# Northpointe Medical Park Building B, Level 2, Suites 202 & 204 Tooele Pediatric Clinic 2371 North 400 East

Tooele, UT 84074

# **Construction Documents**



## **DESIGN TEAM**

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## Contacts:

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# **INTERIM LIFE SAFETY MEASURES**

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IMPLEMENTATION OF INTERIM LIFE SAFETY MEASURES (ILSM) IS REQUIRED IN OR ADJACENT TO ALL CONSTRUCTION AREAS AND THROUGHOUT BUILDINGS WITH EXISTING LSC DEFICIENCIES. ILSM APPLY TO ALL PERSONNEL, INCLUDING CONSTRUCTION WORKERS, MUST BE IMPLEMENTED UPON PROJECT DEVELOPMENT, AND CONTINUOUSLY ENFORCED THROUGH PROJECT COMPLETION. ILSM ARE INTENDED TO PROVIDE A LEVEL OF LIFE SAFETY COMPARABLE TO THAT DESCRIBED IN CHAPTERS 1 THROUGH 7, 31 AND THE APPLICABLE OCCUPANCY CHAPTERS OF THE LSC. EACH ILSM ACTION MUST BE DOCUMENTED THROUGH WRITTEN POLICIES AND PROCEDURES. EXCEPT AS STATED BELOW, FREQUENCIES FOR INSPECTION, TESTING, TRAINING, AND ILSM CONSIST OF THE FOLLOWING ACTIONS:

- ENSURING EXITS PROVIDE FREE AND UNOBSTRUCTED EGRESS. PERSONNEL SHALL RECEIVE TRAINING IF ALTERNATIVE EXITS MUST BE DESIGNATED. BUILDINGS OR AREAS UNDER CONSTRUCTION MUST MAINTAIN ESCAPE FACILITIES FOR CONSTRUCTION WORKERS AT ALL TIMES. MEANS OF EGRESS IN CONSTRUCTION AREAS MUST BE INSPECTED DAILY.
- ENSURING FREE AND UNOBSTRUCTED ACCESS TO EMERGENCY DEPARTMENTS/ SERVICES AND FOR EMERGENCY FORCES.
- ENSURE FIRE ALARM, DETECTION, AND SUPPRESSION SYSTEMS ARE NOT IMPAIRED. A TEMPORARY, BUT EQUIVALENT, SYSTEM SHALL BE PROVIDED WHEN ANY FIRE SYSTEM IS IMPAIRED. TEMPORARY SYSTEMS MUST BE INSPECTED AND TESTED MONTHLY.
- 4 ENSURING TEMPORARY CONSTRUCTION PARTITIONS ARE SMOKE TIGHT AND BUILT OF NONCOM OR LIMITED COMBUSTIBLE MATERIALS THAT WILL NOT CONTRIBUTE TO THE DEVELOPMENT OR SPREAD OF FIRE.
- 5 PROVIDING ADDITIONAL FIRE-FIGHTING EQUIPMENT AND USE TRAINING OF PERSONNEL.
- 6 PROHIBITING SMOKING IN ACCORDANCE WITH MA.1.3.15 AND IN OR ADJACENT TO ALL CONSTRUCTION AREAS.
- DEVELOPING AND ENFORCING STORAGE, HOUSEKEEPING, AND DEBRIS REMOVAL PRACTICES THAT REDUCE THE FLAMMABLE AND COMBUSTIBLE FIRE LOAD OF THE BUILDING TO THE LOWEST LEVEL NECESSARY FOR DAILY OPERATIONS.
- 8 CONDUCTING A MINIMUM OF TWO FIRE DRILLS PER SHIFT PER QUARTER.
- 9 INCREASING HAZARD SURVEILLANCE OF BUILDINGS, GROUNDS, AND EQUIPMENT WITH SPECIAL ATTENTION TO EXCAVATIONS, CONSTRUCTION AREAS CONSTRUCTION STORAGE, AND FIELD OFFICES.
- 10 TRAINING PERSONNEL WHEN STRUCTURAL OR COMPARTMENT FEATURES OF FIRE SAFETY ARE COMPROMISED.
- 11 CONDUCTING ORGANIZATION WIDE SAFETY EDUCATION PROGRAMS TO ENSURE AWARENESS OF ANY LSC DEFICIENCIES, CONSTRUCTION HAZARDS, AND THESE ILSM.

# **PROJECT DESCRIPTION**

THIS PROJECT INCLUDES THE FOLLOWING SCOPE OF WORK:

CONSTRUCTION DOCUMENTS AND SPECIFICATIONS.

A. PROJECT INCLUDES 590 SQ. FT. REMODEL OF PORTION OF EXISTING SUITE B202 & B204 CLINIC AREAS TO CREATE SPACE FOR NEW WORK AREA, BILLING OFFICE, AND FUTURE PHARMACY AREA AN EXAM ROOM AS SHOWN IN THE DRAWINGS. AT LEVEL 2 OF BUILDING 'B' TO TOOELE PEDIATRIC CLINIC. WORK ALSO INCLUDES NEW FLOORING, FINISHES, MILLWORK ALONG WITH ASSOCIATED, HVAC, PLUMBING AND ELECTRICAL WORK AS SHOWN IN THE

# APPROVALS

Approvers Name, Title Date Approvers Name, Title Date Approvers Name, Title Date

Approvers Name, Title

# **ABBREVIATIONS**

& @ Ø (E), EXIST. (N)	AND AT DIAMETER EXISTING NFW	DWL. DN. D.S. D.W.V. DWG.	DOWEL DOWN DOWN S DRAINAG DRAWIN
d # AC	PENNY POUND OR NUMBER	E EA. E.W.C. EL./ELEC.	EACH ELEC. W/ ELECTRIC
ADD A/C ALT. AL A.B. ARCH	ADDENDUM AIR CONDITIONING ALTERNATE ALUMINUM ANCHOR BOLT ARCHITECT(URAL)	ELEV. EQ. EQUIP. EXH. EXIST. E.J. EXT.	ELEVATIC EQUAL EQUIPME EXHAUST EXISTING EXPANSIO
ASP.	ASPHALT	_	
B BSMT. B.M. BLKG. BD. B.O. BLDG.	BASEMENT BENCHMARK BLOCKING BOARD BOTTOM OF BUILDING	F FT. FV/F.V. FIN. F.E. F.E.C. FIXT. FL.	FEET FIELD VE FINISH (EE FIRE EXTII FIRE EXTII FIRE EXTII FIXTURE FLASHING
с		G	
CAB'T C.I.P. C.B. CLG. CL C.T. CH C.O. CLR. CL.	CABINET CAST IN PLACE CATCH BASIN CEILING CENTER LINE CERAMIC TILE CHANNEL CLEAN OUT CLEAR CLOSET	GALV. GA. G.C. G.S.N. GL. GD. GRL. GRD. GYP.	GALVAN GAUGE GENERA GENERA GLASS GRADE GRILLE GROUNE GYPSUM
COL. CONC. CMU COND. CONN. CONST. CONT CJ	COLUMN CONCRETE CONCRETE MASONRY UNIT CONDITION CONNECTION CONSTRUCTION CONTINUOUS CONTROL JOINT	H HDW. HDWD. HTR. HT. H.P. H.M. HORIZ.	HARDWA HARDWC HEATER HEIGHT HIGH PC HOLLOW HORIZON
<b>D</b> D.P.	DAMP PROOFING	h.b. H.W. Hr	HOT MA
D.B.	DECK BEARING	1 IIX <b>.</b>	
DIAG. DIA	DIAGONAL DIAMETER	I	
DIM. DISP.	DIMENSION DISPENSER	in. I.D. Insul.	inch Inside d Insulati

# DEFERRED SUBMITTALS

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING TO THE BUILDING OFFICIA REVIEW WITH AN ACCOMPANYING LETTER FROM THE ARCHITECT STATING T CONTENTS OF THE SUBMITTAL ARE IN CONFORMANCE WITH THE DESIGN. WC RELATED TO THE DEFERRED SUBMITTAL IS NOT TO COMMENCE UNTIL THE BUIL OFFICIAL HAS APPROVED THE SUBMITTAL.

. DETAILS AND ENGINEERING CALCULATIONS FOR THE FIRE SPRINKLER AND DETECTION SYSTEMS, WHICH ARE TO BE DESIGN-BUILD BY THE CONTRACTOR COMPLY WITH NFPA 13 AND SHALL INCLUDE: - FIRE ALARM PLANS (INCLUDING CO DETECTOR LOCATIONS) - AUTOMATIC FIRE SPRINKLER PLANS

## VICINITY MAP



OWEL OWN OWN SPOUT RAINAGE WASTE VENT RAWING ACH LEC. WATER COOLER LECTRIC LEVATION

Date

QUIPMENT XHAUST XISTING XPANSION JOINT XTERIOR

IELD VERIFY INISH(ED) IRE EXTINGUISHER IRE EXTINGUISHER CABINET IXTURE lashing

GALVANIZED GAUGE GENERAL CONTRACTOR GENERAL STRUCTURAL NOTES SLASS RADE RILLE

GROUND SYPSUM

IARDWARE IARDWOOD IEATER IEIGHT IIGH POINT IOLLOW METAL IORIZONTAL OSE BIB IOT WATER

IOUR ١CH

NSIDE D **ISULAT** 

DIAMETER	
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INT.	INTERIOR	P.S.F.	POUNDS PER SQUARE FOOT	V.C.P.
		R		w
1		RAD	RADIUS	W C.
JAN		RFC	RECOMMENDATION	W.U.
JT IT	IOINT	REC.	REGISTER	W R
JT. TZI		REO.	REGUIRED	W.R.
551.	30131	P A		\\\\\\\/ F
				۷۷.۷۷.۱. ۱۸/ E
		REV.		
		R.D.		VVDVV.
		RFG.	ROOFING	VV/
LAV.		RM.	ROOM	W/O
LI.		RGH.	ROUGH	WD.
L.W.C.		RND.	ROUND	
LVR.	LOUVER	_		
		S		
M		SCR.	SCREW	
M.B.	MACHINE BOLT	SECT.	SECTION	
MFR.	MANUFACTURER	SEL.	SELECT	
М.О.	MASONRY OPENING	SHT.	SHEET	
MAT'L	MATERIAL	SIM.	SIMILAR	
MAX.	MAXIMUM	SLDG.	SLIDING	
MECH.	MECHANICAL	SM.	Smooth	
MTL.	METAL	SPEC.	Specification	
MIN.	MINIMUM	SPL.	SPLASH	
MLDG.	MOLDING	SQ.	SQUARE	
MULL.	MULLION	S.S.	STAINLESS STEEL	
		STD.	STANDARD	
Ν		STRUC.	STRUCTURE	
N.G.	NATURAL GRADE	S.A.	SUPPLY AIR	
NOM.	NOMINAL	SUSP.	SUSPENDED	
N/A	NOT APPLICABLE	SW.BD.	Switchboard	
N.I.C.	NOT IN CONTRACT			
N.T.S.	NOT TO SCALE	т		
		TELCO	TELEPHONE COMPANY	
0		IG	TEMPERED GLASS	
0.C.	ON CENTER	T&G	TONGUE & GROOVE	
		T&B		
		TO		
OFS		1.0. TOC		
		1.0.C.		
0.1.0.1.	INSTALLED	Т.О.D. Т.О.Р		
	OWNER FURNISHED, OWNER INSTALLED	T.O.F.		
0.1.0		ITP.	ITFICAL	
P		U		
PT.	PAINT	U.N.O.	UNLESS NOTED OTHERWISE	
PTD.	PAINTED			
PR.	PAIR	V		
PNL.	PANEL	V.	VENT	
d	PENNY	VTR	VENT THROUGH ROOF	

V.T.R. VENT THROUGH ROOF VERT. VERTICAL VERTICAL GRAIN V.G. VEST. VESTIBULE

PLASTIC LAMINATE

P.S.I. POUND PER SQUARE INCH

PLATE

PLBG. PLUMBING

P.L.

**SPECIAL INSPECTIONS** 

PL.

V.C.T. VINYL COMPOSITION TILE

# DEFINITIONS

. GENERAL: BASIC CONTRACT DEFINITIONS ARE INCLUDED IN THE CONDITIONS ( CONTRACT.

VITREOUS CLAY PIPE

WATER CLOSET

WATER HEATER

WIDE FLANGE

WINDOW

WITH

WITHOUT

WOOD

WATER RESISTANT WATERPROOF

WELDED WIRE FABRIC

- "APPROVED": WHEN USED TO CONVEY ARCHITECT'S ACTION ON CONTRACTOR SUBMITTALS, APPLICATIONS, AND REQUESTS, "APPROVED" IS LIMITED TO ARCHIT DUTIES AND RESPONSIBILITIES AS STATED IN THE CONDITIONS OF THE CONTRACT. . "DIRECTED": A COMMAND OR INSTRUCTION BY ARCHITECT. OTHER TERMS INCLUDING "REQUESTED," "AUTHORIZED," "SELECTED," "REQUIRED," AND "PERMITTED" HAVE THE
- SAME MEANING AS "DIRECTED." 4. "INDICATED": REQUIREMENTS EXPRESSED BY GRAPHIC REPRESENTATIONS OR IN WRITTEN FORM ON DRAWINGS, IN SPECIFICATIONS, AND IN OTHER CONTRACT DOCUMENTS. OTHER TERMS INCLUDING "SHOWN," "NOTED," "SCHEDULED," AND "SPECIFIED" HAVE THE SAME MEANING AS "INDICATED."
- . "REGULATIONS": LAWS, ORDINANCES, STATUTES, AND LAWFUL ORDERS ISSUED BY AUTHORITIES HAVING JURISDICTION, AND RULES, CONVENTIONS, AND AGREEMENTS WITHIN THE CONSTRUCTION INDUSTRY THAT CONTROL PERFORMANCE OF THE WORK.
- 6. "FURNISH": SUPPLY AND DELIVER TO PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS. 7. "INSTALL": UNLOAD, TEMPORARILY STORE, UNPACK, ASSEMBLE, ERECT, PLACE, ANCHOR, APPLY, WORK TO DIMENSION, FINISH, CURE, PROTECT, CLEAN, AND SIMILAR
- OPERATIONS AT PROJECT SITE. 8. "PROVIDE": FURNISH AND INSTALL, COMPLETE AND READY FOR THE INTENDED USE.
- 9. "PROJECT SITE": SPACE AVAILABLE FOR PERFORMING CONSTRUCTION ACTIVITIES. THE EXTENT OF PROJECT SITE IS SHOWN ON DRAWINGS AND MAY OR MAY NOT BE IDENTICAL WITH THE DESCRIPTION OF THE LAND ON WHICH PROJECT IS TO BE BUILT.

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A121	Demolition Floor Plan Level 2
A122	Demolition Ceiling Plan Level 2
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M002	Mechanical Specifications
MD101	Level 2 Demolition Mechanical Plan
M101	Level 2 Mechanical Plan
M(0)	Mechanical Details and Schedules
1001	Mechanical Defails and schedules
PLUMBING	
P001	Plumbing Cover Sheet
P002	Plumbing Specifications
PD101	Level 2 Plumbing Demolition Plan
P101	l evel 2 Plumbing Plan
P601	Plumbing Details and Schedules
ELECTRICAL	
EE001	Electrical Cover Sheet
EE201	Electrical Specifications
EE202	Electrical Specifications
EE203	Electrical Specifications
EE501	Electrical Details
EE701	Typical Mounting Details
ED101	Level 2 Electrical Demolition Plan
ED102	Level 2 Ceiling Demolition Plan

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EP101

EP601

EL101

EL601

EY101

Level 2 Power Plan

One-Line Diagram

Level 2 Lighting Plan

Level 2 Auxiliary Plan

Interior Lighting Fixture Schedule



















## **KEYED NOTES**

Symbol	DESCRIPTION	FIRE RESISTANCE RATING	DOOR FIRE RATING	WINDOW FIRE RATING
•	COMMON PATH OF TRAVEL	N/A	N/A	N/A
$\bullet \rightarrow$	TRAVEL DISTANCE	N/A	N/A	N/A
ROOM NAME SQ. FT. ROOM # O.L. #	OCCUPANT LOAD	N/A	N/A	N/A
SP	SMOKE PARTITION WALL	0 HOUR	SMOKE	SMOKE
SB	Smoke barrier wall	1 HOUR	1/3 HOUR	1/3 HOUR
	1 HOUR FIRE RATED WALL	1 HOUR	3/4 HOUR	3/4 HOUR
<b>** ** ** ** **</b>	2 HOUR FIRE RATED WALL	2 HOUR	1-1/2 HOUR	1-1/2 HOUR

## **KEYED NOTES**

01.3	LINE AND ARROW INDICATES "COMMON PATH OF TRAVEL" DIRECTION AND DISTANCE OF 4' BETWEEN POINTS C1 AND C2. THIS IS LESS THAN THE
	MAXIMUM ALLOWED DISTANCE OF 100 - 0.
01.5	LINE AND ARROW INDICATES "TRAVEL DISTANCE" OF 99'-10" BETWEEN POINTS T1 AND T2. THIS IS LESS THAN THE MAXIMUM ALLOWED DISTANCE OF 300'-0".
01.52	LINE AND ARROW INDICATES "TRAVEL DISTANCE" OF 162'-9" BETWEEN POINTS

T1 AND T3. THIS IS LESS THAN THE MAXIMUM ALLOWED DISTANCE OF 300'-0".

**CODE REVIEW** APPLICABLE CODES International Building Code (IBC) 2021 International Existing Building Code (IEBC) 2021 International Fire Code (IFC) 2021 International Mechanical Code (IMC) 2021 International Plumbing Code (IPC) 2021 ANSI/ ASHRAE/ IES Standard 90.12010 National Electric Code (NEC) 2020 NFPA 101-2018 ANSI 117.1-2017 OCCUPANCY CLASSIFICATION Business Group: B REQUIRED SEPARATION OF OCCUPANCIES (Table 508.4, Page 108) Between B & S1: 0 hour (No separation requirement) FIRE SPRINKLER SYSTEM Building is equipped throughout with an automatic sprinkler system. CONSTRUCTION TYPE Building: Type V-B <u>BUILDING HEIGHT</u> (Table 504.3, Page 98) Allowable Building Height: 75 feet Actual Building Height: 45 feet & 4 inches NUMBER OF STORIES (Table 504.4, Page 99) Allowable Number of Stories (Occupancy – B): 4 Actual Number of Stories: **2** Below Grade Plane: **1** (Lift Pit Basement) <u>FLOOR AREA</u> (Table 506.2, Page 102) Allowable Floor Area per Floor Unlimited Actual Floor Area on Level 2 – (Occupancy – B): 14,224 SF Remodel Floor Area at Level 2 590 SF FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (Table 601, Page 113) Primary structural frame: 0 hour Bearing walls – Exterior: 0 hour Bearing walls – Interior: 0 hour Nonbearing walls and partitions – Exterior: 0 hour Nonbearing walls and partitions – Interior: 0 hour Floor construction and associated secondary members: 0 hour Roof construction and associated secondary members: 0 hour FIRE-RESISTANCE RATING REQUIREMENTS FOR INCIDENTAL USES (ROOM OR AREA) (Table 509, Page 109) Paint Shop: 1 hour or Automatic Sprinkler System Boiler Room: 1 hour or Automatic Sprinkler System Laundry Room: 1 hour or Automatic Sprinkler System SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY (Table 1004.5.1, Page 259) 150 Gross Per Occupant Business Areas: Maximum Occupant Load of Space: 590 S.F. / 150 = 3 (Excluding Waiting Area) Occupant Load of Waiting (Chair Seating): Unchanged Occupant Load of Break rooms (Assembly): Unchanged Actual Total Occupants: Unchanged Common Path of Travel (Occupancy – B): 100 feet EXIT ACCESS TRAVEL DISTANCE (Table 1017.2, Page 277) Maximum Travel Distance (Occupancy – B): 300 feet CORRIDOR FIRE-RESISTANCE RATING (Table 1020.1, Page 278) Corridor Walls (Occupancies A3, B, S1): 0 hour MINIMUM CORRIDOR WIDTH (Table 1020.2, Page 279) Minimum corridor width required: 44 inches Actual corridor width provided: 60 inches DEAD END CORRIDORS (Page 279) Occupancy - B: Not to exceed 50 feet

NORTH

OVERAL SITE BOUNDARY







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Site Plan





# **KEYED NOTES**

02.01	WALL. EXISTING TO REMAIN. PROTECT WALL FROM DAMAGE DURING CONSTRUCTION. PATCH, REPAIR AND REFINISH WALLS WHERE PARTIALLY DEMOLISHED UNFINISHED EDGES OR ANY DAMAGES EXIST. REPAINT WALLS AS PER NEW FINISH AND SCHEDULE. PAINT AND FINISH TO MATCH ADJACENT EXISTING WHERE NEW FINISH IS NOT CALLED OUT.
02.02	WALL, EXISTING INDICATED WITH DASHED LINE TO BE REMOVED.
02.05	DOOR. EXISTING TO REMAIN. PROTECT DOOR FROM DAMAGE DURING CONSTRUCTION.
02.06	DOOR AND DOOR FRAME, EXISTING INDICATED WITH DASHED LINE TO BE REMOVED. DOOR FRAME SHALL BE REMOVED UNLESS NOTED OTHERWISE.
02.07	EXISTING SHELVES INDICATED WITH DASHED LINE TO BE REMOVED.
02.08	EXISTING ELECTRICAL PANEL TO REMAIN. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
02.09	WINDOW. EXISTING TO REMAIN. PROTECT WINDOW FROM DAMAGE DURING CONSTRUCTION.
02.10	FURNITURE, EXISTING INDICATED WITH DASHED LINE TO BE REMOVED.
02.11	PLUMBING FIXTURE. EXISTING TO REMAIN. PROTECT FIXTURE FROM DAMAGE DURING CONSTRUCTION.
02.12	PLUMBING FIXTURE, EXISTING INDICATED WITH DASHED LINE TO BE REMOVED. REMOVE UN USED PLUMBING PIPING. SEE PLUMBING DRAWINGS FOR MORE INFORMATION.
02.14	CABINET, COUNTERTOP ETC, EXISTING INDICATED WITH DASHED LINE TO BE REMOVED. OWNER MAY CHOOSE TO SALVAGE SOME OF THE CABINETS, COORDINATE WITH OWNER DURING DEMOLITION.
02.17	FLOOR COVERING. EXISTING TO REMAIN. PROTECT FLOOR COVERING FROM DAMAGE DURING CONSTRUCTION.
02.18	FLOOR COVERING, EXISTING IN THIS AREA TO BE REMOVED. COORDINATE EXTENT OF REMOVAL WITH FINISH FLOOR PLANS FOR NEW FLOOR COVERING LOCATIONS AND TRANSITION LINE BETWEEN EXISTING AND NEW FLOOR COVERINGS. REMOVE FLOORING ALL THE WAY TO GYPCRETE BASE AND

#### 02.23 FURNITURE. EXISTING TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION. 02.52 BASE CABINET AND UPPER WALL CABINETS ETC, EXISTING TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION. 02.61 ALTERNATE #01- AS PART OF THIS ALTERNATE, CARPET FLOOR COVERING,

PREPARE FLOOR TO RECEIVE NEW FLOORING MATERIAL.

EXISTING IN THIS AREA TO BE REMOVED AND REPLACED WITH NEW LUXURY VINYL TILE (LVT) FLOORING IN THE HALLWAYS AND WAITING AREAS. COORDINATE EXTENT OF REMOVAL WITH FINISH FLOOR PLANS FOR NEW FLOOR COVERING LOCATIONS AND TRANSITION LINE BETWEEN EXISTING AND NEW FLOOR COVERINGS. REMOVE FLOORING ALL THE WAY TO GYP-CRETE BASE AND PREPARE FLOOR TO RECEIVE NEW FLOORING MATERIAL. UNDER THE BASE BID NO WORK IS REQUIRED AND EXISTING FLOORING TO REMAIN.

02.62 EXISTING FISH TANK FROM THIS AREA TO BE REMOVED AND RETURNED TO THE OWNER

# **GENERAL NOTES**

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND. B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE. E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.







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## **KEYED NOTES**

- 02.13 EXISTING GYPSUM CEILING CEILING, LIGHTS, DIFFUSERS ETC INDICATED IN THE DASHED AREA TO BE REMOVED.
- 02.15 CEILING, GRIDS, LIGHTS, DIFFUSERS ETC. IN THIS AREA. EXISTING TO REMAIN. PROTECT FROM DAMAGE DURING CONSTRUCTION. COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS.
- 02.16 EXISTING 2'X4' CEILING TILES, GRIDS, LIGHTS, DIFFUSERS ETC INDICATED DASHED IN THIS AREA TO BE REMOVED. SEE NEW CEILING PLAN FOR REQUIRED CEILING IN THIS AREA. ALSO REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS.



- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.
  B. SEE SHEET A505A FOR CABINET LEGEND.
  C. SEE SHEET A601A FOR DOOD SOLIDUITS
- C. SEE SHEET A601A FOR DOOR SCHEDULE.D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.







# **KEYED NOTES**

- 02.05 DOOR. EXISTING TO REMAIN. PROTECT DOOR FROM DAMAGE DURING
- CONSTRUCTION. 02.08 EXISTING ELECTRICAL PANEL TO REMAIN. SEE ELECTRICAL DRAWINGS FOR
- MORE INFORMATION. 02.17 FLOOR COVERING. EXISTING TO REMAIN. PROTECT FLOOR COVERING FROM
- DAMAGE DURING CONSTRUCTION. 02.24 DOOR. EXISTING TO REMAIN. PROTECT FROM DAMAGE DURING
- CONSTRUCTION. DOOR WILL BE LOCKED AND REMAIN CLOSED FOR FUTURE USE 02.61 ALTERNATE #01- AS PART OF THIS ALTERNATE, CARPET FLOOR COVERING, EXISTING IN THIS AREA TO BE REMOVED AND REPLACED WITH NEW LUXURY VINYL TILE (LVT) FLOORING IN THE HALLWAYS AND WAITING AREAS. COORDINATE EXTENT OF REMOVAL WITH FINISH FLOOR PLANS FOR NEW FLOOR COVERING LOCATIONS AND TRANSITION LINE BETWEEN EXISTING AND NEW FLOOR COVERINGS. REMOVE FLOORING ALL THE WAY TO GYP-CRETE
- BASE AND PREPARE FLOOR TO RECEIVE NEW FLOORING MATERIAL. UNDER THE BASE BID NO WORK IS REQUIRED AND EXISTING FLOORING TO REMAIN. 06.01 NEW CABINET, SHELVING ETC. SEE CABINET LEGEND ON SHEET 1/A505A, AND INTERIOR ELEVATIONS, FOR CABINET TYPES SUCH AS BASE CABINETS, WALL
- CABINETS, TALL CABINETS, SHELVING, COUNTERTOP ETC. 08.01 NEW DOOR, DOOR FRAME AND HARDWARE. SEE DOOR SCHEDULE AND HARDWARE SPECIFICATIONS. 08.26 CUT A NEW OPENING IN THE WOOD STUD FRAMED DRY WALL FOR ACCESS TO
- THE WORK ROOM. PATCH, REPAIR AND PAINT THE OPENING EDGES OF THE GYPSUM SHEATHING AND FRAMING. 09.01 METAL STUD FRAMED WALL. BASED ON THE LOCATION INDICATED IN FLOOR
- PLAN, USE 3-5/8" (OR 6" THICK OR 1-1/2" THICK AS OCCURS), 18 GAUGE, METAL STUDS AT 16" O.C. WITH TRACK RUNNERS AT TOP AND BOTTOM. USE 12 GAUGE STUDS AROUND DOOR FRAMES. IN PLACES WHERE FRAMING RUNS FROM FLOOR TO STRUCTURE ABOVE, PROVIDE SLIP CONNECTION AS PER DETAIL 9/A502B TO ACCOMMODATE STRUCTURE DEFLECTION ABOVE. IN PLACES WHERE FRAMING IS SUSPENDED FROM STRUCTURE ABOVE, SLIP CONNECTION IS NOT REQUIRED. SOUND BATT INSULATION REQUIRED AT ALL INTERIOR WALLS WITH PAINTED GYPSUM BOARD SHEATHING. SEE WALL TYPES
- on sheet a501a. 09.07 FLOOR COVERING. SEE FINISH FLOOR PLANS FOR FLOOR COVERING INDICATED WITH A FLOOR FINISH TAG (AS F1, F2, F3, ETC.). SEE FINISH SCHEDULE ON SHEET A603A FOR MATERIAL, SIZE, COLOR, ETC. FOR EACH
- FLOOR FINISH TAG. 10.03 PAPER TOWEL DISPENSER, OWNER FURNISHED, CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING IN WALL AS REQUIRED. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION,
- FTC. 10.04 SOAP DISPENSER, OWNER FURNISHED, CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING FOR ALL OWNER FURNISHED ITEMS. see relevant details 1/G003 and 1/G004 for mounting height,
- LOCATION, ETC. 11.09 COMPUTER, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. SEE ELECTRICAL DRAWINGS.
- 11.10 PRINTER AND COPIER, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. SEE ELECTRICAL DRAWINGS.
- 11.14 NEW FISH TANK, OWNER FURNISHED AND INSTALLED. 11.21 EXAM TABLE, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED.
- 12.09 FURNITURE, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. 22.20 STAINLESS STEEL SINK. SEE PLUMBING DRAWINGS. CUT OPEN PORTION OF BACK WALL TO INSTALL AND RECONNECT TO PLUMBING LINES. PATCH REPAIR AND PAINT WALL AFTER INSTALLATION.





Dimension Floor Plan Level 2



## **KEYED NOTES**

- 09.06 REMOVE EXISTING GYPSUM BOARD FROM ROOM SIDE AND INSTALL BATT INSULATION. RESILIENT CHANNEL AND 5/8" GYPSUM BOARD ON THE EXISTING
  - WALL FRAMING AND EXTEND TO DECK ABOVE IN ORDER TO UPGRADE THE WALL TO WALL TYPE- 'L3' TO ACHIEVE STC RATING OF 50. AS SHOWN ON SHEET A501A.
- 09.20 EXTEND EXISTING WALL TO DECK ABOVE AND UPGRADE THE WALL TO WALL TYPE- 'H3' TO ACHIEVE STC RATING OF 40 BETWEEN ROOM AND OUTSIDE CORRIDOR. SEE SHEET A501 A FOR MORE INFORMATION.



**GENERAL NOTES** 

- B. SEE SHEET A505A FOR CABINET LEGEND. C. SEE SHEET A601 A FOR DOOR SCHEDULE.
- D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.







1 Reflected Ceiling Plan Level 2 SCALE: 1/4" = 1'-0"



# **KEYED NOTES**

- 06.01 NEW CABINET, SHELVING ETC. SEE CABINET LEGEND ON SHEET 1/A505A, AND INTERIOR ELEVATIONS, FOR CABINET TYPES SUCH AS BASE CABINETS, WALL
- CABINETS, TALL CABINETS, SHELVING, COUNTERTOP ETC.
   09.21 NEW 2'X4' ACOUSTICAL LAY-IN CEILING TILES AND GRID SYSTEM. BASIS OF DESIGN: USG RADAR BASIC ACOUSTICAL PANEL ITEM #2110 SQUARE EDGE. GRIDS SHALL BE 15/16" EXPOSED TEE HEAVY DUTY. ANGLE MOULDING SHALL BE 7/8" BERC 2 CLIPS. FIELD VERIFY TO MATCH WITH ADJACENT EXISTING. SEE

CEILING DETAILS ON SHEET A503A. 23.09 RETURN AND SUPPLY DIFFUSERS. SEE MECHANICAL DRAWINGS. 26.03 LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS.



**GENERAL NOTES** 

B. SEE SHEET A505A FOR CABINET LEGEND.C. SEE SHEET A601A FOR DOOR SCHEDULE.D. SEE SHEET A602A FOR WINDOW SCHEDULE.

A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND.

E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.





SAMPI	ΓΙΔΥΟΙΙΤ
SAMPLE	LAYOUT 1
	F2 B1 W2
NOTE: AS INDIC PROJECT SHAL WALL FINISH IN CEILING.	Cated in room number 101, majority of the rooms in the L have a single type of floor finish, wall base and wall finish Idicated as "w2" shall apply to all four walls from floor to
SAMPLE	LAYOUT 2
	ROOM NAME
WEST	F2 B3 W2
	F3 W3 W4 LINE OF FLOOR
	SOUTH WALL
NOTE: AS INDIO FLOOR AND W COVERING TR/ (WITHOUT AN / NORTH AND E/ POINTING TO T AND "W4". SEE "W4".	CATED IN ROOM NUMBER 102, SOME ROOMS SHALL HAVE MULTIPLE ALL FINISHES. SEE GENERAL NOTE "C" ON SHEET A603A FOR FLOOR ANSITIONS. THE WALL FINISH INDICATED AS "W2" IN THE ROOM ARROW POINTING TO ANY SPECIFIC WALL) SHALL APPLY TO THE WEST, AST WALL. WHERE WALL FINISHES ARE INDICATED WITH AN ARROW THE SOUTH SIDE, WALL SHALL HAVE MULTIPLE FINISHES SUCH AS "W3" INTERIOR ELEVATIONS FOR TRANSITION DETAILS BETWEEN "W3" AND
COLO	RLEGEND
see finish sc	HEDULE FOR FLOOR COVERING MATERIALS F1, F2, F3, ETC.
	FLOOR COVERING AND WALL BASE AS PART OF BASE BID.
	FLOOR COVERING AND WALL BASE AS PART OF ALTERNATE #1.
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![](_page_13_Figure_0.jpeg)

![](_page_13_Figure_1.jpeg)

![](_page_13_Figure_2.jpeg)

![](_page_13_Figure_3.jpeg)

![](_page_13_Figure_4.jpeg)

![](_page_13_Picture_5.jpeg)

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	3' - 0"	3' - 0''	3' - 0''	3' - 0''	3' - 0''	~
	W2	W2	W2	W2	W2	
		09.09		06.01		06.16
)   	╤┊═╶╪╶═╶╤ ╤	₩, = = = ;> ₹, = = = ;>		$= = \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} $	$= = \sum_{i=1}^{i} \prod_{j=1}^{i} \sum_{j=1}^{i} $	
		09 /P.		06.15		
	F = - T					
			12.09 TYP.			09.08

![](_page_13_Figure_10.jpeg)

![](_page_13_Figure_11.jpeg)

![](_page_13_Figure_12.jpeg)

![](_page_13_Figure_13.jpeg)

10 Billing Office

09.08

![](_page_13_Figure_16.jpeg)

# 7 Exam Room SCALE: 3/8" = 1'-0"

![](_page_13_Picture_18.jpeg)

# **KEYED NOTES**

- 02.05 DOOR. EXISTING TO REMAIN. PROTECT DOOR FROM DAMAGE DURING CONSTRUCTION. 02.08 EXISTING ELECTRICAL PANEL TO REMAIN. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION. 02.24 DOOR. EXISTING TO REMAIN. PROTECT FROM DAMAGE DURING
- CONSTRUCTION. DOOR WILL BE LOCKED AND REMAIN CLOSED FOR FUTURE 05.12 STEEL ANGLE SUPPORTS FOR COUNTERTOP WHERE KNEE SPACE OCCURS BELOW. LOCATE COUNTER SUPPORTS AT 3'-0" O.C. MAX. SEE DETAILS
- 11/A505B AND 12/A505B. 06.01 NEW CABINET, SHELVING ETC. SEE CABINET LEGEND ON SHEET 1/A505A, AND INTERIOR ELEVATIONS, FOR CABINET TYPES SUCH AS BASE CABINETS, WALL CABINETS, TALL CABINETS, SHELVING, COUNTERTOP ETC.
- 06.15 COUNTERTOP, SEE FINISH PLAN AND SCHEDULE. SEE DETAILS ON SHEET A505B. 06.16 NEW PLASTIC LAMINATE SLOPED DUST TOP. SEE DETAIL 1/A505B & 2/A505B.
- 08.01 NEW DOOR, DOOR FRAME AND HARDWARE. SEE DOOR SCHEDULE AND HARDWARE SPECIFICATIONS. 08.26 CUT A NEW OPENING IN THE WOOD STUD FRAMED DRY WALL FOR ACCESS TO THE WORK ROOM. PATCH, REPAIR AND PAINT THE OPENING EDGES OF THE
- GYPSUM SHEATHING AND FRAMING. 09.08 WALL BASE. SEE FINISH FLOOR PLANS FOR WALL BASE TYPE INDICATED WITH A WALL BASE TAG (AS B1, B2, B3, ETC.). SEE FINISH SCHEDULE ON SHEET A603A FOR MATERIAL, SIZE, COLOR, ETC. FOR EACH WALL BASE TAG.
- 09.09 WALL FINISH. SEE FINISH FLOOR PLANS FOR WALL FINISH INDICATED WITH A WALL FINISH TAG (AS W1, W2, W3, ETC.). SEE FINISH SCHEDULE ON SHEET A603A FOR MATERIAL, SIZE, COLOR, ETC. FOR EACH WALL FINIFH TAG.
- 10.03 PAPER TOWEL DISPENSER, OWNER FURNISHED, CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING IN WALL AS REQUIRED. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION, ETC.
- 10.04 SOAP DISPENSER, OWNER FURNISHED, CONTRACTOR INSTALLED. CONTRACTOR SHALL PROVIDE BACKING FOR ALL OWNER FURNISHED ITEMS. SEE RELEVANT DETAILS 1/G003 AND 1/G004 FOR MOUNTING HEIGHT, LOCATION, ETC.
- 11.09 COMPUTER, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. SEE ELECTRICAL DRAWINGS.
- 11.10 PRINTER AND COPIER, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. SEE ELECTRICAL DRAWINGS.
- 11.21 EXAM TABLE, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED. 12.09 FURNITURE, NOT IN CONTRACT. OWNER FURNISHED OWNER INSTALLED.
- 22.20 STAINLESS STEEL SINK. SEE PLUMBING DRAWINGS. CUT OPEN PORTION OF BACK WALL TO INSTALL AND RECONNECT TO PLUMBING LINES. PATCH REPAIR AND PAINT WALL AFTER INSTALLATION.
- 26.20 POWER AND DATA OUTLETS. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION. COORDINATE EXACT LOCATION WITH OWNER.

# **GENERAL NOTES**

- A. SEE SHEET G003 AND G005 FOR SYMBOLS, GENERAL NOTES AND LEGEND. B. SEE SHEET A505A FOR CABINET LEGEND.
- C. SEE SHEET A601A FOR DOOR SCHEDULE. D. SEE SHEET A602A FOR WINDOW SCHEDULE.
- E. SEE SHEET A603A FOR FINISH SCHEDULE AND GENERAL NOTES.

![](_page_13_Picture_39.jpeg)

![](_page_14_Figure_0.jpeg)

# **KEYED NOTE**

- 1. LINE OF FLOOR OR ROOF DECK AS OCCURS.
- 2. TO ACCOMMODATE FOR STRUCTURE DEFLECTION, PROVIDE SLIP CONNECTION BETWEEN TOP RUNNER TRACK AND METAL STUD FRAMING. SEE DETAIL 9 / A502B 3. STUD FRAMING AROUND DUCT OPENINGS. SEE DETAIL 11/A502A
- 4. METAL STUDS, 20 GA STRUCTURAL (33 MILS) AT 16" O.C, U.N.O. BASED ON WALL TYPES INDICATED IN FLOOR PLAN, PROVIDE STUD SIZE AS INDICATED IN WALL TYPES WITH TRACK RUNNERS AT TOP AND BOTTOM. FOR STUD FRAMING AROUND DOOR AND WINDOW OPENINGS, SEE DETAIL 11/A502A 5. LINE OF CEILING AS OCCURS. SEE REFLECTED CEILING PLAN.
- 6. STEEL STUDS. "C-H' SHAPED, 20 GA STRUCTURAL AT 24" O.C.
- 7. PROVIDE ACOUSTIC INSULATION BLANKET FOR FULL DEPTH OF THE STUD CAVITY THROUGHOUT, UNO. FOR 4" & 3 5/8" STUDS PROVIDE R-13 UNFACED BATT INSULATION AND FOR 6" STUDS PROVIDE R-19 UNFACED BATT INSULATION. PROVIDE KRAFT FACED INSULATION FOR ALL APPLICATIONS AT EXTERIOR WALLS. 8. GYPSUM BOARD, 5/8" THICK, TYPE 'X', U.N.O, ATTACHED TO METAL STUD
- FRAMING. SEE GENERAL NOTE 'B' BELOW. 9. ANCHOR BASE TRACK TO CONCRETE FLOOR BELOW. SEE DETAIL 8/A502A
- 10. FILL GAP BETWEEN DECK AND METAL TRACK TOP RUNNER WITH FIRESTOP SEALANT. SEAL TIGHTLY AROUND ALL PIPES, CONDUITS, DUCTS, ETC. ON EACH SIDE OF THE FIRE BARRIER WALL (CONTINUOUS) WITH APPROVED FIRESTOP SEALANT INSTALLED AROUND ALL PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE FIRE BARRIER.
- 11. FILL GAP BETWEEN DECK AND METAL TRACK TOP RUNNER WITH ACOUSTIC SEALANT. SEAL TIGHTLY AROUND ALL PIPES, CONDUITS, DUCTS, ETC. ON EACH SIDE OF THE WALL (CONTINUOUS) AND AROUND ALL PENETRATIONS TO MAINTAIN THE INTEGRITY OF THE WALL.
- 12. STOP GYPSUM BOARD 1/4" ABOVE THE FLOOR TYP. ON EACH SIDE OF WALL. PROVIDE ACOUSTIC SEALANT AT SOUND WALLS AND FIRESTOP SEALANT AT RATED WALLS ON EACH SIDE OF THE WALL (CONTINUOUS).
- 13. OUTLET BOX AS OCCURS. PROVIDE FIRE BARRIER MOLDABLE PUTTY PADS AND FIRESTOP SEALANT AROUND ELECTRICAL BOXES AT ALL RATED WALLS AND SOUND BARRIER WALLS AND AT BACK TO BACK ELECTRICAL BOXES AT SMOKE PARTITION WALLS, TYP.
- 14. PROVIDE STRAPPING AND BLOCKING AT FURRING WALL. SEE DETAIL 12/A502A 15. LINE INDICATES EXISTING WALL OR STRUCTURE. PROVIDE 1/4" AIR GAP.
- 16. GYPSUM BOARD SHAFT LINER PANEL, 1" THICK, TYPE 'X', ATTACHED TO C-H STUDS. 17. STEEL RUNNER, 'J' SHAPED WITH UNEQUAL LEGS OF 1" AND 2", 20 GA, ATTACHED TO FLOOR AND STRUCTURE ABOVE WITH FASTENERS LOCATED NO GREATER THAN 2" FROM ENDS AND NO MORE THAN 24" O.C. RUNNERS SHOULD BE
- POSITIONED WITH SHORT LEG TO FINISHED SIDE OF WALL. 18. STOP STUD RUNNER AT BASE PLATES. 19. STEEL PLATE, 3/8" THICK WITH 4-1/2" DIA. HILTI-HY200 EPOXY ANCHORS WITH
- 2-3/8" HILTI-HIT -2 ANCHORS. EMBED INTO CONCRETE 2-3/8". 20. TUBE STEEL 3" x 3" x 3/16" AT 6'- 0" O.C.
- 21. WALL CAP. SOLID SURFACE MATERIAL ATTACHED TO WALL BELOW. 22 PLYWOOD, 3/4" THICK, CONTINUOUS FIRE TREATED. ATTACH PLYWOOD TO
- VERTICAL STEEL TUBE POST WITH 'L' SHAPED METAL CLIPS AND FASTENERS. 23. PROVIDE 1/4" RADIUS ROUNDED EDGE, CONTINUOUS.
- 24. METAL STUDS 16 GA STRUCTURAL (35 MIL) AT 16" O.C. PROVIDE RUNNERS AT TOP AND BOTTOM. ATTACH TOP RUNNER TO PLYWOOD AND VERTICAL STEEL POST. 25. LINE OF FLOOR.
- 26. RESILIENT CHANNEL, 2" X 1/2", INSTALLED HORIZONTALLY AND SPACED AT 24" 27 WHERE CONDITIONS PROHIBIT EXTENDING STUDS TO DECK, PROVIDE CROSS
- BRACING FROM TOP RUNNER OF WALL TO STRUCTURE ABOVE WITH 3-5/8" 20 GA STUDS AT 4' - 0" O.C. ALTERNATE DIRECTION OF BRACING TO STRUCTURE EVERY 48" AS CONDITIONS ALLOW. 28 TOP TRACK. 18 GA. REQUIRED AT CROSS-BRACED WALLS.

# **GENERAL NOTES**

- A. CONTRACTOR SHALL VERIFY ITEMS LIKE SEMI OR FULLY RECESSED MISCELLANEOUS BOXES, PANELS, PLUMBING LINES, CONDUITS, PIPES, ETC. THAT ARE CONCEALED IN THE WALL. IF 3-5/8" METAL STUDS ARE INADEQUATE, CONTRACTOR SHALL NOTIFY THE ARCHITECT AND USE 6" STUDS. COORDINATE WITH ALL THE CONSULTANT DRAWINGS PRIOR TO WALL CONSTRUCTION AND USE 6" OR 8", 20 GAUGE METAL STUDS FOR FRAMING IN LIEU OF 3-5/8" METAL STUDS.
- USE 5/8" CEMENTITIOUS BOARD IF CERAMIC OR PORCELAIN WALL TILES ARE INDICATED IN THE FINISH SCHEDULE AS WALL FINISH. CEMENTITIOUS BOARD SHALL EXTEND FROM FINISHED FLOOR TO HEIGHT OF TILE. 5/8" WATER RESISTANT GYPSUM BOARD TO BE USED ABOVE TILE HEIGHT IN RESTROOMS. SEE FLOOR PLANS FOR CERTAIN UNIQUE LOCATIONS THAT REQUIRE LEAD LINED GYPSUM BOARD, IMPACT
- RESISTANT GYPSUM BOARD, SOUND ATTENUATION GYPSUM BOARD, ETC. PROVIDE CONTROL JOINT AS PER DETAIL 14/A502A WHEN LENGTH OF GYPSUM BOARD EXCEEDS 50' IN ONE DIRECTION OR AS DIRECTED BY ARCHITECT. COORDINATE WITH ARCHITECT FOR CONTROL JOINT LOCATIONS. WHEN GYPSUM BOARD OR CEMENTITIOUS BOARD IS ATTACHED VERTICALLY, USE 1" LONG #6 DRYWALL SCREWS TO EACH STUD. SCREWS ARE 8" O.C. AT PERIMETER AND 12" AT INTERMEDIATE STUD. WHEN GYPSUM BOARD IS ATTACHED HORIZONTALLY TO STUDS, HORIZONTAL JOINTS SHALL BE STAGGERED WITH THOSE ON THE OPPOSITE SIDE. SCREWS FOR HORIZONTAL APPLICATION SHALL BE 8" O.C. AT VERTICAL EDGES AND 12" O.C. AT INTERMEDIATE STUDS.
- D. FOR LOCATION OF FIRE RATED WALLS AND SMOKE PARTITION WALLS SEE CODE COMPLIANCE PLAN. E. SEE DIMENSION FLOOR PLANS FOR WALL TYPES USED IN THIS PROJECT. SOME WALL
- TYPES MAY NOT BE USED IN THIS PROJECT. WHERE LEAD LINED WALLS ARE INDICATED ON THE DRAWINGS, USE 16 GA STUDS IN
- LIEU OF THE GAUGE OF STUDS CALLED OUT IN THE WALL TYPES. IN PLACES WHERE MECHANICAL DUCTS ARE DESIGNED TO PENETRATE THE FLOOR, TO MEET THE REQUIREMENTS OF FIRE RATING, PROVIDE A TWO-HOUR FIRE RATED ENCLOSURE AT TOP AND BOTTOM OF SHAFT AS INDICATED IN DETAILS 5/A502B
- AND 8/A502B H. IN PLACES WHERE A TWO-HOUR HORIZONTAL ENCLOSURE IS REQUIRED TO SEPARATE THE DUCTS FROM THE SPACE BELOW, PROVIDE A TWO-HOUR FIRE RATED HORIZONTAL ASSEMBLY AS PER DETAILS 5/A502B AND 8/A502B
- IN PLACES WHERE BACKING IS REQUIRED IN WALLS TO SUPPORT WALL HUNG EQUIPMENT, CABINETS, ETC. PROVIDE BACKING IN WALL PER DETAILS 5/A502A AND 13/A502A

![](_page_14_Picture_31.jpeg)

![](_page_15_Figure_0.jpeg)

![](_page_15_Figure_1.jpeg)

![](_page_15_Figure_2.jpeg)

![](_page_15_Figure_3.jpeg)

- AT 16" O.C. 3. METAL STUD BLOCKING 6" X 16" GA. EXTEND BLOCKING TO NEXT STUD BEYOND
- EQUIPMENT -TYPICAL BOTH SIDES. 4. SHEET METAL BACKING 6" X 16" GA. EXTEND
- BLOCKING TO NEXT STUD BEYOND EQUIPMENT - TYPICAL BOTH SIDES. 5. SHEET METAL SCREW 3 #10 AT EACH STUD.
- 6. WHERE WALL TYPE INCLUDES RESILIENT CHANNELS, USE ADDITIONAL CHANNELS AS FURRING FOR BACKING AS REQUIRED.

# GENERAL NOTES

1. EXTEND BACKING PLATE TO NEXT STUD BEYOND SIDE OF FIXTURE OR <u>TYPE '1'</u> ACCESSORIES - BOTH SIDES. BACKING 2. PROVIDE METAL SLEEVES THROUGH WALL FINISH AT FIXTURE AND EQUIPMENT FASTENING. 3. FOR MECHANICAL WORK ANCHORAGE SEE MECHANICAL DRAWINGS. <u>TYPE '2'</u> BACKING Backing Plate Schedule 5 SCALE: 3" = 1'-0" **KEYED NOTES** KEYED NOTES METAL STUDS. SEE WALL TYPES.
 POWDER DRIVEN PINS .014" METAL STUDS. SEE WALL TYPES.
 POWDER DRIVEN PINS .014" DIA. WITH DIA. WITH 1-1/4" MIN. EMBED 1-1/4" MIN. EMBED AT 2'-0" O.C. AND AT 2" FROM THE ENDS. AT 2" FROM THE ENDS. METAL TRACK - 18 GA MIN.
 SHEET METAL SCREWS #12 EA. SIDE. 3. METAL TRACK - 18 GA MIN. 4. SHEET METAL SCREWS #12 EA. 5. BENT TRACK - 18 GA MIN. SIDE. Base Track Detail ( 8 ) SCALE: 3" = 1'-0" BASE AT SPANS > 8'-0" **KEYED NOTES** 1. HANDRAIL OR CORNER guard as occurs. 2. SEE WALL TYPES FOR PARTITION TYPE. GYPSUM BOARD, 5/8" TYPE 'X', CONTINUOUS ON ALL SIDES BEHIND EQUIPMENT. 4. CLIP ANGLE 2" X 2" X 20" GA MIN. CONT. 5. RECESSED EQUIPMENT AS OCCURS. PLAN VIEW, Section SHALL BE BASE AT SPANS < 8'-0" SIMILAR Framed Opening at Jamb Detail at Recessed Equip. 10) SCALE: 3" = 1'-0" 9 SCALE: 3" = 1'-0" **KEYED NOTES** KEYED NOTES . GYPSUM BOARD, ATTACHED TO METAL STUD FRAMING. SEE WALL TYPES AND WALL SECTIONS FOR GYPSUM BOARD TYPE. METAL STUDS, 3 5/8" THICK. 16 GA AS SHOWN. 2. EXPANSION JOINT ("E-Z STRIP, V-SHAPED VINYL EXPANSION JOINT BY NATIONAL 8" WIDE X (HEIGHT OF WALL BRACKET + 6") HIGH X 16 GYPSUM COMPANY OR EQUIVALENT) ATTACHED TO GYPSUM BOARD. GA BACKING PLATE. ANCHOR TO 16 GA STUDS. METAL STUDS. SEE WALL TYPES AND WALL SECTIONS FOR STUD SIZE, THICKNESS, SHEET METAL SCREWS #10 THROUGHOUT 9/64" GAUGE, SPACING, ETC. DIAMETER HOLES AT 18" O.C. 4. TWO LAYERS OF TYPE 'X' GYPSUM BOARD, 5/8" THICK, ATTACHED TO STUDS WITH GYPSUM BOARD, 5/8" THICK, TYPE 'X', TYPICAL U.N.C DRYWALL SCREWS, 1-5/8" @ 24" O.C. USE NON FIRE RATED GYPSUM BOARD IF ERGOTRON LX WALL MOUNT BRACKET, TV BRACKET, PHYSIOLOGICAL MONITOR, ETC O.F.C.I. WALLS OR CEILING ARE NOT FIRE RATED. NOTE: PROVIDE JOINT AT EVERY 50'-0" OF WALL THAT RUNS IN THE SAME DIRECTION. PRIOR TO INSTALLATION OF JOINTS, GET APPROVAL FROM ARCHITECT FOR CONTROL JOINT LOCATIONS IN WALL. PLAN VIEW \_\_\_\_\_\_5 1/2"~ 14 Control Joint - Gypsum Board Plan Detail at Bracket 13) FIGHT DE SCALE: 3" = 1'-0"

![](_page_15_Figure_10.jpeg)

![](_page_15_Picture_11.jpeg)

![](_page_16_Figure_0.jpeg)

- APPLICATIONS. WHERE A WALL IS DESIGNATED AS BOTH A SOUND-CONTROL WALL AND A FIRE-RATED WALL, REFER TO FIRE-RATED HEAD-OF-WALL CONDITIONS. J. WHERE A WALL IS DESIGNATED AS A SOUND-CONTROL WALL, FILL ALL VOIDS WITH SOUND ATTENUATION BATTS (SAB).
- K. AT SMOKE PARTITIONS AND SOUND-CONTROL WALLS EXTEND GWB ON BOTH SIDES INTO THE FLUTES, CUT TO FOLLOW UNDULATING SURFACES OF THE SUPERSTRUCTURE INCLUDING, BUT NOT LIMITED TO, FLUTES IN METAL DECKING. PROVIDE A CONTINUOUS BEAD OF SEALANT (AS SPECIFIED) TO SUPERSTRUCTURE.

ISOMETRIC VIEW OF SLOTTED TOP TRACK

Slip Connection Detail

SCALE: 3" = 1'-0"

![](_page_16_Figure_3.jpeg)

 $\langle 8 \rangle$ 

 $\langle 3 \rangle$ 

![](_page_16_Figure_4.jpeg)

![](_page_16_Figure_5.jpeg)

- 3. SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM). 4. SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9/A502B 5. METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL
- INFORMATION.
- 6. STRAPS 2" x 18" GA AT 16" O.C. 7. Z-BARS 20 GA TO ACCOMMODATE SFRM THICKNESS.

DESIGN BASIS: UL-HW-D-0252 STEEL BEAM

<u>STEEL BEAM</u>

# KEYED NOTES

- 1. FLOOR OR ROOF DECK AS OCCURS. 2. STEEL BEAM AS OCCURS. SEE STRUCTURAL DRAWINGS.
- B. SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM). 4. SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9 / A502B 5. METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL
- INFORMATION.
- 6. STRAPS, 2" x 18" GA AT 16" O.C. 7. Z-BARS, 20 GA TO ACCOMMODATE SFRM THICKNESS.
- 8. ACOUSTIC SEALANT, CONTINUOUS. 9. GYPSUM BOARD, 5/8" THICK. SEE WALL TYPES ON SHEET A501 FOR
- ADDITIONAL INFORMATION. 10. ADDITIONAL LAYER OF GYP. BD. WHERE OCCURS. 11. GYPSUM BOARD CUT TO FOLLOW PROFILE OF DECKING AT SMOKE
- PARTITION BOTH AT SOUND WALLS. 12. FILL FLUTE VOID WITH BATT INSULATION.

KEYED NOTES 1. FLOOR OR ROOF DECK AS OCCURS. 2. STEEL BEAM AS OCCURS. SEE STRUCTURAL DRAWINGS. 3. SPRAY APPLIED FIRE RESISTIVE MATERIAL (SFRM). 4. SLOTTED TOP TRACK. FOR ADDITIONAL INFORMATION SEE DETAIL 9/A502B 5. METAL STUD WALL. SEE WALL TYPES ON SHEET A501A FOR ADDITIONAL INFORMATION. 6. STRAPS, 2" x 18" GA AT 16" O.C. Z-BARS, 20 GA TO ACCOMMODATE SFRM THICKNESS. 3. ACOUSTIC SEALANT, CONTINUOUS. 9. GYPSUM BOARD, 5/8" THICK, TYPE 'X'. 10. ADDITIONAL LAYER OF GYP. BD. AT 2-HR RATED WALLS. 11. GYPSUM BOARD CUT TO FOLLOW PROFILE OF DECKING AT SMOKE PARTITION BOTH AT SOUND WALLS. 12. FIRE STOP JOINT SPRAY. 13. MINERAL WOOL 4 LB. FRICTION FIT BETWEEN TOP TRACK AND FLUTE. DESIGN BASIS: UL-HW-D-0252 <u>STEEL BEAM</u>

## KEYED NOTES 1. FLOOR OR ROOF DECK AS OCCURS. 2. GYPSUM BOARD1" SHAFT LINER PANEL 6" HIGH MIN. CUT TO FLUTED DECK CONTOUR. 3. MINERAL WOOL 3" 4 LB MIN. FRICTION FITTED BETWEEN J TRACK AND FLUTE. 4. MINERAL WOOL 1" 4 LB MIN. FRICTION FITTED INSIDE J TRACK CAVITY. 5. GYPSUM BOARD 1" SHAFT LINER PANEL STOP AT 1" BELOW THE BOTTOM OF DECK. 6. ACOUSTICAL SEALANT 5/8" x CONT. J TRACK SEE WALL TYPES. 8. GYPSUM BOARD 5/8" THICK, TYPE 'X'. PANELS CUT TO FLUTED DECK CONTOUR. SEE WALL TYPFS. 9. CH STUDS @ 24" O.C. MAX. SEE WALL TYPES FOR SIZE. 10. ADDITIONAL LAYER OF GYPSUM BOARD AT 2HR RATED SHAFT WALL SHOWN DASHED, SEE WALL TYPES ON SHEET A501A. $\checkmark$ 5 $\rangle$ PERPENDICULAR PARALLEL TO to deck DECK Head Detail at Shaft Wall SCALE: 3'' = 1'-0'' $\langle 5 \rangle$ NOTE: THIS DETAIL APPLIES AT ALL FULL HEIGHT NON-NOTE: THIS DETAIL APPLIES AT ALL 2 HOUR RATED, SMOKE TIGHT, OR 1 HOUR RATED PARTITIONS RATED PARTITIONS WHERE ONE SIDE OF WALL WHERE GWB IS OBSTRUCTED. U.N.O. IS OBSTRUCTED. U.N.O. Alternate Framing Details at Rated Walls (10) SCALE: 11/2" = 1'-0"

![](_page_16_Figure_21.jpeg)

![](_page_16_Picture_23.jpeg)

![](_page_17_Figure_0.jpeg)

![](_page_17_Picture_8.jpeg)

Ceiling Details

![](_page_17_Picture_10.jpeg)

![](_page_18_Figure_0.jpeg)

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![](_page_18_Picture_9.jpeg)

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![](_page_18_Picture_11.jpeg)

![](_page_18_Figure_12.jpeg)

![](_page_18_Picture_13.jpeg)

![](_page_18_Picture_14.jpeg)

![](_page_19_Figure_0.jpeg)

![](_page_19_Picture_10.jpeg)

![](_page_20_Figure_0.jpeg)

![](_page_21_Figure_0.jpeg)

Fire Extinguisher Cabinet

Detail

SCALE: 1" = 1'-0"

3

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- 1. ROOM NUMBER (1/32" RAISED TEXT CHARACTERS, HELVETICA FONT, MATTE FINISHED OPAQUE ACRYLIC SHEET) ATTACHED TO FRONT PANEL. 2. MATTE FINISHED OPAQUE ACRYLIC FRONT PANEL (WITH TRANSPARENT WINDOW) ATTACHED TO BASE PANEL. 3. TRANSPARENT WINDOW FOR TEXT INSERT (HELVETICA FONT). TEXT INSERT SHALL BE FURNISHED AND INSTALLED BY SIGN CONTRACTOR. 4. BRAILLE CHARACTERS AS PER ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS DENOTING ROOM NUMBER AND NAME.
- 6. MATTE FINISHED OPAQUE ACRYLIC FRONT PANEL ATTACHED TO BASE PANEL. 7. PROVIDE APPROPRIATE SYMBOL FOR MEN, WOMEN, UNISEX, BOYS AND GIRLS TOILET ROOM AS OCCURS.
- 9. ROOM NAME (1/32" RAISED TEXT CHARACTERS, HELVETICA FONT, MATTE FINISHED OPAQUE ACRYLIC SHEET) ATTACHED TO FRONT PANEL. 10. PROVIDE DISABLED SYMBOL AS INDICATED IN THE SIGN FOR ALL ROOMS THAT ARE WHEEL CHAIR ACCESSIBLE.
- MATTE FINISHED, OPAQUE ACRYLIC SHEET BASE PANEL ATTACHED TO SHIM PLATE.
   SHIM PLATE, ALUMINUM, 1/4" THICK, CONCEALED, WITH PRE-DRILLED HOLES FOR COUNTERSUNK FASTENERS. USE APPROPRIATE FASTENERS
- 14. RECESS 1/16" FOR TEXT INSERT, FOR SIGN "TYPE S1" ONLY.

![](_page_21_Figure_13.jpeg)

SIGNAGE IS CONTRACTOR PROVIDED AND INSTALLED TO MATCH BUILDING STANDARD. FIELD VERIFY TO COORDINATE WITH OWNER.

![](_page_21_Picture_18.jpeg)

Details

![](_page_21_Picture_20.jpeg)

![](_page_22_Figure_0.jpeg)

![](_page_22_Figure_1.jpeg)

![](_page_22_Figure_2.jpeg)

![](_page_22_Figure_3.jpeg)

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I																		
		DOOR SCH	EDULE															
	1. VISION PANEL. GLAZING IN VISION PANEL SHALL BE 1/4" THICK, CLEAR,		V	WIDTH	DOOR	\$I7F				FRAME			DETAILS		_	FIRE		
	TEMPERED, GLAZING. FOR WOOD DOOR, PROVIDE WOOD TRIM FRAME FLUSH WITH THE FACE OF THE DOOR, AROUND THE VISION PANEL OPENING. STAIN AND SPECIES OF WOOD TRIM SHALL MATCH WOOD	DOOR # # OF PANELS	V					TYPE	TYPE (2/A601A)	DEPTH	MATERIAL	JAMB	HEAD	THRESHOLD	DOOR #	RATING (MINUTES)	GROUP	COMMENTS
	DOOR. FOR HOLLOW METAL DOOR, PROVIDE METAL TRIM AROUND VISION PANEL. GLAZING SHALL BE FIRE RATED IF DOORS ARE REQUIRED	A105A 1	<b>W I</b> 3' - 0''	W2	7' - 0''	1 3/4"	WD	(1/A601A) A	1	7 3/4"	НМ	1/A504A	1/A504A		A105A		2.0	2.
	TO BE FIRE RATED. 2. FOR EXTERIOR DOORS OF THIS TYPE, GLAZING SHALL BE TINTED, INSULATED TEMPERED LOW F. AND 1" THICK FOR INTERIOR DOORS OF	A106A 1	3' - 0''		7' - 0''	1 3/4"	WD	A	1	7 3/4"	HM	1/A504A	1/A504A		A106A		1.0	1
	THIS TYPE, GLAZING SHALL BE CLEAR, TEMPERED AND 1/4" THICK. 3. STAINLESS STEEL WELDED WIRE MESH (15 GAUGE) ATTACHED TO DOOR.																	
	PROVIDE FRAME AROUND THE OPENING IN DOOR TO SECURE THE MESH IN PLACE. 4. METAL LOUVER IN DOOR FOR VENTILATION.																	
_																		
		COMMENT	S															
		1. NEW DOOR, FRAM 2. NEW DOOR, FRAM	E AND HARD E AND HARD	WARE. PROVIDE WARE. PROVIDE	e office lock e latch at this	AT THIS DOOR. DOOR.					<u>NOTES:</u>							
											1. THE DOOR GRASPING	HARDWARE SH , OR TWISTING	ALL MEET THE OF THE WRIST	REQUIREMENTS ( IN ORDER TO OP	OF IBC 1010.1.9 ERATE.	P.1. HARDWARES	SHALL NOT REQUI	RE PINCHING, TIGHT
	<ol> <li>GLAZING SHALL BE CLEAR, TEMPERED, AND 1/4" THICK.</li> <li>DOOR FRAME, SEE DOOR SCHEDULE.</li> <li>WUERE DOOR SCHEDULE.</li> </ol>																	
	AND WITH A TYPICAL DOOR HEIGHT OF 7' - 0", USE 4" FRAME AS FRAME HEAD INSTEAD OF THE STANDARD 2" FRAME.																	
— –																		
		HARDWAR	E GROI	UPS						·								
		HARDWARE SET 1.0																
		3 HINGE		TA2714 4-1/	/2" X 4-1/2"	US26D	) M	IK										
		1 CYLINDRICALLOCK 1 CLOSER (SURFACE) 1 KICKPLATE	(OFFICE)	DC6210 K1050 10'' X	ZD ( 2''LDW 3BE CSK	626 689 US32D	RI RI D RC	U U O										
		1 WALL STOP 1 GASKETING		409 \$773D		US32D PE	RC RC	0										
		HARDWARE SET 2.0																
		3 HINGE		TA2714 4-1/	/2" X 4-1/2"	U\$26D	) M	1K										
		1 CLOSER (SURFACE) 1 KICKPLATE		DC6210 K1050 10" X	2"LDW 3BE CSK	626 689 US32D	RL RL	U O										
		1 WALL STOP 1 GASKETING		409 S773D		US32D PE	) RC	0										
	I									1								

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![](_page_22_Picture_12.jpeg)

Door Schedule

![](_page_22_Picture_14.jpeg)

![](_page_23_Figure_1.jpeg)

						GENERAL NOTES
MANUFACTURER		STYLE -	MODEL # -	COLOR -	<b>COMMENTS</b> 2, 3	A. BASIS-OF-DESIGN FOR FINISHES: FINISHES INDICATED ON THE FINISH SCHEDULE ARE BASED ON THE NAMED MANUFACTURER AND THEIR PRODUCTS. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE THE NAMED PRODUCT OR A
-		-	-	-	2	COMPARABLE PRODUCT BY ONE OF THE APPROVED MANUFACTURERS LISTED IN THE PROJECT MANUAL. SEE RELEVANT SPECIFICATION SECTION.
SHERWIN WILLIAMS		SATIN FINISH	-	-	2	HOW DIFFERENT TYPES OF REQUIRED FINISHES ARE INDICATED WITH FINISH TAGS FOR FLOORS, WALLS, MISCELLANEOUS SURFACE, ETC. SEE FINISH FLOOR PLANS FOR REQUIRED FINISHES (INDICATED WITH FINISH TAGS SUCH AS F1, B1, W1, ETC.).
-		-	-	-	1, 2	C. LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF FLOOR COVERING IS INDICATED ON THE FINISH FLOOR PLANS. IN PLACES WHERE TWO DIFFERENT FLOOR COVERING ABUTS EACH OTHER, CONTRACTOR SHALL FOLLOW THE
SHERWIN WILLIAMS		SEMI-GLOSS FINISH	-	-	2	RELEVANT APPLICABLE "FLOOR COVERING TRANSITION DETAILS" INDICATED IN THIS CONSTRUCTION DOCUMENTS. WHERE TWO ROOMS ARE REQUIRED TO HAVE DIFFERENT FLOOR COVERINGS, LINE OF TRANSITION SHALL TYPICALLY OCCUR
-		-	-	-	2	BELOW THE CENTER OF THE DOOR (LOCATED BETWEEN THE TWO ROOMS). AS THESE TRANSITION LINES ARE NOT INDICATED BELOW THE DOOR ON THE FINISH FLOOR PLANS, CONTRACTOR SHALL PROVIDE METAL TRANSITION STRIP
-		-	-	-	2	(MANUFACTURED BY SCHLUTER OR EQUIVALENT) AS REQUIRED. AT EXTERIOR DOORS, PROVIDE ALUMINUM THRESHOLD MATCHING THE DOORWAY. FOR REMODEL PROJECTS, COORDINATE WITH DEMOLITION FLOOR PLAN AND NEW
CORIAN SOLID SURF.	FACE	-	-	SAVANNAH	-	THAT IS SCHEDULED TO REMAIN. D. LINE OF TRANSITION BETWEEN DIFFERENT TYPES OF WALL FINISH IS INDICATED ON
-		- -	- -	- -	2 2	THE INTERIOR ELEVATIONS AND FINISH FLOOR PLANS. FOR REQUIRED WALL PROTECTION TYPE (INDICATED WITH TAG WP1, WP2, ETC.), ON WALLS, COORDINATE WITH FINISH FLOOR PLANS AND INTERIOR ELEVATIONS.
-		-	-	-	2, 4	E. THERE ARE MISCELLANEOUS SURFACES THAT ARE EXPOSED AND WILL REQUIRE A FINISH. SUCH MISCELLANEOUS SURFACES ARE INDICATED IN THE DRAWINGS WITH FINISH TAGS SUCH AS MS1, MS2, ETC.
						<ul> <li>F. PAINT ALL EXPOSED VISIBLE ITEMS SUCH AS METAL DECK, STELL ANGLES, STEEL BEAMS, STELL TRUSSES, MISC. STELL ITEMS, PIPES, CONDUITS, ETC. UNLESS SPECIFICALLY NOTED AS A SURFACE NOT TO BE PAINTED, OR IF NATURAL FINISH IS REQUIRED, PAINT SURFACES USING FIELD COLORS AND ACCENT COLORS SPECIFIED BY THE ARCHITECT. DO NOT PAINT CONCEALED SURFACES, FINISHED METAL SURFACES, OPERATING PARTS, AND RRE-TINISHED ITEMS, VERRY PAINTING SURFACE (SUCH AS STEEL, CONCRETE, MASONRY, GYPSILM BOARD, WOOD, ETC.) AND USE THE APPROPRIATE PAINT AND METHOD INDICATED IN THE PROJECT MANUAL UNDER RELEVANT SPECIFICATION SECTION. ALL HOLLOW METAL DOOR FRAMES.</li> <li>G. IN ROOMS AND AREAS WHERE GYPSIUM BOARD CELLING IS INDICATED, PAINT CELLING WITH HES ANDE COLOR AND TYPE AS ADLACENT WALLS. IN WET ROOMS (LIKE RESTROOM, KITCHEN, ETC.) WHERE EPOXY PAINT IS INDICATED. PAINT CELLING WITH HES ANDE COLOR AND TYPE AS ADLACENT WALLS. IN WET ROOMS (LIKE RESTROOM, KITCHEN, ETC.) WHERE EPOXY PAINT IS INDICATED AS A REQUIREMENT ON WALLS, PAINT CELLINGS AND SOFHTIS WITH EPOXY TYPE PAINT. ALL GYTSUM BOARD SOFHTIS SHALL BE PAINTED. COORDINATE ACCENT COLOR LOCATIONS WITH ARCHITECT WHEREVER INDICATED. SEE INFERIOR ELEVATIONS FOR PLANTIC LAMINATE FINISHES OVER CABINETS, COUNTERTOPS, WALLS, ETC. PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2. ETC. COUNTERTORS THAT TAKE MONOLITIC MATERIAL (SUCH AS SOLID SURFACE, QUARTZ, ETC., PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2. ETC. COUNTERTORS THAT TAKE MONOLITIC MATERIAL SUCH AS SOLID SURFACE, QUARTZ, ETC., PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2. ETC. COUNTERTORS THAT TAKE MONOLITIC MATERIAL SUCH AS SOLID SURFACE, QUARTZ, ETC., AND NOT PLASTIC LAMINATE FINISHES ARE INDICATED AS PL1, PL2. ETC. COUNTERTORS THAT TAKE MONOLITIC MATER MISECOT.</li> <li>IN ROOMS AND AREAS (SUCH AS TOILET ROOMS, SHOWKES, ETC.) WHERE CERAMIC OR PORCELIAN INDARCTURED BY SCHLUTER OR EQUIVALENT AT ALL OUTSIDE VERTICAL CORRESA AND TOP FOR WAILSONS.</li> <li>IN RECOMS AND AREAS SHOW AND LABUTS MASONRY WALL, PROVI</li></ul>
IEDULE. R, ETC.). SEE ICHED SITION STRIP DNS. IGN.			<ul> <li><b>EXAMPLE 1</b> CONTROL COVERING AS OCCURS. SEE FINISH SCHEDULE.</li> <li>I. CARPET FLOOR COVERING AS OCCURS. SEE FINISH SCHEDULE.</li> <li>I. LINE OF FLOOR.</li> <li>J. DOOR AS OCCURS.</li> <li>FLOOR COVERING (VINYL COMPOSITION TILE, LUXURY VINYL TILE, ETC. AS OCCURS). SEE FINISH SCHEDULE.</li> <li>METAL TRANSITION STRIP. MODEL NUMBER LVT 130 IN ETCHED ALUMINUM BY FUTURA OR EQUIVALENT. ATTACH TRANSITION STRIP TO SUBSTRATE PER MANUFACTURERS RECOMMENDATIONS.</li> <li>CENTERLINE OF DOOR AND TRANSITION STRIP SHALL ALIGN.</li> </ul>			<ul> <li>KEYED NOTES ()</li> <li>FLOOR COVERING (VINYL COMPOSITION TILE, LUXURY VINYL TILE, ETC. AS OCCURS). SEE FINISH SCHEDULE.</li> <li>LINE OF FLOOR.</li> <li>DOOR AS OCCURS.</li> <li>LIQUID APPLIED FINISH (OPAQUE SEALER, CLEAR SEALER, ETC.). SEE FINISH SCHEDULE.</li> <li>METAL TRANSITION STRIP. MODEL NUMBER LVT 405 IN ETCHED ALUMINUM BY FUTURA OR EQUIVALENT. ATTACH TRANSITION STRIP TO SUBSTRATE PER MANUFACTURERS RECOMMENDATIONS.</li> <li>CENTERLINE OF DOOR AND TRANSITION STRIP SHALL ALIGN.</li> </ul>
R (	RESILIENT FLOOR COVERING TO C. (VCT, LVT) (C	ARPET FLOOR COVERING CARPET TILE, BROADLOOM, WALK OFF	MAT)	RESILIENT FLOOR COVERIN (VCT, LVT)	IG TO FINISH SUBSTRATE (CONCRETE, GYPCRE	TE, WOOD)

![](_page_23_Picture_7.jpeg)

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SYMBOL LEG	END - PIPING
NOTE: ALL ABBREVIATION	S MAY NOT BE USED.
SYMBOL	DESCRIPTION
	SHUT OFF VALVE
	GATE VALVE
	CHECK VALVE
	AUTOMATIC 2-WAY VALVE
×	AUTOMATIC 3-WAY VALVE
	GLOBE VALVE
Φ	BALL VALVE
Į. į	RELIEF VALVE
	PRESSURE REDUCING VALVE
	BUTTERFLY VALVE
S X	SOLENOID VALVE
	ANGLE VALVE
	VENTURI VALVE
$\otimes$	BALANCING OR PLUG COCK
$\boxtimes$	FLOW SETTER
$\otimes$	EXPANSION VALVE
$\overline{\nabla}$	GAS COCK
Ямач	MANUAL AIR VENT
F <b>⇒</b>	STRAINER
Оı	GAUGE COCK
	FLEXIBLE CONNECTION
9	PRESSURE GAUGE
ļ	THERMOMETER
->	PIPE REDUCER
$\overline{\circ}$	REFRIGERANT SITE GLASS
	REFRIGERANT STRAINER
	REFRIGERANT FILTER DRIER
0	90 DEGREE ELBOW UP
ə	90 DEGREE ELBOW DOWN
	90 DEGREE TEE UP
	90 DEGREE TEE DOWN
	PIPE UNION

SYMBOL LEGEND - N	MECH

\_\_\_\_\_]

PIPE CAP

PIPE ANCHOR

FLOAT AND THERMOSTATIC TRAP

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.		
SYMBOL	DESCRIPTION	
	SQUARE OR RECTANGULAR SUPPLY DIFFUSER	
	SQUARE OR RECTANGULAR RETURN DIFFUSER	
	SQUARE OR RECTANGULAR EXHAUST DIFFUSER	
$\bigcirc$	ROUND DIFFUSER	
	LINEAR SLOT GRILLE OR DIFFUSER	
	FLEXIBLE DUCT	
	SIDEWALL GRILLE OR REGISTER	
	DUCT HIGH EFFICIENCY TAKE OFF WITH BALANCING DAMPER	
	BALANCING DAMPER	
	FIRE DAMPER	
	FIRE / SMOKE COMBINATION DAMPER	
$ ( \mathbf{\bar{T}}  ( \mathbf{\bar{S}}  ( \mathbf{\bar{H}} ) ) ) $	THERMOSTAT - SENSOR - HUMIDIST	

SYMBOL LEGE	ND - DUCTWORK
NOTE: ALL ABBREVIATI	ONS MAY NOT BE USED.
	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN DUCT UP
	RECTANGULAR RETURN DUCT DOWN
	RECTANGULAR EXHAUST DUCT UP
	RECTANGULAR EXHAUST DUCT DOWN
	ROUND SUPPLY DUCT UP
	ROUND SUPPLY DUCT DOWN
	ROUND RETURN DUCT UP
	ROUND RETURN DUCT DOWN
	ROUND EXHAUST DUCT UP
	ROUND EXHAUST DUCT DOWN
	OVAL SUPPLY DUCT UP
	OVAL SUPPLY DUCT DOWN
	OVAL RETURN DUCT UP
	OVAL RETURN DUCT DOWN
	OVAL EXHAUST DUCT UP
	OVAL EXHAUST DUCT DOWN
	SPIRAL OVAL DUCT
	SPIRAL ROUND DUCT
	DUCT INSULATION
	DUCT LINING
	90° RECTANGULAR ELBOW WITH TURNING VANES
	90° ROUND RADIUS ELBOW
	GORED OVAL RADIUS ELBOW
	DUCT SIZE OR SHAPE TRANSITION
	DUCT TO BE DEMOLISHED

)

NOTE	ALL ABBREVIATIONS MAY NOT BE USED.
ABBREVIATION	DESCRIPTION
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CA	COMPRESSED AIR
CD	CONDENSATE DRAIN
C02	CARBON DIOXIDE
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
——FP	FIRE PROTECTION
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
——FOV——	FUEL OIL VENT
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
HPC	HIGH PRESSURE CONDENSATE
MPC	MEDIUM PRESSURE CONDENSATE
LPC	LOW PRESSURE CONDENSATE
HPS	HIGH PRESSURE STEAM
MPS	MEDIUM PRESSURE STEAM
LPS	LOW PRESSURE STEAM
——HHWR——	HEATING HOT WATER RETURN
——HHWS——	HEATING HOT WATER SUPPLY
LPG	LIQUID PROPANE GAS
MA	MEDICAL AIR
NG	NATURAL GAS
NO	NITROUS OXIDE
O	OXYGEN
PC	PUMPED CONDENSATE
RG	REFRIGERANT GAS
	REFRIGERANT LIQUID
SMR	SNOW MELT RETURN
SMS	SNOW MELT SUPPLY
VAC	VACUUM

SYMBOL LEGEND - MISC		
F	REFERENCE LINES AND SYMBOLS	
SYMBOL	DESCRIPTION	
-	VIEW OR DETAIL INDICATOR: # INDICATES DETAIL NUMBER, SHEET INDICATES DRAWING SHEET WHERE VIEW OR DETAIL IS SHOWN.	
	ELEVATION OR SECTION INDICATOR: # INDICATES VIEW NUMBER, SHEET INDICATES DRAWING SHEET WHERE VIEW IS SHOWN.	
NAME	ROOM / SPACE INDICATOR	
<b>#</b>	KEYNOTE INDICATOR	
<u>/#</u>	REVISION INDICATOR	
XX-##	PLUMBING FIXTURE INDICATOR	
XX-##	EQUIPMENT INDICATOR	
TAG CFM	REGISTER, GRILLE, OR DIFFUSER INDICATOR	
<b>-∿-</b> OR ∽	BREAKLINE	
MATCH LINE SEE XX/XXX	MATCHLINE INDICATOR	
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE	
$\bullet$	NEW CONNECTION TO EXISTING	
	POINT OF DEMOLITION	

- HUMIDISTAT

# ABBREVIATIONS

	NOTE: ALL ABBREVIATIONS MAY NOT BE USED.
(E)	EXISTING
(F)	
AC	AIR CONDITION(-ING,-ED) AIR PRESSURE DROP
BD	BALANCING DAMPER
BHP	BRAKE HORSE POWER
BTU BTUH	BRITISH THERMAL UNIT
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CV	
DCW	DRY BULB TEMPERATURE DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRC
	DEPTH, DEEP, OR DROP IN PRESSURE
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ELEC	ELECTRIC
	ELEVATION
EVAP	EVAPORAT(-E, -ING, -ED, -OR)
EWT	ENTERING WATER TEMPERATURE
	EXTERNAL FIRE DAMPER
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FSD	FIRE SMOKE DAMPER
GE	GREASE EXHAUST
GPH GPM	GALLONS PER HOUR
	HEAD
HG	MERCURY
HP	HORSEPOWER
нк HTG	HEATING
HZ	HERTZ (FREQUENCY)
IN	INCH
	KILOWATT LEAVING AIR TEMPERATURE
LBS	POUNDS
LH	LATENT HEAT
	LOCKED ROTOR AMPS
LWT	LEAVING LEAVING WATER TEMPERATURE
МВН	THOUSAND BTU PER HOUR
MCA MED	
NC	NORMALLY CLOSED OR NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP OR DIFFERENCE
PG	PROPOLENE GLYCOL
PH	PHASE
PPM PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	PSIABSOLUTE
PSIG	PSI GAUGE RETURN AIR
RECIRC	RECIRCULATE (-ER, -ED, -ING)
REFR	REFRIGERATION
	REQUIRED RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
SA	
SCFM	STANDARD CUBIC FEET PER MINUTE SOFT COLD WATER
SH	SENSIBLE HEAT
SP	STATIC PRESSURE
SPEC(S)	SPECIFICATION(S)
SS	SANITARY SEWER, SOIL, WASTE
STD	STANDARD
TEMP	TEMPERATURE
TOT	TOTAL
I STAT TVP	TYPICAL
V	VOLT, VOLTAGE OR VENT
VAC	VACUUM
	VARIABLE AIR VOLUME
VENT	VENT, VENTILATION
VERT	VERTICAL
	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
WB	WET BULB TEMP
WC	
WPD	WATER PRESSURE DROP
WTR	WATER

# MECHANICAL GENERAL NOTES

- 1. THE MECHANICAL DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENT, & EXTENT OF THE MECHANICAL SYSTEM. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THESE DRAWINGS DO NOT SHOW ALL OFFSETS, BENDS, OR ELBOWS NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. CONTRACTOR SHALL MAKE ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE & OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT.
- 2. MAJOR DEVIATIONS SUCH AS CHANGES IN SIZES, WEIGHTS, QUANTITIES, OR MATERIAL REQUIRE PRIOR APPROVAL BY THE DESIGN ENGINEER. 3. THE DRAWINGS & SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER & SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE & NOT THE OTHER BEING FURNISHED & INSTALLED
- AS THOUGH SHOWN AND CALLED OUT IN BOTH DOCUMENTS. 4. THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENTLY ADOPTED BUILDING CODES, MECHANICAL CODE, PLUMBING CODE, ELECTRICAL CODE, & ALL OTHER
- APPLICABLE CITY, COUNTY, STATE, & FEDERAL CODES & REGULATIONS IN EFFECT. 5. THE ENTIRE MECHANICAL INSTALLATION SHALL CONFORM TO ALL CODES, RULES, REGULATIONS, & REQUIREMENTS OF THE BUILDING OWNER.
- 6. ALL MECHANICAL COMPONENTS AND EQUIPMENT SHALL BE INSTALLED TO CONFORM WITH ANY APPLICABLE LOCAL SEISMIC REQUIREMENTS. 7. PRIOR TO FABRICATION & INSTALLATION OF ANY MECHANICAL COMPONENT THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL WORK WITH ALL OTHER BUILDING TRADES, INCLUDING
- BUILDING TRADES HIRED DIRECTLY BY THE OWNER. WHERE CONFLICTS MAY OCCUR, THEY SHALL BE RESOLVED PRIOR TO INSTALLATION. 8. VERIFY ALL REQUIRED SERVICE CONNECTIONS, INCLUDING ELECTRICAL CHARACTERISTICS, FOR ALL EQUIPMENT PRIOR TO ORDERING OR FABRICATING MECHANICAL EQUIPMENT AND COMPONENTS.
- 9. THE SPACE ABOVE CEILINGS IS LIMITED. CAREFUL COORDINATION IS REQUIRED WITH ALL TRADES BEFORE ANY PIPE, DUCT, OR EQUIPMENT IS ORDERED &/OR INSTALLED. ANY CONFLICTS &/OR CHANGES FOUND DURING INSTALLATION THAT RESULTS FROM THE LACK OF COORDINATION BY THE CONTRACTORS DURING THE SHOP DRAWING PROCESS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- 10. ALL MECHANICAL INFORMATION IS NOT SHOWN ON THE MECHANICAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS. 11. THE CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW & USE, WHERE APPROPRIATE, ALL THE MECHANICAL DETAILS SHOWN ON THE DRAWINGS. DETAILS MAY OR MAY NOT BE CALLED OUT ON THE DRAWINGS WITH SYMBOLS OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE MECHANICAL SYSTEM WITHOUT USING THE INCLUDED DETAILS
- SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. 12. ALL EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM STRUCTURAL MEMBERS. STRUCTURAL ELEMENTS SHOWN IN DETAILS MAY OR MAY NOT PERTAIN TO ANY PORTION OF THE BUILDING. COORDINATE ALL MOUNTING REQUIREMENTS WITH ARCHITECTURAL & STRUCTURAL DRAWINGS AND SPECIFICATIONS.
- 13. ALL MECHANICAL COMPONENTS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ALL MANUFACTURER RECOMMENDATIONS. 14. ALL SIMILAR EQUIPMENT SHALL BE OF THE SAME MANUFACTURER. AIR INLETS & OUTLETS OF SIMILAR TYPES SHALL BE OF THE SAME
- MANUFACTURER. 15. ANY PART OF THE MECHANICAL INSTALLATION THAT FAILS, IS DEEMED UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO
- THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EQUIPMENT CHECK-IN, SAFEKEEPING, & DAMAGE. 16. COORDINATE WITH ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL CEILING DIFFUSERS & GRILLES.
- 17. CONTRACTOR SHALL OPERATE INSTALLED &/OR MODIFIED SYSTEMS & DEMONSTRATE ALL ASPECTS OF THE SYSTEM TO THE ENGINEER &/OR OWNER TO PROVE ALL ASSOCIATED SYSTEMS ARE OPERATIONAL. 18. DURING CONSTRUCTION THE CONTRACTOR SHALL MAINTAIN A SET OF AS-
- BUILT REDLINED RECORD DRAWINGS AT THE PROJECT SITE. ALL CHANGES OR DEVIATIONS IN LAYOUT, ROUTING, EQUIPMENT, COMPONENTS, & ACCESSORIES SHALL BE RECORDED. THESE REDLINED DRAWINGS SHALL BE GIVEN TO THE ARCHITECT / ENGINEER AFTER THE FINAL INSPECTION IN ACCORDANCE WITH PROJECT SPECIFICATIONS. 19. ALL DUCT ELBOWS SHALL BE LONG RADIUS, UNLESS NOTED OTHERWISE.

## DEFINITIONS NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS."

INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS."

AND READY FOR THE INTENDED USE." INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR

PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE

OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

# **MECHANICAL SHEET INDEX**

1001	MECHANICAL COVER SHEET
1002	MECHANICAL SPECIFICATIONS
ID101	LEVEL 2 DEMOLITION MECHANICAL PLAN
1101	LEVEL 2 MECHANICAL PLAN
1601	MECHANICAL DETAILS AND SCHEDULES

![](_page_24_Picture_42.jpeg)

![](_page_24_Figure_43.jpeg)

MECHANICAL COVER SHEET

![](_page_24_Picture_45.jpeg)

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<u></u>	
1	
	ISOLATED AND SEISMICALLY BRACED FOR THE SITE SPECIFIC SEISMIC DESIGN CATEGORY AND SEISMIC USE GROUP, IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE IBC, UBC, ASHRAE, AND SMACNA. PROVIDE SEISMIC PRODUCTS BY AMBER-BOOTH OR MASON INDUSTRIES.
2.	IN GENERAL, PROVIDE SPRING MOUNTS TO ATTENUATE LOW FREQUENCY SOUND AND VIBRATION AND NEOPRENE PADS TO ATTENUATE HIGH FREQUENCY SOUND AND VIBRATION. SEISMIC BRACING/MOUNTING CAN BE COMBINED WITH VIBRATION ISOLATION AS APPLICABLE.
3.	CONTRACTOR MANUFACTURED SEISMIC BRACING/RESTRAINT METHODS ARE NOT ACCEPTABLE. PROVIDE A SIGNED AND STAMPED LETTER FROM A PROFESSIONAL ENGINEER CERTIFYING THAT THE SUPPLIED PRODUCTS ARE CORRECT FOR THE APPLICATION AND THAT THE INSTALLATION IS IN COMPLIANCE WITH ALL APPLICABLE CODES.
23	0553 - MECHANICAL IDENTIFICATION
1.	<u>DUCT MARKERS</u> : PROVIDE MANUFACTURER'S STANDARD LAMINATED PLASTIC; COLOR CODED DUCT MARKERS.
2.	<u>COLOR</u> : COMPLY WITH ANSI A13.1
3.	<u>LETTERING</u> : MANUFACTURER'S STANDARD PRE-PRINTED NOMENCLATURE WHICH BEST DESCRIBES PIPING OR DUCT SYSTEM IN EACH INSTANCE OR AS SELECTED BY ARCHITECT OR ENGINEER IN CASES OF VARIANCE WITH NAMES AS SHOWN.
4. 23	ARROWS: PRINT EACH MARKER WITH ARROWS INDICATING DIRECTION OF FLOW.
1	
1.	AND BALANCING AGENCY TO BALANCE AND ADJUST THE SYSTEM. THIS SHALL BE DONE BY PERSONS FULLY FAMILIAR WITH SYSTEMS OF THIS TYPE. BALANCING SHALL BE DONE IN ACCORDANCE TO AABC OR NEBB STANDARDS. ALL DATA SHALL BE RECORDED AND A REPORT SUBMITTED TO THE ENGINEER PRIOR TO JOB CLOSE OUT.
2.	CONTRACTOR TO USE AN INDEPENDENT TEST AND BALANCE CONTRACTOR TO PERFORM A FINAL TESTING AND BALANCING OF THE AIR HANDLER SYSTEM.
3.	CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TESTING, ADJUSTING AND BALANCING FOR THIS PROJECT.
4.	THE MINIMUM REQUIRMENT FOR TESTING, ADJUSTING, AND BALANCING (TAB) OF THE HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) DISTRIBUTION SYSTEMS SHALL BE AS FOLLOWS:
5.	TESTING, ADJUSTING AND BALANCING SHALL BE DONE IN ACCORDANCE WITH THESE NOTES AND SPECIFICATIONS.
6.	THE MECHANICAL SYSTEMS SHALL BE TESTED, ADJUSTED AND BALANCED, INCLUDING SUPPLY AIR SYSTEM, RETURN AIR SYSTEM, EXHAUST AIR SYSTEM, OUTSIDE AIR SYSTEM AND ALL ASSOCIATED EQUIPMENT.
7.	CONTRACTOR PERFORMING TESTING, ADJUSTING AND BALANCING WORK SHALL BE EITHER AABC OR NEBB CERTIFIED.
8.	TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC OR NEBB TEST PROCEDURES.
9.	TESTING, ADJUSTING AND BALANCING REPORT FORMS SHALL BE STANDARD FORMS FROM EITHER AABC OR NEBB.
10.	CONTRACTOR SHALL VERIFY QUANTITIES AND LOCATIONS OF ALL BALANCING DEVICES. CONTRACTOR SHALL VERIFY THAT THESE BALANCING DEVICES ARE ACCESSIBLE AN APPROPRIATE FOR BALANCING AND FOR EFFICIENT SYSTEM AND EQUIPMENT OPERATION PRIOR TO COMMENCING WORK.
11.	MECHANICAL AIR AND WATER SYSTEMS SHALL BE ADJUSTED TO WITHIN THE
	SUPPLY: PLUS 5 TO PLUS 10 PERCENT
	RETURN:PLUS 5 TO PLUS 10 PERCENTEXHAUST FANS:PLUS 5 TO PLUS 10 PERCENTEQUIPMENT WITH FANS:PLUS 5 TO PLUS 10 PERCENTAIR OUTLETS AND INLETS:ZERO TO MINUS 10 PERCENTDOMESTIC HW FLOW RATES:ZERO TO MINUS 10 PERCENT
12.	FINAL BALANCE REPORT SHALL INCLUDE THE FOLLOWING:
	<ul> <li>A. TEST CONDITIONS FOR FANS</li> <li>B. SYSTEM DIAGRAMS</li> <li>C. AIR CONDITIONING UNIT TEST REPORTS</li> </ul>
	D. FAN TEST REPORTS E. AIR TERMINAL DEVICE REPORTS
	F. IF INITIAL TESTING, ADJUSTING AND BALANCING PROCEDURES WERE NOT PERFORMED DURING NEAR-PEAK SUMMER AND WINTER CONDITIONS, PERFORM ADDITIONAL TESTING ADJUSTING AND BALANCING DURING NEAR- PEAK SUMMER AND WINTER CONDITIONS.
23	0700 - MECHANICAL INSULATION
1.	WRAP ALL SUPPLY AND RETURN DUCTWORK WITH 1-1/2" THICK FOIL FACED FIBERGLASS INSULATION. WRAP INSULATION TIGHTLY ON THE DUCT WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MIN.
<u> </u>	0900 - AUTOMATIC TEMPERATURE CONTROL SVETEM
FUF	RNISH AND INSTALL A COMPLETE ELECTRONIC AUTOMATIC TEMPERATURE CONTROL STEM, TO PROVIDE THE FOLLOWING FUNCTIONS:
1.	BUILDING HVAC CONTROL SYSTEM:
2.	FURNACE/CONDENSING UNIT SYSTEMS: PROVIDE WALL MOUNTED THERMOSTATS WITH 2-STAGE HEATING, 1-STAGE COOLING AND NIGHT SETBACK.
3.	FURNACE SYSTEMS WITH MODULATING ZONE DAMPERS : PROVIDE CONTROL PANEL (AT FURNACE OR EQUIPMENT ROOM LOCATION) AND AT
	ALL CONTROL COMPONENTS NECESSARY TO PROVIDE A CONTROL SEQUENCE SUCH THAT: A. ANY ZONE THERMOSTAT CALLING FOR COOLING OR HEATING WILL TURN THE COOLING OR HEATING SYSTEM ON.
	<ul> <li>B. EACH THERMOSTAT WILL MODULATED IT'S ZONE DAMPER TO MAINTAIN SPACE TEMPERATURE SET POINT.</li> <li>C. MAINTAIN MINIMUM AIRFLOW THROUGH FURNACES AS REQUIRED BY FURNACE MANUFACTURERS.</li> </ul>
	D. CONTROL SYSTEM SHALL BE "SELECT-TEMP SYSTEM 1000" OR EQUAL.

<u>THERMOSTATS</u>: MANUFACTURER TO MATCH EXISTING MANUFACTURER, PROGRAMMABLE THERMOSTATS WITH COOLING, 1 OR 2 STAGE HEATING, NIGHT SETBACK, A 7-DAY, 24 HOUR CLOCK, L.E.D. INDICATOR, SET POINT ADJUSTMENT AND A FAN ON/AUTO SWITCH. PROVIDE A KEY LOCKING GUARD OR AN ACCESS CODE LOCKOUT.

23	3000 - AIR TEMPERING SYSTEM AND EQUIPMENT	GUARANTEE
1.	DUCTWORK SHALL BE CONSTRUCTED AS INDICATED BY CURRENT SMACNA	THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND
2.	STANDARDS. DAMPERS SHALL BE FACTORY FABRICATED, SUITABLE FOR USE WITH AIR AT -20 TO +240 DEC F. CALVANIZED STEEL HOUSING AND BLADES AND PATED FOR INDICATED	WORKMANSHIP FROM DEFECT OF WORKMANSHIP, AND SHALL REPLACE OR REPAIR WITHOUT ADDITIONAL COST TO THE OWNER ALL DEFECTIVE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF (1) YEAR AFTER COMPLETION AND ACCEPTANCE
	PRESSURES IN CITY OF FOUND OF FORMANCE RATED FOR MCA-500, AS	MECHANICAL SUBMITTAL NOTES:
3.	MANUFACTURED BY RUSKIN OR EQUIVALENT. FLEXIBLE CONNECTORS NOT LESS THAN 4" WIDE SHALL BE HEAVY FIBERGLASS	1. MECHANICAL SUBMITTAL SHALL BE SUBMITTED AS A COMPLETE ELECTRONIC PACKAGE ASSEMBLED BY SPECIFICATION DIVISIONS.
	TEMPERATURES OF -20 TO +2000 F; RATED FOR 10 IN. WG POSITIVE OR NEGATIVE; WITH TENSILE STRENGTH MINIMUM 450 LB/INCH IN THE WARP AND 340 LB/INCH IN THE FILLING.	2. ASSEMBLE COMPLETE ELECTRONIC SUBMITTAL PACKAGE INTO A SINGLE INDEXI FILE INCORPORATING SUBMITTAL REQUIREMENTS OF A SINGLE SPECIFICATION SECTION AND TRANSMITTAL FORM WITH LINKS ENABLING NAVIGATION TO EACH ITEM:
4.	DUCT AND PLENUM ACCESS DOORS: GALVANIZED STEEL, GASKETED. SIZE AS REQUIRED TO PROPERLY INSPECT AND SERVICE COMPONENTS LOCATED WITHIN THE DUCTWORK AS MANUFACTURED BY RUSKIN, ACUDOOR, OR DUCTMATE.	A. LITERATURE SHALL INCLUDE REFERENCE TO EQUIPMENT CALLOUT AND SPECIFICATION SECTION.
5.	PROVIDE TURNING VANES FOR ALL RECTANGULAR ELBOWS. AERO/DYNE CO. MODEL HEP, AIRSAN, ELGEN, OR EQUIVALENT.	B. FILE NAME SHALL USE PROJECT IDENTIFIER AND SPECIFICATION SECTION NUMBER FOLLOWED BY A DECIMAL POINT AND THEN A SEQUENTIAL NUMBER (E.G., LNHS-061000.01). RESUBITTALS SHALL INCLUDE AN ALPHABETIC SUFFIX AFTER ANOTHER DECIMAL POINT (E.G.   NHS-061000.01 A)
0.	TO EACH DIFFUSER AND GRILLE. AN OPERATING HEAD SHALL BE PLACED ON THE IDE OF THE DUCT WITH A POSITIVE LOCKING QUADRANT. DAMPERS SHALL BE PROVIDED IN RETURN AND EXHAUST AIR DUCTS WHERE SHOWN ON DRAWINGS.	C. PROVIDE MANUFACTURER'S CATALOG DATA SHEETS FOR EACH MANUFACTURED ITEM LISTED ON THE DRAWINGS AND SPECIFICATIONS.
23	3113 - METAL DUCTWORK	D. INCLUDE MANUFACTURER'S CATALOG DATA OF EACH MANUFACTURED ITEM AND ENOUGH INFORMATION TO SHOW COMPLIANCE WITH CONTRACT DOCUMENT REQUIREMENTS.
1.	ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED, AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS, OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING	E. LITERATURE SHALL SHOW CAPACITIES AND SIZE OF EQUIPMENT USED AND E MARKED INDICATING EACH SPECIFIC ITEM WITH APPLICABLE DATA UNDERLII
	CONTRACTOR'S NATIONAL ASSOCIATION, (SMACNA).	F. INCLUDE NAME, ADDRESS, AND PHONE NUMBER OF EACH SUPPLIER.
2.	TRANSITION ALL NEW DUCTWORK TO CONNECT TO EXISTING, AS REQUIRED.	G. DEVIATIONS AND ADDITIONAL INFORMATION: ON AN ATTACHED SEPARATE
3.	DUCTWORK SHALL BE GALVANIZED STEEL THROUGHOUT, FABRICATED AND INSTALLED SO THAT NO VIBRATION OR NOISE RESULTS. IT SHALL BE MADE FROM THE BEST GRADE OF GALVANIZED MILLED STEEL SHEETS OF U.S. STANDARD GAUGE AND BE FREE FROM BLISTERS, SLIVERS, AND PITS. ALL SEAMS SHALL BE AIRTIGHT, THE CONSTRUCTION OF ALL DUCTWORK, INCLUDING GAUGES OF METAL,	SHEET, PREPARED ON CONTRACTOR'S LETTERHEAD, RECORD RELEVANT INFORMATION, REQUESTS FOR DATA, REVISIONS OTHER THAN THOSE REQUESTED BY ENGINEER CONTRACT DOCUMENTS, INCLUDING MINOR VARIATIONS AND LIMITATIONS. INCLUDE SAME IDENTIFICATION INFORMATION RELATED SUBMITTAL.
	BRACING LAYOUT, ETC., SHALL BE IN ACCORDANCE WITH SMACNA. SLEEVES FOR FIRE DAMPERS AND DUCT SECTIONS FORMING AN EXTENSION OF THE FIRE WALL	3. PRODUCT DATA:
4.	SHALL BE 10 GAUGE STEEL. SEAL DUCTWORK ACCORDING TO THE FOLLOWING SMACNA DUCT SEALING CLASS:	A. COLLECT INFORMATION INTO A SINGLE SUBMITTAL FOR EACH ELEMENT OF CONSTRUCTION AND TYPE OF PRODUCT OR EQUIPMENT.
		B. IF INFORMATION MUST BE SPECIALLY PREPARED FOR SUBMITTAL BECAUSE STANDARD PUBLISHED DATA ARE NOT SUITABLE FOR USE, SUBMIT AS SHOP DRAWINGS, NOT AS PRODUCT DATA.
5	K 2 IN. WG     > 2 IN. WG     EXHAUST     RETURN       CONDITIONED SPACES     C     B     B     B       HANGERS FOR DUCTS UP TO 18" IN WIDTH OR DIAMETER SHALL BE PLACED ON NOT	C. MARK EACH COPY OF EACH SUBMITTAL TO SHOW WHICH PRODUCTS AND OPTIONS ARE APPLICABLE.
5.	MORE THAN 8 FOOT CENTERS. DUCTS 19" AND OVER IN WIDTH OR DIAMETER SHALL BE SUPPORTED ON NOT MORE THAN 4 FOOT CENTERS. DUCT HANGERS SHALL BE CONSTRUCTED OF GALVANIZED BAND IRON 1-1/8" FOR DUCTS UP TO 36" IN WIDTH OR DIAMETER. HANGERS SHALL EXTEND DOWN SIDES AND A MINIMUM OF 1" UNDER RECTANGULAR DUCTS, AND WRAP COMPLETELY AROUND ROUND DUCTS. ALL DUCTS SHALL BE RIGIDLY SUPPORTED.	<ul> <li>D. INCLUDE THE FOLLOWING INFORMATION, AS APPLICABLE:</li> <li>A. MANUFACTURER'S CATALOG CUTS.</li> <li>B. MANUFACTURER'S PRODUCT SPECIFICATIONS.</li> <li>C. STANDARD COLOR CHARTS.</li> <li>D. STATEMENT OF COMPLIANCE WITH SPECIFIED REFERENCED STANDARDS</li> <li>E. TESTING BY RECOGNIZED TESTING AGENCY.</li> </ul>
6.	ALL DUCTWORK SHALL BE CLEANED PRIOR TO THE INSTALLATION OF CEILING AND DIFFUSERS. OPERATE FANS TO BLOW OUT DUCTWORK.	<ul> <li>F. APPLICATION OF TESTING AGENCY LABELS AND SEALS.</li> <li>G. NOTATION OF COORDINATION REQUIREMENTS.</li> <li>H. AVAILABILITY AND DELIVERY TIME INFORMATION.</li> </ul>
7.	RECTANGULAR LOW-PRESSURE SUPPLY AND RETURN AIR DUCTWORK SHALL BE LINED WITH 1" FACED FIBERGLASS INSULATION SECURELY BUTTONED OR LAPPED AND SEALED. INSULATION SHALL BE 1-1/2 POUND DENSITY.	4. FOR EQUIPMENT, INCLUDE THE FOLLOWING IN ADDITION TO THE ABOVE, AS APPLICABLE:
8.	DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE CLEAR AREA AND SHALL BE INCREASED TO ACCOMMODATE INSULATION. DUCT LINER TO BE BY KNAUF GmbH,	<ul><li>A. WIRING DIAGRAMS SHOWING FACTORY-INSTALLED WIRING.</li><li>B. PRINTED PERFORMANCE CURVES.</li></ul>
	JOHN-MANSVILLE OR SCHULLER INTERNATIONAL.	C. OPERATIONAL RANGE DIAGRAMS
23	3300 - DUCTWORK ACCESSORIES	D. CLEARANCES REQUIRED TO OTHER CONSTRUCTION IF NOT INDICATED ON
1.	FLEXIBLE DUCT WORK: THE FINAL 5 FOOT CONNECTION TO GRILLES AND DIFFUSERS IN LAY-IN CEILINGS, OR TO FLOOR MOUNTED GRILLES, MAY BE MADE WITH FLEXIBLE DUCT, FLEXMASTER TYPE 5M ONLY. ENDS SHALL BE SEALED.	ACCOMPANYING SHOP DRAWINGS. 5. PROCESSING TIME: ALLOW TIME FOR SUBMITTAL REVIEW, INCLUDING TIME FOR RESUBMITTALS AS FOLLOWS TIME FOR DEVIEW, INCLUDING TIME FOR
2.	SQUARE/RECTANGULAR ELBOWS SHALL BE PROVIDED WITH TURNING VANES.	RESUBMITTALS, AS FOLLOWS. TIME FOR REVIEW SHALL COMMENCE ON ENGINE RESUBMITTALS, AS FOLLOWS. TIME FOR REVIEW SHALL COMMENCE ON ENGINE RECEIPT OF SUPMITTAL INC EXTENSION OF THE CONTRACT THAT WILL BE
3.	DUCT MOUNTED BALANCING DAMPERS SHALL BE USED TO CONTROL SUPPLY AIR TO EACH DIFFUSER AND GRILLE. AN OPERATING HEAD SHALL BE PLACED ON THE SIDE OF THE DUCT WITH A POSITIVE LOCKING QUADRANT. DAMPERS SHALL BE PROVIDED IN RETURN AND EXHAUST AIR DUCTS WHERE SHOWN ON DRAWINGS	AUTHORIZED BECAUSE OF FAILURE TO TRANSMIT SUBMITTALS ENOUGH IN ADVANCE OF THE WORK TO PERMIT PROCESSING, INCLUDING RESUBMITTALS. A. INITIAL REVIEW: ALLOW 15 DAYS FOR INITIAL REVIEW OF MECHANICAL
	COORDINATE THE LOCATION OF CEILING ACCESS PANELS.	SUBMITTAL.
23	3713 - GRILLES, DIFFUSER AND LOUVERS	B. RESUBMITTALS REVIEW: ALLOW 15 DAYS FOR REVIEW OF EACH RESUBMITTA
1.	ALL GRILLES, DIFFUSERS, AND REGISTERS SHALL BE COMPLETE WITH FRAMES AND RUBBER GASKETS. FINISH FOR ALL REGISTERS, DIFFUSERS, AND GRILLES SHALL BE WHITE.	6. DEVIATIONS AND ADDITIONAL INFORMATION: ON AN ATTACHED SEPARATE SHEE PREPARED ON CONTRACTOR'S LETTERHEAD, RECORD RELEVANT INFORMATION REQUESTS FOR DATA, REVISIONS OTHER THAN THOSE REQUESTED BY DESIGN
2.		ENGINEER ON PREVIOUS SUBMITTALS, AND DEVIATIONS FROM REQUIREMENTS THE CONTRACT DOCUMENTS, INCLUDING MINOR VARIATIONS AND LIMITATIONS. INCLUDE SAME IDENTIFICATION INFORMATION AS BELATED SUBMITTAL
	B. TITUS C. PRICE D. NAILOR	
3.	COORDINATE THE LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES WITH THE ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL	
	LIGHTING LAYOUT, AND ARCHITECTURAL ELEVATIONS.	

![](_page_25_Figure_10.jpeg)

MECHANICAL SPECIFICATIONS

![](_page_25_Picture_12.jpeg)

![](_page_26_Figure_0.jpeg)

![](_page_26_Figure_4.jpeg)

## MECHANICAL GENERAL NOTES THIS CONTRACTOR SHALL CLOSELY COORDINATE MECHANICAL AND PLUMBING WITH ELECTRICAL, ARCHITECTURAL, AND BUILDING STRUCTURE. ALL SUPPLY AND RETURN DUCTWORK TO BE EXTERNALLY WRAPPED WITH INSULATION WITH AN R-VALUE OF R-6. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE DUCT MAY BE USED AT FINAL TERMINATION OF DUCT TO DIFFUSER OR GRILLE. MAXIMUM FLEXIBLE DUCT LENGTH IS 5'-0". PROVIDE DUCT SUPPORTS EVERY 3 FEET. FLEX DUCT SHALL NOT BE COMPRESSED OR KINKED BY ANY OBJECTS SUCH AS STRUCTURE, PIPING, ETC. PROVIDE FLEX DUCT ELBOW (FLEX FLOW ELBOW BY THERMAFLEX, FLEX RIGHT ELBOW BY FLEXMASTER, SMART FLOW ELBOW BY HART AND COOLEY, OR EQUAL) AT ALL CEILING MOUNTED DIFFUSER CONNECTIONS. NOT FOR USE WHERE ABOVE CEILING SPACE IS USED AS RETURN PLENUM. GRILLES AND DUCTWORK ARE SIZED INDEPENDENTLY. THE NECK SIZE OF GRILLES MAY NOT MATCH THE ASSOCIATED DUCT SIZE. PROVIDE TRANSITION TO GRILLES AS NECESSARY. PROVIDE BALANCING DAMPER WITH LOCKING QUADRANT IN EACH DUCT BRANCH OF SUPPLY AND EXHAUST DUCTWORK. GC TO HIRE NEBB OR AABC CERTIFIED THIRD PARTY TEST AND BALANCE (TAB) CONTRACTOR. TAB CONTRACTOR SHALL ADJUST SHEAVES, BELTS, DAMPERS, ETC AS NECESSARY TO BALANCE SYSTEM TO AIRFLOWS REQUIRED AT LOWEST POSSIBLE SPEEDS. TAB CONTRACTOR SHALL VERIFY THE OUTSIDE AIR AT EACH FURNACE IS AS SCHEDULED. FOLLOW PROCEDURES AS LAID FORTH IN THE CURRENT VERSION OF "PROCEDURAL STANDARDS FOR TESTING ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS" BY NEBB. PROVIDE REPORT ON NEBB FORMS TO ENGINEER FOR REVIEW. ALL MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723. INSULATE ALL PLASTIC PIPING IN CEILING PLENUM. COMPLETELY ENCLOSE PLASTIC PIPE IN INSULATION THAT MEETS THE FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50. . WHERE PIPE, OR DUCT PENETRATES A RATED ASSEMBLY OR FLOOR AND IS NOT REQUIRED TO BE PROTECTED BY A DAMPER, ALL SPACE BETWEEN THE DUCT AND ASSEMBLY IS TO BE FIRE CAULKED. INSULATION OR COVERINGS ARE NOT TO CONTINUE THROUGH ASSEMBLY UNLESS TESTED AS PART OF AN APPROVED PENETRATION FIRESTOP SYSTEM. . THIS CONTRACTOR SHALL ENGAGE A FIRE PROTECTION DESIGN BUILD CONTRACTOR TO MODIFY THE EXISTING FIRE SPRINKLER SYSTEM. DESIGNER SHALL BE NICET LEVEL III TECHNICIAN. WORKING PLANS AND CALCULATIONS SHALL BE PREPARED ACCORDING TO NFPA 13, AND BE APPROVED BY AUTHORITIES HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS IF APPLICABLE. PROVIDE NEW QUICK RESPONSE FIRE SPRINKLER HEADS IN ALL AREAS OF WORK. SPRINKLER HEADS TO BE ON FLEXIBLE BRAIDED STAINLESS DROPS. SPRINKLER HEAD TO BE CENTER IN HALF OF TILE. 4. PROVIDE TEMPORARY NEGATIVE PRESSURE UNIT DURING CONSTRUCTION. COORDINATE LOCATION WITH OWNER. 5. COORDINATE EXACT THERMOSTAT LOCATIONS WITH FURNITURE AND OWNER. FAILURE TO DO SO MAY REQUIRE MOVING THERMOSTATS AT CONTRACTORS COST. 5. CONTRACTOR SHALL FIELD VERIFY EXISTING FIELD CONDITIONS PRIOR TO ORDERING OR FABRICATING. ADDITIONAL COST WILL NOT BE ALLOWED FOR CONTRACTOR'S FAILURE TO BECOME FAMILIAR WITH EXISTING SITE CONDITIONS. . PROVIDE SOUND BOOT ON ALL RETURN GRILLES. SOUND BOOT TO BE SHEET METAL WITH ACOUSTICAL DUCT LINER. DUCT BOARD IS NOT AN APPROVED MATERIAL FOR SOUND BOOTS. SEE SOUND BOOT DETAIL. . PROVIDE OPERATION AND MAINTENANCE MANUALS (O&M) WITHIN 30 DAYS OF CERTIFICATE OF OCCUPANCY FOR ALL EQUIPMENT IN DIGITAL FORMAT TO ENGINEER FOR REVIEW. O&M'S SHALL INCLUDE DOCUMENTATION OF ALL WARRANTIES, REPORTS AND TESTS, RECORD DRAWINGS, CONTROLS SEQUENCE OF OPERATIONS WITH DIAGRAMS, & EQUIPMENT INFORMATION. EQUIPMENT INFORMATION INCLUDES MAKE & MODEL, WIRING, PIPING, STARTUP, SHUTDOWN, TROUBLE SHOOTING SYSTEM BALANCING REPORT, FINAL COMMISSIONING REPORT AND MAINTENANCE PROCEDURES.

# ⊖SHEET KEYNOTES

1 REMOVE EXISTING RESTROOM EXHAUST FAN AND ASSOCIATED DUCTWORK UP THROUGH ROOF. PATCH AND REPAIR ROOF WATERTIGHT. MAINTAIN ANY ROOFING WARRANTIES.

- 2 REMOVE EXISTING SUPPLY DUCT BACK TO MAIN AS INDICATED. PATCH AND SEAL DUCT AIRTIGHT.
- 3 EXISTING SUPPLY DUCT AND AIR TERMINAL TO REMAIN. CONTRACTOR TO RE-BALANCE SUPPLY SERVING FUTURE PHARMACY TO AIRFLOW INDICATED ON SHEET M101.
- 4 EXISTING RETURN DUCT AND GRILLE TO REMAIN. CONTRACTOR TO RE-BALANCE RETURN SERVING FUTURE PHARMACY TO AIRFLOW INDICATED ON SHEET M101.
- 5 REMOVE AND SALVAGE EXISTING THERMOSTAT. SEE SHEET M101 FOR NEW LOCATION.

![](_page_26_Picture_12.jpeg)

![](_page_26_Figure_15.jpeg)

![](_page_27_Figure_0.jpeg)

![](_page_27_Figure_3.jpeg)

## MECHANICAL GENERAL NOTES THIS CONTRACTOR SHALL CLOSELY COORDINATE MECHANICAL AND PLUMBING WITH ELECTRICAL, ARCHITECTURAL, AND BUILDING STRUCTURE. ALL SUPPLY AND RETURN DUCTWORK TO BE EXTERNALLY WRAPPED WITH INSULATION WITH AN R-VALUE OF R-6. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS. FLEXIBLE DUCT MAY BE USED AT FINAL TERMINATION OF DUCT TO DIFFUSER OR GRILLE. MAXIMUM FLEXIBLE DUCT LENGTH IS 5'-0". PROVIDE DUCT SUPPORTS EVERY

- 3 FEET. FLEX DUCT SHALL NOT BE COMPRESSED OR KINKED BY ANY OBJECTS SUCH AS STRUCTURE, PIPING, ETC.
   PROVIDE FLEX DUCT ELBOW (FLEX FLOW ELBOW BY THERMAFLEX, FLEX RIGHT ELBOW BY FLEXMASTER, SMART FLOW ELBOW BY HART AND COOLEY, OR EQUAL) AT ALL CEILING MOUNTED DIFFUSER CONNECTIONS. NOT FOR USE WHERE ABOVE
- CEILING SPACE IS USED AS RETURN PLENUM.
  6. GRILLES AND DUCTWORK ARE SIZED INDEPENDENTLY. THE NECK SIZE OF GRILLES MAY NOT MATCH THE ASSOCIATED DUCT SIZE. PROVIDE TRANSITION TO GRILLES AS NECESSARY.
- PROVIDE BALANCING DAMPER WITH LOCKING QUADRANT IN EACH DUCT BRANCH OF SUPPLY AND EXHAUST DUCTWORK.
   GC TO HIRE NEBB OR AABC CERTIFIED THIRD PARTY TEST AND BALANCE (TAB) CONTRACTOR. TAB CONTRACTOR SHALL ADJUST SHEAVES, BELTS, DAMPERS, ETC
- AS NECESSARY TO BALANCE SYSTEM TO AIRFLOWS REQUIRED AT LOWEST POSSIBLE SPEEDS. TAB CONTRACTOR SHALL VERIFY THE OUTSIDE AIR AT EACH FURNACE IS AS SCHEDULED. FOLLOW PROCEDURES AS LAID FORTH IN THE CURRENT VERSION OF "PROCEDURAL STANDARDS FOR TESTING ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS" BY NEBB. PROVIDE REPORT ON NEBB FORMS TO ENGINEER FOR REVIEW. 9. ALL MATERIALS WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL BE LISTED
- AND LABELED AS HAVING A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84 OR UL 723.
   INSULATE ALL PLASTIC PIPING IN CEILING PLENUM. COMPLETELY ENCLOSE PLASTIC
- PIPE IN INSULATION THAT MEETS THE FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50.
  11. WHERE PIPE, OR DUCT PENETRATES A RATED ASSEMBLY OR FLOOR AND IS NOT REQUIRED TO BE PROTECTED BY A DAMPER, ALL SPACE BETWEEN THE DUCT AND ASSEMBLY IS TO BE FIRE CAULKED. INSULATION OR COVERINGS ARE NOT TO CONTINUE THROUGH ASSEMBLY UNITESS TESTED AS DADT OF AN APPROX (FD)
- CONTINUE THROUGH ASSEMBLY UNLESS TESTED AS PART OF AN APPROVED PENETRATION FIRESTOP SYSTEM.
  12. THIS CONTRACTOR SHALL ENGAGE A FIRE PROTECTION DESIGN BUILD CONTRACTOR TO MODIFY THE EXISTING FIRE SPRINKLER SYSTEM. DESIGNER SHALL BE NICET LEVEL III TECHNICIAN. WORKING PLANS AND CALCULATIONS SHALL BE PREPARED ACCORDING TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING. TO MEDIA 12, AND DE ADDREVITE EVIDENTIAL PROPARED ACCORDING ACC
- PREPARED ACCORDING TO NFPA 13, AND BE APPROVED BY AUTHORITIES HAVING JURISDICTION, INCLUDING HYDRAULIC CALCULATIONS IF APPLICABLE.
  13. PROVIDE NEW QUICK RESPONSE FIRE SPRINKLER HEADS IN ALL AREAS OF WORK. SPRINKLER HEADS TO BE ON FLEXIBLE BRAIDED STAINLESS DROPS. SPRINKLER HEAD TO BE CENTER IN HALF OF TILE.
- 14. PROVIDE TEMPORARY NEGATIVE PRESSURE UNIT DURING CONSTRUCTION. COORDINATE LOCATION WITH OWNER.
   15. COORDINATE EXACT THE PROSTATE CONSTRUCTION.
- CONTRACTOR'S FAILURE TO BECOME FAMILIAR WITH EXISTING SITE CONDITIONS.
  17. PROVIDE SOUND BOOT ON ALL RETURN GRILLES. SOUND BOOT TO BE SHEET METAL WITH ACOUSTICAL DUCT LINER. DUCT BOARD IS NOT AN APPROVED MATERIAL FOR SOUND BOOTS. SEE SOUND BOOT DETAIL.
  18. PROVIDE OPERATION AND MAINTENANCE MANUALS (O&M) WITHIN 30 DAYS OF
- 10. PROVIDE OPERATION AND MAINTENANCE MANUALS (0&M) WITHIN 30 DAYS OF CERTIFICATE OF OCCUPANCY FOR ALL EQUIPMENT IN DIGITAL FORMAT TO ENGINEER FOR REVIEW. 0&M'S SHALL INCLUDE DOCUMENTATION OF ALL WARRANTIES, REPORTS AND TESTS, RECORD DRAWINGS, CONTROLS SEQUENCE OF OPERATIONS WITH DIAGRAMS, & EQUIPMENT INFORMATION. EQUIPMENT INFORMATION INCLUDES MAKE & MODEL, WIRING, PIPING, STARTUP, SHUTDOWN, TROUBLE SHOOTING SYSTEM BALANCING REPORT, FINAL COMMISSIONING REPORT AND MAINTENANCE PROCEDURES.

# ⊖SHEET KEYNOTES

- 1 RE-BALANCE EXISTING AIR TERMINAL TO AIRFLOW INDICATED.
- 2 RE-BALANCE EXISTING RETURN AIR GRILLE TO AIRFLOW INDICATED.
  3 EXISTING RETURN AIR DUCT IS LOCATED BELOW SUPPLY AIR DUCT. COMPONING NEW DETURN AIR TAKE OFF FROM THE TAKE OFF
- 3 EXISTING RETURN AIR DUCT IS LOCATED BELOW SUPPLY AIR DUCT. CONTRACTOR TO PROVIDE NEW RETURN AIR TAKE-OFF FROM THE TOP OF THE RETURN DUCT AND EXTEND TO THE PLENUM SPACE TO ACHIEVE THE REQUIRED ELEVATION ABOVE CEILING.
- 4 CONNECT TO EXISTING SUPPLY DUCT IN APPROXIMATE LOCATION SHOWN. CONTRACTOR TO FIELD VERIFY EXACT ROUTING.
- 5 RELOCATE EXISTING THERMOSTAT TO THIS LOCATION.

![](_page_27_Picture_23.jpeg)

![](_page_27_Figure_26.jpeg)

![](_page_28_Figure_0.jpeg)

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![](_page_28_Figure_1.jpeg)

![](_page_28_Figure_2.jpeg)

SECURE FLEXIBLE DUCT -WITH CINCH BAND

RIGID DUCT -

FIRE DAMPER -

(AS REQ'D) SEE PLAN

FLEXIBLE DUCT
 SEE SPECIFICATION

(3'-0" MAXIMUM LENGTH)

- CEILING SYSTEM SEE ARCHITECTURAL

			E	XISTI	NG FU	<b>RNACE SC</b>	HEDULE (	GAS I	FIRED)					
ACCEPTABLE MANUF	ACTURERS:	REMARKS: (1) EXISTING TO REMAI		4								SCHEDU PLUMB =	LE KEY: = DIVISION 22 DIVISION 23	
		(2) FIELD VERIFY COND (3) TO BE ASSOCIATED (4) FIELD VERIFY CONN (5) OLEAN SERVICE AN	WITH NEW ZONE CON ECTIONS TO SERVED	N. TROL PANEL. SPACES.								MECH = ELEC = [ MNFR = ]	JIVISION 23 JIVISION 26 MANUFACTURER	
		(6) CONTRACTOR TO R	EPORT ANY DEFICIENC	CIES TO ENGINE	ER.									
		HEATING		G			ELECTRICAL		_					
LABEL TYPE	INPUT E (BTUH)	OUTPUT (BTUH) AFUI	CAPACITY SE (BTUH) (	ENSIBLE AI BTUH)	IRFLOW (CFM) (	ESP IN-WC) VOLTS PH	ASE Hz MOC	P FLA	WEIGHT (LBS)	MANUFA	CTURER	MODEL	REMARKS	
(E)F-1 UPBLAST	40,000	38,000 95	17,630	14,620				8		YORK		TG9S040A08MP11	(1)(2)(4)(5)(6)	
	ACCEPTABLE MAN	UFACTURERS:		REMARKS:	EGIST	ER - GRILL	E-DIFFUS	ER S	CHEDU	JLE				
	KRUEGER TUTTLE & BAILEY TITUS			(1) PROVIDE TE (2) COORDINAT	RANSITION AS I TE EXACT COLO	NECESSARY. DR SELECTION WITH OWNER	AND ARCHITECT.							
	PRICE		MAX AIRFLOW	FACE	NECK		PD	THROW(	S) MAX					
	R-1 PERFOI	TYPE RATED RETURN GRILLE	(CFM) 350	SIZE 24" X 24"	SIZE SEE PLANS	BLOW PATTERN	(IN-WC) 0.231	(FT) N/A	NC 30	MANUFA PRICE INDUSTR		MODEL PDDR	ALL	
	S-1 SQUAR	E CONE DIFFUSER	415	24" X 24" 24" X 24"	8"Ø	4-WAY	0.146	5-7-11	30			SCD	ALL	
						DUCT	INSULATI	ON RI		EMENT	「 <b>S</b>			
			DUCT SYSTEM		DUCT LOCA	TION	INSULATION	N MATERIALS		ESISTANCE ("R")	E	FIELD APPI	LIED JACKET	
			SUPPLY AIR BUIL	DING INTERIOR	R, CONCEALED R, EXPOSED, OU	TSIDE CONDITIONED SPACE	MINERAL-FIBER BLANKE	T T		6.0         6.0           6.0         6.0           6.0         6.0			DNE DNE	
			RETURN AIR BUIL	DING EXTERIOR	R (OUTSIDE BUI R, CONCEALED R, EXPOSED, OU	ITSIDE CONDITIONED SPACE	MINERAL-FIBER BLANKE MINERAL-FIBER BLANKE MINERAL-FIBER BLANKE	<u>T</u> T T		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			DNE DNE MINI IM	
			EXHAUST AIR ALL OUTSIDE AIR BUIL BUIL	DING INTERIOR	R, CONCEALED (	DR EXPOSED	NONE MINERAL-FIBER BLANKE	<u>Т</u> Т		6.0         6.0           6.0         6.0           8.0         12.0			DNE	
				DING INTERIOR	{		MINERAL-FIBER BLANKEI POLYETHYLENE INNER A	R AND OUTER JA	CKET	6.0 6.0		NC	DNE	
			1. DUCT INSULATION 2. CLIMATE ZONES D 3. ALL DUCT INSULAT	THERMAL RESI ETERMINED BY	ISTANCE VALUE ASHRAE, THIS	ES DETERMINED FROM 2021 PROJECT IS IN CLIMATE ZON JACKET MANIJEACTURED E	ECC SECTION C403.11.1. IE 6B. ROM KRAFT PAPER REINI	FORCEDSCE			м.			
			4. DUCT INSULATION 5. DUCT LINER, WHE 6. DUCT LINER SHAL	SHALL BE MEC RE SHOWN ON I L NOT BE SUBS	HANICALLY FAS DRAWINGS, SHA TITUTED FOR D	STENED TO DUCTS WIDER TH ALL BE A MINIMUM OF 1" THIC UCT WRAP UNLESS THE MIN	IAN 24" AND SHALL BE AF CK AND SHALL HAVE A MIN IMUM "R" VALUE OF THE D	FIXED TO BOT NIMUM "R" VAL DUCT LINER IS	TOM OF DUCT W UE OF 3.8. INCREASED TO	VITH WELDED ME	TAL PINS AN PER TABLE A	ID 2" WASHERS AT 18" N ABOVE.	IAXIMUM SPACING.	
			7. DUCT DIMENSIONS 8. TOTAL LENGTH OF 9. OFFSET OF FLEXIE	S SHOWN ON TH FLEXIBLE DUC BLE DUCT SHALI	HE DRAWINGS A T FUN SHALL N L NOT EXCEED	ARE NET FREE AREA. WHERE OT EXCEED 5'-0". EXTEND SH ONE HALF OF THE DUCT DIA	DUCT LINER IS SHOWN, I IEET METAL DUCT TO WIT METER.	INCREASE ME	TAL DUCT SIZE T HE AIR INLET OR	O ALLOW FOR TH AIR OUTLET DEV	ICKNESS OI ICE.	F DUCT LINER.		
			10. ALL DUCT CHANG 11. INDOOR DUCT IN 12. OUTDOOR DUCT	GES IN DIRECTIC SULATION AND I INSULATION AN	ON SHALL BE M/ RELATED MATE	ADE WITH RIGID ELBOWS OR RIALS SHALL HAVE A FLAME TERIALS SHALL HAVE A FLAM	OTHER RIGID METAL FIT -SPREAD INDEX OF 25 OR ME-SPREAD INDEX OF 75 (	TINGS. R LESS, AND SI OR LESS, AND	MOKE-DEVELOPE SMOKE-DEVELO	ED INDEX OF 50 C OPED INDEX OF 15	OR LESS WHI 50 OR LESS V	EN TESTED TO ASTM 84 WHEN TESTED TO ASTM	⊧. И 84.	
			13. ALL DUCT COVER 14. ALL MATERIALS U	ISED AS INTERN	NGS SHALL NOT	NAND EXPOSED TO THE AIR	STREAM IN DUCTS SHALL	BE SHOWN T	O BE DURABLE V	WHEN TESTED IN	ACCORDAN	CE WITH UL 181.		
5° MAX		45° MAX									45°	D/4 (4" MII MAI WIT PRO FOF	N) NUAL BALANCING DAMPER TH LOCKING QUADRANT. DVIDE REMOTE OPERATOR R INACCESSIBLE DAMPERS CT SIZE (D)	
		MITERED							(6", M/A (6", M/A					
×	<u>W/ TURN</u>	<u>IING VANES</u>								1" FL RECT	ANGE AROU TANGULAR C	ND DPENING DUC	T SIZE RECTANGLE OPENI	NG
	W W F TYPE 4:	RADIUS	+ R W			AIR FLOW TRUNK DU SEE DRAWINGS FOR S	JCT DIZE	245° V	N N			6 8 10 12 14	"Ø     6" X 9"       "Ø     8" X 12"       )"Ø     10" X 14"       2"Ø     12" X 16"       4"Ø     14" X 18"	
PER SMACNA HVAC D		N STANDARDS				1" FLAN RECTANGUL					X	NOTE: 1. CONSTRUCT	FITTING PER SMACNA HVA	۲C
ISITION IN DUCT SIZE	ALLOWED IN OFFSE	S T					FOR INA	CCESSIBLE DA	MPERS				TRUCTION STANDARDS	
					2	DUCT HIG	HEFFICIE	ENCY	TAKE-(	OFFS				
	— GALVANIZED — SHEET METAL DUCT						1"*20.0							
						OVERHEAD S	STRUCTURAL MEMBER			/				
							1"x22 GAUGE		2 #10	0 SHEET METAL			브니드 1" STRAP (MIN)	
		······				2 #10 SHEET MI OR ON	ETAL SCREW E 1/4"Ø BOLT	'n	SC SC	JKEW OR ONE 1/4"Ø BOLT		60" MAX		
	ENDS OF LI	NER				F				#10 SHEET METAL SCREW 6" OC (TYP)		DUCT		
	FIRMLY TO ALL ENDS (	GETHER							$\bigcirc$					
	TO BE COA ADHESIVE						24" N	ЛАХ	36" MAX		 1" MIN		BEND TAB UNDER	
		THAN 2" E OF LINER					<u>NOTI</u>	<u>E:</u> JSE TRAPE7E				THAN 60" WIDTH		
	- DUCT LINEI	Λ				DUCT HAN SCALE: NTS	NGERS (C	OMBI		LUTANGULAK DU	UI LAKGER	THAN OU WIDTH.		
					$\bigcirc$									

ACTU	JRERS:	REMARKS: (1) EXISTING T (2) FIELD VER (3) TO BE ASS (4) FIELD VER (5) CLEAN, SE (6) CONTRACT	TO REMAIN IFY CONDIT OCIATED V IFY CONNE RVICE, ANI TOR TO RE	TION AND OPERA VITH NEW ZONE CTIONS TO SER O TEST. PORT ANY DEFIC	ATION. CONTROL PANEL. VED SPACES. CIENCIES TO ENGINE	ER.												SCH PLUI MEC ELEC MNF	EDULE MB = DI H = DIV C = DIVI R = MAI	KEY: VISION 22 ISION 23 SION 26 NUFACTURER
Ē	INPUT (BTUH)	HEATING OUTPUT (BTUH)	AFUE	COC TOTAL CAPACITY (BTUH)	SENSIBLE AI (BTUH)	RFLOW (CFM)	ESP (IN-WC)	VOLTS	PHA		RICAL 2 MOCP	FLA	WEI	IGHT BS)	MA	NUFACT	URER	MODEL		REMARKS
	40,000	38,000	95	17,630	14,620	<sup>800</sup>	₀.₅ TER ·	- GRI		E- DII	FFUSE	ER S						TG9S040A08MP <sup>·</sup>	1	(1)(2)(4)(5)(6)
ACC KRU TUT TITU	EPTABLE MAN EGER 「LE & BAILEY S	IUFACTURERS:			REMARKS: (1) PROVIDE TR (2) COORDINAT	RANSITION A	S NECESSAF	RY. TION WITH O	OWNER	AND ARCHIT	ECT.									
	BEI	TVDE		MAX AIRFLC	OW FACE	NECK	BLC		-PN	[ (IN	PD -WC)		V(S)	MAX	MA			MODEL		DEMARKS
R-1 R-2 S-1	PERFOI PERFOI	RATED RETURN RATED RETURN	GRILLE	350 545 415	24" X 24" 24" X 24" 24" X 24"	SEE PLANS	S S	N/A N/A 4-WAY	_1\1\		.231 .217 146	N/A N/A 5-7-11	1	30 30 30	PRICE I PRICE I PRICE I			PDDR PDDR SCD		
				DUCT SYSTEM		DUCT LO	CATION	DUC	CT	INSU			EQL		EMI IIMUM T SISTAN MATE S 1-4	ENTS HERMAL ICE ("R") CLIMATE ZONES 5-8	5	FIELD	APPLIEI	D JACKET
				SUPPLY AIR	BUILDING INTERIOR BUILDING INTERIOR BUILDING EXTERIOF BUILDING INTERIOR BUILDING INTERIOR	, CONCEALE , EXPOSED, ( R (OUTSIDE E , CONCEALE , EXPOSED, ( CONTSIDE E	D OUTSIDE CO BUILDING INS D OUTSIDE CO	NDITIONED S	SPACE SPACE	MINERAL-FIE MINERAL-FIE MINERAL-FIE MINERAL-FIE MINERAL-FIE	BER BLANKET BER BLANKET BER BLANKET BER BLANKET BER BLANKET			6. 6. 8. 6. 6.	.0 .0 .0 .0 .0 .0	6.0 6.0 12.0 6.0 6.0 6.0			NONE NONE ALUMIN NONE NONE	JM
				EXHAUST AIR OUTSIDE AIR FLEXIBLE DUCT	ALL BUILDING INTERIOR BUILDING EXTERIOF BUILDING INTERIOR	, CONCEALE R (OUTSIDE E	D OR EXPOS	ED EULATION)		MINERAL-FIE NONE MINERAL-FIE MINERAL-FIE POLYETHYL	BER BLANKET BER BLANKET BER BLANKER BER BLANKER ENE INNER AN	D OUTER J	IACKET	6. 6. 8.	.0  .0 .0	6.0 6.0 6.0			NONE	
				3. ALL DUCT INS 4. DUCT INSULA 5. DUCT LINER, 6. DUCT LINER S 7. DUCT DIMENS 8. TOTAL LENGT 9. OFFSET OF F 10. ALL DUCT CI 11. INDOOR DUC 12. OUTDOOR D 13. ALL DUCT CO 14. ALL MATERI/	SULATION SHALL HAV TION SHALL BE MECT WHERE SHOWN ON I SHALL NOT BE SUBST SIONS SHOWN ON TH TH OF FLEXIBLE DUCT LEXIBLE DUCT SHALL HANGES IN DIRECTIC CT INSULATION AND F UCT INSULATION AND OVERINGS AND LININ ALS USED AS INTERN	'E ALL SERVI HANICALLY F DRAWINGS, S FITUTED FOR IE DRAWINGS T FUN SHALL - NOT EXCEE IN SHALL BE RELATED MA D RELATED MA IGS SHALL N IAL INSULATI	ICE JACKET N FASTENED TO SHALL BE A N R DUCT WRAF S ARE NET FI NOT EXCEE ED ONE HALF MADE WITH ATERIALS SH/ MATERIALS S OT FLAME, G ION AND EXP	MANUFACTU O DUCTS WIE MINIMUM OF P UNLESS TH REE AREA. W O 5'-0". EXTE OF THE DUC RIGID ELBOV ALL HAVE A F SHALL HAVE A SLOW, SMOLE OSED TO TH	JRER FR DER TH 1" THIC HE MINII WHERE END SHI CT DIAN WS OR FLAME- A FLAM DER, OF HE AIR S	Rom Kraft F An 24" and S K and Shali Mum "R" val Duct liner Eet metal d Meter. Other Rigid Spread ind IE-Spread in Bream in d	PAPER, REINFO SHALL BE AFFI UE OF THE DU IS SHOWN, IN DUCT TO WITH O METAL FITTIN EX OF 25 OR L NDEX OF 75 OF IEN TESTED IN UCTS SHALL E	RCED SCF (ED TO BC (UM "R" VA CT LINER I CREASE MI N 3'-0" OF IGS. ESS, AND S LESS, AND S LESS, AND S LESS, AND S CORDA E SHOWN	RIM, ALUMI DTTOM OF 1 ALUE OF 3. IS INCREAS ETAL DUC <sup>T</sup> THE AIR IN SMOKE-DE D SMOKE-DE D SMOKE-I ANCE WITH TO BE DUF	NUM FOII DUCT WIT 8. SED TO V ISIZE TO ILET OR A EVELOPEL DEVELOP I ASTM 41 RABLE WI	L, OR V TH WEL (ALUE N ) ALLOV AIR OUT D INDEX PED IND 11. HEN TE	INYL FILM. DED METAL IEEDED PER V FOR THICK LET DEVICE COF 50 OR L EX OF 150 C STED IN ACC	. PINS AND R TABLE AB (NESS OF E. LESS WHEN DR LESS W CORDANCI	2" WASHERS AT 7 BOVE. DUCT LINER. N TESTED TO AST HEN TESTED TO 7 E WITH UL 181.	18" MAX M 84. ASTM 84	IMUM SPACING.
		1	5° MAX															D/4 (4	" MIN) MANUA WITH L	L BALANCING DAMPER OCKING QUADRANT.
	<u>TYPE 3:</u> <u>W/ TURM</u>	MITERED NING VANES						<					(6	NIA MIN MIN		1" FLANC	GE AROUN			ACCESSIBLE DAMPERS
	F TYPE 4:	RADIUS		+R w			SEE	AIR FLOW TRU E DRAWINGS	UNK DU S FOR SI 1" FLAN			45°		× ×		RECTAN		PENING   - - - -	DUCT S 6" Ø 8" Ø 10" Ø 12" Ø 14" Ø	ZE       RECTANGLE OPENING         6" X 9"         8" X 12"         10" X 14"         12" X 16"         14" X 18"
JCT ( R TH/ ALLO\	CONSTRUCTION AN 45 DEGREE WED IN OFFSE	N STANDARDS S T				(2			angula HG	AR OPENING	MANUAL B PROVIDE F FOR INACC	ALANCING EMOTE OF ESSIBLE E	DAMPER PERATOR DAMPERS	SE-C	DFF	S	<b>`</b>	NOTE: 1. CONSTR DUCT CO	UCT FI DNSTRU	TTING PER SMACNA HVAC
G S M	ALVANIZED HEET ETAL DUCT NER	INER BUTTED GETHER OF LINER TED WITH						OVERH 2 #10 SHE	HEAD S <sup>-</sup> 1 EET ME OR ONE R	TRUCTURAL MEMBER "x22 GAUGE TAL SCREW 1/4"Ø BOLT OUND DUCT	1"x20 GA	UGE -	36" M/	2 #10 SCR 1/	SHEET REW OR /4"Ø BC #10 METAL 6" C	VERHEAD ST	RESTR	AINED CLIP 60" MAX		- 1" STRAP (MIN)
	— DUCT LINE	R					DU		IAN	IGER	<u>1.</u> US	e trapezi DMBI	e hanger	FOR REC	CTANGU	JLAR DUCT I	LARGER TI	HAN 60" WIDTH.		

![](_page_28_Figure_9.jpeg)

![](_page_28_Figure_10.jpeg)

![](_page_28_Picture_11.jpeg)

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![](_page_28_Figure_12.jpeg)

![](_page_28_Picture_13.jpeg)

![](_page_28_Picture_14.jpeg)

SY	SYMBOL LEGEND - MISC								
F	REFERENCE LINES AND SYMBOLS								
SYMBOL	DESCRIPTION								
-	VIEW OR DETAIL INDICATOR: # INDICATES DETAIL NUMBER, SHEET INDICATES DRAWING SHEET WHERE VIEW OR DETAIL IS SHOWN.								
	ELEVATION OR SECTION INDICATOR: # INDICATES VIEW NUMBER, SHEET INDICATES DRAWING SHEET WHERE VIEW IS SHOWN.								
NAME [####]	ROOM / SPACE INDICATOR								
(#)	KEYNOTE INDICATOR								
<u>_</u> #	REVISION INDICATOR								
(XX-##)	PLUMBING FIXTURE INDICATOR								
XX-##	EQUIPMENT INDICATOR								
TAG CFM	REGISTER, GRILLE, OR DIFFUSER INDICATOR								
<b>→</b> OR ∽	BREAKLINE								
MATCH LINE SEE XX/XXX	MATCHLINE INDICATOR								
	CONTRACT LIMIT LINE: DASHDOT, WIDE LINE								
Ð	NEW CONNECTION TO EXISTING								

# SYMBOL LEGEND - PIPING

POINT OF DEMOLITION

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.

SYMBOL	DESCRIPTION
7	HOSE BIBB / WALL HYDRANT
	CLEANOUT TO GRADE
$\ominus$	FLOOR CLEANOUT
14	WALL CLEANOUT
۵	FLOOR DRAIN
	FLOOR SINK

# DEFINITIONS

NOTE: ALL DEFINITIONS MAY NOT BE USED. INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS, NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED.

DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES.

APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS.

FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS." INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT

SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS." PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE

AND READY FOR THE INTENDED USE." INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE

OPERATIONS THEY ARE ENGAGED TO PERFORM.

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MBER, DETAIL
W VIEW IS

PIPING LEGEND					
NOTE: ALL ABBREVIATIONS MAY NOT BE USED.					
ABBREVIATION	DESCRIPTION				
	160°F HOT WATER				
160R·	160°F HOT WATER RETURN / CIRCULATION				
	180°F HOT WATER				
180R	180°F HOT WATER RETURN / CIRCULATION				
—— –AW– ——	ACID WASTE				
AV	ACID VENT				
C02	CARBON DIOXIDE				
	COMBINATION WASTE AND VENT				
CA	COMPRESSED AIR				
CD	CONDENSATE DRAIN				
DCW	DOMESTIC COLD WATER				
	DOMESTIC HOT WATER				
—DHWR	DOMESTIC HOT WATER RECIRCULATION				
DI	DEIONIZED WATER				
—-—DSW—-—	DOMESTIC SOFT WATER				
	DEMOLISHED PIPING				
FP	FIRE PROTECTION				
FOR	FUEL OIL RETURN				
FOS	FUEL OIL SUPPLY				
——FOV——	FUEL OIL VENT				
—— –GW- ——	GREASE WASTE				
HPC	HIGH PRESSURE CONDENSATE				
MPC	MEDIUM PRESSURE CONDENSATE				
LPC	LOW PRESSURE CONDENSATE				
	INDUSTRIAL COLD WATER				
————-IHW-———	INDUSTRIAL HOT WATER				
IW	IRRIGATION WATER				
LPG	LIQUID PROPANE GAS				
MA	MEDICAL AIR				
NG	NATURAL GAS				
NO	NITROUS OXIDE				
0	OXYGEN				
OD	OVERFLOW ROOF DRAIN / STORM DRAIN				
PC	PUMPED CONDENSATE				
RD	ROOF DRAIN / STORM DRAIN				
—— —SS— ——	SANITARY SEWER				
VAC	VACUUM				

NOTE: ALL ABBREVIATIONS MAY NOT BE USED.         SYMBOL       DESCRIPTION         Image: Symbol       GATE VALVE         Image: Symbol       GATE VALVE         Image: Symbol       GATE VALVE         Image: Symbol       GATE VALVE         Image: Symbol       AUTOMATIC 2-WAY VALVE         Image: Symbol       AUTOMATIC 3-WAY VALVE         Image: Symbol       GLOBE VALVE         Image: Symbol       RELIEF VALVE         Image: Symbol       RELIEF VALVE         Image: Symbol       RELIEF VALVE         Image: Symbol       RELIEF VALVE         Image: Symbol       SolENOID VALVE         Image: Symbol       SolENOI	SYMBOL LEG	END - PIPING
SYMBOL     DESCRIPTION       Image: Symbol     Shut off Valve       Image: Symbol     Cate valve       Image: Symbol     Check valve       Image: Symbol     <	NOTE: ALL ABBREVIATION	S MAY NOT BE USED.
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Image: Market of the second secon		SHUT OFF VALVE
Image: Solution of the second sec	Image: A state of the state of	GATE VALVE
Image: Second system       AUTOMATIC 2-WAY VALVE         Image: Second system       GLOBE VALVE         Image: Second system       BALL VALVE         Image: Second system       BUTTERFLY VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       BALANCING OR PLUG COCK         Image: Second system       BALANCING OR PLUG COCK         Image: Second system       SECONS         Image: Second system       GAUGE COCK         Image: Second system       FLEXIBLE CONNECTION         Image: Second system <t< th=""><th></th><th>CHECK VALVE</th></t<>		CHECK VALVE
Image: Second system       AUTOMATIC 3-WAY VALVE         Image: Second system       GLOBE VALVE         Image: Second system       PRESSURE REDUCING VALVE         Image: Second system       BUTTERFLY VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       ANGLE VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       SOLENOID VALVE         Image: Second system       BALANCING OR PLUG COCK         Image: Second system       FLOW SETTER         Image: Second system       GAS COCK         Image: Second system       GAS COCK         Image: Second system       GAUGE COCK         Image: Second system       FLEXIBLE CONNECTION         Image: Second system       F		AUTOMATIC 2-WAY VALVE
Image: Sole of the second s		AUTOMATIC 3-WAY VALVE
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Image: Pressure reducing valve	Į.	RELIEF VALVE
Image: ButterFLY valve         Image: ButterFLY va		PRESSURE REDUCING VALVE
SOLENOID VALVE         ANGLE VALVE         VENTURI VALVE         BALANCING OR PLUG COCK         FLOW SETTER         S         S         S         FLOW SETTER         S         FLOW SETTER         S         S         FLONCHOR         S <tr< th=""><th></th><th>BUTTERFLY VALVE</th></tr<>		BUTTERFLY VALVE
Image: Angle Valve         Image: Venturi Valve         Image: Angle Valve <t< th=""><th>S</th><th>SOLENOID VALVE</th></t<>	S	SOLENOID VALVE
Image: Second Secon		ANGLE VALVE
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Image: Second state of the second s	$\boxtimes$	FLOW SETTER
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Image: Strainer       Strainer         Image: Strainer       GAUGE COCK         Image: Strainer       GAUGE COCK         Image: Strainer       FLEXIBLE CONNECTION         Image: Strainer       PRESSURE GAUGE         Image: Strainer       PRESSURE GAUGE         Image: Strainer       PIPE REDUCER         Image: Strainer       PIPE REDUCER         Image: Strainer       REFRIGERANT SITE GLASS         Image: Strainer       REFRIGERANT STRAINER         Image: Strainer       PIPE         Image: Strainer       90 DEGREE ELBOW UP         Image: Strainer       90 DEGREE TEE UP         Image: Strainer       90 DEGREE TEE UP         Image: Strainer       PIPE UNION         Image: Strainer       PIPE UNION         Image: Strainer       PIPE CAP         Image: Strainer       PIPE ANCHOR         Image: Strainer       PIPE ANCHOR	$\neg$	GAS COCK
Image: Strainer       Strainer         Image: Strainer       GAUGE COCK         Image: Strainer       FLEXIBLE CONNECTION         Image: Strainer       PRESSURE GAUGE         Image: Strainer       PIPE REDUCER         Image: Strainer       PIPE REDUCER         Image: Strainer       REFRIGERANT SITE GLASS         Image: Strainer       REFRIGERANT STRAINER         Image: Strainer       PIPE		MANUAL AIR VENT
On       GAUGE COCK         Image: Superstand Supersta	⊢ <del>,</del>	STRAINER
Image: Second system of the	O1	GAUGE COCK
PRESSURE GAUGE         Image: Description of the system o		FLEXIBLE CONNECTION
Image: Problem in the image: Proble	9	PRESSURE GAUGE
Image: Pipe Reducer         Image: Pipe Reduc	Ģ	THERMOMETER
Image: Second state sta	->-	PIPE REDUCER
Image: Price Pric	$\odot$	REFRIGERANT SITE GLASS
Image: Problem intermediate       REFRIGERANT FILTER DRIER         Image: Problem intermediate       90 DEGREE ELBOW UP         Image: Problem intermediate       90 DEGREE ELBOW DOWN         Image: Problem intermediate       90 DEGREE TEE UP         Image: Problem intermediate       90 DEGREE TEE DOWN         Image: Problem intermedintermedint       90 DEGREE TEE DOWN      <		REFRIGERANT STRAINER
Image: symbol decision90 DEGREE ELBOW UPImage: symbol decision90 DEGREE ELBOW DOWNImage: symbol decision90 DEGREE TEE UPImage: symbol decision90 DEGREE TEE DOWNImage: symbol decision91 DEGREE TEE DOWNImage: symbol decisi		REFRIGERANT FILTER DRIER
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90 DEGREE TEE DOWN           H         PIPE UNION           PIPE CAP           X         PIPE ANCHOR           FLOAT AND THERMOSTATIC TRAP	o	90 DEGREE TEE UP
Image: Pipe Union       Image: Pipe Cap       Image: Pipe Anchor       Image: Pipe		90 DEGREE TEE DOWN
PIPE CAP       ····································		PIPE UNION
PIPE ANCHOR       FLOAT AND THERMOSTATIC TRAP		PIPE CAP
	×	PIPE ANCHOR
		FLOAT AND THERMOSTATIC TRAP

————V———— VENT

	ABBREVIATIONS
	NOTE: ALL ABBREVIATIONS MAY NOT BE USED.
(E)	EXISTING
(F)	
APD	AIR PRESSURE DROP
BD	BALANCING DAMPER
BHP	BRAKE HORSE POWER BRITISH THERMAL UNIT
BTUH	BTU/HOUR
CFH	
CFM	COBIC FEET PER MINUTE CONTROL VALVE
DB	DRY BULB TEMPERATURE
	DOMESTIC COLD WATER
DHWR	DOMESTIC HOT WATER DOMESTIC HOT WATER RECIRC
DP	DEPTH, DEEP, OR DROP IN PRESSURE
EA FFR	EXHAUST AIR ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ELEC	
ENT	ENTERING
EVAP	EVAPORAT(-E, -ING, -ED, -OR)
	ENTERING WATER TEMPERATURE EXTERNAL
FD	FIRE DAMPER
FLA	
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD GE	FIRE SMOKE DAMPER GREASE EXHAUST
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HG	MERCURY
HP	HORSEPOWER
HR HTG	HOUR HEATING
HZ	HERTZ (FREQUENCY)
IN	
	LEAVING AIR TEMPERATURE
LBS	POUNDS
LH LRA	LATENT HEAT LOCKED ROTOR AMPS
LVG	LEAVING
LWT MBH	LEAVING WATER TEMPERATURE
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTUR(-ER, -ED)
NIC	NORMALLY CLOSED OR NOISE CRITERIA NOT IN CONTRACT
NO	NORMALLY OPEN
NPSH NTS	NET POSITIVE SUCTION HEAD NOT TO SCALE
OA	OUTSIDE AIR
OD OZ	
PD	PRESSURE DROP OR DIFFERENCE
PG	PROPOLENE GLYCOL
PH   PPM	PRASE PARTS PER MILLION
PSF	POUNDS PER SQUARE FOOT
PSI   PSIA	POUNDS PER SQUARE INCH PSI ABSOLUTE
PSIG	PSI GAUGE
RA	
REFR	REFRIGERATION
REQD	
RLA RPM	RATED LOAD AMPS REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCFM SCW	STANDARD CUBIC FEET PER MINUTE SOFT COLD WATER
SH SH	SENSIBLE HEAT
SP SPECIES	
SPEC(S)	SQUARE
SS	SANITARY SEWER, SOIL, WASTE
STD   TA	STANDARD TRANSFER AIR
TD	TEMP. DROP OR DIFF.
TEMP	
TSTAT	THERMOSTAT
TYP	
I V	VOLI, VOLIAGE UK VENI

	PLU	MBING GENERAL NOTES
1.	THE PLUM	ABING DRAWINGS SHOW THE GENERAL DESIGN, ARRANGEMENT ENT OF THE PLUMBING SYSTEM. BECAUSE OF THE SMALL SCALE RAWINGS, THESE DRAWINGS DO NOT SHOW ALL OFFSETS, BENDS
	OR ELBO	WS NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE D. CONTRACTOR SHALL MAKE SUCH SLIGHT ALTERATIONS AS
	IN ACCOP	RECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL RDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS SUCH AS S IN COMPONENT SIZES, WEIGHTS, QUANTITIES OR MATERIAL
2.	REQUIRE THE DRAV SUPPLEN	PRIOR APPROVAL BY THE DESIGN ENGINEER. WINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO IENT EACH OTHER AND SHALL BE INTERPRETED AS AN INTEGRAL
3.	UNIT WIT FURNISH THE ENTI	H THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING ED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH. RE PLUMBING INSTALLATION SHALL CONFORM TO THE
	REQUIRE MECHANI APPLICAE	MENTS OF THE MOST RECENTLY ADOPTED BUILDING CODES, CAL CODE, PLUMBING CODE, ELECTRICAL CODE, AND ALL OTHER BLE CITY, COUNTY, STATE, AND FEDERAL CODES AND
4.	REGULAT THE ENTI	IONS IN EFFECT. RE PLUMBING INSTALLATION SHALL CONFORM TO ANY CODES,
5.	PRIOR TO THE CON	D FABRICATION AND INSTALLATION OF ANY PLUMBING COMPONENT TRACTOR SHALL COORDINATE THE INSTALLATION OF ALL
	TRADES I	G WORK WITH ALL OTHER BUILDING TRADES, INCLUDING BUILDING HIRED DIRECTLY BY THE OWNER. WHERE CONFLICTS MAY OCCUR, ALL BE RESOLVED PRIOR TO INSTALLATION.
6.	ALL PLUM THE CON	IBING INFORMATION IS NOT SHOWN ON THE PLUMBING DRAWINGS. TRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL TION ON ALL OTHER CONSTRUCTION DOCUMENTS.
7.	THE CON APPROPE	TRACTOR SHALL BE RESPONSIBLE TO REVIEW AND USE, WHERE RIATE, ALL THE PLUMBING DETAILS SHOWN ON THE DRAWINGS.
	SYMBOLS	S OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO THE PLUMBING SYSTEM WITHOUT USING THE INCLUDED DETAILS
8.	ANY PAR BECOMES	THE RESPONSIBLETT OF THE CONTRACTOR. T OF THE PLUMBING INSTALLATION THAT FAILS, IS UNFIT, OR S DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR
9.	REPLACE PROVIDE MOVEME	D BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. PROPER PROVISIONS FOR EXPANSION, CONTRACTION, OR NT OF ALL PIPING.
10. 11.	PROVIDE ALLOW FO ALL PIPIN	LARGE ENOUGH PIPE SLEEVES THROUGH WALL OR FLOOR TO OR ANTICIPATED DIFFERENTIAL MOVEMENT. IG SHALL BE SUPPORT WITH CLEVIS HANGERS (MSS TYPE 1).
12	PERFORA SHALL NO	ATED METAL STRAPS OR PLASTIC STRAPPING (PLUMBER TAPE) OT BE USED TO SUPPORT OR BRACE ANY PIPE. PIPE HANGERS WITHIN 18-INCHES OF ALL CHANGES OF
13.	DIRECTIC	SWAY BRACING FOR ALL PIPING 4" AND LARGER AT ALL CHANGES
14.	ALL STEE	IL CLEVIS HANGERS USED TO SUPPORT COPPER PIPING SHALL BE OR PLASTIC COATED.
15.	COPPER LUMBER. COPPER	PIPING SHALL NOT COME IN CONTACT WITH FIRE TREATED PROVIDE ½" THICK SLIP-ON CLOSED CELL INSULATION WHERE PIPING IS ADJACENT TO FIRE TREATED LUMBER. CLOSED CELL
16.	INSULATI ALL EXPO MANNER	ON SHALL EXTEND A MINIMUM OF 1-1/2" PAST LUMBER. DSED PIPING SHALL BE INSTALLED IN A NEATLY ARRANGED PARALLEL TO THE BUILDING STRUCTURE.
17. 18.	ALL EXPO POLISHEI	DSED DOMESTIC WATER PIPE IN OCCUPIED SPACES SHALL BE D CHROME PLATED. DSED DRAINAGE PIPING IN OCCUPIED SPACES INCLUDING TRAPS
19.	UNDER S DRAWING	INKS SHALL BE POLISHED CHROME PLATED. SS SHOW GENERAL ARRANGEMENT OF THE DRAIN WASTE AND
	PROVIDE CODE.	ALL ADDITIONAL CLEANOUTS AS REQUIRED BY THE PLUMBING
20. 21.	ALL SANI IN DIREC ALL SANI	TARY DRAINAGE SYSTEM PIPING 3" AND LARGER SHALL BE SLOPED TION OF FLOW AT A MINIMUM OF 1/8" PER FOOT. TARY DRAINAGE SYSTEM PIPING SMALLER THAN 3" SHALL BE
22.	SLOPED I SLOPE VE	N DIRECTION OF FLOW AT A MINIMUM OF 1/4" PER FOOT. ENT SYSTEM TOWARDS DRAINAGE SYSTEM.
23. 24.	SIMILAR E	EQUIPMENT SHALL BE OF THE SAME MANUFACTURER. PMENT SHALL PROVIDE THE SCHEDULED PERFORMANCE AT THE
25	JOB SITE FIXTURF	ELEVATION. AND EQUIPMENT MODEL NUMBERS SHOWN IN PLUMBING FIXTURE
	SCHEDUL ESTABLIS PRODUC	E AND PLUMBING EQUIPMENT SCHEDULE ARE SHOWN TO SH THE TYPE OF PRODUCT THAT SHALL BE USED. THE SELECTED I SHALL MEET THE SCHEDULED PERFORMANCE DATA SHOWN ON
- ·	DIFFEREN	EDULE EVEN IF A DIFFERENT MODEL IS SUPPLIED THAT IS NT THAN THAT SCHEDULED.
26.	ALL EQUI EQUIPME NECESSA	PMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE NT MANUFACTURER'S INSTALLATION INSTRUCTIONS. PROVIDE ALL NRY FITTINGS, TRANSITIONS, VALVES AND OTHER DEVICES AND
27.	ACCESSO SEE "PLU	DRIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION. MBING FIXTURE SCHEDULE" FOR INDIVIDUAL TRAPS, WASTE, VENT,
28.	AND DON ALL PLUM APPROVE	IESTIC WATER FIFING FOR INDIVIDUAL FIXTURES. IBING EQUIPMENT SHALL BE LISTED AND LABELED BY AN ED TESTING AGENCY.
29.	FIXTURES	5, EQUIPMENT AND PIPING INSTALLATION SHALL MEET NSF 2DS.
	PL	UMBING SHEET INDEX
P001		PLUMBING COVER SHEET PLUMBING SPECIFICATIONS
PD10	01	LEVEL 2 PLUMBING DEMOLITION PLAN
P101 P601		LEVEL 2 PLUMBING PLAN PLUMBING DETAILS AND SCHEDULES

VAC

VAV

VEL

VENT

VERT

VFD

VOL

VTR

WB

WC

WG

WPD

WTR

VACUUM

VELOCITY

VERTICAL

VOLUME

WATER

VARIABLE AIR VOLUME

VENT THROUGH ROOF

WATER PRESSURE DROP

WET BULB TEMP

WATER COLUMN

WATER GAUGE

VARIABLE FREQUENCY DRIVE

VENT, VENTILATION

![](_page_29_Picture_24.jpeg)

![](_page_29_Picture_25.jpeg)

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![](_page_29_Figure_26.jpeg)

![](_page_29_Picture_27.jpeg)

P001

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# PLUMBING SPECIFICATIONS

22	20100 - BASIC PLUMBING REQUIREMENTS
1.	THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS TO BE PERFORMED BY OTHERS, FOR THE INSTALLATION OF ALL PLUMBING WORK INCLUDING: WAST AND WATER PIPING, LABORATORY GAS PIPING AND PROCESS COOLING PIPING. INCLUDING ALL CONNECTIONS TO EACH SYSTEM AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEM, WHETHER SPECIFICALLY CALLED OUT OR NOT.
2.	ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH THE 2009 IPC, ASU DESIGN GUIDELINES AND ALL APPLICABLE LAWS, CODES, RULES AND REGULATIONS, REQUIRED BY CITY, COUNTY AND STATE, AS WELL AS FEDERAL REQUIREMENTS. PERMITS: OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND FEES.
3.	INSPECTIONS: FURNISH OWNER WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL WORK MUST BE INSPECTED.
4.	CORE CUT ALL PIPE PENETRATION OF EXISTING MASONRY OR CONCRETE WALLS AND FLOORS. SLEEVE ALL PENETRATIONS THROUGH NEW WALLS AND FLOORS. SEAL ALL PENETRATIONS WATER TIGHT WITH SILICONE SEALANT. USE FIRE RATED SEALANT (3M "FIRE BARRIER" OR EQUAL ) FOR 1 HOUR OR 2 HOUR PENETRATIONS.
5.	CAULK AROUND ALL PIPING THAT PASSES THROUGH FIRE-RATED PARTITIONS WITH A NON-HARDENING CAULKING SIMILAR TO 3M "FIRE BARRIER".
ю. Ос	
22	20548 - VIBRATION ISOLATION AND SEISMIC
1.	SEISMICALLY BRACED FOR THE SITE SPECIFIC SEISMIC DESIGN CATEGORY AND SEISMIC USE GROUP, IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE BUILDING CODES AND ASHRAE. PROVIDE SEISMIC PRODUCTS BY AMBER- BOOTH OR MASON INDUSTRIES.
2.	IN GENERAL, PROVIDE SPRING MOUNTS TO ATTENUATE LOW FREQUENCY SOUND AND VIBRATION. PROVIDE NEOPRENE PADS TO ATTENUATE HIGH FREQUENCY SOUND.
3.	VIBRATION: SEISMIC BRACING/MOUNTING CAN BE COMBINED WITH VIBRATION ISOLATION AS APPLICABLE.
4.	CONTRACTOR MANUFACTURED SEISMIC BRACING/RESTRAINT METHODS ARE NOT ACCEPTABLE.
5.	PROVIDE A SIGNED AND STAMPED LETTER FROM A PROFESSIONAL ENGINEER CERTIFYING THAT THE SUPPLIED PRODUCTS ARE CORRECT FOR THE APPLICATION AND THAT THE INSTALLATION IS IN COMPLIANCE WITH ALL APPLICABLE CODES.
22	20553 - IDENTIFICATION FOR PLUMBING PIPING
1.	PIPING SHALL BE LABELED IN ACCORDANCE WITH ASU DESIGN GUIDELINES AND THE FOLLOWING:
2.	PLASTIC LABELS SHALL BE ABLE TO WITHSTAND TEMPERATURES OF 160°F AND
4.	SHALL BE ATTACHED WITH PERMANENT CONTACT-TYPE ADHESIVE.
5.	DIRECTION OF FLOW. LABELS SHALL BE PROVIDED NEAR VALVES, FLANGES AND CHANGES IN PIPE DIRECTION AND AT BOTH SIDES OF CEILING, WALL OR FLOOR PENETRATIONS.
22	20719 - INSULATION
1.	PIPE INSULATION: SNAP-ON GLASS FIBER TYPE WITH VAPOR JACKET. SEAL ALL ENDS AND JOINTS TO PROVIDE A COMPLETELY SEALED SYSTEM. ALTERNATIVELY, FOR INTERIOR WATER PIPING, USE FLEXIBLE UNICELLULAR ASTM 534 TYPE 1 INSULATION. USE 1" THICKNESS FOR PIPE UP TO 2"Ø.
2.	PROVIDE ADA COMPLIANT FIXTURES WITH SNAP ON ADA ARTICLE 4.19 22FF COMPLIANT WHITE INSULATION. TRUEBRO LAV GUARD, BASIN GUARD OR LAV SHIELD.
22	21116 - WATER DISTRIBUTION PIPING
1.	ALL ABOVE GROUND HOT AND COLD WATER PIPING: A. ASTM B 88 TYPE "L" COPPER, WITH WROUGHT COPPER FITTINGS AND SOLDERED WITH 95-5 TIN-ANTIMONY SOLDER.
2.	SPACING. UPON COMPLETION OF HANGER INSTALLATION, ALL ADJUSTMENTS HAVING THE POSSIBILITY OF TURNING SHALL BE LOCKED SECURELY IN PLACE BY DOUBLE NUTTING AT THE HANGER ROD ATTACHMENT TO THE STRUCTURE, AND AT THE PIPE HANGER.
	NOM. PIPEMAXMIN. RODSIZE-INCHESSPAN-FT.SIZE-INCHES173/81-1/293/8
3.	ALL PIPE HANGERS AND EQUIPMENT SUPPORTS SHALL BE LOCATED A MINIMUM DISTANCE OF 2" FROM ANY REFRIGERANT PIPE.
4.	ALL PLUMBING FIXTURES CONNECTED TO A POTABLE WATER SYSTEM WITH HOSE CONNECTIONS ON THE OUTLET SIDE AND OWNER FURNISHED EQUIPMENT WITH DIRECT CONNECTIONS, SHALL BE PROVIDED WITH BACKFLOW PREVENTION.
1 22	21116 - PUTABLE WATER DISINFECTION
1.	(I.E. ALL POTABLE WATER AND DOMESTIC HOT WATER STSTEMS (I.E. ALL POTABLE WATER) SHALL BE PURGED OF ALL DELETERIOUS MATTER AND DISINFECTED PRIOR TO UTILIZATION OF POTABLE WATER SYSTEM
2.	FOLLOW THE METHOD PRESCRIBED BY THE LOCAL HEALTH AUTHORITY OR WATER PURVEYOR HAVING JURISDICTIONS.
3.	IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURE DESCRIBED IN EITHER AWWA C651 OR AWWA C652 OR AS DESCRIBED BELOW SHALL BE FOLLOWED.
4.	THESE PROCEDURES SHALL APPLY TO "ON-SITE" OR "IN-PLANT" FABRICATION OF A SYSTEM OR TO A MODULAR PORTION OF A SYSTEM.
5.	FOLLOW EITHER METHOD 1 OR METHOD 2
6.	DISINFECTION PROCEDURE:
	METHOD 1: a. THE PIPING SYSTEM, INCLUDING FIXTURES AND EQUIPMENT, SHALL BE FLUSHED WITH CLEAR, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT THE POINTS OF OUTLET.
	b. THE SYSTEM OR PARTS THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF CHLORINE, AND THE SYSTEM OR PART THEREOF SHALL BE VALVES OFF AND ALLOWED TO STAND FOR 24-HOURS.
	METHOD 2:
	a. THE SYSTEM OR PART THEREOF SHALL BE FILLED WITH A WATER/CHLORINE SOLUTION CONTAINING NOT LESS THAN 200 PARTS PER MILLION OF CHLORINE AND ALLOWED TO STAND FOR 3-HOURS
	<ul> <li>FOLLOWING THE REQUIRED STANDING TIME, THE SYSTEM SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE CHLORINE IS PURGED FROM THE SYSTEM.</li> </ul>
	c. THE PROCEDURE SHALL BE REPEATED WHERE SHOWN BY A BACTERIOLOGICAL EXAMINATION THAT CONTAMINATION REMAINS PRESENT IN THE SYSTEM.
	d. DURING THE DISINFECTION PROCEDURE, WARNING SIGNS SHALL BE PLACED AT BUILDING ENTRANCES, ROOM ENTRANCES AND WATER OUTLETS INDICATING THAT POTABLE WATER HAS A HIGH CONCENTRATION OF CHLORINE AND IS NOT SAFE TO DRINK OR USE.

## PLUMBING SPECIFICATIONS

- 221316 DRAINAGE AND VENT SYSTEMS ABOVE GROUND SANITARY DRAINAGE AND VENT PIPING, IN ALL AREAS EXCEPT AIR PLENUMS AND EXCEPT IN A FIRE RATED BUILDING, SHALL BE ABS TYPE DWV PLASTIC PIPE AND FITTINGS PER ASTM D2661 WITH ASTM D2255 SOLVENT, OR PVC PLASTIC PIPE AND FITTINGS PER ASTM D2665 WITH ASTM D2564 SOLVENT, OR SERVICE WEIGHT, NO HUB CAST IRON COUPLED PIPE AND FITTINGS WITH COMPRESSION TYPE NEOPRENE GASKETS AND STAINLESS STEEL BANDS.
- FORCE SEWER MAINS UP TO 4" SHALL BE TYPE L HARD COPPER TUBE WITH WROUGHT COPPER PRESSURE FITTINGS AND SOLDERED JOINTS, OR DUCTILE IRON PIPE AND FITTINGS WITH MECHANICAL JOINTS.
- ALL SANITARY DRAINAGE AND VENT PIPING INSIDE AIR PLENUMS AND ANYWHERE IN A FIRE RATED BUILDING SHALL BE NO HUB SERVICE WEIGHT CAST IRON COUPLED PIPE AND FITTINGS WITH COMPRESSION TYPE NEOPRENE GASKETS AND STAINLESS STEEL BANDS. ASTM B306 COPPER PIPE MAY BE USED WITH SOLDERED JOINTS FOR PIPE 3" AND SMALLER.
- INSTALL SANITARY DRAIN LINES 2-1/2" AND LESS WITH A SLOPE OF 2%. INSTALL SANITARY DRAIN LINES 3"-6" WITH A SLOPE OF NOT LESS THAN 1%.
- CLEANOUTS: A. FINISHED WALL CLEANOUTS: SMITH FIGURE 4472 COMPLETE WITH CAST
- BRONZE TAPER THREADED PLUG, STAINLESS STEEL COVER AND SCREW. 224213 - PLUMBING FIXTURES
- PROVIDE AND INSTALL CARRIERS AS REQUIRED FOR FLOOR OR WALL MOUNTED PLUMBING FIXTURES. INSTALL ALL FIXTURES WITH ACCESSORIES AS REQUIRED TO PROVIDE A COMPLETE, WORKABLE INSTALLATION.
- PLUMBING FIXTURES SHALL INCLUDE COMPRESSION STOPS ABOVE FLOOR IN SUPPLIES TO ALL FIXTURES AND A MINIMUM 17 GAUGE P-TRAP.
- ALL LAVATORIES AND HAND SINKS WILL HAVE A COMBINATION FAUCET OR PREMIXING FAUCET CAPABLE OF SUPPLYING WARM WATER FOR A MINIMUM OF 10 SECONDS.
- FIXTURE SCHEDULE:
- A. CLINIC SINK (S-1): ELKAY LRADQ191855 18 GA. TYPE 304 STAINLESS STEEL SINK; 19" X 18" X 5-1/2"; SELF-RIMMING; (2) FAUCET HOLES ON 4" CENTERS; LK-99 STAINLESS STEEL STRAINER; MOEN M-BITION MODEL 8938 QUATER TURN TOP MOUNT DECK WITH 4" WRIST BLADE HANDLES WITH HOT ANC COLD COLOR INDICATORS AND RIGID GOOSENECK SPOUT WITH FLO-CONTROL AERATOR. WASTE 2", TRAP 1 1/2", VENT 2", HW 1/2", CW 1/2". PROVIDE THERMOSTATIC MIXING VALVE MEETING ASSE 1016 ON THE HOT WATER SUPPLY TO THE FIXTURE. SET THE HOT WATER TEMPERATURE AT 110°F.

![](_page_30_Picture_45.jpeg)

![](_page_30_Picture_46.jpeg)

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![](_page_30_Figure_47.jpeg)

PLUMBING SPECIFICATIONS

P002

![](_page_31_Figure_0.jpeg)

	FLUMIDING GENERAL NUTES
•	ALL DOMESTIC WATER PIPING TO BE COPPER. ALL HOT WATER AND HOT WATER RECIRCULATING PIPING TO BE INSULATED WITH 1" UP TO 1-1/4" PIPE AND 1-1/2"
   	NSULATION FOR PIPING 1-1/2" AND LARGER. DOMESTIC COLD WATER PIPING TO BE NSULATED WITH 1/2" UP TO 1-1/4" PIPING AND 1" INSULATION FOR PIPING 1-1/2" OR ARGER.
T E	THE CONTRACTOR SHALL CLOSELY COORDINATE MECHANICAL AND PLUMBING WITH ELECTRICAL, ARCHITECTURAL, AND BUILDING STRUCTURE.
	DISSIMILAR METAL PIPING CONNECTIONS SHALL HAVE DIELECTRIC ISOLATORS. ALL DOMESTIC WATER PIPING TO BE PRESSURE TESTED, CLEANED, AND
E	SISINFECTED. SEE SPECIFICATIONS. BALL VALVES SHALL BE FULL PORT AND LEAD FREE. PROVIDE WITH HANDLE/STEM
SE AL	ALED AND VAPOR PROOF. L PLUMBING PIPING TO BE LOCATED ON WARM SIDE OF BUILDING ENVELOPE. ALL
R( EM	OOF DRAIN PIPING (PRIMARY AND SECONDARY) TO BE LOCATED IN BUILDING VELOPE AND TO BE FULLY INSULATED, INCLUDING ANY ROOF DRAIN BOWLS.
	SANITARY WASTE AND STORM WATER PIPING EXPOSED TO FREEZING IDITIONS TO BE INSULATED WITH 1" THICK MINERAL FIBER INSULATION AND 20
N V F	THE PVG JACKET. LABEL ALL EXPOSED PIPING WITH SYSTEM TYPE. VATER HAMMER ARRESTORS SHALL BE SIZED AND INSTALLED PER PLUMBING AND DRAINAGE INSTITUTE (STANDARD PDLWH 201) PEOLUPEMENTS IN ACCESSION F
L (	CONTROL INSTITUTE (STANDARD PDFWIT 201) REQUIREMENTS IN ACCESSIBLE COCATIONS ON THE COLD WATER AND HOT WATER PIPING WHERE FLUSH VALVES OR QUICK CLOSING VALVES ARE LISED
Ì	ALL DOMESTIC WASTE AND VENT PIPING TO BE CAST IRON OR PVC INSULATED TO MEET FLAME SPREAD AND SMOKE DEVELOPED INDEX.
F	THIS PROJECT MAY REQUIRE AFTER HOURS AND WEEKEND WORK TO RUN PIPING/DUCTWORK OR MODIFY SYSTEMS IN OR AFFECTING OCCUPIED SPACES.
P	OORDINATE ALL SHUTDOWNS 72 HOURS IN ADVANCE WITH OWNER. ROVIDE BALANCE REPORT OF DOMESTIC WATER RECIRCULATING SYSTEM TO NGINEER, PROVIDE B&T PORTS AND PRESSURE CAUGES ON EACH SIDE OF
ь F T	RECIRCULATING PUMP. PROVIDE THERMOMETER ON DISCHARGE SIDE OF PUMP. THE CONTRACTOR SHALL FIFLD VERIFY FXISTING FIFLD CONDITIONS PRIOR TO
	ORDERING OR FABRICATING. ADDITIONAL COST WILL NOT BE ALLOWED FOR CONTRACTOR'S FAILURE TO BECOME FAMILIAR WITH EXISTING SITE CONDITIONS.
	TEST WASTE AND VENT PIPING FOR LEAKAGE. AFTER PLUMBING FIXTURES HAVE BEEN SET AND TRAPS FILLED WITH WATER, TEST CONNECTIONS AND PROVE THEY
	ARE GASTIGHT AND WATERTIGHT. PLUG VENT-STACK OPENINGS ON ROOF AND BUILDING DRAINS WHERE THEY LEAVE BUILDING. FOR CAST IRON, INTRODUCE AIR
	MANOMETER INSERTED IN TRAP OF WATER CLOSET TO MEASURE THIS PRESSURE. AIR PRESSURE MUST REMAIN CONSTANT WITHOUT INTRODUCING ADDITIONAL AIR
	THROUGHOUT PERIOD OF INSPECTION. FOR PLASTIC PIPING PERFORM WATER TEST WITH NO LESS THAN 10' OF HEAD OF WATER. INSPECT PLUMBING FIXTURE
	CONNECTIONS FOR GAS AND WATER LEAKS. REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY
	RESULTS ARE OBTAINED. PREPARE REPORTS FOR TESTS AND REQUIRED CORRECTIVE ACTION. PIPING SHALL NOT BE SUPPORTED FROM THE RECORDER (1910) PROVING CR
	OTHER PIPES. HANG PIPES FROM BEAMS, JOIST OR SUPPLEMENTARY STRUCTURAL MEMBERS, WHERE POSSIBLE INSTALL ALL PIPING WITHIN 12" FROM SUPPORTING
	STRUCTURE. WHERE JURISDICTION REQUIRES, THE CONTRACTOR IS RESPONSIBLE FOR
	PROVIDING SEISMIC RESTRAINT. PROVIDE DESIGN DRAWINGS TO AUTHORITY HAVING JURISDICTION AND MECHANICAL ENGINEER FOR REVIEW.
	<ul> <li>PLUMBING PIPING SCHEDULE:</li> <li>DOMESTIC WATER ABOVE GRADE= TYPE L COPPER - SOLDERED</li> <li>POOE DRAIN, WASTER, VENT ABOVE ORADE - OAOT BONK, WISH FOR ADVENTION</li> </ul>
	<ul> <li>KOUF DRAIN, WASTE &amp; VENT ABOVE GRADE = CAST IRON - HUBLESS COUPLINGS WITH HEAVY DUTY COUPLINGS</li> </ul>
	SHEET KEYNOTES
F	SHEET KEYNOTES
	SHEET KEYNOTES SHEET SHE SHE SHE SHE SHE SHE SHE SHE
	SHEET KEYNOTES
	SHEET KEYNOTES EMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED 'IPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. 'DYNAGTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING 'URPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0'. XEMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER INDE BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL
	SHEET KEYNOTES SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED IPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. DYNRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75'-0'. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER INES BACK TO THE DEMOLISHED LENGTH OF PIPE EQUALS 75'-0'. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER INES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PURPOSES ASSUME DEMOLISHED LENGTH OF TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE INES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 76'-0'.
	SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0°. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50°-0°.
	SHEET KEYNOTES SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0°. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER INES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50'-0".
	SHEET KEYNOTES SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75'-0'. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATEF INES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50'-0'.
•	SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75'-0'. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL MATER AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50'-0'.
	SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0". REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALS PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50-0".
~	SHEET KEYNOTES REMOVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SALA ALL PRUTATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0°. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER LINES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50-0°.
	SHEET KEYNOTES SHEET EXPLOSIBILITY OF THE STROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING "URPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75-0". REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER INES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL "PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50-0".
	SHEET KEYNOTES PROVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PROVE ALL PLUMBING FIXTURES FROM EXISTING CONTACTOR TO FILE PROVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PROVE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PROVE SINK AND ASSOCIATED PIPING BACK TO MAINS, CAP AND SEAL ALL PROVE SINK AND ASSOCIATED PIPING BACK TO MAINS, REMOVE DOMESTIC WATER INFES BACK TO THE DEMOLISHED LENGTH OF PIPE EQUALS 75-0'. REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS, CAP AND SEAL ALL PROVE SINK AND ASSOCIATED PIPING BACK TO MAINS, CAP AND SEAL ALL PROVE SINK AND ASSOCIATED PIPING BACK TO MAINS, CAP AND SEAL ALL PROVE SINK AND ASSOCIATED PIPING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50-0'.
	SERVICE ALL PLUMBING FIXTURES FROM EXISTING RESTROOM AND ASSOCIATED PIPING BACK TO MAINS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 75.0°.  REMOVE SINK AND ASSOCIATED PIPING BACK TO MAINS. REMOVE DOMESTIC WATER UNES BACK TO THE DEMOLITION POINT INDICATED ON PLANS. CAP AND SEAL ALL PENETRATIONS WATER TIGHT. CONTRACTOR TO FIELD VERIFY ROUTING OF WASTE AND VENT PIPING. FOR BIDDING PURPOSES ASSUME DEMOLISHED LENGTH OF PIPE EQUALS 50'0'.

![](_page_31_Picture_4.jpeg)

![](_page_31_Figure_7.jpeg)

![](_page_32_Figure_0.jpeg)

![](_page_32_Figure_4.jpeg)

![](_page_32_Picture_5.jpeg)

![](_page_32_Figure_8.jpeg)

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ACCEPTAE	BLE MANUE	ACTURERS:			F	REMARKS:
EXISTING						1) EXISTING 2) CLEAN A 3) PROVIDE 4) MAINTAI 5) PROTEC 7) PROVIDE
					RECO	VERY
			TANK SI	ZE	GPH	
LABEL	LOCA	ATION	(GAL)		@ 90° ΔT	
E)WH-1	MECHANIC	AL ROOM	40	40		0
	ACCEPTAB BELL & GO ARMSTROM TACO GRUNDFOS	BLE MANUFA SSETT NG S	ACTURERS:	REN (1) F (2) E (3) F (4) F	IARKS: PROVIDE W BALANCE D PROVIDE W PROVIDE C/	ITH AQUAS OMESTIC H ITH BRONZ ALEFFI THE
			L		GPM	
	DCP-1 DOMESTIC HOT WATER RECIRC.				WAIEK	2

![](_page_33_Figure_3.jpeg)

# **EXISTING WATER HEATER (GAS)**

XISTING TO REMAIN.					
LEAN AND SERVICE EXISTING UNIT.					
ROVIDE ISOLATION VALVES IF NOT PRESENT.					
AINTAIN ELECTRICAL AND GAS CONNECTIONS.					
ROTECT DURING CONSTRUCTION.					
ROVIDE WITH HEAT TRAPS IF NOT PRESENT.					
RY	ELECTRIC				

		ELECTRICAL				OPERATING				
GAS INPUT						WEIGHT				
(BTUH)	EFFICIENCY	VOLTS	PHASE	Hz	FLA	(LBS)	MANUFACTURER	MODEL	REMARKS	
40,000	0.7 UEF	120	1	60	6.0	269	A.O. SMITH	GDP-40	ALL	

# **RECIRCULATION PUMP SCHEDULE**

QUASTAT AND TIE INTO BUILDING TIMER WITH RUN TIME 1 HOUR BEFORE AND AFTER OCCUPIED SCHEDULE. ESTIC HOT WATER RECIRCULATING LINE. PROVIDE BALANCING VALVE. PROVIDE P&T PORT ON INLET AND DISCHARGE OF PUMP. PROVIDE BALANCE REPORT TO ENGINEER. BRONZE, PLASTIC, OR STAINLESS STEEL IMPELLER AND STAINLESS STEEL BODY. FI THERMAL BALANCING VALVE SET TO 110 F AT EACH CONNECTION POINT OF RECIRC LINE TO HOT WATER LINE.

FLUID					ELECT	RICAL					
GPM	HEAD (FT)	MAX. TEMP. (°F)	VOLTS	PHASE	Hz	WATTS	HP	AMPS	MANUFACTURER	MODEL	REMARKS
2	5.00	225	120	1	60	.125			BELL & GOSSETT	NBF-25	ALL

# PLUMBING FIXTURE SCHEDULE

REFER 1	TO PLUMBING SPE	CIFICATION	S FOR COM	PLETE FIXT	URE COM	PONENTS		
LABEL	DESCRIPTION	WASTE	VENT	CW	HW	MANUFACTURER	MODEL	REMARKS
S-1	CLINIC SINK	1 1/2"	1 1/2"	1/2"	1/2"	FIXTURE: ELKAY FAUCET: MOEN TMV: BRADLEY	FIXTURE: LRADQ191855L FAUCET: M-BITION 8938 TMV: S59-4016 SERIES	
wco	WALL CLEANOUT	0"	0"	0"	0"	ZURN	Z1446	SIZE TO MATCH PIPE BEING

# **IECC TABLE C403.11.3** MINIMUM PIPE INSULATION THICKNESS (in inches)

	FLUID OPERATING	INSUL	ATION CONDUCTIVITY		NOMI	NAL PIPE SIZE (inches)			
RAI	TEMPERATURE RANGE AND USAGE (F)	CONDUCTIVIT Y (BTU / IN.)	MEAN RATING TEMPERATURE (F)	< 1	1 to < 1 1/2	1 1/2 to < 4	4 to < 8	> 8	
	251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5	
	201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0	
	141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0	
	105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5	
	40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0	
	< 40	0.20 - 0.26	50	0.5	1.0	1.0	1.0	1.5	

NOTES:

1. FOR PIPING SMALLER THAN 1 1/2" INCHES AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF THESE THICKENESS BY 1" SHALL BE PERMITTED, BUT NOT TO A THICKNESS LESS THAN 1 INCH.

2. FOR DIRECT-BURIED HEATING AND HOT WATER PIPING, REDUCTION OF THICKNESSES BY 1 1/2" SHALL BE PERMITTED, BUT NOT LESS THAN 1 INCH

![](_page_33_Figure_18.jpeg)

![](_page_33_Figure_19.jpeg)

![](_page_33_Figure_20.jpeg)

![](_page_33_Figure_21.jpeg)

OVER 2" Ø

2" Ø AND UNDER

**PIPE HANGERS DETAIL** SCALE: NTS

- DOMESTIC COLD WATER

- CIRCULATION PUMP

- AGA P & T RELIEF VALVE

- TO DRAIN RUN FULL SIZE

- EXPANSION TANK

- DOMESTIC HOT WATER RECIRC

![](_page_33_Figure_25.jpeg)

![](_page_33_Picture_26.jpeg)

P601

	SYMBOLS LEGEND
SYMBOL	DESCRIPTION
REFERENC	E AND LINE SYMBOLS
A5 E-501	DETAIL INDICATOR: A5 INDICATES DETAIL NUMBER, E-501 INDICATES DRAWING SHEET WHERE DETAIL IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, EXTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
A5 E-201	ELEVATION OR SECTION INDICATOR, INTERIOR: A5 INDICATES ELEVATION OR SECTION NUMBER, E-201 INDICATES DRAWING SHEET WHERE ELEVATION OR SECTION IS SHOWN.
ROOM NAME	ROOM IDENTIFIER WITH ROOM NAME AND NUMBER.
	KEYNOTE INDICATOR.
$\Lambda$	REVISION INDICATOR.
CU-1	EQUIPMENT INDICATOR.
X-X XMDP	MECHANICAL EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK SHOWN ON EQUIPMENT SCHEDULE. "XMDP" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
	BREAK, STRAIGHT: TO BREAK PARTS OF DRAWING
$\sim$	BREAK, ROUND
MATCH LINE SEE XX/X-XXX	MATCH LINE INDICATOR: CENTER, EXTRA WIDE LINE.
	NEW LINE: MEDIUM LINE.
	EXISTING TO REMAIN LINE: THIN LINE.
	CONTRACT LIME: DASHED, WIDE LINE
	ELECTRICAL EQUIPMENT INDICATOR. "XXX" INDICATES TYPE OF
EF-X	EQUIPMENT OR EQUIPMENT ID. "EF-X" IDENTIFIES MECHANICAL EQUIPMENT BEING SERVED. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION. EQUIPMENT INDICATOR. "X-X" INDICATES EQUIPMENT MARK
<u>X-X</u> 1LA-3	SHOWN ON EQUIPMENT SCHEDULE. "1LA-3" IDENTIFIES PANEL EQUIPMENT IS CIRCUITED TO. REFER TO EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.
XXXET #	SHOWN ON SCHEDULE. "#" IDENTIFIES SEQUENCE NUMBER SHOWN ON SITE AND RISER DIAGRAM. REFER TO PLANS AND
	EXTERIOR PULLBOX SCHEDULE FOR ADDITIONAL INFORMATION.
	WIRING
	WIRING TURNED UP OR TOWARDS OBSERVER.
	WIRING TURNED DOWN OR AWAY FROM OBSERVER.
	SINGLE BRANCH CIRCUIT HOME RUN TO PANELBOARD WITH
A-1	DEDICATED NEUTRAL CONDUCTOR. LETTER AND NUMBER NOTATION IDENTIFY PANEL AND CIRCUIT NUMBER.
A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS.
1 A-1,3,5	BRANCH CIRCUIT HOME RUN TO PANELBOARD: NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS. LETTER AND NUMBER NOTATIONS IDENTIFY PANEL AND CIRCUIT NUMBERS. NUMBER IN BOX REFERS TO THE CONDUCTOR AND CONDUIT SCHEDULE.
(1X)	CONDUCTOR & CONDUIT ("CC") SCHEDULE INDICATOR. "X"
•	JUNCTION BOX.
Φ <sub>c</sub>	JUNCTION BOX, CEILING.
SC	JUNCTION BOX, SYSTEMS FURNITURE COMMUNICATION CONNECTION.
0 <sub>SP</sub>	JUNCTION BOX, SYSTEMS FURNITURE POWER CONNECTION.
РВ	PULL BOX.
•	MECHANICAL EQUIPMENT CONNECTION. REFER TO EQUIPMENT SCHEDULE FOR REQUIREMENTS.
	ELECTRIC VEHICLE CHARGING STATION.
	ADDITIONAL INFORMATION.
(W-3)	FIXTURE IDENTIFICATION: (W-3) INDICATES FIXTURE TYPE AS SCHEDULED.
(W-3E)	FIXTURE IDENTIFICATION: EMERGENCY LIGHTING FIXTURE WITH BATTERY PACK AND/ OR GENERATOR AND/ OR CENTRALIZED INVERTER AND/ OR CENTRALIZED UPS CONNECTION AS INDICATED IN PLANS. (W-3E) INDICATES FIXTURE TYPE AS SCHEDULED.
<b>↑</b>	EGRESS DIRECTION ARROW (EXIT SIGNS).
	EXIT SIGN: SINGLE FACE; CEILING MOUNTED
	EXIT SIGN: SINGLE FACE; WALL MOUNTED
$\Theta$	EXIT SIGN: DOUBLE FACE; CEILING MOUNTED
	EXIT SIGN: DOUBLE FACE; WALL MOUNTED
a,b	LOW VOLTAGE DIGITAL LIGHTING CONTROL SWITCH: LETTER "a,b" INDICATES ZONING WHERE SHOWN (REFER TO PLANS, SCHEDULES, AND DETAILS FOR EXACT BUTTON CONFIGURATION AND PROGRAMMING REQUIREMENTS)
RC	DIGITAL LIGHTING ROOM CONTROLLER
	DIGITAL LIGHTING DIMMING CONTROLLER
	LIGHTING SPACE CONTROL TYPE. X INDICATES TYPE. SEE SCHEDULE / DIAGRAM.
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SYMBOL	DESCRIPTION
WIRING DE	VICES
φ	RECEPTACLE, SINGLE: NEMA 5-20R.
	RECEPTACLE, DUPLEX: NEMA 5-20R.
<u>Ф</u> а	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
фс	RECEPTACLE, DUPLEX, CEILING: NEMA 5-20R.
₀₫	RECEPTACLE, DUPLEX, DEDICATED CIRCUIT: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT
	RECEPTACLE BEHIND WATER COOLER. SEE MECHANICAL/PLUMBING SHOP DRAWINGS FOR INSTALLATIC REQUIREMENTS.
∯ ıG	RECEPTACLE, DUPLEX, ISOLATED GROUND: NEMA 5-20R.
₿s	RECEPTACLE, DUPLEX, SWITCHED: NEMA 5-20R.
₩w	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, WET LABEL, "WEATHERPROOF IN USE": NEMA 5-20R.
•	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX, CONNECTED TO UPS: NEMA 5-20R.
U	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT
	INTERRUPTER: NEMA 5-20R.
•	INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
Ц	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT
₩ WP	INTERRUPTER, WEATHERPROOF: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE: NEMA 5-20F
4	RECEPTACLE, QUADRAPLEX, CONNECTED TO UPS: NEMA 5-
¥	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT
₩	INTERRUPTER: NEMA 5-20R. RECEPTACIE SPECIAL PURPOSE, PROVIDE RECEPTACIE T
<u> </u>	MATCH EQUIPMENT PLUG.
	RECEPTACLE, QUADRAPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT
ELECIRICA	
	FUSE WITH RATING (ONE-LINE DIAGRAM).
	DISCONNECT, FUSED (ONE-LINE DIAGRAM).
	DISCONNECT, NONFUSED (ONE-LINE DIAGRAM).
¢	CIRCUIT BREAKER (ONE-LINE DIAGRAM).
, -( ↓ ,,	CIRCUIT BREAKER WITH SHUNT TRIP (ONE-LINE DIAGRAM).
	CIRCUIT BREAKER, MOTOR CIRCUIT PROTECTION (ONE-LINE DIAGRAM).
( #AF #AT	CIRCUIT BREAKER, ADJUSTABLE TRIP. "#AF" REPRESENTS F RATING. "#AT" REPRESENTS TRIP UNIT. (ONE-LINE DIAGRAM
( ↓ ↓LSIG	CURVE ADJUSTMENT, S=SHORT TIME CURVE ADJUSTMENT, I=INSTANTANEOUS CURVE ADJUSTMENT, G=GROUND FAULT ADJUSTMENT FULLY COMPLIANT WITH NEC 210.13, 215.10 AN 230.95. (ONE-LINE DIAGRAM).
(	CIRCUIT BREAKER, SOLID STATE WITH ARC ENERGY REDUC
<u>ن</u>	SWITCHING WITH LOCAL STATUS INDICATOR FULLY COMPLIA WITH NEC 240.87 (ONE-LINE DIAGRAM)
	TRANSFORMER (ONE-LINE DIAGRAM).
11111	
	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM).
"1H"	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM).
"1H" 225/3 "1H"	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM).
"1H" 225/3 "1H" 225/3 "1H"	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM).
"1H" "225/3 "1H" 225/3 "1H" FIRE ALAR	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHAS SHOWN (ONE-LINE DIAGRAM).
"1H" "225/3 "1H" \$225/3 "1H" FIRE ALARI	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHAS SHOWN (ONE-LINE DIAGRAM). VI DETECTOR. SMOKF.
"1H" "225/3 "1H" 225/3 "1H" FIRE ALARI	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHAS SHOWN (ONE-LINE DIAGRAM). VI DETECTOR, SMOKE.
Image: constraint of the second state of the second sta	CURRENT TRANSFORMER (CT) (ONE-LINE DIAGRAM). PANELBOARD (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN LUGS ONLY. BUS SIZE AND PHASE SHOWN (ONE-LINE DIAGRAM). PANELBOARD WITH MAIN CIRCUIT BREAKER. SIZE AND PHAS SHOWN (ONE-LINE DIAGRAM). M DETECTOR, SMOKE. STROBE, WALL MOUNTED.

	SYMBOLS LEGEND
SYMBOL	DESCRIPTION
ELECTRICA	L POWER AND DISTRIBUTION
•) 225/3 "1H" • • 60/3	PANELBOARD WITH MAIN AND SUB FEED CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 25/3	PANELBOARD WITH MAIN LUGS ONLY AND SURGE PROTECTION WITH CIRCUIT BREAKER (ONE-LINE DIAGRAM).
225/3 "1H" 225/3 "1H"	PANELBOARD WITH SUB FEED LUGS (ONE-LINE DIAGRAM).
)225/3 "1H" "1H"	PANELBOARD WITH CIRCUIT BREAKER AND SUB FEED LUGS (ONE-LINE DIAGRAM).
u	EARTH GROUND (ONE-LINE DIAGRAM).
•È-lı	SERVICE ENTRANCE SURGE PROTECTION (ONE-LINE DIAGRAM).
EPO	PUSH BUTTON, REMOTE EMERGENCY STOP.
(M)	METER.
) 	DISCONNECT SWITCH, FUSED.
 	DISCONNECT SWITCH, UNFUSED.
	PANELBOARD CABINET, FLUSH MOUNTED.
	PANELBOARD CABINET, SURFACE MOUNTED, 1 SECTION.
	PANELBOARD CABINET, SURFACE MOUNTED, 2 SECTION.
\$ST	SWITCH, TOGGLE MOTOR STARTER WITH OVERLOAD
NURSE CAI	L
Ø	JUNCTION BOX.
$\square$	CORRIDOR LIGHT.
 	BATHROOM PULL CORD STATION.
	DUTY STATION.
	EMERGENCY ASSISTANCE CALL STATION.
 	EMERGENCY ASSISTANCE CODE BLUE CALL STATION.
	PATIENT STATION.
	STAFF STATION.
	TOUCH SCREEN NURSE CALL MASTER STATION.
ZLC	ZONE LIGHT CONTROLLER.
	NURSE CALL AREA CONTROL UNIT & POWER SUPPLIES.
	UTION
_T_	TV DISTRIBUTION CABLE, INDIVIDUAL DROPS.
TR	TV DISTRIBUTION CABLE, TRUNK.
СМВ	COMBINER.
DC	DIRECTIONAL COUPLER.
DA	DISTRIBUTION AMPLIFIER (ONE-LINE DIAGRAM).
SPL	SPLITTER (ONE-LINE DIAGRAM).
	TV OUTLET.
Ø	SATELLITE ANTENNA.
T	TV ANTENNA (ONE-LINE DIAGRAM).
-////-	TERMINATOR, 75 OHM (TV DISTRIBUTION).
⊖×	HDMI RECEPTACLE WITH SINGLE GANG BACKBOX AND 1.25" CONDUIT STUBBED TO ACCESSIBLE CEILING. PROVIDE 2.1 HDMI CABLE BETWEEN HDMI RECEPTACLES. "X" INDICATES QUANTITY OF HDMI PORTS WHEN GREATER THAN 1.

## DEFINITIONS NOTE: ALL DEFINITIONS MAY NOT BE USED.

INDICATED: THE TERM "INDICATED" REFERS TO GRAPHIC REPRESENTATIONS. NOTES, OR SCHEDULES ON THE DRAWINGS, OTHER PARAGRAPHS OR SCHEDULES IN THE SPECIFICATIONS, AND SIMILAR REQUIREMENTS IN THE CONTRACT DOCUMENTS. WHERE TERMS SUCH AS "SHOWN", "NOTED", "SCHEDULED", AND "SPECIFIED" ARE USED, IT IS TO HELP THE READER LOCATE THE REFERENCE, NO LIMITATION ON LOCATION IS INTENDED. DIRECTED: TERMS SUCH AS "DIRECTED", "REQUESTED", AUTHORIZED", "SELECTED", "APPROVED", "REQUIRED", AND "PERMITTED" MEAN "DIRECTED BY

THE ENGINEER", "REQUESTED BY THE ENGINEER", AND SIMILAR PHRASES. APPROVED: THE TERM "APPROVED", WHERE USED IN CONJUNCTION WITH THE ENGINEER'S ACTION ON THE CONTRACTOR'S SUBMITTALS, APPLICATIONS, AND

REQUESTS, IS LIMITED TO THE ENGINEER'S DUTIES AND RESPONSIBILITIES AS STATED IN GENERAL AND SUPPLEMENTARY CONDITIONS. FURNISH: THE TERM "FURNISH" IS USED TO MEAN "SUPPLY AND DELIVER TO

THE PROJECT SITE, READY FOR UNLOADING, UNPACKING, ASSEMBLY, INSTALLATION, AND SIMILAR OPERATIONS." INSTALL: THE TERM "INSTALL" IS USED TO DESCRIBE OPERATIONS AT PROJECT

SITE INCLUDING THE ACTUAL "UNLOADING, UNPACKING, ASSEMBLY, ERECTION, PLACING, ANCHORING, APPLYING, WORKING TO DIMENSION, FINISHING, CURING, PROTECTING, CLEANING, AND SIMILAR OPERATIONS." PROVIDE: THE TERM "PROVIDE" MEANS "TO FURNISH AND INSTALL, COMPLETE

AND READY FOR THE INTENDED USE." INSTALLER: AN "INSTALLER" IS THE CONTRACTOR OR AN ENTITY ENGAGED BY THE CONTRACTOR, EITHER AS AN EMPLOYEE, SUBCONTRACTOR, OR SUB-SUBCONTRACTOR, FOR PERFORMANCE OF A PARTICULAR CONSTRUCTION ACTIVITY, INCLUDING INSTALLATION, ERECTION, APPLICATION, AND SIMILAR OPERATIONS. INSTALLERS ARE REQUIRED TO BE EXPERIENCED IN THE OPERATIONS THEY ARE ENGAGED TO PERFORM.

TECHNOLOGY SYSTEMS: THE TERM "TECHNOLOGY SYSTEMS" IS USED TO DESCRIBE ALL LOW VOLTAGE SYSTEMS GENERALLY REFERRED TO AS "SPECIAL SYSTEMS". THESE SYSTEMS INCLUDE BUT ARE NOT NECESSARILY LIMITED TO ALL SYSTEMS WHICH UTILIZE VOLTAGES OF LESS THAN 71 VOLTS SUCH AS SOUND SYSTEMS, VIDEO SYSTEMS, TV SYSTEMS, SECURITY SYSTEMS, VOICE AND DATA CABLING SYSTEMS, ETC...

# ABBREVIATIONS

	NOTE: ALL ABBREVIAT	IONS MA	Y NOT BE USED.
1P	SINGLE POLE	kvar	
1PH	SINGLE-PHASE	KVV	KILOWATT
1VVAY			
2/0			
200A 1 3/C			CONDUIT
3WAY	THREE-WAY	LFNC	LIQUID TIGHT FLI
40UT			NONMETALLIC C
1001	OUTLET	LPS	LOW PRESSURE
4PDT	FOUR-POLE DOUBLE THROW	LRA	LOCKED ROTOR
4PST	FOUR-POLE SINGLE THROW	LTG	LIGHTING
4W	FOUR-WIRE	LV	LOW VOLTAGE
4WAY	FOUR-WAY	MATV	MASTER ANTENN
А	ABOVE COUNTER		SYSIEM
AC	ARMORED CABLE	MAX	
ACS	ACCESS CONTROL SYSTEM		
ADA	AMERICANS WITH DISABILITIES	MCB	
		MCC	
		MCP	MOTOR CIRCUIT
AFG		MDP	MAIN DISTRIBUT
AIC		MG	MOTOR GENERA
/	CAPACITY	МН	MANHOLE
ALUM	ALUMINUM	MIN	MINIMUM
AMP	AMPERE	MLO	MAIN LUGS ONLY
ANN	ANNUNCIATOR	MOCP	MAXIMUM OVER
AP	ACCESS POINT (WIRELESS		PROTECTION
		MIS	MANUAL TRANSP
		NA NC	
ASC			
AIG	SWITCH		
AV	AUDIO VISUAL		MANUFACTURER
AWG	AMERICAN WIRE GAGE		ASSOCIATION
BB	BUCK-BOOST TRANSFORMER	NFC	NATIONAL FIRE (
XFMR		NFPA	NATIONAL FIRE F
BFF	BELOW FINISHED FLOOR		ASSOCIATION
BFG	BELOW FINISHED GRADE	NIC	
С	CEILING MOUNTED		
CAT	CATEGORY		
CATV			
CB			
CCBA			
CODA	BY ARCHITECT	OE/CI	OWNER FURNISH
CCTV	CLOSED CIRCUIT TELEVISION		CONTRACTOR IN
CF/CI	CONTRACTOR FURNISHED/	OF/OI	OWNER FURNISH
	CONTRACTOR INSTALLED		INSTALLED
CF/OI	CONTRACTOR FURNISHED/	OFP	OBTAIN FROM PL
0554		OH DR	OVERHEAD (COII
СЕВА	BY ARCHITECT	OL	OVERLOAD
CI		PB	PUSHBUTTON
CKT	CIRCUIT	PF	POWER FACTOR
СМ	CONSTRUCTION MANAGER		PHASE
CND	CONDUIT		
СО	CONVENIENCE OUTLET		
COR	CONTRACTING OFFICER'S	PS	POWER SUPPLY
	REPRESENTATIVE	PT	POTENTIAL TRAN
CP	CONTROL PANEL	PTZ	PAN/TILT/ZOOM
CR	CARD READER	PV	PHOTO VOLTAIC
CT	CURRENT TRANSFORMER	QTY	QUANTITY
CIV		R	REMOVE
		RCP	REFLECTED CEIL
0BA 0DDT		RMC	RIGID METAL CO
DFDI	THROW	RNC	RIGID NONMETA
DS	DISCONNECT SWITCH	RO	REMOTE DOOR (
E	ENHANCED	RPM	REVOLUTIONS P
EA	EACH	RPP	RISER PATCH PA
EM	EMERGENCY	RR	REMOVE AND RE
EMT	ELECTRICAL METALLIC TUBING	5/5	
ENT	ELECTRIC NONMETALLIC	SCA	
	TUBING	SCBA	SELECTED BY AF
EPO		SEC	SECURITY
		SF	SQUARE FOOT (F
FX	EXISTING	SFBA	STANDARD FINIS
F	FURNITURE MOUNTED		SELECTED BY AF
FA	FIRE ALARM	SPD	SUKGE PROTEC
FCP	FIRE ALARM CONTROL PANEL	SPUI SPEC	SINGLE PULE, DO
FLA	FULL LOAD AMPS	SPEC	
FMC	FLEXIBLE METAL CONDUIT	SPST	
FOB	FREIGHT ON BOARD	ST	SINGI F THROW
FPP	FIBER PATCH PANEL	SWBD	SWITCHBOARD
FVNR		SWGR	SWITCHGEAR
		TL	TWIST LOCK
GEN	GENERATOR	TP	TELEPHONE POL
GFCI	GROUND FAULT INTERRIPTER	TP	TWISTED PAIR
GFP	GROUND FAULT PROTECTION	TR	TELECOMMMUNI
GIG	GIGA HERTZ		
GND	GROUND		
HD	HEAVY DUTY	T\/99	
HID	HIGH INTENSITY DISCHARGE	1000	SUPPRESSER
HOA	HAND-OFF-AUTOMATIC	TYP	TYPICAL
HP	HORSE POWER	UF	UNDERFLOOR
HPF	HIGH POWER FACTOR	UGND	UNDERGROUND
HPS	HIGH PRESSURE SODIUM	UPS	UNINTERRUPTIB
HV			SUPPLY
н₩М	HURIZUNTAL WIRE	V	VOLTS
Н7		VA	VOLT AMPERE
1/C		VFC/VF	
". IG			
IMC			
	CONDUIT	V00	
IN/IS	INSULATED/ ISOLATED	W/	WITH
IR	INFRARED	W/O	WITHOUT
J-BOX	JUNCTION BOX	WP	WEATHERPROOF
kV	KILOVOLT	WPP	WIRELESS PATC
kVA	KILOVOLT AMPERE	XFMR	TRANSFORMER

Y NOT BE USED.	
KILOVOLT AMPERE REACTIVE	
KILOWATT	
KILOWATT HOUR	
LIQUID TIGHT FLEXIBLE	
NONMETALLIC CONDUIT	
LOW PRESSURE SODIUM	
LOW VOLTAGE	
MASTER ANTENNA TELEVISION	
SYSTEM	
MAIN CIRCUIT BREAKER	
MOTOR CONTROL CENTER	
MOTOR CIRCUIT PROTECTION	
MAIN DISTRIBUTION PANEL	
MOTOR GENERATOR	
MAIN LUGS ONLY	
MAXIMUM OVERCURRENT	
PROTECTION	
MANUAL TRANSFER SWITCH	
NATIONAL ELECTRICAL CODE	
NATIONAL ELECTRICAL	
MANUFACTURERS	
NATIONAL FIRE PROTECTION	
ASSOCIATION	
NOT IN CONTRACT	
ON CENTER	
OVER CURRENT PROTECTION	
OWNER ELECTRONICS	
OWNER FURNISHED/	
INSTALLED	
OBTAIN FROM PLANS	
OVERHEAD (COILING) DOOR	
OVERLOAD	
POWER FACTOR	
PANEL	
PANEL PLENUM	
PANEL PLENUM PAIR	
PANEL PLENUM PAIR POWER SUPPLY	
PANEL PLENUM PAIR POWER SUPPLY POTENTIAL TRANSFORMER PAN/TILT/ZOOM	
PANEL PLENUM PAIR POWER SUPPLY POTENTIAL TRANSFORMER PAN/TILT/ZOOM PHOTO VOLTAIC	
PANEL PLENUM PAIR POWER SUPPLY POTENTIAL TRANSFORMER PAN/TILT/ZOOM PHOTO VOLTAIC QUANTITY	
PANEL PLENUM PAIR POWER SUPPLY POTENTIAL TRANSFORMER PAN/TILT/ZOOM PHOTO VOLTAIC QUANTITY REMOVE	
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# GENERAL ELECTRICAL NOTES

THEMSELVES WITH THE DRAWINGS AND SPECIFICATIONS. ANY QUESTIONS, MISUNDERSTANDINGS, CONFLICTS, DELETIONS, DISCONTINUED PRODUCTS, CATALOG NUMBER DISCREPANCIES, DISCREPANCIES BETWEEN THE EQUIPMENT SUPPLIED AND THE INTENT OR FUNCTION OF THE EQUIPMENT, ETC, SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER IN WRITING FOR CLARIFICATION PRIOR TO ISSUANCE OF THE FINAL ADDENDUM AND BIDDING OF THE PROJECT. WHERE DISCREPANCIES OR MULTIPLE INTERPRETATIONS OCCUR, THE MOST STRINGENT (WHICH IS GENERALLY RECOGNIZED AS THE MOST COSTLY) THAT MEETS THE INTENT OF THE DOCUMENTS SHALL BE ENFORCED.

- OWNER FURNISHED ITEMS: THE OWNER WILL FURNISH MATERIAL AND EQUIPMENT AS INDICATED IN THE CONTRACT DOCUMENTS TO BE INCORPORATED INTO THE WORK. THESE ITEMS ARE ASSIGNED TO THE INSTALLER AND COSTS FOR RECEIVING, HANDLING, STORAGE, IF REQUIRED, AND INSTALLATION ARE INCLUDED IN THE CONTRACT SUM.
- A. THE INSTALLER'S RESPONSIBILITIES ARE THE SAME AS IF THE INSTALLER FURNISHED THE MATERIALS OR EQUIPMENT.
- B. THE OWNER WILL ARRANGE AND PAY FOR DELIVERY OF OWNER FURNISHED ITEMS FREIGHT ON BOARD JOB SITE AND THE INSTALLER WILL INSPECT DELIVERIES FOR DAMAGE. IF OWNER FURNISHED ITEMS ARE DAMAGED, DEFECTIVE OR MISSING, DOCUMENT DAMAGED ITEMS WITH THE TRANSPORT COMPANY AND THE OWNER WILL ARRANGE FOR REPLACEMENT. THE OWNER WILL ALSO ARRANGE FOR MANUFACTURER'S FIELD SERVICES, AND THE DELIVERY OF MANUFACTURER'S WARRANTIES AND BONDS TO THE INSTALLER.
- C. THE INSTALLER IS RESPONSIBLE FOR DESIGNATING THE DELIVERY DATES OF OWNER FURNISHED ITEMS AND FOR RECEIVING, UNLOADING AND HANDLING OWNER FURNISHED ITEMS AT THE SITE. THE INSTALLER IS RESPONSIBLE FOR PROTECTING OWNER FURNISHED ITEMS FROM DAMAGE, INCLUDING DAMAGE FROM EXPOSURE TO THE ELEMENTS, AND TO REPAIR OR REPLACE ITEMS DAMAGED AS A RESULT OF HIS OPERATIONS.
- EXPOSED STRUCTURE AREAS (EXCLUDING MECHANICAL, ELECTRICAL, AND COMMUNICATION SPACES): INSTALL RACEWAYS BETWEEN DECK AND STRUCTURE WHEREVER POSSIBLE IN EXPOSED STRUCTURE CEILING AREAS. ROUTE RACEWAYS IN CONCEALED AREAS WHEREVER POSSIBLE. REFER ALL CONDITIONS WHERE RACEWAYS MUST BE INSTALLED WHICH CANNOT COMPLY WITH THESE REQUIREMENTS TO THE ARCHITECT.
- SUBMITTALS: PROVIDE ORIGINAL ELECTRONIC PDF FORMAT, BOUND, BOOKMARKED (EACH SECTION AND PRODUCT), AND HIGHLIGHTED. JOB NAME AND SUBCONTRACTOR SHALL BE ON THE FRONT COVER. PREPARE INDEX OF EQUIPMENT SUBMITTED IN EACH TAB.
- REFLECTED CEILING PLANS: COORDINATE THE LOCATION OF LIGHT FIXTURES WITH THE ARCHITECTURAL REFLECTED CEILING PLANS. REFER ALL DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
- ALL WORK SHALL BE DONE ACCORDING TO THE CURRENT NATIONAL ELECTRIC CODE (NEC), IBC, NFPA, AND IFC. COMPLIANCE AND FINAL APPROVAL IS SUBJECT TO THE ON SITE FIELD INSPECTION OF THE AHJ.

# ELECTRICAL SHEET INDEX

- EE001 ELECTRICAL COVER SHEET EE201 ELECTRICAL SPECIFICATIONS EE202 ELECTRICAL SPECIFICATIONS
- EE203 ELECTRICAL SPECIFICATIONS EE501 ELECTRICAL DETAILS
- EE701 TYPICAL MOUNTING DETAILS ED101 LEVEL 2 ELECTRICAL DEMOLITION PLAN
- ED102 LEVEL 2 CEILING DEMOLITION PLAN EP101 LEVEL 2 POWER PLAN
- EP601 ONE-LINE DIAGRAM EL101 LEVEL 2 LIGHTING PLAN
- EL601 INTERIOR LIGHTING FIXTURE SCHEDULE EY101 LEVEL 2 AUXILIARY PLAN

![](_page_34_Picture_42.jpeg)

ELECTRICAL COVER SHEET

![](_page_34_Picture_44.jpeg)

## **SECTION 26 05 19**

	LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES		<ol><li>Line-Vo</li></ol>
PART 1	- PRODUCTS	PART	2 - EXECUTION
1.1	SINGLE CONDUCTORS	2.1	CONDUCTOR
Α.	Manufacturers: Subject to compliance with requirements, available manufacturers offering products that ma	y be A.	Branch Circuit
	incorporated into the Work include, but are not limited to the following:	2.2	CONDUCTOR
	1. Alpha Wire Company.	А.	Multiwire Circ
	2. <u>Belden Inc</u> .		dedicated gro
	3. Cerro Wire LLC.		conduit but no
	<ol> <li>Encore Wire Corporation.</li> </ol>	В.	Branch Circuit
	5. General Cable; General Cable Corporation.		1. Armore
	6. Southwire Company.		walls, a
	<ol><li>Thomas &amp; Betts Corporation; A Member of the ABB Group.</li></ol>		or junc
B.,	Aluminum and Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.		2. Armore
C.	Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN/THWN-2, Type XHHW-2 and Type SO.		junctio
1.2	MULTI-CONDUCTOR CABLES		framin
Α,	Manufacturers: Subject to compliance with requirements, available manufacturers offering products that ma	y be 2.3	INSTALLATION
	incorporated into the Work include, but are not limited to the following:	А.	Conceal cable
	1. Southwire Company.	В.	Use manufact
	2. AFC Cable Systems.		conductor or
В.	Copper Conductors: Comply with NEMA WC 70/ICEA S-95-658.		values. Do not
C.,	Conductor Insulation: Comply with NEMA WC 70/ICEA S-95-658 for Type THHN/THWN-2, Type XHHW-2 and Type SO.	C.	Use pulling m
D.	Multi-conductor Cable, Type AC-HCF:		raceway.
	<ol> <li>Armor: Galvanized Interlocking Steel Strip (green striped or solid green).</li> </ol>	D.	Install expose
	2. Conductors: Solid Copper		where possible
	3. Conductor Insulation: THHN-2 with individual moisture resistant, fire retardant paper wrap on each indiv	idual 2.4	CONNECTION
	conductor.	Α.	Tighten elect
	<ol><li>Grounding: 16 AWG integral bond wire and insulated green copper grounding conductor.</li></ol>		manufacturer
	<ol><li>Neutral (Grounded) Conductor: White for 120Y/208 volt systems and Grey 480Y/277 volt systems.</li></ol>	B.,	Make splices,
	<ol><li>Maximum Voltage Rating: 600 volts.</li></ol>		mechanical st
	7. References and Ratings:		1. Use ox
	<ul> <li>UL 4, 83, 1479, 1581, 2556, File Reference E7330</li> </ul>	С.	Wiring at Out
	b. NEC 250.118(8), 300.22(C), 392, 320, 517.13, 518, 645	2.5	FIRESTOPPING
	<ul> <li>Federal Specification A-A–59544 (formerly J-C–30B)</li> </ul>	A.	Apply firestop
	d III Classified 1. 2 and 2 hour through (Eiro) nonotration product P. 14141		of accomply a

- UL Classified 1, 2, and 3-hour through (Fire) penetration product, R–14141 Environmental Air-Handling Space Installation per NEC 300.22(C)
- Other Multi-conductor Cable: Comply with NEMA WC 70/ICEA S-95-658 for Type SO with ground wire. CONNECTORS AND SPLICES
- 1.3 A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be
- incorporated into the Work include, but are not limited to the following:
- AFC Cable Systems; a part of Atkore International.
- Hubbell Power Systems, Inc.
- Ideal Industries, Inc. ILSCO
- O-Z/Gedney; a brand of Emerson Industrial Automation. B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and
- service indicated. FIRE-ALARM WIRE AND CABLE 1.4
- General Wire and Cable Requirements: NRTL listed and labeled as complying with NFPA 70, Article 760. Α.
- B. Signaling Line Circuits: Twisted, shielded pair, size as recommended by system manufacturer.
- Circuit Integrity Cable: Twisted shielded pair, NFPA 70, Article 760, Classification CI, for power-limited fire-alarm signal service Type FPL. NRTL listed and labeled as complying with UL 1424 and UL 2196 for a two-hour rating. C. Non-Power-Limited Circuits: Solid-copper conductors with 600-V rated, 75 deg C, color-coded insulation, and complying
  - with requirements in UL 2196 for a two-hour rating.
    - 260519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

260529 - HANGERS AND SUPPORTS FOR ELECTIRCAL SYSTEMS

#### **SECTION 26 05 29** HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- PART 1 PRODUCTS 1.1 PERFORMANCE REQUIREMENTS
- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design hanger and support system.
- B. Seismic Performance: Hangers and supports shall withstand the effects of earthquake motions determined according to ASCE/SEI 7. 1. The term "withstand" means "the supported equipment and systems will remain in place without separation of any
- parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event." Component Importance Factor: 1.5. C. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
- Flame Rating: Class 1.
- Self-extinguishing according to ASTM D 635. SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS 1.2
- A. Steel Slotted Support Systems: Comply with MFMA-4 factory-fabricated components for field assembly.
- Material: Galvanized steel.
- Channel Width: Use 1-1/4 inches (31.75 mm) where possible and minimum 13/16 inches (20.64 mm) where necessary due to space restrictions.
- Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
- Channel Dimensions: Selected for applicable load criteria. B. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- C. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for electrical conductors in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be made of malleable iron. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M steel plates, shapes, and bars; black and D. galvanized
- Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include and are limited to the following: Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood,
- with tension, shear, and pullout capacities appropriate for supported loads and building materials where used. Mechanical-Expansion Anchors: Insert-wedge-type, stainless steel, for use in hardened portland cement concrete,
- with tension, shear, and pullout capacities appropriate for supported loads and building materials where used. Concrete Inserts: Steel or malleable-iron, slotted support system units are similar to MSS Type 18 units and comply with MFMA-4 or MSS SP-58.
- Clamps for Attachment to Steel Structural Elements: MSS SP-58 units are suitable for attached structural element. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
- Hanger Rods: Threaded steel. 6. FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

Description: Welded or bolted structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment. Materials: Comply with requirements in Section 05 50 00 "Metal Fabrications" for steel shapes and plates. PART 2 - EXECUTION

## 2.1 APPLICATION

Ε.

1.3

- Α. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems unless requirements in this Section are stricter. B. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- C. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMTs, IMCs, and RMCs as scheduled in NECA 1, where Table 1 lists maximum spacings that are less than those stated in NFPA 70. Minimum rod size shall be 3/8 inch (9 mm) in diameter.
- D. Multiple Raceways: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits. Secure raceways and cables to these supports with single-bolt conduit clamps.

260529 - HANGERS AND SUPPORTS FOR ELECTIRCAL SYSTEMS

#### 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

#### Low-Voltage Circuits: No. 14 AWG, minimum, in pathway.

## oltage Circuits: No. 12 AWG, minimum, in pathway.

MATERIAL APPLICATIONS

ts: Copper. Solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

cuits: may not be used for branch circuit wiring. All 120 volt and 277 volt circuits shall be provided with a ounded conductor (neutral) for each phase conductor. Up to three of these circuits may be installed in a single ot more than one conductor of each phase may be installed in a single conduit.

Its Concealed in Ceilings, Walls, and Partitions: Type THHN/THWN-2, single conductors in raceway. red cable, Type AC-HCF may be installed for normal and equipment system single branch circuits concealed in and partitions in lengths between outlet boxes 30' or less and not as homeruns or wiring between pullboxes

ction boxes. red cable, Type AC-HCF may be installed between the first outlet box concealed in a wall or partition and a on box above an accessible ceiling immediately above the location where the cable exits the wall or partition

#### IN OF CONDUCTORS AND CABLES

es in finished walls, ceilings, and floors unless otherwise indicated. cturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure t use pulling compounds or lubricant for installation of branch circuit conductors for Isolated Power Systems. neans, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or ed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours

trical connectors and terminals according to manufacturer's published torque-tightening values. If r's torque values are not indicated, use those specified in UL 486A-486B.

, terminations, and taps that are compatible with conductor material and that possess equivalent or better trength and insulation ratings than unspliced conductors. xide inhibitor in each splice, termination, and tap for aluminum conductors.

tlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

pping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 07 84 13 "Penetration Firestopping." END OF SECTION

260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

260529 - HANGERS AND SUPPORTS FOR ELECTIRCAL SYSTEMS

 Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to

Comply with NECA 1 and NECA 101 for installation requirements except as specified in this article.

trapeze supports.

units.

SUPPORT INSTALLATION

2.2

A.,

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В.

C.

2.3

Raceway Support Methods: In addition to methods described in NECA 1, EMTs, IMCs, and RMCs may be supported by openings through structure members, according to NFPA 70. Only prefabricated openings in structure members may be used. Do not create openings in structure members unless directed to do so by the structural engineer of record. Cable Support Methods: Cables used for Circuits and Equipment Operating at Less Than 50 Volts and Class 1, 2 or 3 Remote-Control, Signaling and Power-Limited Circuits shall be installed in J-hooks. Where cables extend from J-hooks to equipment cables shall be supported from the structure by straps, hangers, cable ties or similar fittings designed and installed so as not to damage the cable. Do not fasten or secure cables to the raceways of the power system.

D. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).

Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code: To Wood: Fasten with lag screws or through bolts.

To New Concrete: Bolt to concrete inserts. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry

To Existing Concrete: Expansion anchor fasteners. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.

To Steel: Beam clamps (MSS SP-58, Type 19, 21, 23, 25, or 27), complying with MSS SP-69. To Light Steel: Sheet metal screws.

260529 - HANGERS AND SUPPORTS FOR ELECTIRCAL SYSTEMS

Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on 13/16 inches (20.64 mm) slotted-channel racks attached to substrate by means that comply with seismic-restraint strength and anchorage requirements.

Drill holes for expansion anchors in concrete at locations and to depths that avoid the need for reinforcing bars. INSTALLATION OF FABRICATED METAL SUPPORTS

Comply with installation requirements in Section 055000 "Metal Fabrications" for site-fabricated metal supports. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor

electrical materials and equipment. Field Welding: Comply with AWS D1.1/D1.1M.

END OF SECTION

260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

#### **SECTION 26 05 26**

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

- PART 1 PRODUCTS 1.1 CONDUCTORS A. Insulated Conductors: Copper or tinned-copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction. B. Bare Copper Conductors:
- Stranded Conductors: ASTM B 8.
- Tinned Conductors: ASTM B 33. 3. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter. C. Electrical Room Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches (6.3 by 100 mm) in cross section, with 9/32-inch (7.14-mm) holes spaced 1-1/8 inches (28 mm) apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V. Length as required for all specified terminations plus 25% spare but not less than 20 inches.
- D. TEC and TDR Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches (6.3 by 100 mm) in cross section, with 9/32-inch (7.14-mm) holes spaced 1-1/8 inches (28 mm) apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V and shall be Lexan or PVC, impulse tested at 5000 V. Length as required for all specified terminations plus 25% spare but not less than 12 inches.
- 1.2 CONNECTORS A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction for applications in which used and for specific
- types, sizes, and combinations of conductors and other items connected. B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy.
- Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.
- D. Bus-Bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, twobolt connection to ground bus bar.
- 1.3 GROUNDING ELECTRODES A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet (19 mm by 3 m).
- PART 2 EXECUTION
- 2.1 APPLICATIONS
- A. Conductors: Install stranded conductors unless otherwise indicated. Underground Grounding Conductors: Install bare tinned-copper conductor, No. 4/0 AWG minimum.
- Bury at least 18 inches (600 mm) below grade. C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground,
- identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow. D. Grounding Bus: Install in Normal Power Electrical Room, Essential Power Electrical Room, TEC and all TDR. Install bus horizontally, on insulated spacers 2 inches (50 mm) minimum from wall, 96 inches (2400 mm) above finished floor unless
- otherwise indicated. Conductor Terminations and Connections:
- Pipe Terminations: Bolted connectors. Underground Connections: Welded connectors except at test wells and as otherwise indicated.
- Connections to Ground Rods at Test Wells: Bolted connectors. Connections to Structural Steel: Welded connectors.
- 2.2 GROUNDING UNDERGROUND DISTRIBUTION SYSTEM COMPONENTS Comply with IEEE C2 grounding requirements.
- B. Pad-Mounted Transformers and Switches: Install tinned-copper conductor not less than No. 4/0 AWG from equipment grounding terminals to ground ring. Bury ground ring not less 18 inches below finished grade. 2.3 EQUIPMENT GROUNDING
- Install insulated equipment grounding conductors with all feeders and branch circuits. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70: в. 1. Feeders and branch circuits. Lighting circuits.
  - Receptacle circuits. Single-phase motor and appliance branch circuits.
    - 260526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

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Three-phase motor and appliance branch circuits.

- Flexible raceway runs. Armored and metal-clad cable runs.
- Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway. X-Ray Equipment Circuits: Install insulated equipment grounding conductor in circuits supplying x-ray equipment. C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating
- at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping. D. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and
- components. E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.
- F. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.
- G. Metallic Fences: Comply with requirements of IEEE C2. Grounding Conductor: Bare, tinned copper, not less than No. 8 AWG.
- Gates: Shall be bonded to the grounding conductor with a flexible bonding jumper. INSTALLATION
- 2.4 Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. A. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage. B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service grounding electrode. Use bonding conductor sized same as system grounding
- electrode conductor, and install in conduit. C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through concrete footings.
- Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts. Use exothermic-welded connectors; if a disconnect-type connection is required, use a bolted clamp. D. Grounding for Steel Building Structure: Install a driven ground rod at base of each corner column and at intermediate
- interior and exterior columns at distances not more than 60 feet (18 m) apart.
- E. Grounding and Bonding for Piping:
- Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes; use a bolted clamp connector or bolt a lug-type connector to a pipe flange by using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a
- bolted connector. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- F. Panelboard Bonding: To comply with NEC 517.14 panelboard bonding requirements install a minimum #10 AWG copper conductor between all branch-circuit panelboard grounding terminal buses in each electrical room. The conductor may be installed in 1/2" EMT conduit or may be exposed where securely fastened to the walls. END OF SECTION

260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

![](_page_35_Picture_133.jpeg)

NJRA Architects, Inc. 5223 S. Ascension Way, Suite 350 Murray, Utah 84123 801.364.9259 www.njraarchitects.com

![](_page_35_Picture_135.jpeg)

![](_page_35_Picture_136.jpeg)

![](_page_35_Figure_137.jpeg)

ELECTRICAL SPECIFICATIONS

![](_page_35_Picture_139.jpeg)

	SECTION 26 05 33	V	Pull boxes behind monitors: Minimum	
1172-016	RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS	Ľ	Gangable boxes are prohibited.	
PRODU	METAL CONDUITS, TUBING, AND FITTINGS	М.	Partitions: Provide partitions to separa between adjacent switches exceeds 300	
Α.	Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified		Call systems are installed in common b	
в	testing agency, and marked for intended location and application. GBC: Comply with ANSI C80.1 and UL 6.	N.	Hinged-Cover Enclosures: Comply with 1. Indoor: Type 1 with continuous	
c.	ARC: Comply with ANSI C80.5 and UL 6A.		out with manufacturer's standar	
D,	IMC: Comply with ANSI C80.6 and UL 1242.		<ol><li>Outdoor: Type 4X with continue</li></ol>	
E.	EMT: Comply with ANSI C80.3 and UL 797. Factory applied color finish available in black, orange, green, purple, red, yellow, blue, and white. Refer to Specification Section 26 05 53 "Identification for Electrical Systems" for color coding of raceways.		<ol> <li>smooth brushed finish.</li> <li>Interior Panels: Steel: all sides fir</li> </ol>	
F.	FMC: Comply with UL 1; zinc-coated steel.		control devices or power blocks	
G.	LFMC: Flexible steel conduit with PVC jacket and complying with UL 360.	0.	Handholes and Boxes for Exterior Und	
н.	1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.	1.4	PUTTY PADS	
	2. Fittings for EMT:	Α.	Moldable intumescent wall opening-pr	
	a. Material: Steel.		installation of the wall finish to provide when torted in an STC 52 rated wall as	
	<ol> <li>Expansion Fittings: PVC or steel to match conduit type, complying with UL 651, rated for environmental conditions</li> </ol>	В.	Manufacturers: Subject to compliance	
	where installed, and including flexible external bonding jumper.		1. <u>3M Company.</u>	
4	Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by authorities having jurisdiction for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their	PART 7	2. <u>Hilti</u>	
	conductivity.	2.1	RACEWAY APPLICATION	
1.2	NONMETALLIC CONDUITS, TUBING, AND FITTINGS Listing and Labeling, Negretablic conduits, tubing, and fittings shall be listed and labeled as defined in NEDA 70, by a	А.	Indoors: Apply raceway products as sp	
<b>P</b> .	qualified testing agency, and marked for intended location and application.		<ol> <li>Exposed, Not Subject to Physica</li> <li>Exposed, Not Subject to Severe</li> </ol>	
В.	RNC: Type EPC-40-PVC, complying with NEMA TC 2 and UL 651 unless otherwise indicated.		3. Exposed and Subject to Severe	
С. Л	Continuous HDPE: Comply with UL 6518. RTRC: Comply with UL 1684A and NEMA TC 14		<ul> <li>Loading dock.</li> <li>Corridors used for traffir</li> </ul>	
E.	Fittings for RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.		c. Mechanical rooms below	
F.	Solvent cements and adhesive primers shall have a VOC content of 510 and 550 g/L or less, respectively, when calculated		d. Gymnasiums.	
G.	Solvent cements and adhesive primers shall comply with the testing and product requirements of the California Department		<ol> <li>concealed in Ceilings and Interi</li> <li>Feeder Raceways under Slabs: F</li> </ol>	
1997	of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale		from RNC, Type EPC-40-PVC to	
	Environmental Chambers."		6. Branch Circuit Raceways unde	
A.	General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall		Change from RNC, Type EPC-40	
897.9 192	be listed for use in wet locations.		7. Raceways Embedded in slabs or	
B.	Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A. Cast-Metal Outlet and Device Boxes: Comply with NEMA EB 1, aluminum Tune ED, with eachered source		<ol> <li>Connection to Vibrating Equipm Driven Equipment's EMC and and and and and and and and and and</li></ol>	
D.	Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.		<ol> <li>Damp or Wet Locations: GRC or</li> </ol>	
E.	Floor Boxes and Poke-Through Devices: Refer to Specification Section 26 27 26 "Wiring Devices" for floor boxes and poke-		10. Boxes and Enclosures: NEMA 2	
F	through devices Luminaire Outlet Boxes: Nonadiustable, designed for attachment of luminaire weighing 50 lb (22 kg), Outlet house deviaged		or wet locations. Minimum Raceway Size: 2/4 just /21	
122	for attachment of luminaires weighing more than 50 lb (23 kg) shall be listed and marked for the maximum allowable weight.	C.	Raceway Fittings: Compatible with rac	
G.	Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.		1. Rigid and Intermediate Steel Co	
н.	Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, cast aluminum with gasketed cover. Box extensions used to accommodate new building finishes shall be of same material as recessed box.		with NEMA FB 2.10. 2 FMT: Use setscrew or compress	
Ĵ.	Device Box Dimensions:		<ol> <li>Flexible Conduit: Use only fittin</li> </ol>	
	<ol> <li>Wiring Devices other than data or communications devices: Minimum 4 inches square by 2-1/8 inches deep with</li> </ol>	D.	Do not install aluminum conduits, box	
	switch ring as required for the device configuration and wall or ceiling surface. Where light switches are indicated at a common location provide multi-gang boxes to accommodate the quantity and type of switches indicated. Where	2.2	Install surface raceways only where in INSTALLATION	
	deeper boxes are required provide masonry type boxes which do not require a separate switch ring.	А.	Comply with NECA 1 and NECA 101 for	
	<ol> <li>Data and communications devices: Minimum 4-11/16 inches square by 3 inches deep with single-gang 5/8 inch deep (or deeper if wall or calling finish is deeper) sing.</li> </ol>		are stricter. Comply with NECA 102 for	
	260533 - Raceway and Boxes for Electrical Systems		260533	
	262726 - WIRING DEVICES			
	262726 – WIRING DEVICES		3) Leviton Manufact	
	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES		3) <u>Leviton Manufact</u> 4) <u>Pass &amp; Seymour/</u> Key Operated Switches, 120/227 V, 20	
PART 1	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS	C	3) <u>Leviton Manufac</u> 4) <u>Pass &amp; Seymour/</u> Key-Operated Switches, 120/277 V, 20 1. Description: Single pole, with fa	
PART 1 1.1 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following:	С.	3) <u>Leviton Manufac</u> 4) <u>Pass &amp; Seymour/</u> Key-Operated Switches, 120/277 V, 20 1. Description: Single pole, with fa a. Public Restrooms and	
PART 1 1.1 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Acrow Hart).	С.	<ol> <li>Leviton Manufact</li> <li>4) Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fatility a. Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie</li> </ol>	
PART 1 1.1 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart). 2. Hubbell Incorporated; Wiring Device-Kellems. 3. Leviton Manufacturing Co., Inc.	C	3) <u>Leviton Manufact</u> 4) <u>Pass &amp; Seymour/</u> Key-Operated Switches, 120/277 V, 20 1. Description: Single pole, with fa a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie security switch (Pass &	
PART 1 1.1 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart), 2. Hubbell Incorporated; Wiring Device-Kellems, 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour).	C	<ol> <li><u>Leviton Manufact</u></li> <li><u>Pass &amp; Seymour/</u></li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches with</li> </ol>	
PART 1 1.1 A. B.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart). 2. Hubbell Incorporated; Wiring Device-Kellems. 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour). Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single	C. D. F	<ol> <li>Leviton Manufact</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches with</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-Ti</li> </ol>	
PART 1 1.1 A. B.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES - PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart). 2. Hubbell Incorporated; Wiring Device-Kellems. 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour). Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer. GENERAL WIRING-DEVICE REQUIREMENTS	C D. E.	<ol> <li><u>Leviton Manufact</u></li> <li><u>Pass &amp; Seymour/</u></li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit)</li> <li>Momentary Contact Switches: 2-Butto</li> <li>Key-Operated, Single-Pole, Double-Th mechanically held lighting contactors,</li> </ol>	
PART 1 1.1 A. B. 1.2 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES PRODUCTS MANUFACTURERS Manufacturers, Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart), 2. Hubbel Incorporated; Wiring Device-Kellems, 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour), Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer. GENERAL WIRING-DEVICE REQUIREMENTS Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and	C D. E. F.	<ol> <li>Levitori Manufaci</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches witt</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-Ti mechanically held lighting contactors, Decora style rocker switches are not p</li> </ol>	
PART 1 1.1 A. B. 1.2 A.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES PRODUCTS MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Acrow Hart). 2. Hubbell Incorporated; Wiring Device-Kellems. 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour). Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer. GENERAL WIRING-DEVICE REQUIREMENTS Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application. Competence with NERA 70	C. D. E. F. 1.8 A	<ul> <li>3) Leviton Manufac</li> <li>4) Pass &amp; Seymout/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>1. Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave</li> </ul>	
PART 1 1.1 A. B. 1.2 A. B. C.	262726 – WIRING DEVICES SECTION 26 27 26 WIRING DEVICES PRODUCTS MANUFACTURERS Manufacturers, Subject to compliance with requirements, provide products by one of the following: 1. Eaton (Arrow Hart). 2. Hubbal Incorporated; Wiring Device-Kellems. 3. Leviton Manufacturing Co., Inc. 4. Pass & Seymour/Legrand (Pass & Seymour). Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer. GENERAL WIRING-DEVICE REQUIREMENTS Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application. Comply with NFPA 70. All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made	C. D. E. <b>F.</b> <b>1.8</b> A.	<ol> <li>Levitori Manufaci 4) Pass &amp; Seymour// Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie security switch (Pass &amp; of multiple switches witl Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-Ti mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C.	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         MANUFACTURERS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1.       Eaton (Arrow Hart).         2.       Hubbell Incorporated; Wiring Device-Kellems.         3.       Levton Manufacturing Co., Inc.         4.       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.       All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.	C. D. E. <b>1.8</b> A. 8.	<ol> <li>Leviton Manufac</li> <li><u>Pass &amp; Seymour/</u></li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         Manufacturerns: Subject to compliance with requirements, provide products by one of the following:         1.       Eaton (Arrow Hart).         2.       Hubbell Incorporated; Wring Device-Kellems.         3.       Lewton Manufacturing Co., Inc.         4.       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STAIGHT-BLADE RECEPTACLES	C D. E. F. 1.8 A. S. C.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A.	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         MANUFACTURERS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1       Eaton (Acrow Hart).         2       Hubbell Incorporated; Wiring Device-Kellems.         3       Leviton Manufacturing Co., Inc.         4       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.       All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STRAIGHT BLADE RECEPTACLES         Hospital-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596.	C. D. E. F. 1.8 A. B. C.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A.	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1.       Eaton (Arrow Hart).         2.       Hubbell Incorporated; Wring Device-Kellems.         3.       Leviton Manufacturing Co., Inc.         4.       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.       All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STAGGHT-BLADE RECEPTACLES         Hospital-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6         Complication: 5-200, UL 498 Supplement sd, and FS W-C-596.         1.       Description: Single-piece, rivetless, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap.	C. D. E. F. 1.8 A. B. C.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A.	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1.       Eaton (Arrow Hart).         2.       Hubball Incorporated; Wring Device-Kellems.         3.       Lewton Manufacturing Co., Inc.         4.       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STAIGHT-BLADE RECEPTACLES         Hospital-Fade Frace, rivetiess, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap. Mechanical shutter system to help prevent insertion of foreign objects. Labeled shall comply with NFPA 70, "Health Care Facilities" Article, "Pediatic Locations" Sertion.	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B.	262726 – WIRING DEVICES         SECTION 26 27 26 WIRING DEVICES         PRODUCTS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1       faton (Arrow Hart).         2       Hubbel Incorporated; Wiring Device-Kellems.         3       Leviton Manufacturing Co., Inc.         4       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wining Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.       All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STAIGHT-BLADE RECEPTACLES         Hospital-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6         Configuration 5-208, UL 498 Supplement sd, and FS W-C-596.         1       Description: Single-piece, rivetless, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap. Mechanical shutter system to help prevent insertion of foreign objects. Labeled shall comply with NFPA 70, "Health Care Facilities" Articl	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Levitori Manufaci 4) Pass &amp; Seymoury Key-Operated Switches, 120/277 V, 20 Description: Single pole, with fa a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie         security switch (Pass &amp;         of multiple switches wit Momentary Contact Switches: 2-Buttor Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS Dimmer Switches: Modular, full-wave EMI/RFI suppression filters. Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V;         dimmer module for off. 1. These shall be used to control This interface shall operate eitt Decora style rocker switches are not p LED and Low Voltage Dimmer Switche 1. Modular; compatible with LED Contact Switches are not p LED and Low Voltage Dimmer Switche Lend Low Voltage Dimmer Switche Lend Low Voltage Dimmer Switche Li Modular; compatible with LED Lend Low Voltage Dimmer Switche Lend Lo</li></ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B.	262726 – WIRING DEVICES         SECTION 26 27 26 WIRING DEVICES         PRODUCTS         MANUFACTURERS         Manufacturerr, Subject to compliance with requirements, provide products by one of the following:         1       Eaton (Arrow Hart).         2       Hulbbell Incorporated: Wiring Device-Kellems.         3       Leviton Manufacturing Co., Inc.         4       Pass & Seymour/Legrand (Pass & Seymour).         Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STRAIGHT-BLADE RECEPTACLES         Hospital-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6         Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596.         1.       Description: Single-piece, rivetless, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap. Mechanical shutter system to help prevent insertion of	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manuface</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eiti Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B.	262726 – WIRING DEVICES         SECTION 26 27 26 WIRING DEVICES         PRODUCTS         MANUFACTURERS         Succe Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         GENERAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         STRAIGHT-BLADE RECEPTACLES         Mospital-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6         Comply with NEPA 70, "Health Care Facilities" Article, "Pediatric Locations" Section.         Sola	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B.	262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PRODUCTS         Manufacturers:       Subject to compliance with requirements, provide products by one of the following:         1.       Eaton (Acrow Hart).         2.       Hubbell Incorporated; Wiring Device-Kollems.         3.       Leviton Manufacturing Co., Inc.         4.       PRODUCTS         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         Summa Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"         Colspan="2"	C. D. E. <b>1.8</b> A. B. C. D. E.	<ol> <li>Leviton Manuface</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Couch dimming switches shall</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B. C.	JECTION 26 27 26         WIRING DEVICES         PRODUCTS         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         1         Learn Acrow Hart).         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         1         Learn Acrow Hart).         1         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         1         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         1         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         1         Manufacturer Colspan="2">Manufacturer Colspan="2">Manufacturer Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan= Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan= Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"         Colspan="2"	C. D. E. <b>1.8</b> A. B. C. D. E.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 10 2. Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12 4. Touch dimming switches shall than three (3) seconds.</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B. C.	DECTION DEVICES         SECTION 26 27 26         WIRING DEVICES         PODUCTS         Manufacturers:       Subject to compliance with requirements, provide products by one of the following:         1       Eaton (Arrow-Hart).         2       Hubbell incornorated: Wiring Device-Kellems.         3       Leviton Manufacturing Co., Inc.         4       Pass & Seymour/Levitaring Too, Inc.         5       Seymour/Levitaring Too, Inc.         6       Seymour/Levitaring Too, Inc.         Complexities, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         All devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with VE 2459 and shall be made with stranded building wire. Devices the 250 Vec 550. <td colspital-grade,="" resis<="" tamper="" td=""><td>C. D. E. F. 1.8 A. B. C. D. E.</td><td><ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> </ol></td></td>	<td>C. D. E. F. 1.8 A. B. C. D. E.</td> <td><ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> </ol></td>	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> </ol>
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B. C. 1.4	EXPLOSE SECTION 26 27 26 EXPLOSES EXPLOSE	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; o dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; compatible shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> </ol>	
PART 1 1.1 A. B. 1.2 A. C. 1.3 A. B. C. 1.4 A.	EXPLAY OF A STATE	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 10 2. Maximum of four (4) buttons p 3. Dimmer shall operate either 12 4. Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit 6. Switches and switch hardware 7. Each switch shall provide a loc and shall be field renlaceable</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. 1.3 A. B.	JEZZZE – WIRING DEVICES         SECTION 26 27 26 WIRING DEVICES         PODUCTS         MAINFACTURERS         Mainfacturers: Subject to compliance with requirements, provide products by one of the following:         1	C. D. E. F. 1.8 A. B. C. D. E.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour,</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. 1.3 A. B. 1.4 A.	JECTOR DEVICES         SECTION 26 27 26         WINING DEVICES         PRODUCTS         MANUFACTUREDS         MANUFACTUREDS         MANUFACTUREDS         Colspan="2">MANUFACTUREDS         MANUFACTUREDS         MANUFACTUREDS         MANUFACTUREDS         MANUFACTUREDS         MANUFACTUREDS         Suprest Unitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.         OBCREAL WIRING-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.         Male devices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         Stratule Ministratule Repetition: Suprest ministratule Repetition: Single-piece, rivetless, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap. Machanical shutter system to help prevent insertion of foreign objects. Labeled shall comply with NFPA 70, "Health Care Facilitatic Controling stratules" Articite, "Pediatric Locations" Section.         Description: Single-pia	C. D. E. F. 1.8 A. B. C. D. E. F.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.4 A.	<section-header>         262726 – WIRING DEVICES         SECTION 26 27 26         WIRING DEVICES         PODUCTS         Manufacturing, Subject to compliance with requirements, provide products by one of the following:         1.       Enton (Arrow Hart).         2.       Enton (Arrow Hart).         3.       Leviton Manufacturing Co., Inc.         3.       GENERAL WIRNO-DEVICE REQUIREMENTS         Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.         Comply with NFPA 70.       Aldevices must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         Mosplat-Grade, Tamper Resistant, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6         Configuration 5-208, UL 498 Supplement sd, and FS W-C-596.         1.       Description: Single-pice, rivetes, nickel-plated, all-brass grounding system. Nickel-plated, brass mounting strap. Mckel-plated, brass mounting strap. Mckel-plated, brass mounting strap. Mckel-plated, brass mounting</section-header>	C. D. E. <b>1.8</b> A. B. C. D. E. F.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Pescription: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 10 2. Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12 4. Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.4 A. B. C. 1.4 A.	Description: Single-piece, riveties, nickel-plated, and FS W-C596.         Ordinguration 5-20R, UL 498 Supplement sd, and FS W-C596.         Ordinguration 5-20R, UL 498 Supplement sd, and FS W-C596.         Ordinguration 5-20R, UL 498 Supplement sd, and FS W-C596.         Description: Single-piece, riveties, nickel-plated, all-brase grounding system. Nickel-plated, brase mounting strap. Mediatic Section 5-208.         Description: Single-piece, riveties, nickel-plated, all-brase grounding system. Nickel-plated, brase mounting strap. Mediatics for the requirements in this Section.         Source Umatations: Obtain on deplete requirements and requirements in this Section.         Source Umatations: Obtain each type of wiring device and associated wall plate from single source from single market for intended location and application.         Comply with NFPA 70.         Addrexters must be manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         Source Umatations - 2028, UL 498 Supplement sd, and FS W-C 596.         1. Description: Single-piece, riveties, nickel-plated, all-brase grounding system. Nickel-plated, brase mounting strap. Meaht Care Facilities" Article, "Pediatric Locations" Section.         2028, UL 498, and FS W-C 596.         1. Description: Straight blade; equipment grounding contacts shall be connected only to the green grounding strew receptade construction and not dependent on removable parts.         Tamper-Resistant Convenience Receptades, 125 V, 20 A: Comply with NEMA WD	C. D. E. F. 1.8 A. B. C. D. E. F.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymoury</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; bull perate either 124</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a los and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A.	Description: Subject to compliance with requirements, provide products by one of the following:         PRODUCTS         Manufacturing: Subject to compliance with requirements, provide products by one of the following:         1. fation (Arrow Hart).         2. fation (Arrow Hart).         3. full incorporated (Wring Device Kellems).         3. juriton Manufacturing Co., Inc.         3. exiton Manufacturing Co. Inc.         4. exiton Manufacturing Co. Inc.         5. exiton Manufacturing Co. Inc.         5. Arrow (Co. Inc.)         5. Mark Seymour (Local and application.         6. Mark Seymour (Local and application.         Configuration 5-208, UL 498 Supplement sd, and FS W-C596.         1. Description: Single-pice, rivetBes, nickle-pided, all-brass grounding system. Nickle-plated, brass mounting strap. Mechanical shutter system to help prevent insertion of foreign objects. Labeled shall comply with NFPA 70, 'Health Care Facilite' article, 'Pediatric Location's Section.         208, UL 498, Mark Section.       Supplement sd, and FS W-C596.         20, Excription: Single-pided, all-brass grounding syst	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymoury</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith</li> <li>Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 124</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.4 A.	EXPLOYED SUBJECT	C. D. E. F. 1.8 A. B. C. D. E. F. I.9 A.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymout/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; be shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loc and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (behavior)</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.6	JECTION DEVICES         SURING DEVICES         PODUCTS         MANUFACTUREMS         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1         1         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1         1         1         1         1         1         1         Manufacturers: Subject to compliance with requirements, provide products by one of the following:         1         1         1         1         Manufactured for use with modular plug-in connectors, shall comply with UL 2459 and shall be made with stranded building wire. Devices shall comply with the requirements in this Section.         2         1         1         1         Manufactured for use with modular plug-in connectors, shall comply with NEMA WD 1, NEMA WD 1         2         1         1         1<	C. D. E. F. 1.8 A. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with f         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Buttot Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; be shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically in Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall mata</li> <li>Plate-Securing Screws (behavio plate finish.</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A.	JECTION 26 27 26         WIRING DEVICES         PODUCTS         Manufacturers, Subject to compliance with requirements, provide products by one of the following:         International Action Manufacturer Subject to compliance with requirements, provide products by one of the following:         International Action Manufacturer Subject to Compliance with requirements, provide products by one of the following:         International Action Manufacturer Co., Inc.         International Colspan="2">International Colspan="2"         International Colspan="2"         International Colspan="2"         International Colspan="2"         International Colspan="2"         International Colspan="2"         International Colspan="2"	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Levitori Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; d dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Modular; built either 12</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches are specifically n</li> <li>Slide Dimmer Locations:</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall mail</li> <li>Plate-Securing Screws (other th 2</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.5 A.	Description: Straight blade: equipment grounding system. Nickel-plated, brass mounting strap. Methan VD 6 Configuration 5-200, UL 498 Supplement stg. and 55 W-C598.         Order Configuration: Subjeter in the straight blade: equipment grounding system. Nickel-plated, brass mounting strap. Subjeter in the straight blade: groupment grounding system. Nickel-plated, and SNU CS9.         Order Configuration: Subjeter in the straight blade: SNU CS9.         Order Long SNU CS9. <td>C. D. E. F. 1.8 A. C. D. E. F. 1.9 A.</td> <td><ol> <li>Leviton Manufac 4) Pass &amp; Seymour/ Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fi a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; buttens p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (other th</li> <li>Material for Finished Spaces, Smooth high-immert flaveneed</li> </ol></td>	C. D. E. F. 1.8 A. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac 4) Pass &amp; Seymour/ Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fi a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Modular; buttens p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (other th</li> <li>Material for Finished Spaces, Smooth high-immert flaveneed</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A.	Description:       Starting of performance of periformance of perifo	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac 4) Pass &amp; Seymour/ Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa a. Public Restrooms and PS20AC1-WL or equivale b. Behavioral Health Patie security switch (Pass &amp; of multiple switches wit Momentary Contact Switches: 2-Buttor Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switche 1. Modular; compatible with LED otherwise full range of 1% to 1</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically in Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall mail. Plate-Securing Screws (other th 3. Material for Finished Spaces, Smooth, high-impact thermopil</li> <li>Material for Operating Rooms</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.6 A.	EVALUATION DEFICIENCY     SUBJECT OF DEFINITION DEFINITION     SUBJECT OF DEFINITION     SUBJECT      SUBJECT     SUBJECT     SUBJECT      SU	C. D. E. F. 1.8 A. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymout/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>a. Public Restrooms and PS20AC1-WL or equivale</li> <li>b. Behavioral Health Patie security switch (Pass &amp; of multiple switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche 1. Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (other tf 3. Material for Finished Spaces, Smooth, high-impact thermopil</li> <li>Material for Operating Rooms</li> <li>Stainless steel.</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.5 A. 1.7	Description:       Specific Description:         Description:       Description:         De	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymout/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> </ol> </li> <li>WALL-BOX DIMMERS     Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.     Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; of dimmer module for off.     These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switche     Modular; compatible with LED otherwise full range of 1% to 10     Maximum of four (4) buttons p     Dimmer shall operate either 12     Touch dimming switches shall than three (3) seconds.     Switches, with LED indicators switches per gang. Switch to fit     Switches and switch hardware     Each switch shall provide a loo and shall be field replaceable acceptable unless specifically n     Slide Dimmer Locations:     Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial     WALL PLATES     Single and combination types shall ma     Plate-Securing Screws (other th 3. Material for Finished Spaces, Smooth, high-impact thermopil     Material for Operating Rooms stainless steel.     Swincha Thermal Health resulte Too beadvioral Health     Too beadvioral Health     Result Too beadvioral Health</li></ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.6 A. 1.7 A.	EVERY OF CONTRINCT DEVICES     SECTION 25 27 26     WIRING DEVICES     WIRING DEVICE MEQUIPREMING     Lection Manuferturing Co. Ins.     Instant Manuferturing Co. Ins.     Instant Manuferturing Co. Ins.     WIRING DEVICE MEQUIPREMING     WIRING DEVICE NEQUIPREMING     MIRING DEVICE NEQUIPREMING     WIRING DEVICE NEQUIPREMING     WIRING DEVICE NEQUIPREMING     WIRING DEVICE NEQUIPREMING     WIRING DEVICES, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and     marked for intended location and application.     COMPU with NFPA 70.     MIRING DEVICE NEQUIPREMING     MIRING DEVICES, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and     marked for intended location and application.     COMPU with NFPA 70.     MIRING DEVICES, Somponents, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and     marked for intended location and application.     Configuration S200, UL 498, Supplement sd, and TS W-C 596.     Description: Single piece, riveles, nickel plated, al-brass grounding system. Nickel-plated, brass mounting strap.     Mechanical shutter system to help prevent insertion of foreign objects. Labeled shall comply with NFPA 70,     "Health Care Facilities" Article, "Pediatric Locations" Section.     Joscription: Single blade, equipment sd, and TS W-C 596.     Description: Single blade, equipment grounding contacts shall be connected only to the green grounding strap.     Solated Ground, Duples Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-2076,     UL 498, and FS W-C 596.     Description: Singlet b	C. D. E. F. 1.8 A. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches with Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> </ol> </li> <li>WALL-BOX DIMMERS     Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.     Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; 4 dimmer module for off.     These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switches     Modular; compatible with LED otherwise full range of 1% to 10     Maximum of four (4) buttons p     Dimmer shall operate either 12     Touch dimming switches shall than three (3) seconds.     Switches per gang. Switch to fit     Switches per gang. Switch to fit     Switches and switch hardware r     Each switch shall provide a loc and shall be field replaceable acceptable unless specifically in Slide Dimmer Locations:     Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial WALL PLATES     Single and combination types shall ma     Plate-Securing Screws (other th 3. Material for Operating Rooms stainless steel.     Material for Unfinished Spaces, Smooth, high-impact thermoplic     Material for Unfinished Spaces,</li></ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.5 A. 1.5 A. 1.5 A. B.	<section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header>	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v Incandescent Lamp Dimmers: 120 V; v dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switche</li> <li>Modular; compatible with LED otherwise full range of 1% to 11</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware fit</li> <li>Each switch shall provide a loc and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (other th</li> <li>Material for Finished Spaces; Smooth, high-impact thermopus</li> <li>Material for Deprating Rooms stainless steel.</li> <li>Material for Deprating Rooms</li> <li>Stainles steel.</li> <li>Material for Jonap Locations:</li> </ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. L4 A. B. C. L5 A. L5 A. L5 A. B.	<section-header><section-header><section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header></section-header></section-header>	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac         <ol> <li>Pass &amp; Seymour/</li> </ol> </li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fi         <ol> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie security switch (Pass &amp; of multiple switches wit</li> </ol> </li> <li>Momentary Contact Switches: 2-Butto Key-Operated, Single-Pole, Double-T mechanically held lighting contactors, Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full w Incandescent Lamp Dimmers: 120 V; of dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith Decora style rocker switches are not p LED and Low Voltage Dimmer Switche:         <ol> <li>Modular; compatible with LED otherwise full range of 1% to 10</li> <li>Maximum of four (4) buttons p</li> <li>Dimmer shall operate either 12</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches, with LED indicators switches per gang. Switch to fit</li> <li>Switches and switch hardware is securitable unless specifically in</li> <li>Slide Dimmer Locations:             <ol> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall mail.</li> <li>Plate-Securing Screws (other th 3. Material for Finished Spaces, Smooth, high-Impact thermopla</li> <li>Material for Derating Rooms stainless steel.</li> <li>Material for Damp Locations: and damp locations.</li> </ol> </li> </ol></li></ol>	
PART 1 1.1 A. B. 1.2 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.3 A. B. C. 1.3 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.3 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.4 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. C. 1.5 A. B. B. C. 1.5 A. B. C. 1.5 A. B. B. C. 1.5 A. B. B. C. 1.5 A. B. B. C. 1.5 A. B. B. C. 1.5 A. B. B. C. 1.5 A. B. B. C. B. B. C. B. B. C. B. B. B. B. B. B. B. B. B. B	<section-header><section-header><section-header><section-header><section-header></section-header></section-header></section-header></section-header></section-header>	C. D. E. F. 1.8 A. B. C. D. E. F. 1.9 A.	<ol> <li>Leviton Manufac</li> <li>Pass &amp; Seymour/</li> <li>Key-Operated Switches, 120/277 V, 20</li> <li>Description: Single pole, with fa</li> <li>Public Restrooms and PS20AC1-WL or equivale</li> <li>Behavioral Health Patie</li> <li>security switch (Pass &amp; of multiple switches wit</li> <li>Momentary Contact Switches: 2-Buttor</li> <li>Key-Operated, Single-Pole, Double-T</li> <li>mechanically held lighting contactors,</li> <li>Decora style rocker switches are not p</li> <li>WALL-BOX DIMMERS</li> <li>Dimmer Switches: Modular, full-wave</li> <li>EMI/RFI suppression filters.</li> <li>Control: Continuously adjustable full v</li> <li>Incandescent Lamp Dimmers: 120 V; 4</li> <li>dimmer module for off.</li> <li>These shall be used to control This interface shall operate eith</li> <li>Decora style rocker switches are not p</li> <li>LED and Low Voltage Dimmer Switches</li> <li>Modular; compatible with LED otherwise full range of 1% to 19</li> <li>Modular; compatible with LED otherwise full range of 1% to 19</li> <li>Modular; seconds.</li> <li>Switches per gang. Switch to fit</li> <li>Switches and switch hardware</li> <li>Touch dimming switches shall than three (3) seconds.</li> <li>Switches and switch hardware</li> <li>Each switch shall provide a loc and shall be field replaceable acceptable unless specifically n</li> <li>Slide Dimmer Locations:</li> <li>Exam Rooms, Imaging Rooms, Provide slide dimmer switches; component of an antimicrobial</li> <li>WALL PLATES</li> <li>Single and combination types shall ma</li> <li>Plate-Securing Screws (behavior plate finish.</li> <li>Plate-Securing Screws (behavior plate finish.</li> <li>Plate-Securing Screws (behavior plate finish.</li> <li>Plate-Securing Screws (behavior plate finish.</li> <li>Plate-is for Damp Locations: and damp locations.</li> <li>Waterial for Damp Locations: and damp locations.</li> </ol>	
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260533 - Raceway and Boxes for Electrical Systems

#### hind monitors: Minimum 6 inches square by 3-1/2 inches deep with two-gang ring.

es are prohibited. ovide partitions to separate emergency system conductors from conductors or other systems, where voltage cent switches exceeds 300 volts and where switches controlling Low Voltage Controllers for interface to Nurse re installed in common boxes with line voltage switches.

Enclosures: Comply with UL 50 and NEMA 250.

: Type 1 with continuous-hinge cover with flush latch unless otherwise indicated. Steel, finished inside and th manufacturer's standard enamel. or: Type 4X with continuous-hinge cover with flush latch unless otherwise indicated. 304 stainless steel with h brushed finish.

r Panels: Steel; all sides finished with manufacturer's standard enamel. Provide interior panels when there are I devices or power blocks located inside the enclosure. d Boxes for Exterior Underground Wiring: Refer to Specification Section 26 05 43 "Underground Ducts and Electrical Systems".

mescent wall opening-protective pads designed for application to the back of electrical outlet boxes prior to the wall finish to provide up to 2-hour fire barrier ratings and minimum Sound Transmission Class (STC) of 52 n an STC-53 rated wall assembly or 59 according to ASTM E90-97.

s: Subject to compliance with requirements, provide products by one of the following: mpany.

## PLICATION

y raceway products as specified below unless otherwise indicated: d, Not Subject to Physical Damage: EMT.

#### d, Not Subject to Severe Physical Damage: EMT.

d and Subject to Severe Physical Damage: GRC or IMC. Raceway locations include the following: Loading dock.

Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units. Mechanical rooms below 8 feet.

Gymnasiums. aled in Ceilings and Interior Walls and Partitions: EMT.

Raceways under Slabs: RNC, Type EPC-40-PVC encased in not less than 2 inches of 3000 psi concrete. Change NC, Type EPC-40-PVC to GRC or IMC before rising above floor. Circuit Raceways under Slabs: Refer to Specifications Section 26 05 19 "Low-Voltage Electrical Power ctors and Cables" for allowable application of under slab raceways. RNC, Type EPC-40-PVC direct buried. e from RNC, Type EPC-40-PVC to GRC or IMC before rising above floor.

ays Embedded in slabs or composite steel and concrete decks are prohibited. ction to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Equipment): FMC, except use LFMC in damp or wet locations. or Wet Locations: GRC or IMC.

and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4X, 304 stainless steel in kitchens and damp locations. eway Size: 3/4-inch (21-mm) trade size.

ngs: Compatible with raceways and suitable for use and location. nd Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply

EMA FB 2.10. Jse setscrew or compression, steel fittings. Comply with NEMA FB 2.10. e Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.

aluminum conduits, boxes, or fittings in contact with concrete or earth. raceways only where indicated on Drawings.

NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article omply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed upancies and number of floors.

260533 - Raceway and Boxes for Electrical Systems

#### 262726 - WIRING DEVICES

#### Leviton Manufacturing Co., Inc. 4) Pass & Seymour/Legrand (Pass & Seymour).

Switches, 120/277 V, 20 A:

ption: Single pole, with factory-supplied key in lieu of switch handle. Public Restrooms and Other Spaces: Keyed switch, heavy duty specification grade (Pass & Seymour

PS20AC1-WL or equivalent). Behavioral Health Patient Accessible Spaces: Keyed locking switch, extra heavy duty specification grade security switch (Pass & Seymour PS20AC1-KL or equivalent). Coordinate common or differentiated keying

of multiple switches with owner. ontact Switches: 2-Button, Single Pole, Low-voltage switch, mounts in standard single gang ring. , Single-Pole, Double-Throw, Momentary-Contact, Center-off Switches: 120/277 V, 20 A; for use with held lighting contactors, with factory-supplied key in lieu of switch handle.

#### ocker switches are not permitted. MMERS

ches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and ression filters. nuously adjustable full width slider; with single-pole or three-way switching. Comply with UL 1472.

Lamp Dimmers: 120 V; control shall follow square-law dimming curve. On-off switch positions shall bypass le for off. shall be used to control power modules driving large quantity of LED drivers using 0-10VDC control signals.

terface shall operate either 120 or 277 volt circuits, 200 ma rating. ocker switches are not permitted.

Voltage Dimmer Switches: ar; compatible with LED drivers; trim potentiometer to adjust low-end dimming used where "LR" is shown,

vise full range of 1% to 100% of lumen output or as noted. um of four (4) buttons per gang.

er shall operate either 120 or 277 volt circuits, 28 ma minimum rating. dimming switches shall cover the full range of dimming with a single press-and-hold function in not more

nree (3) seconds. es, with LED indicators to indicate both ON and OFF status, shall be available with 2 or 4 single button es per gang. Switch to fit standard Decora opening.

es and switch hardware shall mount to standard wall boxes. witch shall provide a location for a label to identify function. The label shall be under a clear plastic cover all be field replaceable should the operation of the switch change. Permanently etched switches are not able unless specifically noted otherwise.

Locations: Rooms, Imaging Rooms, Operating Rooms, Procedure Rooms, Recovery Bays, and Imaging Control Rooms: e slide dimmer switches; do not provide touch dimming switches in these spaces except when an integrated nent of an antimicrobial or integrated operating room ceiling system.

#### nbination types shall match corresponding wiring devices.

ecuring Screws (behavioral health spaces): Metal tamper resistant TORX screws with head color to match ecuring Screws (other than behavioral health spaces): Metal with head color to match plate finish. al for Finished Spaces, except Operating Rooms, Food Service Kitchens, and Behavioral Health Spaces:

h, high-impact thermoplastic. al for Operating Rooms and Food Service Kitchen: 0.035-inch- (1-mm-) thick, satin-finished, Type 302 ss steel.

al for Behavioral Health Spaces: Smooth, nylon, unbreakable, with a minimum of two (2) screws per gang; e Torx head tamper resistant screws. al for Unfinished Spaces: Galvanized steel.

al for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet mp locations. , Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die-cast aluminum

262726 - WIRING DEVICES

260533 - Raceway and Boxes for Electrical Systems

- Separation of Life Safety and Critical Branch Wiring: Comply with NFPA 70 Article 517. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal
- raceway runs above water and steam piping.
- D. Complete raceway installation before starting conductor installation. E. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for
- which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction. F. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or
- perpendicular to building lines. G. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- H. Stub-ups to Above Recessed Ceilings: Use EMT, IMC, or RMC for raceways.
- Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- I. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- Coat field-cut threads on PVC-coated raceway with a corrosion-preventing conductive compound prior to assembly. K. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors
- including conductors smaller than No. 4 AWG. L. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and
- larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits. M. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn
- N. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- O. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- P. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- Q. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- R. Install devices to seal raceway interiors at accessible locations. Locate seals so no fittings or boxes are between the seal and the following changes of environments. Seal the interior of all raceways at the following points: Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces. Where an underground service raceway enters a building or structure.
- Where otherwise required by NFPA 70. Comply with manufacturer's written instructions for solvent welding RNC and fittings.
- T. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for recessed and semi-recessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
- Use LFMC in damp or wet locations. U. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to center of box unless otherwise indicated.
- Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel. W. Locate boxes so that cover or plate will not span different building finishes.
- X. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- Z. Set metal floor boxes level and flush with finished floor surface. AA. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface. 2.3 FIRESTOPPING AND SOUND TRANSMISSION MITIGATION
- A. Install putty pads with acoustical and firestopping capabilities on all boxes that are installed in wall or partition cavities and in gypsum board ceilings. END OF SECTION

260533 - Raceway and Boxes for Electrical Systems

#### 262726 - WIRING DEVICES

POK	E-THROUGH ASSEMBLIES	
Man	ufacturers: Subject to compliance with requirements, provide	products by the follow
1.	Wiremold / Legrand.	11111111111111111111111111111111111111
Desc	ription:	
1.	Factory-fabricated and -wired assembly of below-floo raceway/firestop unit and detachable matching floor service	e-outlet assembly.
2.	Comply with UL 514 scrub water exclusion requirements.	
3.	Size: Selected to fit cored holes in floor and matched to floo	or thickness.
4.	Fire Rating: Unit is listed and labeled for fire rating of floor-	ceiling assembly.
5.	Closure Plug: Arranged to close unused cored openings and	reestablish fire rating
Desc	ription by Device Type:	
PT1	Flush, Dual Service, 4" Diameter Furniture Feed Poke-Thru. One piece finish flange. One .75" conduit for power, One 1.5" conduit for data cabling. See plans for circuits and data drops. Finish selected by architect.	Legrand 4FFATC Hubbell PT73FFS/FRF3
PT2	Flush, Dual Service Capable, 4"Diameter Poke-Thru. One .75" conduit for power, one 1.5" conduit for data cabling. Two Gang Capacity. See plans for circuits and data drops. Receptacles shall be NEMA 5-20R, Finish selected by architect.	Legrand 4AT Evolution Hubbell S1R4PT
PT3	Flush, Dual Service Capable, 6"Diameter Poke-Thru. One .75" conduit for power, one 1.5" conduit for data cabling. Three Gang Capacity. See plans for circuits and data drops. Receptacles shall be NEMA 5-20R, Finish selected by architect.	Legrand 6AT Evolution Hubbell S1R6PT
PT8	Flush, Dual Service Capable, 8"Diameter Poke-Thru. One .75" conduit for power, one 2" conduit for data cabling. Five Gang Capacity. See plans for circuits and data drops. Receptacles shall be NEMA 5-20R, Finish selected by architect.	Legrand BAT Evolution Hubbell 51R8PT
PTIC	Flush, Dual Service Capable, 10"Diameter Poke-Thru. One .75" conduit for power, one 2" conduit for data cabling. Eight Gang Capacity. See plans for circuits and data drops. Receptacles shall be NEMA 5-20R, Finish selected by architect.	Legrand 10AT Evolution Hubbell S1R10PT
PT11	Flush single service floor box suitable for the wiring method used. NEMA 5-20R duplex receptacle with brushed aluminum flange and cover plate. Hinged receptacle covers.	Legrand RC7CTC Hubbell PT7F5/FRF
FINE	SHES	
Devi	ce Color:	
1.	Wiring Devices Connected to Normal Power System: Gra other finished spaces unless otherwise indicated or require	ay in Food Service Kite d by NFPA 70 or device
2.	Wiring Devices Connected to Essential Power System: Red.	
З.	Isolated-Ground Receptacles: Orange.	
Wall	Plate Color:	
1.	Plastic covers: Match device color.	
2.	Cover plates for receptacles mounted above data racks receptacles served by UPS-A and red cover plates for recept	in TEC and TDR room tacles served by UPS-B
XECL	JTION	
INST	ALLATION	
Com	ply with NECA 1, including mounting heights listed in that star	ndard, unless otherwise
Cool	dination with Other Trades:	

for boxes with routers that are guided by riding against outside of boxes. 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.

Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.

4. Install wiring devices after all wall preparation, including painting, is complete.

262726 - WIRING DEVICES

multichanneled, through-floor

of floor.

![](_page_36_Picture_102.jpeg)

chen. As selected by Architect in listing.

ms: Provide blue cover plates for

indicated.

Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes

262726 - WIRING DEVICES

262726 - WIRING DEVICES

- Do not strip insulation from conductors until right before they are spliced or terminated on devices. 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid
- wire or cutting strands from stranded wire. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails. Existing Conductors:
- a. Cut back and pigtail, or replace all damaged conductors. Straighten conductors that remain and remove corrosion and foreign matter.
- c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.
- D. Device Installation: Replace devices that have been in temporary use during construction and that were installed before building
  - Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
- When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
- Use a torque screwdriver when a torque is recommended or required by manufacturer. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for
- 8. Tighten unused terminal screws on the device. 9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in
- F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.
- G. Dimmers:
- Install 0-10VDC control wiring in conduit with power wiring. Use conductors with insulation equivalent to insulation of power wiring.
- Adjust locations of floor boxes and pokethroughs to suit arrangement of partitions and furnishings.
- 2.2 GFCI RECEPTACLES
- A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required. 2.3 IDENTIFICATION
- A. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes. END OF SECTION

b,

# finishing operations were complete.

- Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
- Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
- device connections.
- yokes, allowing metal-to-metal contact. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.
- Install hospital-grade receptacles in patient-care areas with the ground pin or neutral blade at the top.
- Install dimmers within terms of their listing.
- Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.
- H. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding
- terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

E. Receptacle Orientation:

Conductors:

![](_page_36_Picture_153.jpeg)

NJRA Architects, Inc. 5223 S. Ascension Way, Suite 350 Murray, Utah 84123 801.364.9259 www.njraarchitects.com

![](_page_36_Picture_155.jpeg)

![](_page_36_Picture_156.jpeg)

![](_page_36_Figure_157.jpeg)

ELECTRICAL SPECIFICATIONS

![](_page_36_Picture_159.jpeg)

# 265119 - LED INTERIOR LIGHTING

## **SECTION 26 51 19**

	SECTION 26 51 19	2.3	LED LAMPS AND DRIVERS:
	LED INTERIOR LIGHTING	А,	Minimum CRI Ra- 82 or as :
PART 1	- GENERAL	В.,	Lumen output shall be Lum
1.1	ACTION SUBMITTALS	C.	Each luminaire type shall b
Α.	Product Data: For each type of product.	D.	LED Rated life L70 of 50,00
	<ol> <li>Arrange in order of luminaire designation.</li> </ol>		rating per TM-21.
	<ol><li>Include data on features, accessories, and finishes.</li></ol>	E.	Flicker: No visible or detect
	<ol><li>Include physical description and dimensions of luminaires.</li></ol>	F.	Dimming drivers shall be o
	<ol><li>Include emergency lighting units, including batteries and chargers.</li></ol>		10vdc control unless specif
	<ol><li>Include life, output (lumens, CCT, and CRI), and energy efficiency data.</li></ol>	G.	Inrush current shall be repo
	<ol> <li>Photometric data and adjustment factors based on laboratory tests, complying with IESNA Lighting Measurements</li> </ol>	н.	THD: THD shall not exceed
	Testing and Calculation Guides, of each lighting fixture type. The adjustment factors shall be for lamps and	1.	Minimum driver efficiency
	accessories identical to those indicated for the lighting fixture as applied in this Project. Report data compliant	J.	LED module shall be replace
	with IES LM-79 and IES LM-80. Only Absolute Photometry is acceptable.	К.	Luminaire shall be NRTL Lis
	<ul> <li>Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current</li> </ul>	L	Photometry shall be measured
	accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting		consideration.
1	Products (NVLAP).	м.	Approved Manufacturers- I
В.	Shop Drawings: For nonstandard or custom luminaires.		1. General Electric.
	<ol> <li>Include plans, elevations, sections, and mounting and attachment details.</li> <li>Include datable of lumination economic indicate dimensions unalable loads are used at a section of field.</li> </ol>		2. Philips.
	<ol><li>Include details of luminaire assemblies, indicate dimensions, weights, loads, required clearances, method of field example, companyors, and load in a field companying.</li></ol>		<ol> <li>Osram / Sylvania.</li> </ol>
	assembly, components, and location and size of each field connection.		4. Lutron
4.9	5. Include diagrams for power, signal, and control wining.		5. EldoLED
1.2	Brotect finishes of exposed surfaces by applying a stringable, temporary protective covering before shinning	N	Approved Manufacturers
13	wappanty	· N.	1 General Electric
A	Wannowski i Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or		2 Philins
0.	workmanship within specified warranty period		3 Osram
в	Warranty Period: Five year(s) from date of Substantial Completion		4 Cree
PART 2	- PRODUCTS		5 Xicato
2.1	PERFORMANCE REQUIREMENTS		6. Nichia
Α.	Seismic Performance: Luminaires shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.	0.	Approved Manufacturers for
в.	Seismic Performance: Luminaires and lamps shall be labeled vibration and shock resistant.	2.4	MATERIALS
	<ol> <li>The term "withstand" means "the luminaire will remain in place without separation of any parts when subjected to</li> </ol>	Α.	Metal Parts:
	the seismic forces specified and the luminaire will be fully operational during and after the seismic event."		1. Free of burrs and sh
2.2	LUMINAIRE REQUIREMENTS		2. Sheet metal comport
Α,	Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency,		3. Form and support to
	and marked for intended location and application.	В.	Doors, Frames, and Other
B.,	NRTL Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of hazard		designed to permit relam
	by an NRTL.		components from falling ac
C.	FM Global Compliance: Luminaires for hazardous locations shall be listed and labeled for indicated class and division of	C.	Diffusers and Globes:
	hazard by FM Global.		<ol> <li>Acrylic Diffusers: Or</li> </ol>
D.	Recessed Fixtures: Comply with NEMA LE 4.		due to aging, exposi
Ε.	Bulb shape complying with ANSI C79.1.		<ol><li>Glass: Annealed crys</li></ol>
F.	Lamp base complying with ANSI C81.61 or IEC 60061-1, where employing universal base or mount.		<ol><li>Lens Thickness: At le</li></ol>
G.	CRI of minimum 80. CCT of 3500 K.	D,	Housings:
н.	L70 rated lamp life of 50,000 hours.		<ol> <li>Hydroformed, cast of</li> </ol>
L	Lamps dimmable as indicated or 0.5 to 100 percent of maximum light output, via 0-10 VDC control signal or, where	12	<ol><li>Anodized or powder</li></ol>
	indicated, Digital Dimming Control Signal.	Ε.	Factory-Applied Labels: Co
1.	Field Replaceable driver.		will be readily visible to ser
К.	Nominal Operating Voltage: Universal voltage 120 V ac or 277 V ac unless scheduled differently.		<ol> <li>Label shall include the</li> </ol>

Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless otherwise indicated.

L Housings: Hydroformed, cast or extruded-aluminum housing and heat sink suitable for the environment.

#### Anodized or powder-coat finish.

#### 265119 - LED INTERIOR LIGHTING

283111 - DIGITAL ADRESSABLE FIRE ALARM SYSTEM

#### **SECTION 28 31 11** DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

#### PART 1 - GENERAL 1.1 ACTION SUBMITTALS

Product Data: For each type of product indicated.

B. Shop Drawings: For fire-alarm system, submit shop drawings with product data in one submittal. Include plans, elevations, sections, details, and attachments to other work. 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.

Include voltage drop calculations for notification appliance circuits. Include fire alarm zoning diagrams indicating zoning of the fire alarm system coordinated with the corresponding fire protection zones and smoke compartments. Comply with NFPA 99.

Include battery-size calculations.

5. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating. 6. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations. Provide remote test switches (RTS) as required by NFPA 72.

7. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram. 8. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route

of cable and conduits. General Submittal Requirements:

Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.

Shop Drawings shall be prepared by persons with the following qualifications: Trained and certified by manufacturer in fire-alarm system design.

NICET-certified fire-alarm technician, Level III minimum.

Licensed or certified by authorities having jurisdiction.

Delegated-Design Submittal: For smoke and heat detectors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

 Drawings showing the location of each smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of the detector. 2. Design Calculations: Calculate requirements for selecting the spacing and sensitivity of detection, complying with NFPA 72.

CLOSEOUT SUBMITTALS 1.2 A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

 Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72. 2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.

Record copy of site-specific software.

Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following: Frequency of testing of installed components.

- Frequency of inspection of installed components.
- Requirements and recommendations related to results of maintenance.

Manufacturer's user training manuals.

5. Manufacturer's required maintenance related to system warranty requirements. Abbreviated operating instructions for mounting at fire-alarm control unit.

B. Software and Firmware Operational Documentation:

Software operating and upgrade manuals.

28311 - DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

D. company. 1.4 PROJECT CONDITIONS according to requirements indicated: Do not proceed with interruption of fire-alarm service without Construction Manager's written permission. 1.5 SEQUENCING AND SCHEDULING Α. building. В. wiring. PART 2 - PRODUCTS 2.1 MANUFACTURERS A. Subject to compliance with requirements, provide product by the following: Match Existing 2.2 SYSTEM SMOKE DETECTORS 2. Detectors shall be four-wire type. control unit. operation. fire-alarm control unit. Rate-of-rise temperature characteristic shall be selectable at fire-alarm control unit for 15 or 20 deg F (8 or 11 deg C) per minute. b. Fixed-temperature sensing shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F (57 or 68 deg C).

1.3

Α.

Project.

265119 - LED INTERIOR LIGHTING

## CRI Ra- 82 or as specified.

tput shall be Luminaire Lumens or Delivered Lumens. Source lumens shall not be used. naire type shall be binned within a three-step MacAdam Ellipse to ensure color consistency among luminaires. life L70 of 50,000 hours per (IES LM-80). Luminaire shall maintain LED operating temperature to achieve this

visible or detectable flicker, operating on all dimmed intensities.

drivers shall be compatible with the control method shown on the drawings. All dimmed drivers shall use 0trol unless specified differently. Minimum level as scheduled.

rent shall be reported and the lighting controls adjusted for inrush of LED product supplied. shall not exceed 80%.

triver efficiency shall be 83%.

le shall be replaceable in the field using modules with digitally traceable matching modules. shall be NRTL Listed at intended operating temperature.

shall be measured or absolute photometry. Derived or calculated photometry shall not be provided for

Manufacturers- Drivers

Manufacturers- LEDs

mas Research

Manufacturers for Luminaires shall be as scheduled.

## e of burrs and sharp corners and edges.

#### et metal components shall be steel unless otherwise indicated. m and support to prevent warping and sagging. imes, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other

## s from falling accidentally during relamping and when secured in operating position. ylic Diffusers: One hundred percent virgin acrylic plastic, with high resistance to yellowing and other changes to aging, exposure to heat, and UV radiation.

#### s: Annealed crystal glass unless otherwise indicated. s Thickness: At least 0.125 inch (3.175 mm) minimum unless otherwise indicated.

## froformed, cast or extruded-aluminum housing and heat sink suitable for the environment.

#### odized or powder-coat finish. oplied Labels: Comply with UL 1598. Include recommended lamps and line wattage. Locate labels where they dily visible to service personnel, but not seen from normal viewing angles when lamps are in place.

#### I shall include the following lamp characteristics: "USE ONLY" and include specific lamp type.

## Lamp diameter, shape, size, wattage, and coating.

## c. CCT and CRI for all luminaires.

#### 265119 - LED INTERIOR LIGHTING

283111 - DIGITAL ADRESSABLE FIRE ALARM SYSTEM

2. Program Software Backup: On magnetic media or compact disk, complete with data files.

Device address list. 4. Printout of software application and graphic screens.

QUALITY ASSURANCE

Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level II technician. C. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single

manufacturer. Components shall be compatible with, and operate as, an extension of existing system. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application. NFPA Certification: Obtain certification according to NFPA 72 by an NRTL.

NFPA Certification: Obtain certification according to NFPA 72 by a UL-listed alarm company.

G. NFPA Certification: Obtain certification according to NFPA 72 in the form of a placard by an FMG-approved alarm H. NFPA Certification: Obtain certification according to NFPA 72 by the Authority Having Jurisdiction.

A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service

1. Notify Construction Manager no fewer than 7 days in advance of proposed interruption of fire-alarm service.

Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the

Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and

A. General Requirements for System Smoke Detectors:

Comply with UL 268; operating at 24-V dc, nominal.

Provide multiple levels of detection sensitivity for each sensor.

28311 - DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm 4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that

connects to a fixed base. Provide terminals in the fixed base for connection to building wiring. 5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal

6. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status. 7. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by 265119 - LED INTERIOR LIGHTING

2.5

2.6

2.7

METAL FINISHES

and locking-type plug.

LUMINAIRE FIXTURE SUPPORT COMPONENTS

GENERAL REQUIREMENTS FOR EMERGENCY LIGHTING

automatically recharged and floated on charger.

Humidity: More than 95 percent (condensing).

tolerances and other conditions affecting performance of the Work.

Able to maintain luminaire position after cleaning and repair.

and vertical force of 400 percent of luminaire weight.

Provide support for luminaire without causing deflection of ceiling or wall.

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283111 - DIGITAL ADRESSABLE FIRE ALARM SYSTEM

deg over a 24-hour period.

Altitude: Exceeding 3300 feet Battery: Sealed, maintenance-free, lead-acid type.

and marked for intended location and application.

Comply with NEMA LE 4 for recessed luminaires.

Comply with NFPA 70 and NFPA 101.

otherwise indicated:

PART 3 - EXECUTION

3.2

3.1 EXAMINATION

INSTALLATION

Supports:

Comply with NECA 1.

Sized and rated for luminaire weight.

Trim ring flush with finished surface.

following for each detector:

Present average value.

Present sensitivity selected.

the coded signal prescribed in UL 464 test protocol.

a. 15/30/75/110 cd, selectable in the field.

Comply with NFPA 72 for installation of fire-alarm equipment.

3. Smooth ceiling spacing shall not exceed 30 feet (9 m).

Install keyed remote test stations in acceptable locations.

tamper switch that is not readily visible from normal viewing position.

normal viewing position. Provide in locations acceptable to owner, AHJ, Architect, & EOR.

K. Device Location-Indicating Lights: Locate in public space near the device they monitor.

J. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below

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4. Strobe Leads: Factory connected to screw terminals.

5. Mounting Faceplate: Factory finished, white.

e. Sensor range (normal, dirty, etc.).

for mounting as indicated and with screw terminals for system connections.

Chimes, Low-Level Output: Vibrating type, 75-dBA minimum rated output.

Flashing shall be in a temporal pattern, synchronized with other units.

Chimes, High-Level Output: Vibrating type, 81-dBA minimum rated output.

equipped for mounting as indicated and with screw terminals for system connections.

mounting as indicated and with screw terminals for system connections.

a. Primary status.

b.

d.

NOTIFICATION APPLIANCES

1. Rated Light Output:

3.1 EQUIPMENT INSTALLATION

Electrical Systems."

C. Smoke- or Heat-Detector Spacing:

spacing.

the ceiling.

PART 3 - EXECUTION

2.3

Device type.

Flush-Mounted Luminaire Support:

Secured to outlet box.

Wires: ASTM A 641/A 641 M, Class 3, soft temper, zinc-coated steel, 12 gauge (2.68 mm).

body and compatible with LED light source and driver, including dimming driver.

Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.

Variations in finishes are unacceptable in the same piece. Variations in finishes of a	djoining components are acceptable if
they are within the range of approved Samples and if they can be and are assembled	l or installed to minimize contrast.

.6	LUMINAIRE FIXTURE SUPPORT COMPONENTS
Α.	Comply with requirements in Section 26 05 29 "Hangers and Supports for Electrical Systems" for channel and angle iron
	supports and nonmetallic channel and angle supports.
В.	Single-Stem Hangers: 1/2-inch (13-mm) steel tubing with swivel ball fittings and ceiling canopy. Finish same as luminaire.

Hook Hangers: Integrated assembly matched to luminaire, line voltage, and equipment with threaded attachment, cord,

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, NRTL Compliance: Fabricate and label emergency lighting units, exit signs, and batteries to comply with UL 924.

Internal Type Emergency Power Unit: Self-contained, modular, battery-inverter unit, factory mounted within luminaire Emergency Connection: Operate luminaire continuously at an output of 5 watts upon loss of normal power. Connect unswitched circuit to battery-inverter unit and switched circuit to luminaire ballast.

Operation: Relay automatically turns driver/led module on when power-supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deepdischarge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is

3. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless

 Ambient Temperature: Less than 0 deg F or exceeding 104 deg F with an average value exceeding 95 Ambient Storage Temperature: Not less than minus 4 deg F and not exceeding 140 deg F

Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and a flashing red LED.

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before fixture

installation. Proceed with installation only after unsatisfactory conditions have been corrected.

Install luminaires level, plumb, and square with ceilings and walls unless otherwise indicated.

Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight

Attached to ceiling structural members at four points equally spaced around circumference of luminaire.

2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the

A. General Requirements for Notification Appliances: Individually addressed, connected to a signaling line circuit, equipped B. General Requirements for Notification Appliances: Connected to notification appliance signal circuits, zoned as indicated,

1. Combination Devices: Factory-integrated audible and visible devices in a single-mounting assembly, equipped for

Horns: Electric-vibrating-polarized type, 24-V dc; with provision for housing the operating mechanism behind a grille. Comply with UL 464. Horns shall produce a sound-pressure level of 90 dBA, measured 10 feet (3 m) from the horn, using Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens

For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.

Install wall-mounted equipment, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor. 1. Comply with requirements for seismic-restraint devices specified in Section 260548 "Vibration and Seismic Controls for

1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector 2. Comply with NFPA 72, "Heat-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for heat-detector

HVAC: Locate detectors not closer than 3 feet (1 m) from air-supply diffuser or return-air opening.

Lighting Fixtures: Locate detectors not closer than 12 inches (300 mm) from any part of a lighting fixture. D. Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend the full width of duct.

Heat Detectors in Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location. Single-Station Smoke Detectors: Where more than one smoke alarm is installed within a dwelling or suite, they shall be connected so that the operation of any smoke alarm causes the alarm in all smoke alarms to sound.

G. Remote Status and Alarm Indicators: Install near each smoke detector and each sprinkler water-flow switch and valve-

H. Remote Test Station (RTS): Install keyed test station in wall near each duct smoke detector that is not readily visible from

Audible Alarm-Indicating Devices: Install not less than 6 inches (150 mm) below the ceiling. Install bells and horns on flush-mounted back boxes with the device-operating mechanism concealed behind a grille.

## 265119 - LED INTERIOR LIGHTING

- E. Wall-Mounted Luminaire Support:
- Attached to structural members or approved backer plate in walls Do not attach luminaires directly to gypsum board.
- F. Ceiling-Mounted Luminaire Support: Ceiling mount with four 5/32-inch- (4-mm) diameter steel wire or aircraft cable supports.
- Ceiling mount with hook mount.
- G. Suspended Luminaire Support: Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.
  - Stem-Mounted, Single-Unit Luminaires: Suspend with twin-stem hangers. Support with approved outlet box and accessories that hold stem and provide damping of luminaire oscillations. Support outlet box vertically to building structure using approved devices. Continuous Rows of Luminaires: Use tubing or stem for wiring at one point and wire support for suspension for
- each unit length of luminaire chassis, including one at each end. Do not use ceiling grid as support for pendant luminaires. Connect support wires or rods to building structure.
- H. Ceiling-Grid-Mounted Luminaires:
  - Secure to any required outlet box. Secure luminaire to the luminaire opening using approved fasteners in a minimum of four locations, spaced near
  - corners of luminaire. Use approved devices and support components to connect luminaire to ceiling grid and building structure in a minimum of four locations, spaced near corners of luminaire. END OF SECTION

265119 - LED INTERIOR LIGHTING

## 283111 - DIGITAL ADRESSABLE FIRE ALARM SYSTEM

- L. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished
- M. Annunciator: Install with top of panel not more than 72 inches (1830 mm) above the finished floor.
- WIRING INSTALLATION A. Wiring for Grid Ceiling Mounted Devices: Install junction box at accessible location above ceiling. Use flexible metal conduit for wiring between junction box and outlet box for ceiling mounted device. Secure flexible conduit within 12
- inches of junction box. B. Wiring within Enclosures: Separate power-limited and non-power-limited conductors as recommended by the manufacturer. Install conductors parallel with or at right angles to sides and back of the enclosure. Bundle, lace, and train conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.
- C. Cable Taps: Use numbered terminal strips in junction, pull and outlet boxes, cabinets, or equipment enclosures where circuit connections are made. D. Color-Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color-code
- for alarm circuit wiring and a different color-code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visible alarm-indicating devices. Paint fire alarm system junction boxes and covers red. E. Risers: Install at least two vertical cable risers to serve the fire alarm system. Separate risers in close proximity to each
- other with a minimum one-hour-rated wall, so the loss of one riser does not prevent the receipt or transmission of signal from other floors or zones. F. Wiring to Remote Alarm Transmitting Device: 1-inch (25-mm) conduit between the FACP and the transmitter. Install
- number of conductors and electrical supervision for connecting wiring as needed to suit monitoring function. CONNECTIONS A. For fire-protection systems related to doors in fire-rated walls and partitions and to doors in smoke partitions, comply
- with requirements in Section 087100 "Door Hardware." Connect hardware and devices to fire-alarm system. 1. Verify that hardware and devices are NRTL listed for use with fire-alarm system in this Section before making connections. FIELD QUALITY CONTROL
- Field tests shall be witnessed by authorities having jurisdiction.
- Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections. 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections: Visual Inspection: Conduct visual inspection prior to testing.
  - Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
  - b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
- 2. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
- 4. Test visible appliances for the public operating mode according to manufacturer's written instructions.
- 5. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72. E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.

## END OF SECTION

28311 - DIGITAL ADDRESSABLE FIRE ALARM SYSTEM

- 3.2

# mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.

# 3.3

# 3.4

![](_page_37_Picture_212.jpeg)

NJRA Architects, Inc. 5223 S. Ascension Way, Suite 350 Murray, Utah 84123 801.364.9259 www.njraarchitects.com

![](_page_37_Picture_214.jpeg)

![](_page_37_Picture_215.jpeg)

![](_page_37_Figure_216.jpeg)

ELECTRICAL **SPECIFICATIONS** 

![](_page_37_Picture_218.jpeg)

![](_page_38_Figure_0.jpeg)

![](_page_38_Figure_1.jpeg)

![](_page_38_Figure_2.jpeg)

![](_page_38_Figure_3.jpeg)

![](_page_38_Figure_5.jpeg)

![](_page_38_Picture_6.jpeg)

![](_page_38_Figure_7.jpeg)

![](_page_38_Picture_9.jpeg)

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![](_page_38_Picture_11.jpeg)

![](_page_38_Picture_12.jpeg)

![](_page_38_Figure_13.jpeg)

![](_page_38_Picture_14.jpeg)

![](_page_38_Picture_15.jpeg)

![](_page_39_Figure_0.jpeg)

![](_page_39_Figure_2.jpeg)

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![](_page_39_Figure_4.jpeg)

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![](_page_39_Figure_7.jpeg)

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![](_page_39_Figure_9.jpeg)

![](_page_39_Figure_10.jpeg)

ADJACENT TO SUPPLY AIR

![](_page_39_Figure_14.jpeg)

![](_page_39_Figure_20.jpeg)

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![](_page_39_Picture_21.jpeg)

![](_page_39_Picture_22.jpeg)

![](_page_40_Figure_0.jpeg)

# GENERAL SHEET NOTES

- UNLESS NOTED OTHERWISE REMOVE ALL LIGHTING FIXTURES DEVICES AND EQUIPMENT SHOWN DASHED. REMOVE CONDUIT AND WIRING BACK TO PANELBOARD OF ORIGIN OR TO FIRST ACTIVE DEVICE THAT REMAINS.
- SALVAGE ALL LIGHT FIXTURES, TWIST-LOCK RECEPTACLES AND WALLPLATES, CEILING SPEAKERS AND SECURITY AND FIRE ALARM DEVICES TO OWNER. PROTECT SALVAGED EQUIPMENT FROM DAMAGE.
- PRIOR TO SUBMITTING BID, VISIT THE SITE AND FIELD VERIFY THE EXTENT OF ELECTRICAL DEMOLITION WORK TO MEET THE INTENT OF THE BID DOCUMENTS AND INCLUDE ALL COSTS IN BID.
- PRIOR TO REMOVAL OF ANY ELECTRICAL EQUIPMENT OR WIRING, FIELD VERIFY THAT THE EQUIPMENT OR WIRING IS INACTIVE OR NO LONGER IN USE.
- REMOVE ALL DEVICES, RACEWAYS AND WIRING FROM WALLS TO BE REMOVED. WHERE ACTIVE RACEWAYS OCCUR IN WALLS TO BE REMOVED, RE-ROUTE THE RACEWAY WITH ASSOCIATED WIRING TO KEEP THE CIRCUIT OPERATIONAL.
- REMOVE ALL FIRE ALARM DEVICES WHERE EXISTING WALLS AND CEILINGS ARE BEING REMOVED, WITH ASSOCIATED CONDUIT AND WIRING. EXISTING FIRE ALARM DEVICES AND SYSTEM NOT INDICATED FOR REMOVAL SHALL REMAIN ACTIVE THROUGHOUT DEMOLITION AND CONSTRUCTION UNTIL THE NEW SYSTEM IS TESTED AND OPERATIONAL. MAINTAIN ALL CLASS A FIRE ALARM INITIATING AND INDICATING LOOPS WHERE EXISTING DEVICES ARE REMOVED.
- REMOVE ALL ABANDONED RACEWAY, CONDUIT, WIRING AND CABLING WHETHER ABANDONED PREVIOUS TO THIS PROJECT OR AS A RESULT OF THIS PROJECT. NOT ALL ABANDONED ITEMS ARE SHOWN ON THESE PLANS AND FIELD VERIFICATION OF DEMOLITION SCOPE EXTENT IS REQUIRED.
- DEVICES MARKED "RR" ARE TO BE REMOVED AND RELOCATED PER NEW PLANS. EXTEND CIRCUITING AS REQUIRED FOR RELOCATION.
- REFER TO ARCHITECTURAL DRAWINGS FOR REMOVAL OF MOTORS, CONDUIT, CONDUCTOR AND CONTROL WIRING ASSOCIATED WITH EXISTING MOTORIZED DOORS, PARTITIONS AND LIGHTING.
- 10 ALL ITEMS INDICATED TO REMAIN SHALL BE PROTECTED DURING ALL PHASES OF CONSTRUCTION.
- 11 CONTRACTOR TO TRACE AND LABEL ALL EXISTING LOADS TO REMAIN, THAT ARE CURRENTLY FED FROM PANELS THAT ARE BEING DEMOLISHED IN THIS PHASE. THESE LOADS TO BE RE-FED FROM NEW PANELS IN NEXT PHASE.
- 12 ALL HVAC UNITS TO BE REMOVED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE. REMOVE ALL ASSOCIATED RACEWAYS AND CONDUCTORS BACK TO SOURCE.

# SHEET KEYNOTES

EXISTING PANEL AND BRANCH CIRCUITS TO BE DEMOLISHED. PULL WIRING BACK TO PULL BOX.

![](_page_40_Picture_20.jpeg)

![](_page_41_Figure_0.jpeg)

# GENERAL SHEET NOTES

- UNLESS NOTED OTHERWISE REMOVE ALL LIGHTING FIXTURES DEVICES AND EQUIPMENT SHOWN DASHED. REMOVE CONDUIT AND WIRING BACK TO PANELBOARD OF ORIGIN OR TO FIRST ACTIVE DEVICE THAT REMAINS.
- SALVAGE ALL LIGHT FIXTURES, TWIST-LOCK RECEPTACLES AND WALLPLATES, CEILING SPEAKERS AND SECURITY AND FIRE ALARM DEVICES TO OWNER. PROTECT SALVAGED EQUIPMENT FROM DAMAGE.
- PRIOR TO SUBMITTING BID, VISIT THE SITE AND FIELD VERIFY THE EXTENT OF ELECTRICAL DEMOLITION WORK TO MEET THE INTENT OF THE BID DOCUMENTS AND INCLUDE ALL COSTS IN BID.
- PRIOR TO REMOVAL OF ANY ELECTRICAL EQUIPMENT OR WIRING, FIELD VERIFY THAT THE EQUIPMENT OR WIRING IS INACTIVE OR NO LONGER IN USE.
- REMOVE ALL DEVICES, RACEWAYS AND WIRING FROM WALLS TO BE REMOVED. WHERE ACTIVE RACEWAYS OCCUR IN WALLS TO BE REMOVED, RE-ROUTE THE RACEWAY WITH ASSOCIATED WIRING TO KEEP THE CIRCUIT OPERATIONAL.
- REMOVE ALL FIRE ALARM DEVICES WHERE EXISTING WALLS AND CEILINGS ARE BEING REMOVED, WITH ASSOCIATED CONDUIT AND WIRING. EXISTING FIRE ALARM DEVICES AND SYSTEM NOT INDICATED FOR REMOVAL SHALL REMAIN ACTIVE THROUGHOUT DEMOLITION AND CONSTRUCTION UNTIL THE NEW SYSTEM IS TESTED AND OPERATIONAL. MAINTAIN ALL CLASS A FIRE ALARM INITIATING AND INDICATING LOOPS WHERE EXISTING DEVICES ARE REMOVED.
- REMOVE ALL ABANDONED RACEWAY, CONDUIT, WIRING AND CABLING WHETHER ABANDONED PREVIOUS TO THIS PROJECT OR AS A RESULT OF THIS PROJECT. NOT ALL ABANDONED ITEMS ARE SHOWN ON THESE PLANS AND FIELD VERIFICATION OF DEMOLITION SCOPE EXTENT IS REQUIRED.
- DEVICES MARKED "RR" ARE TO BE REMOVED AND RELOCATED PER NEW PLANS. EXTEND CIRCUITING AS REQUIRED FOR RELOCATION.
- REFER TO ARCHITECTURAL DRAWINGS FOR REMOVAL OF MOTORS, CONDUIT, CONDUCTOR AND CONTROL WIRING ASSOCIATED WITH EXISTING MOTORIZED DOORS, PARTITIONS AND LIGHTING.
- 10 ALL ITEMS INDICATED TO REMAIN SHALL BE PROTECTED DURING ALL PHASES OF CONSTRUCTION.
- 1 CONTRACTOR TO TRACE AND LABEL ALL EXISTING LOADS TO REMAIN, THAT ARE CURRENTLY FED FROM PANELS THAT ARE BEING DEMOLISHED IN THIS PHASE. THESE LOADS TO BE RE-FED FROM NEW PANELS IN NEXT PHASE.
- 12 ALL HVAC UNITS TO BE REMOVED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE. REMOVE ALL ASSOCIATED RACEWAYS AND CONDUCTORS BACK TO SOURCE.

# SHEET KEYNOTES

![](_page_41_Picture_19.jpeg)

![](_page_42_Figure_0.jpeg)

# GENERAL SHEET NOTES

- 1 PROVIDED DEDICATED NETURALS FOR ALL BRANCH CIRCUITS.
- 2 PROVIDE NEW TYPED PANEL SCHEDULES FOR ALL PANELS AFFECTED BY THE PROJECT.
- 3 ALL WIRING IN PATIENT CARE AREAS SHALL MEET THE REQUIRMENTS OF NEC 517.13.
- 4 ALL RECETPACLES LOCATED WITHIN 6' OF THE EDGE OF A SINK SHALL BE GFCI PROTECTED.

# ⊖ SHEET KEYNOTES

- PROVIDE THREE NEW 20A/1P CIRCUIT BREAKERS TO BE INSTALLED IN THE EXISTING EATON PANELBOARD.
- RE-FEED EXISTING FURNACE AND WATER HEATER FROM EXISTING PANEL.
- RE-FEED CONDENSING UNIT ASSOCIATED WITH THIS FURNACE FROM PANEL (E)A-36,38. PROVIDE 30A/2P CIRCUIT.
- 4 EXISTING RECEPTACLE TO BE RE-FED WITH NEW CIRCUIT.

![](_page_42_Picture_15.jpeg)

![](_page_43_Figure_0.jpeg)

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# EVICTINIC DANIEL . "/E/A"

								ΕΧΙΣΙ	IN	IG	Ρ	Α	NE		: (E)A								
VOLT	S/PHA	SE/WIRE: PANEL SIZE & TYPE: MAIN SIZE AND TYPE: FED FROM: CABINET: LOCATION: NOTES:																					
120/20	8V, 3	PH 4 V	VIRE		22" \	W x 6"	D, BOLT-ON	225 AMPERE MA	IN LU	GS					SURFACE								
ACCE	SSOR	ES:			PAN	IEL DI	RECTORY, IDENTI	FICATION, GROU	NDIN	G BAI	R					AIC	RATIN	<b>IG</b> : 0					
СКТ		OCP	1	LO	AD (k	VA)				P	HASE	SE LOAD					LO	AD (k)	/A)		OCP		
NO	ΔΜΡ		BKR	I TG	PWR	co	DESCE			Δ.		3	<u> </u>		DESCE			PWR	I TG	BKR			NO
1	20	1		0.0	0.0	0.0	(EX) LT				-				(EX) BREAK		0.0	0.0	0.0	Brac	1	20	2
3	20	1		0.0	0.0	0.0	(EX) LTS HA		0.0		0.0	0.0			(EX) BREAK	ROOM PLUGS	0.0	0.0	0.0		1	20	4
5	20	1		0.0	0.0	0.0	(EX) LT	S EXAM					0.0	0.0	(EX) BREAK I	ROOM PLUGS	0.0	0.0	0.0		1	20	6
7	20	1		0.0	0.0	0.0	(EX) LT	S EXAM	0.0	0.0					(EX) BREAK I	ROOM PLUGS	0.0	0.0	0.0		1	20	8
9	20	1		0.0	0.0	0.0	(EX) LT	S EXAM			0.0	0.0			(EX) BREAK I	ROOM PLUGS	0.0	0.0	0.0		1	20	10
11	20	1		0.0	0.0	0.0	(EX) F	PLUGS					0.0	0.0	(EX) DR	OFFICE	0.0	0.0	0.0		1	20	12
13	20	1		0.0	0.0	0.0	(EX) F	PLUGS	0.0	0.0					(EX) EXA	MROOMS	0.0	0.0	0.0		1	20	14
15	20	1		0.0	0.0	0.0	(EX) EXA	M ROOM			0.0	0.0			(EX) EXA	M ROOMS	0.0	0.0	0.0		1	20	16
17	20	1		0.0	0.0	0.0	(EX) NURS	E STATION					0.0	0.0	(EX) PA	OFFICE	0.0	0.0	0.0		1	20	18
19	20	1		0.0	0.0	0.0	(E	X)	0.0	0.0					(EX) PA	OFFICE	0.0	0.0	0.0		1	20	20
21	20	1		0.0	0.0	0.0	(EX) EXA	M ROOMS			0.0	0.0			(EX) EXA	M ROOMS	0.0	0.0	0.0		1	20	22
23	20	1		0.0	0.0	0.0	(EX) EXA	M ROOMS					0.0	0.0	(EX) EXA	M ROOMS	0.0	0.0	0.0		1	20	24
25	20	1		0.0	0.0	0.0	(EX) LA	B PLUGS	0.0	0.0					(EX) EXA	M ROOMS	0.0	0.0	0.0		1	20	26
27	20	1		0.0	0.0	0.0	(EX) LA	B - VFC			0.0	0.0			(EX) EXAM F	OOM PLUGS	0.0	0.0	0.0		1	20	28
29	20	1		0.0	0.0	0.0	(EX)	LAB					0.0	0.0	(EX) W	AITING	0.0	0.0	0.0		1	20	30
31	20	1		0.0	0.0	0.0	(EX) LA	B PLUGS	0.0	0.0					(EX) EXA	M PLUGS	0.0	0.0	0.0		1	20	32
33	20	1		0.0	0.0	0.0	(EX) LA	B PLUGS			0.0	0.0			(EX) EXA	AM PLUG	0.0	0.0	0.0		1	20	34
35	20	1		0.0	0.0	0.0	(EX)	LAB					0.0	0.0	SP	ARE	0.0	0.0	0.0		1	20	36
37	20	1		0.0	0.0	0.0	(EX) F	PLUGS	0.0	0.0					SP/	ARE	0.0	0.0	0.0		1	20	38
39	20	1		0.0	0.0	0.0	(EX) F	PLUGS			0.0	0.0			SP/	ARE	0.0	0.0	0.0		1	20	40
41	20	1		0.0	0.0	0.0	(EX) EXAM F	ROOM PLUGS					0.0	0.0	SP/	ARE	0.0	0.0	0.0		1	20	42
43	30	2		0.0	0.0	0.0	(EX) CONDE	ENSING UNIT	0.0	1.6					CO WORK	ROOM A103	1.6	0.0	0.0		1	20	44
45							-	-			0.0	1.3			CO WORK	ROOM A103	1.3	0.0	0.0		1	20	46
47	30	2		0.0	0.0	0.0	(EX) CONDE	ENSING UNIT					0.0	1.6	CO WORK	ROOM A103	1.6	0.0	0.0		1	20	48
49							-	-	0.0	0.2					CO WORK	ROOM A103	0.2	0.0	0.0		1	20	50
51	20	1		0.0	0.0	0.0	(EX) FL	JRNACE			0.0	1.3			CO Room	A105, A106	1.3	0.0	0.0		1	20	52
53	20	1		0.0	0.0	0.0	(EX) FL	JRNACE					0.0	1.1	CO Room	A106, A105	1.1	0.0	0.0		1	20	54
55	20	1		0.0	0.0	0.0	W	H-1	0.0	0.7					CO EXAM I	ROOM A105	0.7	0.0	0.0		1	20	56
57	20	1		0.0	0.1	0.0	DC	P-1			0.1	0.9			CO FUTURE PI	HARMACY A101	0.9	0.0	0.0		1	20	58
59	20	1		0.0	0.0	0.0	FURI	NACE					0.0	0.3	LIGHTING Room	A103, A105, A106	0.0	0.0	0.3		1	20	60
61		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		62
63		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		64
65		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		66
67		1		0.0	0.0	0.0	SP/	ACE			_				SP/	ACE	0.0	0.0	0.0		1		68
69		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		70
71		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		72
73		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		74
75		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		76
77		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		78
79		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		80
81		1		0.0	0.0	0.0	SP/	ACE							SP/	ACE	0.0	0.0	0.0		1		82
83		1		0.0	0.0	0.0	SP/		-						SP/	ACE	0.0	0.0	0.0		1		84
ΤΟΤΑ	LS:						CONNECTEL	D KVA PER PHASE		3	4	4		3		CONNEC	IED I		kVA =		9		
							CONNECTED A	AMPS PER PHASE	2	21	3	0	2	6	AVERAG	GE CONNECTED AN	APS PI	ER PH	ASE =		25		
LIC	GHTIN	G & C		JOUS ECEPT	LOAD ACLE	)S: <b>0.3</b> :S: <b>8.6</b> % :	kVA @ 125% = 0.4 kVA @ 100% = 8.6 0.2 kVA	<b>4 kVA</b> - 1009 <b>6 kVA</b> - FIRS MOT - LAR	% COI ST 10k FOR T GEST	NNEC (VA @ OTAL MOT	TED 0 100 S INC OR C	LOAD %, RE CLUDE ALCU	PLU: MAIN ED IN JLATE	S 25% IDER ALL ED @	% @ 50% OTHER LOADS WIT 125% PER NEC	DIVE AVERAGI H	RSIFIE E AMP	ED TO <sup>-</sup> S PER	ΓAL K PHA	VA = 9 SE = 20	5		
BKR: AF=AI	GF=G RC FA	FCI, G ULT C	GF3=30 SURREI	ma gi NT IN1	FCI CA	APABI JPTER	LE OF BEING LOC R, GA=COMBINATI	KED OUT IN OPE ON OF GROUND	N POS FAUL	SITIO T AN	N, IG= D AR(	=ISOL C FAU	ATEI JLT C	D GRO	OUND, AF=AFCI, ST IIT INTERRUPTER, (	SHUNT TRIP, REI SS=COMBINATION	D=PRO OF SH	VIDE I IUNT 1	RED ( RIP V	COLOR WITH G	ED BI FCI, E	REAKE X=EXI	R, STING

								E	EQUIPMEN	T SCH	IEDUL	E	
EQUIPMENT SC	CHEDULI	EKEY	NOTES	:						GENERAL NOT	ES:		
E - DIVISION 26 Q - FURNISHED WITH EQUIPMENT, INSTALLED BY DIV.26				<ol> <li>PROVIDE MANUAL STARTER WITH THERMAL OVERLOAD AND RELAY FOR ATC/BAS CONTROL.</li> <li>PROVIDE FUSED DISCONNECT ELEVATOR POWER MODULE WITH SHUNT TRIP.</li> <li>INDOOR UNITS FED FROM OUTDOOR UNIT. PROVIDE DISCONNECTS FOR BOTH.</li> </ol>							<ol> <li>LOCATE ELECTRICAL EQUIPMENT IN ACCE SERVING, AND COMPLIES WITH N.E.C. REG</li> <li>CONTRACTOR SHALL BE RESPONSIBLE TO PROTECTION IN ACCORDANCE WITH THE N</li> <li>ELECTRICAL CONTRACTOR SHALL REVIEW PRIOR TO BID.</li> <li>ELECTRICAL CONTRACTOR SHALL REVIEW BY ELECTRICAL CONTRACTOR AND COORD</li> </ol>		
					LOAD	DATA				00	PD	DISCO	
LABEL	QTY	DESCRIPTION	HP	kW	МСА	FLA	v	РН	WIRE AND CONDUIT SIZE	DEVICE	PROVIDED BY		
DCP-1	1	HOT WATER RECIRC PUMP	-	-	-	1.2	120	1	2 #12, #12 GR 0.75" CND	20/1 (E)A E CB			

	F	LOO	RBC	)X	SCHE	EDUL	E					
		AB	BBR	ΞVI	ATIO	NS						
	<u>RATINGS</u>			<u>US</u>	E			<u>CONNECTIO</u>	<u>N</u>			
				<u>FIN</u>	<u>NISH</u>							
NOTES:								<u>COVER</u>				
1 PROVIDE	E ALL REQUIRED HARDWARE FOR COMPLETE	INSTALLA	TION.									
2 INCLUDE	SEPARATION BARRIER BETWEEN SYSTEMS	AND POWE	ER.									
		,		1								
I ID	DESCRIPTION		DATA	AV	FURNITURE	RATINGS	USE	CONNECTION	COVER	FINISH	MANUFACTURERS	NOTES

# CKT NO 20

# BRANCH CIRCUIT CONDUCTOR AND CONDUIT SIZING TABLE

AMPACITY/VULTAGE	LENGIH	(PHASE, NEUTRAL AND GR)	CONDULT SIZE
20A/120V	0' - 60'	#12 AWG	0.75" Ø
20A/120V	60' - 95'	#10 AWG	0.75" Ø
20A/120V	95' - 150'	#8 AWG	1" Ø
20A/120V	150' - 240'	#6 AWG	1.25" Ø
20A/277V	0' - 140'	#12 AWG	0.75" Ø
20A/277V	140' - 220'	#10 AWG	0.75" Ø
20A/277V	220' - 350'	#8 AWG	1" Ø
20A/277V	350' - 550'	#6 AWG	1.25" Ø

# NOTES:

1. WIRE SIZING IS BASED ON COPPER CONDUCTORS SUPPLYING A 20A, 120V CIRCUIT AT THE INDICATED VOLTAGE, ASSUMED TO BE 80% LOADED (16A), WITH MAXIMUM VOLTAGE DROP OF 3% AT THE LOAD.

2. DOWN-SIZED WIRE AT DEVICE/LOAD AS REQUIRED AND TERMINATE CONDUCTORS IN A SAFE AND CODE COMPLIANT MANNER.

3. CONDUIT SIZE IS BASED ON A MAXIMUM OF 3 CIRCUITS PER CONDUIT, EACH WITH A SEPARATE NEUTRAL CONDUCTOR.

# GENERAL SHEET NOTES

- PROVIDE NEMA 3R ENCLOSURES FOR EQUIPMENT LOCATED OUTDOORS. REFER TO PLANS FOR EQUIPMENT LOCATIONS.
- REFER TO PLANS FOR CONSTRAINTS ON PHYSICAL DIMENSIONS AND CLEARANCE REQUIREMENTS OF EQUIPMENT. PROVIDE EQUIPMENT DIMENSIONS THAT FALL WITHIN THE CONSTRAINTS OF EACH SPECIFIC LOCATION.
- ALL EQUIPMENT SHALL BE CONSTRUCTED AND BRACED FOR THE SEISMIC CONDITIONS OF THE PROJECT. REFER TO ELECTRICAL SPECIFICATIONS FOR
- PROVIDE PERFORMANCE TESTING FOR GROUND-FAULT PROTECTION SYSTEMS ON SITE WITH A WRITTEN RECORD OF THIS TEST SUBMITTED TO THE AUTHORITY HAVING JURISDICTION PER NEC 230.95(C).
- SHEET KEYNOTES

REQUIREMENTS.

DEMOLISH EXISTING PANEL AND BRANCH CIRCUITS. PULL FEEDER BACK TO A NEW PULL BOX IN 1ST FLOOR CEILING FOR FUTURE USE. NOTE LOCATION ON AS-BUILTS.

# COPPER CONDUCTOR AND CONDUIT SCHEDULE

SUBSCRIPT (NOTE 5)

CONDUCTOR AND CONDUIT SCHEDULE NOTES CONDUCTORS SHOWN ARE SHOWN FOR EACH CONDUIT WITH MODIFICATIONS AS NOTED IN NOTE 5. ALL CONDUCTORS SHOWN ARE THWN UNLESS

(E.G.)50

- OTHERWISE NOTED. PROVIDE EQUIPMENT GROUND CONDUCTORS PER TABLE 250-122 WHEN
- CIRCUIT BREAKERS ARE SIZED GREATER THAN AMPERE RATING SHOWN IN TABLE. PROVIDE #10 NEUTRALS FOR MULTIWIRE BRANCH CIRCUITS SERVING
- COMPUTERS. GROUND (G) CONDUCTOR MAY BE DELETED ON SERVICE ENTRANCE
- CONDUCTORS. SYMBOL SUBSCRIPTS:

- "2N": INCLUDE TWO NEUTRAL CONDUCTORS SIZED AS SCHEDULED FOR PHASE AND NEUTRAL CONDUCTORS WHERE THE CONDUCTOR IS #1/0 OR LARGER. INCLUDE A SINGLE 200% RATED CONDUCTOR THAT IS TWICE THE AMPACITY OF THE SCHEDULED PHASE AND NEUTRAL CONDUCTOR WHERE THE CONDUCTOR IS BELOW #1/0 IN SIZE.
- "CI": PROVIDE CIRCUIT INTEGRITY CABLE; TYPE TWO-HOUR FIRE RESISTIVE CABLES IN CONDUIT OR PROVIDE FEEDER ENCASED IN CONCRETE.
- "FG" FULL SIZE GROUND, SIZE EQUIPMENT GROUNDING CONDUCTOR TO BE SAME SIZE AS THE PHASE CONDUCTORS.
- "HH": NEUTRAL CURRENTS EXIST DUE TO HIGH HARMONIC "NONLINEAR" LOADS. CURRENT CARRYING CONDUCTORS DERATED ACCORDINGLY. PROVIDE THE IG/HH SIZE FOR THE EQUIPMENT GROUNDING CONDUCTOR.
- "IG": INCLUDE IG (INSULATED/ISOLATED GROUND CONDUCTOR) SCHEDULED ALONG WITH THE GROUND OF EQUIPMENT GROUND CONDUCTOR.
- "MC": PROVIDE FEEDER IN METAL-CLAD CABLE; TYPE MC IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.
- "SE": SUBSTITUTE "SE" CONDUCTOR FOR "G" CONDUCTOR SHOWN, WHICH IS SIZED FOR THE GROUNDING OF THE SECONDARY OF THE SEPARATELY DERIVED SYSTEM.

"SER": PROVIDE SERVICE-ENTRANCE CABLE; TYPE SE OR SER IN PLACE OF SINGLE CONDUCTORS IN CONDUIT.

6. RACEWAY ONLY. CONDUCTORS PROVIDED BY UTILITY.

		НН	CONDUIT	CONDO	CUTOR (N	NOTE 1)			
SYM	AMP	AMPS	SIZE	QTY	SIZE	G	IG/HH	SE	NOTE
1C	20	-	0.75	2	12	12	12	8	2
2C	20	-	0.75	3	12	12	12	8	2
3C	20	24	0.75	4	12	12	12	8	2
4C	30	-	0.75	2	10	10	10	8	2
5C	30	-	0.75	3	10	10	10	8	2
6C	30	32	0.75	4	10	10	10	8	2
7C	40	-	1	2	8	10	8	6	2
8C	40	-	1	3	8	10	8	6	2
9C	40	44	1	4	8	10	8	6	2
10C	55	-	1	2	6	10	8	4	2
11C	55	-	1	3	6	10	8	4	2
12C	55	60	1.25	4	6	10	8	4	2
13C	70	-	1	2	4	8	4	2	2
14C	70	-	1.25	3	4	8	4	2	2
15C	70	76	1.25	4	4	8	4	2	2
16C	85	-	1.25	2	3	8	3	2	2
17C	85	-	1.25	3	3	8	3	2	2
18C	85	92	1.25	4	3	8	3	2	2
19C	95	-	1.25	3	2	8	2	2	2
20C	95	104	1.5	4	2	8	2	2	2
21C	130	-	1.5	3	1	6	2	2	2
22C	130	116	1.5	4	1	6	2	2	2
23C	150	-	2	3	1/0	6	2	1/0	2
24C	150	136	2	4	1/0	6	2	1/0	2
28C	200	180	2.5	4	3/0	6	2	2/0	2
29C	230	-	2.5	3	4/0	4	2	2/0	2
30C	230	208	2.5	4	4/0	4	2	2/0	2
34C	310	280	3	4	350	3	1/0	3/0	2
35C	380	-	3.5	3	500	3	3/0	3/0	2
37C	400	-	2 EA 2	3	3/0	3	3/0	3/0	2
38C	400	360	2 EA 2.5	4	3/0	3	3/0	3/0	2
41C	620	-	2 EA 3	3	350	1/0	4/0	3/0	2
42C	620	560	2 EA 3	4	350	1/0	4/0	3/0	2
52C	1240	1120	4 EA 3	4	350	3/0	4/0	3/0	4
53C	1675	1520	5 EA 4	4	400	4/0	4/0	4/0	4
55C	2660	2408	7 FA 4	4	500	350	350	350	4

ESSIBLE LOCATION, SUCH THAT IT IS WITHIN SIGHT OF THE EQUIPMENT IT IS	
QUIRED CLEARANCES.	
O COORDINATE AND SIZE FEEDER, STARTER, DISCONNECT AND OVERCURRENT	
MANUFACTURER'S RECOMMENDATIONS OF ACTUAL EQUIPMENT SUPPLIED.	
W OTHER DIVISION DRAWINGS FOR ANY ADDITIONAL REQUIREMENTS	
W OTHER DIVISION SUBMITTALS FOR ANY EQUIPMENT REQUIRING CONNECTION	
RDINATE ALL REQUIREMENTS PRIOR TO ROUGH-IN.	

)	NNECT	МОТОР		LER	NEMA	
)	DEVICE	PROVIDED BY	DEVICE	SIZES	ENCLOSURE RATING	NOTES
	TOGGLE SWITCH	Q	-	-	-	

![](_page_43_Picture_43.jpeg)

![](_page_43_Figure_44.jpeg)

![](_page_43_Picture_45.jpeg)

![](_page_43_Picture_46.jpeg)

![](_page_44_Figure_0.jpeg)

# GENERAL SHEET NOTES

⊖ SHEET KEYNOTES

![](_page_44_Picture_7.jpeg)

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WIRING	G LEGEND
	- LINE VOLTAGE WI
	- 0-10V WIRING
	- CAT5E CABLING
	- WIRING BY OTHER
-oc	► TMP SEGMENT NETWORK CABLIN
ID	
TO B AUTO SYSTE	UILDING MATION IM (BAS)

# LIGHTING/SPACE CONTROL TYPE SCHEDULE

	APPROVED MANUFACTURERS	LIGHTING CONTROL ID	GENERAL NOTES								GEN	IERAL NOTES							
NG	1. WATTSTOPPER (BASIS OF DESIGN)	1. # = NUMBER OF ZONES	1. COORDINATE INIT	IAL PROGRAMMII	NG WITH OWNER AND MODI	Y CONTROL TIM	IES AND OPERATION	AS REQUESTED E	BY OWNER.		5.	REFER TO PLAN	S FOR LOCATIO	ONS AND QUANT	TITIES OF DEVIC	ES.			
	2. NLIGHT	2. D = DIMMING, S = SWITCHING	2. PROVIDE FINE TU	2. PROVIDE FINE TUNING PROGRAMMING AND ADJUSTMENTS UPON REQUEST BY OWNER WITHIN FIRST 6 MONTHS AFTER SUBSTANTIAL COMPLETION.							l. 6.   PR	6. INSTALL ONE OF EACH CONTROL TYPE WITH PROGRAMMING, ADJUST, AND OBTAIN OWNERS APPROVAL PRIOR TO PROGRAMMING THE REMAINING CONTROLS.							
	3. HUBBELL BUILDING AUTOMATION	3. P = DAYLIGHT PHOTOCELL	3. PROVIDE CUSTON	1IZED ENGRAVED	PERMANENT BUTTON LABE	LS ON EACH SW	VITCH, LABEL TO MAT	CH BUTTON LABE	L ID OR AS DIRE	ECTED BY OWNE	ER.								
	4. GREENGATE	4. L = PLUG LOAD CONTROLLER	4. PART NUMBERS S	HOWN ARE BASE	ED ON WATTSTOPPER AS TH	E BASIS OF DES	GIGN. ALL APPROVED	MANUFACTURER		TO MEETING AL	L VI	7. WIRING MAY VARY BETWEEN MANUFACTURERS. CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED WIRING THAT WILL BOTH MEET THE MANUFACTURERS REQUIREMENTS AND MATCH WITH THE SHOWN SYSTEM.							
		5. # = INSTANCE	PROVIDE A SYSTEM	JNCTIONS AND CAPABILITIES OF THE BASIS OF DESIGN SYSTEM AND PRODUCTS. FAILURE TO MEET THESE SHALL REQUIRE THE CONTRACTOR TO ROVIDE A SYSTEM THAT DOES AT NOT ADDITIONAL COST.							8.   PA CC	8. PROVIDE COMPLETE SHOP DRAWING SUBMITTALS INCLUDING OCCUPANCY SENSOR LAYOUT AND COVERAGE PATTERNS. PROVIDE ADDITIONAL SENSORS AS REQUIRED FOR 100% COVERAGE OF SPACES WITH OCCUPANCY SENSOR CONTROL.							
				LIGHTING	DAYLIGHT	BAS AUX													
	DETAIL		LIGHTS ON LIGHTS C CONTROL CONTRO	OFF CONTROL	SENSOR TIME DELA SETTING (FC) TO OFF (MII	Y RELAY I.) SIGNAL	PLUG LOAD CONTROLLER	NETWORKED CONTROLS	BUTTON_1	BUTTON_2	BUTTON_3	BUTTON_4	BUTTON_5	BUTTON_6	BUTTON_7	BUTTON_8	BUTTON_9	NOTES	
							1				[	1		1	1				
IED LAY		ER (TYP) 1-BUTTON DIMMING SWITCH LMDM-101	MANUAL & MANUAL ( OCCUPANCY OCCUPAN	ICY 0-10V	- 15	RELAY CLOSED ON OCCUPANCY		-	FUNCTION: PRESS TOP-ON, HOLD TOP-RAISE LABEL ID: TOP- "ON/RAISE" BOTTOM-"OFF/ LOWER"		-	-	-	-	-	-	-		
	O O OCCUPANCY SENSOR LMDC-100																		

![](_page_45_Figure_6.jpeg)

# INTERIOR LIGHTING FIXTURE SCHEDULE

# GENERAL NOTES

. SUBSTITUTIONS AND/OR EQUAL FIXTURES MUST RECEIVE APPROVAL PRIOR TO BIDDING, THEY MUST BE SUBMITTED TO THE ENGINEER NO LESS THAN 2 WEEKS PRIOR TO BID OPENING.

2. SAMPLES MUST BE PROVIDED FOR ANY AND ALL FIXTURES UPON A/E REQUEST PRIOR TO RELEASING FIXTURES.

3. ALL FIXTURES SHALL BE LISTED AND APPROVED FOR THEIR INTENDED USE AND LOCATION.

4. VERIFY THE PROPER MOUNTING KITS OR ACCESSORIES TO FACILITATE INSTALLATION AS SHOWN AT EACH LOCATION ON THE DRAWINGS.

5. COMPLY WITH THE "INTERIOR LIGHTING" SECTION OF THE SPECIFICATIONS.

6. ALL LIGHT FIXTURES TO BE EITHER "DLC" OR "LIGHTING FACTS" LISTED OR TO BE APPROVED BY ARCHITECT/ENGINEER AND OWNER.

7. CONTRACTOR ALLOWANCE PRICES ARE ACCURATE WHEN THIS JOB WAS SPECIFIED, CONTRACTOR AND ELECTRICAL DISTRIBUTOR SHALL VERIFY THIS ALLOWANCE AND REPORT ANY PROBLEMS TO THE ENGINEER BEFORE THE BID. ALLOWANCE PRICE MAY OR MAY NOT INCLUDE LAMP(S) OR FREIGHT AS NOTED, AND DO NOT INCLUDE ANY TAXES.

			LUMINAIRE			D	RIVER		
DESCRIPTION	SIZE (NOMINAL)	DELIVERED DIRECT LUMENS	DELIVERED INDIRECT LUMENS	COLOR TEMP	CRI	TYPE	VOLTAGE	WATTS	MANUFACTURER (CATALOG SERIES)
4' LED FLAT PANEL, GRID LAY-IN G, RECESSED	LENGTH: 4' - 0" WIDTH: 2' - 0" DEPTH: -	4,300		3500K		0-10V DIMMING (1%)	120/277	50	DAYBRITE (2FPZ43L8354DSUNV DIM) LITHONIA (EPANL) TRULY GREEN SOLUTIONS (882440-35-S-F)
4' LED FLAT PANEL, GRID LAY-IN G, RECESSED	LENGTH: 4' - 0" WIDTH: 2' - 0" DEPTH: -	4,300		3500K		0-10V DIMMING (1%)	120/277	50	DAYBRITE (2FPZ43L8354DSUNV DIM) LITHONIA (EPANL) TRULY GREEN SOLUTIONS (882440-35-S-F)
4' LED FLAT PANEL, GRID LAY-IN G, RECESSED	LENGTH: 4' - 0" WIDTH: 2' - 0" DEPTH: -	6,700		3500K		0-10V DIMMING (1%)	120/277	60	DAYBRITE (FGR24T3560WDUNV DRY SILVER WHITE) LITHONIA (EPANL) TRULY GREEN SOLUTIONS (882440-35-S-F)

![](_page_45_Picture_26.jpeg)

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![](_page_45_Picture_28.jpeg)

![](_page_45_Picture_29.jpeg)

![](_page_45_Figure_30.jpeg)

INTERIOR LIGHTING FIXTURE SCHEDULE

EL601

![](_page_46_Figure_0.jpeg)

# GENERAL SHEET NOTES

⊖ SHEET KEYNOTES

![](_page_46_Picture_7.jpeg)