# SHORELINE FAMILY HEALTH CARE

### **PROJECT TEAM:**

### **MEP ENGINEER:**

VAN ZELM ENGINEERS **10 TALCOTT NOTCH** FARMINGTON, CT 06032

## FAIR HAVEN COMMUNITY HEALTH CARE

221 W. MAIN STREET **BRANFORD, CT** 

## **CONSTRUCTION DOCUMENTS** 1/26/2024



195 Scott Swamp Road Farmington, CT 06032 www.qamarch.com

## **LOCATION MAP:**







### LIST OF ABBREVIATIONS

JOINT(S)

LENGTH

KEYPAD LOCK

LAMINATE(D)

LAVATORY

LEFT HAND

LOW POINT

MASONRY

MAXIMUM

MEDIUM

MEMBRANE

MOP HOOK MINIMUM MIRROR

MONITOR

METAL

MULLION

NATURAL

NOMINAL

OXYGEN

OVERALL

OPENING OPPOSITE

OBSCURE

ON CENTER

OUTSIDE DIAMETER

PERFORATE(D)

PLUMB(ER)(ING)

POWER POLE

PREFINISHED

PARTITION

PAVEMENT

PAVER(S)

RISER

RUBBER

REMOVE

RETURN

ROOFING

ROOM

REQUIRED

REVIS(ED)(ION)

**RIGHT HAND** 

ROUGH OPENING

STAINLESS STEEL

SOAP DISPENSER

SHARPS CONTAINER

STRUCTURAL GLAZED TILE

SANITARY NAPKIN DISPENSER

SANITARY NAPKIN WASTE SPECIFICATION(S)

SOAP TRAY-RECESSED

TONGUE AND GROOVE

TEMPER(ED)(ATURE)

TOILET PAPER DISPENSER

UNLESS OTHERWISE NOTED

TERMINAT(ED)(ION)

SOLID CORE

SCHEDULE

SHEET

SIMILAR

SKYLIGHT

SQUARE

STEEL

STORAGE

SYSTEM

TRASH

STRUCTURE(AL)

SUSPEND(ED)

SHEET VINYL

TACK BOARD

THICK(NESS)

TRANSPARENT

THRESHOLD

TOILET

TOP OF

TUFFLEX

TYPICAL

VACUUM

VERTICAL

TERRAZZO

UNDERCOUNTER

VAPOR BARRIER

VERIFY IN FIELD

WIDE, WIDTH

WATER COOLER

WITH

WITHOUT

WOOD

WIRE GLASS WINDOW

VINYL COMPOSITE TILE

VINYL WALL COVERING

WELDED WIRE FABRIC WATERPROOFING

WASTE RECEPTACLE WIRE SHELVING

WELDED WIRE MESH

TELEPHONE

SILIKAL

RAIN WATER LEADER

ROOF DRAIN

REFER(ENCE)

REFRIGERATOR

REINFORC(ED)(ING)

QUARRY TILE

RADIAT(OR)(ION)

PUSH TO OPEN

POLYVINYL CHLORIDE

PREFABRICATED

PAINT(ED)

POINT

PLASTIC LAMINATE

MICROWAVE

NOT IN CONTRACT

NOT TO SCALE

MARKER BOARD MECHAINCAL

MANUFACTURING

MISCELLANEOUS

MOLDING, MOULDING

MASONRY OPENING

MECHANICAL HOOD

LUXURY VINYL TILE

MANUFACTURE(D)(R)

LIGHT

LINTEL LOUVER

-F -P	FIRE RATED PARTITION MOUNTED	JT(S)
-R	RECESSED	KP
-SR	SEMI RECESSED	L
A	AIR	LAM LAV
A/C ABV		LCC I H
ACT	ACOUSTIC CEILING TILE	LP
ADJ AFF	ADJUSTABLE ABOVE FINISH FLOOR	L I LTL
AHU ALT	AIR HANDLING UNIT	LVR LVT
ALUM	ALUMINUM	
ANOD APPROX	ANODIZED APPROXIMATE	MANUF MAS
		MAX
AVD	AIR VAFOR DARKIER	MECH
B/S B/W	BOTH SIDES BOTH WAYS	MED MEMB
BD	BOARD	MFG
BIT	BITUMINOUS	МНК
BLDG BLKG	BUILDING BLOCKING	MIN MIR
BM BOT	BEAM	MISC
BR	BRICK	MO
BRG BRZ	BEARING BRONZE	MON MTL
BUR	BUILT-UP ROOFING	MULL
CAB	CABINET	
CEM CG	CEMENT CORNER GUARD	NA I NIC
CG-F CHBD	CORNER GUARD FIRE RATED CHAI KBOARD	NOM NTS
CI	CAST IRON	00
CL	CENTROL JOINT CENTER LINE	O2 OA
CLG CLOS	CEILING CLOSET	OBS OC
CLR		OD OPC
COL	COLUMN	OPP
COMP CONC	COMPOSITE(ION) CONCRETE	ORD
CONSTR CONT	CONSTRUCTION CONTINUOUS	PERF PLAM
CONTR	CONTRACT(OR)	
CPT	CARPET CARPET TILE	PN1 PP
CR CRS	CARD READER COURSE(S)	PREFAB PREFIN
CT		PSI PT
CYD	CUBIC YARD	PTD
D	DRAIN	PTN PTO
DEFS DFT	DIRECT-APPLIED EXTERIOR FINISH SYSTEM	PTR PVC
DF		PVMT
DIAG	DIAGONAL	FVK
DIM DIR	DIMENSION DIRECT(OR)(ION)	QT
DISP DN		R RAD
DR	DOOR	RBR
DWG(S)	DRAWING(S)	REF
DWR	DRAWER	REFR REINF
EA ED		REM REO'D
EF	EXHAUST FAN	RET
EIFS	ELEVATION	REV RFG
ELEC FLEV		RH RM
EMERG	EMERGENCY	RO
ENG EP	ENGINEER(ING) EPOXY	RWL
EQ EQUIP	EQUAL EQUIPMENT	S/STL SC
ERD EW	EMERGENCY ROOF DRAIN	SCH
EWC	ELECTRICAL WATER COOLER	SGT
EWC-BF EXIST	EWC WITH BOTTLE FILL EXISTING	SH SHT
EXP EXPD	EXPANSION EXPOSED	SIM SKI
EXT	EXTERIOR	SKLT
FA	FIRE ALARM	SNU SNW
FD FDN	FLOOR DRAIN FOUNDATION	SPEC(S) SQ
FE		ST-R
FEC-R	FEC-RECESSED	STOR
⊦EC-SR FIN	FEC-SEMI RECESSED FINISH	STRUCT SUSP
FLG FLR	FLASHING FLOOR(ING)	SV SYS
FP	FIRE-PROOF(ING)	<del>.</del>
FR FRZ	FRAME FREEZER	T T&G
FS FT	FULL SIZE FIRE-TREATED	TB TEL
FTG	FOOTING	TEMP
FURR	FUTURE	THK
FVC FWC	FIRE EXTINGUISHER AND VALVE CABINET FABRIC WALLCOVERING	THR TLT
GA	GAGE GALIGE	TO TPD
GALV	GALVANIZED	TRANS
GBH GBH	GLOVE BOX HOLDER	TYP
GC GF	GENERAL CONTRACTOR GROUND-FACE	ΤZ
GFRC	GLASS-FIBER REINFORCED CONCRETE	
GWB	GYPSUM WALL BOARD	
HC	HOLLOW CORE	V VB
HD HDW	HAND DRYER HARDWARE	VCT VERT
HK		VIF
HORZ	HORIZONTAL	VVVC
HP HR	HIGH POINT HANDRAIL	W W/
HS HT	HAND SANITIZER	W/O
HTG	HEATING	WD
HVAC	HEATING, VENTILATING, AIR CONDITIONING	WG WIN
ID INCI	INSIDE DIAMETER INCLUDE(D)(ING)	WMF WP
INFO		WR
INT		ws WWM

#### CODE INFO 1.0 EXISTING BUILDING: 1.1 Continuation of Existing Use 1.2 Change of Use 1.3 Complying with International Existing Building Code LEAD-COATED COPPER 2.0 NEW BUILDING OR ADDITIONS: 2.1 Exceeds Threshold Building Limits 3.0 OCCUPANCY CLASSIFICATION 3.1 Mixed Occupancies 4.0 HEIGHT AND AREA COMPUTATION + CONSTRUCTION TYPE: No tenant separation required. 6.0 MEANS OF EGRESS: 6.1 Total Occupant Load (Entire Building) 6.2 Total Occupant Load (Largest Floor) 6.3 Total Capacity of Exits 6.4 Total Number of Exits 6.5 Egress Width per Occupant: 6.5.1 Stairs 6.5.2 Other Egress Components 6.5.3 Corridor Width: 6.6 Maximum Travel Distance 6.7 Maximum Common Path of Egress Travel 6.7.1 A, E Occupancy 6.7.2 B Occupancy 6.8 Maximum Dead End Corridor 6.8.1 Group B 6.9 Separation Distance to Multiple Exits: 6.10 Luminous Egress Path Markings: OVERFLOW ROOF DRAIN DOCUMENTS FOR THE FOLLOWING: 7.1 Exterior Walls (Table 602): 7.1.1 Load Bearing 7.1.2 Non-load Bearing 7.2 Fire Walls & Party Walls 7.3 Fire Separation Assemblies: 7.3.1 Fire enclosure of exits 7.3.2 Shafts 7.3.3 Mixed Use Separation POUNDS PER SQAURE INCH 7.3.4 Other Separation Assemblies 7.4 Fire Partitions PAPER TOWEL DISPENSER 7.5 Dwelling Unit Separations 7.6 Smoke Barriers 7.7 Other Non-bearing Partitions PAPER TOWEL RECEPTACLE 7.8.1 Supporting more than one floor 7.8.2 Supporting one floor only or a roof 7.8.3 Structural Members Supporting Wall 7.9 Floor Construction Including Beams 7.10 Roof Construction: 7.10.1 \*15ft. or less 7.10.2 \*15ft. or more 7.10.3 \*20ft. or more \*Height to lowest member

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#### \* CODE INFORMATION FROM CONSTRUCTION DOCUMENTS DATED 06/17/2019 \*

#### PART 1 - CT STATE BUILDING CODE 🗆 N/A 🛛 YES 🛛 YES □ NO ⊠ NO □ NO 🗆 N/A □ N/A □ YES ⊠ YES N/A 🗆 YES 🛛 NO 🗆 N/A □ YES 🗆 NO 🛛 N/A **B - BUSINESS GENERAL BUILDING LIMITATIONS (Chapters 5 & 6)** This is a non-structural interior renovation of an existing building. Building is Fully Sprinklered. Attic draftstopping not required per IBC section 718.4.3, Exception. • The total building is approximately 38,000 sf with a completely open perimeter. CONSTRUCTION INFORMATION 0.3 inch per occ. 0.2 inch per occ 6.5.3.1 Serving less than 50 occupants 36 inches 6.5.3.2 Serving more than 50 occupants 44 inches 250 feet 75 feet 100 feet 50 feet 1/3 diagonal Not Required 7.0 FIRE RESISTANT RATING OF STRUCTURE ELEMENTS (TABLE 601) REFER TO CONSTRUCTION 0 hrs. \_\_\_\_\_0 hrs. 2 hrs. N/A N/A N/A N/A 0 hrs. N/A N/A 0 hrs. 7.8 Interior Bearing Walls, Bearing Partitions, Columns, Girders, Trusses and Framing: 0 hrs. 0 hrs. 0 hrs. 0 hrs. 0 hrs. 0 hrs.

<ul> <li>9.1 Fire Suppression System</li> <li>9.2 Alarms</li> <li>9.3 Automatic Fire Detection System</li> <li>9.4 Smoke Control System</li> <li>9.5 Supervision</li> <li>9.6 Fire Extinguishers</li> </ul>	Y Y Y N N Y
PART 2 - CT STATE FIRE SAFETY CODE	
1.0 CLASSIFICATION OF OCCUPANCY:	В
2.0 CONSTRUCTION CLASSIFICATION:	BUILDING RENOVATION
3.0 MINIMUM CONSTRUCTION TYPE REQUIRED:	VB
4.0 ACTUAL CONSTRUCTION TYPE PROVIDED:	VB
5.0 NOTIFICATION ALARMS	Υ
	Υ
6.0 DETECTION:	Y
7.0 EXTINGUISHMENT REQUIREMENTS:	
APPLICABLE CODES	

- 2022 CONNECTICUT STATE BUILDING CODE, WHICH ADOPTS AND AMENDS: 2021 INTERNATIONAL BUILDING CODE 2021 INTERNATIONAL EXISTING BUILDING CODE
  - 2021 INTERNATIONAL PLUMBING CODE 2021 INTERNATIONAL MECHANICAL CODE
  - 2021 INTERNATIONAL ENERGY CONSERVATION CODE
- 2020 NFPA 70, NATIONAL ELECTRICAL CODE
- 2017 ICC/ANSI A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES
- 2010 AMERICANS WITH DISABILITIES ACT: STANDARDS FOR ACCESSIBLE DESIGN
- 2022 CONNECTICUT STATE FIRE SAFETY CODE, WHICH ADOPTS AND AMENDS:
- 2021 INTERNATIONAL FIRE CODE • 2022 CONNECTICUT STATE FIRE PREVENTION CODE, WHICH ADOPTS AND AMENDS:
- 2021 NFPA 1 UNIFORM FIRE CODE

### **ALTERNATES:**

#### ALTERNATE #1:

8.0 INCIDENTAL USES

9.0 FIRE PROTECTION SYSTEM:

8.1 Storage Rooms over 100 square feet

CONCTRACTOR TO PROVIDE A CREDIT FOR THE RE-USE OF ANY EXISTING DOOR HARDWARE.

#### ALTERNATE #2:

CONTRACTOR TO PROVIDE A COST FOR PROVIDING NEW CRASHRAILS, CR-1.



NOT AN EXIT ہ \_\_ ہ °°° SMALL MEETING TLT. 157 STAFF LOUNGE IT/ ELEC. 154 MECH. 158 155 153 152 CORR. 156 CORR. 58 151 CALL CENTER OFFICE **IOP/ GROUP** 113 **ROOM** 115 8 168 Ó OFFICE 161 114 IOP/ GROUP ROOM **OFFICE** 162 111 109 ø TAKE SPACE OFFICE STOR. FINANCE AND 117 116 OFFICE BILLING 110 ŹLT. 163 160 165 CHECK-IN FAMILY 103



### OVERALL FLOOR PLAN

3/32" = 1'-0"

A0

Smoke Tight

Y

A0.0 A0.01 A1.0 A2.0 A3.0 A4.0 A5.0 FIRE PROTECTION FP001 FPD101 FP101 FP601

PLUMBING P001 P102 P601

MECHANICAL M001 MD101 M101 M401

> M601 ELECTRICAL E001 E002 ED101

E102

E301

E601

### LIST OF DRAWINGS

#### ARCHITECTURAL COVER

LIST OF DRAWINGS, ABBREVIATIONS, CODE INFO

- PHASING PLANS PARTIAL REMOVAL PLAN / PARTIAL FLOOR PLAN / PARTIAL REFLECTED CEILING PLAN INTERIOR ELEVATIONS
- MILLWORK DETAILS
- FINISH SCHEDULE & FLOOR FINISHES SPECIFICATIONS

- FIRE PROTECTION LEGENDS, DETAILS & NOTES FIRE PROTECTION DEMOLITION PARTIAL FIRST FLOOR PLAN FIRE PROTECTION NEW WORK PARTIAL FIRST FLOOR PLAN FIRE PROTECTION SPECIFICATIONS
- PLUMBING LEGENDS, NOTES AND SCHEDULES PLUMBING NEW WORK PARTIAL FIRST FLOOR PLAN
- PLUMBING SPECIFICATIONS
- MECHANICAL LEGENDS AND GENERAL NOTES MECHANCIAL DEMOLITION PARTIAL FIRST FLOOR PLAN MECHANICAL NEW WORK PARTIAL FIRST FLOOR PLAN MECHANICAL DETAILS

ELECTRICAL LEGENDS ELECTRICAL GENERAL NOTES

MECHANICAL SPECIFICATIONS

- ELECTRICAL DEMOLITION PARTIAL FIRST FLOOR PLAN ELECTRICAL NEW WORK PARTIAL FIRST FLOOR PLAN ELECTRICAL DIAGRAM DETAILS AND SCHEDULE
- ELECTRICAL SPECIFICATIONS

### **INTERIOR RENOVATION PROJECT:**

THE SCOPE OF WORK IS A NON-STRUCTURAL RENOVATION IN AN EXISTING MEDICAL OFFICE SUITE. THE EXISTING BUILDING HEIGHT AND AREA ARE TO REMAIN WITHOUT ANY MODIFICATIONS. AREA OF RENOVATION WORK IN THE FOLLOWING LOCATIONS: VESTIBULE 101, WAITING 102, CHECK-IN 103, CORRIDOR 118, EXAM 119, EXAM 172 & 173, CARE TEAM 174, CONSULT 175, AND EXAM 176. THE APPROXIMATE AREA OF THE TOTAL RENOVATION AREA IS APPROXIMATELY 1,300 SF.

**QA**+M architecture **GuisenberryArcariMalik** 195 Scott Swamp Road Farmington, CT 06032 gamarch.com **Fair Haven Community** Health Care Shoreline Family Health **Care Renovations** Branford, CT Project #: **2387** Revisions **Issue Dates:** CONSTRUCTION DOCUMENTS Ν 1/26/2024 LIST OF DRAWINGS, **ABBREVIATIONS, CODE INFO** A0.0

Z ()rTGEQ( aucie v21 Re Health Clinic\_ Community t Local/FH C:\Revit РМ 5:03:01 /26/2024

#### **TEMPORARY PARTITION WALLS:**

RUN UP TO THE UNDERSIDE OF EXISTING CEILINGS ABOVE. TEMPORARY PARTITION WALLS TO BE CONSTRUCTED OF METAL STUDS & 5/8" GWB ON EITHER SIDE OF STUDS.

### **HOURS OF OPERATION:**

CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING HOURS OF OPERATION WITH OWNER PRIOR TO COMMENCING WORK. THE FACILITY WILL REMAIN OPERATIONAL DURING CONSTRUCTION WITH BOTH STAFF AND PATIENT OCCUPANCY.

CONSTRUCTION.

## RETURN TO THE SPACE.









**CARE TEAM** 

174

118

**EXAM 1** 120

EXAM RM 2

119

EXAM RM 3

103

WAITING ROOM

102

**VEST** 

EXAM RM 4 176

CONSULT

- DEMOLITION OF EXISTING MILLWORK @ CHECK-OUT
- REMOVAL OF EXISTING SOFFIT @ CHECK-OUT \* CONSTRUCTION OF NEW WALL & DOOR FOR CHECK-IN 103
- \* CONSTRUCTION OF NEW CHECK-OUT WINDOW

CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING EGRESS PATHS AT ALL TIMES DURING

CONTRACTOR IS TO PROVIDE TEMPORARY CONTAINMENT OF CONSTRUCTION WORK WHILE WORKING IN AN OCCUPIED SPACES. FOR WORK DONE OFF HOURS AND/OR WEEKENDS, THE CONTRACTOR WILL BE RESPONSIBLE FOR PUTTING ITEMS BACK TO ORDER & CLEANING BEFORE STAFF/PATIENTS

CONSTRUCTION OF CONSULT 175

## PHASE IV

REMAINDER OF WORK - CONTRACTOR WILL NEED TO COORDINATE WITH OWNER HOURS OF OPERATION DUE TO PATIENT/STAFF OCCUPANCY COMPLETE CONSTRUCTION OF TRIAGE/EXAM ROOM 172 CONSTRUCTION OF NEW DOOR FROM WAITING ROOM 102 TO CORRIDOR 118 COMPLETION OF CEILING WORK IN CORRIDOR 118





PLAN LI	EGEND	GENERAL PLAN NOTES	4
	REMOVE WALL / ITEM	1. THE FACILITY IS TO REMAIN IN USE THROUGHOUT THE DEMOLITION AND CONSTRUCTION PROCESS. CONTRACTOR TO COORDINATE WITH OWNER REQUIREMENTS FOR TEMPORARY PARTITIONS TO SEPARATE CONSTRUCTION AREAS FROM OCCUPIED SPACES. TAKE CARE TO MAINTAIN EGRESS PATHS AT ALL TIMES.	
	EXISTING CONSTRUCTION TO REMAIN	<ol> <li>CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT.</li> </ol>	OFFICE (
	NEW WALL CONSTRUCTION	<ol> <li>COORDINATE WITH M.E.P. DRAWINGS FOR DUCTWORK, PIPE, CONDUIT, ETC. THROUGH WALLS &amp; SLABS. CUT ANY NEW HOLES AS REQUIRED. FILL ANY HOLES, VOIDS, AND OPENINGS WITH MATCHING MATERIAL. SEAL OFF CRACKS W/SAFING SEALANTS FOR SMOKE OR FIRE-RATED CONSTRUCTION. SEAL ALL NEW DUCT PENETRATIONS SMOKE TIGHT.</li> </ol>	NO WORK
ROOM NAME	ROOM TAG	<ol> <li>NEW WALLS SHALL BE LOCATED AS DETERMINED BY THE FOLLOWING PRIORITY: PERPENDICULAR TO THE EXISTING WALL WHICH IT ABUTS; PARALLEL AND IN LINE WITH EXISTING WALL IT EXTENDS FROM; PARALLEL TO WALL FROM WHICH IT IS DIMENSIONED.</li> </ol>	NEW 3' x 5'-4" OPENING
0000	DOOR TAG	5. INTERIOR DIMENSIONS ARE TO FACE OF EXISTING FINISH THAT REMAINS OR TO FACE OF NEW STUD UNLESS OTHERWISE NOTED.	
		6. REFER TO SHEET A0.0 FOR CODE INFORMATION AND OVERALL FLOOR PLAN.	WAITING ROOM
$\langle \mathbf{X} \rangle$	WINDOW TAG	<ol> <li>PROVIDE BLOCKING IN STUD PARTITIONS AS REQUIRED FOR ITEMS ATTACHED TO WALL. COORDINATE WITH ALL DRAWINGS.</li> </ol>	NEW CRASHRAIL
		8. REFER TO SHEET A2.0 FOR DOOR SCHEDULE AND DETAILS.	ALIGN NEW WALL
$\langle \! \! \rangle$	WALL TAG	GENERAL PARTITION NOTES:	A2.0 1 A2.0
00) X	WORK SCOPE TAG	<ol> <li>UNLESS NOTED OTHERWISE, ALL NEW WALLS SHALL EXTEND TIGHT TO UNDERSIDE OF EXIST. ROOF TRUSSES. PROVIDE DIAGONAL STUD BRACING AS REQUIRED.</li> <li>INTERIOR FINISH MATERIALS VARY ON WALLS SEE INTERIOR ELEVATIONS AND FINISH SCHEDULE.</li> <li>COORDINATE WITH CODE DRAWINGS FOR RATED WALLS AND SMOKE PARTITIONS. PROVIDE SAFING PER DETAILS AT SMOKE PARTITIONS; SAFING WITH FIRESTOP COMPOUND AT RATED</li> </ol>	9 A3.0 RELOCATED
X AX.X X	INTERIOR ELEVATION TAG	<ol> <li>PARTITIONS.</li> <li>WHERE BATT INSULATION IS <u>NOT</u> ENCASED BY GWB BOTH SIDES, PROVIDE WIRE SUPPORTS AS NECESSARY.</li> <li>PROVIDE BLOCKING IN STUD PARTITIONS AS REQUIRED FOR ITEMS ATTACHED TO WALL.</li> </ol>	NEW CRASHRAIL
X AX	DETAIL TAG	<ol> <li>COORDINATE WITH ALL DRAWINGS.</li> <li>PROVIDE VERTICAL CONTROL JOINTS IN GWB WALLS AT 30'-0"o.c. MAX. AND HORIZONTAL CONTROL JOINTS IN GWB CEILINGS AT 50'-0"o.c. MAX. CAULK AT JOINTS TYPICAL.</li> <li>UNLESS NOTED OTHERWISE, ALL WALLS TO BE WALL TYPE '3' AND TO EXTEND TIGHT TO UNDERSIDE OF EXIST. ROOF TRUSSES WITH DIAGONAL STUD BRACING AT 4'-0"o.c. MAX.</li> <li>STEEL STUDS &amp; RUNNERS TO HAVE A MINUMUM BASE METAL THICKNESS OF .0329 INCH (20ga).</li> </ol>	
	PTO	9. USE 5/8" TYPE X WALLBOARD WITH MOISTURE AND MOLD RESISTANCE.	
XX		INTERIOR PARTITION TYPES:	$\begin{array}{c} 2 \\ 2 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$
(XX)	EXIST COLUMN GRID LINE	- 5/8" GWB - 3-5/8" METAL STUDS AT 16"o.c. MAX. WITH SOUND ATTENUATION INSUL. - 5/8" GWB	$1/8^{-1} = 1 - 0^{-1}$
		- (2) LAYERS OF 5/8" GWB * - 3-5/8" METAL STUDS AT 16"o.c. MAX. WITH SOUND ATTENUATION INSUL. - (2) LAYERS OF 5/8" GWB *	

- (2) LAYERS OF 5/8" GWB \* - 3-5/8" METAL STUDS AT 16" - 3-5/8" METAL STUDS AT 16"o.c. MAX. WITH SOUND ATTENUATION INSUL. - 5/8" GWB

> - EXISTING WALL CONSTRUCTION - ADD (1) LAYER OF 5/8" GWB ON EXAM ROOM SIDE

> > (4)

ADD AN ADDITIONAL MANUALLY OPERATED WINDOW SHADE HERE, OTHER EXIST'G SHADE TO

REMAIN; PROVIDE LIGHT SEAL @ EDGES ON BOTH

WINDOWS IN CONSULT ('L' ANGLE) -

OFFICE

\* FOR DOUBLE LAYERS OF GWB: NO NEED TO TAPE THE 1ST LAYER; OFFSET SEAMS 16" IN BOTH DIRECTIONS

### **CEILING LEGEND**

0	CEILING MOUNTED LIGHT FIXTURE	ROOM NAME	ROOM NAME/NUMBER		PATCH GWB S REMOVAL, PN	ORK ○ OFFIT @ LIGH	<b>TRIA</b>
© 0	PENDANT LIGHT FIXTURE	ACT 9'-0"	CEILING TYPE/HEIGHT		CHEC	<b>ČK-IN</b> 03	
0	RECESSED CAN LIGHT FIXTURE		SUSPENDED ACOUSTIC CEIL	ING TILE	EXIST'G ACT CL	G EXIS	5T'G GWE 7'-
	SUPPLY DIFFUSER		GWB CEILING / SOFFIT		Ø	0	EXIS
	RETURN GRILLE		CURTAIN & TRACK		AREA OF NEW ACT CEILING @ SOFFIT	MOC	GWB 8'-( AREA OF NE (SHADED)
۲	EXIT SIGN				REMOVAL (SHADED)		EXAM 6
(WS1)	MANUALLY OPERATED WINDOW SHADE			HATCH AREAS INDICATE NEW 5/8" GWB ON THE UNDERSIDE OF EXIST'G ROOF TRUSSES, EXTEND PARTITIONS TIGHT TO UNDERSIDE AND SEAL, TYP OF (4) RC	DOMS.		× A(
REFLEC	CTED CEILING P	LAN NO	DTES	COORDINATE NEW WALL LOCATION WIT	H	VEST	
SEE M.E.P. DRAW	/INGS FOR FIXTURE AND DEVICE TYPES, QUANT	TITIES AND ADDTIONAI	LOCATIONS.				

- 2. HATCHED AREA INDICATES NEW 5/8" GWB AT THE UNDERSIDE OF EXISTING ROOF TRUSSES. EXTEND EXISTING & NEW PARTITIONS TIGHT TO UNDERSIDE AND SEAL.
- 3. SEISMIC REQUIREMENTS FOR ALL SPACES LARGER THAN 144 SQ. FT: A. HANGER WIRES SHALL BE 12 GA., UNLESS NOTED OTHERWISE. B. ONE SET OF FOUR SPLAY WIRES SHALL BE INSTALLED FOR EACH 144 SQ.FT UNLESS OTHER SPECIALLY DESIGNED & DETAILED BRACING IS PROVIDED. THE FIRST SET OF SPLAY WIRES SHALL BE 4'-0" FROM ANY WALL OR PERIMETER. WIRES SHALL BE TAUT WITHOUT CAUSING CEILING TO LIFT.
- C. ATTACH TEES TO (2) ADJACENT WALLS IN EACH SPACE. ALLOW 1/4" CLEARANCE BETWEEN END OF TEE AND REMAINING WALLS.
- 4. REFER TO SHEET A3.0 FOR TYPICAL CEILING DETAILS.











Q E Q C:\Re Σd  $\sim$  $\overline{}$ 5:03:

MOCKETT; SG3 - 1 3/4" FLIP TOP GROMMET SET; LIGHT GREY SURFACE MOUNTED KEY OPERATED DEAD BOLT LOCK WITH

THERMOSET DECORATIVE OVERLAY: PARTICLEBOARD COMPLYING WITH ANSI A208.1, GRADE M-2, OR MEDIUM-DENSITY FIBERBOARD COMPLYING WITH ANSI A208.2, GRADE MD, WITH THE SURFACE

HIGH-PRESSURE DECORATIVE LAMINATE: NEMA LD 3, GRADES AS REQUIRED BY WOODWORK



							FIN	IISH SCHEDULE						
		FLO	ORS		WA	LLS		CEILINGS	MILLWORK					
Room		Floorin								Cabin	-			
No.	Room Name	g	Base	N	S	E	W	Ceiling	Countertop	et		Notes		
101	VEST	WOC-1	RB-1	P-1	P-1	P-1	P-1	ACT-1	•					
102	WAITING ROOM	EXIST	RB-1	P-1/P-3	EXIST'G	EXIST'G	EXIST'G	ACT-1						
103	CHECK-IN	LVT-1*	RB-1*	P-1	EXIST'G	EXIST'G	P-1	ACT-1/GWB P-7 (ON ALL SIDES) & P-1	PL-3/SS-1 (AT TRANSACTION TOP)		* PROVIDE NEW FINISHES @ A FINISHES TO REMAIN	REA OF NEW WORK / PROTECT EXIST'G		
118	CORRIDOR	LVT-1*	RB-1*	EXIST'G	P-1	P-6	P-1	ACT-1						
119	EXAM RM 2	LVT-7 & 8	RB-1	P-4	P-1	P-1	P-1	ACT-1/GWB P-1	PL-2	PL-1	CC-1, RS-1 ON ALL WALLS, TYP	D.		
121	LAB/ BLOOD POC TESTING	SV-1*	RB-1*	EXISTG	P-1 (EP)/WP-1*	EXISTG	EXIST'G		EXISTIG	EXISTG	* PATCH TO MATCH EXIST'G FI	NISHES @ AREA OF NEW WORK		
172	TRIAGE/EXAM 5		RB-1	P-4	P-1	P-1	P-1	ACT-1/GWB P-1	PL-2	PL-1	CC-1, RS-1 ON ALL WALLS, TYP			
173				P-4	P-1	P-1	P-1		PL-2	PL-1	DNT 6 ON ENTRY WALLS INTO		_	
174		LVT-2	RB-1	P-1	P-1	P-1	P-1	ACT-1/GWD F-1	F L-2	F L-1	FINT-0 ON ENTRY WALLS INTO		_	
176	EXAM RM 4	LVT-7&8	RB-1	P-1	P-4	P-1	P-1	ACT-1/GWB P-1	PI -2	PI -1	CC-1 RS-1 ON ALL WALLS TYP	0		
		LVIIIdo		•••								•		
<u>FINIS</u>	H LEGEND													ALIGN TRANSITION OF FLOOR WITH EDGE OF MILLWORK, TY FOR ALL EXAM ROOMS.
LUXURY VI	NYL TILE		PAINT	-			ACOUSTICAL CE	ILING TILE				FINISH LEGEN	D	
(Mannington	Rep: Kevin O'Bryan		-	-										102 EXA
Kevin.O'Brya	an@mannington.com)		P-1:	MFR- SHERW			ACT-1: MFR-US	Э Т. МАРЅ НІСН NPC (87200) CI	ASS 'A'					
LVT-1: MFF	R- MANNINGTON			FINISH- EGGS	SHELL	0E	COLOR-	FLAT WHITE 050	A33 A					
CO	LLECTION - SPACIA - WOOD			LOCATION- F	IELD PAINT		EDGE- SI	_T				LVT-1	LVT-7	
CO	LOR- WINDSOR OAK SHORE SS	S5W12373	D.o.				SIZE- 24"	X 24" X 7/8"						
SIZ	E- 6" X 36"		P-2:	MFR- SHERW		NV								
LVT-2: MFF	R- MANNINGTON			FINISH- SEMI-	GLOSS	~1	GRID- DC	INN BRAND DA/DAL 15/10 GRI	D (FEAT WHITE 050)			LUXURY VINYL TILE	LUXURY VINYL TILE	NEST.
CO	LLECTION - SPACIA - WOOD			LOCATION- D	OORFRAMES							LVT-2	LVT-8	
CO		SS5W12376	D O.				PLASTIC LAMINA	TF	EDGE BANDING					
SIZ	E- 6" X 36"		P-3:	COLOR- 1163	IN WILLIAMS 5 SII VER BI LIEBER	RY								
LVT-3: MFF	R- MANNINGTON			FINISH- EGGS	SHELL		PL-1: MFR- FO	RMICA	PL-1: 3MM PVC EDGING	TO MATCH	PLAM (HW TAN)	LUXURY VINYL TILE	WALK OFF CARPET TILE	
PR	ODUCT- DIVERGENT COLLECTI	ON		LOCATION- B	ELOW CHAIR RAIL			PLANKED URBAN OAK 9312-N(	G (ALL DOOR, DRAW	ERS, SHEL	VES & CABINET PARTS)			
ST	YLE-FEN		D 4.				LUCATIO							
SIZ	EOR- COMOLOS #13506 F- 18" X 18"		P-4.	COLOR-SW9	129 JADE DRAGON		PL-2: MFR- WIL	SONART	PL-2: 'T' MOLDING TO BE	HW SAND		LUXURY VINYL TILE		
LOC	CATION- WAITING ROOM FIELD			FINISH- EGGS	SHELL		COLOR-	SILVER TRAVERTINE 1858K-55	, ,			LVT-4, 5,& 6 NOT USED		
				LOCATION- C	LIENT CARE ACCEN	NT	LOCATIO	N- COUNTERTOPS						
LVT-4: NOT	T USED		D <i>E</i> .				PL-3: MFR- WIL	SONART	PL-3: 'T' MOLDING TO BE	HW SMOK	Æ			
IVT-5 NOT	TUSED		P-3:	COLOR-SW9	134 DELEANS		COLOR-	MISTED ZEPHYR 4843-60			_			$\frown$ FINISHE
2010.1001	0020			FINISH- EGGS	SHELL		LOCATIO	N- CHECK-OUT COUNTERTOF						
LVT-6: NOT	T USED			LOCATION- A	DMINISTRATION AC	CENT								1/8'' = 1'-0''
			D o				SOLID SURFACE		WINDOW SHADES					
LVI-7: MFF	R- MANNING I ON		P-6:	MFR- SHERW	IN WILLIAMS	=	SS-1. MER- PO		WS- 1: MFR- DRAPER					
ST	YLE- STRAND			FINISH- EGGS	SHELL	-	PRODUC	T- KRION SOLID SURFACE	PRODUCT- CLUTCH	-OPERATE	D FLEXSHADE			
CO	LOR- BLUE THISTLE #13574			LOCATION- A	CCENT		COLOR-I	BRIGHT ROCK 9103	SERIES: 4800 1% OF	PEN				
SIZ LOC	E- 18" X 18" CATION- CARE ROOM FIELD		P-7:	MFR- SHERW	IN WILLIAMS		CUBICLE CURTA	INS	SHADE FABRIC COL ROLLER FASCIA CO	OR- PW48 LOR - CHA	00-V16 GREY RCOAL BRONZE			
				COLOR-SW7	692 CUPOLA YELLC	W				⊘ IO BE M О WINDO	ANUALLY OPERATED			
LVI-8: MFF	X- MANNING LON ODUCT- DIVERGENT COLLECT	ON			OFFIT PAINT		CC-1: OWNER	IO PROVIDE/GC TO INSTALL	TROVIDE E ANGLE					
ST	YLE- STRAND								WOOD DOORS					
CO	LOR- CUMULUS #13518		CRAS	HRAII		TEDNATE "A								
517	E 10" V 10"		01010		I AI	_IERNAIE #2:(								

- - SIZE- 18" X 18" LOCATION- CLIENT CARE ACCENT

#### WALK OFF CARPET

WOC-1: J & J PRODUCT- INCOGNITO WALK-OFF COLOR- 1837 OPERATIVE SIZE- 24" X 24" INSTALLATION- ASHLAR

#### RUBBER BASE

- RB-1: MFR- JOHNSONITE
- PRODUCT- 4" RUBBER BASE COLOR- MOONROCK 29

#### (Acrovyn Rep: Rose Sedgwick quotes@ssosales.com)

CR-1: MFR- ACROVYN PRODUCT- CRASH RAIL FR-451N COLOR- URBANWOOD 654

#### <u>RUB STRIP</u>

RS-1: MFR- ACROVYN (RS-60N) PRODUCT- RUB STRIP .060" COLOR- #315 GALVESTON GRAY PROVIDE COLOR MATCH CAULK

#### WALL PROTECTION

WP-1: MFR- ACROVYN PRODUCT-RIGID VINYL WALL PROTECTION .040" COLOR- #315 GALVESTON GRAY INSTALLATION- 3'-4" A.F.F.

#### FINISH NOTES:

- 1. FINISHES NOTED ON THIS SCHEDULE ARE FOR GUIDANCE ONLY AND ARE GENERAL IN NATURE. IT IS NOT THE INTENT TO LIST EACH AND EVERY ITEM. COORDINATE WITH PLANS, INTERIOR ELEVATIONS, FINISH FLOOR PLANS, SPECIFICATIONS ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FINISHES REQUIRED TO COMPLETE WORK IN ACCORDANCE WITH ALL CONTRACT DOCUMENTS.
- 2. ALL HOLLOW METAL DOOR FRAMES TO BE PAINTED P-2, TYP.
- FLOORING FINISH CHANGES AT DOORS TO BE AT CENTER LINE OF CLOSED DOOR U.N.O.
   USE PREFORMED CORNERS FOR ALL RUBBER WALL BASE INSTALLATION.
- 5. VERIFY EXPANSION JOINT AND CONTROL JOINT LOCATIONS PRIOR TO INSTALLATION OF FLOORING.
- SCRIBE ALL COUNTERS AND BACKSPLASHES TO WALL, CAULK TO MATCH WALL COLOR.
   APPLY SELF LEVELING COMPOUND PRIOR TO INSTALLING FLOOR. SLABS MUST BE FREE OF IMPERFECTIONS, INDENTATIONS AND DEBRIS. 8. BRING ALL FLOOR FINISHES WALL TO WALL AND UNDER MILLWORK. 9. PROVIDE REQUIRED BRACING AT WALL HUNG CABINETRY.
- 10. PROVIDE BLOCKING AT ALL WALL HUNG ACCESSORIES.
- 11. GYPSUM BOARD FINISH LEVEL 1: PROVIDE LEVEL 1 FINISH AT JOINTS IN THE CEILING PLENUM AREAS AND CONCEALED AREAS. GYPSUM BOARD FINISH LEVEL 4: PROVIDE LEVEL 4 FINISH WHERE WALLS ARE SCHEDULED TO RECEIVE PAINT.
- **12.** ALL GWB CEILINGS AND SOFFITS TO BE PAINTED SHERWIN WILLIAMS CEILING WHITE, U.N.O.
- **13.** PAINT ALL WOOD WINDOW TRIM TO MATCH DOOR FRAMES P-2 (EGGSHELL FINISH), TYP.

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FOR PROVIDING NEW CRASHRAILS (CR-1)

MFR- VT INDUSTRIES ARCHITECTURAL WOOD DOORS SPECIES- WHITE MAPLE COLOR- RAVINE RA18



### ES FLOOR PLAN



**SECTION 01 77 00 - CLOSEOUT PROCEDURES** 

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - Inspection procedures.
  - 2. Project Record Documents.
  - 3. Operation and maintenance manuals. 4. Warranties.
  - 5. Instruction of Owner's personnel.
  - 6. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  - 2. Division 1 Section "Execution Requirements" for progress cleaning of Project site. 3. Divisions 2 through 49 Sections for specific closeout and special cleaning requirements for products of those Sections.

**1.3 SUBSTANTIAL COMPLETION** 

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
- Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
- 2. Advise Owner of pending insurance changeover requirements. 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
- 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
- Prepare and submit Project Record Documents, operation and maintenance manuals, damage or settlement surveys, and similar final record information. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable. . Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
- 8. Complete startup testing of systems.
- 9. Submit test/adjust/balance records. 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
- 11. Advise Owner of changeover in heat and other utilities.
- 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- 13. Complete final cleaning requirements, including touchup painting. 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

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

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request. Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

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

#### 1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
  - 1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
  - 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance. 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  - 4. Submit pest-control final inspection report and warranty.
  - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

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

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

- 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
- 3. Include the following information at the top of each page:
  - a. Project name.
- b. Date. c. Name of Architect.
- d. Name of Contractor. e. Page number.
- 1.6 PROJECT RECORD DOCUMENTS

A. Record Documents, General: Do not use Record Documents for construction purposes. Protect Record Documents from deterioration and loss. Provide access to Record Documents for Architect's reference during normal working hours

B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.

- 1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
  - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
  - b. Accurately record information in an understandable drawing technique.
- Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations. d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
- 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
- 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
- 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
- 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets

C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

- 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later. 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected. 3. Note related Change Orders, Record Drawings, and Product Data, where applicable.
- Consider deleting Record Product Data below on small projects. If Change Order proposals include resubmitting updated Product Data, the need to mark up the previous submittal is eliminated. D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data. 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later. 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
- E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

**1.7 OPERATION AND MAINTENANCE MANUALS** 

A. Assemble three (3) complete sets of operation and maintenance data on a flash drive or compact disc indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

- 1. General:
  - a. Table of Contents. b. Directory of Contractor and subcontractors listing addresses, phone numbers and appropriate emergency phone numbers.
  - . Directory of Architect and consultants listing addresses and phone numbers.
  - d. Measurements: Provide all measurements in U. S. standard units with conversions to "International System of Units" (SI). e. Abbreviations: Provide a complete glossary of all abbreviations used in manuals.
- 2. Operation Data:
- a. Emergency instructions and procedures.
- b. System, subsystem, and equipment descriptions, including operating standards. c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.

3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

- d. Color coded wiring diagrams for each piece of equipment installed.
- e. Panelboard circuit directories. Description of controls and sequence of operations.

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3. Maintenance Data:

- Manufacturer's information. b. Name, address, and telephone number of Installer or supplier.
- Maintenance requirements, drawings and parts lists, procedures and guides including trouble shooting guides and instructions for disassembly, repair, balancing, alignment, adjustments, and reassembly. d. Maintenance and service schedules for preventive and routine maintenance.
- e. Maintenance record forms. f. Sources of spare parts and maintenance materials.
- g. Final air and water test and balancing reports.
- h. Copies of maintenance service agreements. i. Copies of warranties and bonds.
- B. Organize operation and maintenance manuals into suitable sets of manageable size. Provide written tables of contents each form of electronic media submitted. for Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets.
- C. Identify each media device on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.
- D. Submit one (1) complete set of operation and maintenance data in final form 21 days prior to Date of Substantial Completion for review. Architect will review and comment and return subsequent to Date of Substantial Completion. Revise and submit all copies to Owner.
- 1.8 WARRANTIES
- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual. Revise first subparagraph below to suit Project.

- 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (115-by-280-mm) paper. 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
- 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor. D. Provide additional electronic media copies of each warranty to include in operation and maintenance manuals.
- PART 2 PRODUCTS
- 2.1 MATERIALS
- finished surfaces
- PART 3 EXECUTION
- 3.1 DEMONSTRATION AND TRAINING
- A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- 1. Provide instructors experienced in operation and maintenance procedures.
- 2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season. 3. Schedule training with Owner with at least seven days' advance notice. 4. Coordinate instructors, including providing notification of dates, times, length of instruction, and course content.
- 3.2 FINAL CLEANING
- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site in areas disturbed by construction activities of rubbish, waste material, litter, and other foreign substances. b. Remove tools, construction equipment, machinery, and surplus material from Project site. c. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, spills, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition
    - d. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces. e. Sweep concrete floors broom clean in unoccupied spaces. f. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged
    - transparent materials. Polish mirrors and glass, taking care not to scratch surfaces. Remove labels that are not permanent.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates. Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances
    - Replace parts subject to unusual operating conditions. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
    - Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills. m. Clean ducts, blowers, and coils if units were operated without filters during construction.
    - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures. o. Leave Project clean and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage

h. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

**GuisenberryArcariMa** 

195 Scott Swamp Road Farmington, CT 06032 gamarch.com

**Fair Haven Community** Health Care

#### Shoreline Family Health **Care Renovations**

**Branford**, CT Project #: **2387** 

Revisions

Issue Dates:



CONSTRUCTION DOCUMENTS 1/26/2024

#### **SPECIFICATIONS**



### FIRE PROTECTION DEMOLITION NOTES

- THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:
- OF RENOVATION.
- RENOVATED AREA AS NOTED AND AS REQUIRED.
- C. REMOVE SPRINKLERS WITH ASSOCIATED BRANCH PIPING, HANGERS, ETC. AS NECESSARY.
- ANY DEAD ENDED PIPING OR ABANDONED PIPING. SECURE IN PLACE.
- ABANDONED SHALL REMAIN. REUSED, BUT ONLY NEW SHALL BE INSTALLED.
- ARE INSTALLED AND OPERATIONAL.
- COMMENCEMENT OF ANY WORK.
- PHASING OF THE SYSTEM REMOVAL, ONLY THE EXTENT.
- ADDITIONAL INFORMATION AND REQUIREMENTS.

### FIRE PROTECTION GENERAL NOTES

- THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:
- SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- ETC AS NECESSARY AND AS REQUIRED BY CODE. CEILING TILES IN BOTH DIRECTIONS UNLESS INDICATED OTHERWISE.
- E. REVIEW THE ARCHITECTURAL REFLECTED CEILING PLANS AS PART OF THIS CONTRACT FOR LOCATIONS.
- SPRINKLER LOCATIONS OR SPRAY PATTERNS.
- PROTECTION BELOW IT.

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A. VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND CONDITIONS IN AREAS

B. ALL EXISTING PIPING AND EQUIPMENT SHOWN HAS BEEN TAKEN FROM THE BEST AVAILABLE EXISTING INFORMATION. THE DRAWINGS ARE DIAGRAMMATIC AND NOT ALL PIPING AND DEVICES ARE SHOWN. THE INTENT OF THE DOCUMENTS IS THAT PIPING IS TO BE REMOVED IN

D. ALL PIPING TO BE REMOVED SHALL BE REMOVED COMPLETELY AND CAPPED WITHOUT LEAVING

E. NO FIRE PROTECTION EQUIPMENT OR DEVICES THAT HAVE BEEN DISCONNECTED OR

F. IT IS THE INTENT OF THESE DOCUMENTS THAT ANY AND ALL DEVICES REMOVED SHALL NOT BE

G. ANY SYSTEM OR EQUIPMENT TO REMAIN ACTIVE DURING RENOVATION SHALL BE KEPT IN OPERATION BY PROVIDING TEMPORARY CONNECTIONS AS REQUIRED UNTIL NEW SYSTEMS

H. ALL SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH THE OWNER PRIOR TO

I. THE FIRE MARSHAL AND/OR THE INSURANCE UNDERWRITER SHALL BE CONTACTED TO REVIEW AND APPROVE THE EXTENT OR PHASING OF THE FIRE PROTECTION DEMOLITION IN ORDER TO PROTECT THE OCCUPANTS AND PROPERTY. THESE DOCUMENTS DO NOT ADDRESS THE

J. REVIEW THE ARCHITECTURAL DEMOLITION DRAWINGS AS PART OF THIS CONTRACT FOR

A. THESE GENERAL NOTES ARE APPLICABLE TO ALL FIRE PROTECTION DRAWINGS.

B. DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL INTENT OF WORK. SEE DETAILS AND

C. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE HYDRAULIC CALCULATIONS AND SHOP DRAWINGS. THE SCOPE OF WORK IN THIS RENOVATION IS TO REUSE EXISTING WET SPRINKLER SYSTEM PIPING TO THE FULLEST EXTENT POSSIBLE AND TO PROVIDE NEW SPRINKLERS FOR THE NEW CEILING LAYOUT, INCLUDING ALL ASSOCIATED PIPING, FITTINGS, HANGERS, VALVES,

D. SPRINKLERS IN FINISHED CEILING AREAS SHALL ALWAYS BE LOCATED IN THE CENTER OF

ADDITIONAL INFORMATION, SUCH AS CEILING HEIGHTS, TYPES, SOFFITS AND OR OTHER DEVICE

REVIEW THE ELECTRICAL DIVISION DRAWINGS AND COORDINATE THE FIRE PROTECTION WORK WITH LOCATIONS OF LIGHTS, AND CEILING MOUNTED DEVICES WHICH MAY INTERFERE WITH

G. REVIEW THE HVAC DIVISION DRAWINGS AND COORDINATE THE FIRE PROTECTION WORK WITH LOCATIONS OF CEILING MOUNTED DEVICES SUCH AS DIFFUSERS, GRILLS, REGISTERS, LOCATIONS OF HEAT PRODUCING EQUIPMENT AND DUCTWORK REQUIRING SPRINKLER

0	NEW CONCEALED SPRINKLER
	NEW PENDENT SPRINKLER
×	NEW UPRIGHT SPRINKLER
Ø	NEW DRY PIPE SPRINKLER
▼	NEW DRY SIDEWALL SPRINKLER
$\nabla$	NEW WET SIDEWALL SPRINKLER
$\otimes$	NEW PENDENT SPRINKLER WITH SPRIG UPRIGHT
●E	EXISTING SPRINKLER TO REMAIN
×E	EXISTING UPRIGHT SPRINKLER TO REMAIN
√E	EXISTING SIDEWALL SPRINKLER TO REMAIN
⊖R	EXISTING SPRINKLER TO BE REMOVED
×R	EXISTING UPRIGHT SPRINKLER TO BE REMOVED
R	EXISTING SIDEWALL SPRINKLER TO BE REMOVED
A	ALARM CHECK VALVE RISER ASSEMBLY
	DRY PIPE VALVE RISER ASSEMBLY
PA	PREACTION VALVE RISER ASSEMBLY
FS	SPRINKLER FLOW SWITCH
PS	PRESSURE SWITCH
(LPS)	LOW PRESSURE SWITCH
SS	SUPERVISORY SWITCH (TAMPER SWITCH)
R	ANGLE HOSE VALVE W/CAP & CHAIN
PRV 2	PRESSURE REGULATING ANGLE HOSE VALVE
Ŕ	PRESSURE RELIEF VALVE
<u>SS</u> ₫	OS&Y VALVE (SUPERVISED)
SS II	BUTTERFLY VALVE (SUPERVISED)
N	CHECK VALVE
SS NN SS	BACKFLOW PREVENTER ASSEMBLY (DCVA) WITH SHUTOFF VALVES
	BACKFLOW PREVENTER ASSEMBLY (RPD) WITH SHUTOFF VALVES
A×	PRESSURE REGULATING VALVE (X = PSI SETTING)
SS 屋	POST INDICATOR VALVE (SUPERVISED)
FDC 役	POST MOUNTED FIRE DEPARTMENT CONNECTION (REFER TO SPECIFICATIONS FOR TYPE)
FDC 2	WALL MOUNTED FIRE DEPARTMENT CONNECTION (REFER TO SPECIFICATIONS FOR TYPE)
<u> </u>	FIRE PUMP TEST HEADER (REFER TO SPECIFICATIONS FOR TYPE)
$\square$	PUMP
φ	PRESSURE GAUGE
	ELECTRIC ALARM BELL
ATS	AUTOMATIC TRANSFER SWITCH
FPC	FIRE PUMP CONTROLLER
JPC	JOCKEY PUMP CONTROLLER
PAC	
FCVA	
	SMOKE DETECTOR
Ш	HEAT DETECTOR



#### SPRINKLER PIPED RETURN BEND DETAIL SCALE: NOT TO SCALE

FIRE PF	ROTECTION ABBREVIATIONS
ACV	ALARM CHECK VALVE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ATS	AUTOMATIC TRANSFER SWITCH
BFP	BACKFLOW PREVENTER
BOP	BOTTOM OF PIPE
CTE	CONNECT TO EXISTING
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DN	DOWN
DPV	DRY PIPE VALVE
EC	EXTENDED COVERAGE
EL	ELEVATION
ETR	EXISTING TO REMAIN
EX	EXISTING
FCVA	FLOOR CONTROL VALVE ASSEMBLY
FDC	FIRE DEPARTMENT CONNECTION
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE BACK
FHV	
FPC	
FPTH	
FS	
FSP	
EVC	
6	
CPM	
GFM	
H	
JP	
JPC	
LPS	
NC	
NIC	
NU	
PA	
PAC	
PIV	
PRV	
PS	
PSI	
RCV	RISER CONTROL VALVE
RPD	REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLY
RR	REMOVE & RELOCATE
SP	SPRINKLER
SS	SUPERVISORY SWITCH
TYP	TYPICAL
UG	UNDERGROUND
VIF	VERIFY IN FIELD
FIRE P	ROTECTION PIPING LEGEND
	- FLOW DIRECTION
F	- FIRE LINE
F	-   FIRE SERVICE BURIED







### LEGEND NOTE

THESE ARE THE GENERAL LEGENDS OF SYMBOLS AND ABBREVIATIONS, AND SHALL BE USED AS A DICTIONARY TO DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.



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#### FIRE PROTECTION SPECIFICATION

A. ARCHITECT'S GENERAL CONDITIONS ARE A PART OF THIS DIVISION. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH CURRENT ACCEPTED EDITION OF NEPA #13, STATE BUILDING CODE, THE INSURANCE UNDERWRITER - (FM) AND THE LOCAL FIRE MARSHAL. THE FIRE PROTECTION CONTRACTOR SHALL BEAR THE COST OF ALL FEES, PERMITS, LICENSES, TAXES AND ANY CHARGES IN CONNECTION WITH HIS WORK.

B. AIA DOCUMENT A201-2007 "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" IS HEREBY MADE PART OF THESE SPECIFICATIONS.

A. DEMOLITION:

- 1. EXISTING PIPING SHALL BE RE-USED TO THE FULLEST EXTENT POSSIBLE IN THE RENOVATION AREA. THIS MEANS EXISTING MAINS AND BRANCH MAINS ONLY. WHERE EXISTING SPRINKLERS ARE REMOVED, THE BRANCH PIPING SHALL BE REMOVED WITH IT. REMOVE ANY PIPING THAT IS IN CONFLICT WITH NEW CONSTRUCTION.
- 2. EXISTING SPRINKLERS, PIPING, ETC. SHALL NOT BE REUSED UNLESS SO INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROPERLY DISPOSE OF REMOVED MATERIAL.
- 3. VERIFY WITH OWNER AND LOCAL AUTHORITY HAVING JURISDICTION ANY TEMPORARY FIRE PROTECTION REQUIRED DURING DEMOLITION OF EXISTING ACTIVE SPRINKLER SYSTEM PIPING IN AN OCCUPIED BUILDING. THE EXISTING SPRINKLER SYSTEM SHALL REMAIN ACTIVE TO THE FULLEST EXTENT POSSIBLE DURING DEMOLITION AND CONSTRUCTION.

B. NEW WORK:

- PROVIDE NEW SPRINKLERS AS SHOWN ON DRAWINGS WITH NEW BRANCH PIPING, FITTINGS, HANGERS, ETC AS REQUIRED AND AS NECESSARY TO PROVIDE A CODE COMPLIANT SPRINKLER SYSTEM FOR THE RENOVATION. INSTALL RETURN BENDS IN PIPE DROPS FOR CENTER OF TILE LOCATIONS IN NEW FINISH CEILING AREAS.
- 2. VERIFY WITH OWNER AND LOCAL AUTHORITY HAVING JURISDICTION ANY TEMPORARY FIRE PROTECTION REQUIRED DURING RENOVATIONS AND MODIFICATIONS TO THE EXISTING ACTIVE SPRINKLER SYSTEM PIPING IN AN OCCUPIED BUILDING. THE EXISTING SPRINKLER SYSTEM SHALL REMAIN ACTIVE TO THE FULLEST EXTENT POSSIBLE DURING DEMOLITION AND CONSTRUCTION.
- 4. PROVIDE COMPLETE LIGHT HAZARD/ORDINARY HAZARD SPRINKLER COVERAGE THROUGHOUT THE RENOVATION. LIGHT HAZARD COVERAGE SHALL BE PROVIDED IN OFFICE AREAS, CORRIDORS, LOBBY, ETC. PER NFPA 13 STANDARDS AND SHALL BE DESIGNED TO PROVIDE MINIMUM 0.15 GPM/1500 SQUARE FEET. ORDINARY HAZARD COVERAGE SHALL BE PROVIDED IN ANY MECHANICAL ROOMS, STORAGE ROOMS, JANITOR ROOMS, ETC. PER NFPA 13 STANDARDS AND SHALL BE DESIGNED TO PROVIDE MINIMUM 0.19 GPM/2000 SQUARE FEET. NEW SPRINKLERS SHALL BE QUICK RESPONSE, CONCEALED TYPE IN ALL FINISHED CEILING AREAS. VERIFY ANY SPECIAL AND/OR MORE STRINGENT REQUIREMENTS WITH THE OWNER'S INSURANCE UNDERWRITER.

C. WORK BY OTHERS:

- 1. THE GENERAL CONTRACTOR SHALL PROVIDE ALL CHASES, OPENINGS, CUTTING, PATCHING, PAINTING AND FINISH WORK.
- 2. ALL EXISTING AND NEW SPRINKLER PIPING IN THE RENOVATION AREA SHALL BE PAINTED RED PER PRATT & WHITNEY STANDARDS.

#### 1.3 FIELD MEASUREMENTS

A. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIARIZED WITH THE PROJECT AND LOCAL CONDITIONS BEFORE SUBMITTING BID. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS MADE THEREOF. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT.

A. SIX (6) COPIES OF HYDRAULIC CALCULATIONS AND SPRINKLER SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER. ARCHITECT. LOCAL AUTHORITY HAVING JURISDICTION AND OWNER'S INSURANCE UNDERWRITER FOR APPROVAL BEFORE BEGINNING INSTALLATION. THE CONTRACTOR SHALL PREPARE THEIR OWN DRAWINGS GIVING THE FOLLOWING INFORMATION: LOCATION OF ALL PERTINENT MECHANICAL AND ELECTRICAL EQUIPMENT; FULL-HEIGHT CROSS SECTIONS AS REQUIRED; MAKE AND TYPE OF SPRINKLERS AND TEMPERATURE RATINGS; ALL FITTINGS AND SIZES; TYPE OF HANGERS INSERTS AND SLEEVES; ALL DRAWINGS AND TEST PIPES: CUTTING LENGTHS AND SIZES OF PIPE LINES.

B. THE HYDRAULIC CALCULATIONS AND SHOP DRAWINGS SHALL BE STAMPED AND SEALED BY A REGISTERED FIRE PROTECTION ENGINEER BEARING A LICENSE IN THE SAME STATE AS THE WORK BEING PERFORMED. THE HYDRAULIC CALCULATIONS SHALL BE BASED ON FLOW TEST DATA THAT IS DATED WITHIN 12 MONTHS OF DESIGN PER NFPA STANDARDS.

1.5 RECORD DRAWINGS

A. NEATLY AND ACCURATELY RECORD ALL CHANGES FROM CONTRACT DOCUMENTS ON RECORD SET OF PRINTS FURNISHED BY THE ENGINEER. THESE RECORD "AS-BUILT" DRAWINGS SHALL INCLUDE LOCATIONS OF SPECIFIC ITEMS AS LISTED IN THE VARIOUS SPECIFICATION DIVISIONS. UPON PROJECT COMPLETION, FURNISH DRAWINGS TO THE ENGINEER.

A. AS USED ON CONTRACT DOCUMENTS, THE TERM "TO PROVIDE" SHALL MEAN "TO FURNISH, INSTALL AND CONNECT COMPLETELY IN THE SPECIFIED OR APPROVED MANNER THE ITEM OR MATERIAL DESCRIBED."

A. MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL HAVE STANDARD WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. ANY FAILURE DUE TO DEFECTIVE OR IMPROPER MATERIAL, EQUIPMENT, WORKMANSHIP OR DESIGN SHALL BE MADE GOOD, FORTHWITH, BY AND AT THE EXPENSE OF THE CONTRACTOR, INCLUDING ANY DAMAGE DONE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM THIS FAILURE. GUARANTEE PERIOD SHALL EXTEND FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.

COORDINATION

A. THE FIRE PROTECTION CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL DRAWINGS AND THE DRAWINGS AND SPECIFICATIONS OF OTHER TRADES. IF SO DIRECTED BY THE ARCHITECT OR THE ENGINEER, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT TO PREVENT CONFLICT WITH THOSE OF OTHER TRADES AND FOR PROPER INSTALLATION OF WORK. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF EQUIPMENT WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

A. FURNISH INSURANCE CERTIFICATES REQUIRED BY THE OWNER.

1.10 PERMITS, LAWS, ORDINANCES, CODES AND STANDARDS

A. OBTAIN AND PAY FOR PERMITS, INSPECTIONS, LICENSES AND CERTIFICATES REQUIRED. EQUIPMENT, MATERIALS AND COMPONENTS LISTED IN UL PRODUCT DIRECTORIES, SHALL BEAR UL LABELS.

1.11 OPERATING AND MAINTENANCE INSTRUCTIONS

A. INSTRUCT OWNER'S PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF SYSTEMS.

B. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THREE (3) SETS OF COMPLETE MAINTENANCE AND OPERATING INSTRUCTIONS AND TECHNICAL DATA, IN BOOKLET FORM, OF ALL EQUIPMENT AND DEVICES FURNISHED IN THE CONTRACT.

WORK SHALL BE COORDINATED BETWEEN TRADES TO PREVENT UNNECESSARY INTERFERENCE. WORK SHALL PRESENT A NEAT COORDINATED APPEARANCE. INSTALL WORK AS NECESSARY TO PROVIDE MAXIMUM POSSIBLE HEADROOM, ADEQUATE CLEARANCE AND READY ACCESS FOR INSPECTION, OPERATION, SAFE MAINTENANCE AND REPAIR AND CODE CONFORMANCE. WHERE SPACE APPEARS INADEQUATE, CONSULT THE OWNER BEFORE PROCEEDING WITH INSTALLATION.

A. EQUIPMENT AND MATERIALS SHALL BE NEW, OF FIRST-CLASS QUALITY, SELECTED AND ARRANGED TO FIT PROPERLY INTO SPACES INDICATED. INSTALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- 1.14 COORDINATION WITH OWNER
  - SUBJECT TO OWNER LIMITATIONS OF DATE AND DURATION.
- 1.15 OPERATION OF SERVICES AND UTILITIES
- 1.16 PROTECTION
- 1.17 CLEANING
- 1.18 PAINTING
- 1.19 CUTTING AND PATCHING
  - PAINTING OF OTHER SURFACES SHALL BE TO NEAREST CUT-OFF POINT.
- 1.20 WATERPROOFING
- 1.21 FIREPROOFING
  - CONSTRUCTION.
- 1.22 SUPPORTS
  - CODE REQUIREMENTS.
- 1.23 ACCESS
- 1.24 TESTS
  - OWNER'S PRESENCE.
- 1.25 SEISMIC REQUIREMENTS

  - 1. ENGINEER HAS REVIEWED THE PROJECT.

  - 3. THE DEVICES SATISFY SPECIFICATION AND CODE MANDATED SEISMIC CRITERIA.
  - DESIGN CATEGORY FOR THIS PROJECT.
  - CATEGORY AND MATERIAL IMPORTANCE FACTORS.

PART 2 - PRODUCTS

- 2.1 PIPING
  - JOINTS AND FITTINGS RATED FOR 175 PSI WORKING PRESSURE.
  - JOINTS
  - MAXIMUM DISTANCE BETWEEN HANGERS SHALL BE 12'-0" ON CENTER.
- 2.2 VALVES
  - PROTECTION VALVES.
- 2.3 SPRINKLERS
  - EXISTING SPRINKLERS.
- PART 3 EXECUTION
- 3.1 INSTALLATION:
  - DRAINED
- 3.2 TESTS
  - A. TEST ALL NEW SPRINKLER SYSTEM PIPING AT 200 PSI WITH WATER FOR TWO HOURS.

END OF SECTION

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A, CA	COMPRESSED AIR	MEDGAS, MG	MEDICAL GAS
AD	AREAWAY DRAIN	MEP	MECHANICAL, ELECTRICAL & PLUMBING
AFF	ABOVE FINISHED FLOOR	MGAAP	MEDICAL GAS AREA ALARM PANEL
AFG	ABOVE FINISHED GRADE	MGC	MASTER GAS CONTROL
AHU	AIR HANDLING UNIT	MGLAP	MEDICAL GAS LOCAL ALARM PANEL
AN	ACID NEUTRALIZATION TANK	MGMAP	MEDICAL GAS METER PANEL
AV	ACID VENT	MGVB	MEDICAL GAS VALVE BOX
AVTR	ACID VENT THRU ROOF	MV	MEDICAL VACUUM
AW	ACID WASTE	N	NITROGEN
BFP	BACKFLOW PREVENTER DEVICE	NIC	NOT IN CONTRACT
BOP	BOTTOM OF PIPE	NC	NORMALLY CLOSED
BOS	BOTTOM OF STEEL	NO	NORMALLY OPEN
BOF	BOTTOM OF FOOTING	NP	NON-POTABLE WATER
BTU	BRITISH THERMAL LINIT	0X	OXYGEN
BWV			
CEH		OST	
		000	
		ר	
		P51	
		RD	
DF		RU	REVERSE OSMOSIS WATER
DFU		RPD	REDUCED PRESSURE BACKFLOW PREVENTE
DI		RI	
DIR		RTU	ROOF TOP UNIT
DIST		RWC	RAIN WATER CONDUCTOR
DN	DOWN	S	SOIL
EL	ELEVATION	SAN	SANITARY
EOSC	EMERGENCY OXYGEN SUPPLY CONNECTION	SF, SQ FT	SQAURE FEET
EWC	ELECTRIC WATER COOLER	SFU	SUPPLY FIXTURE UNITS
EWH	ELECTRIC WATER HEATER	SI	SOLIDS INTERCEPTOR
EX	EXISTING	SP	SUMP PUMP/SEWAGE PUMP
EXP	EXPANSION TANK	SS	SOIL STACK
FCO	FLOOR CLEANOUT	ST	STORM
FCU	FAN COIL UNIT	T&P	TEMPERATURE & PRESSURE RELIEF VALVE
FD	FLOOR DRAIN	TD	TRENCH DRAIN
FS	FLOOR SINK	TOF	TOP OF FOOTING
G	GAS (NATURAL)	TP	TRAP PRIMER
GI	GREASE INTERCEPTOR	TMV	THERMOSTATIC MIXING VALVE
GPM	GALLONS PER MINUTE	TW	TEMPERED OR TEPID WATER
GRU	GREASE RECOVERY UNIT	TWR	TEMPERED OR TEPID WATER RECIRCULATIO
GSV	GAS SOLENOID VALVE	TYP	TYPICAL
GT	GREASE TRAP	UH	UNIT HEATER
GV	GAS VENT	UR	URINAL
GW	GREASE WASTE	V	VENT
HB	HOSE BIBB	VB	VACUUM BREAKER
НС		VIE	VERIEY IN FIELD
H&CW		VS	VENT STACK
н		VTR	
		VV&I	WASTE & TRAP
KW	KILOWATT	W&V	
LA		WC	WAIER CLOSET
LAV	LAVATORY	WCO	WALL CLEANOUT
LF	LINEAR FEET	WH	WALL HYDRANT
LPG	LIQUIFIED PETROLEUM GAS	WHA	WATER HAMMER ARRESTER
LV	LABORATORY VACUUM	WS	WASTE STACK
		241	
MA	MEDICAL AIR	YH	YARD HYDRANT

### PLUMBING GENERAL NOTES

THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING: A. THESE GENERAL NOTES ARE APPLICABLE TO ALL PLUMBING DRAWINGS. SPECIFICATIONS FOR ADDITIONAL INFORMATION. CONTRACT WORK.

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#### PLUMBING PIPING LEGEND

SYMBOL	DESCRIPTION
	COLD WATER
	HOT WATER
	HOT WATER RECIRCULATION
-150F	HOT WATER 150°F
-150F	HOT WATER RECIRCULATION 150°F
—TW— — — —	TEMPERED OR TEPID WATER
	TEMPERED OR TEPID WATER RECIRCULATION
-NPCW	NON-POTABLE COLD WATER
-NPHW	NON-POTABLE HOT WATER
•NPHWR	NON-POTABLE HOT WATER RECIRCULATION
	WASTE OR SANITARY
	WASTE OR SANITARY BURIED
AW	ACID WASTE
— — AW— —	ACID WASTE BURIED
ST	STORM
<b>— —</b> ST <b>— —</b>	STORM BURIED
OS	OVERFLOW STORM
T	VENT
— — -AV <sup>,</sup> — —	ACID VENT
<u> </u>	VAPOR VENT
GW	GREASE WASTE
<b>—</b> GW <b>—</b>	GREASE WASTE BURIED
C	CONDENSATE WASTE
CPD	CONDENSATE WASTE - PUMP DISCHARGE
	INDIRECT WASTE
PD	PUMPED DISCHARGE
G	GAS (NATURAL)
LPG	LIQUIFIED PETROLEUM GAS
HPG	HIGH PRESSURE GAS
— — ·GV· — —	GAS VENT
	DIRECTION OF FLOW
	EXISITNG PIPING OR EQUIPMENT TO BE REMOVED
	EXISTING PIPING OR EQUIPMENT TO REMAIN
A	COMPRESSED AIR
HPA	HIGH PRESSURE COMPRESSED AIR
	PIPE DOWN
	PIPE DROP
O	PIPE RISE
——————————————————————————————————————	PIPE ANCHOR
	PIPE GUIDE
	SEISMIC PIPE FITTING
]	PLUGGED OR CAPPED PIPE
 	CLEANOUT PLUG (WITH FINISHED PLATE FOR WCO)
	FLOOR CLEANOUT
	RUNNING TRAP
EHT	ELECTRIC HEAT TRACE CABLE
TMC	TEMPERATURE MAINTENANCE CABLE

	_				PL	UME	BING FIX
TAG	FIXTURE	MOUNT	CW	нw	W	V	
D1 ಕ	SINK	C'TOP	1/2"	1/2"	1-1/2"	1-1/2"	'ELKAY' # LRADQ2219 SINGLE-BOWL, 22" X FAUCET WITH 6" WRI PLATED SUPPLIES W
SP-1	SINK PUMP		-	-	1-1/2"	1-1/2"	'PENTAIR-FLOTEC', #I 115V, 60 HZ, SINGLE F OUTLET, 1/8" SOLIDS

NOTES:

1. ALL FIXTURES SHALL BE WHITE UNLESS OTHERWISE NOTED.

2. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT FIXTURE MOUNTING HEIGHTS.

B. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK. SEE DETAILS, SCHEDULES AND

C. REVIEW DRAWINGS OF THE OTHER TRADES AS PART OF THIS CONTRACT FOR ADDITIONAL WORK REQUIRED AND COORDINATION OF CONTRACTUAL WORK FOR OPERATIONS AND CONNECTIONS TO OTHER SYSTEMS.

D. PROVIDE ALL SERVICES TO HVAC EQUIPMENT INCLUDING BUT NOT LIMITED TO: GAS SUPPLY PIPING, CONDENSATE PIPING, COLD WATER SUPPLY PIPING, DRAINS, AND CONNECTIONS TO AIR HANDLING UNITS, FAN COIL UNITS, UNIT HEATERS, BOILERS, CHILLERS, ETC. ALSO, PROVIDE ADDITIONAL DEVICES INCLUDING BUT NOT LIMITED TO: BACKFLOW PREVENTERS, REGULATORS, UNIONS, TRAPS, AND SHUT-OFF VALVES REQUIRED FOR AFOREMENTIONED EQUIPMENT. REFER TO HVAC DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.

IN RENOVATION WORK, COORDINATE SYSTEMS SHUTDOWN WITH OWNER IN ORDER TO MAKE NEW PIPING CONNECTIONS. ALLOW MINIMUM OF TEN (10) DAYS ADVANCE OF NOTICE FOR OWNER APPROVAL TO PROCEED WITH

### PLUMBING SYMBOL LEGEND

YMBOL	DESCRIPTION
μ	THERMOMETER
Ŷ	PRESSURE GAUGE WITH PETCOCK
ρ	WATER HAMMER ARRESTER WITH SHUTOFF VALVE
Ч	STRAINER "Y" TYPE
	P-TRAP
0	ROOF DRAIN
$\oslash$	FLOOR DRAIN
$\oslash$	FLOOR SINK
•	SHOWER HEAD
TP	TRAP PRIMER (REFER TO SPECIFICATION FOR TYPE)
ιμ	UNION
Ą	PETCOCK
$\otimes$	BALANCING VALVE
ıſı	BUTTERFLY VALVE
Ø	BACKWATER VALVE
N	CHECK VALVE
	BACKFLOW PREVENTER (DOUBLE CHECK TYPE)
	BACKFLOW PREVENTER ASSEMBLY (RPD) WITH SHUTOFF VALVES
	THERMOSTATIC MIXING VALVE
<u>Ж</u>	SOLENOID VALVE
X	SHUT OFF VALVE (REFER TO SPECIFICATION FOR TYPE)
$\mathbf{V}$	GAS VALVE
<u>م</u>	OS&Y GATE VALVE
函	ANGLE VALVE
ō,,	WALL HYDRANT (WH) OR HOSE BIBB (HB)
Å	PRESSURE REDUCING VALVE (*= PSI SETTING)
Ř	GAS PRESSURE REGULATOR
Т	DRAIN
R	TEMPERATURE AND PRESSURE RELIEF VALVE (T&P)
M	WATER METER
GM	GAS METER
•	CONNECT TO EXISTING
XX	FIXTURE TYPE (REFER TO SPECIFICATION FOR TYPE)
ES/EW	EMERGENCY SHOWER/EYEWASH
$\bigcirc$	PUMP
	ADA ACCESSIBLE FIXTURE
4 4	OVERFLOW STORM CONDUCTOR NOZZLE
Mрв	EMERGENCY GAS REMOTE PUSH BUTTON
ـر	VALVE IN PIPE DROP
$\triangleleft$	VALVE IN PIPE RISE

### LEGEND NOTE

THESE ARE THE GENERAL LEGENDS OF SYMBOLS AND ABBREVIATIONS, AND SHALL BE USED AS A DICTIONARY TO DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

### TURE SCHEDULE

DESCRIPTION

945, 18 GAUGE, TYPE 304 STAINLESS STEEL, SELF-RIMMING, UNDERCOATED, (19-1/2" X 4-1/2" DEEP WITH 'T&S BRASS' # B-0892-FC, RIGID GOOSENECK, 0.7 GPM IST BLADE HANDLES. PROVIDE GRID STRAINER DRAIN ASSEMBLY AND CHROME VITH SCREWDRIVER STOPS.

FPUS1860A, THERMOPLASTIC BODY WITH INTERNAL PRESSURE SWITCH, 1/3 HP, PHASE MOTOR WITH CAPACITY RATED AT 4 GPM AT 12' FT. HD. 1-1/2" INLET, 1-1/4" 3 HANDLING WITH BALL VALVE, CHECK VALVE AND 8' SJTW W/ 3 PRONG PLUG.

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PLUMBING SPECIFICATION

PART 1 - GENERAL

1.1 GENERAL

A. ARCHITECT'S GENERAL CONDITIONS ARE A PAR DONE IN STRICT ACCORDANCE WITH ALL APPLIC AND STATE AGENCIES AND UTILITY COMPANIES OF ALL FEES, PERMITS, LICENSES AND TAXES AI CONNECTION WITH THE WORK.

1.2 SCOPE A. NEW WORK:

> 1. FURNISH AND INSTALL A COMPLETE PLUMB LIMITED TO: HOT AND COLD WATER, SANITA AND ALL OTHER EQUIPMENT AS INDICATED AS NECESSARY TO PROVIDE COMPLETE AN BE COMPLETE IN ALL RESPECTS, TESTED, A PLUMBING CONTRACTOR SHALL ARRANGE NOT INTERFERE WITH THE OWNER'S OPERA

C. WORK BY OTHERS:

- 1. THE PLUMBING CONTRACTOR SHALL INSTAL PLUMBING CONTRACT READY FOR WIRING SHALL FURNISH AND DELIVER TO THE ELEC FOR ALL MOTOR STARTERS FOR INSTALLAT CONTRACTOR SHALL FURNISH MOTOR STAF EQUIPMENT TO THE ELECTRICAL CONTRACT
- 2. THE GENERAL CONTRACTOR SHALL PROVID PATCHING, PAINTING AND FINISH WORK.

1.3 FIELD MEASUREMENTS

- A. THE PLUMBING CONTRACTOR SHALL VERIFY IN FOR HIS WORK AND SHALL ASSUME RESPONSIE
- 1.4 SUBMITTALS
  - A. SUBMIT SIX (6) COPIES OF MANUFACTURER'S DR ARCHITECT/ENGINEER FOR REVIEW: PLUMBING AND SPECIAL EQUIPMENT. SUBMIT INFORMATIC WHEN REQUESTED BY THE ARCHITECT OR THE

1.5 RECORD DRAWINGS

- A. NEATLY AND ACCURATELY RECORD ALL CHANG RECORD SET OF PRINTS FURNISHED BY THE EN DRAWINGS SHALL INCLUDE LOCATIONS OF SPE SPECIFICATION DIVISIONS. UPON PROJECT COM ENGINEER.
- 1.6 DEFINITION
  - A. AS USED ON CONTRACT DOCUMENTS, THE TER INSTALL AND CONNECT COMPLETELY IN THE SP MATERIAL DESCRIBED".
- 1.7 GUARANTEE
  - A. MATERIALS, EQUIPMENT AND WORKMANSHIP S DEFECTS IN MATERIAL AND WORKMANSHIP. AN MATERIAL, EQUIPMENT, WORKMANSHIP OR DES AND AT THE EXPENSE OF THE CONTRACTOR, IN MATERIALS AND OTHER SYSTEMS RESULTING F SHALL EXTEND FOR ONE YEAR FROM DATE OF
- 1.8 COORDINATION
  - A. THE PLUMBING CONTRACTOR SHALL EXAMINE DRAWINGS AND SPECIFICATIONS OF OTHER TR THE CONTRACTOR SHALL VISIT THE SITE AND E LOCAL CONDITIONS BEFORE SUBMITTING A BID INDICATE THE GENERAL ARRANGEMENT OF SY CONTRACT. IF SO DIRECTED BY THE ARCHITEC CONTRACTOR SHALL, WITHOUT EXTRA CHARG LAYOUT TO PREVENT CONFLICT WITH THOSE O INSTALLATION OF WORK. THE CONTRACTOR SH WITH ALL TRADES BEFORE STARTING CONSTRU EQUIPMENT LAYOUT REQUIRED FOR INSTALLAT COST TO THE OWNER.
- 1.9 INSURANCE
  - A. FURNISH INSURANCE CERTIFICATES REQUIRED
- 1.10 PERMITS, LAWS, ORDINANCES, CODES AND STANDA A. OBTAIN AND PAY FOR PERMITS, INSPECTIONS,
  - INTERNATIONAL PLUMBING CODE AND LOCAL U EQUIPMENT, MATERIALS AND COMPONENTS LIS BEAR UL LABELS.
- 1.11 OPERATING AND MAINTENANCE INSTRUCTIONS A. INSTRUCT OWNER'S PERSONNEL IN THE PROPER OPERATING AND MAINTENANCE OF SYSTEMS.

	1.12	ARRANGEMENT OF WORK	PART 2	2 - PRODUCTS
		A. WORK SHALL BE COORDINATED BETWEEN TRADES TO PREVENT UNNECESSARY INTERFERENCE. WORK SHALL PRESENT A NEAT COORDINATED APPEARANCE. INSTALL WORK	2.1	MATERIALS AND METHODS
CABLE CODES AND REGULATIONS OF LOCAL		AS NECESSARY TO PROVIDE MAXIMUM POSSIBLE HEADROOM, ADEQUATE CLEARANCE AND READY ACCESS FOR INSPECTION, OPERATION, SAFE MAINTENANCE AND REPAIR, AND CODE		A. PIPING, VALVES, INSULA
AND ANY UTILITY COMPANY CHARGES IN	4.40	PROCEEDING WITH THE INSTALLATION.		1. WASTE AND VENT PI ABOVE GRADE SHAL STANDARD #C564.
	1.13			2. WATER PIPE ABOVE
		A. EQUIPMENT AND MATERIALS SHALL BE NEW, OF FIRST-CLASS QUALITY, SELECTED AND ARRANGED TO FIT PROPERLY INTO SPACES INDICATED. INSTALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.		SCREWED ENDS: AF
ARY, WASTE AND VENT PIPING; INSULATION	1.14	COORDINATION WITH OWNER		SOLDERED JOINTS.
ID OPERATIONAL SYSTEMS. SYSTEMS SHALL APPROVED AND READY TO OPERATE. THE HIS WORK SO THAT ANY SHUTDOWN DOES		A. ALL WORK SHALL BE SCHEDULED WITH THE OWNER. INTERRUPTIONS IN THE OWNER'S ACCESS TO THE SITE SHALL BE SUBJECT TO OWNER LIMITATIONS OF DATE AND DURATION.		4. DOMESTIC HOT WAT TO 1-1/4" AND 1-1/2"
ATION OF THE EXISTING FACILITY.	1.15	OPERATION OF SERVICES AND UTILITIES		
LL ALL MOTORS PROVIDED UNDER THE		A. SHUTDOWN OF EXISTING SERVICES AND UTILITIES SHALL, WITHOUT EXCEPTION, BE COORDINATED WITH THE OWNER AS TO DATE, TIME OF DAY, AND DURATION BEFORE ANY SERVICE IS INTERRUPTED. NOTIFY THE OWNER OF ESTIMATED DURATION OF SHUTDOWN REPIOD AT LEAST TEN DAYS IN ADVANCE OF PROPOSED SHUTDOWN		5. PROVIDE CHROME-P WALLS, FLOOR OR C
	1 16		PART	3 - EXECUTION
RTERS, RELAYS AND ALL CONTROL	1.10		3.1	INSTALLATION
DE ALL CHASES, OPENINGS, CUTTING,		A. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLOGS DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL OR DAMAGING WATER. PROTECT EXISTING PROPERTY, EQUIPMENT AND FINISHES FROM DAMAGE. REPAIR, TO ORIGINAL CONDITION, EXISTING PROPERTY THAT HAS BEEN DAMAGED DURING EXECUTION OF THE WORK.		A. WATER PIPING SHALL BE CAN BE DRAINED AT LOV SUPPORT PIPING WITH (
	1.17	CLEANING		
THE FIELD ALL MEASUREMENTS NECESSARY BILITY FOR THEIR ACCURACY.		A. WORK SITE MUST BE KEPT CLEAN. RUBBISH, DEBRIS AND LEFTOVER OR EXCESS MATERIALS SHALL BE REMOVED DAILY.		HANGERS AT 5'-0" FOR 5
	1.18	PAINTING		LARGER AND 1/4 INCH P
RAWINGS OF THE FOLLOWING TO THE FIXTURES, DRAINS, PIPE, VALVES, INSULATION ON ON ANY OTHER EQUIPMENT TO BE USED		A. MECHANICAL AND ELECTRICAL EQUIPMENT AND MATERIALS SHALL HAVE PRIME COAT AND STANDARD MANUFACTURER'S FINISH.		NOT SHOWN ON THE DR CONTRACTOR FOR WAL
ENGINEER.	1.19	CUTTING AND PATCHING		D. UNIONS SHALL BE USED EASY REMOVAL, PROVID
		A. AREAS DISTURBED BY NEW CONSTRUCTION OR DEMOLITION SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING CONDITIONS. PATCH PAINTING OF CEILINGS SHALL INCLUDE PAINTING OF ENTIRE CEILING OF ROOM INVOLVED. PATCH PAINTING OF OTHER SURFACES		OR ACCEPTABLE EQUIV
ECIFIC ITEMS AS LISTED IN THE VARIOUS	1.00	SHALL BE TO THE NEAREST CUT-OFF POINT.		E. PROVIDE STANDARD-WE SHEET METAL SLEEVES
VIPLETION, FURNISH DRAWINGS TO THE	1.20			F. ALL PENETRATIONS THR
		CUT BETWEEN FLOORS AND THROUGH FIRE-RATED PARTITIONS. PERMANENT FIRESTOPS SHALL BE PROVIDED AROUND SLEEVES AND AT OTHER PERMANENT OPENINGS THROUGH		EQUAL TO THE RATING (
RM "TO PROVIDE" SHALL MEAN "TO FURNISH, PECIFIED OR APPROVED MANNER THE ITEM OR		FIRE-RATED PARTITIONS AND FLOORS, AS REQUIRED. MATERIALS USED FOR FIRESTOPPING SHALL BE CLASS A "INCOMBUSTIBLE" WITH FIRESTOPPING CAPABILITIES EQUAL TO THAT OF ADJACENT CONSTRUCTION	3.2	CLEANING AND FLUSHING S
	1 21	BASES AND SUPPORTS		RID THE SYSTEM OF DIR MATERIAL FOREIGN TO
HALL HAVE STANDARD WARRANTY AGAINST	1.21	A PROVIDE NECESSARY SUPPORTS REQUIRED FOUIPMENT SHALL BE SECURELY ATTACHED TO		
IY FAILURE DUE TO DEFECTIVE OR IMPROPER SIGN SHALL BE MADE GOOD, FORTHWITH, BY NCLUDING ANY DAMAGE DONE TO AREAS,		BUILDING STRUCTURE IN ACCEPTABLE MANNER. ATTACHMENTS SHALL BE OF STRONG AND DURABLE NATURE, AS DETERMINED BY THE ARCHITECT AND ENGINEER.		B. DISINFECT ALL POTABLE LOCAL OFFICIALS' REQU
FROM THIS FAILURE. GUARANTEE PERIOD ACCEPTANCE.		B. DELEGATED DESIGN: DESIGN TRAPEZE PIPE HANGERS AND EQUIPMENT SUPPORTS, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.	3.3	AFTER DISINFECTION.
THE ARCHITECTURAL DRAWINGS AND THE		C. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN		A. FABRICATE STRUCTURA OVERHEAD OR TO SUPP
ADES TO DETERMINE THE EXTENT OF WORK. BECOME FAMILIAR WITH THE PROJECT AND		LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.		B. USE HANGERS AND SUP
). DRAWINGS ARE DIAGRAMMATIC AND STEMS AND WORK INCLUDED IN THE	1.22	ACCESS		EQUIPMENT THAT WILL I
T OR THE ENGINEER, THE PLUMBING E, MAKE REASONABLE MODIFICATIONS IN THE		A. PROVIDE ADEQUATELY SIZED ACCESS DOORS, FOR ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS REQUIRING SERVICING OR INSPECTION. DOORS SHALL HAVE FIRE RATINGS	3.4	TESTS
FOTHER TRADES AND FOR PROPER HALL COORDINATE LOCATIONS OF EQUIPMENT UCTION. ANY MODIFICATIONS TO THE	1.23	EQUAL TO CONSTRUCTION IN WHICH THEY ARE LOCATED. TESTS		A. DISINFECT ALL POTABLE LOCAL OFFICIALS REQU AFTER DISINFECTION.
I ION SHALL BE PERFORMED AT NO ADDITIONAL		A. PERFORM TESTS REQUIRED BY THE OWNER, LEGAL AUTHORITIES AND AGENCIES. EACH PIECE OF EQUIPMENT, INCLUDING MOTORS AND CONTROLS, SHALL BE OPERATED		B. HYDROSTATICALLY TES WITHOUT LEAKS.
) BY THE OWNER.		TESTS, AND REPEAT TESTS UNTIL NO DEFECTS ARE DISCLOSED. FINAL TESTS SHALL BE MADE IN THE OWNER'S PRESENCE.		C. TEST ALL GRAVITY SANI A MINIMUM OF 15 MINUT
ARDS				D. TEST ALL CONCEALED P
LICENSES AND CERTIFICATES REQUIRED. JTILITY COMPANY REQUIREMENTS. STED IN UL PRODUCT DIRECTORIES, SHALL			END O	FSECTION

![](_page_14_Picture_29.jpeg)

## P601

MEC P	MECHANICAL LEGEND PIPING SYSTEMS						
SYMBOL	DESCRIPTION						
þ	BALL VALVE						
	BUTTERFLY VALVE						
$\otimes$	BALANCE VALVE						
$\overline{\mathbf{N}}$	CHECK VALVE						
 员	AUTOMATIC CONTROL VALVE						
	STRAINER						
× ×	MULTI-PURPOSE VALVE						
$\bowtie$	ISOLATION VALVE						
Å	OUTSIDE SCREW & YOKE GATE VALVE (OS&Y)						
$\bigcirc$	PUMP						
	THERMOMETER						
	FINNED TUBE RADIATION						
	PRESSURE GAUGE						
	PRESSURE RELIEF VALVE						
	PRESSURE REDUCING VALVE						
	FLOAT & THERMOSTATIC TRAP ASSEMBLY						
Юł	INVERTED BUCKET TRAP ASSEMBLY						
φ	AIR VENT (MANUAL OR AUTO.)						
	BRANCH OFF TOP OF MAIN						
	BRANCH OFF BOTTOM OF MAIN						
G	ELBOW, TURNED DOWN						
o—	ELBOW, TURNED UP						
<u>⊱                                    </u>	PIPING TO BE REMOVED						
——HWS——	HOT WATER SUPPLY						
— —HWR- — –	HOT WATER RETURN						
—_MCHWS	MEDIUM TEMPERATURE CHILLED WATER SUPPLY						
— -MCHWS- —	MEDIUM TEMPERATURE CHILLED WATER RETURN						
CHWS	CHILLED WATER SUPPLY						
— — CHWR— —	CHILLED WATER RETURN						
DTWS	DUAL TEMPERATURE WATER SUPPLY						
— — DTWR— —	DUAL TEMPERATUR WATER RETURN						
C	CONDENSATE DRAIN LINE						
——HPS——	HIGH PRESSURE STEAM						
— — HPC- —	HIGH PRESSURE CONDENSATE						
MPS	MEDIUM PRESSURE STEAM						
— — MPC- —	MEDIUM PRESSURE CONDENSATE						
LPS	LOW PRESSURE STEAM						
LPC	LOW PRESSURE CONDENSATE						
CPD	CONDENSATE PUMP DISCHARGE						
HRS	HEAT RECOVERY SUPPLY						
— — HRR- —	HEAT RECOVERY RETURN						
—PHHWS	PRE-HEAT HOT WATER SUPPLY						
— -PHHWR— -	PRE-HEAT HOT WATER RETURN						
GHWS	GLYCOL HOT WATER SUPPLY						
	GLYCOL HOT WATER RETURN						
GHRS							

CONTROLS LEGEND						
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION			
S	SWITCH		FILTER			
H	HUMIDITY SENSOR					
Ē	FLOW SENSOR	ل <i>ر (\</i> )	SUPPLY FAN OR RETURN FAN			
Р	PRESSURE SENSOR	6				
DP	DIFFERENTIAL PRESSURE SENSOR		MOTORIZED DAMPER			
DS	DUCT SMOKE DETECTOR					
LT	LOW TEMPERATURE THERMOSTAT (FREEZE)		STARTER/DISCONNECT			
HT	HIGH TEMPERATURE THERMOSTAT					
Μ	MOTOR					
CS	ELECTRICAL CURRENT SWITCH/SENSOR					
			·			

### MECHANICAL LEGEND **ABBREVIATIONS &** GENERAL SYMBOLS

MBOL	DESCRIPTION
VCU	AIR CONDITIONING/INDOOR UNIT
١FF	ABOVE FINISHED FLOOR
λHU	AIR HANDLING UNIT
AS	AIR SEPARATOR
BC	BC CONTROLLER
BMS	BUILDING MANAGEMENT SYSTEM
FM	CUBIC FEET PER MINUTE
СР	CONDENSATE PUMP
CU	CONDENSING UNIT/OUTDOOR UNIT
)CUH	(ELECTRICAL) CABINET UNIT HEATER
DC	DUST COLLECTOR
OAS	DEDICATED OUTDOOR AIR SYSTEM
EA	EXHAUST AIR
EF	EXHAUST FAN
ET	EXPANSION TANK
TR	EXISTING TO REMAIN
CU	FAN COIL UNIT
TR	FINNED TUBE RADIATION
IRU	HEAT RECOVERY UNIT
WC	HOT WATER COIL
НХ	HEAT EXCHANGER
М	MANIFOLD FOR RADIANT FLOOR
1AU	MAKE-UP AIR UNIT
NL	NEW LOCATION OF EXISTING
OA	OUTSIDE AIR
DAF	OUTDOOR AIR FAN
RA	RETURN AIR
RCP	RADIANT CEILING PANEL
RE	REBALANCE EXISTING
RHC	REHEAT COIL
RL	RELOCATE EXISTING
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SF	SUPPLY FAN
UH	UNIT HEATER
/AV	VARIABLE AIR VOLUME
/FD	VARIABLE FREQUENCY DRIVE
•	DEMOLITION WORK: POINT OF REMOVAL NEW WORK: POINT OF ATTACHMENT

MFC	MECHANICAL LEGEND					
AIR SISIENIS						
SYMBOL	DESCRIPTION					
	SUPPLY DUCT UP					
	SUPPLY DUCT DOWN					
	RETURN DUCT UP					
	RETURN DUCT DN.					
	EXHAUST DUCT UP					
	EXHAUST DUCT DN.					
	EXISTING DUCT (SINGLE LINE)					
γ	EXISTING DUCT (DOUBLE LINE)					
	NEW DUCT (SINGLE LINE)					
<u> </u>	NEW DUCT (DOUBLE LINE)					
===	ACOUSTICALLY LINED DUCT (SINGLE LINE)					
	ACOUSTICALLY LINED DUCT (DOUBLE LINE)					
	DUCT TO BE REMOVED (SINGLE LINE)					
Z = = = Z	DUCT TO BE REMOVED (DOUBLE LINE)					
	FLUSH CAP, SINGLE LINE					
	SUPPLY DIFFUSER					
	RETURN GRILLE					
	EXHAUST GRILLE					
	SUPPLY AIR FLOW					
- <b>/-</b>	RETURN/EXHAUST AIR FLOW					
-√ <b>→</b> LD	LOUVER DOOR (SIZE AS NOTED)					
- <b>√</b> - UD	UNDER CUT DOOR					
	REHEAT COIL					
	VARIABLE AIR VOLUME BOX					
AFC	AIR FLOW CONTROLLER					
	SOUND ATTENUATOR					
VD	VOLUME DAMPER (PLAN VIEW)					
FD	FIRE DAMPER (PLAN VIEW)					
	SMOKE DAMPER (PLAN VIEW)					
	FIRE SMOKE DAMPER (PLAN VIEW)					
ACD	AUTOMATIC CONTROL DAMPER (PLAN VIEW)					
DS	DUCT SMOKE DETECTOR					
	DIFFERENTIAL PRESSURE					
<b></b>	THERMOSTAT					
	TEMPERATURE SENSOR					
A	AIRCUITY SENSOR					
CO₂	CO <sub>2</sub> SENSOR					
CCP	Central HVAC Controll Panel					

![](_page_15_Figure_8.jpeg)

### MECHANICAL GENERAL NOTES

- NEW DUCTWORK AS REQUIRED.
- WITH ALL TRADES.
- F. INSTALL ACCESS DOORS AT ALL COILS, DAMPERS, CONTROL DEVICES AND LOCATIONS INDICATED ON PLANS.
- SPECIFICATIONS AND APPLICABLE CODES.
- WALLS.
- APPROVAL.
- HEIGHTS.

- EQUIPMENT, IN ELEVATOR MACHINE ROOMS, OR SHAFTS.
- R. ALL SUPPLY AND RETURN BRANCH PIPING SHALL BE 3/4" UNLESS OTHERWISE NOTED.

- BE PROVIDED.
- POINTS.
- DRAWING PHASE.
- COORDINATION DRAWING PHASE.

## PROPERLY. ENSURE THE PATCHING IS COMPLETE.

- ELECTRICAL CONNECTIONS BACK TO PANEL.

A. PROVIDE NEW DUCTWORK, DIFFUSERS AND GRILLES WHERE SHOWN, SEE SPECIFICATIONS. COORDINATE NEW DIFFUSER LOCATIONS WITH ARCHITECT'S REFLECTED CEILING PLAN.

B. COORDINATE NEW DUCTWORK WITH STRUCTURAL STEEL, PLUMBING PIPING, LIGHTS, ETC. OFFSET

C. DUCT SIZES SHOWN INDICATE CLEAR INSIDE DIMENSIONS OF DUCT AND INSULATION.

D. THIS PLAN IS GENERALLY SCHEMATIC IN NATURE. EVERY ELBOW, FITTING, ETC. IS NOT SHOWN. PROVIDE SUCH COMPONENTS AS REQUIRED FOR COMPLETE INSTALLATION, PROPERLY COORDINATED

E. PROVIDE VOLUME DAMPERS IN ALL SUPPLY, RETURN, OUTSIDE AIR AND EXHAUST BRANCH DUCTS AS REQUIRED TO PROPERLY BALANCE THE ENTIRE AIR SYSTEM. PROVIDE REMOTELY OPERATED (CABLE) DAMPERS WHEN DAMPERS ARE INACCESIBLE. COORDINATE WITH ARCHITECTURAL RCP TYPES.

G. ALL MATERIALS, METHODS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

H. PROVIDE SEISMIC RESTRAINTS ON ALL EQUIPMENT AND PIPING IN COMPLIANCE WITH PROJECT

I. ANY DUCTWORK, PIPING, ETC. NOT SERVING STAIRWELL AREAS SHALL NOT PENETRATE STAIRWELL

J. THE LOCATIONS OF PENETRATIONS FOR UTILITIES THROUGH EXISTING FLOOR SLAB CONSTRUCTION ARE SHOWN AS APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE FLOOR SLAB PENETRATION LOCATIONS, AND TO TRANSITION UTILITIES IN SIZE, CONFIGURATION, AND ORIENTATION TO PASS THROUGH APPROVED OPENING. CONTRACTOR SHALL IDENTIFY THIS COORDINATION CLEARLY IN THE SHOP DRAWING PROCESS FOR ARCHITECT AND ENGINEER

K. THE HVAC SYSTEMS FOR THIS BUILDING HAVE BEEN DESIGNED AND MODELED FOR LOW TRANSPORT ENERGY (LOW VELOCITY AND LOW PRESSURE DROP). THE CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE THE NUMBER OF FITTINGS AND TRANSITIONS AND TO PROVIDE FITTING TYPES WITH THE LEAST POSSIBLE PRESSURE DROP.

FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF EQUIPMENT, REFER TO ARCHITECTURAL DRAWINGS. ARCHITECT SHALL COORDINATE EQUIPMENT FINISHES, AND EQUIPMENT MOUNTING

M. ALL EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. IN THE INSTANCE WHERE EQUIPMENT MUST BE INSTALLED BEHIND A WALL OR ABOVE AN INACCESSIBLE CEILING, AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PROVIDED.

N. IN THE EVENT OF A CONFLICT BETWEEN DOCUMENTS, ARCHITECT SHALL BE NOTIFIED AND THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEMS SHALL BE CARRIED AS PART OF THE BID.

O. ALL FLOOR MOUNTED EQUIPMENT SHALL BE INSTALLED ON CONCRETE HOUSEKEEPING PAD. P. DUCTWORK AND/OR PIPING SHALL NOT BE INSTALLED OVER ELECTRICAL PANELS, SPECIAL

Q. PROVIDE BRANCH ISOLATION VALVES OFF OF ALL BUILDING PIPING MAINS ON EACH FLOOR.

S. PROVIDE EXPANSION COMPENSATORS, ANCHORS AND GUIDES FOR ALL PIPING SYSTEMS AND INSTALL AS DICTATED BY CODE AND INDUSTRY STANDARDS. EQUIPMENT AND INSTALLATION DETAILS SHALL BE SUBMITTED FOR APPROVAL. THE CONTRACTOR SHALL HIRE AN ENGINEER TO REVIEW DETAILS AND PREPARE COMPLETE DESIGN FOR EXPANSION COMPENSATION.

T. THERMOSTAT AND SIWTCH LOCATIONS SHALL BE GENERALLY AS SHOWN. ACTUAL LOCATIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.

U. SUPPORT ALL PIPING FROM STRUCTURE ABOVE, WHEN PIPE RUNS ARE PERPENDICULAR TO BEAMS. INSTALL PIPING TIGHT TO BOTTOM OF BEAM TO MAXIMIZE SPACE. WHEN PIPE RUNS ARE PARALLEL TO BEAMS, INSTALL PIPING TIGHT TO FLOOR SLAB. ALL NECESSARY TRANSITIONS AND FITTINGS SHALL

V. AIR VENTS SHALL BE PROVIDED AT ALL HIGH POINTS. DRAINS SHALL BE PROVIDED AT ALL LOW

W. ALL WALL MOUNTED SENSORS AND DEVICES SHALL RESIDE ON ARCHITECTURAL PANELS. SEE A-SERIES FOR DEVICE PANEL LOCATIONS AND DETAILS. SEE ARCHITECTURAL FLOOR PLANS FOR LOCATIONS. MOUNTING HEIGHTS TO BE COORDINATED WITH ARCHITECT DURING COORDINATION

REFER TO A-SERIES FOR ACCESS DOOR LOCATIONS IN WALLS, CELINGS AND FLOORS. ACCESS DOORS ARE NOT PERMITTED IN FINISHED SURFACES UNLESS COORDINATED WITH ARCHITECT DURING

TO ASSIST IN COORDINATION OF UTILITY ROUTING WITH NEW AND EXISTING STRUCTURE, REFER TO DRAWINGS TITLED 'BEAM OVERLAY' LOCATED WITHIN THE GM SERIES OF THIS DRAWING SET.

### MECHANICAL DEMOLITION NOTES

A. EXISTING MECHANICAL ITEMS THAT ARE BEING DISCONNECTED AND REMOVED SHALL BE DISPOSED OF

B. NOTIFY CONSTRUCTION MANAGER OF OPENINGS CAUSED BY REMOVAL OF EXISTING EQUIPMENT.

C. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RELATED DEMOLITION WORK.

D. REMOVE AND PROPERLY DISPOSE OF EXISTING RTU-1 IN ITS ENTIRETY INCLUDING CONTROLS AND

REMOVE ALL EXISITNG PIPING AND DUCTWORK LOCATED IN THE FULL DEMOLITION AREA. REFER TO ARCHITECTURAL PLANS FOR EXTENT OF FULL DEMOLITION.

. REMOVE AND PROPERLY DISPOSE OF PUMPS INCLUDING ELECTRICAL CONNECTIONS BACK TO PANEL G. CAP ALL BRANCH LINES (DUCTWORK AND PIPING) SCHEDULED FOR DEMOLITION WHERE THEY TIE INTO LINES TO REMAIN WITHIN DIXON AND THE STUDIO WING.

### LEGEND NOTE

THESE ARE THE GENERAL LEGENDS OF SYMBOLS AND ABBREVIATIONS, AND SHALL BE USED AS A DICTIONARY TO DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

![](_page_15_Picture_72.jpeg)

![](_page_16_Figure_0.jpeg)

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![](_page_16_Figure_2.jpeg)

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_E				
	REMARKS		UNIT NO.	
	STEEL		BB-F	Pl
N	STEEL			

					DIM.	CAPACITY	ELEC. DATA			
UNIT NO.	SERVING	MANUFACTURER	MODEL	IYPE	LxHxD	WATTS	VOLTS	PH	Hz	AM
BB-F	PERIMETER-SEE PLANS	Q-MARK	2506NW	BASEBOARD	6 FT	1500	208	1	60	7.

	ROOF TOP UNIT SCHEDULE- ALTERNATE																
							DX COI	IL DATA		GAS HEATER ELECECTRICAL DATA							
R	MODEL & SIZE	TOTAL CFM	MIN. O.A. CFM	# HIGH / ROWS / F.P.I.	E.D.B. °F	E.W.B. °F	L.D.B. °F	L.W.B. °F	MBH (TOTAL)	MBH (SENS.)	FACE VEL. FPM	INPUT MBH	OUTPUT MBH	VOLTS	PH	Hz	MCA
	YHC120F3RLA	3,250	625	1 / 1 / 4 / 16	80	67	56.3	55.8	112.2	82.3	194	150	120	208	3	60	48

![](_page_18_Figure_0.jpeg)

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![](_page_18_Figure_3.jpeg)

![](_page_18_Figure_6.jpeg)

![](_page_18_Figure_7.jpeg)

1.1 GENERAL

- A. ARCHITECT'S GENERAL CONDITIONS ARE A PART OF THIS DIVISION. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS OF LOCAL AND STATE AGENCIES AND UTILITY COMPANIES. THIS CONTRACTOR SHALL BEAR THE COST OF ALL FEES, PERMITS, LICENSES AND TAXES AND ANY UTILITY COMPANY CHARGES IN CONNECTION WITH THE WORK. ALL EQUIPMENT INSTALLED SHALL BE UL LISTED.
- B. AIA DOCUMENT A201-CURRENT VERSION. "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" IS HEREBY MADE PART OF THESE SPECIFICATIONS
- C. THIS PROJECT WILL BE COMMISSIONED. REFER TO COMMISSIONING SPECIFICATION SECTIONS FOR COMMISSIONING INFORMATION AND RESPONSIBILITIES. THE COMMISSIONING PROCESS WILL REQUIRE ADDITIONAL LABOR, MATERIAL AND/OR OTHER COSTS WHICH MUST BE PROVIDED BY THE CONTRACTOR AS PART OF THIS PROJECT.

1.2 SCOPE

A. PROVIDE A COMPLETE HVAC SYSTEM AND ALL OTHER EQUIPMENT AS SHOWN ON THE DRAWINGS AND HEREIN SPECIFIED, INCLUDING BUT NOT LIMITED TO:

SYSTEM SHALL BE COMPLETE IN ALL RESPECTS, TESTED, ACCEPTED AND READY TO OPERATE.

- 1.3 SUBMITTALS
- A. SUBMIT SIX (6) COPIES OF MANUFACTURER'S DRAWINGS OF THE FOLLOWING TO THE ARCHITECT FOR APPROVAL
- 1. SUBMIT INFORMATION ON ANY OTHER EQUIPMENT TO BE USED WHEN REQUESTED BY THE ARCHITECT OR THE ENGINEER.
- 2. SUBMIT SIX (6) COPIES OF DUCTWORK SHOP DRAWINGS SHOWING CLEARANCES WITH STRUCTURAL MEMBERS AND MAJOR EQUIPMENT OF OTHER TRADES
- 1.4 GUARANTEE
- A. MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL HAVE STANDARD WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. ANY FAILURE DUE TO DEFECTIVE OR IMPROPER MATERIAL, EQUIPMENT, WORKMANSHIP OR DESIGN SHALL BE MADE GOOD, FORTHWITH, BY AND AT THE EXPENSE OF THE CONTRACTOR, INCLUDING ANY DAMAGE DONE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM THIS FAILURE. GUARANTEE PERIOD SHALL EXTEND FOR ONE YEAR FROM THE DATE OF ACCEPTANCE.
- B. THE HVAC CONTRACTOR SHALL PROVIDE A GUARANTEE COVERING ALL MATERIAL AND WORKMANSHIP FOR 1 YEAR FOLLOWING THE DATE OF ACCEPTANCE.
- 1.5 DEFINITION
- A. AS USED ON CONTRACT DOCUMENTS. THE TERM "TO PROVIDE" SHALL MEAN "TO FURNISH. INSTALL AND CONNECT COMPLETELY IN THE SPECIFIED OR APPROVED MANNER THE ITEM OR MATERIAL DESCRIBED."
- **1.6 OPERATING AND MAINTENANCE INSTRUCTIONS**
- A. UPON COMPLETION OF THE PROJECT, THE HVAC CONTRACTOR SHALL FULLY INSTRUCT THE OWNER IN THE OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL EQUIPMENT AND SYSTEMS FURNISHED.
- B. THE HVAC CONTRACTOR SHALL PROVIDE THE OWNER WITH THREE (3) SETS OF COMPLETE MAINTENANCE AND OPERATING INSTRUCTIONS, AND TECHNICAL DATA, IN BOOKLET FORM, OF ALL EQUIPMENT AND DEVICES FURNISHED IN THE CONTRACT.
- 1.7 CONTRACTOR'S INSPECTION
- A. CONTRACT DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW EVERY REQUIRED FITTINGS, ETC. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE EXISTING SITE CONDITIONS, PRIOR TO SUBMITTING A BID, AND SHALL INCLUDE ALL EQUIPMENT AND ACCESSORIES NECESSARY FOR COMPLETE AND OPERATIONAL SYSTEMS.
- B. THE HVAC CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL DRAWINGS AND THE DRAWINGS AND SPECIFICATIONS OF OTHER TRADES TO DETERMINE THE EXTENT OF WORK. THE HVAC CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT AND LOCAL CONDITIONS BEFORE SUBMITTING A BID. DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. IF SO DIRECTED BY THE ARCHITECT OR ENGINEER, THE HVAC CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT TO PREVENT CONFLICT WITH THOSE OF OTHER TRADES AND FOR PROPER INSTALLATION OF WORK. REFER TO THE ARCHITECT'S REFLECTED CEILING PLAN FOR EXACT LOCATION OF AIR DIFFUSERS, REGISTERS AND GRILLES. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF EQUIPMENT WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

**1.8 ARRANGEMENT OF WORK** 

A. WORK SHALL BE COORDINATED BETWEEN TRADES TO PREVENT UNNECESSARY INTERFERENCE. WORK SHALL PRESENT A NEAT COORDINATED APPEARANCE. INSTALL WORK AS NECESSARY TO PROVIDE MAXIMUM POSSIBLE HEADROOM, ADEQUATE CLEARANCE AND READY ACCESS FOR INSPECTION, OPERATION, SAFE MAINTENANCE AND REPAIR, AND CODE CONFORMANCE. WHERE SPACE APPEARS INADEQUATE, CONSULT THE OWNER BEFORE PROCEEDING WITH INSTALLATION.

1.9 INSURANCE

- A. FURNISH INSURANCE CERTIFICATES REQUIRED BY THE OWNER.
- 1.10 PERMITS, LAWS, ORDINANCES, CODES AND STANDARDS
- A. OBTAIN AND PAY FOR PERMITS, INSPECTIONS, LICENSES AND CERTIFICATES REQUIRED. WORK OF THIS CONTRACT SHALL MEET CURRENT ACCEPTED EDITIONS OF THE STATE BUILDING CODE, STATE FIRE SAFETY CODE AND OTHER LAWS, RULES AND REGULATIONS OF LOCAL, STATE AND FEDERAL AUTHORITIES INCLUDING, BUT NOT LIMITED TO: NATIONAL FIRE PROTECTION ASSOCIATION #13; NATIONAL FIRE PROTECTION ASSOCIATION #90A; NATIONAL FIRE PROTECTION ASSOCIATION #90B; NATIONAL FIRE PROTECTION ASSOCIATION #99; INTERNATIONAL PLUMBING CODE; INTERNATIONAL MECHANICAL CODE; NATIONAL FIRE PROTECTION ASSOCIATION #70 (NATIONAL ELECTRICAL CODE); AND LOCAL UTILITY COMPANY REQUIREMENTS. PAY UTILITY COMPANY BACKCHARGES. EQUIPMENT, MATERIALS AND COMPONENTS LISTED UL PRODUCT DIRECTORIES, SHALL BEAR UL LABELS.
- 1.11 FIELD MEASUREMENTS
- A. THE HVAC CONTRACTOR SHALL VERIFY IN THE FIELD ALL MEASUREMENTS NECESSARY FOR THE WORK. VERIFY THERMOSTAT LOCATIONS WITH THE OWNER BEFORE INSTALLATION.
- B. THE HVAC CONTRACTOR SHALL COORDINATE SUPPLY AND RETURN DUCTWORK LOCATIONS WITH STRUCTURE, CONDUITS AND PIPING OF OTHER TRADES. 1.12 WORKMANSHIP
- A. EQUIPMENT AND MATERIALS SHALL BE NEW, OF FIRST QUALITY, SELECTED AND ARRANGED TO FIT PROPERLY INTO SPACES INDICATED. INSTALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 1.13 COORDINATION WITH OWNER
- A. ALL WORK SHALL BE SCHEDULED WITH THE OWNER. INTERRUPTIONS IN THE OWNER'S ACCESS TO THE SITE SHALL BE SUBJECT TO OWNER LIMITATIONS OF DATE AND DURATION. 1.14 OPERATION OF SERVICES AND UTILITIES
- A. SHUTDOWN OF EXISTING SERVICES AND UTILITIES SHALL, WITHOUT EXCEPTION, BE COORDINATED WITH THE PROPER UTILITY AND WITH THE OWNER AS TO DATE, TIME OF DAY, AND DURATION BEFORE ANY SERVICE IS INTERRUPTED. NOTIFY THE OWNER OF ESTIMATED DURATION OF SHUTDOWN PERIOD AT LEAST TEN DAYS IN ADVANCE OF PROPOSED SHUTDOWN.
- 1.15 PROTECTION
- A. CLOSE OPEN ENDS OF WORK WITH TEMPORARY COVERS OR PLUGS DURING CONSTRUCTION TO PREVENT ENTRY OF OBSTRUCTING MATERIAL OR DAMAGING WATER. PROTECT EXISTING PROPERTY, EQUIPMENT AND FINISHES FROM DAMAGE. REPAIR, TO ORIGINAL CONDITION, EXISTING PROPERTY THAT HAS BEEN DAMAGED DURING EXECUTION OF THE WORK.

#### 1.16 CLEANING

- A. WORK SITE MUST BE KEPT CLEAN. RUBBISH, DEBRIS AND LEFTOVER OR EXCESS MATERIALS SHALL BE REMOVED DAILY
- 1.17 PAINTING
- A. MECHANICAL AND ELECTRICAL EQUIPMENT AND MATERIALS SHALL HAVE PRIME COAT AND STANDARD MANUFACTURER'S FINISH. PAINTING OF FINISHED SURFACES (EXCLUDING CEILINGS) SHALL BE ONE COAT PRIMER AND TWO COATS VINYL BASE SEMI-GLOSS PAINT. PAINTING OF CEILING SHALL BE ONE COAT PRIMER AND TWO COATS FLAT WHITE PAINT. PRIMER SHALL BE OMITTED ON REPAINTING OF EXISTING SURFACES.
- 1.18 CUTTING AND PATCHING
- A. AREAS DISTURBED BY NEW CONSTRUCTION OR DEMOLITION SHALL BE PATCHED AND REPAIRED TO MATCH EXISTING CONDITIONS. PATCH PAINTING OF CEILINGS SHALL INCLUDE PAINTING OF ENTIRE CEILING OF ROOM INVOLVED. PATCH PAINTING OF OTHER SURFACES SHALL BE TO NEAREST CUT-OFF POINT.
- 1.19 WATERPROOFING
- A. PROVIDE NECESSARY SLEEVES, CAULKING AND FLASHING REQUIRED TO MAKE OPENINGS WATERPROOF.

- 1.20 FIREPROOFING
- A. AT CLOSING OF EACH WORKING DAY, PROVIDE TEMPORARY FIRESTOPPING IN EVERY OPENING CUT BETWEEN FLOORS AND THROUGH FIRE-RATED PARTITIONS. PERMANENT FIRESTOPS SHALL BE PROVIDED AROUND SLEEVES AND AT OTHER PERMANENT OPENINGS THROUGH FIRE-RATED PARTITIONS AND FLOORS, AS REQUIRED. MATERIALS USED FOR FIRE STOPPING SHALL BE CLASS A "NONCOMBUSTIBLE" WITH FIRESTOPPING CAPABILITIES EQUAL TO THAT OF ADJACENT CONSTRUCTION. 1.21 BASES AND SUPPORTS
- A. PROVIDE NECESSARY SUPPORTS, PADS, BASES AND PIERS REQUIRED. EQUIPMENT SHALL BE SECURELY ATTACHED TO BUILDING STRUCTURE IN ACCEPTABLE MANNER. ATTACHMENTS SHALL BE OF STRONG AND DURABLE NATURE, AS DETERMINED BY THE OWNER.

1.22 ACCESS

- A. PROVIDE ADEQUATELY SIZED ACCESS DOORS, FOR ACCESS TO CONCEALED EQUIPMENT AND COMPONENTS REQUIRING SERVICING OR INSPECTION. DOORS SHALL HAVE FIRE RATINGS EQUAL TO CONSTRUCTION IN WHICH THEY ARE LOCATED. 1.23 TESTS
- A. PERFORM TESTS REQUIRED BY THE OWNER, LEGAL AUTHORITIES AND AGENCIES. EACH PIECE OF EQUIPMENT, INCLUDING MOTORS AND CONTROLS, SHALL BE OPERATED CONTINUOUSLY FOR MINIMUM ONE-HOUR TEST. CORRECT ALL DEFECTS APPEARING DURING TESTS, AND REPEAT TESTS UNTIL NO DEFECTS ARE DISCLOSED. FINAL TESTS SHALL BE MADE IN THE OWNER'S PRESENCE.
- 1.24 INSTRUCTION TRAINING
- A. COMPETENT TECHNICIANS SHALL PROVIDE \_\_\_\_\_ HOURS OF INSTRUCTION TO OWNER'S PERSONNEL. INSTRUCTIONS SHALL INCLUDE, BUT ARE NOT LIMITED TO, FOLLOWING: 1. FAMILIARIZATION WITH HVAC CONTROL SYSTEM, HARDWARE AND OPERATION PROCEDURES.
- 2. FAMILIARIZATION WITH MANAGEMENT SYSTEM HARDWARE
- USE OF MANAGEMENT SYSTEM.
- 4. MODIFICATIONS OF SOFTWARE PACKAGES.
- 5. TROUBLE-SHOOTING AND SERVICE PROCEDURES

#### PART 2 - PRODUCTS

2.1 MATERIALS AND METHODS

#### A. DUCTWORK:

- 1. ALL DUCTWORK AND ACCESSORIES SHALL BE CONSTRUCTED, FABRICATED AND INSTALLED IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS MANUALS FOR LOW PRESSURE DUCTS, FIRE DAMPER INSTALLATIONS AND FLEXIBLE DUCTWORK.
- A FLAME RETARDANT VAPOR BARRIER. FLEXMASTER TYPE IX.
- 3. ALL AIR CONDITIONING, SUPPLY AND EXHAUST (EXCEPT KITCHEN EXHAUST), OUTSIDE AIR AND VENTILATION SYSTEMS DUCTWORK SHALL BE GALVANIZED SHEET METAL, TWO (2") INCH STATIC PRESSURE CLASSIFICATION, SEAL CLASS "C". RETURN AIR DUCTWORK TO BE ONE (1") INCH CLASSIFICATION.
- THE DUCTWORK SHALL BE CONSTRUCTED TO THE PRESSURE CLASS WHICH EXCEEDS THAT SYSTEM'S PRESSURE.
- 4. PROVIDE AIRTIGHT, GASKETED ACCESS PANELS FOR CLEANING AT ALL CHANGES IN DIRECTION AND AT THE BASE OF ALL RISERS AND EVERY 20 FEET IN HORIZONTAL RUNS.
- 5. BOTTOM OF ACCESS PANELS SHALL BE AT LEAST 1-1/2" ABOVE THE BOTTOM OF THE DUCT. ASCERTAIN THAT ALL ACCESS PANELS ARE INDEED IN ACCESSIBLE LOCATIONS.
- 7. FURNISH AND INSTALL UL LISTED FIRE DAMPERS AND ACCESS DOORS AT ALL DUCT PENETRATIONS OF WALLS, FLOORS, PARTITIONS, ETC., THAT ARE REQUIRED TO HAVE A FIRE RESISTANCE RATING. FIRE DAMPERS, SLEEVES, ACCESS DOORS, ETC., SHALL BE CONSTRUCTED AND INSTALLED IN CONFORMANCE TO THE MANUFACTURER'S INSTRUCTIONS, NFPA 90A AND THE BUILDING OFFICIAL.
- D. INSULATION SYSTEMS: 1. DUCT SYSTEM INSULATION:

A. ACOUSTICAL LINING, WHERE SHOWN, SHALL BE NOMINAL 1" THICK FIBERGLASS DUCT LINER, UNLESS OTHERWISE INDICATED.

#### PART 3 - EXECUTION

3.1 FIRE STOPS

A. ALL PENETRATIONS THROUGH FIRE RATED WALLS, CEILINGS OR FLOORS IN WHICH PIPES OR DUCTS PASS SHALL BE SEALED WITH A UL APPROVED FIRE-STOP FITTING CLASSIFIED FOR AN HOURLY RATING EQUAL TO THE RATING OF THE WALL, CEILING OR FLOOR.

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

3.3 BALANCING AIR AND WATER SYSTEMS

- A. THIS CONTRACT IS FOR ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR THE AIR AND WATER SYSTEMS
- B. AIR SYSTEMS TO BE BALANCED INCLUDE AIR CONDITIONING, MAKE-UP AND EXHAUST SYSTEMS. BALANCING SHALL INCLUDE REBALANCING (ADJUSTING OF SHEAVES AND REPLACING BELTS AND MOTORS AS INDICATED) OF EXHAUST FANS, ROOFTOP AIR CONDITIONING UNITS AND MAKE-UP AIR UNITS AS REQUIRED TO PROVIDE AIR FLOWS SPECIFIED. THE BALANCING CONTRACTOR SHALL SECURE A SET OF AS-BUILT DUCTWORK PLANS PRIOR TO COMMENCING WORK.
- C. THE BALANCING CONTRACTOR SHALL ATTEND A COORDINATION MEETING WITH THE HVAC AND ATCS CONTRACTORS TO COORDINATE SENSOR LOCATIONS. D. UPON COMPLETION OF ALL TESTS AND BALANCING OPERATIONS, THE CONTRACTOR SHALL SUBMIT FIVE (5) COPIES OF THE CERTIFIED BALANCING REPORT TO THE GENERAL CONTRACTOR.
- THIS REPORT SHALL INCLUDE ALL DATA FOR EACH OF THE AIR AND WATER SYSTEMS.
- E. BALANCING OF SYSTEMS SHALL BE FOLLOWED UP AFTER BUILDING IS OCCUPIED; ANY REBALANCING SHALL BE DONE AS REQUIRED TO MEET OCCUPANT'S REQUIREMENTS WITHOUT EXTRA CHARGE

END OF SECTION

2. FLEXIBLE DUCTS TO AIR OUTLETS SHALL BE UL CLASS 1 CONNECTORS WITH AIRTIGHT CORE, GALVANIZED WIRE HELIX AND PRE-INSULATED WITH ONE (1") INCH, 3/4 PCF FIBERGLASS WITH

NOTE: WHERE THE STATIC PRESSURE OR MAXIMUM VELOCITY OF A SUPPLY, RETURN OR EXHAUST DUCT SYSTEM EXCEEDS THE STANDARD PRESSURE CLASSIFICATIONS GIVEN ABOVE,

6. INSTALL ADEQUATE BALANCING; E.G., VOLUME DAMPERS, EXTRACTORS, ETC., AS REQUIRED TO BALANCE EACH SYSTEM TO ITS DESIGN AIRFLOWS.

![](_page_19_Picture_121.jpeg)

SWITCHES					
SYMBOL	DESCRIPTION				
S	SINGLE-POLE SWITCH				
<b>S</b> 3	3-WAY SWITCH				
<b>S</b> 4	4-WAY SWITCH				
SP	SINGLE-POLE SWITCH WITH PILOT LIGHT				
SD	SINGLE-POLE DIMMER SWITCH				
<b>S</b> D3	3-WAY DIMMER SWITCH				
S⊤	MANUAL STARTER WITH THERMAL OVERLOAD PROTECTION				
<b>S</b> O	OCCUPANCY SENSOR WALL SWITCH				
S∨	VACANCY SENSOR WALL SWITCH				
DL	DAYLIGHT SENSOR - WALL MOUNT				
	DAYLIGHT SENSOR - CEILING MOUNT				
OS <sub>P,U</sub>	CEILING MOUNTED OCCUPANCY SENSOR; SUB-LETTER INDICATES TYPE - REFER TO SPECIFICATIONS				
OS <sub>P,U</sub>	WALL MOUNTED OCCUPANCY SENSOR; SUB-LETTER INDICATES TYPE - REFER TO SPECIFICATIONS				
PP	POWER PACK FOR OCCUPANCY SENSOR				
DESa	LIGHTING CONTROL SYSTEM - DOOR ENTRY STATION - REFER TO SPECIFICATIONS AND / OR DETAILS FOR ADDITIONAL INFORMATION				
С	CONTACTOR, COMPLETE WITH NEMA ENCLOSURE				
●	PUSHBUTTON SWITCH				
	EMERGENCY GAS SHUT-OFF SWITCH				
Юкд	GAS MASTER EMERGENCY SHUT-OFF / KEYED RESET SWITCH				
R	SOLENOID VALVE				
	150018				

### SPECIAL SYSTEMS

YMBOL	DESCRIPTION
V	COMBINATION DATA / TELEPHONE OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE
$\nabla$	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE
$\mathbf{\nabla}^{a}$	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE. SUBLETTER "a" INDICATES OUTLET TO BE MOUNTED 6" ABOVE COUNTER TOP OR AT 48" AFF
$\mathbf{\nabla}^{b}$	DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED UP TO ABOVE FINISHED CEILING, INCLUDING DRAG LINE. SUBLETTER "b" INDICATES OUTLET TO BE MOUNTED IN ARCHITECTURAL MILLWORK
WA	CEILING MOUNTED DATA OUTLET WITH BACKBOX AND EMPTY CONDUIT STUBBED TO ACCESSIBLE CEILING, INCLUDING DRAG LINE (WA INDICATE WIRELESS ACCESS POINT)
$\langle T \rangle$	TV CABLE OUTLET, COORDINATE MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL ELEVATIONS
IC	PA / SOUND SYSTEM HANDSET OR INTERCOM STATION
EPC	EMERGENCY CALL-FOR-AID PULL CORD SWITCH
E <sub>PB</sub>	EMERGENCY CALL-FOR-AID PUSHBUTTON SWITCH
E	EMERGENCY CALL-FOR-AID AUDIO / VISUAL INDICATING UNIT
Н	VERTICAL LADDER CABLE RACK
DF,W	FLUSH COMMUNICATION OUTLET WITH LFMC WHIP CONNECTION TO FURNITURE PARTITION SYSTEM (WALL OR FLOOR)
	1500

### NORMAL LIGHTING

DESCRIPTION (SUB-LETTER INDICATES FIXTURE TYPE)
CEILING MOUNTED DOWNLIGHT FIXTURE
WALL-MOUNTED FIXTURE
CEILING-MOUNTED 2'x4' LIGHT FIXTURE
DUAL BALLAST 2'x4' CEILING-MOUNTED LIGHT FIXTURE
CEILING-MOUNTED 1'x4' LIGHT FIXTURE
CEILING-MOUNTED 6"x4' LIGHT FIXTURE
WALL-MOUNTED LINEAR LIGHT FIXTURE
CEILING-MOUNTED 2'x2' LIGHT FIXTURE
LINEAR CONTINUOUS LIGHT FIXTURE
WALL WASHER LIGHT FIXTURE
POWER LIGHT TRACK WITH QUANTITY OF FIXTURES AS INDICATED ON PLANS

### FIRE ALARM

SYMBOL	DESCRIPTION
\$	FIRE ALARM SMOKE DETECTOR
<b>(H</b> <sub>200</sub>	HEAT DETECTOR, 135° FIXED RATE OF RISE. HEAT RATING INDICATED BY NOTATION OTHER THAN 135°
Ŝ₽	DUCT MOUNTED SMOKE DETECTOR
©c	COMBINATION SMOKE DETECTOR WITH CARBON MONOXIDE DETECTOR
RIL	FIRE ALARM REMOTE INDICATOR LIGHT FOR DETECTOR
RTS	REMOTE DUCT SMOKE DETECTOR TEST SWITCH / INDICATOR
AIM	ADDRESSABLE INTERFACE MODULE
ΕQ	FIRE ALARM VISUAL INDICATING UNIT SUB-LETTER "#" INDICATES SPECIAL CANDELA RATING
FNs	FIRE ALARM AUDIO / VISUAL INDICATING UNIT WITH SPEAKER: SUB-LETTER "H" INDICATES HORN SUB-LETTER "CH" INDICATES CHIME SUB-LETTER "HO" INDICATES HIGH AMBIENT AUDIO OUTPUT SUB-LETTER "A" AUDIBLE ONLY SUB-LETTER "C" INDICATES CEILING MOUNTED SUB-LETTER "#" INDICATES SPECIAL CANDELA RATING
FB	FIRE ALARM BELL / GONG
F	MANUAL FIRE ALARM PULL STATION
FS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM FLOW SWITCH
SS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM SUPERVISORY SWITCH
PS	FIRE ALARM CONNECTION TO SPRINKLER SYSTEM PRESSURE SWITCH
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANNUNCIATOR PANEL
SD	SMOKE DAMPER OR FIRE / SMOKE DAMPER
K	FIREFIGHTER'S KNOX BOX
	180817

### POWER DEVICES

SYMBOL	DESCRIPTION
	ELECTRICAL PANEL 208 / 120 VOLT
	SPECIAL-PURPOSE ELECTRICAL PANEL OR EQUIPMENT CABINET
$\boxtimes$	MAGNETIC STARTER
F	FUSED DISCONNECT SWITCH
$\boxtimes^{\!$	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH
Ø	ELECTRIC MOTOR
VFD	VARIABLE FREQUENCY DRIVE
J	JUNCTION BOX
R	RELAY
TxEF	ELECTRONIC FAUCET / FLUSH VALVE CONTROL TRANSFORMER
TxTP	TRAP PRIMER SOLENOID TRANSFORMER
J <sub>PS</sub>	MOTORIZED PROJECTION SCREEN POWER CONNECTION BOX
J <sub>MS</sub>	MOTORIZED SHADE POWER CONNECTION BOX
J <sub>FC</sub>	FAN COIL UNIT POWER CONNECTION BOX
JHD	ELECTRIC HAND DRYER POWER CONNECTION BOX
TP	COMBINATION POWER / DATA SERVICES POLE
PF,W	FLUSH POWER OUTLET WITH LFMC WHIP CONNECTION TO FURNITURE PARTITION SYSTEM (WALL OR FLOOR)

### EMERGENCY LIGHTING

SYMBOL	DESCRIPTION (SUB-LETTER INDICATES FIXTURE TYPE)				
$\bigcirc$	CEILING MOUNTED DOWNLIGHT FIXTURE ON EMERGENCY				
•	CEILING-MOUNTED LIGHT FIXTURE ON EMERGENCY				
•	CEILING MOUNTED 1'X4' LIGHT ON EMERGENCY				
	CEILING MOUNTED 6"X4' LIGHT ON EMERGENCY				
⊗ н⊗	SINGLE-FACED CEILING OR WALL-MOUNTED, EXIT SIGN WITH CHEVRONS AS INDICATED ON PLANS				
• •	DOUBLE-FACED CEILING OR WALL-MOUNTED, EXIT SIGN WITH CHEVRONS AS INDICATED ON PLANS				
$\uparrow  $	EXIT SIGN DIRECTIONAL ARROWS				
	CEILING OR WALL-MOUNTED, SELF CONTAINED EMERGENCY LIGHT UNIT; FIXTURE SHALL MONITOR LIGHTING CIRCUIT IN AREA				
Y YY	SINGLE OR DUAL HEAD, REMOTE EMERGENCY LIGHT				

•

SYMBOL	DESCRIPTION				
A	AMPERE				
AFF	ABOVE FINISHED FLOOR				
AFG	ABOVE FINISHED GRADE				
AHU	AIR HANDLING UNIT				
С	CONDUIT				
CATV	CABLE TELEVISION				
C/B	CIRCUIT BREAKER				
CCTV	CLOSED CIRCUIT TELEVISION				
CIR	CIRCUIT				
CUH	CABINET UNIT HEATER				
СТ	CABLE TRAY				
ER	EXISTING TO REMAIN				
EF	EXHAUST FAN				
EM	EMERGENCY				
EMT	ELECTRIC METALLIC TUBING				
EWC	ELECTRIC WATER COOLER				
EWH	ELECTRIC WATER HEATER				
F	FUSED				
FA	FIRE ALARM				
FLA	FULL LOAD AMPS				
FMC	FLEXIBLE METALLIC CONDUIT				
FUT	FUTURE				
G / GND	GROUND				
GFI / GFCI	GROUND FAULT INTERRUPTER				
LFMC	LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT				
MAU	MAKE-UP AIR UNIT				
MCA	MINIMUM CIRCUIT AMPACITY				
MD	MOTORIZED DAMPER				
NC	NORMALLY CLOSED				
NF	NON-FUSED				
NL	NIGHT LIGHT				
NO	NORMALLY OPEN				
Р	POLE (SPACE IN PANELBOARD)				
PE	PRIMARY ELECTRIC SERVICE				
PVC	POLYVINYL CHLORIDE CONDUIT				
RE	REMOVE EXISTING				
REF	REFRIGERATOR				
RMC	RIGID METALLIC CONDUIT				
RTU	ROOFTOP UNIT				
SD	SMOKE DAMPER				
SE	SECONDARY ELECTRIC SERVICE				
S&P	SPACE AND PROVISION				
Т	TELEPHONE SERVICE				
ТСР	TEMPERATURE CONTROL PANEL				
TV	TELEVISION				
ТХ	TRANSFORMER				
TYP	TYPICAL				
UNV	UNIVERSAL				
VAC	VOLTS AC				
W	WIRE OR WATTS				
WA	WIRELESS ANTENNA				
WG	WIRE GUARD				
WM	SURFACE MOUNTED RACEWAY				

SECURITY / ACCESS CONTROL					
SYMBOL	DESCRIPTION				
	DOOR / WINDOW CONTACT				
	VIDEO CAMERA LOCATION				
Jc	JUNCTION BOX FOR FUTURE CAMERA; 3/4"C TO IDF / MDF				
CR	CARD READER / PROXIMITY READER				
KP	KEY PAD				
●	PUSH BUTTON FOR DOOR RELEASE				
RE	REQUEST TO EXIT / ENTER DEVICE				
ML	MAGNETIC LOCK				
ES	ELECTRIC STRIKE				
EL	ELECTRIC LOCK				
EH	ELECTRIC HINGE				
EDO	ELECTRIC DOOR OPERATOR				
EDOMH	ELECTRIC DOOR OPERATOR WITH SMOKE DOOR MAGNETIC HOLD OPEN				
HOEDO	ELECTRIC DOOR OPERATOR PUSH PLATE ACTUATOR				

### ABBREVIATIONS

ONE-LINE				
SYMBOL	DESCRIPTION			
4	CURRENT TRANSFORMER			
_\_	SWITCH			
	CIRCUIT BREAKER			
- <b> </b> 1	GROUND			
-x-	THERMAL OVERLOAD			
©	RELAY / COIL			
ļ	MAIN CIRCUIT BREAKER PANELBOARD			
XX XX	SHORT CIRCUIT DATA POINT / FAULT CURRENT VALUE			
M	UTILITY METER			
	OWNERS POWER METER			
11	N/O CONTACT			
N	N.C. CONTACT			
$\mathbf{\bullet}$	POINT OF CONNECTION BETWEEN EXISTING AND NEW WORK			
×	MAIN LUG ONLY PANELBOARD			
XXXAF XXXAT	CIRCUIT BREAKER WITH AMP FRAME OVER AMP TRIP			
	POINT OF CONNECTION / WIRE TAP			
	150918			

### RECEPTACLES

SYMBOL	DESCRIPTION					
φ	DUPLEX RECEPTACLE. COORDINATE LOCATION WITH ARCHITECT					
₽ª	DUPLEX RECEPTACLE; SUBLETTER "a" INDICATES RECEPTACLE TO BE MOUNTED 6" ABOVE COUNTER TOP OR 48" AFF					
₽ <sup>b</sup>	DUPLEX RECEPTACLE; SUBLETTER "b" INDICATES MOUNTED IN ARCHITECTURAL MILLWORK					
#	DOUBLE DUPLEX RECEPTACLE. COORDINATE LOCATION WITH ARCHITECT					
₽ª	DOUBLE DUPLEX RECEPTACLE; SUBLETTER "a" INDICATES RECEPTACLE TO BE MOUNTED 6" ABOVE COUNTER TOP OR 48"AFF					
₽ <sup>b</sup>	DOUBLE DUPLEX RECEPTACLE; SUBLETTER "b" INDICATES MOUNTED IN ARCHITECTURAL MILLWORK					
P	DUPLEX RECEPTACLE-ONE OUTLET SWITCHED					
Φυ	DUPLEX RECEPTACLE CONTROLLED BY AUTOMATIC DEVICE; PROVIDE ANNOTATION ENGRAVED ON RECEPTACLE BODY					
•	FLUSH FLOOR MOUNTED DUPLEX RECEPTACLE					
	FLUSH FLOOR MOUNTED DOUBLE DUPLEX RECEPTACLE					
φ	SPECIAL-PURPOSE OUTLET. AMPERAGE AND VOLTAGE AS INDICATED ON PLANS. CONTRACTOR TO VERIFY CONNECTION / NEMA CONFIGURATION REQUIREMENTS WITH EQUIPMENT BEING FURNISHED					
Фсн	DUPLEX RECEPTACLE WITH USB CHARGER PORT					
<b>₽</b> <sup>wp</sup>	DUPLEX RECEPTACLE WITH WEATHER-PROOF IN-USE HOUSING					
₽ <sup>GFI</sup>	GROUND FAULT CIRCUIT INTERRUPTER-STYLE DUPLEX RECEPTACLE					
₽ <sup>™</sup>	DUPLEX RECEPTACLE FOR TELEVISION. COORDINATE MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL ELEVATIONS					
<b>₽</b> <sup>TR</sup>	DUPLEX RECEPTACLE - TAMPER RESISTANT					
<u>• • •</u>	SURFACE RACEWAY WITH OUTLETS AS INDICATED ON PLANS, MOUNTED AT 18" AFF, UNLESS OTHERWISE NOTED					
	SURFACE MOUNTED RACEWAY WITH FEED POINT					

### WIRING

SYMBOL	DESCRIPTION
	BRANCH CIRCUIT WIRING
	BRANCH CIRCUIT SWITCHED WIRING
0	CONDUIT UP
C	CONDUIT DOWN
OR	HOME RUN. 3/4" CONDUIT, 2#12 AND 1#12 GROUND, UNLESS OTHERWISE NOTED. NOTE: HOME RUN SHALL BE FROM FIRST ELECTRICAL DEVICE BACKBOX IN CIRCUIT TO ELECTRICAL PANEL
	150918

### LEGEND NOTE

THESE LEGENDS AND ABBREVIATIONS DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

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### GENERAL SITE ELECTRICAL NOTES

- A. CONTRACTOR SHALL VERIFY ALL EXISTING SERVICE LOCATIONS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY COMPANY CHARGES.
- COORDINATE ALL SERVICE ENTRANCE WORK WITH OWNER AND UTILITY COMPANIES. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF EQUIPMENT.
- IF AREA IS BEING EXCAVATED, ABANDONED ELECTRICAL SHALL BE REMOVED. (REMOVE CONDUCTORS AND CONDUIT). IF NO SITE WORK IS BEING DONE IN THESE AREAS, REMOVE CONDUCTORS AND ABANDON CONDUIT IN PLACE AND CAP.
- SEAL ALL POWER CONDUITS WITH CABLES AT THE LAST STRUCTURE PRIOR TO CONDUITS ENTERING A BUILDING AND WHERE CONDUITS ENTER A BUILDING WITH CONDUIT SEALING BUSHINGS PER SPECIFICATIONS AND DETAILS. SEAL ALL SPARE POWER CONDUITS WITH BLANK DUCT PLUGS EQUAL TO TYCO ELECTRONICS "JACKMOON" OR EQUAL.

### **COMMUNICATIONS GENERAL NOTES**

- DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH ALL OTHER TRADES BEFORE STARTING CONSTRUCTION.
- COORDINATE WITH CONSTRUCTION MANAGER. OTHER TRADES AND THE OWNER DURING ALL PHASES. ALL COMMUNICATIONS MUST BE MAINTAINED AT ALL TIMES UNLESS PHASING REQUIRES OTHERWISE. INTERRUPTIONS AND SHUTDOWNS SHALL BE SCHEDULED IN ADVANCE AND APPROVED FOR TIME TO COMPLETE WORK. TAG CABLES TO REMAIN DURING ALL PHASES TO PROPERLY KEEP THE TELECOMMUNICATIONS ACTIVE. UPON COMPLETION OF CONSTRUCTION, ANY CABLES THAT ARE NOT ACTIVE OR TAGGED TO REMAIN FOR FUTURE SHALL BE REMOVED PER THE NEC.
- BEFORE CONSTRUCTION CAN BEGIN IN ANY COMMUNICATIONS EQUIPMENT ROOM THE CONTRACTOR SHALL COORDINATE LAYOUT LOCATIONS AND CLEARANCES OF ALL EQUIPMENT WITH THE OWNER FOR APPROVAL
- REFER TO THE ARCHITECTURAL DRAWINGS FOR ALL WALL MOUNTED AND FLOOR MOUNTED DEVICES. COORDINATE WITH ARCHITECT ON COLORS. CONTACT ARCHITECT FOR CLARIFICATION OF MOUNTING REQUIREMENTS, IF INFORMATION IS NOT CONTAINED IN THESE DRAWINGS
- REFER TO REFLECTIVE CEILING PLANS FOR FLUSH MOUNTED CEILING DEVICES.
- TELECOMMUNICATIONS EQUIPMENT ROOMS SHALL HAVE MINIMUM 3/4" A/C QUALITY, VOID FREE, FIRE RATED PLYWOOD BACKBOARDS ON WALLS, MOUNTED 6" AFF, AS SHOWN ON PART PLANS. PAINT ALL SIX SIDES WITH TWO COATS OF MATTE WHITE (OR COLOR BY OWNER) FIRE RETARDANT PAINT.
- COORDINATE PROPER GROUNDING AND BONDING OF ALL APPLICABLE EQUIPMENT WITH BCT TO THE TGB AND THE TMGB PER DIVISION 27 SPECIFICATIONS, ANSI/TIA-607-C AND THE NEC.
- PROVIDE SEPARATION BETWEEN RACEWAYS, CABLES, AND OTHER SOURCES OF EMI PER ANSI/TIA-569-D.
- ELBOW RADIUS FOR RACEWAYS SMALLER THAN 2" TO BE SIX (6) TIMES THE RACEWAY DIAMETER. ELBOW RADIUS FOR CONDUITS 2" OR LARGER TO BE TWELVE (12) TIMES THE RACEWAY DIAMETER
- ALL EMPTY RACEWAYS SHALL BE PROVIDED WITH A NYLON PULL STRING (PLENUM RATED IF IN A PLENUM SPACE).
- COORDINATE PROPER METHODS FOR PENETRATIONS WITH FIRESTOPPING AS REQUIRED THROUGH FIRE/SMOKE RATED CONSTRUCTION PER DIVISION 07 SPECIFICATIONS. NO PENETRATIONS ARE PERMITTED INTO ANY STAIRWELLS EXCEPT SYSTEMS SERVING THAT STAIRWELL
- COMMUNICATIONS CONDUITS AND CABLING FOR SERVICE ENTRANCE SHALL BE PROVIDED PER SITE UTILITY DRAWINGS, ELECTRICAL POWER DRAWINGS AND DIVISION 26 SPECIFICATIONS.
- COORDINATE SERVICE PROVIDER DEMARCATION POINTS WITH CONSTRUCTION MANAGER AND
- LADDER RACKS, CONDUITS, D-RINGS ETC. FOR CABLE SUPPORT IN ANY COMMUNICATIONS EQUIPMENT ROOM SHALL BE PROVIDED PER PLANS AND DIVISION 27 SPECIFICATIONS.

### GENERAL ELECTRICAL DEMOLITION NOTES

- REMOVE ALL EXISTING ELECTRICAL EQUIPMENT WITHIN DESIGNATED AREA, EXCEPT WHERE MARKED OTHERWISE, i.e. LIGHTING, SWITCHES, OUTLETS, PANELBOARDS, ASSOCIATED WIRING BACK TO SOURCE OR TO LAST ACTIVE DEVICE, CONDUIT, ETC. IN PREPARATION FOR NEW WORK. THIS WORK INCLUDES COMPLETE DEMO AND IS NOT LIMITED TO THE EQUIPMENT SHOWN ON DEMO PLANS.
- REMOVE ALL EXISTING LOW VOLTAGE SYSTEMS AND EQUIPMENT WITHIN DESIGNATED AREA. INCLUDING BUT NOT LIMITED TO, TELEPHONE, DATA, TV, A/V, P.A., CLOCK AND SECURITY SYSTEMS (INCLUDING OUTLETS, ETC. AND ASSOCIATED WIRING) BACK TO SOURCE OR TO LAST ACTIVE DEVICE.
- REMOVE EXISTING FIRE ALARM SYSTEM IN AREA DESIGNATED INCLUDING BUT NOT LIMITED TO FIRE ALARM DEVICES, WIRING, CONDUIT, BOXES, PANELS, ETC. COORDINATE REMOVAL WORK WITH INSTALLATION OF NEW FIRE ALARM SYSTEM SUCH THAT AN OPERATIONAL FIRE ALARM SYSTEM IS MAINTAINED THROUGHOUT PERIODS OF BUILDING OCCUPATION. COORDINATE ANY SERVICE SHUT-DOWN WITH LOCAL FIRE OFFICIAL AND OWNER. PROVIDE FIRE WATCH AS REQUIRED.
- DISCONNECT AND REMOVE EXISTING WIRING, CONDUIT, BOXES, ETC. SERVING ALL EQUIPMENT BEING REMOVED BY MECHANICAL AND OTHER TRADES. REFER TO PLUMBING, MECHANICAL AND ARCHITECTURAL DRAWINGS FOR COORDINATION OF REQUIRED WORK. REMOVALS SHALL BE BACK TO SOURCE PANEL COMPLETE.
- EXISTING ELECTRICAL ITEMS THAT ARE BEING DISCONNECTED AND REMOVED AND NOT BEING REUSED SHALL BE DISPOSED OF PROPERLY.
- ALL ABANDONED ELECTRICAL WIRING AND DEVICES SHALL BE REMOVED.
- G. IF CONTINUITY OF WIRING TO EXISTING FLECTRICAL ITEMS IS INTERRUPTED BY REMOVAL OF DEVICES, CONTRACTOR SHALL INSTALL ALL NECESSARY WIRING AND RACEWAY TO ENSURE THE CONTINUITY OF CIRCUITRY IN OTHER AREAS.
- WIRING FOR ITEMS BEING REMOVED SHALL BE REMOVED BACK TO POWER SOURCE OR LAST н DEVICE TO REMAIN ACTIVE UNLESS NOTED OTHERWISE.
- NOTIFY CONSTRUCTION MANAGER OR GENERAL CONTRACTOR OF OPENINGS CAUSED BY REMOVAL OF EXISTING EQUIPMENT NOT BEING REPLACED. ENSURE THE PATCHING IS COMPLETE.
- REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL RELATED WORK.
- ALL EXISTING EXPOSED RACEWAY THAT IS SERVING DEVICES IN FINISHED AREAS THAT ARE TO REMAIN SHALL BE REMOVED AND REPLACED WITH NEW CONCEALED CONDUIT/RACEWAY AND CONDUCTORS TO SERVE DEVICES.
- INSTALL BLANK COVER PLATES ON RECESSED OUTLET BOXES ABANDONED UNDER THIS CONTRACT IN WALLS THAT ARE TO REMAIN.
- WHERE POWER AND TEL/DATA OUTLETS EXIST ON WALLS TO BE FURRED OUT, THE ELECTRICAL CONTRACTOR SHALL REMOVE AND REINSTALL DEVICES AND PLATES AND PROVIDE BOX EXTENSIONS AS NECESSARY TO EXTEND THE OUTLETS TO THE NEW SURFACES.
- REMOVE DEVICE PLATES (AND DEVICES WHERE NECESSARY) TO ACCOMMODATE NEW WALL FINISHES. REINSTALL COVER PLATES AND DEVICES AFTER NEW FINISHES ARE COMPLETE.

### GENERAL ELECTRICAL NOTES

- ALL HOMERUNS/CIRCUITS TO BE 2#12, 1#12G., 3/4"C TO A 20A-1P CIRCUIT BREAKER IN DESIGNATED PANEL, UNLESS NOTED OTHERWISE. NUMBERS SHOWN AT EACH DEVICE/HOMERUN REPRESENT CIRCUIT NUMBER IN PANELBOARD.
- B. WIRE AND RACEWAY SIZES INDICATED ON HOMERUNS/CIRCUITS SHALL BE CONTINUOUS FOR ENTIRE LENGTH. UNLESS NOTED OTHERWISE
- C. ALL WIRING (CONDUITS, ETC.) TO BE CONCEALED. NO SURFACE WIRING SHALL BE INSTALLED IN FINISHED AREAS. THIS CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CHANNELING REQUIRED OF EXISTING WALLS AND FLOORS TO ACCOMMODATE NEW WIRING. SEE PATCHING SPECIFICATIONS, FLOOR PLANS AND ELEVATIONS FOR ADDITIONAL INFORMATION ON ARCHITECTURAL AND WIRING ROUTING.
- D. ALL WIRING ABOVE CEILING THAT IS NOT IN CONDUIT AND IS LOCATED IN A PLENUM SPACE SHALL BE PLENUM RATED. REFER TO MECHANICAL PLANS FOR PLENUM AREAS.
- ELECTRICAL CONDUITS, WIRING, BOXES, ETC. SHALL NOT PENETRATE STAIR ENCLOSURE, UNLESS THEY ARE FEEDING DEVICES LOCATED WITHIN THE STAIR ENCLOSURE.
- PROVIDE ELECTRICAL OUTLET PLATE GASKET SEALS AT RECEPTACLES, SWITCHES AND OTHER ELECTRICAL BOXES ON EXTERIOR WALLS AND INTERIOR WALLS BETWEEN CONDITIONED AND NON-CONDITIONED SPACES.
- ALL INDIVIDUAL OR GENERAL PURPOSE BRANCH 120 VOLT CIRCUITS OVER 100'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE (i.e. FROM #12AWG TO #10AWG) AND CIRCUITS OVER 170'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES (i.e. FROM #12AWG TO #8AWG) UNLESS NOTED OTHERWISE.
- ALL INDIVIDUAL OR GENERAL PURPOSE BRANCH 277 VOLT CIRCUITS OVER 230'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED ONE WIRE SIZE (i.e. FROM #12AWG TO #10AWG) AND CIRCUITS OVER 380'-0" IN CONDUCTOR LENGTH SHALL BE INCREASED TWO WIRE SIZES (i.e. FROM #12AWG TO #8AWG,) UNLESS NOTED OTHERWISE.
- SEAL ALL CONDUITS AT THE LAST STRUCTURE PRIOR TO CONDUITS ENTERING A BUILDING PER SPECIFICATIONS AND DETAILS. ALL SPARE CONDUITS SHALL HAVE NYLON PULL STRING AND FOOTAGE TAPE.
- RACEWAY AND WIRING INDICATED ON DRAWINGS ARE RECOMMENDATIONS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL ROUTING.
- ALTHOUGH ALL FEEDER AND BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SPECIFICALLY SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE FEEDER AND BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.

### LEGEND NOTE

THESE LEGENDS AND ABBREVIATIONS DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS DEFINED ARE NECESSARILY USED ON THIS PROJECT.

# D. WALL CAVITIES.

- ASSEMBLY
- SYSTEM WIRING.
- G.
- CONSTRUCTION.

- HOURS IN ADVANCE.
- OF THIS PROJECT.

- G

- CIRCUIT.
- INDICATED.

### **GENERAL POWER NOTES**

COORDINATE EXACT LOCATION OF ELECTRICAL DEVICES SUCH AS RECEPTACLES, SWITCHES, FIRE ALARM DEVICES, ETC. WITH ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS PRIOR TO START OF WORK, REQUEST CLARIFICATIONS FROM ARCHITECT PRIOR TO INSTALLATION.

ANY RECEPTACLE LOCATED WITHIN 6'-0" OF EDGE OF SINK SHALL BE A GFI RECEPTACLE OR PROTECTED BY A GFI CIRCUIT BREAKER.

UNLESS OTHERWISE INDICATED, REFER TO MOTOR CIRCUIT SCHEDULE FOR ELECTRICAL REQUIREMENTS OF ALL MECHANICAL (HVAC, PLUMBING, FIRE PROTECTION, ETC.) EQUIPMENT REFER TO DRAWINGS FOR EACH TRADE FOR EXACT LOCATION OF EQUIPMENT.

DO NOT INSTALL OUTLETS BACK TO BACK. PROVIDE MINIMUM 24 INCH HORIZONTAL SPACING IN FIRE RATED WALLS. MOUNT LOW VOLTAGE AND POWER OUTLETS IN DIFFERENT STUD

WHEN THE COMBINING OF CIRCUITS OR HOMERUNS IS PERMITTED ELSEWHERE IN THE CONTRACT DOCUMENTS, RACEWAYS SHALL BE LIMITED TO SIX CURRENT CARRYING CONDUCTORS (THREE PHASE AND THREE NEUTRALS) PLUS GROUNDING CONDUCTORS UNLESS OTHERWISE INDICATED. PROVIDE A DEDICATED NEUTRAL FOR EACH SINGLE PHASE CIRCUIT, UNLESS "OVERSIZED" NEUTRAL IS PROVIDED AS PART OF MANUFACTURED ASSEMBLY. IF MANUFACTURED ASSEMBLIES ARE PROVIDED WITH "OVERSIZED" NEUTRALS. PROVIDE MATCHING "OVERSIZED" NEUTRALS FROM SOURCE PANEL TO MANUFACTURED

PROVIDE NYLON PULL STRING IN ALL EMPTY CONDUIT SYSTEMS FOR USE IN INSTALLING

CONTACT OWNER IT DEPARTMENT FOR COORDINATION OF EXACT LOCATION OF ALL TELECOMMUNICATION OUTLETS, SECURITY DEVICES, VIDEO OUTLETS, AMPLIFIER, SPEAKERS, ETC. PROVIDE ALL REQUIRED RACEWAY FOR THESE SYSTEMS FOR A COMPLETE INSTALLATION. SEE ELECTRICAL, AND ARCHITECTURAL SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS.

COORDINATE EXACT LOCATION OF JUNCTION BOX FOR EQUIPMENT WHICH IS FURNISHED BY OWNER OR OTHERS WITH EQUIPMENT SUPPLIER PRIOR TO CONSTRUCTION. PROVIDE WIRING FROM JUNCTION BOX TO EQUIPMENT CONNECTION AS REQUIRED.

COORDINATE EXACT LOCATION OF MODULAR SYSTEMS FURNITURE POWER AND DATA/TELEPHONE ENTRANCE LOCATIONS WITH FURNITURE SUPPLIER PRIOR TO

WIRING INDICATED BY CIRCUIT NUMBER SYMBOL SHALL INCLUDE A NEUTRAL WHEN THE LOAD SERVED HAS PROVISIONS FOR, OR REQUIRES A NEUTRAL. TYPICALLY, ALL FEEDERS AND BRANCH CIRCUITS WILL REQUIRE A NEUTRAL, EXCEPT MOST MOTOR CIRCUITS.

### **GENERAL FIRE ALARM NOTES - NEW**

FIRE ALARM SYSTEM WIRING SHALL BE IN ACCORDANCE WITH NEC ARTICLE 760 AND AS RECOMMENDED BY THE MANUFACTURER OF THE FIRE ALARM SYSTEM. ALL WIRES SHALL BE COLOR CODED. NUMBER AND SIZE OF CONDUCTORS SHALL BE AS RECOMMENDED BY THE FIRE ALARM SYSTEM MANUFACTURER, BUT NOT LESS THAN #18 AWG FOR INITIATING DEVICE CIRCUITS AND #14 AWG FOR NOTIFICATION DEVICE CIRCUITS.

FIRE ALARM WIRING SHALL BE RUN IN 3/4" EMT MINIMUM; CONDUIT FILL SHALL NOT EXCEED 40% FILL. NEW DEVICES SHALL BE SECURELY AFFIXED TO BUILDING SURFACES.

NEW JUNCTION BOXES, PULL BOXES AND OUTLETS BOXES IN THE FIRE ALARM SYSTEM SHALL BE PAINTED RED. COVERS SHALL BE PAINTED RED AND IDENTIFIED WITH WHITE MARKINGS AS "FA" FOR JUNCTION BOXES. LETTERING SHALL BE MINIMUM OF 3/4" HIGH.

TEST EVERY NEW DEVICE AND OPERATION, INCLUDING TEST BY SIMULATION OF TROUBLE IN THE PRESENCE OF THE OWNER. NOTIFY THE OWNER AND INTERESTED PARTIES OF TEST 72

AS PART OF THE FIRE ALARM EQUIPMENT SUBMITTAL PACKAGE THE ELECTRICAL CONTRACTOR SHALL FURNISH BATTERY CALCULATIONS INDICATING ADDITIONAL BATTERY CAPACITY REQUIRED TO POWER ALL NEW FIRE ALARM SYSTEM DEVICES INCLUDED AS PART

THE FIRE ALARM SYSTEM DESCRIBED SHALL BE INSTALLED, TESTED AND DELIVERED TO THE OWNER IN FULLY OPERATIONAL AND FIRST-CLASS CONDITION BY AN AUTHORIZED MANUFACTURER'S FIRE ALARM SYSTEM AGENT ONLY. WORK ON THE FIRE ALARM SYSTEM SHALL INCLUDE ALL HARDWARE, RACEWAYS, INTERCONNECTING WIRING, SOFTWARE AND PROGRAMMING TO ACCOMPLISH THE REQUIREMENTS OF THIS CONTRACT. THE FIRE ALARM EQUIPMENT SUPPLIER SHALL HAVE A MINIMUM OF TEN (10) YEARS PREVIOUS EXPERIENCE WITH FACILITY OPERATIONS AND REQUIREMENTS.

REFER TO ELECTRICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

### GENERAL LIGHTING NOTES

REFER TO ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS FOR FINAL LOCATION OF ALL CEILING MOUNTED LIGHT FIXTURES.

REFER TO ARCHITECTURAL ELEVATIONS AND DETAILS FOR FINAL LOCATION OF WALL MOUNTED LIGHTING FIXTURES AND TASK LIGHTING.

REFER TO DRAWINGS FOR TYPICAL LIGHTING WIRING SCHEMATICS.

REFER TO DRAWINGS FOR LIGHTING FIXTURE SCHEDULE.

SWITCHING SHOWN ON PLANS DOES NOT SHOW SWITCH LEG/TRACER WIRE BETWEEN SWITCHES. PROVIDE ALL REQUIRED WIRING FOR SWITCHING OF LIGHTING.

ALL EXIT SIGNS AND AREA OF REFUGE SIGNS SHALL BE WIRED TO THE LINE SIDE OF LIGHTING CIRCUIT SERVING THE SAME AREA, SUCH THAT THEY HAVE CONTINUOUS ILLUMINATION, CHARGING AND AC CIRCUIT MONITORING.

LIGHTING FIXTURES NOTED WITH THE SUBSCRIPT 'NL' (NIGHT LIGHT) SHALL BE WIRED FOR CONTINUOUS NON-SWITCHED ILLUMINATION.

EMERGENCY BATTERY UNITS AND BATTERY BALLASTS SHALL BE WIRED AHEAD OF ANY SWITCHED LEGS ON LOCAL EMERGENCY LIGHTING BRANCH CIRCUIT SERVING THE SAME AREA, FOR CONTINUOUS CHARGING AND AC CIRCUIT MONITORING, AND SUCH THAT FIXTURE ILLUMINATES UPON FAILURE OF LOCAL POWER.

LIGHT FIXTURES IN MECHANICAL ROOMS ARE SHOWN FOR QUANTITY ONLY. COORDINATE LIGHT FIXTURE LOCATIONS WITH THE MECHANICAL EQUIPMENT, DUCTWORK, PIPING, ETC. IN MECHANICAL ROOM TO GIVE ADEQUATE WELL DISTRIBUTED ILLUMINATION LEVELS THROUGHOUT THE SPACE.

CONNECT UNDERCABINET LIGHTING TO LOCAL NON-COMPUTER BRANCH RECEPTACLE

A SWITCH IN A SPACE SHALL CONTROL LIGHTING IN THAT SPACE UNLESS OTHERWISE

![](_page_21_Picture_118.jpeg)

![](_page_22_Figure_0.jpeg)

26/

![](_page_22_Figure_1.jpeg)

![](_page_22_Figure_2.jpeg)

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	LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	CATALOG NO.	LAMPS	VOLTS	MOUNTING	DESCRIPTION	REMARKS
A	LITHONIA	2VTL2-20L-ADP-120-EZ1-LP840-DGA22FS/VT	2000 LUMEN 4K LED	120	RECESSED	2' x 2' LED TROFFER, LINEAR ACRYLIC DIFFUSER	DRYWALL CEILING ADAPTER TRIM KIT
A1	LITHONIA	2VTL4-60L-ADP-120-EZ1-LP840-EL14L	2000 LUMEN 4K LED	120	RECESSED	2' x 2' LED TROFFER, LINEAR ACRYLIC DIFFUSER	SIMILAR TO TYPE "A", WITH EMERGENCY BATTERY PACK
A2	LITHONIA	2VTL4-60L-ADP-120-EZ1-LP840-DGA24FS/VT	6000 LUMEN 4K LED	120	RECESSED	2' x 4' LED TROFFER, LINEAR ACRYLIC DIFFUSER	SIMILAR TO TYPE "A", WITH DRYWALL CEILING ADAPTER TRIM KIT
В	T-BAR LED	TBSL-MN-4-XX-D-U-W	445 LM/FT 4000K LED	120	RECESSED T-GRID	48" LONG, NARROW EXTRUDED ALUMINUM HOUSING, DIFFUSING LENS	FURNISH WITH 0-10V (DIM TO 10%) DRIVER. CONFIRM CEILING GRID TYPE
С	DAY-BRITE	LINCS100EL19935120CO SWHDIM	391 LUMENS (3500°K)	120	SURFACE	NOMINAL 24"O.A., LONG, 1" DEEP PROFILE, ALUMINUM HOUSING,TEXTURED ACRYLIC LENS, WHITE ANTI-MICROBIAL FINISH	UNDERCABINET LIGHT
X1	ISOLITE	EUN-EM-R-1C	LED	120	SURFACE	SINGLE FACE EXIT SIGN WITH BATTERY BACK-UP	MOUNTING, FACES AND CHEVRONS AS INDICATED ON PLANS

![](_page_23_Figure_3.jpeg)

![](_page_23_Figure_4.jpeg)

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	GAHM architecture GueenberryArcantMalk 195 Scott Swamp Road Farmington, CT 06032 qamarch.com
	Image: Constraint of the second stress of
$ \begin{array}{c} PAIR 4 \\ \\ T4 & R4 \\ \hline\\ \hline\\$	
7       8         7       8         W-BR       BR         PAIR 1       WHITE - BLUE/BLUE         T1       R1         PAIR 2       WHITE - ORANGE/ORANGE         T2       R2         PAIR 3       WHITE - GREEN/GREEN         T3       R3	Fair Haven Community Health Care Shoreline Family Health
PAIR 4 WHITE - BROWN/BROWN T4 R4	Branford, CT Project #: 2387
<u>NOTES:</u>	
<ol> <li>PROVIDE HORIZONTAL WIRE MANAGEMENT (SIZED AS SHOWN ON RACK LEVATION DETAILS) ABOVE AND BELOW EACH PATCH PANEL. SECURE CABLING WITH HOOK AND LOOP TYPE VELCRO STRAPS.</li> <li>PROVIDE VERTICAL WIRE MANAGEMENT AS SHOWN IN THE RACK LEVATION ETAILS. SECURE CABLE WITH HOOK AND LOOP TYPE VELCRO STRAPS.</li> </ol>	Revisions Issue Dates:
<ul> <li>3. CABLING SHALL BE NEATLY ORGANIZED AND SUPPORTED. SPLIT ROUTING OF CABLES TO PRESENT A NEAT EVEN APPEARANCE FOR IMPROVED SERVICE ABILITY AND CABLE SUPPORT SIMILAR TO ABOVE. WEIGHT OF CABLES SHALL BE SUPPORTED BY WIRE MANAGEMENT DEVICES AND NOT BY THE CABLE CONNECTION.</li> <li>4. THIS ARRANGEMENT IS TYPICAL FOR THE FRONT AND REAR OF THE RACK.</li> </ul>	CONSTRUCTION DOCUMENTS 01/26/2024
5. PROVIDE STRAIN RELIEF AT ALL CABLE CONNECTIONS.	ELECTRICAL DIAGRAM DETAILS AND SCHEDULE
<u>ETAIL</u>	E301

ELEC	TRICAL SPECIFICATION	1.14	OPERATION OF SERVICES AND UTILITIES
PART	1- GENERAL	A.	Shutdown of existing services and utilities shall, wit
11	GENERAL		and with the Owner as to date, time of day, and dur Owner of estimated duration of shutdown period at
	Architect's General Conditions are a part of this Division. All work shall be done in strict accordance with	1 15	
A.	all applicable Codes and Regulations of local and State Agencies and utility companies. This Contractor shall bear the cost of all fees, permits, licenses and taxes and any utility company charges in connection with the work. All equipment installed shall be UL listed.	A.	Close open ends of work with temporary covers or material. Protect existing property, equipment and
В.	AIA Document A201-current version, "General Conditions of the Contract for Construction" is hereby made part of these Specifications.		existing property that has been damaged during ex
1.2	SCOPE	1.16	CLEANING
A.	Demolition:	Α.	Work site must be kept clean. Rubbish, debris and
	1. The Contractor shall reference architectural and electrical plans and remove or relocate existing electrical materials as shown or which exist on walls and partitions being removed. Additionally, the	1.17	
	wiring that is no longer in service shall be complete back to source. Existing conduit may be reused when in suitable condition. Wiring for branch circuits shall not be reused unless otherwise noted. Circuits that remain shall be left in operating condition.	A.	requiring lubrication shall be left freshly and fully lub Owner with one complete new set of any special lub guns, fittings and adapters.
	<ol> <li>The Contractor shall remove all unused telephone and data cables complete from outlet to patch panel.</li> <li>Existing electrical materials shall NOT be reused unless so indicated on the Drawings. Existing flush-</li> </ol>	1.18	PAINTING
	Flush-mounted boxes in good condition may be reused if located as snown for new boxes on Drawings. Flush-mounted boxes not being reused shall be covered with suitable cover plates, surface boxes and	Α.	Equipment and materials shall have standard manu
	4. All materials removed under this Division and not scheduled for reuse or requested by the Owner, shall be disposed of off site	1.19	CUTTING AND PATCHING
В.	New Work: 1. Provide complete electrical lighting, power, fire alarm and special systems as indicated on the	Α.	Cutting and patching to be performed by (General C surfaces after patching shall be as specified by Arc
	Contract Drawings. 2. Provide all electrical work necessary to power Owner-supplied equipment. Provide all receptacles,	1.20	WATERPROOFING
	power wiring, , etc., necessary for a complete installation. 3. Refer to architectural specifications for security system requirements.	A.	Provide necessary sleeves, caulking and flashing r
0	4. Systems shall be complete in all respects, tested, approved and ready for operation. 5. Maintain existing receptacles on existing walls to remain, reconnect circuits that are interrupted.	1.21	FIREPROOFING
C.	1. Other Trade Contractors and Owner's equipment vendors shall install all motors for equipment newided under their trade work contractor, motors shall be ready for wiring by the Electrical Contractor	Α.	At closing of each working day, opening cut betwee
	2. Other Trade Contractors and Owner's equipment vendors shall furnish and deliver to the Electrical Contractor.		construction.
	furnish relays and control equipment to the Electrical Contractor who shall install and wire these devices. The Electrical Contractor shall provide motor starters and disconnect switches	1.22	BASES AND SUPPORTS
	3. The General Contractor shall provide excavation, backfill, chases, openings, cutting, patching, painting and finish work.	Α.	Provide necessary supports, pads, bases and piers to building structure in acceptable manner. Attach
	4. The General Contractor shall install all access doors where required; doors needed for access to electrical systems shall be furnished by the Electrical Contractor.		determined by the Owner.
.3	ALTERNATES	1.23	ACCESS
A.	Definition: An alternate is an amount proposed by Bidders and stated on the Bid Form that will be added	Α.	servicing or inspection. Doors shall have fire rating
	scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents	1.24	TESTS
B. C.	Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project. Examine Contract Documents to determine requirements for materials and methods necessary to	Α.	Perform tests required by the Owner, legal authoriti motors and controls, shall be operated continuously appearing during tests, and repeat tests until no de
	achieve the work described under each alternate. Include as part of each alternate: miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned under Alternate.	1.25	Owner's presence.
D.	Schedule of Alternates: 1. Alternate 1: Provide new low voltage switchboard to replace existing.	A.	Upon completion of the work and at a time designal
	A. Quote the amount of money to be ADDED to the Base Bid for providing a new low voltage switchboard to replace the existing. This work includes disconnecting completely the existing low voltage distribution sections and its feeder cables, removing the existing		instruction manuals including data, warranties, etc., to the arrangement, location and operation of all eq Electrical Contract.
	low voltage sections, providing a new low voltage switchboard with integral main service protector and reconnecting the existing feeder cables to the new switchboard.	PART	12- PRODUCTS
1.4	SHOP DRAWING SUBMITTALS	2.1 V	VIRE CABLE AND RACEWAYS
Α.	Submit shop drawings on equipment and materials, in sextuplet (6 copies), to the Architect for approval.	Α.	Rigid galvanized steel conduit (RGS) shall be used
	Contractor shall assume full responsibility for work performed or equipment supplied that is not in agreement with approved shop drawings	в	shall be galvanized steel threaded type listed for RI
В.	The following list of electrical items must be submitted by this Contractor for approval: 1.Panelboards	D.	and couplings shall be galvanized steel, either com EMT use. Indent or crimp-type connectors are NO
	2. Circuit breakers 3. Wiring devices and plates	C. D.	EMT or RGS shall be used for all circuit homeruns. Schedule 40 polyvinyl chloride (PVC) conduit may l
	<ul><li>4. Lighting fixtures (submit samples as requested.</li><li>5. Fire alarm system components</li></ul>	E.	except as specifically otherwise noted on the Drawi Minimum sizes shall be as follows:
0	<ul><li>6. "Poke-thru" floor devices</li><li>7. Underfloor distribution system activation components</li></ul>		1. Conduit and EMT: 3/4" unless otherwise noted 2. Flexible Metal Conduit: ½"
C.	and associated seismic restraint system to be used.	F	<ul> <li>3. Wireway: 4" x 4".</li> <li>4. Cable Ladder: 12".</li> <li>Type MC metal clad cable may be used for branch</li> </ul>
1.5	RECORD DRAWINGS	1.	Wherever MC cable is used for light fixture wiring, I insulation and green insulated ground wire. Conne
Α.	Neatly and accurately record all changes to Contract Documents on record set of drawings furnished by the General Contractor. These record "as-built" drawings shall include locations of specific items as		MC cable use. All cables shall be rigidly supported within 12" from every fitting and shall run in lines pa
	listed in the various Specification DIVISIONS. Upon project completion, these record drawings shall be turned over to the Engineer.		Cable shall not rest on the ceiling structure. Type N sheath of interlocked aluminum is not acceptable.
1.6	DEFINITION	0	job.
Α.	As used on Contract Drawings, the term "to provide" shall mean "to furnish, install and connect completely in the specified or approved manner the item or material described "	G.	connections to vibrating equipment and furniture pa
1.7	GUARANTEE		malleable iron or steel, with engagement window lo suitable for wet locations. listed for LFMC user acc
<i>г</i> А.	Materials, equipment and workmanship shall have standard warranty against defects in material and		1. Blue Type LA liquid-tight flexible metal conduit floor.
	workmanship. Failures due to defective or improper material, equipment, workmanship or design shall be made good, forthwith, by and at the expense of the Contractor, including damage done to areas, materials		<ol> <li>Grey/tan Type LA liquid-tight flexible metal con vibrating equipment and to furniture partitions f</li> </ol>
	and other systems resulting from such failures. Guarantee period shall extend for one year from the Date of Acceptance.	H.	Wiring that must be run along the surface of the eximetal raceway, Wiremold #2100 surface metal race
1.8	INSPECTION	I.	Conductors shall be new copper with 600 Volt code Wire #10 and smaller shall be solid conductor with
A.	Contract Drawings are diagrammatic and do NOT show every required fitting, etc. The Contractor shall		stranded conductors with THWN/THHN insulation. XHHW insulation. Minimum size wire for light and
	familiarize himself with existing site conditions prior to submitting a bid, and shall include all equipment and accessories necessary for complete and operational systems.		shall include an individual code sized green insulate conduit system or cable covering as the sole mean
1.9	INSURANCE	J.	common neutrals shall not be used for receptacle of common neutral conductor ampere rating shall be of
Α.	Furnish insurance certificates required by the Owner.	K.	CATEGORY 6 TWISTED PAIR CABLE
1.10	PERMITS, LAWS, ORDINANCES, CODES AND STANDARDS		See the Evaluations for a discussion of cable typ "Shielding/Screening" Paragraph below
Α.	Obtain and pay for permits, inspections, licenses and certificates required. Work of this Contract shall meet current accepted editions of the State Building Code, State Fire Safety Code and other laws, rules	1	. Description: Four-pair, balanced-twisted pair cab
	and regulations of local, State and Federal authorities including, but not limited to: National Fire Protection Association #13; National Fire Protection Association #90A; National Fire Protection Association #90B;	2	Category 6 cable at frequencies up to 250MHz. Standard: Comply with NEMA WC 66/ICEA S-11
	National Fire Protection Association #99; International Plumbing Code; International Mechanical Code; National Fire Protection Association #70 (National Electrical Code); and local utility company	3 4	<ol> <li>Conductors: 100-ohm, 23 AWG solid copper.</li> <li>Shielding/Screening: Shielded twisted pairs (FTP</li> </ol>
	requirements. Pay utility company backcharges. Equipment, materials and components listed in UL Product Directories, shall bear UL labels.	5 6	<ul> <li>Cable Rating: Riser.</li> <li>Jacket: Blue thermoplastic.</li> </ul>
1.11	ARRANGEMENT OF WORK	L.	All conduits and wiring shall be run concealed ins
A.	Work shall be coordinated between trades to prevent interference. Work shall present a neat coordinated	M.	All splices for #10 or smaller shall be made with #
	ready access for inspection, operation, safe maintenance and repair and Code conformance. Where space appears inadequate consult the Architect before proceeding with installation	N.	Provide nylon pull lines for all empty conduits.
1.12	WORKMANSHIP	2.2	Patch Panels
<u>م</u> ر	Equipment and materials shall be new. of first quality, selected and arranged to fit properly into spaces	Α.	Category 6 Patch Panel: 1. The Category 6 patch panel shall be compatible v
	indicated. Install equipment and materials in accordance with manufacturer's recommendations.		brackets. 2. The Category 6 patch panel shall be equipped wi
1.13	COORDINATION WITH OWNER		termination using both T568A and T568B wiring s 3. The Category 6 patch panel shall be equipped wi
Α.	Work shall be scheduled with the Owner. Interruptions in Owner's access to the site shall be subject to Owner limitations of date and duration.		4. The connector module shall meet or exceed the 0

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- II, without exception, be coordinated with the proper utility d duration before any service is interrupted. Notify the od at least ten days in advance of proposed shutdown.
- ers or plugs during construction to prevent entry of foreign and finishes from damage. Repair, to original condition, ng execution of the work.
- and leftover or excess materials shall be removed daily.
- service or testing without proper lubrication. Items ly lubricated at time of substantial completion. Furnish ial lubrication devices required for servicing, e.g., grease
- nanufacturer's finish except where otherwise noted.
- eral Contractor) (this Contractor). Painting of finished Architect or shall match adjacent finishes.
- ing required to make openings waterproof.
- tween floors and through fire-rated partitions shall be pustible", firestopping with ratings equal to that of adjacent
- piers for equipment. Equipment shall be securely attached tachments shall be of strong and durable nature, as
- cess to concealed equipment and components requiring ratings equal to construction in which they are located.
- horities and agencies. Each piece of equipment, including ously for minimum one-hour test. Correct all defects o defects are disclosed. Final tests shall be made in the
- signated by the Engineer, the Contractor shall furnish etc., and shall instruct the Owner or his representative as all equipment and systems furnished and installed under the
- used for all exterior wiring and where subject to ically noted on the Drawings. Connectors and couplings
- or RMC use. for feeders run above ground in dry areas. Connectors compression type or heavy-duty set screw-type, listed for NOT allowed.
- nay be used for underground power and telephone wiring Drawings. All elbows shall be rigid steel conduit.
- anch wiring to light fixtures, receptacles and switches. ing, leave sufficient slack for future removal or servicing of onnectors and fittings shall be galvanized steel, listed for orted from the building structure at least 4' O.C. and and es parallel or perpendicular to building structural members. ype MC cable shall not be used for homeruns. Cable ble. Type AC armored cable shall not be permitted on the
- lexible metallic conduit (LFMC) shall be used for re partitions. Connectors, fittings and clamps for FMC shall ectors and couplings for LFMC shall be zinc plated ow locknut and sealing ring: liquid, oil, and rain-tight; acceptable equivalent to O-Z/Gedney "Type 4Q". duit (LFMC) shall be used for all wiring beneath raised
- conduit (LFMC) shall be used for final connections to ons from underfloor duct activation fittings. e existing walls shall be run in Wiremold #500 surface raceway or as otherwise specified on the Drawings. code gauge insulation conforming to NEC requirements. with THWN/THHN insulation, Size #8 and larger shall be tion. Size #3 and larger shall be stranded conductors with and power circuits shall be #12 AWG. The Contractor sulated ground conductor for all circuits; the use of the
- neans of grounding will not be permitted. acle circuits, unless otherwise noted on plans. When used, be double the phase conductor rating.
- e types. Specify shielding or screening in
- cable, certified to meet transmission characteristics of C
- S-116-732 and TIA-568-C.2 for Category 6 cables.
- (FTP)
- ed inside walls where possible. Exposed conduits where perpendicular to building walls.
- with "Scotchlok" spring connectors or equal. Splices for #8 mpression connectors.
- tible with 19" equipment racks, cabinets or wall mount
- ed with 8-position modular ports and shall allow for ring schemes.
- ed with front labeling space to facilitate port identification. the Category 6 performance criteria per ANSI/TIA-568-C.2.

- 1.3 GROUNDING AND BONDING
- A. Equipment Grounds
- 1. Grounding shall be installed and tested in accordance with NFPA 70 (NEC) and to satisfaction of local electrical inspector and Architect 2. Provide green THHN insulated copper equipment grounding conductor between the ground bus of the source distribution panel or switchboard and each load being served. Conductor shall be sized according to NEC Table 250.122. Provide separate grounding conductor for each branch circuit, unless
- otherwise indicated on Contract Drawings. 3. Maintain electrical continuity of raceways.
- B. Ground Fault Protection
- 1. If excessive ground current flows, main breakers and/or circuit breakers with ground fault sensing shall trip to protect against arcing ground faults. 2. Provide ground fault circuit interrupter protection for receptacles located within six feet of sink or faucet and as required and indicated.
- C. Materials
- 1. Above-grade and exposed connections shall be Burndy or acceptable equivalent.
- 2. Wire shall be stranded bare copper or insulated copper, as indicated on Contract Drawings.
- 3. Bus shall be copper bar, as indicated on Contract Drawings. 4. Bushings and Pressure Lugs shall be by T&B, O.Z./Gedney or acceptable equivalent.
- 5. Pipe clamps shall be by O.Z./Gedney or acceptable equivalent.
- D. Telecommunications System Grounds
- 1. Raceway including wireways, conduits, cable trays, etc. installed for low voltage or fiberoptic cabling shall be made electrically continuous for grounding purposes. Provide hollow braided copper jumpers equal to Belden No. 8669 (60A Ampacity). Provide equal impedance conductor for aluminum raceway. Provide connections from each item to the ground bus or if bonded in series provide two separate connections to the ground bus so as to form a loop.
- 2. Bond raceways to the ground bus located in the telecommunications closets/rooms. Bond raceways in each room they terminate in. 3. Grounding or bonding conductors installed for Telecommunications Systems shall be labeled near their
- termination points. Labels shall be non-metallic and include the following: a. "WARNING if this connector or cable is loose or must be removed, please call the Building Telecommunications Manager.
- b. Labels and installation shall meet the requirements of ANSI/TIA/EIA 606 and 607.
- 2.4 SAFETY SWITCHES
- A. Safety switches shall be fused, 600 VAC, heavy-duty type in NEMA enclosures suitable for the environment in which they shall be installed. Switches shall be Square D, General Electric or Cutler-Hammer equivalent to the following Square D types:
- 1. Fused disconnect 2- and 3-pole: "Type H" 2. Fused, raintight (WP) disconnect switches in NEMA 3R enclosures: "Type H-R".
- 2.5 FUSES
- A. Fuses for circuit protection shall be UL listed, non-renewable, low peak, dual-element, time delay fuses. Bussman Type FRN-RK (250 Volt) or FRS-RK (460 Volt) UL Class RK5 or approved equal.
- 2.6 MOTOR STARTERS
- A. Provide starters for all motors unless noted otherwise. Starters shall be Allen-Bradley or equal by Square D. General Electric or Cutler-Hammer, as follows: 1. Manual for 120 Volt or 208 volt, 1-phase: Allen Bradley Bulletin 600.
  - 2. Magnetic across-the-line: Allen Bradley Bulletin 509. 3. Combination starter disconnects: Allen Bradley Bulletin 512.
- Manual starters shall have NEMA 1 enclosure.
- Magnetic starters shall have the following features: 1. NEMA 1 enclosure
- 2. Two N.O. and two N.C. auxiliary contacts
- 3. HOA switch 4. Neon run pilot light
- 5. Three overload heaters
- 6. Control power transformer.
- 2.7 OUTLET AND JUNCTION BOXES
- A. Switch and receptacle outlet boxes in partitions where wiring is concealed shall be standard 4 inches square, 1-1/2 inches deep, hot-dipped, galvanized steel, with device ring for boxes installed in sheetrock walls. Use 1-1/2 inch deep square corner tile wall extension for boxes installed in tile, exposed brick or exposed block masonry walls.
- B. Boxes shall be securely fastened to the building structure. Suitable means shall be provided to support outlet boxes to take the weight of fixtures. Recessed outlet boxes or their extension covers shall be set flush with face of finished wall, but in no case set greater than 1/4 inch behind finished face of wall. The Contractor shall check with the Architectural Drawings for possible box interference.
- C. Junction boxes shall be sized in accordance with Code requirements. D. Junction and outlet boxes where exposed to the weather and wet locations shall be threaded hub type and provided with watertight screw-on covers and gaskets.
- 2.8 SWITCHES, RECEPTACLES AND PLATES
- A. Switches and receptacles shall be as manufactured by Hubbell. Arrow-Hart, Leviton or Pass and Seymour and equivalent to the following specification grades, with color matching Building Standard: 1. Single-pole switches shall be Hubbell #1221.
  - 2.3-way switches shall be Hubbell #1223. 3. Momentary contact switches shall be single-pole, double-throw equivalent to Hubbell #1557.
  - 4. Duplex grounding type receptacles shall be 20 Ampere Hubbell #5362. 5. Isolated ground type receptacles shall be 20 Ampere Hubbell #IG5362.
  - 6. Ground fault type receptacles shall be Hubbell #GF-5362 feed-through receptacles.
- Occupancy sensor switches shall be Sensor Switch #WSD-PDT motion and sound dual technology line voltage wallbox type rated to control up to 600 Watts at 277 VAC. Units shall have adjustable light level and off-time.
- C. Provide wall plates equal to building standard on all switches and receptacles. When no standard exists provide specification grade stainless steel (Type 302). D. Where there are multiple devices in one location, devices shall be ganged under one cover plate. All wall
- switches shall be flush mounted, where applicable. Receptacles shall be mounted 18 inches above finished floor with U ground up unless otherwise
- indicated F. Wall switches shall be mounted 48 inches above finished floor, on strike side of door, unless otherwise
- indicated
- 2.9 LIGHTING FIXTURES
- A. The Contractor shall furnish and install all lighting equipment as shown on the Drawings and specified on Drawings complete with lamps ready for operation.
- B. Existing fixtures in the space shall be reused where noted on the Drawings. The fixtures shall be disconnected, removed and stored by the Electrical Contractor and then be cleaned and replaced prior to reinstallation. The Electrical Contractor shall document, in writing, any damage noted on the fixtures prior to removing them and submit a copy to the General Contractor and the Engineer. The Electrical
- Contractor shall be held responsible for damage caused by work under this project. Fixtures not noted as being reused will be turned over to the Building Owner, or disposed of per the Owner's direction during construction.
- D. Installation of Lighting Fixtures:
- 1. Fixtures shall be securely attached to the building structure by mechanical means and by safety wire. Provide box-mounted studs and additional structural supports as required. Provide two safety wires per fixture. Each safety wire shall be capable of supporting four times the weight of the fixture.
- Safety wire shall be adjusted to be in slack tension. 2. Install seismically rated clips to secure recessed grid-supported luminaires in place. Provide four clips per fixture.
- 2.10 FIRE ALARM
- A. Fire alarm components shall be compatible with existing building system. Provide additional cards as required to control additional initiation devices. Provide additional amplifiers, etc. required to power additional devices required to comply with A.D.A. All devices and mounting heights shall conform to current A.D.A. Standards. Strobe units shall be Xenon strobe type.
  - 1. Pull stations shall be keyed to reset, red Lexan, addressable.
- 2. Combination fire speaker/strobe units shall be multi-tap speaker, initially set appropriate tap to provide proper sound levels and synchronized visual unit with appropriate module adapter mounted on common mounting plate. 3. Smoke detectors shall be addressable, photoelectric or ionization type with twist lock base.
- 4. Duct smoke detectors shall be addressable, photoelectric type, with twist lock base, housing, sampling tubes and relay output with remote LED indicator/test switch and appropriate sampling
- tubes 5. Addressable interface modules shall be provided for monitoring of non-addressable devices and for
- control purposes. 6. Provide and install one monitor module per smoke damper - Fire system shall monitor status of limit switch mounted on smoke damper.
- 7. Contractor shall install cable in a class A configuration. This shall be in accordance with manufactures instructions and shall include a special evacuation appliance cable scheme. All evacuation appliances shall be cabled in an alternating fashion back to separate amplifier / power supply cabinets so that failure of one circuit will not effect occupant notification. There shall be at least two separate amplifier / power supply circuits for this floor.

- steel straps 2'-0" O.C. 2.11 CIRCUIT BREAKERS
- PART 3 EXECUTION
- 3.1 GENERAL
- 3.2 LOAD BALANCE
- 3.3 CIRCUIT BREAKER TESTING/SETTING
- installation
- 3.4 GENERAL WIRING TESTS

larger.

cross-connection

submitted

requirements.

wiring tests.

3.10 LABELING

read as follows:

B. Initiating circuit wiring shall be Type FPLP cable, single pair, twisted shielded, solid THHN with ground (drain) wire, run in EMT conduit, with maximum 6' length of FMC where required. C. Notification circuit wiring shall be Type FPLP cable, single pair, twisted shielded, solid THHN with ground (drain) wire, and 2 #12, 1 #12G THHN, run in EMT conduit, with maximum 6' length of FMC where

D. Notification circuit wiring from the point it leaves the fire alarm system node and/or transponder to the point the circuit enters the notification zone it serves shall be Type MI cable, single pair, twisted shielded, solid and separate (2) #12 solid. Cables shall be bundled together with stainless steel straps 2'-0" O.C. E. Wiring for networking cabling between fire alarm system nodes and/or transponders shall be Type MI cable, eight (8) runs of single pair, twisted shielded, solid. Cables shall be bundled together with stainless

A. All new circuit breakers shall match existing in style, manufacturer and interrupting rating for panel in which they are being installed, unless noted otherwise.

A. The Electrical Contractor shall ensure that no piping, ductwork, leak protection apparatus or other equipment foreign to the electrical trade passes through the space equal to the width and depth of the electrical distribution equipment and extending from the floor to the structural ceiling.

A. The Electrical Contractor shall balance the loads on the three phases in the electrical panelboard in which he does work insofar as physically possible, and report each panel loading to the Engineer.

A. Feeder circuit breakers shall be tested by an independent testing firm with 10 years experience, prior to

B. Tests shall be performed at specified trip setting to ensure proper operation. C. Results of test shall be furnished to Owner for record.

D. Verify final trip settings for adjustable or interchangeable circuit breaker elements. Instantaneous settings shall be minimum unless noted otherwise.

A. At the time of final inspection and test, all wiring and connections throughout the renovation areas must be completed, devices and equipment properly operating, lighting fixtures installed, and power and lighting circuit and control wiring clearly identified with approved tags ready for acceptance. Each system shall test free from short circuit and grounds.

B. Insulation resistance for low voltage cables and wiring shall be performed at 1000 Volt D.C. for one (1) minute. When insulation resistance must be determined, switchboards, panelboards, fuse holders, switches and overcurrent devices shall be in place, and the insulation resistance when tested at 1000 Volts D.C. shall be no less than 100,000 ohms for #14 and #12 wire and 250,000 ohms for #10 wire and

#### 3.5 LOW VOLTAGE WIRING TESTS

1. Visually inspect jacket materials for NRTL certification markings. Inspect cabling terminations in communications equipment rooms for compliance with color-coding for pin assignments, and inspect cabling connections for compliance with TIA-568-C.1. 2. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

Retain first subparagraph below if verification of quality is to be performed before completing horizontal cabling.

3. Test twisted pair cabling for DC loop resistance, shorts, opens, intermittent faults, and polarity between conductors. Test operation of shorting bars in connection blocks. Test cables after termination but not

A. Test instruments shall meet or exceed applicable requirements in TIA-568-C.2. Perform tests with a tester that complies with performance requirements in "Test Instruments (Normative)" Annex, complying with measurement accuracy specified in "Measurement Accuracy (Informative)" Annex. Use only test cords and adapters that are qualified by test equipment manufacturer for channel or link test configuration.

B. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and C. Remove and replace cabling where test results indicate that they do not comply with specified

See Section 014000 "Quality Requirements" for retesting and reinspecting requirements and Section 017300 "Execution" for requirements for correcting the Work.

D. End-to-end cabling will be considered defective if it does not pass tests and inspections. E. Prepare test and inspection reports.

#### 3.6 GROUNDING SYSTEM TESTS

A. Test and inspect the main grounding electrode system in accordance with Section 7.13 of the NETA Handbook for Electrical Testing Procedures. Perform a resistance to ground test and insure that resistance is no greater than 5 (five) ohms. Investigate and supplement grounding system where resistance exceeds recommended values and re-test as required. B. Ground Fault Circuit Interruption shall be tested after installation by random connection of plug-in tester to various protected receptacles, as directed by Architect.

3.7 OPERATIONAL TESTS

A. Each piece of electrical equipment, including lighting fixtures, motors and controls shall be operated continuously for minimum test period of one hour. B. Demonstrate by operating equipment that circuits and devices are in good operating condition. Each item of control equipment shall be operated minimum of five times. Demonstration shall be performed after

3.8 MECHANICAL SYSTEM ADJUSTMENT AND TESTING

A. Be present during adjustment period and final testing of mechanical systems. Take readings necessary to ensure that electrical systems are operating properly. Tests for mechanical work are detailed under DIVISION 15, MECHANICAL WORK.

B. Take ampere readings with true RMS reading ammeter at each electrical component, such as motor and heating coil, to determine proper operation. C. Record readings and submit them in triplicate to the Engineer for review.

3.9 FIRE ALARM SYSTEM INSTALLATION AND TESTING

A. Fire alarm wiring shall be run in EMT; devices shall be securely affixed to building surfaces. B. Junction boxes, pull boxes, outlet boxes and covers in the fire alarm raceway system shall be painted red. C. Test every device and operation, including test by simulation of trouble, in presence of the Owner and the Architect. Notify the Owner, the Architect and interested parties of testing 72 hours in advance. D. The system as described shall be installed, tested and delivered to the Owner in fully operational and firstclass condition. The system shall include all required hardware, raceways interconnecting wiring and software to accomplish the requirements of this Contract. The fire alarm equipment supplier will have had ten (10) years previous experience with facility operations and requirements.

A. Label all new disconnects, starters, motors, furniture feeder boxes, in a manner acceptable to the Architect. Provide updated panel schedules in all panelboards within the scope of work. B. All manufacturer's nameplates shall be kept clean and free of paint.

A. Data/communications wiring done under this Contract shall be recorded on cable management drawings. Each outlet shall be assigned a number which shall be keyed to its punchdown location. Provide printed, colored, adhesive labels for all electrical equipment, such as but not limited to switchboards, panelboards, motor control centers, disconnect switches, meter socket enclosures, etc. to warn qualified personnel of potential electric arc flash hazards. Label shall be a minimum of 4" x 5" and

> WARNING ARC FLASH HAZARD APPROPRIATE PPE REQUIRED FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY REFER TO NFPA 70E

> > END OF ELECTRICAL SPECIFICATIONS

![](_page_25_Picture_137.jpeg)

NGINEER VAN ZELM HEYWOOD & SHADFORD, INC

**GuisenberryArcanMal** 

195 Scott Swamp Road

Farmington, CT 06032

gamarch.com

#### Fair Haven Community Health Care

#### Shoreline Family Health **Care Renovations**

Branford, CT Project #: **2387** 

Revisions

**Issue Dates:** 

![](_page_25_Picture_143.jpeg)

CONSTRUCTION DOCUMENTS 01/26/2024

#### **ELECTRICAL SPECIFICATION**

![](_page_25_Picture_146.jpeg)