# TOWN OF HOTCHKISS PUBLIC WORKS FACILITY

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# PROJECT LOCATION

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#### CONSTRUCTION

C.1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE PERMITS, FUNDING AGENCY REQUIREMENTS AND THE TOWN REGULATIONS AND STANDARDS WHEN THERE IS A CONFLCT BETWEEN THE STANDARDS THE MORE STRINGENT SHALL APPLY UNLESS OTHERWISE DIRECTED BY ENGR

C.2. THE TECHNICAL SPECIFICATIONS COVER NOT ONLY THE WORK SPECIFICALLY INCLUDED IN THE SCOPE OF THE WORK BEING BID. BUT ALSO CONTAINS SPECIFICATIONS FOR WORK THAT COULD BE ADDED AS THE WORK PROGRESS OR AS NEEDED TO COMPLETE THE WORK.

C.3. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND UNDERSTANDING THE PLANS, SPECIFICATIONS, STANDARDS AND CODES. CONTRACTOR SHALL EXECUTE HIS WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. ADDITIONAL WORK OR MATERIALS REQUIRED TO BRING THE WORK IN CONFORMANCE WITH THESE REQUIREMENTS. SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER

C.4. A QUALIFIED SUPERINTENDENT WHO IS ACCEPTABLE TO THE OWNER SHALL BE AT THE WORK SITE AND GIVE EFFICIENT SUPERVISION TO THE WORK UNTIL IT IS COMPLETED. THE SUPERINTENDENT SHALL HAVE FULL AUTHORITY TO ACT ON BEHALF OF THE CONTRACTOR, AND ALL DIRECTIONS GIVEN TO THE SUPERINTENDENT SHALL BE CONSIDERED GIVEN TO THE THE CONTRACTOR. AT MOST TIMES, THE SUPERINTENDENT SHALL NOT BE ENGAGED IN OPERATION OF EQUIPMENT OR OTHER CONSTRUCTION.

C.5. ALIGNMENTS AND UTILITY MODIFICATIONS MAY BE ADJUSTED BY ENGINEER IN THE FIELD TO ACCOMMODATE CONFLICTS THAT ARISE OR FOR OTHER SITE CONDITIONS.

C.6. CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING OR WATER DAMAGE REGARDLESS OF WATER SOURCE. ANY REQUIRED DEWATERING AND/OR RESTORATION REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE OWNER.

C.7. CONTRACTOR SHALL LIMIT ACTIVITIES TO THOSE AREAS WITHIN THE LIMITS OF DISTURBANCE AND/OR TOES OF SLOPES AS SHOWN ON THE PLANS. ANY DISTURBANCE BEYOND THAT LIMIT SHALL BE RESTORED TO ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL WORK SHALL INCLUDE THE PARKING OF VEHICLES & EQUIPMENT, DISPOSAL OF WASTE, & ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.

C.8. ALL WORK SHALL BE COMPLETED FROM WITHIN EXECUTED EASEMENTS OR RIGHTS OF WAY. NOTIFY ENGINEER SHOULD CONFLICT ARISE. USE OF ADJOINING PROPERTY IS PROHIBITED UNLESS CONTRACTOR MAKES ARRANGEMENTS WITH ADJOINING LAND OWNER AND PROVIDES EXECUTED DOCUMENTATION OF THOSE ARRANGEMENT TO **ENGINEER & ENGINEER DETERMINES THAT THE DOCUMENTATION IS** ADEQUATE. AT CONCLUSION OF PROJECT, A WRITTEN ACCEPTANCE AND RELEASE FROM ADJOINING LAND OWNER IS REQUIRED. USE OF HAND TOOLS IS REQUIRED IN CLOSE PROXIMITY TO PROPERTIES

C.9. THE CONCRETE SULFATE EXPOSURE IS CLASS 2 FOR THIS PROJECT. ALL EXTERIOR CONCRETE SHALL BE FIBER MESH REINFORCED.

C.10 CONTROL ALL DUST W/ A DUST PALLATIVE APPROVED BY ENGINEER. INCLUDE THIS WORK IN THE COST OF THE ASSOCIATED WORK.

C.11 WORK HOURS SHALL BE LIMITED TO BETWEEN 7:30 AND 5:00 ON TOWN WORK DAYS

# GENERAL NOTES

#### CONSTRUCTION (CONT'D)

C12.CONTRACTOR SHALL COORDINATE WITH ADJOINING PROPERTY OWNERS WHEN WORKING ADJACENT TO THEIR PROPERTY. CONTRACTOR DEPTH PER SHALL MAINTAIN ACCESS TO ALL PROPERTIES AT ALL TIMES.

C13. HOT & COLD WEATHER CONCRETING SHALL BE PERFORMED CONSISTENT WITH CDOT STANDARDS. COST FOR THIS WORK SHALL BE INCLUDED IN THE COST OF THE WORK.

C.14. CONTRACTOR SHALL BE RESPONSIBLE FOR STAGING & ACCESS POINTS.

C15. ALL SPOILS AND TRASH REMOVAL SHALL BE INCLUDED IN THE COST OF THE WORK.

C16. REFERENCES TO CDOT STANDARDS REFER TO 2017 COLORADO DEPARTMENT TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD CONSTRUCTION.

C.17 WHERE FUTURE LINES ARE STUBBED, INSTALL END CAP & DELINEATE END BY BRINGING 2X4 WOOD POST MARKED AT EVEN 1' MARKS (0 AT BOTTOM) & EXTENDING FROM THE TOP OF THE CAP TO THE SURFACE. BACK 2X4 W/STEEL T FENCE POST. INCLUDE COST FOR THIS WORK IN THE COST OF THE PIPE OR CONDUIT.

SURVEY AND HORIZONTAL AND VERTICAL CONTROL

SURVEY INFORMATION TO BE PROVIDED TO THE CONTRACTOR ARE OUTLINED IN SUB SECTION 10.11 OF THE AGREEMENT

RIGHT OF WAY PRECAUTIONS - WHILE WORK CAN BE PERFORMED FROM WITHIN TOWN PROPERTY, IN PLACES THE LIMITS OF CONSTRUCTION ARE VERY CLOSE TO PRIVATE PROPERTY LINES. CONTRACTOR MUST ENSURE THAT THERE IS NO TRESPASS ON PRIVATE PROPERTY, PRIOR TO CONSTRUCTION. ROW LIMITS MUST BE SURVEYED & STAKED BY PROFESSIONAL LAND SURVEYOR. IN ORDER TO AVOID TRESPASS, CONTRACTOR MAYBE REQUIRED TO USE HAND TOOL.

#### UTILITIES.

U.1. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST 3 BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING OPERATIONS IN PROXIMITY OF THE UTILITY. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.

U.2. UTILITIES SHOWN THE PLANS ARE APPROXIMATE BASED ON LOCATES PROVIDED BY THE UTILITIES DURING DESIGN. THERE MAY BE OTHER UTILITIES THAT ARE NOT SHOWN OR ARE SHOWN INCORRECTLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES AS NECESSARY TO ENSURE THE UTILITIES WILL NOT BE IMPACTED BY CONSTRUCTION ACTIVITIES. THE COST FOR SUCH INVESTIGATION SHALL BE INCLUDED IN THE COST OF THE WORK TO WHICH IT IS APPURTENANT.

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 DRAWING ISSUES

 02/28/19
 50% CD

 03/20/19
 RFP

 08/15/19
 GMP SET

# PUBLIC WORKS FACILITY TOWN OF HOTCHKISS, COLORADO



REFERENCE WEST ELEVATION FOR TYPICAL NOTES







# **BUILDING TRANSVERSE SECTION 1-1**

MEZZANINE EXIT STAIRS	A2 A3
MEZZANINE STAIRS - MAX. RISE 6 3/4" MAXIMUM RUN 11" TREAD LENGTH 12" 1" TOE SPACE 3/8" MAX. VARIATION STAIR GEOMETRY SHALL BE ADJUSTED WITHIN THESE PARAMETERS WHEN FINAL ELEVATIONS OF UPPER AND LOWER FINISHED FLOORS ARE KNOWN	<u></u>
SEE S2.2 FOR STRUCTURAL REQ'TS.	
MEZZANINE HANDRAIL	
THE GENERAL CODE REQUIRMENTS FOR THE HANDRAIL ARE INCLUDED BELOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A HANDRAIL THAT MEETS OR EXCEEDS THESE SPECIFICATIONS INCLUDING	
ALL BLOCKING AND BRACKETS REQUIRED.	A3 A3
HANDRAIL TO BE LOCATED A MIN. OF 34" AND MAX. OF 38" (36" DETAILED) ABOVE THE NOSING. HANDRAIL HEIGHT ABOVE NOSINGS SHALL NOT VARY MORE THAN A TOTAL OF 3/8"	A4 A3
HANDRAIL SHALL EXTEND (1) TREAD LENGTH AT BOTTOM HANDRAIL SHALL RETURN HORIZ. 12 INCHES AT THE TOP	A5 A3
HANDRAILS ARE REQUIRED (1) SIDE OF THE STAIR	A6 A3
	<ul> <li>MEZZANINE EXIT STAIRS</li> <li>MEZZANINE STAIRS - MAX. RISE 6 3/4" MAXIMUM RUN 11" TREAD LENGTH 12" 1" TOE SPACE 3/8" MAX. VARIATION STAIR GEOMETRY SHALL BE ADJUSTED WITHIN THESE PARAMETERS WHEN FINAL ELEVATIONS OF UPPER AND LOWER FINISHED FLOORS ARE KNOWN</li> <li>SEE S2.2 FOR STRUCTURAL REQ'TS.</li> <li>MEZZANINE HANDRAIL</li> <li>THE GENERAL CODE REQUIRMENTS FOR THE HANDRAIL ARE INCLUDED BELOW. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE A HANDRAIL THAT MEETS OR EXCEEDS THESE SPECIFICATIONS INCLUDING ALL BLOCKING AND BRACKETS REQUIRED.</li> <li>HANDRAIL TO BE LOCATED A MIN. OF 34" AND MAX. OF 38" (36" DETAILED) ABOVE THE NOSING. HANDRAIL HEIGHT ABOVE NOSINGS SHALL NOT VARY MORE THAN A TOTAL OF 3/8"</li> <li>HANDRAIL SHALL EXTEND (1) TREAD LENGTH AT BOTTOM HANDRAIL SHALL RETURN HORIZ. 12 INCHES AT THE TOP</li> <li>HANDRAILS ARE REQUIRED (1) SIDE OF THE STAIR</li> </ul>

HANDRAILS ARE REQUIRED (1) SIDE OF THE STAIR

HANDRAIL CONSTRUCTION

- 1 1/4" MIN. 2" MAX. CIRCULAR GRIPABLE SURFACE
- 1 1/2" CLEARANCE TO WALL FINISHES HANDRAIL SHALL PROVIDE CONTINUOUS GRIP SURFACE (UNBROKEN) SPLICES REQUIRED SHALL BE SEAMLESS

MINIMUM LOADING

HANDRAIL LOAD 20 PLF (S OCCUP. IBC 1607.7.11)

# NON-SMOOTH FINISH TO BE DETERMINED BY OWNER. ALL OTHER ROOMS TO BE PAINTED BY OWNER

DRYWALL ENTIRE LAVATORY TO BE MOISTURE-RESISTANT R11 INSULATION AT ALL INTERIOR WALLS - COMPATIBLE FOR INTERIOR USE

INSTALL CEMENT BOARD BACKING BEHIND SHOWERS AND OTHER LOCATIONS WHERE REQUIRED BY MANUFACTURER OR THE IBC. MEZZANINE FLOOR FINISH BY OWNER STAIR FLOOR FINISH BY OWNER

TRIM OUT ALL DOORS AND MOP BOARDS PER FINISH SPECIFICATIONS

RECESS FOR EYE WASH.

A7 A3

A8 A3

A9 A3

A10 A3

A11 A3

A12 A3

A13 A3

A14 A3

A15 A3

WATER FOUNTAIN - ADA COMPLIAN INSTALL TO MANUFACTURER SPEC

RETURN TRIM AT WINDOWS AND I TRIM, FLASHING AND MOISTURE-P

PERIMETER INSULATION 2" RIGID FOAM REF. SPECIFICATIO

STEEL INTERIOR LINER PER META PERIMETER OF MAIN FLOOR (EXCE FRAME WALLS EXIST. HEIGHT TO AND AT EXTERIOR OF MEZZANINE

STEEL FRAMING SHALL BE PRIME
PROJECT SPECIFICATIONS

EYEWASH PER OSHA. REF. MECH DWGS

MOP SINK REF. MECH.

FRAME AROUND STEEL COLUMNS IN OFFICE SPACES DRYWALL FINISH PER OTHER DETAILS

OF THE BUILDING. MAXIMUM GAP 1" TBD

MAXIMUM STUD SPACING 16" O.C., 5/8" DRYWALL, MOISTURE-RESISTANCE DRYWALL SHALL BE USED AT LOCATIONS SUBJECT TO WATER, DRYWALL TO BE INSTALLED TO CODE, TAPED AND TEXTURED. TEXTURE TYPE SHALL BE A

LAVATORY TO BE PAINTED (SEMI GLOSS PER OWNER) BY CONTRACTOR

	A3
NT CIFICATIONS. REF. MECH. DOORS TO INTEGRATE WITH PROOFING FOR EXTERIOR WINDOWS	E5 A3
ONS AL BUILDING MANUFACTURER EPT) AT OFFICE SPACES WHERE	E6 A3
TO A HEIGHT OF 8 FT.	E9 A3
	E10 A3

LOCATE STAIR LANDING OUTSIDE OF THE ENVELOPE

# EXTERIOR NOTES FOR METAL BUILDING PACKAGE

**REF. METAIL BUIDING SPECIFICATION NOTES AND MANUF. SHOP DRAWINGS** ALL EXTERIOR STEEL BUILDING COMPONENTS SHALL BE COMPATIBLE WITH SELECTED STRUCTURAL SYSTEMS, ROOFING SYSTEMS, WALL SYSTEMS AND MISC. TRIM. COLOR TO BE SELECTED BY OWNER AND SHALL MATCH.

- SOFFIT TO BE COVERED WITH STEEL SIDING E1 TO MATCH WALL APPEARANCE. A3
- E2

**E**4

- EXTERIOR SIDING A3 **REF. SPECIFICATIONS COLOR TBD FROM STANDARD COLORS**
- ROOFING PER STEEL BUILDING MANUF. E3 STANDING SEAM A3
  - ROOFING TO BE SPECIFIED FOR SPANS PER BUILDING MANUF. FLASHING PER STEEL BUILDING MANUF.
  - AS NEEDED FOR A WATER AND DAMP TIGHT INSTALLATION.
  - CONTINUOUS RAINGUTTER SOUTH OVERHANG PER MANUF. CONTINUOUS RAINGUTTER NORTH OVERHANG PER MANUF. DOWNSPOUT EACH END. SLOPE AS REQUIRED. INTERMEDIATE DOWNSPOUTS SHALL NOT BE USED.
  - ROOFING EXPOSED TO BELOW AT EQUIPMENT AWNING ALL STRUCTURAL ELEMENTS TO BE PRIMED
  - FLASH AND SEAL AT BEAM PROJECTIONS AS REQUIRED. FLASHING TO MATCH SIDING COLOR, INSULATE AND CAULK
  - FLASHING OVER INSULATION GALVANIZED 24 GAGE. PROFILE TO ACCOMODATE BASE DETAIL OF BUILDING EXTEND MIN. 6 INCHES BELOW FINISHED GRADE ATTACH INSULATION TO STEMWALL PER INSUL MANUF.SPEC.
  - SNOW RAILS SHALL BE DESIGNED AND SPECIFIED BY THE METAL BUILDING MANURACTURE AND SHALL BE CONSITENT WITH THE STANDING SEAM ROOF. CLIPS SHALL BE INSTALLED AT NORTH AND SOUTH EAVE LINES TO PROTECT RAINGUTTERS.

DRAWING ISSUES	
02/28/19 50% CD	
13/20/19 RFP	
08/15/19 GMP SET	

**VORKS FACILITY** DLATHE, COLORADO DEAN NICHOLAS BOSWORTH, PE COLORADO STRUCTURAL ENGINEER

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# LAVATORY PLAN/ DETAILS



			PF
			RE PL FC BA
		B.O. MIRROR	тс
			SC
PENSER H8		す CONCEAL PLUMBING	тс
A4	34" I	SHOWN ON SECTION	М
	¥		36
		0'-6" TOE SPACE	42
	· <b></b> ≻⊢ 0'-9"	KNEE SPACE H3 A4	A
	SECTION AT LAV	ATORY	PF GF RE DI
	TTTTOAL		PF EC M/ AN
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			H1 A4
			H2 A4

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# RODUCT SPECIFICATIONS

REFER TO MECHANICAL PLANS AND SPECIFICATIONS FOR ALL PLUMBING FIXTURES. REFER TO MANUFACTURER SPECIFICATIONS FOR R.I. PLUMBING LOCATIONS AND R.I. FRAMING SIZES AND BACKING MATERIAL AS NEEDED.

OWEL WASTE UNITS - BOBRICK B369 - MOUNT PER MANUF. DIMENSIONS FOR ADA COMPATIBILITY

SOAP DISPENSER - BOBRICK B-2111 - MOUNT PER MANUF. DIMENSIONS

OILET TISSUE DISPENSER - BOBRICK B4388 - MOUNT PER MANUF. DIM.

11 1/4" X 17 1/4" A 17 1/4" X 17 1/4"

6 INCH GRAB BARS - BOBRICK B-5806 (915MM)

2 INCH GRAB BARS - BOBRICK B-5806 (1065MM)

# ADDITIONAL NOTES

PROVIDE BLOCKING IN FRAMING AS REQUIRED FOR ALL SPECIFIED FIXTURES, GRAB BARS, SURFACE AND FLUSH MOUNT ACCESSORIES. VERIFY ALL BACKING REQUIREMENTS AND BLOCKING LOCATIONS WITH MANUFACTURER'S SPECIFIC DIRECTION AND INSTRUCTION.

PRODUCT SPECIFICATIONS SHOWN MAY BE SUBSTITUTED WITH AN APPROVED EQUAL TO BE SELECTED BY THE CONTRACTOR AND OWNER. INSTALLATION TO MAINTAIN ADA ACCESSIBILITY MAY VARY WITH SUBSTITUTED PRODUCTS. VERIFY ANY DIMENSIOAN VARIATIONS AS A RESULT OF SUBSTITUTIONS.

ALL FLOOR SHALL BE FINISHED WITH SHEET VINYL COMPATIBLE WITH WHEELCHAIR OADING. INSTALL PER MANUFACTURER REQUIREMENTS.

ALL WALLS SHALL BE PRIMED THEN PAINTED WITH A GLOSS/CLEANABLE PAINT.

ALL FLOOR PERIMETERS SHALL BE FINSIHED WITH A MOPABLE VINYL BASEBOARD MATERIAL MINIMUM OF 4 INCHES IN HEIGHT. (BY OWNER)

IGHTING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (LATEST STATE ADOPTED STANDARD)

VENTILATION FAN SHALL BE PROVIDED (SWITCH OR TIMER OPERATED). EXHAUSTED AIR TO EXTERIOR IS REQUIRED. REF. MECH.

EACH DOOR SHALL BE SIGNED WITH ADA ACCESIBILITY SYMBOL AND SHALL BE CLEARLY IDENTIFIED AS UNISEX

36" MIN. REAR GRAB BAR MOUNT 33" MIN. 36" MAX. FROM FINISHED FLOOR	H7 A4	DOOR - REF. SCHEDULE & SPECIFICATIONS ADA HARDWARE - SELF CLOSING SPRING LOCK - PANIC HARDWARE
42" MIN. SIDE GRAB BAR		
	ЦО	
FROM FINISHED FLOOR		
KNEE SPACE TO PLUMBING		LOCATE 15" MIN. 24" MAX.
		FROM FINISHED FLOOR
	H9	ADA COMPATIBLE
LOCATE PER MANUFACTURER SPECS.	A4	LEVER-TYPE DOOR LATCH
		ADA COMPATIBLE DOOR STOP
RECESSED COMBINATION		
TOWEL/WASTE UNIT		

5/8" BARRIER FREE THRESHOLD

H3 A4

H4 A4

H5 A4

H6 A4

# ORKS FACILITY

DEAN NICHOLAS BOSWORTH, PE COLORADO STRUCTURAL ENGINEER LAV PLAN

**TCHKISS, COLORADO**150 ROCKPOINT DRIVE #B<br/>DURANGO, CO 81301

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NOT FOR CONSTRUCTION - 50% COMPLETION CD - RFF

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	50% CD	02/28/19
) PUBLI	RFP	03/20/19
	RFP	08/15/19

# STEEL BUILDING NOTES

THIS PLAN IS A SCHEMATIC LAYOUT OF THE ROOF PLAN AND PROPOSED FRAME LOCATIONS, BRACING LOCATIONS AND COLUMN LOCATIONS. THE FINAL LOCATION, SIZES AND DESIGN OF THESE ELEMENTS IS SUBJECT TO THE DESIGN FURNISHED BY THE STEEL BUILDING MANUFACTURER/FABRICATOR.

THE CONTRACTOR IS RESPONSIBLE FOR THE SELECTION OF THE STEEL BUILDING MANUFACTURER/FABRICATOR. REFERENCE PROJECT SPECIFICATIONS.

THE CONTRACTOR SHALL PROVIDE NOTICE TO THE ENGINEER AS SOON AS PRACTICAL IF THE STRUCTURAL LAYOUT SHOWN IS NOT EFFICIENT OR APPLICABLE WITH THE DESIGN INTENT OF THE BUILDNG MANUFACTURER. MINOR VARIATIONS IN THE FRAMING LAYOUT WILL RESULT IN MINOR CHANGES TO THE FOUNDATION AND FLOOR PLAN.

THE STEEL BUILDING MANUFACTURER SHALL FURNISH ALL NECESSARY DESIGN, DETAILING, AND MATERIALS FOR THE FOLLOWING ELEMENTS OF THE CONSTRUCTION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL ASPECTS OF THE CONSTRUCTION OF THE METAL BUILDING INCLUDING THE SELECTION OF THE BUILDING ELEMENTS

REQUIRED TO COMPLETE THE BUILDING WITHIN THE PROJECT SPECIFICATIONS, INDUSTRY STANDARDS AND GOVERNING CODES. THE CONTRACTOR SHALL INSURE COMPATIBILITY OF ALL METAL BUILDING ELEMENTS ALL DESIGN AND DETAILING SHALL BE UNDER THE DIRECTION AND APPROVAL OF A COLORADO REGISTTERED ENGINEER RETAINED BY THE METAL BUILDING MANUFACTURER.

REFERENCE PROJECT SPECIFICATIONS FOR SUBMITTAL AND REVIEW PROCESS.

THE FOLLOWING ELEMENTS SHALL BE INCLUDED AS PART OF THE STEEL BUILDING SYSTEM.

- MOMENT STEEL FRAMES INCLUDING BEAMS AND COLUMNS
- ROOF PURLINS AND BEAMS AS REQUIRED WALL PURLINS AND WIND COLUMNS AS REQUIRED
- BRACING OR PORTAL FRAMES AS REQUIRED AT LOC. SHOWN
- STEEL STANDING SEAM ROOFING RIBBED METAL SIDING
- ALL BASE PLATES AND ANCHOR BOLTS
- VINYL FACED INSULATION AT EXTERIOR WALLS AND ROOF (EXCEPT AT AWNING & OVERHANG)
- EXTERIOR PASSAGE DOORS AND WINDOWS Rails SUPERSTRUCTURE FLASHING, SOFFITS AND FASCIAS AS REQUIRED.
- RAINGUTTERS, DOWNSPOUTS AND SNOW CLIPS AT LOCATIONS SHOWN SKYLIGHTS AND REQUIRED FRAMING AND FLASHING

ALL STEEL SHALL BE PRIMED AND PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. SUPERSTRUCTURE DESIGN LOADS

THE STEEL BUILDING MANUFACTURER SHALL PROVIDE THE NECESSARY STRUCTURAL ELEMENTS EXTERIOR SKIN ELEMENTS AND FLASHING TO PROVIDE A WEATHER-PROOF STRUCTURE TO THE LOADINGS REQUIRED IN THE INTERNATIONAL BUILDING CODE 2015. THE STEEL BUILDING MANUF. SHALL PROVIDE ALL NECESSARY ENGINEERING BY A COLORADO REGISTERED ENGINEER.

2006?

THE BUILDING SHALL BE DESIGNED FOR THE FOLLOWING LOADS LOADCOMBINATIONS SHALL BE CONSISTENT WITH INDUSTRY PRACTICES AND THE IBC

THE BUILDING SHALL BE DESIGNED FOR THE FOLLOWING STRUCTURAL LOADS SNOW LOAD 40 PSF (ROOF) WIND LOAD 115 MPH 3 SEC. GUST SEISMIC ZONE TO BE DETERMINED MEZZANINE 125 PSF COLLATERAL LOADS (INTERIOR CEILING, MECH, ETC) 10 PSF LOAD COMBINATIONS SHALL BE CONSISTENT WITH INDUSTRY PRACTICES AND THE IBC

STEEL BUILDING NOTES

S1 S0LAR LIGHT TUBES SHALL BE INSTALLED AT THE LOC. SHOWN ON THE PLANS. FRAMING SHALL BE DESIGNED TO SUPPORT EDGE OF ROOFING, WEATHER-PROOFING AND LIGHT TUBES. MINOR VARIATIONS IS LOCATION ARE PERMITTED TO FACILITATE STRUCTURAL ELEMENTS LIGHT TUBES SHALL BE VELUX MODEL #TGF 022 0000E0 22" DIAMETER, WITH ACCESSORIES REQ'D FOR INSTALLATION	S6 ALL EXTERIOR PASSAGE DOORS SHALL BE FURNISHED BY METAL BUILDING MANUFACTURER. DOORS SHALL MEET THE REQUIRED MINIMUM SPECIFICATIONS IN THE SPECIFICATIONS METAL BUILDING MANUFACTURER TO PROVIDE NECESSARY HEADERS, STEEL TRIM TO MATCH SIDING AND REQUIRED FLASHING AS REQUIRED FOR A WEATHERTIGHT INSTALL.
S2 PORTAL FRAME TO BE USED IN THIS BASE IN PLACE OF	S7PROPOSED LOCATION FOR VERTICAL STEELS2.1X-BRACING IN THIS BAY. FINAL LOCATION, DETAILS AND MEMBERS SHALL BE DETERMINED BY THE METAL BUILDING MANUFACTURER'S DESIGN ENGINEER.
S2.1 X-BRACING.	
S3 PROPOSED LOCATION OF ROOF PLANE BRACING. FINAL LOCATION, DETAILS AND MEMBERS SHALL BE DETERMINED BY THE METAL BUILDING FABRICATOR ENGINEER.	
S4 S2.1	
S5 S2.1 TYPICAL OVERHEAD DOOR. METAL BUILDING MANUF. TO PROVIDE NECESSARY HEADERS, STEEL TRIM TO MATCH SIDING, REQUIRED FLASHING. COORD. DIM. WITH DOOR MANF.	
GMP plans	

# C WORKS FACILITY HOTCHKISS, COLORADO

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FRAMING

PLAN

S2.1

![](_page_14_Figure_0.jpeg)

![](_page_14_Figure_1.jpeg)

1 1/4" SERRATED BAR GRATING TREADS

DRAWING ISSUES	
02/28/19 50% CD	
03/20/19 RFP	PUBLIC WORKS FACILITY
08/15/19 GMP SET	
	TOWN OF HUTCHKISS, COLORADO

![](_page_14_Figure_5.jpeg)

![](_page_14_Figure_6.jpeg)

# DEAN NICHOLAS BOSWORTH, PE COLORADO STRUCTURAL ENGINEER

150 ROCKPOINT DRIVE UNIT B

DURANGO, CO 81301

970 729 1431 dean.bosworth@gmail.com

![](_page_14_Picture_11.jpeg)

![](_page_15_Figure_0.jpeg)

- REFER TO METAL BUILDING DETAILS FOR ATTACHMENT BOLTING REQUIREMENTS OF GIRTS TO FOUNDATION AS REQUIRED REFER TO FINAL SUBMITTED AND REVIEWED SHOP DRAWINGS
- FLASHING OVER PERIMETER INSULATION S2 S3 REFER TO ARCHITECTURAL DRAWINGS FLASHING GEOMETRY AND MATERIAL SHALL BE SELECTED APPROPRIATE FOR THE CONDITIONS AT THOSE LOCATIONS IN THE BUILDING AND MAY VARY
- SLOPE TOP OF FOUNDATION AT DOOR FOR S3 S3 DRAINAGE. MIN. OF 1/4"
- S4 S3 2" CONTINUOUS LEDGE. T.O.LEDGE 7" BELOW T.O. SLAB ALL LOCATIONS (VARIES W/ T.O.SLAB)
- S5 S3 1/2" TOOLED EDGE AT EXPOSED SLAB EDGES
- S6 S3 TYPICAL STEMWALL REINFORCING CONT. THRU COLUMN PEDESTALS
- PEDESTAL EXTENSION TO BE DETERMINED WHEN S7 **S**3 INTERIOR "CANT" OF FRAME COLUMN IS KNOWN VERIFY WITH PROJECT STRUCTURAL ENGINEER MEZZANINE COLUMN TO BE LOCATED TO AVOID CONFLICT WITH FRAME COLUMN
- S7 S3 MEZZANINE LOAD BEARING WALL 2 X 4 HF#2 @ 16" O.C. LOAD BEARING WALL PLYWOOD SHEATHING AT STORAGE AREA 5/8" TYPE X DRYWALL AT OFFICE SPACES 2 X 4 PT CONTINUOUS PLATE 1/2" ANC. BOLTS @ 48" O.C. TO STEMWALL
- PREPARATION FOR STRUCUTURAL FILL E1 S3 REF. PROJECT GEOTECHNICAL INVESTIGATION REMOVE LOOSE MATERIAL AND ORGANICS SCARIFY AND PROOF COMPACT

E2 S3

- STRUCTURAL FILL CDOT CLASS 6 (OR APPROVED EQUAL) 95% MODIFIED PROCTOR COMPACTION 12" MININUM BELOW ALL SLABS (ALL FILL TO UNDIST. SOILS TO BE STRUCTURA FILL) 8" MINIMUM BELOW ALL FOOTINGS 8" MINIMUM FILL PLACEMENT BEYOND FOOTING EDGES
- E3 S3 4" MIN. 3/4" WASHED OR SCREEN ROCK BELOW ALL CONCRETE FOR LEVELING COURSE AND CAPILLARY BREAK FROM GROUND WATER. PLATE VIBRATE IN PLACE
- PERIMETER BACKFILL REF. CIVIL DWGS E4 S3 SEE CIVIL DRAWINGS FOR SLAB AND LANDSCAPE LOC. REF. PROJECT SPECIFICATIONS
- SLOPE FINISHED GRADE FROM STRUCTURE C1 REFERENCE SITE PLAN FOR GRADING AND S3 LOCATIONS OF EXTERIOR FLATWORK
- C2 S3 MAINTAIN MIN. 6" T.O.SLAB TO GRADE AT
- LOCATIONS WITHOUT FLATWORK PARKING/ACCESS/SIDEWALK SLABS
- C3 S3 **REF. CIVIL ENGINEERING DRAWINGS**
- C4 BOLLARD EACH SIDE OF DOOR **Š**3 REF. CIVIL DRAWINGS FOR DETAILS

	TYPICAL RE	INFORCING PLACEME	INT E	BOLT SCHEDUL	E			
NCASE IN TIES MAT	ġ	-2" TYPICAL 135 DEG -6 db	AB 1	3/4" X 18 ANCHOR I ASTM A36 ASTM A563 NUT AN 3" HORIZ. LEG	BOLT - 3" ND USS F	PROJECTION		
TOM REINF. W. REINF. W. NCRETE		COLUMN TIES PER SPEC VERITCAL BARS TIGHT TO TIES AB 2 3/4" X 15 / ASTM A36 ASTM A56 3" HORIZ.			CHOR BOLT - 3" PROJECTION NUT AND USS FLAT WASHER G			
AN BENT BARS OWN DM MAT OF CONC. OLTS	COLUMN	ALL TIES #4 MAX. 6" O.C. (SEE DETAILS)	AB 3	1/2" X 12 ANCHOR I ASTM A36 ASTM A563 NUT AN 2" HORIZ. LEG	BOLT - 2 ND USS F	1/2" PROJECTION LAT WASHER		
. TIE TENDONS EA. SPLICE COLUMN ETE MIN. 3"COVER	REF. N FOR B EMBE COMP CONC	AETAL BUILDING SHOLT LOCATIONS, B DMENT & PROJECT ATIBILITY OF DETA RETE PLACMENT	10p DR/ Olt Siz Ion. Ve Il Prioi	AWINGS Æ, ERIFY R TO				
			AS BO	).SW/ORTH	PF	08/15/19		
RKS FA	ACILITY 3, co	COLORADO ST		JRAL ENGIN	EER	FOUNDATION DETAILS		
				070 70	0 1/21	$\mathbf{C}$		

150 ROCKPOINT DRIVE UNIT B DURANGO, CO 81301

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![](_page_16_Figure_0.jpeg)

![](_page_16_Picture_1.jpeg)

FOUNDATION MAIN FRAME AT MEZZANINE COLUMNS GRID LINE 6 NOT TO SCALE

![](_page_16_Figure_3.jpeg)

FOUNDATION AT SHOP BUILDING PORTAL FRAMES NOT TO SCALE

D1 S4

REF. METAL BUILDING SHOP DRAWINGS FOR BOLT LOCATIONS, BOLT SIZE, EMBEDMENT & PROJECTION. VERIFY COMPATIBILITY OF DETAIL PRIOR TO CONCRETE PLACMENT

S4

DRAWING ISSUES 02/28/19 50% CD 03/20/19 RFP 08/15/19 GMP

NOT TO SCALE

PUBLIC WORKS FACILITY TOWN OF HOTCHKISS, CO

![](_page_16_Picture_10.jpeg)

![](_page_17_Figure_0.jpeg)

![](_page_17_Figure_2.jpeg)

![](_page_17_Figure_3.jpeg)

# PUBLIC WORKS FACILITY TOWN OF HOTCHKISS, CO

# DEAN NICHOLAS BOSWORTH, PE COLORADO STRUCTURAL ENGINEER

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150 ROCKPOINT DRIVE UNIT B DURANGO, CO 81301

![](_page_17_Picture_6.jpeg)

-CONT. FOOTING

-#4 TIES @ 8" O.C. \_\_\_\_\_8"\_<u>5</u>\_\_\_\_ 12" 12"

![](_page_17_Picture_10.jpeg)

-3" SQ. TUBE STEEL COLUMN FOR LANDING

![](_page_18_Figure_0.jpeg)

![](_page_18_Picture_1.jpeg)

# LIGHTING LEGEND

SYMBOLS SHOWN ARE STANDARD. VARIATION AND/OR COMBINATIONS MAY BE USED ON THE PLANS. THIS LIST SHOWS STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON THE PROJECT DRAWINGS; HOWEVER, WHEREVER THE SYMBOL ON THE PROJECT DRAWINGS OCCUR; THE ITEM SHALL BE PROVIDED AND INSTALLED.

A LOWER CASE LETTER NEXT TO LIGHT FIXTURE OR SWITCH INDICATES A SWITCH DESIGNATION.

AN UPPER CASE LETTER NEXT TO A SWITCH INDICATES THE TYPE OF SWITCH. SEE THE LIST BELOW

AN UPPER CASE LETTER NEXT TO A LIGHT FIXTURE INDICATES THE TYPE OF FIXTURE. REFER TO THE LUMINAIRE SCHEDULE FOR FIXTURE SPECIFICATIONS.

## ELECTRICAL EQUIPMENT

NOTES:

- 🖌 BRANCH CIRCUIT PANELBOARD LA-7 CIRCUITRY HOMERUN: PANEL LA – CIR. #7 ------ CONDUIT OR WIRE CONCEALED IN WALL/CLG. ------ CONDUIT OR WIRE UNDERFLOOR/UNDERGND.
- ☑ CEILING JUNCTION BOX SURFACE/FLUSH OH WALL JUNCTION BOX - SURFACE/FLUSH

## SWITCHES

SINGLE POLE SWITCH

- \$<sub>2</sub> TWO POLE SWITCH
- \$<sub>3</sub> THREE—WAY SWITCH \$₄ FOUR-WAY SWITCH
- S DIMMER SWITCH
- $s_{3D}$  3 WAY DIMMER SWITCH (4D INDICATES A 4WAY DIMMER)
- \$<sub>0S</sub> WALL MOUNTED DUAL TECHNOLOGY VACUITY SENSOR SWITCH
- \$<sub>LV</sub> LOW VOLTAGE LIGHT SWITCH
- $m_{MA}$  manual on / auto off light switch
- $M_{\rm A}$  manual on / auto off dimming light switch
- (OS) CEILING MOUNTED MOTION SENSOR

# LIGHT FIXTURES

ALL FIXTURES: A-UPPER CASE LETTER INDICATES FIXTURE TYPE REFERENCE LUMINAIRE SCHEDULE FOR SPECIFICATIONS a-LOWER CASE LETTER INDICATES SWITCHING CIRCUIT.
ACTUAL FIXTURE ON PLANS MAY VARY SLIGHTLY FROM THE SYMBOL SHOWN HERE
A 2'x4' LED HIGH BAY TYPE FIXTURE, SUSPENDED MOUNTED
A 1'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED
A 2'x4' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED
A 2'x2' LED TROFFER OR DIRECT/INDIRECT TYPE FIXTURE GRID, FLANGE OR SURFACE MOUNTED

- A H)- WALL BRACKET LIGHT FIXTURE
- A-O- RECESSED DOWNLIGHT CAN FIXTURE
- A-()- SURFACE CEILING OR PENDANT MOUNTED FIXTURE
- EX1 😥 SINGLE FACE EXIT SIGN, WALL AND CEILING MOUNTED EX2 EM 0000 WALL MOUNTED EMERGENCY LIGHT

EMR EMERGENCY EXTERIOR EGRESS FIXTURE

## ABBREVIATIONS

E1	DRAWING KEYED NOTE
ROOM NAME	ROOM DESIGNATION, NAME AND NUMBER
NL	NIGHT/SECURITY LIGHT - DO NOT SWITCH
WP	WEATHERPROOF
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
GFCI OR GF	GROUND FAULT CIRCUIT INTERRUPTER
EM	EMERGENCY FUNCTION NON-SWITCHED FIXTURE FOR
44"	MOUNTING HEIGHT - A.F.F. OR A.F.G. TO CENTERLINE
A.C.	ITEM TO BE MOUNTED ABOVE COUNTER HEIGHT

Not sure it occupancy sensor are shown

Ck with Town, think	
awning lights are by	
switch	

# **GENERAL LIGHTING NOTES**

- LUMINAIRES: 1.1. LIGHTING FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE AND SHALL NOT BE SUPPORTED FROM THE T-BAR CEILING GRID.
- 1.2. 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. 1.3. COORDINATE THE LOCATION OF LIGHTING EQUIPMENT INCLUDING BUT NOT LIMITED TO THE LUMINAIRES, SWITCHES AND CONTROL COMPONENTS WITH THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL
- DRAWINGS AND ALL OTHER TRADES AS REQUIRED. VERIFY LUMINAIRE MOUNTING REQUIREMENTS AND 1.4. OVERALL HEIGHT OF ALL PENDANT MOUNTED FIXTURES PRIOR TO ORDERING.
- ALL LIGHT FIXTURES NEED TO BE COMPATIBLE WITH 1.5. THE SWITCHES AND CONTROLS BEING PROVIDED. 1.6. THE LIGHTING PACKAGE SHALL BE APPROVED BY BOTH ARCHITECTS AND ENGINEERS 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.
- 1.7. COORDINATE LUMINAIRE MOUNTING REQUIREMENTS PRIOR TO PLACING ORDER.
- 2. EMERGENCY AND EXIT LIGHTS:
- PROVIDE EMERGENCY AND EXIT SIGNS AS PER ALL 2.1. LOCAL CODES. 2.1. EXIT SIGNS CONNECTED TO A REMOTE EMERGENCY HEAD REQUIRES EXTRA BATTERY CAPACITY TO OPERATE
- THE REMOTELY LOCATED EMERGENCY HEAD FOR EGRESS AWAY FROM THE BUILDING. 2.2. REFER TO THE PLANS FOR THE NUMBER OF FACES
- REQUIRED AT EACH EXIT. FIELD ADJUST THE LOCATION OF THE EXIT SIGNS FOR THE BEST VISIBILITY OSSIBLE. 2.3. ALL LIGHTING FIXTURES DENOTED WITH "EM" SHALL BE
- PROVIDED WITH AN ENGINEER APPROVED EMERGENCY LED DRIVER OR BALLAST TO OPERATION THE FIXTURE IN AN EMERGENCY MODE TO MEET ALL CURRENT LOCAL CODES AND WILL BE CIRCUITED TO THE UNSWITCHED SIDE OF THE LIGHTING CIRCUIT.
- 2.4. ALL LIGHT FIXTURES DESIGNATED WITH "EM" OR SPECIFIED WITH AN EM FUNCTION SHALL BE PROVIDE WITH ONE OF THE FOLLOWING; 2.4.1. INTEGRAL TEST SWITCH;
- REMOTE INFRARED HAND HELD DEVICE; 2.4.2. INTEGRAL ELECTRONIC DEVICE THAT AUTOMATICALLY 2.4.3. PERFORMS CODE REQUIRED TESTS. 2.5. ALL STAIRWELLS AND PATHS OF EGRESS TO THE
- EXTERIOR DOORS, AND THE EXTERIOR PATH OF EGRESS AWAY FROM THE BUILDING SHALL RECEIVE EMERGENCY LIGHTING PER CODE.
- 3. <u>LIGHTING CONTROLS:</u> 3.1. ALL LIGHTS IN; RESTROOMS, STORAGE CLOSETS, JANITORS CLOSETS AND STAIRWELLS ARE TO BE SWITCHED WITH A MOTION SENSOR ON/OFF SWITCH WITH A TIME DELAY. SET THE TIME DELAY LENGTH AS DIRECTED BY THE OWNER. 3.1.1. EXCEPTION: IN AREAS WHERE THE SWITCH IS
- LOCATED OUTSIDE THE AREA THE LIGHT IS LOCATED IN. 4. OFFICES WITH MORE THAT ONE FIXTURE WILL BE
- SWITCHED WITH A MANUAL ON/AUTO OFF DIMMING SWITCH. SWITCHING FOR LIGHTS IN LARGE COMMON AREA ARE AS
- SHOWN ON PLAN.
- 6. <u>GENERAL NOTES:</u> FIELD COORDINATION DURING CONSTRUCTION IS 6.1. IMPERATIVE. CONTRACTORS BIDDING THIS WORK MUST MAKE REASONABLE ALLOWANCES FOR UNFORESEEN CONTINGENCIES.
- 7. <u>WIRING:</u> ALL WIRING IS SHOWN DIAGRAMMATICALLY ON DRAWING, FIELD VERIFY ALL CONDITIONS PRIOR TO ROUGH-IN. ALL WIRE IS TO BE #12 UNLESS NOTED OTHERWISE.
- 7.2. ALL BRANCH CIRCUITS WITH HOME RUNS OVER 50 FEET, WILL BE SIZED ONE SIZE LARGER.
- 7.3. ALL ELECTRICAL WORK TO COMPLY WITH LATEST EDITON OF NEC AND ALL APPLICABLE LOCAL CODES.

TYPE	MANUFACTURER CATALOG NO.	MANUFACTURER CATALOG NO.	VOLTAGE MOUNTING # OF LAMPS	BALLAST LAMP TYPE LAMP CAT. #	DESCRIPTION					
B1	LITHONIA LIGHTING IBG 15000LM SEF ACL GND MVOLT GZ10 40K 80CRI	APPROVED EQUIVALENT	120–277V SUSPENDED CEILING 1	LED DRIVER 97W, 80CRI 14059LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LIGHTING, LM-80 80,000 HOUR LIFESPAN, DAMP LISTED 5 YEAR WARRANTY, -40°C STARTING TEMPERATURE					
B2	LITHONIA LIGHTING IBG 8000LM SEF ACL WD MVOLT GZ10 40K 80CRI	APPROVED EQUIVALENT	120–277V SUSPENDED CEILING 1	LED DRIVER 55W, 80CRI 7384LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LUMINAIRE LM-80 80,000 HOUR LIFESPAN, DAMP LISTED 5 YEAR WARRANTY					
B3	LITHONIA LIGHTING IBG 15000LM SEF ACL GND MVOLT GZ10 40K 80CRI LAOZU	APPROVED EQUIVALENT	120–277V SUSPENDED CEILING 1	LED DRIVER 97W, 80CRI 14059LM, 4000K	24"Lx16"Wx5"H SUSPENDED HIGH BAY LED LIGHTING, LM-80 80,000 HOUR LIFE, DAMP LISTED, 5 YEAR WARRANTY INTEGRAL OCCUPANCY SENSOR, -40°C STARTING TEMPERATURE					
D1	LITHONIA LIGHTING 6JBK-RD-40K-90CRI-MW	APPROVED EQUIVALENT	120–277V SURFACE CEILING 1	LED DRIVER 13W, 80CRI 1000LM, 4000K	4"DIAx5"H SURFACE MOUNTED LUMINAIRE WET LISTED, 5 YEAR WARRANTY					
L1	LITHONIA LIGHTING BLTX 48L ADP EZ1 LP840	APPROVED EQUIVALENT	120–277V SURFACE CEILING 1	LED DIMMING DRIVER 45W, 80CRI 5261LM, 4000K	12"Lx48"Wx5"H SURFACE ARCHITECTURAL LINEAR LIGHT LONG LIFE LED, DAMP LISTED 5 YEAR WARRANTY					
S1	LITHONIA LIGHTING ZL1D L48 5000LM FST MVOLT 40K 80CRI	APPROVED EQUIVALENT	120–277V STRIP LIGHT 1	LED DIMMING DRIVER 41W, 80CRI 5541LM, 4000K	48"Lx3"Wx2"H STRIP LIGHT LONG LIFE LED 5 YEAR WARRANTY					
0_0	LITHONIA LIGHTING EU2C	APPROVED EQUIVALENT	120/277 SURFACE WALL/CEILING 2	NONE REQUIRED LED WITH UNIT	11"Wx3.5"Dx7.5"H IMPACT RESISTANT THERMO-PLASTIC, BATTERY					
НØ	LITHONIA LIGHTING ECG LED HO M6	APPROVED EQUIVALENT	120/277 WALL/CEILING N/A	NONE REQUIRED LED WITH UNIT	14"Wx8"H COMBO EXIT EGRESS LIGHT NICAD BATTERY, UNIVERSAL MOUNTING, 5 YEAR WARRANTY FIELD CONFIGURABLE INDICATION, REMOTE HEAD CAPABLE					
8	LITHONIA LIGHTING ELA LED WP M12	APPROVED EQUIVALENT	120/277 WALL/CEILING N/A	NONE REQUIRED LED WITH UNIT	6.5"Wx10.5"Hx4"D EXTERIOR EGRESS LIGHTING WET LOCATION RATED,					
SW1	LITHONIA LIGHTING OLWX1 20W 40K PE	APPROVED EQUIVALENT	120–277V WALL MOUNT 1	LED DRIVER 20W, 80CRI 2697LM, 4000K	48"Lx24"Wx2"H EXTERIOR WALL PACK LONG LIFE LED, –20°C STARTING TEMPERATURE IP 65 RATED, FULL CUTOFF, 5 YEAR WARRANTY					
SW2	LITHONIA LIGHTING TWH LED ALO 40K T3M MVOLT PE	APPROVED EQUIVALENT	120–277V WALL MOUNT 1	LED DRIVER 78W, 70CRI 9214LM, 4000K	16"Hx16"Wx8"D EXTERIOR WALL PACK LONG LIFE LED, –20°C STARTING TEMPERATURE IP 65 RATED, 5 YEAR WARRANTY					
SP1	LITHONIA LIGHTING DSX0 LED P2 40K T3S MVOLT	APPROVED EQUIVALENT	120–277V POLE MOUNT 1	LED DRIVER 78W, 70CRI 9214LM, 4000K	26"Lx13"Wx3"H POLE MOUNTED FIXTURE LONG LIFE LED, –20°C STARTING TEMPERATURE IP 66 RATED, 5 YEAR WARRANTY					

- 1. OCCUPANCY SENSORS ARE DIAGRAMMATICALLY DISPLAYED ON THE PLANS, FIELD ADJUST UNITS TO MEET THE MANUFACTURER'S RECOMMENDED SPACING REQUIREMENTS.
- EXIT SIGNS FOR THE BEST VISIBILITY POSSIBLE. ALL EXIT LIGHTS SHALL COMPLY WITH ALL LOCAL BUILDING CODES.
- LOCATED.
- AWNING AND SOUTH AWNING INDEPENDENTLY OF EACH OTHER. 5. PROVIDE A MEANS FOR AUTOMATIC OFF CONTROL FOR THE FIXTURES IN THE SHOP AREA; SET TIME DELAY PER OWNER.

![](_page_19_Figure_63.jpeg)

## ENTRY GATE LIGHT - POLE DETAIL NOT TO SCALE

- NOTES: 1. DIMENSION FOR ANCHOR BOLT SPACING BY POLE MANUFACTURER. 2. CONTRACTOR SHALL INSTALL A FUSE AND WEATHERPROOF FUSEHOLDER AT EACH
- 3. BASE HOLE SHALL BE DRILLED INTO NATURAL, UNDISTURBED SOIL OR PROPERLY COMPACTED FILL.

# INTERIOR LUMINAIRE SCHEDUILE

2. THE EXIT LIGHT SYMBOL USED IN THIS SCHEDULE IS A GENERIC SYMBOL TO INDICATE AN EXIT LIGHT FIXTURE. REFER TO THE PLANS FOR THE NUMBER OF FACES REQUIRED AT EACH EXIT. INSTALL THE NUMBER OF FACES REQUIRED AT EACH EXIT. FIELD ADJUST THE LOCATION OF THE 3. EXIT AND EMERGENCY EGRESS LIGHTING TO BE CIRCUITED TO THE UNSWITCHED SIDE OF THE LIGHTING CIRCUIT OF THE SPACE IN WHICH IT IS 4. EXTERIOR FIXTURES UNDER THE AWNING ARE TO BE CONTROLLED WITH A PHOTOCELL, PROVIDE A SNAP SWITCH IN SERIES TO CONTROL NORTH 8

![](_page_19_Figure_71.jpeg)

![](_page_19_Picture_72.jpeg)

![](_page_19_Figure_73.jpeg)

August 15, 2019 - 4:49:49pm

![](_page_20_Figure_0.jpeg)

![](_page_20_Picture_1.jpeg)

![](_page_20_Figure_3.jpeg)

![](_page_21_Figure_1.jpeg)

![](_page_21_Figure_3.jpeg)

August 15, 2019 – 4:49:53pm

PANEL SCHEDULE	E – P1 TYPE: VOLTAGE:	PANELBOARD 120/240	BUS MAIN	SIZE: N BRKR:	600 NONE	Ē	PHASES: 1 WIRES: 3	NEUTRAL BUS: YES GROUND BUS: YES	MECHANICAL EQ	UIPME	NT S	CHED	ULE		
LOAD TYPE	ENCLOSURE:	NEMA1 AMPS		JNTING:	SURF	AMPS	SC RATING: 2200	0 LOAD DESCRIPTION	COMB: COMBINATION MOTOR STARTER NR: NOI MAG: MAGNETIC MOTOR STARTER P/I: PLI	NE REQUIRED UG—IN UNIT	CONT: MAN: W/U:	CONTRACTOR MANUAL MO SUPPLIED W	R TOR STA VITH UNI	RTER	
		POLES	LOAD		LOAD	POLES			UNIT FUNCTION LOAD VOLTS Ø	FULL BRAI	NCH CIRCUI	T GRND B			SC SC
PROCESS	SHOP OUILEI	50A 2P	1 4800	A	2 4000	50A 2P	MOTOR	AIR COMPRESSOR	NO (NOTES)	LOAD CONDUI AMPS SIZE	F NO. WII COND. SIZ	RE WIRE S E SIZE S	SIZE	FU	SE
PROCESS		 	3 4800	B	4 4000		MOTOR		CU CONDENSING UNIT 240 1 4	-2 A 3/4"	2 8	10 5	50A I	IR 60 50	
RECEPTACLE	SHOP OUTLETS	20A	5	A	6	20A	MECH HEATING	UNIT EUH-1	EF   EXHAUST FAN   120   1	1.0A 1/2"	2 1:	2 12 2	1 A02	IR \$	
PROCESS	DOOR OPENER	20A	7	B	8		MECH HEATING		EXHAUST FAN     3/4HP     120     1     1	3.8A 1/2"	2 1:	2 12 2	1 AO	IR \$	
PROCESS	DOOR OPENER	1P 20A	1500	Δ	1000	204	RECEPTACLE		The indoor ac equipment 240 1 C	0.3A 1/2"	2 1:	2 12 2	1 AO	IR \$	2
		1P	1500		720	1P			IR     NADIANT HEATER     120     1     1       IR     MOTORIZED LOUVER     100     1     1	.0A 1/2"	2 12	2 12 2	1 A02		
PROCESS	DOOR OPENER	20A 1P	11 1500	В	12 5040	45A 2P	MECH YEAR ROUND			.0A 1/2	2 12	2 12 2		IR   \$	
PROCESS	DOOR OPENER	20A 1P	13 1500	A	14 5040		MECH YEAR ROUND		ABBREVIATIONS AND NOTATIONS		ELECTRIC	AL SYMBOLS			
RECEPTACLE	BATHROOM OUTLETS	20A 1P	15	В	16	20A 2P	MECH YEAR ROUND	HP UNITS	A.C. ABOVE COUNTER - VERIFY HEIGHT	÷	DUPLEX REC	EPTACLE			
RECEPTACLE	MEZZANINE OUTLETS	20A	17	A	18		MECH YEAR ROUND		A.F.C. ABOVE FINISHED CEILING A.F.F. ABOVE FINISHED FLOOR		FOUR PLEX	RECEPTACLE			
RECEPTACLE	MEZZANINE OUTLETS	20A	19	B	250	20A	RECEPTACLE	BLOCK HEATER 1	A.F.G. ABOVE FINISHED GRADE AIC AMPS INTERRUPTING CAPACITY	$\ominus$	SINGLE REC	PTACLE			
		1P	540 21		1000	1P		PROVIDE BREAKER TIE WITH P1-22	AL ALUMINUM ATS AUTOMATIC TRANSFER SWITCH		SPLIT-WIRED	RECEPTACLE			
		1P	360		1000	1P		PROVIDE BREAKER TIE WITH P1-20	AV AUDIO/VIDEO AWG AMERICAN WIRE GAGE		FLOOR RECE	RPOSE RECEPTA PTACLE	ACLE		
RECEPTACLE	EXTERIOR OUTLETS	20A 1P	23 360	B	24 1000	20A 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-26	CB CIRCUIT BREAKER		JUNCTION B	DX			
RECEPTACLE	AWNING POLE OUTLET	20A 1P	25 360	A	26 1000	20A 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-24	CT CURRENT TRANSFORMER	нIJ	WALL MOUN	IED J-BOX			
RECEPTACLE	AWNING POLE OUTLET	20A	27	В	28	20A	RECEPTACLE	BLOCK HEATER 3	EC ELECTRICAL CONTRACTOR		DISCONNECT	SWITCH			
RECEPTACLE	AWNING POLE OUTLET	20A	29	A	30	20A	RECEPTACLE	BLOCK HEATER 3	EM EMERGENCY	F	FUSED DISC	ONNECT SWITCH			
RECEPTACLE	BREAK ROOM COUNTER OUTLET	1P 20A	360	В	1000 32	1P 20A	RECEPTACLE	PROVIDE BREAKER TIE WITH P1-28 BLOCK HEATER 4	G GROUND	PP1-3	CIRCUITRY F	OMERUN: POWE	R PANEL	1 – CIRCUIT	#3
		1P	360		1000	1P		PROVIDE BREAKER TIE WITH P1-34	GFI GROUND FAULT INTERRUPTER		- CONDUIT OR	WIRE CONCEAL	ED IN WA	L/CLG	
	BREAK ROOM COUNTER OUTLET	1P	360	A	1000	1P	RECEPTACLE	PROVIDE BREAKER TIE WITH P1-32	IG ISOLATED GROUND		- CONDUIT OR	WIRE UNDERFL	.00R/UNDE	RGROUND	
RECEPTACLE	BREAK ROOM OUTLETS	20A 1P	35 360	B	36 1000	20A 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-38	MCA MINIMUM CIRCUIT AMPACITY MCB MAIN CIRCUIT BREAKER						
RECEPTACLE	CONVENIENCE OUTLETS	20A 1P	37 720	A	38 1000	20A 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-36	MLO MAIN LUGS ONLY N NEUTRAL		FIRE	ALARM			
LIGHTING	EXTERIOR LIGHTING	20A	39	В	40	20A	RECEPTACLE	BLOCK HEATER 6	NL NIGHT LIGHT OCP OVERCURRENT PROTECTION	FACP	FIRE ALARM	CONTROL PANE	EL		
SPARE	UNALLOCATED FUTURE	20A	41	A	42	20A	RECEPTACLE	BLOCK HEATER 6	OL OVERLOAD SC SHORT CIRCUIT	F M	MANUAL PUL	L STATION			
SPARE	UNALLOCATED_EUTURE	1P 20A	200	B	1000 44	1P 20A	SPARF	PROVIDE BREAKER TIE WITH P1-40	TR TAMPER RESISTANT TTB TELECOMMUNICATIONS TERMINAL BACKBOARD		WALL MOUNT	ED SPEAKER			
		1P	200		200	1P			VFD VARIABLE FREQUENCY DRIVE WP WEATHERPROOF		ELECTROMAG	NETIC DOOR HO	OLD OPEN		
			0	A	200	1P	SPARE	UNALLOCATED FUTURE	WPIU WEATHERPROOF IN-USE XFMR TRANSFORMER	FS	SPRINKLER F	LOW SWITCH			
SPACE			47 0	B	48 0		SPACE		$\left\langle {x \atop x} \right\rangle$ MECHANICAL EQUIPMENT SCHEDULE NOTATION		SPRINKLER 1	AMPER SWITCH			
SPACE			49 0	A	50 0		SPACE		S FLAG NOTE		SMOKE /CARE		DETECTOR		
SUBFEED	PANEL E1	100A	51	В	52		SPACE		X DELTA REVISION NOTE	CO CO	SMOKE DETE	CTOR WITH PIEZ	ZO BUZZEF	2	
SUBFEED			53	A	54		SPACE		-X- ELECTRICAL FEEDER SIZE		SVSTE				
			5976		0							IS LEGEND			
LOADS BY TYPE:			LOADS E	BY PHAS	SE:										
LOADS BY TYPE: LOAD	CONNECTED DEMAND		LOADS E	BY PHAS	SE:			BALANCE (DEDCENT)	SCHEMATIC WIRING SYMBOLS		TTB, MDF OF	MS LEGEND	т.		
LOADS BY TYPE: LOAD TYPE LIGHTING	CONNECTED DEMAND LOAD (VA) FACTOR 3600.00 1.25	DEMAND LOAD (VA) 4500.00	LOADS E	BY PHAS	SE:	CONNECTED LOAD (VA) 34606.00	CONNECTED LOAD (AMPS) 288.38	BALANCE (PERCENT) A-B: 94.4			TTB, MDF OF TELECOMMUN TELEPHONE	MS LEGEND IDF IICATION OUTLE DUTLET	Т		
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS	CONNECTED         DEMAND           LOAD         (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00	DEMAND LOAD (VA) 4500.00 0.00 15600.00	LOADS E PHASE A B C	BY PHAS	SE:	CONNECTED LOAD (VA) 34606.00 32670.00	CONNECTED LOAD (AMPS) 288.38 272.25	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4	SCHEMATIC WIRING SYMBOLS		TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE	MS LEGEND IDF IICATION OUTLE DUTLET T	T		
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES	CONNECTED         DEMAND           LOAD         (VA)         FACTOR           3600.00         1.25	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00	LOADS E PHASE A B C TOTAL	BY PHAS		CONNECTED LOAD (VA) 34606.00 32670.00  67276.00	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4	SCHEMATIC WIRING SYMBOLS	$\neg \neg \checkmark$	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION O	MS LEGEND IDF IICATION OUTLE DUTLET T DUTLET	T		
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAP POLIND	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           1.00         1.00           0.00         1.00	DEMAND LOAD (VA) 4500.00 15600.00 10000.00 5570.00 2400.00 0.00	LOADS E PHASE A B C TOTAL	E	 SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4	SCHEMATIC WIRING SYMBOLS	$\neg \neg \neg$	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND IDF IICATION OUTLE DUTLET T DUTLET	T		
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           10780.00         1.00           0.00         1.00           10780.00         1.00           300.00         1.00	DEMAND LOAD (VA) 4500.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00	LOADS E PHASE A B C TOTAL NOTES:	E 	GE	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 	SCHEMATIC WIRING SYMBOLS		TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           10780.00         1.00           300.00         1.00           12656.00         1.00           12656.00         1.00           800.00         1.00	DEMAND LOAD (VA) 4500.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00	LOADS E PHASE A B C TOTAL NOTES: 1. TH	E  _/AVERA :: IE LARG	GE -	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL – MAIN LUG ONLY/MAIN CIRCUIT BREAKER UIII GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE		TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup>	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           300.00         1.00           300.00         1.00           4BOVE         0.25	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00	LOADS E PHASE A B C TOTAL NOTES: 1. TH	E ./AVERA :: IE LARG	GE	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER    - GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH		TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           300.00         1.00           300.00         1.00           4BOVE         0.25           67276.00         0	DEMAND LOAD (VA) 4500.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00	LOADS E PHASE A B C TOTAL NOTES: 1. TH	E ./AVERA :: IE LARG	GE -	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER    - GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER	$\blacksquare \lor \lor \lor$	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           4BOVE         0.25           67276.00         0	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOI II	E  _/AVERA : : IE LARG IE LARG SIZE: N BRKR: JNTING:	SE: 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 O IN MECHANICAL, PROCESS, OR MOTOR LOADS.	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER    - GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER		TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION	MS LEGEND IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE LOAD TYPE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           4BOVE         0.25           67276.00         -           E         E1           TYPE:         VOLTAGE:           ENCLOSURE:         ENCLOSURE:	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS DOLES	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU	E 	SE: GE GE EST CON 100 100 SURF CKT#	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 94.4 NEUTRAL BUS: YES GROUND BUS: YES 0 LOAD DESCRIPTION	SCHEMATIC WIRING SYMBOLS TRANSFORMER U U U U U U U U U U U U U	↓       ↓         ↓       ↓	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND IDF ICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE RECEPTACLE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           480VE         0.25           67276.00         -           CAD DESCRIPTION         -           OFFICE OUTLETS         -	DEMAND LOAD (VA) 4500.00 0.00 15600.00 15600.00 2400.00 0.00 10780.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1	BY PHAS	SE: GE GE EST CON 100 SURF CKT# LOAD 2	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 0 IN MECHANICAL, PROCESS, OR MOTOR LOADS.	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER III GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SERVICE FOUIPMENT	↓       ↓         ↓       ↓	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE RECEPTACLE RECEPTACLE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           4BOVE         0.25           67276.00         67276.00           COAD         DESCRIPTION           OFFICE         OUTLETS            COMMS	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 POLES 20A 1P 20A	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3	E -/AVERA : IE LARG SIZE: N BRKR: JNTING: Ø A B	SE: GE GE EST CON 100 SURF CKT# LOAD 2 720 4	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT NECTED MOT	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 O IN MECHANICAL, PROCESS, OR MOTOR LOADS.	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER    - GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC	↓         ↓ <t< td=""><td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (</td><td>MS LEGEND</td><td>T</td><td></td><td>PAD MOUNTED TRANSFORMER 2S 12,9 3 - 2" CONE 3 - 250MCM</td></t<>	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND	T		PAD MOUNTED TRANSFORMER 2S 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE RECEPTACLE RECEPTACLE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         100           COAD         DESCRIPTION           OFFICE         OUTLETS            COMMS           CABINET	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 POLES 20A 1P 20A	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500	E -/AVERA : IE LARG SIZE: N BRKR: INTING: Ø A B B	SE: GE GE EST CON 100 SURF CKT# LOAD 2 720 4 720 6	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT NECTED MOT FACE AMPS POLES 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 O IN MECHANICAL, PROCESS, OR MOTOR LOADS.	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER - MAIN LUG ONLY/MAIN CIRCUIT BREAKER - MAIN LUG ONLY/MAIN CIRCUIT BREAKER CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL STRUCTURAL	↓         ↓ <t< td=""><td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (</td><td>MS LEGEND</td><td>T</td><td></td><td>PAD MOUNTED TRANSFORMER 2S 12,9 3 - 2" CONE 3 - 250MCM</td></t<>	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND	T		PAD MOUNTED TRANSFORMER 2S 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE LOAD TYPE RECEPTACLE RECEPTACLE LIGHTING	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2400.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 POLES 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000	E AVERA SIZE: N BRKR: NTING: Ø A B A	SE: GE 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT FACE AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 O IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER - MAIN LUG ONLY/MAIN CIRCUIT BREAKER CURRENT TRANSFORMER CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STRUCTURAL STR	2017 NEC 0 102(0)(1)	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF NCATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 25 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE LOAD TYPE RECEPTACLE RECEPTACLE LIGHTING LIGHTING	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0           0         FICE OUTLETS            COMMS CABINET            0           OFFICE LIGHTING            BAY LIGHTING	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 POLES 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400	E AVERA SIZE: BRKR: JNTING: Ø A B A B A	SE: GE EST CON 100 SURF CKT# LOAD 2 720 4 720 6 1500 8 1500	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT FACE AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 0 IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER UIII GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STRUCTURAL STRUCTURAL STEEL FRAME OF BUILDING SIZE PER 2017 NEC	Image: Control of the second seco	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF NCATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 22 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL PANEL SCHEDULE LOAD TYPE RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0           0         FICE OUTLETS            VOLTAGE: ENCLOSURE:           LOAD DESCRIPTION         0           OFFICE OUTLETS            OFFICE LIGHTING            BAY LIGHTING            FACP            FACP	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 POLES 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300	E AVERA SIZE: BRKR: DTING: Ø A B A B A B A	SE: GE 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT SPOLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 D IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER HII- GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC CONNECTION	Image: Control of the second seco	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF NCATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 25 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR PANEL SCHEDULE LOAD TYPE RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         -           E         -           E         -           E         -           E         -           FIL         TYPE: VOLTAGE: ENCLOSURE:           E         -           ILOAD         DESCRIPTION           OFFICE         OUTLETS            -           OFFICE         LIGHTING            -           BAY         LIGHTING	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656	E AVERA IE LARG SIZE: N BRKR: NTING: Ø A B A B A B A B	SE: GE 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MECH HEATING MECH HEATING	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 O IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  SHOP OPENER  SHOP HEATER  SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) CONNECTION	Image: Constraint of the second system	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION (	MS LEGEND R IDF NCATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 22 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> LOAD TYPE RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00	DEMAND LOAD (VA) 4500.00 0.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 0.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13	E AVERA SIZE: N BRKR: NTING: Ø A B A B A B A B A	SE: GE 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 D IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER III GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STEEL FRAME OF BUILDING SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION ( 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 29 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0           COFFICE OUTLETS	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15	E AVERA SIZE: N BRKR: NTING: Ø A B A B A B A B A B A B	SE: SE: GE EST CON 100 100 SURF CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 16	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING SPACE SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 0 IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES 0 LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER  SHOP HEATER  SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER IIII GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU	2017 NEC         0.102(C)(1)	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION ( 2(C)(1)	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 29 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         67276.00	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 17	E -/AVERA E -/AVERA E IE LARG SIZE: N BRKR: INTING: Ø A B A B A B A B A B A B	SE: SE: GE CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 16 0 18	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING SPACE SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 0 IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER  SHOP HEATER  SHOP HEATER  SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN.	ZO17 NEC 0.102(C)(1) S MADE F POINT OF PIPE ETALLIC MAIN DMESTIC COLD	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION ( 2(C)(1)	MS LEGEND R IDF IICATION OUTLE DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 22 12,9 3 – 2" CONE 3 – 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0           COAD DESCRIPTION         0           OFFICE OUTLETS	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 7 1400 9 300 11 1656 13 0 15 0 17 0 40	E AVERA SIZE: N BRKR: NTING: Ø A B A B A B A B A B A	SE: GE GE EST CON 100 100 SURF CKT# LOAD 2 720 4 720 4 720 6 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 16 0 10 10 1	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH HEATING SPACE SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4  94.4 D IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES GROUND BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER  SHOP HEATER  SHOP HEATER & CIRC PUMP   	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER - MOLED-CASE - FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC - SIZE PER 2017 NEC	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE F POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE MIN 10')	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION ( 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET	T		PAD MOUNTED TRANSFORMER 22 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           10000.00         1.00           10000.00         1.00           101000.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           00FFICE OUTLETS	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 0	E AVERA SIZE: BRKR: DTING: Ø A B A B A B A B A B A B A B A B A B A B A B	SE: GE GE CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 16 0 18 0 20 0	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING SPACE SPACE SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4           94.4           0           NEUTRAL BUS: YES GROUND BUS: YES O           LOAD DESCRIPTION           SHOP OUTLETS SHOP OUTLETS DOOR OPENER DOOR OPENER SHOP HEATER WATER HEATER & CIRC PUMP SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN.	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE AIN 10')	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION O	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET	T		PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE	CONNECTED         DEMAND           LOAD (VA)         FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           10000.00         1.00           10000.00         1.00           10140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           9000         1.00           800.00         1.00           91000         1.00           91000         1.00           910000         1.00           9100000         1.00           9100000000         1.00	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0	E AVERA SIZE: BRKR: DTING: Ø A B A B A B A B A B A B A B A B A B A B A B A	SE: GE GE CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 16 0 18 0 20 0 22 0	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20A 1P 200 20A 1P 200 20A 1P 200 200 200 200 200 200 200 200 200 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING SPACE SPACE SPACE SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4 94.4           NEUTRAL BUS: YES GROUND BUS: YES O           LOAD DESCRIPTION           SHOP OUTLETS SHOP OUTLETS DOOR OPENER DOOR OPENER SHOP HEATER SHOP HEATER SHOP HEATER SHOP HEATER SHOP HEATER 	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU M	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE MIN 10')	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET	T CASED F	LECTRODE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           10780.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           9776.00         97           COMMS CABINET                BAY LIGHTING	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10000.00 5570.00 2400.00 0.00 10780.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 23 0	E AVERA SIZE: BRKR: DTING: Ø A B	SE: GE GE CKT# LOAD 2 720 4 720 6 1500 8 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 16 0 18 0 20 0 22 0 24 0	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH YEAR ROUND SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         O         NEUTRAL BUS: YES         GROUND BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            SHOP OUTLETS            DOOR OPENER            SHOP HEATER            SHOP HEATER <td>SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN.</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET</td> <td>T CASED EI F CONDU</td> <td>ECTRODE CTOR)</td> <td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM</td>	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN.	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET	T CASED EI F CONDU	ECTRODE CTOR)	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           90.01.00         2400.00           90.025         67276.00           0FFICE OUTLETS                0FFICE LIGHTING	DEMAND         LOAD (VA)         4500.00         15600.00         10000.00         5570.00         2400.00         0.00         10780.00         0.00         300.00         18984.00         800.00         2520.00         65126.00         PANELBOARD         120/24∪         NEMA1         AMPS         POLES         20A         1P         20A         1P <td>LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 25 0 25 0</td> <td>E AVERA SIZE: SIZE: BRKR: JNTING: Ø A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A A</td> <td>SE: SE: SE: SE: SE: SE: SE: SE:</td> <td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH YEAR ROUND SPACE SPACE SPACE SPACE SPACE SPACE</td> <td>BALANCE         (PERCENT)         A-B: 94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            0         IN MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            WATER HEATER &amp; CIRC PUMP                                      </td> <td>SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER URRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN. #7 CU MIN.</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUT</td> <td>T CASED EI F CONDU ENCASEI</td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM</td>	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 25 0 25 0	E AVERA SIZE: SIZE: BRKR: JNTING: Ø A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A A	SE: SE: SE: SE: SE: SE: SE: SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH YEAR ROUND SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            94.4            0         IN MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            WATER HEATER & CIRC PUMP	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER URRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU MIN. #6 CU MIN. #7 CU MIN.	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUT	T CASED EI F CONDU ENCASEI	ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           9776.00         1.00           840 LIGHTING                0FFICE LIGHTING	DEMAND         LOAD (VA)         4500.00         15600.00         10000.00         5570.00         2400.00         0.00         10780.00         0.00         300.00         18984.00         800.00         2520.00         65126.00         PANELBOARD         120/24√         NEMA1         AMPS         POLES         20A         1P         20A         1P <td>LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 25 0 27</td> <td>E -/AVERA E -/AVERA E IE LARG SIZE: N BRKR: N TING: Ø A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B B B B B B B B B B B B</td> <td>SE: SE: SE: SE: SE: SE: SE: SE:</td> <td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE</td> <td>BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         O IN MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            SHOP OUTLETS            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER            SHOP HEATER               SHOP HEATER  </td> <td>SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET DUTLET DUTLET DUNDATION DOTER DONCRETE ENG IN. 20'LF OI EBAR TO BE INIMUM OF 2</td> <td>T CASED EI F CONDU ENCASEI " OF CC</td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM</td>	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 25 0 27	E -/AVERA E -/AVERA E IE LARG SIZE: N BRKR: N TING: Ø A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B A B B B B B B B B B B B B B	SE: SE: SE: SE: SE: SE: SE: SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         O IN MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            SHOP OUTLETS            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER            SHOP HEATER               SHOP HEATER	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET DUTLET DUTLET DUNDATION DOTER DONCRETE ENG IN. 20'LF OI EBAR TO BE INIMUM OF 2	T CASED EI F CONDU ENCASEI " OF CC	ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         7	DEMAND         LOAD (VA)         4500.00         15600.00         10000.00         5570.00         2400.00         0.00         10780.00         0.00         300.00         18984.00         800.00         2520.00         65126.00         PANELBOARD         120/240         NEMA1         AMPS         POLES         20A         1P         20A         1P <td>LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 15 0 17 0 19 0 21 0 25 0 27 0 29</td> <td>E AVERA SIZE: SIZE: SIZE: SIZE: SIZE: A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A A A A A A A A A A A</td> <td>SE: SE: SE: SE: SE: SE: SE: SE:</td> <td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE</td> <td>BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            SHOP OUTLETS            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER   </td> <td>SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STELL FRAME OF BUILDING SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU WITHIN 5' OU OF ENTRANCE SIZE PER 2017 NEC CONNECTION WITHIN 5' OU OF ENTRANCE CONNECTION WITHIN 5' OU OF ENTRANCE</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET DUTLET DUNDATION DOTER DNCRETE ENG ININ 20'LF OF EBAR TO BE INIMUM OF 2</td> <td>T CASED EI F CONDU ENCASEI " OF CC</td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONI 3 - 250MCM</td>	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 15 0 17 0 19 0 21 0 25 0 27 0 29	E AVERA SIZE: SIZE: SIZE: SIZE: SIZE: A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A A A A A A A A A A A	SE: SE: SE: SE: SE: SE: SE: SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            SHOP OUTLETS            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER	SCHEMATIC WIRING SYMBOLS TRANSFORMER ELECTRICAL POWER PANEL - MAIN LUG ONLY/MAIN CIRCUIT BREAKER GROUND CURRENT TRANSFORMER CIRCUIT BREAKER, MOLDED-CASE FUSED DISCONNECT SWITCH METER STELL FRAME OF BUILDING SIZE PER 2017 NEC SIZE PER 2017 NEC TABLE 250.102(C)(1) MIN. #6 CU WITHIN 5' OU OF ENTRANCE SIZE PER 2017 NEC CONNECTION WITHIN 5' OU OF ENTRANCE CONNECTION WITHIN 5' OU OF ENTRANCE	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	MS LEGEND R IDF IICATION OUTLET DUTLET T DUTLET DUTLET DUTLET DUNDATION DOTER DNCRETE ENG ININ 20'LF OF EBAR TO BE INIMUM OF 2	T CASED EI F CONDU ENCASEI " OF CC	ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONI 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE RECEPTACLE LIGHTING LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25 0.00         1.00           15600.00         1.00         100           10000.00         1.00         0.00           11140.00         0.50         2400.00           2400.00         1.00         0.00           10780.00         1.00         0.00           0.00         1.00         300.00           12656.00         1.00         800.00           ABOVE         0.25         67276.00           67276.00         67276.00         67276.00	DEMAND         LOAD (VA)         4500.00         0.00         15600.00         10000.00         5570.00         2400.00         0.00         10780.00         0.00         300.00         18984.00         800.00         2520.00         65126.00         PANELBOARD         120/240         NEMA1         AMPS         POLES         20A         1P         20A </td <td>LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOADS 5 1000 7 1400 9 300 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 23 0 25 0 27 0 29 0 10 10 10 10 10 10 10 10 10</td> <td>E A A B B A B A B B B A B B B A B B B B B B B B B B B B B</td> <td>SE: SE: SE: SE: SE: SE: SE: SE:</td> <td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE</td> <td>BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            900R OPENER            DOOR OPENER            WATER HEATER &amp; CIRC PUMP            WATER HEATER &amp; CIRC PUMP  </td> <td>SCHEMATIC WIRING SYMBOLS         Image: Comparison of the state o</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>DUNDATION DUNDATION DUNDATION DOTER DUNDATION DOTER DUNDATION DOTER DEDAT</td> <td>CASED EI F CONDU ENCASEI " OF CC</td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM</td>	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOADS 5 1000 7 1400 9 300 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 23 0 25 0 27 0 29 0 10 10 10 10 10 10 10 10 10	E A A B B A B A B B B A B B B A B B B B B B B B B B B B B	SE: SE: SE: SE: SE: SE: SE: SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            900R OPENER            DOOR OPENER            WATER HEATER & CIRC PUMP            WATER HEATER & CIRC PUMP	SCHEMATIC WIRING SYMBOLS         Image: Comparison of the state o	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	DUNDATION DUNDATION DUNDATION DOTER DUNDATION DOTER DUNDATION DOTER DEDAT	CASED EI F CONDU ENCASEI " OF CC	ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SP	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           1140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           0FFICE OUTLETS         ENCLOSURE:           OFFICE LIGHTING                UNIT EF-2 <td>DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10780.00 0.00 10780.00 0.00 10780.00 2400.00 2400.00 2400.00 2400.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20 20 20 20 20 20 20 20 20 20</td> <td>LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 7 1400 9 300 1 1 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1 1 1 1 1 1 1 1 1 1 1</td> <td>E A A A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A</td> <td>SE: SE: SE: SE: SE: SE: SE: SE:</td> <td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 ANECTED MOT 67276.00 ANPS POLES 20A 1P 20A 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20</td> <td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE</td> <td>BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER               SHOP HEATER               SHOP HEATER  </td> <td>SCHEMATIC WIRING SYMBOLS         Image: Comparison of the compa</td> <td>TABLE 250.10</td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>DUNDATION DUNDATION DUNDATION DOTER DUNCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE OI EBAR TO BE INIMUM OF 2</td> <td></td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM</td>	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 10780.00 0.00 10780.00 0.00 10780.00 2400.00 2400.00 2400.00 2400.00 10780.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20 20 20 20 20 20 20 20 20 20	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 7 1400 9 300 1 1 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1 1 1 1 1 1 1 1 1 1 1	E A A A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A	SE: SE: SE: SE: SE: SE: SE: SE:	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 ANECTED MOT 67276.00 ANPS POLES 20A 1P 20A 20A 1P 200 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         0         NEUTRAL BUS: YES         GROUND BUS: YES         0         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER               SHOP HEATER               SHOP HEATER	SCHEMATIC WIRING SYMBOLS         Image: Comparison of the compa	TABLE 250.10	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	DUNDATION DUNDATION DUNDATION DOTER DUNCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE ENO DINCRETE OI EBAR TO BE INIMUM OF 2		ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING LIGHTING MISCELLANEOUS MOTOR SPACE	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           1000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         0.25           67276.00         0	DEMAND LOAD (VA) 4500.00 15600.00 15600.00 2400.00 0.00 10780.00 0.00 300.00 18984.00 800.00 2520.00 65126.00 PANELBOARD 120/240 NEMA1 AMPS POLES 20A 1P 20 20 20 20 20 20 20 20 20 20	LOADS E PHASE A B C TOTAL NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 7 1400 9 300 1 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1000 7 1400 9 300 1 1 1 1 1 1 1 1 1 1 1 1 1	E AVERA SIZE: N BRKR: N TING: Ø A B B A B B B A B B B A B B B B B B B B B B B B B	SE: GE GE EST CON CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 10 20 0 24 0 24 0 24 0 25 10 27 20 14 0 10 20 0 22 0 24 0 25 15 15 15 15 15 15 15 15 15 1	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 ANECTED MOT 67276.00 20A 1P 200 20A 1P 20 20A 1P 20 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 OR LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4         O         NEUTRAL BUS: YES         GROUND BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            DOR OPENER            BALARCE         WATER HEATER & CIRC PUMP            WATER HEATER & CIRC PUMP                        BALANCE         (PERCENT)         A-B: 77.6	SCHEMATIC WIRING SYMBOLS         Itansformer         ELECTRICAL POWER PANEL         Itansformer         GROUND         CURRENT TRANSFORMER         CIRCUIT BREAKER, MOLDED-CASE         Ital         WETER	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE MIN 10') DE SYS	SIZES REC	UIRED.		ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE LIGHTING MISCELLANEOUS MOTOR SPACE S	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         0.25           67276.00         7	DEMAND LOAD (VA)           4500.00 0.00           15600.00 10000.00 5570.00 2400.00 0.00           10780.00 0.00           10780.00 0.00           300.00           18984.00 800.00           800.00           2520.00           65126.00           PANELBOARD 120/240 NEMA1           AMPS POLES           20A 1P           20A 1P           20A 1P           20A 1P           20A 1P           20A 1P           20A 1P           20A 1P           20A 1P           20A           1P           20A           20           <	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 23 0 25 0 27 0 27 0 29 0 LOADS E A B C PHASE A B C C C C C C C C C C C C C	E AVERA SIZE: BRKR: DTING: Ø A B B A B B A A B B B A B B B A B B B B B B A B B B B B B B B B B B B B	SE: GE GE CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 22 0 24 0 24 0 28 0 30 0 SE: -	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 20A 1P 20 20A 1P 20 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED           LOAD (AMPS)           288.38           272.25              280.32           OR LOAD IS INCLUDED           PHASES:         1           WIRES:         3           SC RATING:         1000           LOAD TYPE         3           RECEPTACLE         1000           MOTOR         1000           MOTOR         1000           SPACE         3           SPACE         3 <td>BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4           94.4           0           NEUTRAL BUS: YES GROUND BUS: YES 0           LOAD DESCRIPTION           SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  BOOR OPENER  UDOOR OPENER  BALANCE (PERCENT)              SHOP HEATER        -</td> <td>SCHEMATIC WIRING SYMBOLS         Imansformer         Imansformer     <td>TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE AIN 10') DE SYS NG CONDUCTOR AG CONDUCTOR FCTIONS</td><td>STEM</td><td>UIRED. UIRED.</td><td></td><td>ECTRODE CTOR) D BY A NCRETE</td><td>PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM</td></td>	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 94.4           0           NEUTRAL BUS: YES GROUND BUS: YES 0           LOAD DESCRIPTION           SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  BOOR OPENER  UDOOR OPENER  BALANCE (PERCENT)   SHOP HEATER        -	SCHEMATIC WIRING SYMBOLS         Imansformer         Imansformer <td>TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE AIN 10') DE SYS NG CONDUCTOR AG CONDUCTOR FCTIONS</td> <td>STEM</td> <td>UIRED. UIRED.</td> <td></td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM</td>	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DMESTIC COLD ATER PIPE AIN 10') DE SYS NG CONDUCTOR AG CONDUCTOR FCTIONS	STEM	UIRED. UIRED.		ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE RECEPTACLE IGHTING LIGHTING MISCELLANEOUS MOTOR SPACE S	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.01         1.00           800.01         1.00           800.02         0.25           67276.00            COAD DESCRIPTION            OFFICE OUTLETS                OFFICE LIGHTING                UNIT EF-2	DEMAND LOAD (VA)         4500.00         15600.00         10000.00         5570.00         2400.00         0.00         10780.00         0.00         300.00         18984.00         800.00         2520.00         65126.00         PANELBORD         120/240         NEMA1         AMPS         POLES         20A         1P         20A         1P <td< td=""><td>LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 21 0 23 0 25 0 27 0 29 0 LOADS E PHASE A B C TOTAL, A CKT# LOAD 1 1 1 1 1 1 1 1 1 1 1 1 1</br></td><td>E AVERA SIZE: BRKR: DRKR: DRKR: A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A A B A A B A A B A A B A A B A A B A A B A A A B A A A B A A A B A A A A A A A A A A A A A</td><td>SE: GE GE CKT# LOAD 2 720 4 720 6 100 SURF CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 20 0 22 0 24 0 22 0 24 0 25 CK - - - - - - - - - - - - -</td><td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 AMPS POLES 20A 1P 20A 20A 1P 20A 20A 20 20A 20 20 20 20 20 20 20 20 20 20 20 20 20</td><td>CONNECTED LOAD (AMPS) 288.38 272.25  280.32 0R LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH YEAR ROUND SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE ALL SPACE</td><td>BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 D IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER  SHOP HEATER  SHOP HEATER  SHOP HEATER  BALANCE (PERCENT) A-B: 77.6 B-A: 77.6 B-A: 77.6  77.6</td><td><complex-block></complex-block></td><td>TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DETALLIC MAIN MESTIC COLD AG CONDUCTOR AG CONDUCTOR ECTIONS</td><td>STEM</td><td>UNDATION DUNDATION DUNDATION DOTER DUNCRETE ENG INIMUM OF 2 DECTAI</td><td></td><td>ECTRODE CTOR) D BY A NCRETE</td><td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM</td></td<>	LOADS E PHASE A 	E AVERA SIZE: BRKR: DRKR: DRKR: A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A B A A B A A B A A B A A B A A B A A B A A B A A A B A A A B A A A B A A A A A A A A A A A A A	SE: GE GE CKT# LOAD 2 720 4 720 6 100 SURF CKT# LOAD 2 720 4 720 6 1500 8 1500 10 400 12 200 14 0 10 400 12 200 14 0 10 400 12 200 14 0 20 0 22 0 24 0 22 0 24 0 25 CK - - - - - - - - - - - - -	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 AMPS POLES 20A 1P 20A 20A 1P 20A 20A 20 20A 20 20 20 20 20 20 20 20 20 20 20 20 20	CONNECTED LOAD (AMPS) 288.38 272.25  280.32 0R LOAD IS INCLUDED PHASES: 1 WIRES: 3 SC RATING: 1000 LOAD TYPE RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE MOTOR MOTOR MOTOR MOTOR MECH HEATING MECH HEATING MECH YEAR ROUND SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE SPACE ALL SPACE	BALANCE (PERCENT) A-B: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 B-A: 94.4 D IN MECHANICAL, PROCESS, OR MOTOR LOADS. NEUTRAL BUS: YES O LOAD DESCRIPTION SHOP OUTLETS  SHOP OUTLETS  DOOR OPENER  DOOR OPENER  SHOP HEATER  SHOP HEATER  SHOP HEATER  SHOP HEATER  BALANCE (PERCENT) A-B: 77.6 B-A: 77.6 B-A: 77.6  77.6	<complex-block></complex-block>	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DETALLIC MAIN MESTIC COLD AG CONDUCTOR AG CONDUCTOR ECTIONS	STEM	UNDATION DUNDATION DUNDATION DOTER DUNCRETE ENG INIMUM OF 2 DECTAI		ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONE 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES RECEPTACLES MECH HEATING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE IGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPAC	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         67276.00           OFFICE OUTLETS	DEMAND LOAD (VA)           4500.00 0.00           15600.00 10000.00 5570.00 2400.00 0.00 300.00           10780.00 0.00 300.00           10780.00 0.00           10780.00 0.00           2400.00           0.00           300.00           18984.00 800.00           800.00           2520.00           65126.00           PANELBORD 120/24/ NEMA1           AMPS POLES           20A 1P           20A           1P           20A	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD BUS MAIN MOU CKT# LOAD 1 7 1000 7 1400 9 300 5 1000 7 1400 9 300 5 1000 7 1400 9 300 11 1656 13 0 15 0 17 0 19 0 21 0 25 0 27 0 29 0 LOADS E A B C TOTAL, NOTES: 1. TH	E AVERA SIZE: SIZE: SIZE: SIZE: SIZE: A B A B A B A B A B A B A B A B A B A B A B A B A B A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A B A A A A A A B A A A A A A A A A A A A A	SE: GE 	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 20A 1P 20A 20A 1P 20A 20A 20A 1P 20A 20A 20A 20A 20A 20A 20A 20A 20A 20A	CONNECTED LOAD (AMPS)         288.38 272.25 280.32         OR LOAD IS INCLUDED         PHASES:       1         WIRES:       3         SC RATING:       1000         LOAD TYPE       1000         RECEPTACLE       1000         MOTOR       1000         MOTOR       1000         SPACE       1000         A44.23       1000 <td></td> <td><complex-block></complex-block></td> <td>TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DATESTIC COLD ATER PIPE IN 10') DE SYS NG CONDUCTOR GROUND SOU ECTIONS</br></br></br></td> <td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td> <td>UIRED. UIRED. UIRED. UIRED.</td> <td></td> <td>ECTRODE CTOR) D BY A NCRETE</td> <td>PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONI 3 - 250MCM</td>		<complex-block></complex-block>	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN 	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	UIRED. UIRED. UIRED. UIRED.		ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 29 12,9 3 - 2" CONI 3 - 250MCM
LOADS BY TYPE: LOAD TYPE LIGHTING KITCHEN PROCESS RECEPTACLES RECEPTACLES RECEPTACLES MECH HEATING MECH COOLING MECH YEAR ROUND APPLIANCE MISCELLANEOUS MOTOR SPARE LARGEST MOTOR <sup>1</sup> TOTAL <b>PANEL SCHEDULE</b> RECEPTACLE RECEPTACLE RECEPTACLE RECEPTACLE IGHTING LIGHTING MISCELLANEOUS MOTOR SPACE SPAC	CONNECTED LOAD (VA)         DEMAND FACTOR           3600.00         1.25           0.00         1.00           15600.00         1.00           10000.00         1.00           11140.00         0.50           2400.00         1.00           0.00         1.00           10780.00         1.00           0.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           300.00         1.00           800.00         1.00           800.00         1.00           800.00         1.00           ABOVE         0.25           67276.00         0           OFFICE OUTLETS	DEMAND LOAD (VA)           4500.00 0.00           15600.00           15600.00           10000.00           5570.00           2400.00           0.00           10780.00           0.00           300.00           18984.00           800.00           2520.00           65126.00           PANELBOARD           200A           1P           20A           1P           20A <td< td=""><td>LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 17 0 21 0 21 0 25 0 27 0 29 0 LOADS E PHASE A B C TOTAL, NOTES: 1. TH</td><td>BY PHAS E /AVERA E A E A B A B A B A B A B A B A B A B A B A B A B A B A B A A A B A A A A A B A A A B A A A B A A A A A B A A A A A B A A A A A A B A A A A B A A A A B A A A A A A B A A A A A A A A A A A A A</td><td>SE: GE (GE (CKT# LOAD 2 720 4 720 6 1500 10 4 720 10 720 10 720 10 720 10 720 10 720 720 720 720 720 720 720 72</td><td>CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 20A 1P 20A 20A 20A 20A 20A 20A 20A 20A 20A 20A</td><td>CONNECTED         LOAD (AMPS)         288.38         272.25            280.32         OR LOAD IS INCLUDED         PHASES:       1         WIRES:       3         SC RATING:       1000         LOAD TYPE       1000         RECEPTACLE       1000         MOTOR       1000         MOTOR       1000         SPACE       &lt;</td><td>BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4            94.4         Din MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER            BALANCE   </td><td><complex-block></complex-block></td><td>TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DATESTIC COLD ATER PIPE IN 10') DE SYS NG CONDUCTOR GROUND SOU ECTIONS</td><td>TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)</td><td>UIRED. UIRED. UIRED. UIRED.</td><td>CASED EI F CONDU ENCASEI " OF CC</td><td>ECTRODE CTOR) D BY A NCRETE</td><td>PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONI 3 - 250MCM</td></td<>	LOADS E PHASE A B C TOTAL, NOTES: 1. TH BUS MAIN MOU CKT# LOAD BUS MAIN MOU CKT# LOAD 1 720 3 500 5 1000 7 1400 9 300 5 1000 7 1400 9 300 11 1656 13 0 7 1400 9 300 11 1656 13 0 15 0 17 0 21 0 21 0 25 0 27 0 29 0 LOADS E PHASE A B C TOTAL, NOTES: 1. TH	BY PHAS E /AVERA E A E A B A B A B A B A B A B A B A B A B A B A B A B A B A A A B A A A A A B A A A B A A A B A A A A A B A A A A A B A A A A A A B A A A A B A A A A B A A A A A A B A A A A A A A A A A A A A	SE: GE (GE (CKT# LOAD 2 720 4 720 6 1500 10 4 720 10 720 10 720 10 720 10 720 10 720 720 720 720 720 720 720 72	CONNECTED LOAD (VA) 34606.00 32670.00  67276.00 NECTED MOT 67276.00 NECTED MOT 20A 1P 20A 20A 1P 20A 20A 20A 20A 20A 20A 20A 20A 20A 20A	CONNECTED         LOAD (AMPS)         288.38         272.25            280.32         OR LOAD IS INCLUDED         PHASES:       1         WIRES:       3         SC RATING:       1000         LOAD TYPE       1000         RECEPTACLE       1000         MOTOR       1000         MOTOR       1000         SPACE       <	BALANCE         (PERCENT)         A-B: 94.4         B-A: 94.4            94.4            94.4         Din MECHANICAL, PROCESS, OR MOTOR LOADS.         NEUTRAL BUS: YES         O         LOAD DESCRIPTION         SHOP OUTLETS            DOOR OPENER            DOOR OPENER            SHOP HEATER            SHOP HEATER            SHOP HEATER            BALANCE	<complex-block></complex-block>	TABLE 250.10 2017 NEC 0.102(C)(1) S MADE POINT OF PIPE ETALLIC MAIN DATESTIC COLD ATER PIPE IN 10') DE SYS NG CONDUCTOR GROUND SOU ECTIONS	TTB, MDF OF TELECOMMUN TELEPHONE DATA OUTLE TELEVISION OF 2(C)(1)	UIRED. UIRED. UIRED. UIRED.	CASED EI F CONDU ENCASEI " OF CC	ECTRODE CTOR) D BY A NCRETE	PAD MOUNTED TRANSFORMER 2 12,9 3 - 2" CONI 3 - 250MCM

10616.00

TOTAL

11630.00

PANEL SCHEDUL	E – P1 TYPE: PANELE	OARD	BUS SIZE:	600	PHASES: 1	NEUTRAL BUS: YES	MECHANICAL EQUIPMENT SCHEDULE
	VOLTAGE: 120/24 ENCLOSURE: NEMA1		MAIN BRKF MOUNTING:	SURFACE	SC RATING: 22000	GROUND BUS: YES	COMB: COMBINATION MOTOR STARTER NR: NONE REQUIRED CONT: CONTRACTOR MAG: MAGNETIC MOTOR STARTER P/I: PLUG-IN UNIT MAN: MANUAL MOTOR STARTER
LOAD TYPE		POLES	LOAD	LOAD POLES	LOAD TYPE		UNIT FUNCTION LOAD VOLTS Ø FULL BRANCH CIRCUIT GRND BRKR START DISC
PROCESS	SHOP OUTLET	50A 2P	1 A 4800	2 50A 4000 2P	MOTOR	AIR COMPRESSOR	NO     (NOTES)     LOAD     CONDUIT     NO.     WIRE     WIRE     BICKIN     START     DISC       AMPS     SIZE     CONDUIT     NO.     SIZE     SIZE     SIZE     FUSE
PROCESS			3 B 4800	4 4000	MOTOR		CU 1         CONDENSING UNIT         240         1         42 A         3/4"         2         8         10         50A         NR         60 50
RECEPTACLE	SHOP OUTLETS	20A 1P	5 A 720	6 20A 1000 2P	MECH HEATING	UNIT_EUH_1 	ZEF         EXHAUST FAN         120         1         1.0A         1/2"         2         12         12         20A         NR         \$           ZEF         EXHAUST FAN         120         1         1.0A         1/2"         2         12         12         20A         NR         \$
PROCESS	DOOR OPENER	20A 1P	7 B 1500	8 1000	MECH HEATING		$\begin{array}{c c c c c c c c c c c c c c c c c c c $
PROCESS	DOOR OPENER	20A	9 A	10 20A 720 1P	RECEPTACLE	SHOP OUTLET	$\begin{array}{c c c c c c c c c c c c c c c c c c c $
PROCESS	DOOR OPENER	20A	1300 B	12 45A	MECH YEAR ROUND	UNIT CU-1	LR         MOTORIZED LOUVER         120         1         1.0A         1/2"         2         12         12         20A         NR         \$
PROCESS	DOOR OPENER	1P 20A	1500 13 A	14	MECH YEAR ROUND		
RECEPTACLE	BATHROOM OUTLETS	1P 20A	1500 15 B	<u> </u>	MECH YEAR ROUND	HP UNITS	ABBREVIATIONS AND NOTATIONS ELECTRICAL SYMBOLS
		1P	360	250 2P			A.C. ABOVE COUNTER – VERIFY HEIGHT
		1P	540 P	250			A.F.F. ABOVE FINISHED FLOOR A.F.G. ABOVE FINISHED GRADE ALCONTRACTOR SINGLE RECEPTACLE
		1P	540 B	1000 1P		PROVIDE BREAKER TIE WITH P1-22	AL ALUMINUM
RECEPTACLE	EXTERIOR OUTLETS	20A 1P	21 A 360	22 20A 1000 1P	RECEPTACLE	BLOCK HEATER 1 PROVIDE BREAKER TIE WITH P1-20	AV AUDIO/VIDEO
RECEPTACLE	EXTERIOR OUTLETS	20A 1P	23 B 360	24 20A 1000 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-26	CB CIRCUIT BREAKER
RECEPTACLE	AWNING POLE OUTLET	20A 1P	25 A 360	26 20A 1000 1P	RECEPTACLE	BLOCK HEATER 2 PROVIDE BREAKER TIE WITH P1-24	CT CURRENT TRANSFORMER
RECEPTACLE	AWNING POLE OUTLET	20A	27 B	28 20A	RECEPTACLE	BLOCK HEATER 3 PROVIDE PREAKER THE WITH P1-30	EC ELECTRICAL CONTRACTOR DISCONNECT SWITCH
RECEPTACLE	AWNING POLE OUTLET	20A	29 A	30 20A	RECEPTACLE	BLOCK HEATER 3	EF EXTRAOST FAN
RECEPTACLE	BREAK ROOM COUNTER OUTLET	1P 20A	360 31 B	1000 1P 32 20A	RECEPTACLE	PROVIDE BREAKER TIE WITH P1-28 BLOCK HEATER 4	GEC GROUNDING ELECTRODE CONDUCTOR PANEL POWER PANEL 1 - CIRCUIT #3
RECEPTACIE		1P	360	1000 1P		PROVIDE BREAKER TIE WITH P1-34	GFI GROUND FAULT INTERRUPTER
		1P	360 A	1000 1P		PROVIDE BREAKER TIE WITH P1-32	IG ISOLATED GROUND
RECEPTACLE	BREAK ROOM OUTLETS	20A 1P	35 B 360	36 20A 1000 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-38	MCA MINIMUM CIRCUIT AMPACITT MCB MAIN CIRCUIT BREAKER MLO MAIN LUCS ONLY
RECEPTACLE	CONVENIENCE OUTLETS	20A 1P	37 A 720	38 20A 1000 1P	RECEPTACLE	BLOCK HEATER 5 PROVIDE BREAKER TIE WITH P1-36	N NEUTRAL FIRE ALARM
LIGHTING	EXTERIOR LIGHTING	20A 1P	39 B 1200	40 20A 1000 1P	RECEPTACLE	BLOCK HEATER 6 PROVIDE BREAKER TIE WITH P1-42	OCP OVERCURRENT PROTECTION
SPARE	UNALLOCATED FUTURE	20A	41 A	42 20A	RECEPTACLE	BLOCK HEATER 6 BLOCK DEFAUER THE WITH P1 40	SC SHORT CIRCUIT
SPARE	UNALLOCATED FUTURE	20A	43 B	44 20A	SPARE	UNALLOCATED FUTURE	TTB TELECOMMUNICATIONS TERMINAL BACKBOARD
SPACE		1P 	200 45 A	200 1P 46 20A	SPARE	UNALLOCATED FUTURE	WP WEATHERPROOF
SPACE			0	200 1P	SPACE		XFMR TRANSFORMER
SFACE			0 B		SFACE		X     MECHANICAL EQUIPMENT SCHEDULE NOTATION     Image: Sprinkler tamper switch       Image: Structure struct
SPACE			49 A 0	0	SPACE		Image: Stage Note     Image: Stage Note       Image: Stage Note
SUBFEED	PANEL E1	100A 2P	51 B 4640	52 0	SPACE		DELTA REVISION NOTE
SUBFEED			53 A 5976 A	54 0	SPACE		-X ELECTRICAL FEEDER SIZE SYSTEMS LEGEND
LOADS BY TYPE:		1	LOADS BY PHA	ASE:			SCHEMATIC WIRING SYMBOLS
LOAD TYPE	CONNECTED DEMAND DEMAND LOAD (VA) FACTOR LOAD (VA)		PHASE	LOAD (VA)	D CONNECTED LOAD (AMPS)	BALANCE (PERCENT)	
LIGHTING KITCHEN	3600.001.254500.000.001.000.00		A B	34606.00 32670.0C	288.38 272.25	A-B: 94.4 B-A: 94.4	TRANSFORMER TELEPHONE OUTLET
PROCESS RECEPTACLES	15600.001.0015600.0010000.001.0010000.00		<u>C</u>				
MECH HEATING	11140.00 0.50 5570.00 2400.00 1.00 2400.00		TOTAL/AVER	AGE 67276.00	280.32	94.4	- MAIN LUG ONLY/MAIN CIRCUIT BREAKER
MECH YEAR ROUND	10780.00 1.00 10780.00 0.00 1.00 10780.00		NOTES:				
MISCELLANEOUS MOTOR	300.001.00300.0012656.001.0018984.00		1. THE LAR	GEST CONNECTED MC	DTOR LOAD IS INCLUDED	IN MECHANICAL, PROCESS, OR MOTOR LOADS.	CURRENT TRANSFORMER
SPARE LARGEST MOTOR <sup>1</sup>	800.001.00800.00ABOVE0.252520.00						CIRCUIT BREAKER, MOLDED-CASE
TOTAL	67276.00 65126.00						• • • • • • • • • • • • • • • • • • •
PANEL SCHEDUL	<b>F – F1</b> TYPE: PANELE		BUS SIZE:	100		NELITRAL BUS: YES	
	VOLTAGE: 120/24 ENCLOSURE: NEMA1	0	MAIN BRKF MOUNTING:	₹: 100 : SURFACE	WIRES: 3 SC RATING: 10000	GROUND BUS: YES	
LOAD TYPE	LOAD DESCRIPTION	AMPS POLES	CKT# Ø LOAD	CKT# AMPS LOAD POLES	LOAD TYPE	LOAD DESCRIPTION	SIZE PER 2017 NEC TABLE 250.102(C)(1)
RECEPTACLE	OFFICE OUTLETS	20A	1 A 720	2 20A 720 1P	RECEPTACLE	SHOP OUTLETS	
RECEPTACLE	COMMS CABINET	20A	3 B	4 20A	RECEPTACLE	SHOP OUTLETS	STRUCTURAL 3 STEEL FRAME 3
LIGHTING	OFFICE LIGHTING	20A	5 A	6 20A	MOTOR	DOOR OPENER	
LIGHTING	BAY LIGHTING	1P 20A	1000 7 R	1500 1P 8 20A	MOTOR	DOOR OPENER	$G_{\text{G}}$
		1P	1400 ·	1500 1P		SHOP HEATER	SIZE PER 2017 NEC
		1P	300	400 1P			
MUIUK		20A 1P	1656 B	200 20A	MECH YEAR ROUND	WAIER HEAIER & CIRC PUMP	MIN.
SPACE		 	13 A 0	14            0	SPACE		
SPACE			15 B 0	16 0	SPACE		
SPACE			17 A		SPACE		HIALLIC MAIN METALLIC MAIN DOMESTIC COLD WATER DIDE
SPACE			19 B	20	SPACE		(MIN 10') FOOTER
SPACE		 	0 21 A	0 22	SPACE	 	
		<b></b>	0		SPACE		
JFAUE			23 B	0	SFAUE		(MIN. 20 LF OF CONDUCTOR) 
SPACE			25 A 0	26 0	SPACE		GROUND ROD
SPACE			27 B 0	28 0	SPACE		(96"L x 3/4"DIA) COPPER CLAD
SPACE			29 A	30	SPACE		GROUNDING ELECTRODE SYSTEM DETAIL
LOADS BY TYPE:		<b>_</b>	LOADS BY PHA	ASE:			
LOAD TYPE	CONNECTED DEMAND DEMAND LOAD (VA) FACTOR LOAD (VA		PHASE	CONNECTE LOAD (VA)	D CONNECTED LOAD (AMPS)	BALANCE (PERCENT)	SCALE: NOT TO SCALE
	2400.00 1.25 3000.00		A	4640.00	38.67	A-B: 77.6	1. SEE ONE LINE DIAGRAM FOR GROUNDING CONDUCTOR SIZES REQUIRED. 2. PROVIDE A MINIMUM OF TWO SEPARATE GROUND SOURCES. U.O.N. ON
PROCESS RECEPTACIES	0.00 0.		C	00.07.80 	49.δU 	шА. //.0 	ONE LINE DIAGRAM. 3. CADWELD ALL ENCASED GROUND CONNECTIONS
MECH HEATING MECH COOLING	400.00 1.00 400.00 0.00 1.00 0.00		TOTAL/AVER	AGE 10616.00	44.23	77.6	
MECH YEAR ROUND APPLIANCE	200.00         1.00         200.00           0.00         1.00         0.00		NOTES:				
MISCELLANEOUS MOTOR	300.001.00300.004656.001.006984.00		1. THE LAR	GEST CONNECTED MC	DTOR LOAD IS INCLUDED	IN MECHANICAL, PROCESS, OR MOTOR LOADS.	
SPARE LARGEST MOTOR <sup>1</sup>	0.00 1.00 0.00 ABOVE 0.25 414.00						

![](_page_22_Figure_2.jpeg)

MOST OF SHEET MODIFIED TO REFLECT TWO PANELS

August 19, 2019 - 6:43:37pm

E2-3

AS SHOWN

SCALE:

SHEET NUMBER:

#### SECTION 16000 GENERAL PROVISIONS

### SECTION 16010

- 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 HIS OR HER 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 HIM OF THIS RESPONSIBILITY. THE ELECTRICAL CONTRACTOR AND HIS 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 RE-ENFORCE 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 QUALITY 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, EQUIPMENT, AND ACCESSORIES TO THE ENGINEER FOR THE ENGINEER'S 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 TECHNIQUES OF CONSTRUCTION; COORDINATION OF HIS WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS 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 A BID, THE CONTRACTOR SHALL VISIT THE SITE AND EXAMINE ALL ADJOINING EXISTING BUILDINGS, EQUIPMENT AND SPACE CONDITIONS ON WHICH HIS WORK IS IN ANY WAY DEPENDENT FOR THE BEST WORKMANSHIP AND OPERATION ACCORDING TO THE INTENT OF SPECIFICATIONS AND DRAWINGS. HE SHALL REPORT TO THE ARCHITECT ANY CONDITION WHICH MIGHT PREVENT HIM FROM INSTALLING HIS 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. I. EXISTING CONDUITS, PIPES, EQUIPMENT, ETC.: REFER TO DIVISION I FOR ADDITIONAL REQUIREMENTS. EXISTING CONDUITS, PIPES, UTILITY LINES, TANKS, EQUIPMENT, 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, THAT OCCURRED DURING THE COURSE OF CONSTRUCTION.

#### SECTION 16015 ELECTRICAL DRAWINGS AND REFERENCE SYMBOLS

END OF SECTION 16010

- A. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERALLY THE LOCATIONS OF MATERIAL AND EQUIPMENT. 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. ELECTRICAL 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 16015

#### SECTION 16020 WORK INCLUDED

- A. THE SCOPE OF THE WORK CONSISTS OF ELECTRICAL INSTALLATION AND MODIFICATION AT THE HOTCHKISS SHOP, THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: INSTALLATION OF ELECTRICAL DISTRIBUTION: AND OTHER ITEMS AS CALLED OUT ON THE DRAWINGS FOR THE AREAS OF WORK.THIS WORK WILL ALSO INCLUDE: ELECTRICAL DISTRIBUTION INSTALLATION; POWERING OF MECHANICAL EQUIPMENT: AND OTHER ITEMS AS CALLED OUT ON THE DRAWINGS FOR THE CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT, MACHINERY, AND ANY AND ALL OTHER ITEMS NECESSARY TO COMPLETE THE SYSTEMS. THE ELECTRICAL CONTRACTOR SHALL NOTE THAT ALL ITEMS OF EQUIPMENT 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 DRAWINGS BUT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND PERFECT 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: ANY MATERIALS OR APPARATUS BELIEVED INADEQUATE OR UNSUITABLE, IN VIOLATION OF LAWS, ORDINANCES OR RULES' ANY NECESSARY ITEMS OR WORK OMITTED. IN THE ABSENCE OF SUCH WRITTEN NOTICE, IT IS MUTUALLY AGREED THE CONTRACTOR HAS INCLUDED THE COST OF ALL REQUIRED ITEMS IN HIS PROPOSAL, AND THAT HE WILL BE RESPONSIBLE FOR THE APPROVED SATISFACTORY FUNCTIONING OF THE ENTIRE SYSTEM WITHOUT EXTRA COMPENSATION.

## END OF SECTION 16020

### SECTION 16030 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 REQUIRED 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 REQUIREMENTS, AND UTILITY COMPANY REGULATIONS, HE SHALL BEAR THE COST ARISING IN CORRECTING ANY SUCH DEFICIENCY. END OF SECTION 16030

#### SECTION 16100 BASIC METHODS AND MATERIALS

# SECTION 16101

### 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
- 2. PROVIDE PROPER SUPPORTS, MOUNTS, ETC., AS REQUIRED.
- 3. COORDINATE WITH THE GENERAL CONTRACTOR. 4. OBTAIN INSTRUCTIONS FROM THE ARCHITECT FOR INSTALLATION OF ITEMS NOT COMPLETELY
- COVERED BY CONTRACT DOCUMENTS OR PUBLISHED MANUFACTURER'S RECOMMENDATIONS. D.EQUIPMENT FINISH: ALL ELECTRICAL EQUIPMENT 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.
- E. 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 OF THE APPROVED FIRESTOPPING MATERIAL 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, WELDING TO STRUCTURAL MEMBERS. . 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 REQUIRED 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. 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 SOULED BURING I.RECORD DRAWINGS: AT COMPLETION OF THE WORK FURNISH TO THE ARCHITECT THREE COMPLETE HARD COPY SETS AND ONE SEARCHABLE PDF SET OF ELECTRICAL PRINTS MARKER
- TO SHOW THE WORK "AS-BUILT" 1. PROVIDE THE ABOVE FOR BOTH LINE AND LOW VOLTAGE CABLING. 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
- 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 16101

## SECTION 16111

- ONDUITS 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 CONDUIT 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 ANSI 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.
- G.ALL CONDUIT JOINTS SHALL BE CUT SQUARE, 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.
- 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; 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 16111

#### SECTION 16120 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
- B. 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.
- C. 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 REQUIRED 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. E. 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 CU + 1#12G CU UNLESS OTHERWISE NOTED ON DRAWINGS OR IN
- I. ALL 15 AND 20 AMP CIRCUITS WITH LENGTHS OVER 50 FT. SHALL HAVE THEIR CONDUCTOR SIZE  $_{\odot}$ INCREASED TO #10 FOR VOLTAGE DROP.
- J. COMMUNICATION CABLING, OUTLETS AND GEAR TO MEET CAT 6 REQUIREMENTS. K. COMMUNICATION CABLING TO BE CONSISTENT THROUGHOUT WITH DISTINCT OWNER SELECTED COLORS FOR PHONE, DATA, SECURITY AND FIRE SYSTEMS

## SECTION 16121

- 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 16121

#### SECTION 16125 PULLING CABLES

- THE ELECTRICAL SYSTEM REQUIRES SERVICE WORK WITHIN THE WARRANTY PERIOD. J. GUARANTEE: GUARANTEE THAT ALL WORK GOVERNED BY THIS DIVISION SHALL BE NEW AND

END OF SECTION 16/20 SECTION 16450

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. H. 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 16125

SECTION 16133 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 SQUARE BY 1 INCHES DEEP UNLESS OTHERWISE NOTED.
- C.FIXTURE OUTLET BOXES SHALL BE MINIMUM 4 INCH 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 16133

### **SECTION 16190** 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 16190

### SECTION 16195 ELECTRICAL IDENTIFICATION

A. 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 EQUIPMEN

- 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 EQUIPMENT 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 USED. 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 16195

#### **SECTION 16199** 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, FREQUENCY, 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 16199

### SECTION 16400 SERVICE AND DISTRIBUTION

# SECTION 16401

- GENERAL
- A. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL RELATED DISTRIBUTION EQUIPMENT AS INDICATED ON THE FLOOR PLAN, DIAGRAMS, SCHEDULES, AND NOTES. ALL EQUIPMENT SHALL BE NEW AND UL LISTED. 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. END OF SECTION 16401

#### SECTION 16440 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 QUICK-BREAK OPERATING HANDLE AND MECHANISM WHICH SHALL BE AN INTEGRAL PART OF THE BOX, PADI OCKING 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 REQUIRED. SWITCHES LOCATED ON THE EXTERIOR OF THE BUILDING OR IN "WET" LOCATIONS SHALL HAVE NEMA 3R ENCLOSURES
- 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 ON MOTOR CIRCUITS. END OF SECTION 16440

- 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.

#### SECTION 16470 PANELBOARDS

END OF SECTION 16450

A.FURNISH AND INSTALL DISTRIBUTION AND POWER PANELBOARDS AS INDICATED IN THE PANELBOARD SCHEDULE AND WHERE SHOWN ON THE DRAWINGS. PANELBOARDS 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

A.INSTALL CONDUCTORS IN ALL RACEWAYS AS REQUIRED, UNLESS OTHERWISE NOTED, IN A NEAT 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.

- C.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 16470

### SECTION 16471 BRANCH CIRCUIT PANELBOARD

- A.POWER AND LIGHTING PANELS SHALL BE OF THE DEAD-FRONT, SAFETY TYPE, WITH THERMAL MAGNETIC, QUICK-MAKE, 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 EQUAL, 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 FEDERAL SPECIFICATIONS W-P-115A, TYPE 1, CLASS I. D. ALL PANEL DIRECTORIES SHALL BE TYPED AND TERMINOLOGY APPROVED BY THE OWNER. END OF SECTION 16471

#### SECTION 16475 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
- B. 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 16475

PLACE AND WIRED AS FOLLOWS:

COMBINATION MAGNETIC MOTOR

STARTERS, MAGNETIC MOTOR

STARTERS AND CONTACTORS

THERMAL OVERLOAD SWITCHES

AND HEATERS, MANUAL MOTOR

THERMOSTATS (LOW VOLTAGE)

THERMOSTATS (LINE VOLTAGE)

MOTOR AND SOLENOID VALVES,

PUSH-BUTTON STATIONS AND

PILOT LIGHTS . . .

HEATING, COOLING, VENTILATION

AND AIR CONDITIONING CONTROLS

SUBCONTRACTOR WORK.

DAMPER MOTORS, PE & EP

SWITCHES .

EXHAUST FAN SWITCHES

SUBSCRIPT FOOTNOTES:

TEMPERATURE CONTROL PANELS. 15

FUSED AND UNFUSED

DISCONNECT SWITCHES,

MANUAL-OPERATING AND

MULTI-SPEED SWITCHES

CONTROLS, RELAYS,

AND TIME SWITCHES

TRANSFORMERS

RESPONSIBLE DIVISION

**SECTION 16900** CONTROLS AND INSTRUMENTATION

SECTION 16901 GENERAL

ITEM

EQUIPMENT

STARTERS

- A. 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 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 APPROVED DESIGN B. THE ELECTRICAL CONTRACTOR SHALL RECEIVE AND PROPERLY STORE THE EQUIPMENT AND MATERIAL PERTAINING TO THE ELECTRICAL WORK. THE EQUIPMENT SHALL BE TIGHTLY COVERED AND PROTECTED AGAINST DIRT, WATER, CHEMICAL OR MECHANICAL INJURY AND THEFT. THE MANUFACTURER'S DIRECTIONS SHALL BE 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 SPECIFICATIONS. D.IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO CLEAN THE ELECTRICAL EQUIPMENT, MAKE NECESSARY ADJUSTMENTS AND PLACE THE EQUIPMENT INTO OPERATION BEFORE TURNING EQUIPMENT OVER TO OWNER. ANY PAINT THAT WAS SCRATCHED DURING CONSTRUCTION SHALL BE "TOUCHED-UP" WITH FACTORY COLOR PAINT TO THE SATISFACTION OF THE ARCHITECT. ANY ITEMS THAT WERE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

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16(1)

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15(2)

15(2)

15

16

E. GENERAL

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16(1)

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1) GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL

OF EQUIPMENT OR IF FURNISHED WITH COMBINATION STARTERS.

UNDER DIVISION 15 IF FURNISHED FACTORY-WIRED AS PART

- 1. UNLESS OTHERWISE INDICATED ALL HEATING, VENTILATING, AIR CONDITIONING, PLUMBING, AND OTHER MECHANICAL EQUIPMENT, MOTORS, AND CONTROLS SHALL BE FURNISHED, SET IN
  - FURNISHED SET POWER- CONTROL-WIRED WIRED

16 --

16

15

15(2)

15(2)

15

15(2)

- IF ITEM IS FOR LINE VOLTAGE, SET IN PLACE AND CONNECT UNDER DIVISION 16. WHERE FACTORY MOUNTED ON EQUIPMENT OR ATTACHED TO PIPING OR DUCTS AND USING LINE VOLTAGE FURNISH AND SET UNDER DIVISION 15, CONNECT UNDER DIVISION 16.
- 2. VERIFY LOCATION AND NAMEPLATE DATA OF ALL MECHANICAL EQUIPMENT WITH THE MECHANICAL CONTRACTOR PRIOR TO INSTALLING ELECTRICAL FACILITIES. BE RESPONSIBLE FOR COORDINATION OF REVISIONS AND MODIFICATIONS NECESSARY TO PROPERLY SUPPLY ELECTRICAL FACILITIES TO HEATING, VENTILATING, AIR CONDITIONING, PUMPS, MOTORS, CONTROLS, AND OTHER MECHANICAL EQUIPMENT INSTALLED IN PLACE OF EQUIPMENT SPECIFIED. REQUIRED ELECTRICAL FACILITIES CHANGES SHALL BE CONSIDERED TO BE A PART OF THE MECHANICAL CONTRACT.
- 3. PROVIDE EACH MOTOR WITH A HORSEPOWER RATED DISCONNECT SWITCH AND MOTOR RUNNING OVERCURRENT PROTECTION PER N.E.C. 430-37. TO FACILITATE EASE AND SAFETY OF OPERATION AND MAINTENANCE OF MECHANICAL EQUIPMENT, LOCATE THE DISCONNECT SWITCH IMMEDIATELY ADJACENT TO THE MOTOR, UNLESS OTHERWISE INDICATED. SIZE THERMAL OVERLOAD HEATER UNITS FOR APPROXIMATELY 115% OF FULL LOAD MOTOR CURRENT. SIZE FUSES IN ACCORDANCE WITH THE ACTUAL MOTOR NAMEPLATE RATING AND AS RECOMMENDED BY THE BUSSMAN MFG. CO. CHECK AND COORDINATE ALL STARTERS, FUSES. AND OTHER MOTOR-RUNNING PROTECTIVE DEVICES WITH THE EQUIPMENT THEY CONTROL, AND PROVIDE AND INSTALL THE CORRECT SIZE PROTECTIVE ELEMENTS AS
- REQUIRED 4. DO NOT CONNECT MOTORS WHICH ARE OF A VOLTAGE RATING DIFFERENT THAN SUPPLY VOLTAGE. REPORT SAME TO THE ARCHITECT IN WRITING AND OBTAIN WRITTEN INSTRUCTIONS FOR RESOLUTION.
- 5. USE FLEXIBLE CONDUIT FOR ALL CONNECTIONS TO DEVICES DIRECTLY ATTACHED TO DUCTS, PIPING AND MECHANICAL EQUIPMENT. END OF SECTION 16901

#### SECTION 16950 TESTING

- A.AS SOON AS ELECTRIC POWER IS AVAILABLE AND CONNECTED TO SERVE THE EQUIPMENT IN THE BUILDING, AND EVERYTHING IS READY FOR FINAL TESTING AND PLACING IN SERVICE. A COMPLETE OPERATIONAL TEST SHALL BE MADE. THE CONTRACTOR SHALL FURNISH ALL NECESSARY INSTRUMENTS AND EQUIPMENT AND MAKE ALL TESTS, ADJUSTMENTS, AND TRIAL OPERATIONS REQUIRED TO PLACE THE SYSTEM IN BALANCED AND SATISFACTORY OPERATING CONDITION: FURNISH ALL NECESSARY ASSISTANCE AND INSTRUCTIONS TO PROPERLY INSTRUCT THE OWNER'S AUTHORIZED PERSONNEL IN THE OPERATION AND CARE OF THE SYSTEM
- B. PRIOR TO TESTING THE SYSTEM, THE FEEDERS AND BRANCH CIRCUITS SHALL BE CONTINUOUS FROM MAIN FEEDERS TO MAIN PANELS, TO SUBPANELS, TO OUTLETS, WITH ALL BREAKERS AND FUSES IN PLACE. THE SYSTEM SHALL BE TESTED FREE FROM SHORTS AND GROUNDS. SUCH TESTS SHALL BE MADE IN THE PRESENCE OF THE ENGINEER'S REPRESENTATIVE. C. NO CIRCUITS SHALL BE ENERGIZED WITHOUT THE OWNER'S APPROVAL
- D. THE RIGHT IS RESERVED TO INSPECT AND TEST ANY PORTION OF THE EQUIPMENT AND/OR MATERIALS DURING THE PROGRESS OF ITS ERECTION. THE CONTRACTOR SHALL FURTHER TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE CONNECTING ANY FIXTURES OR EQUIPMENT.
- E. THE CONTRACTOR SHALL TEST THE ENTIRE SYSTEM IN THE PRESENCE OF THE ARCHITECT OR HIS ENGINEER WHEN THE SYSTEM IS FINALLY COMPLETED TO ENSURE THAT ALL PORTIONS ARE FREE FROM SHORT CIRCUITS OR GROUND FAULTS. END OF SECTION 16950

### **SECTION 16980** DEMONSTRATION OF ELECTRICAL EQUIPMENT

- A. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH CERTIFICATION OF THE INSPECTION AND APPROVAL OF AN ACTIVE MEMBER OF THE INTERNATIONAL ASSOCIATION OF ELECTRICAL INSPECTORS OF ALL WORK COMPLETED AND INCLUDED IN THE SECTION, IF REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE INSPECTOR WHEN WORK REACHES INSPECTION STAGE.
- B. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE LOCAL AUTHORITY HAVING JURISDICTION IN ORDER THAT LOCAL INSPECTION MAY BE CARRIED OUT AT THE PROPER STAGE C.THE ELECTRICAL CONTRACTOR SHALL PAY FOR ALL PERMITS, INSPECTION FEES, AND
- INSTALLATION FEES AS REQUIRED TO COMPLETE THE WORK UNDER THIS SECTION OF THE CONTRACT
- D. THIS CONTRACTOR SHALL GUARANTEE THE MATERIALS AND WORKMANSHIP FOR A PERIOD OF TWELVE (12) MONTHS FROM THE TIME THE INSTALLATION IS ACCEPTED BY THE OWNER. IF, DURING THIS TIME, ANY DEFECTS SHOULD SHOW UP DUE TO ANY DEFECTIVE MATERIALS. WORKMANSHIP, NEGLIGENCE OR WANT OF PROPER CARE ON THE PART OF THIS CONTRACTOR, HE SHALL FURNISH ANY NEW MATERIALS AS NECESSARY, REPAIR SAID DEFECTS, AND PUT THE SYSTEM IN ORDER AT HIS OWN EXPENSE ON RECEIPT OF NOTICE OF SUCH DEFECTS FROM THE ARCHITECT. THIS SPECIFICATION IS NOT INTENDED TO IMPLY THAT THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NEGLIGENCE OF THE OWNER.

### END OF SECTION 16980 END OF DIVISION

UPDATED SHEET 8/23/19

- DO NOT REPRODUCE THESE DRAWINGS A PECIFICATIONS WITHOUT THE EXPRESSED WRITTE PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE O ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. 60 Ē **50** ultin 08 Οŵ 4  $\cup$ N N <u>6</u> Bi  $\boldsymbol{\mathcal{O}}$  $\simeq$  $\sim$ R' -M DATE: | ISSUED FOR: 03/21/19 REVISED 50% DD 06/28/19 REVISED DRAWINGS 08/16/19 100% CD 03/21/1JOB NO: 18-159 DRAWN BY: BCE BCE CHECKED BY: SCALE: AS SHOWN SHEET NUMBER
- August 19. 2019 6:43:38r

![](_page_24_Figure_0.jpeg)

![](_page_24_Figure_1.jpeg)

FLAG NOTES:

2. NEW GAS METER, ASSUMED MEDIUM PRESSURE GAS (I.E. 2PSI). TOTAL APPROXIMATE LOAD 1,246MBH (~1,520 CFH). LONGEST LENGTH IS APPROXIMATELY 200 FT LONG.

GENERAL NOTES:

 $\sim$ 1. TRENCH DRAIN GRATE TO BE TRAFFIC RATED AND SLOPED PER IPC, SEE CIVIL. -

3. 3/4" (2PSI) GAS LINE STUB FOR FUTURE GENERATOR. PROVIDE WITH ISOLATION VALVE AND CAP ON INTERIOR OF BUILDING.

1. PROVIDE GAS REGULATORS AT GAS FIRED EQUIPMENT.

Venting can be grouped and routed to the east horizontally in the first floor ceiling space to the east exterior wall and routed up the interior of this wall and across the mezzanine ceiling space to the roof on a slope. The only other fixture that would need venting is the trench drain and this can be routed up the interior of the south wall and to the roof. (.....

# PLUMBING - SHOP FLOOR PLAN

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

NORTH

DO NOT REPRODUCE THESE DRAWINGS AND SPECIFICATIONS WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE ON ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. Inc Enginee Bighorn Consulting E Mechanical & Electrical Eng 386 Indian Road Grand Junction, CO 81501 Phone: 970-241-8709 CHKISS ACILIT A RD ADO ES/ OR Γ**Ι** HOT S N O RK BARROW CHKISS, CO MO OF TBD HOT( Z IC  $\geq$ OL BI PU DATE: ISSUED FOR: 03/21/19 REVISED 50% DD 06/28/19 REVISED DRAWINGS 08/16/19 100% CD 03/21/19 DATE: 18-159 JOB NO: DRAWN BY: BCE BCE CHECKED BY: SCALE: AS SHOWN SHEET NUMBER: P1-August 19, 2019 - 4:31:44pm

UPDATED SHEET 8/23/19

![](_page_25_Figure_1.jpeg)

	PLUMBING FIXTURE SCHEDULE								
	DESCRIPTION	MANUFACTURED	MODEL	трии	PIP	PIPING CONNECTIONS			
FIXTURE NO.	DESCRIPTION	MODEL	I RIM	S/W	VENT	C.W.	HW		
EWC-1	ELECTRIC WATER COOLER	ELKAY	LZSVR8L		1-1/2"	1-1/2"	1/2"	1/2"	PROVIDE WITH WA WATT.
EWS-1	EYE WASH STATION	GUARDIAN	G1814P	WALL MOUNTED EYE WASH			3/4"	3/4"	FLOOR MOUNTED, SHOWER SHALL B
FD-1	FLOOR DRAIN	SIOUX CHIEF	832-4PNR	BRONZE	4"	2"	-	-	PROVIDE NICKEL E
HB-1	FREEZE PROOF HOSE BIB	WOODFORD	B67		-	-	3/4"	1/2"	PROVIDE LOCKING
HB-2	FREEZE PROOF HOSE BIB	WOODFORD	V22		-	-	3/4"	1/2"	PROVIDE LOCKING
LV-1	WALL MOUNTED BATHROOM SINK	AMERICAN STANDARD-REGALYN	4867.008	PROVIDE AMERICAN STANDARD MONTERREY .35 GPM FAUCET	1 1/2"	1 1/2"	1/2"	1/2"	GRID DRAIN, P TRA
S-1	24"X24" TERRAZZO BASIN	FIAT	TSB100	PROVIDE PROFLOW PF1118 UTILITY FAUCET	1-1/2"	1-1/2"	1/2"	1/2"	PROVIDE WITH TO STEEL CAPS, SILIC
S-2	1 COMPARTMENT SINK COUNTER MOUNTED	JUST	SLN-1815-A-GR	JUST JV-174-A COUNTER MOUNTED SINK	1-1/2"	1-1/2"	1/2"	1/2"	SINK STRAINER, P
SH-1	ADA SHOWER ENCLOSURE	CHICAGO FAUCETS	SH-PB1-00-013	ADA TERRAZO BASIN, TILE WITH GREEN BOARD.	1-1/2"	1-1/2"	1/2"	1/2"	TERRAZO BASIN, F VALVE, GRID FLOO
WC-1	ADA WATER CLOSET	AMERICAN STANDARD-CHAMPION	2034.314	1.6 GPF FLUSH TANK WATER CLOSET	4"	2"	3/4"	-	VACUUM BREAKER

PLUMBING SPECIFICATION.

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 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 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 ACHITECT/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 1/2" FOAM INSULATION.

5. SANTARY/STORM DRAINAGE AND VENT PIPING.

- A. ABOVE GRADE:
  - -2" BELOW: SCH.40 GALV. STL. PIPE WITH SCREWED ENDS OR SCH. 40PVC 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 SCH 40 PVC WITH SOLVENT
- JOINTS B. BELOW GRADE: SERVICE WT. CAST IRON WITH NO-HUB OR
- BELL AND SPIGOT JOINTS; OR SCH 40 PVC WITH SOLVENT JOINTS.
- PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS.
- DRAINAGE PIPING SHALL BE RUN AS STRAIGHT AS POSSIBLE D.
- AND SHALL HAVE LONG TURN FITTINGS.
- E. DRAINAGE PIPING 3" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST 1/4" PER FOOT. AND PIPING LARGER THAN 3"
- SHALL BE RUN AT A GRADE OF NO LESS THAN 1/8" PER FOOT. ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FLASHING OF THE VENT PIPING RUN THROUGH THE ROOF.
- 6. <u>ALL STUB-INS</u> AND/OR SLAB OR WALL PENETRATION TO BE PER INTERNATIONAL PLUMBING CODE (LATEST EDITION).ALL PIPING PENETRATIONS OF BUILDING FOUNDATIONS OR FOOTINGS SHALL
- 7. PIPE SUPPORTS

BE SLEEVED.

- 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 AS SPECIFIED IN INTERNATIONAL PLUMBING CODE (LATEST EDITION).
- 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

- COORDINATE INSTALLATION OF ALL ROOFS FLASHING AT ROOF PENETRATION.
- DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, Β. CONDITIONS AND DIMENSIONS AT THE JOB SITE.
- C. THE PLUMBING 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. 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 CONTRACTOR'S EXPENSE.
- 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.

![](_page_26_Picture_40.jpeg)

Changed to gas

INSTANTANEOUS GAS FIRED WATER HEATER SCHEDULE								
EQUIPMENT NO	EQUIPMENT NO RECOVERY @70 DEG F. RISE (GPM) BTU PER HR. GAS CONN. WATER CONN. MANUFACTURER & MODEL OPTIONS/ACCESSORIES							
WH-1	5.5	199,000	3/4"	3/4"	RINNAI - RU199IN	NOTE-1		
NOTES: 1. ASME RELIEF VALVE, HIGH ALTITUDE KIT SIZED PER LOCATION ELEVATION AND DIRECT VENT KIT.								

![](_page_26_Figure_44.jpeg)

![](_page_26_Figure_45.jpeg)

DO NOT REPRODUCE THESE DRAWINGS A SPECIFICATIONS WITHOUT THE EXPRESSED WRITTED PERMISSION OF THE DESIGNER. THE DRAWINGS AND SPECIFICATIONS ARE INSTRUMENTS OF THE SERVICE AND SHALL REMAIN THE PROPERTY OF THE DESIGNER WHETHER THE PROJECT FOR WHICH THEY ARE MADE IS EXECUTED OR NOT. THESE DRAWINGS AND SPECIFICATIONS SHALL NOT BE USED BY ANYONE OF ANY OTHER PROJECTS FOR ADDITIONS TO THIS PROJECT BY OTHERS EXCEPT BY THE EXPRESSED WRITTEN PERMISSION OF THE DESIGNER. XEX C Engin **50** F Consulting 1 & Electrical 1 × ~ LCO-8709 al & Roac tion, -241 m lian 970 Bighoi Mechani 386 Indiau Grand Jur Phone: 97 icon. 86 Inc rand hone: S  $\boldsymbol{\mathcal{N}}$  $\mathbf{Z}$  $\bigcirc$ RD DO Η ES/ OR ΓŢ S N S HO  $\mathbf{N}$ ≥Ŭ ARRO' C Γт  $\bigcirc$  $\geq$ B TBD  $\longrightarrow$ C  $\geq$ Η M  $\underline{\smile}$  $\rightarrow$ ρ DATE: ISSUED FOR: 03/21/19 REVISED 50% DD 06/28/19 REVISED DRAWINGS 08/16/19 100% CD 03/21/19 DATE 18-159 JOB NO: DRAWN BY: BCE BCE CHECKED BY: SCALE: AS SHOWN SHEET NUMBER: P2-August 15, 2019 – 4:08:07pm

### PLUMBING SPECIFICATION.

### 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 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 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 ACHITECT/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. 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 1/2" FOAM INSULATION.

5. SANTARY/STORM DRAINAGE AND VENT PIPING.

- A. ABOVE GRADE:
- -2" BELOW: SCH.40 GALV. STL. PIPE WITH SCREWED ENDS OR SCH. 40PVC 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 SCH 40 PVC WITH SOLVENT JOINTS
- BELOW GRADE: SERVICE WT. CAST IRON WITH NO-HUB OR BELL AND SPIGOT JOINTS; OR SCH 40 PVC WITH SOLVENT JOINTS.
- PVC PIPING SHALL NOT BE USED IN AIR PLENUM CEILINGS AND
- SHALL NOT CROSS FIRE RATED WALLS, CEILINGS, OR FLOORS. DRAINAGE PIPING SHALL BE RUN AS STRAIGHT AS POSSIBLE
- AND SHALL HAVE LONG TURN FITTINGS.
- DRAINAGE PIPING 3" SIZE AND SMALLER SHALL RUN AT A UNIFORM GRADE OF AT LEAST 1/4" PER FOOT. AND PIPING LARGER THAN 3" SHALL BE RUN AT A GRADE OF NO LESS THAN 1/8" PER FOOT.
- ALL VENT PIPING SHALL BE SLOPED TO DRAIN BACK TO FIXTURES. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER FLASHING OF THE VENT PIPING RUN THROUGH THE ROOF.
- ALL STUB-INS AND/OR SLAB OR WALL PENETRATION TO BE PER INTERNATIONAL PLUMBING CODE (LATEST EDITION).ALL PIPING PENETRATIONS OF BUILDING FOUNDATIONS OR FOOTINGS SHALL BE SLEEVED.
- 7. PIPE SUPPORTS
- 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 AS SPECIFIED IN INTERNATIONAL PLUMBING CODE (LATEST EDITION)
- 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

- COORDINATE INSTALLATION OF ALL ROOFS FLASHING AT ROOF PENETRATION. DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, B. CONDITIONS AND DIMENSIONS AT THE JOB SITE.
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4AV	AUTOMATIC AIR VENT	DN	DOWN	FTR	FINNED TUBE RADIATION	NC
ABV	ABOVE	DWG	DRAWING	FV	FACE VELOCITY	NEG
ADR	AREA DRAIN (SEE SYMBOLS)	DX	DIRECT EXPANSION	FXC	FLEXIBLE CONNECTION	NIC
4FF	ABOVE FINISHED FLOOR	EA	EACH	GA	GAUGE	No
ALUM	ALUMINUM	EAT	ENTERING AIR TEMPERATURE	GAL	GALLON	NO
٩P	ACCESS PANEL	EC	ELECTRICAL CONTRACTOR	GALV	GALVANIZED	NOM
ATC	AUTOMATIC TEMPERATURE CONTROL	ECC	ECCENTRIC	GC	GENERAL CONTRACTOR	NTS
AVER	AVERAGE	EFF	EFFICIENCY	GPM	GALLONS PER MINUTE	OA
AWT	AVERAGE WATER TEMPERATURE	EJ	EXPANSION JOINT	GR	GRILLE	OB
BDD	BACK DRAFT DAMPER	EL	ELEVATION	GRS/LB	GRAINS PER POUND	OD
BFP	BACK FLOW PREVENTOR	ELEC	ELECTRIC	HT	HEIGHT	OC
BLDG	BUILDING	ELEV	ELEVATOR	Н <sub>2</sub> О	WATER	OCC
BLW	BELOW	ENT	ENTERING	HB	HOSE BIBB	OGH
BSMT	BASEMENT	EQ	EQUAL	HD	HEAD (SEE SCHEDULES)	OPG
BTU	BRITISH THERMAL UNIT	EQUIP	EQUIPMENT	HP	HORSEPOWER	OT
CAP	CAPACITY	EQUIV	EQUIVALENT	HR	HOUR	ΟZ
CBV	CIRCUIT BALANCING VALVE	ER	EXHAUST REGISTER	HTR	HEATER	PART
CFH	CUBIC FEET PER HOUR	ES	END SWITCH	ΗZ	HERTZ	PDR
CFM	CUBIC FEET PER MINUTE	EWT	ENTERING WATER TEMPERATURE	ID	INTERNAL DIAMETER	PD
СНР	CONCRETE HOUSEKEEPING PAD	ΕX	EXHAUST	IN	INCHES	PERF
CI	CAST IRON	EXPAN	EXPANSION	INCL	INCLUDING	РН
ŧ.	CENTER LINE	EXT	EXTERNAL	INT	INTERNAL	PNEU
CLG	CEILING	°F	DEGREES FAHRENHEIT	INV	INVERT	POS
СМИ	CONCRETE MASONRY UNIT	FA	FROM ABOVE	KW	KILOWATT	PRESS
CO	CLEAN OUT	FB	FROM BELOW	L	LENGTH	PS
COL	COLUMN	FC	FAIL CLOSED	LAT	LEAVING AIR TEMPERATURE	PSI
СОМР	COMPRESSOR	FCV	FLOW CONTROL VALVE	LB	POUND	PT
CON	CONCENTRIC	FD	FLOOR DRAIN	LD	LINEAR DIFFUSER	ΡV
CONC	CONCRETE	F/D	FIRE DAMPER	LIN	LINEAR	PVC
COND	CONDENSATE	, FIN	FINISHED	LIQ	LIQUID	QUAN
CONN	CONNECTION	FL	FLANGE	LRA	LOCK ROTOR AMPS	R
CONT'N	CONTINUATION	FLA	FULL LOAD AMPS	LVG	LEAVING	RA
CONTR	CONTRACTOR	FLEX	FLEXIBLE	LVR	LOUVER	RD
DA	DIRECT ACTING	FLR	FLOOR	LWT	LEAVING WATER TEMPERATURE	RE
DAMP	DAMPER	FO	FAIL OPEN	МС	MECHANICAL CONTRACTOR	REL
DB	DRY BULB	FP	FIRE PROTECTION	MBH	THOUSANDS OF BTU PER HOUF	REQD
DEPT	DEPARTMENT	FPM	FEET PER MINUTE	MED	MEDIUM	RET
DIA	DIAMETER	FPS	FEET PER SECOND	MFR	MANUFACTURER	RH
DIAG	DIAGRAM	FRICT	FRICTION	МН	MANHOLE	RICW
DIFF	DIFFERENTIAL	FS	FLOW SWITCH	MIN	MINIMUM	RIE
DISCH	DISCHARGE		FIRE /SMOKE DAMPER	MISC	MISCELLANEOUS	RIW
DIV	DIVISION	F/S/D	WITH ACCESS DOOR	MTD	MOUNTED	RLA
DIW	DOWN IN WALL	FT	FEET			
	DOOR LOUVER		·			

VC	AIR CONDITIONING UNIT	ESP
ND	ACCESS DOOR	ΕT
\FF	ABOVE FINISHED FLOOR	EWT
λH	AIR HANDLER (SPLIT REFRIG)	EWC
νHU	AIR HANDLING UNIT	FA
L.	ACOUSTICAL LINING	FX
νP	ACCESS PANEL	FC
3B	ELECTRIC BASEBOARD RADIATION	FD
3	BOILER	FLR
3DD	BACK DRAFT DAMPER	FOB
BFC	BELOW FINISHED CEILING	FOT
ЮB	BOTTOM OF BEAM	FOP
BOD	BOTTOM OF DUCT	FP
BOP	BOTTOM OF PIPE	FPM
)	CHILLER	FTR
D	CEILING DIFFUSER	GC
СFМ	CUBIC FEET PER MINUTE	GPH
HWP	CHILLED WATER PUMP	GPM
HWR	CHILLED WATER RETURN	HD
HWS	CHILLED WATER SUPPLY	ΗP
0	CLEAN OUT	ΗV
P	CONDENSATE PUMP	HWC
WR	CONDENSER WATER RETURN	HWP
CWS	CONDENSER WATER SUPPLY	HWR
т	COOLING TOWER	HWS
CU	CONDENSING UNIT	ΗX
CUH	CABINET UNIT HEATER	ΗZ
2VB	CONSTANT VOLUME BOX	ID
CWP	CONDENSER WATER PUMP	LAT
)B	DRY BULB	LWT
)S	DUCT SILENCER	LD
) WP	DOMESTIC WATER PUMP	LF
AT	ENTERING AIR TEMPERATURE	MC
C	ELECTRICAL CONTRACTOR	MTD
F	EXHAUST FAN	MOD
J	EXPANSION JOINT	MUA
R	EXHAUST REGISTER	

## **ABBREVIATIONS**

PRESS

NORMALLY CLOSED	RM	ROOM
NEGATIVE	ROD	ROOF OVERFLOW DRAIN
NOT IN CONTRACT	RPM	REVOLUTIONS PER MINUTE
NUMBER	SA	SUPPLY AIR
NORMALLY OPEN	SAD	SUPPLY AIR DIFFUSER
NOMINAL	SCH	SCHEDULE
NOT TO SCALE	SCHEM	SCHEMATIC
OUTSIDE AIR	SH	SENSIBLE HEAT
OFF BOTTOM	SP	STATIC PRESSURE
	SPEC	SPECIFICATION
ON CENTER	S0	SOLIARE
	59	STAINI ESS STEEL
OUTSIDE CROUND HYDRANT		STAINEESS STELL
OPENING		STANDARD
OFE TOD	STM	STEAM
		STEAM
	SIR	STRUCTURAL
	SUCI	SUCTION
PLENUM DRAIN		STSTEM
PRESSURE DROP (SEE SCHEDULE	) TAD	TRANSFER AIR DUCT
PERFORATED	TDH	TOTAL DYNAMIC HEAD
PHASE		TEMPERATURE
PNEUMATIC	THT	TOTAL HEAT
POSITIVE	TP	TOTAL PRESSURE
PRESSURE	TT	TEMPERATURE TRANSMITTER
PRESSURE SWITCH	TYP	TYPICAL
POUNDS PER SQUARE INCH	UC	UNDERCUT
PRESSURE TRANSMITTER	UNOCC	UNOCCUPIED
PLUG VALVE	V	VOLTS
POLYVINYL CHLORIDE	VA	VALVE
QUANTITY	VB	VACUUM BREAKER
REGISTER	VEL	VELOCITY
RETURN AIR	VI	VIBRATION ISOLATOR
ROOF DRAIN	VOLT	VOLTAGE
ROUNDED ENTRANCE/EXIT	VTR	VENT THRU ROOF
RELIEF	W	WIDTH
REQUIRED	W/	WITH
RETURN	W/O	WITHOUT
RELATIVE HUMIDITY	WB	WET BULB
RUN IN CASEWORK	WC	WATER COLUMN
RUN IN ENCLOSURE	WG	WATER GAUGE
RISE IN WALL		
RATED LOAD AMPS		

# ABBREVIATIONS (CONTINUED)

NC

NO

NIC

NK

ОA

OAI

OAT

OC

OD

OBD

PBD

PRV

PTAC

RA

RAG

RAR

RCP

RHC

RF

SA

SAR

SCG

SD

SEF

SF

SP

TG

ΤΥΡ

UON

VAV

VD

WB

EXTERNAL STATIC PRESSURE EXPANSION TANK ENTERING WATER TEMPERATURE ELECTRIC WATER COOLER FREE AREA FLEXIBLE CONNECTION FAN COIL UNIT FIRE DAMPER FLOOR FLAT ON BOTTOM FLAT ON TOP FUEL OIL PUMP FIRE PUMP FEET PER MINUTE FINNED TUBE RADIATION GENERAL CONTRACTOR GALLONS PER HOUR GALLONS PER MINUTE HAND DAMPER HEAT PUMP HEATING AND VENTILATING UNIT HOT WATER CONVERTER HOT WATER PUMP HEATING HOT WATER RETURN HEATING HOT WATER SUPPLY HEAT EXCHANGER HERTZ INSIDE DIAMETER UH LEAVING AIR TEMPERATURE LEAVING WATER TEMPERATURE LINEAR DIFFUSER LINEAR FEET VTR MECHANICAL CONTRACTOR MOUNTED MOTOR OPERATED DAMPER MAKE-UP AIR UNIT

NORMALLY CLOSED NORMALLY OPEN NOT IN CONTRACT NECK OUTSIDE AIR OUTSIDE AIR INTAKE OUTSIDE AIR TEMPERATURE ON CENTER OUTSIDE DIAMETER OPPOSED BLADE DAMPER PARALLEL BLADE DAMPER PRESSURE REDUCING VALVE PACKAGED TERMINAL AIR CONDITIONER RETURN AIR RETURN AIR GRILLE RETURN AIR REGISTER REFLECTED CEILING PLAN REHEAT COIL RETURN FAN SUPPLY AIR SUPPLY AIR REGISTER SMOKE CONTROL GRILLE SMOKE DAMPER SMOKE EXHAUST FAN SUPPLY FAN STATIC PRESSURE TRANSFER GRILLE TYPICAL UNIT HEATER UNLESS OTHERWISE NOTED VARIABLE AIR VOLUME UNIT VOLUME DAMPER VENT THRU ROOF WET BULB WMS WIRE MESH SCREEN

![](_page_27_Figure_45.jpeg)

![](_page_27_Figure_46.jpeg)

# PLUMBING LEGEND

# LINE DESIGNATIONS

# ---- (E)(NAME) ----- EXISTING PIPING TO REMAIN

	C
	S
	S
D	E
LW	L
LV	L
—— F ——	F
—— PS ——	F
—— PSC ——	F
CA	C
SP	S
ST	S
OD	С
—— HPS ——	F
——— HPC ———	F
LPS	L
LPC	L
——— TWS ———	Т

----- DOMESTIC COLD WATER (CW) ----- DOMESTIC HOT WATER (HW) DOMESTIC HOT WATER RECIR. (HWR) SANITARY DRAIN BELOW GRADE SANITARY VENT EQUIPMENT DRAIN LAB WASTE LAB VENT FIRE MAIN PURE STEAM PURE STEAM CONDENSATE COMPRESSED AIR SPRINKLER PIPE STORM WATER OVERFLOW STORM WATER HIGH PRESSURE STEAM HIGH PRESSURE CONDENSATE LOW PRESSURE STEAM LOW PRESSURE CONDENSATE TOWER WATER SUPPLY 

----- PG ----- PROPANE GAS ----- PW ----- PUMPED WASTE ----- PV ----- PROCESS VENT ----- HE ----- HELIUM —— N2 ------ 02 ------ OXYGEN ------ H2 ------ HYDROGEN N20 NITROUS OXIDE ----- MA ----- MEDICAL AIR ----- VAC ------ VACUUM

↓ <sub>FS</sub>

Π

Щ тн∕тι

⊖PI/GA

------ G ------ NATURAL GAS ------ DIS ------ DISTILLED WATER SUPPLY ----- DIR ----- DISTILLED WATER RETURN ----- DES ----- DEIONIZED WATER SUPPLY ------ DER ------ DEIONIZED WATER RETURN ------ WFIS ------ WATER FOR INJECTION SUPPLY ------ WFIR ------ WATER FOR INJECTION RETURN ----- PHWR ----- PROCCESS HOT WATER RECIRC. ----- NITROGEN ----- DC ----- DECONTAMINATION PIPING

# PIPING ELEMENTS/VALVING

⊳	
	PRESSURE REDUCING VALVE (PRV)
$\!$	GATE VALVE
	GLOBE VALVE
₹	PLUG VALVE
[	BUTTERFLY VALVE
<u> </u>	VALVE IN RISE OR DRO
<u>     ф     </u>	BALL VALVE
	SWING CHECK VALVE
<b>—</b>	LIFT CHECK VALVE
<u></u> <del>∕</del> <del>∕</del>	GATE VALVE, ANGLE
′ ≰⊢	GLOBE VALVE, ANGLE
	THREE WAY CONTROL
Ŕ	TWO WAY CONTROL VA
	SOLENOID VALVE
TP\$	TEMPERATURE AND PRI RELIEF VALVE
¥	RELIEF/SAFETY VALVE
<del> </del>	GAS COCK
	GAS PRESSURE REGUL
— <del>—   _  </del>	STRAINER
+	STRAINER WITH BLOW OFF VALVE
	FLEXIBLE-CONNECTION
X	SPRINKLER HEAD

PRESSURE REDUCING VALVE (PRV) GATE VALVE GLOBE VALVE PLUG VALVE BUTTERFLY VALVE \_\_\_\_\_ VALVE IN RISE OR DROP BALL VALVE SWING CHECK VALVE LIFT CHECK VALVE GATE VALVE, ANGLE GLOBE VALVE, ANGLE THREE WAY CONTROL VALVE TWO WAY CONTROL VALVE нв >----SOLENOID VALVE TEMPERATURE AND PRESSURE RELIEF VALVE RELIEF/SAFETY VALVE GAS COCK GAS PRESSURE REGULATOR STRAINER WITH BLOW OFF VALVE

-----O PIPE RISING UP UNION - SCREWED OR FLANGED FLOW SWITCH TEMPERATURE TRANSMITTER □PT/PS PRESSURE TRANSMITTER OR PRESSURE SWITCH THERMOMETER/TEMPERATURE INDICATOR GAUGE WITH GAUGE COCK/ ----- PRESSURE INDICATOR -XI-N--XI-BACKFLOW PREVENTOR (DOUBLE CHECK VALVE ASSEMBLY) SA WATER HAMMER ARRESTER CBV CIRCUIT SETTING BALANCING VALVE ----- HOSE BIBB RD (O) ROOF DRAIN OS OC------ OPEN SITE DRAIN FD \_\_\_\_\_ FLOOR DRAIN ADR C AREA DRAIN WALL CLEAN OUT

HANDLE ISOLATION VALVE PIPE INSULATION PER INTERNATIONAL ENERGY CONSERVATION CODE FLOW 3/4" HOT WATER RE-CIRCULATION PIPE 

## CIRCUIT SOLVER – AUTOMATIC CIRCUIT SETTER DETAIL NOT TO SCALE

**PLUMBING - LEGEND** 

DO NOT REPRO SPECIFICATIONS V PERMISSION OF T SPECIFICATIONS ARE SHALL REMAIN TI WHETHER THE PRO IS EXECUTED OR SPECIFICATIONS SH ANY OTHER PROJECT BY OTHERS EXCE PERMISSION OF T	DDUCE THESE WITHOUT THE E HE DESIGNER. E INSTRUMENTS HE PROPERTY DJECT FOR WH NOT. THESE VALL NOT BE U VALL NOT BE U STS FOR ADDITIO EPT BY THE E HE DESIGNER.	DRAWINGS AND XXPRESSED WRITTEN THE DRAWINGS AND OF THE SERVICE AND OF THE DESIGNER ICH THEY ARE MADE DRAWINGS AND ISED BY ANYONE ON NS TO THIS PROJECT XPRESSED WRITTEN
Encinona Inc	ll Engineers	1
Diahow Concerti	Mechanical & Electrica	580 Indian Koad Grand Junction, CO 8150 Phone: 970-241-8709
TOWN OF HOTCHKISS	PUBLIC WORKS FACILITY	TBD BARROW MESA RD HOTCHKISS, COLORADO
DATE: IS 03/21/19 06/28/19 08/16/19	SUED FOF REVISEI REVISED 1 1009	R: D 50% DD DRAWINGS % CD
DATE: JOB NO: DRAWN BY CHECKED B SCALE: SHEET NUM		03/21/19 18-159 BCE BCE AS SHOWN

August 15, 2019 – 4:08:07pm

![](_page_28_Figure_0.jpeg)

![](_page_28_Figure_1.jpeg)

# MECHANICAL - SHOP FLOOR PLAN

NORTH

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

Need a manual override with timer so town can use the exhaust fans when they want	
require pipe al alumin conne	⇒ black iron bove 8' and hum quick ct below 8'

REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATION.

## FLAG NOTES:

1. MACURCO CM-6, TX-6-ND CARBON MONOXIDE & NITROGEN DIOXIDE SENSORS. SENSORS TO BE INTERLOCKED WITH EF-2 AND LR-1. EXHAUST FANS SHALL TURN ON AT DETECTION OF 10PPM FOR CO & 50 PPB FOR NO2. ALARMS SHALL BE TRIGGERED AT DETECTION OF 25 PPM FOR CO & 100 PPB FOR NO2. LOUVERS TO OPEN UPON ACTIVATION OF EXHAUST FAN. LOUVERS ARE TO FAIL OPEN. INSTALL CO & NO2 DETECTORS PER MANUFACTURER'S INSTRUCTIONS, EACH SENSOR COVERS A CIRCULAR AREA OF APPROXIMATELY 5,000 SQF. RADIUS OF 39'. INSTALL PER MANUFACTURERS REQUIREMENTS. 2. EF-2 TO BE INTERLOCKED WITH VARIABLE SPEED WALL MOUNTED SWITCH. 3. INFRARED HEATER, MAINTAIN MANUFACTURER'S REQUIRED CLEARANCES FROM ALL COMBUSTIBLES. INSTALL INFRARED HEATER PER MANUFACTURER'S RECOMMENDATIONS.

- 4. ROUTE COMPRESSED AIR TO MEZZANINE
- 6. COMPRESSED AIR DROP.

1. DRAWING IS DIAGRAMMATIC IN NATURE. LOCATIONS AND SIZES MAY VARY DURING FIELD COORDINATION & INSTALLATION OF MECHANICAL, PLUMBING, & ELECTRICAL. DRAWINGS DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DRAWINGS ARE NOT TO BE SCALED FOR DIMENSIONS. TAKE ALL DIMENSIONS FROM ARCHITECTURAL DRAWINGS, CERTIFIED EQUIPMENT DRAWINGS AND FROM THE STRUCTURE ITSELF BEFORE FABRICATING ANY WORK, VERIFY ALL SPACE REQUIREMENTS COORDINATING WITH OTHER TRADES, AND INSTALL THE SYSTEMS IN THE SPACE PROVIDED WITHOUT EXTRA CHARGES TO THE OWNER. 2. ALL REFRIGERANT LINES ARE TO BE LIMITED TO 75' EQUIVALENT LINE LENGTH. ALL REFRIGERANT LINES SHALL BE INSULATED PER IECC REQUIREMENTS. ALL

3. INDOOR HEAT PUMPS SHALL BE PROVIDED WITH AUXILLARY CONDENSATE PUMP, 240V/1PH/60HZ "ASPEN-PUMP". CONDENSATE SHALL BE ROUTED THROUGH 3/4" TYPE L COPPER TO NEAREST PLUMBING FIXTURE GROUP. DISCHARGE INDIRECTLY THROUGH AIR GAP SIZED PER IPC.

5. COMPRESSED AIR FROM LOOP BELOW. PROVIDED WITH QUICK CONNECT FITTING.

7. CIRCLE TO SHOW THE EFFECTIVE RANGE OF CO AND NO2 SENSORS.

![](_page_28_Figure_18.jpeg)

![](_page_29_Figure_1.jpeg)

MECHANICAL PROVISIONS

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- A. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIALS, AND LABOR TO SATISFY A COMPLETE WORKING SYSTEM WHETHER
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- SUBMIT MATERIAL LIST AND SHOP DRAWINGS FOR MAJOR EQUIPMENT Α. TO THE ACHITECT/ENGINEER FOR APPROVAL. THE CONTRACTOR SHALL SUBMIT FIVE SETS OF SHOP DRAWINGS AND THEY SHALL BE CLEARLY LABELED.
- 4. FLEXIBLE DUCT WORK
- FLEXIBLE TYPE DUCT SHALL BE OF TWO ELEMENT SPIRAL CONSTRUCTION Α. COMPOSED OF A CORROSION RESISTANT METAL SUPPORTING SPIRAL AND COATED FABRIC WITH A MINERIAL 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. USE OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO NO MORE THAN В.
- 6 LINEAR FEET PER RUN. CONTRACTOR SHALL BE CAREFUL SO AS NOT TO KINK OR COLLAPSE C. FLEXIBLE DUCT.
- 5. REFRIGERENT
- A. PIPING CONTRACTOR SHALL PROVIDE AND INSTALL REFRIGERANT PIPING IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND IN SUCH A WAY AS TO BE INCONSPICIOUS AND FREE FROM ANY
- POSSIBLE CONDENSATION. INSULATE REFRIGERANT LINES WITH ARMOUR-FLEX TYPE INSULATION, В.
- SHALL BE TYPE "K" COPPER TUBING, WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.
- 6. DUCTWORK
- THE DUCTWORK SHALL BE CONSTRUCTED IN ACCORDANCE
- WITH THE "SMACNA" APPLICABLE MANUALS. ALL DUCTWORK SHALL BE THE LOW VELOCITY TYPE, UNLESS SPECIFIED в. OTHERWISE. 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. ALL DUCT JOINTS TO BE SEALED IN ACCORDANCE WITH "SMACNA" Ε.
- STANDARDS AND ACCEPTED GOOD PRACTICE.
- ALL DUCT DIMENSIONS SHOWN ARE NET INSIDE VALUES.DIMENSIONS MAY BE CHANGED SO LONG AS THE NET FREE FACE AREA IS MAINTAINED.
- ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1-1/2" G. FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
- 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
- (CONDENSATE) SHALL BE SCHEDULE 40 PVC OR TYPE L COPPER PER ASTM B306 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
- CONTRACTOR TO SUPPLY AND INSTALL ALL CONTROL WIRING AND THERMOSTATS AS REQUIRED.
- 9. ELECTRICAL
- 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
- ALL EXTERIOR OPENINGS TO BE PROPERLY CAULKED AND SEALED WITH A Α. 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.
- DO NOT SCALE THIS DRAWING FOR EXACT DIMENSIONS. VERIFY ALL FIGURES, CONDITIONS, AND DIMENSIONS AT THE JOB SITE.
- 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.
- THE CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT PROPOSED TO ENSURE THAT THE EQUIPMENT WILL FIT IN THE AVAILABLE SPACE.
- 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
- MATERIALS, EQUIPMENT AND INSTALLATION SHALL BE GUARANTEED FOR A Α. PERIOD OF ONE(1) YEAR FROM DATE OF ACCEPTANCE. DEFECTS WHICH APPEAR DURING THAT PERIOD SHALL BE CORRECTED AT THIS CONTRACTOR'S EXPENSE
- 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.

![](_page_30_Figure_49.jpeg)

![](_page_30_Figure_50.jpeg)

![](_page_30_Figure_51.jpeg)

![](_page_30_Figure_52.jpeg)

![](_page_30_Figure_54.jpeg)

				L
EQUIPMENT NO.	SERVICE	WIDTH (IN)	HEIGHT (IN)	THICKNESS
LR-1	OUTSIDE/EXHAUST	72"	72"	4'
NOTES:				

1. DRAINABLE LOUVER, PROVIDE BIRDSCREEN AND KYNAR FINISH WITH COLOR TO BE SELECTED BY THE ARCHITECT 2. PROVIDE LOW LEAKAGE MOTORIZED DAMPER IN SLEEVE BEHIND LOUVER. INTERLOCK DAMPER OPERATION WITH EF-2. LOUVER SHALL OPEN WHEN EF-2 IS ENERGIZED.

	ELECTRICAL			OPTIONS/ACCES
CIENCY	V./PH./H Z.	AMPS	AMPS MANUFACTURER & MODEL	
%	120/1/6 0	1.0	SUPERIOR RADIANT PRODUCTS, UXR-205	NOTE-1

PIPING	ELEC	TRICAL		OPTIONS/ACCESSORIES	
SUCTION	MCA (AMPS)	MCA (AMPS) V./PH./HZ.		OF HONS/ACCESSORIES	
3/8	0.3	208-230/1/60	MITSUBISHI - SLZ-KF12NA	NOTE-1	

NSING UNIT SCHEDULE								
NG			ELECTRIC	MANUFACTURER &	OPTIONS/ACES			
POR	V/PH/HZ	MOCP (A)	MCA (A)	MODEL	CONILO			
8"	208-230/1/ 60	50	42	MITSUBISHI - MXZ-8C48NAHZ	NOTE-1			
	•							

HAUST FAN SCHEDULE								
5 (IN.		М	OTOR					
	WATTS	HP	RPM	VOLT/PH/HZ	MANOFACTORER & MODEL	OPTIONS/ACCESSORIES		
	10.00		814	115/1/60	PANASONIC FV-05-11VK1	NOTE - 1		
	-	3/4	305	115/1/60	GREENHECK - CUBE-420	NOTE - 2		

OUVER SCHEDULE								
OF LOUVER	MATERIAL	INSECT/BIRD SCREEN	MANUFACTURER & MODEL	OPTIONS/ACCESSORIES				
II	STEEL	1/2" BIRD	GREENHECK FDS-402	NOTE - 1, 2				
			•					

![](_page_30_Figure_69.jpeg)