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PERMIT SET 03/27/2020 COLLINS WEBB #: 19026



OWNER

MARK WESTHUES MC PROPERTIES OF MISSOURI, LLC 620 NE LAKE POINTE DR. LEE'S SUMMIT, MISSOURI 64064

Store <td

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VICINITY MAP

GENER	RAL
SHEET NUMBER	
CS	COVER SHEET
G001	GENERAL INFORMATION
G102	LIFE SAFETY PLANS
G103	ACCESSIBILITY GUIDELI
G104	WALL TYPES & SPECIFIC
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SHEET NO.	
A101	FLOOR PLAN & DOOR D
A601	REFLECTED CEILING PL
A701	INTERIOR ELEVATIONS
A903	FINISH FLOOR PLAN & D
MEP	
SHEET NUMBER	
MEP0	MECHANICAL/ELECTRIC
MEP1	MECHANICAL/ELECTRIC
MEP2	MECHANICAL/ELECTRIC
M101	MECHANICAL - PLANS, S
P101	PLUMBING - PLANS, SCH

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	LIFE SAFETY PLANS
	ACCESSIBILITY GUIDELINES
	WALL TYPES & SPECIFICATIONS
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	SHEET NAME
	FLOOR PLAN & DOOR DETAILS
	REFLECTED CEILING PLANS
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	FINISH FLOOR PLAN & DETAILS
	SHEET NAME
	MECHANICAL/ELECTRICAL/PLUMBING - COVER SHEET
	MECHANICAL/ELECTRICAL/PLUMBING - SPECIFICATIONS
	MECHANICAL/ELECTRICAL/PLUMBING - SPECIFICATIONS
	MECHANICAL - PLANS, SCHEDULES & DETAILS
_	PLUMBING - PLANS, SCHEDULES & DETAILS
	ELECTRICAL - PLANS, SCHEDULES & DETAILS
	ELECTRICAL - POWER PLANS, SCHEDULES & DETAILS





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WALL PRIORITY LEGEND	FIRE & SMOKE RESISTIVE LEGEND I
NOTE: THIS LEGEND IS FOR GRAPHIC REPRESENTATION ONLY.	FIRE WALLS (FW)
FOUR HOUR FIRE WALL (4FW) THREE HOUR FIRE WALL (3FW) TWO HOUR FIRE WALL (2FW) FOUR HOUR FIRE BARRIER (4FB)	DEFINITION A FIRE RATED WALL THAT IS CONTINUOUS VERTICALLY FROM FOUNDATION TO ROOF TO SEPARATE CONSTRUCTION SEPARATE BUILDINGS.
THREE HOUR FIRE BARRIER (3FB)	FIRE WALLS SERVE TO CREATE SEPARATE BUILDINGS FOR THE FOLLOWING REASONS.
TWO HOUR FIRE BARRIER (2FB) (INCLUDES THE FOLLOWING) TWO HOUR SHAFT ENCLOSURE (2SE) ONE HOUR FIRE BARRIER (1FB) (INCLUDES THE FOLLOWING)	CONSTRUCTION TYPE VARIES FROM ONE BUILDING TO ANOTHER. COMPLIANCE WITH MAXIMUM ALLOWABLE AREA REQUIREMENTS. TO SEPARATE BUILDINGS WITH DIFFERENT LEVELS OF FIRE PROTECTION. TO ADDRESS A PROPERTY LINE DEFINING DIFFERENT OWNERSHIP
ONE HOUR SHAFT ENCLOSURE (1SE)	SPECIAL CONSIDERATIONS
 SMOKE TIGHT PARTITION (X) (INCLUDES THE FOLLOWING) SMOKE TIGHT PARTITION TO SMOKE TIGHT CEILING (XC) SMOKE TIGHT PARTITION WITHIN PLENUM ABOVE CEILING (XP) SMOKE TIGHT PARTITION SEPARATION OF INTERSTITIAL SPACES (XI) 	 THE FIRE WALL REQUIRES SUFFICIENT STRUCTURAL STABILITY UNDER FIRE CONDITIONS TO ALLOW THE COLLAPSE OF CONSTRUCTION ON EITHER SIDE WITHOUT COLLAPSE OF THE WALL. OPENINGS ARE REQUIRED TO BE PROTECTED. OPENINGS ARE LIMITED BASED ON A PERCENTAGE OF WALL LENGTH.
	 EXTENDING THE FIRE WALL THROUGH THE ROOF WITH A PARAPET IS REQUIRED FOR SOME CONSTRUCTION CLASSIFICATIONS. THE REQUIRED FIRE RATING OF A FIRE WALL IS BASED ON OCCUPANCY GROUPS AND CLASS OF CONSTRUCTION. HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER.
HIGHER PRIORITY WALLS SHALL PASS THROUGH A LOWER PRIORITY WALL	FIRE BARRIERS (FB)
	A FIRE RATED WALL CONSTRUCTED TO RESTRICT THE SPREAD OF FIRE. CONTINUITY SHALL BE MANNAVED FROM TOP OF FLOOR TO UNDERSIDE OF THE FLOOR OR ROOF DECK ABOVE.
	<u>USE</u>
TAPE & SEAL HIGHER PRIORITY WALL BEHIND INTERSECTING LOWER PRIORITY WALL (TYP) HIGHER PRIORITY WALL TAPE & JOINT COMPOLINID (TYP)	 FIRE BARRIERS HAVE THE FOLLOWING APPLICATIONS. TO CREATE HORIZONTAL EXITS. TO SEPARATE EXIT PASSAGEWAYS. OCCUPANCY SEPARATIONS. TO SEPARATE INCIDENTAL USE AREAS. ISOLATION OF HAZARDS.
A HIGHER PRIORITY WALL B	 TO SEPARATE ROOMS WITH DIFFERENT LEVELS OF FIRE PROTECTION. SMOKE BARRIERS AND SHAFT ENCLOSURES ARE FIRE BARRIERS. SEE ADDITIONAL REQUIREMENTS.
	SPECIAL CONSIDERATIONS WITHIN SOME CONSTRUCTION CLASSIFICATIONS, CONSTRUCTION THAT PROVIDES STRUCTURAL SUPPORT OF A FIRE BARRIER IS REQUIRED TO BE OF THE SAME HOURLY FIRE RATING AS THE FIRE BARRIER OR BETTER
COMPOUND (TYP)	 OPENINGS ARE REQUIRED TO BE PROTECTED. HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER.
HIGHER PRIORITY WALL (TYP)	SHAFT ENCLOSURES (SE)
	DEFINITION A SHAFT ENCLOSURE IS A FIRE BARRIER FORMING THE BOUNDARY OF A VERTICAL
	SHAFT.
	USE PROTECT OPENINGS IN FIRE RATED FLOOR/CEILING ASSEMBLIES.
TAPE & JOINT COMPOUND (TYP) HIGHER PRIORITY WALL	 <u>SPECIAL CONSIDERATIONS</u> PENETRATIONS IN SHAFT ENCLOSURES ARE PROHIBITED UNLESS NECESSARY FOR THE FUNCTION OF THE SHAFT, WHERE ALLOWED.
NOTES:	OPENINGS ARE REQUIRED TO BE PROTECTED. DUCT PENETRATIONS REQUIRE COMBINATION SMOKE AND FIRE DAMPERS
 REFER TO WALL TYPES ON SHEET G121-TI FOR WALL COMPONENTS, NUMBER OF GYPSUM BOARD LAYERS, TYPE OF GYPSUM BOARD, AND OTHER SIMILAR INFO. THE HIGHER PRIORITY WALL SHALL PASS THROUGH THE LOWER PRIORITY WALL. TAPING AND SEALING OF HIGHER PRIORITY WALLS SHALL BE CONTINUOUS. ALTERNATE LAYERS OF GYPSUM BOARD SHALL OVERLAP AT CORNER 	 EXCEPT FOR EXISTING CONDITIONS THAT ARE GRANDFATHERED. HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH, CLOSER, AND PERIMETER SMOKE SEALS.



A10 HANDRAIL @ STAIRS 3/4" = 1'-0"

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FINITIONS	GENERAL DE	ESCRIP	TION			
RE PARTITIONS (FP)	PROJECT NAME: 3RD S PROJECT LOCATION: 5	T. DISPENSAR	۲۲ ., LEE'S SUMMIT, MO, 64063			
NITION E RATED PARTITION THAT IS USED FOR THE APPLICATIONS LISTED BELOW. IT L BE CONTINUOUS AND TOP OF FLOOR TO UNDERSIDE OF A FIRE-RATED R/CEILING OR ROOF CEN NG SET UP. WHERE ALLOWED BY CODE PTION, A FIRE PARTITION SHALL BE ALLOWED TO TERMINATE AT THE UPPER BRANE OF A FIRE RATED CEILING	ARCHITECT: COLLINS WEBB ARCHIT 13A SW 3RD STREET LEES SUMMIT, MISSOUF <u>APPLICABLE CODES:</u> 2018 INTERNATIONAL B	ECTURE RI 64063 UILDING CODE	, , , , , , , , , , , , , , , , , , ,			
PARTITIONS ARE USED IN CERTAIN OCCUPANCIES TO DO THE FOLLOWING. SEPARATE DWELLING UNITS SEPARATE SLEEPING SPACES SEPARATE CORRIDORS FROM ADJACENT SPACES SEPARATE ELEVATOR LOBBIES SEPARATE TENANT SPACES IN COVERED MALL BUILDINGS	2018 INTERNATIONAL P 2018 INTERNATIONAL M 2018 INTERNATIONAL FI 2018 INTERNATIONAL FI 2017 NATIONAL ELECTR ICC/ANSI A117.1-2017, A	LUMBING COD IECHANICAL C UEL GAS COD IRE CODE RICAL CODE CCESSIBLE AN	DE ODE E ND USABLE BUILDINGS AND	FACILITIES		
IAL CONSIDERATIONS	CODE INFOR		N	TABLE/SECTION/REFE	RENCE	
OPENINGS ARE REQUIRED TO BE PROTECTED. HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER. ARTING WALLS (BW)	BUILDING/PROJECT US CONSTRUCTION TYPE OCCUPANCY CLASSIFIC BASE ALLOWABLE ARE ACTUAL TENANT AREA NUMBER OF STORIES	E: CATION A (GROSS)	NO CHANGE VB NO CHANGE NO CHANGE 6,000 SF 1,700 SF 1	SECTION 303 OR 304 TABLE 601 SECTION 303 OR 304 TABLE 506.2 TABLE 504.4		
ARING WALL IS FIRE PLED ONG TO MAINTAIN THE INTEGRITY OF ITSELF AS A RATED STRUCTURAL ELEMENT AND VALL DOES NOT SERVE AS A FIRE RATION FROM ONE SIDE TO THE OTHER SIDE	FIRE RESIST	IVE REG	QUIREMENTS	TABLE/SECTION/REFE	RENCE	
RTICAL, LOAD BEARING STRUCTURAL ELEMENT. HAL CONSIDERATIONS DOORS AND WINDOWS ARE NOT REQUIRED TO BE RATED.	PRIMARY FRAME NON-BEARING WALLS BEARING WALLS INT./ EX FLOOR CONSTRUCTION CEILING/ROOF CORRIDORS	(Т.	0 HRS 0 HRS 0 INT. / 0 EXT. HRS 0 HRS 0 HRS 0 HRS	TABLE 601 TABLE 601 TABLE 601 TABLE 601 TABLE 601 TABLE 1018.1		
HVAC DUCT PENETRATIONS ARE NOT REQUIRED TO BE FIRE-DAMPERED. PLUMBING, ELECTRICAL, SPRINKLER SYSTEM, AND CABLE PENETRATIONS ARE REQUIRED TO BE FIRE-STOPPED WITH FIRE SEALANT AT BOTH SIDES,	FIRE EXTINGUISHERS					
TIVE FIRE PROTECTION SYSTEMS:	1. PROVIDE PORTABLE FI LOCATIONS. NOTIFY ARC 2. PORTABLE FIRE EXTING EXTINGUISHERS.	RE EXTINGUIS CHITECT OF AI GUISHERS SH/	HERS IN OCCUPANCIES ANI NY PROPOSED RELOCATION ALL BE INSTALLED, INSPECT	D LOCATIONS AS REQUIRED BY I OR IF A CONFLICT IS ENCOUNT FED, AND MAINTAINED IN ACCOR	THE FIRE CODE. SE ERED. DANCE WITH NFPA	
AUTOMATIC SPRINKLER SYSTEM - PROVIDED THROUGHOUT (903.2.1)	CEILING HEI	GHT NC	DTES: (IBC 120	7)		
STANDPIPE SYSTEM PROVIDED IN STAIRS THROUGHOUT (905) ADDITIONAL COMPLETIONS REQUIDED AS SHOWN (905) ESCALATOR OPING PROTECTED ACCORDANCE WITH IBC 712.1.3.1. DRAFT CURTAIN AND CLOSELY SPACED SPRINKLERS.	1. ALL MEANS OF EGRESS A.F.F. 2. OCCUPIED SPACES, HA 3. BATHROOMS, TOILET R	S TO HAVE A M ABITABLE SPAC ROOMS, KITCH	MINIMUM CEILING HEIGHT OF CES AND CORRIDORS SHAL ENS, STORAGE ROOMS AND	7'-6" A.F.F., NOR SHALL HAVE A L HAVE A CEILING HEIGHT OF NO LAUNDRY ROOMS SHALL HAVE	INY PROJECTION FF DT LESS THAN 7'-6" A CEILING HEIGHT	
	INTERIOR FII	NISHES				
	GROUP A EXIT ENCLOSURES	MAX. FLAME	E SPREAD	803.13 IBC		
	LOBBIES & CORRIDORS	CLASS A		803.13 IBC		
NEKAL NUTES	ALL OTHER SPACES	CLASS B		803.13 IBC		
THE FOLLOWING INFORMATION SERVES TO PROVIDE BUILDING OWNERS WITH	TEXTILES	CLASS A (0-	25)	IBC 803.1.2		
CONCISE DEFINITIONS OF WALL TYPES RELATED TO LIFE SAFETY ISSUES. THIS INFORMATION IS NOT MEANT TO BE A SUBSTITUTE FOR APPLICABLE BUILDING	SMOKE DEVELOPED	0-450		IBC 803.1.2		
CODES. WHEN A WALL HAS MORE THAN ONE CLASSIFICATION, THE MOST RESTRICTIVE REQUIREMENTS FOR EACH CLASSIFICATION SHALL APPLY.	NOTE: Decorative Materials and Tr	rim (including p	plastics) must comply with IB	C Section 806.		



FOR NEW CONSTRUCTION, PERIMETER SMOKE-SEALS MAY BE REQUIRED AT

FIRE-RATED DOORS IN CERTAIN OCCUPANCIES.



ACCESSIBILITY GUIDELINES

& PROTRUDE 1" MAX. ADA CALL BUTTONS: 42" TO C.L. (TY & 48" MAX. (3/4" SMALLEST DIM.). ADA VISIBLE SIGNALS: 72 MIN. TO C.L. (2 1/2" SMALLEST DIM.). TACTILE SIGNAL ON HOISTWAY: 60" TO BASE OF CHARACTERS W/ TACTILE

STANDARD MOUNTING HEIGHTS: PUSH PLATES = 42", PULL HANDLES = 42", KNOBS/ LEVERS = 40", PANIC EXIT = 42" CENTERLINE OF BAR, KICKPLATES: WIDTH = DOOR WIDTH THRESHOLDS: STANDARD = 1/2" MAX. AT EXT. SLIDING DOORS = 3/4" MAX., ADA HARDWARE = 34" MIN. TO 48" MAX. DRINKING FOUNTAINS & EWC'S (TO SPOUT): STANDARD =

WATER CLOSETS (TO TOP OF SEAT): STANDARD = 14" TO

LAVATORIES (TO SINK RIM/ COUNTERTOP): STANDARD = MIRRORS (TO B.O. REFLECTIVE SURFACE): STANDARD =

GRAB BARS - ADA (TO TOP OF BAR): WATER CLOSETS = 33 MIN. TO 36" MAX. SHOWERS = 33" MIN. TO 36" MAX. (FROM B.O.SHOWER). BATHTUBS: TOP BAR = 33" MIN. TO 36" MAX.

TO 84". ADA = SPRAY UNIT W/ HOSE 60" LONG MIN. ADA = SHOWER CONTROLS (TO CONTROL AREA): STANDARD =

TOILET ROOM PARTITIONS: TOILETS = 12" TO BOT. & 70"

OBSTRUCTED AND UNOBSTRUCTED REACH RANGES. ADA

WARM AIR HAND DRYER (TO PUSH SWITCH): STANDARD = 44" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA

STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. 8 SANITARY NAPKIN DISPOSAL (TO TOP OF UNIT): STANDARD TOILET SEAT COVER DISPENSERS (TO OPNG.): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA

STANDARD = 32" TO 39" (TO B.O. BOARD OR CHALKTRAY). FORWARD REACH = 48" MAX. ADA SIDE REACH = 48" MAX. LIGHT SWITCHES & CARD READERS (TO C.L.): LOCATE 6 CONVENIENCE RECEPTACLES – ELECTRICAL/ TELEPHONE

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MIN. ABOVE DOOR FRAME. EQUAL SPACE FROM CEILING FIRE EXTINGUISHERS (TO TOP, U.N.O.): GROSS WT. 40 LB OR LESS = 60" MAX. GROSS WT. MORE THAN 40 LBS. = 4

FIRE ALARM PULL STATIONS (TO LEVER): STANDARD = 48 MAX. ADA FORWARD REACH = 48" MAX. ADA SIDE REACH

HORN/ SPEAKER/ VISUAL SIGNALS: STANDARD = 80" AF OR 6" BELOW CEILING - WHICHEVER IS LOWER. ROOM SIGNAGE (TO C.L.): STANDARD = 60" HIGH AFF. &



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SPECIFICATIONS		
GENERAL REQUIREMENTS APPLICABLE TO ALL MATERIALS FOR THE PROJECT:	CARPET TILE	
 NO SUBSTITUTIONS OF MATERIALS WITHOUT COMPLETION OF A SUBSTITUTION REQUEST FORM & APPROVAL OF SUBSTITUTION BY BOTH ARCHITECT & OWNER PROJECT MANAGER. FORM CAN BE REQUESTED FROM ARCHITECT. A CONDENSED SET OF SPECIFICATIONS ARE PROVIDED FOR THE PROJECT. STRICT ADHEARANCE TO MANUFACTURER REQUIREMENTS AND INSTALLATION ARE REQUIRED TO BE FOLLOWED WITH SECTIONS PROVIDED WITHIN. IF REQUIRED THE ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO PRODUCTS OR INSTALLATION REQUIREMENTS. 	 FIELD CONDITIONS 1. STORE MATERIALS IN AREA OF INSTALLATION FOR MINIMUM PERIOD OF 24 HOURS PRIOR TO INSTALLATION. ACCESSORIES 2. SUB-FLOOR FILLER: WHITE PREMIX LATEX; TYPE RECOMMENDED BY FLOORING MATERIAL MANUFACTURER. 3. EDGE STRIPS: EMBOSSED ALUMINUM, COLOR AS SELECTED BY ARCHITECT. 4. ADHESIVESCOMPATIBLE WITH MATERIALS BEING ADHERED 	
ROUGH CARPENTRY 1. PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING ITEMS, WHETHER FURNISHED BY OWNER	EXAMINATION 1. VERIFY THAT SUB-FLOOR SURFACES ARE SMOOTH AND FLAT WITHIN TOLERANCES SPECIFIED FOR THAT TYPE OF	
OR CONTRACTOR. 2. CONCEALED WOOD IS TO BE FIRE RETARDANT TREATED UNLESS NOTED OTHERWISE. 3. PRESERVATIVE TREATED LUMBER IS REQUIRED FOR ALL ITEMS TO REMAIN IN CONTACT WITH CONCRETE OR MASONRY TO CONFORM TO AWPA STANDARD 5. 4. PLYWOOD SHALL BE CD GRADE APA FIR OR YELLOW PINE. ALL PLY-WOOD TO BE FIRE RATED. 5. BLOCKING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES & LEVELS, SECURELY CONNECTED & RIGIDLY FIXED IN PLACE, USING NAILS, SCREWS, &/OR BOLTS AS INDICATED OR REQUIRED BY GOOD PRACTICE AND MANUFACTURER'S RECOMMENDATIONS.	 WORK AND ARE READY TO RECEIVE CARPET TILE. 2. CEMENTITIOUS SUB-FLOOR SURFACES: VERIFY THAT SUBSTRATES ARE DRY ENOUGH AND READY FOR FLOORING INSTALLATION BY TESTING FOR MOISTURE AND PH. 3. TEST IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS 3. OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY FLOORING MATERIAL MANUFACTURER AND ADHESIVE MATERIALS MANUFACTURER. 	
	PREPARATION 1. PREPARE FLOOR SUBSTRATES FOR INSTALLATION OF FLOORING IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS	
 WOOD TRIM SHALL BE FOR FAILTED FINISH. INSTALL TRIM WORK STRAIGHT & TRUE IN ALIGNMENT & RIGIDLY FASTEN IN PLACE. FIELD VERIFY ALL DIMENSIONS. COORDINATE WHERE BLOCKING OR BACKING IS REQUIRED. MAKE ALL JOINTS TO CONCEAL SHRINKAGE, MITER ALL EXTERIOR CORNERS, COPE ALL INTERIOR CORNERS & SCARF ALL END-TO-END JOINTS. INSTALL PIECES AS LONG AS POSSIBLE TO MINIMIZE JOINTS. JOINTING ONLY WHERE SOLID SUPPORT IS OBTAINED. DEEP SET ALL FASTENERS, FILL, CLEAN & SAND AS REQUIRED FOR PAINT OR STAIN FINISH. 	INSTALLATION 1. STARTING INSTALLATION CONSTITUTES ACCEPTANCE OF SUB-FLOOR CONDITIONS. 2. INSTALL CARPET TILE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CRI 104 (COMMERCIAL). 3. BLEND CARPET FROM DIFFERENT CARTONS TO ENSURE MINIMAL VARIATION IN COLOR MATCH. 4. CUT CARPET TILE CLEAN. FIT CARPET TIGHT TO INTERSECTION WITH VERTICAL SURFACES WITHOUT GAPS. 5. LAY CARPET TILE IN SQUARE PATTERN, WITH PILE DIRECTION PARALLEL TO NEXT UNIT, SET PARALLEL TO BUILDING	
 INSULATION PROVIDE INSULATION AS SHOWN IN WALL TYPES. PROVIDE 6 INCH BATT INSULATION OVER THE TOP OF STRUCTURAL FRAMING, CONTINUOUS, AS REQUIRED TO MAINTAIN AN INSULATION BARRIER. MINERAL FIBER BATT INSULATION: FLEXIBLE OR SEMI-RIGID PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665; FRICTION FIT; UNFACED FLAME SPREAD INDEX OF 0 (ZERO) WHEN TESTED IN ACCORDANCE WITH ASTM E84. I. AME SPREAD INDEX: 25 OF LESS. WHEN TESTED IN ACCORDANCE WITH ASTM E84. 	LINES. 6. LOCATE CHANGE OF COLOR OR PATTERN BETWEEN ROOMS UNDER DOOR CENTERLINE. 7. FULLY ADHERE CARPET TILE TO SUBSTRATE. 8. TRIM CARPET TILE NEATLY AT WALLS AND AROUND INTERRUPTIONS. 9. COMPLETE INSTALLATION OF EDGE STRIPS, CONCEALING EXPOSED EDGES.	
3. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84. <u>SEALANTS</u>	TILING- PREPARATION	т
 ACCEPTABLE MANUFACTURERS ARE BOSTIK OR EQUAL & APPROVED. ACRYLIC LATEX CAULK AT INTERIOR TRIM SHALL BE ASTM C834; PAINTABLE TYPE. PROVIDE PRIMERS, JOINT BACKING & OTHER ACCESSORIES AS REQUIRED, & RECOMMENDED BY THE MANUFACTURER. PREPARE SURFACE PER SEALANT MANUFACTURER'S RECOMMENDATIONS, APPLY WITH SUFFICIENT PRESSURE TO FILL ALL VOIDS & FINISH JOINTS TO BE OLIVITY & ONNACY & WEATHER TO THE 	 FOLLOW ALL MANUFACTORER RECOMMENTION FOR PREPARING EXISTING SUBFLOORING AND INSTALLATION PROTECTIONS. PROTECT SURROUNDING WORK FROM DAMAGE. VACUUM CLEAN SURFACES AND DAMP CLEAN. SEAL SUBSTRATE SURFACE CRACKS WITH FILLER. LEVEL EXISTING SUBSTRATE SURFACES TO ACCEPTABLE FLATNESS TOLERANCES. INSTALL BACKER BOARD IN ACCORDANCE WITH ANSI A108.11 AND BOARD MANUFACTURER'S INSTRUCTIONS. 	
SLIGHTLY CONVEX & WEATHER TIGHT. 5. CAULK OR SEAL ALL JOINTS BETWEEN DISSIMILAR MATERIALS.	TAPE JOINTS AND CORNERS, COVER WITH SKIM COAT OF SETTING MATERIAL TO A FEATHER EDGE.	
 INTERIOR JOINTS: USE NON-SAG POLYURETHANE SEALANT, UNLESS OTHERWISE INDICATED. WALL AND CEILING JOINTS IN NON-WET AREAS: ACRYLIC EMULSION LATEX SEALANT. WALL AND CEILING JOINTS IN WET AREAS: NON-SAG POLYURETHANE SEALANT FOR CONTINUOUS LIQUID IMMERSION. IN SOUND-RATED ASSEMBLIES: USE ONE OF THE FOLLOWING SEALANTS. 	 INSTALL TILE, THRESHOLDS, AND STAIR TREADS AND GROUT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF ANSI A108.1A THROUGH ANSI A108.13, MANUFACTURER'S INSTRUCTIONS, AND TCNA (HB) RECOMMENDATIONS. LAY TILE TO PATTERN INDICATED. DO NOT INTERRUPT TILE PATTERN THROUGH OPENINGS. CUT AND FIT TILE TO PENETRATIONS THROUGH TILE, LEAVING SEALANT JOINT SPACE. FORM CORNERS AND BASES NEATLY. ALIGN FLOOR JOINTS. 	
A. TREMCO® ACOUSTICAL/CURTAINWALL SEALANT B. PECORA AIS-919 ACCESS LADDERS	 PLACE TILE JOINTS UNIFORM IN WIDTH, SUBJECT TO VARIANCE IN TOLERANCE ALLOWED IN TILE SIZE. MAKE GROUT JOINTS WITHOUT VOIDS, CRACKS, EXCESS MORTAR OR EXCESS GROUT, OR TOO LITTLE GROUT. FORM INTERNAL ANGLES SQUARE AND EXTERNAL ANGLES BULLNOSED. INSTALL CERAMIC ACCESSORIES RIGIDLY IN PREPARED OPENINGS. INSTALL NON-CERAMIC TRIM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 	
1. PROVIDE IN COMPLIANCE WITH ANSI A14.3;WITH MOUNTING BRACKETS AND ATTACHMENTS;PRIME / PAINT FINISH. 2. SIDE RAILS:3/8" X 2" MEMBERS SPACED AT 20 INCHES 3. RUNGS: ONE INCH DIAMETER SOLID ROUND BAR SPACED 12 INCHES ON CENTER. 4. SPACE RUNGS 7 INCHES FROM WALL SURFACE. 5. PROVIDE SHOP DRAWINGS INDICATING SIZE, CONNECTION ATTACHMENTS , ANCHORAGE AND DETAILS.	 INSTALL THRESHOLDS WHERE INDICATED. SOUND TILE AFTER SETTING. REPLACE HOLLOW SOUNDING UNITS. KEEP CONTROL AND EXPANSION JOINTS FREE OF MORTAR, GROUT, AND ADHESIVE. PRIOR TO GROUTING, ALLOW INSTALLATION TO COMPLETELY CURE; MINIMUM OF 48 HOURS. GROUT TILE JOINTS UNLESS OTHERWISE INDICATED. USE STANDARD GROUT UNLESS OTHERWISE INDICATED. AT CHANGES IN PLANE AND TILE-TO-TILE CONTROL JOINTS, USE TILE SEALANT INSTEAD OF GROUT, WITH EITHER 	
WOOD DOORS DOORS: REFER TO DRAWINGS FOR LOCATIONS AND ADDITIONAL REQUIREMENTS	RESILIENT FLOORING -LVT	
 QUALITY STANDARD: CUSTOM GRADE, HEAVY DUTY PERFORMANCE, IN ACCORDANCE WITH AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) OR WDMA I.S. 1A. WOOD VENEER FACED DOORS: 5-PLY UNLESS OTHERWISE INDICATED. HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACED DOORS: 5-PLY UNLESS OTHERWISE INDICATED. 	 PREPARATION 1. PREPARE FLOOR SUBSTRATES AS RECOMMENDED BY FLOORING AND ADHESIVE MANUFACTURERS. 2. REMOVE SUB-FLOOR RIDGES AND BUMPS. FILL MINOR LOW SPOTS, CRACKS, JOINTS, HOLES, AND OTHER DEFECTS WITH SUB-FLOOR FILLER TO ACHIEVE SMOOTH, FLAT, HARD SURFACE. 3. PROHIBIT TRAFFIC UNTIL FILLER IS FULLY CURED. 	
 WHERE PLASTIC LAMINATE (P'LAM) IS INDICATED ON DOOR SCHEDULE, USE EITHER HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACED DOORS IN COMPLIANCE WITH AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) OR WDMA I.S. 1A, OR LOW PRESSURE DECORATIVE LAMINATE (LPDL) FACED DOORS IN COMPLIANCE WITH WDMA I.S. 1A. 	INSTALLATION - GENERAL 1. STARTING INSTALLATION CONSTITUTES ACCEPTANCE OF SUB-FLOOR CONDITIONS. 2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. 3. SPREAD ONLY ENOUGH ADHESIVE TO PERMIT INSTALLATION OF MATERIALS BEFORE INITIAL SET.	
DOOR AND PANEL CORES 1. NON-RATED SOLID CORE AND 20 MINUTE RATED DOORS: TYPE PARTICLEBOARD CORE (PC), PLIES AND FACES AS INDICATED. 2. FIRE-RATED DOORS: MINERAL CORE TYPE, WITH FIRE RESISTANT COMPOSITE CORE (ED), PLIES AND FACES AS	4. FIT JOINTS AND BUTT SEAMS TIGHTLY. 5. SET FLOORING IN PLACE, PRESS WITH HEAVY ROLLER TO ATTAIN FULL ADHESION. 6. WHERE TYPE OF FLOOR FINISH, PATTERN, OR COLOR ARE DIFFERENT ON OPPOSITE SIDES OF DOOR, TERMINATE FLOORING LINDER CENTERLINE OF DOOR	
INDICATED ABOVE; WITH CORE BLOCKING AS REQUIRED TO PROVIDE ADEQUATE ANCHORAGE OF HARDWARE WITHOUT THROUGH-BOLTING. 3. SOUND-RATED DOORS: EQUIVALENT TO TYPE, WITH PARTICLEBOARD CORE (PC) CONSTRUCTION AS REQUIRED TO ACHIEVE STC RATING SPECIFIED; PLIES AND FACES AS INDICATED ABOVE.	 7. INSTALL EDGE STRIPS AT UNPROTECTED OR EXPOSED EDGES, WHERE FLOORING TERMINATES, AND WHERE INDICATED. 8. SCRIBE FLOORING TO WALLS, COLUMNS, CABINETS, FLOOR OUTLETS, AND OTHER APPURTENANCES TO PRODUCE TIGHT JOINTS.LUXURY VINYL TILE -LVT 	
DOOR FACINGS 1. VENEER FACING FOR TRANSPARENT FINISH: MAPLE, VENEER GRADE IN ACCORDANCE WITH QUALITY STANDARD INDICATED, PLAIN SLICED (FLAT CUT), WITH BOOK MATCH BETWEEN LEAVES OF VENEER, RUNNING MATCH OF SPLICED VENEER LEAVES ASSEMBLED ON DOOR OR PANEL FACE. 2. TRANSOMS: CONTINUOUS MATCH TO DOORS.	FIELD CONDITIONS 1. STORE MATERIALS FOR NOT LESS THAN 48 HOURS PRIOR TO INSTALLATION IN AREA OF INSTALLATION AT A TEMPERATURE OF 70 DEGREES F TO ACHIEVE TEMPERATURE STABILITY. THEREAFTER, MAINTAIN CONDITIONS ABOVE 55 DEGREES F.	
 HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACING FOR FIRE DOORS: NEMA LD 3, SGF;; TEXTURED, LOW GLOSS FINISH. HIGH PRESSURE DECORATIVE LAMINATE (HPDL) FACING FOR NON-FIRE-RATED DOORS: NEMA LD 3, HGS; COLOR(S) AS INDICATED; TEXTURED, LOW GLOSS FINISH. DOOR CONSTRUCTION 	ACCESSORIES 1. SUBFLOOR FILLER: WHITE PREMIX LATEX; TYPE RECOMMENDED BY ADHESIVE MATERIAL MANUFACTURER. 2. PRIMERS, ADHESIVES, AND SEAM SEALER: WATERPROOF; TYPES RECOMMENDED BY FLOORING MANUFACTURER. 3. MOLDINGS, TRANSITION AND EDGE STRIPS: SAME MATERIAL AS FLOORING.	
 FABRICATE DOORS IN ACCORDANCE WITH DOOR QUALITY STANDARD SPECIFIED. CORES CONSTRUCTED WITH STILES AND RAILS: FACTORY MACHINE DOORS FOR HARDWARE OTHER THAN SURFACE-MOUNTED HARDWARE, IN ACCORDANCE WITH HARDWARE REQUIREMENTS AND DIMENSIONS. FACTORY FIT DOORS FOR FRAME OPENING DIMENSIONS IDENTIFIED ON SHOP DRAWINGS, WITH EDGE CLEARANCES IN ACCORDANCE WITH SPECIFIED QUALITY STANDARD. PROVIDE EDGE CLEARANCES IN ACCORDANCE WITH THE QUALITY STANDARD SPECIFIED. 	 EXAMINATION 1. VERIFY THAT SURFACES ARE FLAT TO TOLERANCES ACCEPTABLE TO FLOORING MANUFACTURER, FREE OF CRACKS THAT MIGHT TELEGRAPH THROUGH FLOORING, CLEAN, DRY, AND FREE OF CURING COMPOUNDS, SURFACE HARDENERS, AND OTHER CHEMICALS THAT MIGHT INTERFERE WITH BONDING OF FLOORING TO SUBSTRATE. 2. VERIFY THAT WALL SURFACES ARE SMOOTH AND FLAT WITHIN THE TOLERANCES SPECIFIED FOR THAT TYPE OF WORK, ARE DUST-FREE, AND ARE READY TO RECEIVE RESILIENT BASE. 3. CEMENTITIOUS SUB-FLOOR SURFACES: VERIFY THAT SUBSTRATES ARE DRY ENOUGH AND READY FOR RESILIENT 	
INSTALLATION 1. INSTALL DOORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND SPECIFIED QUALITY STANDARD. 2. INSTALL FIRE-RATED DOORS IN ACCORDANCE WITH NFPA 80 REQUIREMENTS. 3. INSTALL SMOKE AND DRAFT CONTROL DOORS IN ACCORDANCE WITH NEPA 105 REQUIREMENTS.	FLOORING INSTALLATION BY TESTING FOR MOISTURE AND PH. 4. OBTAIN INSTRUCTIONS IF TEST RESULTS ARE NOT WITHIN LIMITS RECOMMENDED BY RESILIENT FLOORING MANUFACTURER AND ADHESIVE MATERIALS MANUFACTURER. PAINTING	
 FACTORY-FINISHED DOORS: DO NOT FIELD CUT OR TRIM; IF FIT OR CLEARANCE IS NOT CORRECT, REPLACE DOOR. USE MACHINE TOOLS TO CUT OR DRILL FOR HARDWARE. COORDINATE INSTALLATION OF DOORS WITH INSTALLATION OF FRAMES AND HARDWARE. 	1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PATCHING OF ALL NAIL HOLES, CRACKS ETC., PRIOR TO FINAL PAINTING. 2. WORK INCLUDES PREPARATION OF SURFACES FOR PAINTING, FINISHING & THE APPLICATION OF PAINT & FINISH PRODUCTS ON ALL SURFACES WHICH ARE NOT FACTORY FINISHED. 2. ALL SURFACES MUST BE DRY, EREE FROM CREASE, OIL, MILDEW & CROUT: SANDED SMOOTH & FREE FROM LOOSE DIRT, DUST OR CRIT	
 PREPARATION 1. COMPLY WITH REQUIREMENTS AND RECOMMENDATIONS OF FLOOR COVERING MANUFACTURER. 2. FILL AND SMOOTH SURFACE CRACKS, GROOVES, DEPRESSIONS, CONTROL JOINTS AND OTHER NON-MOVING JOINTS, AND OTHER IRREGULARITIES WITH PATCHING COMPOUND. 	 4. GLOSS SURFACES TO BE DULLED BY LIGHT SANDING. 5. ALL COATS TO BE TINTED TOWARDS FINAL COLOR, MINIMUM 3 COATS. GYPSUM BOARD PRIMERS TO BE FACTORY FORMULATED LATEX BASED FOR INTERIOR APPLICATION, SW PREPRITE 200, B28W200 SERIES OR EQUAL. 6. WOOD PRIMERS TO BE FACTORY FORMULATED ALKYD OR ACRYLIC BASED FOR INTERIOR APPLICATION, SW PREPRITE WOOD, B49W200 OR EQUAL FOR ACRYLIC ENAMEL & SEMIGLOSS FINISHES. 	HOU ONE HOU HOU TRA
 DO NOT FILL EXPANSION JOINTS, ISOLATION JOINTS, OR OTHER MOVING JOINTS. CONCRETE SLAB PREPARATION PERFORM FOLLOWING OPERATIONS IN THE ORDER INDICATED: A. EXISTING CONCRETE SLABS (ON-GRADE AND ELEVATED) WITH EXISTING FLOOR COVERINGS: 	 FERROUS METAL PRIMERS TO BE FACTORY FORMULATED QUICK DRYING RUST INHIBITIVE ALKYD BASED, SW KERN KROMIK UNIVERSAL METAL PRIMER, B50NZ6/B50WZ1 OR EQUAL. GYPSUM BOARD CEILINGS & SOFFITS FINISH COAT TO BE FACTORY FORMULATED FLAT ACRYLIC LATEX, SW PROMAR 200 INTERIOR, B30W200 SERIES OR EQUAL. 	
 VISUAL OBSERVATION OF EXISTING FLOOR COVERING, FOR ADHESION, WATER DAMAGE, ALKALINE DEPOSITS, AND OTHER DEFECTS. PROVIDE PRELIMINARY CLEANING PER MFR. INTERNAL RELATIVE HUMIDITY TESTS; IN SAME LOCATIONS AS MOISTURE VAPOR EMISSION TESTS, UNLESS OTHERWISE INDICATED. SPECIFIED REMEDIATION, IF REQUIRED. 	 9. GYPSUM BOARD WALLS FINISH COAT TO BE FACTORY FORMULATED SATIN ACRYLIC LATEX, SW B20W200 SERIES OR EQUAL. 10. WOOD & METAL SURFACES FINISH COAT TO BE FACTORY FORMULATED FULL SATIN ALKYD ENAMEL, SW PROMAR 200 INTERIOR B35W200 SERIES OR EQUAL. 12. PROVIDE LEFT OVER STOCK OF EACH FINISH COLOR. 	<u>NOTES:</u> 1. ALL PARTITION TYPES INDICATED, MAY OR MAY NOT BE USED. 2. REFER TO PLANS FOR SCOPE OF WORK.
5. PATCHING, SMOOTHING, AND LEVELING, AS REQUIRED BY MFR. 6. OTHER PREPARATION SPECIFIED BY MFR. 7. PROVIDE ADHESIVE BOND AND COMPATIBILITY TEST. 8. PROVIDE FLOOR PROTECTION.	GYPSUM WALL BOARD 1. PROVIDE & INSTALL METAL STUD WALL SYSTEMS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS & THE GYPSUM CONSTRUCTION HANDBOOK AS PUBLISHED BY UGC. 2. METAL STUDS. DIETRICH OR EQUAL. REFERENCE DRAWINGS FOR STUD TYPES. PER ASTM 525. G-90.	WALL PRIORITY LEGEND 2-HR FIRE AND/ OR SMOKE WALL PRIORITY 1 (HIGHEST 2-HR FIRE WALL PRIORITY 2 2-HR SHAFT WALL PRIORITY 2 1-HR FIRE AND/ OR SMOKE WALL PRIORITY 3
	3. FURRING CHANNELS, REFERENCE DRAWINGS FOR CHANNEL TYPES USG OR EQUAL. 4. FASTENERS SHALL BE USG BUGLE HEAD SCREWS. 5. JOINT TREATMENT SHALL BE: - PREFILLER-USG DURABOND 90 - 6. TAPE-USG PERF-A-TAPE - FILLER-USG READY-MIXED JOINT COMPOUND 7. DAPED FACED METAL TOWN TO MEET ASTM COMPARING COMPOUND	1-HR FIRE WALL PRIORITY 4 NON-RATED WALL PRIORITY 5 (LOWEST)
	 8. CORNER BEADS-USG BEADEX INSIDE & OUTSIDE CORNERS 9. CASING BEADS-USG BEADEX L TRIMS 10. ALL EXTERIOR CORNERS SHALL RECEIVE CORNER BEADS, & EXPOSED EDGES (AT END OF NEW DRYWALL WORK)SHALL RECEIVE CASING BEADS TAPED IN WITH THE JOINT TREATMENT SYSTEM. 11. ALL EXTERIOR CORNERS SHALL RECEIVE CORNER BEADS, & EXPOSED EDGES (AT END OF NEW DRYWALL WORK)SHALL RECEIVE CASING BEADS TAPED IN WITH THE JOINT TREATMENT SYSTEM. 	$C6 \frac{WALL CONTINUITY LEGEND - PL}{3'' = 1'-0''}$
	RECOMMENDED BY WALL COVERING MANUFACTURER. 12. REVIEW ALL WORK AFTER PRIME COAT OF PAINT & CORRECT ANY VISIBLE JOINT OR FASTENER TREATMENT OR ROUGHNESS IN THE WORK. 13. FIRE TAPE INNER LAYERS OF GYPSUM BOARD AT RATED WALLS. FINISH TAPE & SAND OUTSIDE LAYER OF GYPSUM BOARD THAT WILL RECEIVE PAINT VINYL OR WALL CARPET. 14. ALL GYPSI IM BOARD IS 5/8" (TYPE "Y") UNITESS NOTED OTHER WILLS (UNIO)	
	 16. LISTED BELOW ARE TYP INNER LAYER GUIDELINES FOR JOINT FINISHING: FACTORY EDGE TO FACTORY EDGE CONDITIONS DO NOT REQUIRE TO BE TAPED & FILLED IN LAYERS BELOW FINISH LAYER. ANY CUT EDGES OR CORNERS ON INNER LAYERS WILL REQUIRE TO BE TAPED & FILLED TYP. ANY GAPS OR BROKEN CORNERS, MUST BE TAPED TYP. 17. REFERENCE DRAWING GENERAL NOTE FOR GYP. FINISH LEVELS. 	EXTRA METAL STUD.
		OR JAMB STUDS.
		TURN DOWN @ JAMB
		JAMB STUDS - REFER

ELEVATION AT DOOR HEAD



FOIL AROUND STRUCT USED

OPEN CELL FOAM AS NEEDED

OPEN CELL FOAM AS NEEDED

·NON RATED

NON RATED

· 3 5/8" METAL STUD @ 16" O.C. TO SCHEDULED HEIGHT · 5/8" INTERIOR DENSARMOR PLUS ON ROOM SIDE

·1 1/2" METAL STUD @ 16" O.C. TO SCHEDULED HEIGHT

5/8" INTERIOR DENSARMOR PLUS ON ROOM SIDE

·1 1/2" MIN. CLOSED CELL FOAM, FILL REMAINING CAVITY WITH

·1 1/2" MIN. CLOSED CELL FOAM, FILL REMAINING CAVITY WITH

		BOTTOM OF DECK
I		
		CEILING HT. RE: RCP (WHERE REQ'D)
		- 5/8" GYP. BD. EACH SIDE
		- 3 5/8" METAL STUD @ 16" O.C. WITH HORIZ. BRACING, AS REQUIRED.
		- 3 1/2" SOUND BATT INSULATION (WHERE REQ'D)
		- METAL RUNNERS TOP AND BOTTOM
		FLOOR
	WALL	ТҮРЕ А
TYPE	WALL DESCRIPTIO	'N
A	• 3-5/8" METAL STUD • 5/8" TYPE "X" GYP. F • NO SOUND BATT IN • NON RATED	@ 16" O.C. TO DECK ABOVE 3D. EACH SIDE ISULATION
A1	- 3-5/8" METAL STUD - 5/8" TYPE "X" GYP. I - NO SOUND BATT IN - NON RATED	© IN CONTROLECK ABOVE BD INCOM ISULATION USED
A2	· 3-5/8" METAL STUD · 2 LAYER S - 5/8" TYE · NO SOUND BATT IN · 2 HR-RATED RE: UL	@ 16" O.C. TODECK ABOVE <u>Pe "NGOBL</u> EACH SIDE ISULATION JUISED
A3	· 3-5/8" METAL STUD · 5/8" TYPE "X" GYP. F · 3-1/2" SOUND BATT WALL · ACOUSTICAL SEAL	@ 16" O.C. TO DECK ABOVE 3D. NO OFF THSUL OF ELL HEIGHT OF
	- 3-5/8" METAL STUD	
A4	· 5/8" TYPE "X" GYP_E · 3-1/2" SOUND BATT · ACOLISTICAL SEAL · 1 HR RATED RE: UL	SD. NOTE INSDE-TOTOLL HEIGHT OF WALL AND SEE DND CEIEING
A5	· 3-5/8" METAL STUD · 2 LAYERS · 5/8" TYP · 3-1/2" SOUND BATT · ACOUSTICAL SEAL · 2 HR RATED RE: UL	@ 16" O.C. TO DECK ABOVE 'E "AGO BELEACH SIDE INSUE TO FULL HEIGHT OF WALL ANT A SECOND CEILING # 44 N
A6	- 3-5/8" METAL STUD - 3 LAYERS - 1/2" TVE - NO SOUND BATT IN - 3 HR RATED RE: UL	@ 16" OS TO DECK ABOVE 2E "IN OS BD. EACH-SIDE ISUHATION USED
A7	· 3-5/8" METAL STUD · 4 LAYERS - 5/8" TYE · NO SOUND BATT IN · 4 HR RATED RE: UL	© 18" O & TO DECK ABOVE <u>E</u> "NOOBL EACH-SIDE ISULATION USED
A8	· 3-5/8" METAL STUD · 3 LAYERS - 1/2" TYP · 3-1/2" SOUND BATT WALL · ACOUSTICAL SEAL · 3 HR RATED RE: UL	@ 16" O.C. TO DECK ABOVE PE "K" GYB ED EACH SIDE HAND, OFUL HEIGHT OF ANTAS CO DND CEILING # U419
A9	· 3-5/8" METAL STUD · 4 LAYERS - 5/8" TYP · 3 -1/2" SOUND BATH WALL · ACOUSTICAL SEAL	@ 16" O.C. TO DECK ABOVE 'E "K SYD BE EACH SIDE FINING FULL HEIGHT OF AND SEE DND CEILING

INSTALL FIRESAFING INSULATION

TO SEAL TOP OF WALL

(RATED WALLS ONLY)



SECURE JAMB STUDS

INTERIOR HOLLOW METAL

TO STRUCT. ABOVE.



WALL TYPE NOTES:

1. RE: LIFE SAFETY PLAN(S) FOR RATED WALL LOCATIONS. 2. RE: WALL TYPE DETAIL SHEET FOR TYPICAL WALL DETAILS AND ADDITIONAL WALL TYPE INFORMATION. 3. FOR TYPICAL TOP OF WALL CONDITIONS AT JOISTS AND BEAMS, REFER TO THE CLOSURE DETAILS ON THE WALL 4. COORDINATE METAL STUD GAUGE WITH PRE-APPROVED

TYPE DETAILS SHEET.

PENETRATIONS (BOTH SIDES).

NOTED OTHERWISE.

LABORATORY EQUIPMENT.

FIRESTOP MATERIAL.

SPECIFICALLY SHOWN.

OTHERWISE.

REQUIREMENTS.

INSTALLATION.

FLOOR PLAN.

SPAN WALL TYPES.

CONDITIONS/ LOCATIONS.

CLARIFICATION.

BOARD AT ALL WET LOCATIONS.

GOVERN.

EQUIPMENT ANCHORAGE. WHERE A DISCREPANCY OCCURS, THE MORE STRINGENT REQUIREMENT SHALL 5. WHERE "ACOUSTIC SEALANT" IS INDICATED ON WALL

TYPES: PROVIDE ACOUSTIC (SOUND) SEALANT ABOVE TOP TRACK, UNDER BOTTOM TRACK, AND AT ALL

6. WHERE "FIRE-RATED SEALANT" IS INDICATED ON WALL TYPES: PROVIDE FIRE-RATED SEALANT ABOVE TOP TRACK, UNDER BOTTOM TRACK, AT ALL PENETRATIONS (BOTH SIDES), AND AS REQUIRED BY FIRE RATING UL NUMBER. 7. EXTEND FIRE-RATED WALL CONSTRUCTION BEHIND RECESSED OR BUILT-IN EQUIPMENT; SUCH AS FIRE EXTINGUISHER CABINETS (FEC), ELECTRICAL WATER COOLERS (EWC), ELECTRICAL PANELS, ETC., UNLESS

8. PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK AND OF ALL FLOOR MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR

9. WHERE HVAC OR OTHER MECHANICAL, ELECTRICAL AND PLUMBING ITEMS PENETRATE PARTITIONS: STUDS SHALL BE BRACED AND FRAMED TO STRUCTURE AS REQUIRED TO PROVIDE ADEQUATE SUPPORT. ALL PENETRATIONS THROUGH ACOUSTICAL AND FIRE RATED WALLS SHALL BE SEALED TO PROVIDE FIRE, SMOKE, AND/OR ACOUSTICAL ISOLATION OF SPACES WITH APPROPRIATE ACOUSTICAL/

10. THERE SHALL BE NO BACK-TO-BACK ELECTRICAL, TELEPHONE, OR OTHER OUTLETS, EXCEPT WHERE

11. WALL BASE IS NOT SHOWN ON ALL WALL TYPES FOR CLARITY. REFER TO FINISH SCHEDULE. 12. PROVIDE GLASS-MAT, WATER RESISTANT BACKING 13. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND

COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS NOTED OR SHOWN 14. PROVIDE AND INSTALL BLOCKING REQUIRED FOR ALL

A.V. EQUIPMENT. G.C. TO COORDINATE WITH TI CONSULTANT FOR FINAL LOCATIONS AND SIZE 15. COMPRESSIBLE FILLER - ACCEPTABLE MATERIALS WOULD BE FIBERGLASS INSULATION OR FIRESTOPPING.

VOIDS TO BE COMPLETELY FILLED AND A FIRESTOP SEALANT OVER ANY ENDS. THIS IS TYPICAL FOR ALL ACOUSTICAL WALL ASSEMBLIES WHERE "COMPRESSIBLE FILLER" IS CALLED FOR. THERE CAN BE NO VOIDS IN THE

16. MUD AND TAPE ALL 1ST AND 2ND LAYER GYP. BOARD JOINTS. PROVIDE 3RD LAYER FINISH PER GENERAL NOTES: 17. PROVIDE A MIN. MSG-12 STUD FOR ALL VERTICAL LONG

18. PROVIDE HORIZONTAL LATERAL BRACING WIRE WELDED TO STUD FOR ALL WALLS, AT APPROPRIATE GAGE AND SPACING SPECIFIED BY SUPPLIER. 19. PROVIDE ACOUSTICAL ISOLATION BRACKET AND/ OR ACOUSTICAL ISOLATION MAT AT ALL ACOUSTICAL WALLS

BRACED BACK OR INTERRUPTED BY STRUCTURE. SEE TYPICAL DETAIL THIS SHEET. CONTRACTOR TO COORDINATE WITH STRUCTURAL DWG'S FOR TYP. 20. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND

SPECIFICATIONS - CONTACT ARCHITECT FOR 21. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL GOVERN.

22. BACK TO BACK ACOUSTICAL WALLS MAY NOT BE BRIDGED, BRACED OR RIGIDLY TIED TOGETHER WITHOUT AN APPROVED ISOLATION SYSTEM.



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ARCHITECTURE, LLC **REVISION DATES:**



03/27/2020 ISSUE DATE: COLLINS WEBB #: 19026



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	TOILET ACCESSOR	YSCHEDULE						
MANUFACTURER	DESCRIPTION	MODEL	WxDxH	FINISH	COMMENTS	DOOR NO.	WIDTH	HEIC
 HOME RISES	DOUBLE ROLL TOILET PAPER HOLDER W/	HOIS56478		OIL RUBBED BRONZE	1	001	2' - 8" 3' - 0"	7' - 7' -
CSI BATHWARE	GRAB BAR, 1-1/2" DIA., SS, 42"	BAR-SB42-TW-150-XX	42" x 1-1/2" DIA.	OIL RUBBED BRONZE	1	102	3' - 0"	6' - 7' -
CSI BATHWARE	GRAB BAR, 1-1/2" DIA., SS, 36"	BAR-SB36-TW-150-XX	36" x 1-1/2" DIA.	OIL RUBBED BRONZE	1	103	3' - 0"	6' -
CSI BATHWARE	GRAB BAR, 1-1/2" DIA., SS,18"	BAR-SB18-TW-150-XX	18" x 1-1/2" DIA.	OIL RUBBED BRONZE	1	105	3' - 0" 4' - 0"	6' -
ELECTRIC MIRROR	MIRROR, LED BACKLIT	FACET BEVEL	24" x 48"		4	X100 X105	3' - 2" 3' - 0"	6' - 10 7' -
SCHOOL HOUSE	ROBE HOOK	Ј НООК	6"H x 2.25" x 3/8"W	TRUE BLACK	5			

GENERAL NOTES:

A. ALL TOILET ACCESSORY LOCATIONS BASED ON FLOOR PLAN LAYOUT. B. REFER TO INTERIOR ELEVATIONS FOR ANY ACCESSORIES THAT MAY NOT SHOW UP ON THE PLANS. C. REFER TO G002 AND MANUFACTURER'S SPECIFICATIONS FOR MOUNTING HEIGHTS. D. COORDINATE ALL MOUNTING HEIGHTS W/ PLUMBING FIXTURES TO ALLOW PROPER OPERATION & INFORM ARCHITECT IN WRITING OF ANY CONFLICTS. E. G.C. TO VERIFY DIRECTLY W/ OWNER TO DETERMINE MOUNTING HEIGHTS, U.N.O.

















WINDOW TYPE ELEVATIONS

1/4" = 1'-0"





FLOOR PLAN & DOOR DETAILS



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C9 REFLECTED CEILING PLAN - LOWER LEVEL 1/4" = 1'-0"



A5 REFLECTED CEILING PLAN $\frac{1}{4} = 1'-0''$

REFLECTED CEILING PLANS



WC-5A OR WC-5B / PRICE BOTH MATERIALS FOR

SUSPENDED LAY-IN ACOUSTICAL CEILING TILE AND EXPOSED TEE-GRID SYSTEM (2'X6')

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ACT-2: FINE FISSURED, WHITE SUSPENDED LAY-IN ACOUSTICAI CEILING TILE AND EXPOSED TEE-GRID SYSTEM (2'X4')

5/8" GYPSUM BOARD BULKHEAD CEILING OR SOFFIT. SEE APPLICABLE DETAILS AND

2'X4' SURFACE LED LIGHT FIXTURE. SEE ELECTRICAL

2'X2' SURFACE LED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE.

RECESSED CAN LIGHT FIXTURE SEE ELECTRICAL DRAWINGS

RECESSED CAN DIRECTIONAL ELECTRICAL DRAWINGS FOR

SURFACE MOUNTED LED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE AND SIZE

SUSPENDED DIRECT/INDIRECT LED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR

LED STRIP LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR

MOUNTED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR

EMERGENCY WALL MOUNTED LIGHT FIXTURE. SEE ELECTRICAL

EMERGENCY EXIT LIGHT FIXTURE (CEILING MOUNTED). SEE

EMERGENCY EXIT LIGHT FIXTURE (WALL MOUNTED). SEE ELECTRICAL DRAWINGS FOR

CEILING MOUNTED RETURN AIR GRILLE. SEE MECHANICAL DRAWINGS FOR TYPE.

DIFFUSER. SEE MECHANICAL DRAWINGS FOR TYPE. MECHANICAL DRAWINGS FOR

CEILING MOUNTED SPEAKER GRILLE. SEE ELECTRICAL DRAWINGS FOR TYPE.



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ISSUE DATE:



- 2 1/2" RESILIENT STRAIGHT

BASE AS SCHED.



- WALL COVERING/FINISH

BEHIND WALL BASE, TYP.

- 1X3 FINISHED WOOD TRIM (WB1 / WB2)

WHERE APPLICABLE



- 5/8" TYPE "X" GYP. BOARD

- 5/8" TYPE "X" GYP. BOARD

- 2 1/2" RESILIENT COVE BASE AS SCHED.







- CONTROL JOINT BOTH SIDES

- 5/8" TYPE "X" GYP. BOARD — 5/8" TYPE "X" GYP. BOARD ROOM SIDE VINYL/ACRYLIC WALL PROTECTION SHEET, - 48" H (MAX.) VINYL/ACRYLIC WALL BUTT JOINT AT CORNER, SEAL JOINT AS REQUIRED TO PROVIDE CONT. SHEET PROTECTION SHEET, PROVIDE BEVEL AT TOP OF SHEET PROTECTION. - EXP.GAP BETWEEN SHEETS PER MANUF. VERTICAL SECTION RECOMMENDATIONS

SYMBOL MATERIAL MANUFACTU BENTLEY MIL CARPET TILE (18"X36") LVT1 LUXURY VINYL PLANK TILE (9"x59.7"x5mm) MILLIKEN INTERIOR LATEX PAINT PPG P1 INTERIOR LATEX PAINT; ZERO VOC PPG INTERIOR LATEX PAINT; ZERO VOC PPG P3 INTERIOR LATEX PAINT; ZERO VOC P4 PPG INTEROR DRYFALL PAINT PPG P5 LAB DESIGN PL1 PLASTIC LAMINATE PL2 PLASTIC LAMINATE FORMICA RB1 ROPPE RUBBER BASE (2 1/2"H) STONHARD RE1 RESINOUS EPOXY SS1 SIMULATED SURFACE; QUARTZ CAMBRIA SS2 SIMULATED SURFACE; QUARTZ CAMBRIA ST1 WOOD STAIN SW1 PVC SLAT WALL PROSLAT CST TILE / FIAN T1 PORCELAIN TILE (12"x24"x.80CM) T2 PORCELAIN TILE (6"x18"x5/16") JAECKLE DISTRIBU RAGNO TB1 PORCELAIN TILE BASE - BULLNOSE (4"Hx24") - CUT TO CST TILE / FIAN SIZE TG1 TILE GROUT - EPOXY (1/16" GROUT JOINTS) LATICRETE TG2 TILE GROUT - EPOXY (1/16" GROUT JOINTS) LATICRETE WB1 WOOD BASE (3"H x 3/4") KOROSEAL WC1 VINYL WALLCOVERING - 54" WC2 VINYL WALLCOVERING - 54" KOROSEAL WC3 WD1 VINYL WALLCOVERING - 51" INNOVATION WOOD PANELING WM1 MATS INC ENTRANCE MAT TILE (18"x18"x1/4") WT1 WINDOW TREATMENT, ROLLER SHADES HUNTER DOUG DISTRIBUTOR MANUFACTURER CONTACT NAME APPLICABLE BENTLEY MILLS ALI SKILLING _____ CAMBRIA SHELBY LEWIS FIANDRE CENTRAL STATES T SHELLEY DORSH INNOVATIONS MICHELLE GRIFFITH **GRIFFITH CONTI** GROUP KOROSEAL TAMRA SMITH PARKWOOD CHIC LAB DESIGNS STEVE LAMMERS MATS INC JOHN MURPHY MILLIKEN RHONDA REED PPG PAINT REBECCA BOYD RAGNO MARIANA EASTHAM JAECKLE DISTRIB ROPPE LAURA KNIGHT ALL SURFACES STONHARD JASON MACIULA

- EXISTING SUMP

BASEMENT

4 001

SW1 / P2

PUMP LOCATION

NORTH

ROOM FINISH SCHEDULE												
		FLO	DORS		WALL	FINISH			C	ASEWORK		
RM. NO.	ROOM NAME	FLOOR	WALL BASE	NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	CEILING FINISH	COUNTERTOP	BASE CABINET	UPPER CABINET	REMARKS
001	BASEMENT	RE1	RB1	SW1 / P2	SW1 / P2	SW1 / P2	SW1 / P2	GYP, P1	-	-	-	4, 7, 8
100	LOBBY	C1, WM1	WB1	WD1, P2, WC3	P2	P2	P2	EXP, P5	SS1	-	-	
101	RESTROOM	T1	TB1	WC2	WC2	T2	WC2	GYP, P1	-	-	-	2, 6
102	STORAGE	LVT1	WB1	P2	P2	P2	P2	GYP, P1 / EXP, P5	PL2	PL1	PL1	
103	RETAIL	C1	WB1	P2	P2	P2	P2	EXP, P5		-	-	
104	OFFICE	LVT1	WB1	WC1	P3	P3	P3	EXP, P5	SS2	PL1	-	
105	PREP ROOM	LVT1	RB1	SW1	SW1	SW1	SW1	EXP, P5 / GYP, P1				4, 8
106	STORAGE	LVT1	RB1	P3	WC1	P3	P3	GYP, P1	SS2			
107	CORR	LVT1	RB1	P2	P2	P2	P2	GYP, P1 / EXP, P5				
108	CORR	LVT1	RB1	P2	P2	P2	P2	GYP, P1				
109	BACK PREP	RE1 / LVT1	RB1	SW1 / P2	SW1 / P2	SW1 / P2	SW1 / P2	EXP, P5				1, 4, 7, 8
110	STAIRS	RE1	RB1	P2	P2	P2	P2	EXP, P5				
111	RETAIL	C1	WB1	P2	P2	P2	P2	EXP, P5		-	-	



		FINISH LEGEN	D								
RER		TY	ΈE			COLOR				REA / REMARKS	
							04074				
_LS							501674		MONOLITHI		
			JSE LAT, PIKE			PIK 121-2					
		FL				14-03 SE					
		SA				1006-3 EARL			GENERAL		
						1007-3 GHU	SI WRITER				
			EL; SEMI-GLOSS			1006-3 EARL	YEVENING				
10		DRY	FALL			14-03 SE				KIDOR & LOBBIES	
15						VV0040VVK V			CABINETS		
		SOLID				949 W	HILE		STORAGE	02	
		PINNACLE, SI				IB	D TONE		ВОН		
)		STONSHIELD W/	LIGHT TEXTURE			FLAGS	IONE				
		UXURY SERIES / 30	CM W/ EASED EDGES	S		SKARA	BRAE		LOBBY		
	DES	SERT COLLECTION /	2CM W/ EASED EDG	JES		WHITE	HALL				
					(CUSTOM STAIN	TO MATCH L	VT1			
						WH	ITE		BACK OF H ABOVE WA	OUSE; INSTALL LL BASE TO CEILING	
NDRE		TAO, PO	DLISHED			WH	ITE		RESTROOM	1	
UTORS /		AURA	DOLCE			AD11 MERIN	NGUE FLAT		RESTROOM	1	
NDRE		POLISHED WITH	BULLNOSE EDGE			WH	ITE		RESTROOM		
Ξ						TB	D		TO BE USE	D WITH T1	
Ξ						TB	D		TO BE USE	D WITH T2	
		BIF	RCH		PAINTE	D TO MATCH AD	JACENT WA	LL COLOR			
		CLODAU	GH TRAIL			CL05-01	FROST		OFFICE		
L		STONE	RHYTHM			67440 BLA	CK/GOLD		RESTROOM	Λ	
٧S		RANGO	ON SILK			RS8503 S	HADOW		LOBBY ACC	ENT	
		SOLID	BIRCH		CUS	STOM STAIN TO	MATCH LVT	1 (ST1)	CUSTOM M	ILLWORK DISPLAY	
;		AQUA BL	OCK TILE			GR	AY	. ,	MAIN ENTR	Y	
		3% OP	PENING			TB	D		INSTALL AT	INTERIOR FACE OF	
JLAS									ALL EXTER	OR WINDOWS	
R (IF F)		PHO	ONE			EM/	AIL				
		913.38	37.7667		AL	I.SKILLING@BEI	NTLEYMILLS	S.COM			
		816.50	06.7134		SH	IELBY.LEWIS@C	AMBRIAUSA	.COM			
FILE (CST)		913.64	5.8380			SHELLEY@C	STTILE.COM				
RACT		913.22	20.8285		MICHEL	LE@GRIFFITHC	ONTRACTG	ROUP.COM			
		816.72	8.3971			TSMITH@KOF	ROSEAL.COM	Λ			
ICAGO		636.34	6.7406		SLAN	IMERS@PARKW	OODCHICA	GO.COM			
		913.21	9.4657		JOHN@GREENPLANETSALES.COM						
		913.90	7.7585		RHONDA.REED@MILLIKEN.COM						
		816.64	2.1668		RBOYD@PPG.COM						
BUTORS		913.72	25.0392		MARIANA.EASTHAM@JAECKLEDISTRIBUTORS.COM						
S INC.	913.608.6230 LKNIGHT@ALLSURFACESINC.COM										
		214.68	0.2494			JMACIULA@ST	ONHARD.CC	DM			
ROC		SH SCHEDULE									
WALL FINISH						C	ASEWORK				
							BASF	UPPER			
EAST W	/ALL	SOUTH WALL	WEST WALL	CEILI	NG FINISH	COUNTERTOP	CABINET	CABINET	REMARKS		

FINISH AND FLOOR TRANSITION CONDITIONS. 4. FLOOR FINISH PATTERN SHALL BE CENTERED IN ROOM, UNLESS NOTED OTHERWISE. ALIGN ALL WALL TILE JOINTS WITH FLOOR TILE JOINTS, UNLESS NOTED OR SHOWN OTHERWISE. FLOOR FINISH MATERIAL AND/ OR PATTERN SHALL BE INSTALLED UNDER TOE KICKS OF CASEWORK/MILLWORK, UNDER OPEN COUNTERTOPS, AND UNDER EQUIPMENT. FLOOR MATERIAL/ COLOR TRANSITIONS TO ALIGN WITH ROOM SIDE OF DOOR STOP, UNLESS NOTED OR SHOWN OTHERWISE. . INSTALL TRANSITION STRIPS AT ALL FLOOR FINISH MATERIAL CHANGES, UNLESS NOTED OTHERWISE. **GENERAL NOTES - WALL FINISH PLANS: RE: G-SHEETS FOR ADDITIONAL GENERAL** NOTES THAT ARE APPLICABLE. RE: FINISH LEGEND & FINISH SCHEDULE FOR SPECIFIC FINISH INFORMATION & LOCATIONS. CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING FOR WALL PROTECTION ATTACHMENT. THIS INCLUDES, BUT IS NOT LIMITED TO: HANDRAILS, POSTER CASES, TV MONITORS, BATHROOM ACCESSORIES, FIRE EXTINGUISHERS AND EQUIPMENT. RE: ROUGH CARPENTRY SPECIFICATION SECTION FOR CLARIFICATION. CONTRACTOR SHALL PROVIDE MANUFACTURER'S STANDARD ACCESSORY MOLDING OR TRIM FOR WALL PROTECTION ITEMS, UNLESS NOTED OTHERWISE. . IF WALL IS LESS THAN 18" WIDE DO NOT PROVIDE HANDRAIL. HANDRAILS SHOULD STOP APPROXIMATELY 3" FROM THE OPEN SWING OF A DOOR. HANDRAILS SHOULD STOP APPROXIMATELY 3" FROM A CORNER GUARD. ROOM FINISH SCHEDULE REMARKS: 1. ALL PAINTED SURFACES TO RECEIVE EPOXY PAINT, EGGSHELL FINISH. PROVIDE FULL HEIGHT WALL TILE AT WET WALLS, AS INDICATED. PROVIDE WALL TILE TO 5'-0" AFF AT WET WALLS, AS INDICATED.

OF WALL TILE BASE (TB1). PROVIDE ADD ALTERNATE FOR FULL HEIGHT SLAT WALL (SW1), IN LIEU OF PAINTED SURFACE. PROVIDE DEDUCT ALTERNATE FOR LVT1, IN

LIEU OF RESINOUS EPOXY FLOORING (RE1).

SLAT WALL.

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- FLOOR FINISH LEGEND **GRAIN / PATTERN** INSTALL DIRECTION WM1 C1: CARPET TILE **RE1: RESINOUS EPOXY** T1 (12"x24") LVT1: LUXURY VINYL TILE
- ALL FLOOR FINISHES ARE **NOT** GRAPHICALLY SHOWN, ONLY THOSE FOR TRANSITION CLARIFICATION. WALL FINISH LEGEND SLAT WALL (SW1) WALL TILE (T) WALLCOVERING, (WC1) _ __ _ _ _

ALL WALL FINISHES ARE NOT GRAPHICALLY SHOWN . REFER TO SHEETS A9.01 AND A7.00 SERIES FOR SPECIFIC LOCATIONS AND MATERIALS.



PROVIDE PLYWOOD (4'Wx8'H) PANELS ALONG PERIMETER OF ROOM AS SUBSTRATE TO PROVIDE FRP TO 3'-0" AFF. 6. PROVIDE BULLNOSE EDGE AT EXPOSED EDGE

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GENERAL NOTES - FINISH FLOOR PLANS: RE: G-SHEETS FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE. . RE: FINISH LEGEND, FINISH SCHEDULE, AND FLOOR FINISH PLANS FOR SPECIFIC FLOOR FINISH INFORMATION AND LOCATIONS. C 3. RE: FINISH DETAILS SHEET FOR ADDITIONAL

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ELECTRICAL SYMBOL LEGEND

SOME SYMBOLS AN	ID ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED				
CIRCUITING		POWER DEVICE	<u>ES</u>	SECURITY	
	HOME RUN (2#12 1#12G UNO)	÷	DUPLEX RECEPTACLE.		FIXED CAMERA
	INDICATES 2 PHASE, 1 N, & 1 GRD CONDUCTOR	\$	LINE THRU DEVICE INDICATES ABOVE COUNTER	PTZ	PAN/TILT/ZOOM CAMERA
	HOME RUN: INDICATES SHARED CIRCUIT		SPECIAL DUPLEX RECEPTACLE (GFCI, ISOLATED GROUND, ETC.)	PROX	PROXIMITY TYPE CARD READER
	HOME RUN: INDICATES #10 CONDUCTORS ENTIRELY	₽	QUADPLEX RECEPTACLE	CARD	SWIPE CARD READER
UTILITIES		$\ominus_{\overline{5}-50R}$	SIMPLEX RECEPTACLE W/NEMA CONFIG AS NOTED	ES	ELECTRIC STRIKE
UGE	UNDERGROUND ELECTRICAL		MULTI-POLE RECEPTACLE W/NEMA CONFIG AS NOTED	KP	KEYPAD / MAG LOCK
OHE	OVERHEAD ELECTRICAL TELECOMMUNICATIONS CONDUIT		CEILING MOUNTED RECEPTACLE	В	BUTTON / MAG LOCK
UGT	UNDERGROUND TELECOMMUNICATIONS CONDUIT		RECEPTACLE/DEVICE MOUNTED IN "TOMBSTONE"		
		ullet	Poke-thru with power	EQUIPMENT	
			POKE-THRU WITH TELECOMMUNICATIONS	C	DISCONNECT SWITCH. RE: PLANS FOR INFORMATION.
•	GRID-MOUNTED TROFFER LIGHT FIXTURE	٢	POKE-THRU W/POWER AND TELECOM		MAGNETIC MOTOR STARTER
		1G	SINGLE GANG FLOOR BOX (2, 3, 4 GANG SIMILAR)	R	COMBINATION DISCONNECT SWITCH / MOTOR STARTER
	SURFACE/RECESSED LIGHT FIXTURE		DIVIDED POWER POLE	\$	TOGGLE-TYPE DISCONNECT. FURNISH WITH THERMAL
	WALL-MOUNTED LIGHT FIXTURE	C	CLOCK RECEPTACLE		MUTUR PROTECTION WHERE SERVING FANS/PUMPS.
	POLE-MOUNTED LIGHT FIXTURE		PLUG MOLD / WIRE MOLD AS SPECIFIED		SURFACE PANELBOARD
HØ Ø		J	JUNCTION BOX		RECESSED PANELBOARD
	BATTERY-OPERATED EMERGENCY LIGHT (WALL MID)	F	THERMOSTAT – ELECTRIC		DISTRIBUTION PANELBOARD
R_R .⊗.	BATTERY-OPERATED EMERGENCY LIGHT (CEILING MTD) WALL-MOUNTED COMBINATION EXIT LIGHT/	Ē	PUSH BUTTON		SWITCHBOARD. FEEDER/MAIN CIRCUIT BREAKER SECTION AND DISTRIBUTION SECTION.
4 *	BATTERY-OPERATED EMERGENCY LIGHT	<i>/</i> · /	MOTOR		
٦ م	LIGHT SWITCH - SINGLE PULE			GENERAL SYME	
\$ ₃	LIGHT SWITCH - 3-WAY	TELEPHONE/DA	TELEPHONE OUTLET (SINGLE-GANG BOX WITH (1)		INDICATES CONNECT TO EXISTING
\$4	LIGHT SWITCH – 4–WAY	\triangleleft	3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)	\oplus	INDICATES ELEVATION
\$ _K	LIGHT SWITCH — KEY	\triangleleft	LINE THRU DEVICE INDICATES ABOVE COUNTER	(XXX)	EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE FOR ELECTRICAL CONNECTIONS AND LOAD INFO
\$ _D	LIGHT SWITCH — DIMMER	<	DATA OUTLET (DOUBLE-GANG BOX WITH (2) 3/4"		FOR KITCHEN, SHOP, ETC. EQUIPMENT
\$ _{PL}	LIGHT SWITCH – PILOT LIGHT		TELEPHONE/DATA OUTLET (DOUBLE-GANG BOX WITH		
\$ _{2P}	LIGHT SWITCH — 2 POLE		(2) 3/4 [*] CONDUITS TO ABOVE ACCESSIBLE CLG.)		
\$3	LIGHT SWITCH — 3—WAY DIMMER	1V	PHONE OUTLET WITH NUMBER OF PHONE JACKS AS INDICATED – SEE DETAILS FOR ADD'L INFO.		
\$ _M	WALL-MOUNTED MOTION SWITCH	✓ 1D	DATA OUTLET WITH NUMBER OF PHONE JACKS AS		
<u><</u>	CEILING-MOUNTED MOTION SWITCH		INDICATED – SEE DETAILS FOR ADD'L INFO. PHONE/DATA OUTLET WITH NUMBER OF PHONE/DATA		
SB	SWITCHBANK – REFER TO DETAILS	◀ 1D/1V	JACKS AS INDICATED - SEE DETAILS FOR ADD'L INFO.		
FD1	DIMMER BOARD	ΗŴ	WALL-MOUNTED WIRELESS INTERNET TRANSMITTER		
<u>RCS-1</u>	REMOTE CONTROL SWITCH AS SCHEDULED	$\langle W \rangle$	CEILING-MOUNTED WIRELESS INTERNET TRANSMITTER		
[TC]	TIMECLOCK – REFER TO PLANS / DETAILS		RECESSED COMBINATION AV AND POWER OUTLET COORD LOCATION OF DEVICE WITH TV MOUNT		

ABBREVIATIONS

A/E	ARCHITECT / ENGINEER	ELEV	ELEVATION
AFF	ABOVE FINISHED FLOOR	ЕМ	EMERGENCY FIXTURE/DEVICE
AFG	ABOVE FINISHED GRADE	EWT	ENTERING WATER TEMPERAT
AG	ABOVE GRADE	ΕX	EXISTING ITEM
AHJ	AUTHORITY HAVING JURISDICTION	FFA	FROM FLOOR ABOVE
AHU	AIR HANDLING UNIT	FFB	FROM FLOOR BELOW
ARCH	ARCHITECT	FFC0	FINISHED FLOOR CLEAN OU
BFP	BACKFLOW PREVENTER	FGC0	FLUSH GRADE CLEAN OUT
BG	BELOW GRADE	FL	FLOW LINE
BLDG	BUILDING	FLR	FLOOR
BMS	BUILDING MANAGEMENT SYSTEM	FP	FIRE PROTECTION
С	CONDUIT	FPM	FEET PER MINUTE
CD	CANDELA	FWCO	FLUSH WALL CLEAN OUT
CD	COLD DECK	G	GROUND / GANG
CLG	COOLING	G/C	GENERAL CONTRACTOR
СМ	COORDINATE MOUNTING HEIGHT	ĠFI	GROUND FAULT CIRCUIT INT
CO	CLEAN OUT	GFIP	GFI-PROTECTED DEVICE
CTE	CONNECT TO EXISTING	GPM	GALLONS PER MINUTE
DCVA	DOUBLE CHECK VALVE ASSEMBLY	HD	HOT DECK
DCW	DOMESTIC COLD WATER	HTG	HEATING
DDC	DIRECT DIGITAL CONTROLS	IG	ISOLATED GROUND
DF	DRINKING FOUNTAIN	JB	JUNCTION BOX
DHW	DOMESTIC HOT WATER	LED	LIGHT EMITTING DIODE
DHWR	DOMESTIC HOT WATER RETURN	LWT	LEAVING WATER TEMPERATU
DIA	DIAMETER	M/C	MECHANICAL CONTRACTOR
DN	DOWN	ŃА	MIXED AIR
E/C	ELECTRICAL CONTRACTOR	MAU	MAKE UP AIR UNIT
EA	EXHAUST AIR	МСВ	MAIN CIRCUIT BREAKER
EDF	ELECTRIC DRINKING FOUNTAIN	MECH	MECHANICAL

VATION	мн	MANHOLE
RGENCY FIXTURE/DEVICE	MLO	MAIN LUGS ONLY
ERING WATER TEMPERATURE	NFA	NET FREE AREA
STING ITEM	NL	NIGHT LIGHT
M FLOOR ABOVE	OA	OUTSIDE AIR
M FLOOR BELOW	ORD	OVERFLOW ROOF DRAIN
SHED FLOOR CLEAN OUT	P/C	PLUMBING CONTRACTOR
SH GRADE CLEAN OUT	PSI	POUNDS PER SQUARE INCH
W LINE	PVC	POLYVINYLCHLORIDE
OR	RA	RETURN AIR
E PROTECTION	RE/REF	REFER / REFERENCE
t per minute	RF	RELIEF FAN
SH WALL CLEAN OUT	RL	RELOCATED ITEM
DUND / GANG	RPZ	REDUCED PRESSURE ZONE
IERAL CONTRACTOR	RR	RESTROOM
OUND FAULT CIRCUIT INTERUPTER	SA	SUPPLY AIR
-PROTECTED DEVICE	SPD	SURGE PROTECTIVE DEVICE
LONS PER MINUTE	ST	SHUNT TRIP
- DECK	TA	TRANSFER AIR
TING	TFA	TO FLOOR ABOVE
LATED GROUND	TFB	TO FLOOR BELOW
ICTION BOX	TP	TAMPERPROOF
HT EMITTING DIODE	TYP	TYPICAL
VING WATER TEMPERATURE	UNO	UNLESS NOTED OTHERWISE
CHANICAL CONTRACTOR	VRF	VARIABLE REFRIGERANT FLOW
ED AIR	VTR	VENT THROUGH ROOF
E UP AIR UNIT	WCO	WALL CLEANOUT
N CIRCUIT BREAKER	WG	WIRE GUARD

WP WEATHERPROOF

TELEVISION OUTLET (SINGLE GANG BOX WITH (1) 3/4" CONDUIT TO ABOVE ACCESSIBLE CEILING)

FIRE SEALING NOTES

TO ENSURE THAT THROUGH-PENETRATION FIRESTOP SYSTEMS ARE INSTALLED ACCORDING TO SPECIFIED AND APPLICABLE UL REQUIREMENTS.

1. COORDINATE CONSTRUCTION OF OPENINGS AND PENETRATING ITEMS

- 2. COORDINATE SIZING OF SLEEVES, OPENINGS, CORE-DRILLED HOLES, OR CUT OPENINGS TO ACCOMMODATE THROUGH-PENETRATION
- FIRESTOP SYSTEMS. 3. DO NOT COVER UP THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATIONS UNTIL EXAMINED BY INSPECTOR, IF REQUIRED BY
- AUTHORITIES HAVING JURISDICTION. 4. COMPATIBILITY: PROVIDE THROUGH-PENETRATION FIRESTOP SYSTEMS THAT ARE COMPATIBLE WITH ONE ANOTHER; WITH THE SUBSTRATES FORMING OPENINGS; AND WITH THE ITEMS, IF ANY, PENETRATING THROUGH-PENETRATION FIRESTOP SYSTEMS, UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
- 5. PROVIDE COMPONENTS FOR EACH THROUGH-PENETRATION FIRESTOP SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS. USE ONLY COMPONENTS SPECIFIED BY THROUGH-PENETRATION FIRESTOP SYSTEM MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOP SYSTEMS INDICATED.
- 6. PROVIDE SLEEVES THROUGH ALL FIRE-RATED WALLS AND FILL VOIDS SURROUNDING SLEEVES AND INTERIOR TO SLEEVES AROUND PIPING WITH FIRE STOP PUTTY WITH U.L. LISTED 3 HOUR RATING INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS. 7. FIRE SEAL ALL PIPING, CONDUIT, CABLE, ETC PENETRATIONS ROUTED
- THROUGH FIRE RATED WALLS. 8. PROVIDE FIRE RATED ENCLOSURES OR WRAPS ON LIGHT FIXTURES AND OTHER ITEMS PENETRATING FIRE RATED CEILINGS, FLOOR/CEILING/ CEILING/ROOF ASSEMBLIES TO MAINTAIN UL LISTING FOR CONSTRUCTION.

GEN. RENOVATION NOTES

- 1. DISCONNECT AND REMOVE ANY EQUIPMENT, PIPING OR DUCTWORK THAT WAS INSTALLED AS PART OF THE BUILDING SHELL THAT IS NOT NEEDED OR CONFLICTS WITH THIS BUILD OUT.
- 2. EXISTING UNDERGROUND PIPING LOCATIONS ARE ESTIMATED BASED UPON ANTICIPATED ROUTINGS. FIELD VERIFY EXACT LOCATIONS
- DURING CONSTRUCTION AND PROVIDE ALL NECESSARY MODIFICATIONS. 3. SAWCUT GRADE FLOOR SLABS TO INSTALL NEW PIPING, MECHANICAL SYSTEMS, ELECTRICAL FLOOR BOXES AND ALL ASSOCIATED CONDUIT, ETC. PATCH FLOOR TO MAKE LIKE NEW AFTER INSTALLATION. TAKE
- CARE TO LOCATE EXISTING CONDUIT, ETC AND AVOID CUTTING EXISTING CONDUITS BY NOT OVER-CUTTING SLAB DEPTH. 4. SAWCUT AND CORE DRILL OPENINGS AS REQUIRED FOR ABOVE GRADE SLAB PENETRATIONS. X-RAY SLABS TO ASCERTAIN STEEL AND EXISTING CONDUIT PENETRATIONS PRIOR TO CUTTING. VERIFY
- OPENINGS WITH STRUCTURAL ENGINEER PRIOR TO CUTTING. 5. HOMERUN CIRCUITS TO 20 AMP, SINGLE POLE BREAKERS IN PANELBOARDS INDICATED. UTILIZE SPARE BREAKERS MADE AVAILABLE BY DEMOLITION, IF NO SPARE BREAKER IS AVAILABLE,
- PROVIDE NEW BREAKER. 6. EXISTING CIRCUITING MAY BE RE-USED WHERE POSSIBLE. 7. CONCEAL NEW CIRCUITING IN WALLS WHERE POSSIBLE. FOR NEW DEVICES INSTALLED ON EXISTING SOLID WALLS, CONCEAL CIRCUITING
- IN WIREMOLD. COORDINATE FINISH AND GENERAL ROUTING OF WIREMOLD WITH ARCHITECT TO BE AS CONCEALED AND/OR ROUTED IN A NEAT AND ORGANIZED CONSISTENT MANNER.
- 8. ALL LIGHTING FIXTURES THAT ARE RELOCATED OR OTHERWISE AFFECTED BY THE SCOPE OF WORK SHALL BE CLEANED AND RELAMPED.

MECHANICAL AND PLUMBING SYMBOL LEGEND SOME SYMBOLS AND ABBREVIATIONS ON THIS LEGEND MAY NOT BE USED SHEET METAL HIGH EFFICIENCY ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER) ΪÞΓ SPIN-IN ROUND DUCT TAKEOFF (WITH & WITHOUT MANUAL DAMPER) CONICAL BELLMOUTH ROUND TAKEOFF Ш ROUND DUCT RUNOUT WITH FLEX DUCT DUCTWORK ELBOW (WITH & WITHOUT TURNING VANES) FRI FH FD:FIRE DAMPER FS:FIRE/SMOKE DAMPER SD:SMOKE DAMPER BD:BACKDRAFT DAMPER (GRAVITY) AUTOMATIC MOTORIZED DAMPER 8"% 225 SUPPLY DIFFUSER AND DIFFUSER CALLOUT (NECK SIZE, TYPE AND CFM) LINEAR/SLOT DIFFUSER \square RETURN GRILLE OR EXHAUST REGISTER SUPPLY AIR FLOW INDICATOR -RETURN AND EXHAUST AIR FLOW INDICATOR ~--► Ð THERMOSTAT TEMPERATURE SENSOR A нÐ HUMIDISTAT /----\ CONTROL WIRING PLUMBING FIXTURES/EQUIPMENT — ➡ WH WALL HYDRANT RPZ REDUCED PRESSURE BACKFLOW PREVENTER DCBP DOUBLE CHECK BACKFLOW PREVENTER $\bigcup_{WC-1} \quad \underbrace{\bullet}_{S-1}$ PLUMBING FIXTURE AND CALLOUT FD: FLOOR DRAIN, AD: AREA DRAIN, RD: ROOF DRAIN (Ô) <u>RD–1</u> ORD: OVERFLOW ROOF DRAIN GENERAL SYMBOLS INDICATES CONNECT TO EXISTING \oplus INDICATES ELEVATION PLUMBING RISER CALLOUT (REFERS TO RISER DIAGRAM) EQUIPMENT TAG. REFER TO CONNECTIONS SCHEDULE (XXX) FOR MECHANICAL CONNECTIONS AND LOAD INFO FOR KITCHEN, SHOP, ETC. EQUIPMENT

GEN. MECHANICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL MECHANICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. ANY POWER FOR CONTROL SYSTEMS TO BE PROVIDED BY E/C IS INDICATED ON ELECTRICAL PLANS. ANY ADDITIONAL LINE VOLTAGE OR LOW VOLTAGE POWER REQUIRED BY THE M/C OR SUBCONTRACTORS TO HAVE A FULLY FUNCTIONING SYSTEM SHALL BE
- PROVIDED BY THE M/C CONTRACTOR OR SUBS. 3. ALL EQUIPMENT SHALL BE ADEQUATELY AND PROPERLY SUPPORTED AND FASTENED FROM STRUCTURE.
- 4. ALL EQUIPMENT AND ACCESSORIES INSTALLED IN CONCEALED SPACES REQUIRING ACCESS SHALL BE PROVIDED WITH ACCESS DOORS MEETING ANY FIRE REQUIREMENTS OF THE WALL/CEILING THEY ARE INSTALLED. 5. EACH AIR HANDLING UNIT OVER 2000CFM SHALL BE PROVIDED WITH
- A SMOKE DETECTOR TO SHUT DOWN THE UNIT PER IMC 606 AS REQUIRED BY AHJ. COORDINATE WITH OTHER TRADES. 6. START UP AND ADJUST ALL EQUIPMENT AND VERIFY ALL MECHANICAL SYSTEMS IN OPERATE IN ACCORDANCE WITH THEIR INTENDED PURPOSES. SUBMIT BALANCE AND START UP REPORTS TO THE A/E.

REFER TO SPECIFICATIONS FOR ANY ADDITIONAL REQUIREMENTS.

GENERAL PLUMBING NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE INTERNATIONAL PLUMBING CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. NO PIPING SHALL BE INSTALLED WHERE IT WILL SUBJECT
- FREEZING TEMPERATURES. PIPING IN EXTERIOR WALLS SHALL BE INSTALLED ON THE WARM SIDE OF BUILDING INSULATION, INSULATED AND THE CHASE SHALL BE VENTILATED WITH GRILLES ALLOWING INDOOR AMBIENT CONDITIONS TO CIRCULATE THROUGH THE CHASE. 3. PROVIDE CLEANOUTS IN THE FOLLOWING LOCATIONS:
- 3.1. IN ALL HORIZONTAL DRAINS (WITHIN THE BUILDING) NOT MORE THAN 100 FEET APART. 3.2. IN BUILDING SEWERS LOCATED NO MORE THAN 100 FEET APART MEASURED FROM THE UPSTREAM ENTRANCE OF THE CLEANOUT.
- 3.3. EACH CHANGE OF DIRECTION OF THE BUILDING DRAIN OR HORIZONTAL WASTE OR SOIL LINES GREATER THAN 45 DEGREES. WHERE MORE THAN ONE CHANGE OF DIRECTION OCCURS IN A RUN OF PIPING, ONLY ONE CLEANOUT SHALL BE REQUIRED FOR EACH 40 FEET OF DEVELOPED LENGTH OF THE DRAINAGE PIPING. 3.4. AT THE BASE OF EACH WASTE OR SOIL STACK. 3.5. NEAR THE JUNCTION OF THE BUILDING DRAIN AND BUILDING
- SEWER.

GENERAL ELECTRICAL NOTES

- 1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION OF THE NATIONAL ELECTRICAL CODE, LOCAL AND STATE CODES, AND REQUIREMENTS OF THE AHJ. 2. COORDINATE LOCATIONS OF RECEPTACLES, SWITCHES, ETC. WITH
- ARCHITECTURAL CASEWORK AND ELEVATIONS. 3. REFER TO MOUNTING HEIGHTS DETAIL FOR MOUNTING HEIGHTS OF ALL DEVICES NOT INDICATED OTHERWISE.
- 4. PROVIDE ALL EMPTY CONDUITS WITH PULL STRINGS AND BUSHED
- FROM VIEW WHERE REASONABLY POSSIBLE.
- 5. CONTRACTOR SHALL CONCEAL ALL CONDUIT, FITTINGS, AND DEVICES

)			
	MECHANICAL PIF	PING	P
	RL	REFRIGERANT LIQUID	_
	—— RS ——	REFRIGERANT SUCTION	
	D	DRAIN (CONDENSATE)	
	—— СА ———	COMPRESSED AIR	
	—— CWS ——	CHILLED WATER SUPPLY	
	—— CWR ——	CHILLED WATER RETURN	
	— C/HWS —	CHILLED/HOT WATER SUPPLY	
	— C/HWR —	CHILLED/HOT WATER RETURN	
	—— HWS ——	HOT WATER SUPPLY	
	—— HWR ——	HOT WATER RETURN	
	—— CTWS ——	COOLING TOWER SUPPLY	
)	—— CTWR ——	COOLING TOWER RETURN	
	STM	STEAM (ANY #'S DENOTE PRESSURE)	
	CR	CONDENSATE RETURN (#'S DENOTE PRESSURE)	
	RV	REFRIGERANT VENT	
		RUPTURE DISK	
	PLUMBING PIPIN	G	
	•	 Domestic cold water	
	••	DOMESTIC HOT WATER	
	••••	RECIRCULATING DOMESTIC HOT WATER	
	SAN	WASTE ABOVE GRADE OR FLOOR	
	— — SAN — —	WASTE BELOW GRADE OR FLOOR	
	ST	STORM ABOVE GRADE OR FLOOR	
	— — ST — —	STORM BELOW GRADE OR FLOOR	
	—— ST/0 ——	STORM OVERFLOW ABOVE GRADE OR FLOOR	
	— — st/0 — —	STORM OVERFLOW BELOW GRADE OR FLOOR	
	ý	PLUMBING VENT	Б
	—— <i>W</i> ——	WATER SERVICE	<u> </u>
	G	GAS (NATURAL)	
	—— PD ——	FROM SUMP PUMP DISCHARGE	—
	—— СА ——	COMPRESSED AIR	
	LP	PROPANE	
	SCW	SOFT DOMESTIC COLD WATER	
	SHW	SOFT DOMESTIC HOT WATER	
	SRW	SOFT RECIRCULATING HOT WATER	
	—— ACID ——	ACID WASTE	
	VACID	ACID WASTE VENT	
	NP	NON-POTABLE	
	—— DI ——	DEIONIZED WATER	
	——	REVERSE OSMOSIS WATER	
	$(\sqrt{\sqrt{2}})$	PLUMRING RISER CALLOUT (REEERS TO RISER DIACRAM)	

	5
	SHUTOFF VALVE
	SHUTOFF VALVE IN RISER
	BALANCING VALVE
-k—	PLUG VALVE
	AUTO FLOW CONTROL VALVE
—ю	PIPING ELBOW UP
+>	PIPING ELBOW DOWN
- '+'	PIPING TEE
	PIPING ELBOW
ю	PIPING TEE UP
	PIPING TEE DOWN
- 4	INCREASER / REDUCER
	UNION
]	CAP
	PIPE FLEX
- , _	STRAINER
-1/ -	CHECK VALVE
┅┅	INLINE STRAINER
<u> </u>	TEST PLUG
-8	GUIDE
-X-	ANCHOR
- <u>@</u> —	TRIPLE DUTY VALVE
Ŕ–	AUTOMATIC 2-WAY CONTROL VALVE
·璨—	AUTOMATIC 3-WAY CONTROL VALVE
	SOLENOID VALVE
	TIES
	PRESS/ TEMP GAUGE WITH COCK
	THERMOMETER.
HI LOW	PRESSURE REDUCING VALVE
-¥	RELIEF VALVE
 ,±,	WATER HAMMER ARRESTER

COORDINATION NOTES

EQUIPMENT WITH ALL OTHER TRADES. 2. THE CONTRACTOR SHALL COORDINATE THE ROUTING AND PATH OF ALL SYSTEMS, CONDUITS, PIPES, DUCTS, ETC WITH THE POSITION AND LAYOUT OF THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING NECESSARY OFFSETS, TURNS, RISES AND DROPS FOR SYSTEMS AND COMPONENTS AS NEEDED TO INSTALL THE MEP SYSTEMS TO CLEAR STRUCTURE, CEILINGS, ETC AND OTHER SYSTEMS IN POTENTIAL CONFLICT WITH ROUTING.

COORDINATE REQUIREMENTS FOR INSTALLATION OF SYSTEMS AND

- COORDINATE WORK WITH OTHER TRADES TO INSTALL SYSTEMS ABOVE CEILING HEIGHTS INDICATED ON ARCHITECTURAL PLANS. 4. CHECK SPACE REQUIREMENTS WITH OTHER TRADES AND STRUCTURE/CONSTRUCTION TO ENSURE THAT ALL MATERIALS AND EQUIPMENT CAN BE INSTALLED IN THE SPACE ALLOTTED INCLUDING FINISHED SUSPENDED CEILINGS AND OTHER SPACES, CHASES, ETC WITHIN THE BUILDING. MAKE MODIFICATIONS THERETO AS REQUIRED
- AND APPROVED. TRANSMIT TO OTHER TRADES ALL INFORMATION REQUIRED FOR WORK TO BE PROVIDED UNDER THEIR RESPECTIVE SECTIONS IN AMPLE TIME FOR INSTALLATION.
- 6. WHEREVER WORK INTERCONNECTS WITH WORK OF OTHER TRADES, COORDINATE WITH THOSE TRADES TO ENSURE THAT ALL SUBCONTRACTORS HAVE THE INFORMATION NECESSARY SO THAT THEY MAY PROPERLY INSTALL ALL CONNECTIONS AND EQUIPMENT. IDENTIFY ALL ITEMS OF WORK THAT REQUIRE ACCESS SO THAT THE CEILING TRADE WILL KNOW WHERE TO INSTALL ACCESS DOORS AND PANELS.
- . COORDINATE, PROJECT AND SCHEDULE WORK WITH OTHER TRADES IN ACCORDANCE WITH THE CONSTRUCTION SEQUENCE. 8. DRAWINGS SHOW THE GENERAL RUNS OF CONDUITS, PIPING AND DUCTWORK AND APPROXIMATE LOCATION OF OUTLETS. ANY SIGNIFICANT CHANGES IN LOCATION OF ITEMS NECESSARY IN ORDER TO MEET FIELD CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT/ENGINEER AND RECEIVE HIS APPROVAL BEFORE SUCH ALTERATIONS ARE MADE. ALL SUCH MODIFICATIONS SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION AND REPAIR OF SURFACES, AREAS AND PROPERTY THAT MAY BE DAMAGED AS A RESULT OF CONSTRUCTION ACTIVITIES. 10. ADJUST LOCATION OF PIPING, DUCTWORK, ETC. TO PREVENT INTERFERENCES, BOTH ANTICIPATED AND ENCOUNTERED. DETERMINE
- THE EXACT ROUTE AND LOCATION OF EACH ITEM PRIOR TO FABRICATION. MAKE OFFSETS, TRANSITIONS AND CHANGES IN DIRECTION IN SYSTEMS AS REQUIRED TO MAINTAIN ADEQUATE CLEARANCES AND HEADROOM. 1. WHEREVER THE WORK IS OF SUFFICIENT COMPLEXITY, PREPARE ADDITIONAL COORDINATION DRAWINGS AND ORGANIZE ON-SITE
- MEETINGS WITH ALL RELATED SUBCONTRACTORS TO COORDINATE THE WORK BETWEEN TRADES . DRAWINGS SHALL CLEARLY SHOW THE WORK AND ITS RELATION TO THE WORK OF OTHER TRADES, AND BE SUBMITTED FOR REVIEW PRIOR TO COMMENCING SHOP FABRICATION OR ERECTION IN THE FIELD. 12. COORDINATE WITH LOCAL UTILITY PROVIDERS FOR THEIR REQUIREMENTS FOR SERVICE CONNECTIONS AND PROVIDE ALL
- NECESSARY PAYMENTS, MATERIALS, LABOR AND TESTING TO ACCOMPLISH THE WORK. 3. COORDINATE THE MOUNTING OF SUSPENDED LIGHT FIXTURES UTILIZING INDIRECT LIGHT SO THAT CONDUIT, DUCTWORK, STRUCTURAL MEMBERS, ETC. ARE NOT LOCATED DIRECTLY ABOVE THE LIGHT FIXTURE. MAINTAIN A MINIMUM OF 24" CLEARANCE FROM

THESE ITEMS WHENEVER POSSIBLE.

GENERAL NOTES

- 1. SOME ROOM NAMES MAY NOT BE SHOWN FOR PURPOSE OF CLARIFYING PLAN. REFER TO ARCHITECTURAL PLANS FOR REFERENCE TO ROOM NAMES NOT SHOWN. 2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND KEEP AT THE JOB SITE, AN UP TO DATE SET OF "RECORD
- DRAWINGS" SHOWING ALL CHANGES FROM THE ORIGINAL PLANS. THE CONTRACTOR SHALL DELIVER THE "RECORD DRAWINGS" TO THE ENGINEER AT THE CONCLUSION OF THE PROJECT ELECTRONICALLY. 3. THESE DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS (NEW AND EXISTING), DIMENSIONS, AND CLEARANCES PRIOR TO THE COMMENCEMENT OF WORK AND SHALL INCLUDE ALL COSTS, EQUIPMENT, MATERIAL, ACCESSORIES, ETC. REQUIRED FOR A FULLY COMPLETE, FUNCTIONAL AND CODE
- COMPLIANT INSTALLATION. 4. FINAL LOCATIONS OF ALL DEVICES, LIGHT FIXTURES, EQUIPMENT ETC SHALL BE INDICATED ON THE ARCHITECTURAL DRAWINGS. ALL DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM ARCHITECTURAL PLANS. NO DIMENSIONAL INFORMATION SHALL BE OBTAINED FROM MEP DRAWINGS.
- 5. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS APPROVALS, LICENSES, ETC. AS NEEDED FOR THE COMPLETE INSTALLATION AND PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR ALL FEES AND DATA NEEDED FOR THIS.

DEMOLITION NOTES

- 1. ALL WORK SHOWN DARK AND DASHED IS TO BE DEMOLISHED. WORK SHOWN LIGHT IS EXISTING TO REMAIN.
- 2. REFER TO ARCHITECTURAL PLANS FOR FURTHER EXTENT OF DEMOLITION REQUIREMENTS. 3. ALL EXISTING PIPING SCHEDULED FOR DEMOLITION THAT ROUTES BELOW SLAB SHALL BE GROUND FLUSH WITH FLOOR, PLUGGED AND
- THE FLOOR PATCHED TO MATCH SURROUNDING FLOOR. 4. COORDINATE ALL DEMOLITION WORK WITH OWNER. 5. CONTACT UTILITY LOCATING SERVICE TO LOCATE EXACT LOCATION OF
- UTILITIES BELOW GRADE. 6. MAINTAIN ALL EXISTING DEVICES, EQUIPMENT, ASSOCIATED CIRCUITS ETC, SHOWN AS EXISTING TO REMAIN OR OTHERWISE UNRELATED TO
- THE SCOPE OF THE PROJECT IN WORKING ORDER. 7. CONTRACTOR SHALL REMOVE LAY-IN CEILINGS, LIGHT FIXTURES, ETC. AS REQUIRED FOR CONSTRUCTION WHERE NEEDED PRIOR TO DEMOLITION AND REPLACE SAME AFTER CONSTRUCTION. EXISTING CONDUITS ABOVE CEILINGS SHALL BE RELOCATED AND/OR TEMPORARILY REMOVED TO FACILITATE THE INSTALLATION OF NEW EQUIPMENT.
- 8. THE OWNER SHALL REMOVE ALL ITEMS THEY DESIRED TO SALVAGE PRIOR TO CONSTRUCTION BEGINNING. 9. NOTES AND DRAWINGS ARE BASED UPON A FIELD EXAMINATION OF THE SITE AND MAY NOT INDICATE ALL ITEMS. THE CONTRACTOR
- SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND THE SCOPE OF WORK FOR THE CONTRACT PRIOR TO BID. ANY EXISTING CONDITION WHICH IS APPARENT OR COULD BE REASONABLY INFERRED FROM A VISIT TO THE SITE SHALL NOT BE THE BASIS FOR A CHANGE IN THE CONTRACT AMOUNT. 10. REFER TO NEW WORK PLANS FOR ANY ITEMS THAT MAY REQUIRE
- RELOCATION AFTER DEMOLITION. 11. PROPERLY DISPOSE OF ALL DEMOLISHED ITEMS OFF SITE. 12. REMOVE ALL MISCELLANEOUS CONDUITS, PIPES, ETC, THOUGH NOT
- SPECIFICALLY SHOWN ON PLAN, THAT ARE EITHER UNUSED OR WILL BECOME UNUSED DUE DEMOLITION ACTIVITIES, IN ORDER TO PROVIDE A "CLEAN" SPACE FOR THE OWNER. 13. PROTECT ALL EXISTING SURFACES AND EQUIPMENT DURING CONSTRUCTION. EXISTING ITEMS TO REMAIN SHALL BE ADEQUATELY
- PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION WORK, AS REQUIRED. ANY ITEMS DAMAGED OR MARRED SHALL BE ADEQUATELY CLEANED OR REPLACED TO THE OWNERS SATISFACTION TO ORIGINAL CONDITION BEFORE CONSTRUCTION. 14. PATCH ANY HOLES IN STRUCTURE CREATED BY REMOVAL OF
- DUCTWORK, CONDUITS, PIPES, ETC. 15. REMOVE ALL ITEMS SHOWN IN WALLS TO BE DEMOLISHED. ELECTRICAL CONDUIT AND WIRING SHALL BE REMOVED BACK TO PANELBOARDS AND PROPERLY TERMINATED. 16. SAW CUT FLOOR FOR THE INSTALLATION OF NEW SANITARY PIPING. REFER TO PLUMBING PLANS SHOWING NEW WORK.

SHEET INDEX

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GENERAL MECHANICAL/ELECTRICAL SPECIFICATIONS

- GENERAL MECHANICAL, ELECTRICAL AND PLUMBING REQUIREMENTS <u>APPLICABILITY</u>
- A. These general requirements apply to all divisions (21, 22, 23, 26, 27, 28). Refer to individual divisions as included for specific information regarding each trade or scope of work.
- GENERAL REQUIREMENTS A. Furnish & install all labor & materials required for complete, functioning, mechanical & plumbing systems w/ all associated equipment & apparatus as shown on plans.
- B. Obtain & pay for all permits required for execution of this work & shall make arrangements for modifications to water, gas & sewer connections to building as
- C. All materials shall be new & shall bare UL label where applicable. D. Visit site & observe conditions under which work will be done. Any discrepancies shall be called to architect's attention. No subsequent allowance will be made in contract for any error or negligence on contractor's part.
- E. Final acceptance of work shall be subject to condition that all systems, equipment, apparatus & appliances operate satisfactorily as designed & intended. Work shall include required adjustment of systems & control equipment installed under these specifications
- F Warrant to owner quality of materials, equipment, workmanship & operation of equipment provided under these specifications for one year from & after completion of building & acceptance of mechanical systems by owner. G.All materials installed in plenums shall be noncombustible or have flame/smoke
- index of no more than 25/50 in accordance w/ ASTM e 84. H. Requirements under Division one & general & supplementary conditions of these specifications shall be part of this section. Contractor shall become thoroughly acquainted w/ its contents as to requirements that affect this Division of work required under this section includes material. Equipment, appliances. Transportation. Services. & labor required to complete entire system as required by drawings & specifications.
- I. The specifications & drawings for project are complementary, & portions of work described in one, shall be provided as if described in both. In event of discrepancies, notify engineer & request clarification prior to proceeding w/ work
- EXTENT OF CONTRACT WORK A. Provide MEP systems indicated on drawings, specified or reasonably implied. In
- addition to specific equipment called out in plans and specifications, provide every device, component, programming, interlocking and accessory necessary for proper operation and completion of totally functional MEP systems.
- B. In no case will claims for "Extra Work" be allowed for work about which Contractor could have been informed before bids were taken.
- C. Contractor shall become familiar with equipment provided by other contractors that require plumbing connections and controls. D. Electrical work required to install and control plumbing equipment, which is not shown on plans or specified under Division 26, shall be included in Contractor's base bid proposal.
- E. All automatic temperature control devices shall be mounted as indicated in automatic temperature control section of specifications.
- F. The cost of larger wiring, conduit, control and protective devices resulting from installation of equipment which was not used for basis of design as outlined in specifications shall be paid for by the supplying Contractor at no cost to Owner or Architect Engineer.
- G.Contractor shall be responsible for providing supervision to other trade Contractors to insure that required connections, interlocking and interconnection of MEP equipment is made to attain intended control sequences and system operation
- H. Contractor shall obtain complete MEP data on shop drawings and shall list this data on an approved form that shall be presented on request, to other trade Contractors. Data shall be complete with wiring diagrams received to date and shall contain necessary data on electrical components of plumbing equipment such as HP, voltage, amperes, watts, locked rotor current to allow other trade Contractors to order support or other equipment coordinated as required in his contract.
- DEFINITIONS
- A. Whenever used in these specifications or drawings, following terms shall have indicated meanings: B. Furnish: term "Furnish" is used to mean "supply & deliver to project site. Ready for unloading, unpacking, assembly. Installation & similar operations. C.Install: term "Install" is used to describe operations at project site including actual "unloading, unpacking. Assembly. Erection. Placing. Anchoring. Applying,
- working to dimension. Finishing, curing, protecting, cleaning. & similar operations." D. Provide: term "Provide" means "to Furnish & Install. Complete & ready for intended use," furnished by owner or furnished by others: item will be furnished by owner or others. It is to be installed & connected under requirements of this Division, complete & ready for operation, including items incidental to work.
- including services necessary for proper installation & operation. Installation shall be included under guarantee required by this Division. E. Engineer: where referenced in this Division, "Engineer" is engineer of record & design professional for work under this Division, & is consultant to, & an authorized representative of, architect. As defined in general &/or supplementary conditions. When used in this Division. It means increased involvement by & obligations to, engineer, in addition to involvement by. & obligations to,
- F. AHJ: local code &/or inspection agency (authority) having jurisdiction over work. G. The terms "Approved equal", "Equivalent". Or "Equal" are used synonymously & shall mean "accepted by or acceptable to engineer as equivalent to item or manufacturer specified".
- H. The term "approved" shall mean labeled, listed. Or both. By nationally recognized testing laboratory (e.g. UL. ETL. CSA). & acceptable to AHJ over this project. PREBID SITE VISIT A. Prior to submitting bid. Visit site of proposed work & become fully informed as to
- conditions under which work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over & above contract price. MATERIAL & WORKMANSHIP
- A.Provide new material, equipment. & apparatus under this contract unless otherwise stated herein. Of best quality normally used for purpose in good commercial practice & free from defects. Model numbers listed in specifications or shown on drawings are not necessarily intended to designate required trim, written descriptions of trim govern model numbers.
- B. Pipe, fittings, specialties & valves shall be manufactured in USA. Work performed under this contract shall provide neat & "workmanlike" appearance when completed to satisfaction of architect & engineer. Workmanship shall be finest possible by experienced mechanics. Installations shall comply w/ applicable codes & laws. Complete installation shall function as designed & intended w/ respect to efficiency, capacity, noise level. etc. Abnormal noise caused by rattling equipment, piping, ducts, air devices & squeaks in rotating components will not be acceptable. In general materials & equipment shall be of commercial specification grade in quality. Light duty & residential equipment is not acceptable.
- C.Remove from premises waste material present from work, including cartons, crating, paper, stickers, &/or excavation material not used. D. Clean equipment installed under this contract to present neat & clean installation
- at completion. E. Repair or replace public & private property damaged as result of work performed under this contract to satisfaction of authorities & regulations having jurisdiction. COORDINATION
- A. Coordinate work w/ other trades so various components of systems will be installed at proper time will fit available space & will allow proper service access for maintenance. Components which are installed without regard to above shall be relocated at no additional cost to owner.
- B. Unless otherwise indicated, general contractor will provide chases & openings in building construction required for installation of systems specified herein. Contractor shall furnish general contractor w/ information where chases & openings are required.
- C.Keep informed as to work of other trades engaged in construction of project & execute work in manner as to not interfere w/ or delay work of other trades. Figured dimensions shall be taken in preference to scale dimensions. D. Contractor shall take his own measurements at building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by
- proper checking & inspection. E. Provide materials w/ trim that will properly fit types of ceiling, wall. Or floor finishes actually installed. Model numbers listed in specifications or shown on
- drawings are not intended to designate required trim. F. Obtain equipment submittal information for all pieces of equipment to be

- connected to from other trades that clearly indicates all connection requirements, locations, sizes, and similar requirements. Obtain this information in ample time to coordinate other trade submittals and equipment coordination. Where requirements differ from that on plans or differs from provisions made in the work. immediately notify the architect/engineer. Do not proceed with work that is incompatible with equipment provided
- G.Coordinate construction operations included in different sections of the specifications to ensure efficient and orderly installation of each part of the work. Coordinate construction operations, included in different sections, that depend on each other for proper installation, connection, and operation. H.Each contractor shall coordinate its construction operations with those of other
- contractors and entities to ensure efficient and orderly installation of each part of the work. Each contractor shall coordinate its operations with operations. included in different sections, that depend on each other for proper installation, connection, and operation. I. Schedule construction operations in sequence required to obtain the best results
- where installation of one part of the work depends on installation of other components, before or after its own installation. J. Coordinate installation of different components with other contractors to ensure
- maximum accessibility for required maintenance, service, and repair. K. Make adequate provisions to accommodate items scheduled for later installation. L. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and
- electrical. M.Prepare coordination drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities. Content: project-specific information, drawn accurately to scale. Do not base coordination drawings on reproductions of the contract documents or standard printed data. Include the following information, as
- applicable: 1) Indicate functional and spatial relationships of components of architectural. structural, civil, mechanical, and electrical systems. 2) Indicate required installation sequences.
- 3) Indicate dimensions shown on the contract drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the contract. N.Meetings: conduct project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other
- purposes, such as progress meetings and preinstallation conferences. 1) Attendees: each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with project and authorized to conclude matters relating to the work. Notify architect of meeting. 2) Agenda: review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress.
- 3) Combined contractor's construction schedule: review progress since the last coordination meeting. Determine whether each contractor is on time, ahead or behind schedule, in relation to construction schedule. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the contract time. Discuss impact of various contractor schedules upon other contractors and how to remedv impacts.
- 4) Review present and future needs of each contractor present O.After shop drawings have been reviewed and approved by all parties, transmit a set of submittals to each other trade (eg Plumbing, Mechanical, Electrical, Controls, etc) that will interface with installation. Each other contractor shall review the submittal for coordination and return a stamped submittal indicating they have reviewed the submittal for coordination purposes.
- ARCHITECTURAL VERIFICATION AND RELATED DOCUMENTS A.Contractor shall consult all Architectural Drawings and specifications in their entirety incorporating and certifying all millwork, furniture, and equipment rough-in including utility characteristics such as voltage, phase, amperage, pipe sizes, duct sizes, including height, location and orientation. Shop drawings incorporating these requirements should be submitted to the Architect for approval prior to installation or rough in.
- ORDINANCES & CODES
- A. Work performed under this contract shall. At minimum, be in conformance w/ applicable national, state & local codes having jurisdiction B. Installation work performed under this contract shall be in strict compliance w/ current applicable codes adopted by local AHJ including any amendments & standards as set forth by National Fire Protection Association (NFPA). Underwriters Laboratories (UL). Occupational Safety & Health Administration (OSHA). American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, & Air Conditioning Engineers (ASHRAE). American
- national standards institute (ANSI), American Society of Testing Materials (ASTM) & other national standards & codes where applicable. C. Where contract documents exceed requirements of referenced codes. Standards, etc., contract documents shall take precedence.
- D.Procure & pay for permits & licenses required for accomplishment of work herein described. Where required, obtain, Pay for & furnish certificates of inspection to owner. Contractor will be held responsible for violations of law. STANDARDS
- A.Drawings and specifications indicate minimum construction standard. Should any work indicated be sub standard to any ordinances, laws, codes, rules or regulations bearing on work. Contractor shall promptly notify Architect Engineer in writing before proceeding with work so that necessary changes can be made. However, if the Contractor proceeds with work knowing it to be contrary to any ordinances, laws, rules, and regulations, Contractor shall thereby have assumed full responsibility for and shall bear all costs required to correct non complying work.
- 11. PROTECTION OF EQUIPMENT & MATERIALS A. Store & protect from damage equipment & materials delivered to job site. Cover as required to protect from dirt & damage. Plug or cap open ends of ductwork & piping systems while stored & installed during construction when not in use to prevent entrance of debris into systems. Equipment & material that has been damaged by construction activities will be rejected. & contractor is obligated to furnish new equipment & material of like kind. Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. Shall have neat & clean appearance at completion.
- 2. SUBSTITUTIONS A. The base bid shall include only products from manufacturers specifically named in drawings & specifications. No substitution will be considered prior to receipt of bids unless written request for approval to bid has been received by engineer at least ten calendar days prior to date for receipt of bids. Request shall include name of material or equipment for substitution & complete description of proposed substitute including drawings, cuts, performance & test data & other information for evaluation. Statement setting forth changes in other materials. equipment or other work that incorporation of substitute would require shall be
- B. The intent of these specifications is to allow ample opportunity for Contractor to use his ingenuity and abilities to perform the work to his and the Owner's best advantage, and to permit maximum competition in bidding on standards of materials and equipment required.
- C.Material and equipment installed under this contract shall be first class quality, new, unused and without damage. D.In general, these specifications identify required materials and equipment by naming one or more manufacturer's brand, model, catalog number and/or other identification. The first named manufacturer or product is used as the basis for
- design; other manufacturers named must furnish products consistent with specifications of first named product as determined by Engineer. Base bid proposal shall be based only on materials and equipment by manufacturers named, except as hereinafter provided E. Where materials or equipment are described but not named, provide required
- items of first quality, adequate in every respect for intended use. Such items shall be submitted to Architect Engineer for review prior to procurement. F. Materials and equipment proposed for substitutions shall be equal to or superior to that specified in construction, efficiency, utility, aesthetic design, and color as determined by Architect Engineer whose decision shall be final and without
- further recourse. Physical size of substitute brand shall be no larger than space provided including allowances for access for installation and maintenance. Requests must be accompanied by complete descriptive and technical data including manufacturer's name, model and catalog number, photographs or cuts, physical dimensions, operating characteristics and any other information needed
- for comparison. G. The burden of proof of merit of proposed substitute is upon proposer. Engineer's

drawing modifications are required because of substituted equipment. 13. SHOP DRAWINGS

as an alternate.

- approved shop drawings relative to each item.
- inapplicable items. Shop drawings will be returned without review if above mentioned requirements are not met
- coordinated w/ other trades.
- actual building conditions. F. Final copies shall be furnished to owner as part of O&M documents in hard & electronic formats. 14. OPERATION & MAINTENANCE INSTRUCTIONS
- an inside cover sheet that lists project name, date, owner, architect, consulting
- B. These requirements may shall also be provided to the owner in a well organized pdf electronic submission & delivered on a DVD or USB thumbdrive.
- owner's representative shall sign certification letter indicating agreement that raining has been provided. Schedule owner training w/ at least 7 days' advance notice. 16. <u>SPARE PARTS</u>
- & balancing work & before turning system over to owner. B. Furnish one complete set of belts for each fan. 17. EQUIPMENT LABELS:
- Black letters on white background than 2-1/2 by 3/4 inch.
- the size of principal lettering. 18. WARRANTIES
- promptly, upon written notice from engineer or owner.
- commencement date & term. 19. CUTTING & PATCHING A.Perform cutting of walls, floors, ceilings, etc. As required to install work under this
- satisfactory to architect. 20. EXCAVATION AND BACKFILL
- specifications, and in compliance with osha safety standards. B. Excavate trenches of sufficient width to allow ample working space, and no deeper than necessary for installation work.
- Division 2.
- architect. E. When available, refer to test hole information on architectural or civil drawings or specifications for types of soil to be encountered in excavations.
- 21.<u>ROUGH-IN</u> conduit rough-in except in unfinished areas & where otherwise shown. 22. STRUCTURAL STEEL
- clean, & conform to ASTM a-36. Support mechanical components from building structure. Do not support mechanical components from ceilings, other mechanical or electrical components, & other non-structural elements.
- 23. ACCESS DOORS manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size. Location & color before ordering.
- 24.PENETRATIONS

decision of approval or disapproval to bid of proposed substitution shall be final. Terms approved". "approved equal", & "equal" refer to approval by engineer as an acceptable alternate bid. No substitutions will be considered that are not bid

H No material substitutions shall be considered for approval after to award of contract. Coordinate & verify w/ other trades whether or not substituted equipment can be installed as shown on construction drawings without modification to associated systems or architectural or engineering design Include additional costs for architectural & engineering design fees in bid if

A.Equipment to be furnished under this contract, items requiring coordination between contractors & sheet metal ductwork fabrication drawings. Before submitting shop drawings verify equipment submitted is mutually compatible & suitable for intended use & will fit available space & allow ample room for maintenance. Engineer's checking & subsequent approval of such shop drawings will not relieve contractor from responsibility for errors in dimensions, details, size of members, quantities, omissions of components or fittings; coordination of electrical requirements; or for coordinating items w/ actual building conditions. Proceed w/ procurement & installation of equipment only after receiving

B. Submittal data shall be neatly organized, identified & indexed. Each item or model number shall be clearly marked & accessories indicated. Label catalog data w/ equipment identification acronym or number as used on drawings & include performance curves, capacities, sizes, materials, finishes, wiring diagrams & deviations from specified equipment or materials. Mark out

C.Requirements shall be met electronically & submitted as pdf in files less than

D. Contractor's stamp, which shall certify that stamped drawings have been checked by contractor, comply w/ drawings & specifications, & have been

E. Transmit submittals as early as required to support project schedule. Allow for two weeks a/e review time, plus duplication of this time for resubmittals, if required. Transmit submittals as soon as possible after notice to proceed & before construction starts. Engineer's submittal reviews will not relieve contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items w/

A. Collect & compile complete brochure of equipment furnished & installed on this project. Include operational & maintenance instructions, manufacturer's catalog sheets, wiring diagrams, parts lists, approved shop drawings, test & balance reports, & descriptive literature as furnished by equipment manufacturer. Include

engineer, general contractor, sub-contractor, & an index of contents, Submit three copies of literature bound in 3-ring binders w/ index & tabs separating equipment types to architect at termination of work. Final approval of plumbing systems will be withheld until manual is received & deemed complete by architect & engineer. Provide "as-built" drawings (see Division 1 & general

A.Provide factory trained & authorized representative to train owner's designated personnel on operation & maintenance of equipment provided for this project. Provide training to include but not be limited to an overview of system &/or equipment as it relates to facility as whole; operation & maintenance procedures & schedules related to startup & shutdown, troubleshooting, servicing, preventive maintenance & appropriate operator intervention: & review of data included in operation & maintenance manuals. Submit certification letter to architect stating that owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees & subject of training. Contractor &

A. Furnish to owner, w/ receipt one set of spare filters of each type required for each unit. In addition to spare set of filters, install new filters prior to testing, adjusting,

A.Material and thickness: multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware. B. Minimum label size: length and width vary for required label content, but not less

C.Minimum letter size: 1/4" for name of units if viewing distance is less than 24 inches, 1/2" for viewing distances up to 72" & proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-fourths

A. Warrant each system & each element thereof against all defects due to faulty workmanship design or material for period of 12 months from date of substantial completion unless specific items are noted to carry longer warranty in construction documents or manufacturer's standard warranty exceeds 12 months. Remedy all defects, occurring within warranty period(s) stated in general conditions & Division 1. Warranties shall include labor & material. Make repairs or replacements without any additional costs to owner. Perform remedial work

B. At time of substantial completion, deliver to owner all warranties in writing & properly executed including term limits for warranties extending beyond one year period. Each warranty instrument being addressed to owner & stating

section. Obtain permission from architect prior to cutting. Do not cut or disturb structural members without prior approval from architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. As required by work under this section. Patching shall match original material & construction. Repair & refinish areas disturbed by work to condition of adjoining surfaces in manner

A.Perform necessary excavation to receive work. Provide necessary sheathing, shoring, cribbing, tarpaulins, etc. For this operation, and remove it at completion of work. Perform excavation in accordance with appropriate section of these

C.Conduct excavations so no walls or footings are disturbed or injured. Backfill excavations made under or adjacent to footing with selected earth or sand and tamp to compaction required by architect engineer. Mechanically tamp backfill under concrete and pavings in six inch layers to 95% standard density, reference

D.Backfill trenches and excavations to required heights with allowance made for settlement. Tamp fill material thoroughly and moistened as required for specified compaction density. Dispose of excess earth, rubble and debris as directed by

A. Coordinate rough-in w/ general construction & other trades. Conceal piping &

A. Structural steel used for support of equipment, ductwork & piping shall be new,

A. Provide access doors in ceilings, walls, etc. Where indicated or required for access or maintenance to concealed valves & equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps;

A. Seal mechanical floor, exterior wall & roof penetrations watertight & weathertight.

Seal around mechanical penetrations w/ 3M CP-25 fire barrier caulk (thickness as required & recommended by manufacturer) to maintain resistance rating of fire-rated assemblies. Provide prefabricated roof curbs manufactured by Custom Curb, Pate, Thycurb or approved equal. Provide roof curb w/ factory installed wood nailer; welded, 18 gauge galvanized steel shell, base plate & flashing; 1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of weather-resistant, weather-proof material & pipe collar of weather-resistant material w/ stainless steel pipe clamps. Make roof penetrations by authorized roofing contractor when required.

25. MOTORS & STARTERS A.Provide motors & starting equipment where not furnished w/ equipment package. Motors shall have copper windings, class b insulation, & standard squirrel cage w/ starting torgue characteristics suitable for equipment served. Motors for air handling equipment shall be selected for quiet operation. Each motor shall be checked for proper rotation after electrical connection has been completed. Provide dripproof enclosure for locations protected from weather & not in air stream of fan; & totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, GE. Westinghouse, or approved equal. Provide every motor, except fractional horsepower single phase motors w/ an approved type of "built-in" thermal overload protection, w/ motor starter. Each starter shall be provided w/ overload heaters sized to motor rating & every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise motor starters shall be furnished by Division 22/23 contractor for installation & connection by Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or approved equal.

26. ELECTRICAL WIRING A.Line voltage wiring shall be provided by Division 26. Line voltage control & interlock wiring for mechanical systems shall also be provided by Division 26 contractor. Low voltage control wiring shall be provided by Division 22/23 contractor. Furnish wiring diagrams to Division 26 contractor as required for proper equipment hookup. Coordinate w/ Division 26 contractor actual wire sizing amps for submitted mechanical equipment to ensure proper installation 27. DISCONNECT SWITCHES

A.Provide heavy-duty horsepower rated safety switches rated in accordance with NEMA enclosed switch standard KS 1_1969 and I98 standard. B. Each piece of electrical equipment shall be provided with a disconnecting means. C.Equivalents by: GE, Eaton, Siemens, Square D. 28. REFRIGERANT & OIL

A. Provide full refrigerant & oil charge in refrigeration systems. Maintain for full term of warranty. 29. FINAL TESTING & ADJUSTMENTS A. Final system testing. Balancing & adjustments shall be performed by contractor certified by NEBB, AABC or other approved agency. Perform test readings on

fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor voltage & amp draws. etc., & submit PDF of final compilation of data to architect for evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or minus 5 percent for main ducts & air handling equipment of amount of air shown on drawings. Further adjustments shall be made to obtain uniform temperature in spaces. Adjust equipment to operate as intended by specification. Align bearings & replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any improperly installed or missing balancing devices that would negatively impact system operation. Adjust thermostats & control devices to operate as intended.

Adjust burners, pumps, fans, etc. For proper & efficient operation. Certify to architect that adjustments have been made & that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set, & adjust automatic temperature controls. Check proper sequencing of interlock systems, & operation of safety controls. 30. EQUIPMENT FURNISHED BY OTHERS

A. Provide necessary equipment & accessories that are not provided by equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., furnished by others, in locations as indicated on drawings &/or described in general notes to this contractor. Equipment & accessories not provided by equipment supplier may include flues, vents, intakes, associated roof jacks & caps to outdoors, dampers. In-line fans, roof fans, control interlocks, etc. As required for proper operation of complete system in accordance w/ manufacturer's instructions. Contractor shall be responsible for correct rough-in dimensions, & shall verify same w/ architect &/or equipment supplier prior to service installations. 31. SETTING, ADJUSTMENT AND EQUIPMENT SUPPORTS

A. Work shall include mounting, alignment and adjustment of systems and equipment. Set equipment level on adequate foundation and provide proper anchor bolts and isolation as shown, specified or required by manufacturers in installation instructions. Level, shim and grout equipment bases as recommended by manufacturer. Mount motors, align and adjust drive shafts and belts according to manufacturer's instructions. B. Equipment failures resulting from improper installation or field alignment shall be

repaired or replaced by Contractor at no cost to Owner. C.Floor or pad mounted equipment shall not be held in place solely by its own dead weight. Include anchor fastening in all cases. D. Provide floor or slab mounted equipment with 3_1/2" high concrete bases unless

specified otherwise. Individual concrete pad shall be no less than 4" wider and 4" longer than equipment, and shall extend no less than 2" from each side of equipment.

E. Provide each piece of equipment or apparatus suspended from ceiling or mounted above floor level with suitable structural support platform or carrier in accordance with best-recognized practice. Verify that structural members of buildings are adequate to support equipment and unless otherwise indicated on plans or specified, arrange for their inclusion and attachment to building structure. Provide hangers with vibration isolators.

F. Submit details of hangers, platforms and supports together with total weights of mounted equipment to Architect_Engineer for review before proceeding with fabrication or installation. 32. MISCELLANEOUS REMODELING WORK

A.Remove all unused equipment, ductwork, piping & associated supports. Cap ductwork & piping at mains & seal air & water tight. Provide items of HVAC systems modification required because of building remodeling, as noted on drawings or necessary for proper operation. Match existing materials & construction techniques when modifying existing systems unless specified otherwise. Coordinate additional requirements w/ general contractor & architect. Seal airtight existing ductwork required to be abandoned in place or not in use at termination of work. Cap & seal weathertight existing roof curbs & roof openings to be abandoned in place as result of equipment removal. Clean & rebalance existing ductwork, diffusers, registers, & grilles intended for reuse as required or as indicated on drawings. Clean & refurbish existing HVAC equipment intended for reuse as required for proper operation including replacement of filters, belts, motors, remote controls, & safety interlocks.

33. FIRE BARRIERS A.General: for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated.

34. WELDING A. Contractor shall be responsible for quality of welding and suitability of welding procedures. All welding shall be in accordance with American Welding Society standard B3.0 and ANSI standard b31.1. B. Welded pipe joints shall be made by certified welding procedures and welders.

Welding electrodes shall be type and material recommended by electrode manufacturer for materials to be welded. All pipe and fittings ends shall be beveled a minimum of 30 degrees prior to welding. C.Only welders who have successfully passed welder qualifications tests in

previous 12 months for type of welding required shall do welding. Each welder shall identify his work with a code marking before starting any welded pipe fabrication. Contractor shall submit three copies of a list of welders who will work on project listing welders' code, date and types of latest gualification test passed by each welder.

D. Welded joints shall be fusion welded in accordance with level AR3 of American Welding Society standard AWS D10.9 "Standard For Qualification Of Welding Procedures And Welders For Pipe And Tubing". Welders qualified under national certified pipe welding bureau will be acceptable. E. Bevel all piping and fittings in accordance with recognized standards by flame

cutting or mechanical means. Align and position parts so that branches and fittings are set true. Make changes in direction of piping systems with factory made welding fittings. Make branch connections with welding tees or forged weldolet.

END OF GENERAL MEP REQUIREMENTS



- **DIVISION 210000 FIRE SPRINKLER SYSTEM MODIFICATIONS** FIRE SPRINKLER GENERAL REQUIREMENTS
- A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements SYSTEM DESCRIPTION A.Provide modifications to existing wet or combination wet/dry sprinkler system as required for building, or area of work shown on drawings, complete w/ alarm
- valves, drain valves, mains, risers, branches, sprinkler heads, test pipes, gauges, exterior electric bell & dialers as shown or required. Coordinate all wiring & conduit for a complete & functional installation. B. An approved automatic sprinkler contractor shall perform all work under this heading. System shall be installed in strict accordance w/ NFPA 13 Underwriters Laboratories (UL), & must be acceptable to owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards. Where contract documents exceed requirements of referenced codes, standards, etc.,
- contract documents shall take precedence C. Sprinkler system shall be certified. Contractor shall retain certification until contractor turns copies of certificates & permits over to owner. Contractor shall be approved & state licensed for design & installation of fire protection systems. Work done under this section shall be performed only by a contractor whose workmen are experienced & regularly engaged in installation of fire protection
- D. System shall be hydraulically designed. Design of sprinkler system shall coordinate main & branch lines w/ structure, ceilings, piping, ductwork & light fixtures. Entire building shall be sprinkled. E. Work shall include, but shall not necessarily be limited to following: design &
- installation of a complete wet-pipe fire protection sprinkler system for project space. Portions of systems subject to freezing or temperatures below 40' f shall be protected against freezing as required by NFPA 13. Contractor shall be responsible for repairs & for all costs incurred from damage caused by freezing of fire protection system. SYSTEM DESIGN
- A. This contractor shall verify design criteria & rating hazards with owner's insurer prior to designing system. Waterflow & pressure test data shall be acquired before system is calculated & be dated not more than 12 months prior to submittal of sprinkler drawings.
- B. Contractor shall verify with authority having jurisdiction any minimum safety factor requirements. Regardless, demand shall not be less than 10% below supply at demand point.
- C. The contractor shall be fully responsible for hydraulic calculations, arrangements for & cost of flow tests, final system design, & layout of all components of system as required for approval by owner's insurer, authority having jurisdiction & all applicable local, state & national codes & standards. D. The contractor shall be fully responsible for coordinating system layout with other
- contractors. Changes to system design due to lack of coordination shall be paid for by contractor. E. Sprinkler spacing shall conform to NFPA 13. Extended coverage sprinklers shall not be used in unfinished (shell) spaces. Hydraulic area of operation shall not be
- reduced as allowed by NFPA 13 for areas utilizing quick response sprinklers. SHOP DRAWINGS A. Shop drawings & hydraulic calculations shall be furnished to architect &/or
- engineer, for his approval. Architect will forward one set to contractor after final approval. Submitted shop drawings shall bear a stamp indicating approval by authority having jurisdiction. Provide drawings electronically in pdf format.
- B. Shop drawings shall meet requirements of NFPA 13 & shall include following: 1) Submit working plans per NFPA 13 including layout drawings of complete overhead sprinkler system indicating relationship of sprinkler piping & sprinklers to all other overhead items including ceiling grid & tiles, light fixtures, diffusers, registers, grilles, ductwork, etc. Location of risers, piping, etc., shall be as inconspicuous as possible & shall fulfill all functional requirements. System design capabilities & water demands shall also be noted on drawings.
- 2) Submit complete details & sections as required to clearly define & clarify design, including a materials list describing all proposed materials by manufacturer's name & catalog number. Hvdraulic calculations.
- 4)Product data for all fire sprinkler system components. Provide next to sprinkler riser main, a printed sheet, protected by glass or a transparent plastic cover, giving brief instructions regarding control, emergency procedure & other data as required by NFPA 13. For hydraulically designed systems, a placard must be permanently attached to riser indicating location, & basis of design (discharge density & system demand).
- YSTEM MANUAL A. Upon completion of installation, & as a condition of its acceptance, contractor shall compile three 8-1/2" by 11" manuals, firmly bound in heavyweight plastic or paper cover to withstand hard use. Loose-leaf binding is not acceptable. Manuals shall be delivered to architect, & shall contain following items:
- 1) Identification clearly visible on or through cover, name of project & "fire sprinkler system manual". 2) Neatly typed index at front with all emergency information clearly identified. 3) Complete list of all system components with manufacturer's names, catalog numbers, & all data for ordering parts.
- 4) One copy of record drawings, as described above.
- 5) All information required to secure emergency repairs or service. 6) Contractor's "material & test certificate(s) for sprinkler system", as described in NFPA 13.
- SPRINKLER HEADS A. Sprinkler heads - as required by NFPA 13 manufactured by Central, Viking, Star, Reliable, Grinnell, Automatic, Semi recessed chrome plated brass where exposed. Sidewall where required. Rough brass where concealed & exposed in

- mechanical rooms. Concealed heads where located in sheet rock ceilings. Provided w/ necessary hardware for mounting into hard or acoustical ceilings. Reference architectural drawings for ceiling types & locations. Where no ceilings occur, provide standard brass upright or pendant as required by construction. B. Sprinkler heads shall be underwriters-approved, automatic spray type. Temperature rating of heads shall be 165 deg f., except furnish 212 deg f. Heads
- where required C.Location of sprinkler heads is not shown on drawings but nevertheless shall be furnished & installed to meet requirements of specifications & NFPA. Center heads in 2x2 tile spacing in acoustic ceilings. Location of heads shall be as approved by architect Provide head quards where required by NEPA Furnish spare heads & wrenches mounted in metal cases where directed by architect & as required by NFPA.
- 7. PIPE, FITTI<u>NGS, & HANGERS</u> A.Sprinkler piping 2-1/2" & larger shall be schedule 10 or schedule 40 black steel.
- Sprinkler piping 2" & smaller shall be schedule 40. Pipes shall have welded, threaded, or mechanically joined fittings, based on pipe material & size per NFPA 13 requirements. Piping shall be UL listed & FM approved B. Acceptable alternatives to schedule 10 & schedule 40 pipe shall be manufactured to standards recognized by NFPA 13. Threaded pipe shall have a corrosion resistance rating of 1.0 or greater. Crimp-type couplings shall not be
- used. Threadable thinwall pipe with corrosion resistance rating less than 1.0 not permitted. C.Hangers shall be of type & spacing to support pipes & meet approval of UL & FM. Hangers shall be attached to structural components only. Support risers from structure below. Do not support exposed risers from clamps above floor. D. Conceal mains back or above construction in finished areas. Piping shall be
- designed to provide maximum head room in all areas. Piping shall not pierce ductwork. E. Pitch all dry pipe sprinkler piping to drain according to NFPA requirements,
- without exception & without traps. Wet pipe sprinkler systems may be pitched to drain or run level, but piping must be installed straight & true, without traps. F. Provide drain valves & inspector test valves as necessary to drain system & meet requirements of NFPA. TESTING & ACCEPTANCE
- A.Upon completion of each phase of installation, each system shall be tested in conformance with local code requirements & as noted below. Contractor shall furnish all labor & equipment required to properly test all sprinkler equipment
- installed under this contract & he shall assume all costs involved in making tests, & repairing &/or replacing all damage resulting therefrom. B. Upon completion of systems installation, & prior to acceptance by engineer & owner, this contractor shall make general operating tests to demonstrate that all equipment & systems are in proper working order, & are functioning in conformance with intent of drawings & specifications.
- C. After completion of installation, test, retest, & make all corrections necessary to secure acceptance by fire marshal &/or any other authority having jurisdiction. Furnish all test equipment & personnel required. D. After completion of all installation, tests, etc., & prior to final acceptance date,
- contractor shall instruct building owner & his selected personnel in operation of sprinkler system & procedure to conduct guarterly main drain tests as required by NFPA 25. **EXECUTION**
- A. All modifications & additions shall be performed without hampering proper operation of remaining system. Shop drawing submittals shall indicate by calculation total system compliance B. Provide installation of water flow switches & tamper switches on bypass lines & shut off valves. Wiring by electrical contractor. Coordinate w/ fire alarm system.
- C. Submit drawings & calculations to state fire marshall, owner's insurance company & local building officials for approval. D. Furnish all gauges, pumps, compressors & equipment required to perform tests.
- Coordinate all scheduling & work with other trades so as to prevent conflicts, & to ensure orderly progress of work, with a minimum of delays. When sprinkler piping is installed without coordinating with other trades & conflicts occur. sprinkler piping shall be relocated as required at no additional cost to owner to resolve conflicts
- E. Piping in areas having ceilings, other than underside of roof deck, shall be concealed. Piping in areas without ceilings may be exposed but kept at a minimum distance from deck. All piping shall be clean & free of rust. Install system such that all piping is rigidly secured & supported. All ductwork, lights structural members & main runs of piping shall take precedence over sprinkler piping. Cutting of structural members for passage of sprinkler pipes or hangers will not be permitted. All horizontal piping in ceiling space shall be at an elevation above top of light fixtures & air outlets to allow for access to light fixtures & air
- outlets without removing horizontal piping. Route all sprinkler piping & provide all offsets, bends, & elbows around all mechanical, electrical, & structural members as required. F. Contractor shall coordinate with fire alarm contractor &/or electrical contractor connection of fire sprinkler alarm devices to fire alarm system or fire sprinkler
- nonitoring panel as required. G. Where exposed piping passes through finish work, chrome plated (or other finish acceptable to architect) split wall plates or escutcheons shall be installed to fit snugly around piping.
- H.Piping shall be routed parallel to building lines. I. Seal all fire protection floor, wall & roof penetrations watertight & weathertight. Caulk around fire protection penetrations with approved fire barrier caulk as required to maintain fire resistance rating of fire-rated assemblies.

END OF DIVISION 21000

ELECTRICAL SPECIFICATIONS

- SECTION 26000 ELECTRICAL GENERAL ELECTRICAL REQUIREMENTS
- A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements. B. Wiring of Mechanical Equipment
- 1) Provide all raceways & power wiring for all division 23 equipment requiring electrical connections, including, but not limited to, pumps, water heaters, 8 HVAC equipment, & all line voltage control & interlock wiring not provided under division 23. Connect per manufacturers' wiring diagrams. Coordinate with division 23 for disconnects furnished w/ equipment, & provide all disconnect switches as required. After installing wiring, verify that each motor load has correct phase rotation.
- 2) Verify actual "maximum overcurrent protection" (MOCP) device ratings & "minimum circuit ampacity" (MCA) conductor sizing for mechanical equipment from equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from conductor & equipment sizes shown on drawings; however, in no case, reduce size of conductors indicated on drawings without authorization from engineer. Provide properly sized electrical wiring & equipment without extra cost to owner. Notify engineer of all changes required in electrical installation due to equipment variances so that effects on feeders, branch circuits, panelboards, fuses & circuit breakers can be checked prior to purchasing & installation. Be responsible for coordinating w/ division 23 to verify actual ampacities & correct sizes of all conductors & overcurrent protective devices for all equipment, & correct overload heaters for all motors, when
- starters are provided under division 26. C. Wiring of Thermostats. Time, & Temperature Controls 1) Provide all raceways, power wiring, & line-voltage control and interlock wiring not provided under division 23, for all thermostats, temperature control devices, & controls, including, but not limited to, night-stats, water heater interlocks, time switches & override timers. See mechanical
- drawings for locations & temperature control diagrams. Low-voltage conductors for thermostats & temperature control system may be run exposed above finished accessible ceilings, if approved & listed for this purpose, but shall be installed in conduit within walls & where exposed in work areas CONDUIT & CONDUCTORS
- A.Follow circuiting shown on plans. Use no conduit smaller than 3/4" & no conductors smaller than #12 ga. Unless noted otherwise. B. Conductors #10 and smaller shall be solid.
- C.If no conductor size is indicated on drawings for branch circuit, provide conductors & conduit sized per NFPA 70 & based on indicated branch circuit overcurrent protective device (OCPD) rating & number of poles. D. Wire shall be in non-flexible metallic conduit (EMT, IMC or RMC) for:
- 1) All circuits & feeders greater than 30A. 2) Kitchen circuits
- 3) Home runs.
- E.MC cable acceptable for branch convenience circuits & lighting circuits. Do not daisy chain light fixtures. Provide cable whips of sufficient lengths to allow for relocating each light fixture within 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths 1) Do not use MC cable for following: homeruns to panelboards, where exposed to view or damage, hazardous locations, in concrete, block walls
- or wet locations, & when disallowed by local AHJ or landlord. 2) Provide health care rated MC for patient care areas (as defined by the NEC) when not in conduit. F. Conduit installed below grade shall be schedule 80 PVC heavy wall plastic
- conduit meeting NEMA standards & UL listed for underground & exposed use. Provide GRS radius bends & risers as conduits rise above grade or above floor G.Lighting & receptacle circuit conductors shall be copper THHN-THWN-2 600 volt. 75 deg c, color coded as described under applicable codes. No romex, plastic

flex tubing etc permitted. Light fixture wire insulation shall have temp rating not

- less than individual fixture manufacturers recommended rating. H. Circuits w/ no. 8 or larger conductors, motor circuits, power & feeder circuits & building service feeders shall be copper THHN-THWN-2 600 volt, 75 deg c.
- I. All materials used to terminate, splice or tap conductors: designed for, properly sized for, & UL listed for specific application & conductors involved, & installed in strict accordance w/ manufacturer's recommendations, using the manufacturer's recommended tools.
- J. Where wiring is indicated as installed, but connection is indicated "future" or "by other division, trades, or contracts", leave minimum 3-foot "pigtail" at box, tape ends of conductors. & cover box K. Number of conductors in specific raceway "home run" is indicated w/ cross lines (tick marks) on each "circuit run" on drawings. In general, direction of branch
- circuit "home run" routing is indicated on drawings, complete w/ circuit numbers & panelboard designation. Continue all such "home run" wiring to designated panelboard, as though "circuit runs" were indicated in their entirety. L. Wiring shall have insulation of proper color to match NEC color code. In larger sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of appropriate color around each conductor at all termination
- points, junction & pull boxes. ROUNDING
- A. Supplement grounded neutral of secondary distribution system w/ equipment grounding system, installed so that metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, portable equipment & other conductive items operate continuously at ground potential & provide low impedance path for ground fault currents.
- B. System shall comply w/ national electrical code, drawings & as specified. C.Provide equipment ground bus in base of low voltage, switchgear brazed or otherwise adequately connected by an approved method to ground rods.
- D. Provide in conduit green insulated copper ground conductor to main metallic water service entrance & connect by means of adequate ground clamps. E. Equipment grounding conductors for branch circuit home runs shown on drawings shall indicate an individual & separate ground conductor for that branch
- circuit which shall be terminated at branch circuit panelboard, switchboard, or other distribution equipment. F. Provide low voltage distribution system w/ separate green insulated equipment grounding conductor for each single or three-phase feeder. Single phase 120
- volt branch circuits for lighting & power shall consist of phase & neutral conductors & green ground conductor installed in common conduit which shall serve as grounding conductor. G.Grounding conductors shall be as shown on plans or if not specifically shown
- shall be no smaller than that required by NEC.
- 4. RACEWAY INSTALLATION A.Install all conductors & cable in raceways continuous without taps or splices. Splice or tap only in approved boxes & enclosures w/ approved solderless connectors, or crimp connectors & terminal blocks for control wiring, & keep to
- minimum required. Insulate all splices, taps, & joints as required by codes. B. Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated. 1) All conduit, junction boxes, etc. Above ceilings shall be supported from
- structure. Pipe sleeves, hangers & supports shall be furnished & set & contractor shall be responsible for proper & permanent locations. 2) Support all conductors & cables in vertical installations, as required by NFPA 70, by installing cable supports or plug-type conduit riser supports, or wire-mesn satety grips
- C.Provide GRS for all conduits run underground, exposed to weather, or exposed to other hazardous conditions. Provide GRS installed below grade w/ corrosion resistant bonded-plastic or approved mastic coating. This shall include 90-degree elbow below grade & entire vertical transition to above grade.
- D. Provide interlocking spacers for multiple runs of UG conduits in same trench. E. All other raceway may be EMT where approved by local code. Use compression type fittings for EMT, w/ all fittings UL listed for environment in which they are

DIVISION 220000 - PLUMBING

- PLUMBING GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL AND PLUMBING requirements
- PIPING & INSULATION
- A. Water service piping shall be copper type K tubing, ductile iron with mechanical joints or PVC AWWA C900 piping properly bedded and supported. B. Water piping - all water piping shall be 95-5 tin-antimony joined type L copper. Underground piping to be continuous tube. Insulate w/ fiberglass w/ ASJ & PVC
- covers. Thickness in accordance w/ ASHRAE 90.1. C. Waste & vent piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent welds may be used where allowed by local code. PVC not allowed in plenums. D.Roof/storm drain piping - CI bell & spigot below grade or hubless CI w/ neoprene gasket fittings w/ stainless steel bands above grade. Sched 40 PVC w/ solvent
- welds may be used where allowed by local code. PVC not allowed in plenums. Insulate w/ min 1/2" fiberglass pipe wrap w/ ASJ jacket. E. Gas piping - Provide Sched 40 cont. Weld carbon steel w/ corresponding fittings. Provide threaded fittings. Provide iron body-brass plug gas stops. Provide 2
- coats paint on exterior gas piping. F. See schedule on plans for additional information.
- 3. PIPING IDENTIFICATION A.Provide pipe markers and flow direction arrows at 10'_0" maximum spacing to identify piping in mechanical rooms and 20' 0" maximum spacing in all other
- B. Pipe marker nomenclature/colors shall meet applicable ANSI standard and OSHA requirements from Seaton or equal. Submit for approval list of colors and wording prior to purchase of pipe markers.
- 4. VALVES A.Equivalent valves listed on current comparison charts of specified valve manufacturers by Milwaukee, Stockham, Powell, Red-White, Crane, Apollo, Mueller, Muessco, Watts, Havs, Rockwell-Nordstrom,
- B. Ball valves 2" & under bronze full port w/ teflon seats, bronze ball & insulated C.Balancing valves - Armstrong model CBV I or CBV II, 125 psi-wp at 250 degrees
- f., meter connections w/ built-in check valves screwed or flanged ends. Provide polyurethane insulation cover. D. Check valves - 2" & smaller screwed or solder bronze check valve, 200
- psi-wog/125 psi-wsp, teflon or bronze disc & seat ring. 2-1/2" & larger flanged, ASTM 126 iron body, bronze trimmed, 200psi-wog/125 psi-wsp. E. Plug valves - 1" & smaller iron body gas cock, 175 PSI_WOG bronze plug washer and nut, screwed ends. 1_1/4" & larger, semi_steel lubricated plug valve,
- 175 PSI WOG coated plug, two bolt cover, and short pattern screwed ends. Provide w/ std. pattern cast handle. F. Butterfly valves - 3" & larger lever ASTM A126 CI drilled & tapped full lug body,
- 200 PSI-WOG, extended neck, bronze disc, stainless steel stem, field-replaceable EPDM sleeve & stem seals. G.Installation
- 1) Install necessary valves within piping systems to provide required flow control, to allow isolation for inspection, maintenance and repair of each piece of equipment or fixture, and on each main and branch service loop. 2)Each valve shall be installed so that it is easily accessible for operation, visual inspection, and maintenance and wherever possible, gate, check and ball valves shall be installed on a horizontal run with the handle upright and within 15 degrees of vertical. Butterfly valves shall be installed with the stem in the horizontal position and the handle at 90 degrees from vertical.
- 3) Valves installed in piping systems shall be compatible with system maximum test pressure, pipe materials, pipe joining method, and fluid or gas conveyed in system. 5. FIXTURES A.See schedules for further requirements and specific fixtures.
- B. Fixtures: American Standard, Kohler, Crane, Zurn, Toto.
- C. Stainless steel fixtures: Elkay, Just, Moen Commercial
- D.Fittings & supports: Josam, Smith, Wade, Zurn, Or Jonespec. E. Seats: Church, Olsonite, Bemis Or Beneke.
- F. Drinking fountains: Halsey Taylor, Elkay, Oasis, Or Haws
- G.Trim by Moen, Delta, Eljer, Kohler, American St&Ard, Crane, Sloan. H.Flushvalves: Sloan, Zurn, Toto
- I. Drains by Wade, Zurn, Woodford, Smith, Josam.
- J. Roof drains cast iron roof drain w/ flange, CI mushroom dome. 2" dam for overflow drains
- K. Wall hydrants Josam series 71000 w/ connections for ³/₄" pipe & hose. Non-freezing w/ key, vacuum breaker, locking cover. Equivalent by J.R. Smith, Wade, Woodford or Zurn.
- L. Downspout nozzels Wade series 3940 cast bronze downspout nozzles w/ threaded outlet & flange to secure nozzle to wall. 6. PLUMBING EQUIPMENT
- A.See schedules for further requirements and specific equipment. B. Backflow preventers provide where shown on plans or as required by Code/AHJ the following types of backflow preventers. Provide isolation value ahead of backflow preventers. Equivalent backflow prevents by Watts, Febco, Lawler.

1) Reduced pressure zone principle (1/4"-1/2"): watts series 009 reduced pressure backflow preventer complete with strainers and valves. 2) Reduced pressure zone principle (3/4"-10"): watts series 909 reduced pressure backflow preventer complete with strainers and valves. Provide isolation valve ahead of backflow preventers. Provide with air gap fitting and pipe to floor drain

B. Convenience outlets:

C.Switches:

A.Color of devices as directed by architect

Seymour/Legrand

Sensor Switch.

D. Weatherproof cover plates:

lockable

covers.

12. DISCONNECT (SAFETY) SWITCHES

13. LUMINAIRES, LAMPS & BALLASTS

C.Fluorescent Fixtures:

D.LED Fixtures:

4)

as applicable.

1) Spec grade 20 amp duplex w/ ground & SS wall plates. Other outlets shall

Provide GFCI rated devices where indicated & as reg'd per code.

1) Light switches - spec grade 20 amp toggle switches w/ SS wall plates.

2) Wall motion switches - spec grade, pir, override.

driver for full range of dimming (100-10%).

1) Provide GFCI receptacles for weatherproof receptacles.

for operation of exhaust fan delay.

room configuration, all necessary power packs & relays.

Comply with UL 1472. 600W or 1200W as required by load.

be verified w/ equipment suppliers for proper NEMA configurations.

2) Equivalent devices by Cooper/Eaton, Hubbell, Leviton, Pass &

3) Ceiling motion switches - spec grade, dual technology, model as req'd by

4) Wall motion switches (bathroom) - dual relay, spec grade, PIR, 2nd relay

5) Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet

on-off switches, with audible frequency and EMI/RFI suppression filters.

Continuously adjustable slider; with single-pole or three-way switching.

Incandescent Lamp Dimmers: 120 V; control shall follow square-law

LED Dimmers: Modular; compatible with dimming drivers in fixture(s); if

other than 0-10V dimming is provided, verify dimmer is compatible with

6) Equivalent devices by Leviton, Bryant, Hubbell, Wattstopper, Lithonia,

2)For wet locations: in-use NEMA 3R, UL-labeled plates die cast metal and

3) For damp locations: UL-listed for wet locations w/ cover(s) closed; die-cast

aluminum or type 302 SS; single-cover for switches & vertically mounted

receptacles; double-cover for horizontally mounted receptacles; self-closing

A.Disconnect (safety) switches: Square D, Siemens, Cutler Hammer, or General

Electric fused or non-fused (as indicated on drawings or required) NEMA KS1,

heavy duty, externally operated, visible-blade safety switches; NEMA enclosure

type indicated on drawings or suitable for environment in which installed. Based

on fusible switch & fuse sizes indicated, include class R, J, or L fuse provisions

B. Where indicated, provide fusible switches permanently labeled as suitable for

use as service entrance equipment w/ integral & separate neutral & ground

terminations not specifically listed as suitable for more than one conductor.

B. Equivalent luminaires by Hubbell, Infinity, Lithonia, Williams, Eaton [Cooper].

85 CRI. Equivalent lamps by G.E., Venture, Phillips Or Sylvania.

1) Lamps shall be type recommended by fixture manuf. Lamp none above

2) Ballasts - Fluorescent - electronic, <20% THD, Equivalent by Advance,

1) Lamps & modules: Philips, General Electric, Osram/Sylvania, Cree, Nichia.

manuf recommended max wattage. Color temperature shall be

coordinated throughout project, with generally 4100k interior lamps and min

required by NFPA 70, & where indicated on drawings.

A.Refer to lighting fixture schedule plans for fixture types.

G.E., Motorola, Or Magnetek.

assemblies, suitable for sizes of conductors indicated. Do not double-lug any

C.Provide switches where not furnished w/ starting equipment, at all other points

dimming curve. On-off switch positions shall bypass dimmer module.

- 3) Double check valve (1/2"-2"): watts series 007 double check valve assembly complete with ball type test cocks, full port ball valve shut offs and strainer.
- 4) Double check valve (2-1/2"-10"): watts series 707 double check valve assembly complete with ball type test cocks, os&v valve shut offs and strainer. Epoxy coated cast iron check valve bodies with bronze seats. 5) Pressure vacuum breakers (1/2"-2"): watts series 800m4qt pressure vacuum breaker with integral ball valve shut offs.
- 6) Pressure vacuum breakers (3/8"-1/2"): watts series 008gt pressure vacuum breaker for anti-spill applications, with integral ball valve shut offs. 7) Atmospheric vacuum breaker (1/4"-3"): watts series 288a atmospheric vacuum breaker in plain brass finish.
- 8) Hose bibb vacuum breakers vacuum breakers for hose end connections shall be Watts series 8 non-removable type C.Domestic hot water expansion tanks be welded steel, diaphragm type tank, and
- pre_charged to the minimum operating pressure. Tanks shall be suitable for domestic water service. Provide by Amtrol. Bell & Gossett. Watts. D. Provide thermometers and wells at all water heaters. Provide pressure test plugs and gauges at water/fire services, booster pumps, etc. so that proper testing/ balancing & trouble shooting can be accomplished.
- 7. PLUMBING EXECUTION A. Provide unions or flanged joints in each pipe line preceding connections to equipment to allow removal for repair or replacement. Provide all screwed & control valves w/ unions adjacent to each connection. Provide screwed end valves w/ union adjacent to valve unless valve can be otherwise easily removed from line
- B. All piping shall be properly supported with hangers and supports specifically intended for that purpose. Provide clevis hangers, unistrut brackets and pipe clamps and similar systems. Protect integrity of insulation and provide rigid insulation inserts or pipe saddles as necessary.
- C. After piping is in place test lines to insure no leaks.
- D. All piping & equipment shall be supported properly from structure. E. Escutcheons - provide nickel-brass or chrome plated on all exposed pipes when
- passing thru wall or ceiling of finished rooms. F. Verify floor materials used from architectural plans & provide proper cleanout
- tops, where they occur in carpet, guarry tile, vinyl tile or ceramic tile. G.Provide water hammer arrestors for all plumbing banks w/ fixtures utilizing flush valves in any capacity. Locate arrester between last two fixtures served on
- branch line H.Emergency Power Off For all water heaters/boilers over 399MBH Input, provide an emergency power off switch at the boiler room entrance to shutdown boilers. in the event of an emergency, when the switch is thrown. Switch shall be red and shall be labeled with a red and white phenolic plastic sign with white letters on red background, reading "Emergency Boiler Shutdown".

END OF DIVISION 22000

DIVISION 230000 - MECHANICAL

- 1. MECHANICAL GENERAL REQUIREMENTS A.Refer to GENERAL MECHANICAL, ELECTRICAL & PLUMBING requirements 2. SHEET METAL WORK
- A HVAC ductwork shall be galv sheet metal of gauges & joint types specified in SMACNA manual. Provide turning vanes in elbows. B. Coordinate routing of ductwork w/ other contractors such that piping, electrical conduit, & associated supports are not routed through ductwork. Construct
- supply ducts to meet SMACNA positive pressure of 3" WG. Construct return. outdoor & exhaust ductwork upstream of fans to meet SMACNA negative pressure of 1" WG. construct exhaust ductwork downstream of fans to meet SMACNA positive pressure of 1" WG. C.Exposed ductwork to be field painted shall have galvanized metal primer applied
- in shop after fabrication & prior to shipping. D. Seal ductwork w/ heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions.
- E. Exposed spiral duct shall be Lindab or approved equal gasketed style. F. Ducts shall be connected to fans, fan casings & fan plenums by means of flexible connectors Elexible connectors shall be neoprene coated glass cloth canvas connections, Duro-Dvne, Elgen, Ventfabric or equal, Flexible connectors shall have flame spread of 25 or less & smoke developed rating not higher than 50. Make airtight joints & install w/ minimum 1-1/2" slack.
- G.All ductwork must be supported properly from structure. 3. DUCTWORK SPECIALTIES
- A. Flexible ducts Thermaflex or equal sound rated type G-KM insulated. (duct w/o published acoustical attenuation ratings not acceptable). Take off fitting shall be hi-eff style w/ locking damper. Maximum length of flexible ductwork shall be
- F. Use FMC for final connection to each motor & transformer, & to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight. 1) Provide all FMC & LFMC w/ an insulated bonding conductor.
- G.Install raceways parallel & perpendicular to building lines. H. Install raceways to requirements of structure & to requirements of all other work on project. Install raceway to clear all openings, depressions, pipes, ducts, reinforcing steel. & other immovable obstacles. Install raceways set in forms for concrete structure in such manner that installation will not affect strength of structure.
- I. Install raceways continuous between connections to outlets, boxes & cabinets w/ minimum possible number of bends & not more than equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- & 90-degree bends, unless approved by engineer in advance. Make other bends smooth & even & without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible & never shorter than corresponding trade elbow. Use long radius elbows where necessary, indicated, or both.
- J. Securely fasten raceways in place w/ approved straps, hangers & steel supports as required. Attach raceway supports to building structure. Hang single raceways for feeders w/ malleable split ring hangers w/ rod & turnbuckle suspension from inserts spaced not over 10 feet apart in construction above.
- K. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of bends. Do not support raceways from suspended ceiling components
- L. Ream raceway ends, thoroughly clean raceways before installation, & keep clean after installation. Plug or cover openings & boxes as required to keep raceways clean during construction & fish all raceways clear of obstructions before pulling conductors wires. Provide raceways of ample size for pulling of wire & not smaller than code requirements & not less than 3/4", unless indicated otherwise on drawings.
- M.Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet engineer's approval without additional cost to owner
- N. Align & install true & plumb all raceway terminations at panelboards, switchboards, motor control equipment & junction boxes.
- O.Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints. P. Install pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament
- plastic line. Leave min. 24" slack at each end. Q.Make all joints & connections in manner that will ensure mechanical strength & electrical continuity. R.Effectively seal raceways, by installing conduit fitting at boundary of two spaces,
- & filling it w/ an approved pliable material after conductors or cables have been installed & tested, whenever raceways pass from non-cooled to cooled spaces or transition from outside facility or enclosure to inside, whether buried or exposed. **BUSHINGS & LOCKNUTS**
- A.Rigidly terminate conduits entering sheet metal enclosures to enclosure w/ bushing & locknut on inside & locknut or an approved hub on outside. Conduit shall enter enclosure squarely B. Provide bushings & locknuts made of galvanized malleable iron w/ sharp, clean-cut threads. Where EMT enters box, provide approved EMT compression connectors
- C.Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture when required by NFPA 70, or both. JUNCTION & OUTLET BOXES
- A. All boxes including light fixture, switch, receptacle, & similar outlet boxes: National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized steel knockout boxes, suitable in design to purpose they serve & space they

- occupy. Size as required for specific function or as required by NFPA 70, whichever is larger. 1) Lighting fixture boxes in ceilings shall not be less than 4" octagonal knockout type.
- B. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush w/ finished surface, accurately set, & rigidly secured in position. Provide plaster rings, extension rings &/or masonry rings as req'd for flush mounting. Provide approved cast outlet boxes, w/ hubs & weatherproof covers, in all areas subject to damp, wet, or harsh conditions
- C.Coordinate locations of outlet boxes. Outlets are only approx located on small scale drawings. Use great care in actual location by consulting various large scale detailed drawings used by other division trades, & by securing definite locations from architect. D. All outlets, shall be mounted w/ bottom at 18" AFF & switches w/ bottom at 44"
- AFF floor unless noted otherwise on plans. Refer to arch for other required elevations & cabinetry coordination. ELECTRICAL IDENTIFICATION
- A.Manufactured labels for each panelboard & transformer. Typewritten panel schedules mounted in panels
- B. Printed tape style label for each receptacle indicating panel & circuit #. C.Manufactured labels for all disconnect switches indicating equipment served. D.Branch circuits - identify each circuit w/ wire markers when enclosure label & wire colors do not provide enough information to identify each circuit without tracing. Feeders & branch circuit home runs w/ wire marker w/ panel & ckt #.
- Box covers above lay-in ceilings neatly marked w/ indelible marker. E. Fire alarm - nameplate on each fire alarm terminal cabinet. Label all wiring DIGITAL LIGHTING CONTROLS A. Provide DLM systems consisting of lighting control panels, room controllers,
- motion sensors, daylight sensors, & other other controls as necessary to achieve lighting switching & dimming control indicated on the drawings. B. Provide all interconnecting wiring, controls, programming & owner training for the system(s).
- C.Provide systems by: Cooper, Hubbell, Leviton, Phillips, Sensor Switch, Watt Stopper, Lutron. D.Execution:
- 1) Calibrate all sensor time delays & sensitivity for proper detection of occupants & energy savings. Adjust time delays. 2) Provide documentation of room by room system configuration including: sensor parameters, time delays, sensitivities, & daylighting setpoints, sequence of operation, load parameters.
- 3) Post start-up tuning 30 days after occupancy contractor shall adjust sensors to meet the owner's requirements. Provide a detailed report to the architect / owner of post start-up activity. PANELBOARDS
- A.Branch circuit 208/240v panels shall be capacity shown w/ tin plated copper bussing & braced for minimum of 10,000a aic or as otherwise noted or required (series rated acceptable). Bolt on circuit breakers. 480v panels same except 14.000a aic min, or as otherwise noted. Minimum 20" wide w/ galv steel enclosure w/ hinged door & keved lock. Coord trim w/ mounting location. Typewritten card directory.
- B. Distribution panels shall be capacity shown & shall be Square D I-Line w/ tin plated copper bussing. 65kaic min or as otherwise noted/reg'd. Bolt on circuit printed labels to load served.
- C.Equivalent by Square D, Siemens, Cutler Hammer, Or GE. 10. CIRCUIT BREAKERS IN EXISTING PANELBOARDS A.Provide new circuit breakers, for installation in existing panelboards, of same manufacturer, type & short circuit current interrupting ratings as existing
- panelboard circuit breakers. 11. WIRING DEVICES

	B. Diffusers & grilles - see schedule. Equivalent by Price, Tuttle & Bailey, Titus, Metal-Aire, Krueger. Coordinate color, mounting w/ duct, ceilings, architect. Select air devices to limit room noise level to no higher than NC-30 unless	 <u>STARTUP SERVICE</u> A.Engage a factory-authorized service representative to perform startup service for all equipment & systems.
	otherwise shown. Provide devices w/ soft plastic gasket to make an airtight seal against mounting surface. Coordinate final location, frame, & mounting type of air devices w/ architectural reflected ceiling plans. Submit complete shop drawings	B. Complete installation & startup checks according to manufacturer's written instructions & also do the following:
	including information on noise level, pressure drop, throw, cfm for each air	1) Inspect for visible damage to any part, casing or component.
	Provide ceiling supply air diffusers & return air grilles of lay-in or surface mounted	2) Verify that labels are clearly visible.
	type as required to be compatible w/ ceiling construction. Provide ceiling diffusers & grilles w/ white enamel finish unless noted otherwise. Provide slot	3) Verify service clearances are provided.
	plenums by diffuser manufacturer. Plenums shall be internally insulated by	4) Verify that controls are connected & operable.
	manufacturer.	5) Verify that filters are installed.
	Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where 'shown	6) Clean all interior and exterior components of construction debris.
	on drawings & wherever necessary for complete control of air flow. Splitter	7) Connect & purge gas line.
	ventlok end bearings for damper rod. Rectangular volume dampers shall be	9) Inspect operation of barometric dampers
	opposed blade interlocking type. Round volume dampers shall be butterfly type consisting of circular blade mounted to shaft.	10)Lubricate all bearings.
	D.Damper leakage for outside air dampers shall not exceed 6.5 cfm/square foot in	11)Inspect all rotating components for direction and correct.
	full closed position at 4" wg pressure differential across damper. Reference	12)Inspect for all rotating components for vibration & binding.
4	DUCT INSULATION WORK	13)Adjust fan belts to proper alignment & tension.
	A.Duct insulation shall meet flame/smoke rating of 25/50 per ASTM E 84.	14)Start unit according to manufacturer's written instructions.
	B.Line all ductwork. See schedule on plans.	15)Start refrigeration system in summer only.
5.	EXHAUST FANS	16)Complete startup sheets & attach copy with contractor's startup report.
	A.Equivalent by Cook, Penn, Acme, Greenheck, Jennaire.	17)Inspect & record performance of interlocks & protective devices;
	B. Bearings shall be designed for 200,000 hours operation. Variable pitch motor sheaves shall be standard.	verify sequences. 18)Operate unit for an initial period as recommended or required by
	C.Fans shall be furnished with acceptable electrical disconnect & birdscreen.	manufacturer.
	multiphase motor equipped fans with magnetic motor starter. Provide local disconnect means for all fans. Coordinate location of starter & disconnects with	19)Perform the following operations for both minimum & maximum firing & adjust burner for peak efficiency. Adjust pilot to stable flame. 20)Measure gas pressure on manifold
	ollier trades.	21)Measure combustion-air temperature at inlet to combustion
	Greenheck, Jennaire, Panasonic. Shall bear the AMCA Certified Ratings Seal for	chamber.
	sound and air performance. Provide speed controls to be furnished to E/C for mounting at fan. Provide wall/roof jacks as indicated on plans	22)Measure flue-gas temperature at furnace discharge.
6.	PROGRAMMABLE THERMOSTATS	23)Calibrate thermostats and sensors.
	A. Stages of cooling & heating as required by stages on specified equipment. 7-day	24)Adjust & inspect high-temperature limits.
	programming capability w/ 2 occ/unocc periods/day. Auto heat/cool change over.	25)Inspect all dampers for stroke & Interlocks.
	equipment as required.	20)Start reingeration system & measure & record the following.
	B. Thermostats by Honeywell, Johnson Controls, White-Rogers, Trane, Carrier or	28)Coil entering-air, dry- & wet-bulb temperatures.
7		29)Outside-air, dry-bulb temperature.
7.	A Coordinate w/ e/c to provide all wiring between equipment dampers thermostats	30)Outside-air-coil, discharge-air, dry-bulb temperature.
	& all other required controls & devices. M/C is responsible for all control & interlock wiring unless specifically shown on electrical drawings. All electrical work shall comply w/ electrical specifications.	31)Inspect controls for correct sequencing of heating, mixing dampers, refrigeration, & normal & emergency shutdown.
	B. All piping shall be properly supported with hangers & supports specifically	fan volumes on fan curve.
	intended for that purpose. Provide clevis hangers, unistrut brackets & pipe clamps & similar systems. Protect inetarity of insulation & provide rigid insulation	33)Supply-air volume.
	inserts or pipe saddles as necessary.	34)Return-air volume.
	C. All exterior control wiring shall be in conduit.	35)Relief-air volume.
	D.Provide any required interfaces to fire alarm or similar systems.	36)Outside-air intake volume.
	E. Provide ground-mounted units on 4", reinforced concrete base, 6" larger than unit on each side.	37)Simulate maximum cooling demand & inspect the following:
	F. Roof-mounted units on equipment supports or curbs, sloped as req'd. Anchor	38)Compressor refrigerant suction & hot-gas pressures.
	units to supports. Coordinate all requirements to maintain roof warranties.	outside-air intake.
	G.Provide factory-authorized service start up on equipment. Train owner's maintenance personnel on startup, shutdown, troubleshooting, servicing, preventive maintenance.	40) Verify operation of remote panel, including pilot-light operation & failure modes. Inspect the following:
	H.Provide clean filters at time of project turnover. Provide	41) High-limit heat exchanger.
8.	FINAL TESTING & ADJUSTMENTS	42) warm-up for morning cycle.
	A.Final system testing. Balancing & adjustments shall be performed by contractor	44) Economizer to limited outside-air changeover
	fans, units, coils, etc. & adjust equipment to deliver specified amounts of air or	45) Alarms.
	water. Prepare testing & balancing report log showing air supply quantities, air entering & leaving temperatures & pressures, fan & unit test readings, motor	46) After startup & performance testing, change filters, vacuum heat
	voltage & amp draws. etc., & submit PDF of final compilation of data to architect	exchanger & cooling & outside coils, lubricate bearings, adjust belt tension, & inspect operation of power vents
	tor evaluation & approval before final inspection of project. Balance air systems to within plus or minus 10 percent for terminal devices & branch lines & plus or	47) Provide one spare set of clean filters & deliver to owner
	minus 5 percent for main ducts & air handling equipment of amount of air shown	C. Adjusting
	spaces. Adjust equipment to operate as intended by specification. Align bearings	1) Adjust initial temperature & humidity set points.
	& replace bearings that have dirt or foreign material in them w/ new bearings without additional cost to owner. Balance contractor shall include in report any	2) Set field-adjustable switches & circuit-breaker trip ranges as indicated.
	improperly installed or missing balancing devices that would negatively impact	3) Occupancy adjustments: when requested within 12 months of date of
	system operation. Adjust thermostats & control devices to operate as intended. Adjust burners, pumps, fans, etc. For proper & efficient operation Certify to	substantial completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to site outside
	architect that adjustments have been made & that system is operating	normal occupancy hours for this purpose, without additional cost.
	spaces. Calibrate, set, & adjust automatic temperature controls. Check proper	D. Demonstration
	sequencing of interlock systems, & operation of safety controls. Verify clean filters are installed.	E. Engage a factory-authorized service representative to train owner's maintenance personnel to adjust, operate, & maintain all HVAC equipment & systems.
		END OF DIVISION 23000

2) LED components, lamps, drivers, and fixtures shall comply with: PCC 47 CFR Part 15; UL 8750; ANSI/NEMA Standards C78.377, NEMA SSL-1, C82.77, IESNA Standards TM-16-05, RP-16, LM-79, LM-80 and TM-21.

3) Drivers shall be integral to the fixture unless otherwise shown or specified. E. Emergency ballasts/drivers/batteries/inverters - shall be Bodine, lota. Coordinate voltages and outputs for min. 90 minute operation with fixtures scheduled and controls indicated and provided. F. Execution:

1) Provide lighting fixtures w/ lamps & accessories req'd for hanging. Coord mounting of lighting fixtures w/ architect & G/C. Additional fixture supports shall be provided by E/C. Supports shall comply w/ latest edition of NEC Provide lighting fixture securing clips as required. Consult arch plans for ceiling types & provide surface & recessed lighting fixtures w/ appropriate

2) Fixtures mounted in fire rated ceilings shall be provided & installed w/ fire rated enclosures to maintain ceiling integrity 3) Poles & support components: comply w/ AASHTO LTS-4. Provide steel poles in color as specified or selected by architect. Provide bolt covers. Provide concrete base for pole & ground rod.

A. Adjust, align, & test all electrical equipment on this project provided under this division & all electrical equipment furnished by others for installation or wiring under this division for proper operation. Test all systems & equipment according to requirements in NETA ATS (latest edition) & all additional requirements specified

B. In following sections. Maintain following on project premises at all times: true RMS reading voltmeter, true RMS reading ammeter, & megohmmeter insulation resistance tester. Provide test data readings as requested or as required by engineer

15. SYSTEM START UP A.Prior to starting up electrical systems:

1) Check all components & devices.

2) Lubricate items accordingly. 3) Tighten screws & bolts for connectors & terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a & UL 486b.

4) Check & record building's service entrance voltage, grounding conditions, grounding resistance, & proper phasing. B. Replace all burned-out lamps & lamps used for temporary construction lighting in permanent light fixtures.

C. After all systems have been inspected & adjusted, confirm all operating features required by drawings & specifications & make final adjustments as necessary. END OF DIVISION 26000

mounting components & accessories.

14. ADJUSTING. ALIGNING & TESTING



PLU														
				FITTINGS AND TRIM	REMARKS	PLUMBING FIXTURE PIPE SIZES								
MARK	FIXTURE MODEL	FIXTURE DESCRIPTION	FITTINGS MODEL	REMARKS	WASTE	VENT	DCW	DHW						
L—1	NAMEEK'S 064200–U CERASTYLE "MONA"	ADA-COMPLIANT WALL-HUNG LAVATORY. 20"x10.75" WHITE CERANUC BOWL. FAUCET HOLES COORDINATED WITH FAUCET AND TRIM. PROVIDE CONCEALED ARM CARRIER. MOUNT TOP OF RIM AT 34" A.F.F.	KOHLER K–14406–4–BGD	BATHROOM SINK FAUCET WITH WIDESPREAD HANDLES. BRUSHED GOLD FINISH.	1,2,3,4,5	2"	1-1/2"	1/2"	1/2"					
WC-1	KHOLER K—3589	ADA-COMPLIANT, 1.6 GPF, FLUSH TANK WATER CLOSET. PRESSURE-ASSISTED SIPHON JET. WHITE VITREOUS CHINA ELONGATED BOWL AND TANK. 16-1/2" HIGH. TWO PIECE, 12" ROUGH-IN. FURNISH WITH FLUSH ACTUATOR ON WIDE SIDE OF	KHOLER K-4731-GC-0	WHITE, SOLID PLASTIC, QUIET CLOSE, OPEN-FRONT SEAT FOR ELONGATED BOWL. STAINLESS STEEL HINGE ARMS AND HARDWARE.	3,6	4"	2"	1/2"						
		STALL.	KHOLER K-9466-L-BL	MATTE BLACK, LEFT HAND TRIP LEVER.										
S-1	FIAT L—1	23"x21.5"x12" DEEP WALL—MOUNTED LAUNDRY TUB. FURNISH WITH BRACKETS FOR INSTALLATION. 20 GALLON CAPACITY. WHITE FINISH.	FIAT A—1	BRASS FAUCET WITH SWING SPOUT FOR MOUNTING ON REAR DECK OF TUB.	1,2,3,4	2"	2"	1/2"	1/2"					
REMARKS	2	•		·	•									

. PROVIDE CHROME-PLATED BRASS TAILPIECE AND GRID DRAIN. 2. PROVIDE CHROME-PLATED BRASS P-TRAP.

- 3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
- 4. PROVIDE CONCEALED ARM TYPE CARRIER WITH SQUARE, TUBULAR STEEL UP-RIGHTS AND BLOCK TYPE BASES. 5. INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS. REFER TO SPECIFICATIONS FOR INSULATION METHODS.
- 6. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF STALL.
- 7. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS. 8. PROVIDE CHROME-PLATED BRASS TAILPIECE AND BASKET STRAINER.
- GENERAL NOTES (APPLICABLE TO ALL FIXTURES):
- 1) ALL PUBLIC LAVATORIES AND SINKS SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 LISTED VALVE ON HOT WATER SUPPLY.

FIRST - FLOOR PLAN - HVAC 1/4" = 1'-0"

2) VERIFY PLUMBING MATERIALS AND EQUIPMENT COORDINATE BETWEEN TRADES. VERIFY CABINET SIZES, COUNTERTOP MATERIALS, WALL THICKNESSES, ETC ARE APPROPRIATE FOR SPECIFIED EQUIPMENT PRIOR TO ORDER.

WA	WATER HEATER SCHEDULE - ELECTRIC													
PLAN MARK	MANUFACTURER	MODEL NUMBER	GALLONS	USE	STYLE	# HTG. ELEMENTS	WATTS	RECOVERY @ 90°F RISE	VOLTAGE/ PHASE	REMARKS				
EWH—1	STATE	ENG 30 DORT	30	LIGHT COMM.	STANDARD	2	4500/4500	21	240V / 1PH	1				
<u>REMARKS</u> 1. PROVI 2. DUAL	<u>:</u> De with expansion ta Heating elements sh	NK. IALL NOT RUN SIMULI	TANEOUSLY.											

PLAN MARK	AN MANUFACTURER MODEL		SERVICE	TOP/GRATE SIZE	WASTE SIZE	REMARKS
FD	D WADE 1100		FLOOR DRAIN	6 " Ø	2"	1

GENERAL NOTES

- I. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK. 2. REFER TO PLUMBING FIXTURE / DRAIN SCHEDULES FOR PIPING SIZES FOR INDIVIDUAL CONNECTIONS TO FIXTURES AND RISERS NOT SHOWN ON PLANS.
- 3. NO SANITARY OR VENT PIPING BELOW GRADE SHALL BE
- LESS THAN 2". 4. NO DOMESTIC WATER PIPING SHALL BE SMALLER THAN 3/4" UNLESS NOTED OTHERWISE.
- 5. ALL VENT PIPING SHOWN IS DIAGRAMMATIC. USE APPROPRIATE FITTINGS FOR VENT PIPING BELOW FLOOD RIM OF FIXTURE.
- 6. NOT ALL INTERIOR CLEANOUTS ARE SHOWN FOR DRAWING CLARITY. CONTRACTOR SHALL INSTALL ALL CODE-REQUIRED CLEANOUTS (RE: GENERAL NOTES ON COVER SHEET). COORDINATE EXACT LOCATIONS OF
- CLEANOUTS WITH ARCHITECT. 7. PROVIDE TRAP SEAL DEVICE FOR ALL FLOOR DRAINS.

PLAN KEYED NOTES

- (1) REFER TO BASEMENT PLAN FOR CONTINUATION. 2 1/2" DHW, 3/4" DCW, AND 4" SANITARY PIPE ROUTED ÚNDERGROUND. (3) CONNECT LAUNDRY TUB SANITARY PIPE TO EXISTING MAIN GOING DOWN IN BASEMENT.
- (4) LAUNDRY TUB AND WALL HYDRANT DOMESTIC WATER PIPED FROM BELOW.
- 5 1/2" DHW AND 3/4" DCW UP TO SERVE LAUNDRY TUB AND WALL HYDRANT.
- 7 1/2" DHW, 3/4" DCW, AND 4" SANITARY PIPE ROUTED UNDERGROUND TO SERVE RESTROOM ON FIRST FLOOR.
- (8) CAP EXISTING SANITARY PIPE. (9) 2" SANITARY PIPE FROM LAUNDRY TUB ON FIRST
- FLOOR TO CONNECT TO EXISTING SANITARY STACK. REFER TO FIRST FLOOR PLAN FOR CONTINUATION. (10) 2" OPEN HUB DRAIN FOR CONDENSATE DISPOSAL AND WATER HEATER T&P RELIEF.
- (11) sanitary pipe routed in basement ceiling.

(6) REFER TO FIRST FLOOR PLAN FOR CONTINUATION.

PKMR #: 19379 PLUMBING - PLANS

BASEMENT - FLOOR PLAN - LIGHTING 1/4" = 1'-0"

FLOOR PLAN - LIGHTING

XTURE TYPE	MANUFACTURER	CATALOG NUMBER / SERIES	DESCRIPTION	SOURCE	VOLT	NOTES
A	LITHONIA OR PRE-BID APPROVED EQUAL	LDN4CYL SERIES	4" ROUND SURFACE MOUNTED LED CYLINDER. ALUMINUM HOUSING, SEMI-SPECULAR LOW IRIDESCENT FINISH ALUMINUM REFLECTOR WITH 55 DEGREE BEAM ANGLE. INTEGRAL CONCEALED LENSED LED SOURCE. LED DRIVER PRE-WIRED FOR 0-10V DIMMING APPLICATIONS.	ONE (1) 20 WATT, 2000 LUMEN, L20 LED MODULE. 3000K CCT.	120	1
В	EUROFASE OR PRE-BID APPROVED EQUAL	DEMARK	6.75" X 6" TALL DOUBLE OVAL PENDANT. COORDINATE FINISH WITH ARCHITECT. POWER THROUGH AIRCRAFT CABLE, LINE VOLTAGE DIMMING DRIVER IN CANOPY. COORDINATE COLOR WITH ARCHITECT.	ONE (1) 6 WATT, 500 LUMEN MODULE. 3000K CCT.	120	1
B-ALT	EUROFASE OR PRE-BID APPROVED EQUAL	NAVADA	1" DIAMETER X 16" TALL LED CYLINDER PENDANT. COORDINATE FINISH WITH ARCHITECT. DROP CORD PENDANT, COORDINATE CORD TYPE AND COLOR WITH ARCHITECT. MONOPOINT CANOPY MOUNT. LINE VOLTAGE DIMMING.	ONE (1) 6 WATT, 500 LUMEN MODULE. 3000K CCT.	120	1,3
C1	TECH LIGHTING OR PRE-BID APPROVED EQUAL	LOOM 14 FLUSH SQUARE	14" SQUARE SURFACE MOUNTED LED FIXTURE WITH TRIANGULAR BAFFLES. 3.5" DEEP. COORDINATE FINISH WITH ARCHITECT. LINE VOLTAGE DIMMING DRIVER.	ONE (1) 20 WATT, 783 LUMEN MODULE. 3500K CCT.	120	1
C2	TECH LIGHTING OR PRE-BID APPROVED EQUAL	90 SMALL FLUSH MOUNT	5.3" SQUARE SURFACE MOUNTED LED FIXTURE WITH WHITE OPAL GLASS SHADE. 2.3" DEEP. COORDINATE FINISH WITH ARCHITECT. T20 LAMP BASE.	ONE (1) 5W LED T20 DIMMABLE LAMP. 3500K CCT.	120	1
D	WILLIAMS OR PRE-BID APPROVED EQUAL	PTS SERIES	2X4 SHALLOW SURFACE MOUNT FIXTURE. STEEL HOUSING AND FRAME WITH WHITE POWDER COAT FINISH. WELDED SEAMLESS CORNERS, 0–10V DIMMING DRIVER.	ONE (1) 32 WATT, 3800 LUMEN, L38 LED MODULE. 3500K CCT.	120	1
F	LITHONIA	ZL1N	4'-0" LONG LENSED STRIP FIXTURE. STEEL HOUSING WITH ALL PARTS PAINTED AFTER FABRICATION. INTEGRAL LED DRIVER PRE-WIRED FOR DIMMING APPLICATIONS.	ONE (1) 42 WATT, 5000 LUMEN, L50 LUMEN PACKAGE. 3500K	120	1,2
G	LUMARK	CROSSTOUR XTOR SERIES	LOW-PROFILE EXTERIOR WALL-MOUNTED FIXTURE. ONE-PIECE, DIE-CAST ALUMINUM HOUSING. IMPACT-RESISTANT, TEMPERED GLASS LENS. FORWARD THROW OPTICS. INTEGRAL LED DRIVER WTIH HEAT SINK. POWDER COAT FINISH; COORDINATE WITH ARCHITECT/BUILDING OWNER. UL LISTED WET LOCATION. FURNISH WITH OPTIONAL PHOTOCELL FOR ON/OFF CONTROL OF LIGHT FIXTURE.	ONE (1) LED ARRAY. 26 WATTS, 2575 LUMENS. 3500K CCT.	120	1
Н	ELECTRIC MIRROR	FACET BEVEL COLLECTION	MIRROR WITH 1" BACKLIT WHITE BEVELED EDGE. RAISED MIRROR, COPPER-FREE, CORROSIION-RESISTANT GLASS. COORDINATE SIZE WITH ARCHITECT.	695 LUMENS PER FT, 100 LUMENS PER WATT. 3000K CCT.	120	1
J	LITELINE	FORUM	1' x 1' STATIC GRID LED FLAT PANEL. MITERED FRAME, EDGE LIT LOW GLARE OPTICS. ALL PARTS PAINTED WHITE AFTER FABRICATION. INTEGRAL 0–10V DIMMING LED DRIVER.	ONE (1) 20 WATT, 2100 LUMEN MODULE. 3500K CCT.	120	1
К	KUZCO	AMPERSAND PD22332	32" DIAMETER X 8" TALL CURVED DECORATIVE PENDANT. THIN CURVED RIBBON WITH WHITE ACRYLIC DIFFUSER, WRAPPED TO CREATE AN INFINITY SPIRAL EFFECT. INTEGRAL LED, REMOTE DRIVER PRE-WIRED FOR ELV OR TRIAC DIMMING. AIRCRAFT CABLE HUNG TO ARCHITECT'S SPECIFIED MOUNTING HEIGHT.	ONE (1) 66W, 4550 LUMEN LED ARRAY. 3000K CCT.	120	1
X	WILLIAMS OR PRE-BID APPROVED EQUAL	EXIT SERIES	LED EXIT SIGN, THERMOPLASTIC HOUSING, RED LETTERING, SEALED NI-CAD BATTERY, MINIMUM 90 MINUTE CAPACITY. DRAWINGS INDICATE ARROWS. DRAWINGS INDICATE SINGLE OR DOUBLE FACE. UNIVERSAL MOUNT. PROVIDE WITH METALLIC TWO-HEAD REMOTE HEAD AND ADDITIONAL BATTERY WHERE SHOWN ON PLAN.	LED, 5W	120	1
Ŷ	SURE-LITES	APEL SERIES	ULTRA LOW-PROFILE 2" DEEP X 9" X 4.5" EMERGENCY LIGHTING UNIT. FLAME-RATED, UV-STABLE THERMOPLASTIC HOUSING. TWO (2) SEMI-RECESSED, ADJUSTABLE "EYEBALL" HEADS WITH GLASS LENS. BLACK FINISH. MAINTENANCE-FREE BATTERY FOR 90 MINUTE OPERATION OF LAMPS. INTEGRAL TEST SWITCH AND AC-ON INDICATOR.	TWO (2) 0.75 WATT 1W LED HEADS.	120	1

1) REFER TO SPECIFICATIONS FOR ADDITIONAL FIXTURE/DRIVER/BALLAST REQUIREMENTS. 2) LUMENS LISTED FOR LED FIXTURES ARE GENERALLY DELIVERED LUMENS UNLESS NOTED OTHERWISE.

3) WHERE SHOWN ON PLAN, PROVIDE WITH WEATHERPROOF REMOTE HEAD MOUNTED TO SOFFIT OR WALL ABOVE DOOR. 90 MINUTE BATTERY TO BE SIZED FOR BOTH THE EXIT SIGN AND EM HEAD.

 \mathcal{A}

SINGLE SECTION PANELBOARD SCHEDULE													
PANEL DESIGNATION	D1							MAIN LU	JG AMPS:	225			
						_ ₩ MAIN E			BREAKER: M.L.O.				
MOUNTING: SURFACE									/OLTAGE:	240/120			
LOCATION:	BACK OF	HOUSE				r		PHA	SE/WIRE:	1Ø, 3W			
DESCRIPTION	PH	ASE	C	/B		5	C	/B	PH	ASE	DESC	RIPTION	
	A	В	TRIP	POLE			POLE	TRIP	Α	В			
LTS – BACK OF HOUSE	512		20	1	1	2	1	20	540			REC – BASEMENT	
REC – SALES		720	20	1	3	4	1	20		711	LTS	– LOBBY + RETAIL	
REC – SALES	540		20	1	5	6	1	20	1200		L	TS – EXTERIOR LOT	
REC – SALES		540	20	1	7	8	1	20		1000	DISPLAY CASE LIGHT		
REC – SALES	360		20	1	9	10	1	20	1500		EXTERIOR SIGNA		
REC – SALES		1200	20	1	11	12	1	20		1500	EXTERIOR SIGNA		
REC – LOBBY	250		20	1	13	14	1	20	1500			EXTERIOR SIGNAGE	
REC – COFFEE MAKER		900	20	1	15	16	1	15		122	AF		
FCU-1A FCU-1B FCU-2	315		15	2	17	18	1	15	72			FAN F—1	
100 11, 100 12, 100 2		315	315 10		19	20	1	20		1500		EXTERIOR SIGNAGE	
REC – BATHROOM	180		20	1	21	22	1	20	-		SPA		
REC – OFFICE		720	20	1	23	24	1	20		-	SPAR		
REC – TV'S	1700		20	1	25	26	1	20	-			SPARE	
REC – OFFICE		1000	20	1	27	28	1	20		-		SPARE	
REC – PREP. + STORAGE	720		20	1	29	30	1	20	-			SPARE	
REC – STORAGE		540	20	1	31	32	1	20		-		SPARE	
REC – MICROWAVE	900		20	1	33	34	1	-	-			SPACE	
REC – REFRIGERATOR		1200	20	1	35	36	1	-		-		SPACE	
REC – BACK PREP	900		20	1	37	38	1	-	-			SPACE	
REC – BASEMENT		540	20	1	39	40	1	-		-		SPACE	
TOTALS	0	0							0	0	TOTALS		
			_										
PA	NELBOAI	RD SIZIN	IG LOA	D						C	ONNECTED PHA	SE LOADS	
LOAD DESCRIPTION	CONN	ECTED	DEM	IAND		COL	DE MIN.	(VA)		PHASE	VA	AMPS	
LIGHTS	9,4	23	1	25			11,779			A	11,189	93.2	
RECEPTACLES	13,	450	10KVA +	50% REST			11,725			В	12,508	104.2	
MOTORS	()	1.25 x LARO 0F	gest + Sum Rest			0			TOTALS	23,697	98.7	
AIR CONDITIONING	6.	30	1.0	00			630						
SPACE HEATING	()	0.	00			0			<u>REMARKS:</u>			
CONTINUOUS 194 1.25				243				1.PANEL IS EXISTING TO REMAIN. PROVIDE NEW					

TOTALO	20,	001	30	5.1
<u>REMARKS:</u>				
1.PANEL IS COVER.	S EXISTING	to remain	I. PROVIDE	NEW

P	ANELBOARD SIZI	NG LOAD					
OAD DESCRIPTION	CONNECTED	CONNECTED DEMAND					
LIGHTS	9,423	1.25	11,779				
RECEPTACLES	13,450	10KVA + 50% REST	11,725				
MOTORS	0	1.25 x LARGEST + SUM OF REST	0				
AIR CONDITIONING	630	1.00	630				
SPACE HEATING	0	0.00	0				
CONTINUOUS	194	1.25	243				
NON-CONTINUOUS	0	1.00	0				
MISC. LOADS 1	0	1.00	0				
MISC. LOADS 2	0	1.00	0				
		SIZING LOAD:	24,376				
	102						

BASEMENT - FLOOR PLAN - POWER

FLOOR PLAN - POWER

PANEL DESIGNATION: P2 (EXISTING)								MAIN LUG AMPS: 125							
							#	N	IAIN BR						
MOUNTING: SURFACE						Ī	3			LAGE: 240/120					
LUCATION:	BACK OF HOUSE							0	PHAS	=/VVIKE: JU, 4W (NUIE 2					
DESCRIPTION										•			DESCRIF	NOIT	
	A 7145	В		TRIP	POLE			POLE	IRIP	A	В				
RTU – 1 (EXISTING)	5145	7145		35	3		2	2	25	2000	2000		WATER HEATE		
		5145	7145			3	4			2000			CDADE		
	7100		5145			5	6	1	20			-		SPARE	
HP-1	3100	7100		40	2		8	1	20	_				SPARE	
		3100	1075			9	10	1	-		-			200V SPACE	
HP-2	1075		1055	15	2	11	12	1	20			_		SPARE	
	1055				1	13	14	1	20	_				SPARE	
208V SPACE		_		-		15	10	1	-		-		208V SPACE		
SPARE			_	20		17	18	1	_			-	SPACE		
SPARE	-			20		19	20	1	-	-			SPACE		
208V SPACE		_		-		21	22	1	_		-		208V SPACE		
SPARE			_	20		23	24	1	_			_	SPACE		
JPARE 2001/ SDACE	_			20		20	20	1	_	_			SPACE		
200V SPACE		_		- 20		27	20	1	_		-		208V SPACE		
JFARE	7280	6245	4190	20	/	29	30	1	_	2000	2000	-		SPACE	
TOTALS	7200	0243	4100							2000	2000	0	TUTALS		
P		OARD	SIZING)							CONN	IECTED PHASE I	OADS	
I OAD DESCRIPTION						CODE MIN. (VA)			1	PHASE			AMPS		
	00111	<u>)</u>	1 25				0				A		9.280	77.3	
RECEPTACLES		<u>-</u> ר	10KVA + 50% REST			0			1	B		8.245	68.7		
MOTORS	9.4	- 135	1.25 x LARGEST + SUM OF REST			11.794			1	C		4.180	.34.8		
AIR CONDITIONING)	1.00				0		1	TOTALS		21,705	60.3		
SPACE HEATING		- ว	0.00			0			1			,			
HEAT PUMP	8.2	- 270	1.00			8.270		REMARKS:							
CONTINUOUS	4.0	000	1.25		5,000			1. PANEL IS EXISTING TO REMAIN, PROVIDE NEW COVI							
NON-CONTINUOUS		2		1.00			0		2. SERVICE IS A 240V-3PH WILD LEG SERVICE. THIS						
MISC. LOADS 1)		1.00		0			1	PANEL ASSUMES THE B-PHASE TO GROUND TO BE					
-		-	SIZING LOAD:				25,064			208V. FIELD VERIFY EXACT CONFIGURATION. DO NOT					
SIZING LOAD (AMPS):					70			1	JOINNEO	1200	LONDO TO THE ZOOV				

NOTE: ALL WORK IS EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

GENERAL NOTES I. REFER TO GENERAL NOTES ON MEP COVER SHEET FOR ADDITIONAL REQUIREMENTS OF WORK. 2. LIGHT FIXTURES INDICATED AS EMERGENCY FIXTURES ARE TO FUNCTION AS NIGHT LIGHTS UNLESS SPECIFICALLY SHOWN SWITCHED. 3. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC. ALL CIRCUITING SHOWN ON THIS PLAN IS DIAGRAMMATIC. ALL FIXTURES SHALL BE FED FROM JUNCTION BOXES WITH LIGHT FIXTURE WHIPS (<6'). DAISY-CHAINING OF FIXTURES IS NOT ALLOWED. SWITCH BOX LOCATIONS SHALL BE WIRED SO THAT A NEUTRAL WIRE IS AVAILABLE AT THE SWITCH BOX LOCATION, EITHER IN THE BOX OR AVAILABLE TO BE ADDED VIA RACEWAY OR AN ACCESSIBLE WALL CAVITY. WALL SWITCHES FOR SEPARATE LOAD TYPES (EM/NORMAL, 120/277V, ETC.) SHALL NOT BE IN A SINGLE BOX. REFER TO SPECIFICATIONS FOR ADDITIONAL 3.4. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. PLAN KEYED NOTES JUNCTION BOX FOR SIGN. COORDINATE EXACTREQUIREMENTS WITH OWNER. 2 PROVIDE NEW COVER FOR EXISTING PANEL. FIELD VERIFY EXACT PANEL MAKE AND MODEL. COORDINATE WITH OWNER. 3 RECEPTACLE MOUNTED TO STRUCTURE FOR BUDTENDER. COORDINATE EXACT LOCATION WITH OWNER. 4 SEMI-RECESSED CLOCK RECEPTACLE.

