCE
- F. SUMMARY OF OUTDOOR AND EXHAUST FLOWS TO INDICATE BUILDING PRESSURIZATION G. NOMENCLATURE USED THROUGHOUT REPORT
- H. TEST CONDITIONS3. INSTRUMENT LIST: A. INSTRUMENT
- B. MANUFACTURER C. MODEL NUMBER
- D. SERIAL NUMBER E. RANGE
- F. CALIBRATION DATE
- 4. AIR DISTRIBUTION TEST SHEET A. AIR TERMINAL NUMBER
- B. ROOM NUMBER/LOCATION C. TERMINAL TYPE
- D. TERMINAL SIZE E. AREA FACTOR F. DESIGN VELOCITY
- G. DESIGN AIR FLOW H. TEST (FINAL) VELOCITY
- I. TEST (FINAL) AIR FLOW J. PERCENT OF DESIGN AIR FLOW
- 5.DUCT TRAVERSE:
- A. SYSTEM ZONE/BRANCH B. DUCT SIZE
- C. AREA D. DESIGN VELOCITY E. DESIGN AIR FLOW
- F. TEST VELOCITY G. TEST AIR FLOW
- H. DUCT STATIC PRESSURE
- I. AIR TEMPERATURE J. AIR CORRECTION FACTOR

6. ELECTRIC MOTORS FOR ALL HVAC EQUIPMENT: A. MANUFACTURER B. MODEL/FRAME C. HP/BHP AND KW D. PHASE, VOLTAGE, AMPERAGE; NAMEPLATE, ACTUAL, NG E. RPM F. SERVICE FACTOR

F. SERVICE FACTOR G. STARTER SIZE, RATING, HEATER ELEMENTS H. SHEAVE MAKE/SIZE/BORE 7. V-BELT DRIVE:

A. IDENTIFICATION/LOCATION B. REQUIRED DRIVEN RPM C. DRIVEN SHEAVE, DIAMETER AND RPM

D. BELT, SIZE AND QUANTITY E. MOTOR SHEAVE DIAMETER AND RPM F. CENTER TO CENTER DISTANCE, MAXIMUM, MINIMUM, 8. COOLING COIL DATA:

A. IDENTIFICATION/NUMBER B. LOCATION

C. SERVICE D. MANUFACTURER E. AIR FLOW, DESIGN AND ACTUAL F. ENTERING AIR DB TEMPERATURE, DESIGN AND ACTUAI G. ENTERING AIR WB TEMPERATURE, DESIGN AND ACTUAL H. LEAVING AIR WB TEMPERATURE, DESIGN AND ACTUAL J. WATER FLOW, DESIGN AND ACTUAL K. WATER PRESSURE DROP, DESIGN AND ACTUAL

L. ENTERING WATER TEMPERATURE, DESIGN AND ACTUAL
 M. LEAVING WATER TEMPERATURE, DESIGN AND ACTUAL
 N. SATURATED SUCTION TEMPERATURE, DESIGN AND ACTUAL
 O. AIR PRESSURE DROP, DESIGN AND ACTUAL
 9. AIR MOVING EQUIPMENT:

A. LOCATION B. MANUFACTURER C. MODEL NUMBER

D. SERIAL NUMBER E. ARRANGEMENT/CLASS/DISCHARGE F. AIR FLOW, SPECIFIED AND ACTUAL G. RETURN AIR FLOW, SPECIFIED AND ACTUAL H. OUTSIDE AIR FLOW, SPECIFIED AND ACTUAL I. TOTAL STATIC PRESSURE (TOTAL EXTERNAL), SPECIFIE J. INLET PRESSURE

K. DISCHARGE PRESSURE L. SHEAVE MAKE/SIZE/BORE M. NUMBER OF BELTS/MAKE/SIZE

N. FAN RPM 10.RETURN AIR/OUTSIDE AIR DATA: A. IDENTIFICATION/LOCATION

B. DESIGN AIR FLOW C. ACTUAL AIR FLOW D. DESIGN RETURN AIR FLOW E. ACTUAL RETURN AIR FLOW

F. DESIGN OUTSIDE AIR FLOW G. ACTUAL OUTSIDE AIR FLOW H. RETURN AIR TEMPERATURE I. OUTSIDE AIR TEMPERATURE

J. REQUIRED MIXED AIR TEMPERATURE K. ACTUAL MIXED AIR TEMPERATURE 11. AIR COOLED CONDENSER:

A. IDENTIFICATION/NUMBER B. LOCATION C. MANUFACTURER D. MODEL NUMBER

E. SERIAL NUMBER F. ENTERING DB AIR TEMPERATURE, DESIGN AND ACTUAI G. LEAVING DB AIR TEMPERATURE, DESIGN AND ACTUAL H. NUMBER OF COMPRESSORS

12.EXHAUST FAN DATA: A. LOCATION B. MANUFACTURER

C. MODEL NUMBER D. SERIAL NUMBER E. AIR FLOW, SPECIFIED AND ACTUAL F. TOTAL STATIC PRESSURE (TOTAL EXTERNAL), SPECIFI G. INLET PRESSURE H. DISCHARGE PRESSURE

I. SHEAVE MAKE/SIZE BORE J. NUMBER OF BELTS/MAKE/SIZE K. FAN RPM

- 13. TAB PROCESS & PROCEDURE: A. TAB CONTRACTOR SHALL PROVIDE INITIAL RE CONTRACTOR FOR REVIEW. IF ANY ITEMS ON TA WITHIN PLUS OR MINUS 10% OF DESIGN, TAB AND SHALL MAKE THE APPROPRIATE CHANGES TO MEET I IF DESIGN SPECIFICATION CANNOT BE MET, SUBMIT TO ULTA, INC FOR REVIEW. GENERAL CONTRACTOR
- REPORT TO ULTA, INC. WHEN ALL ITEMS ARE WITH S B. TESTING ADJUSTING, AND BALANCING REPORT MUST I TURNED OVER TO THE G.C.'S CONSTRUCTION MANAGE MERCHANDISING DATE. THE HVAC CONTRACTOR SHALL SCHEDULING THEIR WORK AND THE WORK OF THEIR THE G.C. TO ALLOW ADEQUATE TIME FOR TABC TO C
- C. THE HVAC CONTRACTOR SHALL COMPLETE THE AIR E START-UP VERIFICATION CHECKLIST BELOW AND FAX TABC. A COPY SHALL ALSO BE PROVIDED TO THE G THIS TIME. IF ALL SYSTEMS ARE NOT OPERATIONAL BALANCING, IT SHALL BE THE HVAC CONTRACTOR'S ALL COSTS ASSOCIATED WITH THE ADDITIONAL TESTIN INCLUDING ALL LABOR, TRAVEL EXPENSES, MEALS, H INCURRED BY TBC.
- D. THE HVAC CONTRACTOR SHALL BE PRESENT FOR AIR ACCESSIBILITY TO ALL DEVICES, VERIFY ALL OPERATIN INSTALL NEW FILTERS IN ALL UNITS JUST PRIOR TO HVAC CONTRACTOR SHALL INSTALL A NEW SET OF FI IS COMPLETE.

SEISMIC CONTROLS FOR MEPF SEISMIC BRACING OF MECHANICAL, ELECTRICA INSTALLED AS REQUIRED BY LOCAL ADOPTED APPLIED TO MECHANICAL/ELECTRICAL/PLUMBIN INSTALLED IN STRICT ACCORDANCE WITH ALL CODES AS WELL AS MANUFACTURER'S REQUIN STRUCTURAL FOR ADDITIONAL BRACING DETAIL

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	RTU-3 RTU-4						p: 847.671.7452 f: 847.671.4200
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	RTU-3 RTU-4						CONNECTION WITH ANY WORK OR PROJ OTHER THAN THE SPECIFIC PROJECT FC WHICH THEY HAVE BEEN PREPARED ANI DEVELOPED WITHOUT THE WRITTEN CO
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	······						SHOP DETAILS MUST BE SUBMITTED TO OFFICE FOR APPROVAL BEFORE PROCE WITH FABRICATION.
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IVI-D

12/31/20



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







DESIGNATION	FIXTURE	SIZE	TYPE	MANUFACTURER	MODEL NO.	COLOR	TRAP	CARRIER	MOUNTING HEIGHT	SUPPLY FITTING	STOP VALVE	REMARKS
WC-1	HCP WATER CLOSET	ELONGATED	FLOOR MOUNTED	AMERICAN STANDARD	3043.001	WHITE	INTEGRAL	NONE	RIM 17-1/4" ABOVE FLOOR	SLOAN ROYAL 111-YO		BEMIS NO. 1955-SSC, OPEN FRONT, SELF SUSTAINING CHECK HINGE SEAT HANDICAPPED ACCESSIBLE
LAV-1	LAVATORY		COUNTERTOP	ELKAY	RLLVR12		MCGUIRE C8902F	NONE	SEE ARCH. DRAWINGS	AMERICAN STANDARD 1340.825	MCGUIRE H2167CCLK	MCQUIRE NO. 115A STRAINER WITH TAILPIECE. PROVIDE WATER-CONSERVING, PRESSURE COMPENSATING VANDAL RESISTANT AREATOR FOR FAUCET, INSULATE HOT WATER SUPPLY AND DRAIN PIPING; HANDICAPPED ACCESSIBLE FAUCET FURNISHED AND INSTALLED BY G.C. REFER TO A6.3 FOR EXACT FAUCET LOCATION
SK-1	SALON SINK		COUNTERTOP	ELKAY	LR1716		MCGUIRE C8912F	NONE	SEE ARCH. DRAWINGS	GROHE EUROSMART 32643 00A CHROME FINISH	MCGUIRE H2167CCLK	FURNISHED AND INSTALLED BY G.C., SUPPLY FITTING LAVATORY CENTERSET LESS DRAIN
SK-2	SHAMPOO SINK		COUNTERTOP	FURNISHED BY ULTA				NONE	SEE ARCH. DRAWINGS		MCGUIRE H2167CCLK	FURNISHED BY ULTA AND INSTALLED BY G.C. THERMOSTATIC MIXING VALVE BY SHAMPOO SUPPLIER
SK-4	COFFEE BAR SINK		COUNTERTOP	ELKAY	BCR15 3 HOLE		MCGUIRE C8912F	NONE	SEE ARCH. DRAWINGS	AM-STD 7100.241H-002 POLISHED CHROME FINISH	MCGUIRE H2167CCLK	FURNISHED AND INSTALLED BY G.C., SEE ARCH. DWGS FOR FAUCET AND EYEWASH LAYOUT. PROVIDE LK126 HOLE COVER FOR UNUSED HOLE(S).
SK-5	SKIN BAR		COUNTERTOP	SIGNATURE HARDWARE	918626		MCGUIRE C8912F	NONE	SEE ARCH. DRAWINGS	GROHE EUROSMART 32643 00A CHROME FINISH	MCGUIRE H2167CCLK	2.2 GPM MAX AT 60 PSI. 9" INFINITE NARROW, TOP MOUNT BOWL. BOWL, FAUCET, STOP AND DRAIN FURNISHED AND INSTALLED BY G.C. SUPPLY FITTING LAVATORY CENTERSET LESS DRAIN. MAINTAIN 1/2" CLEAR BETWEEN SINK FLANGE AND FACE OF SPOUT. PURCHASE ELKAY BCR15 BOWL IF #918626 IS NOT AVAILABLE.
MB-1	MOP BASIN	24"x24"	FLOOR MOUNTED	FIAT	MSB-2424	WHITE	3" CAST IRON	NONE	SEE REMARKS	CHICAGO FAUCET NO. 897-CRCF	INTEGRAL	MOUNT SUPPLY FITTING 36" ABOVE FLOOR, ROUGH CHROME FINISH WITH INTEGRAL VACUUM BREAKER
EWC-1	ELECTRIC WATER COOLER		WALL MOUNTED	ELKAY	EZSTL8LC	STANDARD FINISH	MCGUIRE C8872F	SMITH 834	CENTERLINE OF BUBBLER ORIFICE 36" & 41" ABOVE FLOOR	INTEGRAL	MCGUIRE H2167CCLK	HANDICAP ACCESSIBLE, 120 VOLT - 1 PHASE. PROVIDE OPTIONAL LKAPREZL APRON
EW-1	EMERGENCY EYE WASH		DECK MOUNT DRENCH HOSE	GUARDIAN	G5022BP			NONE	SEE ARCH. DRAWINGS	NA	MCGUIRE H2167CCLK	PROVIDE WITH INTEGRAL BACKFLOW PREVENTER. DECK MOUNT ON SK-4. SEE ARCH PLANS FOR MORE INFORMATION. PROVIDE WITH G3600LF MIXING VALVE.
WWB-1	WASHER WALL BOX		WALL RECESSED	GUY GREY CO. PRODUCTS	B-200	GREY	2" CAST IRON "P" TRAP		RIM 42" ABOVE FLOOR	INTEGRAL	1/2" BALL VALVE (ABOVE CEILING)	FINAL CONNECT CLOTHES WASHER SUPPLIES AND LINES.
TP-1	TRAP PRIMER		MOUNTED IN WALL	PRECISION PLUMBING PRODUCTS	P1-500	NA	NA		18" ABOVE FINISHED FLOOR	NA	1/2" BALL VALVE	PROVIDE CHROME PLATED ACCESS PANEL AND AG-500 AIR GAP CONNECTION
* PROVIDE TR	ROVIDE TRAP PRIMER PROTECTION ON ALL FLOOR DRAINS.											

	VA	LVE SO	CHEDULE						PUMP	SCHE	DULE				
TYPE	MANUFACTU	IRER	LEAD FREE MODEL I NSF 61, ANNEX G ANI	MEETING D NSF 372	DESIGNATION	SERVICE	LOCATIO	DN MAN	UFACTURER	MODEL	TYPE GPM	HEAD (FT) MOT	ELECTRICAL	CYC RPM	
	NIBCO		S-113-LF		P-1	HW RECIRC	STAGIN	G BELL	& GOSSETT N	IBF-12F/LW	NLINE 2	10 1	/20 115 1	60 2,800	
GATE	HAMMON	D	UP-668					I							
	MILWAUKE	ΞE	UP668		WATER HEATER SCHEDULE										
	APOLLO)	70-LF-200			тург								NOTER	
BALL	HAMMON	ID	UP8501		DESIGNATION			CATION	MANUFACTUR		CAPACITY	PRAGE GAS INPUT ACITY (MBH)	100 DEG. F. RISE	E	
	MILWAUKE	E	UPBA-150		HWH-1	STORAGE 1	TANK S	TAGING	A.O. SMITH	BTR-197	100 GALLO	N 199	193 GPH	A, B, C, D	
	NIBCO		S-413-Y-LF		NOTES:								I		
СНЕСК	MILWAUKE	E	UP-1509		А.	SET THERM	OSTAT TO		PUT TEMPERA	T TEMPERATURE OF 140 DEG. F.					
	APOLLO 1635-LE DE OF OPEATE				B. ALTERNATE MANUFACTURER'S BRADFORD-WHITE, LOCHINVAR, STATE, RHEEM OR RUUD. ALTERNATE TO BE										
	BELL AND GO	SSETT	RF-1/2S "CIRCUIT S	ETTER"	C.	SEE DETAIL						B / (Korinie	01.		
BALANCING					D.	PROVIDE LC	DW NOx V	VHERE R	EQUIRED BY C	ODE.					
THER	MOSTATI		NG VALVE SC	HEDULE				XPA	NSION .					MODEL	
DESIGNATION	MANUFACTURER	MODEL	NOTE	S					(GALLONS)	PRESS (F	PSI) (APF	PROX)			
		170LE			ET-1	STAGIN	G DO	DM. HW	4.4	150	11" D	A x 15"	AMTROL	ST-12	
1141 4 - 1	LEONARD	TTOLI	MOONT ONDER TRIORE, P	COL 1070 CERTIFIED.											
	FIXTURE	CONNE	CTION SCHEDUI	F					DRAIN	SCHE	DULE				
				- L _			0175								
FIXTURE	CW	HW/TV	V WASTE	VENT	DESIGNATION	IYPE	SIZE	MERK	MODEL NC				REMARKS		
LAV	1/2"	1/2"	2"	1-1/2"		FLOOR			2010-A	NICKI		AL-PROOF	SCREWS: GALVANI	ZED BODY:	
EWC	1/2"	-	2"	1-1/2"	FD-1	DRAIN	4"	SMITH	5"DIA. STRAIN	NER BRON	ZE 4" C	4" DEEP SEAL "P" TRAP WITH TRAP PRIMER		P PRIMER	
WC	1-1/4"	-	4"	2"		FLOOR	411		0050 0050	GALVAN	JIZED GAL	VANIZED B	ODY; 4" DEEP SEAL	. "P" TRAP	
FD	-	-	4"	2"	FD-2	DRAIN	4"	SMITH	2350-P050	CAST	RON	W	TH TRAP PRIMER		
SK	1/2"	1/2"	2"	1-1/2"	F00 4	FLOOR	SEE	O MITT I	4000	NICKI	EL	VAND	AL-PROOF SCREWS	;	
МВ	3/4"	3/4"	3"	2"	FCO-1			SMITH	4020		70	G			
							FLANS			BRON		Gr	ALVANIZED BODY		

ΕW

1/2"

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TION	TYPE	LOCATION	MANUFACTURER	MODEL	STORAGE CAPACITY	GAS INPUT (MBH)	RECOVERY @ 100 DEG. F. RISE	NOTES	
1	STORAGE TANK	STAGING	A.O. SMITH	BTR-197	100 GALLON	199	193 GPH	A, B, C, D	
TES:									
Α.	A. SET THERMOSTAT TO AN OUTPUT TEMPERATURE OF 140 DEG. F.								

PLUMBING ABREVIATIONS:

AFF ABOVE FINISHED FLOOR FFB FROM FLOOR BELOW AFG ABOVE FINISHED GRADE IE INVERT ELEVATION BFF BELOW FINISHED FLOOR T TRAP PRIMER LINE BFG BELOW FINISHED GRADE TFA TO FLOOR ABOVE DN DOWN TFB TO FLOOR BELOW ETR EXISTING TO REMAIN VTR VENT THRU ROOF FFA FROM FLOOR ABOVE WC WATER COLUMN

- FIRE PROTECTION GENERAL NOTES:
- PROVIDE ALTERATIONS AND MODIFICATIONS AS NECESSARY COMPLETE FIRE PROTECTION SYSTEM PER NFPA #13. THE SYST REQUIREMENTS OF LOCAL, STATE AND FEDERAL AUTHORITIES AGENCY.
- ALL WORK SHALL BE IN ACCORDANCE WITH THE RULES AND FIRE PROTECTION DISTRICT AND WATER DEPARTMENT.
- 3. ALL AUTHORITIES HAVING JURISDICTION SHALL BE NOTIFIED AT DAYS PRIOR TO COMMENCEMENT OF WORK.
- 4. PROVIDE AN AUTOMATIC WET PIPE SPRINKLER SYSTEM INC VALVES, ALARMS, SUPPORTS AND SPRINKLER HEADS, NECESS INSTALLATION OF COMPLETE AND APPROVED FIRE PROTECTION SY
- WORK SHALL BE PERFORMED BY AN APPROVED AUTOMATIC CONTRACTOR. SHOP DRAWINGS AND CALCULATIONS SH REGISTERED PROFESSIONAL ENGINEER. APPROVED CONTRACT REGISTERED ENGINEER SHALL BE LICENSED WITH THE PRO LOCATION OF THIS PROJECT.
- 6. PROVIDE A COMPLETE WET PIPE SPRINKLER SYSTEM FOR ALL INDICATED OR REQUIRED FOR FREEZE PROTECTION.
- SPECIAL CONSIDERATION SHALL BE GIVEN TO AREAS THROUGH DROPPED SOFFITS, LIGHTING SOFFITS AND RECESSED STORAG ADDITIONAL SPRINKLER HEADS.
- 8. RUN PIPING HORIZONTALLY AND AT RIGHT ANGLES TO WALL SPRINKLER HEADS IN BOTH HORIZONTAL DIRECTION WI COMPONENTS, SUCH AS CEILING GRID, LIGHT FIXTURES, HVAC OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
- 9. FIRE PROTECTION SYSTEM SHOP DRAWINGS SHALL INCLUDE REFLECTED CEILING PLANS INDICATING LOCATION OF EACH SF PIPING LAYOUTS.
- 10. PROVIDE MAIN DRAINS AND AUXILIARY DRAINS WHERE NECESSARY 11. PROVIDE TEST CONNECTIONS AT MOST REMOTE POINT OF SPRINKLER SYSTEM.
- 12. LAYOUT THE SPRINKLER PIPING SO THAT THERE IS A MINIMUM S THE CEILING HEIGHT AND THE BOTTOM OF THE SPRINKLER PIPI LIGHT FIXTURES TO AVOID CONFLICTS.
- 13. FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY EXACT R REGARDING PIPE SIZES, ADEQUATE PRESSURES, SERVICE LOCA SHOP DRAWINGS TO THE AUTHORITIES FOR APPROVAL INSTALLATION OF FIRE PROTECTION WATER SERVICE AND SYSTEMS
- 14. AUTOMATIC SPRINKLERS SHALL BE OF THE OPERATING TEMPERA LOCATION WITH SPECIAL REGARD FOR HEATING UNITS. SPRIN AROUND, PROVIDE PROPER CLEARANCES, AND AVOID CONFLIC AND SYSTEMS.
- 15. ALL PIPING SHALL BE ROUTED IN THE SUSPENDED CEILING S AND BEHIND FIXED FURNISHINGS, UNLESS OTHERWISE INDICATE VIEW SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT STRUCTURE.
- 16. REFER TO ARCHITECTURAL DRAWINGS OR CONSULT ARCHITEC FIXTURES, EQUIPMENT, ETC. AND FINAL FINISHED ELEVATIONS WORK.
- 7. EXISTING SYSTEMS THAT REQUIRE RELOCATION AND SER^V EQUIPMENT OR AREAS THAT MUST REMAIN ACTIVE, SHALL BE SCHEDULED SHUT-DOWNS. TEMPORARY CONNECTIONS AND SYSTEMS SHALL BE PROVIDED AS NEEDED AND AT THE CONTRAC
- 18. CONTRACTOR SHALL VISIT THE SITE AND DOCUMENT EXISTIN LIMITS OF DEMOLITION, PRIOR TO START OF ANY ARCHITECT/ENGINEER, FOR REVIEW, ONE (1) COPY OF EQUI REMOVED BY DEMOLITION WORK AND NEW INSTALLATION WO AREA SHALL BE AS INDICATED ON DRAWINGS PREPARED CONSULTANT.
- 19. CAREFULLY REVIEW THE INTERIOR DESIGN, ARCHITECTURAL, ST WINGS AND SPECIFICATIONS FOR ADDITIONAL ITEMS TO I ACCOMMODATED; INCLUDE ALL COSTS IN BASE BID FOR THIS WO
- 20. NEW OR EXISTING EQUIPMENT SHALL NOT BE LOCATED ABO PROVIDE LOCATION OR RELOCATION OF EQUIPMENT TO CEILINGS AND RECONNECT EQUIPMENT TO SYSTEMS.
- 21. DRAINING AND REFILLING OF SYSTEMS AS REQUIRED FOR INSTALLATIONS WORK, SHALL BE THE RESPONSIBILITY OF THIS CO
- 22. REROUTE FIRE SPRINKLER PIPING IF REQUIRED FOR THE NEW DUCTWORK LAYOUT.
- 23. ALL SPRINKLERS IN CEILINGS SHALL BE CONCEALED TYPE WITH MATCH COLOR OF CEILING FINISH. OPEN CEILING AREA SHALL TYPE. EXACT LOCATIONS OF EACH AND EVERY SPRINKLER WILL ARCHITECT AND OWNER. SUBMIT PRODUCTS AND SPRINKLER AND OWNER FOR APPROVAL PRIOR TO SHOP DRAWING PROCES
- 24. CONTRACTOR TO PROVIDE BID ALTERNATE FOR ANY MODIFICAT SPRINKLER BRANCH LINES/STRUCTURE HEIGHTS. MODIFICATIO LINES NEED TO BE TIGHT TO STRUCTURE AS POSSIBLE.
- 25. PROVIDED MEANS FURNISH AND INSTALL.

PLUMBING LEGEND:

	DOMESTIC COLD WATER (CW)	<u>, k</u> ,	GAS F
s	DOMESTIC HOT WATER (HW)	⊊i	GAS C
	HOT WATER RECIRC (HWR)	۶ا⊢	UNION
Vs	PLUMBING VENT ABOVE FLR	<u>;</u>	TRAP
— — VBF — —	PLUMBING VENT BELOW FLR	ب	WALL
s	SANITARY ABOVE FLR	\$+	WALL
ss	SANITARY BELOW FLR	ب +	HOSE
Ws	WASTE ABOVE FLR	·]	CAP
— — W — — s	WASTE BELOW FLR	<u>ب</u>	CLEAN
CWV—	COMBINATION WASTE & VENT	⊱ગ	WALL
CD	CONDENSATE DRAIN	∽—∞	P-TR/
— — ID — — →	INDIRECT DRAIN	0	FLOOF
G	NATURAL GAS	Ο	EXTER
	FIRE PROTECTION		FLOOF
TW	TEMPERED WATER	5	ISOME
с і (о і 	ELBOW UP & DN IN PIPING		CONN
	TEE UP & DN IN PIPING	(1)	PLUM
	BALL VALVE		- Loini
	SHUTOFF VALVE	(1)	PLUM
×、	BALANCING VALVE	$\begin{pmatrix} 1 \\ 1 \end{pmatrix}$	DETAIL
\	CHECK VALVE		
\$s	PRESSURE REDUCING VALVE	$\left< \frac{\text{RTU}}{1} \right>$	MECH
	STRAINER		
	RECIRCULATION PUMP		
<mark>, , , , , , , , , , , , , , , , , , , </mark>	WATER HAMMER ARRESTER WITH PDI SIZES: A, B, C, D, AND E (SIZE "A" UNLESS NOTED OTHE	: RWISE)	

	PLUMBING GENERAL NOTES:	
7 TO FURNISH AND INSTALL TEM SHALL COMPLY WITH ALL 3 AND LANDLORD'S INSURING	 A. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE RULES AND REGULATIONS OF LOCAL AUTHORITIES. B. ALL AUTHORITIES HAVING JURISDICTION SHALL BE NOTIFIED AT LEAST THREE 	RGLA
REGULATIONS OF THE LOCAL	C. ALL PIPING SHALL BE ROUTED IN THE SUSPENDED CEILING SPACE UNLESS OTHERWISE INDICATED. ALL PIPING EXPOSED TO VIEW SHALL BE ROUTED AS HIGH AS POSSIBLE AND TIGHT TO THE UNDERSIDE OF THE STRUCTURAL STEEL.	
T LEAST THREE (3) WORKING	D. EXPOSED PIPING IN FINISHED AREAS SHALL BE CHROME PLATED WITH CHROME PLATED ESCUTCHEON AT PIPE ENTRY TO FINISHED AREA.	rgla solutions, inc.
CLUDING PIPING, HANGERS, SARY AND AS REQUIRED FOR YSTEMS.	E. SLEEVE OR CORE-DRILL FLOOR SLABS, WALLS, ETC. AS REQUIRED FOR PIPING AND FIRE-STOP OPENING AROUND PIPE. VERIFY LOCATION OF STRUCTURAL BEAMS, JOISTS, ETC. BEFORE DRILLING.	5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847.671.4200
FIRE PROTECTION SPRINKLER HALL BE PREPARED BY A TOR AND THE CONTRACTOR'S DPER AUTHORITIES FOR THE	 F. ALL OPENINGS IN DRAINAGE AND/OR VENT SYSTEMS AS A RESULT OF INSTALLATION ROUGH-IN SHALL BE PROTECTED WITH A TEST PLUG THAT IS SECURELY LOCKED IN PLACE UNTIL FINAL FINISHED CONNECTIONS ARE INSTALLED. G. ALL PIPING SHALL BE CONCEALED IN WALLS AND BEHIND FIXED FURNISHINGS 	www.rgla.com
AREAS, UNLESS OTHERWISE	UNLESS OTHERWISE INDICATED. H. WHEREVER FOUNDATION WALLS, OUTSIDE WALLS, ROOF, ETC. ARE PENETRATED FOR INSTALLATION OF SYSTEMS, THEY SHALL BE PATCHED TO MATCH EXISTING CONSTRUCTION AND SEALED WEATHER TIGHT. WORK SHALL BE PERFORMED BY	REVISIONS: DATE: LL & ULTA REVIEW 07/01/2020
HOUT THE BUILDING SUCH AS GE RACKS THAT NECESSITATE	CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES. I. ALL PIPING SHALL RUN PARALLEL TO BUILDING LINES AND SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION. ALL PIPING SHALL BE CONCEALED EXCEPT IN UNEINISHED SPACES INSTALL AS RECUIRED	PERMIT ISSUE 07/02/2020 BID ISSUE 07/13/2020
LS AND CEILINGS. CENTER VITH RESPECT TO CEILING C DIFFUSERS AND SPEAKERS	TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING DUCTS AND ELECTRICAL CONDUIT. AT ALL CONNECTIONS BETWEEN FERROUS PIPING AND NONFERROUS PIPING, PROVIDE AN ISOLATING DIELECTRIC UNION.	
E SEPARATE AND COMPLETE PRINKLER HEAD AS WELL AS	J. PROVIDE ALL FITTINGS, ACCESSORIES, OFFSETS, AND MATERIALS NECESSARY TO FACILITATE THE PLUMBING SYSTEM'S FUNCTIONING AS INDICATED BY THE DESIGN AND THE EQUIPMENT INDICATED.	
Y. DF MAIN PORTION OF EACH	 K. PROVIDE A COMPLETE SYSTEM OF COPPER OR STEEL (OR DWV PVC IF ALLOWED BY CODE) VENT RISERS ABOVE FLOOR. ALL VENTS SHALL BE CARRIED THROUGH THE ROOF WITH FLASHING. L. CONDENSATE AND INDIRECT DRAIN PIPING SHALL BE TYPE "M" COPPER TUBING. 	
SEPARATION OF 12'' BETWEEN PE OR ROUTE PIPING AROUND	M. PROVIDE CLEANOUTS AT THE END OF EACH HORIZONTAL RUN, AND AT THE BASE OF ALL VERTICAL WASTE AND DRAIN PIPES. CLEANOUTS SHALL BE OF THE SAME SIZE AS THE PIPES THEY SERVE.	300700 € 2
REQUIREMENTS FOR BUILDING ATIONS, ZONING AND SUBMIT PRIOR TO FABRICATION OR S. RATURE AS REQUIRED BY THE	N. HOT AND COLD WATER PIPING SHALL BE TYPE L COPPER PIPING ABOVE GRADE AND TYPE "K" COPPER PIPE BELOW GRADE, FITTINGS AS REQUIRED BY LOCAL AUTHORITIES. PROVIDE WATER HAMMER ARRESTORS WADE "SKOKSTOP" MODEL NO. W-5 THROUGH W-100, SIZE AND LOCATION AS INDICATED BY MANUFACTURER. INSTALL STOP VALVE IN AN ACCESSIBLE LOCATION IN EACH WATER SUPPLY TO EACH FIXTURE. CHECK EXISTING WATER PRESSURE AND PROVIDE PRV WHEN WATER PRESSURE EXCEEDS 80 PSI.	Ites, In c h I t e c t u r e r Road, Ste 1 r Park, IL 601 p: 847.671.74 f: 847.671.42 www.rgla.co
INKLER PIPING SHALL ROUTE T WITH BUILDING EQUIPMENT	0. INSULATE ALL HOT AND COLD WATER PIPING BOTH VERTICALLY AND HORIZONTALLY, IN CEILING, BELOW ALL HANDICAPPED FIXTURES AND CONCEALED IN WALLS COMPLETELY. PROVIDE 1" PREFORMED FIBERGLASS ASJ-VB, FLAME SPREAD 25, SMOKE DEVELOPED 50. ASTM C-547.	SOCIA a II a r 5100 Rive Schille
SPACE, CONCEALED IN WALLS TED. ALL PIPING EXPOSED TO TO THE UNDERSIDE OF THE	 P. PIPING ROUTED IN EXTERIOR WALLS SHALL BE ROUTED ON WINTER WARM SIDE OF BUILDING WALL INSULATION. ACCESS PANELS SHALL BE PROVIDED WHERE CONCEALED CONTROL DEVICES VALVES 	\$
CT FOR EXACT LOCATION OF PRIOR TO ANY INSTALLATION	ETC. ARE CONCEALED WITHIN WALLS. WHERE ACCESS FOR ADJUSTMENT AND MAINTENANCE IS POSSIBLE THROUGH LAY-IN SUSPENDED CEILINGS, ACCESS PANELS ARE NOT REQUIRED.	lyon
EXISTING FIXTURES OR RELOCATED DURING OWNER DEXTENSIONS OF REQUIRED CTOR'S EXPENSE.	 R. TEST WATER SYSTEM UNDER 150 PSIG HYDROSTATIC PRESSURE, FOR FOUR (4) HOURS MINIMUM. WHEN TESTING INDICATES MATERIALS OR WORKMANSHIP IS DEFICIENT, REPLACE OR REPAIR AS REQUIRED, AND REPEAT TEST UNTIL STANDARDS ARE ACHIEVED. S. PROVIDE A COMPLETE NATURAL GAS PIPING SYSTEM AS NOTED ON THE DRAWINGS. 	er e.
NG CONDITIONS WITHIN THE WORK. FORWARD TO IPMENT AND SYSTEMS BEING ORK. LIMITS OF DEMOLITION D BY THE ARCHITECTURAL	PIPE AND FITTINGS SHALL BE AS REQUIRED BY LOCAL AUTHORITIES. PROVIDE ALL UNIONS, SHUT-OFF VALVES AND DIRT LEGS REQUIRED BY NEPA-54 AND GOVERNING LOCAL CODES. PROVIDE ALL TESTS, METERS, INSPECTIONS, HANGERS AND EQUIPMENT CONNECTIONS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. PAINT PIPING ON ROOF WITH TWO COATS OF RUST RESISTANT OUTDOOR PAINT.	
TRUCTURAL AND ELECTRICAL E REMOVED, RELOCATED, OR DRK.	 I. THE DOMESTIC WATER SYSTEM, DRAINAGE SYSTEMS, AND GAS PIPING SYSTEM SHALL BE FLUSHED AND PRESSURE TESTED. THE DOMESTIC WATER SYSTEM SHALL BE PURIFIED. U. DRAINAGE PIPING ABOVE AND BELOW FLOOR SHALL BE SCHEDULE 40 PVC UNLESS OTHERWISE REQUIRED BY CODE. PROVIDE CAST IRON OR OTHER 	
OVE INACCESSIBLE CEILINGS. AREAS ABOVE ACCESSIBLE	APPROVED MATERIAL ONLY WHEN REQUIRED BY JURISDICTION. CONTRACTOR SHALL CLEARLY IDENTIFY WHAT MATERIAL WAS BID AT THE TIME OF BID SUBMITTAL. V. ALL FLOOR DRAINS SHALL BE CONNECTED TO THE SANITARY SEWER SYSTEM.	
R DEMOLITION AND/OR NEW ONTRACTOR. EW SUPPLY AND RETURN AIR	W. THE EXISTING CONDITIONS ARE BASED ON "AS-BUILT" DRAWINGS AND/OR LIMITED FIELD VERIFICATIONS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE PROJECT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR ANY EXTRAS DUE TO THE CONTRACTOR'S FAILURE TO VISIT THE PROJECT SITE AND/OR PREDETERMINATION OF EXISTING CONDITIONS PRIOR TO SUBMITTING THE BID. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION.	THE ABOVE DRAWINGS AND SPECIFICATIONS AND IDEAS, DESIGNS AND ARRANGEMENTS
H WHITE COVER PLATE TO BE PROVIDED WITH UPRIGHT L BE APPROVED BY LOCATIONS TO ARCHITECT SS.	X. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE INCIDENTAL DEMOLITION WORK PRIOR TO BIDDING AND COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF ALL EXISTING EQUIPMENT AS REQUIRED FOR INSTALLATION/CONSTRUCTION OF NEW WORK.	REPRESENTED THEREBY ARE AND SHALL REMAIN THE PROPERTY OF THIS OFFICE: AND NO PART THEREOF SHALL BE COPIED, DISCLOSED TO OTHERS OR USED IN THE CONNECTION WITH ANY WORK OR PROJECT OTHER THAN THE SPECIFIC PROJECT FOR WHICH THEY HAVE BEEN PREPARED AND DEVEL OPED WITHOUT THE WRITTEN CONSENT
TIONS NEEDED, DUE TO LOW ONS TO SPRINKLER BRANCH	Y. COORDINATE ALL SLAB PENETRATIONS WITH GENERAL CONTRACTOR PRIOR TO CONSTRUCTION. MAINTAIN A MINIMUM OF 2" CLEARANCE FROM THE EDGE OF THE SLAB OPENING TO ANY STRUCTURAL MEMBERS AND PIPES.	OF THIS OFFICE. VISUAL CONTACT WITH THESE DRAWINGS OR SPECIFICATIONS SHALL CONSTITUTE CONCLUSIVE EVIDENCE OF ACCEPTANCE OF THESE RESTRICTIONS. WRITTEN DIMENSIONS ON THESE DRAWINGS
	Z. PIPE SIZES INDICATED ON THE PLANS ARE MINIMUM. THE CONTRACTOR SHALL PROVIDE PIPE SIZES EQUAL TO OR GREATER THAN THE SPECIFIED SIZES. THE CONTRACTOR MAY INCREASE PIPE SIZES AS REQUIRED AT NO ADDITIONAL EXPENSE TO THE PROJECT.	SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS: CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THIS OFFICE MUST BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS.
RESSURE REGULATOR	AA. THE CONTRACTOR SHALL OBTAIN A COPY OF THE LANDLORD'S TENANT CRITERIA MANUAL PRIOR TO BIDDING. THE TENANT CRITERIA MANUAL REQUIREMENTS SHALL BE INCLUDED IN THE CONTRACTOR CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH THE LANDLORD REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE PROJECT.	SHOP DETAILS MUST BE SUBMITTED TO THIS OFFICE FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. © 2018 RGLA SOLUTIONS, INC. © 2018 RDFET C. LYON & ASSOCIATES
ЭСК	AB. PROVIDE TEMPORARY COVERS, CAPS, OR PLUGS ON SANITARY SEWER SYSTEM THROUGHOUT THE DURATION OF CONSTRUCTION. RAG WADS, DUCT TAPE, OR OTHER SIMILAR METHODS OF TEMPORARY COVERS SHALL NOT BE UTILIZED. UPON COMPLETION OF CONSTRUCTION COMPLETELY REMOVE ANY AND AU	
RIMER WITH DISTRIBUTION UNIT	OBSTRUCTIONS INSIDE THE ENTIRE SYSTEM BY SNAKING, RODING, OR JETTING THE SYSTEM IMMEDIATELY PRIOR TO PROJECT TURNOVER TO THE OWNER. AC. ALL BELOW GRADE SANITARY LINES SHALL BE A MINIMUM OF 2" OR IN ACCORDANCE	
BIBB (HB)	AD. USE SANITARY TEE FITTINGS, STRAIGHT TEE FITTINGS SHALL NOT BE INSTALLED IN DRAIN WASTE, AND VENT (DWV) SYSTEM.	LII TA #790
UT (CO) LEANOUT (WCO)	 AE. INSTALL SANITARY PIPING 2" OR SMALLER AT A SLOPE OF 1/4" PER FOOT AND SANITARY PIPING LARGER THAN 2" AT A SLOPE OF 1/8" PER FOOT. AF. ALL PUBLIC USE LAVATORY FAUCETS SHALL HAVE AN AUTOMATIC SAFETY WATER MIXING DEVICE IN ACCORDANCE WITH ANSI/ASSE 1016 OR 1017. 	3031 E. HIGHLAND DRIVE JONESBORO, AR 72401
CLEANOUT (FCO)	AG. ALL HANDICAPPED ACCESSIBLE WATER CLOSETS SHALL HAVE THE FLUSHING HANDLE ON THE WIDE SIDE OF THE HANDICAPPED ACCESSIBLE STALL AS REQUIRED BY ADA	
DR CLEANOUT (ECO) DRAIN (FD) SIZE & TYPF	AH. HARD 90 DEGREE ELBOW WILL NOT BE PERMITTED ON SANITARY LINES.	PLUMBING
RIC FLOOR PENETRATION	AI. SUPPORT ALL PIPING AND DUCTWORK, EQUIPMENT, ETC. FROM TOP CHORD OF ROOF/FLOOR JOISTS, OR PROVIDE STRUCTURAL CALCULATIONS INDICATING BOTTOM CHORD ATTACHMENT IS ACCEPTABLE.	SPECIFICATIONS
CT TO EXISTING NG PLAN NOTE CALLOUT	AJ. PLUMBING CONTRACTOR SHALL VERIFY EXISTING WATER PRESSURE AND PROVIDE PRESSURE REDUCING VALVE ON WATER SERVICE IF PRESSURE EXCEEDS 80 PSI.	DRAWN BY
NG EQUIPMENT DESIGNATION	AK. PROVIDED MEANS FURNISH AND INSTALL.	DJF CHECKED BY
REFERENCE	HENDERSON	RCB JOB NUMBER
NICAL EQUIPMENT DESIGNATION	8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214	20406
	WWW.HENDERSONENGINEERS.COM	SHEET NAME
	AR. CORPORATE NUMBER: 484 12/31/20	P-4



SECTION 15050 BASIC MATERIALS AND METHODS

PART 1 – GENERAL

- 1.01 DESCRIPTION A. THIS SECTION DEFINES THE GENERAL PROVISIONS WHICH ARE COMMON TO ALL SECTIONS OF DIVISION 15
- B. FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT; FABRICATE, AND INSTALL COMPLETE AND IN PLACE, ALL THE FIXTURES, EQUIPMENT AND SYSTEMS AS SHOWN ON
- THE DRAWINGS, SPECIFIED HEREIN, AND AS REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION. C. THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES AND CHARGES REQUIRED FOR THIS
- 1.02 DRAWINGS AND SPECIFICATIONS A. DESIGN DRAWINGS: THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE GENERALLY DIAGRAMMATIC. ANY CHANGES FROM THE GENERAL ROUTING SHOWN ON THE
- DRAWINGS SUCH AS OFFSETS, BENDS OR CHANGES IN FLEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND THE BUILDING CONSTRUCTION SHALL BE DONE
- WITHOUT ADDITIONAL CHARGE TO THE OWNER. B. SHOP DRAWINGS: SHOP DRAWINGS SHALL BE SUBMITTED FOR EACH AND EVERY ITEM OF MANUFACTURED MATERIAL AND EQUIPMENT.
- C. RECORD DRAWINGS: . THE CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF ALL CONCEALED PIPES, DUCTS, VALVES, CONDUITS, ETC. IN ADDITION, HE SHALL RECORD, IN A SPECIAL SET OF CONTRACT DRAWINGS, ALL CHANGES AND DEVIATIONS FROM THE DESIGN DRAWINGS THAT CCURRED DURING THE INSTALLATION OF THE WORK. 2. AT COMPLETION OF THE JOB, THESE DRAWINGS ILLUSTRATING CHANGES OR
- DEVIATIONS SHOWING BY DIMENSION AND LOCATION THE EXACT POSITION OF ALL CONCEALED PIPES, VALVES, ETC., SHALL BE DELIVERED TO THE ARCHITECT/ENGINEER. D. SPECIFICATIONS - REFER TO THE FOLLOWING GENERAL SPECIFICATIONS AS THEY ARE A PART OF ALL SECTIONS OF DIVISION 15.
- . DIVISION 1 GENERAL REQUIREMENTS; REGARDING BUT NOT LIMITED TO ALTERATION PROJECT PROCEDURES, SUBMITTALS, CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS, CLEANING DURING CONSTRUCTION, AND PRODUCT OPTIONS AND SUBSTITUTIONS. 2. DIVISION 2 - SITEWORK: REGARDING BUT NOT LIMITED TO: SELECTIVE DEMOLITION, EARTHWORK, EXCAVATION AND BACKFILLING
- DIVISION 3 CONCRETE; REGARDING BUT NOT LIMITED TO: CAST-IN-PLACE CONCRETE, FORMWORK AND REINFORCEMENT. E. IT IS THE INTENTION OF THIS SPECIFICATION SECTION THAT ALL ITEMS OF MATERIAL
- AND EQUIPMENT HEREIN SPECIFIED OR SHOWN ON THE DRAWINGS FOR EACH SECTION SHALL BE FURNISHED BY THE CONTRACTOR FOR THAT SECTION, AND INSTALLED BY THAT CONTRACTOR. UNI FSS IT IS SPECIFICALLY STATED IN THE SECTION SPECIFICATION, OR SHOWN ON THE DRAWINGS. THAT ANY ITEM OF MATERIAL OR EQUIPMENT IS TO BE FURNISHED BY THE CONTRACTOR OF A SECTION AND INSTALLED BY THE CONTRACTORS OF OTHER SECTIONS, OR FURNISHED BY OTHER SECTION CONTRACTORS AND INSTALLED BY THE CONTRACTOR OF THE SECTION.
- 1.03 CHASES AND RECESSES
- A. ALL CHASES, RECESSES AND MAJOR MASONRY OPENINGS AS SHOWN ON THE DRAWINGS WILL BE PROVIDED BY THE ARCHITECTURAL TRADES.
- 1.04 LUBRICATION A. PRIOR TO TESTING, ALL EQUIPMENT SHALL BE PROPERLY LUBRICATED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ONE SET OF TOOLS NECESSARY FOR LUBRICATION SHALL BE DELIVERED TO OWNER. AFTER PROPER LUBRICATING, ALL UNITS SHALL BE STARTED AND SUCCESSFULLY OPERATED BY THE CONTRACTOR IN THE PRESENCE OF THE ARCHITECT
- AND/OR ENGINEER. B. EXCEPT FOR SMALL ELECTRICAL MOTORS WHICH UNDER NEMA STANDARDS ARE EQUIPPED WITH LIFETIME LUBRICATION, ALL BEARINGS ON LARGE MOTORS AND MECHANICAL EQUIPMENT SHALL BE EQUIPPED WITH LUBRICATOR FITTINGS EXTENDED TO THE EXTERIOR OF THE HOUSING.
- 1.05 POWER WIRING A. MOTORS UP TO AND INCLUDING 1/3 H.P. SHALL BE 120 VOLT, 60 HERTZ, SINGLE PHASE AND MOTORS 1/2 H.P. AND LARGER SHALL BE BUILT FOR 208 VOLTS, 60 HERTZ, THREE PHASE; UNLESS OTHERWISE INDICATED PER DRAWING SCHEDULES, PLANS AND
- DETAILS B. THE ELECTRICAL CONTRACTOR SHALL PROVIDE COMBINATION MAGNETIC STARTERS WITH H.O.A. SWITCH FOR EACH ITEM OF THREE PHASE EQUIPMENT AND UNFUSED DISCONNECTS
- FOR EACH ITEM OF SINGLE PHASE EQUIPMENT, EXCEPT WHERE STARTERS ARE FURNISHED AS A PART OF WIRED EQUIPMENT. C. THE ELECTRICAL CONTRACTOR SHALL DO ALL POWER WIRING INCLUDING CONNECTIONS TO
- THE MOTORS FURNISHED BY THE CONTRACTORS OF THIS DIVISION. D. REFER TO SECTION 15900 FOR THE WIRING TO BE PERFORMED BY THE TEMPERATURE CONTROL CONTRACTOR AND THE ELECTRICAL CONTRACTOR AS THEY RELATE TO TEMPERATURE

1.06 FLUSHING AND TESTING

- A. ALL NEW WATER PIPING SYSTEMS SHALL BE FLUSHED USING WATER. LOW POINT DRAINS SHALL BE OPENED AND THE SYSTEMS PROVED TO BE DRAINABLE. B. ALL CLOSED SYSTEMS, OPERATING UNDER PRESSURE, SHALL BE TESTED, WITH WATER, AT 1 1/2 TIMES THEIR OPERATING PRESSURE.
- C. ALL OPEN SYSTEMS, SEWERS, ETC., SHALL BE TESTED WITH WATER, AT A HEAD OF FIVE (5) FEET ABOVE FINISHED FLOOR OR GRADE. D. GAS PIPING SHALL BE FLUSHED USING 100 PSIG COMPRESSED AIR. AFTER CLEANING.
- PIPING SHALL FIRST BE AIR TESTED AT 5 PSIG USING GAUGES WITH INCREMENTS OF NO MORE THAN 1" W.G. AND FINAL TESTED WITH A MERCURY MANOMETER AT 6" W.G. THE
- FIRST TEST SHALL BE APPLIED FOR A MINIMUM OF ONE (1) HOUR, THE SECOND TEST FOR A PERIOD OF 15 MINUTES. E. ALL PIPING SYSTEMS SHALL BE TESTED. IF LEAKS OCCUR, THE PIPE OR FITTING SHALL
- BE REMOVED AND REPLACED AND THE SYSTEM RETESTED. F. PIPING SHALL NOT BE BACKFILLED OR INSULATED UNTIL TESTED. TESTS MUST BE OBSERVED BY THE ARCHITECT/ENGINEER.

1.07 SUPPORTS

- A. CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLES, CHANNELS, PLATES, OR BEAMS REQUIRED FOR THE SUPPORT OF THE EQUIPMENT OF EACH SECTION, WHETHER SHOWN ON HE DRAWINGS OR NOT. B. FURNISH AND INSTALL ALL RODS, AUXILIARY STRUCTURAL STEEL FRAMES, ATTACHMENTS,
- BRACKETS AND PLATFORMS REQUIRED FOR SUPPORT OF EQUIPMENT FROM OVERHEAD CONSTRUCTION FOR THE RESPECTIVE SECTION. C. VERTICAL PIPE RISERS SHALL BE ANCHORED MIDWAY OF THEIR HEIGHT, AND SHALL BE
- SUPPORTED AT EACH FLOOR BY 1-1/2" X 1/4" BAR CLAMPS ATTACHED TO PIPES AND RESTING ON THE FLOOR CONSTRUCTIÓN. D. HORIZONTAL PIPING SHALL BE SUPPORTED BY ADJUSTABLE, WROUGHT, CLEVIS TYPE
- HANGERS, FEE & MASON, ELCEN, OR CRAWFORD, WHERE PARALLEL PIPES ARE INSTALLED AT THE SAME LEVEL, PRÓVIDE TRAPEZE HANGERS; THE VARIOUS TRADES SHALL COOPERATE IN THE JOINT USE OF SUCH HANGERS. PIPE HANGERS SHALL BE OF SIZE TO SUIT PIPE COVERING PROTECTION SADDLES. E. PIPES SHALL BE SUPPORTED ONLY FROM THE STRUCTURAL MEMBERS OF THE BUILDING.
- HEY SHALL BE SUPPORTED AT SUCH INTERVALS AS WILL PREVENT SAGGING, AND SC EXCESSIVE LOADS WILL NOT BE PLACED UPON ANY ONE SUPPORT. SPACING AND ROD SIZES SHALL BE AS FOLLOWS: XIMUM SPACING MINIMUM ROD SIZE

PIPE SIZE	MAXIMUM SPACING	MINI
1/2"	6'—0" AND AT ALL TURNS	3/8
3/4", 1"	7'–0" AND AT ALL TURNS	3/8
1-1/4", 1-1/2", 2"	9'—0" AND AT ALL TURNS	3/8
2-1/2", 3"	10'–0" AND AT ALL TURNS	1/2
4", 5"	14'–0" AND AT ALL TURNS	5/8
C "	AC' O" AND AT ALL TUDNO	7 / 4

8", 10", 12"

-0" AND AT ALL TURNS 5/8 16'-0" AND AT ALL TURNS 3/4' 18'-0" AND AT ALL TURNS 7/8" F. HANGER RODS SHALL BE FULL-DIAMETER STEEL WITH THREADED ENDS FOR FIELD

- CUTTING AND THREAD EXTENDING AS REQUIRED. WHERE THREADED ROD IS SHORTER THAN 6" IT SHALL BE DIPPED IN RUST RESISTANT PAINT PRIOR TO INSTALLATION.
- G. AT THE CONTRACTOR'S OPTION, HANGER RODS SHALL BE CONTINUOUS THREADED STEEL WITH GALVANIZED FINISH H. HANGER RODS SHALL NOT BE BENT OR ALTERED IN ANY MATTER AND SHALL BE INSTALLED PLUMB AND TRUE. THE ROD SUPPORTING THE HANGER SHALL BE NO LONGER
- THAN 1/2" BELOW THE LOWER NUT. I. ALTERNATE WIRE ROPE HANGER SYSTEM (CONTRACTOR OPTION)
- A. GENERAL: AT THE OPTION OF THE CONTRACTOR AND IF APPROVED BY AUTHORITIES HAVING JURISDICTION, WIRE ROPE SYSTEM MAY BE USED IN LIEU OF CONVENTIONAL HANGERS. MINIMUM LOAD SAFETY FACTOR OF 5:1.
- B. WIRE ROPE HANGER SYSTEM AND LOCKING DEVICES TO BE ONE OF THE FOLLOWING MANUFACTURED SYSTEMS:
- 1. DUCTMATE INDUSTRIES, CHARLEROI, PA CLUTCHER MECHANICAL HANGER SYSTEM WITH ZINC COATED STEEL AIRCRAFT QUALITY ROPE (FIELD CUT TO LENGTH). LOCKING DEVICE TO BE CLUTCHER CAST ZINC HOUSING WITH STAINLESS STEEL SPRINGS. 2. GRIPPLE, INC., BATAVIA, IL - HANG FAST WIRE ROPE HANGING SYSTEM WITH ZINC GALVANIZED
- STEEL WIRE ROPE. STANDARD LENGTHS OF 5, 10, 15 AND 30 FT WITH A PERFORATED LOOP AT ONE END. LOCKING DEVICE TO BE GRIPPLE ZINC HOUSING WITH STAINLESS STEEL SPRINGS. 3. ERICO, INC., SOLON, OH - CADDY SPEED LINK UNIVERSAL SUPPORT SYSTEM WITH GALVANIZED
- STEEL AIRCRAFT QUALITY WIRE ROPE. AVAILABLE IN 3.3, 6.6, 9.9, 16.4, AND 32.8 FT. LENGTHS WITH FACTORY HOOK AT ONE END. LOCKING DEVICE TO BE ERICO STAINLESS STEEL HOUSING WITH ALL STEEL LOCKING DEVICE.

1.08 VALVES

- A. ALL CONNECTIONS SHALL BE PROPERLY VALVED: INSTALL VALVES IN THE DOMESTIC COLD WATER SUPPLY, HOT WATER SUPPLY, HOT WATER RETURN, AND NATURAL GAS SUPPLY AND ALL OTHER LOCATIONS AS MAY BE NECESSARY TO SHUT OFF A PORTION OF A SYSTEM WHETHER SHOWN ON THE DRAWINGS OR NOT, AND SPECIFICALLY WHERE HEREINAFTER SPECIFIED
- B. ALL VALVES SHALL COMPLY WITH THE SCHEDULE OR LEGEND ON THE DRAWINGS WHERE VALVES ARE NOT SCHEDULED OR SHOWN IN THE LEGEND, THEY SHALL BE RATED FOR THE SERVICE.
- C. ANY DOMESTIC HOT WATER SUPPLY OR COLD WATER SUPPLY SERVING TWO OR MORE FIXTURES SHALL BE SEPARATELY VALVED IN ADDITION TO THE SHUT OFF VALVE REQUIRED AT FACH FIXTURE
- D. MAKE PROVISIONS FOR DRAINING ALL LOW POINTS OF ALL PIPING SYSTEMS WHETHER INDICATED ON THE DRAWINGS OR NOT, USING A GLOBE VALVE AND IRON PIPE THREAD TO HOSE THREAD ADAPTER WITH CAP. DRAINS SHALL NOT BE LESS THAN 3/4".
- 1.09 VALVE TAGS A. EACH VALVE ON EVERY PIPELINE SHALL BE PROVIDED WITH A NUMBERED BRASS TAG WHICH SHALL BE FASTENED TO THE VALVE OR LINE WITH NON-RUSTING WIRE. WHEN ALL WORK IS COMPLETE, DELIVER TO THE ARCHITECT/ENGINEER A FRAMED (UNDER GLASS) CHART WHICH SHALL INDICATE THE SERVICE AND LOCATION OF EACH VALVE. VALVES USED FOR LOCAL SHUT-OFF MAY BE OMITTED FROM THIS LIST.
- 1.10 EQUIPMENT IDENTIFICATION A. ALL MECHANICAL EQUIPMENT SHALL BE CLEARLY IDENTIFIED WITH 2" HIGH STENCILED LETTERS, PAINTED ON THE EQUIPMENT (I.E. "WH-1"). THIS INCLUDES EXTERIOR EQUIPMENT WHERE THE PAINT SHALL BE WEATHER RESISTANT.
- PART 2 PRODUCTS
- 2.01 DESCRIPTION
- A. THIS PART DEFINES THE PIPE AND FITTINGS TO BE USED FOR ALL SERVICES INSTALLED UNDER DIVISION 15. B. REFER TO THE DRAWING LEGENDS AND SYMBOL SCHEDULES FOR DEFINITION OF THE DESIGNATORS USED IN THE FOLLOWING SPECIFICATION.

B. WATER MAIN: REFER TO DIVISION 2 SPECIFICATIONS SECTIONS AND/OR CIVIL ENGINEERING DRAWINGS AND COMPLY WITH AUTHORITIES HAVING JURISDICTION. SANITARY AND STORM: BELOW GRADES INSIDE BUILDING. . PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE, ASTM A74; WITH LEAD AND OAKUM JOINTS. A. PREFORMED JOINTS MAY BE USED IF ACCEPTABLE TO THE LOCAL AUTHORITIES HAVING JURISDICTION. 2. POLYVINYL CHLORIDE (PVC), SCHEDULE 40 PIPE AND FITTINGS, ASTM D2665 WITH PRIMER AND SOLVENT CEMENT JOINTS MAY BE USED IF ACCEPTABLE TO THE LOCAL AUTHORITIES HAVING JURISDICTION D. SANITARY AND STORM: ABOVE GRADE INSIDE BUILDING. 1. 2-1/2" AND LARGER: PIPING SHALL BE SERVICE WEIGHT CAST IRON SOIL PIPE AND FITTINGS, ASTM A74, WITH LEAD AND OAKUM JOINTS. A. CAST IRON NO-HUB PIPE, FITTINGS, AND JOINTS, CISPI 301, MAY BE USED IF ACCEPTABLE TO THE LOCAL AUTHORITIES HAVING JURISDICTION. 2. 2" AND SMALLER: PIPING SHALL BE SCHEDULE 40 GALVANIZED PIPE, ASTM 53 OR ASTM 120, WITH BLACK CAST IRON DRAINAGE FITTINGS. A. CAST IRON NO-HUB PIPE, FITTINGS, AND JOINTS, CISPI 301, MAY USED I ACCEPTABLE TO THE LOCAL AUTHORITIES HAVING JURISDICTION. 3. POLYVINYL CHLORIDE (PVC), SCHEDULE 40, PIPE AND FITTINGS, ASTM D2665 WITH PRIMER AND SOLVENT CEMENT JOINTS MAY BE USED IF ACCEPTABLE TO LOCAL AUTHORITIES HAVING JURISDICTION. A. NO CELLULAR CORE OR FOAMED PIPING WILL BE PERMITTED. 2.03 PIPE AND FITTINGS RELATED TO SECTION 15350 A. GAS PIPING . GAS PIPING ABOVE THE FLOOR SHALL BE BLACK, SCHEDULE 40, ASTM A120 STEEL PIPE. FITTINGS SHALL BE GALVANIZED, MALLEABLE CAST IRON FOR PIPING 2" AND SMALLER AND WEIDING FITTINGS FOR PIPING 2-1/2" AND LARGER. 2. GAS PIPING BELOW GRADE SHALL BE BLACK, SCHEDULE 80, ASTM A120, ALL WELDED CONSTRUCTION, WRAPPED WITH ASPHALT IMPREGNATED KRAFT PAPER. FINISH JOINTS WITH BITUMASTIC #50 AND PAPER. 2.04 ACCESS DOORS A. PROVIDE 24" X 24" ACCESS DOORS MANUFACTURED AS AN INTEGRAL UNIT COMPLETE WITH ALL PARTS AND READY FOR INSTALLATION AS MANUFACTURED BY ONE OF THE FOLLOWING 1 .BIRMINGHAM ORNAMENTAL. 2. KARP. 3. MILORD, DIVISION OF INRYCO. B. PROVIDE FLUSH PANEL DOORS, EXCEPT PROVIDE RECESSED PANEL DOORS WHERE ACCESS DOORS OCCUR IN PLASTER OR ACOUSTICAL TILE GLUED TO GYPSUM LATH. C. PROVIDE UL "B" LABELED UNITS WHERE ACCESS DOORS OCCUR IN HOUR RATED-CONSTRUCTION. D. PROVIDE SCREW DRIVER OPERATED CAM LOCKS OF NUMBER REQUIRED BY SIZE OF DOOR. E. PROVIDE ANCHORAGE APPROPRIATE TO CONSTRUCTION. PART 3 - EXECUTION 3.01 CUTTING AND PATCHING A. ALL CUTTING, REPAIRING, FITTING AND REFINISHING OF IN PLACE CONSTRUCTION REQUIRED FOR THE INSTALLATION OF THE WORK OF A SECTION SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR OF THE SECTION, EXCEPT AS SPECIFICALLY SHOWN ON THE RAWINGS OR HEREINAFTER SPECIFIED. B. WORK SHALL BE PERFORMED BY CRAFTSMEN SKILLED IN THEIR RESPECTIVE TRADES. 3.02 EXCAVATING A. THE CONTRACTOR OF EACH SECTION SHALL DO ALL EXCAVATING AND BACKFILLING AS REQUIRED FOR THE INSTALLATION OF HIS WORK.

2.02 PIPE AND FITTINGS RELATED TO SECTION 15400

FLARE FITTINGS

A. Piping designators: CWS, HWS, HWR, and TWS.

- B. THE WORK SHALL BE PERFORMED IN ACCORDANCE WITH DIVISION 2 SPECIFICATION SECTIONS AND AS HEREINAFTER SPECIFIED. C. EXCESS EARTH FROM THE EXCAVATIONS SHALL BE DEPOSITED ON THE SITE WHERE DIRECTED D. ALL EXCAVATIONS SHALL BE BACKFILLED AS FOLLOWS:
- . WITHIN THE BUILDING WALLS AND UNDER ALL PAVED AREAS: BANK RUN GRANULAR FILL COMPACTED TO 95% MODIFIED PROCTOR 2. UNDER CONCRETE AREAS AND PAVED AREAS. FILL AS WITHIN THE BUILDINGS. . IN GRASSY AREAS, FILL WITH BANK RUN GRANULAR FILL TO A DEPTH OF 12 INCHES OVER THE HIGHEST PART OF THE PIPING AND FINISH WITH ACCEPTABLE EXCAVATED MATERIAL.
- 3.03 OPERATING INSTRUCTION A. THE CONTRACTOR FOR THE SECTION SHALL, WHEN DIRECTED BY THE ARCHITECT/ENGINEER, PROVIDE THE OWNER WITH A COMPETENT TRADESMAN TO INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE EQUIPMENT HE HAS INSTALLED. B. PROVIDE COPIES OF OPERATING INSTRUCTIONS, EQUIPMENT MANUALS, AND CONTROL DIAGRAMS PER DIVISION-1 CONTRACT CLOSE-OUT. C. CONTROL DIAGRAMS AND WRITTEN INSTRUCTIONS SHALL BE FRAMED UNDER GLASS.
- 3.04 CODES AND STANDARDS A. PIPING AND APPURTENANCES INSTALLED UNDER THIS DIVISION OF THE SPECIFICATIONS SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING, WHERE APPLICABLE: ANSI CODES FOR PRESSURE PIPING ANSI STANDARDS FOR PIPE AND FITTINGS ASME CODE FOR UNFIRED PRESSURE VESSELS
- FACTORY INSURANCE ASSOCIATION AMERICAN WATER WORKS ASSOCIATION B. IN ADDITION, THE WORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES 3.05 WORK CLEANLINESS
- A. CONTRACTOR SHALL KEEP STORED MATERIALS, STORAGE AREAS, AND INSTALLED SYSTEMS FREE OF DIRT AND DEBRIS. B. ALL EXPOSED ENDS OF INCOMPLETE OR UNCOVERED WORK SHALL BE TEMPORARILY PLUGGED AS EACH PHASE OF PIPING WORK AND DUCTWORK IS COMPLETED. C .PIPING AND EQUIPMENT TO BE PAINTED (EXPOSED TO VIEW IN COMPLETED
- STRUCTURE) SHALL BE CLEANED BY REMOVING RUST, PLASTER, AND DIRT BY WIRE BRUSHING. GREASE, OIL AND SIMILAR MATERIALS SHALL BE REMOVED BY WIPING WITH CLEAN RAGS AND SUITABLE SOLVENTS. D. MOTOR, PUMPS, AND OTHER ITEMS WITH FACTORY FINISH SHALL BE REMOVED OF GREASE AND OIL AND LEAVE WITH ALL SURFACES CLEANED AND POLISHED.
- 3.06 ARRANGEMENT AND ALIGNMENT A. ALL PIPING SHALL BE ARRANGED AND ALIGNED IN ACCORDANCE WITH THE DRAWINGS.
- ELEVATIONS AS GIVEN MUST BE HELD. FLOOR ELEVATIONS WHERE GIVEN ARE TO HIGH POINTS OF FLOOR. DIMENSIONS MUST BE HELD AS CLOSELY AS POSSIBLE. ALL DIMENSIONS ARE TO BE FIELD CHECKED FOR ACCURACY BEFORE PIPE IS FABRICATED.
- B. INSTALL ALL PIPING STRAIGHT AND DIRECT AS POSSIBLE, GENERALLY FORMING RIGHT ANGLES WITH, OR RUNNING PARALLEL WITH, WALLS OR ADJACENT PIPING. ALL PIPING SHALL BE NEATLY SPACED WITH RISERS AND DROPS RUNNING PLUMB AND TRUE. RUN PIPING IN WALL CHASES, PIPE SHAFTS, HUNG CEILINGS, RECESSES, ETC., WHERE
- SAME ARE PROVIDED. DO NOT RUN SERVICE PIPING IN FLOOR SLAB FILL UNLESS SPECIFICALLY SO NOTED ON DRAWINGS. PIPING SHALL NOT BE COVERED OR CLOSED UNTIL TESTING IS COMPLETED. D. DRAWINGS, IN GENERAL, ARE MADE TO SCALE. ALL DIMENSIONS SHALL BE CHECKED
- IN THE FIELD BY THE CONTRACTOR BEFORE FINAL CONNECTIONS ARE FABRICATED E. DRAWINGS FOR SMALL PIPING ARE, IN GENERAL, DIAGRAMMATIC AND THE EXACT LOCATION OF THESE LINES SHALL BE DETERMINED BY THE CONTRACTOR FROM FIELD MEASUREMENTS TAKEN BY HIM. THE ACTUAL ARRANGEMENT OF THE SMALL SIZE PIPING WHEN ERECTED, SHALL FOLLOW THE GENERAL LOCATIONS SHOWN ON THE DRAWINGS AS FAR
- AS PRACTICABLE. THE INSTALLATION MADE IN THIS WAY SHALL BE NEAT IN APPEARANCE AND CONVENIENT TO OPERATE, AND SHALL PROVIDE FOR PROPER EXPANSION AND DRAINAGE . INSTALLATION OF PIPING SYSTEMS SHALL BE COORDINATED WITH OTHER WORK TO AVOID BLOCKING BUILDING OPENINGS, LIGHT FIXTURES, ETC. PIPING SHALL NOT INTERFERE WITH ACCESS TO VALVES OR EQUIPMENT AND SHALL NOT OBSTRUCT PASSAGEWAYS. PIPING
- 3.07 MODIFICATIONS AND INTERFERENCES A. CONTRACTOR SHALL CAREFULLY CHECK AND BECOME FAMILIAR WITH THE ARCHITECTURAL. STRUCTURAL, ELECTRICAL AND ALL MECHANICAL DRAWINGS AND DETAILS, AND MAKE NOTE OF
- ALL LOCATIONS WHERE WALLS, PARTITIONS, CEILINGS, STRUCTURAL MEMBERS, ETC., ARE CALLED FOR TO BE FURRED OR CLOSED-IN. B. MODIFICATIONS TO THE ARRANGEMENT OF THE PIPING SYSTEM MAY BE REQUIRED TO
- RADES. CONTRACTOR SHALL FURNISH ALL OFFSETS, ADDITIONAL FITTINGS, ETC., AS REQUIRED TO MEET INSTALLATION CONDITIONS WHETHER DETAILED ON THE DRAWINGS OR NOT. C. ANY QUESTIONABLE INFORMATION IN THE SPECIFICATIONS OR ON THE DRAWINGS SHALL
- BE CALLED TO THE ATTENTION OF THE ARCHITECT AND/OR ENGINEER FOR CLARIFICATION BEFORE PROCEEDING WITH FABRICATION OR ERECTION OF THE PARTS AFFECTED. IF. IN THE PINION OF THE CONTRACTOR, ANY ADDITIONAL DETAIL DRAWINGS ARE NECESSARY, HE SHALL PREPARE THEM AT HIS OWN EXPENSE, TOGETHER WITH ALL BILLS OF MATERIAL.

3.08 PIPE CLEARANCES A. INSTALL PIPING TO PROVIDE MINIMUM CLEARANCE OF AT LEAST ONE INCH BETWEEN EXTREME PROJECTIONS OF PIPING, FLANGES, FITTINGS, VALVES, ALLOWING FOR INSULATION, PIPE EXPANSION AND THE LIKE. 3.09 PIPING EXPANSION

- A. SPECIAL ATTENTION SHALL BE GIVEN TO THE INSTALLATION OF HOT AND COLD LINES WHICH HAVE AN APPRECIABLE MOVEMENT SO THAT THEY WILL NOT HIT OTHER PIPES. STRUCTURAL MEMBERS AND THE LIKE WHEN THEY HEAT UP OR COOL INSTALL ANCHORS WHERE SHOWN ON THE DRAWINGS AND WHERE REQUIRED. . GUIDES ARE TO BE FURNISHED ON EACH SIDE OF ALL EXPANSION LOOPS, OFFSETS,
- SWING JOINTS AND EXPANSION JOINTS WHETHER OR NOT DETAILED ON THE DRAWINGS D. COLD SPRINGING WHERE REQUIRED SHALL BE DONE WITH ANCHORS, HANGERS AND SLIDING SUPPORTS IN PLACE.
- 3.10 LOCATION OF VALVES. FTC. A. SYSTEM COMPONENTS WHICH REQUIRE OBSERVATION, OPERATION OR MAINTENANCE -SUCH AS VALVES, GAUGES, CONTROLS, STRAINERS, DIRT POCKETS, CLEANOUTS, UNIONS AND FLANGES, ETC. - SHALL BE LOCATED WHENEVER POSSIBLE SO AS TO BE READILY ACCESSIBLE. THEY SHALL NOT BE CONCEALED IN CHASES OR ABOVE CEILINGS WITHOUT PROVISION FOR ACCESS. VALVES WHICH REQUIRE FREQUENT OPERATION, OR WHICH MAY
- REQUIRE EMERGENCY OPERATION, AND WHICH ARE NOT ACCESSIBLE FROM NORMAL WORKING LEVEL, SHOULD BE INSTALLED WITH APPROPRIATE PROVISIONS SUCH AS CHAIN WHEELS OR EXTENSION STEMS. B. INSTALL ALL VALVES WITH STEMS IN EITHER AN UPRIGHT (PREFERRED) OR HORIZONTAL
- POSITION. CONTROL VALVES SHALL BE INSTALLED WITH TOP WORKS UPWARD UNLESS PECIFICALLY SHOWN OTHERWISE
- C. GLOBE VALVES SHOULD BE INSTALLED TO SEAT AGAINST THE DIRECTION OF FLOW.

- . PIPING SHALL BE TYPE 'L' HARD COPPER TUBING MADE UP WITH WROUGHT COPPER FITTINGS USING 95-5 (LEAD FREE) SOLDER. 2. CWS AND HWS PIPING UNDER FLOOR SHALL BE TYPE 'K' HARD COPPER WITH

- SHALL BE INSTALLED TO PROVIDE WORKING CLEARANCE FOR OPERATION AND MAINTENANCE.
- SUIT STRUCTURAL CONDITIONS, OR TO AVOID INTERFERENCE WITH THE WORK OF OTHER

- 3.11 DRAINAGE AND VENTING A. WHERE LINES ARE PURPOSELY PITCHED FOR DRAINAGE OR VENTING, AN ACCURATE GRADE SHALL BE MAINTAINED. LINES SHALL BE SUPPORTED IN SUCH A MANNER AS TO PREVENT DEFLECTION OF THE PIPING SUFFICIENT TO POCKET THE LINES.
- 3.12 PIPE AND FITTINGS A. ALL PIPE SIZES REFERRED TO IN THESE SECTIONS SHOULD BE INTERPRETED AS IPS (IRON PIPE SIZE) UNLESS SPECIFICALLY DESIGNATED OTHERWISE, SUCH AS "O.D." FOR
- B. FULL LENGTHS OF PIPE SHALL BE USED WHEREVER POSSIBLE. SHORT LENGTHS OF PIPE WITH COUPLINGS WILL NOT BE PERMITTED C. ALL PIPE SHALL BE CUT TO EXACT MEASUREMENT TO BE INSTALLED WITHOUT FORCING
- (EXCEPT WHERE COLD SPRINGING IS SPECIFICALLY CALLED FOR). AFTER CUTTING, ENDS SHALL BE REAMED AND CLEANED TO ELIMINATE FOREIGN MATTER. CUTTING OR OTHER WEAKENING OF THE BUILDING STRUCTURE TO FACILITATE PIPING INSTALLATION WILL NOT BE PERMITTED
- E. ALL PIPE AND FITTINGS SHALL BE MARKED BY THE MANUFACTURER IN ACCORDANCE WITH THE MARKING SECTIONS OF THE STANDARDS TO WHICH REFERENCE IS MADE IN THIS SPECIFICATION MANUAL. STANDARD MARKING SYSTEM FOR VALVES, FITTINGS, FLANGES AND UNIONS OF THE MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND
- FITTINGS INDUSTRY F. MAKE ALL CHANGES IN SIZE AND DIRECTION OF PIPING WITH FITTINGS. DO NOT USE BENDS, MITER FITTINGS, FACE OR FLUSH BUSHINGS, STREET ELBOWS OR FIELD-FABRICATED
- G. CLOSE NIPPLES SHALL NOT BE PERMITTED; USE ONLY SHOULDER NIPPLES. SHOULDER NIPPLE WITH SHOULDER LENGTH LESS THAN 1-1/2" SHALL BE OF HEAVY WALL PIPE; NIPPLES HAVING SHOULDER LENGTH OF 1-1/2" OR GREATER SHALL BE OF SAME SCHEDULE AS CONNECTED PIPE.
- H. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, INSTALL ALL SUPPLY PIPING TO COILS, PUMPS AND OTHER EQUIPMENT INCLUDING VALVES AND STRAINERS THEREIN, AT LINE SIZE IF A REDUCTION IS REQUIRED AT A PUMP OR CONTROL VALVE, THE REDUCER SHALL BE INSTALLED ABUTTING THE INLET AND/OR OUTLET OF THE PUMP OR VALVE.
- 3.13 WELDING FITTINGS A. BUTT-WELDING FITTINGS SHALL BE MANUFACTURED ACCORDING TO ANSI STANDARD B16.9 (LATEST EDITION). MITERED JOINT ELBOWS AND FIELD FABRICATED REDUCERS ARE
- NOT PERMITTED. B. MAKE ALL BRANCH CONNECTIONS WITH TEES, EXCEPT THAT ON STEEL PIPING, FORGED STEEL "WELDOLETS" AS MANUFACTURED BY BONNEY FORGE MAY BE USED WHERE THE BRANCH PIPE IS NOT LARGER THAN ONE-HALF THE SIZE OF THE MAIN PIPE (NOMINAL SIZES).
- 3.14 REDUCING FITTINGS A. USE ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS WHERE REQUIRED TO PREVENT POCKETING OF LIQUID. B. WHERE ECCENTRIC REDUCERS ARE USED, THE STRAIGHT SIDE SHOULD BE INSTALLED ON TOP FOR PUMP SUCTION AND ON THE BOTTOM FOR ALL OTHER LINES.
- 3.15 CONNECTIONS TO EQUIPMENT AND SPECIALTIES A. PIPING SYSTEMS SHALL BE INSTALLED COMPLETE TO EQUIPMENT CONNECTIONS OR
 - TERMINAL USE POINTS. B. PIPING SHALL BE FABRICATED CAREFULLY AND ACCURATELY TO MEET CONNECTIONS ON EQUIPMENT WITHOUT SPRINGING THE PIPE. C. PROVIDE UNIONS OR FLANGES AT ALL PIPING CONNECTIONS TO COILS, EQUIPMENT, CONTROL VALVES, PRESSURE REDUCING VALVES, STEAM TRAPS, ETC., AT ALL LOCATIONS AS SHOWN ON THE DRAWINGS, AND GENERALLY AS REQUIRED TO DISCONNECT PIPING FROM EQUIPMENT AND APPARATUS. ARRANGE CONNECTIONS SO THAT THE EQUIPMENT SERVED MAY BE REMOVED WITHOUT DISTURBING THE PIPING. WHERE VALVES SERVE TO ISOLATI EQUIPMENT OR SPECIALTIES, THE UNIONS OR FLANGES SHALL BE LOCATED BETWEEN VALVES AND EQUIPMENT OR SPECIALTIES. UNIONS SHALL GENERALLY BE USED FOR PIPE SIZES 2" AND SMALLER AND FLANGES FOR PIPE SIZES 2-1/2" AND LARGER.
- 3.16 DIELECTRIC CONNECTIONS A. PROVIDE DIELECTRIC FITTINGS BETWEEN FERROUS AND COPPER PIPING.
- 3.17 PIPE SLEEVES A. PROVIDE ALL PIPE OPENINGS THROUGH WALLS, PARTITIONS AND SLABS WITH SLEEVES HAVING AN INTERNAL DIAMETER AT LEAST 1" LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE FOR UNINSULATED LINES OR OF THE THICKNESS OF THE INSULATION FOR INSULATED SERVICES
- B. INSTALL SLEEVES THROUGH INTERIOR WALLS AND PARTITIONS FLUSH WITH FINISHED SURFACES; SLEEVES THROUGH OUTSIDE WALLS ARE TO PROJECT 1/2" ON OUTSIDE OF THE INISHED WALL. FLOOR SLEEVES ARE TO PROJECT 2" ABOVE FINISHED FLOORS. C. SET SLEEVES IN PLACE BEFORE POURING CONCRETE OR SECURELY FASTEN AND GROUT IN WITH CEMENT
- D. SLEEVE CONSTRUCTION: INTERIOR PARTITIONS: NO. 22 GAUGE GALVANIZED SHEET STEEL WITH SOLDERED . INTERIOR MASONRY WALLS AND FLOORS: SCHEDULE 40 GALVANIZED STEEL PIPE.
- E. INTERIOR WALLS: FILL THE SPACE BETWEEN OUTSIDE OF PIPE OR INSULATION AND THE INSIDE OF THE SLEEVE OR FRAMED OPENING WITH FIBER GLASS. F. EXTERIOR WALLS: PACK WITH OAKUM, SEAL WITH LEAD AND WATERTIGHT MASTIC OR
- G. PROVIDE ESCUTCHEONS ON BOTH SIDES OF THE PENETRATION THROUGH THE STRUCTURE FOR ALL PIPES EXPOSED TO VIEW PASSING THROUGH WALLS, FLOORS, CEILINGS, AND PARTITIONS, WHETHER OR NOT INSULATED. FOR PIPES PASSING THROUGH FLOORS, ESCUTCHEONS SHALL FIT OVER THE SLEEVES.
- H. FIRE-STOPPING SHALL BE PROVIDED AT ALL OPENINGS TO INCLUDE THE ANNULAR SPACE AROUND DUCTS, PIPING, CONDUITS, ETC. AND SHALL BE U.L. RATED MATERIALS AND METHODS PER THE ARCHITECTURAL SPECIFICATION SECTIONS. SUBMIT THROUGH PENETRATION PROTECTION SYSTEMS FOR ALL FIRE RATED ASSEMBLIES TO THE LOCAL AUTHORITIES AND THE ARCHITECT/ENGINEER FOR REVIEW.
- 3.18 SCREWED JOINTS CUT THREADS FULL AND CLEAN WITH SHARP DIES. B. REAM ENDS OF PIPE AFTER THREADING AND BEFORE ASSEMBLY, TO REMOVE BURRS. C. LEAVE NOT MORE THAN THREE PIPE THREADS EXPOSED AT EACH CONNECTION. D. USE JOINT SEALANT OR TAPE ON MALE THREADS ONLY.
- 3.19 FLANGED JOINTS A. USE STEEL BOLTS WITH SQUARE HEADS AND HARD-PRESSED STEEL HEXAGON NUTS (THREADED TO THE ANSI STANDARD COARSE THREAD SERIES #2 FIT). 3. ALL BOLT HOLES ARE TO BE SPOT-FACED. FLANGE DIMENSIONS AND DRILLING ARE TO CONFORM TO ANSI STANDARDS FOR THE
- PRESSURE CLASSES INVOLVED D. WHERE A CAST IRON, FLAT-FACED FLANGE JOINS A STEEL FLANGE, THE STEEL FLANGE MUST ALSO HAVE FULL, FLAT FACE. USE FULL FACE GASKET. E. MATE RAISED-FACED FLANGES TO RAISED-FACED. USE RING TYPE GASKET.
- 3 20 SOLDERED AND BRAZED JOINTS A. ALL SOLDERED AND/OR BRAZED JOINTS SHALL BE MADE IN ACCORDANCE WITH GOOD PRACTICE. TUBE ENDS SHALL BE SQUARE CUT AND REAMED, STRAIGHTENED AND ROUNDED WITH STRAIGHTENING TOOLS AS NECESSARY. B. FITTING AND TUBE SURFACES SHALL BE PROPERLY CLEANED WITH STEEL WOOL OR
- EMERY CLOTH AND A SUITABLE FLUX SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. UNIFORM HEAT SHALL BE APPLIED BY THE USE OF BLOW TORCH, ELECTRIC JOINT HEATER, OR OXYACETYLENE TORCH. ADEQUATE COOLING TIME SHALL BE ALLOWED BEFORE WASHING OR QUENCHING. APPURTENANCES THAT ARE FRAGILE OR HEAT SENSITIVE SHALL BE PROTECTED AGAINST OVERHEATING, OR THE SENSITIVE PARTS SHALL BE REMOVED DURING THIS APPLICATION OF HEAT. C. ALL SOLDERED JOINTS SHALL BE MADE USING 95-5 SOLDER D. ALL BRAZED JOINTS SHALL BE MADE USING SILFOSS OR SILVER SOLDER.
- 3.21 WELDED JOINTS A. IN GENERAL, ALL WELDING ON CARBON STEEL PIPE AND FITTINGS SHALL BE DONE BY THE METAL ARC PROCESS.
- B. WELDING OPERATIONS SHALL CONFORM TO CHAPTER V, OF THE CODE FOR PRESSURE PIPING, ANSI B31.3, LATEST EDITION. C. WELDERS AND WELDING PROCEDURES SHALL BE CERTIFIED WHERE REQUIRED BY SECTION OF THE ASME BOILER AND PRESSURE VESSEL CODE, LATEST EDITION
- D. TACK WELDS USED IN ASSEMBLY PIPE, FITTINGS, ETC., SHALL BE MADE BY A QUALIFIED WELDER OR SHALL BE REMOVED. TACK WELDS, WHICH ARE NOT REMOVED, SHALL BE MADE WITH AN ELECTRODE WHICH IS THE SAME AS OR EQUIVALENT TO THE ELECTRODE BE USED FOR THE FIRST PASS. TACK WELDS MUST BE THOROUGHLY CLEANED, GROUN SMOOTH, CAREFULLY EXAMINED FOR CRACKS, AND ALL CRACKS REMOVED BEFORE ADDITIONAL METAL MAY BE DEPOSITED. NO METAL SHALL BE TACK-WELDED INSIDE PIPE FOR ALIGNMENT PURPOSES.
- 3.22 CAULKED JOINTS A. JOINTS IN CAST IRON BELL AND SPIGOT PIPING SHALL BE FIRMLY PACKED WITH OAKUM AND SHALL BE FILLED WITH PURE LEAD. MINIMUM 1" DEEP. JOINT SHALL THEN BE CAULKED. PROVIDE 'PUSH-ON' GASKET JOINTS WHERE ALLOWED BY CODE.
- 3.23 PREFORMED JOINTS A. WHERE ASTM C425 JOINTS ARE USED, THEY SHALL BE WIPED CLEAN AND THE SOLVENT APPLIED IN ACCORDANCE WITH ASTM PROCEDURES.
- 3.24 MECHANICAL JOINTS A. CLEAN SPIGOT AND BELL WITH WIRE BRUSH. BRUSH SURFACES AND GASKET WITH SOAPY WATER. WITH GLAND AND GASKET IN PLACE ON SPIGOT, INSERT INTO BELL. SEAT SPIGOT IN BELL AND PRESS GASKET INTO BELL AND PULL GLAND AGAINST BELL. INSTALL BOLTS AND NUTS FINGER TIGHT. FINISH WITH A TORQUE WRENCH, RANGE 60 TO 90 FOOT POUNDS.
- SECTION 15250 INSULATION
- PART 1 GENERAL
- 1.01 RELATED DOCUMENTS A. SECTION 15050, "BASIC MATERIALS AND METHODS", APPLIES TO THE WORK SPECIFIED IN THIS SECTION B. IN ADDITION, THE FOLLOWING APPLY: SECTION 15400.

- PART 2 PRODUCTS
- 2.01 INSULATION HOT PIPING A. INSULATION FOR DOMESTIC WATER PIPING SYSTEMS SHALL BE B. GLASS FIBER INSULATION SHALL BE UL RATED, NONCOMBUSTIBL INSULATION OF HEAVY DENSITY GLASS FIBER WITH ALL SERVICE COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 5
- INSULATION SHALL BE AS SUPPLIED BY CERTAINTEED, OWENS/0 C. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHE DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFA
- ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND. JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING TYPE. PROVIDE HALF ROUND GALVANIZED 18 GAUGE SHEET METAL HAN SHALL BE 12" LONG FOR PIPE SIZES UP TO 3", 18" FOR PIPE 6", AND 24" LONG FOR PIPE SIZES OVER 6".
- 2.02 INSULATION COLD PIPING A. INSULATION FOR DOMESTIC WATER PIPING SYSTEMS SHALL BE 1 B. INSULATION FOR DRAINAGE PIPING SYSTEMS SHALL BE 1" THICK . GLASS FIBER INSULATION SHALL BE UL RATED, NONCOMBUSTIB INSULATION OF HEAVY DENSITY GLASS FIBER WITH ALL SERVIC COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 5 INSULATION SHALL BE AS SUPPLIED BY CERTAINTEED, OWENS/
- D. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHE DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFA
- ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND. E. JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING TYPE. PROVIDE HALF ROUND GALVANIZED 18 GAUGE SHEET METAL HAN SHALL BE 12" LONG FOR PIPE SIZES UP TO 3", 18" FOR PIPE
- 6", AND 24" LONG FOR PIPE SIZES OVER 6". PART 3 - EXECUTION
- 3.01 INSULATED PIPING SYSTEMS A. PROVIDE INSULATION ON PIPING SYSTEMS AS FOLLOWS:
- 1 HOT PIPING . COLD PIPING . SANITARY DRAINAGE LINES RECEIVING COLD CONDENSATE, AS 4. HOT WATER SUPPLY AND WASTE LINES AT LAVATORIES INTEN ACCESSIBILITY
- 3.02 PIPE HANGER SHIFLDS A. EACH CONTRACTOR INSTALLING HOT OR COLD PIPING SHALL SET
- WOOD BLOCKING AT EACH HANGER. B. THE WOOD BLOCKING THICKNESS SHALL BE THE SAME AS THAT NSULATION.
- THIS CONTRACTOR SHALL REPLACE THE WOOD BLOCKING WITH A DENSITY PIPE INSULATION AND A HANGER SHIELD.
- 3.03 INSTALLATION, GENERAL HOT PIPING A. ALL SURFACES MUST BE CLEAN AND DRY AND PIPE LINES TESTE PIPE INSULATION. IF COVERING IS APPLIED AT THE PIPE COVER TESTING, AND DEFECTS IN COVERED WORK APPEAR AT OR BEF(INSPECTION AND TESTS, THE COVERING MUST BE REMOVED, AN BEEN CORRECTED, MUST BE REINSTALLED WITHOUT EXPENSE TO
- B. COVERING SHALL BE DRY WHEN INSTALLED AND BEFORE AND OF ANY FINISH. SURFACES OF COVERING SHALL BE SMOOTH, FLUSH WITH ADJACENT PIPE COVERING.
- . MANUFACTURER'S APPLICATION INSTRUCTIONS FOR ALL MATERIAL . INSULATION SHALL NOT BE APPLIED OVER PIPE PLUGS, BLIND N INSPECTION STAMPS, OR IDENTIFICAON TAGS.
- E. INSULATOR MUST EXERCISE EXTREME CAUTION IN THE STORAGE ADHESIVES AND DURING THEIR APPLICATION. 3.04 INSULATION OF PIPING - HOT PIPING
- A. BUTT JOINTS FIRMLY TOGETHER. OVERLAP SEAM SHALL BE DOW PIPE, SEALED TIGHT AND SMOOTH. STAPLE OVERLAP ON 6" SF B. INSTALL BUTT STRIPS WITH 2" OVERLAP DOWNWARD STAPLE END INSULATION SHALL BE FASTENED WITH 9/16" FLARE TYPE STAPI
- 3.05 INSULATION OF FITTINGS, VALVES, ETC. HOT PIPING A. FITTINGS AND VALVES 3" AND LESS SHALL BE INSULATED BY WI FIBER GLASS BLANKET INSULATION AND SECURING WITH JUTE MOLDED PVC JACKET COVER SHALL BE INSTALLED OVER THE B JACKET SHALL BE FASTENED WITH STAINLESS STEEL TACKS AND ONTO THE ADJOINING PIPE INSULATION. B. FITTINGS 4" IPS AND LARGER SHALL BE INSULATED WITH NESTE
- SECTIONAL PIPE COVERING OF THE SAME MATERIAL AND THICKNI PIPE INSULATION. INSULATION SHALL THEN RECEIVE ONE COA GLASS FIBER REINFORCING CLOTH APPLIED TO FORM A SMOOTH MANUFACTURER'S RECOMMENDATIONS. C. VALVES 4" IPS AND LARGER SHALL HAVE BODIES UP TO THE BO
- WITH NESTED AND/OR MITERED SECTIONAL PIPE COVERING OF T THICKNESS AS THE ADJACENT PIPE INSULATION. INSULATION SI FINISHING CEMENT WITH GLASS FIBER REINFORCING CLOTH APP FINISH IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIO VALVES SHALL NOT BE INSULATED.
- D. FLANGES SHALL BE INSULATED WITH NESTED PIPE INSULATION. SHALL EXTEND NOT LESS THAN 2" OVER THE ADJACENT PIPE I THE FLANGE. INSULATION ON PIPES SHALL BE STOPPED SHOR REMOVAL OF FLANGE BOLTS. THE FLANGE INSULATION SHALL I MANNER THAT IT MAY BE REMOVED WITHOUT DAMAGE TO THE A INSULATION.
- E. STRAINERS 1-1/2" AND LARGER SHALL BE INSULATED WITH NE AND FILLING VOIDS WITH CEMENT AS DESCRIBED ABOVE FOR 4 VALVES. CLEAN-OUT PLUGS SHALL BE LEFT ACCESSIBLE SO DAMAGED BY THEIR REMOVAL. STRAINERS SMALLER THAN 1-1/3INSULATED
- F. WHEREVER NESTING SIZE SECTIONAL COVERING IS USED, IT SHA NEAT WORKMANLIKE MANNER WITH ALL JOINTS BUTTED AND HEL G. UNIONS SHALL NOT BE INSULATED. H. FITTINGS, VALVES, STRAINERS, UNFINISHED ENDS OF SECTIONAL DAMAGED JACKETS SHALL BE SEALED AND PAINTED WITH CHILDE AT THE RATE OF 85-100 SQ. FT. PER GALLON.
- 3.06 INSTALLATION, GENERAL COLD PIPING A. ALL SURFACES MUST BE CLEAN AND DRY AND PIPE LINES TEST
- PIPE INSULATION. IF COVERING IS APPLIED AT THE PIPE COVER TESTING, AND DEFECTS IN COVERED WORK APPEAR AT OR BEFC INSPECTION AND TESTS, THE COVERING MUST BE REMOVED, AND BEEN CORRECTED, MUST BE REINSTALLED WITHOUT EXPENSE 1
- B. COVERING SHALL BE DRY WHEN INSTALLED AND BEFORE AND E OF ANY FINISH. SURFACES OF COVERING SHALL BE SMOOTH, FLUSH WITH ADJACENT PIPE COVERING. MANUFACTURER'S APPLICATION INSTRUCTIONS FOR ALL MATERIAL
- INSULATION SHALL NOT BE APPLIED OVER PIPE PLUGS, BLIND N INSPECTION STAMPS, OR IDENTIFICATION TAGS. E. INSULATOR MUST EXERCISE EXTREME CAUTION IN THE STORAGE ADHESIVES AND DURING THEIR APPLICATION.
- 3.07 INSULATION OF PIPING COLD PIPING A. BUTT JOINTS FIRMLY TOGETHER. OVERLAP SEAM SHALL BE DOW PIPE, SEALED TIGHT AND SMOOTH. STAPLE OVERLAP ON 6" SP B. INSTALL BUTT STRIPS WITH 2" OVERLAP DOWNWARD STAPLE FOR INSULATION SHALL BE FASTENED WITH 9/16" FLARE TYPE STAP D. SEAL OVER STAPLES WITH VAPOR-BARRIER MASTIC, CHILDERS N
- 3.08 INSULATION OF FITTINGS, VALVES, ETC. COLD PIPING A. FITTINGS AND VALVES 3" AND LESS SHALL BE INSULATED BY W FIBER GLASS BLANKET INSULATION AND SECURING WITH JUTE MOLDED PVC JACKET COVER SHALL BE INSTALLED OVER THE BL JACKET SHALL BE FASTENED WITH STAINLESS STEEL TACKS AND ONTO THE ADJOINING PIPE INSULATION. A VAPOR-BARRIER MAS (WHITE), SHALL BE USED TO SEAL THE JACKET THROAT AND JAC NSULATION PRIOR TO TACK AND BUTT STRIP INSTALLATION.
- B. FITTINGS 4" IPS AND LARGER SHALL BE INSULATED WITH NESTE SECTIONAL PIPE COVERING OF THE SAME MATERIAL AND THICKNI PIPE INSULATION. C. VALVES 4" AND LARGER SHALL HAVE BODIES UP TO THE BONNE NESTING PIPE INSULATION OF APPROPRIATE SIZE AND OF THE S
- HICKNESS AS THE ADJACENT PIPE INSULATION. D. FLANGES SHALL BE INSULATED WITH NESTING PIPE INSULATION.
- INSULATION SHALL EXTEND NOT LESS THAN 2" OVER THE ADJA EACH SIDE OF THE FLANGE. INSULATION ON PIPES IS TO BE S TO PERMIT REMOVAL OF FLANGE BOLTS. THE FLANGE INSULATION SUCH A MANNER THAT IT MAY BE REMOVED WITHOUT DAMAGE T INSULATION. E. UNIONS SHALL BE COVERED WITH NESTING PIPE INSULATION AS
- FLANGES F. STRAINERS SHALL BE INSULATED AS DESCRIBED ABOVE FOR SM FITTINGS. CLEAN-OUT PLUGS SHALL BE LEFT ACCESSIBLE SO DAMAGED BY THEIR REMOVAL. G. WHEREVER NESTING SIZE SECTIONAL COVERING IS USED, IT SHAL NEAT WORKMANLIKE MANNER WITH ALL JOINTS BUTTED AND HEL

3.09 METAL JACKETING

	SECTION 15350 NATURAL GAS PIPING SYSTEMS
A. INSULATION - HOT FIFING A. INSULATION FOR DOMESTIC WATER PIPING SYSTEMS SHALL BE 1" THICK GLASS FIBER. B. GLASS FIBER INSULATION SHALL BE UL RATED, NONCOMBUSTIBLE, SECTIONAL PIPE	PART 1 – GENERAL
INSULATION OF HEAVY DENSITY GLASS FIBER WITH ALL SERVICE JACKET HAVING A COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. INSULATION SHALL BE AS SUPPLIED BY CERTAINTEED, OWENS/CORNING, OR KNAUF.	 1.01 RELATED DOCUMENTS A. THE FOLLOWING SECTIONS APPLY TO THE WORK OF THIS SECTION: SECTION 15050. B. IN ADDITION: THE FOLLOWING APPLY: 15400, AND 15800.
C. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHESIVE AND COATING DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFACTURER'S STAMP OR LABEL ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND.	1.02 DESCRIPTION A. THIS SECTION PROVIDES FOR THE INSTALLATION OF NATURAL GAS PIPING SYSTEMS.
D. JACKET LAPS AND BUTT STRIPS SHALL BE SELF-SEALING TYPE. E. PROVIDE HALF ROUND GALVANIZED 18 GAUGE SHEET METAL HANGER SHIELDS. SHIELDS SHALL BE 12" LONG FOR PIPE SIZES UP TO 3". 18" FOR PIPE SIZES OVER 3" AND UP TO	1.03 SHOP DRAWINGS A. PROVIDE 1/4" SCALE SHOP DRAWINGS FOR ALL PIPING SYSTEMS.
6", AND 24" LONG FOR PIPE SIZES OVER 6".	PART 2 – PRODUCTS
A. INSULATION FOR DOMESTIC WATER PIPING SYSTEMS SHALL BE 1" THICK GLASS FIBER. B. INSULATION FOR DRAINAGE PIPING SYSTEMS SHALL BE 1" THICK GLASS FIBER.	2.01 PROVIDE GAS PIPING SYSTEM PRODUCTS A. GAS COCKS AND UNIONS. B. PIPE, FITTINGS AND PIPING SPECIALTIES.
C. GLASS FIBER INSULATION SHALL BE OL RATED, NONCOMBOSTIBLE, SECTIONAL PIPE INSULATION OF HEAVY DENSITY GLASS FIBER WITH ALL SERVICE JACKET HAVING A COMPOSITE RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED.	C. PROTECTIVE COATINGS. D. PRESSURE REGULATORS. E. GAS SERVICE METER AND APPARATUS SUPPORT.
INSULATION SHALL BE AS SUPPLIED BY CERTAINTEED, OWENS/CORNING, OR KNAUF. D. EVERY PACKAGE OR STANDARD CONTAINER OF COVERING, ADHESIVE AND COATING DELIVERED AT THE BUILDING FOR USE MUST HAVE THE MANUFACTURER'S STAMP OR LABEL	PART 3 – EXECUTION
ATTACHED, GIVING NAME OF MANUFACTURER AND BRAND. E. JACKET LAPS AND BUTT STRIPS SHALL BE SELF—SEALING TYPE. F. PROVIDE HALF ROUND GALVANIZED 18 GAUGE SHEET METAL HANGER SHIELDS. SHIELDS	3.01 CODE COMPLIANCE A. CURRENT NFPA #54-NATIONAL FUEL GAS CODE. B. UNDERWRITER'S LABORATORIES INC
SHALL BE 12" LONG FOR PIPE SIZES UP TO 3", 18" FOR PIPE SIZES OVER 3" AND UP TO 6", AND 24" LONG FOR PIPE SIZES OVER 6".	C. AMERICAN GAS ASSOCIATION. D. ALL CURRENT LOCAL, STATE AND FEDERAL APPLICABLE.
3 - EXECUTION	3.02 NATURAL GAS SERVICE A. THE GAS UTILITY WILL PROVIDE A GAS SERVICE AND METER.
A. PROVIDE INSULATION ON PIPING SYSTEMS AS FOLLOWS: 1. HOT PIPING.	B. PROVIDE A CONCRETE PAD AND STEEL PIPE STANDS/PLATFORMS FOR METER, PER DRAWINGS.
 COLD FIFTING. SANITARY DRAINAGE LINES RECEIVING COLD CONDENSATE, AS PER COLD PIPING. HOT WATER SUPPLY AND WASTE LINES AT LAVATORIES INTENDED FOR HANDICAPPED ACCESSIBILITY. 	A. PROVIDE A GAS DISTRIBUTION SYSTEM FROM THE METER TO THE GAS—FIRED EQUIPMENT AND APPLIANCES, PER DRAWINGS.
PIPE HANGER SHIELDS A. EACH CONTRACTOR INSTALLING HOT OR COLD PIPING SHALL SET THE PIPING UP ON WOOD BLOCKING AT EACH HANGER	A. EXTEND VENTS FROM PRESSURE REGULATIONS TO THE OUTSIDE WITH SCREENED VENT CAP.
B. THE WOOD BLOCKING AT EACH HANGER. B. THE WOOD BLOCKING THICKNESS SHALL BE THE SAME AS THAT OF THE PIPE INSULATION.	DITHER INSTALLATION REQUIREMENTS.
DENSITY PIPE INSULATION AND A HANGER SHIELD.	SECTION 15400 PLUMBING
A. ALL SURFACES MUST BE CLEAN AND DRY AND PIPE LINES TESTED BEFORE APPLYING PIPE INSULATION. IF COVERING IS APPLIED AT THE PIPE COVERER'S OPTION PRIOR TO	PART 1 – GENERAL
TESTING, AND DEFECTS IN COVERED WORK APPEAR AT OR BEFORE THE TIME OF INSPECTION AND TESTS, THE COVERING MUST BE REMOVED, AND AFTER DEFECTS HAVE BEEN CORRECTED, MUST BE REINSTALLED WITHOUT EXPENSE TO THE OWNER. B. COVERING SHALL BE DRY WHEN INSTALLED AND BEFORE AND DURING THE APPLICATION	 1.01 RELATED DOCUMENTS A. SECTION 15050, BASIC MATERIALS AND METHODS, APPLIES TO THE WORK SPECIFIED IN THIS SECTION. B. IN ADDITION, THE FOLLOWING APPLY: 15250 AND 15350.
OF ANY FINISH. SURFACES OF COVERING SHALL BE SMOOTH, EVEN AND SUBSTANTIALLY FLUSH WITH ADJACENT PIPE COVERING. C. MANUFACTURER'S APPLICATION INSTRUCTIONS FOR ALL MATERIALS SHALL BE FOLLOWED.	1.02 DESCRIPTION A. THIS SECTION PROVIDES FOR THE INSTALLATION OF PLUMBING SYSTEMS, FIXTURES,
 D. INSULATION SHALL NOT BE APPLIED OVER PIPE PLUGS, BLIND NIPPLES, NAMEPLATES, INSPECTION STAMPS, OR IDENTIFICAON TAGS. E. INSULATOR MUST EXERCISE EXTREME CAUTION IN THE STORAGE OF FLAMMABLE 	LQUIPMENT AND ACCESSORIES.
ADHESIVES AND DURING THEIR APPLICATION.	A. PROVIDE 1/8" SCALE SHOP DRAWINGS FOR ALL PIPING SYSTEMS. PART 2 – PRODUCTS
 A. BUTT JOINTS FIRMLY TOGETHER. OVERLAP SEAM SHALL BE DOWNWARD ON SIDE OF PIPE, SEALED TIGHT AND SMOOTH. STAPLE OVERLAP ON 6" SPACING. B. INSTALL BUTT STRIPS WITH 2" OVERLAP DOWNWARD STAPLE END OF OVERLAP. 	2.01 PLUMBING FIXTURES AND ACCESSORIES A. PROVIDE PLUMBING FIXTURES AND ACCESSORIES AS SCHEDULED AND NOTED.
C. INSULATION SHALL BE FASTENED WITH 9/16" FLARE TYPE STAPLES. INSULATION OF FITTINGS, VALVES, ETC. – HOT PIPING	2.02 VACUUM BREAKERS A. PROVIDE VACUUM BREAKERS FOR PLUMBING FIXTURES AND SUPPLY FITTINGS HAVING A
A. FITTINGS AND VALVES 3" AND LESS SHALL BE INSULATED BY WRAPPING WITH PRE-CUT FIBER GLASS BLANKET INSULATION AND SECURING WITH JUTE TWINE. A PREFORMED, MOLDED PVC JACKET COVER SHALL BE INSTALLED OVER THE BLANKET INSULATION. THE	2.03 CLEANOUTS
JACKET SHALL BE FASTENED WITH STAINLESS STEEL TACKS AND BUTT STRIPS OVERLAPPING ONTO THE ADJOINING PIPE INSULATION.	2.04 DRAINS AND ACCESSORIES
SECTIONAL PIPE COVERING OF THE SAME MATERIAL AND THICKNESS AS THE ADJACENT PIPE INSULATION. INSULATION SHALL THEN RECEIVE ONE COAT OF FINISHING CEMENT WITH GLASS FIBER REINFORCING CLOTH APPLIED TO FORM A SMOOTH FINISH IN ACCORDANCE WITH	A. PROVIDE FLOOR DRAINS AND ACCESSORIES AS SCHEDULED, NOTED AND DETAILED. 2.05 FLASHINGS A PROVIDE 4 POLIND SHEET LEAD ELASHINGS FOR VENTS OR MOLDED PIPE
MANUFACTURER'S RECOMMENDATIONS. C. VALVES 4" IPS AND LARGER SHALL HAVE BODIES UP TO THE BONNETS INSULATED WITH NESTED AND/OR MITERED SECTIONAL PIPE COVERING OF THE SAME MATERIAL AND	BOOT-FLASHINGS. REFER TO ARCHITECTURAL DRAWING DETAILS.
THICKNESS AS THE ADJACENT PIPE INSULATION. INSULATION SHALL RECEIVE ONE COAT OF FINISHING CEMENT WITH GLASS FIBER REINFORCING CLOTH APPLIED TO FORM A SMOOTH FINISH IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. PACKING NUTS OF	A. PROVIDE TRANSITION COUPLINGS BETWEEN CHANGE OF MATERIALS OF PIPING SYSTEMS.
VALVES SHALL NOT BE INSULATED. D. FLANGES SHALL BE INSULATED WITH NESTED PIPE INSULATION. THE FLANGE INSULATION SHALL EXTEND NOT LESS THAN 2" OVER THE ADJACENT RIPE INSULATION ON EACH SIDE OF	A. PROVIDE THERMOMETER AND GAUGES PER DRAWING LEGENDS. B. THEY SHALL BE SEPARABLE SOCKET, ADJUSTABLE ANGLE TYPE. C. MANUEACTURERS: TRERICE MARSH MARSHAUTOWN
THE FLANGE. INSULATION ON PIPES SHALL BE STOPPED SHORT OF FLANGES TO PERMIT REMOVAL OF FLANGE BOLTS. THE FLANGE INSULATION SHALL BE APPLIED IN SUCH A MANNER THAT IT MAY BE REMOVED WITHOUT DAMAGE TO THE ADJACENT PIPE	2.08 HOT WATER GENERATORS A. PROVIDE HOT WATER GENERATORS PER DRAWING LEGEND.
INSULATION. E. STRAINERS 1–1/2" AND LARGER SHALL BE INSULATED WITH NESTED PIPE INSULATION AND FILLING YOURS WITH CEMENT AS DESCRIBED ABOVE FOR 4" AND LARGER FITTINGS AND	B. FLUES PROVIDED UNDER SECTION 15800. 2.09 CIRCULATING PUMPS
VALVES. CLEAN-OUT PLUGS SHALL BE LEFT ACCESSIBLE SO THAT INSULATION WILL NOT BE DAMAGED BY THEIR REMOVAL. STRAINERS SMALLER THAN 1-1/2" SHALL NOT BE INSULATED.	A. PROVIDE HOT WATER RECIRCULATION PUMP PER DRAWING LEGEND. 2.10 BACKFLOW PREVENTERS
F. WHEREVER NESTING SIZE SECTIONAL COVERING IS USED, IT SHALL BE CUT TO FIT IN A NEAT WORKMANLIKE MANNER WITH ALL JOINTS BUTTED AND HELD SECURELY IN PLACE. G. UNIONS SHALL NOT BE INSULATED.	A. PROVIDE BACKFLOW PREVENTERS WHERE SHOWN AND WHERE REQUIRED BY CODE.
H. FITTINGS, VALVES, STRAINERS, UNFINISHED ENDS OF SECTIONAL INSULATION, AND COLOR DAMAGED JACKETS SHALL BE SEALED AND PAINTED WITH CHILDERS NO. CP-35 (WHITE) AT THE RATE OF 85-100 SQ. FT. PER GALLON.	 A. PROVIDE WATER CONSERVATION FLOW RESTRICTORS IN THE SUPPLIES FOR ALL FIXTURES TO COMPLY WITH FEDERAL, STATE, AND LOCAL CODE. B. PROVIDE PRESSURE REDUCING VALVE FOR MAXIMUM WATER PRESSURE OF 80 PSIG. 2.12 THERMOSTATIC MIXING VALVES.
INSTALLATION, GENERAL – COLD PIPING A. ALL SURFACES MUST BE CLEAN AND DRY AND PIPE LINES TESTED BEFORE APPLYING PIPE INSULATION IF COVERING IS APPLIED AT THE PIPE COVERER'S OPTION PRIOR TO	A. PROVIDE THERMOSTATIC MIXING VALVES WHERE SHOWN AND REQUIRED BY CODE.
TESTING, AND DEFECTS IN COVERED WORK APPEAR AT OR BEFORE THE TIME OF INSPECTION AND TESTS, THE COVERING MUST BE REMOVED, AND AFTER DEFECTS HAVE BEEN CORPECTED MUST BE REINSTALLED WITHOUT EXPENSE TO THE OWNER	PART 3 – EXECUTION 3.01 SEWER SYSTEMS
B. COVERING SHALL BE DRY WHEN INSTALLED AND BEFORE AND DURING THE APPLICATION OF ANY FINISH. SURFACES OF COVERING SHALL BE SMOOTH, EVEN AND SUBSTANTIALLY FULSE WITH ADJACENT PIPE COVERING	A. PROVIDE SANITARY AND STORM SYSTEMS PER THE DRAWINGS. B. PROVIDE CLEANOUTS IN THE SANITARY AND STORM SYSTEMS PER THE DRAWINGS. C. PROVIDE CLEANOUTS AT THE BASE OF RISERS, ENDS OF HORIZONTAL MAINS, CHANGES
C. MANUFACTURER'S APPLICATION INSTRUCTIONS FOR ALL MATERIALS SHALL BE FOLLOWED. D. INSULATION SHALL NOT BE APPLIED OVER PIPE PLUGS, BLIND NIPPLES, NAMEPLATES, INSECTION STAMPS, OR IDENTIFICATION TAGS	IN DIRECTION AND MAXIMUM OF FIFTY (50) FEET CENTERS IN MAIN RUNS. 3.02 TRAPS
E. INSULATOR MUST EXERCISE EXTREME CAUTION IN THE STORAGE OF FLAMMABLE ADHESIVES AND DURING THEIR APPLICATION.	A. PROVIDE TRAPS FOR EACH FIXTURE AND DRAIN. B. TRAP SHALL BE SAME SIZE AS FIXTURE OF DRAIN OUTLET.
INSULATION OF PIPING – COLD PIPING A. BUTT JOINTS FIRMLY TOGETHER. OVERLAP SEAM SHALL BE DOWNWARD ON SIDE OF PIPE, SEALED TIGHT AND SMOOTH. STAPLE OVERLAP ON 6" SPACING.	A. PROVIDE 24 INCH SQUARE FLASHING FOR VENTS. B. TURN VENT FLASHINGS DOWN INTO VENT PIPE.
 B. INSTALL BUTT STRIPS WITH 2" OVERLAP DOWNWARD STAPLE END OF OVERLAP. C. INSULATION SHALL BE FASTENED WITH 9/16" FLARE TYPE STAPLES. D. SEAL OVER STAPLES WITH VAPOR-BARRIER MASTIC, CHILDERS NO. CP-35 (WHITE). 	 3.04 COLD WATER SYSTEM A. PROVIDE A COLD WATER DISTRIBUTION SYSTEM, INCLUDING METER, AS SHOWN, SCHEDULED AND DETAILED.
INSULATION OF FITTINGS, VALVES, ETC. – COLD PIPING A. FITTINGS AND VALVES 3" AND LESS SHALL BE INSULATED BY WRAPPING WITH PRE-CUT FIBER GLASS BLANKET INSULATION AND SECURING WITH JUTE TWINE. A PREFORMED,	3.05 HOT WATER SYSTEM A. PROVIDE A HOT WATER SUPPLY AND RETURN DISTRIBUTION SYSTEM AS SHOWN, SCHEDULED AND DETAILED.
MOLDED PVC JACKET COVER SHALL BE INSTALLED OVER THE BLANKET INSULATION. THE JACKET SHALL BE FASTENED WITH STAINLESS STEEL TACKS AND BUTT STRIPS OVERLAPPING ONTO THE ADJOINING PIPE INSULATION. A VAPOR-BARRIER MASTIC, CHILDERS NO. CP-35	3.06 AIR CHAMBERS A. PROVIDE MINIMUM 12" LONG AIR CHAMBERS FOR HOT AND COLD WATER
INSULATION PRIOR TO TACK AND BUTT STRIP INSTALLATION. B. FITTINGS 4" IPS AND LARGER SHALL BE INSULATED WITH NESTED AND/OR MITERED	3.07 DISINFECTION OF DOMESTIC WATER PIPING
SECTIONAL PIPE COVERING OF THE SAME MATERIAL AND THICKNESS AS THE ADJACENT PIPE INSULATION. C. VALVES 4" AND LARGER SHALL HAVE BODIES UP TO THE BONNETS INSULATED WITH	A. THE DISINFECTING AGENT SHALL BE ONE OF THE FOLLOWING: SODIUM HYPOCHLORITE SOLUTION (COMMERCIALLY AVAILABLE BLEACH), CALCIUM HYPOCHLORITE GRANULES OR TABLETS, OR CHLORINE GAS. THE CHOICE FOR A PARTICULAR JOB WILL DEPEND ON THE
NESTING PIPE INSULATION OF APPROPRIATE SIZE AND OF THE SAME MATERIAL AND THICKNESS AS THE ADJACENT PIPE INSULATION. D. FLANGES SHALL BE INSULATED WITH NESTING PIPE INSULATION. THE FLANGE	CONFIGURATION OF THE SYSTEM TO BE TREATED, THE CONVENIENCE AND SAFETY FACTORS INVOLVED, ETC. B. PROVIDE NIPPLES AND VALVES AS REQUIRED TO INTRODUCE DISINFECTANT AND WATER,
INSULATION SHALL EXTEND NOT LESS THAN 2" OVER THE ADJACENT PIPE INSULATION ON EACH SIDE OF THE FLANGE. INSULATION ON PIPES IS TO BE STOPPED SHORT OF FLANGES TO PERMIT REMOVAL OF FLANGE BOLTS. THE FLANGE INSULATION SHALL BE APPLIED IN	SHOWN ON THE DRAWINGS. C. FILL THE SYSTEM UNIFORMLY WITH A DISINFECTION SOLUTION OF 100 PPM AVAILABLE
SUCH A MANNER THAT IT MAY BE REMOVED WITHOUT DAMAGE TO THE ADJACENT PIPE INSULATION. E. UNIONS SHALL BE COVERED WITH NESTING PIPE INSULATION AS SPECIFIED FOR	ALTERNATE, A SOLUTION OF 300 PPM HELD FOR 3 HOURS IS ALSO ACCEPTABLE. AFTER THE HOLDING PERIOD, A TEST FOR RESIDUAL CHLORINE SHALL BE MADE. IF NONE IS FOUND THE SYSTEM SHALL BE DRAWED AND THE DEVISION PERSONNEL AND THE
FLANGES. F. STRAINERS SHALL BE INSULATED AS DESCRIBED ABOVE FOR SMALL VALVES AND FITTINGS. CLEAN–OUT PLUGS SHALL BE LEFT ACCESSIBLE SO THAT THE INSULATION IS NOT	WHEN A POSITIVE RESIDUAL CHLORINE TEST IS ACCOMPLISHED, THE SYSTEM SHALL BE FLUSHED WITH POTABLE WATER AND PUT INTO OPERATION.
DAMAGED BY THEIR REMOVAL. G. WHEREVER NESTING SIZE SECTIONAL COVERING IS USED, IT SHALL BE CUT TO FIT IN A NEAT WORKMANLIKE MANNER WITH ALL JOINTS BUTTED AND HELD SECURELY IN PLACE WITH	J. WURK SHALL CUMPLY WITH REQUIREMENTS OF STATE AND LOCAL AUTHORITIES.
JULE OR GLASS FIBER IWINE. JOINTS SHALL BE POINTED UP WITH INSULATING CEMENT PRIOR TO RECEIVING SURFACE FINISH. H. FITTINGS, VALVES, STRAINERS, WHERE VAPOR-BARRIER JACKET OR CLOTH TAPE HAS BEEN FITTED FOR NESTED / MITCHED APPLICATIONS AND COLOR DAMAGED MOVETS SHALL BE	3.09 HOT WATER GENERATORS A. PROVIDE GENERATORS, ACCESSORIES AND TRIM PER DRAWING DETAILS.
SEALED AND PAINTED WITH CHILDERS NO. CP-35 (WHITE) AT THE RATE OF 85-100 SQ. FT. PER GALLON.	3.10 CIRCULATING PUMPS A. PROVIDE PUMPS PER DRAWING.
METAL JACKETING A. PROVIDE ALUMINUM JACKETING FOR PROTECTION OF INSULATION WHERE EXPOSED. B. ALUMINUM JACKETING SHALL BE FITTED OVER PIPE AND FITTINGS FOR ALL INSULATION UP TO $8^{2}-0^{2}$ AROVE FLOOR OR METZANINE LEVELS	B. ELECTRIC WIRING BY ELECTRICAL CONTRACTOR TO EXTENT SHOWN ON ELECTRICAL DRAWINGS. ALL OTHER WIRING BY THIS CONTRACTOR.
S. IS S S RESTE I LOOK OK MELLANINE LEVELS.	A. PROVIDE PLUMBING PIPING AND EQUIPMENT INSULATION PER SECTION 15250.

A. PROVIDE INTERFACE CONNECTIONS TO THE WORK OF OTHER TRADES PER DRAWINGS.



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- 3.13 PIPING IDENTIFICATION A. ALL NEW PIPING, INSTALLED UNDER THIS CONTRACT, SHALL BE IDENTIFIED AS TO THE TYPE OF SERVICE, AND THE DIRECTION OF FLOW, USING A SYSTEM CURRENTLY IN USE BY THE OWNER. B. WHERE PIPING IS INSULATED, PIPE IDENTIFICATION MARKERS SHALL BE INSTALLED AFTER
- THE INSULATION HAS BEEN INSTALLED. C. PIPE IDENTIFICATION MARKERS SHALL BE INSTALLED AT EACH EQUIPMENT CONNECTION AND ON TWENTY (20) FOOT CENTERS FOR RUNS OF STRAIGHT PIPING.
- 3.14 ACCESS DOORS A. INSTALL ACCESS DOORS IN THE BUILDING CONSTRUCTION WHERE SHOWN ON THE DRAWINGS OR WHERE REQUIRED TO ACCESS VALVES AND CLEANOUTS. B. COORDINATE INSTALLATION WITH THE GENERAL CONTRACTOR.
- 3.15 BACKFLOW PREVENTERS A. INSTALL PREVENTERS COMPLETE WITH DRAIN. ALL PIPING IN ACCORDANCE WITH MANUFACTURER'S LITERATURE.

SECTION 15500 AUTOMATIC SPRINKLER SYSTEM

- PART 1 GENERAL
- 1.01 GENERAL CONDITIONS AND SPECIAL CONDITIONS A. SECTION 15050, BASIC MATERIALS AND METHODS, APPLIES TO THE WORK SPECIFIED IN THIS SECTION. B. GENERAL AND SPECIAL CONDITIONS APPLY TO THE WORK UNDER THIS SECTION. C. A PRE-CONSTRUCTION MEETING BEFORE THE SHOP DRAWING PROCESS. A MEETING WILL BE HELD TO DISCUSS THE SENSITIVITY OF THE PIPING AND SPRINKLERS IN THE FACILITY AND ESPECIALLY THE SPECIAL CEILINGS. LOCATION OF AUTOMATIC SPRINKLES SHALL BE APPROVED THE ARCHITECT/OWNER.
- 1.02 SCOPE OF WORK A. AUTOMATIC WET PIPE SPRINKLER SYSTEM AND COMPONENTS AS SPECIFIED HEREIN AND AS MIGHT BE SHOWN ON DRAWINGS, INCLUDING PIPING, HANGERS, VALVES, ALARMS, SUPPORTS AND SPRINKLER HEADS, NECESSARY AND AS REQUIRED FOR INSTALLATION OF
- COMPLETE AND APPROVED FIRE PROTECTION SYSTEMS. B. WORK UNDER THIS SECTION SHALL BE PERFORMED BY AN APPROVED AND AUTOMATIC FIRE SPRINKLER CONTRACTOR. SHOP DRAWINGS AND CALCULATIONS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER. APPROVED CONTRACTOR AND THE CONTRACTOR'S REGISTERED ENGINEER SHALL BE LICENSED WITH THE PROPER AUTHORITIES FOR THE LOCATION OF THIS PROJECT
- C. WORK SHALL BE DONE IN A FIRST CLASS AND WORKMANLIKE MANNER, COMPLETE IN ALL RESPECTS INCLUDING ITEMS OF WORK SPECIFIED HEREIN OR OUTLINED AND ILLUSTRATED ON DRAWINGS AND NECESSARY TO ACCOMPLISH A COMPLETE, FULLY OPERATING, SATISFACTORY AND APPROVED INSTALLATION. 1.03 APPLICABLE STANDARDS
- A. LOCAL AND STATE FIRE MARSHAL CODES. B. NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
 C. NFPA-13 - SPRINKLER SYSTEMS.
- . UNDERWRITERS LABORATORIES STANDARDS.
- OWNER'S OR TENANT'S INSURANCE UNDERWRITER. . MATERIALS AND EQUIPMENT SHALL BE U.L. INC. APPROVED AND LISTED AND APPROVED BY FACTORY MUTUAL.
- 1.04 SHOP DRAWINGS A. UPON AWARD OF CONTRACT, FIRE PROTECTION CONTRACTOR SHALL IMMEDIATELY PREPARE WORKING DRAWINGS, HYDRAULIC CALCULATIONS, AND MANUFACTURER'S DATA SHEETS FOR EACH AND EVERY ITEM OF EQUIPMENT AND MATERIAL; AND SUBMIT THE SAME FOR APPROVAL TO: 1. LOCAL FIRE PREVENTION BUREAU.
- 2. OWNER'S OR TENANT'S INSURANCE UNDERWRITER. 3. ARCHITECT/ENGINEER. B. AFTER APPROVAL, FIRE PROTECTION CONTRACTOR SHALL SUBMIT APPROVED WORKING DRAWINGS BEARING SEAL OR STAMP OR APPROVAL FROM THE FIRE PREVENTION BUREAU AND THE OWNER'S/TENANT'S INSURANCE UNDERWRITER, IF REQUIRED. SUBMIT ONE (1) REPRODUCIBLE SEPIA AND THREE (3) BLUELINE PRINTS OF COMPLETE SHOP DRAWINGS, AND
- SIX (6) SETS OF MANUFACTURER'S DATA ON DEVICES AND (4) SETS OF CALCULATIONS. C. CONTRACTOR SHALL SUBMIT COMPLETE PACKAGES. PARTIAL SUBMITTALS SHALL BE AVOIDFD. D. FIRE PROTECTION WORK, INCLUDING ORDERING OF MATERIALS, SHALL NOT BE DONE UNTIL AFTER REQUIRED APPROVALS HAVE BEEN OBTAINED. E. PREPARE SHOP DRAWINGS AT MINIMUM SCALE OF 1/8"=1'-0" FOR PLANS, AND
- 1/4"=1'-0" FOR DETAILS. SHOW ALL PIPING, SPRINKLERS, HANGERS, FLEXIBLE COUPLINGS, ROOF CONSTRUCTION AND OCCUPANCY OF EACH AREA, INCLUDING CEILING AND ROOF HEIGHTS AS REQUIRED BY NFPA-13. WHEN WELDING IS PLANNED. SHOP DRAWINGS SHALL INDICATE THE SECTIONS TO BE SHOP WELDED AND THE TYPE OF WELDED FITTINGS TO BE
- F. INSTALLATION SHALL BE BASED ON THE LATEST ARCHITECTURAL, STRUCTURAL, HEATING AND VENTILATING, PLUMBING AND ELECTRICAL DRAWINGS. G. SPRINKLER SYSTEM CONTROLS, VALVING, DEVICES, PIPE ROUTING, SPRINKLER HEAD LOCATIONS AND SPACING IF SHOWN ARE A CRITERIA FOR CONTRACTOR TO PREPARE FINAL SHOP DRAWINGS. FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY EXACT REQUIREMENTS FOR BUILDING REGARDING PIPE SIZES, ADEQUATE PRESSURES, SERVICE LOCATIONS, ZONING AND SUBMIT SHOP DRAWING TO THE AUTHORITIES FOR APPROVAL PRIOR TO FABRICATION OR INSTALLATION OF FIRE PROTECTION WATER SERVICE AND SYSTEMS.
- 1.05 AS-BUILT DRAWINGS A. MAINTAIN AT THE SITE AN UP-TO-DATE MARKED SET OF AS-BUILT DRAWINGS, WHICH SHALL BE CORRECTED AND DELIVERED TO THE ARCHITECT UPON COMPLETION OF THE WORK. B. FURNISH THE ARCHITECT WITH ONE (1) REPRODUCIBLE SEPIA PRINT OF EACH
- APPROVED SHOP DRAWINGS, REVISED TO SHOW "AS-BUILT" CONDITIONS. 1.06 VALVE DIAGRAM AND OPERATING INSTRUCTIONS A. AT THE COMPLETION OF THE WORK, PROVIDE A SMALL SCALE PLAN OF EACH BUILDING
- SYSTEM INDICATING THE LOCATIONS OF ALL CONTROL VALVES, LOW POINT DRAINS, AND INSPECTOR'S TESTS. THE PLANS SHALL BE NEATLY DRAWN AND COLOR CODED TO INDICATE THE PORTION OF THE BUILDING PROTECTED BY EACH SYSTEM, FRAMED UNDER GLASS AND PERMANENTLY MOUNTED ON THE WALL ADJACENT TO THE SPRINKLER RISER VALVES. B. FURNISH ONE (1) COPY OF NFPA-25, 'INSPECTION, TESTING AND MAINTENANCE OF WATER BASE PROTECTION SYSTEMS', AND BOUND SET(S) OF PRINTED OPERATING AND
- MAINTENANCE INSTRUCTIONS TO THE OWNER, AND ADEQUATELY INSTRUCT THE OWNER'S MAINTENANCE PERSONNEL IN PROPER OPERATION AND TEST PROCEDURES OF ALL FIRE PROTECTION COMPONENTS PROVIDED. 1.07 CHANGES A. MAKE NO CHANGES IN INSTALLATION FROM LAYOUT AS SHOWN ON DRAWINGS, UNLESS
- CHANGE IS SPECIFICALLY APPROVED BY THE ARCHITECT. THIS DOES NOT INCLUDE MINOR REVISIONS FOR THE PURPOSE OF COORDINATION. B. ANY CHANGES MADE, OTHER THAN AS ABOVE STATED, ARE AT THE CONTRACTOR'S OWN EXPENSE AND RESPONSIBILITY.
- 1.08 LEAK DAMAGE A. THE CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, ITS CONTENTS, ETC. CAUSED BY LEAKS IN ANY EQUIPMENT, BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS, ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.
- 1.09 PERMITS AND FEES A. THE CONTRACTOR SHALL PAY FOR ALL PERMITS, FEES AND CHARGES REQUIRED FOR THIS WORK.

PART 2 – PRODUCTS 2.01 GENERAL

- A. THE NAMING OF MANUFACTURERS IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED AS ELIMINATING THE MATERIALS, PRODUCTS OR SERVICES OF OTHER MANUFACTURERS AND SUPPLIERS HAVING APPROVED EQUIVALENT ITEMS. B. "LISTED" SHALL REFER TO MATERIALS OR EQUIPMENT INCLUDED IN A LIST PUBLISHED BY A NATIONALLY RECOGNIZED TESTING LABORATORY THAT MAINTAINS PERIODIC INSPECTION OF PRODUCTION OF LISTED EQUIPMENT OR MATERIALS, AND WHOSE LISTING STATES EITHER THAT THE EQUIPMENT OR MATERIAL MEETS NATIONALLY RECOGNIZED STANDARD OR HAS BEEN TESTED AND FOUND SUITABLE FOR USE IN A SPECIFIED MANNER.
- 2.02 SPRINKLERS A. SPRINKLERS FOR THE PROPOSED EQUIPMENT SHALL BE NEW AND OF THE LISTED AUTOMATIC, CONCEALED WITH WHITE COVER PLATE OR APPROVED EQUAL, AND SHALL BE DISTRIBUTED THROUGHOUT THE BUILDING, APPROXIMATE NUMBER OF SPRINKLERS AND TYPE SHOWN ON CONTRACTOR'S SHOP DRAWINGS. IF THE NUMBER OF SPRINKLERS INDICATED IN THE SPRINKLER COUNT SUMMARY DIFFERS FROM ACTUAL COUNT ON PLANS, THE ACTUAL COUNT SHALL BE PROVIDED. B. INSTALL SPRINKLERS OF PROPER DEGREE RATING WHEREVER NECESSARY TO MEET REQUIREMENTS OF NFPA-13.
- 2.03 HOSE THREADS A. HOSE THREADS FOR HYDRANTS AND FIRE DEPARTMENT SIAMESE CONNECTION SHALL MATCH THOSE OF THE LOCAL FIRE DEPARTMENT.
- 2.04 VALVES AND DEVICES A. ALL SPRINKLER CONTROL VALVES, DEVICES, CHECK VALVES, ALARM VALVES, ETC. SHALL BE OF THE APPROVED AND LISTED TYPE
- 2.05 PIPINO A. PIPE SHALL BE SCHEDULE 40, ASTM 53, BLACK STEEL WITH 125 & 250 WORKING PRESSURE CAST IRON FITTINGS, ANSI B16.4 OR 150 & 300 WORKING PRESSURE MALLEABLE IRON FITTINGS, ANSI B16.3. FITTINGS 2" & SMALLER SHALL BE STANDARD WEIGHT AND 2-1/2" & LARGER SHALL BE EXTRA HEAVY. CAST IRON FLANGED FITTINGS, ANSI B16.1, MAY BE USED FOR PIPING 3" & LARGER. NO THINWALL TYPE PIPE WILL BE PERMITTED.
- B. SCHEDULE 10, ASTM 135 BLACK STEEL THINWALL PIPE WITH MECHANICAL PIPE COUPLING AND ROLL-GROOVED JOINTS MAY BE USED FOR 2-1/2" AND LARGER PIPING. NO "XL" TYPE PIPE WILL BE PERMITTED. C. PIPING SHALL BE JOINTED BY THREADING AND/OR GROOVED JOINT MECHANICAL PIPE
- COUPLINGS. GROOVED JOINT COUPLINGS SHALL BE FOR 2-1/2" & LARGER ONLY AND SHALL BE EQUAL TO VICTAULIC STYLE 75 OR 77. NO THREADED THINWALL PIPE IS PERMITTED. VELDING WILL BE ACCEPTED WHEN IN ACCORDANCE WITH THE STANDARDS OF NFPA, AND WHERE APPROVED BY AUTHORITIES HAVING JURISDICTION; NO FIELD WELDING IS PERMITTED.

- PART 3 EXECUTION 3.01 HYDRANT FLOW TEST A. HYDRANT FLOW TEST EXISTING SITE FIRE LOOP PIPING PRIOR TO MAKING ANY CONNECTIONS. NOTIFY ARCHITECT IF FLOW TEST IS UNSUCCESSFUL. SCHEDULE TESTING TO ALLOW SUFFICIENT TIME FOR REPAIRS TO BE MADE OR IF FIRE PUMP IS REQUIRED TO SUPPLEMENT THE REQUIRED PRESSURE AND DESIGN FLOW RATE.
- 3.02 TESTING OVERHEAD PIPE A. TEST ALL SPRINKLER PIPING IN ACCORDANCE WITH NFPA-13 REQUIREMENTS. NOTIFY ARCHITECT'S REPRESENTATIVE, OWNER'S REPRESENTATIVE AND LOCAL FIRE DEPARTMENT, 72 HOURS IN ADVANCE REGARDING TIME AND DATE OF ALL TESTS. OWNER SHALL ALSO ARRANGE WITH INSURING AGENCY AUTHORITIES FOR THEM REPRESENTATIVE TO BE PRESENT.
- 3.03 DRAIN A. PROVIDE ALL MAIN AND AUXILIARY DRAINS WHERE NECESSARY. PROVIDE MEANS FOR DRAINING ENTIRE SYSTEMS, DOWN STREAM OF ALL SHUT-OFF VALVES AND ALL LOW POINTS. 3.04 CEILING AND WALL PLATES
- A. INSTALL CHROME FINISHED CEILING AND WALL PLATES WHEREVER EXPOSED SPRINKLER PIPING PASSES THROUGH CEILINGS AND WALLS. 3.05 SLEEVES
- A. SET SLEEVES IN PLACE FOR ALL PIPES PASSING THROUGH FLOOR AND WALL OPENINGS. 3.06 WELDING
- A. NO FIELD WELDING OF SPRINKLER PIPING SHALL BE PERMITTED. B. JOIN ALL INSIDE PIPING BY MEANS OF SCREWED, FLANGED OR FLEXIBLE GASKETED JOINTS OR OTHER ACCEPTABLE FITTINGS.
- 3.07 INSPECTOR'S TEST A. PROVIDE TEST CONNECTIONS AT MOST REMOTE POINT OF MAIN PORTION OF EACH SPRINKLER SYSTEM WITH 1-INCH PIPE AND VALVE. TEST PIPE SHALL BE CONNECTED TO SPRINKLER PIPE AT LEAST 1-1/4" DIAMETER AND SHALL DISCHARGE OUTSIDE BUILDING OR ADEQUATE FLOOR DRAIN THROUGH 1/2" SMOOTH BORE BRASS OUTLET WHERE IT CAN BE EASILY SEEN.
- B. CONSULT WITH ARCHITECT'S REPRESENTATIVE AT JOB FOR EXACT LOCATION OF INSPECTORS TEST CONNECTIONS.
- 3.08 EXTRA SPRINKLERS A. PROVIDE TWO SPARE SPRINKLER CABINETS COMPLETE WITH SPRINKLERS OF ASSORTED TEMPERATURE RATINGS OF THE TYPE NECESSARY AND IN USE THROUGHOUT THE INSTALLATION. EACH CABINET SHALL BE EQUIPPED WITH TWELVE (12) SPRINKLERS AND A SPECIAL SPRINKLER WRENCH FOR EACH TYPE OF SPRINKLER FURNISHED. B. INSTALL SPRINKLER CABINETS ADJACENT TO THE RISER VALVES AND CONFER WITH
- ARCHITECT'S REPRESENTATIVE FOR EXACT LOCATION OF CABINET. 3.09 SPECIALTY DEVICES
- A. INSTALLATION OF ALL SPECIALTY DEVICES SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS. WHERE THE INSTALLATION OF THOSE DEVICES REQUIRE USE OF A TORQUE WRENCH OR OTHER APPLIANCE, THE CONTRACTOR SHALL CERTIFY THAT THE MANUFACTURERS' INSTRUCTIONS HAVE BEEN COMPLIED WITH.

SEISMIC CONTROLS FOR MEPF SYSTEMS:

SEISMIC BRACING OF MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS SHALL BE INSTALLED AS REQUIRED BY LOCAL ADOPTED CODES. SEISMIC BRACING MEASURES TO BE APPLIED TO MECHANICAL/ELECTRICAL/PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AS WELL AS MANUFACTURER'S REQUIREMENTS. REFER TO ARCHITECTURAL AND/OR STRUCTURAL FOR ADDITIONAL BRACING DETAILS AND INFORMATION.



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REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020





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SHEET NAME

			LIGHTING FIXTURE	SCHED	JLE			
			MANUFACTURER/		_AMP			
TYPE	SYMBOL	DESCRIPTION	CATALOG NUMBER	LUMENS	TYPE	VOLTAGE	WATTS	NO
14				500		4001/		
LI			AT 11 005 50	500		1200	500	1,9
		(ACTUAL LENGTH 11")	AI-11-005-50		5,000K			
		2' SURFACE MOUNTED LED STRIP						
L2		W/INTEGRAL DRIVER	ATTAINLED #	900	LED	120V	9W	1.9
		(ACTUAL LENGTH 21 1/2")	AT-21-009-50		5,000K			
		3' SURFACE MOUNTED LED STRIP						
L3		W/ INTEGRAL DRIVER	ATTAINLED #	1200	LED	120V	12W	1,9
		(ACTUAL LENGTH 33")	AT-33-012-50		5,000K			
				1500		1001	4.514/	
L4				1500		1200	1500	1,9
		(ACTUAL LENGTH 45.)	AI-45-015-50		5,000K			
		5' SURFACE MOUNTED LED STRIP						
L5		W/INTEGRAL DRIVER	ATTAINLED #	1800	LED	120V	18W	1.9
		(ACTUAL LENGTH 57")	AT-56-018-50		5,000K			
		2X2 LED PANEL LIGHT						
L		W/0-10V DIMMING DRIVER	ATTAINLED #	3600	LED	120/277V	7V 30W 1	1
(LD)		("LD" DENOTES WIRED FOR DIMMING)	AT-PN-22-30-37-W		3,700K			
	_			2050		100/0771/	2014/	1
				3950		120/2777	3877	'
					4,000K			
			A1-002-0-110001110					+
		8" SQUARE LED DOWNLIGHT						
UE		W/WHITE REFLECTOR, 0-10V DIMMING	ATTAINLED #	3950	LED	120/277V	38W	1,5
(UED)		WITH EMERGENCY BATTERY PACK	AT-SDL-8-38-40-WH-EM &		4,000K		ĺ	
		(UED DENOTES WIRED FOR DIMMING)	AT-SDL-8-HOUSING					
		8" SURFACE MOUNTED LED STRIP						
UCL		W/ REMOTE DIMMING DRIVER	ATTAINLED #	300	LED	120V	ЗW	1,10
		(ACTUAL LENGTH 7 3/8")	AT-LNR-100-3-40-90		4,000K			
		4' SURFACE MOUNTED LED STRIP						
UCL4			ATTAINLED #	1500	LED	120V	15W	1,10
		(ACTUAL LENGTH 44 178")	AT-LNR-100-15-40-90		4,000K			
FX			PATHWAY LIGHTING #		LED	120/2771/	5W	1 6
		WTH BATTERY BACKUP	PEXUR-DL			120/2110		ABC
		WALL MOUNT 2-HEAD						1
EX3	4-P	EMERGENCY LIGHT W/ BATTERY BACKUP	BEST LIGHTING #	LED	LED	120/277V	(2)2W	1,6
		(MOUNT AT 7'-6" AFF)	LEDR-1-HL					
EX4	kO⊲	CEILING/PENDANT MOUNTED 2 HEAD	BEST LIGHTING #	LED	LED	120/277V	(2)2W	1,6
		EMERGENCY LIGHT WITH BATTERY BACKUP	LEDR-1-HL					
						100/0771/	2147	
EX5	ΙЮ				LED	12012111	500	1,6

LIGHTING SCHEDULE NOTES:

- 1. FURNISHED BY ULTA, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
- 2. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHT FIXTURES. COORDINATE EXACT MOUNTING REQUIREMENTS WITH ARCHITECTURAL DETAILS.
- 3. COORDINATE EXACT MOUNTING HARDWARE REQUIRED WITH OWNER VENDOR AND MANUFACTURER PRIOR TO BIDDING AND INCLUDE ALL COST IN BASE BID.
- 4. COORDINATE EXACT FINISH OF FIXTURE WITH INTERIOR DESIGNER.
- 5. EMERGENCY BATTERY BACK-UP WITH A MINIMUM OF 577 LUMEN OUTPUT FOR LED DOWNLIGHT FIXTURES FOR 90 MINUTES.
- 6. PROVIDE EXIT SIGNS AND EMERGENCY BATTERY PACKS PER LOCAL ORDINANCES.
- 7. PROVIDE DIRECTIONAL ARROWS AS SHOWN ON PLAN DRAWINGS AND AS REQUIRED BY LOCAL CODE AUTHORITIES. PROVIDE LETTER SIZE, COLOR AND TYPE AS REQUIRED BY LOCAL CODE AUTHORITIES.
- 8. LIGHT FIXTURES MUST BE POSITIVELY ATTACHED TO THE CEILING GRID WITH AN ATTACHMENT CAPABLE OF CARRYING 100% OF THE WEIGHT OF THE LIGHT FIXTURE IN ANY DIRECTION. THIS ATTACHMENT SHALL CONSIST OF FOUR EQUALLY SPACED ATTACHMENT POINTS USING SCREWS, RIVETS, BOLTS OR OTHER APPROVED POSITIVE ATTACHMENT DEVICES. VERIFY ALL REQUIREMENTS WITH BUILDING CODES AND LOCAL AMENDMENTS.
- 9. FIXTURE SHALL BE CONTINUOUS MOUNTED, PROVIDE WITH HARDWIRE BOX, CONNECTING CABLES, CONNECTORS AND MOUNTING HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION. A MAXIMUM OF 1440W (720W PER PORT) SHALL BE CONNECTED TO A SINGLE HARDWIRE BOX.

10. DRIVER SHALL BE MOUNTED INSIDE CABINET, AS DETAILED ON THE ARCHITECTURAL ELEVATIONS. PROVIDE WITH 96W REMOTE PLUG-IN DRIVER (# AT-24DC-96/US (D)), CONNECTING CABLES AND MOUNTING HARDWARE AS REQUIRED FOR A COMPLETE INSTALLATION. VERIFY EXACT SIZE REQUIRED FOR EACH LOCATION BEFORE ORDERING FIXTURES.

T L	UBE STEEL IP-RIGHT-	FIXTURE	
1 E	TUBE STEEL BASE	FIXTURE	
C F	ABLE TRAY IXTURE MFR	BY	
SCHEDULI PERMITTE	E 40 PVC (D BY LOCAL	CONDUIT W	HERE
CONTRAC TO CONC ADHESIVE	TOR SHALL RETE FLOOF FOR FINISI	CUT FLOO R PRIOR TO HED FLOOF	R BOX F O APPLYI RING
1	FLO	OR	FIX
I	SCALE: N	NOT TO S	CALE

TES
0
0
,7 WALL MOUNTED, BOTTOM OF SIGN 6" OVE DOOR FRAME



<u>ELECTRICAL ONE-LINE DIAGRAM</u> NO SCALE

NOTES:

- L1. ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. COORDINATE EXACT CODE REQUIREMENTS AND LOCAL AMENDMENTS WITH LOCAL INSPECTOR PRIOR TO ANY INSTALLATION.
- L2. CONTRACTOR SHALL CONTACT EMS VENDOR FOR EXACT SYSTEM REQUIREMENTS FOR EMS/LIGHTING CONTROL PANELS AND PROVIDE ALL EQUIPMENT FOR A FULLY FUNCTIONAL SYSTEM. REFER TO SHEET CS-3 OR CONTACT ULTA PROJECT MANAGER FOR EMS VENDOR INFORMATION.
- L3. LANDLORD SHALL PROVIDE GROUNDING IN ACCORDANCE WITH N.E.C. AND ALL LOCAL CODES.
- L4. PANELS MDP, C, AND D SHALL HAVE AN ISOLATED GROUND BUS AND ISOLATED GROUND CONDUCTOR TO POINT OF SERVICE GROUND.
- L5. LANDLORD SHALL OBTAIN AVAILABLE FAULT CURRENT RATING FROM LOCAL UTILITY COMPANY AND PROVIDE PROPER PROTECTION FOR MAIN CIRCUIT BREAKER AND ALL BRANCH DEVICES. FAULT CURRENT VALUES SHOWN ON THIS DIAGRAM WERE CALCULATED USING THE STARTING VALUE OF 83,357 FCA. EXISTING UTILITY TRANSFORMER IS ASSUMED TO BE 300 KVA 3-PHASE WITH 1.11%Z.
- L6. LANDLORD SHALL PROVIDE A SQUARE D POWERLINK PANELBOARD, NFMA 1 ENCLOSURE. GROUND BAR. 208Y/120V, MAIN LUGS ONLY, 200 AMPS, 48 CIRCUIT INTERIOR (42 AVAILABLE), LEFT AND RIGHT 21 CIRCUIT CONTROL BUSSES, 3500 LEVEL MASTER CONTROLLER WITH LCD DISPLAY (NF3500G4), 16 PHYSICAL INPUTS, MODBUS ASCII/RTU, ASTRONOMICAL TIMECLOCK AND POWER SUPPLY, CONTROLLABLE BREAKERS (ECB- G3) AND EMERGENCY CONTROLLABLE CIRCUIT BREAKER (ECB- G3EL).
- L7. LANDLORD TO PROVIDE A SQUARE D POWERLINK PANELBOARD, NEMA 1 ENCLOSURE, GROUND BAR, 208Y/120V, MAIN LUGS ONLY, 200 AMPS, 48 CIRCUIT INTERIOR (42 AVAILABLE), LEFT AND RIGHT 21 CIRCUIT CONTROL BUSSES AND SLAVE ID SELECTOR AND CONTROLLABLE BREAKERS (ECB-G3).
- L8. ALL ROOF TOP UNITS AND ROOF MOUNTED RECEPTACLES AND SERVICE LIGHTS FOR ROOF TOP UNITS ARE FURNISHED, INSTALLED, AND WIRED BY LANDLORD. L9. FIELD VERIFY AND COORDINATE ALL EXISTING EQUIPMENT AND CONDITIONS.
- L10.ULTA AND SQUARE D HAVE A NATIONAL AGREEMENT FOR PANELBOARDS. THIS INCLUDES PANELBOARDS, POWERLINK PANELS, TRANSFORMERS AND CIRCUIT BREAKERS. THE ELECTRICAL CONTRACTOR SHALL CALL GRAYBAR
- AT 1-800-784-6059 TO REQUEST THE ULTA NATIONAL ACCOUNT PRICING. L11.CONTRACTOR SHALL INSTALL EMS DEMAND METER ON MAIN DISTRIBUTION
- PANEL HDP. REFER TO EMS DRAWINGS FOR RESPONSIBILITY AND INSTALLATION INSTRUCTIONS.
- L12.ALL WIRE SHALL BE TYPE THW OR THWN COPPER.
- L13.CONTRACTOR SHALL VERIFY THAT LANDLORD HAS INSTALLED POWERLINK CONTROL PANELS WITH 'COMMUNICATION CABLE' (4-WIRE 18 AWG, CLASS 1 CABLE, SUBNET CABLE (GENERAL CABLE 236100, BELDEN CABLE 27326 OR EQUIVALENT)) BETWEEN 'MASTER' AND 'SLAVE' PANEL INSTALLED 'SLAVE BUS INTERCONNECT CABLE' BETWEEN CONTROL BUSSES FOR EACH PANEL.
- L14.PER THE LANDLORD LEASE AGREEMENT, THE LANDLORD IS RESPONSIBLE FOR PROVIDING ULTA BEAUTY WITH 800A OF AVAILABLE LOAD CAPACITY. IT IS, THEREFORE, THE LANDLORD'S RESPONSIBILITY TO ENSURE THIS WORK DOES NOT OVERLOAD THEIR UPSTREAM DEVICES AND GEAR.



PANEL	_ & CI								
 ALL ELI CIRCUIT BY LAN 	ECTRICAL PAN BREAKERS S DLORD.								
BRANCH CIRCUIT E LANDLORD, UNLESS									
• ECB-G	3 CONTROLLAE ED BY LANDL								
	AB								
SYMBOL									
А.	AMPERES								
A.F.F.	ABOVE FINISH								
B.P.S.	BOLTED PRES								
C.	CONDUIT								

LEGEND:

A.F.F.	ABOVE FINISH
B.P.S.	BOLTED PRES
C.	CONDUIT
E	EXISTING TO
EC	ELECTRICAL C
EWC	ELECTRIC WA
GFI	GROUND FAUL
GRD.	GROUND
M.L.O.	MAIN LUGS O
ND	NEW DEVICE I
N.I.C.	NOT IN CONTI
NEC	NATIONAL ELE
SS	STAINLESS ST

	DRA
E0-1	SYMBOL LIS
E0-2	PANELBOARD
E0-3	ROOF PLAN ELEVATIONS
E1-1	FLOOR PLAN
E2-1	FLOOR PLAN
E2-2	FLOOR PLAN
E3-1	FLOOR PLAN
E3-2	FLOOR PLAN
E4-1	ELECTRICAL

DIAG	RAM
GEND:	DENOTES FURNISHED AND INSTALLED
	BY TENANT ELECTRICAL CONTRACTOR
	EXISTING TO REMAIN
	0 CIDCUIT DDEAKED NATES
	<u>a circuit dreaker nutes</u>
ALL ELE CIRCUIT BY I AND	CTRICAL PANELS, MAIN CIRCUIT BREAKERS AND SUBFEED BREAKERS SHALL BE FURNISHED, INSTALLED, AND WIRED DI ORD.
BRANCH	CIRCUIT BREAKERS ARE FURNISHED AND INSTALLED BY
LANDLOF	RD, UNLESS NOTED OTHERWISE.
INSTALLE	ED BY LANDLORD, UNLESS NOTED OTHERWISE.
	ABBREVIATIONS
YMBOL	DESCRIPTION
Α.	AMPERES
A.F.F.	ABOVE FINISHED FLOOR
B.P.S.	BOLTED PRESSURE SWITCH
С.	CONDUIT
E	EXISTING TO REMAIN
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER
GFI	GROUND FAULT INTERRUPTER
GRD.	GROUND
ND.	
N.I.C.	NOT IN CONTRACT
NEC	NATIONAL ELECTRICAL CODE
SS	STAINLESS STEEL
WP	WEATHERPROOF
	DRAWING INDEX
E0-1	SYMBOL LIST, ONE LINE DIAGRAM & LIGHTING SCHEDULE
E0-2	PANELBOARD SCHEDULES
E0-3	ROOF PLAN – POWER, DETAILS & ARCH LIGHTING ELEVATIONS
E1-1	FLOOR PLAN – LIGHTING
E2-1	FLOOR PLAN - ELECTRICAL DIMENSIONS
E2-2	FLOOR PLAN – POWER
E3-1	FLOOR PLAN – LOW VOLTAGE WIRING
	FLOOR PLAN – VOICE/DATA & SECURITY
E3-2	

ROOF	\$ ² SWITCH LETTER DESIGNATIONS AS FOLLOWS: D = DIMMER SWITCH 0-10V (LUTRON #NTSTV-DV) D1 = ELECTRONIC LOW VOLTAGE DIMMER SWITCH (LUTRON #DVELV-300P) D2 = DIMMER SWITCH 120V (LUTRON #NT-600) OS = OCCUPANCY SENSOR K = KEY OPERATED SWITCH T = THERMAL OVERLOAD SWITCH WP = WEATHER PROOF
SEE NOTE L4 PANEL D 65KAIC	MAXIMUM 48" AFF UNLESS NOTED OTHERWISE, TYPICAL FOR SWITCHES. SIMPLEX RECEPTACLE - NEMA 5-20R, UNO ** DUPLEX RECEPTACLE - NEMA 5-20R, UNO ** DOUBLE DUPLEX RECEPTACLE - NEMA 5-20R, UNO ** SPECIAL RECEPTACLE - NEMA TYPE AS NOTED ** GFCI GFCI TYPE RECEPTACLE * ** KECEPTACLE INSTALLED IN CEILING * **
FCA * 25,070 FCA VD 1.31% CVD	 RECEPTACLE INSTALLED IN FLOOR * RECEPTACLE LETTER DESIGNATIONS AS FOLLOWS: ** IG = ISOLATED GROUND USB = USB/DUPLEX WP = WEATHERPROOF WR = WEATHER RESISTANT * DUPLEX RECEPTACLE SHOWN, SIMILAR FOR OTHERS
	** RECEPTACLE INSTALLED 18" AFF, UNO. REMOTE GFCI MODULE., 20A., 120V., GRAY WITH STAINLESS STEEL COVERPLATE (HUBBELL # GFBFST20GY OR APPROVED EQUAL) <u>RECEPTACLES INSTALLED IN FLOOR:</u>
FINISHED FLOOR	HUBBELL RECTANGULAR NONMETALLIC FLUSH FLOOR BOX WITH DUPLEX RECEPTACLES, FLANGE AND ALUMINUM COVER – 1-GANG FLOOR BOX # PFBRG1, RECTANGULAR FLANGE # SA3083W, ADAPTER COLLAR # PFBRAC, COVER AND GASKET # SA3826, "CONTROLLED" RECEPTACLE # DR20C2GRY (FLOOR OUTLETS WILL BE FURNISHED BY OWNER, CONTRACTOR SHALL INDICATE QUANTITY ON BID SHEET.)
	HUBBELL RECTANGULAR NONMETALLIC FLUSH FLOOR BOX WITH QUAD RECEPTACLES, FLANGE & ALUMINUM COVER – 2–GANG FLOOR BOX # PFBRG2, RECTANGULAR FLANGE # SA3084W, (2) ADAPTER COLLAR # PFBRAC, (2) COVER AND GASKET # SA3826, (2) "CONTROLLED" RECEPTACLES # DR20C2GRY (FLOOR OUTLETS WILL BE FURNISHED BY OWNER, CONTRACTOR SHALL INDICATE QUANTITY ON BID SHEET.)
	HUBBELL RECTANGULAR NONMETALLIC FLUSH FLOOR BOX WITH DUPLEX RECEPTACLE AND CONDUIT CONNECTION WITH FLANGE AND ALUMINUM COVER - 2-GANG FLOOR BOX # PFBRG2, RECTANGULAR FLANGE # SA3084W, (2)ADAPTER COLLAR # PFBRAC, (1)COVER AND GASKET # SA3826, (1) COVER AND GASKET # SA2425 (2 1/8" & 3/4" OPENING) (1)"CONTROLLED" RECEPTACLES DR20C2GRY (FLOOR OUTLETS WILL BE FURNISHED BY OWNER, CONTRACTOR SHALL INDICATE QUANTITY ON BID SHEET.)
ECTRICAL CONTRACTOR	▼ TELEPHONE OUTLET – BACKBOX AND PLASTER TRIM RING BY E.C. JACKS AND DEVICES BY TELEPHONE DATA SYSTEM
REMAIN	 VENDOR. DATA OUTLET – BACKBOX AND PLASTER TRIM RING BY E.C. JACKS AND DEVICES BY TELEPHONE DATA SYSTEM VENDOR. COMBINATION TELEPHONE/DATA OUTLET – BACKBOX AND PLASTER TRIM RING BY E.C. JACKS AND DEVICES BY TELEPHONE DATA SYSTEM VENDOR.
	 JUNCTION BOX/OUTLET BOX-FLOOR, WALL OR CEILING MOUNTED HARDWIRE BOX FOR LED STRIP (ATTAINLED #AT-HWB-120) HEAD END FOR CCTV SYSTEM FURNISHED AND INSTALLED BY CCTV VENDOR
BREAKER NOTES:	SWITCHED HOT CONDUCTORS (SHOWN TRAILING NEUTRAL) NEUTRAL CONDUCTOR UNSWITCHED HOT CONDUCTORS (SHOWN LEADING NEUTRAL) HOMERUN TO PANELBOARD, ARROWS INDICATE NUMBER OF CIRCUITS, HASH MARKS INDICATE NUMBER OF CONDUCTORS. INFORMATION AT ARROWS ARE CIRCUIT
FURNISHED, INSTALLED, AND WIRED	EQUIPMENT GROUNDING CONDUCTOR IN CONDUIT (GREEN INSULATION OR BARE)
RE FURNISHED AND INSTALLED BY HERWISE.	isolated grounding conductor in conduit (green insulation with yellow tracer)
JIT BREAKERS ARE FURNISHED AND	CONDUIT CONCEALED IN CEILING OR WALLS
LESS NOTED OTHERWISE.	\leq \geq conduit in/under floor/ground construction EXPOSED CONDUIT
VIATIONS	LOW VOLTAGE CABLE (NOT ROUTED IN CONDUIT)
DESCRIPTION	ELECTRICAL SERVICE PANELBOARD
	FLUSH MOUNT), TYPE AS NOTED
ГСН	SYSTEM, UNO. SIZE AS NOTED.
	TRANSFORMER
	PUSH BUTTON FOR DOOR BELL
JPTER	 VENDOR. REFER TO SOUND VENDOR DRAWINGS FOR EXACT LOCATIONS. GLASS BREAK DETECTOR BY OTHERS. WHEN LOCATED IN DRYWALL CEILING, INSTALL (1) SINGLE GANG JUNCTION BOX IN ACCESSIBLE CEILING SPACE FOR WIRNG OF GLASS BREAK DETECTOR. INSTALL (1) SINGLE GANG JUNCTION BOX FLUSH IN DRYWALL CEILING CEILING FOR GLASS BREAK DETECTOR. PROVIDE 3/4" CONDUIT BETWEEN JUNCTION BOXES.
G LOCATION OF REMOVED DEVICE	M SECURITY MONITOR FURNISHED AND INSTALLED BY CCTV VENDOR S SAFE BOX BA BURGLAR ALARM SIREN
CODE	DA DOOR ALARM
	DUCT MOUNTED SMOKE DETECTOR
	$\frac{RD}{PC}$ Photo Cell, provided and installed by EMS vendor, wiring
	BY E.C. REFER TO EMS DRAWINGS FOR WIRING DIAGRAM

SYMBOL LIST

SINGLE POLE WALL SWITCH (NO LETTER DESIGNATION)



HENDERSON

8345 LENEXA DRIVE, SUITE 300

WWW.HENDERSONENGINEERS.COM

2050002918

AR. CORPORATE NUMBER: 484

12/31/20

LENEXA, KS 66214 TEL 913.742.5000 FAX 913.742.5001

ENGINEERS

ENDERSON

Gineers, Inc

No. 484

TENANT ELECTRICAL SERVICE LO	DAD SUM	MARY			
TENANT OCCUPANCY TYPE:	SERVICE DESCRIPTION:				
TENANT SQUARE FOOTAGE:	208Y/120V, 3PH				
LOAD DESCRIPTION		Connected	Demand	Demano	
		KVA	FACTOR	KVA	
HVAC - SUMMER		55.77	100%	55.7	
HVAC - WINTER		0.00	100%	0.0	
LIGHTING (PER NEC-220)		27.95	125%	34.9	
RECEPTACLES		34.96	100%;50%	22.4	
MOTOR LOADS		13.89	100%	13.8	
LARGEST MOTOR LOAD		6.31	125%	7.8	
SUPPLEMENTAL ELECTRIC HEAT		0.00	100%	0.0	
MISCELLANEOUS EQUIPMENT		47.26	100%	47.2	
DISPLAY CASE/SIGNAGE		7.74	125%	9.6	
SHOW WINDOW / TRACK LIGHTING	G	2.16	PER NEC	2.7	
TOTAL LOAD		196.03	KVA	194.5	
TOTAL AMPACITY		544.12	AMPS	540.1	
SERVICE AMPACITY		800	AMPS	800.0	
SPARE CAPACITY			AMPS	26	

РА	NELB
BUS	AMPS: 8
MAIN	SIZE/TY
VOLT	S/PHAS
SECT	[ION: 1
CKT	
INU.	
1	PNLBD
3	(BY LAN
5	
7	PNLBD
9	(BY LAN
11	
13	
15	RTU-1
17	(HACR
19	
21	RTU-3
23	(HACR)
25	
27	EMS DE
29	
	TOTAL
	TOTAL I

VOLTS/PHASE: SECTION: 1 СКТ NO 1 LTG - SAI 3 LTG - SAL 5 LTG - SAL 7 LTG - SAL 9 LTG - SAL 11 LTG - SAL EL 13 EM BALL 15 LTG - SAL EL 17 EM BALLA 19 LTG-SALE EL 21 EM BALL 23 LTG - SHAN 25 LIGHT ARC 27 LIGHT ARC 29 LIGHT ARC 31 LIGHT ARC 33 LTG - STOR 35 LTG - STOR 37 LTG - SHAN 39 LTG - REAR 41 SPARE TOTAL F TOTAL P TOTAL PI TOTAL

PANEL SCHEDULE LEGEND:
DENOTES NEW

<u>PANEL NOTES:</u>

- P1. PROVIDE SQUARE D ECB-G3EL CIRCUIT BREAKERS FOR CONTROL OF EMERGENCY LIGHTING FIXTURES, REFER TO SHEET # E1-1 FOR ADDITIONAL INFORMATION.
- P2. PROVIDE HANDLE TIES AS REQUIRED FOR MULTIWIRE BRANCH CIRCUITS WITH COMMON NEUTRALS PER NEC 210.4.

PANELBOARD: MDP (EXISTING) BUS AMPS: 800A MAIN SIZE/TYPE: 800A MCB VOLTS/PHASE: 208Y/120V, 3PH, 4W SECTION: 1					FED F AIC R SERV MOU LOCA	ROM: ATING VES: U NTING	Ð: LTÆ 6: SI	REF A JRF AGII	F. 1-LIN FACE NG, R	ISOLATED GROUND BUS EQUIPMENT GROUND BUS						
СКТ	DESCRIPTIC	DN	VOLTAMPS/PH/		HASE	WIRE	BKR	Р	Р	BKR	WIRE	VOL.	TAMPS/PH	HASE	DESCRIPTION	СКТ
NO.			A	В	С	NO.	AMP			AMP	NO.	А	В	С		NO.
1	PNLBD A		9,743									8,623			PNLBD B	2
3	(BY LANDLORD)			10,896		EX	200	3	3	200	ΕX		7,460		(BY LANDLORD)	4
5					9,659									8,130		6
7	PNLBD C		8,968									4,540			PNLBD D	8
9	(BY LANDLORD)			11,920		ΕX	200	3	3	200	ΕX		5,688		(BY LANDLORD)	10
11					12,390	1								6,670		12
13			7,277									7,277				14
15	RTU-1			7,277		ΕX	80	3	3	80	ΕX		7,277		RTU-2	16
17	(HACR RATED BY LA	NDLORD)			7,277									7,277	(HACR RATED BY LANDLORD)	18
19			6,473									3,423				20
21	RTU-3			6,473		ΕX	70	3	3	45	EΧ		3,423		RTU-4	22
23	(HACR RATED BY LA	NDLORD)			6,473									3,423	(HACR RATED BY LANDLORD)	24
25									1						EQUIPPED SPACE	26
27	EMS DEMAND METER	8				12	15	3	1						EQUIPPED SPACE	28
29									1						EQUIPPED SPACE	30
	SUBTOTAL	-	32,461	36,566	35,799							23,863	23,848	25,500	SUBTOTAL	
	TOTAL PHASE A - VA	56,324	LOAD		CONN. \	/A	DF		LO.	AD		C	ONN. VA	DF		
	AMPS	469	COOLIN	G	55,770		1.00]	RE	FRIG				1.00		
	TOTAL PHASE B - VA	60,414	HEATING	3			0]	SIC	SN/DIS	βP		7,737	1.25		
	AMPS 503			G	9,955		1.25		KIT	CHEN	1			1.00		
	TOTAL PHASE C - VA 61,299			ACLES	34,960		1.0/.5]	EX	ISTING	3			1.00		_
	AMPS 511			5	20,195		1.00		LRG MOTOR				1.25	TOTAL DEMAND		
	TOTAL PNLBD - VA	178,037	SUPP HI	EAT			1.00		SH	OWW	NDW		2,160	1.25	170,520 VA	
AMPS 494 MISC EQUI			UIP	47,260		1.00		LT	G TRA	CK			1.00	473 A		
PANE	LBOARD NOTES															

SIGN/DISPLAY - SIGNAGE & DISPLAY CASE

SIGN/DISPLAY - SIGNAGE & DISPLAY CASE

PA BUS MAIN VOL	NELBOARD: A AMPS: 225A SIZE/TYPE: MLO TS/PHASE: 208Y/120V, TION: 1	(EXIS 3PH, 4W	TING)			FED I AIC F SER ^Y MOU LOC	FROM: RATING: VES: UL ⁻ NTING: S ATION: S	TA E SUF	RE BEA RFA GIN(F. 1-LINE UTY CE G, ROOM	MDP DIAGR	AM FULLY	RATED		EQUIPMENT GROUNE) BUS	
СКТ	DESCRIPTIC	ON	VOL	TAMPS/P	HASE	WIRE	BKR	Ρ	Ρ	BKR	WRE	VOL	TAMPS/PH	HASE	DESCRIPTION	Скт	1
NO.			A	В	С	NO.	AMP			AMP	NO.	A	В	С		NO.	
1	LTG - SALES STOREF	RONT	456			10	20-SB	T1	1	20-SB	10	772			LTG - VALANCE ACCENT 1	2	1
3	LTG - SALES 1			912		10	20-SB	1	1	20-SB	10		856		LTG - VALANCE ACCENT 2	4	1
5	LTG - SALES 2				1,140	10	20-SB	1	1	20-SB	10			1,364	LTG - DECORATIVE COVE	6	1
7	LTG - SALES 3		608			10	20-SB	1	1	20-SB	12	210			LTG - STAGING/OFFICE EM	8	EM
9	LTG - SALES M1			722		10	20-SB	1	1	20-SB					SPARE	10	
11	LTG - SALES M2				608	10	20-SB	1	1	20-SB					SPARE	12	
L 13	EM BALLAST					10	20	2	1	20-SB	12	1,000			RCPT - SALON STATION 1A	14	HT1
15	LTG - SALES ENTRY 1	1		504		10	20-SB		1	20-SB	12		1,000		RCPT - SALON STATION 1B	16	HT1
L 17	EM BALLAST					10	20	2	1	20-SB	12			1,000	RCPT - SALON STATION 1C	18	HT2
19	LTG-SALES ENTRY2		813			10	20-SB		1	20-SB	12	1,000			RCPT - SALON STATION 1D	20	HT2
L 21	EM BALLAST					12	20	2	1	20-SB	12		500		RCPT - STN 1 MIRROR/USB	22	HT2
23	LTG - SHAMPOO EMP	LOYEE			154	12	20-SB		1	20-SB	12			1,000	RCPT - SALON STATION 2A	24	НТЗ
25	LIGHT ARCHS A-3, Z-2	2C, A-2	1,356			10	20-SB	1	1	20-SB	12	1,000			RCPT - SALON STATION 2B	26	НТ3
27	LIGHT ARCHS A-25, A	⊷ 15		1,002		10	20-SB	1	1	20-SB	12		1,000		RCPT - SALON STATION 2C	28	HT4
29	LIGHT ARCHS A-6, A-7	13			693	10	20-SB	1	1	20-SB	12			1,000	RCPT - SALON STATION 2D	30	HT4
31	LIGHT ARCHS A-13		828			10	20-SB	1	1	20-SB	12	500			RCPT - STN 2 MIRROR/USB	32	HT4
33	LTG - STOREFRONT S	SIDE SIGN		1,200		10	20-SB	1	1	20-SB	12		1,000		RCPT - SALON STATION 3A	34	HT5
35	LTG - STOREFRONT S	SIGN			1,200	10	20-SB	1	1	20-SB	12			1,000	RCPT - SALON STATION 3B	36	HT5
37	LTG - SHAMPOO CUS	TOMER	200			12	20-SB	1	1	20-SB	12	1,000			RCPT - SALON STATION 3C	38	HT6
39	LTG - REAR SIDE EXT	. SIGN		1,200		10	20-SB	1	1	20-SB	12		1,000		RCPT - SALON STATION 3D	40	HT6
41	SPARE						20-SB	1	1	20-SB	12			500	RCPT - STN 3 MIRROR/USB	42	HT6
	SUBTOTAL	-	4,261	5,540	3,795							5,482	5,356	5,864	SUBTOTAL		
	TOTAL PHASE A - VA	9,743	LOAD		CONN. V	/A	DF		LC	AD			ONN. VA	DF			1
	AMPS	81	COOLIN	G			1.00		RE	FRIG				1.00			
	TOTAL PHASE B - VA	10,896	HEATIN	G			0	-	SIC	GN/DISP)		7,479	1.25	1		
	AMPS	91	LIGHTIN	G	9,739		1.25	1	Kľ	ICHEN		1		1.00	1		
	TOTAL PHASE C - VA	9,659	RECEPT	FACLES			1.0/.5	1	EX	ISTING				1.00	1		
	AMPS	80	MOTOR	S			1.00	-	LR	G MOTO	DR			1.25	TOTAL DEMAND	1	
	TOTAL PNLBD - VA	30,298	SUPP H	EAT			1.00		SF	IOW WN	IDW			1.25	34,603 V/	4	
	AMPS	84	MISC EC	QUIP	13,080		1.00	-	LT	G TRAC	K	1		1.00	96 /	4	

PANELBOARD NOTES

PANELBOARD: B (EXISTING) BUS AMPS: 225A MAIN SIZE/TYPE: MLO VOLTS/PHASE: 208Y/120V, 3PH, 4W				FED F AIC R SER\ MOUI	FROM: MDP RATING: REF. 1-LINE DIAGRAM FULLY RATED RVES: ULTA BEAUTY UNTING: SURFACE CATION: STACING, BOOM#111						EQUIPMENT GROUND BUS				
OLU														DESCRIPTION	
NO.	DESCRIPTION	A	B	C	NO.	AMP	ſ	٢	AMP	NO.	A	B	C	DESCRIPTION	NO
1	WALL DISPLAY - KIEHLS	720			12	20-SB	1	1	20-SB	12	459			LTG - RSTRMS/EF-2	2
3	WALL DISPLAY - KIEHLS SIGN		360		12	20-SB	1	1	20-SB	12		600		RCPT - WATER COOLER	4
5	WALL DISPLAY - CLINIQUE			720	10	20-SB	1	1	20-SB	10			1,080	FLR RCPT - MASS COSM	6
7	WALL DISPLAY - LANCOME	924			10	20-SB	1	1	20-SB	10	900		,	FLR RCPT - BATH/BODY 1	8
9	WALL DISPLAY - GENERAL 1		720		10	20-SB	1	1	20-SB	10		360		FLR RCPT - BATH/BODY 2	10
11	WALL DISPLAY - ESTEE LAUDE	२		720	10	20-SB	1	1	20-SB	12			180	FLR RCPT - DERMALOGICA	12
13	WALL DISPLAY - GENERAL 2	720			10	20-SB	1	1	20-SB	12	360			FLR RCPT - PRESTIGE SKIN	14
15	SPARE					20-SB	1	1	20-SB	10		360		FLR RCPT - GENERAL 2	16
17	SPARE					20-SB	1	1	20-SB	10			360	FLR RCPT - ESTEE LAUDER	18
19	FLR RCPT - STYLING TOOLS	540			12	20-SB	1	1	20-SB	10	360			FLR RCPT - GENERAL 1	20
21	FLR RCPT - HAIR CARE		720		12	20-SB	1	1	20-SB	10		540		FLR RCPT - COLOR COSM	22
23	WALL DISPLAY - PRIVATE LABE	-		1,080	10	20-SB	1	1	20-SB	10			360	FLR RCPT - CLINIQUE	24
25	SPARE					20-SB	1	1	20-SB	12	1,200			FLR RCPT - WAITING	26
27	RCPT - SALON STATION 4A		1,000		12	20-SB	1	1	20-SB	10		360		FLR RCPT - CENTER 1	28
29	RCPT - SALON STATION 4B			1,000	12	20-SB	1	1	20-SB	10			540	FLR RCPT - CENTER 2	30
31	RCPT - SALON STATION 4C	1,000			12	20-SB	1	1	20-SB	10	360			FLR RCPT - BENEFIT 1	32
33	RCPT - SALON STATION 4D		1,000		12	20-SB	1	1	20-SB	10		360		FLR RCPT - BENEFIT 2	34
35	RCPT - STN 4 MIRROR/USB			500	12	20-SB	1	1	20-SB					SPARE	36
37	RCPT - SKIN BAR STATION 1	360			12	20-SB	1	1	20-SB	10	720			FLR RCPT - FRAGRANCE 1	38
39	RCPT - SKIN BAR STATION 2		360		12	20-SB	1	1	20-SB	10		720		FLR RCPT - FRAGRANCE 2	40
41	RCPT - SKIN BAR/ LIGHT BOX			414	12	20-SB	1	1	20-SB	EX			1,176	EF-1 (BY LANDLORD)	42
	SUBTOTAL	4,264	4,160	4,434							4,359	3,300	3,696	SUBTOTAL	
	TOTAL PHASE A - VA 8,623	LOAD		CONN. V	/A	DF		LO	DAD		C	onn. Va	DF		
AMPS 72 COOLING				1.00		RE	FRIG				1.00]			
TOTAL PHASE B - VA 7,460 HEATING				0		SIC	GN/DISP			258	1.25				
	AMPS 62	LIGHTIN	G	216		1.25		KI	TCHEN				1.00	1	
	TOTAL PHASE C - VA 8,130	RECEPT	ACLES	20,380		1.0/.5		EX	ISTING				1.00		-
	AMPS 68	MOTORS	3	383		1.00		LR	G MOTC	R		1,176	1.25	TOTAL DEMAND	
	TOTAL PNLBD - VA 24,213	SUPP HI	EAT			1.00		SH	10W WN	DW	1.25		1.25	19,436 V/	٩
	AMPS 67	MISC EG	UIP	1,800		1.00		LT	G TRACI	K	1		1.00	54 /	٩

	DESCRIPTION	VOL	TAMPS/PI	HASE	WIRE	BKR	ΡI	- BKR	WIRE	VOL	TAMPS/PI	HASE	DESCRIPTION	CKT
NO.		A	В	С	NO.	AMP		AMP	NO.	А	В	C	1	NO.
1	SPARE					20	1	1 20	10	1,200	1 200			2
5	SPARE					20	1	1 20	10		1,200	1,200	RCPT - HAIR DRYER #3	6
7	SPARE					20	1	1 20	10	1,200	1.000		RCPT - HAIR DRYER #4	8
9	SPARE Ispare					20	1	1 20	10		1,200	1 200		10
13	SPARE					20	1	1 20	10	1,200		1,200	RCPT - HAIR DRYER #7	14
15	SPARE					20	1	1 20	10		1,200		RCPT - HAIR DRYER #8	16
17 19	ISPARE ISPARE					15 20	1	1 20 1 20	10	1 200		1,200	RCPT - HAIR DRYER #9	18 20
21	SPARE					20	1	1 20		1,200			SPARE	22
23	SPARE					20	1	1 20		4.400			SPARE	24
25	SPARE					20	1	1 20 1 20	12 12	1,100	1,100		RCPT - SALON HAIR DRYER #1	26
29	SPARE					20	1	1 20	12		- ,	540	RCPT - SALON BACKWRAP	30
31	SPARE		540		10	20	1	1 20	12	720	1 500		RCPT - RESTROOM	32
35	RCPT - SHOW WINDOW		540	1,080	12	20	1	1 20	10		1,500	1,500	WOMENS HAND DRYER	34
37	SPARE					20	1	1 20	12	528			RECIRC PUMP	38
39	RCPT - DRYER		2,200	2 200	10	30	2	1 20	EX		720	180	RCPT - ROOF TOP	40
41	SUBTOTAL	1,820	5,000	2,200 6,570				20	12	7,148	6,920	5,820	SUBTOTAL	42
	TOTAL PHASE A - VA 8,968	LOAD		CONN. V	Ά	DF	L	.OAD		C	ONN. VA	DF		
	AMPS 75	COOLIN	G			1.00	F	REFRIG				1.00	-	
	AMPS 99		ز G			0			5P N			1.25	~	
	TOTAL PHASE C - VA 12,390	RECEP	FACLES	6,840		1.0/.5	E	XISTIN	G			1.00	-	
	AMPS 103	MOTOR				1.00	L				528	1.25	TOTAL DEMAND	
	AMPS 92	MISC FC		24 830		1.00	i T		CK		1,080	1.25	33,680 VA 93 A	
PAI BUS /	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO	TING)			FED F AIC R SER\	FROM: ATINC	G: F	REF. 1-LI		GRAM FUL	LY RATED		LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND	
PAI BUS J MAIN VOLT SECT	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W	TING)			FED F AIC R SER\ MOUI LOCA	FROM: RATINC /ES: U NTING	6: 1 LTA 6: SU : STA	REF. 1-LIF BEAUTY RFACE GING, R		GRAM FUL	LY RATED		LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND	IICAL BUS BUS
PAI BUS MAIN VOLT SECT	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION		TAMPS/PI	HASE	FED F AIC R SERV MOUI LOCA	ROM: ATINC ZATINC ZES: U NTING ATION: BKR	B: F LTA B: SU STA	REF. 1-LI BEAUTY RFACE GING, R P BKR		FRAM FUL	LY RATED	HASE	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION	
PAI BUS MAIN VOLT SECT CKT NO.	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION	VOL A	TAMPS/P	HASE	FED F AIC R SER\ MOUI LOCA	ROM: ATINC ZATINC ZES: U NTING ATION BKR AMP	B: F LTA B: SU STA	REF. 1-LIF BEAUTY RFACE GING, R PBKR AMP	MDP VE DIAG OOM # WIRE NO.	FRAM FULI #:111 VOL A	LY RATED	HASE	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION	IICAL BUS BUS CKT NO.
PAI BUS MAIN VOLT SECT CKT NO.	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2	VOL A 180	TAMPS/P B 360	HASE	FED F AIC R SER\ MOUI LOCA WIRE NO.	ROM: ATINC ZES: U NTINC ATION: ATION: BKR AMP 20 20	3: I LTA S: SU STA 1 1	REF. 1-LII BEAUTY RFACE GING, R PBKR AMP 1 20 1 20	MDP NE DIAG 200M # WIRE NO. 12 12	GRAM FULI #:111 VOL A 360	LY RATED	HASE C	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2	IICAL BUS BUS CKT NO. 2 4
PAI BUS MAIN VOLT SECT CKT NO.	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV	VOL A 180	TAMPS/PI B 360	HASE C 180	FED F AIC R SERV MOUI LOCA WIRE NO. 12 12 12	ROM: ATINC /ES: U NTING ATION: ATION: 20 20	G: I LTA S: SU STA 1 1	REF. 1-LII BEAUTY RFACE GING, R PBKR AMP 1 20 1 20 1 20	MDP NE DIAG WIRE NO. 12 12 12	FRAM FULI #:111 VOL A 360	TAMPS/P B 360	HASE C 200	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET	BUS BUS CKT NO. 2 4 6
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE	VOL A 180 360	TAMPS/PI B 360	HASE C 180	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: BKR AMP 20 20 20 20 20 20 20	G: I LTA S: SU P 1 1 1 1	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 200M # WIRE NO. 12 12 12 12 12	GRAM FULI #:111 VOL A 360 200	TAMPS/P B 360	HASE C 200	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY	IICAL BUS BUS CKT NO. 2 4 6 8 10
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION	VOL A 180 360	TAMPS/P B 360	HASE C 180	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: ATION: ATION: 20 20 20 20 20 20 20 20 20 20 20 20 20	5: I LTA : SU STA 1 1 1 1 1 1	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP NE DIAG 200M ≠ WIRE NO. 12 12 12 12 12 12 12 12	GRAM FUL	TAMPS/P B 360 200	HASE C 200 500	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS	UICAL BUS BUS BUS CKT NO. 2 4 6 8 10 12
PAI BUS, MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV	VOL A 180 360 1,080	TAMPS/P B 360	HASE C 180 180	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: BKR AMP 20 20 20 20 20 20 20 20 20	3: I LTA : S: SU 1 I 1 I 1 I 1 I 1 I 1 I 1 I	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12	FRAM FUL	TAMPS/P B 360 200	HASE C 200 500	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND DESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1	IICAL BUS BUS BUS 2 4 6 8 10 12 12
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION	VOL A 180 360 1,080	TAMPS/PI B 360 560	HASE C 180 180	FED F AIC R SER\ MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC VES: U NTING ATION: BKR AMP 20 20 20 20 20 20 20 20 20 20 20 20 20	3: I LTA : S: SU P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP NE DIAG 200M # WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12	FRAM FULI #:1111 VOL A 360 200 720	TAMPS/P B 360 200 720	HASE C 200 500 720	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND BESCRIPTION RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3	UICAL BUS BUS BUS 2 4 6 8 10 12 14 16 18
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP.	VOL A 180 360 1,080 200	TAMPS/P B 360 560	HASE C 180 180 180	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: ATION: 20 20 20 20 20 20 20 20 20 20 20 20 20		REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	FRAM FUL #:111 VOL A 360 200 720 360	TAMPS/P B 360 200 720	HASE C 200 500 720	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1	CKT BUS BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER	VOL A 180 360 1,080 200	TAMPS/P B 360 560 528	HASE C 180 180 180	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: BKR AMP 20 20 20 20 20 20 20 20 20 20 20 20 20	3: I LTA : SSU I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I 1 I	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 7 000M # 12 12 12 12 12 12 12 12 12 12 12 12 12	FRAM FULI #:111 VOL A 360 200 720 360	TAMPS/P B 360 200 720 180	HASE C 200 500 720	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 2 RCPT - CASHWRAP 2 RCPT - CASHWRAP 2	IICAL BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20 22 24
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23 25	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE	VOL A 180 360 1,080 200	TAMPS/P B 360 560 528	HASE C 180 180 180 180 180	FED F AIC R SERV MOUI LOCA VMRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: ATION: 20 20 20 20 20 20 20 20 20 20 20 20 20	D: SU STA P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	GRAM FUL #:111 VOL A 360 200 720 360 360	TAMPS/P B 360 200 200 720 180	HASE C 200 500 720 360	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE	CKT BUS BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20 22 24 26
PAI BUS / MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23 25 27	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SPARE	VOL A 180 360 1,080 200 200	TAMPS/P B 360 560 528	HASE C 180 180 180 180 180	FED F AIC R SER\ MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC ZATINC ZES: U NTING ATION: BKR AMP 20	B: I LTA S: S: STA I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I I	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 7 12 12 12 12 12 12 12 12 12 12 12 12 12	FRAM FUL #:111 VOL A 360 200 720 360 360	TAMPS/P B 360 200 720 180	HASE C 200 500 720 360	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE	ICAL BUS BUS BUS CKT NO 2 4 6 8 10 12 14 16 18 20 22 24 26 28
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SPARE REAR EAS SPARE	VOL A 180 360 1,080 200 200	TAMPS/P B 360 560 528	HASE C 180 180 180 180 180 100 200	FED F AIC R SERV MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC VES: U NTING ATION: BKR AMP 20 20 20 20 20 20 20 20 20 20	Display="block">Display="block" Display="block">Display="block" Display="block">Image: State	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 200M # WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	GRAM FUL	TAMPS/P B 360 200 200 180	HASE C 200 500 720 360	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 2 RCPT - CASHWRAP 3 SPARE SPARE SPARE	UCAL BUS BUS BUS CKT NO. 2 4 6 8 10 12 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32
PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONVRCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SPARE SPARE SPARE SPARE	VOL A 180 360 1,080 200 200	TAMPS/P B 360 560 5528 528	HASE C 180 180 180 180 180 180 200	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC ZES: U NTING ATION: ATION: </td <td>B: I LTA S: SI I</td> <td>REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20</td> <td>MDP VE DIAG 7 12 12 12 12 12 12 12 12 12 12 12 12 12</td> <td>SRAM FUL #:111 VOL A 360 200 720 360 360</td> <td>LY RATED</td> <td>HASE C 200 500 500 720 360</td> <td>LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE</td> <td>CKT BUS BUS BUS CKT NO 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34</td>	B: I LTA S: SI I	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 7 12 12 12 12 12 12 12 12 12 12 12 12 12	SRAM FUL #:111 VOL A 360 200 720 360 360	LY RATED	HASE C 200 500 500 720 360	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE	CKT BUS BUS BUS CKT NO 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34
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PAI BUS MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SPARE SPARE SPARE SPARE SPARE SPARE RCPT - COFFEE MAKER 1 RCPT - COFFEE MAKER 1 RCPT - COFFEE MAKER 2 RCPT - REFRIGERATOR	VOL A 180 360 1.080 200 200 200 1.080 200 1.080 200 1.080 200 1.080 200 200 200	TAMPS/P B 360 550 528 528 528	HASE C 180 180 180 180 180 180 100 100 100 100	FED F AIC R SERV MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC VES: U NTING ATION: 20 20 20 20 20 20 20 20 20 20 20 20 20	B: I LTA :: STA 1 <td>REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20</td> <td>MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12</td> <td>GRAM FUL #:111 VOL A 360 200 720 360 360 360 180</td> <td>LY RATEC TAMPS/P B 360 200 200 100 100 100 100 100 10</td> <td>HASE C 200 500 500 720 360 360</td> <td>LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE</td> <td>UCAL BUS BUS BUS CKT NO. 2 4 6 8 10 12 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42</td>	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	GRAM FUL #:111 VOL A 360 200 720 360 360 360 180	LY RATEC TAMPS/P B 360 200 200 100 100 100 100 100 10	HASE C 200 500 500 720 360 360	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE	UCAL BUS BUS BUS CKT NO. 2 4 6 8 10 12 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
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PAI BUS, MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONVRCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SPARE SPARE SPARE SPARE SPARE REAR EAS SPARE SPARE RCPT - COFFEE MAKER 1 RCPT - COFFEE MAKER 1 RCPT - COFFEE MAKER 2 RCPT - COFFEE MAKER 2 RCPT - REFRIGERATOR SUBTOTAL TOTAL PHASE A - VA 4,540	VOL A 180 360 1,080 200 200 200 200 2,720 LOAD	TAMPS/P B 3360 5560 5528 5528 5528 5528 5528 5528 5528 552	HASE C 180 180 180 180 180 100 100 1,000 200 1,000 200 1,080 720 3,540 CONN. \	FED F AIC R SER\ MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC ZATINC ZES: U NTING ATION 20 20 20 20 20 20 20 20 20 20 20 20 20	B: I LTA S: STA I <td>REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20</td> <td>MDP VE DIAG 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7</td> <td>SRAM FULI #:111 VOL A 360 200 720 360 360 180 180 180 1,820</td> <td>TAMPS/P B 360 200 720 720 180 180 540 540 540 2,800</td> <td>HASE C 200 500 720 360 360 1,350 3,130 1,350</td> <td>LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE SUBTOTAL</td> <td>ICAL BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42</td>	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	SRAM FULI #:111 VOL A 360 200 720 360 360 180 180 180 1,820	TAMPS/P B 360 200 720 720 180 180 540 540 540 2,800	HASE C 200 500 720 360 360 1,350 3,130 1,350	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE SUBTOTAL	ICAL BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
PAI BUS, MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE	VOL A 180 360 1,080 200 200 200 200 200 200 200 200 200	TAMPS/P B 360 360 550 550 5528 5540 540 900 2,888 G G G G G G G	HASE C 180 180 180 180 180 100 1,000 1,000 1,000 1,080 1,080 1,080 1,080 1,080	FED F AIC R SERV MOUI LOCA VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC /ES: U NTING ATION: ATION: ATION: ATION: 20 20 20 20 20 20 20 20 20 20	D: I LTA : SU : STA P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG VIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	GRAM FUL #:111 VOL A 360 200 720 360 360 180 180 1,820	LY RATED TAMPS/P B 360 200 200 180 180 540 540 2,800 2,800	HASE C 200 500 720 360 360 1,350 3,130 1.00 1.25	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE SUBTOTAL	CKT BUS BUS BUS CKT NO. 2 4 6 8 10 12 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
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PAI BUS, MAIN VOLT SECT CKT NO. 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41	NELBOARD: D (EXIS AMPS: 225A I SIZE/TYPE: MLO TS/PHASE: 208Y/120V, 3PH, 4W TION: 1 DESCRIPTION RCPT - OFFICE COMPUTER 1 RCPT - OFFICE COMPUTER 2 RCPT - MONITOR/CCTV RCPT - SOUND SYSTEM SPARE RCPT IPAD CHARGING STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - OFFICE CONV BELL/BUZZER CONV RCPT RCPT - SALON STATION RCPT - HAIR COLOR COMP. DRYER BOOSTER RCPT - WASHER SPARE SP	VOL A 180 360 1,080 200 2,720 2,720 LOAD COOLIN HEATIN LIGHTIN RECEP MOTOR SUPP H	TAMPS/P B 360 560 528 528 528 528 528 528 528 528 528 528	HASE C 180 180 180 180 180 180 100 200 1,000 200 1,000 200 1,000 200 1,000 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FED F AIC R SER\ MOUI LOCA WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	ROM: ATINC ZATINC ZES: U NTING ATION 20 20 20 20 20 20 20 20 20 20	D: ITA D: STA P I I I	REF. 1-LII BEAUTY RFACE GING, R P BKR AMP 1 20 1 20 1 20 1 20 1 20 1 20 1 20 1 20	MDP VE DIAG 200M # WIRE NO. 12 12 12 12 12 12 12 12 12 12 12 12 12	SRAM FUL 111 VOL A 360 200 720 360 360 180 180 1,820 (LY RATED TAMPS/P B 360 200 200 180 200 200 200 200 200 200 200 2	HASE C 200 500 500 720 720 360 360 360 1,350 3,130 1,350 3,130 1,25 1.00 1,25 1.00 1,25 1.25	LINE-SIDE LUGS: MECHAN EQUIPMENT GROUND ISOLATED GROUND ISOLATED GROUND RCPT - TELEPHONE BOARD 1 RCPT - TELEPHONE BOARD 2 RCPT - IT CABINET EMS CHECK POINT SECURITY RCPT - CHARGERS RCPT - CASHWRAP IG 1 RCPT - CASHWRAP IG 2 RCPT - CASHWRAP IG 3 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 1 RCPT - CASHWRAP 3 SPARE SPARE SPARE SPARE SPARE SPARE SPARE RCPT - CONCIERGE SPARE MOBILE WORK STATION REFRIGERATOR MICROWAVE SUBTOTAL TOTAL DEMAND	ICAL BUS BUS CKT NO. 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42
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PANELBOARD SCHEDULE NOTE LEGEND:

CD - CONTRACTOR TO PROVIDE LABEL WITH CIRCUIT DESCRIPTION ON COVER PLATE.

EL - PROVIDE POWERLINK ECB-G3EL BREAKER - ONE POLE POSITION FOR UNSWITCHED HOT.

EM - EMERGENCY LIGHTING HANDLE-ON CLAMP.

EX - EXISTING TO REMAIN.

FA - RED/HANDLE-ON CLAMP. HT# - PROVIDE HANDLE TIE FOR CIRCUITS SHARING NEUTRALS. # DENOTES CIRCUITS TO PAIRED.

IG - ISOLATED GROUND CIRCUIT. LCK - HANDLE PADLOCKABLE-OFF DEVICE.

LO - HANDLE-ON CLAMP.

SB - ECB-G3 SMART BREAKER.



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2050002918 AR. CORPORATE NUMBER: 484 12/31/20

rgla solutions	s, inc.
5100 River Roa Schiller Park, I p: 847.671.745	ad, Ste 125 L 60176 2
f: 847.671.420 www.rgla.com	0
REVISIONS:	DATE:
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020
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OTHER THAN THE SPECIFIC PR WHICH THEY HAVE BEEN PREP DEVELOPED WITHOUT THE WR OF THIS OFFICE. VISUAL CONT	OJECT FOR PARED AND ITTEN CONSENT PACT WITH
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ULTA #79 3031 E. HIGHLAN	0 D DRIVE
JONESBORO, A	R 72401
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CHECKED BY	
JOB NUMBER	
2040	6

SHEET NAME

E0-2

RGL





	DESCRIPTION	MODEL NUMBER	
	360DEG MOTION SENSOR	SENSORSWITCH	
U	LOW VOLTAGE-PASSIVE INFRARED	CM-10	
	360DEG MOTION SENSOR	SENSORSWITCH	
ത	LOW VOLTAGE-PASSIVE INFRARED	CM-10-D	
Ŭ	WITH 0-10V DIMMING		
	360DEG MOTION SENSOR	SENSORSWITCH	
Ŵ	LINE VOLTAGE-PASSIVE INFRARED	CMR-10	
Ø	MOTION SENSOR	SENSORSWITCH	
U	POWER PACK	PP-20	
* 00	3-WAY WALL MOUNTED CEILING	SENSORSWITCH	
\$ 00	SENSOR INTERFACE SWITCH	SPODM-SA-3X	
\$ 001	WALL MOUNTED CEILING	SENSORSWITCH	
\$ 001	SENSOR INTERFACE SWITCH	SPODM-SA	
	WALL MOUNTED CEILING	SENSORSWITCH	
\$ 0C2	SENSOR INTERFACE SWITCH	SPODM-SA-D	
	WITH 0-10V DIMMING		
	3-WAY WALL MOUNTED CEILING	SENSORSWITCH	
\$ 0C3	SENSOR INTERFACE SWITCH	SPODM-SA-3X-D	
·	WITH 0-10V DIMMING		
	WALL MOUNTED CEILING	SENSORSWITCH	
\$ 0C4	SENSOR INTERFACE SWITCH	SPODM-SA-D	
•	WITH 0-10V DIMMING		
A 00	WALL MOUNTED	SENSORSWITCH	
\$ 05	MOTION SENSOR	WSX	
A 061	2 CIRCUIT WALL MOUNTED	SENSORSWITCH	
Å 021	MOTION SENSOR	WSX-2P	
\$ 052	WALL MOUNTED	SENSORSWITCH	
\mathbf{P}_{22}	MOTION SENSOR W/ DIMMING	WSXD	



	SQUARE D POWER	LIGHTING PLAN NOTES:	
	LINK G3 LIGHTING CONTROL PANELBOARD A	REQUIREMENTS WITH SIGN CONTRACTOR. PROVIDE LOCAL DISCONNECT SWITCH MOUNTED IN AN INCONSPICUOUS ACCESSSIBLE LOCATION. EACH SIGN CIRCUIT SHALL HAVE SEPARATE NEUTRAL AND SEPARATE EQUIPMENT	
		GROUND CONDUCTORS. SIGNAGE TO BE FURNISHED AND INSTALLED BY ULTA, WITH FINAL CONNECTION BY ELECTRICAL CONTRACTOR. VERIFY NUMBER AND LOCATION OF SIGNS WITH OWNER'S REPRESENTATIVE PRIOR TO ROUGH—IN.	
		2 CONNECT THE EXHAUST FAN SERVING THIS ROOM TO THE SWITCHED SIDE OF THE LOCAL LIGHTING CIRCUIT SERVING THIS ROOM. SEE SHEET E0-3 FOR CONTINUATION. SEE DETAIL ON SHEET E0-3 FOR ADDITIONAL INFORMATION.	(A) EX5 Q
THREE-WAY	HOT BATTERY PACK/EXIT SIGNS/BATTERY	3 MOUNT HARDWIRE BOX FOR VALANCE/ARCH VALANCE LIGHTING INSIDE ARCH ON BACK PANEL OF MILLWORK BEHIND ARCH FACE PANEL IN CONCEALED ACCESSIBLE LOCATION, REFER TO TYPICAL HARDWIRE BOX LOCATION ON	
AUTOMATIC CONTROLS SERVING SPACE SERVING SPACE TO LIGHTING UNSWITCHED HOT CONDUCTOR SERVING SPACE CONDUCTOR	SQUARE D ECB-G3EL	ARCHITECTURAL SHEET A8.1. 4 PENETRATIONS FOR CONNECTING CABLES FROM THE HARDWIRE BOX TO LIGHTING FIXTURE SHALL BE MADE IN-LINE WITH LIGHT FIXTURE TO CONCEALED CABLES. NO CONDUIT OR CONNECTION CABLES SHALL BE VISIBLE FROM THE SALES FLOOP	DRYING 105 WASHED/
3 MAINTENIANCE OVERDIDE	(I) EMERGENCY LIGHTING	5 MOUNT HARDWIRE BOX TO BOTTOM SIDE OF CHAIN HUNG PLYWOOD FOR CENTER BOX LIGHTING, REFER TO ARCHITECTURAL DETAIL. EACH ROW SHALL HAVE (1) HARDWIRE BOX DIRECTLY CONNECTED TO THE END FIXTURE OF EACH	DRYER 105 C C C C C C C C C C C C C C C C C C C
WIRING DIAGRAM	FIXTURE WIRING DIAGRAM	6 CENTER BOX LED STRIPS SHALL BE MOUNTED TO BOTTOM SIDE OF CHAIN	
NO SCALE	NO SCALE	7 LED DRIVER AND RECEPTACLE FOR UNDER CABINET LIGHTING. DRIVER SHALL BE MOUNTED IN CABINET AND RECEPTACLE TO BE MOUNTED IN BACK PANEL	MEN
	OCCUPANCY SENSOR SCHEDULE ALL SWITCHES AND WALL MOUNTED OCCUPANCY SENSORS SHALL BE LOCATED A	OF MILLWORK AT 62" A.F.F REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION. THE SWITCH CONTROLS THE RECEPTACLE ON/OFF, THE DRIVER IS PLUGGED IN TO RECEPTACLE, THE SWITCH IS HARDWIRED TO THE DRIVER FOR 0/10V DIMMING AND THE UNDER CABINET LIGHTS ARE PLUG INTO THE DRIVER WITH FACTORY CORD.	102 $\square \# A = \square \# 23a$
	MAXIMUM +48" AFF, UNLESS NOTED OTHERWISE. TYPE MANUFACTURER & REMARKS DESCRIPTION MODEL NUMBER	8 NOT USED.	$\begin{array}{c} \begin{array}{c} \begin{array}{c} & \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \\ \end{array} \\ $
	O 360DEG MOTION SENSOR LOW VOLTAGE-PASSIVE INFRARED SENSORSWITCH CM-10	10 MOUNT HARDWIRE BOX FOR VALANCE LIGHTING ON THE INTERIOR SIDE OF THE VALANCE AND CONCEALED IN A LOCATION THAT IS NOT VISIBLE FROM	
	360DEG MOTION SENSOR SENSORSWITCH Image: Description of the sensor of	THE SALES FLOOR. 11 CAPITAL LETTERS DENOTE THE HARDWIRE BOX THAT ASSOCIATED STRIP LIGHTS SHALL BE CONNECTED (ROWERED FROM) REFER TO LIGHTING FIXTURE	
	360DEG MOTION SENSOR SENSORSWITCH LINE VOLTAGE-PASSIVE INFRARED CMR-10 MOTION SENSOR SENSORSWITCH	SHALL BE CONNECTED (POWERED FROM). REFER TO LIGHTING FIXTORE SCHEDULE NOTES FOR ADDITIONAL INFORMATION. 12 INSTALL LIGHTING FIXTURES AND HARDWIRE BOX AS INDICATED. LEAVE	(2)L3D (S) (C) (2)L1D (2)L1D
	POWER PACK PP-20 3-WAY WALL MOUNTED CEILING SENSORSWITCH	LIGHTING FIXTURES UNPLUGGED FROM HARDWIRE BOX. FIXTURES ARE TO BE FOR FUTURE USE.	
	Image: Sensor Interface switch SPODM-SA-3X \$0C1 WALL MOUNTED CEILING SENSORSWITCH SENSOR INTERFACE SWITCH SPODM-SA WALL MOUNTED CEILING SENSORSWITCH WALL MOUNTED CEILING SENSORSWITCH SENSOR INTERFACE SWITCH SENSORSWITCH	ELECTRICAL PANEL TO BYPASS THE AUTOMATIC LIGHTING CONTROLS IN STAGING WHILE WORKING ON ELECTRICAL PANELS (PER NEC 110.26D). LABEL SWITCH "ELECTRICAL MAINTENANCE OVERRIDE SWITCH". WITH SWITCH POSITIONS: "NORMAL OPERATION" AND "MAINTENANCE OVERRIDE". INSTALL	$(3) - (2) L_{E}$
	Description Sensor interface switch Spodiesa-b With 0-10V DIMMING 3-WAY WALL MOUNTED CEILING SENSORSWITCH	SWITCH POSITION TO BE UP FOR NORMAL. UNDER NORMAL OPERATION, SWITCH SHALL BE WIRED FOR OCCUPANCY SENSORS TO CONTROL LIGHTING. DURING ELECTRICAL MAINTENANCE, SWITCH SHALL BE WIRED TO BY-PASS	SALES
	\$0C3 SENSOR INTERFACE SWITCH SPODM-SA-3X-D WITH 0-10V DIMMING WALL MOUNTED CEILING	OCCUPANCY SENSORS TO "ON". GENERAL LIGHTING NOTES:	
	\$0C4 SENSOR INTERFACE SWITCH WITH 0-10V DIMMING SPODM-SA-D \$0S WALL MOUNTED SENSORSWITCH WOTION SENSOR	A. EXISTING CONDITIONS SHOWN ARE BASED ON AS-BUILT DRAWINGS PROVIDED BY THE OWNER. CONTRACTOR SHALL ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.	$(PART) \xrightarrow{A 4} (2)L1_F \otimes (2)L1_F \otimes (2)L3_F \otimes $
	2 CIRCUIT WALL MOUNTED SENSORSWITCH MOTION SENSOR WSX-2P	B. ALL CONDUIT AND JUNCTION BOXES SHALL BE SUPPORTED INDEPENDENTLY FROM ACOUSTICAL CEILING.	$(2)L5_{F}$
	\$ ^{0S2} MOTION SENSOR W/ DIMMING WSXD	C. CONTRACTOR SHALL LAYOUT BRANCH CIRCUIT WIRING AND ARRANGEMENT OF HOME RUNS FOR MAXIMUM EFFICIENCY. INCREASE WIRE SIZE IF VOLTAGE DROP	
	OCCUPANCY SENSOR NOTES: OS1.FURNISH AND INSTALL A POWER PACK FOR EACH	EXCEEDS 2%. OR 100 FEET IN LENGTH.	
	CIRCUIT/SWITCH LEG THAT IS CONTROLLED BY AN OCCUPANCY SENSOR.	ALL LIGHTING FIXTURES. E. ALL LIGHT FIXTURES SHOWN (■) SHALL BE WIRED TO EMERGENCY LIGHTING	(PART) (2)L1 _G
	OS2.PLAN DRAWING LOCATIONS OF OCCUPANCY SENSOR ARE DIAGRAMATIC ONLY. CONTRACTOR SHALL LOCATE OCCUPANCY SENSOR PER MANUFACTURER'S RECOMMENDATIONS.	CIRCUIT UNLESS NOTED OTHERWISE.	
	OS3.CONTRACTOR SHALL COORDINATE OCCUPANCY SENSOR SETTINGS WITH OWNER AND FIELD ADJUST AS REQUIRED.	OTHERWISE.	(2)L ⁵ G S
	OS4.RESTROOM WALL MOUNTED OCCUPANCY SENSORS SHALL TURN ON WHEN OCCUPANCY IS DETECTED AND TURN OFF AFTER NO	G. ALL LIGHT FIXTURES SHOWN () SHALL BE TYPE 'U' UNLESS NOTED OTHERWISE.	(2)L5 _G ¢ ¢
	IS MANUALLY TURNED OFF AND NO OCCUPANCY HAS BEEN DETECTED AFTER BRIEF GRACE PERIOD, SENSOR SHALL DEFAULT TO OCCUPANCY DETECTION ON.	H. ALL LIGHT FIXTURES SHOWN (\square) SHALL BE TYPE "UE" AND WIRED TO EMERGENCY LIGHTING CIRCUIT UNLESS NOTED OTHERWISE. REFER TO DETAIL 1/E1-1.	
	OS5.0CCUPANCY SENSORS SHALL BE MANUAL ON AND TURN OFF AFTER NO OCCUPANCY HAS BEEN DETECTED FOR 30 MINUTES.	I. ALL LIGHT FIXTURES SHOWN (😥 😒) SHALL BE TYPE "EX" UNLESS NOTED OTHERWISE.	(2) (2)_L3 _H b c
		J. ALL LIGHT FIXTURES SHOWN (🔶) SHALL BE TYPE "EX3" UNLESS NOTED OTHERWISE.	(2)L5 _H
		K. ALL LIGHT FIXTURES SHOWN (🖂) SHALL BE TYPE "EX4" UNLESS NOTED OTHERWISE.	
		L. MAINTAIN CONTINUITY OF CIRCUITS SERVING FIXTURES, DEVICES OR EQUIPMENT	
		M. ALL FIXTURES INSTALLED IN SUSPENDED CEILINGS SHALL BE DIRECTLY	(PART)
		AMENDMENTS. IF STEEL RODS ARE UTILIZED FOR THIS PURPOSE, NO LESS THAN 2 SEPARATE RODS SHALL BE USED. THESE RODS MUST EXTEND FROM 2000000000000000000000000000000000000	
		SUPPOSITE CORNERS OF THE FIXTURE WITH EACH ROD INDEPENDENTLY SUPPORTED FROM STRUCTURE. ATTACH RODS WITHIN 3 INCHES OF EACH CORNER OF EACH FIXTURE. ALL LIGHTING FIXTURES SHALL BE ATTACHED TO	
$\left(\frac{2}{E1-1}\right)$	$\frac{SHAMPOO/DRYING}{SCALE: 1/4"=1'-0"}$	CEILING GRID. VERIFY ALL REQUIREMENTS WITH BUILDING CODES AND LOCAL AMENDMENTS.	(2)L3 _J (2)L1 _J
	0' 4' 8' 12' 16' NORTH	N. BRANCH CIRCUIT WIRING IS SHOWN AS A GUIDE ONLY, EXACT QUANTITIES OF CONDUITS AND CONDUCTORS ARE NOT INDICATED. CONTRACTOR SHALL PROVIDE BRANCH CIRCUIT WIRING AS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM.	
		O. SIGNAGE, INTERIOR AND EXTERIOR LIGHTING SHALL BE CONTROLLED BY THE EMS SYSTEM VIA THE LIGHTING CONTROL PANELS, REFER TO SHEET E0–1 FOR	
LIGHTING ZONE SCHEDULE SIGNAGE, INTERIOR AND EXTERIOR LIGHTING IS CONTROLLED AUTOMATICAL	LY BY THE EMS SYSTEM VIA THE LIGHTING CONTROL PANELS WITH	ADDITIONAL INFORMATION. LOCAL LIGHTING OVERRIDES WILL BE AT LIGHTING CONTROL PANELS AND SECURITY STATIONS THROUGHOUT THE BUILDING. COORDINATE EXACT LOCATIONS AND REQUIREMENTS WITH ENERGY MANAGEMENT	I
SMART/CONTROLLABLE BREAKERS. CONTROL /OVERIDES WILL BE AT EMS P ALL RECEPTACLES TO BE CONTROLLED BY EMS SYSTEM SHALL BE PROVIDE	ANELS AND CONTROLLED VIA SECURITY STATION KEY PAD. D WITH ENGRAVED NEC "CONTROLLED RECEPTACLE MARKING SYMBOL"	COMPANY AND SECURITY VENDOR.	
ZONE CIRCUITS CONTROLLED REMARKS 1 A-5,7 EMPLOYEE LIGHTING - ARE 2 A-11.23 EMPLOYEE LIGHTING - ARE	CONTROL A1 (1/2 GENERAL) ON/OFF WITH SECURITY CODE A2 (1/2 GENERAL) ON/OFF WITH SECURITY CODE	Q. CONTRACTOR SHALL FURNISH AS-BUILT DRAWINGS FOR ELECTRICAL POWER	$\frac{ - _{OO}}{\text{SCALE: }1/8"}$
3 A-2,4,14,16,18,20,22,24,26,28, DISPLAY LIGHTING - VALANC 30,32,34,36,38,40,42	CE AND RECEPTACLES ON/OFF WITH SECURITY CODE	R. CONTRACTOR SHALL FURNISH OPERATION AND MAINTENANCE INSTRUCTIONS FOR	0'
B-4,12,14,18,24,27,29, 31,33,35,41 A-1,3,25,27,29,31.37	ON/OFF DURING STORE HOURS IF SECURITY CODE IS FNABI FD	REPRESENTATIVE.	
4 B-1,3,5,6,7,8,9,10,11,13,16,19,20,21, CUSTOMER LIGHTING - ARE 22,23,26,28,30,32,34,37,38,39,40,42		THAT LIGHTING SYSTEMS HAVE BEEN TESTED TO ENSURE PROPER CALIBRATION, ADJUSTMENT, PROGRAMMING AND OPERATION.	
5A-9CUSTOMER LIGHTING - ARE6A-6DECORATIVE LIGHTING - CO7A-15,19ENTRY LIGHTING	A2 ON/OFF DURING STORE HOURS IF SECURITY CODE IS ENABLED OVE AND PENDANTS ON/OFF DURING STORE HOURS IF SECURITY CODE IS ENABLED ON/OFF DURING STORE HOURS IF SECURITY CODE IS ENABLED	T. SWITCHES SHALL BE GRAY DEVICES WITH STAINLESS STEEL COVER PLATE WHEN LOCATED OVER WC-5, STAINLESS STEEL OR OTHER GRAY WALL FINISHES. SEE	CIRCUITS WITH COMMO
8 A-33,35 EXTERIOR SIGNAGE 9 SPARE	ON BY PHOTOCELL, OFF AT MIDNIGHT	ARCHITECTURAL INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.	
10 SPARE 11 SPARE THESE TIMES ARE FOR REFERENCE ONLY. COORDINATE EXACT DETA	ILS WITH OWNER PRIOR TO COMMISSIONING.		

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E1-1





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- PLAN NOTES:
- 1 ALL MOUNTING HEIGHTS SHALL BE ABOVE FINISHED
- 2 RECEPTACLE TO BE MOUNTED INSIDE ARCH LIGHTING PANEL/MILLWORK ON BACK FACE, COORDINATE EXACT LOCATION WITH ARCHITECTURAL DRAWINGS, SEE DETAIL 4/E0-3.
- 3 REFER TO ARCHITECTURAL DETAIL 3/F-1.1C FOR EXACT LOCATION OF RECEPTACLES.
- 4 RECEPTACLES SHALL BE MOUNTED HORIZONTALLY IN BACK PANEL OF MILLWORK AT 28" A.F.F. SEE ARCHITECTURAL INTERIOR ELEVATION FOR EXACT RECEPTACLE LOCATIONS.
- 5 HARDWIRE BOX FOR ARCH LIGHTING, MOUNTED ON BACK PANEL OF MILLWORK BEHIND ARCH FACE PANEL IN CONCEALED ACCESSIBLE LOCATION. REFER TO DETAILS ON ARCHITECTURAL SHEET A-8.1 AND SHEET E0-3 FOR EXACT LOCATIONS.
- 6 HARDWIRE BOX FOR LIGHT BOX, MOUNTED ON BACK PANEL OF MILLWORK BEHIND LIGHT BOX PANEL IN CONCEALED ACCESSIBLE LOCATION. REFER TO DETAILS ON ARCHITECTURAL SHEET A-6.1 AND SHEET E0-3 FOR EXACT LOCATIONS.
- 7 RECEPTACLES SHALL BE MOUNTED HORIZONTALLY. COORDINATE WITH MILLWORK MANUFACTURER PRIOR TO ROUGH-IN. SEE ARCHITECTURAL INTERIOR ELEVATIONS FOR EXACT RECEPTACLE LOCATIONS.
- 8 EAS SECURITY ANTENNA, REFER TO SHEET # E3-1 FOR RISER DIAGRAM.
- 9 CONTRACTOR SHALL VERIFY TIMING OF TELEPHONE COMPANY CONNECTION WITH ULTA. RECEPTACLES NEED TO BE INSTALLED PRIOR TO TELEPHONE COMPANY CONNECTION COMPLETION.
- 10 TYPICAL FOR ALL FLOOR RECEPTACLES: SEE SHEET E0-1 AND E4-1 FOR ELECTRICAL SPECIFICATIONS ON FLOOR RECEPTACLES TO BE USED.
- 11 REFER TO ARCHITECTURAL INTERIOR ELEVATIONS FOR EXACT RECEPTACLE LOCATIONS.
- 12 RECEPTACLES SHALL BE MOUNTED HORIZONTALLY AT 44" AFF.
- 13 REFER TO COLUMN DETAIL ON SHEET A-2.0 FOR EXACT MOUNTING REQUIREMENTS.
- 14 COORDINATE WITH MILLWORK MANUFACTURER PRIOR TO ROUGH-IN. SEE ARCHITECTURAL INTERIOR ELEVATION FOR EXACT RECEPTACLE LOCATIONS, ROUTING OF CONDUIT IN BASE OF MILLWORK AND ADDITIONAL INFORMATION.
- 15 TELEPHONE BOARD SHALL BE (3) 3/4" (4'X6') FIRE RATED PLYWOOD, REFER TO DETAIL 1/A-8.3. 16 COORDINATE EXACT MOUNTING HEIGHT OF RECEPTACLE FOR DRYER BOOSTER WITH
- MECHANICAL CONTRACTOR. RECEPTACLE SHALL BE BELOW CEILING. 17 WIRE REMOTE GFI MODULE FOR GFI PROTECTION OF
- ELECTRIC WATER COOLER OUTLET. GFI MODULE SHALL BE MOUNTED BELOW WATER COOLER, COORDINATE RECEPTACLE LOCATION WITH MANUFACTURER'S INSTRUCTIONS AND ARCHITECT TO BE HIDDEN BY WATER COOLER.
- RECEPTACLES SHALL BE MOUNTED IN MILLWORK. REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT

S1. CONDUITS ROUTED IN SLAB SHALL BE STUBBED UP TO ACCESSIBLE CEILING SPACE VIA ILLUMINATED ARCH, WALLS, OR COLUMNS. CONDUITS ROUTED WITH IN ILLUMINATED ARCH SHALL NOT CREATE SHADOWS ON ACRYLIC PANEL CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS AND DETERMINE THE MOST ECONOMICAL METHOD/ROUTE TO STUB CONDUITS UP TO

RECEPTACLES IN THE AREA OF WORK AND SHALL REUSE EXISTING WHERE FEASIBLE (MEANING IT FALLS UNDER THE FIXTURE/DISPLAY).

EXISTING WHITE PORCELAIN TILE CONTACT THE ARCHITECT AND PROJECT

TYPE TO MATCH EXISTING MANUFACTURER FOR ANY FLOOR BOX THAT WILL BE EXPOSED (DOES NOT FALL UNDER FIXTURE/DISPLAY) AFTER THE





S2 SEE SECURITY SYSTEM WIRING DIAGRAM, SHEET E3-2, FOR CONTINUATION

OF SECURITY SYSTEM CONNECTIONS.

- LOCATION OF ALL ELECTRICAL DEVICES. CONTRACTOR MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS 3 NEMA 14-30R RECEPTACLE FOR ELECTRIC DRYER.

- EFFICIENCY. INCREASE WIRE SIZE IF VOLTAGE DROP

AREA FOR HAND-HELD SCANNER CHARGER. LABEL DUPLEX RECEPTACLE

PLAN NOTES:

- 1 CHIME PUSHBUTTON. PROVIDE 1900 BOX WITH SINGLE GANG BOX. REFER TO SHEET # E3-1 FOR ADDITIONAL INFORMATION. REFER TO DETAIL 2/F-1.1C FOR EXACT CHIME LOCATION.
- 2 CONTRACTOR SHALL ROUTE FEEDERS FROM SALON STATION OVER TO NEAREST COLUMN/WALL.
- VERIFY WITH EQUIPMENT SUPPLIER FOR EXACT ELECTRICAL REQUIREMENTS AND OUTLET TYPE PRIOR TO ROUGH-IN.
- 4 REFER ARCHITECTURAL DETAIL # 3 ON SHEET F-1.1C FOR EXACT RECEPTACLE AND DATA LOCATIONS.
- 5 PROVIDE A GENERAL PURPOSE BELL, (EDWARDS #156G-4AM), PUSH BUTTON (TRINE ACCESS TECHNOLOGY #65P) AND CLASS 2 SIGNAL TRANSFORMER (EDWARDS #590). PROVIDE # 10 WIRING BETWEEN PUSH BUTTON AND TRANSFORMER.
- 6 DOUBLE GANG, 3" DEEP JUNCTION BOX FOR SECURITY SYSTEM KEY SWITCH. MOUNT ON RIGHT SIDE OF DOOR. IF ROOM IS NOT AVAILABLE THEN MOUNT ON THE LEFT SIDE OF THE DOOR.
- 7 PROVIDE FINAL CONNECTION TO HAND DRYER (120V., 1,500W). VERIFY ALL REQUIREMENTS WITH ÈQUIPMENT VENDOR PRIOR TO ROUGH-IN. PROVIDE LABEL WITH CIRCUIT NUMBER FOR HAND DRYERS. PROVIDE CIRCUIT BREAKER WITH PAD LOCK OUT CAPABILITIES.
- 8 WIRE EACH OUTLET TO A DEDICATED CIRCUIT, PROVIDE A HANDLE TIE FOR CIRCUITS TO THE SAME RECEPTACLE/YOKE.
- 9 HARDWIRE BOX FOR ARCH LIGHTING, MOUNTED ON BACK PANEL OF MILLWORK BEHIND ARCH FACE PANEL IN CONCEALED ACCESSIBLE LOCATION. REFER TO DETAILS ON ARCHITECTURAL SHEET A-8.1 AND SHEET E0-3 FOR EXACT LOCATIONS.
- 10 PROVIDE FINAL CONNECTION TO RECIRCULATION PUMP (120V., 1PH 55W), VERIFY EXACT ELECTRICAL CONNECTION WITH PLUMBING CONTRACTOR. PROVIDE DIGITAL 1-CHANNEL, 40A., 120V., 1PH. TIMECLOCK (TORK # E101B OR APPROVED EQUAL) MOUNTED ADJACENT TO ELECTRICAL PANELS FOR CONTROL OF RECIRCULATION PUMP. COORDINATE SHUT OFF SCHEDULE WITH ULTA'S CONSTRUCTION MANAGER.
- 11 PROVIDE FINAL CONNECTION TO GAS WATER HEATER. VERIFY EXACT ELECTRICAL CONNECTION WITH PLUMBING CONTRACTOR PRIOR TO ROUGH-IN. (120V., 1PH.)
- 12 SEE DETAIL ON SHEET E0-1 FOR ADDITIONAL INFORMATION. TYPICAL FOR ALL FLOOR RECEPTACLES.
- 13 CONDUIT AND WIRING FOR ARCH RECEPTACLES SHALL BE ROUTED IN CHASE WITHIN BASE MILLWORK FIXTURE. CONDUIT SHALL ENTER AT BACK OF VERTICAL ARCH SECTION BEHIND VERTICAL PANEL (WITH LIGHT FIXTURES). CONDUIT TO BE INSTALLED PRIOR TO INSTALLATION OF ARCH. THERE SHALL BE NO EXPOSED CONDUIT.
- 14 VERIFY EXACT LOCATION OF DIMMER SWITCH WITH ARCHITECTURAL DETAIL 3/F1.1C, PRIOR TO INSTALLATION. LIGHT FIXTURE AND DIMMER SWITCH SHALL BE PROVIDED BY VENDOR AND INSTALLED AND WIRED BY CONTRACTOR. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN MILLWORK.
- HARDWIRE BOX FOR LIGHT BOX, MOUNTED ON BACK PANEL OF MILLWORK BEHIND LIGHT BOX PANEL IN CONCEALED ACCESSIBLE LOCATION, REFER TO DETAILS ON ARCHITECTURAL SHEET A-6.1 AND SHEET E0-3 FOR EXACT LOCATIONS.
- 16 SALON COUNTER IS FURNISHED WITH PRE-WIRED OUTLETS AND LIGHTING. PROVIDE FINAL CONNECTION FROM FLOOR BOX TO VENDOR INSTALLED JUNCTION BOX WITHIN SALON COUNTER. EACH SALON COUNTER SHALL GET (5) CIRCUITS, (1) FOR USB SOCKET/MIRROR LIGHTS AND (2) FOR EACH SALON STATION FOR A SPLIT YOKE RECEPTÁCLE. PROVIDE A HANDLE TIE FOR CIRCUITS TO THE SAME RECEPTACLE/YOKE.

REFERENCE POWER SHEETS E2-1 AND E2-2 FOR POWER CONNECTIONS FOR ALL ARCH LIGHTING FIXTURES.

GENERAL NOTES:

PROVIDE STOP TYPE MOUNTING CLIP OR FOOTER FOR BOTTOM LIGHTING FIXTURES IN VERTICAL ARCH SECTIONS, TO PREVENT FIXTURES FROM SLIDING DOWN.



STUB UP LOCATIONS

S1. CONDUITS ROUTED IN SLAB SHALL BE STUBBED UP TO ACCESSIBLE CEILING SPACE VIA ILLUMINATED ARCH, WALLS, OR COLUMNS. CONDUITS ROUTED WITH IN ILLUMINATED ARCH SHALL NOT CREATE SHADOWS ON ACRYLIC PANEL CONTRACTOR SHALL FIELD VERIFY THE EXISTING CONDITIONS AND DETERMINE THE MOST ECONOMICAL METHOD/ROUTE TO STUB CONDUITS UP TO ACCESSIBLE CEILING SPACE.

FLOOR OUTLETS

F1. CONTRACTOR SHALL VERIFY EXACT LOCATION OF EXISTING FLOOR RECEPTACLES IN THE AREA OF WORK AND SHALL REUSE EXISTING WHERE FEASIBLE (MEANING IT FALLS UNDER THE FIXTURE/DISPLAY).

F2. IF, NEW POWER OR TRENCHING IS REQUIRED IN THE AREAS OF EXISTING WHITE PORCELAIN TILE CONTACT THE ARCHITECT AND PROJECT MANAGER PRIOR TO STARTING THIS WORK.

F3. CONTRACTOR SHALL PROVIDE NEW FLUSH BRASS COVER PLATE OF TYPE TO MATCH EXISTING MANUFACTURER FOR ANY FLOOR BOX THAT WILL BE EXPOSED (DOES NOT FALL UNDER FIXTURE/DISPLAY) AFTER THE REMODEL.





FIRE ALARM GENERAL NOTES: GENERAL CONTRACTOR SHALL VERIFY ALL FIRE ALARM REQUIREMENTS WITH LOCAL CODES, AUTHORITY HAVING JURISDICTION AND LANDLORD.

- IF A FIRE ALARM SYSTEM IS REQUIRED: • GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO DESIGN, PERMIT, FURNISH AND INSTALL A FULLY COMPLIANT OPERABLE FIRE ALARM SYSTEM.
- PROVIDE AN ADDRESSABLE FIRE ALARM CONTROL PANEL (HONEYWELL "SILENT KNIGHT" #SK-6808) WITH COMPATIBLE DEVICES FOR A FULLY COMPLIANT SYSTEM, UNLESS THE LANDLORD REQUIRES SPECIFIC MANUFACTURE/PANEL AND/OR CONNECTION TO BUILDING/LANDLORD FIRE ALARM PANEL/SYSTEM.

EMS	NOTES:
EMS1.	ELECTRICAL CONTRACTOR TO MOUNT 12"X12" JUNCTION BOX (PROVIDED BY EMS VENDOR) NEXT TO THE EMS PANEL BASEPLATE, COORDINATE EXACT LOCATION WITH EMS VENDOR. ELECTRICAL CONTRACTOR TO INSTALL CONDUIT BETWEEN EMS PANEL BASEPLATE AND 12"X12" JUNCTION BOX.
EMS2.	ELECTRICAL CONTRACTOR TO PROVIDE DEDICATED 120V. CIRCUIT FOR THE EMS PANEL POWER SUPPLY AND TERMINATE COMPLETE (INSTALLED INSIDE OF 12"X12" JUNCTION BOX). TERMINATION TO OCCUR ONCE THE EMS PANEL POWER SUPPLY IS INSTALLED BY VENDOR.
EMS3.	ELECTRICAL CONTRACTOR TO INSTALL SQUARE D FACTORY WIRING COMMUNICATION CABLE BETWEEN THE SQUARE D NF2000G3 MASTER CONTROLLER LOCATED IN PANEL A AND THE SQUARE D NFSELG3 SLAVE CONTROLLER LOCATED IN PANEL B AND TERMINATE COMPLETE. COMMUNICATION WIRE SHALL BE ROUTED IN CONDUIT.
EMS4.	ELECTRICAL CONTRACTOR TO MOUNT THE EMON CURRENT TRANSFORMERS ON THE MAIN ELECTRICAL FEEDS IN THE MAIN DISTRIBUTION PANEL HDP. ELECTRICAL CONTRACTOR TO MOUNT THE EMON ENERGY METER NEXT TO THE PANEL MDP AND CONNECT IT TO THE EMS METER BREAKER IN PANEL. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL CONDUIT BETWEEN EMON METER AND EMS PANEL.
EMS5.	ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL CONDUIT AND BOXES, WHERE NECESSARY FOR CONTROL WIRING, REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION. THIS INCLUDES LENNOX ZONE TEMPERATURE SENSORS AND COMMUNICATION WIRING. IF THE WIRE NEEDS TO BE IN CONDUIT, THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE AND INSTALL THE CONDUIT; ULTA'S EMS VENDOR WILL PROVIDE AND INSTALL THE WIRING INSIDE THE CONDUIT. IF CONDUIT IS NOT REQUIRED, ELECTRICAL CONTRACTOR IS TO PROVIDE A CUT-IN RING AND PULL STRING FROM ABOVE THE CEILING TO THE CUT-IN RING.
EMS6.	PROVIDE 1-GANG BACK BOX WITH 3/4" CONDUIT STUB TO ACCESSIBLE CEILING SPACE WITH PULL STRING FOR EACH EMS TEMPERATURE, HUMIDITY AND CO2 SENSOR AS REQUIRED FOR EACH HVAC SYSTEM. SEE MECHANICAL DRAWINGS M-1 AND M-2 FOR SENSOR QUANTITIES AND LOCATIONS.

SHALL BE FURNISHED AND INSTALLED BY VENDOR.

CCTV NOTES:

1. REFER TO CCTV VENDOR DRAWINGS FOR EXACT LOCATION OF ALL EQUIPMENT. ALL CCTV EQUIPMENT AND WIRING SHALL

BE FURNISHED AND INSTALLED BY VENDOR.

NOTES:

- 1 ALL CONDUIT AND BACK BOXES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. ALL CABLING, DEVICES AND TERMINATIONS SHALL BE FURNISHED AND INSTALLED BY ULTA'S SOUND VENDOR. PROVIDE 10 FEET OF SLACK CABLE AT EACH DEVICE.
- 2 INSTALLATION OF VOLUME CONTROL STATIONS SHALL BE BY SOUND SYSTEM VENDOR. PROVIDE SINGLE GANG BACKBOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE.
- 3 CHIME PUSHBUTTON. ELECTRICAL CONTRACTOR TO PROVIDE 1900 BOX WITH SINGLE GANG TRIM PLATE. SEE SOUND SYSTEM WIRING DIAGRAM THIS SHEET FOR ADDITIONAL INFORMATION. SEE DETAIL 1/F-1.1C FOR EXACT CHIME LOCATION.
- 4 ALL LOW VOLTAGE CABLING/WIRING SHALL BE RUN ADJACENT TO THE PERIMETER SOFFITS NOT MORE THAN 3'-0" OFF DEMISING WALLS.
- 5 ALL CONDUIT AND JUNCTION BOXES SHALL BE SUPPORTED INDEPENDENTLY FROM ACOUSTICAL CEILING.
- 6 DUCT MOUNTED SMOKE DETECTORS SHALL BE EXISTING TO REMAIN (BY LANDLORD). MAINTAIN CONTINUITY OF SERVICE TO EXISTING DUCT DETECTORS AS REQUIRED. RELOCATE EXISTING REMOTE INDICATING DEVICES TO NEAREST COLUMN/WALL AS REQUIRED.
- 7 IT CABINET TO BE FURNISHED BY ULTA AND INSTALLED BY GENERAL CONTRACTOR.
- 8 CAMERA LOCATIONS SHOWN ARE FOR REFERENCE ONLY.
- 9 REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL ELECTRICAL DEVICES. CONTRACTOR SHALL COORDINATE ALL DEVICE LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL ELEVATIONS PRIOR TO ANY INSTALLATION. ALL CEILING MOUNTED DEVICES SHALL BE CENTERED IN CEILING TILE.
- 10 NO SENSORS, KEYPADS OR SIMILAR EQUIPMENT TO BE MOUNTED TO MILLWORK.
- 11 PROVIDE CONDUIT STUB WITH PULL STRING FROM EXTERIOR CAMERA TO ACCESSIBLE CEILING SPACE, VERIFY EXACT LOCATION WITH SECURITY VENDOR. CAMERA MOUNT SHALL BE WATERPROOF.











VISION 16 - ELECTRICAL SECTION 16010

GENERAL PROVISIONS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS The General Conditions, Supplementary Conditions, and General Requirements apply to the Work specified in this

1.02 DESCRIPTION

- A. This Section defines the General Provisions which are common to all Sections of Division 16. The information in the Specifications and the Plan Drawings are basic facts to follow in determining a reasonable and competitive price for the disciplines intended. The Drawings and Specifications do not necessarily indicate or describe each item necessary for the full performance and completion of the particular work the contractor may be bidding. These documents provide the general intent necessary to inform the contractor of the Owner's desire for the systems required for Electrical. Contractor shall visit the site prior to bidding to become familiar with the existing conditions under which the work shall be performed. Failure to inspect the site will not be considered justification for an adjustment in contract
- price or failure to perform the work under this contract. Work Included: All electrical work herein specified and/or shown on Drawings unless noted otherwise.
- Installation shall be complete from location designated by the Electric Utility Company as point of service connection, to the final connection of motors, fixtures, devices, apparatus or pieces of equipment
- unless modified by Drawings or these Specifications. 3. The Electrical Drawings and Specifications shall be understood to cover complete operating system. The Drawings and Specifications are to be taken together. Work specified and not shown, or Work shown and not specified shall be performed or furnished as though
- mentioned in both Drawings and Specifications. 4. Minor items and accessories reasonably inferred as necessary to the complete and proper operation of any system, shall be provided by this Contractor or Subcontractor for such systems.
- D. Description of Systems: Complete power wiring from existing panelboards to motorized equipment, motors, equipment cabinets, and miscellaneous outlets.
- 2. General wiring for power, lighting, and miscellaneous svstems.
- Materials and equipment for electrical work. Motor and equipment wiring.
- General and emergency lighting and power systems. Wiring of equipment furnished by others.
- Motor and equipment, including Starters if required. Empty conduit stubs and backboxes for telephone
- 9. Reconnection of all relocated electrical equipment
- (where applicable). 10. Power and empty conduit system and backboxes for
- Owners security system
- 11. Power and empty conduit system and backboxes for Owners computer system
- 12. Power and empty conduit system and backboxes for Owners sound system.
- 13. All other equipment, material, devices, accessories
- required and/or shown on the Drawings. 14. Arrange for sources of temporary construction
- services. Such services shall be nominally 120/208 volt, 1 phase, 3 wire from which a complete system of temporary power and lighting shall be installed for all construction needs and as required by the occupational safety and health departments. (OSHA) Temporary services shall be removed upon completion of
- 15. Cutting, patching, excavation and backfill and concrete work required to complete the work of this section. Backfill shall be compacted to 95% of standard compaction. All existing surfaces shall be patched or replaced to "Like New" conditions.
- Related work to be completed by others: Telephone system wiring.
- Computer system wiring
- Sound system wiring. Security system wiring.
- Temperature controls and thermostat wiring Fire alarm system by owner vendor
- Definitions As used within the Contract Documents:
- The term "Contractor" shall be understood to mean the Electrical Contractor or Electrical Subcontractor. "Circuitry" shall mean any electric work (not limited to light and power distribution) which consists of wires, cables, raceways, and/or specialty wiring method assemblies taken all together complete with associated junction boxes, pull boxes, outlet boxes, joints, couplings, splices and connections, except where limited to a lesser meaning by specific
- "Wiring" shall mean the same as Circuitry. 4. "Package Unit" shall mean an item of equipment having one or more motors or other electric energy consuming elements integrally factory mounted on a single base, complete with all associated control devices and interconnecting wiring.
- 5. "Normal Electric Work Conditions" means locations within building confines which are neither damp, wet, nor hazardous, and which are not used for air
- 6. "Raceway" shall mean any pipe, duct, extended enclosed, or conduit (as specified for a particular system) which is used to contain wires, and which is of such nature as to require that the wires be
- installed by a "pulling in" procedure. 7. "Concealed" (as applied to circuitry) means covered completely by building materials, except for penetrations(by boxes or fittings) to a level flush with the surface as necessitated by functional or specified accessibility requirements. Unless directed otherwise, all outlet boxes in walls are to be concealed.
- G. Fees and Permits: Obtain all permits and pay all inspection fees required for the complete electrical system
- 1.03 QUALITY ASSURANCE Qualifications
 - Only new products will be acceptable unless otherwise 2. The Electrical Contractor and his Subcontractors shall
 - only employ workmen who are skilled in their respective trades. 3. All equipment, material, fixtures, devices, articles,
- accessories or products included in the Contract shall be of the exact make, model or catalog number, size, form and of the characteristics specified B. Requirements of Regulatory Agencies:
- All electrical work shall be in accordance with the National Electrical Code (N.E.C.), (check with local inspector for edition), and other governing bodies which have jurisdiction over this project. 2. Where applicable, all fixtures, equipment and
- materials shall be as approved or listed by the following agencies: Factory Mutual Laboratories.
- National Fire Protection Association Underwriters Laboratories, Inc. (UL)
- National Electrical Manufacturers Association (NFMA)
- Americans with Disabilities Act (ADA) C. Allowable Tolerances:
- 1. Review Architectural, Structural and Mechanical Drawings for all dimensions, locations, partitions and walls, structural details, and location of mechanical pipes and ducts so that the electrical installation shall be in harmony with that of the other trades.
- 2. Exact size, location, and electrical requirements of equipment furnished by other trades and wired by this Contractor shall be obtained from the Drawings of the other trades.
- 1.04 SUBMITTALS A. Shop drawings for all fixtures, equipment, materials, etc., shall be submitted as specified in Division 1. Installation, maintenance and operating manuals and
 - instructions for all equipment shall be provided as specified in Division 1.
- 1.05 APPROVAL DRAWINGS A. Prepare and submit for approval to local code authorities such additional electrical drawings, diagrams, and
 - specifications as are required by: Local Fire Prevention Bureau
 - Local Building Department Electrical Inspection Section
 - 3. Local Utility Company Metering Department

- .06 EXAMINATION OF THE SITE A. All Contractors submitting proposals for this work are requested to visit the existing site. Failure to visit the existing site will in no way relieve the successful bidder from the necessity of furnishing any materials or performing any work that may be required to complete work in accordance with Drawings and Specifications without additional cost to the Owner.
- 1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING A. Exercise care in transporting and handling to avoid damage
 - to fixtures, equipment and materials. Store materials on the site so as to prevent damage. Keep fixtures, equipment and materials clean, dry and free from deleterious conditions. Where items of electrical equipment and/or materials are
 - furnished by others for installation by Electrical Contractor, Electrical Contractor will be held responsible for the unloading of such equipment and/or materials from the delivery truck. He shall check equipment and/or materials upon receipt and notify party furnishing item of any damaged or missing equipment. He shall coordinate installation with Contractor providing equipment.

1.08 GUARANTEE A. Provide one year guarantee for all fixtures, equipment,

materials and workmanship, upon final acceptance by Owner. PART 2 - PRODUCTS

2.01 MATERIALS A. Refer to individual Sections of Division 16.

- PART 3 EXECUTION
- 3.01 INSTALLATION/APPLICATION/PERFORMANCE/ERECTION A. Excavating and Backfilling:
 - The Electrical Contractor shall do all excavating and backfilling required for the installation of any and all parts of his work requiring excavation. He shall also do all sheathing and bracing required for the installation of his work. He shall provide and operate pumping equipment, if required, to keep the trenches free of standing water. All work shall comply with requirements given in Section 02200.
 - The above shall include all excavation of every character, including rock, if encountered. Contractor shall visit the premises and determine for himself, by actual observations, boring, or other means, the nature of the soil conditions. The cost of all such inspections, boring, etc., shall be borne by the Contractor.
 - All excavations are to be so conducted that no walls or footings shall be disturbed or injured in any way. Remove all surplus earth not needed for filling and
 - dispose of same as specified under Section 02200 of the Specifications. All backfilling shall be thoroughly tamped and settled
 - in a manner as is proper for the particular type of Where it is necessary to install work in or across
 - roads, pavements, curbs, sidewalks, etc., this Contractor shall restore the present construction to its original or better condition if disturbed by his operation at no additional cost to the Owner. Application. Installation:
 - In the event that conflicts, if any, cannot be settled rapidly and amicably between the affected trades, with work proceeding in a workmanlike manner, then the Architect/Engineer shall decide which work is to be relocated and his judgement shall be final and binding on this Contractor.
 - No measurements of a Drawing by scale shall be used as a dimension to work by. The Drawings are not intended to show complete or accurate details of the building in every respect. Exact locations and relations are to be defined in the field and shall be satisfactory to the Architect/Engineer. This Contractor shall take all field measurements and shall be responsible
 - therefore. Compare Drawings and Specifications, checking all measurements and determine intent of Contract Documents. Discrepancies shall be brought to the Architect/Engineer's attention for interpretation prior to any installation.
 - The right is reserved to make any reasonable change in location of outlets and equipment prior to roughing-in without involving additional expense. Any change from the Electrical Drawings as is necessary to make the work of this Contractor conform to the building as constructed and to fit the work of other trades shall be included in Contractor's Contract and installed without extra cost.

3.02 FIELD QUALITY CONTROL A. Testina:

- After wires are in place and connected to devices and equipment, the system shall be tested for shorts and arounds.
- All hot wires, if shorted or grounded, shall be removed and replaced.
- 3. A voltage test shall be made at the last outlet on each circuit. If drop in potential is excessive, Contractor will be required to correct the condition by locating partly grounded conductor or high resistance splice
- All grounds, shorts and high resistance splices shall be rectified. Any wiring device, electrical apparatus or lighting fixture furnished under this Contract, if grounded or shorted on any integral "live" part, shall be removed
- and the trouble rectified by replacing all defective parts or materials as directed. Service ground to be tested per National Electrical Code requirement. Grounding pole of all receptacles
- to be tested. All motors shall be tested under load with ammeter readings taken in each phase, and the RPM of motors recorded at the time. All motors shall be tested for correct direction or rotation. Electrical Contractor shall be responsible for testing running of all motors
- and shall verify that proper overload devices have been installed. All meters, instruments, cable connections, equipment or apparatus necessary for making all tests, shall be
- furnished by this Contractor at his own expense. Contractor shall submit proof of all tests to the Architect before final acceptance of the work.
- 3.03 ADJUST AND CLEAN
- A. Cleaning Equipment, Completed Work and Premises: After the completion of all installations, each system shall be thoroughly cleaned to remove all paint, oil and other foreign material. Contractor shall also clean all foreign paint, arease, oil, dirt, labels and stickers, etc., from all fixtures, equipment, etc. The Contractor shall remove all rubbish, debris, etc., accumulated from his operations from the premises
- Demonstration: At the conclusion of the work and before final contract payment is made demonstrate and explain to the Using Agency's personnel, the function, operation and maintenance of all equipment and systems installed by this Division of the work and provide a copy of all tests performed.
- Protect all equipment and systems against harmful exposures to, or accumulations of dust and moisture, flooding, corrosion or other forms of damage and clean and restore damaged finishes as may be required to place installations in a "like-new" condition before acceptance by the Architect.
- 3.04 SCHEDULES
- A. Equipment Schedules: See Drawings for schedules of lighting fixtures, switchboard, panelboards, distribution equipment, and related items.
- 3.05 APPROVALS A. Obtain all permits and approvals from the governing bodies which have jurisdiction over this project.
- 3.06 IDENTIFICATION AND TAGGING A. Provide all distribution switches and/or circuit breakers. starters, etc. whether individually mounted in panelboards. switchboards, etc., with suitable identification. The designation, using proper nomenclature, shall indicate the load served. Provide all feeders with suitable
- identification as to their designation in all junction boxes, pullboxes, autter spaces through which they pass and at their terminal points of connection. Identification of distribution switches or circuit breakers in panelboards
- shall be by means of panelboard directories. Identification of distribution switches or circuit breakers and starters individually mounted or in switchboards shall

suitably fastened to the cables.

be by means of engraved lamacoid nameplates permanently fastened on the front face of the housing, showing 1/4"high white lettering on a black background. Identification of feed cables shall be by means of engraved fiber tags

PART 1 - GENERAL 1.01 DESCRIPTION A. This section are commor PART 2 - PRODUCTS 2.01 MATERIALS A. Conduit: 1. Electric shall in except shall be otherwi

as manufactured by Hubbell, Pass & Seymour, or

3.07 SLEEVES

3.07	A.	Provio all co Corec	de coring in walls and floor slabs for the passage of onduits, pipes and ducts installed. I holes in floor shall be provided with sleeves	
7		exter water	ded one inch above finished floor level and made rtight.	
3.08	PAIN A.	All ec factc	quipment, panelboards, switchboards, etc., shall be rry finished in baked enamel or lacquer, or as fied. Standard factory finishes shall be approved.	
	в.	Any Conti All m	scratches shall be neatly touched up by the installing ractor. etal work installed by this Contractor exposed to the	
	C.	weatl coats All fir of th	her and not factory finished shall be painted with two s of oil paint of color selected by Architect. hish painting shall comply with the Painting Section le Specifications.	K.
3.09	CUTT A.	ING Al Perfo	ND PATCHING rm all cutting and patching required to complete the	
	в.	Work, or St Refer	, except where specifically shown on the Architectural tructural Drawings. to Section 01070 for additional requirements. END OF SECTION	
			SECTION 16100 BASIC MATERIALS AND METHODS	L.
PART 1.01	1 – DESCF	GENEI RIPTIOI This	RAL N section defines the Basic Material and Methods which	М.
PART	2 –	are o	common to all Sections of Division 16. UCTS	
2.01	MATE A.	Condi 1.	uit: Electrical Metallic Tubing: EMT, "Thinwall" conduit shall in general be utilized where permitted by Code	
			except where described herein. Minimum size conduit shall be 3/4", unless otherwise specifically noted otherwise.	PART 3 – 3.01 PREF
		2. 3.	Heavy—wall steel conduit and I.M.C shall be either hot dipped galvanized or sherardized. Flexible conduit shall be heavy duty steal Greenfield	~.
		4.	type except, where exposed to oil, grease, or water — then conduit shall be Sealtite. MC cable, a factory assembly of one or more current— carrying insulated conductors in an overall metallic sheath.	
		5. 6.	rated 600V. Plastic conduit shall be PVC Schedule 40. Conduit Fittings:	
			 a. Rigid & IMC: Threaded. b. Thin-Wall: Compression Type or Set Screw. c. Flexible: Connectors shall be compatible with flexible conduit used 	
		7.	Conduit shall be as manufactured by AFC Cable Systems, Inc., Alflex Inc., Allied Tube & Conduit, Anamet Electrical, Inc., or Wheatland Tube Company.	
		8.	Flexible liquid tight conduit as manufactured by Anamet Electrical, Inc., Electri—Flex Co or International Metal Hose. Provide an insulating bushing for all conduits	
		5.	containing #4 and larger wire as well as all conduits 1" and larger regardless of the size wire they contain.	
	В.	Wires 1.	and Cables: All wire shall be type THW or THWN copper. Aluminum is unacceptable. Wiring shall be a minimum of <i>#</i> 12 AWG.	
		2. 3.	where light fixtures are wired in continuous rows, wire pulled through fixtures shall be type SF2.	
		4. 5.	Final connections to heating equipment where shown, type SF2. Cable and wire shall be as manufactured by Alcoa, Angeorda, Constal, Cable, Triangle, Simpley, Hatfield	
		6.	Bell, Alpha, and Coleman Cable and Wire. Unless specifically noted otherwise, all wiring shall be installed in conduit.	
	C	7.	Layout branch circuit wiring and arrangement of home runs for maximum economy efficiency. Increase wire size if voltage drop exceeds 2% or 100 ft in length.	
	0.	entire applie 1.	e electrical system. Colors shall be factory applied or field ed for sizes larger # 8 AWG. Colors for 208/120V. Circuits:	
		0	 a. Phase A - Black. b. Phase B - Red. c. Phase C - Blue. Colors for 480 (277) Colors for 480 (277) 	
		۷.	a. Phase A – Brown. b. Phase B – Orange. c. Phase C – Yellow.	
	D	3. 4. 5.	Neutral – White. Grounding Wire – Green, insulated. Control Wire – Colors other than above.	
	D.	optio cond and	nal; but, if needed to prevent damage to the uctors, it must be listed by Underwriters Laboratories be of such consistency that it will leave no	
	E.	obstr wires Electr	ruction or tackiness that will prevent pulling out old or pulling in new wires or additional wires. rical Connections, Terminals and Splicing shall be in rican convicts section 110-14 of the NEC.	
	F.	mate when Outlet	rials and equipment must be given special attention using dissimilar metal conductors, etc. t, Pull and Junction Boxes:	
		1.	Boxes shall be 12 gauge or heavier steel, sherardized or galvanized to prevent rusting and shall have readily removable knockouts.	
		2. 3.	removable covers secured with brass machine screws. Junction boxes shall be minimum 4" square or octagon, not less than 2" deep, deeper if required by the	
			number of wires or construction, with appropriate covers. Provide with 3/8" stud where lighting fixture is suspended from box.	
		4.	All switch and receptacle outlets shall be equipped with minimum 4" box. Gang boxes shall be provided where groups of switches occur. All boxes shall be equipped with proper raised covers mounted at heights	
			shown on Drawings, or as directed. The approximate location of outlet boxes is shown on the Drawings, but care shall be taken to install all outlets with proper	
			relation to equipment or material to be installed by other trades. Special outlets shall have proper boxes to accommodate special equipment. Outlet boxes in masonry shall be or proper depth to allow conduit to	
		5.	be installed without cutting of shell of blocks, etc. Outlet boxes shall be as manufactured by Appleton, Steel City, Raco or Crouse-Hinds.	
		б.	Boxes for all exterior conduit, or conduit mounted in exterior walls, shall be cast iron boxes, type "FS" or "FD", as manufactured by Crouse-Hinds, Appleton, Pyle National Or Killark and provided with aasketed	
	G.	Disco	watertight covers. Fittings shall be pull type with gasketed covers. nnect Switches:	
		1.	Switches shall meet NEMA enclosed switch standards KS1, current edition. Switches shall be quick-make, quick-break so that operation of the contacts shall not be capable, during normal operation of the switch.	
		2.	of being restrained by the operating handle after the opening or closing of the contacts has started. All safety switches shall be heavy duty of voltage matching	
	Н.	Fuses	equipment served, NEMA 1 for indoor use and NEMA 3R for outdoor use. Switches shall be as manufactured by Square D, Eaton, Siemens or General Electric. :: Furnish and install all fuses. Fuses shall be	
	١.	Buss unles Switch	man "Fusetron", dual element, current limiting type, as specifically noted otherwise. es:	
		1. 2.	Except where otherwise specified, wall switches shall be mounted in suitable outlet boxes in the walls, partitions, or as shown on Drawings. Wall switches shall be located as indicated on the	
			Drawings, arranged singly or in gangs and at the height specified or indicated and shall have proper covers with finishes specified herein. Switches shall	
			or hereinafter specified. (Contractor shall check architectural drawings for additional information.)	
			 b. SPST Hubbell #1221; P & S #20AC1; Leviton #1221 c. 3-way Hubbell #1223; P & S #20AC3; Leviton #1223 	
			 d. 30A-SPST (Motor Disconnect): Hubbell #3031; P & S #30AC1; Leviton #3031. Coordinate location with mechanical trades. A constraint of the second seco	
		3.	Verify door swings before installing switchboxes and install the boxes on the latch side of the door unless otherwise directed by the Architect.	
	J.	4. Recep 1.	Color of devices to be white, unless noted otherwies. tacles: Receptacle shall be located as shown on the Drawings	
			and power outlets shall be of the grounding type and	

•	Grour	nd fault circuit interrupter to be provided for otacles outdoors, in toilet rooms, and within 6'	
witcl	n and Plates shall	Receptacle Plates: s in finished areas for switches and receptacles be white finish and thermoplastic nylon, unless	
•	note Provi arou	d otherwise. de multigang or combination plates for devices ped in gang or combination.	
•	Provi area	de cadmium plated steel plates in unfinished s. if all dedicated circuits with a laser printed	
rcui	adhe t Brea	sive label indicating panel and circuit number.	
•	Squa or o	t breakers shall be as manutactured by re D, Eaton, Siemens, General Electric f type and manufacturer to match existing for	
otor	exitir s, Co Check	ng panels. ntrol Panels, Etc., Furnished by Others: the Drawings and Specifications covering all	
-	bran furni	ches of the work to ascertain what equipment is shed by others. It will be this Contractor's	
	respo mate the	erials to furnish the necessary labor and erials to receive and wire said equipment. Check Plumbing and Mechanical Drawings and Division 15	
	of th Elect	ne Specifications carefully for wiring by the rical Contractor.	
XECI ATIC	NOITU NI/N	STALLATION/APPLICATION	
ondı	uit: Instal	lation — All conduit shall be sized in	
	acco a.	rdance per local codes: Conduit to be run exposed in unfinished areas	
		such as mechanical, electrical room, and janitors' closets used as electrical closets.	
	b.	All other conduit shall be concealed. All conduit and wiring shall be concealed whorever possible. Where conduit and wire connet	
		be concealed, obtain direction from the Architect. No surface mounted conduit, wiremold	
		or power poles will be acceptable, unless specifically indicated on the drawings.	
	c. d.	of building. Locate to avoid equipment, fixtures, ductwork,	
	e.	piping, etc. Layout and install work in advance of the laying	
		all sleeves that may be required for openings through floors, walls, etc.	
	f.	Where conduit is to be run exposed, furnish and install all inserts and clamps for the supporting of conduit	
	g.	If contractor does not properly install all sleeves and inserts he will be required to do the	
		necessary cutting and patching later at his own expense, and to the satisfaction of the Architect.	
	h. i.	Do not obstruct openings or passageways. Where conduit passes through floors or through	
	i.	smoke and fire walls, space between conduit and floor or wall shall be filled with cement grout. Radius of bends shall be not less than six(6)	
		times internal diameter. Any run of conduit shall not include more than the equivalent of	
	k.	Provide expansion fittings for all conduits at expansion joints.	
•	Cuttiı a.	ng Conduit: Measure and cut conduit from job site conditions,	
	b.	not from Drawings. Conduit shall be cut square and butted solidly into fittings.	
	с.	On rigid conduit, cut conduit full and clean with sharp dies. Ream ends of pipe after cutting and	
	d. Liquid	before assembly to remove burrs. Ream thin-wall conduit (EMT) after it is cut. I Tight and Elexible Conduit:	
•	a.	Liquid tight flexible conduit shall be installed in such a manner that liquids tend to run off the	
	b.	surfaces and not drain toward the fittings. Final connections of flexible conduit shall be as short as practical of the same size as the conduit it	
		extends and with enough slack to reduce the effects of vibration. A minimum of 24 inches of flexible	PART
	c.	conduit shall be installed. Where the fittings are brought into an enclosure with a knockout, an insulated throat type fitting	1.01 F
	d.	with liquid sealing "O" ring shall be used. Flexible metal conduit shall be installed for all	
		final equipment connections to transformers, light fixtures (lay—in type) and all other	
•	Type a.	of Conduit: The following greas shall be galvanized steel	1.02 [
		heavy wall conduit: 1) In earth fill.	
		 Exposed in wet areas. Exposed outdoors (Provide watertight 	
		4) Outside masonry walls. 5) Within building confines run in concrete	
		slab. 6) Exposed in mechanical rooms.	
		7) Feeder conduit for panelboards. Couplings for conduit run in poured concrete shall be concrete tight	PART
	b.	Conduit run in dry areas within building confines shall be EMT. Dry areas are inside partitions,	2.01
	<u> </u>	ceiling cavities and areas not subject to damage. Outside walls are not considered dry areas.	
	c. d.	size 3/4" only. Where permitted by local codes run conduits under	
		floor slabs and in contact with earth may be schedule 40 PVC.	
	e.	where permitted by local cods MC cable can be utilized in lengths less than 20', all home runs and exposed conduits shall be in conduit	
•	Supp	orting of Conduit:	

Duplex Convenience Receptacles: 20A.,2 Pole, 3 Wire,

Special Receptacles and Floor Boxes: As indicated on

noted otherwise. Color of Isolated Ground receptacles

4. Color of receptacles to match switches (white), unless

125 Volt, (NEMA designation 5-20R) Specification

Pass & Sevmour #5362

Leviton # 5362

Drawinas.

shall be orange.

Hubbell # 5362

a. All conduits must be independently supported from structure. No conduits shall be supported from the ventilating ducts, ceiling hangers, mechanical piping or their hangers.

b. All surface run conduit one inch(1") and smaller shall be supported every five feet with one hole straps with clamp backs. Perforated strap hangers will not be permitted.

- c. Hangers shall be proportioned for the weight of the conduit(s) supported. All rods, clamps and/or hangers shall be galvanized, bonderized, plated or painted. Where factory supplied, with one of the above rust resistant finishes, all field cuts and threads are to be painted and covered with a grey finishing paint.
- d. Trapeze type hangers may be used where several conduits occur at the same elevation. The spacing of such trapeze hangers shall be determined by the electrical code spacing requirements for the smallest conduit in the run. e. Approved type inserts for support of work in cast
- or concrete construction. f. Approved type steel beam clamps in the case of steel construction. Where holes or recesses must be cut in walls, floors,
- ceilings, or any part of the building to admit apparatus, conduit or other work of this Contractor he must have it done by a competent mechanic in a neat and workmanlike manner. The portions cut must be restored to their original condition at the expense of this Contractor. This Contractor shall provide for
- all of his own cutting and patching. 7. All conduits run in or below any grade slab shall be heavy wall conduit and entirely encased in 2" of concrete. In no case shall conduit be laid in fill below slab. Conduit shown as plastic shall be schedule 40.
- 8. 3/4"D. minimum conduit shall be provided in all non-accessible construction such as floor slabs, earth, masonry, walls, partitions, etc. 9. Provide:

a. Supplementary angles, channels, plates, etc., where supports are required between building's structural members, spanning the space and attached to building structural members, by welding, bolting or with concrete anchors.

anchors, etc., and all miscellaneous specialties or the attachment of hangers and supports to the structure. 10. Unless otherwise noted on the Drawings, the following shall apply: a. Convenience outlets shall be placed on separate circuits from motor and lighting outlets. Motors shall be placed on separate circuits from lighting outlets. c. Convenience outlets shall not be installed back to back. 11. Provide full size ground wire in all conduits, PVC or Metallic. Where the drawings do not identify the size of the equipment ground wire, it shall be the same size as the phase conductors. B. Motor and Equipment Wiring: Unless indicated or specified elsewhere perform the following: a. Connect and wire to each motor and piece of electrically operated equipment shown on the Drawings or as specified in these Specifications. b. Furnish, install and connect all starters. controller selector switches, pilot lights, pushbuttons' stations for each motor and piece of electrically operated equipment shown or Drawings, or as specified in the Specifications unless otherwise indicated. c. Furnish and install all wirina from the current source to all starters and from starters to motors, except in the case of factory installed

All rods, angles, rails, struts, brace plates

Straps, clamps, threaded rods, turnbuckles,

support of conduit and equipment.

platforms, etc. required for suspension or

- wiring packaged equipment. Wire to the line side of all prewired equipment. d. Furnish and install a disconnect switch ahead of all prewired package equipment. Coordinate with Mechanical Trades Contractor.
- e. Install all roughing—in pertaining to each item of equipment furnished under other Sections of the Specifications or by the Owner. Locations of electrical outlets for this equipment are indicated on the Drawings in their approximate locations. The supplier furnishing the equipment will furnish dimensional drawings accurately
- locating all roughing—in required for his equipment. f. Receive, set and align motors which are shipped loose if local union or trade jurisdiction
- practice requires doing so. Provide all control circuit and interlock wiring and connections for all mechanical equipment as
- indicated and scheduled on the Drawings. 2. If a disconnect switch is required by the enforcing code and not indicated on the Drawings or in the Specifications, it shall be furnished and installed. Where specific locations of switches and starters are
- not shown on the Drawings, these shall be placed near the motor. C. Conductors, Cables: 1. Except where otherwise shown on the drawings all
- wiring shall be installed in conduit. Conductors and cables shall not be installed in conduit or raceways until same are free from moisture and debris.
- 3. Leave a minimum of six inch(6") length of cable and conductor slack at each outlet
- All wire shall be type THW or THWN copper. D. Expansion Fittings: Expansion fittings shall be installed in all conduits
- crossing expansion joints. Refer to Architectural drawings for locations. E. Fire and Smoke Partition Penetrations: The Contractor shall familiarize himself with all fire
- rated construction and install his work so as to maintain the integrity of the fire code rating. Maintain rating of fire rated and smoke rated construction. Sleeves shall be steel or pre-manufactured sleeves similar to Pipe Shields. Inc for bare pipe through fire walls and floors, model WFB. DFB or QDFB. For plastic pipe, use type WFB with one inch thick calcium silicate insulation encased in metal sleeve extension two feet either side of fire rated walls or floor. Seal annular space around conduits. For fire and smoke rated floors, walls and partitions, use UL listed material that maintains fire rated wall and floor integrity, similar to RTV foam, Dow Corning "Fire Stop" or Pipe Shields, Inc., model
 - WFB, DFB, or QDFB. For non-rated walls and partitions, use mineral or glass fiber insulation. END OF SECTION SECTION 16400 SERVICE AND DISTRIBUTION
- 1 GENERAL RELATED DOCUMENTS
- A. The General Conditions, Supplementary Conditions, and General Requirements apply to the Work specified in this
- B. Section 16010, "General Provisions Electrical", applies
- to the work specified in this Section DESCRIPTION
- A. Work Included: Existing current transformers cabinet shall remain. All charges by the Local Utility Company for
- construction related work. Owner charges will be paid by the Owner.
- System Grounding per the local Utility Company and the 3.
- Existing panelboards shall remain, by Landlord. Provide new circuit breakers of type to match existing
- as required for complete distribution system, refer to One
- Diagram notes for additional information. Existing tenant metering to remain, by Landlord.
- 2 PRODUCTS EQUIPMENT
- A. Lighting and Application Panelboards: Panelboards are funished and installed by Landlord The Electrical Contractor shall balance all circuits. All conductors shall be continuous without splicing from last outlet to their terminals in cabinet. All circuit conductors in cabinet shall be installed with sufficient amount of length to reach the most remote
 - breaker connection from its point of entrance. Contractor shall provide a directory of circuits for cabinet. Directory shall be typewritten designating room or equipment, circuit numbers and any existing circuits to remain. Directory frame are to be secured to inside of door and trim in such a manner that screws, holes or welds, etc., are not visible on the door panel or trim.
- Where 2 or 3 pole breaker units are called for, they shall be one unit with common trip and not single pole units with handle ties. Capacity of main busses shall be as shown on the Drawinas.
- Branch circuit breakers shall be provided by this contractor for all panelboards furnished by landlord. Circuit breakers, manufacturer, model numbers, AIC ratings shall be type to match landlords provided equipment.

PART 3 - EXECUTION 3.01 INSTALLATION

- A. Groundina Provide an electrically continuous ground system from existing service ground to all points of utilization.
 - In general, all pieces of electrical equipment shall be grounded as required by Federal, State and Local Codes and regulations, but special attention is called to the following items to be grounded as indicated:
 - Conduit and other metallic raceways. 2. In general where grounding wire is shown use green
 - END OF SECTION

SECTION 16500 LIGHTING SYSTEMS AND CONTROLS

- PART 1 GENERAL 1.01 DESCRIPTION
- A. Work Included: Installing and wiring lighting fixtures as shown on Drawings, Lighting Fixture Schedule, and as furnished by the Owner. 2.
 - Refer to the Architectural Room Finish Schedules and Architectural and Structural details to determine conditions and finishes affecting the installation of the work. Include, to the full intent and meaning of these Specifications, all items of labor and materials necessary for design, detailing or adjustment of fixtures due to surrounding finishes and construction

PART 2 - PRODUCTS 2.01 MATERIALS

All lighting fixtures shall be furnished by Owner. All lamps shall be furnished by Owner.

PART 3 - EXECUTION

- 3.01 INSTALLATION A. Fixtures: An outlet is to be provided for each fixture. All fixtures shall be located to suit the Architectural details of the areas involved. Unpack, assemble, wire and install all fixtures at the proper locations indicated on
- the Drawings. В. Recessed Fixture Installation: Recessed fixtures shall be of type suitable for mounting in the type of ceiling as scheduled on the Drawings. Variations to catalog numbers indicated shall be made to assure proper mounting and fitting arrangements, prior to fabrication. Changes to be made by this Division Contractor must have prior written approval from the Architect.
- Supports: Each lighting fixture shall be rigidly supported from the building construction. Provide suspension hangers, stems and extra steel work for fixture support where required.
- 2. Confer with Ceiling Contractor to determine modifications required to make fixtures suitable for ceilina as installed.
- Where recessed fixtures are called for, each shall be provided with the proper plaster frame or suitable
- adapter to receive the finished ceiling construction. Where suspended acoustic tile ceilings on steel
- channels occur, outlets and fixtures shall be supported on members resting on the channel framework. In no case shall fixtures be supported from plaster or acoustic material.
- Suspended fixtures shall be hung on suspension hangers furnished by the fixture manufacturer and shall be adjusted as necessary during installation to insure that all fixtures in the same room or area are at a uniform height from the floor. Mounting height shall be as specified, detailed or noted on the Drawings.
- Any electrical lighting fixture which weighs more than 50 pounds shall be supported independently of the outlet box. Fixture Wiring:
- Fixtures shall be wired with white wire for the neutral and colored wire for phase wires, see Section
- 2. Housing of all fixtures must be grounded to conduit
- 3. Each fixture to be complete with holders, screws, sockets, wires, lamps, etc., as is necessary for a complete installation.
- Operation and Controls:
- Local switches as shown and wired. Exit and directional signs shall be constantly on, and wired as shown. END OF SECTION

SECTION 16620 EMERGENCY LIGHT AND POWER

PART 1 – GENERAL 1.01 DESCRIPTION

A. Install all exit signs and battery emergency lights as shown on the Drawings and required by all governing authorities having jurisdiction.

1.02 SUBMITTALS A. Requirements of Regulatory Agency: Obtain any and all plan approvals as required by the authorities which have jurisdiction over this Project, prior to start of work.

PART 2 - PRODUCTS 2.01 MATERIALS AND FIXTURES

- Conduits, fittings, wire, etc., shall be in accordance with applicable Section of this Specification
- Exit and Direction Signs:
 - Shall be U.L. approved Colored letters on white background. (Color per the
 - local Code Authority). Directional arrows as required by local Fire
- Protection Bureau. 4. Color of trim as selected by Architect.
- PART 3 EXECUTION

3.01 INSTALLATION A. Furnish and install all panels, conduits, feeders, branch

- circuit wiring, etc., with green ground wire required by Code and as shown on the Drawings.
- B. All emergency system branches shall be installed in separate conduits.

END OF SECTION

SECTION 16720 ALARM AND DETECTION SYSTEMS

PART 1 – GENERAL 1.01 DESCRIPTION

- A. Work Included:
 - Provide necessary conduit and power for alarm and detection systems. This shall only include the following: Dedicated 20 Amp., 120 Volt circuit (s).
 - 3/4" conduit (empty) to each door contact, silent duress alarm, camera and keypad.

PART 2 - PRODUCTS (REFER TO OTHER SECTIONS OF THE SPECIFICATION)

PART 3 - EXECUTION 3.01 RELATED DOCUMENTS

- A. All conduit and wiring requirements shall conform with Section 16100, "Basic Materials and Methods" of this
- Specification
 - END OF SECTION
 - SECTION 16700 COMUNICATIONS

PART 1 – GENERAL 1.01 DESCRIPTION

- A. Work Includes 1. Empty conduit and boxes for wiring installed by
- owner's vendor. B. Work by Telephone Utility:
- All wiring for telephone instruments. All telephone instruments.

PART 2 - PRODUCTS

- 2.01 MATERIALS A. Conduits, fittings, and outlet boxes shall be as
 - hereinbefore specified in Section 16100. Wall boxes to be flush, 4" square, with extension ring. Telephone System Grounding Conductors: Furnish a #6 AWG,
 - copper grounding conductor from each telephone service equipment to respective electrical service grounding electrode system
 - Telephone/Computer Conduit System: Furnish as indicated on the Drawings, including the following: Telephone service conduits for underground service. Other conduits as indicated on the Drawings. Furnish #14 AWG soft iron pull wire or heavy nylon cord in
 - each conduit for pulling the telephone cable to each termination point. 3. Outlet boxes with a 3/4" conduit stubbed into accessible ceiling space with pullwire for cabling b
 - others. Provide separate dedicated conduits for P. O S. lines. (Do not share with other telephone or data
 - 4. No electrical conduits or power wiring shall pass over the telecommunications closet and panels, except for telecommunications room light fixtures. 5. Contact CrossCom National Green team/Ulta Project Coordinator at (800) 933-9203 to fully coordinate
- entire Tele/Data low voltage installation. PART 3 - EXECUTION

3.01 INSTALLATION A. Furnish and install conduit system as shown. Cabling and final connection to be by the owners subcontractor. The system shall consist of telephone/data outlets in locations as indicated, branch conduits, and all accessories required by the telephone company for complete installation. END OF SECTION

SEISMIC CONTROLS FOR MEPF SYSTEMS:

SEISMIC BRACING OF MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS SHALL BE INSTALLED AS REQUIRED BY LOCAL ADOPTED CODES. SEISMIC BRACING MEASURES TO BE APPLIED TO MECHANICAL/ELECTRICAL/PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AS WELL AS MANUFACTURER'S REQUIREMENTS. REFER TO ARCHITECTURAL AND/OR STRUCTURAL FOR ADDITIONAL BRACING DETAILS AND INFORMATION.



WWW.HENDERSONENGINEERS.COM 2050002918

AR. CORPORATE NUMBER: 484 12/31/20



5100 River Road, Ste 125 Schiller Park, IL 60176 p: 847.671.7452 f: 847 671 4200 www.rgla.com

REVISIONS:	DATE:
LL & ULTA REVIEW	07/01/2020
PERMIT ISSUE	07/02/2020
BID ISSUE	07/13/2020

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ULTA #790 3031 E. HIGHLAND DRIVE JONESBORO, AR 72401

ELECTRICAL SPECIFICATIONS

DRAWN BY
HEI
CHECKED BY
HEI
JOB NUMBER
20406
SHEET NAME
E4-1



BID SCHEDULE - as of 07/14/20

NOTE: Approximate Dates - Changes WILL occur

Proj# Bids Due Starts Completes PROJECT NAME & LOCATION

15855 08/01/20 09/07/20 11/11/20 Ulta Beauty - ??? - Jonesboro, AR

Email this page to bid@teamcci.net -- THANK YOU!! OR fax to 616.842.4548

We'll need your company name & phone number to find you in our system:

Company Name _____ Phone: _____

Plans will be available for download approximately 10 days before the bid due date.

NOTE: we will email a link when the plans are ready for download.

List the project numbers you want to bid: ______

NOTE: we email this list every Wednesday - Send an email to SubscribeBidSchedule@teamcci.net to receive it.

Commercial Contractors, Inc.

CCI Bid Instructions

November 19, 2015

Since 1985, Commercial Contractors, Inc. (CCI) has completed over 3,800 projects throughout the United States for many of the nations leading specialty retailers. We acknowledge the importance of our subcontractors role in helping to establish our reputation for providing fast-paced, high quality construction services at competitive costs. To maintain the high standards demanded by our clients, prior to the submission of our bid, we work hard to ensure that our subcontractors are well informed of the requirements for each project. Please contact our office with any questions you may have regarding the bidding process, documents or requirements.

Bid Documents/Subcontract Documents: In addition to Bid Documents issued by the Owner and/or the Architect, the other Subcontract Documents which will be incorporated into the Subcontract Purchase Order Agreements issued by CCI to successful bidders, if any, are as follows: 1) these CCI Bid Instructions, 2) the CCI Scope of Work Outline, and 3) the Standard Form of Agreement Between Contractor and Subcontractor AIA Document A401, Electronic Format, as revised by CCI on 11/19/15. Prior to the submission of bids, the Subcontractor shall become familiar with all of the documents referenced in this paragraph. Unless a specific qualification is made to the contrary, all bids must be submitted in accordance with the documents referenced in this paragraph.

Responsibility of the Work: Any wording in the Bid Documents referring to an item being furnished or installed by the *General Contractor, Contractor, Tenant's General Contractor, etc.* shall be interpreted to mean by the Subcontractor responsible for that portion of the work.

Site Inspections: By the submission of a bid, the Subcontractor acknowledges familiarity with the project location and the conditions affecting the work. Should the Subcontractor's investigation of the project location reveal conditions contrary to the Bid Documents, the Subcontractor shall advise the Contractor, in writing, prior to the submission of their bid. Failure to do so will not relieve the Subcontractor from completing the work as required.

Insurance: Prior to the Subcontractor starting work, a Certificate of Insurance must be provided to CCI's office. The C of I must name the following as additional insured on a primary noncontributory basis: Commercial Contractors, Inc., the Owner (i.e. Gap, Limited etc), and the Landlord (insert LL's name). The specific Owner and Landlord names will be provided. Please reference AIA document A401 Article 13 and specifically 13.3.1 for further information.

Performance and Payment Bonds: The Subcontractor shall not include the cost of Performance and Payment Bonds in their base bid. Performance and Payment Bonds, if required, shall be bid as an alternate addition to the base bid. All Subcontractors submitting bids in excess of \$50,000 must provide an alternate add to the base bid for the cost of Performance and Payment Bonds.

Permits, Licenses and Taxes: The Subcontractor shall include all necessary permit fees, license fees and taxes in his base bid. Submission of a bid shall be presumptive evidence that the Subcontractor is properly licensed and is duly authorized to transact business and conduct affairs at the location of the project.

Fees: The Subcontractor shall include in their base bid all costs for tap fees, hook-up fees, shut down fees, etc. as may be required by governmental agencies, utility companies or the Landlord. However, the Subcontractor should submit an alternate deduction to the base bid in the event these costs are paid by others.

Landlord Required Contractors: Prior to the submission of a Bid Proposal, the Subcontractor shall become familiar with the Landlords criteria and requirements and shall include in their base bid all costs necessary for compliance. The Subcontractor shall include the costs for work to be completed by Landlord required contractors as necessary to complete the Subcontractors Scope of Work (i.e. roofing, shut-downs and alarms).

Meters: The Subcontractor shall include in their base bid all costs necessary for obtaining utility meters, as may be required, for the completion for the work. However, the Subcontractor should submit an alternate deduction to the base bid in the event these costs are to be paid by others.

Alternate Materials and Substitutions: All items shall be as specified in the Bid Documents. Where *or equal* is stated, an alternate material may be used only with written approval from the Contractor prior to the submission of a bid. No substitutions shall be allowed without prior written approval of the Contractor.

Excavation, Cutting and Patching: The Subcontractor shall include in their base bid all costs for cutting, removal, patching, framing and sealing of all required openings in walls, floors, ceilings, roofs, etc. as may be required for the completion of the Subcontractors Scope of Work. The Subcontractor shall also include in his base bid all costs necessary to install Subgrade items including excavation, digging, fill and compaction as may be required for the completion of his work. Third party testing, as may be required, shall be paid for by others and not a part of the Subcontractor bid.

Unloading, Storage and Material Handling: The Subcontractor shall include in their base bid all costs for unloading, storing and distributing materials furnished for the Subcontractors Scope of Work, whether furnished by the Subcontractor, the Owner or by others.

Demolition: The Electrical Subcontractor shall include in their base bid the cost to remove and dispose of electrical distribution equipment as required and to disconnect and make safe all other electrical items. The HVAC, Plumbing and Sprinkler Subcontractors shall include in their base bids the demolition of all items that pertain to their respective trades. All other demolition, including removal of light fixtures and electrical outlets disconnected and abandoned by the Electrical Subcontractor, and all architectural trade items such as walls, ceiling and floor covering shall be removed and disposed of as part of the Demolition Scope of Work. Each Subcontractor shall be responsible for the disposal of his own debris. The Demolition Scope of Work shall include adequate dumpsters (or other means of disposal as may be required) for the use of all trades through the demolition phase of the Project. Subcontractors must follow any and all guidelines established by local, state, or any other governing jurisdiction for the disposal of hazardous material such as lighting ballasts and transformers, HVAC refrigerants, etc. as it relates to their scope of work.

Safety, Clean-up Disposal: Each Subcontractor shall be responsible to maintain a safe work environment and to clean the premises once each day and remove all waste materials and rubbish created by the Subcontractors Scope of Work, including debris created from items supplied by others but installed by the Subcontractor. Subsequent to the demolition phase, the General Contractor will be responsible to provide dumpsters (or other means of disposal as may be required) for the use of its employees and its Subcontractors to dispose of their waste materials and rubbish. Dumpsters shall be located in accordance with the Owner and Landlord requirements.

Temporary Power and Light: The Electrical Subcontractor shall include in their base bid all cost to provide and maintain adequate temporary lights (minimum of one watt per square foot) and power including temporary panels and transformers as may be necessary. All utility company or Landlord fees for power usage during construction will be paid by others.

Commencement of the Work: The Subcontractors commencement of the Subcontract Work is positive acknowledgement that all Contract/Subcontract documents have been received and are sufficient for their intended purpose of completing the Subcontract Work as required.

▲IA Document A401[™] – 2007

Standard Form of Agreement Between Contractor and Subcontractor

AGREEMENT made as of the 19th day of November in the year 2015 (In words, indicate day, month and year.)

BETWEEN the Contractor: (Name, legal status, address and other information)

Commercial Contractors, Inc. 16745 Comstock Street Grand Haven, MI 49417 (616) 842-4540

and the Subcontractor: (Name, legal status, address and other information)

As named in the Subcontract Purchase Order

The Contractor has made a contract for construction (hereinafter, the Prime Contract) dated:

with the Owner: (Name, legal status, address and other information)

As named elsewhere in the Subcontract Documents

for the following Project: (Name, location and detailed description)

As named in the Subcontract Purchase Order Agreement

The Prime Contract provides for the furnishing of labor, materials, equipment and services in connection with the construction of the Project. A copy of the Prime Contract, consisting of the Agreement Between Owner and Contractor (from which compensation amounts may be deleted) and the other Contract Documents enumerated therein, has been made available to the Subcontractor.

The Architect for the Project: (Name, legal status, address and other information)

As named elsewhere in the Subcontract Documents, if applicable

The Contractor and the Subcontractor agree as follows.

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201[™]--2007, General Conditions of the Contract for Construction, is adopted in this document by reference.

This document has been approved and endorsed by the Associated Specialty Contractors, Inc.

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ARTICLE 1 THE SUBCONTRACT DOCUMENTS

§ 1.1 The Subcontract Documents consist of (1) this Agreement; (2) the Prime Contract, consisting of the Agreement between the Owner and Contractor and the other Contract Documents enumerated therein; (3) Modifications issued subsequent to the execution of the Agreement between the Owner and Contractor, whether before or after the execution of this Agreement; (4) other documents listed in Article 16 of this Agreement; and (5) Modifications to this Subcontract issued after execution of this Agreement. These form the Subcontract, and are as fully a part of the Subcontract as if attached to this Agreement or repeated herein. The Subcontract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Subcontract Documents, other than Modifications issued subsequent to the execution of this Agreement, appears in Article 16.

§ 1.2 Except to the extent of a conflict with a specific term or condition contained in the Subcontract Documents, the General Conditions governing this Subcontract shall be the AIA Document A201TM-2007, General Conditions of the Contract for Construction.

§ 1.3 The Subcontract may be amended or modified only by a Modification. The Subcontract Documents shall not be construed to create a contractual relationship of any kind (1) between the Architect and the Subcontractor, (2) between the Owner and the Subcontractor, or (3) between any persons or entities other than the Contractor and Subcontractor.

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§ 1.4 The Contractor shall make available the Subcontract Documents to the Subcontractor prior to execution of this Agreement, and thereafter, upon request, but the Contractor may charge the Subcontractor for the reasonable cost of reproduction.

ARTICLE 2 MUTUAL RIGHTS AND RESPONSIBILITIES

The Contractor and Subcontractor shall be mutually bound by the terms of this Agreement and, to the extent that the provisions of AIA Document A201–2007 apply to this Agreement pursuant to Section 1.2 and provisions of the Prime Contract apply to the Work of the Subcontractor, the Contractor shall assume toward the Subcontractor all obligations and responsibilities that the Owner, under such documents, assumes toward the Contractor, and the Subcontractor shall assume toward the Contractor all obligations and responsibilities which the Contractor, under such documents, assumes toward the Owner and the Architect. The Contractor shall have the benefit of all rights, remedies and redress against the Subcontractor that the Owner, under such documents, has against the Contractor, and the Subcontractor shall have the benefit of all rights, remedies and redress against the Contractor that the Contractor, under such documents, has against the Owner, insofar as applicable to this Subcontract. Where a provision of such documents is inconsistent with a provision of this Agreement, this Agreement shall govern.

ARTICLE 3 CONTRACTOR

§ 3.1 SERVICES PROVIDED BY THE CONTRACTOR

§ 3.1.1 The Contractor shall cooperate with the Subcontractor in scheduling and performing the Contractor's Work to avoid conflicts or interference in the Subcontractor's Work and shall expedite written responses to submittals made by the Subcontractor in accordance with Section 4.1 and Article 5. Promptly after execution of this Agreement, the Contractor shall provide the Subcontractor copies of the Contractor's construction schedule and schedule of submittals, together with such additional scheduling details as will enable the Subcontractor to plan and perform the Subcontractor's Work properly. The Contractor shall promptly notify the Subcontractor of subsequent changes in the construction and submittal schedules and additional scheduling details.

§ 3.1.2 The Contractor shall provide suitable areas for storage of the Subcontractor's materials and equipment during the course of the Work. Additional costs to the Subcontractor resulting from relocation of such storage areas at the direction of the Contractor, except as previously agreed upon, shall be reimbursed by the Contractor.

§ 3.1.3 Except as provided in Article 14, the Contractor's equipment will be available to the Subcontractor only at the Contractor's discretion and on mutually satisfactory terms.

§ 3.2 COMMUNICATIONS

§ 3.2.1 The Contractor shall promptly make available to the Subcontractor information, including information received from the Owner, that affects this Subcontract and that becomes available to the Contractor subsequent to execution of this Subcontract.

§ 3.2.2 The Contractor shall not give instructions or orders directly to the Subcontractor's employees or to the Subcontractor's Sub-subcontractors or material suppliers unless such persons are designated as authorized representatives of the Subcontractor.

§ 3.2.3 The Contractor shall permit the Subcontractor to request directly from the Architect information regarding the percentages of completion and the amount certified on account of Work done by the Subcontractor.

§ 3.2.4 If hazardous substances of a type of which an employer is required by law to notify its employees are being used on the site by the Contractor, a subcontractor or anyone directly or indirectly employed by them (other than the Subcontractor), the Contractor shall, prior to harmful exposure of the Subcontractor's employees to such substance, give written notice of the chemical composition thereof to the Subcontractor in sufficient detail and time to permit the Subcontractor's compliance with such laws.

§ 3.2.5 The Contractor shall furnish to the Subcontractor within 30 days after receipt of a written request, or earlier if so required by law, information necessary and relevant for the Subcontractor to evaluate, give notice of or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property, usually referred to as the site, on which the Project is located and the Owner's interest therein.

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§ 3.2.6 If the Contractor asserts or defends a claim against the Owner that relates to the Work of the Subcontractor, the Contractor shall promptly make available to the Subcontractor all information relating to the portion of the claim that relates to the Work of the Subcontractor.

INSERT A: 3.2.7 The Contractor and Subcontractor agree that the receipt of facsimile and Internet transmissions from each other shall be deemed as acceptable for the following notices and communications: 1) Subcontract Purchase Order Agreements; 2) Applications for Payments; 3) Claims for adjustments to the Subcontract; 4) Subcontract Change Orders; 5) All written notices permitted under this Agreement; and 6) General Correspondence. Nothing in this Subparagraph shall waive the requirement for submittals of original certificates, warranties and notary sealed affidavits and waivers of lien as required by the Prime Contract.

§ 3.3 CLAIMS BY THE CONTRACTOR

§ 3.3.1 Liquidated damages for delay, if provided for in Section 9.3 of this Agreement, shall be assessed against the Subcontractor only to the extent caused by the Subcontractor or any person or entity for whose acts the Subcontractor may be liable, and in no case for delays or causes arising outside the scope of this Subcontract.

§ 3.3.2 The Contractor's claims for the costs of services or materials provided due to the Subcontractor's failure to execute the Work shall require

- Twenty four hours written notice prior to the Contractor's providing services or materials, except in .1 an emergency; and
- .2 written compilations to the Subcontractor of services and materials provided by the Contractor and charges for such services and materials no later than the fifteenth day of the month following the Contractor's providing such services or materials.

§ 3.4 CONTRACTOR'S REMEDIES

If the Subcontractor defaults or neglects to carry out the Work in accordance with this Agreement and fails within three (3) working days after receipt of written notice from the Contractor to commence and continue correction of such default or neglect with diligence and promptness, the Contractor may, by appropriate Modification, and without prejudice to any other remedy the Contractor may have, make good such deficiencies and may deduct the reasonable cost thereof from the payments then or thereafter due the Subcontractor.

SUBCONTRACTOR ARTICLE 4

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§ 4.1 EXECUTION AND PROGRESS OF THE WORK

§ 4.1.1 For all Work the Subcontractor intends to subcontract, the Subcontractor shall enter into written agreements with Sub-subcontractors performing portions of the Work of this Subcontract by which the Subcontractor and the Sub-subcontractor are mutually bound, to the extent of the Work to be performed by the Sub-subcontractor, assuming toward each other all obligations and responsibilities that the Contractor and Subcontractor assume toward each other and having the benefit of all rights, remedies and redress each against the other that the Contractor and Subcontractor have by virtue of the provisions of this Agreement.

§ 4.1.2 The Subcontractor shall supervise and direct the Subcontractor's Work, and shall cooperate with the Contractor in scheduling and performing the Subcontractor's Work to avoid conflict, delay in or interference with the Work of the Contractor, other subcontractors, the Owner, or separate contractors.

§ 4.1.3 The Subcontractor shall promptly submit Shop Drawings, Product Data, Samples and similar submittals required by the Subcontract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Contractor or other subcontractors.

§ 4.1.4 The Subcontractor shall furnish to the Contractor periodic progress reports on the Work of this Subcontract as mutually agreed, including information on the status of materials and equipment that may be in the course of preparation, manufacture, or transit.

§ 4.1.5 The Subcontractor agrees that the Contractor and the Architect each have the authority to reject Work of the Subcontractor that does not conform to the Prime Contract. The Architect's decisions on matters relating to aesthetic effect shall be final and binding on the Subcontractor if consistent with the intent expressed in the Prime Contract.

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§ 4.1.6 The Subcontractor shall pay for all materials, equipment and labor used in connection with the performance of this Subcontract through the period covered by previous payments received from the Contractor, and shall furnish satisfactory evidence, with supplier waivers of lien for all amounts over \$1,000, waivers of lien from subcontractors, waivers of lien from labor providers and notices of good standing from labor unions to verify compliance with the above requirements.

§ 4.1.7 The Subcontractor shall take necessary precautions to protect properly the work of other subcontractors from damage caused by operations under this Subcontract.

§ 4.1.8 The Subcontractor shall cooperate with the Contractor, other subcontractors, the Owner, and separate contractors whose work might interfere with the Subcontractor's Work. The Subcontractor shall participate in the preparation of coordinated drawings in areas of congestion, if required by the Prime Contract, specifically noting and advising the Contractor of potential conflicts between the Work of the Subcontractor and that of the Contractor, other subcontractors, the Owner, or separate contractors.

INSERT B: 4.1.9 The Subcontractor shall attend preconstruction and progress meetings at the site as may be scheduled by the Contractor for the purposes of reviewing the schedule, addressing site conditions and inspecting the work. When scheduling meetings, the Contractor shall give reasonable advance notice to the Subcontractor.

§ 4.2 PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

§ 4.2.1 The Subcontractor shall give notices and comply with applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities bearing on performance of the Work of this Subcontract. The Subcontractor shall secure and pay for permits, fees, licenses and inspections by government agencies necessary for proper execution and completion of the Subcontractor's Work, the furnishing of which is required of the Contractor by the Prime Contract.

§ 4.2.2 The Subcontractor shall comply with Federal, state and local tax laws, social security acts, unemployment compensation acts and workers' compensation acts insofar as applicable to the performance of this Subcontract.

INSERT C: 4.2.3 The Subcontractor shall be properly licensed and duly authorized to transact business and conduct affairs in the place where the Project is located and shall remain in good standing through the full completion of the Subcontract work.

INSERT D: 4.2.4 Upon request by the Contractor, the Subcontractor shall provide documentation of its compliance with Subparagraphs 4.2.1, 4.2.2 and 4.2.3.

§ 4.3 SAFETY PRECAUTIONS AND PROCEDURES

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§ 4.3.1 The Subcontractor shall take reasonable safety precautions with respect to performance of this Subcontract, shall comply with safety measures initiated by the Contractor and with applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities for the safety of persons and property in accordance with the requirements of the Prime Contract. The Subcontractor shall report to the Contractor within three days an injury to an employee or agent of the Subcontractor which occurred at the site.

§ 4.3.2 If hazardous substances of a type of which an employer is required by law to notify its employees are being used on the site by the Subcontractor, the Subcontractor's Sub-subcontractors or anyone directly or indirectly employed by them, the Subcontractor shall, prior to harmful exposure of any employees on the site to such substance, give written notice of the chemical composition thereof to the Contractor in sufficient detail and time to permit compliance with such laws by the Contractor, other subcontractors and other employers on the site.

§ 4.3.3 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a hazardous material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Subcontractor, the Subcontractor shall, upon recognizing the condition, immediately stop Work in the affected area and promptly report the condition to the Contractor in writing. When the material or substance has been rendered harmless, the Subcontractor's Work in the affected area shall resume upon written agreement of the Contractor and Subcontractor. The Subcontract Time shall be extended appropriately and the Subcontract Sum shall be increased in the amount of the Subcontractor's reasonable additional costs of

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demobilization, delay and remobilization, which adjustments shall be accomplished as provided in Article 5 of this Agreement.

§ 4.3.4 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Subcontractor. the Subcontractor's Sub-subcontractors, and agents and employees of any of them from and against claims. damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 4.3.3 and has not been rendered harmless, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) except to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity.

§ 4.3.5 The Subcontractor shall indemnify the Contractor for the cost and expense the Contractor incurs (1) for remediation of a material or substance brought to the site and negligently handled by the Subcontractor or (2) where the Subcontractor fails to perform its obligations under Section 4.3.3, except to the extent that the cost and expense are due to the Contractor's fault or negligence.

§ 4.4 CLEANING UP

§ 4.4.1 The Subcontractor shall keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations performed under this Subcontract. The Subcontractor shall not be held responsible for conditions caused by other contractors or subcontractors.

§ 4.4.2 As provided under Section 3.3.2, if the Subcontractor fails to clean up as provided in the Subcontract Documents, the Contractor may charge the Subcontractor for the Subcontractor's appropriate share of cleanup costs.

§ 4.5 WARRANTY

The Subcontractor warrants to the Owner, Architect, and Contractor that materials and equipment furnished under this Subcontract will be of good quality and new unless the Subcontract Documents require or permit otherwise. The Subcontractor further warrants that the Work will conform to the requirements of the Subcontract Documents and will be free from defects, except for those inherent in the quality of the Work the Subcontract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Subcontractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Subcontractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the Architect and Contractor, the Subcontractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

INSERT E: 4.5.1 Upon request by the Owner or Contractor, the Subcontractor shall assign any warranties relating to the performance of the Subcontract work.

§ 4.6 INDEMNIFICATION

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§ 4.6.1 To the fullest extent permitted by law, the Subcontractor shall indemnify and hold harmless the Owner, Contractor, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Subcontractor's Work under this Subcontract, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Subcontractor, the Subcontractor's Sub-subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or otherwise reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section 4.6.

§ 4.6.2 In claims against any person or entity indemnified under this Section 4.6 by an employee of the Subcontractor, the Subcontractor's Sub-subcontractors, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section 4.6.1 shall not be limited by a limitation on the amount or type of damages, compensation or benefits payable by or for the Subcontractor or the Subcontractor's Sub-subcontractors under workers' compensation acts, disability benefit acts or other employee benefit acts.

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§ 4.7 REMEDIES FOR NONPAYMENT

If the Contractor does not pay the Subcontractor through no fault of the Subcontractor, within two (2) days from the time payment should be made as provided in this Agreement, the Subcontractor may, without prejudice to any other available remedies, upon one (1) additional days' written notice to the Contractor, stop the Work of this Subcontract until payment of the amount owing has been received. The Subcontract Sum shall, by appropriate Modification, be increased by the amount of the Subcontractor's reasonable costs of demobilization, delay and remobilization.

ARTICLE 5 CHANGES IN THE WORK

§ 5.1 The Owner may make changes in the Work by issuing Modifications to the Prime Contract. Upon receipt of such a Modification issued subsequent to the execution of the Subcontract Agreement, the Contractor shall promptly notify the Subcontractor of the Modification. Unless otherwise directed by the Contractor, the Subcontractor shall not thereafter order materials or perform Work that would be inconsistent with the changes made by the Modification to the Prime Contract,

§ 5.2 The Subcontractor may be ordered in writing by the Contractor, without invalidating this Subcontract, to make changes in the Work within the general scope of this Subcontract consisting of additions, deletions or other revisions, including those required by Modifications to the Prime Contract issued subsequent to the execution of this Agreement, the Subcontract Sum and the Subcontract Time being adjusted accordingly. The Subcontractor, not more than seven (7) days after a written notice or bulletin from the Contractor and prior to the commencement of such changed or revised Work, shall submit promptly to the Contractor written copies of a claim for adjustment to the Subcontract Sum and Subcontract Time for such revised Work in a manner consistent with requirements of the Subcontract Documents.

§ 5.3 The Subcontractor shall make all claims promptly to the Contractor for additional cost, extensions of time and damages for delays or other causes in accordance with the Subcontract Documents. A claim which will affect or become part of a claim which the Contractor is required to make under the Prime Contract within a specified time period or in a specified manner shall be made in sufficient time to permit the Contractor to satisfy the requirements of the Prime Contract. Such claims shall be received by the Contractor not less than two working days preceding the time by which the Contractor's claim must be made. Failure of the Subcontractor to make such a timely claim shall bind the Subcontractor to the same consequences as those to which the Contractor is bound.

INSERT F: 5.4 All claims by the Subcontractor for an adjustment to the Subcontract Sum shall be accompanied by a detailed description of the changes and breakdown of all such costs related to such claim. All claims must be submitted and duly authorized prior to proceeding with work.

INSERT G: 5.5 Only the Contractor's designated Construction Manager, or a corporate officer of the Contractor shall have the authority to approve claims submitted by the Subcontractor for an adjustment to the Subcontract Work, Subcontract Sum or Subcontract Time. If the Contractor and Subcontractor cannot agree to a lump sum for additional compensation, the Contractor may require the Subcontractor to proceed with additional work on a Time and Material basis in accordance with Insert H: 5.6.

INSERT H: 5.6 In the event the Contractor authorizes a portion of the Subcontract Work to be completed on a Time and Material basis, the Subcontractor shall prepare for verification by the Contractors Field Supervisor daily Time and Material reports. These verified daily Time and Material reports and other cost substantiation documentation as may be required must be submitted to the Contractor with the Subcontractors next application for payment. Based on the actual costs to complete Time and Material work, the Contractor will make necessary Modifications to the Subcontract Sum. Hourly labor rates as submitted on the Subcontractor Bid Proposal shall be the basis for all Time and Material work. In the absence of a rate on the Bid Proposal, the local union rate or RS Means rate, without markup, will be used as a default.

ARTICLE 6 MEDIATION AND ARBITRATION § 6.1 MEDIATION § 6.1.1

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§ 6.1.2 § 6.1.3

§ 6.2 BINDING DISPUTE RESOLUTION

For any claim subject to, but not resolved by mediation pursuant to Section 6.1, the method of binding dispute resolution shall be as follows:

(Check the appropriate box. If the Contractor and Subcontractor do not select a method of binding dispute resolution below, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, claims will be resolved by litigation in a court of competent jurisdiction.)

[X] Arbitration pursuant to Section 6.3 of this Agreement

1 Litigation in a court of competent jurisdiction

1 Other: (Specify)

§ 6.3 ARBITRATION

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§ 6.3.1 If the Contractor and Subcontractor have selected arbitration as the method of binding dispute resolution in Section 6.2, any claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. A demand for arbitration shall be made in writing, delivered to the other party to the Subcontract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all claims then known to that party on which arbitration is permitted to be demanded.

§ 6.3.2 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the claim.

§ 6.3.3 Either party, at its sole discretion, may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation; (2) the arbitrations to be consolidated substantially involve common questions of law or fact; and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 6.3.4 Either party, at its sole discretion, may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of a claim not described in the written consent.

§ 6.3.5 The Contractor and Subcontractor grant to any person or entity made a party to an arbitration conducted under this Section 6.3, whether by joinder or consolidation, the same rights of joinder and consolidation as the Contractor and Subcontractor under this Agreement.

§ 6.3.6 This agreement to arbitrate and any other written agreement to arbitrate with an additional person or persons referred to herein shall be specifically enforceable under applicable law in any court having jurisdiction thereof. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

TERMINATION, SUSPENSION OR ASSIGNMENT OF THE SUBCONTRACT ARTICLE 7 § 7.1 TERMINATION BY THE SUBCONTRACTOR

The Subcontractor may terminate the Subcontract for the same reasons and under the same circumstances and procedures with respect to the Contractor as the Contractor may terminate with respect to the Owner under the Prime Contract, or for nonpayment of amounts due under this Subcontract for 60 days or longer. In the event of such

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termination by the Subcontractor for any reason which is not the fault of the Subcontractor. Sub-subcontractors or their agents or employees or other persons performing portions of the Work under contract with the Subcontractor, the Subcontractor shall be entitled to recover from the Contractor payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead, profit and damages.

§ 7.2 TERMINATION BY THE CONTRACTOR

§ 7.2.1 If the Subcontractor repeatedly fails or neglects to carry out the Work in accordance with the Subcontract Documents or otherwise to perform in accordance with this Subcontract and fails within a ten-day period after receipt of written notice to commence and continue correction of such default or neglect with diligence and promptness, the Contractor may, by written notice to the Subcontractor and without prejudice to any other remedy the Contractor may have, terminate the Subcontract and finish the Subcontractor's Work by whatever method the Contractor may deem expedient. If the unpaid balance of the Subcontract Sum exceeds the expense of finishing the Subcontractor's Work and other damages incurred by the Contractor and not expressly waived, such excess shall be paid to the Subcontractor. If such expense and damages exceed such unpaid balance, the Subcontractor shall pay the difference to the Contractor.

§ 7.2.2 If the Owner terminates the Prime Contract for the Owner's convenience, the Contractor shall promptly deliver written notice to the Subcontractor.

§ 7.2.3 Upon receipt of written notice of termination, the Subcontractor shall

- .1 cease operations as directed by the Contractor in the notice;
- .2 take actions necessary, or that the Contractor may direct, for the protection and preservation of the Work: and
- except for Work directed to be performed prior to the effective date of termination stated in the .3 notice, terminate all existing Sub-subcontracts and purchase orders and enter into no further Sub-subcontracts and purchase orders.

§ 7.2.4 In case of such termination for the Owner's convenience, the Subcontractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

§ 7.3 SUSPENSION BY THE CONTRACTOR FOR CONVENIENCE

§ 7.3.1 The Contractor may, without cause, order the Subcontractor in writing to suspend, delay or interrupt the Work of this Subcontract in whole or in part for such period of time as the Contractor may determine. In the event of suspension ordered by the Contractor, the Subcontractor shall be entitled to an equitable adjustment of the Subcontract Time and Subcontract Sum.

§ 7.3.2 An adjustment shall be made for increases in the Subcontract Time and Subcontract Sum, including profit on the increased cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent that

- .1 performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Subcontractor is responsible; or
- an equitable adjustment is made or denied under another provision of this Subcontract. .2

§ 7.4 ASSIGNMENT OF THE SUBCONTRACT

§ 7.4.1 In the event the Owner terminates the Prime Contract for cause, this Subcontract is assigned to the Owner pursuant to Section 5.4 of AIA Document A201-2007 provided the Owner accepts the assignment.

§ 7.4.2 Without the Contractor's written consent, the Subcontractor shall not assign the Work of this Subcontract, subcontract the whole of this Subcontract, or subcontract portions of this Subcontract.

ARTICLE 8 THE WORK OF THIS SUBCONTRACT

The Subcontractor shall execute the following portion of the Work described in the Subcontract Documents, including all labor, materials, equipment, services and other items required to complete such portion of the Work, except to the extent specifically indicated in the Subcontract Documents to be the responsibility of others.

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(Insert a precise description of the Work of this Subcontract, referring where appropriate to numbers of Drawings, sections of Specifications and pages of Addenda, Modifications and accepted alternates.)

The Scope of Work included in this Agreement is as described in the Subcontract Purchase Order Agreement and other Subcontract Documents enumerated therein.

ARTICLE 9 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 9.1 Subcontract Time is the period of time, including authorized adjustments, allotted in the Subcontract Documents for Substantial Completion of the Work described in the Subcontract Documents. The Subcontractor's date of commencement is the date from which the Subcontract Time of Section 9.3 is measured; it shall be the date of this Agreement, as first written above, unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Contractor.

(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

§ 9.2 Unless the date of commencement is established by a notice to proceed issued by the Contractor, or the Contractor has commenced visible Work at the site under the Prime Contract, the Subcontractor shall notify the Contractor in writing not less than five days before commencing the Subcontractor's Work to permit the timely filing of mortgages, mechanic's liens and other security interests.

§ 9.3 The Work of this Subcontract shall be substantially completed not later than the date(s) indicated in the Subcontract Purchase Order Agreement .

(Insert the calendar date or number of calendar days after the Subcontractor's date of commencement, Also insert any requirements for earlier substantial completion of certain portions of the Subcontractor's Work, if not stated elsewhere in the Subcontract Documents.)

Portion of Work

Substantial Completion Date

, subject to adjustments of this Subcontract Time as provided in the Subcontract Documents, (Insert provisions, if any, for liquidated damages relating to failure to complete on time.)

Liquidated damages shall be assessed in the amount of One Thousand Dollars (\$1,000) per calendar day or as provided for in the Prime Contract, whichever is greater. This amount for liquidated damages shall be deemed as a penalty.

§ 9.4 With respect to the obligations of both the Contractor and the Subcontractor, time is of the essence of this Subcontract.

§ 9.5 No extension of time will be valid without the Contractor's written consent after claim made by the Subcontractor in accordance with Section 5.3.

ARTICLE 10 SUBCONTRACT SUM

§ 10.1 The Contractor shall pay the Subcontractor in current funds for performance of the Subcontract the Subcontract Sum of (\$), subject to additions and deductions as provided in the Subcontract Documents.

§ 10.2 The Subcontract Sum is based upon the following alternates, if any, which are described in the Subcontract Documents and have been accepted by the Owner and the Contractor: (Insert the numbers or other identification of accepted alternates.)

Refer to the Subcontract Purchase Order Agreement for acceptable alternates, if any.

§ 10.3 Unit prices, if any:

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(Identify and state the unit price, and state the quantity limitations, if any, to which the unit price will be applicable.)

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Item

Units and Limitations

Indicated in the Subcontract Purchase Order Agreement.

§ 10.4 Allowances included in the Subcontract Sum, if any: (Identify allowance and state exclusions, if any, from the allowance price.)

Item

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Price

ARTICLE 11 PROGRESS PAYMENTS

§ 11.1 Based upon applications for payment submitted to the Contractor by the Subcontractor, corresponding to applications for payment submitted by the Contractor to the Owner, the Contractor shall make progress payments on account of the Subcontract Sum to the Subcontractor as provided below and elsewhere in the Subcontract Documents. Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor and Subcontractor for Work properly performed by their contractors and suppliers shall be held by the Contractor and Subcontractor for those contractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor or Subcontractor for which payment was made to the Contractor by the Owner or to the Subcontractor by the Contractor, as applicable. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor or Subcontractor, shall create any fiduciary liability or tort liability on the part of the Contractor or Subcontractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor or Subcontractor for breach of the requirements of this provision.

§ 11.2 The period covered by each application for payment shall be at 50% project completion and at 100% project completion.

Unless indicated otherwise in the Subcontract Purchase Order Agreement.

§ 11.3 Provided an application for payment is received by the Contractor not later than ten (10) days following the end of the period as provided in Subparagraph 11.2, the Contractor shall make payment to the Subcontractor within thirty (30) days after receipt of the invoice for the end of the period covered by the application for payment.

§ 11.4 If the Subcontractor's application for payment is received by the Contractor after the application date fixed above, the Subcontractor's Work covered by it shall be included by the Contractor in the next application for payment submitted by the Subcontractor.

§ 11.5 The Subcontractor shall submit to the Contractor a schedule of values prior to submitting the Subcontractor's first Application for Payment. Each subsequent application for payment shall be based upon the most recent schedule of values submitted by the Subcontractor in accordance with the Subcontract Documents. The schedule of values shall allocate the entire Subcontract Sum among the various portions of the Subcontractor's Work and be prepared in such form and supported by such data to substantiate its accuracy as the Contractor may require. This schedule, unless objected to by the Contractor, shall be used as a basis for reviewing the Subcontractor's applications for payment.

§ 11.6 Applications for payment submitted by the Subcontractor shall indicate the percentage of completion of each portion of the Subcontractor's Work as of the end of the period covered by the application for payment. The Subcontractor's total indicated percentage of completion shall not exceed the total percentage of completion as posted at the location of the project by the Contractor's Field Supervisor.

§ 11.7 Subject to the provisions of the Subcontract Documents, the amount of each progress payment shall be computed as follows:.

§ 11.7.1 Take that portion of the Subcontract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Subcontractor's Work by the share of the total

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Subcontract Sum allocated to that portion of the Subcontractor's Work in the schedule of values, less a retainage of ten (10%) percent. Pending final determination of cost to the Contractor of changes in the Work which have been properly authorized by the Contractor, amounts not in dispute shall be included to the same extent provided in the Prime Contract, even though the Subcontract Sum has not yet been adjusted.

§ 11.7.2 Add that portion of the Subcontract Sum properly allocable to materials and equipment delivered and suitably stored at the site by the Subcontractor for subsequent incorporation in the Subcontractor's Work or, if approved by the Contractor, suitably stored off the site at a location agreed upon in writing, less the same percentage retainage required by the Prime Contract to be applied to such materials and equipment in the Contractor's application for payment;

§ 11.7.3 Subtract the aggregate of previous payments made by the Contractor; and

§ 11.7.4 Subtract amounts, if any, calculated under Section 11.7.1 or 11.7.2 that are related to Work of the Subcontractor for which the Architect has withheld or nullified, in whole or in part, a certificate of payment for a cause that is the fault of the Subcontractor.

§ 11.8 Upon the partial or entire disapproval by the Contractor of the Subcontractor's application for payment, the Contractor shall provide written notice to the Subcontractor. When the basis for the disapproval has been remedied, the Subcontractor shall be paid the amounts withheld.

§ 11.9 SUBSTANTIAL COMPLETION

Within thirty (30) days after the project completion date and in accordance with the requirements of the Prime Contract and this agreement, the Subcontractor shall submit a final application for payment to the Contractor. Within thirty (30) days following receipt of the Subcontractor's final application for payment, the Contractor shall make payment to the Subcontractor, deducting any portion of the funds for the Subcontractor's Work to cover costs of items to be completed or corrected by the Subcontractor. Such payment to the Subcontractor shall be the entire unpaid balance of the Subcontract Sum less retainage of ten (10%) percent.

INSERT I: 11.10 PAYMENT REQUIREMENTS

INSERT J: 11.10.1 Prior to making payments as provided in Article 11, the Contractor must receive the following documents from the Subcontractor: 1) a fully executed Subcontract Purchase Order Agreement; 2) a certificate of insurance as provided in Article 13; 3) all applicable fully executed Subcontract Change Orders for the period covered by the application for payment; and 4) all required original Notary sealed affidavits and waivers of lien. Before issuance of payment, the Subcontractor shall submit evidence, satisfactory to the Contractor, that all payrolls, bills for materials and equipment, and all known indebtedness connected with the Subcontractor's Work have been satisfied. Evidence shall be in the form of supplier waivers of lien for all amounts over \$1,000, waivers of lien from subcontractors, waivers of lien from labor providers and notices of good standing from labor unions.

ARTICLE 12 FINAL PAYMENT

§ 12.1 Final payment, constituting the entire unpaid balance of the Subcontract Sum, shall be made by the Contractor to the Subcontractor when the Subcontractor's Work is fully performed in accordance with the requirements of the Subcontract Documents. Prior to making final payment the Contractor must receive the following documents from the Subcontractor: 1) a fully executed Subcontract Purchase Order Agreement; 2) a certificate of insurance as evidenced in Article 13; 3) all fully executed Subcontract Change Orders; 4) all original Notary sealed affidavits and waivers of lien; 5) all warranties required by the Subcontract Documents.

(Insert provisions for earlier final payment to the Subcontractor, if applicable.)

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§ 12.2 Before issuance of the final payment, the Subcontractor shall submit evidence satisfactory to the Contractor that all payrolls, bills for materials and equipment, and all known indebtedness connected with the Subcontractor's Work have been satisfied. Evidence shall be in the form of supplier waivers of lien for all amounts over \$1,000, waivers of lien from subcontractors, waivers of lien from labor providers and notices of good standing from labor unions.

ARTICLE 13 INSURANCE AND BONDS

§ 13.1 The Subcontractor shall purchase and maintain insurance in effect for the benefit of the Subcontractor, the Contractor, the Owner and, if applicable, the Landlord in the following types of coverage and minimum limits of liability:

- 1) Workers Compensation and Employers Liability insurance with limits in accordance with statutory requirements at the location of the Project.
- Commercial General Liability insurance with General Aggregate limit of \$1,000,000; 2) Products-Com/Op Aggregate limit of \$1,000,000; Personal & Adv. Injury limit of \$1,000,000; Each Occurrence limit of \$1,000,000; Fire Damage (any one fire) limit of \$500,000; Med Expense (any one person) limit of \$5,000.
- Automobile Liability insurance with Combined Single limit of \$500,000. This paragraph shall be in 3) addition to and not in limitation of any other types of coverage, limits of liability, or any other requirements by law of Subcontract Documents.

Type of insurance or bond

Limit of liability or bond amount (\$0.00)

§ 13.2 Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from the date of commencement of the Subcontractor's Work until the date of final payment and termination of any coverage required to be maintained after final payment to the Subcontractor, and, with respect to the Subcontractor's completed operations coverage, until the expiration of the period for correction of Work or for such other period for maintenance of completed operations coverage as specified in the Prime Contract.

§ 13.3 Certificates of insurance acceptable to the Contractor shall be filed with the Contractor prior to commencement of the Subcontractor's Work. These certificates and the insurance policies required by this Article 13 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Contractor. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final application for payment as required in Article 12. If any information concerning reduction of coverage is not furnished by the insurer, it shall be furnished by the Subcontractor with reasonable promptness according to the Subcontractor's information and belief. Certificates of Insurance shall indicate the name and location of the Project. Certificates of Insurance must name "Commercial Contractors, Inc., Owner (insert Owner name) and Landlord (insert Landlord name" as additional insureds on a primary noncontributory basis.

INSERT K: 13.3.1 The Subcontractor is required to name Commercial Contractors, Inc., Owner (insert Owner name) and Landlord (insert Landlord name) as additional insureds pursuant to GC 2010 11/85 or equivalent. Additional insured coverage shall apply to the Subcontractor's ongoing and completed operations on a primary basis without contribution from any other insurance or self-insurance. The Subcontractor shall maintain products-completed operations through the longer of the applicable statute of limitations or repose period for construction defects and products liability claims in the state where the Project Work was performed.

§ 13.4 The Subcontractor shall cause the commercial liability coverage required by the Subcontract Documents to include: (1) the Contractor, the Owner, the Architect and the Architect's consultants as additional insureds for claims caused in whole or in part by the Subcontractor's negligent acts or omissions during the Subcontractor's operations; and (2) the Contractor as an additional insured for claims caused in whole or in part by the Subcontractor's negligent acts or omissions during the Subcontractor's completed operations.

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§ 13.5 The Contractor shall furnish to the Subcontractor satisfactory evidence of insurance required of the Contractor under the Prime Contract.

§ 13.6 The Contractor shall promptly, upon request of the Subcontractor, furnish a copy or permit a copy to be made of any bond covering payment of obligations arising under the Subcontract.

§ 13.7 Performance Bond and Payment Bond:

(If the Subcontractor is to furnish bonds, insert the specific requirements here.)

Bond type	Bond amount (\$0.00)	Bond delivery date	Bond form
Dour Gho	Bona amoune (voico)	Bona aonroig aato	Dona tonn

Performance and Payment Bonds shall not be required unless otherwise stated int eh Subcontract Purchase Order Agreement.

§ 13.8 PROPERTY INSURANCE

§ 13.8.1 When requested in writing, the Contractor shall provide the Subcontractor with copies of the property and equipment policies in effect for the Project. The Contractor shall notify the Subcontractor if the required property insurance policies are not in effect.

§ 13.8.2 If the required property insurance is not in effect for the full value of the Subcontractor's Work, then the Subcontractor shall purchase insurance for the value of the Subcontractor's Work, and the Subcontractor shall be reimbursed for the cost of the insurance by an adjustment in the Subcontract Sum.

§ 13.8.3 Property insurance for the Subcontractor's materials and equipment required for the Subcontractor's Work, stored off site or in transit and not covered by the Project property insurance, shall be paid for through the application for payment process.

§ 13.9 WAIVERS OF SUBROGATION

The Contractor and Subcontractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Owner, the Architect, the Architect's consultants, separate contractors, and any of their subcontractors, sub-subcontractors, agents and employees for damages caused by fire or other causes of loss to the extent covered by property insurance provided under the Prime Contract or other property insurance applicable to the Work, except such rights as they may have to proceeds of such insurance held by the Owner as a fiduciary. The Subcontractor shall require of the Subcontractor's Sub-subcontractors, agents and employees, by appropriate agreements, written where legally required for validity, similar waivers in favor of the parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

ARTICLE 14 **TEMPORARY FACILITIES AND WORKING CONDITIONS**

§ 14.1 The Contractor shall furnish and make available at no cost to the Subcontractor the Contractor's temporary facilities, equipment and services, except as noted below:

Refer to the Subcontract Purchase Order Agreement and elsewhere in the Subcontract Documents.

Temporary Facility, Equipment or Service Cost, if any (\$0.00)

§ 14.2 Specific working conditions:

(Insert any applicable arrangements concerning working conditions and labor matters for the Project.)

Refer to the Subcontract Purchase Order Agreement and elsewhere in the Subcontract Documents.

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ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Where reference is made in this Subcontract to a provision of another Subcontract Document, the reference refers to that provision as amended or supplemented by other provisions of the Subcontract Documents.

§ 15.2 Payments due and unpaid under this Subcontract shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

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Per annum

§ 15.3 Retainage and any reduction thereto are as follows:

The retainage from all payments as provided in Article 11 shall become the Final payment as provided in Article 12

§ 15.4 The Contractor and Subcontractor waive claims against each other for consequential damages arising out of or relating to this Subcontract, including without limitation, any consequential damages due to either party's termination in accordance with Article 7.

ARTICLE 16 ENUMERATION OF SUBCONTRACT DOCUMENTS

§ 16.1 The Subcontract Documents, except for Modifications issued after execution of this Subcontract, are enumerated in the sections below.

§ 16.1.1 This executed AIA Document A401–2007, Standard Form of Agreement Between Contractor and Subcontractor.

§ 16.1.2 The Prime Contract, consisting of the Agreement between the Owner and Contractor dated as first entered above and the other Contract Documents enumerated in the Owner-Contractor Agreement.

§ 16.1.3 The following Modifications to the Prime Contract, if any, issued subsequent to the execution of the Owner-Contractor Agreement but prior to the execution of this Agreement:

Modification

Date

§ 16.1.4 Additional Documents, if any, forming part of the Subcontract Documents:

AIA Document E201TM-2007, Digital Data Protocol Exhibit, if completed by the parties, or the -1 following:

Other documents:

(List here any additional documents that are intended to form part of the Subcontract Documents. Requests for proposal and the Subcontractor's bid or proposal should be listed here only if intended to be/made part of the Subcontract Documents.)

This Agreement entered into as of the day and year first written above.

(Printed name and title) Ken R. Sharkey Vice President

CONTRACTOR (Signature)

SUBCONTRACTOR (Signature)

(Printed name and title)

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