# VICINITY MAP



# MATERIALS LE

EXIST CONS
ASPH/ (SECT
EARTH (PLAN
GRAN (SECT
STRU( (SECT
SAND (SECT
CONC (PLAN
BRICK
CONC (PLAN
ENGIN (PLAN
MORT. (SECT
STEEL (SECT
WOOD (SECT
WOOD (SECT
WOOD
WOOD (SECT
INSUL (PLAN
INSUL (PLAN
STUCO (SECT
STUCO (ELEV)
GYPSI (REFL

EGEND
EXISTING CONSTRUCTION
ASPHALT PAVING (SECTION)
EARTH (PLAN & SECTION)
GRANULAR FILL (SECTION)
STRUCTURAL FILL (SECTION)
SAND (SECTION)
CONCRETE (PLAN & SECTION)
BRICK VENEER
CONCRETE MASONRY UNITS (CMU) (PLAN & SECTION)
ENGINEERED STONE (PLAN & SECTION)
MORTAR NET (SECTION)
STEEL (SECTION)
WOOD BLOCKING (CONTINUOUS) (SECTION)
WOOD BLOCKING (INTERMITTENT) (SECTION)
WOOD SHEATHING
WOOD (FINISH) (SECTION & ELEVATION)
INSULATION (FIBROUS) (PLAN & SECTION)
INSULATION (RIGID) (PLAN & SECTION)
STUCCO (SECTION)
STUCCO (ELEVATION)
GYPSUM WALL BOARD (GWB) (REFLECTED CEILING PLAN)

## SYMBOLS LEGEND RO<u>OM NA</u>ME ROOM NUMBER A202A (PLAN AND SECTION) DOOR NUMBER D220A (MATCHES ROOM NO., WITH LETTER SUFFIX FOR MULTIPLE DOORS) (PLAN) WALL TYPE (PLAN) NEW COLUMN GRID LINE 0 (PLAN, SECTION, DETAIL OR ELEVATION) EXISTING COLUMN GRIDLINE \_ \_\_ \_ \_ (PLAN, SECTION, DETAIL OR ELEVATION) ? KEY NOTE (27) WINDOW / FRAME TYPE ✓1 View Nam SECTION PAGE REFERENCE | A1-1 | 1/8" = 1'-0" (PLAN, SECTION, DETAIL OR ELEVATION) ELEVATION OR DETAIL NUMBER BUILDING SECTION INDICATOR REFERENCE (PLAN, SECTION, OR ELEVATION) WALL SECTION INDICATOR REFERENCE \_\_\_\_\_ (PLAN, SECTION, OR ELEVATION) ELEVATION INDICATOR REFERENCE (SECTION, & ELEVATION) DIMENSION LINES NEW CONTOUR EXISTING CONTOUR ####' HIDDEN LINE \_ \_ \_ \_ \_ \_ (PLAN, SECTION, DETAIL OR ELEVATION) OVERHEAD OBJECT \_\_\_\_\_ (PLAN) CENTER LINE \_\_\_\_\_ (PLAN, SECTION, DETAIL OR ELEVATION) MATCH LINE \_\_\_\_. (PLAN, SECTION, DETAIL OR ELEVATION) LIMITS OF CONSTRUCTION \_ . . . . . . \_ (PLAN, SECTION, DETAIL OR ELEVATION) DEMOLISHED ITEMS \_\_\_\_\_

(PLAN OR DETAIL)



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	INDEX TO DRAWIN GENERAL INFORMATION SHEETS T1-1 TITLE SHEET ARCHITECTURAL SHEETS
ne	A1-1 FLOOR PLAN, ROOF PLAN, SE STRUCTURAL SHEETS S1-0 GENERAL NOTES AND DETAIL S1-1 FOUNDATION PLAN S1-2 ROOF FRAMING PLAN MECHANICAL SHEETS M0-1 MECHANICAL COVER SHEET M1-1 MECHANICAL PLAN
DINTS IN RECTION F DETAIL DINTS IN RECTION F DETAIL	M2-1 MECHANICAL SCHEDULES
	39" - 41" GRAB BARS (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GHD) (GH
	NOTES: 1. ALL FIXTUF REFERENC 2. ALL FIXTUF HEIGHTS A 3. ALL FIXTUF NOT APPE, 4. ALL ITEMS PROJECT.

(2)

F F

- 🔨 F

# **REED PARK RESTROOM & BUILDING FACILITIES**

# PROJECT # 23038 ADDRESS FRUITA, CO 09/15/23 CONSTRUCTION DOCUMENTS

# VINGS

, SECTION, ELEVATIONS AND SCHEDULES

ETAILS

PLUMBING SHEETS P0-1 PLUMBING COVER SHEET P1-1 PLUMBING PLAN P2-1 PLUMBING SCHEDULES

ELECTRICAL SHEETS

E0-1 ELECTRICAL COVER SHEET E2-1 ELECTRICLA FLOOR PLAN

E3-1 ELECTRICAL DETAILS AND SCHEDULES E3-2 ELECTRICAL SPECIFICATIONS

EET S



XTURES AND ACCESSORIES ARE TO BE MOUNTED AT BARRIER FREE HTS AS RECOMMENDED BY MANUFACTURER'S SPECIFICATIONS.

IXTURES AND TOILET ACCESSORIES REQUIRED FOR THIS PROJECT MAY APPEAR ON THIS DETAIL. EMS SHOWN ON THIS DETAIL MAY NOT BE REQUIRED FOR THIS

REFLECTING SURFACE

\*\*\* DIMENSION IS TO T.O. SPOUT OUTLET \*\*\*\* DIMENSION IS TO T.O. OPERABLE PARTS

TYPICAL MOUNTING HEIGHTS T1-1 1/4" = 1'-0"

# BUILDING CODE ANALYSIS

CODE JURISDICTION: 2018 IBC, IMC 2021 IPC 2023 NEC 2009 ICC/ ANSI 117.1

OCCUPANCY: UTILITY AND MISCELLANEOUS (U)

OCCUPANT LOADS: STORAGE = WAREHOUSE PER TABLE 1004.5 = 500 GROSS FLOOR AREA = 220 GSF OCCUPANT LOAD = 1

> SINGLE-USE RESTROOMS = QUANTITY: 5 OCCUPANT LOAD = 5

CONSTRUCTION TYPE: CONSTRUCTION TYPICAL OF TYPE I-A STIPULATED BY ARCHITECT.

AUTOMATIC SPRINKLER SYSTEM: NOT SPRINKLED

ALLOWED [IBC 506.2]

BUILDING AREA: ACTUAL TOTAL BUILDING:

1,180 SF UNLIMITED SF

BUILDING HEIGHT:

ACTUAL HEIGHT: 16' - 3"AFF, 1 STORY ALLOWABLE HEIGHT: UNLIMITED HEIGHT [IBC 504.2] FIRE RESISTANCE RATING REQUIREMENTS: (FOR TYPE I-A CONSTRUCTION) [IBC TABLE 601] STRUCTURAL FRAME: 3 HRS BEARING WALLS, EXTERIOR: 3 HRS BEARING WALLS, INTERIOR: 3 HRS NON-BEARING WALLS, EXTERIOR: 1 HRS\* \*1 HR IF < 10 FT FIRE SEPARATION DISTANCE [IBC TABLE 602] NON-BEARING WALLS, INTERIOR: 0 HRS FLOOR CONSTRUCTION: 2 HRS

EXIT TRAVEL DISTANCE:

ROOF CONSTRUCTION: 1 1/2 HRS

FOR (U) OCCUPANCY: 27'-8" FT [WITHOUT SPRINKLER SYSTEM, IBC TABLE 1004.2.4]

# **ABBREVIATIONS**

ADD-X	ADDENDUM NO. X
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATE
ALT-X	ALTERNATE NO. X
АМ	ACOUSTIC MATERIAL
ΔΜ_Χ	
ATTEN	
AVE	AVENUE
AVG	AVERAGE
B.O.	BOTTOM OF
BIT	BITUMINOUS
BLDG	BUILDING
C/L	CENTER LINE
CFM	CEMENT / CEMENTITIOUS
CI	
	CEILING
OLR	
CMU	CONCRETE MASONRY UNIT(S)
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
D	DEEP / DEPTH
DEPT	
DIA / Ø	DIAMETER
DIM(S)	DIMENSION(S)
DN	DOWN
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
FΔ	EACH
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXT	EXTERIOR
F.O.	FACE OF
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FTG	FOOTING
FURN	FURNISHING / FURNITURE
GA	GAGE
GALV	GALVANIZED
GI	GLAZING
GL-X	GLAZING TYPE X
GWB	
ц	
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HVAC	HEATING VENTILATING & AIR CONDITIONIN
ID	INSIDE DIAMETER
ILLUM	ILLUMINATED
INCL	INCLUDED
INSUL	INSULATION
INT	INTERIOR
1	I ONG / I ENGTH
	LAVATORY
111/	

MAS MASONRY MATERIAL MATL MAXIMUM MAX MECH MECHANICAL MFR MANUFACTURER MIN MINIMUM MISC MISCELLANEOUS MO MASONRY OPENING MTD MOUNTED MTL METAL NOT APPLICABLE NA NOT IN CONTRACT NIC NO. NUMBER NRC NOISE REDUCTION COEFFICIENT NTS NOT TO SCALE OC ON CENTER OD OUTSIDE DIAMETER OPNG OPENING OPP OPPOSITE PERF PERFORATED PLAM PLASTIC LAMINATE PLBG PLUMBING PLYWD PLYWOOD PNT PAINT PREFAB PREFABRICATED PREFIN PREFINISHED PT PORCELAIN TILE QT QUARRY TILE QTY QUANTITY RADIUS R RUBBER BASE RB RCP REFLECTED CEILING PLAN REF REFERENCE / REFER TO REFR REFRIGERATOR REINF REINFORCE (D) (ING) REQD REQUIRED RES RESILIENT RFS ROOM FINISH SCHEDULE RO ROUGH OPENING ROW RIGHT OF WAY RTU ROOF TOP UNIT SC SEALED CONCRETE SCHED SCHEDULE (D) SECT SECTION SF SQUARE FEET SIM SIMILAR SPEC SPECIFICATION SQ SQUARE SS STAINLESS STEEL SSM SOLID SURFACE MATERIAL STL STEEL STN STAIN STRUCT STRUCTURAL T&G TONGUE & GROOVE T.O. TOP OF TEMP TEMPORARY TV TELEVISION TYP TYPICAL UNO UNLESS NOTED OTHERWISE VCT VINYL COMPOSITION TILE VERT VERTICAL VIF VERIFY IN FIELD VWC VINYL WALL COVERING W WIDE / WIDTH W/ WITH W/O WITHOUT WOOD WD WOM WALK OFF MATT



Project Team: MKA, CME Drive Doctor 0/16/2003 0:01-5



ABBREVIATIONS					
A.B.	-ANCHOR BOLT	F.O.B.	-FACE OF BRICK	P.T.	-PRESSURE TREATED
ADD'L	-ADDITIONAL	F.O. CONC.	-FACE OF CONCRETE	R.	-RADIUS
ADJ.	-ADJACENT	F.O.W.	-FACE OF WALL	REINF.	-REINFORCEMENT
A.I.S.C.	-AMERICAN INSTITUTE OF	FS.	-FLAT SLAB	REQ'D	-REQUIRED
	STEEL CONSTRUCTION	FT.	-FOOT	RM.	-ROOM
ALT.	-ALTERNATE	FTG.	-FOOTING	SCHED.	-SCHEDULE
ARCH.	-ARCHITECTURAL	F.W.	-FILLET WELD	SECT.	-SECTION
A.S.T.M.	-AMERICAN SOCIETY FOR	GA.	-GAUGE	SHT.	-SHEET
	TESTING & MATERIALS	GAL.	-GALVANIZED	s.d.l.	-SUPERIMPOSED DEAD LOAD
BLDG.	-BUILDING	G.L.	-GLU-LAM BEAM	SIM.	-SIMILAR
BM.	-BEAM	GR.	-GRADE	S.I.	-SNOW LOAD
B.O.	-BOTTOM OF	GR. BM.	-GRADE BEAM	S.L.V.	-SHORT LEG VERTICAL
BOT.	-BOTTOM	H.A.S.	-HEADED ANCHOR STUD	SPC.	-SPACE
BSMT.	-BASEMENI	H.D.G.	-HOT DIPPED GALVANIZED	SPEC.	-SPECIFICATION
BIWN.		HORIZ.		SQ.	-SQUARE
CANT.		H.S.B.		SID.	
CB.		HSS	-HOLLOW STRUCTURAL SECTION	STIFF.	-STIFFENER
CH.		I.D.		SIL.	-STEEL
C.J.	-CONTROL/CONSTRUCTION JOINT		-INSIDE FACE	STOR.	
	-COMPLETE JOINT PENETRATION	IN.			
CLR.	-CLEAR, CLEARAINCE			1.&D. TUV	
C.M.U.		JINI.	-JUINI KID (1.000 lbc.)		
COL.		N K C I		T.U. TVD	
CONC.		N.C.I.			
CONST		LD.			
CONST.				VAR. VEDT	
				VLNI. VIE	
CTRD				V.I.I. W/T	-VERIT IN TILLD
C W				VV I .	
DFT		ΜΔΤΊ	-MATERIAI	6	SYMBOLS
		ΜΔΧ		Ĺ.	CENTER LINE
DIAM	-DIAMETER	MECH	-MECHANICAI	~	
DIM.	-DIMENSION	MID.	-MIDDLF	Ø	DIAMETER
DISCONT.	-DISCONTINUOUS	MIN.	-MINIMUM		
d.l.	-DEAD LOAD	MISC.	-MISCELLANEOUS	$\overline{\mathbf{v}}$	ELEVATION
DWG.	-DRAWING	MTL.	-METAL	Q,	
EA.	-EACH	N.I.C.	-NOT IN CONTRACT	a	
E.F.	-EACH FACE	NO.	-NUMBER	\M//	WITH
EL.	-ELEVATION	NOM.	-NOMINAL	••/	VVIIII
ELECT.	-ELECTRICAL	N.T.S.	-NOT TO SCALE	P	ρι Δτε
ELEV.	-ELEVATOR	0.C.	-ON CENTER	·L	
EQ.	-EQUAL	0.F.	-OUTSIDE FACE	х	BY
E.W.B.	-END WALL BARS	0.D.	-OUTSIDE DIAMETER	Λ	
E.W.	-EACH WAY	O.H.	-OPPOSITE HAND	#	NUMBER
EXIST.	-EXISTING	OPNG.	-OPENING	"	
EXP. JNT.	-EXPANSION JOINT	P.A.F.	-POWDER ACTUATED FASTENERS	۵	АТ
EXT.	-EXTERIOR	PL	-PLATE		
FDN.	-FOUNDATION	P.S.F.	-POUND PER SQUARE FOOT	ф	SOUARE
FIN.	-FINISH	P.S.I.	-POUND PER SQUARE INCH	1	
FLR.	-FLOOR	P.S.L.	-PARALLEL STRAND LUMBER	L	ANGLE

	Р	LYWOOD NAILI	NG SCHEDULE		
USE	PLYWOOD THICKNESS	SPAN/INDE XRATIO	EDGE NAILING	INTERIOR NAILING	HOLD DOWN
WALL	1/2"	24/0	8d @ 6" O.C.	8d @ 12" O.C.	
SLOPED ROOF	5/8"	32/16	8d @ 6" O.C.	8d @ 12" O.C.	

 PLYWOOD FOR ROOFS AND WALL SHEATHING SHALL BE APA GRADE TRADEMARKED CDX W/ EXTERIOR GLUE. LAY UP PLYWOOD W/ FACE GRAIN PERPENDICULAR TO SUPPORTS AND STAGGER JOINTS. ALL NAILING COMMON RING SHANKED NAILS. REFER TO TABLE ABOVE FOR USE REQUIREMENTS.

 OSE REQUIREMENTS.
 OSB SHEATHING MAY BE USED AS AN ALTERNATE TO PLYWOOD W/ PRIOR APPROVAL OF OWNER AND CONTRACTOR. OSB SHEATHING SHALL COMPLY WITH THE APA PLYWOOD DESIGN SPECIFICATION AND SHALL HAVE A SPAN RATING EQUIVALENT TO, OR BETTER, THAN THE PLYWOOD IT REPLACES. ATTACHMENT AND THICKNESS (WITHIN 1/32") SHALL BE THE SAME AS THE PLYWOOD IT REPLACES.

	C.M
1.	PROVIDE #5 @ 32 VERTICAL R
	SOLID. VERTICAL REINFORCE
	TOP OF C.M.U. USE STANDARI
	REINFORCING.
2.	PROVIDE #4 @ 24 VERTICAL F
1	SOLID. PROVIDE BOND BEAM
1	HORIZONTAL JOINTS WITH ST
3.	PROVIDE (2) #5 CONT. VERTION
	2'-0" MINIMUM EACH SIDE OF
4.	LAP ALL VERTICAL REINFORCI
	#4 - MINIMUM OF 2'-0"
	#5 - MINIMUM OF 2'-4"
	#6 - MINIMUM OF 3'-4"
5.	PROVIDE #5 x 4'-0" DOWELS
	WALL VERTICAL REINFORCEM

# 1.U. REINFORCING SCHEDULE

REINFORCING AT 8" C.M.U. GROUT ALL VERTICAL REINFORCING EMENT SHALL EXTEND THROUGH BOND BEAMS TO 2" CLR. BELOW RD "DUR-O-WAL" "LADUR TYPE" @ 16" O.C. HORIZONTAL

REINFORCEMENT AT 6" C.M.U. WALLS. GROUT ALL REINFORCEMENT 1 WITH (1) #6 CONT. AT TOP OF 6" C.M.U. WALLS, AND REINFORCE TANDARD LADDER TYPE REINFORCEMENT. ICAL EACH SIDE OF ALL OPENINGS AND CONTROL JOINTS. EXTEND <sup>5</sup> OPENING. GROUT SOLID. ING AS FOLLOWS:

@ 24 FROM STEMWALLS TO 8" C.M.U. LAP 2'-4" WITH MENT AND GROUT SOLID.

## GENERAL NOTES CONT. . WOOD: A. ALL BEAMS AND HEADERS 2 TO 4 INCHES THICK SHALL BE HEM-FIR NO. 2 AND BETTER WITH Fb = 850 PSI AND E = 1,300,000 PSI.B. ALL BEAMS 5" AND THICKER SHALL BE HEM-FIR NO. 2 WITH Fb = 850 PSI AND E = 1,300,000 PSI. C. ALL POSTS AND COLUMNS 5" AND THICKER SHALL BE HEM-FIR NO. 2 WITH Fb = 850 PSI AND E = 1,300,000 PSI.D. WALL STUDS AND PLATES SHALL BE HEM-FIR IN STUD GRADE OR BETTER W/ Fc=800 PSI, AND E = 1,200,000 PSI.E. GLUE LAMINATED BEAMS: (1) ALL LAMINATED MEMBERS SHALL BE FABRICATED WITH ONE OF THE FOLLOWING SPECIES: DOUGLAS FIR, HEMLOCK, LARCH, OR SOUTHERN PINE. (2) LAMINATED MEMBERS SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE DESIGN AND FABRICATION OF STRUCTURAL GLUED LAMINATED LUMBER. PUBLISHED BY THE A.I.T.C. AND THE APPROPRIATE LUMBER PRODUCER'S ASSOCIATION. (3) LAMINATED MEMBERS SHALL BE FABRICATED AS FOLLOWS: a. BEAMS: --24F-V4 SIMPLE SPAN ---CONTINUOUS AND CANTILEVERS ---------24F-V8 b. COLUMNS: COMBINATION SYMBOL ------(4) LAMINATED MEMBERS SHALL BE BUILT UP USING 2" NOMINAL MATERIAL. LAMINATED MEMBER SIZES NOTED ARE NET. (5) MEMBERS EXPOSED TO VIEW SHALL BE FURNISHED IN "ARCHITECTURAL" APPEARANCE GRADE. MEMBERS TO BE CONCEALED BY FINISH MATERIALS OR CEILINGS MAY BE "INDUSTRIAL" GRADE. (6) ADHESIVES USED SHALL COMPLY WITH THE SPECIFICATIONS AS CONTAINED IN VOLUNTARY PRODUCT STANDARD PS56-73, STRUCTURAL GLUED LAMINATED TIMBER. WET-USE ADHESIVES ARE TO BE USED FOR ALL MEMBERS EXPOSED TO THE WEATHER. 4. STEEL: A. ALL STRUCTURAL STEEL ANGLES, CHANNELS, S SHAPES, AND PLATES SHALL CONFORM TO ASTM 36 (FY = 36 ksi) B. ALL RECTANGULAR OR SQUARE HSS (HOLLOW STRUCTURAL SECTIONS) MEMBERS SHALL CONFORM TO ASTM A500 (GRADE B). ALL ROUND HSS MEMBERS SHALL CONFORM TO ASTM A53 (GRADE B) OR A500 (GRADE B), LATEST EDITIONS. C. STRUCTURAL STEEL SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH LATEST PROVISION OF THE A.I.S.C. STEEL CONSTRUCTION MANUAL. D. ALL WELDERS SHALL HAVE EVIDENCE OF PASSING THE A.W.S. STANDARD QUALIFICATION TESTS. MASONRY: A. ALL REINFORCING IN MASONRY WALLS SHALL BE FULLY ENCLOSED WITH GROUT. USE

A. ALL REINFORCING IN MASONRY WALLS SHALL BE FULLY ENCLOSED WITH GROUT. USE PEA GRAVEL WITH fc = 3,000 PSI.
B. CONCRETE MASONRY SHALL CONSIST OF LIGHTWEIGHT CONCRETE BLOCK WITH A

- CONCRETE MASONRY SHALL CONSIST OF LIGHT WEIGHT CONCRETE BLOCK WITT A COMPRESSIVE STRENGTH OF 1,900 PSI.
  C. FILL ALL VOIDS AND BLOCK CELLS SOLID WITH MORTAR FOR A DISTANCE OF 24" BENEATH AND 12" EACH SIDE OF ALL BEAM REACTIONS OR OTHER CONCENTRATED
- LOADS, UNLESS OTHERWISE SHOWN OR NOTED.
  D. MASONRY IS TO BE LAID IN TYPE "M" OR "S" MORTAR IN ACCORDANCE WITH SECTION 2103 OF THE INTERNATIONAL BUILDING CODE. TYPE "N" MASONRY CEMENT MORTAR IS NOT
- ACCEPTABLE.
  E. MASONRY WALLS MUST BE ADEQUATELY BRACED DURING CONSTRUCTION TO WITHSTAND WIND AND SEISMIC LOADS. BRACING MUST REMAIN IN PLACE UNTIL ROOF (AND FLOOR) DIAPHRAGMS ARE FULLY CAPABLE OF PROVIDING LATERAL SUPPORT.

## 6. FOUNDATIONS:

FOUNDATION DESIGN IS BASED UPON RECOMMENDATIONS BY HUDDLESTON BERRY, L.L.C., JOB #00207-0013. RECOMMENDATIONS IN THIS REPORT SHOULD BE FOLLOWED. A. ALLOWABLE SOILS BEARING PRESSURE-------1,500 PSF SOILS ENGINEER OF RECORD SHALL EXAMINE EXCAVATION TO VERIFY ALLOWABLE BEARING PRESSURE AND SOILS CONDITIONS PRIOR TO CONSTRUCTION.

- 7. ALL DIMENSIONS ON STRUCTURAL DRAWINGS TO BE CHECKED AGAINST ARCHITECTURAL. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH CONSTRUCTION.
- 8. VERIFY ALL OPENINGS THROUGH FLOORS, ROOF, AND WALLS WITH MECHANICAL AND ELECTRICAL REQUIREMENTS.



# TYPICAL MASONRY COLUMN

1" = 1'-0"



BGG too. 255 ESTABLISHED 1996 VEARS 370-242-1058 BLYTHE GROUP + CO.
Lindauer • Dunn, Inc. STRUCTURAL ENGINEERS 802 Rood Avenue Grand Junction, CO 81501 970-241-0900 www.lindauerdunn.com
REED PARK RESTROOM & BUILDING FACILITIES
250 S. ELM ST. FRUITA, CO 81521
GENERAL NOTES & DETAILS
FOR CONSTRUCTION
REV. DESC. DATE:
DATE: 09/14/23
PROJECT #: 23.048
SHEET #: <b>\$1-0</b>























## HVAC & DUCTWORK SYMBOLS

SECTION THROUGH RETURN DUCT SECTION THROUGH EXHAUST AIR DUCT SECTION THROUGH SUPPLY OR OUTSIDE AIR DUCT FIRE / SMOKE DAMPER SMOKE DAMPER SUPPLY OR OUTSIDE AIR DUCT ACCESS DOOR (BOTTOM OR SIDE) ACOUSTICALLY LINED DUCT FIRE DAMPER, SMOKE DAMPER, FIRE/SMOKE DAMPER MANUAL VOLUME DAMPER INCLINED DROP IN DIRECTION OF ARROW INCLINED RISE IN DIRECTION OF ARROW TRANSITION, RECTANGULAR TO ROUND

FLEXIBLE DUCT

IN-LINE FAN

TRANSITION, RECTANGULAR

SPIN-IN COLLAR INTO ADAPTER ON TOP OF DUCT

CEILING SUPPLY AIR REGISTER/GRILLE

SIDEWALL SUPPLY AIR REGISTER (SR)

ELBOW TURNED DOWN

ELBOW TURNED UP

ELBOW, RADIUS TYPE

ELBOW, SQUARE OR RECTANGULAR TYPE WITH AIRFOIL TURNING VANES

CEILING RETURN AIR REGISTER (RR)

SIDEWALL RETURN AIR REGISTER (RR)

OPEN END DUCT

FLEXIBLE CONNECTION

LINE	DESIGNATION SYMBOLS
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CA	COMPRESSED AIR
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
D	DRAIN
HPR	HEAT PUMP RETURN
HPS	HEAT PUMP SUPPLY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
G	NATURAL GAS
RH	REFRIGERANT HIGH PRESSURE VAPOR
———— R ————	REFRIGERANT LIQUID AND VAPOR LINE
RS	REFRIGERANT SUCTION / VAPOR
SMR	SNOWMELT RETURN
SMS	SNOWMELT SUPPLY
V	VENT PIPING

## **RESPONSIBLE DIVISION:**

UNLESS OTHERWISE INDICATED ALL F AND OTHER MECHANICAL EQUIPMENT IN PLACE AND WIRED AS FOLLOWS:	IEATING, VENTI I, MOTORS, ANE	LATING, AIF OCONTROL	R CONDITION S SHALL BE	NING, PLUMBING, FURNISHED, SET
ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	-
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

SUBSCRIPT FOOTNOTES: 1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC

AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS. 2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE

FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

## ABBREVIATIONS:

44" - NUCLU		DIA	DIAMETER
-INISH	ED FLOOR TO CENTER OF DEVICE	DIAG	DIAGRAM
A	AMPS	DIFF	DIFFERENTIAL
A.D.	ACCESS DOOR	DISCH	DISCHARGE
AAV	AIR ADMITTANCE VALVE	DIV	DIVISION
ABV	ABOVE	DN	DOWN
AC	AIR CONDITIONING UNIT	DS	DUCT SILENCER
AC	ABOVE COUNTER	DWG	DRAWING
AD	AREA DRAIN (SEE SYMBOLS)	אס	
A.F.C.	ABOVE FINISHED CEILING		
A.F.G.	ABOVE FINISHED GRADE		
AIC	AMPERE INTERRUPTING		EXHAUST AIR GRILLE/REGISTER
CAPAC	ITY	EAI	
AFCI	ARC FAULT CIRCUIT	EC	ELECTRICAL CONTRACTOR
NTERF	RUPTERS	ECC	ECCENTRIC
A.F.F.	ABOVE FINISHED FLOOR	EF	EXHAUST FAN
AHU	AIR HANDLING UNIT	EFF	EFFICIENCY
ALUM	ALUMINUM	EL	ELEVATION
AP	ACCESS PANEL OR DOOR	ELEC	ELECTRIC
ATS	AUTOMATIC TRANSFER SWITCH	ELEV	ELEVATOR
AV	AUDIO / VIDEO	EM	EMERGENCY FUNCTION
AVG	AVERAGE	ENT	ENTERING
AWG		EMT	ELECTRIC METALLIC TUBE
RAS		EQ	EQUAL
		FOLIP	FOLIPMENT
BB	BASEBUARD		
BD			
BFP	BACK FLOW PREVENTOR	EO	
BL	BOILER	ESP	EXTERNAL STATIC PRESSURE
BLDG	BUILDING	ΕI	EXPANSION TANK
BLW	BELOW	EWC	ELECTRIC WATER COOLER
BOB	BOTTOM OF BEAM	EWT	ENTERING WATER
BOD	BOTTOM OF DUCT	TEMPE	
BOP	BOTTOM OF PIPE	EX	EXHAUST
BSMT	BASEMENT	EXPAN	EXPANSION
BTU	BRITISH THERMAL UNIT	EXT	EXTERNAL
С	CHILLER	F	DEGREES FAHRENHEIT
	COMBINATION ARC FAULT	FA	FREE AREA
	CIRCUIT INTERRUPTERS	FC	FAN COIL UNIT
CAP	CAPACITY	FC	FOOTCANDLE
СВ	CIRCUIT BREAKER	FCV	FLOW CONTROL VALVE
CBV	CIRCUIT BALANCING VALVE	FD	FIRE DAMPER
ССТ		FD	FLOOR DRAIN
001	TEMPERATURE	FIN	FINISHED
СКТ	CIRCUIT	FLA	FULL LOAD AMPS
CFH	CUBIC FEET PER HOUR	FLEX	
CFM	CUBIC FEET PER MINUTE	FIR	FLOOR
CHWR			
		FOB	
		FUI	
		FP	
		FP	FIRE PUMP
CLG	CEILING	FPM	FEET PER MINUTE
CMU	CONCRETE MASONRY UNIT	FPS	FEET PER SECOND
CO	CLEAN OUT	FS	FLOW SWITCH
COL	COLUMN	FSD	FIRE/SMOKE DAMPER
COMP	COMPRESSOR	FT	FEET
CONC	CONCRETE	FXC	FLEXIBLE CONNECTION
COND	CONDENSATE	GND	GROUND
CONN	CONNECTION	GA	GAUGE
CONT	CONTINUATION	GAL	GALLON
CONTR	CONTRACTOR	GALV	GALVANIZED
CRI		GEC	
ст		CONDU	JCTOR
ст Ст		GFCI /	GFI GROUND FAULT CIRCUIT
		INTERF	RUPTER
		GC	GENERAL CONTRACTOR
UU	COPPER	GPH	GALLONS PER HOUR
CUH	CABINET UNIT HEATER	GPM	GALLONS PER MINUTE
CVB	CONSTANT VOLUME BOX	GRS/I F	
CWR	CONDENSER WATER RETURN	H 20	WATER
CWS	CONDENSER WATER SUPPLY	HR	HOSE BIBB
DB	DRY BULB	מה	
DEPT	DEPARTMENT		
DF	DRINKING FOUNTAIN	n۲	

## SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO BID TIME.

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE NEW MEXICO BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HTR	HEATER
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HX	HEAT EXCHANGER
HZ	HERTZ
ID	
IG	ISOLATED GROUND
JBOX	
K	KELVIN
KW	KILOWATT
KVA	KILO VOLT - AMPS
L	LENGTH
LAT	LEAVING AIR TEMPERATURE
LV	LAVATORY
LB	POUND
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LIN	LINEAR
LIQ	
IWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MD	MOTORIZED DAMPER
MDP	MAIN DISTRIBUTION PANEL
MED	MEDIUM
MFR	MANUFACTURER
MIN	
MISC	MISCELLANEOUS
MOCE	
PROT	ECTION
MTD	MOUNTED
MUA	MAKE-UP AIR UNIT
Ν	NEUTRAL
NC	NORMALLY CLOSED
NEG	NEGATIVE
NIC	
NL NOT S	SWITCH
NO	NORMALLY OPEN
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
000	OCCUPIED
OCP	
07	OUNCE
PBD	PARALLEL BLADE DAMPER
PD	PRESSURE DROP
PH	PHASE
POS	POSITIVE PRESSURE
POS	POINT OF SALES
PRV	PRESSURE REDUCING VALVE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TRANSMITTER

PTAC CONDI	PACKAGED TERMINAL AIR TIONER
٧	PLUG VALVE
PVC	POLYVINYL CHLORIDE
ΩTY Ω	
	REFURN AIR GRILLE / REGISTER
RD	ROOF DRAIN
REL	RELIEF
REQD	REQUIRED
RF	RETURN FAN
RH	
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR GRILLE / REGISTER
SC	SHORT CIRCUIT
SCA	SHORT CIRCUIT AVAILABLE
SCCR RATINO	SHORT CIRCUIT CURRENT
SCH	- SCHEDULE
SD	SMOKE DAMPER
SEF	SMOKE EXHAUST FAN
SF	SUPPLY FAN
SH	SENSIBLE HEAT
SH SD	
SPD	SURGE PROTECTION DEVICE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SS	SAFETY SHOWER
STD	STANDARD
SIL	SIEEL
510	STOTEM
ГЕМР	TEMPERATURE
remp rr	TEMPERATURE TRANSFER GRILLE / REGISTER
remp rr rr	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT
remp rr rr rr	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER
remp rr rr rr rtb rermi	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD
TEMP TR TR TT TTB TERMII	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL
remp Fr Fr Ft Ftb Fermi Fyp Fx	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER
remp Fr Fr Ft Ftb Fermi Fyp Fx JC	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR
remp rr rr tt ttb rermi ryp tx JC JH	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER
remp fr fr ft ft fermi fyp fx JC JH JNO	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE
TEMP TR TR TT TTB TERMI TYP TX JC JH JNO JNOCO IR	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED
remp fr fr ft ft ft fermi fyp fx jc jr jn jn jn jn o jr jr jr	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS
remp fr fr ft ft ft ft ft ft jt jt jt jt jt jt jt jt jt jt jt jt jt	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE
remp fr fr ft ft ft fermi fyp fx JC JH JNO JNO JNO JNO JNO JNO JNO JNO JNO JNO	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE
TEMP TR TR TT TTB TERMI TYP TX JC JH JNOCO JR / / A /AV	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT
TEMP TR TR TT TTB TERMI TYP TX JC JH JNO JNO JR / / A / A / A / A / / A / / A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE
remp fr fr ft ft ft ft ft ft jr jr jr jr jr jr jr jr jr jr jr jr jr	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW
TEMP TR TR TT TERMI TYP TX JC JH JNO JNO JR /A /A /A /A /A /A /A /A /A /A /A /A /A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF
TEMP TR TR TT TERMI TYP TX JC JH JNOCO JR / A /A /A /A /A /A /A /A /A /A /A / /A / / RF / / TR // / / RF // / / / / / / / / / / / / /	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH
TEMP TR TR TT TERMI TERMI TYP TX JC JH JNO JR JNO JR /A /A /A /A /A /A /A /A /A /A /A /A /A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS
TEMP TR TR TT TTB TERMII TYP TX JC JH JNOCO JR / A /AV /AV /AV /FD /RF /OLT /TR // N//	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNDERCUT DOOR UNIT HEATER UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH
TEMP TR TR TT TTB TERMI TYP TX JC JH JNO JR / A /A /A /A /A /A /A /A /A /A /A /A /A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT
TEMP TR TR TT TERMII TYP TX JC JH JNO JR /A /AV /FD /RF /OLT /TR // / // / // // // // // // // // // /	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB
TEMP TR TR TT TTB TERMII TYP TX JC JH JNO C JR /A /A /A /A /A /A /A /A /A /A /A /A /A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET
TEMP TR TR TT TTB TERMII TYP TX JC JH JNO CO JR /A /AV /FD /TR /AV /FD /TR /V/ W/ W/ W/ W/ W/ W/ W/ W/ W/ W/ W/ W/ W/	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE
TEMP TR TR TT TTB TERMII TYP TX JC JH JNOCO JR /A /AV /AV /AV /AV /AV /AV /AV /AV /AV	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF
TEMP TR TR TT TTB TERMII TYP TX JC JH JNO JR /A /AV /FD /AV /FD /AV /FD /AV /FD /AV /FD /VF /VTR N/ N/ N/O N/ N/O N/O N/O N/O N/O N/O N/	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF IN-USE
TEMP TR TR TT TTB TERMII TYP TX JC JH JNOCO JR /A /AV /AV /AV /AV /AV /AV /AV /AV /AV	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS AL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF IN-USE WITHSTAND RATING
TEMP TR TR TT TTB TERMII TYP TX JC JH JNO JR /A /AV /FD /AV /FD /AV /FD /AV /FD /AV /FD /AV /FD /AV /FD /AV /FD /VOLT /TR // A /A /AV /FD // A // A // A // A // A // A // A	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE CUNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF IN-USE WITHSTAND RATING TRANSFORMER
TEMP TR TR TT TTB TERMII TYP TX JC JH JNOCO JR /A /AV /FD /AV /AV /FD /AV /AV /FD /AV /AV /AV /AV /AV /AV /AV /AV /AV /AV	TEMPERATURE TRANSFER GRILLE / REGISTER TAMPER RESISTANT TEMPERATURE TRANSMITTER TELECOMMUNICATIONS NAL BACKBOARD TYPICAL TRANSFORMER UNDERCUT DOOR UNIT HEATER UNLESS NOTED OTHERWISE C UNOCCUPIED URINAL VOLTS VOLT AMPERE VALVE VARIABLE AIR VOLUME UNIT VARIABLE FREQUENCY DRIVE VARIABLE REFRIGERANT FLOW VOLTAGE VENT THROUGH ROOF WIDTH WATTS WITH WITHOUT WET BULB WATER COLUMN WATER CLOSET WATER GAUGE WEATHERPROOF IN-USE WITHSTAND RATING TRANSFORMER

BGG Co. 250 Established 1996 Stablished 1996 S	
Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road Grand Junction, CO 81501 Phone (970) 241-8709	)
REED PARK RESTROOM & BUILDING FACILITIES	
MECHANICAL COVER SHEET	
100% CD	
REV. DESC. DATE:	
DATE: 09/15/2023	

Project Team: BCE

Print Date: 7/26/2023 11:40:05 AM





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REED PARK RESTROOM & BUILDING FACILITIES	_
FLOOR PLAN, ROOF PLAN, SECTION FLEVATIONS AND	
SCHEDULES	
100% CD	
REV. DESC. DATE:	_
DATE: 09/15/2023	
PROJECT #: 23234	_
SHEET #: <b>M1-1</b>	

FLAG NOTES:.

1. ROUTE 8"Ø RETURN DUCT TO THE AIR HANDLER AH-1 RETURN.

2. LOCATE A TRAMPER PROOF THERMOSTAT ON A NORTH WALL

MECHANICAL PROVISIONS

## 1. SCOPE OF WORK

- A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
- B. ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND ALL OTHER REGULATION GOVERNING WORK OF THIS NATURE.
- C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY EFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR FAILS TO MAKE SUCH EXAMINATIONS. D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED EQUAL" BY THE ENGINEER OR ARCHITECT.
- 2. PERMITS
- A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.
- 3. SHOP DRAWINGS
- A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.
- 4. FLEXIBLE DUCT WORK
- A. FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERAL BASE. FLEXIBLE DUCT CONNECTORS SHALL BE LISTED BY U.L., CLASS 1 DUCTS, AND SHALL HAVE A FLAME SPREAD RATING NOT EXCEEDING 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50.
- B. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN
- 6 LINEAR FEET PER RUN. C. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE FLEXIBLE DUCT.
- 5. REFRIGERANT
- A. PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICUOUS AND FREE FROM ANY POSSIBLE CONDENSATION.
- B. INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION, SHALL BE TYPE "K" COPPER TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.
- 6. DUCTWORK
- A. THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE
- WITH THE "SMACNA" APPLICABLE MANUALS. B. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED OTHERWISE.
- C. CONTRACTOR SHALL PROVIDE AND INSTALL APPROVED FIRE DAMPERS AND ACCESS PANELS IN ANY AND ALL DUCTWORK WHICH PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON DRAWINGS.
- D. ALL BRANCH DUCTS TO HAVE VOLUME DAMPERS, SMOOTH TURN RADIUS DUCTWORK OR TURNING VANES SHALL BE USED THROUGHOUT WHERE FLOW EXCEEDS 150 CFM.
- E. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" STANDARDS AND ACCEPTED GOOD PRACTICE.
- F. ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES.DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
- G. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
- H. ALL SUPPLY AND RETURN DUCTWORK 15 FEET DOWNSTREAM OF THE HVAC UNIT SHALL BE INTERNALLY LINED WITH A 1/2" ACOUSTICAL DUCT LINER UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 7. DRAINAGE PIPING
- A. (CONDENSATE) SHALL BE SCHEDULE 40 PVC PIPE WITH SOLVENT JOINTS. PITCH HORIZONTAL LINES 1" IN 10'-0". CONDENSATE DRAINS SHALL BE ROUTED TO FLOOR DRAIN, ROOF DRAIN OR INDIRECT WASTE DRAIN.
- 8. HVAC CONTROLS
- A. CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.
- 9. ELECTRICAL
- A. CONTRACTOR TO COORDINATE WITH ELECTRICAL CONTRACTOR FOR LOCATION OF WIRING FOR EACH HVAC UNIT.
- 10. PIPE SUPPORTS
- A. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAP TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL NOT EXCEED 8 FEET FOR ALL PIPING. PLASTIC PIPING TO BE SUPPORTED EVERY 4 FEET.
- 11. GAS PIPING
- A. PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE IRON FITTINGS. WHERE GAS PIPE CONNECTS TO EQUIPMENT, IT SHALL BE PROVIDED WITH A DRIP LEG THE FULL SIZE OF THE RUNOUT, A 100% SHUT-OFF VALVE AND A UNION. GAS PIPING CONTAINING PRESSURE GREATER THAN 9" W.G. SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH WELDED JOINTS.
- 12. MISCELLANEOUS
- A. ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A SEALANT OF HIGH QUALITY AND LONG LIFE, TO PREVENT INFILTRATION OF OUTSIDE AIR INTO CONDITIONED SPACE. COORDINATE INSTALLATION OF ALL ROOF FLASHING AT ROOF PENETRATION.
- B. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. C. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
- D. THE MECHANICAL PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURE'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE EXACT DIMENSIONS, OR ALL THE DETAILS OF THE EQUIPMENT.
- E. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE.
- D. PEX TUBING, IF PEX TUBING IS USED AS AN APPROVED ALTERNATE FOR APPLICATIONS WHERE METALLIC PIPING IS THE BASIS OF DESIGN. THE PEX MANUFACTURER SHALL SUBMIT SHOP DRAWINGS CLEARLY INDICATING THAT THE DESIGN HAS BEEN ANALYZED AND MODIFIED, AS REQUIRED TO MAINTAIN SCHEDULED HYDRONIC SYSTEM PARAMETERS. ANY DESIGN RESULTING IN INCREASED SYSTEM PRESSURE DROP AS A RESULT OF IMPROPER PEX SIZING OR DESIGN SHALL NOT BE PERMITTED.
- 13. TESTING AND BALANCING
- A. THE HVAC SYSTEM SHALL BE TESTED AND AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL.
- 14. GUARANTEE
- A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE(1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE
- B. FOR THE SAME PERIOD, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

					ELECTRIC	AIR HANDLE	R SCHEDI	JLE					
	SEDVICE		SUPPLY AIR	Н	EATING	COOLING		ELECTRIC	AL		UNIT		
	SERVICE	(CFM)	(IN. W.G.)	(MBH)	ĸw	(MBH)	V./PH./HZ.	HP	MCA	МОСР	(LBS.)	MANOI ACTORER & MODEL	OF HONS ACCESSORIES
AH-1	HANGING IN MECH/PLUMBING CHASE	840	0.3	25600	7.5	NA	208/1/60	1/4	28.6	45.00	131	AIREA SE BCS 2M24	NOTE-1

NOTES: 1. PROVIDE ELECTRIC HEAT KIT AEHBCCO7CSA-1 AND TAMPER PROOF THERMOSTAT.

	EXHAUST FAN SCHEDULE									
EQUIPMENT NO SERVICE LOCATION CEM EXTERNAL STATIC PRESS (IN.			l	MOTOR						
EQUIFMENT NO.	JERVICE	LUCATION	CLIN	W.G.)	WATTS	HP	RPM	VOLT/PH/HZ	MANUFACTURER & MODEL	OF HUNS/ACCESSORIES
EF-1	TOILET ROOMS	CEILING	75	0.03	54.00	-	900	110/1/60	GREENHECK #SPB80	NOTE-1
NOTES: 1. MOTION SENSOR	ON/OFF, BACK DRAFT	DAMPER, STE	EL INTEF	RIOR GRILLE.			•			

GRILLE-REGISTER-DIFFUSER SCHEDULE					
EQUIPMENT NO.	SIZE	MODEL	MANUFACTURER	FINISH	OPTIONS/ACCESSORIES
CD1	12"X12"	SHR W/OBD	KRUEGER	BY ARCH	SEE DRAWING FOR NECK SIZE
CD2	24"X24"	SHR W/OBD	KRUEGER	BY ARCH	SEE DRAWING FOR NECK SIZE
RG1	12"X12"	SHR - OPEN	KRUEGER	BY ARCH	SEE DRAWING FOR NECK SIZE
EG1	8"X8"	EGC - HEAVY	KRUEGER	BY ARCH	SEE DRAWING FOR NECK SIZE
NOTES OCODDI					



NOTES: COORDINATE ALL MOUNTING TYPES WITH CEILING.





# PLUMBING PIPE DESIGNATIONS

LINE TYPE	DESCRIPTION
140	HIGH TEMPERATURE (140°) WATER PIPE
	COLD WATER PIPE (CW)
CA	COMPRESSED AIR
DC	DECONTAMINATION PIPING
DER	DEIONIZED WATER RETURN
DES	DEIONIZED WATER SUPPLY
DIS	DISTILLED WATER SUPPLY
DIR	DISTILLED WATER RETURN
CD	EQUIPMENT CONDENSATE DRAIN
FP	FIRE MAIN
GW	GREASE WASTE PIPE
——— HE ———	HELIUM
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
	HOT WATER RECIRCULATION (HWR)
	HOT WATER PIPE (HW)
——— H2 ———	HYDROGEN
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
——— MA ———	MEDICAL AIR
G	NATURAL GAS PIPE
——— N2 ———	NITROGEN
N2O	NITROUS OXIDE
ORD	OVERFLOW STORM WATER PIPE
O2	OXYGEN
PG	PROPANE GAS
RD	ROOF DRAIN PIPE
	SOIL OR WASTE PIPE
S/O	SOIL / OIL WASTE PIPE
TWR	TOWER WATER RETURN
TWS	TOWER WATER SUPPLY
VAC	VACUUM
	VENT PIPE (V)

# BCE 7/26/

Ž

				RESPONSIBLE DIVISION:		
	PLUMBING ELEI	VIENTS / VALVING		UNLESS OTHERWISE INDICATED ALL H AND OTHER MECHANICAL EQUIPMENT	EATING, VENTI , MOTORS, AND	LATING, AIR ( CONTROLS
LINE TYPE	DESCRIPTION	LINE TYPE	DESCRIPTION	IN PLACE AND WIRED AS FOLLOWS:		
		O	PIPE RISING UP	IIEM	FURNISHED	SEI
	PRESSURE REDUCING		PIPE DROPPING DOWN	EQUIPMENT	23	23
	VALVE (PRV) - GATE VALVE		UNION - SCREWED OR FLANGED	COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC		
	- GLOBE VALVE	PT/PS	PRESSURE TRANSMITTER OR PRESSURE SWITCH	MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26
₹	- PLUG VALVE	ТН/ТІ	THERMOMETER/TEMPERATURE	FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES		
	- BUTTERFLY VALVE	PI/GA	GAUGE WITH GAUGE COCK/	AND HEATERS, MANUAL MOTOR STARTERS	26	26
	- BALL VALVE		BACKFLOW PREVENTOR	MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26
	- SWING CHECK VALVE		(REDUCED ZONE) BACKFLOW PREVENTOR	CONTROLS, RELAYS, TRANSFORMERS	23	23
<b> </b> ◀	- LIFT CHECK VALVE		(DOUBLE CHECK VALVE ASSEMBLY) WATER HAMMER ARRESTER	THERMOSTATS (LOW VOLTAGE)		
<u></u> ↓ −	GATE VALVE, ANGLE		CIRCUIT SETTING	THERMOSTATS (LINE VOLTAGE)	23	23
' <u>k</u> –	GLOBE VALVE, ANGLE			TEMPERATURE CONTROL PANELS	23	23
		НВ +	HOSE BIBB	MOTOR AND SOLENOID VALVES,		
	- TEMPERATURE AND PRESSURE RELIEF VALVE	RD 0	ROOF DRAIN	SWITCHES	23	23(2)
		FD	FLOOR DRAIN	PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)
	- GAS COCK	AD	AREA DRAIN	HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23
			FLOOR CLEAN OUT	EXHAUST FAN SWITCHES	23	26
	- STRAINER	FS FS	FLOOR SINK	SUBSCRIPT FOOTNOTES:	NTROL TRANSE	
+ <u>×</u>	- STRAINER WITH		CLEAN OUT TO GRADE	AUXILIARY CONTACT, AND "ON" AI	ND "OFF" PILOT	LIGHTS.
(WH)	WATER HEATER		WALL CLEAN OUT	2. IF ITEM IS FOR LINE VOLTAGE, SE FACTORY MOUNTED ON EQUIPME VOLTAGE FURNISH AND SET UND	F IN PLACE AND NT OR ATTACH ER DIVISION 23,	CONNECT L ED TO PIPINO CONNECT U
			FLEXIBLE-CONNECTION	ABBREVIATIONS:		
$\sim$	PRESSURE GAGE		CHECK VALVE	44" MOUNTING HEIGHT ABOVE	DIA	DIAMETER
Ý	TEMPERATURE GAGE		VACUUM BREAKER	FINISHED FLOOR TO CENTER OF DEVI	CE DIAG DIFF	DIAGRAM DIFFERENT
1				A.D. ACCESS DOOR AAV AIR ADMITTANCE VALVE	DISCH	DISCHARGE

FINISH	ED FLOOR TO CENTER OF DEVICE	DIAG	DIAGRAM
А	AMPS	DIFF	DIFFERENTIAL
A.D.	ACCESS DOOR	DISCH	DISCHARGE
AAV	AIR ADMITTANCE VALVE	DIV	DIVISION
ABV	ABOVE	DN	DOWN
AC	AIR CONDITIONING UNIT	DS	DUCT SILENCE
AC	ABOVE COUNTER	DWG	DRAWING
AD	AREA DRAIN (SEE SYMBOLS)	DX	DIRECT EXPA
A.F.C.	ABOVE FINISHED CEILING	(E)	EXISTING
A.F.G.	ABOVE FINISHED GRADE	EA	EXHAUST AIR
	AMPERE INTERRUPTING	EAT	ENTERING AIR
AFCI	ARC FAULT CIRCUIT	EC	ELECTRICAL C
INTERF	RUPTERS	ECC	ECCENTRIC
A.F.F.	ABOVE FINISHED FLOOR	EF	EXHAUST FAN
AHU	AIR HANDLING UNIT	EFF	EFFICIENCY
ALUM	ALUMINUM	EL	ELEVATION
AP	ACCESS PANEL OR DOOR	ELEC	ELECTRIC
ATS	AUTOMATIC TRANSFER SWITCH	ELEV	ELEVATOR
AV	AUDIO / VIDEO	EM	EMERGENCY
AVG	AVERAGE	ENT	ENTERING
AWG	AMERICAN WIRE GAGE	EMI	
BAS	BUILDING AUTOMATION SYSTEM	EQ	EQUAL
BB	BASEBOARD	EQUIP	
BD	BACK DRAFT DAMPER	EQUIV	
BFP	BACK FLOW PREVENTOR	ES	END SWITCH
BL	BOILER	ESP FT	EXTERNAL ST
BLDG	BUILDING		
BLW	BELOW		
BOB	BOTTOM OF BEAM	TEMPE	RATURE
BOD	BOTTOM OF DUCT	EX	EXHAUST
BOP		EXPAN	EXPANSIC
BOINT		EXT	EXTERNAL
BIU		F	DEGREES FAH
		FA	FREE AREA
CAFCI	CIRCUIT INTERRUPTERS	FC	FAN COIL UNIT
CAP	CAPACITY	FC	FOOTCANDLE
СВ	CIRCUIT BREAKER	FCV	FLOW CONTRO
CBV	CIRCUIT BALANCING VALVE	FD	FIRE DAMPER
ССТ	CORRELATED COLOR	FD	FLOOR DRAIN
	TEMPERATURE	FIN	FINISHED
CKT	CIRCUIT	FLA	FULL LOAD AN
CFH	CUBIC FEET PER HOUR	FLEX	FLEXIBLE
CFM	CUBIC FEET PER MINUTE	FLR	FLOOR
CHWR	CHILLED WATER RETURN	FOB	FLAT ON BOTT
CHWS	CHILLED WATER SUPPLY	FOT	FLAT ON TOP
CI	CAST IRON	FP	FIRE PROTEC
CL	CENTER LINE	FP	FIRE PUMP
CLG	CEILING	FPM	FEET PER MIN
CMU	CONCRETE MASONRY UNIT	FPS	FEET PER SEC
CO		FS	FLOW SWITCH
COL	COLUMN	FSD	FIRE/SMOKE D
COMP	COMPRESSOR	FT	FEET
CONC		FXC	FLEXIBLE CON
COND	CONDENSATE	GND	GROUND
CONN	CONNECTION	GA	GAUGE
CONT		GAL	GALLON
CONTR		GALV	GALVANIZED
CRI		GEC	GROUND ELEC
CT CT		GECL/	GEL GROUND
		INTERF	RUPTER
		GC	GENERAL CON
		GPH	GALLONS PER
CUH		GPM	GALLONS PER
CVB		GRS/LE	GRAINS P
CWR		H 20	WATER
CWS		HB	HOSE BIBB
DEC-		HD	HEAD (SEE SC
		HP	HEAT PUMP
υF	DRINKING FOUNTAIN		

## ATING, AIR CONDITIONING, PLUMBING, CONTROLS SHALL BE FURNISHED, SET

SET	POWER WIRED	CONTROL WIRED	
23	26		
26	26(2)	23	
26	26		
26	26	26	
23	26	23	
23	26	23	
23	26	26	
23	26	23	
23(2)		23(2)	
23(2)		23(2)	
23	26	23	
26	26	23(2)	_

ORMER, HOA SWITCH, (1) NO AND (1)NC

## CONNECT UNDER DIVISION 26. WHERE D TO PIPING OR DUCTS AND USING LINE CONNECT UNDER DIVISION 26.

METER	HP	HORSEPOWER
GRAM	HR	HOUR
FERENTIAL	HT	HEIGHT
CHARGE	HTR	HEATER
ISION	HWR	HEATING WATER RETURN
WN	HWS	HEATING WATER SUPPLY
CT SILENCER	HX	HEAT EXCHANGER
AWING	ΗZ	HERTZ
ECT EXPANSION	ID	INSIDE DIAMETER
STING	IG	ISOLATED GROUND
AUST AIR GRILLE/REGISTER	IN	INCHES
ERING AIR TEMPERATURE	INV	INVERT
CTRICAL CONTRACTOR	JBOX	JUNCTION BOX
CENTRIC	K	KELVIN
AUST FAN	KW	KILOWATT
ICIENCY	KVA	KILO VOLT - AMPS
VATION	L	LENGTH
CTRIC	LAT	LEAVING AIR TEMPERATURE
VATOR	LV	LAVATORY
ERGENCY FUNCTION	LB	POUND
TERING	LD	LINEAR DIFFUSER
CTRIC METALLIC TUBE	LF	LINEAR FEET
JAL	LIN	LINEAR
JIPMENT	LIQ	LIQUID
JIVALENT	LM	LUMEN
D SWITCH	LRA	LOCKED ROTOR AMPS
ERNAL STATIC PRESSURE	LV	LOUVER
PANSION TANK	LVG	LEAVING
CTRIC WATER COOLER	LWT	LEAVING WATER TEMPERATURE
	MBH	THOUSANDS OF BTU PER HOUR
	MC	MECHANICAL CONTRACTOR
	MCA	MINIMUM CIRCUIT AMPACITY
	MCB	
	MD	MOTORIZED DAMPER
	MDP	
	MED	MEDIUM
	MFR	MANUFACTURER
	MIN	
E DAMPER	MISC	MISCELLANEOUS
OR DRAIN	MOCD	
ISHED	PROTE	CTION
L LOAD AMPS	MTD	MOUNTED
XIBLE	MUA	MAKE-UP AIR UNIT
OOR	Ν	NEUTRAL
T ON BOTTOM	NC	NORMALLY CLOSED
T ON TOP	NEG	NEGATIVE
E PROTECTION	NIC	NOT IN CONTRACT
E PUMP	NL	NIGHT / SECURITY LIGHT - DO
T PER MINUTE	NOT S	WITCH
T PER SECOND	NO	NORMALLY OPEN
W SWITCH	NOM	NOMINAL
E/SMOKE DAMPER	NTS	NOT TO SCALE
T	OA	
XIBLE CONNECTION	OBD	OPPOSED BLADE DAMPER
DUND	OC	ON CENTER
JGE	OCC	OCCUPIED
LON	OCP	OVER CURRENT PROTECTION
VANIZED	OD	
OUND ELECTRODE	OL	OVERLOAD
		OVERFLOW ROOF DRAIN
	OZ	OUNCE
	PBD	PARALLEL BLADE DAMPER
LONS PER HOUR	עץ	PRESSURE DRUP
LONS PER MINUTF	PH DOO	
GRAINS PER POUND	PUS	
TER	FU5	
SE BIBB		
AD (SEE SCHEDULES)	го 001	
'	101	

PT PRESSURE TRANSMITTER

## SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO BID TIME.

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE NEW MEXICO BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

PV	PLUG VAI VF
PVC	
QTY	QUANTITY
RA	RETURN AIR GRILLE / REGISTE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REL	RELIEF
REQD	REQUIRED
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RATED LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR GRILLE / REGISTER
SC	
SCA	
RATIN	G
SCH	SCHEDULE
SD	SMOKE DAMPER
SEF	SMOKE EXHAUST FAN
SF	SUPPLY FAN
SH	SENSIBLE HEAT
SH	SHOWER
SP	STATIC PRESSURE
SPD	SURGE PROTECTION DEVICE
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
SS	SAFETY SHOWER
SID	STANDARD
SIL	SIEEL
TEMD	
	TRANSFER GRILLE / REGISTER
TR	TAMPER RESISTANT
тт	TEMPERATURE TRANSMITTER
ттв	TELECOMMUNICATIONS
TERMI	NAL BACKBOARD
TYP	TYPICAL
ТХ	TRANSFORMER
UC	UNDERCUT DOOR
UH	
UNO	UNLESS NOTED OTHERWISE
UNOCO	
V VA	
VΑ VΔ	
VED	
VRF	VARIABLE PREQUENCE DRIVE
	VOLTAGE
VTR	VENT THROUGH ROOF
W	WIDTH
W	WATTS
W/	WITH
W/O	WITHOUT
WB	WET BULB
	WATER COLUMN
WC	WATER CLOSET
WC WC	
WC WC WG	WATER GAUGE
WC WC WG WP	WATER GAUGE WEATHERPROOF
WC WC WG WP WPIU	WATER GAUGE WEATHERPROOF WEATHERPROOF IN-USE
WC WC WG WP WPIU WSR	WATER GAUGE WEATHERPROOF WEATHERPROOF IN-USE WITHSTAND RATING

BG2R Rood Avenue Grand Junction, CO 81501 970-242-1058 BLYTHE GROUP + CO.
Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road Grand Junction, CO 81501 Phone (970) 241-8709
REED PARK RESTROOM & BUILDING FACILITIES
FLOOR PLAN, ROOF PLAN, SECTION, ELEVATIONS AND SCHEDULES
100% CD
100% CD
100% CD
100% CD
100% CD         REV. DESC.       DATE:         DATE:       09/15/2023

**P0-1** 





PLUMBING FLOOR PLAN SCALE: 1/4"=1'-0"

1. 1-1/2" DOMESTIC WATER SERVICE TO METER. ROUTE PIPING A MINIMUM OF 48" BELOW FINISHED GRADE AND SLEEVE THROUGH EXTERIOR WALL. REFER TO CIVIL DRAWINGS FOR CONTINUATION.

2. PROVIDE AND INSTALL LINE SIZE REDUCED PRESSURE BACK FLOW PREVENTER. ROUTE DRAIN FROM CONNECTION AT AIR GAP DRAIN FITTING TO FLOOR DRAIN. SEE DETAIL.

3. ROUTE TO WATER HEATER. SEE WATER HEATER DETAIL.

4. SEE PLUMBING EQUIPMENT SCHEDULE. CONNECT NEW FIXTURES TO COLD, HOT, WASTE AND VENT LINES PER MANUFACTURE'S INSTALLATION GUIDE, PROVIDE SHUT OFF VALVES TO ALL PLUMBING FIXTURE GROUPS AND INDIVIDUAL PLUMBING FIXTURES. PROVIDE SHOCK ABSORBER HAMMER FOR ALL TOILET ROOMS.

5. EXTEND WASTE TO 5'-0" BEYOND BUILDING EXCAVATION LINE. INSTALL GRADE CLEAN-OUT. CONNECT TO SANITARY SEWER EXTENDED TO BUILDING IN SITE UTILITIES PORTION OF WORK. PROVIDE SLEEVE THROUGH STRUCTURE. REFERENCE CIVIL DRAWINGS FOR CONTINUATION.

6. ROUTE 3" VENT THRU ROOF. VENT LINE FROM WASTE FIXTURE UP WALL TO ABOVE CEILING.

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100% CD	
REV. DESC. DATE:	
DATE: 09/15/2023 PROJECT #: 23234 SHEET #:	
P1-1	

				PLUMBING FIXTURE SCHEDULE					
	DESCRIPTION	MANUEACTURER	MODEL	трім	PIF		CTIONS		
FIATORE NO.	DESCRIPTION	MANUFACIORER	MODEL		S/W	VENT	C.W.	HW	OF HONS-ACCESSORIES
DF-1	BARRIER FREE DUAL WALL MOUNT FOUNTAIN	ELKAY	VRCTL8SC		1 1/2"	1 1/2"	1/2"	-	PROVIDE MOUNTING FRAME # MTGFR.DF2
FD-1	FLOOR DRAIN	ZURN	Z415S	CAST IRON HOUSING, NICKEL BRONZE STRAINER	3"	2"	-	-	PROVIDE NICKEL BRONZE STRAINER, ASSE 1017 RATED J.R. SMITH QUAD-CLOSE MECHANICAL TRAP SEAL. PROVIDE ACID RESISTING EPOXY COATED CAST IRON AT FLOOR DRAINS WHICH RECEIVE CONDENSATE DISCHARGE FROM HIGH EFFICIENCY GAS EQUIPMENT.
HB-1	FREEZE PROOF HOSE BIB	WOODFORD	B67	-	-	-	3/4"	-	PROVIDE ANTI SIPHON, FREEZEPROOF, LOCKING ENCLOSURE EXTERIOR RATED HOSE BIB.
LV-1	WALL MOUNTED BATHROOM SINK	AMERICAN STANDARD, LUCERNE	356.015	PROVIDE WITH AMERICAN STANDARD	1 1/2"	1 1/2"	1/2"	1/2"	GRID DRAIN K-7129-A-CP
MS-1	UTILLITY SINK	STERN WILLIAMS	МТВ	PROVIDE WITH T10VB SERVICE FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	COMPOSITE BASIN WITH T4024SS MOP HANGER AND T10VB SERVICE FAUCET
WC-1	WATER CLOSET	AMERICAN STANDARD, MADERA ELONGATED	2234.105	1.6/1.1 GPF SELECTRONIC, DUAL FLUSH VALVE	4"	2"	1-1/2"	-	VITREOUS CHINA, ADA 1.6GPH, ELONGATED, OPEN FRONT SEAT, SLOAN #8110 FLUSH VALVE, BATTERY POWERED.
WC-2	ADA WATER CLOSET	AMERICAN STANDARD, MADERA ELONGATED	3043.102	1.6/1.1 GPF SELECTRONIC, DUAL FLUSH VALVE	4"	2"	1-1/2"	-	ADA VITREOUS CHINA, ADA 1.6GPH, ELONGATED, OPEN FRONT SEAT, SLOAN #8110 FLUSH VALVE, BATTERY POWERED.
						ELE	ECTRIC	WATE	R HEATER SCHEDULE

PLUMBING SPECIFICATION

A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR

1. SCOPE OF WORK

TO SATISFY A COMPLETE WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.

B. ALL WORK IS TO BE PREFORMED IN STRICT COMPLIANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION), ALL LOCAL CODES AND ALL

OTHER REGULATION GOVERNING WORK OF THIS NATURE. C. THE CONTRACTOR SHALL, BEFORE SUBMITTING ANY PROPOSAL, EXAMINE THE PROPOSED SITE AND SHALL DETERMINE FOR HIMSELF THE CONDITIONS THAT MAY AFFECT THE WORK. NO ALLOWANCE SHALL BE MADE IF THE CONTRACTOR

FAILS TO MAKE SUCH EXAMINATIONS.

D. ALL EQUIPMENT AND MATERIALS SHALL BE AS SPECIFIED OR "APPROVED AS EQUAL" BY THE ENGINEER OR ARCHITECT.

2. PERMITS

A. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES.

3. SHOP DRAWINGS

A. SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT TO THE ARCHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.

4. DOMESTIC WATER SUPPLY PIPING

A. UNDERGROUND: PROVIDE TYPE "K" SOFT DRAWN COPPER TUBING WITH BRAZED CONNECTIONS.

B. ABOVE GROUND: PROVIDE TYPE "L" HARD DRAWN COPPER TUBING WITH 125 PSI SOLDER JOINTS, COPPER OR BRASS FITTINGS. ALL SOLDER TO BE "NO LEAD" TYPE.

C. ALL HOT WATER PIPING TO BE INSULATED WITH 1" FIBERGLASS INSULATION.

D. ALL COLD WATER PIPING TO BE INSULATED WITH  $\frac{1}{2}$ " FOAM INSULATION.

5. SANITARY/STORM DRAINAGE AND VENT PIPING

A. ABOVE GRADE:

-2" BELOW: SCHEDULE 40 GALV. STEEL PIPE WITH SCREWED ENDS OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS OR DWV COPPER WITH SOLDER JOINTS. ALL SOLDER TO BE "NO LEAD" TYPE.

-3" AND ABOVE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.

B. BELOW GRADE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SOLID CORE SCHEDULE 40 PVC WITH SOLVENT JOINTS.

C. PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS.

D. DRAINAGE PIPING SHALL BE RUN AS STRAIGHT AS POSSIBLE AND SHALL HAVE LONG TURN FITTINGS.

E. DRAINAGE PIPING 3" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST  $\frac{1}{4}$ " PER FOOT. AND PIPING LARGER THAN 3" SHALL BE RUN AT A GRADE OF NO LESS THAN  $\frac{1}{8}$ " PER FOOT.

F. ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES.

G. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FLASHING OF THE VENT PIPING RUN THROUGH THE ROOF.

H. PVC USED TO BE SOLID CORE TYPE SCHEDULE 40 PVC.

7. PIPE SUPPORTS

(LATEST EDITION).

A. ABOVE GRADE: ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE AND PERFORATED METAL TO SUPPORT PIPES WILL NOT BE PERMITTED. SPACING OF PIPE SUPPORTS SHALL BE A S SPECIFIED IN INTERNATIONAL PLUMBING CODE

B. BELOW GRADE: EARTH SHALL BE EXCAVATED TO A MINIMUM DEPTH WITH AN EVEN SURFACE TO INSURE SOLID BEARING OF PIPE FOR ITS ENTIRE LENGTH.

-INTERIOR: THE PIPE SHALL BE INSTALLED (UNLESS OTHERWISE SPECIFIED) A MINIMUM OF 4 INCHES BELOW THE BOTTOM OF THE SLAB AND SHALL NOT BE IN ANY DIRECT CONTACT WITH THE CONCRETE AT ANY POINT.

-EXTERIOR: THE WATER PIPE SHALL HAVE A MINIMUM OF 60" OF COVER AND THE SANITARY WASTE PIPE SHALL HAVE A MINIMUM OF 24" OF COVER.

8. MISCELLANEOUS

A. COORDINATE INSTALLATION OF ALL ROOFS FLASHING AT ROOF PENETRATIONS.

B. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS AND DIMENSIONS AT THE JOB SITE.

C. THE PLUMBING PLANS ARE INTENDED TO BE DIAGRAMMATIC AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION. THE EXACT DIMENSIONS OR ALL THE DETAILS OF THE EQUIPMENT. THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT THE AVAILABLE SPACE.

9. TESTING

A. PLUMBING SYSTEM SHALL BE FLOW AND PRESSURE TESTED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (LATEST EDITION). 10 GUARANTEE

A. MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTORS EXPENSE.

B. FOR THE SAME PERIOD THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO PREMISES CAUSED BY DEFECTS IN WORKMANSHIP OR IN THE WORK OR EQUIPMENT FURNISHED AND/OR INSTALLED BY HIM.

	ELECTRIC WATER HEATER SCHEDULE							
EQUIPMENT NO.	CAPACITY	RECOVERY @ 90 DEG. F. RISE	BTU/H	WATER CONN.	HEATING ELEMENT KW	V/PH/HZ	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES
WH-1	12	7	10236	3/4"	3	120/1/60	BRADFORD WHITE M-1-12UT6SS	NOTE-1
NOTES: 1. PROVIDE WITH A	NOTES: 1. PROVIDE WITH AQUASTAT, ASME TEMPERATURE AND PRESSURE RELIEF VALVE, EXPANSION TANK, AND FACTORY CONTROLS,							





	FIRE ALARM EQUIPMENT LEGEND		LIGHT
	FIRE ALARM CONTROL PANEL FIRE ALARM PULL STATION FIRE ALARM HORN FIRE ALARM STROBE FIRE ALARM HORN/STROBE CEILING MOUNTED SPEAKER DUCT DETECTOR REMOTE LAMP	NOTES: SYMBO THE PL/ PROJEC OCCUR VARIAT A NUME AN UPP LOWER AN UPP REFER LETTER	LS SHOWN ARE STANDAH ANS. THIS LIST SHOWS S T DRAWINGS; HOWEVER , THE ITEM SHALL BE PRO ION AND/OR COMBINATIO BER NEXT TO A RECEPTA ER CASE LETTER NEXT T CASE LETTER INDICATES ER CASE LETTER NEXT T TO THE LUMINAIRE SCHE ENEXT TO A LIGHT CORR
(2) <sub>P</sub> (H) <sub>135°</sub> [PIR]	SMOKE DETECTOR - PHOTOELECTRIC 135° STANDARD HEAT DETECTOR PIR DETECTOR		S
□ □ □ □ □ □ □ □ □ □ □ □ □ □	DOOR HOLD - MAGNETIC HOLD FLOW SWITCH TAMPER SWITCH	\$ \$2 \$3 \$4 \$D	SINGLE POLE SWITCH TWO POLE SWITCH THREE-WAY SWITCH FOUR-WAY SWITCH DIMMER SWITCH

	COMMUNICATION LEGEND
Ŷ	CLOCK ONLY
60	CLOCK / PA SPEAKER WALL MOUNTED
S	ROUND CEILING MOUNTED SPEAKER
S	SQUARE SPEAKER
ΗС	INTERCOM PUSH TO CALL SWITCH
WAP Å	WIRELESS ACCESS POINT ABOVE THE CEILING
PROJECTOR	ABOVE THE CEILING PROJECTOR CONNECTION
	WALL MOUNTED HDMI
$\bigtriangledown$	PLAIN DATA OUTLET
\_80"	PLAIN DATA OUTLET WITH MOUNTING HEIGHT
$\mathbf{V}$	COMBINATION DATA/TELEPHONE
$\mathbf{V}$	FLOOR MOUNTED COMBINATION DATA/TELEPHONE
$\mathbf{v}$	CEILING MOUNTED COMBINATION DATA/TELEPHONE
Ă	TELEVISION OUTLET

	SECURITY SYSTEM LEGEND
	SECURITY CAMERA
HC	ADA DOOR OPERATOR PUSH BUTTON
DS	ELECTRIC DOOR STRIKE
CR	CARD READER FOR DOOR OPERATOR

Α	2'x2' LED TROFFER OR FLANGE OR SURFACE
	OPEN STRIP FIXTURE WALL BRACKET LINEA
	WALL MOUNTED SCOP
а ф- а-ф-	SURFACE CEILING OR
	DOUBLE FACE EXIT SI
EX1 <b>818</b>	SINGLE FACE EXIT SIG
ЕМ ()(()	WALL MOUNTED EMER
EMR 🖁	EMERGENCY EXTERIC

SWITCH

\$TO MANUAL MOTOR STARTER

\$<sub>■</sub> PILOT LIGHT SWITCH

GENERAL ELECTRICAL NOTES: GOVERNING CODES.

# WIRING

- TO ROUGH-IN.
- 3. SIZES OF WIRE AND CABLES ARE BASED UPON COPPER CONDUCTORS, UNLESS OTHERWISE UNLESS NOTED OTHERWISE.
- APPROPRIATE DISCIPLINES AND CONTRACTORS.
- PRIOR TO MAKING SHOP DRAWING SUBMITTALS.

- 12. PROVIDE ELECTRICAL CONNECTION TO ALL FIRE, SMOKE, AND FIRE / SMOKE DAMPERS INCLUDING
- COMPLETE INSTALLATION.
- FURNISHED EQUIPMENT.

# LIGHTING LEGEND

## I ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE IGS: HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS

SHALL BE PROVIDED AND INSTALLED. R COMBINATION MAY BE USED ON THE PLANS.

TO A RECEPTACLE OR DEVICE INDICATES A CIRCUIT NUMBER.

ETTER NEXT TO A SWITCH INDICATES THE FUNCTION OF THE SWITCH. A TER INDICATES THE SWITCH CIRCUIT.

ETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. MINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS. A LOWER CASE A LIGHT CORRESPONDS TO THE SWITCH DESIGNATION.

# SWITCHES

\$3D 3 WAY DIMMER SWITCH - (4D INDICATES A 4WAY DIMMER)

\$<sub>DR</sub> DOOR ACTIVATED SWITCH WALL MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR \$ V LOW VOLTAGE LIGHT SWITCH

## \$<sub>OS</sub> AUTO ON / AUTO OFF LIGHT SWITCH \$MO DUAL TECHNOLOGY MOTION / OCCUPANCY SENSOR LIGHT SWITCH

\$D MANUAL ON / AUTO OFF DIMMING LIGHT SWITCH \$ KEY OPERATED LIGHT SWITCH \$<sub>T</sub> MANUAL ON - TIMED OFF LIGHT SWITCH

(OS)(OS) CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH

(MA) (MA) CEILING MOUNTED DUAL TECHNOLOGY MANUAL ON / AUTO OFF VACANCY SENSOR DS (DS) CEILING MOUNTED DAYLIGHT HARVESTING SENSOR

\$<sub>SC</sub> SCENE CONTROL STATION \$<sub>MS</sub> UNIT LIGHTING MANAGEMENT CONTROL STATION,

LIGHT FIXTURES

A 1'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED

2'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED

> R DIRECT/INDIRECT TYPE FIXTURE GRID, E MOUNTED

AR FIXTURE

NCE LIGHT FIXTURE

HT CAN FIXTURE

R PENDANT MOUNTED FIXTURE

IGN, WALL AND CEILING MOUNTED

IGN, WALL AND CEILING MOUNTED

RGENCY LIGHT

OR EGRESS FIXTURE

1. ALL ELECTRICAL WORK TO COMPLY WITH LATEST EDITION OF NEC, IECC AND ALL APPLICABLE

2. FIELD COORDINATION DURING CONSTRUCTION IS IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES. 3. ELECTRIC UTILITY TO ADVISE OWNER AND/OR THE ELECTRICAL ENGINEER PRIOR TO SERVICE MODIFICATION REQUIRING COST TO THE OWNER.

1. ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWING, FIELD VERIFY ALL CONDITIONS PRIOR

2. ALL CONDUITS AND CONVEYANCES SHALL BE CONCEALED. IN THE EVENT THAT A NEW DEVICE IS BEING INSTALLED IN AN EXISTING DRYWALL PARTITION, PROVIDE A CUT IN TYPE BOX AND FISH FLEXIBLE CONDUIT DOWN INSIDE THE WALL FROM ABOVE THE CEILING AND REPAIR THE DRYWALL AROUND THE CONDUIT. TRANSITION TO EMT ONCE ABOVE THE CEILING.

INDICATED. ALL CIRCUITS SHALL CONTAIN (2) #12 AWG WITH (1) #12 GND IN 1/2" CONDUIT

4. ALL BRANCH CIRCUITS WITH HOME RUNS OVER 50 FEET, WILL BE SIZED ONE SIZE LARGER. 5. ALL PENETRATIONS IN OR THROUGH FIRE RATED PARTITIONS SHALL BE FIRE STOPPED IN SUCH A WAY THAT THE PENETRATION MATCHES THE FIRE RATING OF THE WALL. 6. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION BETWEEN THE

7. COORDINATE ALL DEVICE, FIXTURE AND HARDWARE COLOR SELECTIONS WITH THE ARCHITECT

8. COORDINATE THE MOUNTING HEIGHTS OF ALL RECEPTACLES MOUNTED ABOVE COUNTERS, CASEWORK AND APPLIANCE RECEPTACLES WITH ARCHITECTURAL ELEVATIONS. 9. BRANCH CIRCUIT AND SPECIAL SYSTEMS WIRING FOR DEVICES ON WALLS IN FINISHED AREAS

WHICH CANNOT BE CONCEALED SHALL BE INSTALLED IN SURFACE MOUNTED RACEWAY. 10. ALL EXPOSED CONDUITS, BOXES, ETC. IN ROOMS TO BE PAINTED SHALL BE PAINTED TO MATCH THE SURROUNDING SURFACE. EXPOSED CONDUITS, BOXES, ETC. IN ROOMS WHICH ARE NOT PAINTED MAY BE LEFT UN-PAINTED. EXPOSED CONDUIT, BOXES, ETC. ON THE EXTERIOR OF BUILDINGS SHALL BE PAINTED TO MATCH THE SURROUNDING SURFACE AS CLOSELY AS POSSIBLE.

11. THE CONTRACTOR IS RESPONSIBLE FOR PATCHING, PAINTING, REPAIRING OR REPLACEMENT OF ALL WALLS, CEILING OR OTHER BUILDING ELEMENTS WHICH ARE DISTURBED AS PART OF THE DEMOLITION AND/OR INSTALLATION OF ELECTRICAL WORK.

POWER AND FIRE ALARM. VERIFY EXACT SIZE AND FINAL LOCATION OF ALL DAMPERS WITH THE MECHANICAL CONTRACTOR. ALL ROOFTOP UNITS RATED AT MORE THAN 2000 CFM WILL BE OUTFITTED WITH A DUCT DETECTOR IN THE RETURN DUCT. ALL ROOFTOP UNITS RATED AT MORE THAN 15000 CFM WILL BE OUTFITTED WITH A DUCT DETECTOR IN BOTH THE SUPPLY AND RETURN DUCT AT ROOFTOP LEVEL AND IN THE RETURN DUCT AT EVERY LEVEL THAT IS SERVED. ELECTRICAL CONTRACTOR WILL PROVIDE A REMOTE TEST STATION AND ALL WIRING NECESSARY TO

13. REFER TO THE MECHANICAL EQUIPMENT SCHEDULE FOR ADDITIONAL REQUIREMENTS ASSOCIATED WITH PLUMBING AND HVAC EQUIPMENT AND OWNER/GENERAL CONTRACTOR

## ELECTRICAL EQUIPMENT LEGEND BRANCH CIRCUIT PANELBOARD TELEPHONE TERMINAL BOARD $\mathcal{O}$ ELECTRIC MOTOR F FUSED SAFETY SWITCH / DISCONNECT COMBINATION Ч MOTOR STARTER $\square$ CONTACTOR LA-7 CIRCUITRY HOMERUN: PANEL LA - CIR. #7 CONDUIT OR WIRE CONCEALED IN WALL/CLG. (SOLID LINE TYPE) CONDUIT OR WIRE UNDERFLOOR/UNDERGND. (CENTER LINE TYPE) MAIN DISTRIBUTION GEAR 6 6 CIRCUIT BREAKER IN A PANEL BOARD 35 PAD MOUNTED UTILITY TRANSFORMER $\left| \begin{array}{c} \\ \\ \\ \end{array} \right|$ FUSED DISCONNECT 0 100A = AMP RATING 100 A 2P = NUMBER OF POLES 100 A 2 POLE FUSED DISCONNECT (M) ELECTRICAL METER SHOWN ON ONE-LINE DIAGRAMS ELECTRICAL POWER PANEL WITH MAIN LUG OR MAIN BREAKER PP1= PANEL NAME 225A MLO = MAIN LUG OR BREAKER SIZE 120/208V = PANEL VOLTAGE 3PH, 4 WIRE = PANEL PHASE, DISTRIBUTION TYPE PP1 PP1 225A MCB 225A MLO 120/208V 120/208V 3PH, 4W 3PH, 4W ELECTRICAL DEVICE LEGEND O CEILING JUNCTION BOX - SURFACE/FLUSH (J) WALL JUNCTION BOX - SURFACE/FLUSH ⇔ DUPLEX RECEPTACLE Μ FLOOR MOUNTED RECEPTACLE

SPLIT WIRED DUPLEX RECEPTACLE  $\bigcirc$ CEILING MOUNTED DUPLEX RECEPTACLE FLOOR MOUNTED FOURPLEX RECEPTACLE Œ APPLIANCE RECEPTACLE - 3 WIRE DUPLEX RECEPTACLE  $\ominus$ FOURPLEX RECEPTACLE ⊕ ⊕ () ABBREVIATIONS PERTAIN TO ALL DUPLEX AND FOURPLEX RECEPTACLES: ABOVE COUNTER ABOVE COUNTER - GROUND FAULT CIRCUIT INTERRUPTER 🕀 AC GF AC USB ABOVE COUNTER WITH USB PORT ARC FAULT PROTECTED ARC FAULT PROTECTED WITH USB PORT AF USB AF GF ARC FAULT WITH GROUND FAULT CIRCUIT INTERRUPTER DEDICATED RECEPTACI E DEDICATED RECEPTACLE WITH USB PORT D USB RECEPTACLE CIRCUITED TO THE EMERGENCY PANEL WITH RED COVER PLATE GROUND FAULT CIRCUIT INTERRUPTER WEATHER PROOF GROUND FAULT CIRCUIT INTERRUPTER GF WP PLUG LOAD PL GENERAL PURPOSE WITH MOUNTING HEIGHT. 72" ELECTRIC HAND DRYER  $\langle D \rangle$ T THERMOSTAT OPEN/CLOSE/STOP PUSH BUTTON  $\langle 1 \rangle$ DRAWING KEY NOTES ROOM ROOM DESIGNATION 100

LUMINAIRES

1. COORDINATE THE LOCATION OF ALL LIGHTING EQUIPMENT INCLUDING BUT NOT LIMITED TO THE LUMINAIRES. SWITCHES WITH THE ARCHITECTURAL. STRUCTURAL AND MECHANICAL DRAWINGS AND ALL OTHER TRADES AS REQUIRED. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR DIMENSIONAL LOCATION OF LIGHT FIXTURES.

2. LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE AND SHALL NOT BE SUPPORTED FROM THE T-BAR CEILING GRID. 3. THE ELECTRICAL CONTRACTOR IS TO CONFIRM THE LIGHT FIXTURES ORDERED WILL BE

- COMPATIBLE WITH THE CEILING TYPES AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS. NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING THE FIXTURES.
- 4. VERIFY LUMINAIRE MOUNTING REQUIREMENTS AND OVERALL HEIGHT OF ALL PENDANT
- MOUNTED FIXTURES PRIOR TO ORDERING. 5. ALL LIGHT FIXTURES NEED TO BE COMPATIBLE WITH THE SWITCHES AND CONTROLS BEING
- PROVIDED. 6. THE LIGHTING PACKAGE SHALL BE APPROVED BY BOTH THE ARCHITECT AND ENGINEER AS
- APPROVED EQUAL BEFORE BID. NO LIGHT FIXTURE SHALL BE ORDERED UNTIL THE LIGHT FIXTURE SUBMITTAL PACKAGE HAS BEEN APPROVED IN WRITING BY THE ARCHITECT, GENERAL CONTRACTOR AND ELECTRICAL ENGINEER. 7. COORDINATE LUMINAIRE MOUNTING REQUIREMENTS PRIOR TO PLACING ORDER.

## **RESPONSIBLE DIVISION:**

UNLESS OTHERWISE INDICATED ALL HI AND OTHER MECHANICAL EQUIPMENT, IN PLACE AND WIRED AS FOLLOWS:	EATING, VENTII MOTORS, AND	LATING, AIR CONTROLS	CONDITION S SHALL BE	IING, PLUMBING, FURNISHED, SET
ITEM	FURNISHED	SET	POWER WIRED	CONTROL WIRED
EQUIPMENT	23	23	26	
COMBINATION MAGNETIC MOTOR STARTERS, MAGNETIC MOTOR STARTERS, VFD'S AND CONTACTORS	23(1)	26	26(2)	23
FUSED AND UNFUSED DISCONNECT SWITCHES, THERMAL OVERLOAD SWITCHES AND HEATERS, MANUAL MOTOR STARTERS	26	26	26	
MANUAL-OPERATING AND MULTI-SPEED SWITCHES	23	26	26	26
CONTROLS, RELAYS, TRANSFORMERS	23	23	26	23
THERMOSTATS (LOW VOLTAGE) AND TIME SWITCHES	23	23	26	23
THERMOSTATS (LINE VOLTAGE)	23	23	26	26
TEMPERATURE CONTROL PANELS	23	23	26	23
MOTOR AND SOLENOID VALVES, DAMPER MOTORS, PE & EP SWITCHES	23	23(2)		23(2)
PUSH-BUTTON STATIONS AND PILOT LIGHTS	23	23(2)		23(2)
HEATING, COOLING, VENTILATION AND AIR CONDITIONING CONTROLS	23	23	26	23
EXHAUST FAN SWITCHES	23	26	26	23(2)

## SUBSCRIPT FOOTNOTES: 1. MOTOR STARTER TO INCLUDE CONTROL TRANSFORMER, HOA SWITCH, (1) NO AND (1)NC

- AUXILIARY CONTACT, AND "ON" AND "OFF" PILOT LIGHTS.
- 2. IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 26. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 23, CONNECT UNDER DIVISION 26.

## ABBREVIATIONS

A4*       MOUNTING HEIGHT ABOVE       DIAG       DIAG         A       AMPS       DIFF       DI         A.D.       ACCESS DOOR       DISCH       DI         AAV       AIR ADMITTANCE VALVE       DIV       DI         AAV       AIR CONDITIONING UNIT       DS       DI         AC       ABOVE       DN       DN       DA         AC       ABOVE COUNTER       DWG       DU       DA         AF.C.       ABOVE FINISHED CELLING       (E)       EA       EA         AF.C.       ABOVE FINISHED GRADE       EAT       EA       EA         AF.G.       ABOVE FINISHED FLOOR       EF       EA       EA       EA         AF.G.       ABOVE FINISHED FLOOR       EF       EA       EA       EA         AF.G.       ABOVE FINISHED FLOOR       EF       EA       EA <td< th=""><th></th><th></th><th></th><th></th></td<>				
NINSHED FLOOK 10 CENTER OF DEVICEDIAGAAMPSDIFFDIALDACCESS DOORDISCHDIAAVAIR ADMITTANCE VALVEDIVDIAAVAIR ADMITTANCE VALVEDIVDIACABOVE COUNTERDWGDIADAREA DRAIN (SEE SYMBOLS)DXDIAF.C.ABOVE FINISHED CEILING(E)EAA.F.G.ABOVE FINISHED CEILINGEAECCAPACITYECCEAECAFC.ARCFAULT CIRCUITECCEAINTERRUPTERSECCEAECAFC.ARC FAULT CIRCUITECCEANITERRUPTERSACCESS PANEL OR DOORELECEIALUM ALUMINUMELEIEIALUM ALUMINUMELEIEIALUM ALUMINUMELEIEIAVE AAGEEMEDEQAVGAVERAGEEMEIAVGAVERAGEEMEIAVGAVERAGEENTEIBUBOILERESPEZEIBLBOILERESPEZEIBLBOTTOM OF BEAMEWCEIBUBOTTOM OF BEAMEWTEIBUBOTTOM OF DIDCTEXEZBOBBOTTOM OF DIDCTEXEZBOBBOTTOM OF BEAMEWTEICCCOMBINATION ARC FAULTFAFFCCCOMBINATION ARC FAULTFAFFCCCO	44″	MOUNTING HEIGHT ABOVE	DIA	DIA
A     AMPS     DIFF     DIFF     DISCH     DIS	FINISH	ED FLOOR TO CENTER OF DEVICE	DIAG	DIA
A.D.ACCESS DOORDISCH DUDIAAVAR ADMITTANCE VALVEDIVDIVDIVABVABOVEDINDIVDIVACAR CONDITIONING UNITDSDIVACAR CONDITIONING UNITDXDIACABOVE COUNTERDVKDXDIAF.C.ABOVE FINISHED CEILINGEAEEAICAMPERE INTERRUPTINGEATECEICAPACITYECCECEIALF.C.ARC FAULT CIRCUITECCECALT.C.ARC FAULT CIRCUITECCEIALT.C.ARC FAULT CIRCUITECCEIALMAUMINUMELECEIALMAUUMINUMELECEIALMAUUMINUMELECEIAVAUUDIO / VIDEOEMEIAVAUUDIO / VIDEOEMEIAVAUCRARGEEMTEIBUBACK PLOW PREVENTORESEIBDBACK PLOW PREVENTORESEIBLDBOITOM OF DUCTEXEIBUBOITOM OF DUCTEXEIBUBOITOM OF DUCTEXEIBUBOITOM OF DUCTEXEICOCIRCUIT BRAKERFCVFICOCOMBINATION ARC FAULTFCFICACONTON OF PIPEEXFIBUBOITOM OF DUCTEXFICOCOMBINATION ARC FAULTFCFICOCOMBINATION ARC FAUL	А	AMPS	DIFF	DIF
AAVAIR ADMITTANCE VALVEDISCH 30ABVABOVEDNDNDAACABOVE COUNTERDNDNADAREA DRAIN (SEE SYMBOLS)DXDDA.F.C.ABOVE FINISHED CEILING(E)EDA.F.G.ABOVE FINISHED GRADEEAEAAICAMDVE FINISHED GRADEEAEDARCABOVE FINISHED FLOOREFEDARCARC FAULT CIRCUITECEDALIMALIMINUMELEEALIMALIMINUMELEEALIMAUTOMATIC TRANSFER SWITCHELECEDAVAUDIO / VIDEOEMEDAVGAVERAGEENTEDBBBASEBOARDEQUIP EDBBBASEBOARDEQUIP EDBDBACK DRAFT DAMPEREQUIP EDBLDGBUILINGENTEDBLDGBUILINGENTEDBLDGBUTTOM OF BEAMEXTEDBDDBACK DRAFT DAMPEREXPANEDBDDBOTTOM OF DUCTEXEDBCDBOTTOM OF DUCTEXEDBODBOTTOM OF DUCTEXEDBCDBOTTOM OF DUCTEXEDCACCHLLERFAFDCATCORRELATED COLORFDFDCTCORRELATED COLORFDFDCTCORRELATED COLORFDFDCTCORRELATED COLORFDFDCTCORRELATED COLORFD	A.D.	ACCESS DOOR		-
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CONDCONDENSATEGNDGICONNCONNECTIONGAGACONTCONTRUATIONGALGACONTRCONTRACTORGALVGACRICOLOR RENDERING INDEXGECGICTCONDUNG TOWERCONDUCCUCONDENSING UNITGCGICUCOPPERGPHGACVBCONSTANT VOLUME BOXGRS/LBCWRCONDENSER WATER RETURNH2OWCWSCONDENSER WATER SUPPLYHBH0DBDRY BULBHDHIDENNKING EQUINTAINHDHI	CONC	CONCRETE	FXC	FLE
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CONIN CONNECTIONGACONT CONTINUATIONGALCONTRCONTRACTORCONTRCONTRACTORCRICOLOR RENDERING INDEXCTCOOLING TOWERCTCURRENT TRANSFORMERCUCONDENSING UNITCUCONDENSING UNITCUCOPPERCVBCONSTANT VOLUME BOXCWRCONDENSER WATER RETURNCWSCONDENSER WATER SUPPLYDBDRY BULBDEPTDEPARTMENTDEDRINKING FOLINTAIN		CONNECTION	<u> </u>	0.11
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CVB     CONSTANT VOLUME BOX     GRS/LB       CWR     CONDENSER WATER RETURN     H 20       CWS     CONDENSER WATER SUPPLY     HB       DB     DRY BULB     HD       DEPT     DEPARTMENT     HD       DE     DRINKING FOUNTAIN     HP	CUH	GADINET UNIT HEATER	GPM	GAI
CWR     CONDENSER WATER RETURN     H 20     W       CWS     CONDENSER WATER SUPPLY     HB     H0       DB     DRY BULB     HD     HI       DEPT     DEPARTMENT     HD     HI	CVB	CONSTANT VOLUME BOX	CDC/1	2
CWS     CONDENSER WATER SUPPLY     H 20     W       DB     DRY BULB     HB     H0     HI       DEPT     DEPARTMENT     HD     HI       DE     DRINKING FOUNTAIN     HP     HI	CWR	CONDENSER WATER RETURN	UNA-	,
DB DRY BULB HD HI DEPT DEPARTMENT HP HI DE DRINKING FOUNTAIN	CWS	CONDENSER WATER SUPPLY	H 20	WA
DEPT DEPARTMENT HD HI DEPT DEPARTMENT HP HI DE DRINKING FOLINTAIN	2.10		HB	HO
DEPT DEPARTMENT HP HI	NR	UKT BULB	HD	HE
	DEPT	DEPARTMENT	. <i>-</i> -	
DI D	DF	DRINKING FOUNTAIN	115	וז⊏ו

	DIAMETER
G	DIAGRAM
F	DIFFERENTIAL
СН	DISCHARGE
011	
~	DOCT SILENCER
G	
	EXHAUST AIR GRILLE/REGISTER
-	ENTERING AIR TEMPERATURE
	ELECTRICAL CONTRACTOR
2	ECCENTRIC
	EXHAUST FAN
	EFFICIENCY
	ELEVATION
С	ELECTRIC
V	ELEVATOR
	EMERGENCY FUNCTION
-	ENTERING
Г	ELECTRIC METALLIC TUBE
	EQUAL
JIP	EQUIPMENT
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<b>,</b>	EXTERNAL STATIC PRESSURE
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ı /IPE	RATURE
	EXHAUST
PAN	EXPANSION
-	EXTERNAL
,	
	FINISHED
	FULL LOAD AMPS
Х	FLEXIBLE
	FLOOR
3	FLAT ON BOTTOM
-	FLAT ON TOP
	FIRE PROTECTION
	FIRE PUMP
1	FEET PER MINUTE
5	FEET PER SECOND
	FLOW SWITCH
)	FIRE/SMOKE DAMPER
	FEET
;	FLEXIBLE CONNECTION
C	GROUND
	GAUGE
_	GALLON
v	GALVANIZED
2	
, NDL	ICTOR
CI / (	GFI GROUND FAULT CIRCUIT
ERF	RUPTER
	GENERAL CONTRACTOR
H	GALLONS PER HOUR
Λ	GALLONS PER MINUTE
S/LE	GRAINS PER POUND
С	WATER
	HOSE BIBB

HEAD (SEE SCHEDULES) HEAT PUMP

## SUBSTITUTIONS:

A. SUBSTITUTIONS: SUBSTITUTION OF SPECIFIED EQUIPMENT WILL BE ALLOWED THROUGH A PRIOR APPROVAL PROCESS INITIATED BY THE CONTRACTOR. CONTRACTOR SHALL SUBMIT INTENDED SUBSTITUTION AT LEAST FIVE DAYS PRIOR TO BID FOR APPROVAL FROM ENGINEER. SUBMITTAL SHALL INCLUDE CAPACITIES, DIMENSIONS AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT. SUBSTITUTION SHALL OCCUR AT NO COST TO THE OWNER. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF APPROVED SUBSTITUTION AND SHALL INCUR ALL COSTS ASSOCIATED WITH THE SUBSTITUTION INCLUDING STRUCTURAL MODIFICATIONS, SPACE LAYOUT AND REDESIGN COSTS. SEE ALSO DIVISION I GENERAL REQUIREMENTS.

EXAMINATION OF SITE, DRAWINGS, SPECIFICATIONS:

A. EXAMINE CAREFULLY THE SITE AND CONDITIONS OF THE SITE. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR TO INSTALL A COMPLETE WORKING SYSTEM WITHIN THE SITE CONDITIONS.

B. EXAMINE THE DRAWINGS AND SPECIFICATIONS AND 5 DAYS PRIOR TO BIDDING REPORT ANY ERRORS, OMISSIONS, INCONSISTENCIES, AND CONFLICTS TO THE ENGINEER TO BE REMEDIED IN AN ADDENDUM TO THE PROJECT PRIOR TO BID TIME.

C. DRAWINGS ARE DIAGRAMMATIC AND CATALOG NUMBERS GIVEN ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE CAPACITY OF THE EQUIPMENT MEETS THE DRAWING REQUIREMENTS AND SHALL NOT DIMENSION FROM THE MECHANICAL, PLUMBING, OR PIPING DRAWINGS.

D. THE LATEST ADOPTED VERSIONS OF THE NEW MEXICO BUILDING CODES SHALL BE USED AS REQUIRED. THIS WILL ALSO INCLUDE THE LATEST ADOPTED VERSIONS OF THE MECHANICAL, PLUMBING, AND ENERGY CONSERVATION CODES. ALL METHODS AND MATERIALS REQUIRED BY THESE CODES SHALL BE REQUIRED BY THESE SPECIFICATIONS UNLESS INDICATED OTHERWISE. OTHER APPLICABLE LOCAL CODES AND ORDINANCES SHALL BE AS REQUIRED AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BE KNOWLEDGEABLE OF THESE REQUIREMENTS.

E. WHERE INSTALLATION PROCEDURES OR ANY PART THEREOF ARE REQUIRED TO BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL BEING INSTALLED, PRINTED COPIES OF THESE RECOMMENDATIONS SHALL BE FURNISHED TO THE ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF THE ITEM WILL NOT BE ALLOWED TO PROCEED UNTIL THE RECOMMENDATIONS ARE RECEIVED. FAILURE TO FURNISH THESE RECOMMENDATIONS CAN BE CAUSE FOR REJECTION OF THE MATERIAL.

HP	HORSEPOWER	PTAC	PACKAGED TERMINAL AIR
HR	HOUR	COND	ITIONER
ΗT	HEIGHT	PV	
HTR	HEATER		
HWR	HEATING WATER RETURN		
HWS	HEATING WATER SUPPLY	RCP	
HX	HEAT EXCHANGER	RD	ROOF DRAIN
HZ		REL	RELIEF
		REQD	REQUIRED
		RF	RETURN FAN
	INVERT	RH	RELATIVE HUMIDITY
		RHC	REHEAT COIL
K	KELVIN	RLA	RATED LOAD AMPS
ĸw	KILOWATT	RM	ROOM
KVA	KILO VOLT - AMPS	RPM	REVOLUTIONS PER MINUTE
L	LENGTH	SA	SUPPLY AIR GRILLE / REGISTER
LAT	LEAVING AIR TEMPERATURE	SC	SHORT CIRCUIT
LV	LAVATORY	SCA	SHORT CIRCUIT AVAILABLE
LB	POUND	SCCR	
LD	LINEAR DIFFUSER	RATIN	
LF	LINEAR FEET	SCH	
LIN	LINEAR	3D 855	
LIQ	LIQUID	SEF	
LM	LUMEN	ъг сц	SUPPLY FAN
LRA	LOCKED ROTOR AMPS	21	
LV	LOUVER	оп СП	
LVG	LEAVING	37 800	
LWT	LEAVING WATER TEMPERATURE	SPD	
MBH	THOUSANDS OF BTU PER HOUR	50	SOLIARE
MC	MECHANICAL CONTRACTOR	50	STAINI ESS STEEL
MCA	MINIMUM CIRCUIT AMPACITY	SS	SAFETY SHOWER
МСВ	MAIN CIRCUIT BREAKER	STD	STANDARD
MD	MOTORIZED DAMPER	STI	STEEL
MDP	MAIN DISTRIBUTION PANEL	SYS	SYSTEM
MED	MEDIUM	TEMP	TEMPERATURE
MFR	MANUFACTURER	TR	TRANSFER GRILLE / REGISTER
MIN	MINIMUM	TR	
MISC	MISCELLANEOUS	TT	TEMPERATURE TRANSMITTER
MLO	MAIN LUG ONLY	ттв	TELECOMMUNICATIONS
		TERMI	NAL BACKBOARD
	MOUNTED	TYP	TYPICAL
MIIA		ТХ	TRANSFORMER
N		UC	UNDERCUT DOOR
NC		UH	UNIT HEATER
NEG	NEGATIVE	UNO	UNLESS NOTED OTHERWISE
		UNOC	C UNOCCUPIED
NI	NIGHT / SECURITY LIGHT - DO	UR	URINAL
NOT S	WITCH	V	VOLTS
NO	NORMALLY OPEN	VA	VOLT AMPERE
NOM	NOMINAL	VA	VALVE
NTS	NOT TO SCALE	VAV	VARIABLE AIR VOLUME UNIT
OA	OUTSIDE AIR	VFD	VARIABLE FREQUENCY DRIVE
OBD	OPPOSED BLADE DAMPER	VRF	VARIABLE REFRIGERANT FLOW
ос	ON CENTER	VOLT	VOLTAGE
occ	OCCUPIED	VTR	VENT THROUGH ROOF
OCP	OVER CURRENT PROTECTION	W	WIDTH
OD	OUTSIDE DIAMETER	VV	WATTS
OL	OVERLOAD	VV/	WITH
ORD	OVERFLOW ROOF DRAIN	W/O	
ΟZ	OUNCE	WB	
	PARALLEL BLADE DAMPER	WC	
PBD		WC	
PBD PD	PRESSURE DROP	14/0	
PBD PD PH	PRESSURE DROP PHASE	WG	
PBD PD PH POS	PRESSURE DROP PHASE POSITIVE PRESSURE	WG WP	
PBD PD PH POS POS	PRESSURE DROP PHASE POSITIVE PRESSURE POINT OF SALES	WG WP WPIU	WEATHERPROOF WEATHERPROOF IN-USE
PBD PD PH POS POS PRV	PRESSURE DROP PHASE POSITIVE PRESSURE POINT OF SALES PRESSURE REDUCING VALVE	WG WP WPIU WSR	WEATHERPROOF WEATHERPROOF IN-USE WITHSTAND RATING
PBD PD PH POS POS PRV PS	PRESSURE DROP PHASE POSITIVE PRESSURE POINT OF SALES PRESSURE REDUCING VALVE PRESSURE SWITCH	WG WP WPIU WSR XFMR	WEATHERPROOF WEATHERPROOF IN-USE WITHSTAND RATING TRANSFORMER
PBD PD PH POS POS PRV PS PSI	PRESSURE DROP PHASE POSITIVE PRESSURE POINT OF SALES PRESSURE REDUCING VALVE PRESSURE SWITCH POUNDS PER SQUARE INCH	WG WP WPIU WSR XFMR	WEATHERPROOF WEATHERPROOF IN-USE WITHSTAND RATING TRANSFORMER

ESTABLISHED 1996 **EARS** 622 Rood Avenue Grand Junction, CO 81501 970-242-1058 **BLYTHE GROUP + CO.** Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road Grand Junction, CO 81501 Phone (970) 241-8709 **REED PARK RESTROOM & BUILDING FACILITIES** ELECTRICAL COVER SHEET 100% CD REV. DESC. DATE: DATE: 09/15/2023 PROJECT #: 23234 SHEET #: **E0-1** 

# BCE



# Project Team: BCE

Print Date: 7/26/2023 11:40:05 AM


![](_page_14_Figure_3.jpeg)

![](_page_14_Figure_4.jpeg)

![](_page_14_Picture_5.jpeg)

ELECTRICAL ROOF PLAN

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

![](_page_14_Picture_8.jpeg)

ELECTRICAL FLOOR PLAN SCALE: 1/4"=1'-0"

BC Established 1996 (CO. BLYTHE GROUP + CO.
Bighorn Consulting Engineers, Inc. Mechanical & Electrical Engineers 386 Indian Road Grand Junction, CO 81501 Phone (970) 241-8709
REED PARK RESTROOM & BUILDING FACILITIES
ELECTRICAL ROOF AND FLOOR PLAN
100% CD
REV. DESC. DATE:
DATE: 09/15/2023
SHEET #:
E2-1

PANEL SCHEDULE - PP1 TYPE: PANELBOAR VOLTAGE: 277/480 ENCLOSURE: NEMA1				DARD	BUS SIZE: 200 MAIN BRKR: 200 MOUNTING: SURFACE		CE	PHASES: 3 WIRES: 4 SC RATING: 2200	NEUTRAL BUS: YES GROUND BUS: NO 00	
LOAD TYPE	LOAD DESCRIPTION			AMPS POLES	CKT# LOAD	۵	CKT# LOAD	AMPS POLES	LOAD TYPE	LOAD DESCRIPTION
PROCESS					1 12500	A	2 25000		PROCESS	
PROCESS	SITE POWER SP			60A 3P	3 12500	В	4 25000	100A 3P	PROCESS	RESTROOM BUILIDNG PP2
PROCESS					5 12500	С	6 25000		PROCESS	
SPACE					7 0	A	8 0		SPACE	
SPACE					9 0	В	10 0		SPACE	
SPACE					11 0	С	12 0		SPACE	
SPACE					13 0	A	14 0		SPACE	
SPACE					15 0	В	16 0		SPACE	
SPACE					17 0	С	18 0		SPACE	
SPACE					19 0	A	20 0		SPACE	
SPACE					21 0	В	22 0		SPACE	
SPACE					23 0	С	24 0		SPACE	
LOADS BY TYPE:					LOADS BY	PHASE	:			
LOAD TYPE	CONNECTED LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)		PHASE		( [	CONNECTED OAD (VA)	CONNECTED LOAD (AMPS)	BALANCE (PERCENT)
LIGHTING KITCHEN PROCESS BECEPTACI ES	0.00 0.00 112500.00	1.25 0.00 1.00	0.00 0.00 112500.00		A B C			37500.00 37500.00 37500.00	135.38 135.38 135.38	A-B: 100 B-C: 100 C-A: 100
MECH HEATING MECH COOLING	0.00 0.00 0.00	1.00 1.00 1.00	0.00 0.00 0.00		TOTAL//	AVERA	GE 1	12500.00	135.38	100.0
MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE	0.00 0.00 0.00 0.00 0.00	1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 0.00 0.00		NOTES: 1. THE LARGEST CC			IED MOTOR	LOAD IS INCLUDED IN M	IECHANICAL, PROCESS, OR MOTOR LOADS.
TOTAL	112500.00	0.20	112500.00							

PANEL SCHEDULE	- PP2	TYPE: VOLTAGE: ENCLOSURE:	PANELB 120/240 NEMA1	OARD	BUS S MAIN MOUN	SIZE: BRKR: ITING:	100 100 FLUSH	ł	PHASES: 1 WIRES: 3 SC RATING: 18000	NEUTRAL BUS: YES GROUND BUS: YES
LOAD TYPE	LOAD DESCRIPTION			AMPS POLES	CKT# LOAD	۵	CKT# LOAD	AMPS POLES	LOAD TYPE	LOAD DESCRIPTION
LIGHTING	INTERIOR AREA			20A 1P	1 638	A	2 4077	50A 2P	MECH YEAR ROUND	ELECTRIC AIR HANDLING UNIT
LIGHTING	EXTERIOR BUILDING			20A 1P	3 500	В	4 4077		MECH YEAR ROUND	
RECEPTACLE	INTERIOR AREA			20A 1P	5 1080	A	6 270	15A 1P	MOTOR	EXHAUST FANS EF-1
RECEPTACLE	DRINKING FOUNTAIN GROUND FAULT BRE	I AKER 5 MA		20A 1P	7 800	В	8 3000	30A 1P	MECH HEATING	WATER HEATER WH-1
MOTOR	PUMP CONTROL PAN	IEL		20A 1P	9 300	A	10 360	15A 1P	RECEPTACLE	EXTERIOR GROUND FAULT BREAKER 5 MA
LIGHTING	SITE LIGHTS			20A 1P	11 75	В	12 0		SPACE	
SPACE					13 0	A	14 0		SPACE	
SPACE					15 0	В	16 0		SPACE	
SPACE					17 0	A	18 0		SPACE	
SPACE					19 0	В	20 0		SPACE	
SPACE					21 0	A	22 0		SPACE	
SPACE					23 0	В	24 0		SPACE	
LOADS BY TYPE:					LOADS BY	PHASE	:	1	l .	
LOAD TYPE	CONNECTED LOAD (VA)	DEMAND FACTOR	DEMAND LOAD (VA)		PHASE			CONNECTED LOAD (VA)	CONNECTED LOAD (AMPS)	BALANCE (PERCENT)
LIGHTING KITCHEN PROCESS	1213.00 0.00 0.00	1.25 0.00 1.00	1516.25 0.00 0.00		A B C			6725.00 8452.00 	56.04 70.43	A-B: 79.6 B-A: 79.6
MECH HEATING MECH COOLING MECH YEAR ROUND	3000.00 0.00 8154.00	1.00 1.00 1.00 1.00	3000.00 0.00 8154.00		TOTAL/	AVERA	GE	15177.00	63.24	79.6
APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL	0.00 0.00 570.00 0.00 ABOVE 15177.00	1.00 1.00 1.00 1.00 0.25	0.00 0.00 855.00 0.00 2038.50 17519.00		1. THE L	ARGES	T CONNEC	TED MOTOR	LOAD IS INCLUDED IN ME	CHANICAL, PROCESS, OR MOTOR LOADS.

			1 1 16 416		
	MANUFACTURER	MANUFACTURER		RE SCHED	
	CATALOG NO.	CATALOG NO.	# OF LAMPS	LAMP TYPE LAMP CAT. #	4' LED STRIP LIGHT, UL LISTED, DAMP LOCATIONS,
A  	COOPER LUMARK AP		120-277V SURFACE CEILING	40W LED, 4000K, 80CR	, 10" SQUARE CANOPY LIGHT, UL LISTED, IP65 RATED
c	COOPER STREETWORKS WKP4BLEDEDFC-7040	APPROVED	120-277V EXTERIOR WALL	32W LED, 4000K, 2239L	M 10"X16.625" LED WALL PACK WITH FULL CUTOFF, IP66 RATED, UL LISTED
	LITHONIA DSX1-LED-P3-30K-BLC3-120-	APPROVED EQUIVALENT	120V POLE	102W LED, 9750 LM, 70CRI,	10"X16.625" LED WALL PACK WITH FULL CUTOFF, IP66 RATED, UL LISTED
EM	NLTAIR2 COOPER - SURE-LITES APEL	APPROVED EQUIVALENT	120-277V SURFACE	LED EMERGENCY	UL924 DAMP LOCATION LISTED LED EMERGENCY LIGHT, NFPA101 COMPLIANT. FOLLOW MANUFACTURER'S SPACING REQUIREMENTS: PROVIDE ALL REQUIRED ACCESSORIES
IOTE					SYSTEM.
3. A	CHITECT/OWNER TO SELECT CO	OLORS/FINISHES AN	ND ROUND OR SQUAR	e pole for lights.	
COMI MAG:	COMBINATION MOTOR STARTE MAGNETIC MOTOR STARTER	ER	NR: NONE REQU P/I: PLUG-IN UNI	JIRED CONT: CON T MAN: MANI W/U: SUPP	TRACTOR JAL MOTOR STARTER LIED WITH UNIT:
UNIT NO	FUNCTION (NOTES)	LOAD	VOLTS Ø FULL LOAD AMPS	BRANCH CIRCUIT CONDUIT NO. WIRE SIZE CONDUCTOR SIZE	GRND WIRE SIZE SIZE SIZE SIZE SIZE SIZE SIZE
	ELECTRIC AIR HANDLING UNIT  EXHAUST FAN EF-1 	54W	208         1         39.2A           120         1         0.45A	1"         3         6           3/4"         2         12	10         50         W/U         60 50           12         15         \$
	ELECTRIC WATER HEATER WH-7	1 3kW	120 1 25.0A	3/4" 2 10	10 30 \$
			EXTER		
			2		75KVA 480V DELTA 2081/(120) (10)/E
			200A SERVICE 480/277V 3Ø, 4W		NEMA 1 MOUNT UP HIGH IN MECH ROOM
	FROM TRANSFORMER			PP1	
				200A MC 277/480\ 24CKT 3Ø, 4W	
				22kAIC	
					PP2 100A MCB 120/208V
	FEEDER SCHEDI	<u>ULE</u>			24CKT 3Ø, 4W 18kAIC
	2 2-1/2"EMT-/ 3 1.5"PVC-3#	4#4/0(CU) + GROUNI 1(CU) + GROUND	D		
	G #4AWG CU #4AWG CU	TO METAL WATER   TO 20' UNCOATED (	PIPES AND STRUCTUF CONCRETE ENCASED	RAL STEEL ELECTRODE	
		(		DIAGRAM	
		N	OT TO SCALE		

	MANUFACTURER	MANUFACTURER	LUMINAI VOLTAGE	BALLAST	ILE	BG
TYPE	CATALOG NO.	CATALOG NO.	MOUNTING # OF LAMPS	LAMP TYPE LAMP CAT. #		25 ESTABLISHED 1996
A	SEAL4-50N/D10/LC		SURFACE CEILING	26.4W, 4000K	HIGH IMPACT POLYCARBONATE LENS	622 Rood Avenue Grand Junction, CO 81501
В	CLCS15	EQUIVALENT	SURFACE CEILING	5671LM	TU' SQUARE CANOPY LIGHT, UL LISTED, IP65 RATED	BLYTHE GROUP + CO.
С	COOPER STREETWORKS WKP4BLEDEDFC-7040	APPROVED EQUIVALENT	120-277V EXTERIOR WALL	32W LED, 4000K, 2239LM	10"X16.625" LED WALL PACK WITH FULL CUTOFF, IP66 RATED, UL LISTED	
D	LITHONIA DSX1-LED-P3-30K-BLC3-120- NLTAIR2	APPROVED EQUIVALENT	120V POLE	102W LED, 9750 LM, 70CRI,	10"X16.625" LED WALL PACK WITH FULL CUTOFF, IP66 RATED, UL LISTED	Bighorn Consulting
EM	COOPER - SURE-LITES APEL	APPROVED EQUIVALENT	120-277V SURFACE	LED EMERGENCY 0.33W	UL924 DAMP LOCATION LISTED LED EMERGENCY LIGHT, NFPA101 COMPLIANT. FOLLOW MANUFACTURER'S SPACING REQUIREMENTS; PROVIDE ALL REQUIRED ACCESSORIES.	Engineers, Inc. Mechanical &
NOTES 1. C 2. LI 3. A	S: ONTRACTOR TO PROVIDE ALL AP GHTING CONTROLS ARE BASED ( RCHITECT/OWNER TO SELECT CO	PURTENANCES REC JPON 2018 IECC REC DLORS/FINISHES AN	QUIRED FOR A COMPI QUIREMENTS. ID ROUND OR SQUAR	LETE AND FUNCTIONING S	/STEM.	Electrical Engineers
	ΝΛΕ					386 Indian Road Grand Junction, CO 81501 Phone (970) 241-8709
COME MAG:	IVIL B: COMBINATION MOTOR STARTE MAGNETIC MOTOR STARTER			JIRED CONT: CONT T MAN: MANU	ACTOR L MOTOR STARTER	
UNIT	FUNCTION	LOAD	VOLTS Ø FULL		ED WITH UNIT: GRND BRKR START DISC	
	(NOTES)		208 1 39.2A	SIZE CONDUCTOR SIZE 1" 3 6	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	
	 EXHAUST FAN EF-1  ELECTRIC WATER HEATER WH (	54W	120 1 0.45A	3/4" 2 12	12 15 \$	REED PARK RESTROOM & BUILDING FACILITIES
			200A SERVICE 480/277V 3Ø, 4W		75KVA 480V DELTA 208V/120V WYE NEMA 1 MOUNT UP HIGH IN MECH ROOM	
	FROM TRANSFORMER	<u></u> 1		PP1 200A MCB 277/480V 24CKT 3Ø, 4W 22kAIC	3 PP2 100A MCB 120/208V 24CKT	ELECTRICAL SCHEDULES AND DETAILS
	1 2-1/2"PVC-4	1#4/0(CU,XHHW)	_		3Ø, 4W 18kAIC	100% CD
	2 2-1/2"EMT-4 3 1.5"PVC-3#	I#4/0(CU) + GROUNE 1(CU) + GROUND	)			
	G #4AWG CU #4AWG CU	TO METAL WATER F TO 20' UNCOATED (	PIPES AND STRUCTUF CONCRETE ENCASED	DIAGRAM		
		NO	OT TO SCALE			
						REV. DESC. DATE:
						PROJECT #: 23234
						SHEET #:

![](_page_15_Figure_9.jpeg)

## SECTION 260000 GENERAL PROVISIONS

### SECTION 26010 GENERAL PROVISIONS

A. THE ARCHITECTURAL GENERAL AND SPECIAL CONDITIONS FOR THE CONSTRUCTION OF THIS PROJECT SHALL BE A PART OF THE ELECTRICAL SPECIFICATIONS. THE ELECTRICAL CONTRACTOR SHALL EXAMINE THE GENERAL AND SPECIAL CONDITIONS BEFORE SUBMITTING THEIR PROPOSAL B. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK INCLUDED IN

- THIS SECTION AND THE DELEGATION OF WORK TO THE ELECTRICAL CONTRACTOR SHALL NOT RELIEVE THEM OF THIS RESPONSIBILITY. THE ELECTRICAL CONTRACTOR AND THEIR SUBCONTRACTORS WHO PERFORM WORK UNDER THIS SECTION SHALL BE RESPONSIBLE TO THE GENERAL CONTRACTOR. C. WHERE ITEMS OF THE GENERAL CONDITIONS OR OF THE SPECIAL CONDITIONS ARE
- REPEATED IN THIS SECTION OF THE SPECIFICATIONS, IT IS INTENDED TO CALL PARTICULAR ATTENTION TO OR QUALIFY THEM; IT IS NOT INTENDED THAT ANY OTHER PARTS OF THE GENERAL CONDITIONS OR SPECIAL CONDITIONS SHALL BE ASSUMED TO BE OMITTED IF NOT REPEATED HEREIN.
- D. THE NAMING OF A CERTAIN BRAND OR MAKE OR MANUFACTURER IN THE SPECIFICATIONS IS TO ESTABLISH A OUALITY STANDARD FOR THE ARTICLE DESIRED. THE CONTRACTOR IS NOT RESTRICTED TO THE USE OF THE SPECIFIC BRAND OF THE MANUFACTURER NAMED UNLESS SO INDICATED IN THE SPECIFICATIONS. E. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND PRESENT FIVE (5) COPIES OF SHOP DRAWINGS OR BROCHURES FOR ALL FIXTURES. EOUIPMENT, AND ACCESSORIES TO THE ARCHITECT AND OWNER FOR APPROVAL. CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL
- COMPLIANCE SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIOUES: CONSTRUCTION COORDINATION OF THEIR WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF THEIR WORK. F. THE ELECTRICAL CONTRACTOR SHALL EXAMINE DRAWINGS RELATING TO WORK OF
- ALL TRADES AND BECOME FULLY INFORMED AS TO EXTENT AND CHARACTER OF WORK REQUIRED AND ITS RELATION TO ALL OTHER WORK IN THE PROJECT. G. BEFORE SUBMITTING BID, CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALI ADIOINING EXISTING BUILDINGS. EOUIPMENT AND SPACE CONDITIONS ON WHICH THEIR WORK IS IN ANY WAY DEPENDENT FOR THE BEST WORKMANSHIP AND OPERATION ACCORDING TO THE INTENT OF SPECIFICATIONS AND DRAWINGS. THEY SHALL REPORT TO THE ARCHITECT ANY CONDITION WHICH MIGHT PREVENT THEM FROM INSTALLING THEIR EQUIPMENT IN THE MANNER INTENDED. H. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT SITE,
- OR FOR ANY ALLEGED MISUNDERSTANDING OF MATERIALS TO BE FURNISHED OR WORK TO BE DONE. CERTIFYING ENGINEER RESERVES THE RIGHT TO PROVIDE INTERPRETATION OF DESIGN DRAWINGS AND THE INTENT OF WHAT IS BEING SHOWN AND THIS INTERPRETATION SHALL BE FINAL I. REFER TO DIVISION I FOR ADDITIONAL REQUIREMENTS. EXISTING CONDUITS, PIPES, UTILITY LINES, TANKS, EOUIPMENT, OR OTHER OBSTRUCTIONS WHETHER UNDERGROUND, CONCEALED, OR EXPOSED ARE NOT IN GENERAL INDICATED ON
- DRAWINGS. PRIOR TO START OF WORK, HAVE EXISTING UTILITY OBSTRUCTIONS CLEARLY MARKED BY UTILITIES LOCATOR SERVICE. PLAN WORK SO AS TO ROUTE AND LOCATE ALL NEW WORK TO AVOID THESE OBSTRUCTIONS. REPAIR OR REPLACE. AT NO COST TO OWNER, EXISTING INSTALLATIONS WHERE DAMAGED, OCCURRING DURING THE COURSE OF CONSTRUCTION. END OF SECTION 26010

## SECTION 26015 ELECTRICAL DRAWINGS AND REFERENCE SYMBOLS

- A. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERALLY THE LOCATIONS OF MATERIAL AND EOUIPMENT. THESE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE WORK UNDER THIS SECTION WITH THE ARCHITECTURAL, STRUCTURAL, PLUMBING, HEATING AND AIR CONDITIONING, AND THE DRAWINGS OF OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES AND ROUGHING-IN LOCATIONS: THIS CONTRACTOR SHALL COOPERATE WITH ALL OTHER TRADES IN ORDER TO MAKE MINOR FIELD ADJUSTMENTS TO ACCOMMODATE THE WORK OF OTHERS. DO NOT RELY ON THE SCALE OF THE DRAWINGS FOR ROUGH-IN MEASUREMENTS, NOR USE THEM AS SHOP DRAWINGS.
- B. THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY, EACH TO THE OTHER, AND THE WORK REQUIRED BY EITHER SHALL BE INCLUDED IN THE CONTRACT AS IF CALLED FOR BY BOTH. C. IF DIRECTED BY THE ARCHITECT, THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE LAYOUT AS NEEDED TO
- PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK D FLECTRICAL SYMBOLS USED ON THIS PROJECT ARE SHOWN IN A SYMBOL LIST ON THE ACCOMPANYING WORKING DRAWINGS. THIS LIST SHOWS STANDARD SYMBOLS
- AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON PROJECT DRAWINGS OCCURS, THE ITEM SHALL BE PROVIDED AND INSTALLED. END OF SECTION 26015

## SECTION 26020 WORK INCLUDED

THE SCOPE OF THE WORK CONSISTS OF ELECTRICAL INSTALLATION AND MODIFICATION AT THE PROJECT LOCATION INDICATED ON THE ACCOMPANYING WORKING DRAWINGS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: ELECTRICAL DISTRIBUTION INSTALLATION: POWERING OF MECHANICAL EOUIPMENT: POWERING OF OWNER PROVIDED EQUIPMENT; AND OTHER ITEMS AS CALLED OUT ON THE DRAWINGS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIALS, EOUIPMENT, MACHINERY, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE INSTALLATION OF SYSTEMS WITHIN SCOPE OF WORK THE ELECTRICAL CONTRACTOR SHALL NOTE THAT ALL ITEMS OF EOUIPMENT ARE SPECIFIED IN THE SINGULAR; HOWEVER, THE CONTRACTOR SHALL PROVIDE AND INSTALL THE NUMBER OF ITEMS OF EQUIPMENT AS INDICATED ON THE DRAWINGS AND AS REQUIRED FOR COMPLETE SYSTEMS. B. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED, AND READY FOR OPERATION.

C. ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON THE DRAWINGS BUT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PROFESSIONAL IN ALL RESPECTS AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED. SHALL BE FURNISHED DELIVERED AND INSTALLED BY THE CONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER, WITH SUBMISSION OF BID. THE ELECTRICAL CONTRACTOR SHALL GIVE WRITTEN NOTICE TO THE ARCHITECT OF ANY MATERIALS OR APPARATUS BELIEVED INADEQUATE OR UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES, RULES; ANY NECESSARY ITEMS OR WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGREED THAT THE CONTRACTOR HAS INCLUDED THE COST OF ALL REOUIRED ITEMS IN THEIR PROPOSAL, AND THAT THEY WILL BE RESPONSIBLE FOR THE APPROVED SATISFACTORY FUNCTIONING OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPENSATION.

## END OF SECTION 26020 SECTION 26030

- CODES AND FEES A. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS. UTILITY COMPANY AND FIRE INSURANCE CARRIER'S REQUIREMENTS. CONTACT PROPER AUTHORITIES, OBTAIN AND PAY FOR REOUIRED PERMITS, INSPECTIONS AND UTILITY SERVICE CONNECTIONS. DO NOT INCLUDE ANY UTILITY COMPANY CHARGES THAT CAN BE BILLED DIRECTLY TO THE OWNER. B. IN CASE OF DIFFERENCE BETWEEN THE BUILDING CODES, SPECIFICATIONS, STATE
- LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, FIRE INSURANCE CARRIER'S REQUIREMENTS, AND THE CONTRACT DOCUMENTS, THE MOST STRINGENT SHALL GOVERN. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT IN WRITING OF ANY SUCH DIFFERENCE. C. NONCOMPLIANCE: SHOULD THE CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, FIRE INSURANCE CARRIER'S REOUREMENTS, AND UTILITY COMPANY REGULATIONS, THEY SHALL BEAR THE COST ARISING IN CORRECTING ANY SUCH DEFICIENCY.

## SECTION 26100 BASIC METHODS AND MATERIALS

END OF SECTION 26030

### SECTION 26101 GENERAL

- A. PROTECTION: ALL WORK, MATERIALS AND EQUIPMENT SHALL BE COMPLETELY AND ADEQUATELY PROTECTED AT ALL TIMES. PAY FOR ALL DAMAGE, INJURY OR LOSS. EXCEPT SUCH AS MAY BE DIRECTLY DUE TO ERRORS IN THE CONTRACT DOCUMENTS OR BE CAUSED BY AGENTS OR EMPLOYEES OF THE OWNER. POST EFFECTIVE DANGER SIGNS WARNING AGAINST HAZARDS CREATED BY THE WORK. B. TRENCHING AND BACKFILLING: PERFORM ALL TRENCHING AND BACKFILL REQUIRED BY WORK UNDER THIS DIVISION OF THE SPECIFICATIONS. TRENCHING AND BACKFILLING SHALL BE DONE IN ACCORDANCE WITH THE "SITE WORK" DIVISION OF THE SPECIFICATIONS AND AS HEREIN SPECIFIED. THIS PORTION OF THE WORK SHALL BE EXECUTED UNDER THE DIRECT SUPERVISION OF THE GENERAL CONTRACTOR.
- TRENCHES SHALL BE EXCAVATED TO THE DEPTH REQUIRED FOR THE UTILITIES INVOLVED. THE TRENCH BOTTOM SHALL BE GRADED TRUE AND FREE FROM DEBRIS. STONES AND SOFT SPOTS. WHERE DIRECT BURIAL CABLES ARE USED FOUR INCHES OF FINE SAND SHALL BE PLACED IN THE BOTTOM OF THE TRENCH PRIOR TO CABLE PLACEMENT

### C. EQUIPMENT, MATERIALS, INSTALLATION: 1. ALL EQUIPMENT, ACCESSORIES, AND SPECIALTIES CONNECTED TO EQUIPMENT, AND ALL ITEMS OF MATERIAL SHALL BE INSTALLED AS RECOMMENDED BY THEIR

- MANUFACTURERS UNLESS SPECIFICALLY STATED OTHERWISE. PROVIDE PROPER SUPPORTS, MOUNTS, ETC., AS REOUIRED. 2. COORDINATE WITH THE GENERAL CONTRACTOR.
- 3.0BTAIN INSTRUCTIONS FROM THE ARCHITECT FOR INSTALLATION OF ITEMS NOT COMPLETELY COVERED BY CONTRACT DOCUMENTS OR PUBLISHED MANUFACTURER'S RECOMMENDATIONS.
- D. EQUIPMENT FINISH: ALL ELECTRICAL EOUIPMENT SHALL BE FURNISHED FACTORY PAINTED OR FINISHED WITH TWO COATS OF HIGH-GRADE ENAMEL AND IN THE MANUFACTURER'S STANDARD COLORS UNLESS OTHERWISE SPECIFIED. 1. UNPAINTED EQUIPMENT AND MATERIALS, EXCEPT CONDUIT IN CONCEALED SPACES, SHALL BE CLEANED AND PRIMED TO BE PAINTED BY THE PAINTING CONTRACTOR IN
- ACCORDANCE WITH THE PAINTING SECTION OF THESE SPECIFICATIONS. 2. THE COLORS OF ALL EXPOSED ELECTRICAL MATERIAL AND APPARATUS SHALL BE AS SELECTED BY THE OWNER. CHASES, SLEEVES, CUTTING, PATCHING
- 1. PROVIDE FOR NECESSARY CHASES, HOLES, SLEEVES, BOXES, INSERTS AND HANGERS BY ARRANGEMENT WITH CONTRACTORS OF THE OTHER APPROPRIATE TRADES. PROVIDE "FLAMESEAL" OR OTHER APPROVED AND RATED FIRESTOPPING MATERIAI AT ALL PENETRATIONS THROUGH RATED WALLS, FLOORS AND CEILINGS. 2. PROVIDE FOR ALL CUTTING AND PATCHING OF HOLES, OPENINGS, AND NOTCHES. OBTAIN WRITTEN APPROVAL OF THE ARCHITECT BEFORE NOTCHING, BORING,
- CHIPPING, BURNING, DRILLING, OR WELDING TO STRUCTURAL MEMBERS. F. INSPECTION 1. ALL WORK AND MATERIALS COVERED BY DRAWINGS AND SPECIFICATIONS SHALL BE SUBJECT TO INSPECTION AT ANY AND ALL TIMES BY REPRESENTATIVES OF THE ARCHITECT AND OWNER. IF ANY MATERIAL OR INSTALLATION DOES NOT CONFORM TO THE DRAWINGS AND SPECIFICATIONS, WITHIN THREE DAYS AFTER BEING NOTIFIED BY THE ARCHITECT. REMOVE THE MATERIALS FROM THE PREMISES AND CORRECT THE INSTALLATION TO THE SATISFACTION OF THE ARCHITECT. ASSUME
- THE ENTIRE COST OF REMOVING AND REPLACING THE MATERIAL AND CORRECTING THE INSTALLATION, INCLUDING CUTTING AND PATCHING THAT MAY BE NECESSARY. 2. WORK SHALL NOT BE CLOSED IN NOR COVERED BEFORE INSPECTION AND APPROVAL BY THE ARCHITECT. PROVIDE FOR UNCOVERING AND MAKING REPAIRS. AT NO EXTRA COST. WHEN UNINSPECTED WORK HAS BEEN CLOSED IN. NOTIFY THE ARCHITECT WHEN WORK IS READY FOR INSPECTION
- 3.NOTIFY PROPER AUTHORITIES WHEN WORK IS READY FOR ANY INSPECTIONS REOUIRED BY APPLICABLE CODES, RULES AND REGULATIONS, ALLOWING SUFFICIENT TIME FOR INSPECTIONS TO BE MADE WITHOUT HINDERING PROGRESS OF THE WORK, AND FURNISH THE OWNER, WITHOUT ADDITIONAL COSTS, PROPER CERTIFICATES OF ACCEPTANCE FROM SUCH AUTHORITIES. 4. UPON COMPLETION OF ALL WORK AND ADJUSTMENT OF ALL EQUIPMENT, FINAL INSPECTION SHALL BE MADE UNDER DIRECTION OF THE ARCHITECT. THE CONTRACTOR SHALL TEST AND OPERATE ALL DEVICES, EQUIPMENT AND SYSTEMS TO DEMONSTRATE THAT THE ELECTRICAL SYSTEM IS COMPLETE AND FUNCTIONAL
- IN THE MANNER REQUIRED. G. CLEAN UP 1. DURING THE COURSE OF THE WORK REMOVE ANY MATERIALS NOT INSTALLED IN THE WORK WHICH CONFLICT WITH THE WORK OF OTHERS IF SO DIRECTED BY THE ARCHITECT
- 2. AT COMPLETION OF WORK CLEAN UP AND REMOVE FROM THE PREMISES ALL DEBRIS AND MATERIALS NOT INSTALLED IN THE WORK SO THE PREMISES WILL BE LEFT CLEAN. WASH AND WIPE CLEAN ALL LIGHTING FIXTURES AND LAMPS WHICH MAY HAVE BECOME SOILED DURING INSTALLATION H. RECORD DRAWINGS: AT COMPLETION OF THE WORK FURNISH TO THE ARCHITECT TWO COMPLETE SETS OF ELECTRICAL PRINTS MARKED TO SHOW THE WORK
- "AS-BUILT". I. MAINTENANCE AND OPERATING PROCEDURES: UPON COMPLETION OF ALL WORK AND ADJUSTMENT OF ALL EQUIPMENT INSTRUCT THE OWNER ON THE CORRECT OPERATION AND MAINTENANCE PROCEDURE FOR THE ELECTRICAL SYSTEM IN TOTAL FURNISH 3 SETS OF TYPED MAINTENANCE MANUALS CONTAINING CUT SHEETS ON ALL EQUIPMENT, TABLES OF FUSES AND FOR WHAT EQUIPMENT, TABLE OF LAMPS AND BALLASTS AND FOR WHAT FIXTURES. INCLUDE A LIST OF CONTACTS WITH PHONE NUMBERS FOR ALL SYSTEMS FOR OWNERS' USE. IN THE EVENT THE ELECTRICAL
- SYSTEM REQUIRES SERVICE WORK WITHIN THE WARRANTY PERIOD. J.GUARANTEE: GUARANTEE THAT ALL WORK GOVERNED BY THIS DIVISION SHALL BE NEW AND FREE OF DEFECTIVE WORK, MATERIALS, AND COMPONENTS FOR A PERIOD OF ONE YEAR AFTER WRITTEN ACCEPTANCE. REPAIR. REVISE AND REPLACE DEFECTS AS DIRECTED, WITH NO ADDITIONAL COST TO THE OWNER. (INCANDESCENT LAMPS, FUSES AND ANY EXISTING EQUIPMENT ARE EXEMPT). END OF SECTION 26101

## SECTION 26111 CONDUITS

- A. PVC CONDUIT SHALL BE USED FOR ALL UNDERGROUND FEEDERS AND BRANCH CIRCUITS UNLESS OTHERWISE DIRECTED ON PLANS OR AS APPROVED BY NEC. ALL CONDUIT SHALL BE UL APPROVED B. CONDUIT SIZES SHALL BE AS INDICATED ON THE DRAWINGS, OR MINIMUM IN
- ACCORDANCE WITH THE NEC, INCLUDING PROVISION FOR GREEN EQUIPMENT GROUNDING CONDUCTOR USING 3/4 INCH MINIMUM CONDUIT. THE USE OF 1/2 INCH ONDUIT ELSEWHERE MAY BE APPROVED IF CONDITIONS WARRANT C. SPECIAL CONDUIT FITTINGS SHALL BE APPROPRIATE FOR EACH APPLICATION AND SHALL BE MANUFACTURED BY T & B OR APPROVED EQUAL
- D. CONDUIT SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NEC AND SHALL BE INSTALLED IN A NEAT. WORKMANLIKE MANNER. E. THE ENTIRE CONDUIT SYSTEM SHALL BE INSTALLED TO PROVIDE A CONTINUOUS BOND THROUGHOUT THE SYSTEM F. ELECTRICAL METALLIC TUBING (EMT) MAY BE USED FOR BRANCH CIRCUITS AND
- RACEWAYS OTHER THAN FOR SERVICE ENTRANCE AND MAIN FEEDERS UNLESS PROHIBITED BY THE NEC OR LOCAL ORDINANCES. EMT SHALL BE UL APPROVED. GALVANIZED INSIDE AND OUTSIDE, COMPLYING WITH ASA C-80.3 FOR ZINC COATED EMT WITH FITTINGS OF THE SAME TYPE MATERIAL AND FINISH, OF THE PRESSURE CONNECTED TYPE FOR EXTERIOR INSTALLATION AND OF THE SET SCREW TYPE FOR INTERIOR INSTALLATION. . ALL CONDUIT JOINTS SHALL BE CUT SOUARE, REAMED SMOOTH, AND DRAWN UP
- TIGHT. BENDS OR OFFSETS SHALL BE MADE WITH AN APPROVED BENDER OR HICKEY. OR HUB-TYPE CONDUIT FITTINGS. NUMBER OF BENDS PER RUN SHALL CONFORM TO THE NEC LIMITATIONS. H. CONCEALED CONDUITS SHALL BE RUN IN A DIRECT LINE WITH LONG SWEEP BENDS
- AND OFFSETS. EXPOSED CONDUITS SHALL BE PARALLEL TO AND AT RIGHT ANGLES TO BUILDING LINES, USING CONDUIT FITTINGS FOR ALL TURNS AND OFFSETS. I. TRANSITIONS BETWEEN NONMETALLIC CONDUITS AND CONDUITS OF OTHER MATERIALS SHALL BE MADE WITH THE MANUFACTURER'S STANDARD ADAPTERS DESIGNED FOR SUCH PURPOSE. J.EXPOSED CONDUITS SHALL BE SECURELY FASTENED IN PLACE ON MAXIMUM 10 FOOT
- INTERVALS (OR AS DIRECTED BY MANUFACTURERS INSTALLATION GUIDELINES); AND HANGERS, SUPPORTS OR FASTENERS SHALL BE PROVIDED AT EACH ELBOW AND AT THE END OF EACH STRAIGHT RUN TERMINATING AT A BOX OR CABINET. END OF SECTION 26111

## SECTION 26120 WIRES AND CABLES

- A. WIRE AND CABLE SHALL MEET ALL STANDARDS AND SPECIFICATIONS APPLICABLE AND SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE NEC INSULATED WIRE AND CABLE SHALL HAVE SIZE, TYPE OF INSULATION, VOLTAGE AND MANUFACTURER'S NAME PERMANENTLY MARKED ON OUTER COVERING AT REGULAR INTERVALS NOT EXCEEDING FOUR FEET. WIRE AND CABLE SHALL BE DELIVERED IN COMPLETE COILS OR REELS WITH IDENTIFYING TAGS, STATING SIZE, TYPE OF INSULATION, ETC.
- 3. WIRE AND CABLE SHALL BE SUITABLY PROTECTED FROM WEATHER AND OTHER DAMAGE DURING STORAGE AND HANDLING AND SHALL BE IN FIRST CLASS CONDITION AFTER INSTALLATION. WIRE AND CABLE SHALL BE FACTORY COLOR CODED WITH A SEPARATE COLOR FOR
- EACH PHASE AND NEUTRAL USED CONSISTENTLY THROUGHOUT THE SYSTEM. COLOR CODING SHALL BE AS REOUIRED BY THE NEC. D. ALL CONDUCTORS SHALL BE RATED 600 VOLTS, UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE DRAWINGS, OR FOR ELECTRONIC OR COMMUNICATION USE. WIRE AND CABLE FOR VARIOUS APPLICATIONS SHALL BE AS FOLLOWS UNLESS
- **OTHERWISE DESIGNATED:** 1. WIRE #10 AND SMALLER SHALL BE SOLID; WIRE #8 AND LARGER SHALL BE STRANDED.
- 2. #12 THRU #6 DRY LOCATIONS: TYPE THHN, 90 DEGREES C. 3.#12 THRU #6 IN SLABS, UNDERGROUND, OR WET LOCATIONS: TYPE THWN OR TYPE XHHW, 75 DEGREES C 4. #4 AND LARGER: TYPE XHHW OR TYPE THWN 75 DEGREES C.
- F. WIRE AND CABLE SHALL BE AS MANUFACTURED BY GENERAL ELECTRIC ANACONDA WIRE & CABLE, ROME CABLE, TRIANGLE CONDUIT & CABLE, OR APPROVED EQUAL. SUBSTITUTION OF WIRE AND CABLE MANUFACTURER SHALL BE ONLY WITH THE APPROVAL OF THE ARCHITECT/ENGINEER.
- G. FOR ANY SPECIFIC USE NOT COVERED HERE ABOVE, COMPLY WITH THE NEC IN CONDUCTOR USE H. ALL CIRCUITS SHALL BE 2#12+G UNLESS OTHERWISE NOTED ON DRAWINGS OR IN SCHEDULES. I. ALL 15- AND 20-AMP CIRCUITS WITH LENGTHS OVER 100 FT. SHALL HAVE THEIR
- CONDUCTOR SIZE INCREASED TO #10 FOR VOLTAGE DROP. END OF SECTION 26120

## SECTION 26121 WIRE CONNECTIONS

A. JOINTS ON BRANCH CIRCUITS SHALL OCCUR ONLY WHERE SUCH CIRCUIT DIVIDE AS

## INDICATED ON PLANS AND SHALL CONSIST OF ONE THROUGH CIRCUIT TO WHICH SHALL BE SPLICED THE BRANCH FROM THE CIRCUIT. IN NO CASE SHALL JOINTS IN BRANCH CIRCUITS BE LEFT FOR THE FIXTURE HANGER TO MAKE. NO SPLICES SHALL BE MADE IN CONDUCTOR EXCEPT AT OUTLET BOXES, JUNCTION BOXES, OR SPLICE BOXES B. ALL JOINTS OR SPLICES FOR #10 AWG OR SMALLER SHALL BE MADE WITH UL

APPROVED WIRE NUTS OR COMPRESSION TYPE CONNECTORS. C. ALL JOINTS OR SPLICES FOR #8 AWG OR LARGER SHALL BE MADE WITH A MECHANICAL COMPRESSION CONNECTOR. AFTER THE CONDUCTORS HAVE BEEN MADE MECHANICALLY AND ELECTRICALLY SECURE, THE ENTIRE JOINT OR SPLICE SHALL BE COVERED WITH SCOTCH #33 TAPE OR APPROVED EQUAL TO MAKE THE INSULATION OF THE JOINT OR SPLICE EQUAL TO THE INSULATION OF THE CONDUCTORS. THE CONNECTOR SHALL BE UL APPROVED. END OF SECTION 26121

### SECTION 26125 PULLING CABLES

- A. INSTALL CONDUCTORS IN ALL RACEWAYS AS REQUIRED, UNLESS OTHERWISE NOTED, IN A NEAT AND WORKMANLIKE MANNER. ALL EMPTY CONDUITS SHALL HAVE A #14 GALVANIZED PULL WIRE OR NYLON PULLCORD LEFT IN PLACE FOR FUTURE USE. B. CONDUCTORS SHALL BE COLOR CODED IN ACCORDANCE WITH THE NEC. MAINS. FEEDERS, SUBFEEDERS SHALL BE TAGGED IN ALL PULL, JUNCTION, AND OUTLET BOXES AND IN THE GUTTER OF PANELS WITH APPROVED CODE TYPE WIRE MARKERS. C. NO LUBRICANT OTHER THAN POWDERED SOAPSTONE OR APPROVED PULLING
- COMPOUND MAY BE USED TO PULL CONDUCTORS. D. AT LEAST EIGHT (8) INCHES OF SLACK WIRE SHALL BE LEFT IN EVERY OUTLET BOX WHETHER IT BE IN USE OR LEFT FOR FUTURE USE. E. ALL CONDUCTORS AND CONNECTIONS SHALL TEST FREE OF GROUNDS SHORTS AND OPENS BEFORE TURNING THE JOB OVER TO THE OWNER.
- F. PULL BOXES SHALL BE REQUIRED IN RUNS OVER 100 FEET OR WHEN MORE THAN THREE 90-DEGREE BENDS ARE USED, OR AS INDICATED ON THE
- DRAWINGS G. FEEDERS ARE TO BE RUN ABOVE GROUND TO ALL POWER PANELS AND LIGHTING PANELS, UNLESS INDICATED OTHERWISE ON DRAWINGS.
- 1. WHERE MOTORS HAVE CONDUIT TERMINAL BOXES, FEEDERS SHALL BE CONNECTED TO SAME BY FLEXIBLE MEANS. I. ALL MOTORS WITH SLIDING BASE MOUNTINGS SHALL HAVE NOT LESS THAN 18 INCHES
- NOR MORE THAN 6 FEET OF CONDUIT CONNECTING RIGID CONDUIT FEED TO MOTOR TERMINAL BOX.
- J.CONDUCTOR SPLICES SHALL BE MADE ONLY IN JUNCTION BOXES, TERMINAL BOXES, OR PULL BOXES. END OF SECTION 26125

## SECTION 26133 OUTLET BOXES

- ALL OUTLET BOXES FOR CONCEALED WIRING SHALL BE SHEET METAL A. GALVANIZED OR CADMIUM PLATED, AT LEAST 1 « INCHES DEEP, SINGLE OR GANGED OF SIZE TO ACCOMMODATE DEVICES AND NUMBER OF CONDUCTORS NOTED BOXES SHALL BE EQUIPPED WITH PLASTER RING OR COVER AS NECESSARY. ALL
- OUTLET BOXES SHALL BE MANUFACTURED BY STEEL CITY OR APPROVED EQUAL. B. BOXES FOR EXPOSED WIRING SHALL BE MALLEABLE IRON, CADMIUM FINISH, OR
- CAST ALUMINUM ALLOY, AS MANUFACTURED BY STEEL CITY, AND SHALL NOT BE LESS THAN 4 INCHES SOUARE BY 1 « INCHES DEEP UNLESS OTHERWISE NOTED.
- C. FIXTURE OUTLET BOXES SHALL BE MINIMUM 4 IN OCTAGONAL AND, WHERE REQUIRED AS OUTLET AND JUNCTION BOXES, THEY SHALL BE 4 11/16 INCHES BY 2 1/8 INCHES DEEP. END OF SECTION 26133

# **SECTION 26190**

- SUPPORTING DEVICES A. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL METALLIC SUPPORTS AS REQUIRED FOR THE PROPER INSTALLATION OF RACEWAY SYSTEMS AND ALL OTHER EQUIPMENT INSTALLED UNDER THIS DIVISION OF THE CONTRACT
- CONFORMING TO THE LATEST EDITION OF THE NEC. B. CONDUIT SHALL BE SUPPORTED ON APPROVED TYPES OF WALL-BRACKETS, CEILING TRAPEZES, STRAP HANGERS OR PIPE SUPPORTS, SECURED BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY WALLS OR UNITS. EXPANSION BOLTS WILL BE USED IN CONCRETE OR BLOCK MACHINE SCREWS ON METAL SURFACES AND WOOD SCREWS ON
- WOOD CONSTRUCTION. C. CONDUIT SHALL BE SECURELY FASTENED TO ALL SHEET METAL OUTLETS. JUNCTION AND PULL BOXES WITH TWO GALVANIZED LOCKNUTS AND BUSHING, CARE BEING TAKEN TO SEE THAT THE FULL NUMBER OF THREADS PROJECT THROUGH TO PERMIT THE BUSHING TO BE DRAWN TIGHT AGAINST THE END OF THE CONDUIT, AFTER WHICH THE LOCKNUTS SHALL BE MADE TIGHT SUFFICIENTLY TO DRAW THEM INTO FIRM ELECTRICAL CONTACT WITH THE OUTLET BOX. INSTALL A PLASTIC BUSHING ON END OF PIPE THREADS PROTRUDING INTO JUNCTION BOXES AND OTHER
- ENCLOSURES TO PROTECT CABLING. D. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUPPORTS REQUIRED FOR THE ELECTRICAL EQUIPMENT AND CONDUIT. END OF SECTION 26190

## SECTION 26195 ELECTRICAL IDENTIFICATION

- THE ELECTRICAL CONTRACTOR SHALL MAINTAIN ACCURATE RECORDS OF ALL DEVIATIONS IN WORK AS ACTUALLY INSTALLED FROM WORK INDICATED ON THE DRAWINGS. UPON COMPLETION OF THE PROJECT, TWO (2) COMPLETE SETS OF MARKED-UP PRINTS SHALL BE DELIVERED TO THE ARCHITECT.
- B. IDENTIFICATION OF EQUIPMENT 1.PROVIDE AND INSTALL LAMINATED BLACK AND WHITE LAMACOID NAMEPLATES FOR ALL SERVICE SWITCHES, DISTRIBUTION SWITCHES, DISTRIBUTION SWITCHBOARDS, BRANCH CIRCUIT PANELBOARDS, SAFETY SWITCHES, CABINETS STARTERS, AND OTHER EOUIPMENT WITH THEIR CORRECT DESIGNATION. LABEL EQUIPMENT IN AREAS ACCESSIBLE TO THE PUBLIC ON INSIDE OF ENCLOSURE ONLY. NAMEPLATES SHALL BE FIRMLY SECURED TO FRONT COVER OR DOOR WITH TWO
- PROPERLY SIZED POP RIVETS. 2. MOUNT A TYPEWRITTEN DIRECTORY BEHIND PLASTIC ON THE INSIDE OF EACH BRANCH CIRCUIT PANEL DOOR GIVING THE NUMBER DESCRIPTION AND LOCATION OF THE CIRCUIT CONTROLLED BY EACH CIRCUIT BREAKER. REVISE EXISTING DIRECTORIES TO REFLECT CIRCUIT MODIFICATIONS UNDER THIS CONTRACT.
- 3.ALL FUSED SAFETY SWITCHES AND FUSED SWITCH UNITS IN SWITCHBOARDS SHALL INDIVIDUALLY BEAR A FUSE LABEL SHOWING PROPER SIZE AND TYPE OF FUSE TO BE 4. INSTALL WIRING DIAGRAMS ON THE INSIDE COVER OF ALL STARTERS, SWITCHES
- AND OTHER SUCH EQUIPMENT. SUCH DIAGRAMS SHALL NOT BE HANDWRITTEN. 5.ALL JUNCTION BOXES WITH BLANK COVERS SHALL HAVE CIRCUITS CONTAINED THEREIN IDENTIFIED BY MEANS OF PERMANENT BLACK "MAGIC MARKER" ON THE COVER. END OF SECTION 26195

## SECTION 26199 ELECTRONIC EQUIPMENT

- A. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND CONNECTION OF A PROPER POWER SUPPLY TO ALL ELECTRONIC EQUIPMENT FURNISHED BY OTHERS. HE SHALL VERIFY ALL VOLTAGE, FREOUENCY, ETC REQUIREMENTS PRIOR TO ENERGIZING THE CIRCUIT. THOSE INSTALLING THE EQUIPMENT WILL BE RESPONSIBLE FOR THE PROPER OPERATION OF THE EQUIPMENT
- PROVIDED THE PROPER POWER SUPPLY CIRCUIT IS INSTALLED BY THE ELECTRICAL CONTRACTOR. B. PROVIDE TELEPHONE LINES TO EQUIPMENT CONTROL PANELS WITH MODEM
- ACCESS. COORDINATE WITH MECHANICAL CONTRACTOR. END OF SECTION 26199

## SECTION 26400 SERVICE AND DISTRIBUTION

# SECTION 26401

GENERAL A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL RELATED DISTRIBUTION EQUIPMENT AS INDICATED ON THE FLOOR PLAN, DIAGRAMS SCHEDULES, AND NOTES. ALL EOUIPMENT SHALL BE NEW AND UL LISTED.

END OF SECTION 26401

B. RELATED DOCUMENTS: DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND DIVISION 1 SPECIFICATIONS SECTION, APPLY TO WORK OF THIS SECTION.

# SECTION 26440

- DISCONNECT SWITCHES A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL SAFETY SWITCHES AS INDICATED ON THE DRAWINGS OR AS REQUIRED. ALL SAFETY SWITCHES SHALL BE UL LISTED.
- 1. THE SWITCHES SHALL BE FUSED SAFETY SWITCHES (FSS) OR NON-FUSED SAFETY SWITCHES (NFSS) AS SHOWN ON THE DRAWINGS OR REQUIRED AND SHALL BE
- MANUFACTURED BY SIEMENS, SQUARE D, OR APPROVED EQUAL. 2. SWITCHES SHALL HAVE A QUICK-MAKE AND QUICKBREAK OPERATING HANDLE AND MECHANISM WHICH SHALL BE AN INTEGRAL PART OF THE BOX. PADLOCKING PROVISIONS SHALL BE PROVIDED FOR PADLOCKING IN THE OFF POSITION WITH AT
- LEAST THREE PADLOCKS. SWITCHES SHALL BE HORSEPOWER RATED FOR 250 VOLTS AC OR DC OR 600 VOLTS AC AS REQUIRED. LUGS SHALL BE UL LISTED FOR COPPER AND ALUMINUM CABLE. 3.SWITCHES SHALL BE FURNISHED IN NEMA I GENERAL PURPOSE ENCLOSURES WITH
- KNOCKOUTS UNLESS OTHERWISE NOTED OR REOUIRED. SWITCHES LOCATED ON THE EXTERIOR OF THE BUILDING OR IN "WET" LOCATIONS SHALL HAVE NEMA 3R

# ENCLOSURES (WP)

- 4. THE SAFETY SWITCHES SHALL BE SECURELY MOUNTED IN ACCORDANCE WITH THE NEC. THE CONTRACTOR SHALL PROVIDE ALL MOUNTING MATERIALS AND INSTALL FUSES IN THE FSS. THE FUSES SHALL BE DUAL ELEMENT TIME DELAY ON MOTOR CIRCUITS.
- END OF SECTION 26440

## SECTION 26450 GROUNDING

A. THE CONDUIT SYSTEMS AND NEUTRAL CONDUCTOR FOR THE WIRING SYSTEM, AND THE TELEPHONE SYSTEM SHALL BE SECURELY GROUNDED. THE GROUNDS SHALL BE NEC GROUNDS IN EACH CASE B. A GROUND SHALL BE ESTABLISHED AND TESTS CARRIED OUT TO INDICATE THAT SATISFACTORY GROUND HAS BEEN ESTABLISHED IN ACCORDANCE WITH THE NEC. C. WRITTEN RESULTS OF THIS TEST SHALL BE FORWARDED TO THE ENGINEER BEFORE CONNECTION TO THE SERVICE. END OF SECTION 26450

## SECTION 2647( PANELBOARDS

- A. FURNISH AND INSTALL DISTRIBUTION AND POWER PANELBOARDS AS INDICATED IN THE PANELBOARD SCHEDULE AND WHERE SHOWN ON THE DRAWINGS. PANELBOARD SHALL BE DEAD-FRONT SAFETY TYPE, EQUIPPED WITH QUICK-MAKE, QUICK-BREAK FUSIBLE BRANCH SWITCHES AND APPROVED FOR SERVICE ENTRANCE. THE ACCEPTABLE MANUFACTURERS OF THE PANELBOARD ARE SIEMENS, SQUARE D, AND GE, PROVIDED THEY ARE FULLY EQUAL TO THE TYPE LISTED ON THE DRAWINGS. THE PANELBOARD SHALL BE UL LISTED AND BEAR THE UL LABEL
- B. ALL FUSIBLE BRANCH SWITCHES SHALL BE QUICK-MAKE, QUICK BREAK, WITH VISIBLE BLADES AND DUAL HORSEPOWER RATINGS SWITCH HANDLES SHALL PHYSICALLY INDICATE ON AND OFF POSITIONS. SUCH HANDLES SHALL ALSO BE ABLE TO ACCEPT THREE PADLOCKS HAVING HEAVY-DUTY INDUSTRIAL TYPE SHACKLES. COVERS SHALL BE INTERLOCKED WITH THE SWITCH HANDLES TO PREVENT OPENING IN THE ON POSITION. A MEANS SHALL BE PROVIDED TO ALLOW AUTHORIZED PERSONNEL TO RELEASE THE INTERLOCK FOR INSPECTION PURPOSES WHEN A SWITCH
- IS ON. A CARDHOLDER, PROVIDING CIRCUIT IDENTIFICATION, SHALL BE MOUNTED ON EACH BRANCH SWITCH. SWITCHES SHALL BE PROVIDED WITH FUSES OR AS NOTED ON THE DRAWINGS. PANELBOARD BUS STRUCTURE AND MAIN LUGS OR MAIN SWITCH SHALL HAVE
- CURRENT RATINGS AS SHOWN ON THE PANELBOARD SCHEDULE. THE BUS STRUCTURE SHALL ACCOMMODATE PLUG-ON OR BOLTED BRANCH SWITCHES AND MOTOR STARTERS AS INDICATED IN THE PANELBOARD SCHEDULE WITHOUT MODIFICATION TO THE BUS ASSEMBLY. PROVIDE SOLID NEUTRAL ASSEMBLY (S/N). D. SWITCHES AND PANELBOARD BUS STRUCTURE SHALL SAFELY AND WITHOUT
- FAILURE WITHSTAND SHORT CIRCUITS ON THE SYSTEMS CAPABLE OF DELIVERING UP TO 100.000 AMPERES RMS SYMMETRICAL. UNLESS OTHERWISE NOTED E. PANELBOARD ASSEMBLY SHALL BE ENCLOSED IN A STEEL CABINET. THE RIGIDITY AND GAUGE OF STEEL TO BE AS SPECIFIED IN UL STANDARD FOR CABINETS. THE SIZE OF WIRING GUTTERS SHALL BE IN ACCORDANCE WITH UL STANDARD. CABINETS SHALL BE EQUIPPED WITH A FRONT DOOR AND HAVE FULLY CONCEALED, SELF-ALIGNING TRIM CLAMPS. FRONTS SHALL BE FULL-FINISHED STEEL WITH RUST
- INHIBITING PRIMER AND BAKED ENAMEL FINISH. F. TERMINALS FOR FEEDER CONDUCTORS TO THE PANELBOARD MAINS AND NEUTRAL SHALL BE SUITABLE FOR THE TYPE OF CONDUCTOR SPECIFIED. TERMINALS FOR BRANCH CIRCUIT WIRING, BOTH BREAKER AND NEUTRAL, SHALL BE SUITABLE FOR THE TYPE OF CONDUCTOR SPECIFIED.
- G. BEFORE INSTALLING PANELBOARDS CHECK ALL OF THE ARCHITECTURAL DRAWINGS FOR POSSIBLE CONFLICT OF SPACE AND ADJUST THE LOCATION OF THE PANELBOARD TO PREVENT SUCH CONFLICT WITH OTHER ITEMS.
- H. THE PANELBOARDS SHALL BE MOUNTED IN ACCORDANCE WITH THE NEC. THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL MATERIAL FOR MOUNTING THE PANELBOARDS. END OF SECTION 26470

# SECTION 26471

- BRANCH CIRCUIT PANELBOARD A. POWER AND LIGHTING PANELS SHALL BE OF THE DEAD-FRONT, SAFETY TYPE, WITH THERMAL MAGNETIC, QUICKMAKE, QUICK-BREAK, TRIP FREE, BOLTED-TYPE MOLDED CASE CIRCUIT BREAKERS. VOLTAGE RATINGS NUMBER OF POLES, FRAME SIZE, TRIP RATINGS, MAIN BREAKER OR LUGS, NEUTRAL BUS, AND GROUND BUS ARE ALL AS SHOWN ON THE DRAWINGS. BUS BARS SHALL BE RECTANGULAR, SOLID COPPER, SECURELY MOUNTED AND BRACED. ALL CONNECTIONS TO BUS BARS SHALL BE SECURELY BOLTED. CABINET BOXES SHALL BE CONSTRUCTED OF CODE GRADE GALVANIZED STEEL, SIZED TO PROVIDE MINIMUM 4-INCH WIDE WIRING GUTTERS ON SIDES. TOP AND BOTTOM. FRONTS SHALL BE CONSTRUCTED OF CODE GRADE STEEL, ADJUSTABLE INDICATING TRIM CLAMPS AND WITH DOOR PROVIDED WITH CONCEALED HINGES AND CYLINDER TYPE LOCK AND CATCH. TWO KEYS PER PANEL SHALL BE FURNISHED, AND ALL LOCKS KEYED ALIKE. FRONT SHALL BE FINISH PAINTED BLUE-GRAY.
- B. POWER PANELS SHALL BE SIEMENS, TYPE S1, S2, S3, SE, OR ENGINEER APPROVED FOUAL. WITH BRANCH BREAKERS, MAIN BREAKERS OR LUGS, NEUTRAL AND GROUND BUSES ETC ALL AS SHOWN ON THE DRAWINGS C. POWER AND LIGHTING PANEL CONSTRUCTION DETAILS SHALL BE IN ACCORDANCE WITH UL STANDARDS AND SHALL CONFORM TO NEMA STANDARDS. THEY SHALL
- BEAR THE UL LABEL. PANELS SHALL MEET USASI SPECIFICATIONS W-P-115A, TYPE CLASS L D. ALL PANEL DIRECTORIES SHALL BE TYPED AND TERMINOLOGY APPROVED BY THE OWNER.

## END OF SECTION 26471 SECTION 26475

- OVERCURRENT PROTECTIVE DEVICES A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL WHERE INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE NEC MOLDED CASE CIRCUIT BREAKERS IN A NEMA TYPE 1 ENCLOSURE. BREAKERS SHALL BE MANUALLY OPERATED. TRIP-FREE AND DESIGNED SO THAT ALL POLES OPEN SIMULTANEOUSLY. TRIPPING MECHANISM SHALL BE (THERMALLY, MAGNETICALLY) OPERATED, SHALL OPEN INSTANTANEOUSLY ON SHORT CIRCUITS AND HAVE TIME DELAY ON OVERLOADS. AND HAVE EFFECTIVE SCALING AGAINST TAMPERING. BREAKERS SHALL BE AS CALLED FOR ON THE DRAWINGS OR IN THE PANELBOARD SCHEDULE AND AS MANUFACTURED
- BY SIEMENS, SQUARE D, OR APPROVED EQUAL. FUSES, UNLESS INDICATED OTHERWISE, SHALL BE DUAL ELEMENT, TIME LAG, CARTRIDGE TYPE AS MANUFACTURED BY BUSSMAN. FUSES FOR MOTOR CIRCUITS SHALL BE SIZED IN ACCORDANCE WITH THE NEC. LABELS INDICATING THE SIZE AND TYPE OF REPLACEMENT FUSES SHALL BE GLUED TO INSIDE OF DOOR ON ALL FUSIBLE SWITCHES AND PANELBOARDS.
- C. ALL FUSES SHALL BE OF THE CURRENT AND VOLTAGE RATING AS REQUIRED OR INDICATED. D. SPARES: SPARE FUSES AMOUNTING TO 10% (MINIMUM THREE) OF EACH TYPE AND RATING SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR. THESE SHALL BE
- TURNED OVER TO THE OWNER UPON PROJECT COMPLETION. END OF SECTION 26475

## SECTION 26800 ELECTRIC RESISTANCE HEATING

SECTION 26851 GENERAL

- A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ELECTRIC HEATING EQUIPMENT AS INDICATED ON THE DRAWINGS, IN THE ELECTRIC HEATING SCHEDULE OR NOTED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS. THE INSTALLATION OF ALL SUCH EQUIPMENT SHALL BE IN STRICT CONFORMANCE TO THE NEC AND APPLICABLE LOCAL ORDINANCES.
- B. ALL CIRCUITS FEEDING THE ELECTRIC HEATING EQUIPMENT SHALL AS INDICATED ON THE DRAWINGS AND ALL CONNECTIONS TO THE HEATER JUNCTION BOX SHALL BE MADE WITH AN APPROVED TYPE OF CONNECTOR C. UNLESS OTHERWISE SPECIFIED, ALL ELECTRIC HEATING EQUIPMENT SHALL BE MANUFACTURED BY NELSON, OR APPROVED EQUAL AND SHALL BE FOR OPERATION
- ON A 208 VOLT. 3 PHASE, WIRE DISTRIBUTION SYSTEM. D. ALL EQUIPMENT SHALL BE FURNISHED COMPLETE WITH REQUIRED BLANK SECTIONS, CORNER AND TRIM ACCESSORIES TO PROVIDE AN INSTALLATION AS SHOWN ON THE DRAWINGS. E. ALL ELECTRIC HEATING EQUIPMENT SHALL BE AUTOMATICALLY CONTROLLED BY
- THERMOSTATS INSTALLED WHERE INDICATED ON THE PLANS OR IN SOME CASES BUILT INTO THE INDIVIDUAL UNITS AS CALLED FOR IN THE SCHEDULE. END OF SECTION 26851

. ALL EQUIPMENT AND MATERIALS USED IN RELATION TO CONTROL WORK FOR THE

PROJECT SHALL BE NEW AND SHALL BEAR THE MANUFACTURER'S NAME AND TRADE

EQUIPMENT AND MATERIAL PERTAINING TO THE ELECTRICAL WORK. THE EQUIPMENT

SHALL RE TIGHTLY COVERED AND PROTECTED AGAINST DIRT. WATER, CHEMICAL OR

MECHANICAL INJURY AND THEFT. THE MANUFACTURER'S DIRECTIONS SHALL BE

NAME. THE EQUIPMENT AND MATERIAL SHALL BE ESSENTIALLY THE STANDARD PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF THE

REQUIRED TYPE OF EQUIPMENT AND SHALL BE THE MANUFACTURER'S LATEST

B. THE ELECTRICAL CONTRACTOR SHALL RECEIVE AND PROPERLY STORE THE

SECTION 26900 CONTROLS AND INSTRUMENTATION

## SECTION 26901 GENERAL

APPROVED DESIGN.

FOLLOWED COMPLETELY IN THE DELIVERY, STORAGE, PROTECTION AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS. C. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL ITEMS	
NECESSARY FOR THE COMPLETE INSTALLATION OF THE EQUIPMENT AS RECOMMENDED OR AS REQUIRED BY THE MANUFACTURER OF THE EQUIPMENT OR REQUIRED BY CODE WITHOUT ADDITIONAL COST TO THE OWNER, REGARDLESS OF WHETHER THE ITEMS ARE SHOWN ON THE PLANS OR COVERED IN THE	BG-
PECIFICATIONS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CLEAN THE LECTRICAL EQUIPMENT, MAKE NECESSARY ADJUSTMENTS AND PLACE THE OUIPMENT INTO OPERATION BEFORE TURNING EQUIPMENT OVER TO OWNER. ANY	
INT THAT WAS SCRATCHED DURING CONSTRUCTION SHALL BE "TOUCHED-UP" WITH CTORY COLOR PAINT TO THE SATISFACTION OF THE ARCHITECT. ANY ITEMS THAT ERE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.	622 Rood Avenue Grand Junction, CO 81501 970-242-1058
JENERAL NLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, LUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL E FURNISHED, SET IN PLACE AND WIRED PER COVER SHEET MATRIX.	BLYTHE GROUP + CO.
LIFY LOCATION AND NAMEPLATE DATA OF ALL MECHANICAL EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLING ELECTRICAL FACILITIES. BE PONSIBLE FO COORDINATION OF REVISIONS AND MODIFICATIONS NECESSARY TO	
)PERLY SUPPLY ELECTRICAL FACILITIES TO HEATING, VENTILATING, AIR NDITIONING, PUMPS, MOTORS, CONTROLS, AND OTHER MECHANICAL EQUIPMENT TALLED IN PLACE OF EQUIPMENT SPECIFIED. REQUIRED ELECTRICAL FACILITIES	Bighorn Consulting Engineers. Inc.
ANGES SHALL BE CONSIDERED TO BE A PART OF THE MECHANICAL CONTRACT. JVIDE EACH MOTOR WITH A HORSEPOWER RATED DISCONNECT SWITCH AND /TOR RUNNING OVERCURRENT PROTECTION PER N.E.C. 430-37. TO FACILITATE SE AND SAFETY OF OPERATION AND MAINTENANCE OF MECHANICAL FOURMENT.	Mechanical & Electrical
OCATE THE DISCONNECT SWITCH IMMEDIATELY ADJACENT TO THE MOTOR, UNLESS THERWISE INDICATED. SIZE THERMAL OVERLOAD HEATER UNITS FOR PPROXIMATELY 115% OF FULL LOAD MOTOR CURRENT. SIZE FUSES IN	Engineers
CCORDANCE WITH THE ACTUAL MOTOR NAMEPLATE RATING AND AS ECOMMENDED BY THE BUSSMAN MFG. CO. CHECK AND COORDINATE ALL FARTERS, FUSES, AND OTHER MOTOR-RUNNING PROTECTIVE DEVICES WITH THE	386 Indian Road
QUIPMENT THEY CONTROL, AND PROVIDE AND INSTALL THE CORRECT SIZE ROTECTIVE ELEMENTS AS REQUIRED. DO NOT CONNECT MOTORS WHICH ARE OF A VOLTAGE RATING DIFFERENT THAN UPPLY VOLTAGE. REPORT SAME TO THE ARCHITECT IN WRITING AND OBTAIN	Grand Junction, CO 81501 Phone (970) 241-8709
RITTEN INSTRUCTIONS FOR RESOLUTION. SE FLEXIBLE CONDUIT FOR ALL CONNECTIONS TO DEVICES DIRECTLY ATTACHED O DUCTS, PIPING AND MECHANICAL EQUIPMENT.	
END OF SECTION 26901 TION 26950 TING	
AS SOON AS ELECTRIC POWER IS AVAILABLE AND CONNECTED TO SERVE THE QUIPMENT IN THE BUILDING, AND EVERYTHING IS READY FOR FINAL TESTING AND LACING IN SERVICE, A COMPLETE OPERATIONAL TEST SHALL BE MADE. THE	
JNTRACTOR SHALL FURNISH ALL NECESSARY INSTRUMENTS AND EQUIPMENT AND AKE ALL TESTS, ADJUSTMENTS, AND TRIAL OPERATIONS REQUIRED TO PLACE THE YSTEM IN BALANCED AND SATISFACTORY OPERATING CONDITION; FURNISH ALL ECESSARY ASSISTANCE AND INSTRUCTIONS TO PROPERTY INSTRUCT THE OWNER'S	BUILDING FACILITIES
JTHORIZED PERSONNEL IN THE OPERATION AND CARE OF THE SYSTEM. PRIOR TO TESTING THE SYSTEM, THE FEEDERS AND BRANCH CIRCUITS SHALL BE ONTINUOUS FROM MAIN FEEDERS TO MAIN PANELS, TO SUBPANELS, TO OUTLETS,	
TH ALL BREAKERS AND FUSES IN PLACE. THE SYSTEM SHALL BE TESTED FREE FROM ORTS AND GROUNDS. SUCH TESTS SHALL BE MADE IN THE PRESENCE OF THE IGINEER'S REPRESENTATIVE.	
THE CIRCUITS SHALL BE ENERGIZED WITHOUT THE OWNER'S APPROVAL. THE RIGHT IS RESERVED TO INSPECT AND TEST ANY PORTION OF THE EQUIPMENT JD/OR MATERIALS DURING THE PROGRESS OF ITS ERECTION. THE CONTRACTOR ALL FURTHER TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND	
REPORT OF THE PARTY OF THE PARTY OF THE PRESENCE OF THE REPORT OF THE PRESENCE OF THE REPORT OF THE	
AT ALL PORTIONS ARE FREE FROM SHORT CIRCUITS OR GROUND FAULTS. END OF SECTION 26950 TION 26980	
MONSTRATION OF ELECTRICAL EQUIPMENT THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH ERTIFICATION OF THE INSPECTION AND APPROVAL OF AN ACTIVE MEMBER OF THE	
TERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS OF ALL WORK DMPLETED AND INCLUDED IN THE SECTION, IF REQUIRED. THE CONTRACTOR SHALL E RESPONSIBLE FOR NOTIFYING THE INSPECTOR WHEN WORK REACHES INSPECTION	
HE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE LOCAL HORITY HAVING JURISDICTION IN ORDER THAT LOCAL INSPECTION MAY BE RIED OUT AT THE PROPER STAGE.	
HE ELECTRICAL CONTRACTOR SHALL PAY FOR ALL PERMITS, INSPECTION FEES, INSTALLATION FEES AS REQUIRED TO COMPLETE THE WORK UNDER THIS TION OF THE CONTRACT.	SPECIFICATIONS
IOD OF TWELVE (12) MONTHS FROM THE TIME THE INSTALLATION IS ACCEPTED BY OWNER. IF, DURING THIS TIME, ANY DEFECTS SHOULD SHOW UP DUE TO ANY ECTIVE MATERIALS, WORKMANSHIP, NEGLIGENCE OR WANT OF PROPER CARE ON	
PART OF THIS CONTRACTOR, HE SHALL FURNISH ANY NEW MATERIALS AS CESSARY, REPAIR SAID DEFECTS, AND PUT THE SYSTEM IN ORDER AT HIS OWN PENSE ON RECEIPT OF NOTICE OF SUCH DEFECTS FROM THE ARCHITECT. THIS	
IFICATION IS NOT INTENDED TO IMPLY THAT THE ELECTRICAL CONTRACTOR LL BE RESPONSIBLE FOR NEGLIGENCE OF THE OWNER. END OF SECTION 26980 END OF DIVISION	
	100% CD
	REV. DESC. DATE:
	DATE: 09/15/2023
	PROJECT #: 23234
	SHEET #:
	E3-2