

ABBREVIATIONS

(E) (F)	EXISTING FUTURE
(N) (R)	NEW
¢	CENTERLINE DIAMETER PROPERTY
Ψ <u>⊥</u>	PERPENDICULAR
中 #	SQUARE NUMBER
e A (C	
A/C A. B.	ALK CUMULTIUNING ANCHOR BOLT
<u>A. D. A. A. G.</u> A. F. F.	AMERICAN'S WITH DISABILITIES ACT
ABV.	ABOVE
AUDUST. A. D. A.	ALDUSTICAL AIRLINES OPERATION AREA
ADJ. Agg	ADJUSTABLE AGGREGATE
ALT.	ALTERNATIVE
ALUM. APPREX.	ALUMINUM APPRDXIMATE
ARCH.	ARCHITECTURAL
AVE.	AVENUE AVENUE
<u>B. L.</u> B. D. C.	BUTTUM UP BASE DF CURB
B.U.	BUILT-UP
BLDG.	BUILDING
BLK. BM.	BLOCK BEAM
BOT.	BOTTOM CATCH BASIN
C. C.	CENTER TO CENTER
C. I. C. I. P.	CAST IRDN CAST IN PLACE
<u>C. M. U.</u>	CONCRETE MASONRY UNIT
с. ц. С. Т.	CERAMIC TILE
C. W. CAB	COLD WATER
CEM.	CEMENT
CFM CLG,	<u>CUBIC FEET/MINUTE</u> CEILING
CLR.	
COL.	COLUMN
CENC. CENT.	CONCRETE CONTINUOUS
CORR.	CURRIDUR
UW/ D.	DEEP
D.F.	DRINKING FOUNTAIN
<u>D. S. P.</u>	DRY STANDPIPE
D. B. A. DET.	DEFURMED BAR ANCHUR DETAIL
DIA. DIAG	DIAMETER
DING.	DIMENSION
DN. DWG.	DRAVING
E.B. FIFS	EXPANSION BOLT EXTERIOR INSULATION & EINISHING SYSTE
E. J.	
e. p. E. W. C.	ELECTRICAL PANELBUARD ELECTRIC WATER CODLER
EA. Fl	ΕΑCΗ ΕΙ ΕΥΔΤΙΠΝ
ELEC.	ELECTRICAL
ELEV. EQ.	ELEVATUR EQUAL
EQUIP.	EQUIPMENT
EXP.	EXPANSION
EXT. F. S.	EXTERIOR FAR SIDE
F. A. F. R	FIRE ALARM FLAT BAR
F. D.	FLOOR DRAIN
F. E. F. E. C.	FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET
F. H. C. F. D	FIRE HOSE CABINET
F. D. C.	FACE OF CURB/CONCRETE
н. Ц. Н. Г. Д. М.	FACE OF MASONRY
F. D. S. F. D. T	FACE OF STUDS
FDN.	FOUNDATION
<u>F IN.</u> FL.	FLODR(ING)
FLASH.	FLASHING FOOT OP FEET
FTG.	FODTING
FTW. FURR.	FIRE IREATED WOOD FURRING
G.	GAS GDAR RAD
а. в. GA.	GAUGE DR GAGE
GALV. GYP.	GAL VAN I ZED GYPSUM
H.	HIGH
н. А. S. H. C. A.	HEADED CONCRETE ANCHOR
H. B. H. C.	HOSE BIBB HANDICAPPFD – A.D.A.A.G
H. M.	HOLLOW METAL
<u>н. Р.</u> Н. V .	HDT WATER

T.	HEIGHT
VAC	HEATING VENTILATING AND AIR CONDITIONING
NSUL.	INCH INSULATION INTERIOR
AN.	JANITOR
I. . D.	JUINI KNOCKOUT
IT. F	KITCHEN LINEAL FFFT OR FOOT
. P.	
ΑΜ. ΑV.	LAVATORY
BS.	
H.	MANHOLE MANNEY REPLING
. Ш. АХ.	MASUNKY UPENING MAXIMUM
ECH. Fit	MECHANICAL METAL
FR.	MANUFACTURER
in. ISC.	MINIMUM MISCELLANEDUS
T'D S.	MOUNTED NEAR SIDE
I C	NORTH
T. S.	NOT TO SCALE
□. □M.	NUMBER NDMINAL
/H	
<u>/</u> А.	OVER ALL
. C. . D.	DN CENTER DUTSIDE DIAMETER
. H.	OPPOSITE HAND
PNG.	DPENING
PP. Z.	DUNCE
ART.	PARTICLE
LAM.	PLASTIC LAMINATE
<u>I.D.</u> L.	PAPER IUWEL DISPENSER PLATE
LUMB. YWD	PLUMBING PLYNDDD
RE-ENG.	PRE-ENGINEERED METAL BUILDING
VMT.	PAVEMENT
Ι,	QUARRY TILL RADIUS DR RISER
D.	ROOF DRAIN
W. L.	RAIN WATER LEADER
EINF.	REINFURCE(D)
EQ'D. M.	REQUIRED ROOM
C.	SOLID CORE
D.	SDAP DISPENSER
F. I.D.A.	SQUARE FEET OR FOOT SECURITY IDENTIFICATION DISPLAY AREA
N.D. N.R	SANITARY NAPKIN DISPENSER
S.	STAINLESS STEEL
ECT.	SECTION
HR. HT.	SHDWER SHEET
IM.	SIMILAR DR SIMILAR TD
2.	SQUARE
T. TD.	STREET DR STEEL STANDARD
TRUC.	STRUCTURAL
YM.	SYMETRICAL
& ն	TREAD
В. П	TOWEL BAR
. Ц. С. . Д. М.	TOP OF MASONRY
. D. P. П. S.	TOP OF PARAPET TOP OF SLAB
<u> </u>	TOP OF WALL
EL.	TELEPHONE
HK. HRES.	THICKNESS THRESHOLD
YP. B.C	TYPICAL
D. N.	UNLESS OTHERWISE NOTED
L. I. I. F.	VINTL CUMPUSITIUN TILE VERIFY IN FIELD
ENT. FRT.	VENTILATION VERTICAL
EST.	VESTIBULE
/ /[]	WITH WITHOUT
D.	WOOD WIDE
B.	WALL BEYOND
с. G.	WHIER CLUSET UK WALL CUVERING
GL. P.	WIRE GLASS WORK PDINT

WASTE RECEPTACLE

WELDED WIRE FABRIC

W. R.

W.W.F.

GENERAL NOTES

- 2. DO NOT SCALE DRAWINGS
- RESOLUTION.
- 4. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS.
- 5. CONCRETE DIMENSIONS ARE GIVEN TO FACE OF CONCRETE AND TO THE FACE OF ROUGH OPENINGS.
- 7. PARTITION DIMENSIONS ARE GIVEN TO THE FACE OF STUD UNLESS OTHERWISE NOTED.
- 8. DOOR OPENING LOCATIONS ARE DIMENSIONED TO ROUGH OPENING OR CENTERLINE OF OPENING LIST ON THIS SHEET.
- 10. FINISH FLOOR ELEVATION DATUM 100'-0'' = XXX.
- 11. ALL NEW CONSTRUCTION TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT AND ANSI.
- ADOPTED BUILDING CODE.
- CURRENT ADOPTED BUILDING CODE.
- SYSTEM, AS REQUIRED BY CURRENT ADOPTED BUILDING CODE.

- 19. PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE FIRESTOPED AND PROTECTED IN ACCORANCE WITH CURRENT ADOPTED BUILDING CODE.



ITD MAINT. BLDG. IMPROVEMENTS

1. THE DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE, AND TYPICAL DETAILS OF CONSTRUCTION. THE DRAWINGS DO NOT INDICATE EVERY CONDITION - WORK NOT PARTICULARLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE DETAILED.

3. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS. WHERE DISCREPANCIES OCCUR, THEY SHALL BE REPORTED TO ARCHITECT FOR

6. MASONRY DIMENSIONS ARE GIVEN TO FACE OF MASONRY AND TO THE FACE OF ROUGH OPENINGS

9. WHERE NO MATERIAL NOTES OCCUR, THE GRAPHIC MATERIAL INDICATION SHALL INDICATE MATERIAL TYPES AND ITEMS. SEE MATERIALS & SYMBOL

12. ALL MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.

13. EACH TRADE IS RESPONSIBLE FOR DAILY CLEANUP OF THEIR WORK AREA(S). WORK AREAS SHALL BE KEPT ORDERLY AND STAGED MATERIALS STACKED OUT OF TRAVELED WAYS. FINAL CLEANING SHALL BE BY THE GENERAL CONSTRUCTION AND DOOR ASSEMBLIES CONTRACTOR. 14. ALL EXITS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT, AS REQUIRED BY CURRENT

15. EXIT SIGNAGE SHALL BE EXTERNALLY OR INTERNALLY ILUMINATED BY THE PREMISES' WIRING AND BY STORAGE BATTERIES, AS REQUIRED BY

16. EXIT WAYS SHALL BE ILLUMINATED, AND THE POWER SUPPLY FOR EXIT ILLUMINATION SHALL NORMALLY BE PROVIDED BY THE PREMISES' WIRING

17. UNLESS OTHERWISE INDICATED ALL DRAWING, NOTES WHICH DO NOT READ "N.I.C.", "EXISTING", OR "EXISTING TO REMAIN", OR "BY OTHERS" SHALL INDICATE NEW WORK WHICH SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED. 18. EACH TRADE SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS FOR ACCURACY PRIOR TO COMMENCING WITH THE WORK. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE THE CONSTRUCTION MANAGER.



CODE INFORMATION

ADOPTED CODES:

BUILDING CODES: • 2015 INTERNATIONAL BUILDING CODE (IBC) 2015 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) 2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC) IDAPA 07.03.01 – RULES OF BUILDING SAFETY PLUMBING CODE: IDAHO STATE PLUMBING CODE (BASED ON THE 2015 UPC) RULES GOVERNING PLUMBING SAFETY IDAPA 07.02.02

ELECTRICAL CODE: 2017 NATIONAL ELECTRIC CODE (NEC) INCLUDING AMENDMENTS A LISTED IN IDAPA 07.01.06. • IDAPA ELECTRICAL ADMINISTRATIVE RULES - 07.01.01

MECHANICAL CODE: • 2012 INTERNATIONAL MECHANICAL CODE (IMC) – IDAPA RULE

07.07.01.004 • 2012 INTERNATIONAL FUEL GAS CODE (IFGC) – IDAPA RULE 07.07.01.005

FIRE CODE (ADMINISTERED BY THE STATE FIRE MARSHAL): 2015 INTERNATIONAL FIRE CODE (IFC)

CONTRACTOR TO KEEP MSDS SHEETS FOR ALL PRODUCTS USED DURING CONSTRUCTION IN A LOCATION DESIGNATED BY THE CONSTRUCTION MANAGER. EACH TRADE IS ENTIRELY RESPONSIBLE FOR THEIR SAFETY.

CALDWELL, IDAHO 83605

CONTACT INFORMATION

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STRUCTURAL STRUX ENGINEERING 6015 W. OVERLAND RD. BOISE, IDAHO 83709 CONTACT: MATT CHRISTIAN (512) 676-9004 MATT@STRUXENGINEERING.COM OWNER REPRESENTATIVE IDAHO TRANSPORTATION DEPT. 3311 W. STATE ST. BOISE, IDAHO 83703 CONTACT: TONY PIRC (208) 334-8600 TONY.PIRC@ITD.IDAHO.GOV

CIVIL CSHQA 200 BROAD STREET BOISE, IDAHO 83702 CONTACT: JEFF WARD (208) 343-4635 JEFF.WARD@CSHQA.COM

$\langle A \rangle$ WINDOW TYPE RE: A10.1-1 WINDOW TYPES (100) DOOR NUMBER RE: A10.2-1 DOOR SCHEDULE (21) SHEET NOTE, RE: SHEET NOTES LIST ON CURRENT PAGE W01 WALL TYPE, RE: A0.2-2 $\langle A \rangle$ ACCESSORY/FIXTURE TYPE, RE: A5.1-1 REVISION KEY RE: REVISED BOX IN TITLE BLOCK OF CURRENT PAGE ---- PROPERTY LINE — – – – SWALE/FLOW LINE TRENCH DRAIN AREA DRAIN / CATCH BASIN Ш (15) Building grid line — – — STRUCTURE CENTERLINE DIMENSION WORK POINT <u>118'-0</u>" ELEVATION POINT DRAWING MATCH LINE — SECTION MARK REF. A4.4-1 (SEE DWG. #1 @ SHT. A4.4) A9.1-1 DETAIL REFERENCE └─ (SEE DWG. #1 @ SHT. A9.1) DETAIL SECTION MARK 2 **A**5.1 INTERIOR ELEVATIONS (SEE DWG #2 @ SHT. A5.1)

	BUILDING USE:	VEHICLE MAINTENANCE,	STORAGE	& OFFICE	(NO	CHANGE)
	OCCUPANCY GROUP:	F1 & B (NO CHANGE)				
	CONSTRUCTION TYPE:	III-B (NO CHANGE)				
	NUMBER OF STORIES:	1 WITH MEZZANINE (NO	CHANGE)			
S	BUILDING AREA: SHOP: OFFICE: <u>OFFICE MEZZANINE:</u> TOTAL:	10,597 S.F. 2,917 S.F. <u>1,678 S.F.</u> 15,192 S.F.				
	OCCUPANT LOAD: SHOP: 1 OFFICE: <u>OFFICE MEZZANINE:</u> TOTAL:	0,597 / 500 = 21 2,348 / 100 = 24 <u>1,376 / 100 = 14</u> 59				
	FIRE SPRINKLERS:	NO (NO CHANGE)				

DRAWING INDEX

<u>GENERAL</u> GO1 TITLE SHEET

<u>CIVIL</u> COO GENERAL INFORMATION SHEET C10 SITE DEMOLITION PLAN C20 EROSION CONTROL PLAN C40 SITE IMPROVEMENT PLAN

<u>ARCHITECTURAL</u> A01 ENERGY COMPLIANCE

A11 DEMOLITION PLANS AD1 FINOR PLANS A31 ROOF AND REFLECTED CEILING PLAN

A41 RESTROOM PLANS A51 EXTERIOR ELEVATIONS

A52 PARTIAL BUILDING SECTIONS A61 INTERIOR FINISH SCHEDULE & MILLWORK A71 DETAILS A81 DOOR & WINDOW SCHEDULES

<u>STRUCTURAL</u>

S1.0 GENERAL STRUCTURAL NOTES S2.0 FOUNDATION AND ROOF FRAMING PLAN S3.0 TYPICAL FOUNDATION DETAILS S3.1 FOUNDATION DETAILS S4.0 TYPICAL FRAMING DETAILS S4.1 FRAMING DETAILS HVAC

M01 MECHANICAL COVER SHEET M02 ENERGY CODE COMPLIANCE M21 HVAC PLAN M41 MECHANICAL SCHEDULES M42 MECHANICAL SCHEDULES

M51 MECHANICAL DETAILS MPS MECHANICAL AND PLUMBING SPECIFICATIONS

<u>PLUMBING</u> P01 PLUMBING COVER SHEET P11 WASTE AND VENT DEMOLITION PLAN P12 WATER AND GAS DEMOLITION PLAN P21 WASTE AND VENT PLAN P22 WATER AND GAS PLAN P41 PLUMBING SCHEDULES P51 PLUMBING DETAILS

<u>ELECTRICAL</u> E01 GENERAL SYMBOLS AND ABBREVIATIONS E02A SHEET SPECIFICATIONS E02B SHEET SPECIFICATIONS E03A ENERGY COMPLIANCE FORMS E03B ENERGY COMPLIANCE FORMS E04 LIGHTING FIXTURE AND CONTROL SCHEDULE E06 ELECTRICAL DEMO PLANS LIGHTING PLAN POWER PLAN

MECHANICAL POWER PLAN E70 ELECTRICAL DETAILS E80 EXISTING SINGLE LINE DIAGRAM AND SCHEDULES E81 SINGLE LINE DIAGRAM AND SCHEDULES



DRAWING INDEX

C00	GENERAL INFORMATION SHEET
C10	SITE DEMOLITION PLAN
C20	EROSION & SEDIMENT CONTROL PLAN
C40	SITE IMPROVEMENT PLAN

GENERAL NOTES

- FOR SPECIFICATIONS CONFORM TO THE CURRENT EDITION OF THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (ISPWC) AND THE IDAHO PLUMBING CODE UNLESS OTHERWISE NOTED.
- B. THE DRAWINGS INDICATE LOCATION, DIMENSIONS, REFERENCE, AND TYPICAL DETAILS OF CONSTRUCTION. THE DRAWINGS DO NOT INDICATE EVERY CONDITION WORK NOT PARTICULARLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE DETAILED.
- C. ALL LOT DIMENSION, EASEMENTS AND CERTAIN OFF-SITE EASEMENTS ARE TO BE TAKEN FROM THE PLAT.D. DO NOT SCALE DRAWINGS.
- E. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED DRAWINGS. WHERE DISCREPANCIES OCCUR, THEY SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION.
- F. DETAILED DRAWINGS AND LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS (IE 1"=10' TAKES PRECEDENCE OVER 1"=100').
- G. THE CONTRACTOR(S) SHALL REMOVE ALL OBSTRUCTIONS BOTH ABOVE AND BELOW GROUND, AS REQUIRED FOR THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. THIS SHALL INCLUDE CLEARING AND GRUBBING WHICH CONSISTS OF CLEARING THE GROUND SURFACE OF ALL TREES, STUMPS, BRUSH, UNDERGROWTH, HEDGES, HEAVY GROWTH OF GRASS OR WEEDS, FENCES, STRUCTURES, DEBRIS, RUBBISH, AND SUCH MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOR THE FOUNDATION OF PAVEMENTS. ALL MATERIAL NOT SUITABLE FOR FUTURE USE ON SITE SHALL BE DISPOSED OF OFF SITE.
- H. THE CONTRACTOR SHALL MAINTAIN ALL DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL THE DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONING.
- I. ALL CONTRACTORS WORKING WITHIN THE PROJECT BOUNDARIES ARE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE SAFETY LAWS OF ANY JURISDICTIONAL BODY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BARRICADES, SAFETY DEVICES AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA.
- J. ALL AC PAVEMENT SHALL BE CUT TO A NEAT STRAIGHT LINE AND THE EXPOSED EDGE SHALL BE TACKED WITH EMULSION PRIOR TO PAVING.
- K. THE CONTRACTOR(S) SHALL KEEP ALL AREAS OF CONSTRUCTION CLEAN AND FREE OF DEBRIS. AFTER CONSTRUCTION IS COMPLETE, THE GENERAL CONTRACTOR SHALL PROVIDE FINAL CLEAN UP.
- L. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS FOR ACCURACY PRIOR TO COMMENCING WITH THE WORK. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- M. THE CONTRACTOR SHALL CALL DIGLINE (208–342–1585) AND HAVE THE LOCATION OF EXISTING UTILITIES MARKED AT LEAST TWO WORKING DAYS PRIOR TO THE BEGINNING OF EXCAVATION. CONTACT OTHER UTILITY OWNERS WHICH DIGLINE DOES NOT MARK, TO HAVE THEM LOCATE THEIR FACILITIES.
- N. WHERE NO MATERIAL NOTES OCCUR, THE GRAPHIC MATERIAL INDICATION SHALL INDICATE MATERIAL TYPES AND ITEMS. SEE LEGEND ON THIS SHEET.
- O. ALL NEW CONSTRUCTION TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBLE GUIDELINES (A.D.A.A.G).
- P. UNLESS OTHERWISE INDICATED ALL DRAWINGS, NOTES WHICH DO NOT READ "NIC", "EXISTING", "EXISTING TO REMAIN", OR "BY OTHERS" SHALL INDICATE NEW WORK WHICH SHALL BE CONTRACTOR FURNISHED AND CONTRACTOR INSTALLED.
- Q. ALL MATERIALS FURNISHED ON OR FOR THE PROJECT MUST MEET THE MINIMUM REQUIREMENTS OF THE APPROVING AGENCIES OR AS SET FORTH HEREIN, WHICHEVER IS MORE RESTRICTIVE. CONTRACTORS MUST FURNISH PROOF THAT ALL MATERIALS INSTALLED ON THIS PROJECT MEET THIS REQUIREMENT IF REQUESTED BY THE AGENCY OR THE ENGINEER.
- R. ALL COSTS OF RETESTING PREVIOUSLY FAILED TESTS SHALL BE BACK CHARGED TO THE CONTRACTOR BY THE OWNER.
- S. ALL COSTS INCURRED IN CORRECTING DEFICIENT WORK SHALL BE TO THE CONTRACTOR. FAILURE TO CORRECT SUCH WORK WILL BE CAUSE FOR A STOP WORK ORDER AND POSSIBLE TERMINATION.
- T. THE CONTRACTOR IS RESPONSIBLE FOR FILING THE STORM WATER POLLUTION PREVENTION PLAN NOTICE OF INTENT (N.O.I.) PRIOR TO ANY CONSTRUCTION.
- U. ALL CONSTRUCTION ADDENDA, CHANGE ORDERS, OR DESIGN CLARIFICATIONS FOR THOSE ITEMS REGULATED BY THE CODES MUST BE SUBMITTED TO THE FIELD INSPECTOR FOR REVIEW AND APPROVAL PRIOR TO COMMENCING WITH ANY OF THE PROPOSED WORK RELATED TO THE FIELD CHANGE.
- V. CONTRACTOR SHALL WORK FROM AND HAVE ON SITE AT ALL TIMES ONLY STAMPED, AGENCY APPROVED, DRAWINGS FOR THIS PROJECT.
- W. IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER.
- X. MANHOLE LIDS AND DRAINAGE STRUCTURES SHALL BE HS-25 TRAFFIC RATED.Y. ANY CHANGE FROM THE PLANS SHALL BE APPROVED BY THE ENGINEER OF RECORD.
- Z. EQUIPMENT AND MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
- AA. IF A CONFLICT EXISTS BETWEEN THE PLANS, SPECIFICATIONS, OR SOILS REPORT, THE CONTRACTOR SHALL CONTACT THE ARCHITECT/ENGINEER FOR CLARIFICATION PRIOR TO CONSTRUCTION.
- AB. SEE SITE ELECTRICAL PLAN FOR SITE LIGHTING, POWER, AND COMMUNICATION.
 AC. THE CONTRACTOR SHALL SUBMIT A SET OF RECORD DRAWINGS TO THE ENGINEER OF RECORD WITHIN FIVE WORKING DAYS AFTER THE COMPLETION OF WORK. RECORD DRAWINGS SHALL BE IN ACCORDANCE WITH AHJ SPECIFICATIONS.
- AD. SITE GRADING AND PREPARATION, PAVEMENT THICKNESSES, AND MATERIAL SPECIFICATIONS SHALL CONFORM TO THE RECOMMENDATIONS OF THE SOILS REPORT FOR THIS SITE PREPARED BY ATLAS, DATED DECEMBER 2, 2022 WITH ATLAS NO. B222379g, AND TITLED "GEOTECHNICAL INVESTIGATION, CALDWELL MAINTENANCE BUILDING EXPANSION, 15430 HIGHWAY 44, CALDWELL, ID" AND ALL ADDENDA TO THE SOILS REPORT.
- AE. CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE HIS WORK.

ABBREVIATIONS

@	AT
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ASPH	ASPHALT
AWWA	AMERICAN WATER WORKS ASSOCIATION
BFTG	BOTTOM OF FOOTING
BLDG	BUILDING
BTM	BOTTOM
€	CENTERLINE
C	CURVE
CB	CATCH BASIN
CB/SB	CATCH BASIN/SEDIMENT BOX
CONC	CONCRETE
CSP	CORRUGATED STEEL PIPE
DEPT	DEPARTMENT
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY
DESC	DESCRIPTION
DIA	DIAMETER
E	ELECTRICAL / EAST / EASTING
EG	EXISTING GRADE
ELEV	ELEVATION
ELL	ELBOW
EOP	EDGE OF PAVEMENT
EST	ESTIMATE
EW	EACH WAY
FDC	FIRE DEPARTMENT CONNECTION
FF	FINISH FLOOR ELEVATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
FOC	FACE OF CURB
FT	FEET
G	GAS
GALS	GALLONS
GALV	GALVANIZED
GB	GRADE BREAK
GPD	GALLONS PER DAY
GRVD	GROUND
GRVL	GRAVEL
GRT	TOP OF GRATE
HDPE	HIGH DENSITY POLYETHYLENE
IE	INVERT ELEVATION
INV	INVERT
L	LENGTH / LINE
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH / NORTHING
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OWS	OIL WATER SEPARATOR
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PE	POLYETHYLENE
PERF	PERFORATED
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PS	PRESSURIZED SEWER
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
QUAN	QUANTITY
R	RADIUS
RE:	REFER TO
ROW	RIGHT OF WAY
S SCH SDCO SDMH SDWK SQ FT SS SSCO SSMH	SOUTH SCHEDULE STORM DRAIN STORM DRAIN CLEANOUT STORM DRAIN MANHOLE SIDEWALK SQUARE FEET SANITARY SEWER SANITARY SEWER CLEANOUT SANITARY SEWER MANHOLE
T TBC TD TDH TMC TOC TOW TYP	TELEPHONE TOP BACK OF CURB TOP OF CONCRETE TRENCH DRAIN TOTAL DYNAMIC HEAD TOP OF MOUNTABLE CURB TOP OF CURB TOP OF WALL TYPICAL
W	WATER / WEST
W∕	WITH
WV	WATER VALVE

	ASPHALT CONCRETE PAVEMENT
	PORTLAND CEMENT CONCRETE
	RIGHT OF WAY LINE
	PROPERTY LINE
	EASEMENT LINE
(1000)	FINISH GRADE CONTOUR (MAJOR)
	FINISH GRADE CONTOUR (MINOR)
	EXISTING GRADE CONTOUR (MAJOR)
X	FENCE
[BUILDING
	INFLOW CURB AND GUTTER
	OUTFLOW CURB AND GUTTER
$\langle 10 \rangle$	PARKING COUNT
E	ACCESSIBLE PARKING SYMBOL
-	SIGN
1.1.1	BIKE RACK
	LUMINAIRE
	ELECTRICAL TRANSFORMER
SD	STORM WATER LINE
\bigcirc	STORM WATER MANHOLE
٢	STORM WATER CLEANOUT
•/1	CATCH BASIN
OO	OIL WATER SEPARATOR
\rangle	HEADWALL
SS	SANITARY SEWER LINE
۲	SANITARY SEWER MANHOLE
۲	SANITARY SEWER CLEANOUT
w	WATER LINE
0	WATER METER
	WATER VALVE
Y	FIRE HYDRANT
G	GAS LINE
T	COMMUNICATION LINE
———— E	ELECTRICAL LINE

LEGEND





GENERAL NOTES:

A. SEE SHEET COO FOR GENERAL NOTES.

DEMOLITION NOTES:

- A. EXISTING SITE INFORMATION AND LOCATION OF EXISTING SITE IMPROVEMENTS WERE PROVIDED ELECTRONICALLY BY STEVE FRISIBIE OF TO ENGINEERS ON 11/01/22. THE EXISTING SITE INFORMATION IS PROVIDED FOR THE CÓNVÉNIENCE OF THE CONTRACTOR. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.
- B. THE CONTRACTOR SHALL CALL DIGLINE (1–208–342–1585) AND HAVE THE LOCATION OF EXISTING UTILITIES MARKED AT LEAST TWO WORKING DAYS PRIOR TO THE BEGINNING OF EXCAVATION.
- C. CONTRACTOR SHALL CALL THE UNDERGROUND UTILITY LOCATING SERVICE AND HAVE THEM MARK THE LOCATION OF EXISTING UTILITIES AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING OF WORK.
- D. TYPE AND LOCATION OF EXISTING UTILITIES SHOWN IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND LOCATING ALL EXISTING UTILITIES PRIOR TO DEMOLITION AND EXCAVATION. COORDINATE WITH UTILITY COMPANIES AND ARCHITECT/ENGINEER FOR SCHEDULING OF DISCONNECTION AND FOR CAPPING PROCEDURES. COORDINATE ALL DISRUPTIONS WITH UTILITY SERVICES WITH ARCHITECT AND ADJACENT BUSINESSES THREE DAYS PRIOR TO SCHEDULED DISRUPTION.
- E. REMOVE ALL LOOSE SOIL FROM AREAS OF EXCAVATION AND FILL WITH APPROVED BACKFILL.
- F. DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION, PRECAUTION SHALL BE TAKEN NOT TO INCONVENIENCE THE ADJOINING BUSINESSES AS REASONABLY POSSIBLE AND TO MAINTAIN UNINTERRUPTED ACCESS.
- G. DEMOLITION CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE HIS WORK. IN ADDITION, DEMOLITION CONTRACTOR SHALL OBTAIN ALL CERTIFICATES OF SEVERANCE OF ALL UTILITY SERVICES AS PART OF HIS WORK AND SUBMIT TO THE ARCHITECT/ENGINEER HIS DEMOLITION PROCEDURES AND OPERATIONAL SEQUENCE FOR APPROVAL.
- H. CONTRACTOR SHALL PROVIDE PROPER CONSTRUCTION SIGNAGE/BARRICADES AT ROADWAYS AND APPROACHES IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND ACHD REQUIREMENTS. I. EXISTING TREES, DEBRIS, STRUCTURES, ASPHALT, CONCRETE, AND DELETERIOUS
- MATERIAL INCLUDING BUT NOT LIMITED TO CONCRETE FOOTINGS, BASEMENTS, SEPTIC TANKS, AND UNDERGROUND UTILITIES TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE AT THE CONTRACTOR'S EXPENSE. THE DEPRESSIONS LEFT BY REMOVAL SHALL BE BACKFILLED WITH CLEAN ENGINEERED FILL IN LAYERS NOT TO EXCEED 8 INCHES.
- J. THE CONTRACTOR SHALL COMPLETELY REMOVE THE EXISTING PAVED AREAS SPECIFIED. IN ADDITION, CONTRACTOR SHALL REMOVE UNDERGROUND UTILITIES AS IDENTIFIED ON THESE DRAWINGS, IN ACCORDANCE WITH ALL APPLICABLE AUTHORITIES HAVING JURISDICTION AND IN AN ORDERLY MANNER. COORDINATE REMOVAL AND CONSTRUCTION OF UTILITIES TO MAINTAIN UNINTERRUPTED SERVICE TO EXISTING FACILITIES.
- K. PERFORM ASPHALT STREET CUTS AND SURFACE REPAIRS PER ACHD POLICIES AND PROCEDURES. ANY DAMAGED ROADWAY PAVEMENT SHALL BE REPAIRED TO THE SATISFACTION OF ACHD.
- L. THIS PLAN SHOWS GENERAL DEMOLITION WORK TO BE PERFORMED AND DOES NOT RELIEVE THE CONTRACTOR FROM OTHER DEMOLITION WORK REQUIRED TO PRODUCE THE SITE MODIFICATIONS SHOWN ON THE REMAINING CONTRACT DOCUMENTS.
- M. AREAS INDICATED ASPHALT OR CONCRETE REMOVAL SHALL INCLUDE REMOVAL OF THE PAVEMENT SECTION FROM THE ASPHALT SURFACE DOWN TO EXISTING SUBGRADE.
- N. DEMOLITION OF LIGHT POLES, ELECTRICAL CONDUIT AND UNDERGROUND UTILITIES SHALL NOT INTERFERE WITH THE OPERATION OF EXISTING LIGHTING, ELECTRICAL SYSTEM OF UTILITIES WHICH REMAIN. TEMPORARY REROUTING OF LINES MAY BE REQUIRED TO ENSURE CONTINUOUS OPERATION OF THOSE SYSTEMS NOT SCHEDULED FOR DEMOLITION.
- O. ALL PAVEMENT REMOVAL SHALL BE SAWCUT WHERE INDICATED TO FORM A CLEAN EDGE AT THE LINE OF REMOVAL PER ACHD STANDARDS, POLICIES, AND PROCEDURES.
- P. EXISTING UNDERGROUND UTILITIES WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, OR WITHIN 2' OF THE BOTTOM OF EXCAVATION, SHALL BE REMOVED. UTILITIES TO BE DEMOLISHED BEYOND 2' BELOW SUBGRADE SHALL BE REMOVED OR ABANDONED IN PLACE AT THE CONTRACTORS OPTION. PIPES, CONDUIT, AND UTILITY LINES 6" OR LARGER SHALL BE GROUTED WITH CONCRETE MORTAR MIX IF ABANDONED IN PLACE.

SHEET NOTES: 1. SAWCUT LINE, SHOWN APPROXIMATE. 2. EXISTING ASPHALT TO BE REMOVED AS INDICATED BY HATCH PATTERN. 3. CONCRETE LANDING AT EXISTING DOOR TO BE REMOVED. 4. EXISTING METAL RAILING TO BE REMOVED. 5. EXISTING SEPTIC TANK TO BE REMOVED. 6. EXISTING PROPANE TANK TO BE RELOCATED, COORDINATE WITH OWNER FOR NEW LOCATION. SEE ARCHITECTURAL DRAWINGS FOR DEMOLITION ASSOCIATED WITH BUILDING FEATURES.

- 8. EXISTING BUILDING WATER SERVICE IS EXPECTED TO RUN ALONG NORTH FACE OF EXISTING BUILDING, FIELD LOCATE AND ADJUST AS REQUIRED FOR BUILDING ADDITION.
- 9. REMOVE EXISTING DRAIN FIELD WITHIN 10 FEET OF NEW BUILDING ADDITION. BACKFILL WITH STRUCTURAL FILL IN ACCORDANCE WITH THE GEOTECHNICAL REPORT. EXTENTS OF DRAIN FIELD SHOWN APPROXIMATE.





EROSION CONTROL NO

- ALL WORK ASSOCIATED WITH STABILIZING THE DISTURBED AREAS SHAL ACCORDANCE WITH THE CITY OF BOISE CONSTRUCTION SITE EROSION SEDIMENT CONTROL PROGRAM AND FIELD MANUAL.
- B. CONTRACTOR OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT COI MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGU
- C. THE IMPLEMENTATION OF THESE EROSION AND SEDIMENT CONTROL P CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF TH AND SEDIMENT CONTROL PLAN FACILITIES IS THE RESPONSIBILITY OF CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE P

APPROVED.

- D. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SI CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIM PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE CONTRAC DURATION OF CONSTRUCTION.
- E. THE EROSION AND SEDIMENT CONTROL FACILITIES SHOWN ON THIS PL CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING AC IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT L DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, ADJACENT OPEN SURFACES OR VIOLATE APPLICABLE WATER STANDARDS.
- F. THE EROSION AND SEDIMENT CONTROL FACILITIES SHOWN ON THIS P MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIOD, THESE EROSION AND SEDIMENT CONTROL FAC BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
- G. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIC THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WAT DOWNSTREAM SYSTEM.
- H. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECT PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-E
- . PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPID POSSIBLE.
- J. CONCRETE WASHOUT MUST BE CONTAINED IN AN ABOVE GROUND CO IDEQ STORM WATER BMP #49.
 <u>STOCKPILED TOPSOIL NOTES:</u>
- K. STOCKPILES SHALL BE STABILIZED (WITH PLASTIC COVERING OR OTHE
- DEVICE) DAILY BETWEEN NOVEMBER 1 AND MARCH 31. L. IN ANY SEASON, SEDIMENT LEACHING FROM STOCKPILES MUST BE P
- STORM WATER NOTES: M. OPERATORS ARE RESPONSIBLE TO PREPARE AND FILE A NOTICE OF AS REQUIRED BY THE EPA AND DEVELOP A PROJECT SPECIFIC STOR POLLUTION PREVENTION PLAN (SWPPP).
- N. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH BOISE STANDARDS AND THE CITY OF BOISE CONSTRUCTION SITE ERO SEDIMENT CONTROL PROGRAM AND FIELD MANUAL.
- O. SHOULD THE TEMPORARY EROSION AND SEDIMENTATION CONTROL ME SHOWN ON THIS DRAWING NOT PROVE ADEQUATE TO CONTROL EROS SEDIMENTATION, THE CONTRACTOR SHALL INSTALL ADDITIONAL FACILITI NECESSARY TO PROTECT ADJACENT PROPERTIES, SENSITIVE AREAS, N COURSES, AND/OR STORM DRAINAGE SYSTEMS.
- P. THE CONTRACTOR SHALL CALL DIGLINE (1-208-342-1585) AND HA LOCATION OF EXISTING UTILITIES MARKED A MINIMUM OF 48 HOURS EXCAVATIONS.
- Q. ALL EROSION CONTROL AND STORM WATER FACILITATES SHALL BE R INSPECTED AND MAINTAINED BY THE CONTRACTOR DURING CONSTRUCT
- R. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO OB USE AND OTHER RELATED OR REQUIRED PERMITS PRIOR TO ANY CO ACTIVITY IN THE MUNICIPALITY'S RIGHT-OF-WAY. IT SHALL ALSO BE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL REQUIRED PER ANY CONSTRUCTION. THE CONTRACTOR SHALL ABIDE BY ALL REQUIRE TRAFFIC CONTROL AND SAFETY WHEN WORKING IN THE ROAD RIGHT-
- S. AT NO TIME SHALL MORE THAN ONE-HALF (1/2) FOOT OF SEDIMEN TO ACCUMULATE WITHIN A PROTECTED CATCH BASIN. ALL CATCH BA CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PROJECT COMPLET CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INT DOWNSTREAM SYSTEM.

GENERAL NOTES:

A. CONSTRUCTION PARKING SHALL BE LOCATED ON EXISTING FACILITIE

(#) SHEET NOTES:

1. DESIGNATED AREA FOR WASHOUTS.

LEGEND

AREA OF ACTIVE CONSTRUCTION/CONTRACT SANITARY AND SEPTIC WASTE MANAGEMENT BMP #50

DTES:	
HALL BE IN DN CONTROL &	¢
R PROPER CONTROL GULATIONS.	
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SHALL BE G THE LIMITS SHALL BE ACTOR FOR THE	
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SITE IMPROVEMENT NOTES:

A. FOR GENERAL NOTES SEE DRAWING COO.

ARCHITECT/ENGINEER.

- B. IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER.
- C. THE MAXIMUM CROSS SLOPE OF ANY SIDEWALK OR RAMP SHALL BE 2%.
 D. UNLESS ELEVATIONS AND/OR CONTOURS ARE OTHERWISE SHOWN, NEW IMPERVIOUS SURFACE MUST BE PLACED TO ALLOW FOR POSITIVE DRAINAGE TO CURB, GUTTER, AND OTHER RUNOFF COLLECTION DEVICES. SLOPE TO BE MIN. 1.5% AND MAX. 5%, UNLESS OTHERWISE INDICATED OR DIRECTED BY THE ADDUTECT (CHOINTEED)
- E. PROJECT BENCHMARK INFORMATION COMES FROM THE TOPOGRAPHIC SURVEY.
- F. COORDINATE WITH OTHER DISCIPLINES FOR CONDUIT LOCATIONS.
- G. UTILITY TRENCHING AND BACKFILLING SHALL BE IN ACCORDANCE WITH THE SOILS REPORT AND LOCAL REQUIREMENTS, AND SHALL COMPLY WITH ALL LOCAL, STATE, AND NATIONAL SAFETY STANDARDS.
 H. LITULTY CONSTRUCTION SHALL CONFORM TO PLUMBING CODE AND THE CURE
- H. UTILITY CONSTRUCTION SHALL CONFORM TO PLUMBING CODE AND THE CURRENT EDITION OF THE ISPWC.
 I. EXISTING UTILITIES ARE SHOWN APPROXIMATELY AND FOR GENERAL INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES.
- EXISTING UTILITIES. J. WATER LINES SHALL BE INSTALLED WITH AT LEAST 42" COVER.

LEGEND:

HEAVY DUTY PAVEMENT: 3" AC ON 4" CRUSHED AB ON 16" GRANULAR SB ON PREPARED SUBGRADE, RE: GEOTECHNICAL REPORT

SHEET NOTES:

- PROVIDE 5'X5' CONCRETE LANDING AT DOOR WITH SLOPE LESS THAN 2% IN ALL DIRECTIONS. FROM LANDING SLOPE 20:1 OR LESS TO MEET EXISTING GRADE.
 4" SDR 35 SANITARY SEWER LINE AT 2% SLOPE FROM BUILDING PLUMBING TO
- NEW SEPTIC TANK. COORDINATE EXACT LOCATION OF BUILDING CONNECTION WITH PLUMBING AND TANK WITH SEPTIC SYSTEM INSTALLER.
- 3. CONTRACTOR TO PROVIDE CERTIFIED INSTALLER FOR SEPTIC TANK, DRAIN FIELD, AND REPLACEMENT AREA DESIGN AND INSTALLATION IN COMPLIANCE WITH SOUTHWEST DISTRICT HEALTH DEPARTMENT STANDARDS. ITEMS SHOWN ARE INTENDED ONLY TO SHOW POTENTIAL GENERAL AREA OF FACILITIES THAT ARE SUBJECT TO INSTALLERS SITE SPECIFIC DESIGN.





Energy Code: Project Title: Location: Climate Zone: Project Type: Vertical Glazing / Wall Area:	2021 IECC ITD Caldwell - sho Caldwell, Idaho 5b Addition 5%
Construction Site: 15430 Highway 44 Caldwell, Idaho 83605	Owner/Agent:
Building Area	
1-Automotive Facility : Nonresid	Jential
Envelope Assemblies	mhlu
A330	in biy
Roof: Metal Building, Standing S Thermal Blocks (d), [Bldg. Use Floor: Unheated Slab-On-Grade [Bldg. Use 1 - Automotive Facili	Seam, Filled Cavity with 1 - Automotive Facility] , Horizontal with vertical 2 t ty] (c)
NORTH Ext. Wall: Steel-Framed, 24in. o Facility] Door: Insulated Metal, Swinging Facility]	o.c., [Bldg. Use 1 - Automoti), [Bldg. Use 1 - Automotive
Window: Metal Frame with The Product ID pending, SHGC 0.30 Automotive Facility] (b)	mal Break: Fixed, Perf. Spe , PF 0.20, [Bldg. Use 1 -
EAST Ext. Wall: Steel-Framed, 24in. o	o.c., [Bldg. Use 1 - Automot
racincy]	.c., [Bldg. Use 1 - Automot
WEST Ext. Wall: Steel-Framed, 24in. o Facility]	

SHOP ADDITION



Project Information Energy Code: Project Title: Location: Climate Zone: Project Type: Vertical Glazing / Wall Area:

2021 IECC ITD Caldwell - office addition Caldwell, Idaho 5b Addition 10%

Owner/Agent:

Construction Site: 15430 Highway 44 Caldwell, Idaho 83605

Building Area

1-Office : Nonresidential

Envelope Assemblies

Gro

Roof: Metal Building, Standing Seam, Filled Cavity with Thermal Blocks (d), [Bldg. Use 1 - Office] Floor: Unheated Slab-On-Grade, Horizontal with vertical 2 ft., [Bldg. Use 1 - Office] (c)

Assembly

NORTH Ext. Wall: Steel-Framed, 24in. o.c., [Bldg. Use 1 - Office] Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID pending, SHGC 0.30, PF 0.20, [Bldg. Use 1 -Office] (b)

EAST Ext. Wall: Steel-Framed, 24in. o.c., [Bldg. Use 1 - Office] Window: Metal Frame with Thermal Break: Fixed, Perf. Specs.: Product ID pending, SHGC 0.30, PF 0.20, [Bldg. Use 1 -

Office] (b)

WEST Ext. Wall: Steel-Framed, 24in. o.c., [Bldg. Use 1 - Office] Door: Insulated Metal, Swinging, [Bldg. Use 1 - Office]

(a) Budget U-factors are used for software baseline calculations ONLY, (b) Fenestration product performance must be certified in accordance (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.
 (d) Thermal spacer block with minimum R-3.5 must be installed above the purlin/batt, and the roof deck secured to the purlins.

Project Title: ITD Caldwell - office addition Data filename:

OFFICE ADDITION

n COMcheckWeb e Certificate

Envelope PASSES, Design 4/6 bet	Servingin Codies	
Envelope Compliance State	ment	
Compliance Statement: The proposed specifications, and other calculations designed to meet the 2021 IECC requi mandatory requirements listed in the	I envelope design represented in this document submitted with this permit application. The prop rements in COM <i>check</i> Version COMcheckWeb a Inspection Checklist.	is consistent with the building plans, bosed envelope systems have been and to comply with any applicable
Loren Broyles	14 fm	1/12/23
Name - Title	Signatuke	Date

Floor	Desi Lor CSI 200 Boi 208 Iore	gner/Contra en Broyles 1QA) Broad St. se, Idaho 83 3-429-4046 en.broyles@	actor: 3714 ocshqa.com	
2	686			
oss Area or rimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor _(a)
2686	38.0	5.0	0.031	0.035
126	-	5.0	0.700	0.520
1446	19.0	13.0	0.042	0.055
21			0.370	0.370
100	100		0.380	0.360
137	19.0	13.0	0.042	0.055
363	19.0	13.0	0.042	0.055

Y, and are not code requirements. e with NFRC and requires supporting documentation.

e F-factors. we the purlin/batt, and the roof deck secured to the

Report date: 01/12/23 Page 1 of 9

Project Title: ITD Caldwell - shop addition Data filename:

Envelope PASSES: Design 0.4% be	tter than code	
Envelope Compliance State	ment	
Compliance Statement: The proposed specifications, and other calculations s designed to meet the 2021 IECC requi mandatory requirements listed in the	envelope design represented in this docume submitted with this permit application. The pro- rements in COMcheck Version COMcheckWeb nspection Checklist.	nt is consistent with the building plans, oposed envelope systems have been and to comply with any applicable
Loren Broyles, designer	1x 2m	1/12/23
Name - Title	Signature	Date

	Desi Lor CSI 200 Boi 208 Iore	gner/Contra en Broyles HQA D Broad St. se, Idaho 8: 3-429-4046 en.broyles@	actor: 3714 vcshqa.com	
Floor #	Area			
1	904			
Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U- Factor _(a)
1904	38.0	5.0	0.031	0.035
126		5.0	0.700	0.520
577	19.0	13.0	0.042	0.055
100		***	0.380	0.360
474	19.0	13.0	0.042	0.055
60			0.380	0.360
474	19.0	13.0	0.042	0.055
21	1000000	ansesses t	0 370	0 970

Report date: 01/12/23 Page 1 of 9

Project Title: ITD Caldwell - office addition Data filename:

Report date: 01/12/23 Page 2 of 9





DEMOLITION MEZZANINE PLAN SCALE 1/8" = 1'-0"

AN EXPEDITIOUS MANNER.

МАТСН	
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E OR 10'-0" OF	
DING SEAM METAL STRUCTURAL FOR	
SELECTED BY	
OWNER. IG TO REMAIN IN	
T SHOP AREA	
IG TO REMAIN IN	
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ROOF BELOW.	
WITH MECHANICAL	
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SHEET NOTES:

- 2. PHOTOCOPIER. PROVIDED AND INSTALLED BY ITD.

- 1. REPLACE EXISTING ROOFING WITH NEW PREFINISHED STANDING SEAM METAL ROOFING. COLOR TO BE SELECTED BY OWNER.
- 2. NEW PREFINISHED STANDING SEAM METAL ROOFING AT ADDITION. COLOR TO BE SELECTED BY OWNER.
- 3. EXISTING RAIN GUTTER AND DOWNSPOUTS. PAINT. COLOR TO BE SELECTED
- BY OWNER. 4. EXISTING OVERHEAD DOORS. PAINT TO MATCH EXISTING.
- 5. EXISTING AWNING. PAINT. COLOR TO BE SELECTED BY OWNER.
- 6. EXISTING METAL SIDING. PAINT. COLOR TO BE SELECTED BY OWNER.
- 7. EXISTING CONCRETE STEM WALL.
- 8. EXISTING STAIRS. PAINT TO MATCH EXISTING COLOR.
- NEW PREFINISHED RIBBED METAL SIDING AT ADDITION. COLOR TO BE SELECTED BY OWNER.
- 10. NEW CONCRETE STEM WALL AT ADDITION. PROVIDE SACK CONCRETE FINISH. 11. REPLACE EXISTING WINDOW WITH NEW.
- 12. EXISTING DOOR. PAINT. COLOR TO BE SELECTED BY OWNER.
- 13. NEW COLUMN. PAINT. COLOR TO BE SELECTED BY OWNER.
- 14. MECHANICAL LOUVER. PAINT TO MATCH ADJACENT SURFACE.

1 WALL SECTION SCALE 3/8" = 1'-0"

2 WALL SECTION SCALE 3/8" = 1'-0"

4 WALL SECTION SCALE 3/8" = 1'-0"

SHEET NOTES:

- 1. CONCRETE FOOTING AND STEM WALL, RE: STRUCTURAL
- 2. 1-1/2" PERIMETER INSULATION (R=5) AT ALL EXTERIOR LOCATIONS.
- 3. COMPACTED EARTH/GRAVEL PER GEOTECH REPORT AND STRUCTURAL.
- 4. CONCRETE SLAB, RE: STRUCTURAL.
- 5. 1/2" EXPANSION (TYPICAL)
- 6. CHAMFER ALL EXPOSED CONCRETE EDGES (TYPICAL) 7. INTERIOR CLOSURE. EXTEND SIDING BLOW T.O. STEM WALL MIN. 1.5".
- 8. METAL STUDS, RE: STRUCTURAL
- 9. STRUCTURAL SHEATHING, RE: STRUCTURAL
- 10. MOISTURE/VAPOR BARRIER
- 11. 24 GA. RIBBED METAL WALL PANELS
- 12. FULL INSULATION BETWEEN INNER AND EXTERIOR WALL SHEATHING (R=19)
- 13. RIGID INSULATION BD. (R=5) ATTACHED TO PURLINS
- 14. BATT INSULATION (R=38)
- 15. METAL PURLINS, RE: STRUCTURAL 16. INTERIOR CLOSURE
- 17. FACIA CAP CLOSURE (MATCH EXISTING) 18. METAL DECKING, RE: STRUCTURAL
- 19. STANDING SEAM METAL ROOF PANELS OVER MOISTURE BARRIER OVER COVER BOARD. (TYPICAL AT ENTIRE ROOF)
- 20. STRUCTURAL COLUMN, RE: STRUCTURAL
- 21. STRUCTURAL BEAM, RE: STRUCTURAL
- 22. 1-1/2" METAL FURRING RUNNERS TO CONC. FOUNDATION WALL.
- 23. 1–1/2" RIGID INSULATION
- 24. FURRED WALL 2x4s AT 24" O.C.
- 25. 5/8"GYP. BD.
- 26. MOISTURE/VAPOR BARRIER BETWEEN CONCRETE WALL AND WALL FURRING.
- 27. SUSPENDED TILE CEILING.
- 28. CONCRETE STOOP, RE: CIVIL.

N. 200 BR BOISE, PHONE PHONE THESE I THESE I THE ARC WHICH I DRAWIN NG PROVEMENT: CALDWELL, IDAF MP C \square \mathbf{m} ITD MAINTENANCE 15430 HIGHWAY 44 H DATE PROJECT 22123.00 1/20/23 DRAWN CHECKED LGB JAM REVISED

ORIGINAL SHEET SIZE 30" x 42"

1 BREAK RM. MILLWORK SCALE 3/8" = 1'-0"

PATTERN: COVE BASE

SIZE: 6 X 12

COLOR: INTENSITY PEBBLE VL72

INSTALLATION: MONOLITHIC GROUT: MAPEL 1/8" THK.: COLOR: 107 IRON

4 BREAK RM. 202 MILLWORK SCALE 3/8" = 1'-0"

SCHEDULE OF INTERIOR MATERIALS AND FINISHES

ROOM	ROOM	NO	RTH	EA	ST	SO	JTH	WE	EST	FLC	OR	CEIL	ING	DEMARKS
NO.	NAME	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	BASE	MATERIAL	FINISH	REMARKS
101	CORRIDOR			(E) GYP	P1	(E) GYP	P1	(E) GYP	P1	F1	B1	(E) GYP	P1	
102	CONFERENCE	(E) GYP	P1	(E) GYP	P1	(E) GYP	P1	(E) GYP	P1	F1	B1	(E) GYP	P1	
103	OFFICE	(E) GYP.	(E)	(E) GYP.	(E)	(E) GYP.	(E)	(E) GYP.	(E)	F1	B1	(E) GYP	(E)	(E) WALL PAINT TO REMAIN AS IS. DO NOT PAINT.
104	BREAK ROOM	GYP	P1	(E) GYP.	P1	(E) GYP	P1	(E) GYP	P1	F2	B1	(E) GYP	P1	_
105	UNISEX 1	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	(E) GYP	P1	-
106	I.T. CLOSET	GYP	P1	GYP	P1	GYP	P1	(E) GYP	P1	F1	B1	(E) GYP	P1	
107	UNISEX 1	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	(E) GYP	P1	
108	COPY AREA	GYP	P1			GYP	P1	GYP	P1	F1	B1	SAT	-	
109	OPEN OFFICE AREA	GYP	P1	GYP	P1	GYP	P1	GYP	P1	F1	B1	SAT	-	
110	UNISEX RESTROOM	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	GYP	P1	
111	UNISEX RESTROOM	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	GYP	P1	_
112	DECONTAMINATION ROOM	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	GYP	P1	_
113	SHOP SUPPLIES	GYP	P1	GYP	P1	GYP	P1	GYP	P1	CONC	_	SAT	-	
114	FIELD SUPPLIES STORAGE	GYP	P1	GYP	P1	GYP	P1	GYP	P1	CONC	_	SAT	-	
115	OFFICE STORAGE	GYP	P1	GYP	P1	GYP	P1	GYP	P1	CONC	_	SAT	-	
116	SHOP AREA	MPS		(E)MPS		(E)MPS		(E)MPS		CONC		(E)IB/IB	_	
117	JANITOR CLOSET	GYP	P1	GYP	P1	GYP	P1	GYP	P1	CONC	_	SAT	-	FRP AT WALLS AROUND MOP SINK TO 48" H.
118	MECHANIC OFFICE	MPS		MPS		GYP	P1	GYP	P1	CONC		IB	-	
119	MECHANIC STORAGE	MPS		GYP	P1	GYP	P1	GYP	P1	CONC		IB	-	
201	WORK AREA	GYP	P1	GYP	P1	GYP	P1	GYP	P1	F1	B1	(E)IB	-	
202	BREAK ROOM	GYP	P1	GYP	P1	GYP	P1	GYP	P1	F1	B1	(E)IB	-	
203	LOCKERS	GYP	P1	GYP	P1	GYP	P1	GYP	P1	F1	B1	(E)IB	-	
204	FOREMAN OFFICE	GYP	P1	GYP	P1	GYP	P1	GYP	P1	F1	B1	(E)IB	-	
205	MECHANICAL	GYP	P1	GYP	P1	GYP	P1	GYP	P1	-	_	(E)IB	-	
206	JANITOR	GYP	P1	GYP	P1	GYP	P1	GYP	P1	_	_	(E)IB	- 1	FRP AT WALLS AROUND MOP SINK TO 48" H.
207	UNISEX RESTROOM	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	GYP, T1	P1 @ GYP	T2	Т3	GYP	P1	
MAT G` (E C((E MI (E S <i>H</i> FF (E	ERIAL (P – ¾" GYPSUM BOARD (WATER RESISTAN)GYP – EXISTING GYP. BD. DNC – CONCRETE)CONC – EXISTING CONCRETE PS – METAL PANEL SIDING)MPS – EXISTING METAL PANEL SIDING AT – 2'x2' SUSPENDED ACOUSTICAL TILE RP – FIBERGLASS RESIN PANEL)IB – EXISTING INSULATION BOARD	NT GYP. BRD.	AT FRAMED R	ESTROOM WALL	FLO F S) F <u>WAI</u> B	DORING 1 – CARPET T MFGR: TAF STYLE: OF COLOR: LI SIZE: 18X INSTALLATI 2 – LVT MFGR: TAF STYLE: CO PATTERN: COLOR: C SIZE: 18 INSTALLATI L BASE 1 – RUBBER MFGR: JO STYLE: BA	ILE RKETT FSET 11338 THOGRAPHY 3 36 ON: MONOLITH RKETT NTOUR SERIES MODERN STON OSTA PCMS OF X 18 ON: MONOLITH BASE HNSONITE SEWORKS THE	0804 IC S STONE IE 516 QU IC	ΈĐ	PAINT (FIEL P1 (COLOR MFGR: SHEI COLOR: #SV FINISH: SAT SOLID SURI S1 - SOLIE MFGR COLOI THICK PLASTIC LA L1 - PLAS MFGR STYLE FINISI EDGE	<u>D)</u> TO MATCH) RWIN WILLIAMS V 7647 CRUS IN FACE (COU D SURFACE : CORIAN R: GLACIER WI (NESS: 2 CM. <u>MINATE (M</u> TIC LAMINATE : WILSONART E: FAWN CYPR H: CASUAL RU BANDING: MA	S SHED ICE JNTERTOP) HITE HILLWORK) STIC STIC TCH PLASTIC L	<u>TII</u> S AMINATE	 E T1 - RESTROOM WALLS MFGR: DALTILE STYLE: VOLUME 1.0 COLOR: ELECTRIC MOSS VL79 SIZE: 12 X 24 INSTALLATION: MONOLITHIC GROUT: MAPEI 1/8" THK.; COLOR: 27 SILVER T2 - RESTROOM FLOORS MFGR: DALTILE STYLE: VOLUME 1.0 COLOR: INTENSITY PEBBLE VL72 SIZE: 12 X 24 INSTALLATION: MONOLITHIC GROUT: MAPEI 1/8" THK.; COLOR: 107 IRON T3 - RESTROOM TILE BASE MFGR: DALTILE STYLE: VOLUME 1.0

MFGR: JOHNSONITE STYLE: BASEWORKS THERMOSET RUBBER COLOR: TA4 GATEWAY WG SIZE: 6"

2 COPY RM. MILLWORK SCALE 3/8" = 1'-0"

3 COPY RM. MILLWORK SCALE 3/8" = 1'-0"

5 WORK COUNTER 201 MILLWORK SCALE 3/8" = 1'-0"

7 TYP. CAB SECTION SCALE 3/8" = 1'-0"

6 WORKSPACE 201 MILLWORK SCALE 3/8" = 1'-0"

- METAL FRAME PER

CAULK ALL AROUND,

DOOR SCHEDULE

			D	OR SIZ	Έ		DOOR	DFTAII	S (ON SHT.	A71)	
ROOM	DOOR TYPE	FIRE RATING	WIDTH	HT.	THICKNESS	FRAME TYPE	HARDWARE	SILL	HEAD	JAMB	_ REMARKS
CORRIDOR	(E)										2
CONFERENCE	(E)										2
OFFICE	(E)										2
BREAK	С	_	3'-0"	7'-0"	1-3/4"	В	6	_	9	9	_
1 UNISEX	В	_	3'-0"	7'-0"	1-3/4"	ΒZ	1 5	_	9	9	-
I.T. CLOSET	В	_	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	-
1 UNISEX	В	_	3'-0"	7'-0"	1-3/4"	ΒZ	1 5	_	9	9	-
OPEN OFFICE	A	_	3'-0"	7'-0"	1-3/4"	В	1	3	4	5	-
UNISEX RESTRM.	В	_	3'-0"	7'-0"	1-3/4"	В	5	-	9	9	-
UNISEX RESTRM.	В	_	3'-0"	7'-0"	1-3/4"	В	5	-	9	9	-
DECON. RM.	В	_	3'-0"	7'-0"	1-3/4"	В	5	_	9	9	-
SHOP SUPPLIES	В	_	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	-
FIELD SUPPLIES	В	_	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	-
OFFICE STORAGE	В	_	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	_
SHOP	(E)										
SHOP	(E)										
SHOP	A	_	3'-0"	7'-0"	1-3/4"	А	1	3	1	2	_
SHOP	(E)										
SHOP	(E)										
SHOP	(E)										
SHOP	(E)										
SHOP	(E)										
SHOP	(E)										
JANITOR CLOSET	A	-	3'-0"	7'-0"	1-3/4"	В	3	-	9	9	-
MECH. OFFICE	Č	* - *	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	-
MECH. STORAGE	В	_	3'-0"	7'-0"	1-3/4"	В	3	_	9	9	-
h	han					\cdots					$ \mathbf{\mu} $
											1.0
BREAK	(E)										1, 2
BREAK	(E)										1, 2
					1 7 / A ¹						2
		_	5'-0''	/'-0"	1 - 5/4	B	2	_	9	9	-
MECH.		_	5'-0''	/' - 0''	1 - 5/4	L B	3	_	9	9	-
		_	5'-0''	/ -0''	1 - 3/4	L R	5	_	9	9	-
UNISEX RESTRM.		_	3 -0"	/ -0"	1-3/4	В	5	_	9	9	-

1. INSTALL SMOKE SEALS AND DOOR BOTTOM SEAL ON EXISTING DOOR AND FRAME. OPENING MUST BE SEALED TO PREVENT ANY EXHAUST FUMES FROM ENTERING OFFICE AREA FROM SHOP AREA.

PAINT. PROVIDE NEW HARDWARE TO MATCH NEW DOORS.

TOR	

GENERAL NOTES:

- A. CONSTRUCTION DOCUMENTS: 1. THE CONTRACTOR SHALL REVIEW THE APPROVED CONSTRUCTION DOCUMENTS AND NOTIFY THE ENGINEER OF ANY ERRORS OR DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION
- 2. CONTRACTOR IS RESPONSIBLE FOR USING QUALIFIED SUB CONTRACTORS EXPERIENCED IN THIS TYPE OF CONSTRUCTION. 3. THE CONTRACTOR SHALL FURNISH AND INSTALL EVERYTHING REQUIRED TO PROVIDE A COMPLETE STRUCTURE AS SHOWN HEREIN. IF THERE IS AN OMISSION ON THE PLANS, SUCH OMISSION SHALL NOT BE CONSTRUED TO MEAN
- THAT THE CONTRACTOR IS NOT REQUIRED TO FURNISH OR PROVIDE EVERYTHING THAT IS NECESSARY TO COMPLETE THE PROJECT TO THE MINIMUM REQUIREMENTS OF THE 2015 INTERNATIONAL BUILDING CODE AND ALL OTHER SPECIFICATIONS, CODES AND STANDARDS NOTED ON THE APPROVED CONSTRUCTION DOCUMENTS. 4. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY IF ANY
- UNIDENTIFIED EXISTING UNDERGROUND UTILITIES ARE DISCOVERED. THE ENGINEER IS NOT RESPONSIBLE FOR THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE DRAWINGS.
- 5. THE APPROVED STRUCTURAL DRAWINGS ARE PART OF THE OVERALL CONSTRUCTION DOCUMENT SET AND SHALL BE REFERENCED IN CONJUNCTION WITH OTHER APPROVED CONSTRUCTION DOCUMENTS INCLUDING, BUT NOT LIMITED TO, CIVIL, ARCHITECTURAL, MECHANICAL, ELECTRICAL, LANDSCAPE AND GEOTECHNICAL DOCUMENTS.
- a. SEE ARCHITECTURAL DRAWINGS FOR THE FOLLOWING: HORIZONTAL AND D. IBC WIND LOAD: VERTICAL DIMENSIONS NOT SHOWN ON THE STRUCTURAL PLANS. SIZE AND LOCATIONS OF DOOR AND WINDOW OPENINGS. SIZE AND LOCATIONS OF ROOF AND FLOOR OPENINGS. SIZE AND LOCATIONS OF INTERIOR NON-BEARING AND NON STRUCTURAL WALLS. CEILING
- ASSEMBLIES; WALL, FLOOR AND ROOF FINISHES; AND HANDRAILS. b. SEE MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR THE
- FOLLOWING: SIZE AND LOCATION OF PIPES, SLEEVES, AND DUCT PENETRATIONS. EQUIPMENT SIZES AND LOCATION. EQUIPMENT CURBS AND MOUNTING BRACKETS OR ANCHORS.
- c. SEE CIVIL, GEOTECHNICAL, OR LANDSCAPE DRAWINGS AND REPORTS FOR THE FOLLOWING: SITE TOPOGRAPHY, EXCAVATION AND COMPACTION REQUIREMENTS, FINISH GRADE SLOPE AND DRAINAGE AND SITE ELEVATION.
- 6. THE STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO, BRACING AND/OR SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. CONTRACTOR AT HIS/HER OWN EXPENSE SHALL ENGAGE PROPERLY QUALIFIED PERSONS TO DESIGN BRACING, SHORING, ETC. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL NOT INCLUDE OBSERVATION OF THE ABOVE NOTED ITEMS.
- 7. UNDER NO CIRCUMSTANCES CAN STRUCTURAL COMPONENTS BE SUBSTITUTED, OMITTED, SPLICED, OR ALTERED FROM THE APPROVED SET OF CONSTRUCTION DOCUMENTS WITHOUT WRITTEN APPROVAL FROM THE ENGINEER
- B. DIMENSIONS AND NOTATIONS: 1. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS
- DO NOT SCALE DRAWINGS. 2. FOR ANY MISSING DIMENSIONS REFER TO THE ARCHITECTURAL DRAWINGS OR
- THE DRAWINGS OF APPLICABLE TRADE. 3. ABBREVIATIONS USED ON THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE CONSIDERED TYPICAL ABBREVIATIONS FOR THE INDUSTRY. THE
- CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE ENGINEER IMMEDIATELY OF ANY ABBREVIATIONS THAT ARE UNKNOWN TO THE CONTRACTOR. C. TYPICAL NOTES AND DETAILS:
- 1. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER STANDARD TYPICAL NOTES AND DETAILS.
- 2. STANDARD TYPICAL NOTES AND DETAILS ARE TO BE USED WHEN REFERRED TO OR WHEN NO OTHER MORE RESTRICTIVE OR DIFFERENT DETAILS ARE SHOWN ON THE DRAWINGS
- 3. WORK NOT PARTICULARLY SHOWN OR SPECIFIED SHALL BE THE SAME AS SIMILAR PARTS THAT ARE SHOWN OR SPECIFIED. D. SHOP DRAWINGS:
- 1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER IN A TIMELY FASHION PRIOR TO FABRICATION AND CONSTRUCTION, UNLESS OTHERWISE STATED, A MINIMUM OF 5 WORKING DAYS AFTER RECEIPT OF SHOP DRAWINGS SHALL BE CONSIDERED AN ACCEPTABLE TIME PERIOD FOR THE STRUCTURAL ENGINEER REVIEW PROCESS.
- 2. A MINIMUM OF (2) HARD COPY SETS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. THE STRUCTURAL ENGINEER WILL MAINTAIN (1) SET FOR REFERENCE PURPOSES. THE CONTRACTOR SHALL MAINTAIN (1) SET AT THE JOB SITE DURING THE DURATION OF CONSTRUCTION
- 3. CONTRACTOR SHALL REVIEW AND STAMP SHOP DRAWINGS PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER. CONTRACTOR SHALL REVIEW FOR COMPLETENESS AND COMPLIANCE WITH CONTRACT DOCUMENTS.
- 4. SHOP DRAWINGS ARE NOT A PART OF THE CONSTRUCTION DOCUMENTS. THE STRUCTURAL ENGINEER REVIEW DOES NOT GIVE PERMISSION TO DEVIATE FROM THE APPROVED CONSTRUCTION DOCUMENTS. WHERE THE SHOP DRAWINGS AND THE CONSTRUCTION DOCUMENTS DIFFER, THE MORE STRICT OF THE TWO SHALL GOVERN UNLESS WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER PERMITS OTHERWISE.
- E. INSPECTIONS, SPECIAL INSPECTIONS, AND SITE VISITS (STRUCTURAL OBSERVATIONS):
- 1. INSPECTIONS BY THE BUILDING OFFICIAL ARE REQUIRED FOR CONSTRUCTION WORK FOR WHICH A PERMIT IS REQUIRED PER SECTION 110 OF THE IBC. CONTRACTOR IS REQUIRED TO COORDINATE AND SCHEDULE ALL REQUIRED INSPECTIONS WITH THE BUILDING OFFICIAL. INSPECTIONS PRESUMING TO GIVE AUTHORITY TO VIOLATE OR CANCEL PROVISIONS OF THE IBC OR OF OTHER ORDINANCES OF THE JURISDICTION SHALL NOT BE VALID. 2. SPECIAL INSPECTIONS ARE IN ADDITION TO, AND DO NOT REPLACE, THE
- INSPECTIONS BY THE BUILDING OFFICIAL PER CHAPTER 17 OF THE IBC. SPECIAL INSPECTIONS SHALL BE PERFORMED BY A QUALIFIED PERSON TO INSPECT AS REQUIRED ON THESE DOCUMENTS THE MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- 3. SITE VISITS OR STRUCTURAL OBSERVATIONS BY THE STRUCTURAL ENGINEER DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF INSPECTIONS OR SPECIAL INSPECTIONS PER SECTION 110 AND CHAPTER 17 OF THE IBC. SITE VISITS ARE NOT CONTINUOUS OR DETAILED. SITE VISITS DO NOT VALIDATE CONTRACTORS PERFORMANCE, MEANS, OR METHODS. SITE VISITS ARE FOR VISUAL OBSERVATION FOR GENERAL CONFORMANCE TO THE APPROVED
- CONSTRUCTION DOCUMENTS. F. CODE REQUIREMENTS:
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
- 1. 2018 INTERNATIONAL BUILDING CODE (IBC) 2. ANY OTHER REGULATING AGENCIES WHICH MAY HAVE AUTHORITY OVER ANY
- PORTION OF THE WORK, INCLUDING THE STATE OF IDAHO.
- 3. SPECIFICATIONS, CODES AND STANDARDS NOTED SHALL BE OF THE LATEST APPROVED ISSUE, INCLUDING SUPPLEMENTS, UNLESS NOTED OTHERWISE.
- 4. CONTRACTOR SHALL BE PROPERLY REGISTERED IN THE STATE OF IDAHO PER
- IDAHO STATE LAW. 5. ALL STRUCTURAL MATERIAL MUST HAVE CURRENT ICC-ES REPORTS AVAILABLE UPON REQUEST TO PROVE CODE APPROVAL & INDUSTRY TOLERANCES.

DESIGN CRITERIA

A. 2018 INTERNATIONAL BUILDING CODE (IBC).

1. RISK CATEGORY: II 2. NATURE OF OCCUPANCY: OFFICE/WAREHOUSE

B. DESIGN LOADS: 1. ROOF:

- a. LIVE LOAD = 25 PSF (SNOW) b. DEAD LOAD = 15 PSF
- 2. FLOOR- LIVE LOADS: b. OFFICE = 50 PSF
- c. WAREHOUSE = 250 PSF WALL- DEAD LOADS:
- a. DEAD LOAD = 15 PSF C. IBC SEISMIC DESIGN:
- SEISMIC DESIGN CATEGORY: C
- 2. IMPORTANCE FACTOR $I_E = 1.0$ 3. SOIL SITE CLASS: D
- 4. SEISMIC COEFFICIENTS: $S_{DS} = 0.3$
- $S_{D1} = 0.17$
- 5. RESPONSE MODIFICATION: R= 7 WALLS
- 6. DESIGN BASE SHEAR:
- V= 0.043W
- 1. BASIC DESIGN WIND SPEED = 115 MPH 2. EXPOSURE = C
- 3. ANALYSIS METHOD= SIMPLE DIAPHRAGM
- 4. DESIGN BASE PRESSURE (ASD): P = 22.8 PSF

FOUNDATIONS:

- A. MAXIMUM ALLOWABLE FOUNDATION SOIL BEARING PRESSURE: 1. 3.000 PSF (DEAD + LIVE LOAD) 2. 4,000 PSF (GRAVITY + LATERAL LOAD)
- ADJACENT FINISHED GRADE.
- C. THE INTERIOR FOOTINGS SHALL BE 12 INCHES MINIMUM BELOW FINISH FLOOR, U.N.O.
- DURING BACKFILLING OPERATIONS.
- OF THE STRUCTURAL ENGINEER.
- F. DEFINITIONS: THAT REQUIRES A FOOTING.
- CONCRETE: A. REFERENCE STANDARDS: 2. ALL CONCRETE SHALL BE NORMAL WEIGHT CONCRETE CHAPTER 5 OF ACI 318 B. SUBMITTALS

- CONCRETE STRUCTURES. FORMWORK AND FINISHES:

- SHALL BE FORMED WITH A 3/4 INCH CHAMFER.
- PLATES, OR SILL PLATES AS REQUIRED FOR A LEVEL AND UNIFORM BEARING
- D. MIX DESIGN, STRENGTH, AND ADMIXTURES:
- 1. 28-DAY COMPRESSIVE STRENGTHS (f'c):
- a. FOUNDATION STEM WALLS = 3500 PSI
- b. FOOTINGS = 3500 PSI c. INTERIOR SLABS-ON-GRADE = 4000 PSI
- 2. CEMENT II OR I/II PER ASTM C-150
- 3. MAXIMUM SLUMP:
- 5. APPROVED ADMIXTURES:
- a. FLYASH PER ASTM C-618 b. AIR ENTRAINING PER ASTM C-260
- c. WATER REDUCING PER ASTM C-494
- E. REINFORCEMENT 1. REINFORCEMENT FOR CONCRETE:

 - STANDARD PRACTICE"
 - b. DEFORMED BARS ASTM A615, GRADE 60 c. WELDED WIRE REINFORCEMENT (WWR):
 - SMOOTH WIRE ASTM A185
 - DEFORMED WIRE ASTM A497
- 2. MINIMUM REINFORCEMENT LAP = 40 BAR DIAMETERS
- a. CONCRETE CAST AGAINST EARTH = 3" b. CONCRETE EXPOSED TO EARTH OR WEATHER = 1 1/2"

- 3. MINIMUM WWR LAP = GRID SPACING PLUS 2 INCHES
- 4. MINIMUM CONCRETE COVER OVER REINFORCEMENT:
- c. CONCRETE NOT EXPOSED TO EARTH OR WEATHER = 3/4"
- SLAB. F. COORDINATION:
- CONSTRUCTION DOCUMENTS.

SEISMIC FORCE RESISTING SYSTEM: STEEL STUDS W/ WOOD SHTG. SHEAR

7. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE

B. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 24 INCHES MINIMUM BELOW

D. STRUCTURAL BACKFILL SHALL BE COMPACTED TO 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. BRACE WALLS AND PIERS AS REQUIRED

E. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL COORDINATE THE CONSTRUCTION DOCUMENTS, INCLUDING THE STRUCTURAL DRAWINGS, WITH THE GEOTECHNICAL REPORT. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION

1. STRUCTURAL WALLS - ANY LOAD BEARING WALL, SHEAR WALL, AND ANY WALL

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF ACI 301

3. CONCRETE MIX DESIGN SHALL BE ESTABLISHED IN ACCORDANCE WITH

4. USE LATEST EDITION OF ACI 306R WHEN CONCRETING DURING COLD WEATHER

1. SUPPLY PRODUCT DATA FOR PROPRIETARY MATERIALS AND ITEMS, INCLUDING REINFORCEMENT AND FORMING ACCESSORIES, ADMIXTURES, PATCHING COMPOUNDS, JOINT SYSTEMS, CURING COMPOUNDS AND OTHERS 2. SHOP DRAWINGS FOR REINFORCEMENT DETAILING, FABRICATING, FOR BENDING, AND PLACING OF CONCRETE REINFORCEMENT SHALL COMPLY WITH ACI 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED

CONCRETE STRUCTURES. BAR SCHEDULES, STIRRUP SPACING, BENT BAR DIAGRAMS, AND ARRANGEMENT OF CONCRETE REINFORCEMENT SHALL BE SHOWN. INCLUDE SPECIAL REINFORCING REQUIRED FOR OPENINGS THROUGH

1. FORMWORK: DESIGN, ERECT, SUPPORT, BRACE AND MAINTAIN FORMWORK TO SUPPORT VERTICAL, LATERAL, STATIC AND DYNAMIC LOADS THAT MIGHT BE APPLIED UNTIL STRUCTURE CAN SUPPORT SUCH LOADS.

2. FINAL SLAB SURFACES SHALL RECEIVE A MACHINED STEEL TROWEL FINISH. 3. ANY PROJECTING CORNERS OF COLUMNS, BEAMS, WALLS, PEDESTALS, ETC 4. DRY PACK, OR USE NON-SHRINK GROUT, UNDER BASE PLATES, BEARING

SURFACE. MINIMUM GROUT STRENGTH SHALL BE f'c = 7000 PSI, U.N.O. 5. SEPARATE SLABS-ON-GRADE FROM VERTICAL SURFACES WITH JOINT FILLER.

a. PRIOR TO ADDITION OF WATER-REDUCING ADMIXTURE = 4" b. WITH ADDITION OF WATER-REDUCING ADMIXTURE= 10"

4. MAXIMUM SIZE COARSE AGGREGATE: 3/4 INCHES (PER ASTM C-33)

a. ALL REINFORCING SHALL BE SUPPORTED IN FORMS SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI "MANUAL OF

USE FLAT MATS ONLY. NO ROLLED WWR IS PERMITTED.

5. SLAB-ON-GRADE REINFORCEMENT SHALL BE PLACED AT THE MID-DEPTH OF THE

1. COORDINATE ALL UNDER-SLAB MATERIAL SUCH AS VAPOR BARRIER, INSULATION, AND SUB-BASE WITH ARCHITECTURAL AND GEOTECHNICAL

2. COORDINATE CONCRETE SURFACE FINISHING WITH ARCHITECTURAL FINISH

MATERIALS 3. REPAIR OR REPLACE DEFECTIVE CONCRETE AS DIRECTED BY THE ARCHITECT ENGINEER, OR TESTING AGENCY.

- 4. COORDINATE ALL JOINT SPACING, LAYOUT, FILLER AND SEALANTS. 5. COORDINATE WITH ARCHITECTURAL ANY FINISH SURFACES THAT REQUIRE
- MOCK-UPS AND ACCEPTANCE PRIOR TO CONSTRUCTION 6. COORDINATE WITH REQUIRED INSPECTORS, SPECIAL INSPECTORS, AND STRUCTURAL OBSERVERS FOR FIELD QUALITY CONTROL ITEMS AND SCHEDULE NOTIFICATIONS IN A TIMELY FASHION.

G. DEFINITIONS: 1. PERFORMANCE DESIGN - A SET OF INSTRUCTIONS THAT OUTLINES THE FUNCTIONAL REQUIREMENTS FOR HARDENED CONCRETE DEPENDING ON THE APPLICATION. PERFORMANCE DESIGN DOES NOT INCLUDE REQUIREMENTS FOR MEANS AND METHODS AND DOES NOT PROVIDE LIMITATIONS ON THE INGREDIENTS OR PROPORTIONS OF THE CONCRETE MIXTURE. SUBMITTALS FOR PERFORMANCE DESIGN WOULD NOT BE A DETAILS LIST OF MIXTURE

- INGREDIENTS BUT RATHER A CERTIFICATION THAT THE MIX WILL MEET THE SPECIFICATION REQUIREMENTS, INCLUDING PRE-QUALIFICATION TEST RESULTS. 2. DURABILITY DESIGN - DURABILITY IS THE ABILITY OF CONCRETE TO RESIST WEATHERING ACTION, CHEMICAL ATTACK, AND ABRASION WHILE MAINTAINING IT'S DESIRED ENGINEERING PROPERTIES.
- 3. STRENGTH DESIGN- BASED ON THE ULTIMATE COMPRESSIVE STRENGTH OF THE CONCRETE NEEDED TO RESIST THE CALCULATED DESIGN LOADS. ANY ADDITIONAL STRENGTH THAT MAY BE PRESENT DUE TO STEEL REINFORCING IS NOT PERMITTED TO BE INCLUDED IN THE CONCRETE STRENGTH DESIGN.

WOOD:

A. REFERENCE STANDARDS AND GOVERNING AGENCIES:

- 1. NDS FOR WOOD CONSTRUCTION
- 2. APA PANEL DESIGN SPECIFICATION 3. AWPA U1 - USE CATEGORY SYSTEM: USER SPECIFICATION FOR TREATED WOOD 4. TPI 1 NATIONAL DESIGN STANDARD FOR METAL PLATE CONNECTED WOOD
- TRUSS CONSTRUCTION 5. WWPA - WESTERN WOOD PRODUCTS ASSOCIATION
- B. PANEL SHEATHING:

1. STRUCTURAL WOOD SHEATHING AS SPECIFIED ON THESE DRAWINGS AT ROOF/FLOOR DIAPHRAGMS, SHEAR WALLS, AND BUILT-UP BLOCKING LOCATIONS SHALL BE STAMPED WITH THE SPECIFIED APA RATING.

- 2. STRUCTURAL WOOD SHEATHING MAY BE EITHER PLYWOOD OR ORIENTED STRAND BOARD (OSB) AS LONG AS THE PANEL MEETS OR EXCEEDS THE CRITERIA LISTED BELOW.
- 3. WALL SHEATHING SHALL BE, U.N.O.:
- a. THICKNESS: 7/16" b. SPAN RATING: WALL-16
- c. GRADE: PS-1/EXP-1
- d. NAILING: PER PLAN
- e. BLOCKED AT ALL UNSUPPORTED EDGES MAXIMUM DISTANCE BETWEEN SUPPORT MEMBERS: 16'

C. DEFINITIONS:

- 1. APA RATED SHEATHING: A COMMON TRADE NAME THAT APPLIES TO A GRADE OR PANEL FOR USE AS SUBFLOORING, WALL SHEATHING, AND ROOF SHEATHING. PANELS ARE MADE WITH RESIN ADHESIVES THAT PROVIDE A MOISTURE RESISTANT BOND AND ARE DESIGNATED AS: EXPOSURE 1. PANELS CAN BE MANUFACTURED AS EITHER: PLYWOOD OR OSB. 2. APA STRUCTURAL 1 RATED SHEATHING: A SPECIAL SHEATHING GRADE
- DESIGNED FOR USE WHERE SHEAR AND/OR CROSS PANEL STRENGTH PROPERTIES ARE OF MAXIMUM IMPORTANCE. PANELS ARE MADE WITH RESIN ADHESIVES THAT PROVIDE A MOISTURE RESISTANT BOND AND ARE DESIGNATED AS: EXPOSURE 1. PANELS CAN BE MANUFACTURED AS EITHER: PLYWOOD OR OSB

STEEL

- A. REFERENCE STANDARDS: 1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC MANUAL AND SPECIFICATIONS.
- 2. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE.SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
- B. SUBMITTALS: 1. SUBMIT SHOP DRAWINGS OF STRUCTURAL STEEL LAYOUT FOR REVIEW BY THE ENGINEER PRIOR TO FABRICATION.
- C. MATERIALS: 1. PLATES, ANGLES AND BARS: ASTM A36.
- 2. W SHAPES AND TEES: ASTM A992.
- TUBE-SHAPES: ASTM A500, GRADE B.
- 4. PIPE: ASTM A53, GRADE B.
- 5. SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON THE DRAWINGS, IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE ENGINEER. D. BOLTS AND STUDS
- 1. BOLTS
- g. STEEL-TO-CONCRETE: A307 OR F1554 h. STEEL-TO-STEEL: A325N BEARING CONDITION "SNUG-TIGHT"
- 2. STUD CONNECTORS: ASTM A 108
- E. WELDS:
- 1. PROVIDE E70XX ELECTRODES FOR ALL WELDS, IN ACCORDANCE WITH AWS D1.4 F. METAL DECK:
- 1. ROOF DECK: VULCRAFT $1\frac{1}{2}$ INCH 22 GAUGE TYPE 'PLB-36' STEEL DECK @ 3-SPAN CONDITION. PROVIDE (4) HILTI X-EDNK22 OR X-HSN 24 AT SUPPORTS & BUTTON PUNCH @ 24" O.C. @ SEAMS. ALTERNATIVELY, MAY PROVIDE (7) ½ INCH DIAMETER PUDDLE WELDS PER PANEL & 1/2" DIAMETER PUDDLE WELDS @ 12" O.C. AT EACH SUPPORT AND TOP SEAM WELDS @ 12" O.C. MAXIMUM, PER MANUFACTURER'S
- INSTRUCTIONS. 2. SHEET METAL DECK ACCESSORIES: METAL CLOSURE STRIPS, WET CONCRETE STOPS, AND COVER PLATES TO BE 22 GAUGE THICK SHEET STEEL; OF PROFILE AND SIZE INDICATED; FINISHED SAME AS DECK.
- 3. REINFORCE OPENING IN DECKING WITH ADDITIONAL METAL AND CLOSURE PIECES AS REQUIRED FOR STRENGTH, CONTINUITY OF THE DECKING AND SUPPORT OF OTHER WORK SHOWN. WHERE OPENINGS ARE FROM 15 INCHES WIDE TO 30 INCHES WIDE, AND ARE NOT SUPPORTED BY STRUCTURAL MEMBERS, WELD A STEEL $L4x4x\frac{1}{4}$ TO THE UNDERSIDE OF DECK AT RIGHT ANGLES TO THE RIBS. EXTEND THE ANGLES 3 RIBS BEYOND EACH SIDE OF THE OPENING AND WELD TO BOTTOM SURFACE OF EACH RIB. REINFORCE SIDE OF OPENING PARALLEL TO DECK RIBS WITH A 20 INCH WIDE, 20 GAUGE STEEL
- SHEET PLACED ON THE TOP SURFACE OF DECKING, WELDED TO DECKING AT EACH CORNER AT 12" O.C. MAXIMUM ALONG EACH SIDE. G. JOISTS AND JOIST GIRDERS: 1. STEEL JOISTS AND STEEL GIRDERS SHALL BE SPECIFICALLY DESIGNED FOR THE
 - LOADS INDICATED IN THE ABOVE DESIGN CRITERIA BY A CERTIFIED FABRICATOR, AND IN ACCORDANCE WITH THE SPECIFICATIONS OF THE STEEL JOIST INSTITUTE (SJI). PROVIDE JOIST AND JOIST GIRDER DEPTHS INDICATED ON THE PLANS
- 2. DO NOT PERMIT ERECTION OF DECKING UNTIL JOISTS ARE BRACED, BRIDGED, AND SECURED OR UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRIDGING AND BRACING.
- 3. DO NOT FIELD CUT OR ALTER STEEL JOISTS AND STEEL GIRDERS WITHOUT APPROVAL OF JOIST MANUFACTURER. 4. ALL SUBMITTED STEEL JOIST AND JOIST GIRDERS PLANS AND CALCULATIONS
- SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF IDAHO.

COLD-FORMED METAL

- A. REFERENCED STANDARDS: 1. AISI STANDARD: STANDARD FOR COLD-FORMED STEEL FRAMING
- B. SUBMITTALS:
- C. LIGHT GAUGE STEEL STUDS AND JOISTS:
- SHEET STEEL MUST BE COATED WITH A RUST INHIBIT PAINT. 3. ALL STRUCTURAL PROPERTIES COMPUTED IN ACCORDANCE WITH ANSI
- MEMBERS". DESIGNATIONS ON THE DRAWINGS ARE STEEL STUD MAY BE PERMITTED UPON REVIEW OF THE ARCHITECT AND STRUCTURAL ENGINEER.
- NOTED OTHERWISE ON THESE DRAWINGS, STUD WALL TRACK TO BE OF THE SAME MATERIAL AND GAUGE AS STUDS.

THIS TYPE OF CONSTRUCTION.

GALVANIZED PER ASTM A153

THIS TYPE OF CONSTRUCTION

THICKNESS.

c. 43 MILS = 18 GA

d. 54 MILS = 16 GA

e. 68 MILS = 14 GA

f. 97 MILS = 12 GA

MANUFACTURER'S INSTRUCTIONS.

D AS ADOPTED BY THE IBC.

OF THE IBC.

SERVICES.

THE ENGINEER.

SPECIAL INSPECTION:

2. GAUGE EQUIVALENT:

2. ANCHORAGE DEVICES: POWER ACTUATED

D. FASTENERS

F. DEFINITIONS:

600 S162-54

1. SUBMIT SHOP DRAWINGS OF PRE MANUFACTURED METAL TRUSS LAYOUT FOR REVIEW BY THE AND ENGINEER PRIOR TO FABRICATION.

2. TRUSS MANUFACTURER SHALL PROVIDE PROOF OF APPROVED THIRD PARTY INSPECTION AS REQUIRED BY THE 2012 IBC, SECTION 1705.2.

1. 18 & 20 GAUGE MATERIAL: ASTM A570 GRADE 33 FOR PAINTED CARBON SHEET STEEL OR ASTM A653 GRADE A FOR GALVANIZED STEEL (Fy=33 KSI) 2. 12, 14 &16 GAUGE MATERIAL: ASTM A570 GRADE 50 FOR PAINTED CARBON SHEET STEEL OR ASTM A653 GRADE D FOR GALVANIZED STEEL (Fy=50 KSI). CARBON

"SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MANUFACTURER'S ASSOCIATION (S.S.M.A.), APPROVED EQUIVALENT PRODUCTS

4. INSTALL MEMBERS IN ACCORDANCE WITH INDUSTRY STANDARDS. UNLESS

5. PROVIDE HORIZONTAL BRIDGING AT 5'-0" O.C. MAXIMUM AT NONBEARING WALLS AND 3'-4" O.C. MAXIMUM AT BEARING WALLS, COORDINATE W/ STUD MANUFACTURE'S REQUIREMENTS AND STUD CUT-OUT LOCATIONS.

6. BEARING WALLS TO BE ERECTED WITH STUD ENDS SEATED AGAINST TRACK WEB ON TOP AND BOTTOM. SPLICING OF WALL STUDS IS NOT PERMITTED. 7. CONSTRUCT WALL CORNERS USING A MINIMUM OF THREE STUDS. 8. INSTALL DOUBLE STUDS AT WALL OPENINGS, DOOR AND WINDOW JAMBS, U.N.O.

SPLICING STUDS & HEADER/LINTEL FRAMING MEMBERS IS NOT PERMITTED. 9. SUBMIT SHOP DRAWINGS SHOWING STUD AND JOIST LAYOUT, DIMENSIONS, SIZES, BRIDGING, AND REQUIRED CONNECTION DETAILS FOR REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER. 10. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS EXPERIENCED IN

11. CURTAIN WALL FRAMING ANCHORS: "THE STEEL NETWORK" OR APPROVED EQUIVALENT AS INDICATED ON DRAWINGS. INSTALL AND CONNECT PER MANUFACTURER'S REQUIREMENTS.

1. SELF-DRILLING, SELF TAPPING SCREWS, BOLTS, NUTS AND WASHERS: HOT DIP

1. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS EXPERIENCED IN

1. PRODUCT IDENTIFICATION: STEEL FRAMING PRODUCTS HAVE A FOUR PART IDENTIFICATION CODE WHICH IDENTIFIES THE SIZE (BOTH DEPTH AND FLANGE WIDTH), STYLE, AND MATERIAL THICKNESS OF EACH MEMBER. FOR EXAMPLE:

a. MEMBER DEPTH - 6" = 600 x $\frac{1}{100}$ INCHES b. STYLE: STUD OR JOIST SECTIONS = S

> TRACK SECTIONS = T FURRING CHANNEL SECTIONS = F

CHANNEL SECTIONS = C c. FLANGE WIDTH: $1\frac{5}{8}$ " = 1.625" = 162 x $\frac{1}{100}$ INCHES

d. MATERIAL THICKNESS - 0.054 INCHES = 54 MILS, 1 MIL = $\frac{1}{1000}$ INCH. MATERIAL THICKNESS IS THE MINIMUM BASE METAL THICKNESS IN MILS. MINIMUM BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN

a. 30 MILS = 20 GA - ARCHITECTURAL b. 33 MILS = 20 GA - STRUCTURAL

POST INSTALLED ANCHORS IN CONCRETE:

A. POST INSTALLED EXPANSION OR EPOXY ANCHORS SHALL BE PREAPPROVED BY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION UNLESS SPECIFICALLY DETAILED ON THE DRAWINGS.

B. HOLES MUST BE DRILLED AND CLEANED PER MANUFACTURER'S INSTRUCTIONS. ANCHORS MUST BE INSTALLED AND SPECIAL INSPECTED PER

C. ANCHORS SHALL NOT BE INSTALLED WITHIN 1 $^{\prime}_{2}$ " OF MASONRY HEAD JOINTS. D. IF NO OTHER MORE STRICT SPECIFICATION IS DETAILED THEN THE EPOXY USED SHALL BE: SIMPSON 'SET-XP' AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS. USE A SIMPSON 'IXP' ANCHOR, THREADED ROD, OR REBAR AS APPLICABLE. E. UNDER NO CIRCUMSTANCES WILL AN EXPANSION BOLT AND/OR EPOXY SYSTEM BE APPROVED WITHOUT A CURRENT ICC ES REPORT THAT MEETS THE REQUIREMENTS OF THE GOVERNING JURISDICTION AND IS IN ACCORDANCE WITH AC1 318 APPENDIX

SPECIAL INSPECTION PROGRAM:

A. THE OWNER SHALL EMPLOY AN APPROVED AGENCY FOR SPECIAL INSPECTION SERVICES TO PERFORM SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17

B. AN APPROVED AGENCY SHALL BE AN ESTABLISHED AND RECOGNIZED AGENCY REGULARLY ENGAGED IN CONDUCTING TESTS OR FURNISHING INSPECTION

C. A SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL SHOW COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. A SPECIAL INSPECTOR SHALL ALSO DEMONSTRATE A THOROUGH WORKING KNOWLEDGE OF CHAPTER 17 OF THE IBC AS SUMMARIZED BELOW. IF THERE IS ANY OMISSION ON THE SUMMARIZED LIST BELOW, SUCH OMISSION SHALL NOT BE CONSTRUED TO MEAN THAT THE SPECIAL INSPECTOR IS NOT REQUIRED TO INSPECT EVERYTHING THAT IS NECESSARY TO MEET THE MINIMUM REQUIREMENTS OF THE IBC.

D. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL SUBMIT INSPECTION REPORTS TO THE BUILDING OFFICIAL AND THE ENGINEER FOR REVIEW IN A TIMELY FASHION. E. SPECIAL INSPECTION REPORTS SHALL INDICATE THAT WORK INSPECTED WAS DONE

IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE BUILDING OFFICIAL AND

A. SPECIAL INSPECTION AS HEREIN REQUIRED OF THE FOLLOWING MATERIALS INSTALLATION. FABRICATION. ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. B. STRUCTURAL OBSERVATION OF THE STRUCTURAL SYSTEM BY THE ENGINEER OF RECORD DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE SPECIAL

INSPECTION REQUIRED BY SECTION 110, 1704, OR OTHER SECTIONS OF THE INTERNATIONAL BUILDING CODE.

C. THE SPECIAL INSPECTION STATEMENT ON THIS SHEET LISTS THE ITEMS THAT REQUIRE SPECIAL INSPECTION AND VERIFICATION, THE CODE SECTION- REFERENCE FOR ADDITIONAL INFORMATION, AND THE REQUIRED FREQUENCY OF INSPECTION.

STRUCTURAL OBSERVATIONS:

A. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEMS BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE

TO THE APPROVED CONSTRUCTION DOCUMENTS. B. THE STRUCTURAL OBSERVER SHALL BE EITHER THE ENGINEER OF RECORD OR A REGISTERED DESIGN PROFESSIONAL APPROVED BY THE ENGINEER OF RECORD. C. THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR STRUCTURAL OBSERVATION, THE CONTRACTOR, AND APPROPRIATE SUBCONTRACTORS SHALL

HOLD A PRE-CONSTRUCTION MEETING TO REVIEW THE DETAILS OF THE STRUCTURAL SYSTEMS TO BE STRUCTURALLY OBSERVED. D. THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR STRUCTURAL OBSERVATION SHALL SUBMIT SEPARATE WRITTEN OBSERVATION REPORTS FOR

EACH REQUIRED SIGNIFICANT CONSTRUCTION STAGE TO BE OBSERVED. THIS WRITTEN REPORT, INCLUDING ANY OBSERVED DEFICIENCIES, SHALL BE SUBMITTED TO THE ENGINEER OF RECORD, THE OWNER'S REPRESENTATIVE, THE CONTRACTOR AND THE BUILDING OFFICIAL.

CONTRACTOR'S ENGINEERING REQUIREMENTS:

A. GENERAL CONTRACTOR'S PRIOR REVIEW: ONCE THE CONTRACTOR HAS COMPLETED THEIR REVIEW OF THE SPECIALTY STRUCTURAL ENGINEER'S (SSE) COMPONENT DRAWINGS, THE SER WILL REVIEW THE SUBMITTAL FOR GENERAL CONFORMANCE WITH THE DESIGN AND IMPACT TO STRUCTURE OF THE BUILDING AND WILL STAMP THE SUBMITTAL ACCORDINGLY. REVIEW OF THE SSE SHOP DRAWINGS IS FOR COMPLIANCE WITH DESIGN CRITERIA AND COMPATIBILITY WITH THE DESIGN OF THE PRIMARY STRUCTURE AND DOES NOT RELIEVE THE SSE OF RESPONSIBILITY FOR THAT DESIGN . ALL NECESSARY BRACING, TIES, ANCHORAGE, PROPRIETARY PRODUCTS SHALL BE FURNISHED AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS OR THE SSE'S DESIGN DRAWINGS AND CALCULATIONS. THESE ELEMENTS INCLUDE BUT ARE NOT LIMITED TOO:

ABBREVIATIONS

ADD

APPROX

ARCH'L

BI DG

BM

BOT

CMU

COM

CON

COND.

CONN.

COORD

DET

D.F.I

DIAC

DIAN

DIMS

DWG

E.J.

ELE'

E.N.

EQ

EQUI

EXIST

(F.V.)

GAL

GLB

H.A.S

H.D.

HDF

LLH

LLV

LVL

HORIZ

1. ARCHITECTURAL AWNINGS IF PRESENT

ANCHOR BOLT ADDITIONAL ALTERNATE APPROXIMATE ARCHITECT ARCHITECTURAL BOTTOM BUILDING BEAM	MANUF MAX MB MECH MIN MISC NO. N.T.S. O
BEARING CHANNEL CONTROL JOINT CENTER LINE CEILING CONCRETE MASONRY UNITS	O.H. OPNG OPP OSB OWSJ PEMB
COMMON CONCRETE CONDITION CONNECTION COORDINATE	PERP PL PLY PSL PSI P.T.
DEPTH DETAIL DOUGLAS FIR DOUGLAS FIR- LARCH DIAGONAL DIAMETER DIMENSION DRAWING	<u>R</u> REF REINF REQ'D REV RTU S
EXISTING EACH EXPANSION BOLT/ANCHOR EXPANSION JOINT ELEVATION EDGE NAIL EQUAL EQUIPMENT EXISTING	SCHED SHTG SIM SK SPECS SS STAG STD STRUCT T
FOUNDATION FINISH FLOOR FRAMING FOOTING FIELD VERIFY	T&G T&B THRU TJI TO TRANSV TYP
GAUGE GALVANIZE GLU-LAM BEAM GYPSUM BOARD	UNO V.I.F.
HEADED ANCHOR STUD HOLD DOWN HEADER HORIZONTAL	W (W) W WD

MANUFACTURER MAXIMUM MACHINE BOLT MECHANICAL MINIMUM MISCELLANEOUS

NUMBER NOT TO SCALE

ON CENTER OPPOSITE HAND OPENING OPPOSITE ORIENTED STRAND BOARD OPEN WEB STEEL JOIST

PRE-ENGINEERED METAL BUILDING PERPENDICULAR PLATE

PLYWOOD PARALLEL STRAND LUMBER POUNDS PER SQUARE INCH PRESSURE TREATED

REFERENCE REINFORCEMENT REQUIRED REVISION ROOF TOP UNIT

SCHEDULE SHEATHING SIMILAR SKETCH SPECIFICATIONS STAINLESS STEE STAGGERED STANDARD STRUCTURAL

THREADED ANCHOR STUD TONGUE AND GROOVE TOP AND BOTTOM THROUGH **TRUS JOIST I-JOIST** TOP OF TRANSVERSE TYPICAL

UNLESS OTHERWISE NOTED

VERIFY IN FIELD VERTICAL

WIDTH WIDE FLANGE WOOD WORK POINT WEIGH⁻ WELDED WIRE FABRIC WELDED WIRE REINFORCEMENT

SHEET INDEX

INCHES

LENGTH

POUND

LONG LEG HORIZONTAL

LAMINATED VENEER LUMBER

LONG LEG VERTICAL

S1.0 GENERAL STRUCTURAL NOTES S2.0 FOUNDATION AND ROOF FRAMING PLAN S3.0 TYPICAL FOUNDATION DETAILS S3.1 FOUNDATION DETAILS S4.0 TYPICAL FRAMING DETAILS S4.1 FRAMING DETAILS

W.P.

WT

WWF

WWR

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

FOUNDATION & FRAMING PLAN NOTES:

- 1. FOR ANY ADDITIONAL DIMENSIONS NOT SHOWN, SEE ARCH PLANS. NOTIFY THE ARCHITECT OR ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
- 2. DIMENSIONS ON EXISTING MEMBERS SHALL BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- 3. CONTACT ENGINEER FOR ANY REQUIRED CHANGES TO EXISTING STRUCTURE NOT SHOWN
- 4. STRUCTURAL WALLS ARE CONSIDERED TO BE ALL LOAD BEARING WALLS, SHEAR WALLS AND ANY WALL THAT REQUIRES A FOOTING.
- 5. (E) = EXISTING FRAMING MEMBER
- 6. (F.V.) = FIELD VERIFY DIMENSION OR EXISTING FRAMING CONDITION
- 7. FOR GENERAL STRUCTURAL NOTES SEE SHEET S1.0.
- 8. FOR TYPICAL FOUNDATION DETAILS SEE SHEET S3.0.
- 9. FOR TYPICAL STEEL FRAMING DETAILS SEE SHEET S4.0.
- 10. T.O.SLAB = TOP OF CONCRETE SLAB ELEVATION
- 11. T.O.FTG. = TOP OF FOOTING ELEVATION
- 12. T.O.CONC. = TOP OF CONCRETE WALL ELEVATION
- 13. SLAB JOINTS SHALL BE SPACED PER 1/S3.0.
- 14. CORNER REINF. IS REQ'D PER 2/S3.0. 15. FOR TOP PLATE SPLICE DETAIL SEE 1/S4.0.
- 16. FOR STEEL STUD LINTEL SCHEDULE AND DETAIL SEE 3/S4.0 & 4/S4.0.
- 17. LABELED COLUMN INDICATES COLUMN BEGINS ON DISPLAYED FLOOR. COLUMN WITHOUT LABEL INDICATED COLUMN BEGINS ON LOWER FLOOR.
- 18. BRACE NONSTRUCTURAL WALLS PER DETAIL 6/S4.0 AND 7/S4.0.
- 19. FOR EXTERIOR STEEL STUD WALLS, USE SHEAR WALL TYPE 1 PER SHEAR WALL SCHEDULE, DETAIL 2/S4.0.
- 20. <u>METAL ROOF DECK:</u> 1¹/₂" DEEP x 22 GA TYPE "PLB-36" METAL DECK @ 3-SPAN CONDITION. PROVIDE (4) HILTI X-EDNK22 OR X-HSN 24 AT SUPPORTS & BUTTON PUNCH @ 24" O.C. @ SEAMS.
- 21. SEE DETAIL 9/S3.0 WHERE NEW FOUNDATION INTERSECTS EXISTING FOUNDATION.

CORNERS PER SHEAR WALL DETAILS, U.N.O.

FOUNDATION & FRAMING PLAN LEGEND:

- _____ INDICATES STEEL STUD WALL: _____ AT EXTERIOR WALLS REQUIRING A FOOTING PROVIDE: 600S162-43 @ 24" & 600T250-43 TOP TRACK & 600T250-43 BOTTOM TRACK. PROVIDE HORIZONTAL BRIDGING AT 4'-0" O.C. FOR ALL WALLS, SEE TYPICAL
- DETAIL 8/S4.0 INDICATES STEEL STUD SHEAR WALL ABOVE. SEE DETAIL 2/S4.0 FOR SCHEDULE. SHEAR WALL LENGTH SHALL BE FULL LENGTH BETWEEN WINDOWS\DOORS OR WALL

4 4

4 4

BM1

CONN. XX

INDICATES HOLD DOWN MARK. SEE DETAIL 7/S3.0 FOR SCHEDULE. COORDINATE HOLD DOWN AND HOLD DOWN ANCHOR BOLT PLACEMENT WITH HOLD DOWN SCHEDULE AND HEADER SCHEDULE.

INDICATES 6" CONC. SLAB ON GRADE W/ #3 @ 18" O.C. EA. WAY (PLACED @ MID-DEPTH OF SLAB) OVER 10 MIL VAPOR BARRIER OVER 6" COMPACTED 3/4" MINUS GRAVEL

INDICATES CONCRETE SLAB CONTROL JOINT, LOCATIONS TO BE COORDINATED BY CONTRACTOR PER DETAIL 1/S3.0

INDICATES STEEL HSS POST PER COLUMN SCHEDULE: C1: STEEL HSS 5½x5½x¾6", WHERE EXTERIOR WALL SHTG OCCURS ATTACH WALL STUD TO HSS PER DETAIL 10/S3.0

- INDICATES STEEL POST BASE PLATE PER BASE PLATE SCHEDULE: BP1: BASE PLATE 1 w/ GROUT PAD PER DETAIL 5/S3.0 BP2: BASE PLATE 2 w/ GROUT PAD PER DETAIL 5/S3.0
- BP3: BASE PLATE 3 w/ GROUT PAD PER DETAIL 5/S3.0 BP4: BASE PLATE 4 w/ GROUT PAD PER DETAIL 5/S3.0
- INDICATES HEADER BELOW. ALL UNMARKED LINTELS ARE "L1" U.N.O. SEE HEADER SCHEDULE PER DETAIL 3/S4.0.
- INDICATES BEAM AND COLUMNS. SEE BEAM & COLUMN SCHEDULE:
- BM1: STEEL W10x26 BM2: WOOD (2) 1.75"x9.5" 2.0E LVL W/ (2) 2x WALL STUD SUPPORTS EACH END
- INDICATES SPECIAL CONNECTION. SEE CONNECTION SCHEDULE:
- CONN. 1: W BEAM TO W COLUMN PER DETAIL 5/S4.0

INDICATES (E) ROOF. (E) ROOF TO BE REMOVED AND REPLACED WITH NEW ROOF DECKING PER PLAN, SEE **METAL ROOF DECK** PLAN NOTES.

	WAI	L FOOTING S	SCHEDULE			
OOTING MARK	OOTING WIDTH DEPTH MARK (W) (D)		REINF.			
WF1 1'-6" 8'		8"	(2) #4 (L)			
 FOR EXTERIOR WALL FOOTINGS NOT MARKED, USE FOOTING TYPE WF1. FOR INTERIOR BEARING WALLS WHERE MARKED, USE FOOTING TYPE WF1. ALL FOOTINGS ARE CENTERED UNDER WALLS UNLESS NOTED OR DETAILED OTHERWISE. (H) = HORIZONTAL BARS IN STEM WALL - WHERE OCCURS (L) = LONGITUDINAL BARS IN FOOTING (V) = VERTICAL BARS IN STEM WALL - WHERE OCCURS (T) = TRANSVERSE BARS IN STEM WALL - WHERE OCCURS (T) = TRANSVERSE BARS IN FOOTING E.F. =EACH FACE T&B = TOP AND BOTTOM (V) VERTICAL BARS IN STEM WALL MAY BE BENT (IN ALTERNATE DIRECTIONS) @ THE FOOTING AND USED IN LIEU OF (T) TRANSVERSE BARS - SEE DETAILS. 						
	CC WIDTH x LENGT	DLUMN FOOTI				
MARK	(W) x (L)	(D)	REINF.			
CF1	2'-6" x 2'-6"	8"	(3) #4 EA DIRECTION			
CF2	4'-6" x 4'-6"	10"	(5) #4 EA DIRECTION			
CF3	2'-0" x 4'-0"	18"	(2) #4 (L) (T&B), (4) #4 (T) (T&B)			
NOTE	<u>ES:</u> WHERE COLUMN I WALL FOOTING RE	FOOTING OCCURS EINF. CONT. THRU	8 @ WALL FOOTING - RUN COLUMN FOOTING.			

- (1) INDICATES 1200Z30096-100 (55KSI) LIPPED Z PURLIN @ 5'-0" O.C.
- (2) INDICATES S600S162-43 JOIST @ 6'-0" O.C.
- (3) INDICATES (E) 12" MEZZANINE JOISTS (F.V.)

ORIGINAL SHEET SIZE 30" x 42"

PH 200 **у** Ч Z Ш $\overline{}$ Щ≥ ſ \geq \mathbf{m} \bigcirc AN Ż \square **TD** 1543(GIONAL FAT CENSE 17720 01/18/2023 DATE PROJECT 1227.22 01/17/23 DRAWN CHECKED MC REVISED SHEET TITLE FOUNDATION AND FRAMING PLAN SHEET S2.0

	HOLD DOWN (HD) SCHEDULE							
нр	OPTI	ON 1		/	OPTION 2		FTG	
MARK	STRAP HD SIZE	STUD SCREWS	SCREW HD SIZE	STUD SCREWS	ANCHOR BOLT	POSTS	SIZE	
A _F	A _F STHD14 (30) #10 N/A N/A N/A (2) 18 GA N/A						N/A	
NOTES 1. C(S(2. D	 <u>NOTES:</u> COMPARE HOLD DOWN STUD/POST (PER HOLD DOWN SCHEDULE) TO KING STUD(S) (PER HEADER SCHEDULE). LARGER SIZE GOVERNS. DEEPEN OR WIDEN FOUNDATION AND STEM WALL AT FOOTING. WHERE REQUIRED 							

SCALE: 3/4" = 1'-0"

SCALE: 3/4" = 1'-0"

S4.

5 (N) ROOF AT (E) ROOF SCALE: N.T.S.

- ZEE ROOF PURLIN PER PLAN

CONT. TOP TRACK PER PLAN

– WALL STUDS

PER PLANS

- BOX LINTEL WHERE OCCURS PER PLAN

HVAC ABBREVIATIONS

IN WC

INCHES OF WATER COLUMN

AC	AIR CONDITIONING	KW	KILOWATT
ACCU	AIR COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE
ACU	AIR CONDITIONING UNIT	LBS	POUNDS
AFF	ABOVE FINISHED FLOOR	LVR	LOUVER
AFG	ABOVE FINISHED GRADE	MA	MILLIAMPS
AHU	AIR HANDLING UNIT	MAX	MAXIMUM
AL	ALUMINUM	MCA	MINIMUM CIRCUIT AMPACITY
APD	AIR PRESSURE DROP	MECH	MECHANICAL
APPROX	APPROXIMATE	MFR	MANUFACTURER
ARCH	ARCHITECT. ARCHITECTURAL	MIN	MINIMUM
ASHRAF	AMERICAN SOCIETY OF HEATING	MISC	MISCELLANEOUS
NOT IT VIE	REERICERATION AND AIR CONDITIONING	MOCP	
	ENCINEERS		
AUTO			
BD	BARUMETRIC DAMPER	(N)	NEW
BDD	BACK DRAFT DAMPER	N	NEUTRAL
BHP	BRAKE HORSE POWER	NC	NORMALLY CLOSED
BLDG	BUILDING	NIC	NOT IN CONTRACT
BOD	BOTTOM OF DUCT	NO	NORMALLY OPEN
BOT	BOTTOM	NO/#	NUMBER
BTU	BRITISH THERMAL UNIT	NOM	NOMINAL
С	COMMON	NTS	NOT TO SCALE
CAB	CABINET	OBD	OPPOSED BLADE DAMPER
CFM	CUBIC FEET PER MINUTE	OC	ON CENTER
CL	CENTERLINE	OD	OUTSIDE DIAMETER
CLG	CEILING	OPNG	OPENING
CONC	CONCRETE	OSA	OUTSIDE AIR
C/W	COORDINATE WITH	PH	PREHEAT
טין (D)			
			POUNDS PER SQUARE FOOT
DB		P31	POUNDS PER SQUARE INCH
	DIRECT DIGITAL CONTROL	PVC	POLYVINYL CHLORIDE
DIA/Ø	DIAMETER	R/RAD	RADIUS
DIFF	DIFFUSER	RA	RETURN AIR
DN	DOWN	RE:	REFERENCE
DS	DEW POINT SENSOR	REG	REGISTER
DUC	DOOR UNDER CUT	REQ'D	REQUIRED
DWG	DRAWING	RG	RETURN AIR GRILLE
(E)	EXISTING	RH	REHEAT
EA	EXHAUST AIR	RM	ROOM
EAT	ENTERING AIR TEMPERATURE	RPM	REVOLUTIONS PER MINUTE
EER	ENERGY EFFICIENCY RATIO	RR	RETURN REGISTER
FF	EXHAUST FAN	RS	REFRIGERANT SUCTION
FFF	FFFICIENCY	RTII	
EG		54	
FI			
		SCHED	
		SU	SMORE DETECTOR
		SEER	SEASONAL ENERGY EFFICIENCY RATIO
EQUIP	EQUIPMENT	SG	SUPPLY AIR GRILLE
ESP	EXTERNAL STATIC PRESSURE	SHT	SHEET
EXH	EXHAUST	SP	STATIC PRESSURE
EXT	EXTERIOR	SPEC(S)	SPECIFICATION(S)
F	FAHRENHEIT	SQ. FT.	SQUARE FEET
FCU	FAN COIL UNIT	STD	STANDARD
FD	FIRE DAMPER	TEMD	TENDEDITUDE
FLA			IEMPERATURE
FP	FULL LOAD AMPS	TD	TEMPERATURE DIFFERENCE
	FULL LOAD AMPS FIRE PROTECTION	TD TS	TEMPERATURE TEMPERATURE DIFFERENCE TEMPERATURE SENSOR
FPM	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE	TD TS TXV	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE
FPM FSD	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER	TD TS TXV TYP	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL
FPM FSD FT	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET	TD TS TXV TYP UBC	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE
FPM FSD FT FT HD	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD	TD TS TXV TYP UBC UFC	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODF
FPM FSD FT FT HD FUR	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE	TD TS TXV TYP UBC UFC	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE
FPM FSD FT FT HD FUR C	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE CAS	TD TS TXV TYP UBC UFC UMC	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE
FPM FSD FT FT HD FUR G	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS	TD TS TXV TYP UBC UFC UMC UH	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER
FPM FSD FT FT HD FUR G GA	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE	TD TS TXV TYP UBC UFC UMC UH UV	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR
FPM FSD FT FT HD FUR G GA GAL GAL	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON	TD TS TXV TYP UBC UFC UMC UH UV VAV	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME
FPM FSD FT FT HD FUR G GA GAL GALV	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALVANIZED CENERAL CONTRACTOR	TD TS TXV TYP UBC UFC UMC UH UV VAV VD	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER
FPM FSD FT FT HD FUR G GA GAL GALV GC	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALUON GALVANIZED GENERAL CONTRACTOR	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALUON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE	TD TS TXV TYP UBC UFC UMC UH UV VAV VAV VD VEL VFD	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GC GPM HP	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM HP HS	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VAV VD VEL VFD VIF	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM MECHANICAL CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME–FAN POWERED
FPM FSD FT FT HD FUR G GA GAL GALV GC GPM HP HS HT	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH	TD TS TXV TYP UBC UFC UFC UMC UH UV VAV VAV VD VEL VFD VIF VVF VVR	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME-FAN POWERED VARIABLE VOLUME-REHEAT
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM HP HS HT	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VAV VD VEL VFD VIF VVF VVR	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME-FAN POWERED VARIABLE VOLUME-REHEAT WIDE, WIDTH
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM HP HS HT HTR HTR	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VAV VD VEL VFD VIF VVF VVR W	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM MECHANICAL CODE UNIFORM MECHANICAL CODE UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME-FAN POWERED VARIABLE VOLUME-REHEAT WIDE, WIDTH WITH
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM HP HS HT HTR HVAC HW	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC)	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VAV VD VEL VFD VIF VVF VVR W W/	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME-FAN POWERED VARIABLE VOLUME-REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GAL GAL HP HS HT HTR HTR HVAC HW HX	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALUON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VAV VD VEL VFD VIF VVF VVF VVR W W W/ WB	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM MECHANICAL CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME-FAN POWERED VARIABLE VOLUME-REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GAL GC GPM HP HS HT HTR HVAC HW HX IBC	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GAL GAL GAL GAL HT HT HTR HVAC HW HX IBC ID	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALUON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE INSIDE DIAMETER	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC W/O	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM MECHANICAL CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GAL GC GPM HP HS HT HTR HVAC HW HX IBC ID	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE INSIDE DIAMETER INTERNATIONAL ENERGY CONSERVATION CODE	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC W/O	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT
FPM FSD FT FT HD FUR G GA GAL GAL GAL GAL GAL GAL GAL GAL GA	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE INSIDE DIAMETER INTERNATIONAL ENERGY CONSERVATION CODE INTERNATIONAL ENERGY CONSERVATION CODE	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC W/O	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT
FPM FSD FT FT HD FUR G GA GAL GAL GALV GC GPM HP HS HT HTR HVAC HW HX IBC ID IECC IFGC IMC	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALLON GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE INSIDE DIAMETER INTERNATIONAL ENERGY CONSERVATION CODE INTERNATIONAL FUEL GAS CODE INTERNATIONAL FUEL GAS CODE	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC W/O	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT
FPM FSD FT FT HD FUR G GA GAL GALV GC GPM HP HS HT HTR HVAC HW HX IBC ID IECC IFGC IMC INST	FULL LOAD AMPS FIRE PROTECTION FEET PER MINUTE COMBINATION FIRE/SMOKE DAMPER FEET FEET OF HEAD FURNACE GAS GAUGE GALLON GALLON GALVANIZED GENERAL CONTRACTOR GALLONS PER MINUTE HORSEPOWER HUMIDITY SENSOR HEIGHT/HIGH HEATER HEATING/VENTILATION, AIR CONDITIONING HOT WATER (DOMESTIC) HEAT EXCHANGER INTERNATIONAL BUILDING CODE INSIDE DIAMETER INTERNATIONAL ENERGY CONSERVATION CODE INTERNATIONAL FUEL GAS CODE INTERNATIONAL MECHANICAL CODE INSUL ATION INSUL ATE	TD TS TXV TYP UBC UFC UMC UH UV VAV VD VEL VFD VIF VVF VVF VVR W W/ WB WC W/O	TEMPERATURE DIFFERENCE TEMPERATURE SENSOR THERMAL EXPANSION VALVE TYPICAL UNIFORM BUILDING CODE UNIFORM BUILDING CODE UNIFORM FIRE CODE UNIFORM MECHANICAL CODE UNIT HEATER UNIT VENTILATOR VARIABLE AIR VOLUME VOLUME DAMPER VELOCITY VARIABLE FREQUENCY DRIVE VERIFY IN FIELD VARIABLE VOLUME—FAN POWERED VARIABLE VOLUME—REHEAT WIDE, WIDTH WITH WET BULB TEMPERATURE WATER COLUMN WITHOUT

MECHANICAL DUCTWORK SYMBOLS

\mathbb{M} \square _____ p<u>pppppppppppp</u> **|** + + + + + + + + ; \square $\left\{ \begin{array}{c} \\ \\ \end{array} \right\}$ S----DUCT DIMENSION DESCRIPTION: 1ST FIGURE = SIDE SHOWN 2ND FIGURE = SIDE NOT SHOWN ALL SIZES IN INCHES (TYPICAL) 20"X18" 24"x12" .30° MAX 24"x12 _____ _ _ _ _ _ _ _ _ _ _ _____ DUCT Ħ \bot

SUPPLY DIFFUSER (ARROWS INDICATE THROW) (4–WAY SHOWN)
RETURN GRILLE
EXHAUST GRILLE
ROUND DUCT/FLUE THRU ROOF OR FLOOR
FLEX DUCT
FABRIC DUCT
SUPPLY DUCT THRU ROOF OR FLOOR
RETURN DUCT THRU ROOF OR FLOOR
EXHAUST DUCT THRU ROOF OR FLOOR
OUTSIDE AIR DUCT THRU ROOF OR FLOOR
BALANCE DAMPER
OPPOSED BLADE DAMPER
PARALLEL BLADE DAMPER
BACKDRAFT DAMPER
SIDEWALL OR DOOR GRILLE
FLEXIBLE DUCT CONNECTION
FIRE DAMPER
COMBINATION FIRE/SMOKE DAMPER
SMOKE DETECTOR (DUCT MOUNTED)

ELBOW - RADIUS (R) = WIDTH

90° OR 45° ELBOW

90° TAKE-OFF

SIZE TRANSITION

RECTANGULAR TO ROUND TRANSITION

90° MITERED

DUCT DOWN

ELBOW

ACOUSTICALLY-LINED DUCTWORK

VOLUME DAMPER WITH OPPOSED BLADES

RADIUS SPLITTER

TAKE-OFF

45° TAKE-OFF

90° CONICAL TAKE-OFF

С—

DUCT DOWN

ANGLE TAKE-OFF

RADIUS TAKE-OFF

4	DISCONNECT (1Ø)	
L	DISCONNECT (3Ø)	L TS
_~	FUSE	Ş
0-0	ON-OFF SWITCH	HS
어	NORMALLY OPEN CONTACT (NO)	° O
91/fo	NORMALLY CLOSED CONTACT (NC)	(FMS)
T _#	THERMOSTAT (ROOM OR UNIT#)	
TS _#	WALL-MOUNT TEMP SENSOR (ROOM OR UNIT#)	<u>`</u>
(HS)	HUMIDITY SENSOR	
(PS) _#	PRESSURE SWITCH	M
CO2 XXX	CARBON DIOXIDE SENSOR	
© xxx	CARBON MONOXIDE	M
(TC) _{XXX}	TIME CLOCK	\$
-R-	INDICATING LIGHT (PRESS TO TEST) G=GREEN,R=RED,B=BLUE	
— <u>(</u>)—	STARTER COIL	
—R—	RELAY	
	PRESSURE GAUGE W/ RANGE INDICATED	I I R I
	NUMBER OF CONDUCTORS (3 SHOWN)	
\checkmark	CONDUCTOR CONTINUATION	
	JUNCTION	
	JUMP	

 $\frac{3}{16}$ TYPICAL SPACING

MECHANICAL LINETYPE AND ANNOTATION LEGEND

SUFFIX (E) IN (OR EQUIPMENT.	CONJUNCTION WITH (TYPICAL OF ALL	H LIGHTER SHADING . EQUIPMENT AND F
NEW	EXISTING	TO BE DEMOLISHED
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		4//////////////////////////////////////
		4//////////////////////////////////////
CD	CD	47777 XX 7777777
		<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>
		4//////////////////////////////////////
(E)		

M/C C/E

MECHANICAL CONTROL SYMBOLS

	<u> </u>		-
T	DUCT MOUNTED		
	TEMPERATURE SENSOR	_0 0	PUSH-BUTTON NO
ŢS	DUCT MOUNTED		PUSH-BUTTON NC
Ş	(AVERAGING)	<u> </u>	SWITCH SPST
HS			SWITCH SPDT
0 0 0	HUMIDITY SENSOR	Но	
(FMS)	WATER FLOW	OO	HUA SWITCH
	MEASURING STATION	AI	ELECTRIC TERMINAL
(TS) ──│/──́	PIPE MOUNTED	Ð	DIFFERENTIAL PRESS
	TEMI ENATONE SENSON	->-	SPEED CONTROLLER
-(R)	INDICATING LIGHT		CURRENT SENSING F
\sim			
M	MOTOR (1Ø)		POWER WIRE FACTOR
$\downarrow \downarrow$			POWER WIRE FIELD
M	MOTOR (3Ø)		LOW VOLTAGE WIRE
\$ (UNIT)	SWITCH		LOW VOLTAGE WIRE
ĻĻ		—— TSP ——	TWISTED SHIELDED F
R R I I	CONTROL RELAY (NO)		CONTROL PANEL
$\frac{1}{2}$			
Ź₿ ŢŢ	CONTROL RELAY (NC)		

0	HOA SWITCH
	ELECTRIC TERMINAL
	DIFFERENTIAL PRESSURE GAUG
_	SPEED CONTROLLER
 CSR	CURRENT SENSING RELAY
	POWER WIRE FACTORY
	POWER WIRE FIELD
	LOW VOLTAGE WIRE FACTORY
	LOW VOLTAGE WIRE FIELD
	TWISTED SHIELDED PAIR
	CONTROL PANEL

RELAY (3ø)

TRANSFORMER

750

المن لا

G INDICATES EXISTING PIPE PIPING)

REFRIGERANT LIQUID

REFRIGERANT SUCTION

REFRIGERANT HOT GAS

CONDENSATE DRAIN

MECHANICAL EQUIPMENT

ROOFTOP MECHANICAL EQUIPMENT (E)

CONNECT NEW TO EXISTING SHADED SIDE IS NEW WORK

SHEET NOTES

EQUIPMENT CALLOUT (STANDARD)

DIFFUSER CALLOUT (STANDARD)

REVISION

FURNISHED AND INSTALLED BY CONTROLS CONTRACTOR

FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR

FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR

FURNISHED BY MECH INSTALLED AND WIRED BY ELECTRICAL

FURNISHED BY CONTROLS. INSTALLED BY MECHANICAL

FURNISHED AND WIRED BY ELECTRICAL INSTALLED BY MECH. FURNISHED AND INSTALLED BY MECHANICAL WIRED BY CONTROLS

FURNISHED BY CONTROLS WIRED AND INSTALLED BY ELECTRICAL

MECHANICAL SHEET INDEX

M01 MECHANICAL COVER SHEET

- M02 ENERGY COMPLIANCE
- M21 HVAC PLAN M41 MECHANICAL SCHEDULES
- M51 HVAC DETAILS
- MPS MECHANICAL AND PLUMBING SPECIFICATIONS

MECHANICAL GENERAL NOTES

- A. ALL WORK SHALL COMPLY WITH THE OWNERS REQUIREMENTS, AND WITH ALL APPLICABLE STATE AND LOCAL CODES, OR AUTHORITY HAVING JURISDICTION.
- B. COORDINATE INSTALLATION WITH THE WORK OF OTHER TRADES PRIOR TO STARTING. IN THE EVENT THAT CONFLICTS ARE FOUND WITH THE WORK OF OTHER TRADES, BRING ALL SUCH CONFLICTS TO THE ARCHITECT'S ATTENTION FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK IN THAT AREA. DEFICIENCIES CAUSED BY FAILURE TO PERFORM SUCH VERIFICATIONS SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO OWNER. IMMEDIATELY NOTIFY ARCHITECT OF CONDITIONS IN CONFLICT WITH THE PLANS.
- C. HVAC CONTRACTOR IS RESPONSIBLE FOR COORDINATING FINAL LOCATIONS OF DIFFUSERS. REGISTERS AND GRILLES WITH ARCHITECTURAL REFLECTED CEILING PLANS. CONTRACTOR SHALL NOT DEVIATE FROM REFLECTED CEILING PLAN UNLESS THERE ARE EXTENUATING JOB SITE CONDITIONS.
- D. FOR LOW PRESSURE DUCTWORK, WHERE RECTANGULAR DUCT IS INDICATED ON PLANS, EQUIVALENT SIZE ROUND DUCT MAY BE USED. EQUIVALENT SIZE RECTANGULAR DUCT MAY BE USED IN PLACE OF ROUND DUCT, EXCEPT IN EXPOSED AREAS. EQUIVALENT RECTANGULAR SIZE MAY NOT BE USED ON DUCTS EXPOSED TO VIEW OR AS INDICATED OTHERWISE.
- E. PROVIDE SEISMIC RESTRAINTS FOR ALL PIPING EQUIPMENT, AND DUCTWORK AS RECOMMENDED IN SMACNA "SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL EQUIPMENT", LATEST EDITION. CONSULT LOCAL SEISMIC CODES FOR THE SEISMIC RATING OF THE AREA IN WHICH THE PROJECT IS BEING BUILT.
- F. SUBSTITUTIONS OF EQUIPMENT OTHER THAN AS SPECIFIED SHALL BE THE COMPLETE RESPONSIBILITY OF THE HVAC CONTRACTOR. ANY ADDITIONAL ELECTRICAL, STRUCTURAL, MECHANICAL OR ARCHITECTURAL REQUIREMENTS SHALL BE PROVIDED AT NO ADDITIONAL EXPENSE TO OWNER.
- G. DEMOLITION: REMOVE ALL DUCTWORK, VAV UNITS AND AIR OUTLETS FROM THE FORMER TENANT SPACE, AND ELSEWHERE AS NECESSARY, AND DISPOSE OF OFF SITE.
- H. LOCATIONS OF POINTS OF CONNECTION TO EXISTING TENANT SUPPLY AIR DUCT ARE APPROXIMATE. VERIFY ACTUAL LOCATIONS OF ALL POINTS OF CONNECTION IN FIELD.
- PRIOR TO BIDDING, OBTAIN A COPY OF THE SPECIFICATIONS AND PLANS, VISIT THE JOB SITE, TAKE ALL NECESSARY MEASUREMENTS, NOTE EXISTING CONDITIONS, AND GATHER ALL OTHER INFORMATION NEEDED FOR AN ACCURATE BID. ALLOWANCES WILL NOT BE MADE FOR EXTRA COSTS RESULTING FROM FAILURE TO NOTE EXISTING CONDITIONS.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY TRANSITIONS TO AVOID CONFLICT WITH OTHER DUCTWORK, PIPING, STRUCTURE, ETC. AS PART OF THIS CONTRACT. WHEREVER AVAILABLE SPACE ALLOWS, OFFSETS SHALL BE MADE WITH 45 DEGREE ELBOWS WITH TURNING VANES.
- K. DUCTWORK SIZES NOTED ON DRAWINGS ARE FREE AREA SIZES. HVAC CONTRACTOR SHALL BE RESPONSIBLE TO COMPENSATE FOR INSULATION, ETC.
- L. ALL SQUARE SUPPLY DIFFUSERS SHALL BE 4-WAY THROW UNLESS INDICATED OTHERWISE ON PLAN.
- M. ALL ELBOWS ARE STANDARD RADIUS (R=3W/2) UNLESS NOTED OTHERWISE. DO NOT SUBSTITUTE MITERED ELBOWS FOR RADIUS ÉLÉOWS UNLESS APPROVED IN WRITING BY THE ENGINEER OF RECORD.
- N. PROVIDE ACCESS DOORS IN DUCTWORK FOR RESETTING OF FIRE/SMOKE DAMPERS WHERE INDICATED AND AS REQUIRED BY SPECIFICATIONS OR CODE.
- 0. FIRE DAMPERS SHALL BE 1-1/2 HOUR RATED UNLESS OTHERWISE NOTED.
- RE: DIVISION 23 SECTION "AIR DUCT ACCESSORIES" FOR SPECIFICATIONS. P. ALL WIRING, PIPING, AND EQUIPMENT INSTALLED IN PLENUMS SHALL BE PLENUM RATED OR INSTALLED IN CONDUIT.
- Q. THERMOSTATS, TEMPERATURE SENSORS, AND CO2 SENSORS SHALL BE INSTALLED AT 48" AFF UNLESS NOTED OTHERWISE. COORDINATE JUNCTION BOX INSTALLATION WITH ELECTRICAL CONTRACTOR.
- R. PIPING PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE FIRESTOPPED IN ACCORDANCE WITH 2018 IBC SECTION 714.
- S. OUTSIDE AIR INTAKES SHALL BE INSTALLED WITH A MINIMUM SEPARATION OF 10'-0" FROM ALL EXHAUST AIR DISCHARGE, GAS FLUES, AND PLUMBING VENTS.
- . MATERIALS UTILIZED WITHIN RETURN PLENUMS SHALL HAVE A FLAME-SPREAD INDEX OF NOT MORE THAN 25, AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50.
- U. ALL EXPOSED DUCTWORK SHALL BE PAINTED PER ARCHITECTURAL CEILING PLANS. COORDINATE WITH CONSTRUCTION MANAGER.
- V. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

SUBMITTAL REVIEW NOTES

- A. STRICT ADHERENCE TO AIA A201 WILL BE OBSERVED WHEN REVIEWING ALL SUBMITTALS. OBTAIN A COPY AND BE FAMILIAR WITH CONTRACTOR RESPONSIBILITIES WHEN SUBMITTING ON PROPOSED PRODUCTS. ANY SUBMITTAL NOT MARKED AS BEING IN CONFORMANCE WITH THE CONTRACT DOCUMENTS WILL BE RETURNED "NOT REVIEWED".
- B. SUBMITTALS MUST BE BROKEN OUT ACCORDING TO SPECIFICATION SECTION. COMBINED SUBMITTALS WITH MULTIPLE SPECIFICATION SECTIONS WILL BE RETURNED "NOT REVIEWED". C. SUBMITTALS MUST INCLUDE ONLY INFORMATION RELEVANT TO THE PROJECT AND BE CLEARLY MARKED WHAT THE PROPOSED PRODUCTS ARE. EXCESSIVELY LENGTHY SUBMITTALS INCLUDING COPIOUS AMOUNTS OF IRRELEVANT INFORMATION AND/OR NOT CLEARLY MARKED WILL BE RETURNED "NOT REVIEWED".
- D. SUBMITTALS FOR VALUE ENGINEERING ITEMS NEGOTIATED BETWEEN THE CONTRACTOR AND THE OWNER WILL BE RETURNED "NOT REVIEWED". THE CONTRACTOR ASSUMES COMPLETE RESPONSIBILITY AND LIABILITY FOR VALUE ENGINEERING ITEMS NOT APPROVED BY THIS OFFICE. E. THE CONTRACTOR MAY SUBMIT UP TO FIVE SUBMITTALS TO THE OFFICE AT ANY ONE TIME.
- THESE FIVE SUBMITTALS WILL BE RETURNED WITHIN FIVE BUSINESS DAYS. IF MORE THAN FIVE SUBMITTALS ARE IN FOR REVIEW AT ANY ONE TIME, ONE ADDITIONAL BUSINESS DAY WILL BE REQUIRED FOR EACH SUBMITTAL. F. EXPEDITED REVIEW FOR LONG LEAD ITEMS WILL BE PERFORMED AT OUR DISCRETION. PAST
- EXPERIENCE WITH THE SUBMITTING CONTRACTOR WILL BE A FACTOR IN OUR DECISION TO PERFORM AN EXPEDITED REVIEW.

Reduced Lighting Power, 1.0 credit Mechanical Systems List Quantity System Type & Description

1 2 - Ton Heat Pump (Single Zone): Split System Heat Pump Heating Mode: Capacity = 26 kBtu/h, Proposed Efficiency = 10.40 HSPF, Required Efficiency = 8.20 HSPF Cooling Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 19.00 SEER, Required Efficiency: 14.00 SEER Fan System: 2 - Ton Heat Pump | Janitor 117 -- Compliance (Motor nameplate HP method) : Passes Fans: FC1 Supply, Constant Volume, 800 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade

1 3.5 - Ton Heat Pump (Single Zone): Split System Heat Pump Heating Mode: Capacity = 48 kBtu/h, Proposed Efficiency = 10.00 HSPF, Required Efficiency = 8.20 HSPF Cooling Mode: Capacity = 42 kBtu/h, Proposed Efficiency = 15.40 SEER, Required Efficiency: 14.00 SEER Fan System: 3.5 - Ton Heat Pump | Mechanical Storage 205 -- Compliance (Motor nameplate HP method) : Passes Fans: FC2 Supply, Constant Volume, 1485 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade

2 4 - Ton Heat Pump (Single Zone): Split System Heat Pump Heating Mode: Capacity = 54 kBtu/h, Proposed Efficiency = 11.00 HSPF, Required Efficiency = 8.20 HSPF

Project Title: ITD Maintenance BLDG. Improvements

COMcheck Software Version 4.1.5.5 Mechanical Compliance Certificate

2018 IECC ITD Maintenance BLDG. Improvements Caldwell, Idaho 5b New Construction

Designer/Contractor:

200 W. Broad St. Boise, ID 83702

Owner/Agent:

Joseph Huff CSHQA

Report date: 01/20/23 Data filename: Q:\2022\22123.0_Idaho_Trans_Dept_Dist_3_Caldwell_ID\70 HVAC\05_Calcs\22123 - ITD Page 1 of 17 Maintenance Building.cck Quantity System Type & Description Cooling Mode: Capacity = 48 kBtu/h, Proposed Efficiency = 14.00 SEER, Required Efficiency: 14.00 SEER Fan System: 4 - Ton Heat Pump | Open Office 109 -- Compliance (Motor nameplate HP method) : Passes Fans: FC3 Supply, Constant Volume, 1600 CFM, 0.5 motor nameplate hp, 0.0 fan efficiency grade FC4 Supply, Constant Volume, 1600 CFM, 0.5 motor nameplate hp, 0.0 fan efficiency grade 3 EH (1-3) - Electric Heater (Single Zone): Heating: 3 each - Unit Heater, Electric, Capacity = 4 kBtu/h No minimum efficiency requirement applies Fan System: EH (1-3) - Electric Heater | EH1 - STORAGE 119, EH2 - SUPPLIES 113, EH3 - ROOM 112 -- Compliance (M nameplate HP method) : Passes Fans:

otor EH1 Supply, Single-Zone VAV, 65 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade EH2 Supply, Constant Volume, 65 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade EH3 Supply, Constant Volume, 65 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade Heating: 9 each - Unit Heater, Gas, Capacity = 105 kBtu/h Proposed Efficiency = 83.00% Ec, Required Efficiency: 80.00 % Ec Fan System: UH (1-9) - Unit Heater | UH (1-9) - SHOP AREA 116 -- Compliance (Motor nameplate HP method) : Passes Fans: UH1 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH2 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH3 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH4 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH5 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH6 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH7 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH8 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade UH9 Supply, Constant Volume, 1345 CFM, 0.3 motor nameplate hp, 0.0 fan efficiency grade Electric Storage Water Heater, Capacity: 55 gallons w/ Circulation Pump Proposed Efficiency: 0.79 SL, %/h (if > 12 kW), Required Efficiency: 0.79 SL, %/h (if > 12 kW) Jonn Hup 1/20/2023 Joseph Huff Date Report date: 01/20/23

9 UH (1-9) - Unit Heater (Single Zone): 1 Water Heater 1: Mechanical Compliance Statement *Compliance Statement:* The proposed mechanical design represented in this document is consistent with the building p specifications, and other calculations submitted with this permit application. The proposed mechanical systems have belans, designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandato requirements listed in the Inspection Checklist. Name - Title Project Title: ITD Maintenance BLDG. Improvements Data filename: Q:\2022\22123.0_Idaho_Trans_Dept_Dist_3_Caldwell_ID\70 HVAC\05_Calcs\22123 - ITD Page 2 of 17 Maintenance Building.cck

1 FIRST FLOOR HVAC PLAN SCALE: 1/8" = 1'-0"

- TURNING VANES.

- OR INSTALLÉD IN CONDUIT.
- ELECTRICAL CONTRACTOR.
- ACCORDANCE WITH 2015 IBC SECTION 713.

- MINIMUM OF 50° TEMPERATURE IN SPACE.

		LOCA	TION	INSUL	ATION	
PLENUM OR DUCTWORK TYPE		INDOOR	OUTDOOR	DENSITY (PCF)	THICKNESS (INCHES)	JACKET
Rectangular Supply, Outside Air Ductwork, and Retum Ductwork in	Rigid Mineral Fiber	X		3	1.5	All-Service
Mechanical Rooms, All Exposed Areas and Duct Shafts	Board	*****	X	6	2	- -
	Rigid Mineral Fiber	Х		3	1.5	All-Service
Destangular Supply Outside Air Dustwald, and Datum Dustwald, in	Board		X	6	2	+
Concealed Areas			C	DR		
	Minoral Eibor Wron	Х		0.75	2.25	All-Service
			X	0.75	2.25	+
Outside Air Intake, Pelief and Exhaust Plenums	Rigid Mineral Fiber	Х		6	2	
Outside Air Intake, Reier and Exhaust Flendins	Board		X	6	2	
Louver Blank-Off Panels	Rigid Mineral Fiber Board	Х		6	2	Galvanized Sheet Metal (Two Sides)
Round and Flat-Oval Supply, Outside Air Ductwork, and Return		X		0.75	2.25	
Ductwork in Mechanical Rooms	Mineral Fiber Wrap		X	0.75	2.25	All-Service +
Emergency or Standby Power Generator Air IntakePlenum, Intake Ductwork and Intake Attenuator	Rigid Mineral Fiber Board	х		6	1.5	All-Purpose Jacket with Vapor Barrier
Ductwork Requiring Noise Transmission Control (as indicated on the Drawings)	Rigid Mineral Fiber Board	х		6	2	Noise Barrier Jacket

final coat of mastic covering the cloth completely. As an alternate, cover insulation board with corrugated rolled aluminum jacketing installed in strict accordance with manufacturer's recommendations. ++ = Use double-layer application of two 2 inch thick panels to ensure overlapping of all seams and joints to minimize heat loss and hot spots.

INSULATION SPECIFICATION:

Rigid and Semi Rigid Mineral Fiber Board (w/ vapor barrier): ASTM C 612, k = 0.23 Btu-in/h-ft2 at 75°F Mineral Fiber Wrap (w/ vapor barrier): ASTM C 553, k = 0.27 Btu-in/h-ft2 at 75°F

Calcium Silicate: ASTM C 533, k = 0.38 Btu-in/h-ft2 at 100°F

Ceramic Fiber Blanket: k = 0.27 Btu-in/h-ft2 with a melting point of 3200°F and a 3-hour fire rating for 5-inch thickness when tested in accordance with ASTM E119 **Thermal Insulating Wool:** k = 0.22 Btu-in/h-ft2 at 100°F Flexible Cellular: ASTM C 534, k = 0.27 Btu-in/h-ft2 at 75°F

SPLIT	SYSTEM H	HEAT P	UMP SC	HEDU	LE																								
		BASIS OF D	ESIGN				Τ	T				COOL	ING CAP	ACITY			HEA		APACITY	7	T			ELECTRICAL	DATA				
MARK	MANUFACTURER	FAN COIL MODEL	CONDENSING UNIT	OPERATING WEIGHT	FCU LOCATION	CONDENSING UNIT LOCATION	AREA AND/OR BLDG SERVED	SUPPLY AIR FLOW	MIN. OUTSIDE	E EXT STATIC PRESSURE	MIN TOTAL CAPACITY	MIN	E Db	EAT Wb	OSA DESIGN TEMP	MIN. I CAPA	HEAT ACITY	AT DB	LAT Db	OSA DESIGN TEMP	IN	DOOR FAN	OUTDO	OOR UNIT FAN	МСА	моср	PHASE	VOLT	REMAR
				LBS	-			CFM	CFM	IN	МВН		°F	°F	°F	ME	вн	°F	°F	°F	FLA	CONTROL	w	CONTROL	_				
FC-1	TRANE	TPVA0A024	-	141	JANITOR 117	-	OFFICE	800	88	0.8	24	19	77	61	96	26.	.00	58	94	2	3.3	THERMOSTAT	г –	-	-	-	-	-	1-7
HP-1	TRANE	-	TRUZH024	190	-	OUTSIDE	-	-	-	-	-	-	-	-	96	-	-	-	-	2	-	-	74	INDOOR	17	27	1	208	1-7
FC-2	TRANE	TPVA0A042	-	172	MECHANICAL STORAGE 205	-	OFFICE	1485	330	.8	42	15.4	79	63	96	48.	.00	59	95	2	4.5	THERMOSTAT	г -	-	-	-	-	-	1-7
HP-2	TRANE	-	TRUZH042	283	-	OUTSIDE	-	-	-	-	-	-	_	-	96		-	-	-	2	_	-	74	INDOOR	36	44	1	208	1-7
FC-3	TRANE	TPEFYP048MA	-	86	OPEN OFICE 109	-	OFFICE	1600	320	.6	48	14	79	63	96	54.	.00	52	88	2	3.5	THERMOSTAT	г –	_	4	15	1	208	1-7
HP-3	TRANE	-	TUMYP048	271	-	OUTSIDE	-	-	-	-	-	-	-	-	96	-	-	-	-	2	-	-	74	INDOOR	29	44	1	208	1-7
FC-4	TRANE	TPEFYP048MA	-	86	STORAGE 114	-	OFFICE	1600	200	.6	48	14	77	61	96	54.	.00	57	95	2	3.5	THERMOSTAT	г -	-	4	15	1	208	1-7
HP-4	TRANE	-	TUMYP048	271	-	OUTSIDE	-	-	-	-	-	-	-	-	96	-	-	-	-	2	_	-	74	INDOOR	29	15	1	208	1-7
REMARKS	 REFRIGERANT LINES SI PROVIDE WITH LOW AN FURNISH CONDENSING INDOOR UNIT POWER S FUNRISH INDOOR UNIT ' FURNSIH INDOOR UNIT ' 	HALL BE SIZED AND IBIENT CONTROLS (UNIT WITH BASE PA HALL NOT BE FED F WITH DRAIN PAN WI WITH BLUE DIAMON	INSTALLED PER THE (0°F). AN HEATER, 12" UNIT : FROM CONDENSING U ITH LEVEL SENSOR/C ID CONDENSATE PUM	MANUFACTUREF STAND WIND BAF JNIT. SEPARATE (ONTROL. P WITH RERVIOR	S WRITTEN INSTI FLES DRIAN PAN CONNECTIONS AR AND SENSOR.	AND SOCKET. REQUIRED.	ELOPED LINE LENGTH.				-																		

ELECTRIC UNIT HEATER SCHEDULE

		BASIS OF DESIGN											DOV			
MARK			OPERATING WEIGHT		MOUNTING	TYPE		HEAT INPUT	DEALER	POWER			POV	VER		REMARKS
	MANUFACTURER		LBS				CFM	ĸw	PHASE	VOLT	BTUH	AMP	FAN HP	PHASE	VOLT	
EH-1	MARKEL	CWH1101DS	10	MECHANIC STORAGE 119	WALL	ELEC. FORCED AIR	65	1	-	_	3413	8.4	-	1	120	1-3
EH-2	MARKEL	CWH1101DS	10	SHOP SUPPLIES 113	WALL	ELEC. FORCED AIR	65	1	-	-	3413	8.4	-	1	120	1-3
EH-3	MARKEL	CWH1101DS	10	DECON ROOM 112	WALL	ELEC. FORCED AIR	65	1	-	-	3413	8.4	-	1	120	1-3
REMAF	RKS 1. FURNISH WITH LOW-VOI	LTAGE THERMOSTAT.														

2. FURNISH WITH 2V TRASNFORMER 3. FURNISH WITH WALL MOUNTING KIT

FUEL FIRED UNIT HEATER SCHEDULE

		BASIS OF DESIGN						EAT	HEATING (SCH	EDULED VALUES ALTITUDE, 3	S HAVE BEEN 2441 FT)	DERATED FOR				۰۸۱		
MARK	MANUFACTURER	MODEL NUMBER	OPERATING WEIGHT	LOCATION	BLDG SERVED	FUEL			INPUT CAPACITY	OUTPUT CAPACITY	EFF.	TEMP. RISE						REMARKS
			LBS	_			CFM	°F	MBH	MBH	%	°F	HP	VOLT	PHASE	FLA	MOCP	1
UH-1-9	REZNOR	UDAP	96	-	SHOP AREA 116	PROPANE	1345	-	105	87.2	83	60	0.25	115	1	3.9	15	1, 2, 3, 4
REMARKS		-							····									
	1. FURNISH WITH SINGLE-	/OLTAGE THERMOSTAT.																

2. FURNISH WITH CEILING SUSPENSION KIT.

3. FURNISH WITH GAS CONVERSION KIT (NATURAL AND PROPANE)

4. FURNISH WITH TWO STAGE PROPANE GAS VALVE

FAN SC	CHEDULE	PASIS			I		1			EAN					MOTO					T	T
MARK	MANUFACTURER	QUANTITY	MODEL NUMBER	OPERATING WEIGHT	LOCATION	AREA AND/OR BLDG SERVED	SYSTEM AND/OR SERVICE	AIR FLOW	ESP	TYPE	DRIVE	FAN MAX	NOMINA		PHASE		RPM	SPEED	DAMPER	CONTROL SEQUENCE	REN
				LBS	-			CFM	IN				BHP	HP (W)	-			CONTROL			
EF-1	GREENHECK	2	G-070-VG	20	ROOF	TOILET EXHAUST	RESTROOM EXHAUST	300	.25	CENTRIFUGAL	DIRECT	1669	.03	1/15	1	115	-	-	BACK DRAFT	TIMECLOCK	
EF-2	GREENHECK	4	SP-A90	12	CELING	TOILET /ROOM EXHAUST	RESTROOM / JANITOR EXHAUST	75	.25	CENTRIFUGAL	DIRECT	900	-	14	1	115	-	_	BACK DRAFT	TIMECLOCK	
REMARKS		/1	÷								-										

1. PREFAB ROOF CURB SLOPED TO MATCH ROOF. REFER TO ARCHITECTURAL DRAWINGS.

2. WEATHER PROOF DISCONNECT SWITCH. 3. BIRDSCREEN

4. FURNISH WITH GRAVITY BACK DRAFT DAMPER.

5. TIMECLOCK FAN WITH LIGHTING CONTROLS TO MATCH BUILDING OCCUPIED HOURS. COORDINATE WITH ELECTRICAL CONTRACTOR.

VVALL			•	l	I	1	1	1	FRAME		[BRAY		Г	1
MARK	BASIS		LOCATION		ТҮРЕ	APPLICATION	WIDTH	HEIGHT	DEPTH	FREE AREA	AIR FLOW	VELOCITY	APD	DAMPER TYPE	REMARKS
	MANUFACTURER	MODEL NUMBER		SERVICE			IN	IN	IN	FT ²	CFM	FPM	IN		
LVR-1	GREENHECK	ESD-202	MEZZANINE	EXHAUST	DRAINABLE	EXHAUST	8	8	2	0.09	75	851	0.09	N/A	1
LVR-2	GREENHECK	ESD-202	LEVEL 1	VENTILATION	DRAINABLE	AIR INTAKE	12	12	2	0.22	88	360	0.02	N/A	1
LVR-3	GREENHECK	ESD-202	LEVEL 1, MEZZ.	VENTILATION	DRAINABLE	AIR INTAKE	16	16	2	0.51	330	630	0.05	N/A	1
LVR-4	GREENHECK	ESD-202	LEVEL 1	VENTILATION	DRAINABLE	AIR INTAKE	14	14	2	0.33	200	575	0.04	N/A	1
REMARKS															/1

7.FURNISH UNIT WITH 24 VOLT INTERFACE KIT AND 7 DAY PROGRAMMABLE ELECTROINC THERMOSTAT. CONTROLS SHALL HAVE 5 DEGREE DEADBAND, AUTO SETBACK, AND MANUAL OVERIRDE.

	BASIS O	F DESIGN				AIR I	FLOW	MAX APD		FRAME SIZE	FACE SIZE	NECK SIZE				
MARK	MANUFACTURER	MODEL NUMBER	DESCRIPTION	ТҮРЕ	MATERIAL	MIN CFM	MAX CFM	IN WG	MOUNTING	IN x IN	IN x IN	IN	NC	DAMPER	FINISH	REMARKS
CD-1	TITUS	TDC	SUPPLY DIFFUSER	LOUVERED FACE	STEEL	174	209	0.059	CEILING	24 x 24	12 x 12	8 ø	16	NONE	WHITE	1-4
SG-1	TITUS	271RS	SUPPLY GRILLE	AEROBLADE	STEEL	123	287	0.089	SURFACE	14 x 8	12 x 6	12 x 6	18	OBD	WHITE	1-3
DG-1	TITUS	S301FS	DUCT MTD GRILLE	LOUVERED FACE	ALUMINUM	102	170	0.077	DUCT	17 1/2 x 5 3/4	16 x 4	-	12	NONE	WHITE	1-3
DG-2	TITUS	S301FS	DUCT MTD GRILLE	LOUVERED FACE	ALUMINUM	129	258	0.022	DUCT	15 1/2 x 7 3/4	14 x 6	-	19	NONE	WHITE	1-3
DG-3	TITUS	S301FS	DUCT MTD GRILLE	LOUVERED FACE	ALUMINUM	156	312	0.022	DUCT	15 1/2 x 7 3/4	14 x 6	-	20	NONE	WHITE	1-3
DG-4	TITUS	S301FS	DUCT MTD GRILLE	LOUVERED FACE	ALUMINUM	156	260	0.022	DUCT	17 1/2 x 7 3/4	16 x 6	-	14	NONE	WHITE	1-3
SG-2	TITUS	271RS	SUPPLY GRILLE	AEROBLADE	STEEL	216	288	0.029	SURFACE	14 x 10	12 x 10	12 x 10	-	OBD	WHITE	1-3
SG-3	TITUS	271RS	SUPPLY GRILLE	AEROBLADE	STEEL	216	504	0.089	SURFACE	14 x 10	12 x 10	12 x 10	21	OBD	WHITE	1-3
SG-4	TITUS	271RS	SUPPLY GRILLE	AEROBLADE	STEEL	57	95	0.045	SURFACE	8 X 8	6 X 6	6 x 6	-	OBD	WHITE	1-3
RG-1	TITUS	50F	RETURN GRILLE	EGGCRATE	STEEL	-	1449	0.073	SURFACE	20 x 20	18 x 18	-	19	NONE	WHITE	1-3
RG-2	TITUS	50F	RETURN GRILLE	EGGCRATE	STEEL	-	945	0.073	SURFACE	20 x 14	18 x 12	-	19	NONE	WHITE	1-3
RG-3	TITUS	50F	RETURN GRILLE	EGGCRATE	STEEL	-	945	0.073	CEILING	20 x 14	18 x 12	-	19	NONE	WHITE	1-3
REMARKS	 VERIFY CEILING AND WALI SEE FLOOR PLAN FOR THR PROVIDE 24x24 LAY-IN MOD PROVIDE SQUARE TO ROUI 	- CONSTRUCTION ON ARCHITE OW PATTERN. ULE FRAME IN LAY-IN CEILING ND ADAPTER.	CTURAL DRAWINGS . PROVIDE	CORRECT FRAME TYPES.												

CODE REQUIRED OUTSIDE AIR VENTILATION RATES (2018 IMC)

		1	1	1			1 1	1	1		1	
ZONE & AREA	OCCUPANCY CATEGORY	NET AREA SQ. FT.	AREA OUTDOOR AIR RATE CFM/SQ. FT.	CODE REQ'D CFM BASED ON FLOOR AREA	NO. OF PEOPLE	PEOPLE OUTDOOR AIR RATE CFM/PERSON	CODE REQ'D CFM BASED ON PEOPLE	TOTAL OSA CFM REQUIRED BY CODE	ZONE AIR DIST. EFF.	SPACE OUTDOOR AIR CFM	DESIGN OSA CFM PROVIDED	REMARKS
FCU-1	1		1	1		1				1	· · · · · · · · · · · · · · · · · · ·	
BREAK RM. 104	OFFICE SPACE: BREAK ROOM	329	0.06	20	10	5	50	70	0.8	88	88	
						1			TOTAL=	88	88	
FCU-2	1	1				1			1			
WORK SPACE 201	OFFICE SPACE	286	0.06	18	8	5	40	58	0.8	73	85	
BREAK ROOM 202	OFFICE SPACE: BREAK ROOM	597	0.06	36	15	5	75	111	0.8	139	150	
LOCKERS 203	STORAGE	199	0.12	24	0	0	0	24	0.8	30	30	
FORMAN OFFICE 204	OFFICE SPACE	233	0.06	14	2	5	10	24	0.8	30	50	
MECH 205	STORAGE	90	0.12	11	0	0	0	11	0.8	14	15	
JANITOR 206	STORAGE (NOT OCCUPIED)	22	0.12	3	0	0	0	3	0.8	4	0	75 CFM EXHAUST
UNISEX 207	TOILET	57	0	0	0	0	0	0	0.8	0	0	75 CFM EXHAUST
									TOTAL=	289	330	
FCU-3	-		-									
WORK STATION 9	OFFICE SPACE	67	0.06	5	1	5	5	10	0.8	13	40	
WORK STATION 10	OFFICE SPACE	83	0.06	5	1	5	5	10	0.8	13	40	
WORK STATION 11	OFFICE SPACE	83	0.06	5	1	5	5	10	0.8	13	40	
OFFICE 103	OFFICE SPACE	130	0.06	8	2	5	10	18	0.8	23	50	
CONFERNCE 102	OFFICE SPACE	146	0.06	9	4	5	20	29	0.8	36	90	
CORRIDOR 101	GENERAL	349	0.06	21	0	0	0	21	0.8	26	60	
					-				TOTAL=	123	320	
FCU-4	-		-		1	-			1	-		
COPY 108	OFFICE SPACE	150	0.06	9	1	5	5	14	0.8	18	25	
OPEN OFFICE 109	OFFICE SPACE	1129	0.06	68	10	5	50	118	0.8	148	175	
									TOTAL=	165	200	
FCU-5		1									1	
MECHANIC OFFICE 118	OFFICE SPACE	87	0.06	6	1	5	5	11	0.8	14	15	
									TOTAL=	14	15	

5 CEILING MOUNTED EXHAUST FAN DETAIL SCALE: NTS

1 ROUND DUCT SUPPORT DETAIL SCALE: NTS

PROVIDE SEISMIC-BRACING AT ALL

FAN COILS. SEE SPECIFICATIONS FOR SEISMIC DESIGN CRITERIA.

AIR FLOW

SA DUCT-/ DUCT TRANSITION -FLEX CONNECTION -FAN COIL UNIT ------

3 GRILLE ON CMU WALL DETAIL SCALE: NTS

7 GAS FIRED UNIT HEATER DETAIL SCALE: NTS

9 FAN COIL UNIT MOUNTING DETAIL SCALE: NTS

4 CEILING DIFFUSER CONNECTION DETAIL SCALE: NTS

SECTION 220500 - BASIC MECHANICAL REQUIREMENTS

PART 1 – GENERAI

- 1.1 GENERAL
- A. REFER TO THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND DIVISION 1 GENERAL REQUIREMENTS.
- 1.2 SCOPE OF WORK
- A. PROVIDE ALL DETAILED DESIGN AND COORDINATION, LABOR, EQUIPMENT, AND MATERIALS THAT ARE REQUIRED TO PROVIDE A COMPLETE INSTALLATION AND COMPLETE OPERATING SYSTEM(S) AS INDICATED ON THE DRAWINGS AND AS DESCRIBED IN THESE SPECIFICATIONS INCLUDING THAT REASONABLY INFERRED FOR
- PROPER EXECUTION OF WORK AND SYSTEM OPERATION. B. PROVIDE CUTTING, PATCHING EXCAVATION AND BACK FILL AS REQUIRED FOR EXECUTION OF WORK
- PERFORMED UNDER THIS SECTION UNLESS SPECIFICALLY PROVIDED FOR UNDER OTHER SECTIONS. C. COORDINATE WITH WORK PERFORMED BY OTHER SECTIONS IN ORDER TO ACCOMMODATE THE REQUIREMENTS OF THIS SECTION AND TO ENSURE ADEQUATE SPACE AND PROPER LOCATION FOR ALL NECESSARY WORK ON THIS PROJECT WHETHER OR NOT WORK IS UNDER THIS SECTION. PROVIDE COORDINATION DRAWINGS AS NFCFSSARY. 1. SPACE PREFERENCE: CAREFULLY CHECK AND COORDINATE THE LOCATION AND LEVEL OF ALL PIPES, DUCTS, ETC. RUN PRELIMINARY LEVELS AND CHECK WITH ALL TRADES SO THAT CONFLICTS IN ALL LOCATIONS MAY BE AVOIDED. WHERE CONFLICTS OCCUR, IF ANY, THE FOLLOWING PREFERENCE
- SCHEDULE SHALL BE FOLLOWED: a. RECESSED ELECTRICAL LIGHT FIXTURES. b. DUCTWORK.
- c. SPRINKLER PIPING. d. SOIL, WASTE, VENT AND STORM PIPING.
- e. REFRIGERATION PIPING. f. DOMESTIC WATER PIPING
- g. ELECTRICAL CONDUITS. 2. HOWEVER, NO DUCTWORK OR REFRIGERANT LINES SHALL HAVE PREFERENCE OVER PLUMBING LINES BELOW PLUMBING FIXTURES, OR OVER ELECTRICAL CONDUITS ABOVE OR BELOW ELECTRIC SWITCHGEAR AND PANELS. NO PIPING CONVEYING FLUIDS SHALL BE INSTALLED DIRECTLY OVER ELECTRICAL EQUIPMENT.
- D. PROVIDE ALL NECESSARY RIGGING, EQUIPMENT AND MANPOWER TO SET EQUIPMENT AND MATERIALS IN PLACE AND TO REMOVE DEMOLISHED EQUIPMENT AND MATERIALS FROM THE SITE. E. PROVIDE ALL SEISMIC RESTRAINTS REQUIRED BY CODE, FOR ALL EQUIPMENT, DUCT, PIPE, AND MATERIALS FURNISHED UNDER THIS SECTION. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE RESTRAINTS AND FOR PROOF OF ADEQUACY OF THE RESTRAINTS AND SHALL SUBMIT SIGNED SEISMIC CALCULATIONS
- PREPARED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER, WHERE REQUIRED. F. PROVIDE LAYOUT OF EQUIPMENT SUPPORTS, PIPING, AND DUCTWORK.
- G. PROVIDE COMPLETE START-UP, CHECK-OUT, TESTING, AIR/WATER BALANCE AND CERTIFICATION OF SYSTEMS. TEST AND BALANCE TO BE PERFORMED BY AN INDEPENDENT, QUALIFIED FIRM.
- H. PROVIDE COMPLETE TEMPERATURE AND EQUIPMENT CONTROL SYSTEMS AS INDICATED. I. PROVIDE COLD AND HOT WATER SYSTEMS, GAS, PLUMBING WASTES, VENTS, INDIRECT DRAINS, RAIN LEADERS AND CONNECTIONS TO SITE PLUMBING AS REQUIRED
- J. PROVIDE PLUMBING EQUIPMENT, FIXTURES, AND TRIM AS INDICATED HEREIN AND ON THE DRAWINGS. PROVIDE ROUGH IN AND ALL FINAL CONNECTIONS TO EQUIPMENT AND FIXTURES. PROVIDE CHROME PLATED STOPS AND SUPPLIES AND ESCUTCHEON PLATES, SERVICE STOPS, AND ACCESS PANELS FOR ALL FIXTURES
- AND EQUIPMENT K. PROVIDE ALL PLUMBING ITEMS REQUIRED FOR COMPLETE AND PROPERLY OPERATING PLUMBING INSTALLATION IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.
- 1.3 CODES AND STANDARDS
- A. THE WORK INSTALLED UNDER THIS SECTION SHALL CONFORM TO ALL APPLICABLE LOCAL CODES, REGULATIONS, LOCAL CODE AMENDMENTS AND STANDARDS. B. DO NOT CONSTRUE ANYTHING CONTAINED IN THESE SPECIFICATIONS OR DRAWINGS TO PERMIT WORK TO BE INSTALLED THAT DOES NOT CONFORM TO CODE.
- 1.4 DRAWINGS AND SPECIFICATIONS
- A. THE DRAWINGS PROVIDED ARE SCHEMATIC IN NATURE. ABSOLUTE ACCURACY OF THE DRAWINGS AND SPECIFICATIONS CAN NOT BE GUARANTEED. WHILE REASONABLE EFFORT HAS BEEN MADE TO COORDINATE THE LOCATION OF EQUIPMENT AND MATERIALS WITH THE STRUCTURE AND OTHER TRADES, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE EXACT REQUIREMENTS AND LOCATIONS AS GOVERNED BY ACTUAL JOB CONDITIONS. CHECK ALL INFORMATION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE FABRICATION AND IN TIME TO AVOID ANY UNNECESSARY CHANGES.
- 1.5 GUARANTEE AND WARRANTIES
- A. ALL MATERIALS, PARTS, EQUIPMENT, MODIFICATIONS MADE, AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE OF WORK. SHOULD SUCH PARTS, MATERIALS, OR WORKMANSHIP BE FOUND TO BE DEFECTIVE DURING THIS PERIOD, THEY SHALL BE RECTIFIED AT NO COST TO THE OWNER.
- 1.6 FEES
- A. PROVIDE, PROCURE, AND PAY FOR ALL PERMITS, SERVICES, METERS, LICENSES, FEES, ETC., REQUIRED FOR PERFORMANCE OR WORK OF THIS SECTION. THIS INCLUDES COORDINATION WITH UTILITY PROVIDERS FOR PROPER PHASING OF INSTALLATION. B. UPON COMPLETION OF THE WORK, DELIVER TO THE ARCHITECT, ALL CERTIFICATES OF APPROVAL SIGNED BY THE CONTROLLING AUTHORITIES.
- 1.7 SUBMITTAL DATA
- A. COMPLETE SUBMITTAL DATA SHALL BE FURNISHED ON ALL MECHANICAL AND PLUMBING ITEMS WHETHER AS SPECIFIED OR PROPOSED AS ALTERNATES. THE SUBMITTALS SHALL BE SUBMITTED ELECTRONICALLY. B. EQUIPMENT, MATERIALS, AND PRODUCTS SPECIFICALLY IDENTIFIED, DESCRIBED, OR SCHEDULED ON THE DRAWINGS AND NAMED FIRST IN THE SPECIFICATIONS ARE THE BASIS OF DESIGN. THE OTHER
- MANUFACTURERS OR SUPPLIERS WHICH MAY BE NAMED IN THE SPECIFICATION ONLY INDICATE THE GENERAL ACCEPTABILITY OF THE MANUFACTURER OR SUPPLIER AND ARE CONSIDERED SUBSTITUTIONS. C. THIS CONTRACTOR ASSUMES FULL RESPONSIBILITY THAT ALTERNATIVE ITEMS SUBSTITUTED FOR THE FIRST NAMED MANUFACTURER WILL MEET THE JOB REQUIREMENTS AND IS RESPONSIBLE FOR THE COST OF REDESIGN AND MODIFICATIONS NECESSARY DUE TO THIS SUBSTITUTION.
- 1.8 RECORD DRAWINGS
- A. RECORD OF JOB PROGRESS: KEEP AN ACCURATE, DIMENSIONAL RECORD OF THE AS-BUILT LOCATIONS OF ALL WORK B. FINAL AS-BUILT REPRODUCIBLE DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT AND OWNER PRIOR TO FINAL ACCEPTANCE.
- 1.9 OPERATING AND MAINTENANCE INSTRUCTIONS
- A. FURNISH THREE (3) COMPLETE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT BOUND IN A RIGID BINDER AND INDEXED. 1.10 EQUIPMENT SUPPORT AND RESTRAINTS
- A. GENERAL: ALL EQUIPMENT. PIPING. DUCTWORK. AND MATERIALS SHALL BE FASTENED TO THE STRUCTURE WITH PROPERLY SIZED AND STRUCTURALLY ENGINEERED ANCHORS, BOLTS, AND RESTRAINTS TO PREVENT PERMANENT DISPLACEMENT IN ANY DIRECTION CAUSED BY LATERAL MOTION, OVERTURNING, OR UPLIFT AS
- REQUIRED BY THE BUILDING CODE B. ALL ISOLATORS SHALL BE FASTENED TO THE STRUCTURE AND TO THE EQUIPMENT WITH PROPERLY SIZED AND STRUCTURALLY ENGINEERED ANCHORS AND BOLTS.
- C. THE ENGINEER PROVIDING THE REQUIRED CALCULATIONS SHALL INSPECT ALL SUPPORTS AND ATTACHMENTS DESIGNED BY HIM AND PROVIDE A LETTER TO ARCHITECT OF RECORD CERTIFYING THAT THEY HAVE BEEN INSTALLED AS DESIGNED.
- 1.11 RELATED WORK SPECIFIED ELSEWHERE
- A. THE FOLLOWING ITEMS ARE TO BE INCLUDED IN OTHER SECTIONS TO BE DONE BY OTHER TRADES. WHERE COORDINATION IS NECESSARY, THIS CONTRACTOR SHALL PROVIDE IT 1. ALL ELECTRICAL POWER WIRING INCLUDING FIELD CONNECTIONS. . PAINTING AND PATCHWORK.
- 3. STRUCTURAL INTERFERENCE AND PENETRATIONS.
- 1.12 START-UP SERVICES
- A. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER OPERATION OF ALL SYSTEMS, MINOR SUBSYSTEMS, AND SERVICES PROVIDED UNDER THIS DIVISION. HE SHALL COORDINATE START-UP PROCEDURES, CALIBRATION, AND SYSTEM CHECK-OUT WITH ALL SUBCONTRACTOR AND TRADES INVOLVED. ANY SYSTEM OPERATIONAL PROBLEMS SHALL BE DIAGNOSED AND ALL CORRECTIONAL PROCEDURES SHALL BE INITIATED WITH THE VARIOUS SUBCONTRACTORS AS REQUIRED TO BRING THE SYSTEM INTO COMPLIANCE WITH THE DESIGN
- INTENT B. PERSONNEL PERFORMING START-UP SERVICES SHALL BE FULLY QUALIFIED, EXPERIENCED, AND NORMALLY ENGAGED IN THIS TYPE OF WORK. IF THE CONTRACTOR DOES NOT HAVE SUCH PERSONNEL AVAILABLE FROM HIS OWN COMPANY, HE SHALL HIRE, AT HIS OWN EXPENSE, SUBCONTRACTORS WHO ARE QUALIFIED. C. THE CONTRACTOR SHALL CHECK ALL EQUIPMENT DURING THE INITIAL START-UP TO ENSURE PROPER OPERATION. ADEQUATE FLUIDS AND WATER FLOWS OR AIR FLOWS, AND VIBRATION ISOLATION. SYSTEMS SHALL BE CHECKED FOR AIR AND/OR WATER FLOWS THROUGHOUT WITHOUT BLOCKAGES. AIR HANDLING
- SYSTEMS SHALL BE CHECKED FOR PROPER DAMPER CONNECTIONS AND POSITIONS, AND MINIMAL VIBRATION. OTHER MISCELLANEOUS EQUIPMENT SHALL BE STARTED AND OPERATED AS DESCRIBED ABOVE AS APPLICABLE. D. A FINAL AND COMPLETE START-UP AND BALANCE REPORT SHALL BE SUBMITTED PRIOR TO FINAL ACCEPTANCE AND PAYMENT. THIS REPORT SHALL BE SIGNED BY EACH PERSON DOING THE START-UP TASK
- AND BY THE RESPONSIBLE FIELD PERSON. REPORT SHALL INCLUDE, BUT NOT BE LIMITED TO: DATE OF TEST: DATE OF LAST CALIBRATION: TEMPERATURES: HUMIDITIES: SET POINTS: RPM: VOLTAGE. AMPERAGE: PRESSURES; STABILITY; SUPPLY, RETURN AND OUTSIDE AIRFLOWS AT EACH UNIT AND EACH UNIT AND EACH TERMINAL; ETC. END OF SECTION 220500

SECTION 221000 - PLUMBING

- PART 1 GENERAL
- 1.1 GENERAL A. REFER TO SECTION 220500 - BASIC MECHANICAL REQUIREMENTS.
- PART 2 MATERIALS
- 2.1 VALVES
- A. ALL BALL OR BUTTERFLY VALVES FOR GENERAL USE SHALL HAVE EPT SEATS. B. GENERAL USE VALVES: 1. GATE VALVES:
- a. 1/2" THROUGH 2" SWEAT: STOCKHAM FIGURE B-108. b. 1/2" THROUGH 2" – THREADED: STOCKHAM FIGURE B–105. c. 2-1/2" AND ABOVE - FLANGED: STOCKHAM FIGURE G-634 BRONZE FITTED. 2. BALL VALVES - 1/2" THROUGH 2": HAMMOND 8000 SERIES. 3. PRESSURE REDUCING VALVES: 2" AND SMALLER - THREADED: BRONZE CONSTRUCTION, WATTS UL5B.
- 4. SAFETY AND RELIEF VALVES: WATTS NO. 740 SERIES OR WATTS NO. 174A SERIES. 5. CROSS CONNECTION CONTROL: PROVIDE BACKFLOW PREVENTION IN ACCORDANCE WITH CODE FOR EACH PIECE OF EQUIPMENT CAPABLE OF CONTAMINATING THE POTABLE WATER SYSTEM. WHERE PERMITTED BY
- C. MANUFACTURERS: HAMMOND, LEGEND, STOCKHAM, WATTS, NIBCO, WILKINS. 2.2 PIPES AND FITTINGS
- A. SANITARY SOIL, WASTE, VENT, RAIN LEADER SYSTEM:
- 1. UNDERGROUND: a. CAST IRON; ASTM A888 OR CISPI 301, SOIL, BELL AND PLAIN END WITH NEOPRENE COMPRESSION GASKETS. AB&I COUPLINGS OR "HUSKEY" COUPLINGS ARE ACCEPTABLE ALTERNATES. WRAP WITH "CALPICO" TAPE PER MANUFACTURER'S INSTRUCTION. b. (CONTRACTOR'S OPTION) WHEN CONCEALED ABOVE CEILING (NON-RETURN AIR PLENUM), IN WALLS
- PIPING WITH SOLVENT WELD FITTINGS MAY BE USED, UNLESS SHOWN OTHERWISE, IF ALLOWED BY LOCAL GOVERNING AUTHORITIES. DO NOT MIX USE OF PVC AND ABS MATERIALS. TRANSITION OF CAST IRON AS HEREAFTER SPECIFIED.
- 2. ABOVEGROUND: a. CAST IRON; ASTM A888 OR CISPI 301, SOIL, PLAIN END (NO HUB). b. (CONTRACTOR OPTION) DWV COPPER; ASTM B306 OR STEEL ASTM A53, WITH DRAINAGE PATTERN FITTINGS MAY BE USED FOR PIPE SIZES 2-1/2" AND SMALLER.
- 3. ALL VENT PIPING PROTRUDING THROUGH THE ROOF SHALL BE RESISTANT TO UV RADIATION. B. POTABLE WATER: 1. ABOVE GRADE: COPPER; ASTM B88, PRESSURE TYPE L; JOINTS SILVABRITE 100, 95 % TIN, 4 % COPPER, 0.5 % SILVER SOLDER, AND NON CORROSIVE, WATER-SOLUBLE FLUX. 2. UNDERGROUND: COPPER; PRESSURE TYPE K; ASTM B88, BRAZED JOINTS; BCUP SERIES COPPER
- DOUBLE HAND WRAP ALL JOINTS AND FITTINGS. C. CONDENSATE: 1. EXTERIOR OR RETURN AIR PLENUM: COPPER; TYPE M; ASTM B75, SOLDER JOINTS, ALLOY GRADE 95%
- TIN, 5% ANTIMONY. 2. INTERIOR OR DUCTED RETURN: PVC, ASTM D2665, SOLVENT WELD JOINTS. D. FUEL GAS PIPING:
- WROUGHT STEEL BUTT WELD FITTINGS. ALL WELDING SHALL BE BY A CERTIFIED WELDER. 2. PROVIDE CORROSION RESISTIVE PAINT ON ALL GAS PIPING. 2.3 PIPING SPECIALTIES
- A. THERMOMETERS AND WELLS: WEKSLER TYPE A, "ADJUST-ANGLE", 5" DIAL BIMETAL THERMOMETER. B. PRESSURE GAUGES: WEKSLER MODEL BA13P OR EQUAL WEISS, MARCH, OR ASHCROFT, 3-1/2" DIAMETER PHENOLCASE WITH BLACK NUMERALS ON WHITE FACE. INSTALL WITH BOLTON #B250FF BAR STOCK
- TO THE MIDPOINT OF THE DIAL RANGE AS POSSIBLE. C. TEMPERATURE AND PRESSURE TEST STATION: 1/4" OR 1/2" MPT "PETE'S PLUG" WITH SOLID BRASS
- D. AIR VENTS: HOFFMAN #79 WHERE AUTOMATIC TYPE IS SHOWN UNLESS SPECIFIED OTHERWISE. INSTALL WITH
- FOR MANUAL AIR VENT AT COILS AND AT EACH HIGH POINT IN PIPING SYSTEMS. E. FLEXIBLE PIPE CONNECTORS: FLEX HOSE, T-FLEX OR FLEXZORBER JOINTS, ARCH TYPE CONSTRUCTION OF
- APPROVED SUBSTITUTION). 2.4 PIPE INSULATION
- A. PIPE INSULATION
- 1. PREFORMED MINERAL-FIBER PIPE INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN COMPLYING WITH ASTM C547, TYPE 1, WITH FACTORY-APPLIED, ALL-PURPOSE, VAPOR-RETARDER
- JACKET. 2. APPLICATION: REFER TO THE PLUMBING PIPING INSULATION SCHEDULE FOR ALL PIPE INSULATION
- APPLICATIONS AND SIZES. 3. INSULATION INSTALLED INDOORS SHALL HAVE A FLAME/SMOKE SPREAD INDEX OF 25/50 OR LESS.
- 2.5 EQUIPMENT, PIPE SUPPORTS AND PENETRATIONS A. ALL ROTATING EQUIPMENT AND EQUIPMENT CAPABLE OF TRANSMITTING VIBRATION INTO THE SPACE SHALL BE MOUNTED ON VIBRATION ISOLATORS AND BASES OR AS SHOWN ON DRAWINGS. THE ISOLATORS AND BASES SHALL BE PROPERLY SIZED BY THE ISOLATOR MANUFACTURER, TAKING INTO ACCOUNT THE PIECE OF EQUIPMENT AND THE STRUCTURE UPON WHICH IT IS SETTING, SO THAT VIBRATION TRANSMITTED TO THE STRUCTURE IS HELD TO AN ACCEPTABLE LEVEL.
- B. OPEN SPRINGS WITH SEPARATE SNUBBERS MAY ALSO BE USED. C. THE BASES AND ISOLATORS SHALL BE AS MANUFACTURED BY MASON, KINETICS, SAUSSE, OR AMBER/BOOTH
- D. ALL ISOLATORS SHALL BE PROPERLY ADJUSTED SO THAT EQUIPMENT IS LEVEL. SNUBBERS AND SEISMIC TYPE MOUNTS ARE CENTERED. AND NO SHORT CIRCUITING OCCURS. E. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND SIZING ALL PIPING SUPPORTS. HANGERS.
- AND ACCESSORIES INCLUDING ALL ATTACHMENTS TO THE STRUCTURE. F. PROVIDE PIPE SHIELDS ANCHORS, GUIDES, AND SUPPORTS EQUAL TO GRINNELL, ELCEN, SUPERSTRUT, UNISTRUT. G. ALL HANGERS, SUPPORTS, ANCHORS, GUIDES, AND STRUCTURAL ATTACHMENTS SHALL BE INSTALLED
- ACCORDING TO GOOD STANDARD PRACTICE AND ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. H. USE CADMIUM PLATED OR GALVANIZED HANGERS, ATTACHMENTS, RODS, NUTS, BOLTS, AND OTHER
- ACCESSORIES. I. ON PIPES 1-1/4" AND SMALLER THAT ARE INSULATED, RUN THE INSULATION CONTINUOUS THROUGH THE
- UNDER THE INSULATION TO PREVENT CRUSHING.
- SUPPORTS. K. ALL ROOFTOP PIPING (GAS, COND. DRAIN, ETC.) IS TO BE SUPPORTED BY ADJUSTABLE PIPE SUPPORTS
- (MIRO, VERSABLOCK, ETC.). WOOD SUPPORTS ARE UNACCEPTABLE.

CODE, VACUUM BREAKERS MAY BE USED. USE BACKFLOW PREVENTERS IN ALL OTHER INSTANCES.

OR BELOW SLAB, EITHER PVC; ASTM D2665/F891 OR ABS; ASTM D2661/F628 SCHEDULE 40 DWV

MATERIALS SHALL OCCUR BELOW SLAB OR ABOVE CEILING. FLOOR AND WALL CLEANOUTS SHALL BE

PHOSPHORUS ALLOY BRAZED. MACHINE WRAP ALL UNDERGROUND PIPING WITH "3M" PIPE WRAP.

1. BLACK STEEL; ASTM A53, SCHEDULE 40; FITTINGS: CLASS 150 MALLEABLE IRON THREADED OR

NEEDLE VALVE. SELECT DIAL RANGE SO THAT THE NORMAL OPERATING PRESSURE WILL OCCUR AS CLOSE

FITTING CAP ON ALL SUPPLY AND RETURN PIPING TO EACH PIECE OF MECHANICAL EQUIPMENT. BOLTON #B250FF BAR STOCK NEEDLE VALVE. PROVIDE BOLTON #B250FF BAR STOCK NEEDLE VALVE COCK MOLDED NEOPRENE ELASTOMER OR TEFLON, COMPLETE WITH LIMIT BOLTS AND TIE RODS (MASON MFNC OR

HANGER AND PROVIDE GRINNELL (TYCO) FIGURE 167 (OR EQUIVALENT) GALVANIZED SHEET METAL SHIELDS J. ON PIPES 1-1/2" AND LARGER THAT ARE INSULATED, PROVIDE PIPE SHIELDS, INC., INSULATED PIPE

2.6 DRAINAGE SPECIALTIES

- A. CLEANOUTS: PROVIDE WHERE SHOWN AND AS REQUIRED; TYPES AND SIZES AS SCHEDULED. PROVIDE LUBRICATION ON CLEANOUT THREADS AND PROVIDE OWNER WITH THREE (3) CLEANOUT PLUG REMOVAL TOOLS. WALL CLEANOUT: WITH STAINLESS STEEL COVER.
- 2. FLOOR CLEANOUT: WITH NICKEL BRONZE TOP AND CARPET RING (AS REQUIRED). 3. GRADE CLEANOUT (GCO) SHALL BE SUPPLIED WITH HEAVY DUTY CAST IRON TOP. 4. MANUFACTURERS: JR SMITH, ZURN, JOSAM, WADE
- B. FLOOR DRAINS/ FLOOR SINKS: CAST IRON BODY WITH INTEGRAL STRAINER, AND NICKEL BRONZE RIM AND TOP COVER. ACID RESISTANT INTERIOR COATING AT SANITARY LOCATIONS. TRAP PRIMER CONNECTIONS. MANUFACTURERS: JR SMITH, ZURN, JOSAM, WADE, COMMERCIAL ENAMEL
- C. ROOF / OVERFLOW DRAINS: CAST IRON BODY WITH METAL STRAINER, SUMP RECEIVER UNDER DECK CLAMP. 1. MANUFACTURERS: JR SMITH, ZURN, JOSAM, WADE.
- 2.7 FIXTURE SUPPORTS
- A. GENERAL: PROVIDE PLUMBING FIXTURE CARRIERS, SUPPORTS, AND DEVICES TO CARRY LOADS INDEPENDENTLY OF WALLS OR PARTITIONS. SECURELY BOLT SUPPORTS TO FLOOR WITH POWER-DRIVEN OR DRILLED INSERTS OR STUDS. B. MANUFACTURER: J.R. SMITH, JOSAM, WADE, OR ZURN. 2.8 PLUMBING FIXTURES
- A. FIXTURE SCHEDULE: FURNISH AND INSTALL AS INDICATED ON THE DRAWINGS. WATER SAVER FIXTURES AND ACCESSORIES SHALL HAVE A PROVEN TRACK RECORD IN THE FIELD. . MANUFACTURERS: AMERICAN STANDARD, KOHLER, ZURN, ELKAY, JUST, HAWS, BEST BATH, AQUAGLASS, FIAT, BRADLEY.
- B. PROVIDE TRAP PRIMERS AT ALL FLOOR DRAINS AND FLOOR SINKS AS INDICATED ON THE DRAWINGS. 1. MANUFACTURERS: PPP, JR SMITH, ZURN, SIOUX CHIEF. C. FIXTURE SUPPLIES AND STOPS: 1. GENERAL: ALL SUPPLIES AND STOPS SHALL BE NEW. PROVIDE CHROME PLATED ESCUTCHEONS AT ALL WALL PENETRATIONS.
- INSULATE ALL SUPPLIES AND STOPS PER ADA STANDARDS 2. MANUFACTURERS: BRASSCRAFT, EASTMAN, WATTS, MCGUIRE. D. FIXTURE FLOW CONTROLS: TO BE PROVIDED AT EACH FIXTURE AS FOLLOWS:
- 1. LAVATORY: 0.5 GPM. E. FAUCET / SUPPLY FITTINGS: BRASS CONSTRUCTION, INDEXED HANDLES.
- 1. MANÚFACTURERS: CHICAGO, T&S, SYMMONS, ZURN, AMERICAN STANDARD, ELKAY, MOEN. FIXTURE COLOR (UNLESS SELECTED BY ARCHITECT): WHITE. TRIM FINISH: POLISHED CHROME PLATED. G. TRAPS: 17 GAUGE CHROME PLATED WITH CHROME PLATED ESCUTCHEONS AT WALL PENETRATIONS.
- 2.9 HOSE BIBB:
- A. PROVIDE SERVICE STOP FOR EACH HOSE BIBB WITH ACCESS PANEL AS REQUIRED TO ACCESS THE VALVE. PROVIDE HOSE BIBB WITH INTEGRAL VACUUM BREAKER B. MANUFACTURERS: JR SMITH, WOODFORD, ZURN.
- 2.10 SHOCK ABSORBER/WATER HAMMER ARRESTOR:
- A. PROVIDE WITH ACCESS PANEL AS NECESSARY. SIZE PER PRESSURE DRAINAGE INSTITUTE (PDI) RECOMMENDATIONS. B. MANUFACTURERS: SIOUX CHIEF, JR SMITH, ZURN.
- 2.11 WATER HEATERS:
- A. STORAGE TYP 1. GENERAL: U.L. APPROVED, STORAGE TYPE, COMPLY WITH LOCAL ENERGY STANDARDS 2. MANUFACTURERS: RHEEM, AO SMITH, STATE, LOCHINVAR, OR APPROVED SUBSTITUTE. SIZE AND MODEL NUMBER IS SCHEDULED ON THE DRAWINGS. 3. SECURE WATER HEATER TO WALL WITH SHEET METAL STRAP.
- 4. PROVIDE DRAIN PAN PIPED TO FLOOR SINK BENEATH ELEVATED WATER HEATER. B. ELECTRIC TANKLESS.
- . GENERAL: U.L. APPROVED, ELECTRIC TANKLESS, COMPLY WITH LOCAL ENERGY STANDARDS. 2. MANUFACTURERS: CHRONOMITE, EEMAX, RINNAI, OR APPROVED SUBSTITUTE. SIZE AND MODEL NUMBER IS SCHEDULED ON 3. INSTALL TANKLESS WATER HEATER ON WALL PER THE MANUFACTURERS REQUIREMENTS.
- PART 3 EXECUTION 3.1 WATER HEATERS
- A. INSTALLER MUST EXAMINE AREAS AND CONDITIONS UNDER WHICH WATER HEATERS ARE TO BE INSTALLED, AND NOTIFY GENERAL CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER COMPLETION OF THE WORK. DO NOT PROCEED WITH THE WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN A MANNER ACCEPTABLE TO INSTALLER. B. EXCEPT AS OTHERWISE INDICATED, INSTALL WATER HEATERS, INCLUDING COMPONENTS REQUIRED, IN ACCORDANCE WITH
- MANUFACTURER'S INSTRUCTIONS C. LOCATE EACH UNIT ACCURATELY IN THE POSITION INDICATED IN RELATION TO OTHER WORK. POSITION UNIT WITH SUFFICIENT CLEARANCE FOR NORMAL SERVICE AND MAINTENANCE. . LEVEL OR PITCH UNITS TO THE INDICATED TOLERAN
- SUPPORT WATER HEATERS FROM THE STRUCTURE AS DETAILED ON THE PLANS. CLEAN DUST AND DEBRIS FROM EACH WATER HEATER PRIOR TO INSTALLATION AND AFTER START-UP AND TESTING.
- 3. INSTALL TEMPERATURE AND PRESSURE RELIFE DRAIN H. AFTER INSTALLATION HAS BEEN COMPLETED, TEST EACH WATER HEATER TO DEMONSTRATE PROPER OPERATION OF UNIT AT PERFORMANCE REQUIREMENTS SPECIFIED. WHEN POSSIBLE, FIELD CORRECT MALFUNCTIONING UNITS, THEN RETEST TO DEMONSTRATE COMPLIANCE. REPLACE UNITS WHICH CANNOT BE SATISFACTORILY CORRECTED. I. MINIMUM TEMPERATURE SETTING IS 140°F TO AVOID LEGIONNAIRE'S DISEASE.
- 3.2 GENERAL PIPING
- A. CUT PIPING ACCURATELY TO JOB MEASUREMENTS AND INSTALL WITHOUT SPRINGING OR FORCING, TRUE TO LINE AND GRADE. GENERALLY SQUARE WITH BUILDING AND ADEQUATELY SUPPORTED TO PREVENT SAGGING OR UNDUE STRESS ON PIPE, FITTINGS, AND ACCESSORIES. THOROUGHLY CLEAN ALL PIPE AND MAINTAIN IN SUCH CONDITION THROUGHOUT CONSTRUCTION. TEMPORARILY CAP OFF OR PLUG
- ENDS OF UNPROTECTED PIPE C. ARRANGE PIPING AND HANGERS TO ALLOW FOR EXPANSION, CONTRACTION, AND STRUCTURAL SETTLEMENT. DO NOT INSTALL PIPING IN CONTACT WITH THE BUILDING STRUCTURE, ANCHOR PIPES PROPERLY SO EXPANSION/CONTRACTION IS CONTROLLED. "BULL HEAD" TEES SHALL NOT BE INSTALLED
- FLUSH ALL PIPES FREE FROM FOREIGN SUBSTANCES BEFORE INSTALLING VALVES, STOPS, OR MAKING FINAL CONNECTIONS. F. INSTALL PIPING AT THE COILS SO THAT COILS CAN BE REMOVED WITH A MINIMUM OF PIPE DISLOCATION. ALL FITTINGS, ETC., SHALL BE READILY ACCESSIBLE G. VICTAULIC COUPLINGS WITH GROOVED PIPING MAY BE USED ON EXPOSED PIPING SECTIONS IN LIEU OF WELDED JOINTS. OPTION
- WILL REQUIRE ADDITIONAL SUPPORTS TO PREVENT SAGGING OF PIPE. H. PROVIDE A SUPPORT OR HANGER CLOSE TO EACH CHANGE OF DIRECTION IN THE PIPE, EITHER HORIZONTAL OR VERTICAL. 3.3 PIPE TESTING
- A. TEST ALL PRESSURE PIPING AT 150 PSIG FOR 4 HOURS WITH NO LEAK OR LOSS OF PRESSURE. REPAIR OR REPLACE DEFECTIVE PIPING UNTIL TESTS ARE ACCOMPLISHED SUCCESSFULLY. B. WASTE, VENT, AND CONDENSATE - FILL TO TOP OF HIGHEST VENT WITH WATER FOR 4 HOURS WITH NO LOSS OF HEIGHT.
- REPAIR OR REPLACE DEFECTIVE PIPING UNTIL TESTS ARE ACCOMPLISHED SUCCESSFULLY. C. FUEL GAS PIPING - PRIOR TO INITIAL OPERATION, TEST AND PURGE FUEL GAS PIPING IN ACCORDANCE WITH ANSI Z223.1. REPAIR OR REPLACE DEFECTIVE PIPING UNTIL TESTS ARE COMPLETED SUCCESSFULLY. 3.4 IDENTIFICATION
- 1. IDENTIFY ALL PIPELINES WITH ADHESIVE MARKERS INDICATING THE CONTENTS AND DIRECTION OF FLOW. MANUFACTURERS; SETON TYPE SETMARK, BRADY, OR PERMA-COLOR.
- PROVIDE PIPE MARKING AS FOLLOWS: a. PROVIDE AT EACH END OF EACH MARKER. BRADY OR EQUAL. 2-1/4" WIDE SELF-STICKING CLEAR TAPE AROUND THE PERIPHERY OF PIPE OR INSULATION TO FURTHER SECURE THE MARKER. ALL MARKERS SHALL BE INSTALLED AFTER FINISH PAINTING IS COMPLETE. COAT FULL MARKER WITH CLEAR LACQUER AFTER INSTALLATION. b. GUARANTEE THAT "PIPE MARKERS" WILL STAY ON PIPE SYSTEMS FOR A PERIOD OF NOT LESS THAN 5 YEARS.
- c. IDENTIFY PIPING 2-1/2" AND SMALLER WITH 1" MINIMUM HEIGHT LETTERING EVERY 20' WHERE EXPOSED TO VIEW AND AT VALVES WHERE CONCEALED. d. IDENTIFY PIPING 3" AND LARGER WITH 2" MINIMUM HEIGHT LETTERING EVERY 30' WHERE EXPOSED TO VIEW AND AT VALVES WHERE CONCEALED.
- e. WHERE PIPING IS PROVIDED WITH INSULATION, PROVIDE THE SIZE LETTERS SCHEDULED ABOVE IN ACCORDANCE WITH THE OUTSIDE DIMENSIONS OF INSULATION. B. EQUIPMENT IDENTIFICATION: IDENTIFY EACH NEW AND EXISTING EQUIPMENT WITH LAMINATED BLACK PLASTIC TAGS WITH ENGRAVED
- WHITE CORE LETTERING. USE TAGS WITH A MINIMUM THICKNESS OF 1/16", A MINIMUM SIZE OF 1-1/2" X 4", AND WITH 1" HIGH LETTERING. ACCEPTABLE MANUFACTURERS: SETON, W.W. WILCOX, OR BRADY. SECURE TAGS TO EQUIPMENT BY MEANS OF SCREWS OR BOLTS.
- C. VOLUME DAMPER IDENTIFICATION: INDICATE DAMPER POSITION ON ALL SUPPLY DUCT VOLUME DAMPERS. 3.5 STERILIZATION OF PIPES
- 1. AFTER PRELIMINARY PURGING OF THE SYSTEM, CHLORINATE THE ENTIRE POTABLE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH THE CURRENT RECOMMENDATIONS OF THE AMERICAN WATER WORKS ASSOCIATION AND IN ACCORDANCE WITH ALL PERTINENT STATE AND LOCAL HEALTH CODES AND REGULATIONS. 2. UPON COMPLETION OF THE STERILIZATION, THOROUGHLY FLUSH THE ENTIRE POTABLE WATER SYSTEM AND IMMEDIATELY FILL

END OF SECTION 221000

SECTION 231000 - HEATING, VENTILATION AND AIR CONDITIONING

PART 1 – GENERA

2.1 SHEET METAL DUCT AND ACCESSORIES

1.1 GENERAL

A. GENERA

2.3 GRILLES AND DIFFUSERS

2.4 BALANCE DAMPERS

CDR-25

E. ELECTRICAL

A. REFER TO SECTION 220500 - BASIC MECHANICAL REQUIREMENTS

PART 2 – MATERIALS

A. DUCT SHALL BE FABRICATED OF GALVANIZED CARBON SHEET STEEL CONFORMING TO ASTM A527 (G90) AND THE LATEST SMACNA DUCT CONSTRUCTION MANUALS. B. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO FOLLOWING PRESSURE

CLASSIFICATIONS: 1. SUPPLY DUCTS: a. 2" W.G., POSITIVE 2. RETURN AND EXHAUST DUCTS: a. 2"W.G., NEGATIVE

C. EXCEPT WHERE OTHERWISE INDICATED, USE DUCT SEALANTS OF THE FOLLOWING PRESSURE CLASSIFICATION: 1. SUPPLY DUCTS (CLASS B): a. 3"W.G. 2. RETURN DUCTS (CLASS C):

a. 3"W.G. D. FLEXIBLE DUCT: FINAL FIVE FEET MAXIMUM TO CONNECTIONS TO ALL SUPPLY AIR OUTLETS, RETURN AIR GRILLES, AND EXHAUST GRILLES SHALL BE MADE WITH SOUND ABSORBING FLEXIBLE DUCT. FACTORY INSULATED, 4" W.G. NEGATIVE TO 6" W.G. POSITIVE PRESSURE CLASS ACOUSTICAL DUCT, WITH FULL INTERNAL LINER TO SHIELD AIR FROM FIBERGLASS. MANUFACTURERS: FLEXMASTER TYPE 8M, ATCO INSUL-FLEX, FLEX-AIRE, HART AND COOLEY (GENFLEX).

E. FLEXIBLE CONNECTIONS: 30 OUNCE NEOPRENE FIBERGLASS, VENTFAB OR VENTGLAS IF EXPOSED TO THE WEATHER. NO TURNS SHALL HAVE A BEND RADIUS OF R/D > 1.5. F. TURNING VANES: ALL MITERED RECTANGULAR ELBOWS SHALL HAVE TURNING VANES INSTALLED PER SMACNA. 2.2 DUCT INSULATION

1. MINERAL-FIBER BOARD THERMAL INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 612, TYPE IB, WITHOUT FACING AND WITH ALL-SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM. 2. MINERAL-FIBER BLANKET THERMAL INSULATION: GLASS FIBERS BONDED WITH A THERMOSETTING RESIN. COMPLY WITH ASTM C 553, TYPE II, WITHOUT FACING AND WITH ALL-SERVICE JACKET MANUFACTURED FROM KRAFT PAPER, REINFORCING SCRIM, ALUMINUM FOIL, AND VINYL FILM. B. INSULATE ALL CONCEALED SUPPLY DUCTWORK. C. INSULATION INSTALLED INDOORS SHALL HAVE A FLAME/SMOKE SPREAD INDEX OF 25/50 OR LESS.

A. DIFFUSERS AND RETURN AIR REGISTERS SHALL BE TITUS AS SCHEDULED OR APPROVED SUBSTITUTION (KRUEGER, PRICE). PROVIDE OPPOSED BLADE DAMPERS AS SCHEDULED. B. DRUM LOUVER SHALL BE TITUS WITH OPPOSED BLADE DAMPER AS INDICATED OR EQUIVALENT.

A. OPPOSED BLADE BALANCE DAMPERS: RUSKIN CD35. DAMPERS FOR ROUND DUCTS SHALL BE RUSKIN B. UPSTREAM OF EACH DUCT TO SUPPLY AIR OUTLETS, RETURN GRILLES AND EXHAUST GRILLES. 1. DAMPERS SHALL BE 20 GAUGE GALVANIZED STEEL AND SHALL HAVE A 3/8" MINIMUM SHAFT AND A DURO-DYNE KS385 QUADRANT SET. QUADRANT SHALL BE ACCESSIBLE AND EASILY VISIBLE. WHERE DIFFICULT TO LOCATE, THEY SHALL BE MARKED WITH A RED RIBBON HANGING BELOW THE DUCTS. PROVIDE STANDOFF PLATE FOR INSULATED DUCTS.

2.5 AIR HANDLING UNITS HEAT PUMP CONDENSING UNITS A. MANUFACTURER: CARRIER OR EQUAL TO MANUFACTURER'S MODEL WITH CAPACITY AND OPERATING

CHARACTERISTICS AS SCHEDULED. B. INDOOR UNIT (AIR HANDLER UNIT)

1. SELF-CONTAINED, FACTORY-ASSEMBLED, PRE-WIRED UNIT CONSISTING OF CABINET, SUPPLY FAN, DX COOLING COIL, AUX ELECTRIC HEAT SECTION, CONTROLS, AND ACCESSORIES. 2. FURNISH UNIT FOR SINGLE POINT ELECTRICAL CONNECTION. C. OUTDOOR UNIT (HEAT PUMP CONDENSING UNIT)

1. SELF-CONTAINED, PACKAGED, PRE-WIRED UNIT CONSISTING OF CABINET WITH COMPRESSOR AND CONDENSER D. REFRIGERANT PIPING 1. PIPE MATERIAL: COPPER TUBE, ASTM B280, H58 HARD DRAWN OR O60 SOFT ANNEALED.

2. FITTINGS: ASME B16.22 WROUGHT COPPER. 3. JOINTS: BRAZE, AWS A5.8 BCuP SILVER/PHOSPHORUS/COPPER ALLOY.

1. FURNISH EACH UNIT FOR SINGLE POINT ELECTRICAL CONNECTION. EACH UNIT SHALL HAVE INTEGRAL SHORT CIRCUIT PROTECTION OF ALL INTERNAL ELECTRICAL COMPONENTS, AND ALL NECESSARY MOTOR START, CONTACTOR AND OVER-CURRENT PROTECTION. 2. EACH UNIT TO INCLUDE LOW VOLTAGE CONTROL TRANSFORMER.

3. VOLTAGES SHALL BE AS SCHEDULED. F. UNIT CONTROLS

1. THIS CONTRACTOR SHALL PROVIDE ALL TEMPERATURE CONTROL AND INTERLOCKING DEVICES NECESSARY TO PERFORM TEMPERATURE CONTROL SEQUENCE 2. HEAT PUMP SPACE THERMOSTAT TO PROVIDE HEATING AND COOLING STAGES AS SCHEDULED, AUTOMATIC CHANGEOVER AND FAN CONTROL. PROVIDE MATCHING SUB-BASE AS NECESSARY. 3. UNIT MANUFACTURER SHALL PROVIDE THE FOLLOWING CONTROLS:

a. SWITCHING SUB-BASE ON THERMOSTAT OR REMOTE STATUS PANEL SHALL START/STOP UNIT FAN BASED ON "ON-OFF-AUTO" SETTING. b. SPACE THERMOSTAT SHALL SEQUENCE HEAT PUMP HEATING AND COOLING TO MAINTAIN THERMOSTAT SETPOINT

c. THERMOSTATIC CONTROLS SHALL HAVE A 5 DEGREE DEADBAND. d. AUTOMATIC CONTROLS: SETBACK 55 DEGREE (HEAT) AND 85 DEGREE (COOL); 7-DAY CLOCK, 2 HOUR OCCUPANT OVERRIDE, 10 HOUR BACKUP.

2.6 EXHAUST FANS

A. MANUFACTURER: COOK, GREENHECK, PENN, JENN-AIR OR ACME. B. CONSTRUCT HOUSING OF GALVANIZED SHEET METAL, CONFIGURATION AS SCHEDULED AND SHOWN ON THE

- C. UNIT'S INTERIORS SHALL BE FURNISHED WITH LINED ACOUSTICAL INSULATION. D. UNITS TO BE UL LISTED OR CSA CERTIFIED.
- E. INSTALL PER MANUFACTURER'S INSTRUCTIONS WITH BACKDRAFT DAMPER.

2.7 GAS FIRED HEATER

A. MANUFACTURER: REZNOR, MODINE HASTINGS, STERLING, TRANE B. CONTROLS: INTEGRAL JUNCTION BOX FOR ALL POWER AND CONTROL CONNECTIONS. INCLUDE HIGH LIMIT SWITCH, FAN CONTROLS, AND A 24 VOLT AUTOMATIC GAS VALVE WITH SAFETY PILOT SHUT-OFF (100%), PRESSURE REGULATOR WITH LEAK LIMITING DEVICE, AND MANUAL MAIN AND PILOT (A AND B) VALVES. GAS VALVES SHALL BE SUITABLE FOR MAXIMUM 0.5 PSIG INLET PRESSURE FOR NATURAL GAS. PROVIDE WITH ELECTRIC IGNITION AND CONTROLS TRANSFORMERS.

2.8 TYPE B DOUBLE WALL GAS VENTS

- A. PROVIDE DOUBLE WALL GAS VENTS, UL-LISTED FOR TYPE B, CONSISTING OF DOUBLE WALL METAL CONSTRUCTION PIPE SECTIONS AND FITTINGS AND ACCESSORIES REQUIRED FOR COMPLETE INSTALLATION. B. ACCESSORIES: PROVIDE MANUFACTURER'S STANDARD ACCESSORY ITEMS AS INDICATED, FOR COMPLETE
- INSTALLATION. C. MANUFACTURER: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TYPE B DOUBLE WALL GAS VENTS OF ONE OF THE FOLLOWING: 1. AMERICAN METAL PRODUCTS CO.
- 2. GENERAL PRODUCTS CO., INC. 3. METALBESTOS SYSTEMS, WALLACE-MURRAY CORP.
- 4. METAL-FAB, INC.

PART 3 - EXECUTION

3.1 SHEET METAL DUCT AND ACCESSORIES

- A. FABRICATE AND INSTALL THE DUCT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE - "LATEST EDITION" AND THE FOLLOWING: 1. SUPPLY DUCT: 2" STATIC PRESSURE SEAL CLASS A.
- 2. RETURN DUCTS: 2" STATIC PRESSURE SEAL CLASS A.
- KITCHEN EXHAUST DUCT: -2"STATIC PRESSURE SEAL CLASS A. B. PROVIDE ALL NECESSARY TRANSITIONS AND ADDITIONAL FITTINGS AS REQUIRED TO CLEAR OBSTRUCTIONS, MAINTAIN CLEARANCES, AND COORDINATE WITH OTHER TRADES AT NO EXTRA COST TO THE OWNER. C. ACCESS DOORS: GASKETED, AIRTIGHT, HINGED SHEET METAL DOORS. INSTALL METAL ACCESS DOORS AND
- FRAMES OF SIZE TO PERMIT ACCESS BUILT-IN EQUIPMENT. USE WONDER METAL TYPE AT-7 OR APPROVED SUBSTITUTE ACCESS DOOR IN DUCTWORK. D. ACCESS DOORS: GREASE DUCT: TIGHT FITTING STEEL DOORS OF GAGE NOT LESS THAN DUCT. DOOR
- FASTENING METHOD SHALL NOT REQUIRE TOOLS. E. THE INSTALLATION OF ALL DUCTWORK, DAMPERS, ETC., SHALL BE IN ACCORDANCE WITH SMACNA

3.2 DUCT HANGERS

STANDARDS.

- A. HANGERS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SMACNA DUCT CONSTRUCTION STANDARD
- B. NECESSARY SEISMIC RESTRAINT OF THE DUCT SYSTEM SHALL BE MADE IN ACCORDANCE WITH THIS SECTION. C. GREASE DUCTS: BRACING AND SUPPORTS SHALL BE OF NON-COMBUSTIBLE MATERIAL. SCREWS AND OTHER FASTENERS SHALL NOT PENETRATE DUCT WALLS.

3.3 EXHAUST FANS

- A. INSTALL UNITS AS SHOWN ON DRAWINGS, AND ACCORDING TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. 3.4 INSTALLATION OF GAS VENTS
- A. INSTALL DOUBLE WALL GAS VENTS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. TYPE B, DOUBLE WALL GAS VENTS SHALL BE USED FROM UNIT OUTLET TO VENT CAP. MAINTAIN UL-LISTED MINIMUM CLEARANCES FROM COMBUSTIBLES. ASSEMBLE PIPE AND ACCESSORIES AS INDICATED FOR COMPLETE INSTALLATION.
- B. INSTALL VENT DAMPERS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. LOCATE AS CLOSE TO DRAFT HOOD COLLAR AS POSSIBLE. C. CLEAN EXTERNAL SURFACES OF FOREIGN SUBSTANCES WHICH MIGHT CAUSE CORROSIVE DETERIORATION OF

3.5 TESTING, ADJUSTING, AND BALANCING

- A. TESTING, ADJUSTING AND BALANCING OF ALL WORK SHALL BE PERFORMED BY AN AABC OR NEBB CERTIFIED TABC AS A DIRECT CONTRACTOR FOR THE HVAC CONTRACTOR. THE HVAC CONTRACTOR SHOULD INCLUDE ALL COSTS IN BID FOR TESTING AND BALANCING WORK INCLUDING THE WORK NOTED BELOW. B. TESTING, ADJUSTING, AND BALANCING REPORT MUST BE COMPLETE AND TURNED OVER TO THE G.C.'S
- CONSTRUCTION MANAGER 1 WEEK PRIOR TO MERCHANDISING DATE. THE HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THEIR WORK AND THE WORK OF THEIR SUBCONTRACTORS WITH THE G.C. TO ALLOW ADEQUATE TIME FOR TABC TO COMPLETE THEIR WORK. C. THE HVAC CONTRACTOR SHALL COMPLETE THE AIR BALANCE REVIEW START-UP VERIFICATION CHECKLIST AND
- FAX A COPY AS NOTED TO TABC. A COPY SHALL ALSO BE PROVIDED TO THE G.C. SUPERINTENDENT AT THIS TIME. IF ALL SYSTEMS ARE NOT OPERATIONAL AT THE TIME OF BALANCING, IT SHALL BE THE HVAC CONTRACTOR'S RESPONSIBILITY TO PAY ALL COSTS ASSOCIATED WITH THE ADDITIONAL TESTING AND BALANCING INCLUDING ALL LABOR, TRAVEL EXPENSES, MEALS, HOTEL COSTS ETC. INCURRED BY TABC. D. THE HVAC CONTRACTOR SHALL BE PRESENT FOR AIR BALANCE TO VERIFY ACCESSIBILITY TO ALL DEVICES.

BALANCE. HVAC CONTRACTOR SHALL INSTALL A NEW SET OF FILTERS AFTER PROJECT IS COMPLETE.

END OF SECTION 231000

VERIFY ALL OPERATING SEQUENCES AND INSTALL NEW FILTERS IN ALL UNITS JUST PRIOR TO THE AIR

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	GA	GAUGE	PRV	PRESSURE REDUCING VALVE	0			
AG	AIR GAP	GAL	GALLON	PSF	POUNDS PER SQUARE FOOT	<u> </u>	PIPE ELBOW OP		MOTOR-OPERATED VALVE
ALT	ALTERNATIVE, ALTERNATE	GCO	GRADE CLEANOUT	PSI	POUNDS PER SQUARE INCH				
AP	ACCESS PANEL	GI	GREASE INTERCEPTOR	PVC	POLYVINYL CHLORIDE	c =	PIPE ELBOW DOWN		
AR	ACID RESISTANT	GPM	GALLONS PER MINUTE	R/RAD	RADIUS			S	
ARCH	ARCHITECT, ARCHITECTURAL	GW	GREASE WASTE	RD	ROOF DRAIN		PIPE TEE BRANCH UP (WITH ELBOW)	— - — X — - —	SOLENOID-OPERATED VALVE
ARV	AIR RELIEF VALVE	HB	HOSE BIBB	RE:	REFERENCE	1			
AUTO	AUTOMATIC	HP	HORSEPOWER	RM	ROOM		PIPE TEE BRANCH DOWN (WITH ELBOW)		GAS SHUTOFF COCK
BFF	BELOW FINISHED FLOOR	HW	HOT WATER	RP	RECIRCULATION PUMP				
BFP	BACKFLOW PREVENTER	HWR	HOT WATER RETURN	RPM	REVOLUTIONS PER MINUTE	r>	INDICATES DIRECTION OF DOWNWARD PITCH		PRESSURE REDUCING VALVE
BHP	BRAKE HORSEPOWER	IBC	INTERNATIONAL BUILDING CODE	RWL	RAINWATER LEADER			Ν	
BLDG	BUILDING	ID	INSIDE DIAMETER	SA	SHOCK ARRESTER	X	CONCENTRIC REDUCER		PRESSURE REGULATING VALVE
CD	CONDENSATE DRAIN	IE	INVERT ELAVATION	SH	SHOWER				
CGW	CAST IRON GREASE WASTE	IECC	INTERNATIONAL ENERGY CONSERVATION CODE	SHT	SHEET	>	FLOW DIRECTION INDICATOR		BACK PRESSURE REGULATING VALVE
CL	CENTERLINE	IFGC	INTERNATIONAL FUEL GAS CODE	SK	SINK				
CO	CLEANOUT	IMC	INTERNATIONAL MECHANICAL CODE	SPEC(S)	SPECIFICATION(S)	_		= <u></u> \$ =	ASME PRESSURE RELIFE VALVE
CP	CONDENSATE PUMP	IN WC	INCHES OF WATER COLUMN	SS	SANITARY SEWER		TERIBLE CONNECTION, BRABED	Д ²	A.S.M.E. TRESSORE RELEE VALVE
CW	COLD WATER	ISPC	IDAHO STATE PLUMBING CODE	STD	STANDARD	. du		• • • • • •	
C/W	COORDINATE WITH	KW	KILOWATT	TDL	TOTAL DEVELOPED LENGTH	= =	UNION		VALVE IN PIPE RISER
(D)	DEMOLISH	LAV	LAVATORY	TEMP	TEMPERATURE				
D	DEPTH, DEEP	LG	LENGTH, LONG	TP	TRAP PRIMER		STRAINER	+c	CONTROL STOP
DF	DRINKING FOUNTAIN	LPG	LIQUID PETROLEUM GAS	TYP	TYPICAL				
DIA/Ø	DIAMETER	MA	MILLIAMPS	UR	URINAL		STRAINER, BLOW-OFF		IN-LINE PUMP
DS	DOWNSPOUT	MAX	MAXIMUM	UPC	UNIFORM PLUMBING CODE			Π	
DWG	DRAWING	MECH	MECHANICAL	V	VENT	[PIPE CAP	¥	TEMPERATURE GAUGE
(E)	EXISTING	MFR	MANUFACTURER	VBF	VENT BELOW FLOOR			Ø	
EFF	EFFICIENCY	MHT	MALE HOSE THREAD	VIF	VERIFY IN FIELD	—— – —— f ∮ ⊢—— – ——	BALL VALVE		PRESSURE GAUGE
EL	ELEVATION	MIN	MINIMUM	VTR	VENT THROUGH ROOF				
ELEC	ELECTRIC, ELECTRICAL	MISC	MISCELLANEOUS	W	WIDE, WIDTH		BUTTERFLY VALVE	VTR	VENT THROUGH ROOF
EQUIP	EQUIPMENT	MTD	MOUNTED	WB	WATER BOX				
ET	EXPANSION TANK	MV	MIXING VALVE	WC	WATER CLOSET	/	CHECK VALVE	·	WALL CLEANOUT
EW	EYE WASH	(N)	NEW	WCO	WALL CLEANOUT			·	
EWC	ELECTRIC WATER COOLER	Ν	NEUTRAL	WG	WATER GAUGE		DOUBLE CHECK BACK FLOW PREVENTER	— — —	FLOOR CLEANOUT OR GRADE CLEANOUT
EWS	EYE WASH SHOWER	NC	NORMALLY CLOSED	WH	WATER HEATER		DODEL CHECK DACK FEOW FREVENTER		FEGOR GEENROOF OR ONADE GEENROOF
F	FAHRENHEIT	NIC	NOT IN CONTRACT	WPD	WATER PRESSURE DROP				
FCO	FLOOR CLEANOUT	NO	NORMALLY OPEN	W/	WITH		REDUCED PRESSURE BACK FLOW PREVENIER		IRENCH DRAIN
FD	FLOOR DRAIN	NO/#	NUMBER	w/o	WITHOUT				
FIN FL/FF	FINISHED FLOOR	NPW	NON-POTABLE WATER			=K;+ = GPM	CIRCUIT SETTER		FLOOR DRAIN, ROUND
FP	FIRE PROTECTION	NTS	NOT TO SCALE			-		_	
FPM	FLET PER MINUTE	OC	ON CENTER				GATE SHUTOFF VALVE		FLOOR DRAIN, SQUARE
FS	FLUOR SINK	OD	OUTSIDE DIAMETER, OVERFLOW DRAIN						
FT HD	FEET OF HEAD	OFL	OVERFLOW LEADER			₽	GATE SHUTOFF VALVE ANGLE		FLOOR SINK
						I			
						_	GLOBE VALVE	(Ô)	ROOF DRAIN OR OVERFLOW DRAIN
							GLOBE VALVE, ANGLE		
						='	HUSE BIBB, EXPOSED		
							HOSE BIBB, RECESSED W/ LOCKING COVER		

Project N	ame:	ITD Cald	well, ID					Date:	11/21/2022	
Proie	ct #:	22123						Designer:	Kent Anders	son
Pressure available	at buik	dina							60	PSIG
Pressure loss (Sta	tic) due	e to systen	n height		Syster	n Height =	20	FT	8.60	PSIG
Pressure required	to ope	rate remote	e fixture (20 PSI - F	lush Tank)	(25 P	SI - Flush V	/alve)	25	PSIG
		2000 X0000		-				201		
Actual length of pip	be, ser	vice tap to	remote fixt	ure					190	Feet
Fitting Factor multi	plier (U to 50% c	of actual len	igtn)					50	%
	or pipinę	y system					Pomainir	De Droccuro -	200	reel (equiv.)
					Maximu	um allowal	ble pressur	e loss/100ft =	9.3	PSIG
		EIVTU	DE					WELL	FIX OTY	TOTAL MIELL
Bathtub or Combin	nation F	FIX IU	RE er (fill)				Fither		FIXQIY	TOTAL WFU
Bathtub Fill Valve (3/4")						Either	10		
Bidet							Private	1	-	
Clothes Washer							Either	4		
Dental Unit, cuspic	lor						Public	1		
Dishwasher, dome	stic						Either	1.5	1	1.5
Drinking Fountain	or Wat	er cooler					Either	0.5	1	0.5
Drinking Fountain	or Wat	er cooler,	assembly				Public	0.75		
Hose Bibb							Either	2.5		
Hose Bibb, each a	ddition	al					Either	1	-	
Lavatory							Either	1	6	6
Lawn Sprinkler, ea	ach hea	ad ,					Either	1		
Mobile Home, each	n (minii	mum)					Private	12		
SINKS: Bar Sink							Private	1	2	4
	pot						Public	2	2	4
Clinic Flus	homete	r Valve wit	h or withou	t faucet			Public	3		
Kitchen Sir	nk don	nestic		llauool			Fither	1.5		
Laundry	in, don	0000					Either	1.5		
Service or	Mop B	asin					Private	1.5		
Service or	Mop B	asin					Public	3	2	6
Washup, e	ach se	t of faucet	S				Public	2		
Shower, per head							Either	2	1	2
Urinal, 1.0 GPF flu	Ishome	ter valve					Private	3		
Urinal, 1.0 GPF flu	ishome	ter valve					Public	4	4	16
Wash Fountain, ci	rcular s	spray					Public	4		
Water Closet, 1.6	GPF G	ravity Tank	k or Flusho	meter Tank	(Either	2.5		
Water Closet, 1.6	GPF FI	ushometer	Valve				Either	5	6	30
								Syst	em Total WFU:	66
	×							WFU conv	ersion to GPM:	57
	М	ISCELLAN	NEOUS FIX	TURES			FLOW R	RATE (GPM)	FIX QTY	TOTAL WFU
								Total Missol	Danagua CDM -	
								Svete	m Total GPM =	57.0
							Water	Main Service	Size (inches) =	2
							Trater			-
		9 PSI L	OSS / 100	FT			Notes: 1.	The plumbing fi	xture water fixtur	e units were
CW	VELOC	CITY = 8 F	PS, HW VI	ELOCITY =	= 5 FPS			selected from T	able A103.1.	
BRANCH	(GPM	FU	-FT	FU	FV	2.	The branch pipe	e chart sizes wei	re selected
PIPING SIZE	CW	HW	CW	HW	CW	-		from Charts A1	03.1(2) and A10	5.1(1).
1/2"	4.2	4.2	5	5	-		3. 1	WFU refers to v	water fixture units	5.
3/4"	9	8	12	9		-	4			
1"	18	14	26	20	-	-	-			
1-1/4	35	24	110	39	20	-	1			
1-1/2	80	50	275	120	1/9	-	1			
2-1/2"	112	72	443	236	312		1			
3"	180	112	809	443	775	-	1			
4"	300	190	1755	874	1755	-	1			

PLUMBING PIPING SYMBOLS

Project #: 22123		De	signer:	Kent Anderson			
FIXTI IBE	SERV		DELL	SANI	TARY		
TIXTORE	JERV		DIO	FIX QTY	TOTAL DFU		
Bathtub or Combination Bath/Shower	Eith	er	2				
Clothes Washer (domestic 2" standpipe)	Eith	er	3				
Dishwasher (domestic with independent drain)	Eith	er	2	1	2		
Drinking Fountain or Water Cooler	Eith	er	0.5	1	0.5		
Food Waste Grinder (commercial)	Pub	lic	3				
Floor Drain (emergency)	Pub	lic	0		0		
Floor Drain (2" through 4" trap)	Eith	er	2				
Shower (single head trap)	Eith	er	2	1	2		
Multi-Head (each additional)	Eith	er	1				
Lavatory (single)	Eith	er	1	6	6		
Lavatory (in sets of two or three)	Eith	er	2				
Washfountain (1-1/2" trap)	Pub	lic	2				
Washfountain (2" trap)	Pub	lic	3				
Receptor: indirect waste, up to 7.5 GPM	Eith	er	1				
indirect waste, 8 GPM to 30 GPM	Eith	er	4				
Sinks: Bar	Priva	ate	1				
Bar	Pub	lic	2	2	4		
Clinical	Pub	lic	6				
Commercial (with food waste)	Pub	lic	3				
Special purpose (1-1/2" trap)	Pub	lic	3				
Special purpose (2" trap)	Pub	lic	4		21 27-		
Special purpose (3" trap)	Pub	lic	6				
Kitchen (domestic with/without disposal or DW)	Eith	er	2				
Laundry (with/without discharge from a cloths washer	Eith	er	2				
Service or mop basin (2" or 3" trap)	Pub	lic	3	2	6		
Wash (each set of faucets)	Pub	lic	2				
Urinal (1.0 GPF integral trap)	Eith	er	2	4	8		
Water Closet (1.6 GPF, gravity tank or flushometer valve)	Prive	ate	3				
Water Closet (1.6 GPF, gravity tank or flushometer valve)	Pub	lic	4	6	24		
	Total System Drainage	Fixtu	re Units:	SS Units:	52.5		
	Sanitary Sewer System I	Main P	ipe Size:	SS Size:	4		
 Notes: 1. The plumbing fixture drainage fixture units were sele 2. The sanitary sewer system main pipe size was sele 3. DFU refers to drainage fixture units. 4. SS refers to sanitary sewer. 	ected from Tables 702.1 an cted from Table 703.2.	d 702.	2(2).				

WASTE MAIN SIZING CALCULATION - 2017 IDAHO STATE PLUMBING CODE Date: 11/21/2022 Project Name: ITD Caldwell, ID

PLUMBING LINETYPE LEGEND

NOTE: SUFFIX (E) IN CONJUNCTION WITH LIGHTER SHADING INDICATES EXISTING PIPE OR EQUIPMENT. (TYPICAL OF ALL EQUIPMENT AND PIPING).

NEW	EXISTING	TO BE DEMOLISHED	
		4//////////////////////////////////////	DOMESTIC C
— NPW —			NON-POTAB
		4444444444	DOMESTIC H
		444/14/14/14/14	DOMESTIC H
		4//////////////////////////////////////	PLUMBING E
		4//////////////////////////////////////	PLUMBING E
			PLUMBING E
LPG	LPG	4447XXXXX/44444	LIQUID PETR
OFL	OFL	44447ØFXL/44444	OVERFLOW L
	RWL		RAINWATER
CD	CD	44444 XXX 4444444444444444444444444444	CONDENSATE
		444114444444444444444444444444444444444	SANITARY SE
		4444444	SANITARY SE
<u> </u>	— SOW —	4444/\$Ø\$\$V/44444	SAND OIL W
		44444444	SANITARY VE
_//	_//	41 <i>5</i> 7111157111,	PLUMBING W
— CA —	— CA ——	44471 XXX 744444	COMPRESSE

PLUMBING ANNOTATION SYMBOLS

WC 1	FIXTURE OR EQUIPMENT CALLO
1	KEY NOTES
⊥#	REVISION
⊲ ^(E) (N)	CONNECT NEW TO EXISTING (SHADED SIDE IS NEW WORK)

RE OR EQUIPMENT CALLOUT NOTES ION ECT NEW TO EXISTING

PLUMBING SHEET INDEX

01	PLUMBING COVER SHEET
11	WASTE AND VENT DEMOLITION PLAN
12	WATER AND GAS DEMOLITION PLAN
21	WASTE AND VENT PLAN
22	WATER AND GAS PLAN
41	PLUMBING SCHEDULES
51	PLUMBING DETAILS

PLUMBING GENERAL NOTES

- A. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE CODES, LOCAL CODES, LOCAL STANDARDS, IBC, IPC, NFPA, AND THE LANDLORD'S AND TENANT'S REQUIREMENTS INCLUDING SUPPLEMENTS AND DETAILS.
- B. PROVIDE SEAL BETWEEN WALLS AND PLUMBING FIXTURES PER HEALTH DISTRICT REQUIREMENTS.
- C. COLD AND HOT WATER SUPPLY PIPING SIZES FOR FIXTURE CONNECTIONS ARE NOT SHOWN ON PLANS. SEE FIXTURE SCHEDULE FOR CONNECTION SIZES.
- INSTALL ALL OVERHEAD PIPING AS CLOSE TO STRUCTURE AS POSSIBLE, OR AS DETAILED D. OTHERWISE.
- E. LOCATE AND LABEL ALL VALVES FOR SERVICE ACCESSIBILITY. VALVES INSTALLED ABOVE CEILINGS SHALL BE ACCESSIBLE THRU CEILING. SEE DRAWINGS FOR LOCATIONS.
- F. COORDINATE INSTALLATION WITH THE WORK OF OTHER TRADES PRIOR TO STARTING. IN THE EVENT THAT CONFLICTS ARE FOUND WITH THE WORK OF THE OTHER TRADES, BRING ALL SUCH CONFLICTS TO THE ARCHITECT'S ATTENTION FOR RESOLUTION PRIOR TO PROCEEDING WITH THE WORK IN THAT AREA. DEFICIENCIES CAUSED BY FAILURE TO PERFORM SUCH VERIFICATIONS SHALL BE CORRECTED AT NO ADDITIONAL EXPENSE TO OWNER. IMMEDIATELY NOTIFY ARCHITECT OF CONDITIONS IN CONFLICT WITH THE PLANS.
- PROVIDE PIPING EQUIPMENT AND MATERIALS IN ACCORDANCE WITH APPLICABLE PLUMBING G. CODE REGULATIONS AND STANDARDS, AUTHORITIES HAVING JURISDICTION, OR AS OTHERWISE RECOMMENDED OR DIRECTED BY MANUFACTURERS.
- H. COORDINATE INSTALLATION OF PIPING BELOW AND ABOVE GRADE WITH STRUCTURAL COMPONENTS AND OTHER SYSTEM INSTALLATIONS.
- COORDINATE ALL FIXTURES, EQUIPMENT AND ROUGH-IN CONNECTION LOCATIONS AND SIZES WITH ARCHITECTURAL DRAWINGS, OWNER AND EQUIPMENT SUPPLIER PRIOR TO
- INSTALLATION. J.
- COORDINATE ALL FURRING REQUIREMENTS AND WALL THICKNESS WITH PIPE AND ACCESS PANEL INSTALLATIONS. COORDINATE ACCESS PANEL LOCATIONS WITH INTERIOR ELEVATIONS TO AVOID CONFLICTS WITH EQUIPMENT, GRAB BARS OR DECORATIVE ELEMENTS. K. PROVIDE SEISMIC RESTRAINTS FOR ALL PIPE AND EQUIPMENT AS RECOMMENDED IN SMACNA "SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL EQUIPMENT", LATEST
- EDITION. L. ALL PIPING SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. ALL WALLS IN WHICH WATER OR WASTE LINES ARE INSTALLED MUST BE
- PATCHED TO MATCH EXISTING AFTER LINES ARE INSTALLED. M. PRIOR TO BIDDING, OBTAIN A COPY OF THE SPECIFICATIONS AND PLANS, VISIT THE JOB SITE, TAKE NECESSARY MEASUREMENTS, NOTE EXISTING CONDITIONS, AND GATHER ALL OTHÉR INFORMATION NEEDED FOR AN ÁCCURATE BID. NO ALLOWANCES WILL BE MADE FOR EXTRA COSTS RESULTING FROM FAILURE TO NOTE EXISTING CONDITIONS.
- N. PIPING PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE FIRESTOPPED IN ACCORDANCE WITH APPLICABLE CODES.
- O. ALL WORK ON THE PLUMBING DRAWINGS SHALL BE COMPLETED BY THE PLUMBING
- CONTRACTOR UNLESS SPECIFIED OTHERWISE. P. ANY DISCREPANCIES OR INADEQUACIES BETWEEN THE PLUMBING DRAWINGS AND OTHER
- DISCIPLINES SHALL BE BROUGHT TO THE ATTENTION OF OWNER'S REPRESENTATIVE. Q. INSTALL ALL PIPING RUNS AS HIGH AS POSSIBLE THROUGHOUT ENTIRE BUILDING.
- INSTALL LONG RUNS WITHIN JOIST SPACE AND OTHER PIPING TIGHT TO BOTTOM OF STEEL. COORDINATE WITH OTHER TRADES - DUCTWORK, FIRE PROTECTION, PIPING, LIGHTING SYSTEMS, ETC.
- R. FINAL CONNECTION TO ALL GAS FIRED APPLIANCES TO BE BY PLUMBING CONTRACTOR REGARDLESS OF WHO PROVIDES APPLIANCES. THIS SHALL INCLUDE BUT NOT BE LIMITED TO HVAC EQUIPMENT, COOKING EQUIPMENT, EMERGENCY GENERATORS, DOMESTIC WATER HEATERS, ETC.
- S. ALL PLUMBING FIXTURES SHALL HAVE THEIR OWN INDEPENDENT SHUT OFF BALL VALVES, INSTALLED IN AN EASILY ACCESSIBLE LOCATION.
- T. REFER TO SPECIFICATIONS FOR ALL PIPING MATERIALS AND SERVICES.

U. SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

SUBMITTAL REVIEW NOTES

- A. STRICT ADHERENCE TO AIA A201 WILL BE OBSERVED WHEN REVIEWING ALL SUBMITTALS. OBTAIN A COPY AND BE FAMILIAR WITH CONTRACTOR RESPONSIBILITIES WHEN SUBMITTING ON PROPOSED PRODUCTS. ANY SUBMITTAL NOT MARKED AS BEING IN CONFORMANCE WITH THE CONTRACT DOCUMENTS WILL BE RETURNED "NOT REVIEWED".
- B. SUBMITTALS MUST BE BROKEN OUT ACCORDING TO SPECIFICATION SECTION. COMBINED SUBMITTALS WITH MULTIPLE SPECIFICATION SECTIONS WILL BE RETURNED "NOT REVIEWED". C. SUBMITTALS MUST INCLUDE ONLY INFORMATION RELEVANT TO THE PROJECT AND BE CLEARLY MARKED WHAT THE PROPOSED PRODUCTS ARE. EXCESSIVELY LENGTHY SUBMITTALS INCLUDING COPIOUS AMOUNTS OF IRRELEVANT INFORMATION AND/OR NOT CLEARLY MARKED WILL BE
- RETURNED "NOT REVIEWED". D. SUBMITTALS FOR VALUE ENGINEERING ITEMS NEGOTIATED BETWEEN THE CONTRACTOR AND THE OWNER WILL BE RETURNED "NOT REVIEWED". THE CONTRACTOR ASSUMES COMPLETE RESPONSIBILITY AND LIABILITY FOR VALUE ENGINEERING ITEMS NOT APPROVED BY THIS OFFICE.
- E. THE CONTRACTOR MAY SUBMIT UP TO FIVE SUBMITTALS TO THE OFFICE AT ANY ONE TIME. THESE FIVE SUBMITTALS WILL BE RETURNED WITHIN FIVE BUSINESS DAYS. IF MORE THAN FIVE SUBMITTALS ARE IN FOR REVIEW AT ANY ONE TIME, ONE ADDITIONAL BUSINESS DAY WILL BE REQUIRED FOR EACH SUBMITTAL.
- F. EXPEDITED REVIEW FOR LONG LEAD ITEMS WILL BE PERFORMED AT OUR DISCRETION. PAST EXPERIENCE WITH THE SUBMITTING CONTRACTOR WILL BE A FACTOR IN OUR DECISION TO PERFORM AN EXPEDITED REVIEW.

1 WATER AND GAS PLAN SCALE: 1/8" = 1"-0"

A. CONTRACTOR TO INSTALL SHUT OFF VALV PLUMBING FIXTURES, APPLIANCES, AND B INDEPENDENT SHUT-OFF VALVES INSTALL LOCATION, BRANCHES SHALL COME OFF F	ES AT EACH BRANCH LINE TAKE-C RANCH LINES SHALL HAVE THEIR C ED IN AN EASILY ACCESSIBLE AND BOTTOM OR SIDE OF MAIN TO PRE
B. PROVIDE MIXING VALVE ON ALL HAND SIN SINKS LOCATED TO BE EASILY ACCESSIBL	IKS, LAVATORIES AND BREAK ROOM E. REFER TO SCHEDULE AND DETA
C. PROVIDE FIXTURE BRANCH PIPING, PRESS TO ALL EQUIPMENT AS REQUIRED. REFER	SURE REGULATORS AND BACKFLOW TO FIXTURE SCHEDULES FOR FUR
D. INSTALL CHECK VALVES IN HOT AND COL 3-COMPARTMENT SINKS AND MOP SINKS	D WATER SUPPLY LINES SERVING A
E. ROUTE ALL WATER OR GAS PIPING OVER SUPPORT DETAILS. COORDINATE ROUTING	HEAD AS HIGH AS POSSIBLE. RE: F WITH STRUCTURE AND DUCTWORK
G. RE: PLUMBING DETAIL SHEET FOR ALL DE	ETAILS THAT ARE NOT REFERENCED
# SHEET	NOTES
 INSTALL FIXTURE IN WALL AT 12" AFF INSTALL INSTANTANEOUS WATER HEATED 	MIN. R NEXT TO EMERGENCY EYE WASH
3. CONNECT NEW OVERHEAD WATER PIPIN SIZE, LOCATION, AND CONNECTION REC	NG TO EXISTING OVERHEAD PIPING. QUIREMENTS IN FIELD PRIOR TO ST
 ROUTE WATER PIPING OVERHEAD. COOL DUCTWORK LAYOUT PRIOR TO CONSTRU- ROUTE WATER PIPING DOWN IN WALL 	RDINATE ROUTING WITH STRUCTURE UCTION. TO FIXTURES AND FOUIPMENT REF
 ROUTE WATER IN THE DOWN IN WALL SCHEDULE FOR CONNECTION SIZES AN ROUTE 1/2"Ø PEX TUBING INDEPENDE WALL AND CONNECT TO FLOOR DRAIN 	ID REQUIREMENTS. SIZE AS INDICAT
FOR FLOOR DRAIN LOCATIONS. 7. DROP PIPING DOWN FROM LEVEL 2 SI	PACE TO LEVEL 1 CEILING SPACE.
8. INSTALL SHOCK ARRESTER ON THE CW 12"X12" ACCESS PANEL. COORDINATE ARCHITECTURAL PLANS PRIOR TO CON	/ PIPE IN WALL SPACE. FURNISH A THE EXACT ACCESS PANEL AND LO STRUCTION.
 CONNECT NEW LIQUID PETROLEUM GAS PIPING. VERIFY EXACT SIZE, LOCATION, TO START OF WORK. 	5 TO EXISTING GAS LIQUID PETROLE AND CONNECTION REQUIREMENTS
10. PIPE UP AND CONNECT TO LEVEL 2 V 11. CONTRACTOR IS TO FIELD VERIFY THE	VATER PIPING FROM LEVEL 1. SIZE
UNDILUTED PROPANE TANK WITH OWNE PIPING PER MANUFACTURES REQUIREM 12. GENERAL CONTRACTOR IS TO RELOCAT	ER PRIOR TO START OF WORK. CON ENTS. E AND RECONNECT EXISTING PRES
REGULATOR. CONNECT ACCORDINGLY T PRESSURES. CONTRACTOR IS TO INSPE IS IN WORKING ORDER OR REPAIR TO DEEMS IRREPARABLE GENERAL CONTRA	O EXISTING CONDITIONS FOR INLET ECT EXISTING PRESSURE REGULATO LIKE "NEW CONDITION". IF GENER/ CTOR IS TO MAKE OWNER AWARE
REPLACEMENT. CONNECT NEW PIPING REQUIREMENTS. 13. UNDILUTED PROPANE IS SIZED FOR AN	TO EXISTING EQUIPMENT PER MANU
WATER COLUMN. ROUTE PIPING AS HIG AND STRUCTURAL PLANS. 14. CONNECT NEW GAS PIPING UP TO STU	GH AS POSSIBLE ACCORDING TO AF
PIPING TO EQUIPMENT. PROVIDE CSA- CONNECTOR, 6" DIRT LEG, AND UNION TO VERIFY LOCATION OF EXISTING GAS INDICATED.	LISTED SHUT-OFF VALVE, FLEXIBLE I. GAS TO UNIT CONNECTION DETAIL PIPING PRIOR TO START OF WORK
15. ROUTE HW MAIN DOWN IN WALL TO LA HORIZONTALLY, AND ROUTE IN WALL T	AVATORY ROUGH-IN HEIGHT, OFFSE O FIXTURES. TERMINATE EACH LAVA
SUFFLI WITHIN 2 -0 OF THE FIXION	L SUFFLI FIFL.
LEG	END
HOT WATER	C PIPE ELBOW
LPG LIQUID PETROLEUM GAS	PIPE TEE BR/ ► FLOW DIRECT
	−−−−− Φ −−−− BALL VALVE

1 WATER AND GAS MEZZANINE PLAN SCALE: 1/8' = 1'-0'

	FIXTURE	BASIS	OF DESIGN		TR	IM	CO	NNEC	CTION	S, IN	REMARKS
MARK	ITEM	MFR	MODEL	ITEM	MFR	MODEL	cw	нพ	w	v	-
EW-1	EMERGENCY EYEWASH	CHRONOMITE	ER-90S/208_3P	-	-	-	3/4	-	2	1-1/2	WALL-MOUNTED EYEWAS
EWC-1	ADA ELECTRIC WATER COOLER (HI-LOW, BOTTLE FILLER)	ELKAY	LZSTL8WSLK	-	-	-	1/2	-	2	1-1/2	DUAL "HIGH-LOW" WALL N HEADS. ELECTRICAL LOA
FD-1	FLOOR DRAIN (ROUND)	J.R. SMITH	2005YA-P050-U	-	-	-	-	-	2	1-1/2	CAST IRON BODY WITH AI
FS-1	FLOOR SINK (SHALLOW BODY -1/2 GRATE	J.R. SMITH	3100Y-12	-	-	-	-	-	2	1-1/2	FURNISH 8-1/2"x8-1/2"x6" D
GD-1	GARBAGE DISPOSAL	IN SINK ERATOR	BADGER 5	-	-	-	-	-	1-1/2	-	CONTINUOUS FEED GARB. PHASE, 60 HZ, 6.9 AMPS.
LAV-1	ADA LAVATORY (ROUND COUNTER-MTD)	ZURN	Z5114	FAUCET	ZURN	Z6915-XL-F	1/2	1/2	2	1-1/2	COUNTER MOUNTED VITRE
LAV-2	ADA LAVATORY (SQUARE WALL-MTD)	ZURN	Z5344	FAUCET	ZURN	Z6915-XL-F	1/2	1/2	2	1-1/2	WALL MTD VITREOUS CHI TMV-1), AND 0.5 GPM FLO
MV-1	MIXING VALVE (LAVATORIES, HAND SINKS)	WATTS	LFUSG-B	-	-	-	3/8	3/8	-	-	INSTALL VALVE UNDER FI
MV-2	MIXING VALVE (WATER HEATER)	WILKINS	ZW1017XL	-	-	-	1	1	-	-	INSTALL VALVE ABOVE W.
SA-1	SHOCK ARRESTER	J.R. SMITH	5005 THRU 5050	-	-	-	-	-	-	-	STAINLESS STEEL PRECH
SH-1	ADA SHOWER (ONE-PIECE INSERT)	BEST BATH	LSS4038A5T	SHOWER SYSTEM	SYMMONS	C-96-500- B30-∨	1/2	1/2	2	1-1/2	ONE-PIECE TRANSFER SH WITH CURTAIN, L-SHAPED INCLUDE PRESSURE BALA (BARRIER-FREE).
SK-1	ADA SINK (COUNTER-MTD)	ELKAY	LRAD2219	FAUCET	ZURN	Z812B1-XL	1/2	1/2	2	1-1/2	COUNTER MOUNTED, 18 G COMPLIANT DECK-MOUNT
SS-1	SERVICE SINK (FLOOR-MTD)	ZURN	Z5850-D3-RG	FAUCET	ZURN	Z842M1	1/2	1/2	3	2	FLOOR (CORNER) MOUNTE BRACE, STOPS, VACUUM
TP-1	TRAP PRIMER (AUTO-ELECTRIC)	РРР	SMP-500-115V	-	-	-	1/2	-	-	-	ELECTRONIC PRIMER ASS FOR PRIMING 2 FLOOR DR
TP-2	TRAP PRIMER (AUTO-PNEUMATIC)	РРР	P2-500	-	-	-	1/2	-	-	-	INSTALL TRAP PRIMER IN
TP-3	TRAP PRIMER (AUTO-PNEUMATIC)	РРР	P1-500	-	-	-	1/2	-	-	-	INSTALL TRAP PRIMER AB
UR-1	ADA URINAL (WALL-MTD)	ZURN	Z5755	FLUSH VALVE	SLOAN	G2 OPTIMA PLUS 8186-1	3/4	-	2	1-1/2	VITREOUS CHINA WALL M SMITH 0637 CARRIER SUP
WB-1	WATER BOX (REFRIGERATOR ICE MAKER)	GUY GRAY	MIB1AB	-	_	-	1/2	-	-	-	STEEL ICEMAKER BOX WI
WB-2	WATER BOX (DISHWASHER)	GUY GRAY	MDWB1AB	-	-	-	-	1/2	-	-	STEEL DISHWASHER BOX
WC-1	WATER CLOSET (FLOOR-MTD)	ZURN	Z5655-BWL1	-	-	G2 OPTIMA PLUS 8111-1.6	1	-	3	2	VITREOUS CHINA, FLOOR
WC-2	ADA WATER CLOSET (FLOOR-MTD)	ZURN	Z5665-BWL1	FLUSH VALVE TRAP PRIMER	SLOAN SLOAN	G2 OPTIMA PLUS 8111-1.6 VBF-72-A1	1	-	3	2	VITREOUS CHINA, FLOOR CHURCH NO. 9500CT SEAT

Pipe Location Jacket (c) Insulation Thickness											
			Pipe Location		Jacket (c)		Insulation Thickness				
System Or Service	Temp (°F)	Insulation Type	Indoor	Outdoor		Metal		Pipe Si	zes (in.)		
			macor	Cutacon		motar	0.5-1.25	1.5-4	5-8	10-30	
		Mineral Fiber	Х				0.5	-	-	-	
Condensate Drains for Air-Conditioning Equipment	60	OR									
		Flexible Cellular	Х	X(a)			0.5	-	-	-	
		FOR MAINS:									
	105 to 140	Mineral Fiber	Х		Х		1	1.5	1.5	1.5	
Hot and Recirculated Hot Water		FOR BRANCHES, DROPS, AND RUNOUTS:									
		Mineral Fiber	Х		Х		1	-	-	-	
		OR									
		Flexible Cellular	Х				1	-	-	-	
Handicapped Fixture Trap and Supply	40 to 140	Mineral Fiber	X(b)				0.5	-	-	-	
		FOR MAINS:									
		Mineral Fiber	Х		Х		0.5	1	1	1	
Domestic Cold, Trap Primer Water	40 to 50	FOR BRANCHES, DROPS, AND RUNOUTS:									
		Mineral Fiber	Х		Х		1	-	-	-	
		OR									
		Flexible Cellular	Х				1	-	-	-	

b = Polyvinyl chloride (PVC) jacket required.

c= Protective jackets consisting of 0.016 inches 316 stainless steel shall be used for exposed (exterior) insulation systems and where exposed in interior mechanical equipment rooms, or other high traffic areas (up to 10 feet above finished floor). As an alternative, PVC jacket and fitting covers may be used in these interior spaces.

INSULATION SPECIFICATION:

Flexible Cellular: ASTM C 534, 5 pcf density, k = 0.27 Btu-in/h-ft² at 75 °F Mineral Fiber: ASTM C 547, 4 pcf density, k = 0.23 Btu-in/h-ft2 at 75 °F

			UNDI	LUTED GAS CALCULATION															
		Project Name:	ITD Caldwell M	Aaintenance Building	Date:	1/20/2023													
	Pr	oject Number:	22123		Designer:	Luis Ojeda													
ΤΟΤΑΙ	DELIVE TOTAL DEVEL BUILDING CON DELIV	RY PRESSURE = OPED LENGTH = NECTED LOAD = 'ERY PIPE SIZE =	2 PSI 390 FT 945 MBH 1 IN	CODE USED = TABLES USED =	2018 INTERNATIO 402.4(27) AND 40	DNAL FUEL GAS C 2.4(28)													
MARK TOTAL MBH	DIST. METER TO PRV, FT	PIPE SIZE ENTER. PRV, IN	PIPE SIZE EXIT. PRV, IN	EQUIPMENT SERVED	CAPACITY MBH	DIST. PRV TO EQUIP., FT													
PRV-1 (E)				UH - 1	105	120													
				UH - 2	105	85													
945 MBH	вн		UH - 3	105	35														
				UH - 4	105	33													
	65	1(E)	2-1/2 (E)	UH - 5	105	390													
					-	_	UH - 6	105	192										
							-	-								-	UH - 7	105	245
				UH - 9	105	355													
				TOTAL CONNECTED LOAD =	945														
NOTES:	 A 1" EXISTING THE LONGES DEVELOPED LE PER SPECIFICA THE SYSTEM FURNISH GAS UNDILUTED PRO 	G UNDILUTED PRO T LENGTH METHO NGTH FROM METE TION. I PRESSURE ENTE S PRESSURE REG OPANE GAS.	DPANE GAS PIPE D WAS USED TO ER TO PRV OR PR ERING THE PRESS GULATOR FISHER	AT 2 PSI AND 400 FT TOTAL DEVELOPED LENGT CALCULATE THE GAS PIPING. ALL PIPING LENG V TO EQUIPMENT. ALL GAS PIPING SHALL BE S SURE REGULATORS IS 2 PSI AND THE PRESSURE SERIES CS400 OR EQUAL FOR ALL NEW REGUL	TH CAN DELIVER GTHS ARE SHOW TANDARD WEIGH E EXITING THE RE ATORS. SIZE FOR	1,430 CFH. N AS TOTAL IT BLACK STEEL EGULATORS IS 11 II & USE WITH													

ELECTRIC WATER HEATER SCHEDULE

			REF	ERENCE			PERFORMANCE					CONNE	CTIONS	ELECTRICAL				
MARK	ITEM	BASIS OI	F DESIGN	TYPE	LOCATION	DETAIL	FUEL	NO. OF	STORAGE	RECOVERY	TEMP RISE	CW	нพ	EL. INPUT	VOLTAGE	PHASE	OP. WEIGHT	REN
		MFR	MODEL			REFERENCE	TYPE	ELEMENTS	GAL	GPH	°F	IN	IN	KW		L	LBS	
WH-1	WATER HEATER	AO SMITH	DEN-52	ELECTRIC STORAGE	MECHANICAL STORAGE 205	P71-12	ELEC.	2	55	24	100	3/4	3/4	6	240	1	610	1,
WH-2	WATER HEATER	CHRONOMITE	ER-90S/208_3P	ELECTRIC INSTANTANEOUS STORAGE	MECHANICAL BAY 116	_	ELEC.	-	-	-	68	3/4	3/4	18.7	208	3	30	2
REMARKS:																		

1. SET OPERATING TEMPERATURE AT 140°F.

2. INSTALL WITH HEAT TRAPS AT CW AND HW CONNECTIONS. 3. FURNISH WATER HEATER WITH NON-SIMULATANEOUS ELEMENT OPERATION.

4. FACTORY PRESET TEMPERATURE FOR 80°F.

5. INSTALL WITH DIGITIAL READOUT.

			REFERENCE	PER							
MARK	BASIS OF DESIGN		SERVICE	LOCATION	DETAIL	TYPE	TANK VOL	ACCEPT. CONNECTION		WEIGHT	REMA
	MFR	MODEL			REFERENCE		GAL	FACTOR	IN	LBS	
ET-1	AMTROL	ST-12	DOMESTIC HOT WATER	MECHANICAL STORAGE 205	P71-12	DIAPHRAGM	4.4	0.73	3/4	36	1, 2
REMARKS:	 PROVIDE L PROVIDE IS 	JNISTRUT BRAG	CKET SECURED TO WALL WI VE (LESS HANDLE OR LOCK-	TH STRAP AROUND TANK. SHIELD).							

WAT	WATER PUMP SCHEDULE													
			PE	RFORMA	NCE		ELECTRICAL							
MARK	ITEM	BASIS OF DESIGN		TYPE	LOCATION	DETAIL	FLOW	TDH	TEMP.	MOTOR	VOLTS	PHASE	MCA	REMA
		MFR	MODEL			REFERENCE	GPM	FT	°F	HP				
RP-1	HOT WATER CIRCULATOR	GRUNDFOS	UP15-42FC	SYMPLEX	MECHANICAL STORAGE 205	P71-12	2	12	140	1/25	115	1	0.74	1, 2,
	· •		•			•			•	•	•			

		MFF
RP-1	HOT WATER CIRCULATOR	GRUND
REMARKS:		
	1. PUMP MUST BE LISTED FO	or potable
	2. PROVIDE PUMP WITH ALL	BRONZE CO
	3. FURNISH PUMP WITH AUT	OMATIC TIM
	4. ALL PUMP CONTROL WIRI	NG SHALL E

SH WITH TAILPIECE AND STAINLESS STEEL BOWL. INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. CONNECT TO INSTANTANEOUS WATER HEATER RE: ELECTRIC WATER HEATER PER MANUFACTURERE'S INSTALLATION REQUIREMENTS. MOUNTED DRINKING FOUNTAIN WITH STAINLESS STEEL TOP, 1.1 GPM BOTTLE FILLER, AND 8 GPH CHILLED WATER CAPACITY. FURNISH WITH MOUNTING HANGER AND FLEXIBLE SAFETY BUBBLER

AD 6.0 FLA 115 VOLTS. 5 YEAR WARRANTY. ADA COMPLIANT (BARRIER-FREE). DJUSTABLE STRAINER HEAD. FURNISH WITH ROUND TOP, VANDAL PROOF SCREWS, AND 1/2" CW TRAP PRIMER CONNECTION.

DEEP FLOOR SINK WITH CAST IRON BODY AND ACID RESISTANT ENAMEL FINISH. FURNISH WITH 1/2 TOP GRATE AND BOTTOM DOME STRAINER.

BAGE DISPOSAL. FURNISH WITH GALVANIZED STEEL GRINDING COMPONENTS AND GRINDING CHAMBER, AND QUIET DURA-DRIVE INDUCTION MOTOR. ELECTRICAL REQUIREMENTS: 1/2 HP, 120V, 1

REOUS CHINA LAVATORY. FURNISH WITH FAUCET (4" CENTERS) WITH BATTERY POWERED SENSOR OPERATED VALVE, VANDAL PROOF STRAINER, MIXING VALVE (NO. P6900-TMV-1), AND 0.5 GPM JLATE CW, HW, AND SS LINES FOR ADA COMPLIANCE. ADA COMPLIANT (BARRIER-FREE). SET MIXING VALVE OUTLET TO 105°F. INA LAVATORY WITH FLOOR MOUNTED SUPPORTS. FURNISH WITH FAUCET (4" CENTERS) WITH BATTERY POWERED SENSOR OPERATED VALVE, VANDAL PROOF STRAINER, MIXING VALVE (NO. P6900-DW RESTRICTOR. INSULATE CW, HW, AND SS LINES FOR ADA COMPLIANCE. ADA COMPLIANT (BARRIER-FREE). SET MIXING VALVE OUTLET TO 105°F.

IXTURE AND SIZE ACCORDING TO FIXTURE WATER SUPPLY. SET TO 105°F. RE: MIXING VALVE DETAIL.

VATER HEATER IN AN ACCESSIBLE LOCATION. SET TO 120°F.

ARGED HYDROTROL WATER HAMMER ARRESTER. SIZE ARRESTER FOR THE FIXTURES SERVED AND INSTALL PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

HOWER SURROUND, 38-1/4"x37"x78-5/8" FIBERGLASS CONSTRUCTION WITH INTEGRAL CAULKLESS DRAIN. FURNISH WITH LEFT PLUMBING ORIENTATION, INTEGRAL PLYWOOD BACKING, CURTAIN ROD D GRAB BAR, FOLDING SEAT, COLLAPSIBLE RUBBER WATER RETAINER, SEMI-PERMANENT THRESHOLD ADAPTER AND FACTORY INSTALLED SHOWER SYSTEM. SYMMONS SHOWER SYSTEM TO ANCING MIXING VALVE WITH SINGLE-LEVER CONTROL, 2.5 GPM HAND-HELD SHOWER WITH 60" METAL BRAIDED HOSE, INLINE VACUUM BREAKER, 30" SLIDE BAR, AND SOAP DISH. ADA COMPLIANT

GA TYPE 304 STAINLESS STEEL SINGLE BOWL SINK WITH SELF-RIMMING EDGE, STRAINER, AND TWO (2) HOLES (4") OC. INSIDE BOWL DIMENSIONS: 18" L, 14" W, 6-1/2" D. FURNISH WITH ADA ED SWIVEL GOOSENECK FAUCET WITH LEVER HANDLES AND 2.2 GPM PRESSURE COMPENSATING AERATOR. ADA COMPLIANT (BARRIER-FREE). TED ENAMELED CAST IRON SERVICE SINK. FURNISH WITH VINYL-COATED WIRE RIM GUARD, GRID DRAIN, 2 FT HOSE WITH WALL HOOK, AND WALL MOUNTED POLISHED CHROME FAUCET WITH TOP

BREAKER, 3/4" THREADED HOSE OUTLET, AND PAIL HOOK WITH WALL SUPPORT. SEMBLY COMPLETE WITH TIME CLOCK, SOLENOID, AND VACUUM BREAKER. INSTALL TRAP PRIMER IN WALL IN AN ACCESSIBLE LOCATION. FURNISH TRAP PRIMER WITH DISTRIBUTION UNIT (NO. DU-U) RAIN TRAPS AND A LOCKABLE STAINLESS STEEL ACCESS COVER. INSTALL TRAP PRIMER IN AN ACCESSIBLE LOCATION. ELECTRICAL REQUIREMENTS: 115 V, 1 PH, 60 HZ.

WALL IN AN ACCESSIBLE LOCATION. FURNSIHE TRAP PRAIMER WITH A LOCKABLE STAINLESS STEEL ACCESS COVER.

BOVE CEILING IN AN ACCESSIBLE LOCATION. FURNISH TRAP PRIMER WITH DISTRIBUTION UNIT (NO. DU-U) FOR PRIMING 3 FLOOR DRAIN TRAPS.

MOUNTED URINAL WITH WASHOUT FLUSH ACTION. FURNISH WITH 1.0 GPF BATTERY POWERED SENSOR OPERATED FLUSH VALVE WITH METAL VALVE COVER, STAINLESS STEEL STRAINER, AND J.R. PPORT. ADA COMPLIANT (BARRIER FREE)

ITH WHITE POWDER COAT FINISH AND ONE QUARTER-TURN VALVE. MOUNT FIXTURE FLUSH TO WALL AT 48" AFF TO TOP OF BOX.

WITH WHITE POWDER COAT FINISH AND ONE QUARTER-TURN VALVE. MOUNT FIXTURE FLUSH TO WALL BELOW COUNTER IN AN ACCESSIBLE LOCATION.

MOUNTED, WATER CLOSET WITH SIPHON-JET ACTION. FURNISH WITH 1.6 GPF BATTERY POWERED SENSOR OPERATED FLUSH VALVE WITH METAL VALVE COVER AND CHURCH NO. 9500CT SEAT. R MOUNTED, ADA WATER CLOSET WITH SIPHON-JET ACTION. FURNISH WITH 1.6 GPF BATTERY POWERED SENSOR OPERATED FLUSH VALVE WITH METAL VALVE COVER , TRAP PRIMER DIVERTER, AND : ADA COMPLIANT (BARRIER FREE). RE: TRAP PRIMER AT FLUSH VALVE DETAIL.

EXPANSION TANK SCHEDULE

E WATER USE.

CONSTRUCTION DESIGNED FOR DOMESTIC SERVICE.

IME CLOCK AND 5°F DIFFERENTIAL AQUASTAT FOR PUMP CONTROL.

BE INSTALLED BY THE PLUMBING CONTRACTOR.

COLLAR.

STRUCTURE OR OTHER BUILDING ELEMENTS, USE 1/2" THICK,

40-DUROMETER NEOPRENE AS SLEEVE BETWEEN PIPE AND PIPE

- ATTACH TO STRUCTURE

SUPERSTRUT

MAX. HORIZONTAL

HANGER SPACING

C-710

山

Ш

THREADED ROD

SIZE

WITH SUPERSTRUT

-SPRING ISOLATORS

(SEE SCHEDULE)

PIPE HANGER ------

SUPERSTRUT

C-711

PIPE TYPE

(WHERE CALLED FOR)

LOCK & LOCKNUT (TYP)

ALL THREADED ROD

ACCESSORIES AS REQUIRED

8 AC UNIT CONDENSATE DRAIN DETAIL SCALE: NTS

EXTEND TUBING TO DRAIN LOCATION.

SECURE WITH PIPE STRAP TO WALL STUDS

- WALL FINISH MATERIAL - VERIFY WITH

(OVERHEAD/EXPOSED: COPPER) (CONCEALED/BELOW SLAB: PEX)

- COMPRESSION FITTING

- ESCUTCHEON PLATE

SUPPLY TUBE

- USE TUBE BENDER

- RE: SECTION VIEW

- WATER CLOSET

ARCHITECTURAL DRAWINGS

- CHROME FINISH LOCK-NUT

- CHROME FINISH METALLIC

- FACTORY OPTION DIVERTER FITTING

- CHROME ESCUTCHEON PLATE

2 TRAPEZE SPRING HANGER DETAIL SCALE: NTS

3 FLOOR AND WALL CLEANOUT DETAIL SCALE: NTS

-ROOF MOUNTED

AIR UNIT

<u></u> — 3" MIN

∖ FALL

AC OR MAKE-UP

┽┤╷╶╤╴╷

6" MIN

TRAP

– 12" HIGH OPEN VENT PIPE DO NOT BLOCK UNIT ACCESS DOOR.

- FULL SIZE COPPER CONDENSATE

INDIRECT WASTE. (NO TRAP FOR

DRAIN WITH 6" TRAP SEAL.

- TERMINATE CD LINE 10'-0" MINIMUM FROM ALL AC OSA

INTAKES. SLOPE CD LINE DOWN

HILL AND DISCHARGE ONTO ROOF.

INSTALL PIPE SUPPORT PER DETAIL.

MAKE-UP AIR UNITS)

- ROOF

GAS COCK-

FIRE WALL

IN SLEEVE

SLEEVE

NOTES: RE: ARCHITECTURAL PLANS FOR WATERPROOFING REQUIREMENTS IF APPLICABLE.

5 FLOOR DRAIN DETAIL SCALE: NTS

4 PIPE THRU FRAMED WALL DETAIL SCALE: NTS

SYMBOLS

SYMBC	DLS not all symbols may be utilized				
\frown	CONDUIT CONTINUATION	۲	EMERGENCY EXIT SIGN WITH BATTERY BACKUP: SHADED QUARTER		TELEPHONE TERMINAL BOARD (PLAN VIEW)
	CONDUIT CONCEALED IN WALL OR CEILING		INDICATE LIGHTED DIRECTIONAL ARROW ON THAT FACE. CONNECT		SIGNAL OUTLETS SYSTEM NOTES: SYSTEMS
	CONDUIT EXISTING		TO UNSWITCHED LOCAL LIGHTING CIRCUIT.		ONLY FOR THIS CONTRACTOR UON. 4" SQU MINIMUM WITH SINGLE GANG MUD RING UO
	CONDUIT CONCEALED UNDERGROUND		EMERGENCY LIGHTING (SURFACE, RECESSED) CONNECT TO UNSWITCHED LOCAL LIGHTING CIRCUIT		CONDUIT SIZE FROM BOX TO NEAREST ACC CEILING.
	HOMERUN		FIXTURES WITH HALF-SHADING ARE EMERGENCY LIGHTS WITH		
•	CONDUIT STUB DOWN		BATTERY BACKUP. BATTERY BACKUP SHALL PROVIDE MINIMUM 1100 LUMENS PER FIXTURE FOR 90 MINUTES. EMERGENCY		IELEPHONE-DATA OUTLET
⊢ →	STUB THROUGH	0	BATTERY UNIT SHALL BE CONNECTED TO UNSWITCHED LOCAL LIGHTING CIRCUIT. FIXTURES SHALL BE SWITCHED WITH ROOM	/ M /	MOTOR CONNECTION
0—	CONDUIT STUB UP		LIGHTS. FIXTURES TO REMAIN ON AT LOSS OF POWER. FIXTURES WITH 'NI' SHALL BE EMERGENCY/NIGHT LIGHTS CONNECTED FOR	\boxtimes	STARTER OR CONTACTOR: SIZE AS REQUIRED BY EQUIPMENT MANUFA
] () () ()	JUNCTION BOX (NEW, EXISTING, DEMO)		24 HOUR OPERATION.	<u>κ</u> μ	COMBINATION MOTOR STARTER/DISCONNECT
	ELECTRICAL DISTRIBUTION PANELBOARD	0	2X4 LIGHT FIXTURE		SIZE AS REQUIRED BY EQUIPMENT MANUFA
	EQUIPMENT ENCLOSURE AS NOTED	0	2X2 LIGHT FIXTURE	Ē	DISCONNECT SWITCH: SIZE AS REQUIRED BY EQUIPMENT MANUFA
$\Phi \Phi \Phi$	DUPLEX RECEPTACLE (NEW, EXISTING, DEMO)				F=FUSED, BLANK=UNFUSED
$\oplus \oplus \clubsuit$	DOUBLE DUPLEX RECEPTACLE (NEW, EXISTING, DEMO)	0	STRIP LIGHT FIXTURE	1/30/3	SWITCH/DISCONNECT CONFIGURATION DESIG
\mathbb{A}	OVER-COUNTER RECEPTACLE	Ō	PENDANT FIXTURE	▲ ▲ └───	- NUMBER OF POLES
(CONTROLLED RECEPTACLE	0	RECESSED ROUND FIXTURE		- AMPERE RATING OF THE SWITCH
₩ #	GFCI RECEPTACLE	\bigtriangledown	WALL SCONCE		- NEMA CLASSIFICATION
世世	GFCI OVER-COUNTER RECEPTACLE	OH 🗖	WALL MOUNTED FIXTURE	(T) (TS)	THERMOSTAT OR TEMPERATURE SENSOR: S MECHANICAL DRAWINGS FOR LOCATIONS FU
444	GFCI CONTROLLED RECEPTACLE	E	RECESSED STEP FIXTURE		INSTALL BACKBOX AND 1"C TO ABOVE ACC CEILING, COORDINATE INSTALLATION WITH M
O 🔂	WEATHERPROOF GFCI RECEPTACLE	O	BOLLARD FIXTURE		DUCT TYPE SMOKE DETECTOR, SEE MECHA
	OVER-COUNTER WEATHERPROOF GFCI RECEPTACLE		POST TOP LIGHT FIXTURE POLE AND RASE	SD	DRAWINGS FOR LOCATIONS VERIFY REQUIRE
	ISOLATED GROUND RECEPTACLE		TOST TOT EIGHT HATOME, TOLE, AND DASE		INSTALL ALL ELECTRICAL REQUIRED FOR CO
\mathbf{r}	USB CHARGER/DUPLEX RECEPTACLE	XXX	LIGHT FIXTURE CALLOUT	~	UPERATIONAL SYSTEM
\mathbf{k}	OVER-COUNTER USB CHARGER/DUPLEX RECEPTACLE	\$	SWITCH 120/277 VOLT, 20 AMP	$\langle D \rangle$	SMOKE DAMPER: SEE MECHANICAL DRAWING LOCATIONS VERIFY REQUIREMENTS WITH ME
\clubsuit	CONTROLLED USB CHARGER/DUPLEX RECEPTACLE	\$x	SWITCH X = 2 - DOUBLE POLE-DOUBLE THROW		FIRE PROTECTION FURNISH AND INSTALL AI REQUIRED FOR COMPLETE OPERATIONAL SY
	FLOOR RECEPTACLE: FLUSH WITH COVER		3 – THREE-WAY 4 – FOUR-WAY D – DIMMER	$\left\langle \begin{array}{c} XX \\ X \end{array} \right\rangle$	MECHANICAL EQUIPMENT CALLOUT
T (A /V	FLUSH FLOOR BOX DUPLEX RECEPTACLE, COMM/DATA, A/V		HP – HORSEPOWER RATED SWITCH WITH THERMAL OVERLOADS SIZED AS REQUIRED BY EQUIPMENT LABEL RATING	X	SHEET NOTE CALLOUT
	CEILING RECEPTACLE: FLUSH WITH CEILING		OV – LOW VOLTAGE MOMENTARY OVERRIDE SWITCH OS – OCCUPANCY SENSOR PASSIVE–INFRARED WALL SWITCH, WITH A 30 MINUTE TIME DELAY	\triangle	REVISION DELTA
۲	SPECIAL ELECTRICAL CONNECTION: COORDINATE REQUIREMENTS WITH EQUIPMENT BEING SERVED		P – NEON PILOT LIGHT L – LIGHTED SWITCH T – TIMER AS NOTED		
HH	HAND HOLE, RATED AS REQUIRED FOR APPLICATION		W – WIRELESS SWITCH WP – WEATHERPROOF		
		0S	CEILING OCCUPANCY SENSOR		

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ØS

PC

WALL-MOUNTED OCCUPANCY SENSOR

ABBREVIATIONS

#" C	SIZE OF TRADE SIZE CONDUIT. $\# = 1/2$ °C, 2°C.
" #Р	NUMBER OF POLES. $\# = 1P, 2P, ETC.$
#W	NUMBER OF WIRES, $\# = 3W$, 4W, ETC.
Ä	AMPERE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ANN	ANNUNCIATOR
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
СВ	CIRCUIT BREAKER
CLG	CEILING
С	CONDUIT
Cd	CANDELLA
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
(E)	EXISTING DEVICE/EQUIPMENT - FOR CLARIFICATION
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
EWH	ELECTRIC WALL HEATER
F	FUSE
FACP	FIRE ALARM CONTROL PANEL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GEL	GROUND FAULI INTERRUPTER
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
GND	GROUND
HUA	
HP	HURSE PUWER
HVAC	HEATING VENTILATION AND AIR CONDITIONING
1/0	
KOMIL	INUUSANU UIKUULAK MIL KNOCK OUT
KU KV	
۳NV	NILUVULI

KVA KILOVOLT AMPERE

	SIGNAL OUTLETS SYSTEM NOTES: SYSTEMS ARE RACEWAY ONLY FOR THIS CONTRACTOR UON. 4" SQUARE BOX MINIMUM WITH SINGLE GANG MUD RING UON. 1" MINIMUM CONDUIT SIZE FROM BOX TO NEAREST ACCESSIBLE CEILING.
	TELEPHONE-DATA OUTLET
M/	MOTOR CONNECTION
\boxtimes	STARTER OR CONTACTOR: SIZE AS REQUIRED BY EQUIPMENT MANUFACTURER
	COMBINATION MOTOR STARTER/DISCONNECT: SIZE AS REQUIRED BY EQUIPMENT MANUFACTURER
Ē	DISCONNECT SWITCH: SIZE AS REQUIRED BY EQUIPMENT MANUFACTURER F=FUSED, BLANK=UNFUSED
/30/3	SWITCH/DISCONNECT CONFIGURATION DESIGNATION
	NUMBER OF POLES AMPERE RATING OF THE SWITCH NEMA CLASSIFICATION
	THERMOSTAT OR TEMPERATURE SENSOR: SEE MECHANICAL DRAWINGS FOR LOCATIONS FURNISH AND INSTALL BACKBOX AND 1"C TO ABOVE ACCESSIBLE CEILING. COORDINATE INSTALLATION WITH MECHANICAL
]	DUCT TYPE SMOKE DETECTOR: SEE MECHANICAL DRAWINGS FOR LOCATIONS VERIFY REQUIREMENTS WITH MECHANICAL AND FIRE PROTECTION FURNISH AND INSTALL ALL ELECTRICAL REQUIRED FOR COMPLETE OPERATIONAL SYSTEM
\bigcirc	SMOKE DAMPER: SEE MECHANICAL DRAWINGS FOR LOCATIONS VERIFY REQUIREMENTS WITH MECHANICAL AND FIRE PROTECTION FURNISH AND INSTALL ALL ELECTRICAL REQUIRED FOR COMPLETE OPERATIONAL SYSTEM
XX X X	MECHANICAL EQUIPMENT CALLOUT
X	SHEET NOTE CALLOUT
\triangle	REVISION DELTA

RIFICATION

INTERIOR DAYLIGHT SENSOR EXTERIOR PHOTOCELL KW KILOWATT KWH KILOWATT HOUR LIGHTING CONTROL PANEL LCP LTS LIGHTS / LIGHTING LV LOW VOLTAGE MCC MOTOR CONTROL CENTER MDSB MAIN DISTRIBUTION SWITCHBOARD MFR MANUFACTURER MLO MAIN LUG ONLY NEW DEVICE/EQUIPMENT – FOR CLARIFICATION (N) N/A NOT APPLICABLE NC NORMALLY CLOSED NEC NATIONAL ELECTRICAL CODE NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION NESC NATIONAL ELECTRICAL SAFETY CODE NO NORMALLY OPEN NO. NUMBER NRTL NATIONALLY RECOGNIZED TESTING LABORATORY - AS DEFINED BY OSHA OVER COUNTER TOP BACKSPLASH – COORDINATE INSTALLATION OC 0.H. OPPOSITE HAND – MIRRORED OR ROTATED LAYOUT OS OCCUPANCY SENSOR OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION PF POWER FACTOR PH PHASE (R) REC RELOCATED DEVICE/EQUIPMENT - FOR CLARIFICATION RECEPTACLE REV REVISION RTU ROOF TOP UNIT SPDT SINGLE POLE, DOUBLE THROW SPST SINGLE POLE, SINGLE THROW SST SOFT START/STOP MOTOR STARTER SYMM SYMMETRICAL TK TOE KICK TTB TELEPHONE TERMINAL BOARD TVSS TRANSIENT VOLTAGE SURGE SUPPRESSOR TYP TYPICAL UON UNLESS OTHERWISE NOTED UPS UNINTERRUPTABLE POWER SUPPLY V VOLTAGE

VA VOLT–AMPERE VFD VARIABLE FREQUENCY MOTOR DRIVE

WATER HEATER WH

WP WEATHERPROOF XFMR TRANSFORMER

XFR TRANSFER SWITCH

FIRE ALARM SYSTEM NOTES:

A. THIS PROJECT SHALL INCLUDE UPGRADES AND MODIFICATIONS TO THE EXISTING FIRE ALARM SYSTEM AS REQUIRED FOR CODE COMPLIANCE.

- B. REVISIONS AND ADDITIONS TO EXISTING FIRE ALARM SYSTEM SHALL BE DESIGNED AND CONSTRUCTED BY FIRE ALARM SYSTEM CONTRACTOR. SYSTEM SHALL BE DESIGNED AND CONSTRUCTED IN FULL ACCORDANCE WITH LOCAL PREVAILING CODES AND PER THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. FIRE ALARM CONTRACTOR SHALL SUBMIT ALL DOCUMENTATION TO THE PROPER ENTITIES TO OBTAIN ALL PERMITS FOR THE PROJECT FIRE ALARM SYSTEM. FIRE ALARM CONTRACTOR SHALL CONSTRUCT THE FIRE ALARM SYSTEM AND SECURE ALL INSPECTIONS AND APPROVALS FOR THE INSTALLED PROJECT FIRE ALARM SYSTEM. INSTALLATION SHALL BE COMPLETE, OPERATIONAL, AND TESTED IN EVERY DETAIL TO THE FULL ACCEPTANCE OF THE AUTHORITY HAVING JURISDICTION. FINAL INSTALLATION DOCUMENTATION SHALL BE SUBMITTED TO CSHQA AND THE AUTHORITY HAVING JURISDICTION. PROJECT FIRE ALARM SYSTEM SHALL BE GUARANTEED FOR ALL PARTS AND LABOR FOR ONE FULL YEAR STARTING AT THE FINAL ACCEPTANCE BY THE AUTHORITY HAVING JURISDICTION.
- C. DEFERRED SUBMITTAL TO AGENCY BY CONTRACTOR.

GENERAL NOTES:

- A. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE LOCALLY ADOPTED ELECTRICAL CODE, ALL LOCAL CODES, AND TO THE FULL ACCEPTANCE OF THE AUTHORITY HAVING JURISDICTION. WHENEVER THE REQUIREMENTS OF THE ELECTRICAL SPECIFICATION OR DRAWINGS EXCEED THOSE OF THE APPLICABLE CODES OR STANDARDS, THE REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS SHALL GOVERN.
- B. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF AS-BUILT DRAWINGS. AS-BUILT SE OF DRAWINGS SHALL BE UPDATED DAILY AND SHALL DOCUMENT THE ACTUAL INSTALLED CONDITION OF THE ENTIRE ELECTRICAL INSTALLATION. AS-BUILT SET OF DRAWINGS SHALL BE AVAILABLE AT ALL TIMES ON THE SITE FOR INSPECTION BY CODE OFFICIALS, OWNER, ARCHITECT, AND ENGINEER.
- PROPOSED MODIFICATIONS OF ENGINEERED ELECTRICAL DRAWINGS SHALL BE APPROVED BY ENGINEER OF RECORD PRIOR TO PROCEEDING WITH WORK. PROPOSED CHANGES SHALL COMPLY WITH ALL APPLICABLE CODES/JURISDICTION REQUIREMENTS. COST OF ANY ENGINEERING/REVIEW REQUIRED BY PROPOSED CHANGES SHALL BE BORNE BY ENTITY PROPOSING CHANGE.
- D. ALL EXISTING ELECTRICAL EQUIPMENT SHALL REMAIN FULLY FUNCTIONAL, UON. CONTRACTOR SHALL COORDINATE ALL POWER OUTAGES WITH THE OWNER AND OBTAIN PERMISSION A MINIMUM OF (7) DAYS PRIOR TO REMOVAL OF POWER.
- PROTECT ALL EXISTING WORK FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGED MATERIALS, SYSTEMS, COMPONENTS, FINISHES, AND THE LIKE, SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR TO THE ACCEPTANCE OF THE OWNER.
- G. DESIGN IS BASED ON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS TO DETERMINE STATUS OF ACTUAL CONDITIONS AS THEY RELATE TO THE SCOPE OF WORK AS SHOWN ON THESE PLANS.
- H. DEMOLITION WORK IS A PART OF THIS PROJECT. SEE DRAWINGS FOR EXISTING ELECTRICAL DEVICES TO BE REMOVED. REMOVE ASSOCIATED BOXES, RACEWAYS AND CONDUCTORS BACK TO SOURCE, AND MAKE SAFE. RACEWAYS THAT ARE IN WALLS OR FLOORS WHICH ARE TO REMAIN SHALL BE ABANDONED IN PLACE. THE RACEWAY SHALL BE REMOVED TO BELOW THE SURFACE OF THE ASSOCIATED WALL OR FLOOR. THE RESULTING DEPRESSION SHALL BE REPAIRED TO MATCH THE ADJACENT SURFACE.
- CONTRACTOR SHALL DISPOSE OF THE REMOVED ELECTRICAL. DISPOSAL OF DEVICES SHALL COMPLY WITH ALL APPROPRIATE CODES. REUSE EXISTING CONDUITS AND JUNCTION BOXES AS IS PRACTICAL.
- . ALL EXISTING CIRCUITS TO REMAIN THAT RUN THROUGH WALLS TO BE REMOVED SHALL BE REROUTED AND RECONNECTED. REPAIR AND PATCH ALL WALLS TO MATCH SURROUNDING SURFACES.
- K. IF A CIRCUIT TO REMAIN IS INTERRUPTED AS A RESULT OF WORK RELATING TO THIS PROJECT, THE CIRCUIT SHALL BE RE-ENERGIZED AS REQUIRED TO MAINTAIN POWER TO THE AFFECTED DEVICES.
- BOXES MOUNTED IN A COMMON WALL SHALL BE OFFSET A MINIMUM OF 12" OR MOUNTED IN ADJACENT STUD SPACES. BOXES MOUNTED BACK-TO-BACK ARE NOT ALLOWED.
- M. FURNISH AND INSTALL A PULL CORD IN ALL EMPTY CONDUITS FOR ACCESS CONTROL AND COMMUNICATIONS DISTRIBUTION.
- N. EQUIPMENT REMOVED AND RELOCATED SHALL HAVE ALL CONDUCTORS AND CONDUITS LABELED IN A LOGICAL FASHION. CONTRACTOR SHALL COORDINATE WITH LABELING SCHEME FOR RECONNECTION OF EQUIPMENT.
- O. THE ELECTRICAL CONTRACTOR SHALL VERIFY ELECTRICAL LOADS ON EXISTING CIRCUIT(S) AND PANELBOARDS PRIOR TO MAKING ANY MODIFICATION TO ENSURE ADEQUATE CAPACITY FOR NEW DEVICES AND LIGHT FIXTURES. FURNISH AND INSTALL CIRCUIT BREAKERS OF THE SAME TYPE AND RATING IN PANELBOARD AS NEEDED.
- P. FOR CIRCUITS THAT ARE MADE SPARE, THE CIRCUIT BREAKER SHALL REMAIN IN PLACE. THE CIRCUIT CONDUCTORS SHALL BE DISCONNECTED FROM THE CIRCUIT BREAKER AND REMOVED FROM THE RACEWAY. THE CIRCUIT BREAKER SHALL BE MARKED SPARE.
- Q. CLEARLY LABEL ALL ACCESSIBLE CONDUIT STUBS WITH SYSTEM NAME AND LOCATION (ROOM NUMBER) WHERE THE OTHER END OF THE CONDUIT TERMINATES. USE INDELIBLE INK. THE LABELS SHALL BE LOCATED ON THE CONDUIT IN A POSITION THAT CAN BE EASILY READ BY THE OWNER IN THE FUTURE.
- R. THE CONTRACTOR SHALL PROVIDE UPDATED CIRCUIT PANEL DIRECTORIES FOR ALL PANELS THAT CONTAIN CIRCUITS IMPACTED BY THIS PROJECT. NEW DIRECTORIES SHALL BE TYPED, AND OLD DIRECTORIES SHALL BE RETAINED BEHIND THE NEW.

DRAWING INDEX:

- E01 ELECTRICAL SYMBOLS & ABBREVIATIONS E02A SHEET SPECIFICATIONS
- E02B SHEET SPECIFICATIONS E03A ENERGY COMPLIANCE FORMS
- E03B ENERGY COMPLIANCE FORMS E04 LIGHTING FIXTURE AND CONTROL SCHEDULE
- E06 ELECTRICAL DEMO PLAN E11 LIGHTING PLAN
- E21 POWER PLAN E31 MECHANICAL POWER PLAN
- E70 ELECTRICAL DETAILS E80 EXISTING SINGLE LINE DIAGRAM & SCHEDULES

E81 SINGLE LINE DIAGRAM & SCHEDULES

ELECTRICAL SPECIFICATIONS

SECTION 260100 - BASIC ELECTRICAL REQUIREMENTS

1.1 GENERAL REQUIREMENTS

- A. THE REQUIREMENTS OF THIS SECTION SHALL APPLY TO ALL SUBSEQUENT SECTIONS OF THESE SPECIFICATIONS. NOT ALL EQUIPMENT LISTED MAY BE NEEDED FOR THE PROJECT; REFER TO THE ELECTRICAL DRAWINGS FOR REQUIRED EQUIPMENT. ADDITIONAL EQUIPMENT DESCRIBED OR SPECIFIED ON THE ELECTRICAL DRAWINGS THAT IS NOT LISTED IN THESE
- SPECIFICATIONS SHALL MEET ALL REQUIREMENTS HEREIN. B. FURNISH AND INSTALL ALL NEW MATERIAL AND EQUIPMENT BEARING THE LISTING LABEL OF UNDERWRITERS LABORATORIES (UL), OR A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) AS DEFINED BY OSHA IN 29CFR 1910.7, AND IS ACCEPTABLE TO AUTHORITY HAVING JURISDICTION, WHERE APPLICABLE.
- UNLESS SPECIFICALLY NOTED TO THE CONTRARY, ALL MATERIALS AND EQUIPMENT SHALL BE OF STANDARD CATALOG AND PRODUCTION AS REQUIRED TO PRODUCE COMPLETE OPERATING SYSTEMS. THE ENTIRE INSTALLATION MUST BE IN STRICT ACCORDANCE WITH THE REGIONALLY ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, LATEST RULES AND REGULATIONS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, STATE AND LOCAL CODES AND INSPECTORS, AND ALL OTHER APPLICABLE CODES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
- 1. OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS (OSHA). NFPA 70 – NATIONAL ELECTRICAL CODE (NEC).
- ADA STANDARDS AMERICANS WITH DISABILITIES ACT. ANSI/IEEE C-2 - NATIONAL ELECTRICAL SAFETY CODE.
- NECA STANDARD OF INSTALLATION. INTERNATIONAL BUILDING CODE. INTERNATIONAL FIRE CODE.
- CABO/ANSI A117.1. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. . THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS.
- 1.2 DRAWINGS
- ALL CONTRACT DRAWINGS ARE A PART OF THE ELECTRICAL WORK INSOFAR AS THEY APPLY, AS IF REFERRED TO IN FULL. 3. THE DRAWINGS ARE MADE ON A SMALL SCALE AND OUTLETS ARE INDICATED ONLY IN THEIR APPROXIMATE LOCATION. UNLESS DIMENSIONED. LOCATE OUTLETS, FIXTURES, AND APPARATUS SYMMETRICALLY ON FLOORS, WALLS, AND CEILINGS WHERE NOT DIMENSIONED AND COORDINATE SUCH LOCATIONS WITH WORK OF OTHER TRADES TO PREVENT INTERFERENCES. VERIFY ALL DIMENSIONS ON THE JOB. DO NOT SCALE ELECTRICAL DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL, CIVIL, AND MECHANICAL DRAWINGS FOR DIMENSIONS.
- 1.3 COORDINATION
- A. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE PROJECT SCHEDULE AS WELL AS OTHER TRADES. THE CONTRACTOR SHALL REPAIR OR REPLACE SURFACES REMOVED OR DAMAGED DUE TO INTERFERENCE WITH OTHER TRADES (NOT COORDINATED) AT HIS EXPENSE WITHOUT IMPACT TO THE PROJECT SCHEDULE. B. THE ENTIRE ELECTRICAL INSTALLATION AND DEMOLITION (IF NECESSARY) SHALL BE CAREFULLY COORDINATED WITH THE ARCHITECTURAL PHASING PLAN. FOR AREAS, WHICH ARE TO BE OCCUPIED PRIOR TO COMPLETION OF THE PROJECT, THE
- CONTRACTOR SHALL PROVIDE TEMPORARY SERVICES IF PERMANENT SERVICES ARE NOT AVAILABLE. C. COORDINATE LAYOUT AND INSTALLATION OF ELECTRICAL EQUIPMENT AND COMPONENTS WITH OTHER CONSTRUCTION AND TRADES. INCLUDING CONDUIT. PIPING, EQUIPMENT, AND ADJACENT SURFACES. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND INSURE EQUIPMENT AND COMPONENTS WILL FIT IN SPECIFIED LOCATIONS PRIOR TO ORDERING EQUIPMENT OR ROUGH-IN. MAINTAIN REQUIRED WORKING CLEARANCES.
- 1.4 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
- A. MEASURE INDICATED MOUNTING HEIGHTS TO BOTTOM OF UNIT FOR SUSPENDED ITEMS AND TO CENTER OF UNIT FOR WALL-MOUNTED ITEMS. B. IF MOUNTING HEIGHTS OR OTHER LOCATION CRITERIA ARE NOT INDICATED, ARRANGE AND INSTALL COMPONENTS AND EQUIPMENT TO PROVIDE MAXIMUM POSSIBLE HEADROOM CONSISTENT WITH THESE REQUIREMENTS. C. INSTALL EQUIPMENT TO FACILITATE SERVICE, MAINTENANCE, AND REPAIR OR REPLACEMENT OF COMPONENTS OF BOTH ELECTRICAL EQUIPMENT AND OTHER NEARBY INSTALLATIONS. CONNECT IN SUCH A WAY AS TO FACILITATE FUTURE
- DISCONNECTING WITH MINIMUM INTERFERENCE WITH OTHER ITEMS IN THE VICINITY. D. YIELD RIGHT OF WAY TO PIPING SYSTEMS INSTALLED AT A REQUIRED SLOPE.
- 1.5 TEMPORARY ELECTRICAL SERVICES
- A. THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER SERVICES FOR THE DURATION OF THE PROJECT WHERE THE SITE DOES NOT HAVE A USABLE EXISTING SERVICE. ALL TEMPORARY SERVICES SHALL BE INSTALLED IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURY TO PERSONNEL OR DAMAGE TO THE PROJECT WORKSITE.
- 1.6 SITE VISIT
- A. THE CONTRACTOR SHALL CAREFULLY INSPECT THE SITE PRIOR TO SUBMITTING HIS BID. NO ADDITIONAL CHARGES WILL BE ALLOWED DUE TO THE LACK OF SUCH INSPECTION. 1.7 MATERIAL SUBMITTALS AND SUBSTITUTIONS
- A. THE CONTRACTOR SHALL CHECK, STAMP, AND APPROVE ALL MATERIAL SUBMITTALS. THE SIGNED STAMP OF APPROVAL SHALL APPEAR ON THE COVER SHEET OF EACH SUBMITTAL SET. PROVIDE SUBMITTALS AS INDICATED IN RESPECTIVE SPECIFICATION SECTIONS. B. BY SPECIFIC DESIGNATION AND DESCRIPTION, STANDARDS ARE ESTABLISHED FOR MATERIALS AND EQUIPMENT. OTHER
- MAKES AND EQUIPMENT OF EQUAL QUALITY WILL BE CONSIDERED, PROVIDED SUCH REQUESTS FOR SUBSTITUTION ARE SUBMITTED FOR REVIEW. NO CHANGES IN SIZE, LOCATION, TYPE, FUNCTION, BRAND, FINISH, ETC., SHALL BE MADE WITHOUT THE SPECIFIC PERMISSION OR DIRECTION OF THE ARCHITECT OR HIS REPRESENTATIVE. A SCHEDULE SHOWING MAKE, TYPE, MANUFACTURER'S NAME, AND TRADE DESIGNATION OF ALL MATERIALS AND EQUIPMENT PROPOSED AS A SUBSTITUTION SHALL BE SUBMITTED FOR APPROVAL.
- 1.8 COMPLETION OF WORK
- A. THE WORK SHALL INCLUDE ALL LABOR, EQUIPMENT, APPLIANCES, MATERIALS, TRANSPORTATION, FACILITIES, AND SERVICES NECESSARY FOR PRODUCING A COMPLETE OPERATING ELECTRICAL SYSTEM IN CONFORMANCE WITH ALL CONTRACT DOCUMENTS. B. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE COMPLETED IN EVERY DETAIL AS SPECIFIED AND/OR INDICATED ON THE DRAWINGS AND TESTED FOR PROPER OPERATION.
- 1.9 WORKMANSHIP
- A. WHERE CUTTING, DRILLING, OR CHANNELING BECOMES NECESSARY FOR PROPER INSTALLATION, PERFORM WITH CARE USING SKILLED MECHANICS OF TRADES INVOLVED, REPAIR DAMAGE TO BUILDING AND EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER. CUT STRUCTURAL MEMBERS ONLY WITH SPECIFIC APPROVAL OF THE ARCHITECT. B. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER BY COMPETENT SPECIALISTS FOR EACH SUBTRADE. THE INSTALLATION OF ANY MATERIAL OR EQUIPMENT NOT MEETING THESE STANDARDS MAY BE CONDEMNED BY THE ARCHITECT OR HIS REPRESENTATIVE AND SHALL BE REMOVED. PROPER MATERIAL OR EQUIPMENT SHALL BE INSTALLED AT NO ADDITIONAL COST TO THE OWNER. ALL MATERIALS SHALL BE STORED IN SUCH A WAY AS TO PREVENT DAMAGE OR WEATHERING PRIOR TO INSTALLATION. C. PENETRATIONS THROUGH FIRE RESISTIVE STRUCTURES SHALL BE DONE SUCH THAT THE INTEGRITY RATING OF THE STRUCTURE(S) IS NOT COMPROMISED. THIS INCLUDES COMPLIANCE WITH ALL CODES AND INSPECTION AGENCIES.
- 1.10 RECORD DRAWINGS
- A. MAINTAIN A CLEAN SET OF DRAWINGS AS THE WORK PROGRESSES, TO SHOW THE DIMENSIONED LOCATION AND ROUTING OF ALL ELECTRICAL WORK WHICH WILL BECOME PERMANENTLY CONCEALED. INDICATE TERMINATION LOCATION OF ALL B. ACCURATE PROGRESS MARK-UPS SHALL BE AVAILABLE ON SITE FOR EXAMINATION BY THE OWNER, ARCHITECT, OR ELECTRICAL ENGINEER AT ALL TIMES. INDICATE ITEMS OTHER THAN THAT INDICATED ON THE DRAWINGS AND ALL ITEMS
- ADDED BY CHANGE ORDER OR ADDENDUM. 1.11 GUARANTEE
- A. REPAIR OR REPLACE WITHOUT CHARGE, ALL MATERIAL AND EQUIPMENT, WHICH FAILS TO PERFORM IN A NORMAL, PROPER, OR SPECIFIED MANNER FOR A PERIOD OF ONE (1) YEAR AFTER FINAL ACCEPTANCE OF THE WORK. SECTION 260500 - ELECTRICAL MATERIALS AND METHODS
- 1.1 CONDUCTORS AND CABLES
- A. COPPER CONDUCTORS, UNLESS ALUMINUM IS SPECIFICALLY SHOWN: SOLID ALLOWED FOR NO. 10 AWG AND SMALLER; STRANDED ONLY FOR NO. 8 AWG AND LARGER. COMPLY WITH NEMA WC 70.
- SERVICE ENTRANCE: TYPE THHN-THWN OR XHHW, SINGLE CONDUCTORS IN RACEWAY. FEEDERS CONCEALED IN CONCRETE, BELOW SLABS-ON-GRADE, AND UNDERGROUND: TYPE THHN-THWN, SINGLE CONDUCTORS IN RACEWAY BRANCH CIRCUITS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN-THWN, SINGLE CONDUCTORS IN
- RACEWAY OR METAL-CLAD CABLE, TYPE MC. MC CABLE NOT ALLOWED FOR HOMERUNS TO PANELBOARDS OR FOR RUNS EXCEEDING 20 FT. MULTICONDUCTOR CABLE FOR CORD AND PLUG CONNECTED EQUIPMENT: TYPE SOW.
- CLASS 1, 2 AND 3 CONDUCTORS: PROVIDE MULTICONDUCTOR CABLE AS REQUIRED FOR APPLICATION WITH STRANDED-COPPER CONDUCTORS NOT SMALLER THAN NO. 18 AWG. B. BRANCH CIRCUIT CONDUCTORS MAY BE COMBINED INTO SINGLE HOMERUNS PROVIDED THE ALLOWABLE AMPACITIES OF
- THE CONDUCTORS ARE NOT EXCEEDED AS A RESULT OF DERATING FOR THE QUANTITY OF CONDUCTORS INSTALLED IN THE CONDUIT OR RACEWAY. INCREASE MINIMUM RACEWAY SIZE AS NECESSARY FOR CONDUCTOR FILL. C. EACH SINGLE-POLE BRANCH CIRCUIT SHALL HAVE ITS OWN NEUTRAL CONDUCTOR; SHARED NEUTRALS ARE NOT ALLOWED
- ON MULTIWIRE BRANCH CIRCUITS. D. CONNECTIONS AND SPLICES: MAKE SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS.
- TIGHTEN ELECTRICAL CONNECTORS AND TERMINALS. E. USE PULLING MEANS, INCLUDING FISH TAPE, CABLE, ROPE, AND BASKET-WEAVE WIRE/CABLE GRIPS, THAT WILL NOT DAMAGE CABLES OR RACEWAY.

F.	USE MANUFACTURER-APPROVED PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT	1.7	PROTECTION
G. 1.2 CON	DETERIORATE CONDUCTOR OR INSULATION. DO NOT EXCEED MANUFACTURER'S RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES. WIRING AT OUTLETS: INSTALL CONDUCTOR AT EACH OUTLET, WITH AT LEAST 12 INCHES OF SLACK. IDUIT AND TUBING		 A. STORE PRODUCTS INSTALLED. REPAI B. KEEP OUTLET BOXI OTHER MATERIAL T
A.	PROVIDE RACEWAYS AND FITTINGS LISTED FOR TYPE AND SIZE OF RACEWAY AND FOR APPLICATION AND ENVIRONMENT IN	SECTI	ON 260526 - GROUNDING
	WHICH INSTALLED. MINIMUM SIZE AS FOLLOWS UNLESS OTHERWISE NOTED: 1. POWER: HOMERUNS TO PANELBOARD 3/4" TRADE SIZE, BETWEEN ELECTRICAL BOXES 1/2" TRADE SIZE.	1.1	QUALITY ASSURANCE
В.	2. COMMUNICATIONS: 1" TRADE SIZE. ELECTRICAL METALLIC TUBING (EMT): ANSI C80.3; FOR USE IN INDOOR AND ABOVEGROUND, CONCEALED EXTERIOR		A. COMPLY WITH UL
C.	SPACES. USE STEEL SET—SCREW OR COMPRESSION TYPE FITTINGS, DIE CAST FITTINGS NOT ALLOWED. ELECTRICAL NONMETALLIC TUBING (ENT): NOT ALLOWED.	1.2	
D.	FLEXIBLE METAL CONDUIT (FMC): ZINC-COATED STEEL, FOR CONNECTION TO VIBRATING EQUIPMENT INCLUDING TRANSFORMERS AND MOTOR DRIVEN EQUIPMENT AND RECESSED OR SEMI-RECESSED LIGHT FIXTURES.		A. INSULATED CONDUC
F.	LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC): NOT ALLOWED. LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC): NEMA RN 1, WITH MINIMUM 0.040 INCH THICK SUNLIGHT AND MINERAL-OIL RESISTANT PVC COATING FOR CONNECTION TO VIBRATING FOLIPMENT IN DAMP OR WET LOCATIONS		B. BARE COPPER CON
G	FITTINGS WITH OVERLAPPING SLEEVES PROTECTING THREADED JOINTS.		2. STRANDED CON 3. TINNED CON
H.	RIGID STEEL CONDUIT (RMC): ANSI C80.1, FOR EXPOSED INTERIOR SPACES WHERE PHYSICAL DAMAGE IS LIKELY AND IN EXPOSED, EXTERIOR LOCATIONS. USE THREADED RIGID STEEL CONDUIT FITTINGS.		4. BONDING CA 5. BONDING CO
I.	RIGID NONMETALLIC CONDUIT (RNC): NEMA TC 2, TYPE EPC-40-PVC, UNLESS OTHERWISE INDICATED FOR DIRECT BURIAL. FITTINGS TO MATCH COMPLYING WITH NEMA TC 3.		6. BONDING JU FERRULES;
1.3 BOX	ES, ENCLOSURES, AND CABINETS		C. GROUNDING BUS: 12 INCHES LONG;
А. В.	SHEET METAL OUTLET AND DEVICE BOXES: NEMA OS 1, 2 1/4 INCHES DEEP. CAST-METAL OUTLET AND DEVICE BOXES: NEMA FB 1, FERROUS ALLOY OR ALUMINUM, TYPE FD, WITH GASKETED COVER		E. WELDED CONNECTO
C.	FOR USE IN DAMP, WET OR HAZARDOUS LOCATIONS. NONMETALLIC OUTLET AND DEVICE BOXES: NEMA OS 2, 2 1/4 INCHES DEEP.		BEING JOINED AND F. GROUND RODS: CC
D. E. F.	NONMETAL FLOOR BOXES: CAST OR SHEET METAL, FULLY ADJUSTABLE, RECTANGULAR. NONMETALLIC OUTLET AND DEVICE BOXES: NEMA OS 2. SMALL SHEFT METAL PULL AND JUNCTION BOXES: NEMA OS 1.	1.3	APPLICATIONS
G.	CAST-METAL ACCESS, PULL, AND JUNCTION BOXES: NEMA FB 1, CAST ALUMINUM OR GALVANIZED, CAST IRON WITH GASKETED COVER.		A. UNDERGROUND GR BELOW GRADE.
H.	METAL WIREWAYS: SHEET METAL SIZED AND SHAPED AS INDICATED, NEMA 250, TYPE 1, WITH SCEW-COVER IN MANUFACTURER'S STANDARD ENAMEL FINISH. INCLUDE ALL ACCESSORIES AND FITTINGS FOR A COMPLETE SYSTEM. HANDHOLES: POLYMER CONCRETE FIBERCIASS ENCLOSURES WITH POLYMER-CONCRETE FRAME AND COVER OR		B. GROUNDING BUS: I AND ELSEWHERE A
1.	FIBERGLASS-REINFORCED POLYESTER RESIN, SCTE 77, TIER 15 STRUCTURAL LOAD RATING IN TRAFFIC AREAS AND SCTE 77, TIER 8 ELSEWHERE.		C. CONDUCTOR TERMI 1. PIPE AND E
1.4 HAN	GERS, SUPPORTS, AND ATTACHMENT		2. UNDERGROU 3. CONNECTION
A.	DESIGN SUPPORTS CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS AND COMPONENTS USING MATERIALS WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING	1.4	INSTALLATION
В.	MATERIALS WHERE USED. STEEL SLOTTED SUPPORT SYSTEMS: COMPLY WITH MFMA-4, FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY		A. GROUNDING CONDU OR REQUIRED BY
C.	WITH CHANNEL DIMENSIONS SELECTED FOR APPLICABLE LOAD CRITERIA. THREADED RODS: STEEL, MINIMUM 1/4 INCH IN DIAMETER. CONDUIT AND CARLE SUPPORT DEVICES: STEEL HANCERS, CLANDS, AND ASSOCIATED EITINGS, DESIGNED, FOR TYPES, AND		B. GROUNDING AND B
Б.	SIZES OF RACEWAY OR CABLE TO BE SUPPORTED. RACEWAY SUPPORT METHODS: IN ADDITION TO METHODS DESCRIBED IN NECA 1, EMT AND RMC MAY BE SUPPORTED BY		GROUNDING CONDU
F.	OPENINGS THROUGH STRUCTURE MEMBERS, AS PERMITTED IN NFPA 70. MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCHOR AND FASTEN ELECTRICAL		LUG-TYPE CONNEC WATER FITTING IS
	OTHERWISE INDICATED BY CODE: 1. TO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS.		D. WATER METER PIPI PIPF WITH A BOI T
	 TO NEW CONCRETE: BOLT TO CONCRETE INSERTS OF STEEL OR MALLEABLE-IRON OR SLOTTED SUPPORT SYSTEM. TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS, INSERT-WEDGE-TYPE, STAINLESS STEEL. 		E. BOND EACH ABOVE F. BONDING INTERIOR
	 TO MASONRY UNITS: TOGGLE-TYPE BOLTS ON HOLLOW; EXPANSION ANCHOR FASTENERS ON SOLID. TO STEEL: WELDED THREADED STUDS WITH LOCK WASHERS AND NUTS, BEAM CLAMPS OR SPRING-TENSION CLAMPS IN COORDINATION WITH STRUCTURAL REQUIREMENTS. 		FANS, BLOWERS, E CONNECTIONS TO /
G.	6. TO LIGHT STEEL: SHEET METAL SCREWS. ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT CABINETS, PANELBOARDS,		ROUTED THROUGH
	DISCONNECT SWITCHES, CONTROL ENCLOSURES, PULL AND JUNCTION BOXES, TRANSFORMERS, AND OTHER DEVICES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE BY MEANS THAT MEET SEISMIC-RESTRAINT STRENGTH AND	1.5	EQUIPMENT GROUNDING
H.	ANCHURAGE REQUIREMENTS. MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE—TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED CHANNEL SUPPORT SYSTEM, SIZED SO CAPACITY CAN BE INCREASED BY AT LEAST 50 PERCENT IN FUTURE WITHOUT EXCEEDING SPECIFIED		A. INSTALL INSULATED COPPER CONDUCTO B. ISOLATED GROUNDI
I.	DESIGN LOAD LIMITS. SPRING-STEEL CLAMPS DESIGNED FOR SUPPORTING SINGLE CONDUITS WITHOUT BOLTS MAY BE USED FOR 1 1/2 INCH		THE GROUNDING T
J.	AND SMALLER RACEWAYS SERVING BRANCH CIRCUITS AND COMMUNICATION SYSTEMS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO TRAPEZE SUPPORTS. CONCRETE BASES: CONSTRUCT CONCRETE BASES OF 3000-PSI. 28-DAY COMPRESSIVE-STRENGTH CONCRETE NOT LESS	1.6	FIELD QUALITY CONTROL
0.	THAN 4 INCHES LARGER IN BOTH DIRECTIONS THAN SUPPORTED UNIT, AND SO ANCHORS WILL BE A MINIMUM OF 10 BOLT DIAMETERS FROM EDGE OF THE BASE. INSTALL ANCHOR FOR PROPER ATTACHMENT TO SUPPORTED EQUIPMENT AND		A. AFTER INSTALLING
1.5 INS ⁻	ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.		COMPLIANCE WITH
A.	INSTALL RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO BUILDING LINES WITH NO MORE THAN THE EQUIVALENT OF	SECTI	ON 262400 - ELECTRICAL
B.	ARE ALLOWED. KEEP RACEWAYS AT LEAST 6 INCHES AWAY FROM PARALLEL RUNS OF FLUES AND STEAM OR HOT-WATER PIPES.	1.1	A. PRODUCT DATA: FO
С.	INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER AND STEAM PIPING. ARRANGE STUB-UPS SO CURVED PORTIONS OF BENDS ARE NOT VISIBLE ABOVE THE FINISHED SLAB.		ON FEATURES, PEF B. SHOP DRAWINGS: F
D. E.	CONCEAL CONDUIT AND CABLES WITHIN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED. RACEWAYS EMBEDDED IN SLABS: RUN CONDUIT LARGER THAN 1–INCH TRADE SIZE, PARALLEL OR AT RIGHT ANGLES TO MAIN REINFORCEMENT WHERE AT RIGHT ANGLES TO REINFORCEMENT PLACE CONDUIT CLOSE TO SLAB SUPPORT.		1. INCLUDE DIN FOUIPMENT
F.	ARRANGE RACEWAYS TO CROSS BUILDING EXPANSION JOINTS AT RIGHT ANGLES WITH EXPANSION FITTINGS. THREADED CONDUIT JOINTS, EXPOSED TO WET, DAMP, CORROSIVE, OR OUTDOOR CONDITIONS: APPLY LISTED COMPOUND		2. DETAIL BUS 3. SHORT-CIRC
G.	TO THREADS OF RACEWAY AND FITTINGS BEFORE MAKING UP JOINTS. FLEXIBLE CONDUIT CONNECTIONS: USE MAXIMUM OF 72 INCHES OF FLEXIBLE CONDUIT FOR RECESSED AND SEMI-RECESSED LICHTING EXTURES FOURDMENT SUBJECT TO VIDENTIAL MOISE TRANSMISSION, OR MOVEMENT: AND FOR		4. INCLUDE EVI 5. INCLUDE TIM
H.	TRANSFORMERS AND MOTORS. USE INSULATING BUSHINGS TO PROTECT CONDUCTORS. INSTALL PULL WIRES IN EMPTY RACEWAYS. USE POLYPROPYLENE OR MONOFILAMENT PLASTIC LINE WITH NOT LESS THAN	1.2	MANUFACTURERS
I.	200-LB TENSILE STRENGTH. LEAVE AT LEAST 12 INCHES OF SLACK AT EACH END OF PULL WIRE. RECESSED BOXES IN MASONRY WALLS: SAW-CUT OPENING FOR BOX IN CENTER OF CELL OF MASONRY BLOCK, AND		A. OBTAIN ALL ELECT
J. K	INSTALL BUX FLUSH WITH SURFAUE OF WALL. SET FLOOR BOXES LEVEL AND FLUSH WITH FINISHED FLOOR SURFACE. FIRE-RATED-ASSEMBLY PENETRATIONS: MAINTAIN INDICATED FIRF RATING OF WALLS PARTITIONS OFFILINGS AND FLOORS	1.3	PROJECT CONDITIONS
Ν.	AT RACEWAY AND CABLE PENETRATIONS. APPLY APPROVED FIRESTOPPING TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.		A. ENVIRONMENTAL LI UNLESS OTHERWISE
L. M	RUCH-PENETRATION SLEEVES: SEAL PENETRATION OF INDIVIDUAL RACEWAYS AND CABLES WITH FLEXIBLE BOOT-TYPE FLASHING UNITS APPLIED IN COORDINATION WITH ROOFING WORK. ENVIRONMENTAL TRANSITIONS' SEAL PENETRATIONS OF INDIVIDUAL RACEWAYS AND CARLES WHERE PASSING THROUGH		1. AMBIENT TEN 2. ALTITUDE: N B. SEISMIC PERFORMA
IVI.	BARRIERS BETWEEN PLENUM SPACES, COOLER AND FREEZER BOXES, AND CONDITIONED AND UNCONDITIONED SPACES OF BOTH INTERIOR AND EXTERIOR WALLS.		AS REQUIRED BY C. ENCLOSURES: LISTI
Ν.	UNDERGROUND CONDUIT: EXCAVATE TRENCH BOTTOM TO PROVIDE FIRM AND UNIFORM SUPPORT FOR CONDUIT. AFTER INSTALLING CONDUIT, BACKFILL AND COMPACT. INSTALL MANUFACTURED ELBOWS FOR STUB-UPS WITH ENTIRE ELBOW BELOW EINISHED SUBJECT SUCH THAT EXPOSED CONDUIT IS DUIND.		1. INDOOR DRY 2. OUTDOOR LO
0.	INSTALL HANDHOLES LEVEL AND PLUMB ON A 6 INCH BED OF CRUSHED STONE OR GRAVEL WITH BOTTOM BELOW FROST LINE ORIENTED AND SIZED TO MINIMIZE BENDS AND DEFLECTIONS IN CONNECTING CONDUITS. IN PAVED AREAS. SET SO		4. OTHER WET 5. INDOOR LOC
	COVER SURFACE WILL BE FLUSH WITH FINISHED GRADE. OTHERWISE, SET COVERS 1 INCH ABOVE GRADE.	1.4	SWITCHBOARDS
1.6 IDEN A	PROVIDE A COMPLETE, MEANINGEUL, NEAT AND WELL LARELED INSTALLATION NAMEDIATES AND TADE LARELS SHALL DE		A. COMPLY WITH NEM B. FRONT-CONNECTED
л. В.	INSTALLED PARALLEL TO EQUIPMENT LINES. ENGRAVED NAMEPLATES: LAMINATED PHENOLIC PLASTIC, ENGRAVED WITH 3/8 INCH WHITE LETTERING ON BLACK		AND BARRIERS BE
	BACKGROUND FOR IDENTIFICATION OF MAIN SERVICE DISCONNECTS, SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, MOTOR STARTERS, SAFETY SWITCHES, LIGHTING CONTROLS, CONTACTORS, RELAYS, AND SAFETY SWITCHES. LOCATE ON		1. INDOOR ENC RUST-INHIBI
C	EQUIPMENT EXTERIORS, CLEARLY VISIBLE FROM WORKING SPACES AND FASTENED WITH A MINIMUM OF (2) SCREWS OR RIVETS. TAPE LABELS' EMBOSSED 3/8 INCH HEAVY DUTY ADHESIVE TAPE WITH 3/16 INCH MECHANICALLY LABELED PLACE		2. UNDERSURFA
υ.	LETTERS ON CLEAR BACKGROUND FOR IDENTIFICATION OF INDIVIDUAL WALL SWITCHES AND RECEPTACLES TO INDICATE PANEL AND CIRCUIT NUMBER TO WHICH DEVICE IS CONNECTED.		
D.	PANELBOARD CIRCUIT DIRECTORIES: TYPEWRITTEN FOR EACH BRANCH CIRCUIT PANELBOARD TO IDENTIFY AREAS AND EQUIPMENT SERVED BY INDIVIDUAL CIRCUITS. THE CARDS SHALL REFLECT THE "AS BUILT" CONDITIONS AND BE PLACED		
E.	UNDER A PROTECTIVE, TRANSPARENT COVER LOCATED ON INSIDE OF PANEL DOOR UNDERGROUND-LINE WARNING TAPE: PERMANENT, BRIGHT-COLORED, POLYETHYLENE TAPE 6 INCHES WIDE BY 4 MILS THICK SUITABLE FOR DIRECT-BURIAL WITH EMBEDDED. CONTINUOUS METALLIC STRIP AND PRINTED WITH TYPE OF		
F.	UNDERGROUND LINE. JUNCTION BOXES: JUNCTION BOX COVERS WITH POWER WIRING SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT		
	NUMBER, JUNCTION BOX COVERS FOR SPECIAL SYSTEMS SHALL BE LABELED WITH THE SYSTEM NAME. ALL LABELS FOR EXPOSED JUNCTION BOXES IN "FINISHED AREAS" SHALL BE LABELED UTILIZING TAPE LABELS. LABELS FOR JUNCTION BOX COVERS IN CONCEALED LOCATIONS SHALL BE NEATLY HANDWRITTEN ON THE OUTCIDE SUBFACE OF THE COVER WITH		
	A PERMANENT STYLE MARKER. JUNCTION BOX COVERS FOR FIRE ALARM AND EMERGENCY SYSTEMS SHALL BE PAINTED RED AND LABELED "FA" AND "E" RESPECTIVELY.		
G.	CONDUCTORS: FACTORY COLORED FOR SIZES #6 AWG AND SMALLER. WIRE #4 AWG AND LARGER MAY BE IDENTIFIED BY COLORED PVC TAPE WRAPPED FOR AT LEAST 4 INCHES ON EACH END OF THE CONDUCTOR.		
	1. COLOR CODING FOR PHASE IDENTIFICATION SHALL BE AS FOLLOWS:		
	208Y/120 VOLT SYSTEM 240/120V HIGH LEG DELTA BLACK PHASE A PHASE A –BLACK		
	208Y/120 VOLT SYSTEM 240/120V HIGH LEG DELTA BLACK PHASE A PHASE A –BLACK RED PHASE B PHASE B –ORANGE BLUE PHASE C PHASE C –BLUE WHITE NEUTRAL NEUTRAL –WHITE		

2. ISOLATED GROUND CONDUCTORS SHALL BE GREEN WITH A YELLOW STRIPE.

		5.		DEVIC	E.
.2	MAN	UFACTI	JRE	RS	
	A.	OBTA	٩N	ALL	ELEC
.3	PRO	JECT (CON	IDITIC	ONS
	А. В. С.	ENVI UNLI 2. SEIS AS I ENCI 1. 2. 3. 4. 5.	Roi ESS / Mic Rec Los II (K (II (II	NMEN MBIE ALTITI PEE UIRE UIRE UIRE UIRE UIRE NDOC UTD (ITCH NDOC	ITAL IERWI ENT T JDE: RFORI CD BY S: LIS DR DF OOR IEN C R WE DR LC
.4	SWIT	CHBOA	RD	S	
	А. В.	COM FROI	PLY NT-	/ WIT -CON	'H NE Nect

A. STORE PRODUCTS AND MATERIALS IN MANUFACTURER'S PACKAGING OR OTHERWISE PROTECTED UNTIL THEY ARE USED OR INSTALLED. REPAIR OR REPLACE DAMAGED PRODUCTS. KEEP OUTLET BOXES FREE OF PLASTER, DRYWALL JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES. SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

A. COMPLY WITH UL 467 FOR GROUNDING AND BONDING MATERIALS AND EQUIPMENT. B. FOLLOW REQUIREMENTS OF NEC-250.

A. INSULATED CONDUCTORS: COPPER WIRE OR CABLE INSULATED FOR 600 V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE OR AUTHORITIES HAVING JURISDICTION. B. BARE COPPER CONDUCTORS: SOLID CONDUCTORS: ASTM B 3.

STRANDED CONDUCTORS: ASTM B 8. TINNED CONDUCTORS: ASTM B 33. BONDING CABLE: 28 KCMIL, 14 STRANDS OF NO. 17 AWG CONDUCTOR, 1/4 INCH IN DIAMETER. BONDING CONDUCTOR: NO. 4 OR NO. 6 AWG, STRANDED CONDUCTOR. BONDING JUMPER: COPPER OR TINNED-COPPER TAPE, BRAIDED CONDUCTORS, TERMINATED WITH COPPER FERRULES; 1-5/8 INCHES WIDE AND 1/16 INCH THICK. C. GROUNDING BUS: RECTANGULAR BARS OF ANNEALED COPPER, NOT LESS THAN 1/4 BY 2 INCHES IN CROSS SECTION, 12 INCHES LONG; WITH INSULATORS.

BOLTED CONNECTORS FOR CONDUCTORS AND PIPES: COPPER OR COPPER ALLOY, BOLTED PRESSURE-TYPE, WITH AT LEAST TWO BOLTS AND CLAMP TYPE, SIZED FOR PIPE. WELDED CONNECTORS: EXOTHERMIC-WELDING KITS OF TYPES RECOMMENDED BY KIT MANUFACTURER FOR MATERIALS BEING JOINED AND INSTALLATION CONDITIONS. F. GROUND RODS: COPPER-CLAD STEEL, 3/4 INCH DIAMETER BY 10 FEET IN LENGTH.

A. UNDERGROUND GROUNDING CONDUCTORS: BURY NO. 2/0 AWG MINIMUM, BARE COPPER CONDUCTOR AT LEAST 24 INCHES B. GROUNDING BUS: INSTALL IN ELECTRICAL AND TELEPHONE EQUIPMENT ROOMS, IN ROOMS HOUSING SERVICE EQUIPMENT, AND ELSEWHERE AS INDICATED. INSTALL BUS ON INSULATED SPACERS 1 INCH, MINIMUM, FROM WALL 6 INCHES ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED. C. CONDUCTOR TERMINATIONS AND CONNECTIONS: PIPE AND EQUIPMENT GROUNDING CONDUCTOR TERMINATIONS: BOLTED CONNECTORS. UNDERGROUND CONNECTIONS: WELDED CONNECTORS EXCEPT AT TEST WELLS AND AS OTHERWISE INDICATED. 3. CONNECTIONS TO STRUCTURAL STEEL: WELDED CONNECTORS.

A. GROUNDING CONDUCTORS: ROUTE ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE. GROUNDING AND BONDING FOR PIPING:

METAL WATER SERVICE PIPE: INSTALL INSULATED COPPER GROUNDING CONDUCTORS, IN CONDUIT, FROM BUILDING'S MAIN SERVICE EQUIPMENT, OR GROUNDING BUS, TO MAIN METAL WATER SERVICE ENTRANCES TO BUILDING. CONNECT GROUNDING CONDUCTORS TO MAIN METAL WATER SERVICE PIPES, USING A BOLTED CLAMP CONNECTOR OR BY BOLTING A LUG-TYPE CONNECTOR TO A PIPE FLANGE, USING ONE OF THE LUG BOLTS OF THE FLANGE. WHERE A DIELECTRIC MAIN WATER FITTING IS INSTALLED, CONNECT GROUNDING CONDUCTOR ON STREET SIDE OF FITTING. BOND METAL GROUNDING CONDUCTOR CONDUIT OR SLEEVE TO CONDUCTOR AT EACH END. WATER METER PIPING: USE BRAIDED-TYPE BONDING JUMPERS TO ELECTRICALLY BYPASS WATER METERS. CONNECT TO PIPE WITH A BOLTED CONNECTOR

BOND EACH ABOVE GROUND PORTION OF GAS PIPING SYSTEM DOWNSTREAM FROM EQUIPMENT SHUTOFF VALVE. BONDING INTERIOR METAL DUCTS: BOND METAL AIR DUCTS TO EQUIPMENT GROUNDING CONDUCTORS OF ASSOCIATED FANS, BLOWERS, ELECTRIC HEATERS, AND AIR CLEANERS. INSTALL BONDING JUMPER TO BOND ACROSS FLEXIBLE DUCT CONNECTIONS TO ACHIEVE CONTINUITY BONDING STRAPS AND JUMPERS: INSTALL IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.

A. INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS IN ALL RACEWAYS WITH FEEDERS AND BRANCH CIRCUITS. USE COPPER CONDUCTORS ONLY. THE CONDUIT SYSTEM MAY NOT BE USED FOR EQUIPMENT GROUNDING. B. ISOLATED GROUNDING CIRCUITS: INSTALL A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR CONNECTED TO THE GROUNDING TERMINAL. ISOLATE CONDUCTOR FROM RACEWAY AND FROM PANELBOARD GROUNDING TERMINALS. TERMINATE AT EQUIPMENT GROUNDING CONDUCTOR TERMINAL OF THE APPLICABLE DERIVED SYSTEM OR SERVICE, UNLESS OTHERWISE INDICATED. GREEN-COLORED INSULATION WITH CONTINUOUS YELLOW STRIPE.

A. AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITS HAVE BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

SECTION 262400 - ELECTRICAL DISTRIBUTION EQUIPMENT

A. PRODUCT DATA: FOR EACH TYPE OF EQUIPMENT INDICATED. INCLUDE DIMENSIONS AND MANUFACTURER'S TECHNICAL DATA ON FEATURES, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, ACCESSORIES, AND FINISHES. SHOP DRAWINGS: FOR EACH SWITCHBOARD, PANELBOARD, TRANSFORMER SWITCHING AND OVERCURRENT PROTECTIVE DEVICE, MOTOR STARTER AND RELATED EQUIPMENT. 1. INCLUDE DIMENSIONED PLANS, ELEVATIONS, SECTIONS, AND DETAILS. SHOW TABULATIONS OF INSTALLED DEVICES, EQUIPMENT FEATURES, AND RATINGS. DETAIL BUS CONFIGURATION, CURRENT, AND VOLTAGE RATINGS. SHORT-CIRCUIT CURRENT RATING OF SWITCHBOARDS, PANELBOARDS AND OVERCURRENT PROTECTIVE DEVICES. INCLUDE EVIDENCE OF NRTL LISTING FOR SERIES RATING OF INSTALLED DEVICES. INCLUDE TIME-CURRENT COORDINATION CURVES FOR EACH TYPE AND RATING OF OVERCURRENT PROTECTIVE

CTRICAL DISTRIBUTION EQUIPMENT THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.

LIMITATIONS: RATE EQUIPMENT FOR CONTINUOUS OPERATION UNDER THE FOLLOWING CONDITIONS, ISE INDICATED: TEMPERATURE: NOT LESS THAN MINUS 22 DEG F AND NOT EXCEEDING 104 DEG F

NOT EXCEEDING 6600 FEET RMANCE: TO WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS AT THE LOCATION OF INSTALLATION AND ' THE AUTHORITY HAVING JURISDICTION. ISTED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.

DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1. LOCATIONS: NEMA 250, TYPE 3R. OR WASH-DOWN AREAS: NEMA 250, TYPE 4X, STAINLESS STEEL.

VET OR DAMP INDOOR LOCATIONS: NEMA 250, TYPE 4. OCATIONS SUBJECT TO DUST, FALLING DIRT, AND DRIPPING NONCORROSIVE LIQUIDS: NEMA 250, TYPE 12.

IEMA PB 2 AND UL 891. ED, FRONT-ACCESSIBLE, REAR-ALIGNED SWITCHBOARDS: PANEL MOUNTED MAIN AND BRANCH DEVICES AND BARRIERS BETWEEN ADJACENT SECTIONS. BUS TRANSITIONS TO BE MATCHED AND ALIGNED WITH BASIC SWITCHBOARD; INSULATION AND ISOLATION FOR MAIN BUS OF MAIN SECTION AND MAIN AND VERTICAL BUSES OF FEEDER SECTIONS. 1. INDOOR ENCLOSURES: TYPE 1 WITH FACTORY-APPLIED FINISH IN MANUFACTURER'S STANDARD GRAY FINISH OVER A RUST-INHIBITING PRIMER ON TREATED METAL SURFACE. 2. OUTDOOR ENCLOSURES: TYPE 3R WITH FACTORY-APPLIED FINISH IN MANUFACTURER'S STANDARD COLOR; UNDERSURFACES TREATED WITH CORROSION-RESISTANT UNDERCOATING.

ELEC	TRICAL	SPECIFICATIONS CONTINUED
	D.	BUSES AND CONNECTIONS: HARD-DRAWN COPPER OF 98 PERCENT CONDUCTIVITY OR TIN-PLATED ALUMINUM WITH UNIFORM CAPACITY FOR ENTIRE LENGTH OF SWITCHBOARD'S MAIN AND DISTRIBUTION SECTIONS. PROVIDE FOR FUTURE
		 NEUTRAL BUSES: 100 PERCENT OF THE AMPACITY OF PHASE BUSES UNLESS OTHERWISE INDICATED, EQUIPPED WITH MECHANICAL CONNECTORS FOR OUTGOING CIRCUIT NEUTRAL CABLES. BRACE BUS EXTENSIONS FOR BUSWAY FEEDER. NEUTRAL BUS
		2. GROUND BUS: 1/4-BY 2-INCH HARD-DRAWN COPPER OF 98 PERCENT CONDUCTIVITY, EQUIPPED WITH MECHANICA CONNECTORS FOR FEEDER AND BRANCH-CIRCUIT GROUND CONDUCTORS.
	E.	BUSES, EQUIPPED WITH MECHANICAL CONNECTORS FOR OUTGOING CIRCUIT CONDUCTORS. FUTURE DEVICES: PROVIDE FULL VERTICAL BUS AND EQUIP WITH ALL NECESSARY MOUNTING HARDWARE.
1.5	PANE	LBOARDS
	А. В.	COMPLY WITH NEMA PB 1 AND UL 67. POWER DISTRIBUTION, AND LIGHTING AND APPLIANCE PANELBOARDS: PANELS AND TRIM SHALL BE STEEL WITH GALVANIZED STEEL BACKBOX, FACTORY FINISHED IMMEDIATELY AFTER CLEANING AND PRETREATING WITH MANUFACTURER'S STANDARD TWO-COAT, BAKED-ON FINISH CONSISTING OF PRIME COAT AND THERMOSETTING TOPCOAT. SURFACE-MOUNTED FRONTS SHALL MATCH BOX DIMENSIONS; FOR FLUSH-MOUNTED FRONTS, OVERLAP BOX.
	C.	PHASE, NEUTRAL, AND GROUND BUSES: HARD-DRAWN COPPER, 98 PERCENT CONDUCTIVITY OR TIN-PLATED ALUMINUM WITH 100 PERCENT NEUTRAL BUS.
		BONDED TO BOX. 2. ISOLATED GROUND BUS: WHERE INDICATED FOR BRANCH-CIRCUIT ISOLATED GROUND CONDUCTORS; INSULATED
	D.	FROM BOX. CONDUCTOR CONNECTORS: MECHANICAL LUGS OF SAME MATERIAL AS BUSSING AND SUITABLE FOR USE WITH CONDUCTOR
		MATERIAL AND SIZES SHOWN ON DRAWINGS. PROVIDE ADDITIONAL LUGS WHERE INDICATED AS FOLLOWS: FEED-THROUGH LUGS: LOCATE AT OPPOSITE END OF BUS FROM INCOMING LUGS OR MAIN DEVICE. SUBFEED (DOUBLE) LUGS: LOCATE AT SAME END OF BUS AS INCOMING LUGS OR MAIN DEVICE.
	E.	SERVICE EQUIPMENT LABEL: NRTL LABELED FOR USE AS SERVICE EQUIPMENT FOR PANELBOARDS OR LOAD CENTERS WITH ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.
	F.	FUTURE DEVICES: MOUNTING BRACKETS, BUS CONNECTIONS, FILLER PLATES, AND NECESSARY APPURTENANCES REQUIRED FOR FUTURE INSTALLATION OF DEVICES.
	6.	TERMINALS OR SERIES RATED IN COMBINATION WITH UPSTREAM DEVICES AND TESTED PER UL 489. PROVIDE SERIES
	H. I.	DOORS: CONCEALED HINGES; SECURED WITH FLUSH LATCH WITH TUMBLER LOCK; KEYED ALIKE. DIRECTORY CARD: INSIDE PANELBOARD DOOR, MOUNTED IN METAL FRAME WITH TRANSPARENT PROTECTIVE COVER
1.6	DISCO	DNNECTING AND OVERCURRENT PROTECTIVE DEVICES
	Α.	 MOLDED-CASE CIRCUIT BREAKER (MCCB): COMPLY WITH UL 489, WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAUL CURRENTS. PROVIDE BREAKERS IN STANDARD FRAME SIZES, TRIP RATINGS AND NUMBER OF POLES AS REQUIRED WITH MECHANICAL LUGS SUITABLE FOR QUANTITY, SIZE AND MATERIAL OF CONDUCTORS SPECIFIED. MULTI-POLE UNITS ENCLOSED IN A SINGLE HOUSING OR FACTORY ASSEMBLED TO OPERATE AS A SINGLE UNIT. 1. THERMAL-MAGNETIC CIRCUIT BREAKERS: INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SIZES 250 A AND LARGER. 2. ADJUSTABLE INSTANTANEOUS-TRIP CIRCUIT BREAKERS: MAGNETIC TRIP ELEMENT WITH FRONT-MOUNTED, ELEMENT FOR SETUNG.
		 ELECTRONIC TRIP CIRCUIT BREAKERS WITH RMS SENSING; FIELD-REPLACEABLE RATING PLUG OR FIELD-REPLICABLE ELECTRONIC TRIP; AND FIELD-ADJUSTABLE SETTINGS FOR INSTANTANEOUS TRIP, LONG- AND SHORT-TIME PICKUP LEVELS, LONG- AND SHORT-TIME TIME ADJUSTMENTS, GROUND-FAULT PICKUP LEVEL, TIME DELAY, AND I²T RESPONSE.
		 ARC-FAULT CIRCUIT INTERRUPTING (AFCI): COMPLY WITH UL-1699 AND IEEE 1584. GROUND-FAULT CIRCUIT INTERRUPTING (GFCI): CLASS A GROUND-FAULT PROTECTION (5-MA TRIP). GROUND-FAULT EQUIPMENT PROTECTION (GFEP): CLASS B GROUND-FAULT PROTECTION (30-MA TRIP). SHUNT TRIP (ST): COIL ENERGIZED FROM SEPARATE CIRCUIT, SET TO TRIP AT 75 PERCENT OF RATED VOLTAGE. REMOTELY CONTROLLED MOTORIZED BREAKER (RCMB): MOTOR DRIVE TO OPEN AND CLOSE CONTACTS WHEN THE BREAKER IS IN THE "ON" POSITION CONTROLLED BY INTEGRAL MICROPROCESSOR. APPLICATION LISTING: APPROPRIATE FOR APPLICATION:
a. b.	TYPE TYPE	WD FOR SWITCHING LIGHTING LOADS. HACR FOR HEATING, AIR CONDITIONING AND REFRIGERATION CIRCUITS. 10. ACCESSORIES: PROVIDE LOCK ON (LO) HANDLE CLAMP DEVICES OR PADLOCK PROVISIONS FOR LOCKOUT WHERE
	В.	REQUIRED. BOLTED-PRESSURE CONTACT SWITCH: OPERATING MECHANISM USES ROTARY-MECHANICAL-BOLTING ACTION TO PRODUCE
		 MAINTAIN HIGH CLAMPING PRESSURE ON THE SWITCH BLADE AFTER IT ENGAGES THE STATIONARY CONTACTS. UTILIZED FOR MAIN SWITCH GREATER THAN 800A ONLY. MAIN-CONTACT INTERRUPTING CAPABILITY: MINIMUM OF 12 TIMES THE SWITCH CURRENT RATING.
		 OPERATING MECHANISM: MANUAL HANDLE OPERATION TO CLOSE SWITCH; STORES ENERGY IN MECHANISM FOR OPENING AND CLOSING. SERVICE—RATED SWITCHES: LARELED FOR LISE AS SERVICE FOULIPMENT
	0	 SERVICE TOTALS. BIOLECED FOR USE TO SERVICE EQUITMENT. GROUND-FAULT RELAY: COMPLEX WITH UL 1053; SELF-POWERED TYPE WITH MECHANICAL GROUND-FAULT INDICATOR TEST FUNCTION, TRIPPING RELAY WITH INTERNAL MEMORY, AND THREE-PHASE CURRENT TRANSFORMER/SENSOR.
	с. D.	LOCKABLE SWITCH. NEWA KS 1, HEAVI DOTT THE WITH CLIPS OK BOLT PADS TO ACCOMMODATE SPECIFIED POSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION. NONFUSIBLE SWITCH: NEWA KS 1, HEAVY DUTY TYPE LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT TWO PADLOCKS,
	E.	AND INTERLOCKED WITH COVER IN CLOSED POSITION. FUSES: COMPLY WITH NEMA FU 1; COORDINATE FUSE RATINGS WITH UTILIZATION EQUIPMENT NAMEPLATE LIMITATIONS OF MAYIMUM FUSE SIZE
	F.	MOTOR STARTERS: PROVIDE FULL VOLTAGE MAGNETIC STARTERS FOR SINGLE MOTORS LESS THAN 10 HP AND REDUCED VOLTAGE STARTERS FOR MOTORS 10 HP AND LARGER UNLESS OTHERWISE INDICATED. PROVIDE WITH AUXILIARY CONTROL COMPONENTS AS REQUIRED. INCLUDE ONE OVERLOAD RELAY PER PHASE, SIZED FOR 115 PERCENT OF FULL LOAD MOTOR CURRENT, VERIFY ALL STARTER SIZES AND OVERLOAD PROTECTION WITH MECHANICAL CONTRACTOR.

1.9 INSTALLATION

A.	INSTALL SWITCHBOARDS, FLOOR-MOUNTED PANELBOARDS AND TRANSFORMERS LARGER
	4-INCH NOMINAL THICKNESS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
В.	MOUNT PANELBOARD CABINETS PLUMB AND RIGID WITHOUT DISTORTION OF BOX. MOUN
	FRONTS UNIFORMLY FLUSH WITH WALL FINISH AND MATING WITH BACK BOX.
C.	INSTALL OVERCURRENT PROTECTIVE DEVICES, TRANSIENT VOLTAGE SUPPRESSION DEVICE
	ALREADY FACTORY INSTALLED AND SET FIELD-ADJUSTABLE SWITCHES AND CIRCUIT-BRE
D.	INSTALL FUSES IN FUSIBLE DEVICES. ARRANGE FUSES SO RATING INFORMATION IS RE
E.	INSTALL FILLER PLATES IN UNUSED SPACES.
F.	STUB FOUR 1-INCH EMPTY CONDUITS FROM PANELBOARD INTO ACCESSIBLE CEILING S
	BE CEILING SPACE IN THE FUTURE.

- TIN-PLATED ALUMINUM WITH ECTIONS. PROVIDE FOR FUTURE THERWISE INDICATED, EQUIPPED E BUS EXTENSIONS FOR BUSWAY JCTIVITY, EQUIPPED WITH MECHANICAL
- SAME MATERIAL AS THROUGH JNTING HARDWARE.

SHALL BE STEEL WITH GALVANIZED WITH MANUFACTURER'S STANDARD COAT. SURFACE-MOUNTED FRONTS

- TIVITY OR TIN-PLATED ALUMINUM MENT GROUNDING CONDUCTORS; DUND CONDUCTORS; INSULATED
- SUITABLE FOR USE WITH CONDUCTOR ATED AS FOLLOWS: MAIN DEVICE. J DEVICE NELBOARDS OR LOAD CENTERS WITH
- ESSARY APPURTENANCES REQUIRED CIRCUIT CURRENT AVAILABLE AT PER UL 489. PROVIDE SERIES
- D ALIKE. PARENT PROTECTIVE COVER

CAPACITY TO MEET AVAILABLE FAULT IBER OF POLES AS REQUIRED WITH

- ECIFIED. MULTI-POLE UNITS LOW-LEVEL OVERLOADS, AND
- AGNETIC TRIP SETTING FOR WITH FRONT-MOUNTED,
- RATING PLUG OR FIELD-REPLICABLE LONG- AND SHORT-TIME PICKUP LEVEL, TIME DELAY, AND I²T
- CTION (5-MA TRIP). DTECTION (30-MA TRIP).
- 75 PERCENT OF RATED VOLTAGE. AND CLOSE CONTACTS WHEN THE ж.
- PROVISIONS FOR LOCKOUT WHERE CAL-BOLTING ACTION TO PRODUCE
- CURRENT RATING. ENERGY IN MECHANISM FOR
- CHANICAL GROUND-FAULT INDICATOR, CURRENT TRANSFORMER/SENSOR. OMMODATE SPECIFIED FUSES, ITH COVER IN CLOSED POSITION.
- LITY TO ACCEPT TWO PADLOCKS, PMENT NAMEPLATE LIMITATIONS OF
- LESS THAN 10 HP AND REDUCED PROVIDE WITH AUXILIARY CONTROL 115 PERCENT OF FULL LOAD ANICAL CONTRACTOR.
- THAN 75 KVA ON CONCRETE BASE, INT RECESSED PANELBOARDS WITH ES, AND OTHER ACCESSORIES NOT REAKER TRIP RANGES.
- EADABLE WITHOUT REMOVING FUSE. SPACE OR SPACE DESIGNATED TO

ARRANGE CONDUCTORS IN GUTTERS INTO GROUPS AND BUNDLE AND WRAP WITH WIRE TIES. ADJUST MOVING PARTS AND OPERABLE COMPONENTS TO FUNCTION SMOOTHLY, AND LUBRICATE AS RECOMMENDED BY MANUFACTURER.

SECTION 262726 - WIRING DEVICES 1.1 MANUFACTURERS

- A. OBTAIN EACH TYPE OF WIRING DEVICE AND ASSOCIATED WALL PLATE THROUGH ONE SOURCE FROM A SINGLE MANUFACTURER.
- 1.2 RECEPTACLES
- COMPLY WITH NEMA WD 1, NEMA WD 6 AND UL 498. B. DUPLEX RECEPTACLES, 125 V, 20A: COMMERCIAL GRADE, 5–20R.
- I. GFCI RECEPTACLES: COMPLY WITH UL 943, CLASS A. FEED-THROUGH TYPE WITH INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED. . ISOLATED-GROUND, RECEPTACLES: EQUIPMENT GROUNDING CONTACTS SHALL BE CONNECTED ONLY TO THE GREEN GROUNDING SCREW TERMINAL OF THE DEVICE AND WITH INHERENT ELECTRICAL ISOLATION FROM MOUNTING STRAP. ISOLATION SHALL BE INTEGRAL TO RECEPTACLE CONSTRUCTION AND NOT DEPENDENT ON REMOVABLE PARTS.
- PENDANT CORD-CONNECTOR DEVICES: MATCHING, LOCKING-TYPE PLUG AND RECEPTACLE BODY CONNECTOR; VOLTAGE AND CURRENT RATING AS REQUIRED, HEAVY-DUTY GRADE. BODY: NYLON WITH SCREW-OPEN CABLE-GRIPPING JAWS AND PROVISION FOR ATTACHING EXTERNAL CABLE GRIP. PLUG: NYLON BODY AND INTEGRAL CABLE-CLAMPING JAWS. MATCH CORD AND RECEPTACLE TYPE FOR
- CONNECTION. CORD AND PLUG SETS: MATCH VOLTAGE AND CURRENT RATINGS AND NUMBER OF CONDUCTORS TO REQUIREMENTS OF EQUIPMENT BEING CONNECTED.
- CORD: RUBBER-INSULATED, STRANDED-COPPER CONDUCTORS, WITH TYPE SOW-A JACKET; WITH GREEN-INSULATED GROUNDING CONDUCTOR AND EQUIPMENT-RATING AMPACITY FOR CIRCUIT. 2. PLUG: NYLON BODY AND INTEGRAL CABLE-CLAMPING JAWS. MATCH CORD AND RECEPTACLE TYPE FOR CONNECTION.
- 1.3 SNAP SWITCHES
 - COMPLY WITH NEMA WD 1 AND UL 20. SWITCHES, 120/277 V, 20 A: COMMERCIAL GRADE (SINGLE POLE, TWO POLE, THREE WAY, FOUR WAY): 1. PILOT LIGHT SWITCHES: NEON-LIGHTED HANDLE, ILLUMINATED WHEN SWITCH IS "ON."
 - LIGHTED SWITCHES: NEON-LIGHTED HANDLE, ILLUMINATED WHEN SWITCH IS "OFF." KEY-OPERATED SWITCHES: FACTORY-SUPPLIED KEY IN LIEU OF SWITCH HANDLE. 4. MOTOR-RATED SWITCHES: 1 HP AT 120 V; 2 HP AT 277V.

1.4 FINISHES

- A. WIRING DEVICES CONNECTED TO NORMAL POWER SYSTEM: IVORY, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70 OR DEVICE LISTING. B. ISOLATED-GROUND RECEPTACLES: ORANGE, WITH GREEN TRIANGLE.
- 1.5 WALL PLATES
- A. SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH.
- MATERIAL FOR FINISHED SPACES: 0.035-INCH- THICK, SATIN-FINISHED STAINLESS STEEL. MATERIAL FOR UNFINISHED SPACES: GALVANIZED STEEL.
- B. DAMP OR WET-LOCATION, WEATHERPROOF COVER PLATES: NEMA 250, COMPLYING WITH TYPE 3R WEATHER-RESISTANT, GASKETED, THERMOPLASTIC ENCLOSURE, LISTED AND LABELED FOR USE IN "WET LOCATIONS." THE WEATHERPROOF INTEGRITY OF THE ENCLOSURE SHALL NOT BE AFFECTED WHEN THE RECEPTACLE IS IN USE (ATTACHMENT PLUG CAP INSERTED)
- 1.6 INSTALLATION
- A. DEVICE INSTALLATION: REPLACE ALL DEVICES THAT HAVE BEEN IN TEMPORARY USE DURING CONSTRUCTION. CONNECT DEVICES TO BRANCH CIRCUITS USING PIGTAILS THAT ARE NOT LESS THAN 6 INCHES IN LENGTH. WHEN CONDUCTORS LARGER THAN NO. 12 AWG ARE INSTALLED ON 15- OR 20-A CIRCUITS, SPLICE NO. 12 AWG
- PIGTAILS FOR DEVICE CONNECTIONS. 3. WHEN THERE IS A CHOICE, USE SIDE WIRING WITH BINDING-HEAD SCREW TERMINALS. WRAP SOLID CONDUCTOR
- TIGHTLY CLOCKWISE, 2/3 TO 3/4 OF THE WAY AROUND TERMINAL SCREW. TIGHTEN UNUSED TERMINAL SCREWS ON THE DEVICE. 4. WHEN MOUNTING INTO METAL BOXES, REMOVE THE FIBER OR PLASTIC WASHERS USED TO HOLD DEVICE MOUNTING
- SCREWS IN YOKES, ALLOWING METAL-TO-METAL CONTACT. ARRANGEMENT OF DEVICES: INSTALL GROUND PIN OF VERTICALLY MOUNTED RECEPTACLES DOWN, AND ON HORIZONTALLY MOUNTED RECEPTACLES TO THE RIGHT. GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.

SECTION 265500 - LIGHT FIXTURES AND LIGHTING CONTROLS

1.1 SUBMITTALS A. PRODUCT DATA: FOR EACH LIGHT FIXTURE TYPE AND CONTROL DEVICE INDICATED ON DRAWINGS AND IN SPECIFICATIONS.

1.2 LIGHT FIXTURES

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- A. PROVIDE LIGHTING FIXTURES AS LISTED IN LIGHTING FIXTURE SCHEDULE ON DRAWINGS COMPLETE WITH LAMPS, BALLASTS, LAMP HOLDERS, LENSES, DIFFUSERS, REFLECTORS, WIRING, ETC. FIXTURES INSTALLED IN CEILINGS SHALL BE LISTED FOR USE IN THE APPLICATION INCLUDING, BUT NOT LIMITED TO, DIRECT CONTACT WITH INSULATION, PLENUM SPACES AND FIRE-RATED ASSEMBLIES. PROVIDE NECESSARY COMPONENTS
- AND ACCESSORIES AS REQUIRED. FIXTURES INSTALLED IN WET OR DAMP LOCATIONS SHALL BEAR THE UL LISTING "WET" OR "DAMP" LABEL. EXTERIOR FIXTURES SHALL HAVE BALLASTS AND LAMPS COMPATIBLE FOR OPERATION AT 0 DEGREES F.
- SITE LIGHTING POLES SHALL BE EQUIPPED WITH A SHEET METAL BASE COVER TO CONCEAL ALL ANCHOR BOLTS. THE FIXTURE SUPPLIER SHALL PROVIDE ALL NECESSARY HANGING OR MOUNTING HARDWARE FOR ALL FIXTURES AND SHALL BE RESPONSIBLE FOR VERIFYING ACCESSORIES AND OPTIONS REQUIRED FOR THE INSTALLATION CONDITIONS PRIOR TO ORDERING THE FIXTURE.

1.3 LAMPS

- PROVIDE LAMP(S) FOR EACH FIXTURE AS INDICATED IN LIGHTING FIXTURE SCHEDULE ON DRAWINGS. LAMP TYPE, SIZE, WATTAGE. AND MOUNTING ORIENTATION SHALL BE AS RECOMMENDED BY LAMP AND FIXTURE MANUFACTURERS. COORDINATE ALL REQUIREMENTS PRIOR TO LAMP INSTALLATION. 1.4 TIME SWITCHES
- ELECTRONIC TIME SWITCHES: SOLID-STATE PROGRAMMABLE ASTRONOMIC TIME UNITS WITH ALPHANUMERIC DISPLAY AND BATTERY BACKUP; COMPLYING WITH UL 917. B. CONTACTS SHALL BE DPDT, RATED FOR 30-A INDUCTIVE OR RESISTIVE AT REQUIRED VOLTAGE.
- 1.5 OUTDOOR PHOTOELECTRIC SWITCHES
- A. DESCRIPTION: SOLID STATE, WITH DPST DRY CONTACTS RATED FOR 2000-VA TUNGSTEN OR 1800-VA INDUCTIVE, TO OPERATE CONNECTED LOAD, RELAY, CONTACTOR COILS, OR MICROPROCESSOR INPUT; COMPLYING WITH UL 773A.
- 1. LIGHT-LEVEL MONITORING RANGE: 1.5 TO 10 FC, WITH AN ADJUSTMENT FOR TURN-ON AND TURN-OFF LEVELS WITHIN THAT RANGE, AND A DIRECTIONAL LENS IN FRONT OF PHOTOCELL TO PREVENT FIXED LIGHT SOURCES FROM CAUSING TURN-OFF. TIME DELAY: 15-SECOND MINIMUM, TO PREVENT FALSE OPERATION.
- MOUNTING: TWIST LOCK COMPLYING WITH IEEE C136.10, WITH BASE-AND-STEM MOUNTING OR STEM-AND-SWIVEL MOUNTING ACCESSORIES AS REQUIRED TO DIRECT SENSOR TO THE NORTH SKY EXPOSURE. 1.6 INDOOR OCCUPANCY SENSORS
- A. DESCRIPTION: WALL- OR CEILING-MOUNTING, SOLID-STATE UNITS TO TURN LIGHTS ON WHEN COVERED AREA IS OCCUPIED AND OFF WHEN UNOCCUPIED; WITH A TIME DELAY FOR TURNING LIGHTS OFF, ADJUSTABLE OVER A MINIMUM RANGE OF 1 TO 15 MINUTES. 1. SENSORS SHALL HAVE BYPASS SWITCH FOR OVERRIDE IN CASE OF SENSOR FAILURE AND LED INDICATOR TO SHOW
- WHEN MOTION IS BEING DETECTED. CONTACTS SHALL BE RATED FOR 20-A BALLAST LOAD AT 120- AND 277-V AC. FOR 13-A TUNGSTEN AT 120-V AC, AND FOR 1 HP AT 120-V AC. CONTACTS MAY BE INTEGRAL TO SENSOR OR THROUGH A SEPARATE RELAY; POWER SUPPLY TO SENSOR SHALL BE 24-V DC, 150-MA, CLASS 2 POWER SOURCE AS DEFINED BY NFPA 70.
- COMPLY WITH UL 773A. 3. AUTOMATIC LIGHT-LEVEL SENSOR: ADJUSTABLE FROM 2 TO 200 FC; KEEP LIGHTING OFF WHEN SELECTED LIGHTING LEVEL IS PRESENT.

- PASSIVE INFRARED (PIR) TYPE: DETECT OCCUPANCY BY SENSING A COMBINATION OF HEAT AND 6-INCH MINIMUM MOVEMENT OF ANY PORTION OF A HUMAN BODY THAT PRESENTS A TARGET OF NOT LESS THAN 36 SQ. IN... ULTRASONIC TYPE: DETECT OCCUPANCY BY SENSING A CHANGE IN PATTERN OF REFLECTED ULTRASONIC ENERGY IN
- AREA OF COVERAGE FOR A PERSON OF AVERAGE SIZE AND WEIGHT MOVING NOT LESS THAN 12 INCHES IN EITHER A HORIZONTAL OR A VERTICAL MANNER AT AN APPROXIMATE SPEED OF 12 INCHES(S). DUAL-TECHNOLOGY TYPE: DETECT OCCUPANCY BY USING A COMBINATION OF PIR AND ULTRASONIC DETECTION METHODS
- IN AREA OF COVERAGE. PARTICULAR TECHNOLOGY OR COMBINATION OF TECHNOLOGIES THAT CONTROLS ON-OFF FUNCTIONS SHALL BE SELECTABLE IN THE FIELD BY OPERATING CONTROLS ON UNIT WITH SEPARATE SENSITIVITY ADJUSTMENT FOR EACH TECHNOLOGY. E. PROVIDE SENSORS WITH COVERAGE SUITABLE FOR SIZE AND SHAPE OF CONTROLLED SPACE AT PRESCRIBED MOUNTING HEIGHT AND LOCATION.
- 1.7 LIGHTING CONTACTORS
- A. DESCRIPTION: ELECTRICALLY OPERATED AND ELECTRICALLY HELD, COMPLYING WITH NEMA ICS 2 AND UL 508. CURRENT RATING FOR SWITCHING: LISTING OR RATING CONSISTENT WITH TYPE OF LOAD SERVED. FAULT CURRENT WITHSTAND RATING: EQUAL TO OR EXCEEDING THE AVAILABLE FAULT CURRENT AT THE POINT OF INSTALLATION.
- ENCLOSURE: COMPLY WITH NEMA 250. MOUNTING: MOUNT CONTACTORS WITH ELASTOMERIC ISOLATOR PADS UNLESS CONTACTORS ARE INSTALLED IN AN ENCLOSURE WITH FACTORY-INSTALLED VIBRATION ISOLATORS.
- 1.8 LIGHTING CONTROL SYSTEMS
 - PROVIDE A LIGHTING CONTROL SYSTEM CONSISTING OF RELAY/CONTACTOR PANEL(S), CONTROL SWITCHES, OCCUPANCY SENSORS, PHOTOCELLS AND OTHER CONTROLLING DEVICES. THE DEVICES ARE CONNECTED BY LOW VOLTAGE AND LINE VOLTAGE WIRING. THE GENERAL OPERATION OF LIGHTING AND CONTROLLED LOADS SHALL INCLUDE: 1. INTERIOR LIGHTING: MANUAL SWITCH AND OCCUPANCY SENSOR CONTROL ON/OFF WITH AUTOMATIC TIME SCHEDULED SHUT OFF.
 - 2. SCHEDULED ON/OFF LOADS: TIME ON, TIME OFF BY AUTOMATIC TIME SCHEDULE WITH AFTER HOUR OVERRIDE CAPABILITY AND SHUTOFF.
- EXTERIOR LIGHTING: PHOTOCELL OR ASTRONOMIC ON/TIME OFF, TIME ON/PHOTOCELL OR ASTRONOMIC OFF. EXTERIOR SECURITY LIGHTING: PHOTOCELL OR ASTRONOMIC ON, PHOTOCELL OR ASTRONOMIC OFF. B. PROVIDE LIGHTING CONTROL PANELS IN THE LOCATIONS AND CAPACITIES AS INDICATED ON THE PLANS AND SCHEDULES. EACH PANEL SHALL BE OF MODULAR CONSTRUCTION AND CONSIST OF THE FOLLOWING COMPONENTS: 1. ENCLOSURE SHALL BE NEMA 1, NEMA 3R, OR NEMA 4, SIZED TO ACCEPT THE REQUIRED NUMBER OF RELAYS.
- COVER SHALL BE CONFIGURED FOR SURFACE OR FLUSH WALL MOUNTING OF THE PANEL AS INDICATED ON THE PLANS. THE PANEL COVER SHALL HAVE A HINGED AND LOCKABLE DOOR WITH RESTRICTED ACCESS TO LINE VOLTAGE SECTION OF THE PANEL. 2. INTERIOR ASSEMBLY SHALL BE SUPPLIED AS A FACTORY ASSEMBLED COMPONENT SPECIFICALLY DESIGNED AND
- LISTED FOR FIELD INSTALLATION. THE INTERIOR CONSTRUCTION SHALL PROVIDE TOTAL ISOLATION OF LINE VOLTAGE (CLASS 1) WIRING FROM LOW VOLTAGE (CLASS 2) WIRING WITHIN THE ASSEMBLED PANEL.
- 3. RELAYS SHALL BE LATCHING TYPE WITH MODULAR PLUG-IN DESIGN WITH THE FOLLOWING RATINGS: a. 30 AMP BALLAST AT 277V.
- b. 20 AMP TUNGSTEN AT 120V. c. 1.5 HP MOTOR AT 120V.
- 10,000 AMP SHORT CIRCUIT CURRENT AT 120V. e. 14,000 AMP SHORT CIRCUIT CURRENT AT 277V.

1.9 INSTALLATION

- A. FIXTURES ARE LOCATED FOR SYMMETRICAL PATTERNS AND TO SUIT STRUCTURAL CONDITIONS. MAJOR CHANGES IN LOCATION OF OUTLETS SHALL BE APPROVED BY THE ARCHITECT. CONSULT FINISH SCHEDULE AND ARCHITECTURAL DRAWINGS FOR CEILING AND WALL CONSTRUCTION AND FINISH. FIELD LOCATE LIGHT FIXTURES TO AVOID CONFLICTS WITH MECHANICAL AND OTHER EQUIPMENT. DO NOT LOCATE LIGHT FIXTURES NEAR HEAT SOURCES THAT EXCEED MANUFACTURER WARRANTED TEMPERATURE LEVELS. COORDINATE LAYOUT AND INSTALLATION OF CEILING-MOUNTED DEVICES WITH OTHER CONSTRUCTION THAT PENETRATES
- CEILINGS OR IS SUPPORTED BY THEM, INCLUDING LIGHT FIXTURES, HVAC EQUIPMENT, SMOKE DETECTORS, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES. RECESSED FIXTURES IN LAY IN TYPE CEILING GRID SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF THE CEILING GRID SYSTEM. FIXTURES SHALL HAVE A GALVANIZED #12 WIRE ATTACHED TO THE BUILDING STRUCTURE. PROVIDE TWO (2) WIRES MINIMUM FOR INDIVIDUAL FIXTURES ATTACHED TO OPPOSITE CORNERS OF THE FIXTURE. THE FIXTURES SHALL ALSO HAVE "EARTHQUAKE" CLIPS INSTALLED AT ALL FOUR (4) CORNERS OF THE FIXTURE THAT POSITIVELY ATTACH THE FIXTURE TO THE SUSPENSION SYSTEM. EACH ATTACHMENT DEVICE SHALL HAVE THE CAPACITY OF SUPPORTING 100 PERCENT OF THE FIXTURE WEIGHT IN ANY DIRECTION. EACH FIXTURE SHALL BE WIRED WITH A 72" PIECE OF FLEXIBLE CONDUIT CONNECTED TO A BLANK COVERED JUNCTION BOX LOCATED IN THE ACCESSIBLE CEILING SPACE WITHIN 36" OF
- THE FIXTURE CONNECTION POINT. PENDANT FIXTURES IN SUSPENDED LAY-IN GRID CEILINGS SHALL BE SUPPORTED INDEPENDENT OF THE CEILING GRID AND OUTLET BOX. SUPPORT SHALL CONSIST OF NO. 9 SUPPORT WIRE OR 1/4" THREADED ROD ATTACHED TO THE BUILDING STRUCTURE. UTILIZE MANUFACTURER'S STANDARD HARDWARE FOR ATTACHMENT TO FIXTURE.
- SUPPORT SURFACE AND PENDANT MOUNT FIXTURES IN EXCESS OF 50 LBS. INDEPENDENTLY OF OUTLET BOX. ATTACH TO ROOF, FLOOR, OR CEILING ABOVE USING LAG SCREWS, LAG BOLTS, THREADED ROD, TOGGLE BOLTS, OR CINCH ANCHORS TO SUPPORT FIXTURE PLUS 100 LBS. AT EACH SUPPORT. FIXTURES AND LAMPS SHALL BE LEFT CLEAN AT THE TIME OF ACCEPTANCE OF THE WORK AND EVERY ITEM SHALL BE IN
- PROPER OPERATION. IF FIXTURES ARE DIRTY AT COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL CLEAN THEM AT NO ADDITIONAL COST TO THE OWNER. H. DO NOT INSTALL FIXTURE LENS ENCLOSURES OR LOUVERS IN FIXTURES UNTIL GENERAL CONSTRUCTION WORK IS COMPLETE, INCLUDING PAINTING.
- INSTALL AND AIM SENSORS IN LOCATIONS TO ACHIEVE NOT LESS THAN 90 PERCENT COVERAGE OF AREAS INDICATED. DO NOT EXCEED COVERAGE LIMITS SPECIFIED IN MANUFACTURER'S WRITTEN INSTRUCTIONS. AFTER INSTALLATION AND ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, VERIFY OPERATION OF EACH DEVICE, AND TEST FOR COMPLIANCE WITH REQUIREMENTS AND ADJUST AS NECESSARY FOR PROPER OPERATION.

Interior Lighting Compliance Certificate					
Project Information					
Energy Code: Project Title: Project Type:	2018 IECC ITD MAINTENANCE BLDG. Addition				
Construction Site: 15430 Highway 44 Caldwell, ID	Owner/Agent:	Designe Jaydn CSHQ/ 200 W Boise,	r/Contractor: Benart A J. Broad Street ID 83702		
Allowed Interior Lighti	ng Power				
	A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)	
1-CORRIDOR 101 (Common	Space Types:Corridor/Transition <8 ft wide)	546	0.66	360	
2-CONFERENCE 102 (Comm	on Space Types:Conference/Meeting/Multipurpose)	145	1.07	155	
3-OFFICE 103 (Common Spa	ce Types:Office - Enclosed)	130	0.93	121	
4-BREAK ROOM 104 (Comm	on Space Types:Lounge/Breakroom)	321	0.62	199	
5-RESTROOMS 105,107 (Con	mmon Space Types:Restrooms)	244	0.85	207	
6-I.T. CLOSET 106 (Common	Space Types:Storage <50 sq.ft.)	36	0.46	17	
7-COPY ROOM 108 (Commo	n Space Types:Copy/Print Room)	87	0.56	49	
8-OPEN OFFICE 109 (Comm	on Space Types:Office - Open Plan)	1396	0.81	1131	
9-UNISEX 110, 111 (Common	Space Types:Restrooms)	110	0.85	94	
10-DECON ROOM 112 (Com	mon Space Types:Restrooms)	43	0.85	37	
11-SHOP SUPPLIES 113 (Co	mmon Space Types:Storage >=50 - <=1000 sq.ft.)	70	0.46	32	
12-FIELD SUPPLIES STORA sq.ft.)	GE 114 (Common Space Types:Storage >=50 - <=1000	129	0.46	59	
13-OFFICE STORAGE 115 (C	Common Space Types:Storage >=50 - <=1000 sq.ft.)	52	0.46	24	
16-MECHANIC OFFICE 118 (Common Space Types:Office - Enclosed)	89	0.93	83	
17-MECHANIC STORAGE 11	9 (Common Space Types:Storage >=50 - <=1000 sq.ft.)	153	0.46	70	
15-SHOP AREA 116 (Commo	n Space Types:Workshop)	10042	1.14	11448	
14-JANITOR 117 (Common S	pace Types:Storage <50 sq.ft.)	35	0.46	16	

Proposed Interior Lighting Power

18-WORK SPACE 201 (Common Space Types:Office - Open Plan)

19-BREAKROOM 202 (Common Space Types:Lounge/Breakroom)

21-FOREMAN OFFICE 204 (Common Space Types:Office - Enclosed)

20-LOCKERS 203 (Common Space Types:Locker Room)

22-MECH 205 (Common Space Types:Electrical/Mechanical)

23-JANITOR 206 (Common Space Types:Storage <50 sq.ft.)

24-UNISEX 207 (Common Space Types:Restrooms)

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242

716

118

233

90

22

58

0.81

0.62

0.48

0.93

0.43

0.46

0.85

Total Allowed Watts = 15113

196

444

57

217

39

10

49

Project Title: ITD MAINTENANCE BLDG.

Jaydn Benart - Designer <u>Qaydn Benart</u> <u>01/23/23</u> Name - Title <u>01/23/23</u>

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Report date: 01/23/23

C103.2

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-CORRIDOR 101 (Common Space Types:Corridor/Transition <8 ft wide) LED 1: 2S1: LED 2X2 FLAT PANEL: Other:	1	9	31	279
2-CONFERENCE 102 (Common Space Types:Conference/Meeting/Multipurpose) LED 2: 2S1: LED 2X2 FLAT PANEL: Other:	1	2	31	62
3-OFFICE 103 (Common Space Types:Office - Enclosed) LED 3: 2S1: LED 2X2 FLAT PANEL: Other:	1	2	31	62
4-BREAK ROOM 104 (Common Space Types:Lounge/Breakroom) LED 4: 2S1: LED 2X2 FLAT PANEL: Other:	1	6	31	186
5-RESTROOMS 105,107 (Common Space Types:Restrooms) LED 5: 2S1: LED 2X2 FLAT PANEL: Other:	1	4	31	124
LED 6: V1: LED 3' VANITY: Other:	1	2	26	52
LED 7: 2S1: LED 2X2 FLAT PANEL: Other:	1	1	31	31
7-COPY ROOM 108 (Common Space Types:Copy/Print Room) LED 8: 2R1: LED 2X2 FLAT PANEL: Other:	1	1	31	31
8-OPEN OFFICE 109 (Common Space Types:Office - Open Plan) LED 9: 2R1: LED 2X2 TROFFER: Other:	1	24	26	624
9-UNISEX 110, 111 (Common Space Types:Restrooms) LED 10: 2S1: LED 2X2 FLAT PANEL: Other:	1	2	31	62
10-DECON ROOM 112 (Common Space Types:Restrooms) LED 11: LP1: LED 3' LINEAR: Other:	1	1	33	33
11-SHOP SUPPLIES 113 (Common Space Types:Storage >=50 - <=1000 sq.ft.) LED 12: 2R1: LED 2X2 TROFFER: Other:	1	1	26	26
12-FIELD SUPPLIES STORAGE 114 (Common Space Types:Storage >=50 - <=1000 sq LED 13: 2R1: LED 2X2 TROFFER: Other:	1. <u>ft.)</u>	2	26	52
13-OFFICE STORAGE 115 (Common Space Types:Storage >=50 - <=1000 sq.ft.) LED 14: 2R1: LED 2X2 TROFFER: Other:	1	1	26	26
16-MECHANIC OFFICE 118 (Common Space Types:Office - Enclosed) LED 15: 2R1: LED 2X2 TROFFER: Other:	1	2	26	52
17-MECHANIC STORAGE 119 (Common Space Types:Storage >=50 - <=1000 sq.ft.) LED 16: LP1: LED 3' LINEAR: Other:	1	2	33	67
15-SHOP AREA 116 (Common Space Types:Workshop) LED 17: HB1: LED HIGH BAY: Other: LED 18: HB2: EXISTING LED HIGH BAX: Other:	1	9	107	963 2675
14-JANITOR 117 (Common Space Types:Storage <50 sq.ft.) LED 19: LP1: LED 3' LINEAR: Other:	1	1	33	33
18-WORK SPACE 201 (Common Space Types:Office - Open Plan) LED 20: 2P1: LED 2X2 FLAT PANEL: Other:	1	3	31	93
19-BREAKROOM 202 (Common Space Types:Lounge/Breakroom)	1	7	31	217
20-LOCKERS 203 (Common Space Types:Locker Room)	1	2	31	62
21-FOREMAN OFFICE 204 (Common Space Types:Office - Enclosed)	1	4	31	124
22-MECH 205 (Common Space Types:Electrical/Mechanical)	1	2	33	67
23-JANITOR 206 (Common Space Types:Storage <50 sq.ft.)	1	1	33	33
24-UNISEX 207 (Common Space Types:Restrooms)			00	55
LED 26: LP1: LED 3' LINEAR: Other: LED 27: V1: LED 3' VANITY: Other:	1 1	1 1	33 26	33 26
Project Title: ITD MAINTENANCE BLDG.			Report dat	e: 01/23/2

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Interior Lighting PASSES: Design 60% bi	etter than code	
Compliance Statement: The proposed interior li specifications, and other calculations submitted designed to meet the 2018 IECC requirements in requirements listed in the Inspection Checklist.	ghting design represented in this document is o with this permit application. The proposed inter n COMcheck Version 4.1.5.5 and to comply with	onsistent with the building plans, rior lighting systems have been any applicable mandatory
<u>Jaydn Benart - Designer</u> Name-Title	Signature Benart	

Project Title: ITD MAINTENANCE BLDG.

COMcheck Software Version 4.1.5.5 **Inspection Checklist**

Energy Code: 2018 IECC

Requirements: 0.0% were addressed directly in the COMcheck software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

	Plan Review	Complies?	Comments/Assumptions
Plans, calcula with w determ and ele and do the sta provide lighting bulbs a control	specifications, and/or tions provide all information hich compliance can be bined for the interior lighting ectrical systems and equipment cument where exceptions to ndard are claimed. Information ed should include interior g power calculations, wattage of ind ballasts, transformers and devices.	Complies Does Not Not Observable Not Applicable	
Plans, calcula with wi determ and ele and do the sta provide lighting bulbs a control	specifications, and/or tions provide all information hich compliance can be sined for the exterior lighting ectrical systems and equipment cument where exceptions to ndard are claimed. Information ed should include exterior g power calculations, wattage of ind ballasts, transformers and devices.	Complies Does Not Not Observable Not Applicable	
Plans, calcula with w determ efficier	specifications, and/or tions provide all information hich compliance can be nined for the additional energy ncy package options.	Complies Does Not Not Observable Not Applicable	

Additional Comments/Assumptions:

Section # & Req.ID	Rough-In Electrical Inspection	Complies?
C405.2.2. 2 [EL22] ¹	Spaces required to have light- reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	Complies Does Not Not Observab
C405.2.1, C405.2.1. 1 [EL18] ¹	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	Complies Does Not Not Observat
C405.2.1. 2 [EL19] ¹	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	Complies Does Not Not Observab
C405.2.1. 3 [EL20] ¹	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting only when occupancy for the same area is detected.	Complies Does Not Not Observat
C405.2.2, C405.2.2. 1, C405.2.2. 2 [EL21] ²	Each area not served by occupancy sensors (per C405.2.1) have time- switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	Complies Does Not Not Observab

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1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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COMcheck Software Version 4.1.5.5 Exterior Lighting Compliance Certificate

Project Information Energy Code: 2018 IECC Project Title: Project Type: Addition Exterior Lighting Zone 3 (Other (LZ3))

Construction Site:

15430 Highway 44 Caldwell, ID

ITD MAINTENANCE BLDG.

Owner/Agent:

Designer/Contractor: Jaydn Benart CSHQA 200 W. Broad Street Boise, ID 83702

Α	в	С	D		E
Area/Surface Category	Quantity	Allowed Watts / Unit	Tradable Wattage	Allowe (B	ed Wat X C)
BACKDOOR CANOPY (Pedestrian and vehicular entrances and exits)	3 ft of door	21	Yes		63
ENTRY CANOPY (Entry canopy)	18 ft2	0.4	Yes		7
OUTDOOR LOT (Outdoor sales area/lot)	3986 ft2	0.35	Yes	1	395
		Total Tradab	ble Watts (a)	∝ 1	465
		Total All	owed Watts	= 1	465
	Total All	owed Supplement	tal Watts (b)	-	500
 (a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power 	i. I compliance of b	oth non-tradable a	and tradable	areas/surfac	ces.
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power A Fixture ID : Description / Lamp / Wattage Per Lamp	i. d compliance of b / Ballast	oth non-tradable a B Lamps/ Fixture	C Fixtures	D Fixture Watt.	Ces. E (C X
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power A Fixture ID : Description / Lamp / Wattage Per Lamp BACKDOOR CANOPY (Pedestrian and vehicular entrances and e	i. d compliance of b / Ballast xits 3 ft of door	oth non-tradable a B Lamps/ Fixture width): Tradable	C # of Fixtures 9 Wattage	D Fixture Watt.	E (C X
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power A Fixture ID : Description / Lamp / Wattage Per Lamp BACKDOOR CANOPY (Pedestrian and vehicular entrances and e LED 1: LS1: LED 4' VAPOR TIGHT LINEAR: Other: ENTRY CANOPY (Entry canopy 18 ft2): Tradable Wattage LED 2: SR1: LED SURFACE MOUNT: Other:	i. d compliance of b / Ballast <u>xits 3 ft of door</u>	oth non-tradable a B Lamps/ Fixture width): Tradable 1	C # of Fixtures 9 Wattage 1	D Fixture Watt. 33	ces. E (C X
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power A Fixture ID : Description / Lamp / Wattage Per Lamp BACKDOOR CANOPY (Pedestrian and vehicular entrances and e LED 1: LS1: LED 4' VAPOR TIGHT LINEAR: Other: ENTRY CANOPY (Entry canopy 18 ft2): Tradable Wattage LED 2: SR1: LED SURFACE MOUNT: Other: OUTDOOR LOT (Outdoor sales area/lot 3986 ft2): Tradable Wattage LED 2: WB11 LED WALL BACK: Other:	t. d compliance of b / Ballast <u>xits 3 ft of door</u>	oth non-tradable a B Lamps/ Fixture width): Tradable 1 1	C # of Fixtures 9 Wattage 1 1	D Fixture Watt. 33 17	Ces. E (C X
(a) Wattage tradeoffs are only allowed between tradable areas/surfaces (b) A supplemental allowance equal to 500 watts may be applied toward Proposed Exterior Lighting Power A Fixture ID : Description / Lamp / Wattage Per Lamp BACKDOOR CANOPY (Pedestrian and vehicular entrances and e LED 1: LS1: LED 4' VAPOR TIGHT LINEAR: Other: ENTRY CANOPY (Entry canopy 18 ft2): Tradable Wattage LED 2: SR1: LED SURFACE MOUNT: Other: OUTDOOR LOT (Outdoor sales area/lot 3986 ft2): Tradable Watta LED 3: WP1: LED WALL PACK: Other: LED 4: WP2: LED WALL PACK: Other:	i. d compliance of b / Ballast <u>xits 3 ft of door</u> tge	oth non-tradable a B Lamps/ Fixture width): Tradable 1 1	C # of Fixtures 9 Wattage 1 1 1	D Fixture Watt. 33 17 54 97	ces. E (C X

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

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Total Proposed Watts = 6096

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Section #	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3. 1, C405.2.3. 2 [EL23] ²	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	Complies Does Not Not Observable Not Applicable	
C405.2.4 [EL26] ¹	Separate lighting control devices for specific uses installed per approved lighting plans.	Complies Does Not Not Observable Not Applicable	
C405.2.4 [EL27] ¹	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	Complies Does Not Not Observable Not Applicable	
C405.2.5 [EL28] ^{null}	Manual controls required by the energy code are in a location with ready access to occupants and located where the controlled lights are visible, or identify the area served and their status.	Complies Does Not Not Observable Not Applicable	
C405.2.6 [EL30] ^{null}	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	Complies Does Not Not Observable Not Applicable	
C405.3 [EL6] ¹	Exit signs do not exceed 5 watts per face.	Complies Does Not Not Observable Not Applicable	
C405.6 [EL26] ²	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	Complies Does Not Not Observable Not Applicable	
C405.7 [EL27] ²	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	Complies Does Not Not Observable Not Applicable	
C405.8.2, C405.8.2. 1 [EL28] ²	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	Complies Does Not Not Observable Not Applicable	
C405.9 [EL29] ²	Total voltage drop across the combination of feeders and branch circuits $\leq 5\%$.	Complies Does Not Not Observable Not Applicable	

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Section # & Req.ID C303.3, C408.2.5. [FI17]³ C405.5.1 [FI18]¹ C405.5.1 [FI19]¹ C405.5.1 [FI19]¹ C408.1.1 [FI57]¹ C408.2.5. 1 [FI57]¹ C408.2.5. 1 [FI57]¹ C408.2.5. C408.2.5. C408.2.5. C408.2.5.

 I
 High Impact (Tier 1)
 I
 Medium Impact (Tier 2)
 I
 Impact (Tier 3)

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Final Inspection	Complies?	Comments/Assumptions
Furnished O&M instructions for systems and equipment to the building owner or designated representative.	Complies Does Not Not Observable Not Applicable	
Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	Complies Does Not Not Observable Not Applicable	See the Interior Lighting fixture schedule for values.
Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	Complies Does Not Not Observable	See the Exterior Lighting fixture schedule for values.
Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	Complies Does Not Not Observable Not Applicable	
Furnished as-built drawings for electric power systems within 90 days of system acceptance.	Complies Does Not Not Observable	
Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	Complies Does Not Not Observable	

 1 High Impact (Tier 1)
 2 Medium Impact (Tier 2)
 3 Low Impact (Tier 3)

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FIXTURE DESCRIPTION MANUFACTURER & PART NUMBER LITHONIA NO. CPANL 2X2 ALO1 SWW7 M4 EMERGENCY BATTERY: ILBLP CP10 HE SD A (WHERE INDICATED) 2P1 LED 2X2 FLAT PANEL LITHONIA NO. 2BLT 33L ADSM MVOLT EZ1 LP835 EMERGNECY BATTERY: EL14L (WHERE INDICATED) 2R1 LED 2X2 TROFFER 2S1 LED 2X2 FLAT PANEL LITHONIA NO. CPANL 2X2 ALO1 SWW7 M4 EMERGENCY BATTERY: ILBLP CP10 HE SD A (WHERE INDICATED) HB1 LED HIGH BAY LITHONIA NO. IBE 15LM MVOLT 40K LP1 LED 3' LINEAR Lithonia no. Shlp 36in 40k 80cri Dna LS1 LED 4' VAPOR TIGHT LINEAR LITHONIA NO. VAP 4000LM FST WD MVOLT GZ10 40K 80CRI, SURFACE MOUNT KIT EMERGENCY BATTERY: BSL722C (WHERE INDICATED) SR1 SURFACE MOUNTED ENTRY LITHONIA NO. OLCFM 15 DDB V1 LED 3' VANITY LITHONIA NO. FMVTSL 36IN MVOLT 30K 90CRI BN LITHONIA NO. LQM S W 3 R 120/277 EL N M6 EX1 EXIT SIGN EX2 EMERGENCY LIGHT LITHONIA NO. ELT24C WP1 LED WALL PACK LITHONIA NO. TWX2 LED P4 40K MVOLT DDBXD WP2 LED WALL PACK LITHONIA NO. TWX3 LED P3 40K MVOLT DDBXD WP3 LED WALL PACK, EMERGENCY DISCHARGE LITHONIA NO. WPX1 LED P2 40K MVOLT E14WC DDBXD CONTRACTOR MAY PROVIDE FIXTURES EQUAL TO THOSE SPECIFIED. SUBSTITUTED FIXTURES MUST MATCH SPECIFIED FIXTURE IN PERFORMANCE (LUMENS AND WATTAGE), APPEARANCE ALL FIXTURES SHALL BE SUBJECT TO REVIEW BY ENGINEER AT TIME OF LIGHTING FIXTURE SUBMITTAL. CONTRACTOR SHALL PROVIDE FIXTURES INDICATED ON SCHEDULE FOR ANY FIX A. VERIFY MATERIALS AND FINISHES WITH OWNER PRIOR TO ORDERING. VERIFY MOUNTING HEIGHTS WITH FINISHED DECK, JOIST HEIGHTS, CEILING HEIGHTS PRIOR TO ORDERING AND ALLOW 2 WEEKS FOR DIRECTION. B. LIGHTING REPRESENTATIVE TO CONFIRM / VERIFY ALL ACCESSORIES TO ENSURE THE CONTRACTOR HAS COMPLETE LIGHTING SYSTEMS. C. DOWN LIGHTS IN CEILING SOFFITS SHALL HAVE MOUNTING FRAMES WITH A LOWER HOUSING RING OR PROVISIONS TO ACCOMMODATE CEILINGS. D. COORDINATE LIGHT FIXTURES IN SOFFIT WITH FRAMING CONTRACTOR. E. LIGHTING REPRESENTATIVE AND ELECTRICAL CONTRACTOR TO VERIFY DIMMING SYSTEM, OCCUPANCY AND DAYLIGHT SENSOR COMPATIBILITY WITH LIGHT FIXTURE.

load in Watts	VOLTAGE	LAMP TYPE	MOUNTING
31	MVOLT	3500K	SUSPENDED
26	MVOLT	3500К	RECESSED
31	MVOLT	3500K	SURFACE MOUNT
107	MVOLT	4000K	SUSPENDED
33.4	MVOLT	4000K	SUSPENDED
33	MVOLT	4000K	SURFACE MOUNT
16.6	120	4000K	SURFACE
26	MVOLT	3000K	WALL MOUNT
0.06	120		WALL MOUNT
20	120		WALL MOUNT
54	MVOLT	4000K	WALL MOUNT
97	MVOLT	4000K	WALL MOUNT
97	MVOLT	4000K	WALL MOUNT
E, SIZE AND	QUALITY.		
IXTURES DE	EMED NOT EQ	UAL BY THE ENGI	NEER.
TO OPDER	INC AND ALLO	W 2 WEEKS FOR	NIRECTION

			<u>CONTRO</u>	<u>L TYPE</u>			<u><u>P</u></u>	ROGRAMMING	
<u>ROOM</u> <u>NUMBER</u>	AREA DESCRIPTION	MANUAL ON/OFF	MANUAL DIMMER/ON/OFF	OCCUPANCY		<u>B</u> 	AUTO OFF	ON (TYPICAL: SEE BUSINESS	AUTO OFF (TYPICAL: SEE BUSINESS
		SWITCH	SWITCH	JENSON				HOURS)	HOURS)
101	CORRIDOR		X	X	X	TIME CONTROL	CONTROL TRANSFERRED TO OCCUPANCY SENSORS AFTER BUSINESS HOURS.	OCCUPANCY SENSORS TO 50%	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
102	CONFERENCE		x	x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
103	OFFICE		x	x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
104	BREAKROOM		x	x	X	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	OCCUPANCY SENSORS TO 50%	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
105	WOMENS	X		X		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
106	I.T. CLOSET	x				MANUAL	405.2.2 EXCEPTION 2		
107	MENS	x		x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
108	СОРҮ		x	x	x	TIME CONTROL	CONTROL TRANSFERRED TO OCCUPANCY SENSORS AFTER BUSINESS HOURS.	OCCUPANCY SENSORS TO 50%	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
109	OPEN OFFICE		x	x	X	TIME CONTROL	CONTROL TRANSFERRED TO OCCUPANCY SENSORS AFTER BUSINESS HOURS.	OCCUPANCY SENSORS TO 50%	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
110	UNISEX	x		x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
111	UNISEX	x		x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
112	DECON ROOM	X				MANUAL	405.2.2 EXCEPTION 2		
113	SHOP SUPPLIES	X		X		MANUAL	OCCUPANCY SENSORS - 30 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
114	FIELD SUPPLIES STORAGE	X		X		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
115	OFFICE STORAGE	X		x		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
116	SHOP AREA	x				MANUAL	405.2.2 EXCEPTION 2		
117	JANITOR CLOSET	X		X		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
118	MECHANIC OFFICE		X	X		MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
119	MECHANIC STORAGE	X		X		OCCUPANCY SENSORS	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY	MANUAL	OCCUPANCY SENSORS - 20 MINUTES OF VACANCY
					EXT	ERIOR			
FIYTIIDE			<u>C</u>	ONTROL TYPE			-		
	FIXTURE DESCRIPTION	INTEGRATED PHOTOCELL	EXTERNAL PHOTOCELL	INTEGRATED AFTERHOURS DIMMING	INTEGRATED OCCUPANCY SENSOR	TIME-SWITCH CONTROL		<u>NOTES</u>	
WP1, WP2	BUILDING MOUNTED AREA LIGHTS		X			X	ROUTE EXTERIOR LIGHTING C	IRCUIT TO NEW LIGHTING CONT FOR CONTROL.	FROL PANEL AND PHOTO CELL
EXISTING	BUILDING MOUNTED AREA LIGHTS		X			X	INTEREPT AND EXTEND EXISTI PANEL C	NG EXTERIOR LIGHTING CIRCUI LOCK AND PHOTO CELL FOR CO	T TO NEW LIGHTING CONTROL ONTROL.
	GENERAL NOTES:	 REFER TO LIGHT REFER TO LIGHT EXTERIOR PHOT 	TING PLAN FOR OCCUP FING PLANS FOR QUAN FOCELL LOCATED ON R	PANCY SENSOR TYPE ITITY OF SWITCHES OOF. REFER TO LIG	: (CEILING OR WALI AND SENSORS. HTING PLAN.	AND QUANTITY O	F SWITCHES)		

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GENERAL NOTES:

- A. ALL DEMOLITION OF ELECTRICAL SYSTEMS SHALL BE CLOSELY COORDINATED WITH THE CONTRACTORS PHASING OF THE PROJECT. VERIFY DEMOLITION OF ELECTRICAL
- WITH ALL TRADES PRIOR TO START OF DEMOLITION. PROTECT ALL EXISTING WORK FROM DAMAGE DURING CONSTRUCTION. ANY DAMAGED
- MATERIALS, SYSTEMS, COMPONENTS, FINISHES AND THE LIKE, SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR TO THE ACCEPTANCE OF THE OWNFR.
- ALL CIRCUITS AND RELATED DEVICES THAT ARE TO REMAIN ARE TO STAY "ENERGIZED" IN THE DEMOLITION AND NEW CONSTRUCTION PHASES UNTIL THE COMPLETION OF THE WORK INDICATED ON THESE PLANS.
- THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL ASSOCIATED WITH WALLS BEING REMOVED, AND IN ALL LOCATIONS WHERE JUNCTION BOXES WILL NOT REMAIN ACCESSIBLE AFTER INSTALLATION OF MILLWORK.
- CONTRACTOR SHALL DISPOSE OF THE REMOVED DEVICES. DISPOSAL OF DEVICES SHALL COMPLY WITH ALL APPROPRIATE CODES. REUSE EXISTING CONDUITS AND JUNCTION BOXES AS IS PRACTICAL. CONTRACTORS OPTION TO REUSE EXISTING JUNCTION BOX IN CORRECT LOCATION AT
- RECEPTACLES AND DEVICES IN WALLS NOT BEING REMOVED. EXISTING CONDUCTORS, DEVICES, AND COVERPLATES SHALL BE REPLACED WITH NEW. WHERE ELECTRICAL DEMOLITION IS DESIGNATED, ALL EXISTING CONDUCTORS SHALL
- BE REMOVED BACK TO SOURCE OR NEAREST JUNCTION BOX THAT IS TO REMAIN. H. THE CONTRACTOR SHALL PROVIDE UPDATED CIRCUIT PANEL DIRECTORIES FOR ALL PANELS THAT CONTAIN CIRCUITS IMPACTED BY THIS PROJECT.

③ SHEET NOTES:

- EXISTING LIGHTING IN SHOP TO REMAIN. PROTECT DURING DEMOLITION AND CONSTRUCTION.
- EXISTING RADIANT HEATING TO BE REMOVED. COORDINATE WITH MECHANICAL PRIOR TO BEGINNING WORK.
- EXISTING SUB PANEL A TO BE REMOVED. IDENTIFY EXISTING CIRCUITS THAT ARE TO REMAIN ENERGIZED. BRANCH CIRCUIT TO BE INTERCEPTED AND EXTENDED TO NEW PANEL. SEE POWER PLAN.
- EXISTING SUB PANEL TO BE REMOVED. FIELD COORDINATE BRANCH CIRCUITS AND REMOVE ALL CONDUIT AND CONDUCTOR.
- REMOVE ALL ELECTRICAL IN TOOL/PARTS STORAGE AREA. COORDINATE WITH ARCHITECTURE FOR WALL BEING DEMOLISHED.
- COORDINATE WITH ARCHITECTURE FOR WALL BEING DEMOLISHED IN OFFICE AREA. ALL CONDUIT AND CONDUCTORS TO BE REMOVED.
- EXISTING HOTSY WASHING UNIT TO REMAIN. INTERCEPT EXISTING CIRCUIT AND EXTEND TO NEW PANEL. SEE POWER PLAN.
- EXISTING AIR COMPRESSOR AND LOCAL DISCONNECT TO BE REMOVED AND RELOCATED. SEE POWER PLAN.
- 9. EXISTING OIL PUMP SYSTEM TO BE REMOVED AND RELOCATED. SEE POWER PLAN. 10. EXISTING VEHICLE EXHAUST SYSTEM TO BE REMOVED AND RELOCATED. SEE POWER
- PLAN. . REMOVE ALL ELECTRICAL DEVEICES AND FIXTURES IN THIS AREA. COORDINATE WITH
- ARCHITECTURE FOR SCOPE OF DEMOLITION PRIOR TO BEGINNING WORK. 12. EXISTING PANEL TO REMAIN. PROTECT DURING DEMOLITION. FIELD VERIFY ANY EXISTING BRANCH CIRCUITS TO REMAIN.

DET BERNALD SCALE 1/8" = 1'-0"

DECALE 1/8" = 1'-0"

- A. ALL ELECTRICAL WORK SHALL BE CLOSELY COORDINATED WITH THE CONTRACTORS PHASING OF THE PROJECT. COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES.
- B. MAKE ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
- ROUTE ALL CONDUIT HOME RUNS TO PANELS OVERHEAD AND ABOVE ACCESSIBLE CEILINGS WHERE AVAILABLE.
- D. ALL LIGHT FIXTURES SHALL BE 120 VOLT, UNLESS OTHERWISE NOTED. SHADED FIXTURE SHALL HAVE EMERGENCY BALLAST CONNECTED TO CONTINUOUS
- POWER SUPPLY. ALL EXIT SIGNS AND THE EMERGENCY BATTERY OF EMERGENCY FIXTURES SHALL BE WIRED FOR CONTINUOUS OPERATION. CONNECT TO UNSWITCHED LIGHTING CIRCUIT.
- FURNISH AND INSTALL COMPATIBLE DIMMER SWITCH FOR CONTROL OF LIGHT FIXTURES AS INDICATED. COORDINATE WITH DIMMER SWITCH MANUFACTURER'S INSTALLATION REQUIREMENTS.
- H. ALL FINAL LOCATIONS AND ARRANGEMENTS OF CEILING LIGHTING FIXTURES SHALL BE COORDINATED WITH ALL OTHER TRADES.
- EACH SWITCH BOX SHALL HAVE A GROUND AND ASSOCIATED LIGHTING CIRCUIT NEUTRAL CONDUCTOR. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR FINAL LOCATION OF ALL CEILING MOUNTED ITEMS. REFER TO ARCHITECTURAL ELEVATIONS AND SECTIONS FOR
- MOUNTING HEIGHTS OF WALL OR COLUMN MOUNTED FIXTURES AND DEVICES. ALL CONDUITS WITH CIRCUIT CONDUCTORS SHALL HAVE A COPPER EQUIPMENT
- GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250. M. SEE SHEET E04 FOR LIGHTING FIXTURE SCHEDULE AND LIGHTING CONTROL SCHEDULE. SEE SHEET E01 FOR DEVICE AND SYMBOL SCHEDULE.
- N. ALL LIGHTING CIRCUIT HOMERUNS ARE TO BE 3/4" CONDUIT MINIMUM WITH BRANCH CIRCUIT #12 AND GROUNDING CONDUCTOR #12 UNLESS OTHERWISE NOTED.
- FURNISH AND INSTALL SAFETY WIRES AT ALL LIGHT FIXTURES INSTALLED IN A SUSPENDED CEILING.
- MOUNTING METHODS INDICATED AND REFERRED TO ARE MINIMUM CODE REQUIREMENTS. COMPLY WITH LOCAL CODES FOR ADDITIONAL SEISMIC RESTRAINTS.
- Q. COORDINATE HOMERUN CIRCUIT NUMBERS WITH PANEL SCHEDULES. RE: SHEET E81.

- DAYLIGHT ZONE CONTROL REQUIREMENTS: 2018 IECC: C405.2.3 AREA HAS LESS THAN 150 WATTS OF GENERAL LIGHTING. NO DAY-LIGHTING CONTROLS ARE REQUIRED. ROUTE EXTERIOR LIGHTING CIRCUIT THROUGH NEW LIGHTING CONTROL PANEL. COORDINATE EXTERIOR MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURE PRIOR TO ROUGH IN. COORDINATE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS. PROVIDE ALL REQUIRED MOUNTING HARDWARE FOR A COMPLETE, INSTALLED SYSTEM CONNECT AS REQUIRED. ADD ALTERNATE TO REPLACE EXISTING LIGHT FIXTURES ONE-FOR-ONE WITH NEW SPECIFIED HB1 FIXTURE. INTERCEPT AND EXTEND EXISTING SHOP LIGHTING CONTROLS TO NEW LIGHT FIXTURES. FIELD COORDINATE PRIOR TO BEGINNING WORK. FURNISH AND INSTALL ADDITIONAL CONTACTORS AS REQUIRED. INTERCEPT AND EXTEND EXISTING EXTERIOR LIGHT FIXTURE CIRCUIT AND ROUTE TO NEW LIGHTING CONTROL PANEL. FIELD VERIFY LOCATION AND QUANTITY OF EXISTING LIGHTS TO REMAIN.
- COORDINATE WITH LIGHTING VENDOR TO PROVIDE OCCUPANCY SENSOR COVERAGE AS REQUIRED TO COMPLY WITH IECC 2018 OPEN OFFICE CONTROL REQUIREMENTS.
- FURNISH AND INSTALL NEW LIGHTING CONTROL PANEL. COORDINATE WITH MANUFACTURER FOR CONNECTION AND MOUNTING REQUIREMENTS. FURNISH AND INSTALL NEW EXTERIOR RATED PHOTOCELL FOR EXTERIOR LIGHTING CONTROLS. CONNECT TO NEW LIGHTING CONTROL PANEL. COORDINATE WITH MANUFACTURER FOR INSTALLATION REQUIREMENTS.
- 0. EMERGENCY DISCHARGE LIGHTING. LIGHT FIXTURE TO BE OFF WHILE NORMAL POWER IS AVAILABLE. LIGHT TO COME ON AT LOSS OF NORMAL POWER. COORDINATE MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH IN.

ORIGINAL DOCUMENTS ARE HELD AT CSHQA, INC. OFFICE, 200 W BROAD STREET, BOISE, ID 83702

GENERAL NOTES:

- A. ALL ELECTRICAL WORK SHALL BE CLOSELY COORDINATED WITH THE CONTRACTORS PHASING OF THE PROJECT. COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES.
- B. MAKE ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. ROUTE ALL CONDUIT HOME RUNS TO PANELS OVERHEAD AND ABOVE ACCESSIBLE
- CEILINGS WHERE AVAILABLE. . COORDINATE ELECTRICAL REQUIREMENTS FOR A COMPLETE AND OPERATIONAL
- SYSTEM WITH ARCHITECTURAL DOOR HARDWARE SCHEDULE AND SPECIFICATIONS, MECHANICAL AND PLUMBING CONTROL DRAWINGS, SPECIAL SYSTEM DRAWINGS, ARCHITECT, SYSTEM'S PROVIDER'S AND OWNERS AGENT. VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.
- . THE CONTRACTOR SHALL PROVIDE UPDATED CIRCUIT PANEL DIRECTORIES FOR ALL PANELS THAT CONTAIN CIRCUITS IMPACTED BY THIS PROJECT.
- COORDINATE WITH OWNERS AGENT FOR FINAL LOCATIONS OF ALL RECEPTACLES AND SPECIAL CONNECTIONS FOR EQUIPMENT PRIOR TO ROUGH-IN. COORDINATE RECEPTACLE INSTALLATION WITH MILLWORK AND BACKSPLASH INSTALLERS TO AVOID INTERFERENCES.
- G. ALL CONDUIT WITH CIRCUIT CONDUCTORS SHALL HAVE A COPPER EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250.
- H. ELECTRICAL DEVICES TO BE MOUNTED OVER COUNTER TO BE COORDINATED WITH BACK SPLASH. THE BOTTOM OF THE DEVICE COVERPLATE SHALL CLEAR THE TOP OF THE BACK SPLASH. COORDINATE THE MOUNTING HEIGHT WITH THE MILLWORK BEING INSTALLED.
- ALL SINGLE–PHASE RECEPTACLES RATED 125–VOLT, 50 AMPS OR LESS AND THREE-PHASE RECEPTACLES RATED 125-VOLT, 100 AMPS OR LESS INSTALLED IN KITCHEN, OUTDOOR AREAS, AND ALL OTHER AREAS REQUIRED BY CODE, SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER PROTECTION FOR PERSONNEL. UTILIZE GFCI RATED RECEPTACLES OR GFCI BREAKERS IN PANELBOARDS.
- ALL RECEPTACLES IN SHOP AREAS TO BE MOUNTED AT 42" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.

- EXISTING PANEL TO BE REMOVED. SEE SINGLE LINE DIAGRAM ON SHEET E80.
- EXISTING PANEL TO REMAIN. REMOVE AND RE-ISINSTALL WITH NEW WALL FURRING. COORDINATE WITH ARCHITECTURE PRIOR TO BEGINNING WORK.
- EXISTING AIR COMPRESSOR. INTERCEPT AND EXTEND EXISTING FEEDER TO THIS LOCATION. RELOCATE EXISTING LOCAL DISCONNECT. RECONNECT ALL EQUIPMENT AS REQUIRED. MATCH EXISTING CONDUIT AND CONDUCTOR SIZE.
- . FURNISH AND INSTALL NEMA RATED 240V, 30 AMP OUTLET. COORDINATE WITH OWNERS PROJECT MANAGER FOR PIN CONFIGURATION TYPE.
- EXISTING VEHICLE EXHAUST SYSTEM. COORDINATE NEW LOCATION AND CONNECT. FIELD VERIFY EXISTING POWER CONNECTION AND CONTROL REQUIREMENTS. COORDINATE WITH OWNER PROJECT MANAGER FOR LOCATIONS PRIOR TO ROUGH IN. 6. EXISTING EXTERIOR RECEPTACLE TO REMAIN.
- OVER COUNTER MICROWAVE PROVIDED BY OTHERS. COORDINATE WITH OWNERS
- PROJECT MANAGER FOR EXACT LOCATION PRIOR TO ROUGH IN. COORDINATE WITH EQUIPMENT MANUFACTURERS CONNECTION REQUIREMENTS.
- OVER COUNTER COFFEE MAKER PROVIDED BY OTHERS. COORDINATE WITH OWNERS PROJECT MANAGER FOR EXACT LOCATION. COORDINATE WITH EQUIPMENT MANUFACTURERS CONNECTION REQUIREMENTS.
- EXISTING HOTSY TRUCK WASH UNIT TO REMAIN. PROTECT DURING CONSTRUCTION. 0. EXISTING IDAHO POWER DISTRIBUTION POLE. FIELD COORDINATE WITH IDAHO POWER TO VERIFY REQUIRED CLEARANCES ARE MAINTAINED WITH NEW BUILDING FOOT PRINT. COORDINATE BUILDING FOOT PRINT WITH ARCHITECT.

ORIGINAL DOCUMENTS ARE HELD AT CSHQA, INC. OFFICE, 200 W BROAD STREET, BOISE, ID 83702

- A. ALL ELECTRICAL WORK SHALL BE CLOSELY COORDINATED WITH THE CONTRACTORS PHASING OF THE PROJECT. COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES.
- B. MAKE ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.
- C. ROUTE ALL CONDUIT HOME RUNS TO PANELS OVERHEAD AND ABOVE ACCESSIBLE CEILINGS WHERE AVAILABLE.
- PROVIDE POWER RELAYS, LOW VOLTAGE TRANSFORMERS, CONDUITS AND JUNCTION BOXES FOR THE FOLLOWING SPECIAL SYSTEMS AS REQUIRED: BUILDING AUTOMATION AND MECHANICAL CONTROLS.
- COORDINATE WITH OWNERS AGENT FOR FINAL LOCATIONS OF ALL RECEPTACLES AND SPECIAL CONNECTIONS FOR EQUIPMENT PRIOR TO ROUGH-IN.
- F. ALL CONDUIT WITH CIRCUIT CONDUCTORS SHALL HAVE A COPPER EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC 250.
- G. COORDINATE WITH MECHANICAL CONTRACTOR AND PROVIDE LOCAL DISCONNECTS FOR EQUIPMENT WHERE REQUIRED.
- H. VERIFY FINAL CONNECTION TO EQUIPMENT WITH MANUFACTURER. PROVIDE CONNECTORS, FLEX CONDUIT, JUNCTION BOXES AND RECEPTACLES AS REQUIRED.
- FURNISH AND INSTALL CONDUIT AND JUNCTION BOXES WITH PULL CORD FOR ALL PLUMBING AND MECHANICAL EQUIPMENT CONTROLS. MECHANICAL CONTRACTOR TO FURNISH AND INSTALL CONTROL WIRING AND MAKE ALL CONTROL CONNECTIONS.

- SHOP GAS FIRED UNIT HEATER. FURNISH AND INSTALL LOCAL DISCONNECT SWITCH. COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION REQUIREMENTS. FURNISH AND INSTALL 1/2" CONDUIT WITH PULL CORD AND SINGLE GANG JUNCTION BOX FOR THERMOSTAT. COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION.
- WALL MOUNTED ELECTRIC HEATER. FURNISH AND INSTALL LOCAL DISCONNECT SWITCH. COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION REQUIREMENTS. FURNISH AND INSTALL 1/2" CONDUIT WITH PULL CORD AND SINGLE GANG JUNCTION BOX FOR THERMOSTAT. COORDINATE WITH MECHANICAL CONTRACTOR FOR LOCATION PRIOR TO ROUGH IN.
- EXHAUST FAN. COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION REQUIREMENTS. CONNECT AS REQUIRED. LOCAL DISCONNECT PROVIDED BY OTHERS. INTERCONNECT CIRCUIT CONTROL WITH OCCUPANCY SENSOR FOR LIGHTING. FAN TO BE RUNNING WHILE LIGHT IS ON.
- . FURNISH AND INSTALL 1/2" CONDUIT AND PULL CORD FROM SINGLE GANG JUNCTION BOX TO ACCESSIBLE SPACE FOR THERMOSTAT. COORDINATE WITH MECHANICAL FOR LOCATION PRIOR TO ROUGH IN. FURNISH AND INSTALL ROOFTOP CONVENIENCE OUTLET FOR EXHAUST FANS.
- COORDINATE WITH MECHANICAL CONTRACTOR FOR MOUNTING LOCATION.
- FURNISH AND INSTALL LOCAL DISCONNECT FOR MECHANICAL EQUIPMENT. COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION REQUIREMENTS.
- . FURNISH AND INSTALL 3/4" CONDUIT WITH PULL CORD FROM CONDENSING UNIT TO FAN COIL FOR CONTROL CONDUCTORS BY OTHERS.
- B. FURNISH AND INSTALL 1" CONDUIT WITH PULL CORD FROM CONDENSING UNIT TO FAN COIL FOR SUB FEED POWER CONDUCTORS. COORDINATE WITH MECHANICAL FOR REQUIREMENTS.
- 9. FURNISH AND INSTALL LOCAL DISCONNECT FOR PLUMBING EQUIPMENT. COORDINATE WITH EQUIPMENT MANUFACTURER FOR CONNECTION REQUIREMENT
- 10. ELECTRIC TRAP PRIMER. COORDINATE WITH EQUIPMENT MANUFACTURER AND PLUMING FOR CONNECTION REQUIREMENTS. CONNECT AS REQUIRED.
- 1. INSTA HOT WATER HEATER FOR EYE WASH STATION. COORDINATE WITH EQUIPMENT MANUFACTURER FOR DISCONNECT AND CONNECTION REQUIREMENTS. COORDINATE WITH PLUMBING FOR LOCATION PRIOR TO ROUGH IN.

ORIGINAL DOCUMENTS ARE HELD AT CSHQA, INC. OFFICE, 200 W BROAD STREET BOISE, ID 83702

1 CIRCUITING SYMBOLS SCALE: NONE

- 5 ALL ISOLATED GROUND CIRCUITS SHALL HAVE AN ISOLATED GROUND CONDUCTOR, CONNECTED TO ISOLATED GROUND SYSTEM, IN ADDITION TO AN EQUIPMENT GROUND.
- (4) ALL CIRCUITS SHALL HAVE AN INDEPENDENT NEUTRAL CONDUCTOR. NO EDISON STYLE SHARED NEUTRAL CONDUCTORS ARE ALLOWED.
- \bigcirc DASHED LINES INDICATE UNDERSLAB OR UNDERGROUND CONDUIT (SCHEDULE 40 PVC, 1" MIN.)
- (2) A GROUND CONDUCTOR, SIZED PER NEC, SHALL BE INCLUDED IN ALL CONDUIT RUNS.
- NOTES: (1) ALL HOMERUNS ARE TO BE 3/4" CONDUIT MINIMUM WITH BRANCH CIRCUIT AND GROUNDING CONDUCTOR #12 UNLESS NOTED OTHERWISE.

BRANCH CIRCUIT CONDUIT

2 STANDARD MOUNTING HEIGHTS SCALE: NONE

P	anel '(e)MDP'				NOTES:	EXISTING (OMMERCIA	l bolt	-ON	CIRCUIT	BREAKER	PANELBO	ARD.			
24	40/120-volt, 3-phase, 4-wire	A.I.C.	. Rating:	10000												
3	00-AMP BUS W/ 300-AMP MCB	м	OUNTING:	SURFAC	E											
СКТ	LOAD	REF	BRKR	LOAD	BR	EAKER		PHASE AMPS	5	BREAM	KER	LOAD	BRKR	REF	LOAD	CKT
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	A	B	C	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	AIR COMPRESSOR				3	20	0.0			100	2				PANEL 'A	2
3	**				*	**		0.0		**	*				*:	* 4
5	**				*	**			0.0	60	2				SUB PANEL 'A	6
7	WATER HEATER				2	30	0.0			**	*				*:	* 8
9	**				*	**		0.0		60	2				SUB PANEL 'B	10
11	ELECTRIC FURNACE AH-1				2	100			0.0	**	*				*:	* 12
13	**				*	**	0.0			50	2				WELDING OUTLET	14
15	HEAT PUMP CU-1				3	40		0.0		**	*				*1	* 16
17	**				*	**			0.0							18
19	**				*	**	0.0									20
21	SUB PANEL 'C'				2	60		0.0							BUSSED SPACE	22
23	**				*	**			0.0						BUSSED SPACE	24
25	BUSSED SPACE						0.0								BUSSED SPACE	26
27	BUSSED SPACE							0.0							BUSSED SPACE	28
29									0.0							30
		· ·	·													
	PROJECT #22123 Panel Schedules			T	OTAL	LOAD:	0	0	0						01/25/23	3
							ACTUAL	DEMAND	DEMAND							
		LICHTING AN	in ather	CONTINI	210		0.0	125%	0.0	Evolu	dae t	rack and	l chow w	indow liah	ting	
				TRAC	K IIG	HTING:	0.0	N/A	0.0	Track	lena	th.	0 ft	indow ligh	ang.	
				SHOW	V WIN	DOWS:	0.0	N/A	0.0	Show	wind	ow lenat	h: 0 ft			
				RECEPT	ACLE	LOAD:	0.0	100%	0.0	100%	of t	he first	10 kVA,	plus 50%	over 10 kVA.	
KITCHEN EQUIPMENT LOAD								100%	0.0	Based	d on	0 pieces	s of equi	oment.		
HEATING (COINCIDENTAL) LOAD							0.0	100%	0.0	Incluc	les s	pace hea	nt in exce	ess of co	oling and other electric heat.	
HEATING OR OTHER NON-COINCIDENTAL LOAD:							0.0	0%	0.0							
WELDER LOAD							0.0	0%	0.0							
	motors and other no	N-CONTINUOL	JS OR MI	SCELLANE		LOAD:	0.0	100%	0.0	All ot	her l	oads exc	cluding m	aximum r	notor load.	
			LA	KGEST MO	JIUR	LUAU:	0.0	125%	0.0	MININ	ны г					
		VIALS:	0.0	0%	0.0	MINIM	IUM F	LEVEK:	U-AMPS							

P/	anel '(e)b'						NOTES:	Existing (COMMERCIA	NL BOLT	-ON (CIRCUIT	BREAKER	PANELBO	ARD.
24	40/80-VOLT, 1-PHASE, 4-WIRE	A.I.C	. Rating:	10000			1 –PANEI	_ LOCATED (ON MEZZA	NINE NC)rth N	NEST WA	LL		
1(00-AMP BUS W/ 100-AMP MCB	м	OUNTING:	SURFAC	E										
CKT	LOAD	REF	BRKR	LOAD	BR	EAKER		PHASE AMP	S	BREAK	(ER	LOAD	BRKR	REF	LOAD
NO	DESCRIPTION	NO	TYPE	AMPS	Ρ	AMP	L1		L2	AMP	Ρ	AMPS	TYPE	NO	DESCRIPTION
1	LIGHTS				1	20	0.0			20	1				RECEPTACLES
3	AIR HANDLER				2	60			0.0	20	1				RECEPTACLES
5	**				*	**	0.0			20	1				RECEPTACLES
7	CONDENSER				2	30			0.0	20	1				LTS – REC – OUTSIDE DECK
9					*	**	0.0			20	1				REC – BREAK ROOM PLUGMOLD
11	BUSSED SPACE								0.0	20	1				REC – BREAK ROOM PLUGMOLD
13	BUSSED SPACE						0.0			20	1				REC - SERVER ROOM
15	BUSSED SPACE								0.0						BUSSED SPACE
17	BUSSED SPACE						0.0								BUSSED SPACE
19	BUSSED SPACE								0.0						BUSSED SPACE
21	BUSSED SPACE						0.0								BUSSED SPACE
23	BUSSED SPACE								0.0						BUSSED SPACE
	PROJECT #22123 Panel Schedules			T	OTAL	LOAD:	0		0						01/25/23
		LIGHTING AN	id other	CONTINU	JOUS K LIG	LOAD:	ACTUAL KVA 0.0 0.0	DEMAND FACTOR 125% N/A	DEMAND KVA 0.0 0.0	Exclue	des tr	ack and	show w	indow ligh	ting.
				SHOW	V WIN	DOWS:	0.0	N/A	0.0	Show	windo	ow lengt	h: 0 ft		
				RECEPT	ACLE	LOAD:	0.0	100%	0.0	100%	of th	ne first	10 kVA,	plus 50%	over 10 kVA.
			KITCHEI	n Equipi	MENŢ	LOAD:	0.0	100%	0.0	Based	d on (0 pieces	of equi	pment.	
		H	EATING (C	OINCIDEN	ITAL)	LOAD:	0.0	100%	0.0	Includ	les sp	ace hec	it in exc	ess of co	oling and other electric heat.
	HE	aiing or oth	er non-(LUAD:	0.0	U%	0.0						
			IS OD MK	WEI Sofi I Anig			0.0	U% 100%	0.0	All	har la	ade eve	ludina m	avimum r	notor load
	MOTORS AND UTTER IN		JJ UN MIN Δ	RGEST M)TOR		0.0	125%	0.0	AII UL			auuny m		
					T	OTALS:	0.0	0%	0.0	MINIM	UM FE	EDER:	0-AMPS		
													-		

P/	anel '(e)a'						NOTES:	EXISTING F	ANELBOAR	D						
24	40/120-VOLT, 3-PHASE, 4-WIRE	A.I.C.	RATING:	10000												
2	25-AMP MLO	М	ounting:	SURFAC	E											
ж		RFF	BRKR		BR	FAKFR		PHASE AMPS		BRFAK	(FR	LOAD	BRKR	RFF	LOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	A	B	C	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS - SHOP				1	20	0.0			20	1				LTS – OFFICE	2
3	LTS – SHOP				-1	20		0.0		20	1				LTS – OFFICE	4
5	LTS – SHOP				1	20			0.0	20	1				LTS - OFFICE	6
7	LTS - SHOP				1	20	0.0			20	1				LTS - OFFICE	8
9	LTS – SHOP				1	20		0.0		20	1				LTS – OFFICE	10
11	LIS - SHOP				1	20	0.0		0.0	20	1				LIS - MEZZANINE	12
13 15	LIS SHOP				1	20	0.0	0.0		20	1				LIS – EXTERIOR	14
10 17	REC - SHOP				1	20		0.0	0.0	20	1				RECIR FANS	10
17 19	REC - SHOP				1	20	0.0		0.0	20	1				REC. – OFFICE	20
21	REC - SHOP				1	20	0.0	0.0		20	1				REC - OFFICE/BREAKROOM	22
23	REC – SHOP				1	20			0.0	20	1				REC – OFFICE/BATH ROOM	24
25	REC – SHOP				1	20	0.0			20	1				REC – OFFICE	26
27	REC – SHOP				1	20		0.0		20	1				REC – MEZZANINE /COM PANEL	28
29	CO-RAY-VAC FANS				1	20			0.0	20	1				VEEDER ROOT	30
31	GENERATOR PANEL				2	70	0.0			20	1				OVERHEAD DOOR	32
33	**				*	**		0.0		20	1				OVERHEAD DOOR	34
35	WAIST WATER MONITOR				1	20			0.0	20	1				OVERHEAD DOOR	36
37	BUSSED SPACE						0.0			20	1				OVERHEAD DOOR	38
<u>39</u>	BUSSED SPACE							0.0		20	1				OVERHEAD DOOR	40
41					1	20	0.0		0.0	20	1				OVERHEAD DOOR	42
4J 45					1	20	0.0	0.0		20	4					44
40 47					1	20		0.0	0.0	20	1					40
40	UNKNOWN				1	20	0.0		0.0	20	1					50
51	BUSSED SPACE					20	0.0	0.0		20	,				BUSSED SPACE	52
53	BUSSED SPACE							0.0	0.0						BUSSED SPACE	54
	PROJECT #22123 Panel Schedules			T	otal	LOAD:	0	0	0						01/25/23	
							ACTUAL	DEMAND	DEMAND							
		CHTING AN	n ather	CONTINI	2101		KVA 0.0	FACTUR 125%	KVA 0.0	Evolu	dae ti	rack and	l chow w	indow lightin	a	
				TRACI	KIIG	HTING:	0.0	N/A	0.0	Track	lenat	th:	0 ft	indow ingritin	y.	
				SHOW	V WIN	DOWS:	0.0	N/A	0.0	Show	wind	ow lengt	h: 0 ft			
				RECEPT	ACLE	LOAD:	0.0	100%	0.0	100%	of t	he first	10 kVA,	plus 50% ov	ver 10 kVA.	
			KITCHE	N EQUIP		LOAD:	0.0	100%	0.0	Based	lon	0 pieces	of equi	oment.		
		H UTA AD C	EATING (C	COINCIDEN	IIAL) NTAI	LUAD:	0.0	100% 0%	0.0	Includ	ies sp	pace hec	it in exce	ess ot coolir	ng and other electric heat.	
				WFI			0.0	0%	0.0							
	MOTORS AND OTHER NON-(Continuol	JS OR MI	SCELLANE	EOUS	LOAD:	0.0	100%	0.0	All ot	her lo	oads exc	luding m	aximum mot	tor load.	
			LAF	rgest M	otor	LOAD:	0.0	125%	0.0				5			
					Ţ	OTALS:	0.0	0%	0.0	MINIM	UM F	EEDER:	0-AMPS			

	anel '(e)sub-c'			NOTES:	EXISTING	COMMERCIA	l Bolt	-ON	CIRCUIT	BREAKER	PANELBO	ARD.				
	40/80-volt, 1-phase, 4-wire	A.I.C. 1	rating:	10000			1 - PANI	el located	ON MEZZA	NINE S	SOUTH	IWEST WA	LL			
·	00-AMP MLO	MOL	UNTING:	SURFAC	Ж											
СКТ	LOAD	REF	BRKR	LOAD	B	REAKER		PHASE AMP	S	BREAK	KER	LOAD	BRKR	REF	LOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	Ρ	AMP	L1		L2	AMP	Ρ	AMPS	TYPE	NO	DESCRIPTION	NO
1	RECEPTACLE				1	20	0.0			20	1				FRONT OFFICE/DESK HEATER	2
3	REC – SOUTH (FAN)				1	20			0.0	20	1				REC - NORTH	4
5	REC – WEST				1	20	0.0			20	1				LIGHTS	6 6
7	REC – SOUTH DOWNSTAIRS				1	20			0.0	20	1					8
9							0.0									10
11									0.0							12
	DRAIFAT #22123 Danel Schedules			1			0		0						01 /25 /27	τ
_						L LUND.									01/23/25	,
							KVA	FACTOR	KVA							
	LIG	SHTING AND	other	CONTIN	000	s load:	0.0	125%	0.0	Exclu	des t	rack and	l show w	indow ligh	ting.	
				TRAC	КЦ	GHTING:	0.0	N/A	0.0	Track	leng	th:	0 ft			
				SHO	W WI	NDOWS:	0.0	N/A	0.0	Show	wind	ow lengt	h: 0 ft			
			KITCHEI	KEUEPI	MEN		0.0	100%	0.0	TUU%	ort don	ne first	TU KVA,	pius 30%. nment	over IU kva.	
		HFA	TING (C	OINCIDE		1000	0. 0.0 100% 0.0 Dused on o pieces of equipment.									
	HEATING	OR OTHER	R NON-(COINCIDE	ENTA	L LOAD:	0.0	0%	0.0	monut		pullo 1100		000 01 00	and other electric hour	
	HEATING OR OTHER NON-COINCIDENTAL LA WELDER LO							0.0 0% 0.0								
	MOTORS AND OTHER NON-C	s load:	0.0	100%	0.0	All ot	her l	oads exc	luding m	aximum r	notor load.					
			LAF	rgest M	otof	r load:	0.0	125 %	0.0							
						TOTALS:	0.0	0%	0.0	MINIM	ium f	EEDER:	0-AMPS			

NOTES:

1. EXISTING PANELS TO BE REMOVED ARE SHADED. FIELD COORDINATE FOR EXACT LOCATION OF PANELS. COORDINATE WITH OWNERS PROJECT MANAGER PRIOR TO BEGINNING DEMOLITION..

2. PANEL B TO BE REMOVED AND RE-INSTALLED FLUSH IN NEW WALL.

P	anel '(e)sub-a'			NOTES:	Existing (COMMERCIA	L BOLT	-ON	CIRCUIT	BREAKER	PANELBO	ARD.					
2	40/80-VOLT, 1-PHASE, 4-WIRE	A.I.C.	RATING:	10000			1 - LOC/	TED IN SHO)p area								
1	25-AMP MLO	мо	UNTING:	SURFAC	E												
СКТ	LOAD	REF	BRKR	LOAD	BR	eaker		PHASE AMP	5	BREAK	(ER	LOAD	BRKR	REF	LOAD		CKT
NO	DESCRIPTION	NO	TYPE	AMPS	Ρ	AMP	L1		L2	AMP	Ρ	AMPS	TYPE	NO	DESCRIPTION		NO
1	UNKNOWN				2	20	0.0			20	1					UNKNOWN	2
3	**				*	**			0.0	20	1					UNKNOWN	4
5	BUSSED SPACE						0.0			20	1					UNKNOWN	6
7	BUSSED SPACE				0.0	20	1					UNKNOWN	8				
9			0.0										10				
11									0.0								12
	PROJECT #22123 Panel Schedules		0		0							01/25/23					
	PROJECT #22123 Panel Schedules			T	otal	LOAD:	0 Actual	DEMAND	0 DFMAND							01/25/23	
	PROJECT #22123 Panel Schedules			Ti	otal	LOAD:	0 Actual Kva	Demand Factor	0 Demand Kva							01/25/23	
	PROJECT #22123 Panel Schedules	ighting and) other	CONTINU	otal Ious	LOAD:	0 Actual KVA 0.0	DEMAND FACTOR 125%	0 Demand KVA 0.0	Exclu	des ti	rack and	l show w	indow ligh	ting.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and) other	To Continu Traci	otal Ious K Ligi	LOAD: LOAD: HTING:	0 ACTUAL KVA 0.0 0.0	DEMAND FACTOR 125% N/A	0 DEMAND KVA 0.0 0.0	Exclue Track	des ti lengi	rack and th:	l show w O ft	indow ligh	ting.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and) other	T Continu Track Show Recent	otal Ious K Ligi V Wini	LOAD: LOAD: TTING: DOWS:	0 ACTUAL KVA 0.0 0.0 0.0	DEMAND FACTOR 125% N/A N/A 100%	0 DEMAND KVA 0.0 0.0 0.0 0.0	Exclue Track Show	des ti lengi wind	rack and th: ow lengtl	l show w 0 ft h: 0 ft 10 k/A	indow ligh	ting.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and) other	Continu Trach Show Recept/ Fouip	otal Ious K Ligi V Wini Acle Vent	LOAD: HTING: DOWS: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0	DEMAND FACTOR 125% N/A N/A 100% 100%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0	Exclue Track Show 100%	des ti lengi wind of ti	rack and th: ow lengtl he first 0 pieces	Ishow w 0ft h:0ft 10kVA,	indow ligh plus 50%	ting. over 10 kVA.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and) other Kitchen Ating (co	TO Continu Traci Show Recept/ N Equipm Oinciden	otal Jous K Ligi V Wini Acle Ment Ital)	LOAD: HTING: DOWS: LOAD: LOAD: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0	DEMAND FACTOR 125% N/A N/A 100% 100%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Exclue Track Show 100% Based Includ	des ti lengi wind of ti d on les si	rack and th: ow lengtl he first 0 pieces pace hea	Ishow w 0ft h:0ft 10kVA, of equi	indow ligh plus 50% pment. ess of co	ting. over 10 kVA. Jling and other electric heat.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and He/ Ig or othei) other Kitchen Ating (CC R Non-C	T Continu Traci Show Recept, Equipa Oinciden Coincidei	otal Jous K Ligł V Wini Acle Ment Ital) Ntal	LOAD: TING: DOWS: LOAD: LOAD: LOAD: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	DEMAND FACTOR 125% N/A N/A 100% 100% 100% 0%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Exclue Track Show 100% Based Incluc	des ti lengi wind of ti on les sp	rack and th: ow lengtl he first O pieces pace hea	l show w O ft h: O ft 10 kVA, ; of equi it in exc	indow ligh plus 50% pment. ess of co	ting. over 10 kVA. Dling and other electric heat.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and Hej Ig or othei) other Kitchen Ating (cc R Non–C	T Continu Trac Show Recept Equipm Oinciden Coinciden Wei	otal Jous K Ligi V Wini Acle Ment Ital) Ntal Lder	LOAD: HTING: DOWS: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	DEMAND FACTOR 125% N/A N/A 100% 100% 100% 0% 0%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Exclue Track Show 100% Basec Incluc	des to lengt wind of to d on les sp	rack and th: ow lengtl he first 0 pieces Dace hea	l show w O ft h: O ft 10 kVA, s of equi tt in exc	indow ligh plus 50% pment. ess of co	ting. over 10 kVA. oling and other electric heat.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and hej ig or othei -continuous) other Kitchen Ating (CC R Non-C S or Mis	T Continu Traci Show Recept/ Equipm Oinciden Coinciden Coinciden Wei Coinciden	otal Jous K Ligi V Wini Acle Ment Ital) Ntal Lder Eous	LOAD: HTING: DOWS: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	DEMAND FACTOR 125% N/A N/A 100% 100% 100% 0% 0%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Exclue Track Show 100% Basec Incluc	des ti lengi wind of ti d on les sp her lo	rack and th: ow lengtl he first 0 pieces bace hea bads exc	l show w O ft h: O ft 10 kVA, ; of equi it in exc	indow ligh plus 50% pment. ess of com aximum n	ting. over 10 kVA. oling and other electric heat. notor load.	01/25/23	
	PROJECT #22123 Panel Schedules	ighting and he/ ig or othei -continuous) other Kitchen Ating (CC R Non-C S or Mis Lar	To Continu Traci Show Recept/ N Equipm Oinciden Coinciden Wel Coellane Gest Mo	OTAL JOUS K LIGH V WINI ACLE MENT ITAL) NTAL LDER COUS DTOR	LOAD: HTING: DOWS: LOAD:	0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	DEMAND FACTOR 125% N/A N/A 100% 100% 100% 0% 100% 125%	0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Exclue Track Show 100% Based Incluc	des ti leng wind of ti J on les sp her k	rack and th: ow lengtl he first 0 pieces bace hea bads exc	l show w O ft h: O ft 10 kVA, s of equi tt in exc luding m	indow ligh plus 50% pment. ess of com aximum n	ting. over 10 kVA. Dling and other electric heat. notor load.	01/25/23	

P/	anel '(e)gas'						NOTES:	EXISTING	COMMERCIA	l Bolt	-0N	CIRCUIT	BREAKER	PANELBO	ARD.	
24	40/120-volt, 3-phase, 4-wire	A.I.C.	. Rating:	10000												
10	DO-AMP MLO	м	ounting:	SURFAC	Έ											
СКТ	LOAD	REF	BRKR	LOAD	BR	EAKER		PHASE AMP	S	BREAK	KER	LOAD	BRKR	REF	LOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	Ρ	AMP	A	В	C	AMP	Ρ	AMPS	TYPE	NO	DESCRIPTION	NO
1	GENERATOR MAIN				2	30	0.0			30	2				MAIN	2
3	**				*	**		0.0		**	*				**	4
5	GAS PUMP				2	20			0.0	20	2				DIESEL PUMP	6
7	**	**	0.0			**	*				**	8				
9	OVERHEAD DOOR, 3RD DOOR	20		0.0		20	1				GAS SYSTEM	10				
11	PANEL SURGE PROTECTOR	20			0.0	20	1				CO-RAY-VAC FAN	12				
13	**	*	**	0.0			20	1				PHONE SYSTEM	<u> 14 </u>			
15	BUSSED SPACE							0.0							BUSSED SPACE	. 16
17									0.0							18
	PROJECT #22123 Panel Schedules			T	OTAL	load:	0	0	0						01/25/23	j
							ACTUAL KVA	Demand Factor	DEMAND KVA							
	LIC	GHTING AN	id other	CONTINU	Jous	load:	0.0	125%	0.0	Exclu	des t	rack and	l show w	indow ligh	ting.	
				TRAC	k ligł	iting:	0.0	N/A	0.0	Track	leng	th:	0 ft	-	-	
				SHOW	N WINI	DOWS:	0.0	N/A	0.0	Show	wind	low lengt	h: 0 ft			
				RECEPT	ACLE	LOAD:	0.0	100%	0.0	100%	i of t	the first	10 kVA,	plus 50%	over 10 kVA.	
			KIICHE	N EQUIPI	MENI	LUAD:	D: 0.0 100% 0.0 Based on 0 pieces of equipment.							alian and other clastic back		
	HEATING (COINCIDENTAL) LOA						0.0	100%	0.0	incluc	jes s	pace neo	it in exce	ess of co	bling and other electric heat.	
	HEATING OR OTHER NON-COINCIDENTAL LOA						0.0	0%	0.0							
	Welder Lov Motors and other Non-Continuous or Miscellanfous Lov							100%	0.0	All ot	ther I	oads exc	luding m	aximum r	notor load.	
	MUTURS AND UTHER NUN-CUNTINUUUS UR MISCELLANEUUS LUI LARGEST MOTOR LOA						0.0	125%	0.0				- J			
		TALS:	0.0	0%	0.0	MINIM	ium f	EEDER:	0-AMPS							

P 2	anel 'MDP' D8Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.(. Rating:	10000			NOTES:	NEW COMM	iercial BC)LT-ON	CIRC	CUIT BREA	KER PAI	ielboard.	
4	DO-AMP BUS W/ 400-AMP MCB	N	IOUNTING:	SURFAC	Ж										
CKT	LOAD	REF	BRKR	LOAD	B		Δ	PHASE AMPS	6	BREAK	(ER P	LOAD	BRKR	REF	LOAD CKT DESCRIPTION NO
1	AIR COMPRESSOR			16.0	3	20	56.0		U	50	2	40.0			WELDING OUTLET 2
3 5	**			16.0 16.0	*	**		56.0	45.0	** 45	*	40.0 29.0	HACR	HP-3	** 4 HEAT PUMP HP-3 6
7	SHOP EYEWASH STATION INSTA-HOT			52.0	3	70	81.0	56 0		** 15	* 2	29.0	HACR	** Fr_ 7	** 8 EAN COULEC 7 10
11	*			52.0	*	**		50.0	56.0	**	×	4.0	HACR	**	** 12
13 15	SPARE				1	20	0.0	17.0		30	2	17.0	HACR	HP1.FC1	BUSSES SPACE 14 HEAT PUMP HP-1, FAN COIL FC-1 16
17	SPARE				1	20			17.0	**	*	17.0	**	**	** 18
19 21	PANEL 'S' **			44.0 22.0	3 *	100	44.0	58.0		45	2	36.0	HACR	HP2,FC2	BUSSESD SPACE 20 HEAT PUMP HP-2, FAN COIL FC-2 22
23	** DANEL 2D2			58.0	*	**	47.0		94.0	**	*	36.0	**	**	** 24
27	**			35.0	*	**	+7.0	39.0		15	2	4.0			FAN COIL FC-4 28
29 31	** PANEL 'C'			85.0 23.0	*	**	23.0		89.0	**	*	4.0			** 30 BUSSED SPACE 32
33	**			10.0	*	**		39.0	00.0	45	2	29.0			HEAT PUMP HP-4 34
35 37	** (E) PANEL 'B'			59.0 42.0	*	** 60	132.0		88.0	** 200	*	29.0 90.0			** 36 (E) PANEL 'A' 38
39 41	** RUSSED SPACE			40.0	*	**		119.0	0.0	**	*	79.0			** 40 BUSSED SPACE 42
							ACTUAL	DEMAND	DEMAND						
	LI	ghting ai	nd other	CONTIN	uous	LOAD:	KVA 13.6	FACTOR 125%	KVA 17.0	Exclu	des t	rack and	show w	indow ligh	ting.
				TRAC SHO	K LIG N WIN	GHTING:	0.0 0.0	N/A N/A	0.0 0.0	Track Show	leng wind	ith: Iow lengt	0ft h∙0ft	J	•
			KITCHE	RECEPT	ACLE	LOAD:	36.4	64% 65%	23.2	100%	of t	the first	10 kVA,	plus 50%	over 10 kVA.
	115471614		IEATING ((COINCIDE	NTAL)	LOAD:	5.4	100%	5.4	Incluc	les s	pace hea	t in exc	ess of co	oling and other electric heat.
	HEATING	טיא UTH הנייי	ILIX NUN-	CUINCIDE WE	LDER	LUAD:	0.0 0.0	0%	0.0 0.0						
	MOTORS AND OTHER NON-(CONTINUO	us or Mi La	ISCELLAN RGEST M	lous Otor	load: Load:	61.3 5.8	100% 125%	61.3 7.2	All ot	her I	oads exc	luding m	aximum n	notor load.
					T	OTALS:	134.3	91%	121.8	MINIM	UM F	EEDER:	338-AM	PS	
P	ANEL 'C'						NOTES:	NEW COMM	iercial BC)LT-ON	CIRC	CUIT BREA	ker pai	IELBOARD.	
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C	C. RATING:	10000 SUREAC	۲										
скт	LOAD	REF	BRKR	LOAD	BF	REAKER		PHASE AMPS	5	BREAK	(ER	LOAD	BRKR	REF	LOAD CKT
N0 1	Description RFC - Copy Machine	NO	TYPE	AMPS 4.0	P 1	AMP 20	A 4.0	В	C	AMP 20	P 1	AMPS	TYPE	NO	DESCRIPTION NO
3	REC - MONITOR, WORK ROOM			5.0	1	20		5.0	40.5	20	1	7.0			SPARE 4
5	REC – MEZZANINE WORK SPACE REC – REFRIGERATOR FUTURE		GFCI	7.5 1.5	1	20	6.0		10.5	20	1	3.0 4.5			REC – OVER COUNTER CONVENIENCE 6 REC – CONVENIENCE OUTLET 8
9	SPARE				1	20		0.0	60	20	1	60			SPARE 10
13	REC - WORK ROOM MONITOR			5.0	1	20	5.0		0.9	20	1	0.9	GFCI		SINK GARADAGE DISPOSAL 12 SPARE 14
15 17	REC – MEZZANINE WORK SPACE REC – REFRIGERATOR			3.0 8.0	1	20		3.0	20.0	20	1	12.0			SPARE 16 COFFFF MAKER 18
19	SPARE			0.0	1	20	12.0		20.0	**	*	12.0			** 20
21 23	SPARE REC – MICROWAVE BRK RM			8.3	1	20		0.0	16.6	20	1	8.3			SPARE 22 REC – MICROWAVE BRK RM 24
25	SPARE				1	20	0.0	0.0		20	1				SPARE 26
27 29	SPARE				1	20		0.0	0.0	20	1				SPARE 20 SPARE 30
							ACTUAL KVA	DEMAND Factor	Demand Kva						
	LI	ghting ai	nd other	CONTIN	uous K Lig	LOAD: Shting:	0.0 0.0	125% N/A	0.0 0.0	Exclu Track	des t lena	track and th:	show w 0 ft	indow ligh	ting.
				SHON RECEPT	N WIN FACLE		0.0 4 0	N/A 100%	0.0 4 0	Show 100%	wind	low lengtl the first	h: 0 ft 10 kVA	nlus 50%	over 10 kVA
		L	KITCHE	N EQUIP	MENT	LOAD:	5.4	80%	4.4	Based	d on	4 pieces	of equi	pment.	aling and other electric heat
	HEATING	G OR OTH	ier non-	COINCIDE	ENTAL)	LOAD:	0.0	0%	0.0	Incluc	les s	pace nea	it in exc	ess of co	oning and other electric reat.
	MOTORS AND OTHER NON-	Continuo	us or m	WE SCELLAN	EOUS	LOAD:	0.0	0% 100%	0.0	All ot	her I	oads exc	luding m	aximum n	notor load.
				RGEST M	T	i luad: Iotals:	0.8 10.3	91%	1.0 9.4	MINIM	UM F	EEDER:	26-AMP	S	
F	ANEL 'S'						NOTES:	NEW PANE	LBOARD						
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C	c. Rating:	10000											
1	00-AMP BUS W/ 100-AMP MCB		OUNTING:	SURFAC	<u>ک</u>	סבייה				DDEN	/FP	1040	סעסק	DEE	
NO		NO	TYPE	AMPS	P		A	B	C	AMP	P	AMPS	TYPE	NO	DESCRIPTION NO
1 3	REC – SHOP NORTH WEST REC – SHOP EXTERIOR NORTH WEST			6.0 1.5	1	20 20	6.0	1.5		20 20	1				SPARE 2 SPARE 4
5 7	REC – SHOP NORTH WEST			3.0	1	20	7 2		10.8	15 15	1	7.8 7.8		UH-1,2	SHOP UNIT HEATER #1,2 6
9	REC - SHOP NORTH			6.0	1	20	1.0	9.9		15	1	3.9		UH-5	SHOP UNIT HEATER #5 10
<u>11</u> 13	kec – Shop North Rec – Shop East			6.0 6.0	1	20	6.0		6.0	20 20	1				SPARE 12 SPARE 14
15	REC - SHOP SUPPLY ROOM			1.5	1	20	-	1.5	0.0	20	1	0 4		E11 4	SPARE 16
19	SPARE			C.1	1	20	0.0		3.3	20	1	0.4		LU-1	SPARE 20
21 23	SPARE REC – SHOP STORAGE, MECH OFFICF			7.5	1	20		0.0	31.5	20 30	1	24.0			SPARE 22 REC - 240V 24
25	SPARE				1	20	24.0			**	*	24.0			** 26
2/ 29	SPARE			9.5	1	20		9.5	0.0	20	1				SPARE 28 SPARE 30
31	SPARE				1	20	0.0	0.0		20	1				SPARE 32 SDADE 34
35	SPARE				1	20		0.0	0.0	20	1				SPARE 36
37 39	SPARE				1 1	20 20	0.0	0.0		20 20	1				SPARE 38 SPARE 40
41	SPARE				1	20		DE111-7	0.0	20	1				SPARE 42
				001	10112		ACTUAL KVA	DEMAND FACTOR	Demand Kva	ب .	J. ·	Luc. 1	I	<u>.</u>	ling.
	L	ghiing A	NU UTHER	CONTIN TRAC	UUUS K LIC	LOAD: Chtting:	0.0 0.0	125% N/A	0.0 0.0	Exclu Track	aes t leng	track and th:	show w 0 ft	indow ligh	ting.
				Sho Recept	W WIN TACLE	NDOWS: Load:	0.0 9.7	N/A 100%	0.0 9.7	Show 100%	wind of t	iow lengti the first	n: 0 ft 10 kVA,	plus 50%	over 10 kVA.
		ŀ	Kitche Heating ((n Equip Coincidei	ment Ntal)	LOAD:	0.0 3.3	100% 100%	0.0 3.3	Based Includ	d on des s	0 pieces pace her	of equi It in exc	pment. ess of co	oling and other electric heat.
	HEATING	g or oth	ier non-	COINCIDE	ental 1 dfp	LOAD:	0.0 0.0	0% 0%	0.0		5				-
	Motors and other Non-	Continuo	US OR M	ISCELLAN	EOUS Otop	LOAD:	0.0	100% 125%	0.0	All ot	her l	loads exc	luding m	aximum r	notor load.
1			5		1	TOTALS:	14.2	102%	14.4	MINIM	IUM F	EEDER:	40-AMP	S	

P	ANEL 'A'						NOTES:	EXISTING	PANELBOAR	RD						
2	40/120-volt, 1-phase, 3-wire	A.I.C	. Rating:	10000			NEW BR	ANCH CIRCU	IIT BREAKE	r indic	ATED	BY BOLI	d text. B	REAKER SHA	ILL BE COMPATIBLE WITH EXISTING PANEL	
2	25-AMP MLO	N	IOUNTING:	SURFAC	E											
скт	LOAD	RFF	BRKR	LOAD	B	RFAKER		PHASE AMP	S	BRFA	(FR	LOAD	BRKR	RFF	IOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	L1		<u> </u>	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS – SHOP				1	20	9.0			20	1	9.0			LTS – SHOP	2
3	LTS – SHOP				1	20			7.5	15	1	7.5		UH-8,9	SHOP UNIT HEATER #8,9	4
5	LTS – SHOP				1	20	7.5			15	1	7.5		UH-6,7	SHOP UNIT HEATER #6,7	6
7	LTS – SHOP				1	20			8.4	20	1	8.4		EH-2	ELECTRIC HEATER EH-2	8
9	LTS – SHOP				1	20	8.4			20	1	8.4		UH-3	ELECTRIC HEATER EH-3	10
11	LTS – SHOP				1	20			5.4	20	1	5.4			LTS – EXTERIOR	12
13	LTS – SHOP				1	20	16.0			20	1	16.0			LTS – EXTERIOR	14
15	LTS – SHOP				1	20			1.5	20	1	1.5		EF-1	EXHAUST FAN EF-1	16
17	REC – SHOP				1	20	9.0			20	1	9.0			REC - ROOFTOP CONVENIENCE	18
19	REC – SHOP				1	20			1.0	20	1	1.0		EF-2	EXHAUST FAN EF-2	20
21	REC – SHOP				1	20	1.0			20	1	1.0		TP-1.2	DRAIN TRAP PRIMER	22
23	REC – SHOP				1	20			0.0	20	1				SPARE	24
25	REC – SHOP				1	20	0.0			20	1				SPARE	26
27	REC – SHOP				1	20			0.0	20	1				SPARE	28
29	SPARE				1	20	0.0			20	1				VEEDER ROOT	30
31	GENERATOR PANEL			25.0	2	70			32.2	20	1	7.2			OVERHEAD DOOR	32
33	**			25.0	*	**	32.2			20	1	7.2			OVERHEAD DOOR	34
35	WASTE WATER MONITOR			10.0	1	20	02.2		17.2	20	1	7.2			OVERHEAD DOOR	36
37	BUSSED SPACE			10.0		20	72		17.2	20	1	7.2			OVERHEAD DOOR	38
39	BUSSED SPACE						7.2		72	20	1	7.2			OVERHEAD DOOR	40
41				10.0	1	20	17.2		7.2	20	1	7.2			OVERHEAD DOOR	42
43	LINKNOWN			10.0	1	20	17.2		0.0	20	1	1+1				44
45	UNKNOWN				1	20	0.0		0.0	20	1				LINKNOWN	46
47	UNKNOWN				1	20	0.0		0.0	20	1				UNKNOWN	48
49	UNKNOWN				1	20	0.0		0.0	20	1				LINKNOWN	50
51	BUSSED SPACE					20	0.0		0.0	20					BUSSED SPACE	52
53	BUSSED SPACE	_					0.0		0.0						BUSSED SPACE	54
	BOSSED STADE						0.0									01
	HEAT	lighting an H Ing or oth	nd other Kitche Ieating (C Ier Non-	Continu Trac Shov Recept N Equip Coincide Coincide We	Jous K Lig V Win Acle Ment (Tal) (NTAL Lder	Load: HTING: Idows: Load: Load: Load: Load: Load:	KVA 3.6 0.0 0.0 1.1 0.0 2.0 0.0 0.0	FACTOR 125% N/A N/A 100% 100% 0% 0%	KVA 4.6 0.0 0.0 1.1 0.0 2.0 0.0 0.0 0.0	Exclu Track Show 100% Base Inclue	des t leng wind of t d on des s	track and th: low lengt the first O pieces pace hed	I show wi O ft h: O ft 10 kVA, p of equip at in exce	ndow lightin olus 50% ov ornent. sss of coolir	g. er 10 kVA. ng and other electric heat.	
	MOTORS AND OTHER NON	-Continuo	us or mi La	SCELLANI RGEST M	eous Otor T	LOAD: LOAD: OTALS:	14.9 0.9 22.5	100% 125% 105%	14.9 1.1 23.7	All of MININ	ther I IUM F	loads exc <u>EEDER:</u>	cluding ma	aximum mot	or load.	

P	PANEL 'D'						NOTES:	NEW PANE	Elboard							
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C.	RATING:	10000												
1	00-AMP MLO	мс)UNTING:	SURFAC	Έ											
СКТ	L DAD	RFF	BRKR	LOAD	B	RFAKFR		PHASE AMP	S	BRFAK	(FR	LOAD	BRKR	RFF	I OAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	A	B	C C	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS – SOUTH OFFICE			7.1	1	20	12.1			20	1	5.0	GFCI		REC – WATER COOLER	2
3	LTS – NORTH OFFICE			8.1	1	20		14.1		20	1	6.0			REC - OFFICE 103/WS #11	4
5	MICROWAVE			8.3	1	20			17.3	20	1	9.0			REC – CONFERENCE 102	6
7	SPARE				1	20	7.5			20	1	7.5			REC – BREAKROOM 104	8
9	LTS – EXTERIOR			5.7	1	20		13.2		20	1	7.5			REC - RESTROOMS	10
11	REC – CONVENIENCE/STORAGE/SUPPLIES			4.5	1	20			10.5	20	1	6.0			REC - WS #7,8,9,10	12
13	SPARE				1	20	6.0			20	1	6.0			REC - WS #5,6,12,13	14
15	WATER COOLER		GFCI	3.0	1	20		9.0		20	1	6.0			REC – WS #1,2,3,4	16
17	MICROWAVE			8.3	1	20			12.8	20	1	4.5			REC – COPY COUNTER	18
19	REC - EXTERIOR OFFICE WEST			1.5	1	20	4.5			20	1	3.0			REC – BREAKROOM CNTR	20
21	SPARE				1	20		1.5		20	1	1.5			REC - COPY MACHINE RM 108	22
23	MICROWAVE			8.3	1	20			9.8	20	1	1.5			REC – JANITOR CLOSET	24
25	SPARE				1	20	0.0			20	1				SPARE	26
27	SPARE				1	20		0.0		20	1				SPARE	28
29	REC – REFRIGERATOR		GFCI	8.0	1	20			12.5	20	1	4.5			REC - IT ROOM	30
31	SPARE				1	20	4.5			20	1	4.5			REC - IT ROOM	32
33	SPARE				1	20		0.0		20	1				SPARE	34
35	BREAK ROOM COFFEE MAKER			12.0	2	20			12.0	20	1				SPARE	36
37	**			12.0	*	**	12.0			20	1				SPARE	38
39	SPARE				1	20		0.0		20	1				SPARE	40
41	TRAP PRIMER TP-1			1.5	1	20			10.5	20	1	9.0			REC – CONFERENCE 102	42
							ACTUAL KVA	DEMAND Factor	demand Kva							
	L	Ghting and) other	CONTINU	Jous	LOAD:	2.7	125%	3.4	Exclu	des t	rack and	l show w	indow ligh	nting.	
				TRAC	k li	Ghting:	0.0	N/A	0.0	Track	leng	th:	0 ft			
				SHOW	V WI	NDOWS:	0.0	N/A	0.0	Show	wind	low lengt	h: 0 ft			
				RECEPT	ACLE	LOAD:	10.9	96%	10.4	100%	of t	the first	10 kVA,	plus 50%	over 10 kVA.	
			KIICHE	N LUUIPI	MENI Attai V	LUAD:	6.4 0.0	/0%	4.5	Based	i on	D pieces	s of equi	pment.	aling and other electric bast	
		HL COROTHE	RING (U RNON-	CONCIDENT	VIAL) 'NTAI		0.0	100% 0%	0.0	Incluc	ies s	pace neo	u in exc	ess of co	ioning and other electric heat.	
	HEALING			WF	INTAL		0.0	0%	0.0							
	MOTORS AND OTHER NON-	CONTINUOU	s or Mi	SCELI ANF	EOUS		0.0	100%	0.0	All of	her l	oads exc	ludina m	iaximum r	motor load.	
			LA	RGEST M	OTOR	LOAD:	0.0	125%	0.0							
						TOTALS:	20.0	92%	18.3	MINIM	UM F	EEDER:	51-AMP	S		

l o							NOTES	EVISTING			_0N				
			D 1 T 110				NUIES:	EXISTING						PANELDUA	
2	40/120-VOLT, 1-PHASE, 3-WIRE	A.I.C.	. RAIING:	10000			NEW BR	ANCH CIRCU	III BREAKEH	RINDIC	AIED	BA BOF) IEXI. I	BREAKER S	HALL BE COMPATIBLE WITH EXISTING PANEL
1	00-AMP MLO	<u> </u>	OUNTING:	SURFAC)E										
СКТ	LOAD	REF	BRKR	LOAD	B	REAKER		PHASE AMP	S	BREAM	(ER	LOAD	BRKR	REF	LOAD
NO	DESCRIPTION	NO	TYPE	AMPS	Ρ	AMP	L1		L2	AMP	Ρ	AMPS	TYPE	NO	DESCRIPTION
1	LTS – MEZZANINE			4.5	- 1	20	6.0			20	1	1.5			REC - RESTROOM
3	SPARE				2	60			6.0	20	1	6.0			REC – GENERAL CONVENIENCE
5	**				*	**	7.5			20	1	7.5			REC – FOREMAN OFFICE
7	SPARE				2	30			5.0	20	1	5.0			LTS – REC – OUTSIDE DECK
9	**				*	**	0.0			20	1				SPARE
11	WATER HEATER	WH1		28.0	2	40			28.0	20	1				SPARE
13	**	**		28.0	*	**	28.0			20	1				SPARE
15	HOT WATER RECIRC PUMP RP-1	RP-1		0.7	1	20	2010		0.7	20					BUSSED SPACE
17	RUSSED SPACE						0.0								BUSSED SPACE
19	BUSSED SPACE	_					0.0		0.0						BUSSED SPACE
21	BUSSED SPACE						0.0		0.0						BUSSED SPACE
21	BUSSED SPACE						0.0		0.0						BUSSED SPACE
20	DUSSED STACE								0.0						DUSSED STADE
							ACTUAL	DEMAND	DEMAND						
		LICHTING AN	in other				73	125%	Q 1	Evolu	dae t	rack and	l show w	indow light	ing
				TRAC	K 110	CURD.	0.0	N/A	0.0	Track	lena	th.	י הווסיי 1 ח היו	indow light	ing.
				SHO	N WIN	NDOWS:	0.0	N/A	0.0	Show	wind	ow lenat	h: 0 ft		
				RECEPT	ACLE	LOAD:	2.4	100%	2.4	100%	of t	he first	10 kVA.	plus 50% (over 10 kVA.
			KITCHE	n Equipi	MENT	LOAD:	0.0	100%	0.0	Based	d on	0 pieces	s of equi	pment.	
		Н	eating (COINCIDEN	NTAL)	LOAD:	0.0	100%	0.0	Incluc	les s	pace hea	at in exc	ess of coo	ling and other electric heat.
	HEATI	ng or oth	er non-	-COINCIDE	NTAĹ	LOAD:	0.0	0%	0.0						5
				WE	lder	LOAD:	0.0	0%	0.0						
	MOTORS AND OTHER NON	-continuol	JS OR M	ISCELLAN	eous	LOAD:	0.0	100%	0.0	All ot	her l	oads exc	luding m	aximum m	otor load.
			LA	rgest M	otor	LOAD:	0.1	125%	0.1						
					1	TOTALS:	9.7	119%	11.6	MINIM	UM F	EEDER:	48-AMP	S	
2	40/120-VOLT, 3-PHASE, 4-WIRE	A.I.C.	RATING					EXISTING		DOLI	011				
_		M	OUNTING:	10000 SURFAC	E										
CKT	LOAD	REF	OUNTING: BRKR	10000 SURFAC	E BF	REAKER		PHASE AMP	5	BREAK	ïER	LOAD	BRKR	REF	LOAD
CKT NO	LOAD DESCRIPTION	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E BF P	reaker Amp	A	Phase Amp	S C	Break Amp	ER P	load Amps	Brkr Type	ref No	LOAD DESCRIPTION
CKT NO 1	LOAD DESCRIPTION GENERATOR MAIN	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E BF P 2	REAKER AMP 30	A 0.0	Phase Amp B	5 C	BREAK AMP 30	ER P 2	load Amps	Brkr Type	ref No	LOAD DESCRIPTION MAIN
CKT NO 1 3	LOAD DESCRIPTION GENERATOR MAIN **	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E BF P 2 *	REAKER AMP 30 **	A 0.0	PHASE AMP B 0.0	5 C	BREAK AMP 30 **	ER P 2 *	LOAD Amps	Brkr Type	ref No	LOAD DESCRIPTION MAIN **
CKT NO 1 3 5	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E BF P 2 * 2	REAKER AMP 30 ** 20	A 0.0	PHASE AMP B 0.0	5 C 0.0	BREAK AMP 30 ** 20	ER P 2 *	LOAD AMPS	BRKR Type	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP
CKT NO 1 3 5 7	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP **	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E P 2 * 2 *	AMP 30 ** 20 *** 20	A 0.0	PHASE AMP B 0.0	S C 0.0	BREAK AMP 30 ** 20 **	ER P 2 * 2	LOAD Amps	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP **
CKT NO 1 3 5 7 9	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR	REF NO	DUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E P 2 * 2 * 1	AMP 30 ** 20 ** 20	A 0.0 0.0	PHASE AMP B 0.0	S C 0.0	BREAK AMP 30 *** 20 *** 20	ER P 2 * 2 * 1	LOAD Amps	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM
CKT NO 1 3 5 7 9 11	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR	REF NO	OUNTING: BRKR TYPE	10000 SURFAC LOAD AMPS	E P 2 * 2 * 1 2	EAKER AMP 30 ** 20 ** 20 22 20 20 20 20 20	A 0.0 0.0	PHASE AMP B 0.0	S C 0.0	BREAK AMP 30 ** 20 ** 20 20	ER P 2 * 2 * 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN
CKT NO 1 3 5 7 9 11 13	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR **	REF NO	BRKR TYPE	10000 SURFAC AMPS	E BR P 2 * 2 * 1 2 *	AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20	A 0.0 0.0 0.0	PHASE AMP B 0.0	5 C 0.0	BREAK AMP 30 ** 20 ** 20 20 20	ER P 2 * 2 * 1 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM
CKT NO 1 3 5 7 9 11 13 15	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	REF NO	OUNTING: BRKR TYPE	10000 SURFAC AMPS	E P 2 * 2 * 1 2 *	AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20	A 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0	S C 0.0	BREAK AMP 30 ** 20 20 20 20	ER 2 * 2 * 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	REF NO	BRKR TYPE	10000 SURFAC AMPS	E BR P 2 * 2 * 1 2 *	AMP 30 ** 20 ** 20 ** 20 ** 20 **	A 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0	S C 0.0 0.0	BREAK AMP 30 *** 20 20 20 20	ER P 2 * 2 * 1 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	REF NO	BRKR TYPE	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * *	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 **	A 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0	S C 0.0 0.0	BREAK AMP 30 ** 20 20 20 20	ER P 2 * 2 * 1 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	REF NO	BRKR TYPE	10000 SURFAC AMPS	E BF P 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 5 * * * * * * * * * * * * *	AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 LOAD: **	A 0.0 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0	S C 0.0 0.0 0.0 0.0 0.0	BREAK AMP 30 ** 20 20 20 20	ER P 2 * 2 * 1 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	REF NO	BRKR TYPE	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * *	EAKER AMP 30 ** 20 ** 20 20 ** 20 20 ** LOAD:	A 0.0 0.0 0.0 0.0 ACTUAL KVA	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 DEMAND FACTOR	S C 0.0 0.0 0.0 0.0 0 DEMAND KVA	BREAK AMP 30 *** 20 20 20 20	ER P 2 * 2 * 1 1 1	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * * 0 0 TAL	EAKER AMP 30 *** 20 ** 20 20 ** LOAD:	A 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0 DEMAND FACTOR 125%	S C 0.0 0.0 0.0 0 DEMAND KVA 0.0	BREAK AMP 30 *** 20 20 20 20	ER P 2 * 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * * 0 TAL	REAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: CHTING:	A 0.0 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 DEMAND FACTOR 125% N/A	S C 0.0 0.0 0.0 0.0 DEMAND KVA 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20	ER P 2 * 1 1 1 1 des t leng	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * * 0 TAL	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: Comparison HTING: IDOWS:	A 0.0 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0 0 DEMAND FACTOR 125% N/A N/A	S C 0.0 0.0 0.0 0.0 DEMAND KVA 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20 50 20 20 70 20 20 70 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 0 es t leng	LOAD AMPS	BRKR TYPE	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * *	EAKER AMP 30 *** 20 *** 20 20 *** 20 20 *** 20 20 ** EXTING: IDOWS: LOAD: LOAD: ELOAD:	A 0.0 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 DEMAND FACTOR 125% N/A N/A 100%	S C 0.0 0.0 0.0 0.0 0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 0 0 0 t 1	LOAD AMPS	BRKR TYPE show w 0 ft h: 0 ft 10 kVA,	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS	E P 2 * 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 2 * 1 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * 2 * * * * 2 *	EAKER AMP 30 *** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 20 ** EX 20 20 ** 20 5 20 20 ** * 20 20 ** 20 20 20 20 ** * * 20 20 20 20 20 20 20 ** * * *	A 0.0 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0 0 DEMAND FACTOR 125% N/A N/A 100% 100%	S C 0.0 0.0 0.0 0.0 0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 0 0 f t I on	LOAD AMPS	BRKR TYPE show w 0 ft 10 kVA, of equi	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules		D OTHER	10000 SURFAC AMPS AMPS	E BF P 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 2 * * * 1 2 * * * 2 * * * *	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 1 LOAD: COMD: LOAD: LOAD: LOAD: LOAD:	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0 0 DEMAND FACTOR 125% N/A 100% 100%	S C 0.0 0.0 0.0 0.0 0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 0 0 vind of t I on les sp	LOAD AMPS	BRKR TYPE show w 0 ft h: 0 ft 10 kVA, of equi t in exc	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER	10000 SURFAC AMPS AMPS	E P 2 * 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 1 2 * * * 2 * * * 1 2 * * * *	EAKER AMP 30 ** 20 ** 20 20 ** 20 20 ** EDAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD:	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LOAD AMPS	BRKR TYPE show w 0 ft h: 0 ft 10 kVA, c of equi t in exc	REF NO indow lighti plus 50% o poment. ess of coo	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN	D OTHER KITCHE EATING (C EATING (C) EATING (C	10000 SURFAC LOAD AMPS T CONTINU TRACI SHOW RECEPT, N EQUIPY COINCIDEN COINCIDEN COINCIDEN COINCIDEN WEI	E BF P 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 2 * * 1 2 * * * 2 * * * 2 * * * 2 * * * *	EAKER AMP 30 *** 20 ** 20 20 ** 20 20 ** ECAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD:	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0	S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 1 1 0 1 0 1 0 0 f t lon gles sp her b	LOAD AMPS	BRKR TYPE show w 0 ft h: 0 ft 10 kVA, of equi t in exc	REF NO indow lighti plus 50% o oment. ess of coo	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23
CKT NO 1 3 5 7 9 9 11 13 15 17	LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	LIGHTING AN HE NG OR OTHE -CONTINUOU	D OTHER KITCHE EATING (C ER NON- IS OR MI	10000 SURFAC AMPS LOAD AMPS T CONTINU TRACI SHOW RECEPT. N EQUIPY COINCIDEN COINCIDEN COINCIDEN COINCIDEN COINCIDEN COINCIDEN COINCIDEN COINCIDEN	E P 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 2 * * 1 2 * * * 2 * * * *	EAKER AMP 30 *** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 20 20 ** 20 20 20 20 20 20 20 20 20 20 20 20 20	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	PHASE AMP B 0.0 0.0 0.0 0.0 0 0 0 DEMAND FACTOR 125% N/A N/A 100% 100% 100% 0% 100% 125%	S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LOAD AMPS	BRKR TYPE show w 0 ft 10 kVA, of equi t in exc luding m	REF NO	LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ing. over 10 kVA. ling and other electric heat.

AVAILABLE FAULT CURRENT HAS NOT YET BEEN MADE AVAILABLE FROM UTILITY. EQUIPMENT WITHSTAND AND AIC RATING MAY BE CALCULATED ONCE ACTUAL FAULT CURRENT VALUES ARE PROVIDED. FINAL EQUIPMENT REQUIREMENTS WILL BE BASED ON ACTUAL FAULT CURRENT VALUES FROM UTILITY. FOR ANY FIELD ALTERATIONS OF SINGLE LINE LAYOUT, A FAULT CURRENT STUDY, BY THE CONTRACTOR, SHALL BE REQUIRED.

1 SINGLE LINE DIAGRAM SCALE NONE

P 2	anel 'MDP' D8Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.(. Rating:	10000			NOTES:	NEW COMM	iercial BC)LT-ON	CIRC	CUIT BREA	ker pai	ielboard.	
4	DO-AMP BUS W/ 400-AMP MCB	N	IOUNTING:	SURFAC	Ж										
CKT	LOAD	REF	BRKR	LOAD	B		Δ	PHASE AMPS	6	BREAK	(ER P	LOAD	BRKR	REF	LOAD CKT DESCRIPTION NO
1	AIR COMPRESSOR			16.0	3	20	56.0		U	50	2	40.0			WELDING OUTLET 2
3 5	**			16.0 16.0	*	**		56.0	45.0	** 45	*	40.0 29.0	HACR	HP-3	** 4 HEAT PUMP HP-3 6
7	SHOP EYEWASH STATION INSTA-HOT			52.0	3	70	81.0	56 0		** 15	* 2	29.0	HACR	** Fr_ 7	** 8 EAN COULEC 7 10
11	*			52.0	*	**		50.0	56.0	**	×	4.0	HACR	**	** 12
13 15	SPARE				1	20	0.0	17.0		30	2	17.0	HACR	HP1.FC1	BUSSES SPACE 14 HEAT PUMP HP-1, FAN COIL FC-1 16
17	SPARE				1	20			17.0	**	*	17.0	**	**	** 18
19 21	PANEL 'S' **			44.0 22.0	3 *	100	44.0	58.0		45	2	36.0	HACR	HP2,FC2	BUSSESD SPACE 20 HEAT PUMP HP-2, FAN COIL FC-2 22
23	** DANEL 2D2			58.0	*	**	47.0		94.0	**	*	36.0	**	**	** 24
27	**			35.0	*	**	+7.0	39.0		15	2	4.0			FAN COIL FC-4 28
29 31	** PANEL 'C'			85.0 23.0	*	**	23.0		89.0	**	*	4.0			** 30 BUSSED SPACE 32
33	**			10.0	*	**		39.0	00.0	45	2	29.0			HEAT PUMP HP-4 34
35 37	** (E) PANEL 'B'			59.0 42.0	*	** 60	132.0		88.0	** 200	*	29.0 90.0			** 36 (E) PANEL 'A' 38
39 41	** RUSSED SPACE			40.0	*	**		119.0	0.0	**	*	79.0			** 40 BUSSED SPACE 42
							ACTUAL	DEMAND	DEMAND						
	LI	ghting ai	nd other	CONTIN	uous	LOAD:	KVA 13.6	FACTOR 125%	KVA 17.0	Exclu	des t	rack and	show w	indow ligh	ting.
				TRAC SHO	K LIG N WIN	GHTING:	0.0 0.0	N/A N/A	0.0 0.0	Track Show	leng wind	ith: Iow lengt	0ft h∙0ft	J	•
			KITCHE	RECEPT	ACLE	LOAD:	36.4	64% 65%	23.2	100%	of t	the first	10 kVA,	plus 50%	over 10 kVA.
	115471614		IEATING ((COINCIDE	NTAL)	LOAD:	5.4	100%	5.4	Incluc	les s	pace hea	t in exc	ess of co	oling and other electric heat.
	HEATING	טיא UTH הנייי	ILIX NUN-	CUINCIDE WE	LDER	LUAD:	0.0 0.0	0%	0.0 0.0						
	MOTORS AND OTHER NON-(CONTINUO	us or mi La	ISCELLAN RGEST M	lous Otor	load: Load:	61.3 5.8	100% 125%	61.3 7.2	All ot	her I	oads exc	luding m	aximum n	notor load.
					T	OTALS:	134.3	91%	121.8	MINIM	UM F	EEDER:	338-AM	PS	
P	ANEL 'C'						NOTES:	NEW COMM	iercial BC)LT-ON	CIRC	CUIT BREA	ker pai	IELBOARD.	
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C	C. RATING:	10000 SUREAC	۲										
скт	LOAD	REF	BRKR	LOAD	BF	REAKER		PHASE AMPS	5	BREAK	(ER	LOAD	BRKR	REF	LOAD CKT
N0 1	Description RFC - Copy Machine	NO	TYPE	AMPS 4.0	P 1	AMP 20	A 4.0	В	C	AMP 20	P 1	AMPS	TYPE	NO	DESCRIPTION NO
3	REC - MONITOR, WORK ROOM			5.0	1	20		5.0	40.5	20	1	7.0			SPARE 4
5	REC – MEZZANINE WORK SPACE REC – REFRIGERATOR FUTURE		GFCI	7.5 1.5	1	20	6.0		10.5	20	1	3.0 4.5			REC – OVER COUNTER CONVENIENCE 6 REC – CONVENIENCE OUTLET 8
9	SPARE				1	20		0.0	60	20	1	60			SPARE 10
13	REC - WORK ROOM MONITOR			5.0	1	20	5.0		0.9	20	1	0.9	GFCI		SINK GARADAGE DISPOSAL 12 SPARE 14
15 17	REC – MEZZANINE WORK SPACE REC – REFRIGERATOR			3.0 8.0	1	20		3.0	20.0	20	1	12.0			SPARE 16 COFFFF MAKER 18
19	SPARE			0.0	1	20	12.0		20.0	**	*	12.0			** 20
21 23	SPARE REC – MICROWAVE BRK RM			8.3	1	20		0.0	16.6	20	1	8.3			SPARE 22 REC – MICROWAVE BRK RM 24
25	SPARE				1	20	0.0	0.0		20	1				SPARE 26
27 29	SPARE				1	20		0.0	0.0	20	1				SPARE 20 SPARE 30
							ACTUAL KVA	DEMAND Factor	Demand Kva						
	LI	ghting ai	nd other	CONTIN	uous K Lig	LOAD: Shting:	0.0 0.0	125% N/A	0.0 0.0	Exclu Track	des t lena	track and th:	show w 0 ft	indow ligh	ting.
				SHON RECEPT	N WIN FACLE		0.0 4 0	N/A 100%	0.0 4 0	Show 100%	wind	low lengtl the first	h: 0 ft 10 kVA	nlus 50%	over 10 kVA
		L	KITCHE	N EQUIP	MENT	LOAD:	5.4	80%	4.4	Based	d on	4 pieces	of equi	pment.	aling and other electric heat
	HEATING	G OR OTH	ier non-	COINCIDE	ENTAL	LOAD:	0.0	0%	0.0	Incluc	les s	pace nea	it in exc	ess of co	oning and other electric reat.
	MOTORS AND OTHER NON-	Continuo	us or m	WE SCELLAN	EOUS	LOAD:	0.0	0% 100%	0.0	All ot	her I	oads exc	luding m	aximum n	notor load.
				RGEST M	T	i luad: Iotals:	0.8 10.3	91%	1.0 9.4	MINIM	UM F	EEDER:	26-AMP	S	
F	ANEL 'S'						NOTES:	NEW PANE	LBOARD						
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C	c. Rating:	10000											
1	00-AMP BUS W/ 100-AMP MCB		OUNTING:	SURFAC	<u>ک</u>	סבייה				DDEN	/FP	1040	סעסק	DEE	
NO		NO	TYPE	AMPS	P		A	B	C	AMP	P	AMPS	TYPE	NO	DESCRIPTION NO
1 3	REC – SHOP NORTH WEST REC – SHOP EXTERIOR NORTH WEST			6.0 1.5	1	20 20	6.0	1.5		20 20	1				SPARE 2 SPARE 4
5 7	REC – SHOP NORTH WEST			3.0	1	20	7 2		10.8	15 15	1	7.8 7.8		UH-1,2	SHOP UNIT HEATER #1,2 6
9	REC - SHOP NORTH			6.0	1	20	1.0	9.9		15	1	3.9		UH-5	SHOP UNIT HEATER #5 10
<u>11</u> 13	kec – Shop North Rec – Shop East			6.0 6.0	1	20	6.0		6.0	20 20	1				SPARE 12 SPARE 14
15	REC - SHOP SUPPLY ROOM			1.5	1	20	-	1.5	0.0	20	1	0 4		EII 4	SPARE 16
19	SPARE			C.1	1	20	0.0		3.3	20	1	0.4		LU-1	SPARE 20
21 23	SPARE REC – SHOP STORAGE, MECH OFFICF			7.5	1	20		0.0	31.5	20 30	1	24.0			SPARE 22 REC - 240V 24
25	SPARE				1	20	24.0			**	*	24.0			** 26
2/ 29	SPARE			9.5	1	20		9.5	0.0	20	1				SPARE 28 SPARE 30
31	SPARE				1	20	0.0	0.0		20	1				SPARE 32 SDADE 34
35	SPARE				1	20		0.0	0.0	20	1				SPARE 36
37 39	SPARE				1 1	20 20	0.0	0.0		20 20	1				SPARE 38 SPARE 40
41	SPARE				1	20		DE111-7	0.0	20	1				SPARE 42
				001	10112		ACTUAL KVA	DEMAND FACTOR	Demand Kva	ب .	J. ·	Luc. 1	I	<u>.</u>	ling.
	L	ghiing A	NU UTHER	CONTIN TRAC	UUUS K LIC	LOAD: Chtting:	0.0 0.0	125% N/A	0.0 0.0	Exclu Track	aes t leng	track and th:	show w 0 ft	indow ligh	ting.
				Sho Recept	W WIN TACLE	NDOWS: Load:	0.0 9.7	N/A 100%	0.0 9.7	Show 100%	wind of t	iow lengti the first	n: 0 ft 10 kVA,	plus 50%	over 10 kVA.
		ŀ	Kitche Heating ((n Equip Coincidei	ment Ntal)	LOAD:	0.0 3.3	100% 100%	0.0 3.3	Based Includ	d on des s	0 pieces pace her	of equi It in exc	pment. ess of co	oling and other electric heat.
	HEATING	g or oth	ier non-	COINCIDE	ental 1 dfp	LOAD:	0.0 0.0	0% 0%	0.0		5				-
	Motors and other Non-	Continuo	US OR M	ISCELLAN	EOUS Otop	LOAD:	0.0	100% 125%	0.0	All ot	her l	loads exc	luding m	aximum r	notor load.
1			5		1	TOTALS:	14.2	102%	14.4	MINIM	IUM F	EEDER:	40-AMP	S	

P	ANEL 'A'						NOTES:	EXISTING	PANELBOAR	RD						
2	40/120-volt, 1-phase, 3-wire	A.I.C	. Rating:	10000			NEW BR	ANCH CIRCU	IIT BREAKE	r indic	ATED	BY BOLI	d text. B	REAKER SHA	ILL BE COMPATIBLE WITH EXISTING PANEL	
2	25-AMP MLO	N	IOUNTING:	SURFAC	E											
скт	LOAD	RFF	BRKR	LOAD	B	RFAKER		PHASE AMP	S	BRFA	(FR	LOAD	BRKR	RFF	IOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	L1		<u> </u>	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS – SHOP				1	20	9.0			20	1	9.0			LTS – SHOP	2
3	LTS – SHOP				1	20			7.5	15	1	7.5		UH-8,9	SHOP UNIT HEATER #8,9	4
5	LTS – SHOP				1	20	7.5			15	1	7.5		UH-6,7	SHOP UNIT HEATER #6,7	6
7	LTS – SHOP				1	20			8.4	20	1	8.4		EH-2	ELECTRIC HEATER EH-2	8
9	LTS – SHOP				1	20	8.4			20	1	8.4		UH-3	ELECTRIC HEATER EH-3	10
11	LTS – SHOP				1	20			5.4	20	1	5.4			LTS – EXTERIOR	12
13	LTS – SHOP				1	20	16.0			20	1	16.0			LTS – EXTERIOR	14
15	LTS – SHOP				1	20			1.5	20	1	1.5		EF-1	EXHAUST FAN EF-1	16
17	REC – SHOP				1	20	9.0			20	1	9.0			REC - ROOFTOP CONVENIENCE	18
19	REC – SHOP				1	20			1.0	20	1	1.0		EF-2	EXHAUST FAN EF-2	20
21	REC – SHOP				1	20	1.0			20	1	1.0		TP-1.2	DRAIN TRAP PRIMER	22
23	REC – SHOP				1	20			0.0	20	1				SPARE	24
25	REC – SHOP				1	20	0.0			20	1				SPARE	26
27	REC – SHOP				1	20			0.0	20	1				SPARE	28
29	SPARE				1	20	0.0			20	1				VEEDER ROOT	30
31	GENERATOR PANEL			25.0	2	70			32.2	20	1	7.2			OVERHEAD DOOR	32
33	**			25.0	*	**	32.2			20	1	7.2			OVERHEAD DOOR	34
35	WASTE WATER MONITOR			10.0	1	20	02.2		17.2	20	1	7.2			OVERHEAD DOOR	36
37	BUSSED SPACE			10.0		20	72		17.2	20	1	7.2			OVERHEAD DOOR	38
39	BUSSED SPACE						7.2		72	20	1	7.2			OVERHEAD DOOR	40
41				10.0	1	20	17.2		7.2	20	1	7.2			OVERHEAD DOOR	42
43	LINKNOWN			10.0	1	20	17.2		0.0	20	1	1+1				44
45	UNKNOWN				1	20	0.0		0.0	20	1				LINKNOWN	46
47	UNKNOWN				1	20	0.0		0.0	20	1				UNKNOWN	48
49	UNKNOWN				1	20	0.0		0.0	20	1				LINKNOWN	50
51	BUSSED SPACE					20	0.0		0.0	20					BUSSED SPACE	52
53	BUSSED SPACE						0.0		0.0						BUSSED SPACE	54
	BOSSED STADE						0.0									01
	HEAT	lighting an H Ing or oth	nd other Kitche Ieating (C Ier Non-	Continu Trac Shov Recept N Equip Coincide Coincide We	Jous K Lig V Win Acle Ment (Tal) (NTAL Lder	Load: HTING: Idows: Load: Load: Load: Load: Load:	KVA 3.6 0.0 0.0 1.1 0.0 2.0 0.0 0.0	FACTOR 125% N/A N/A 100% 100% 0% 0%	KVA 4.6 0.0 0.0 1.1 0.0 2.0 0.0 0.0 0.0	Exclu Track Show 100% Base Inclue	des t leng wind of t d on des s	track and th: low lengt the first O pieces pace hed	I show wi O ft h: O ft 10 kVA, p of equip at in exce	ndow lightin olus 50% ov ornent. sss of coolir	g. er 10 kVA. ng and other electric heat.	
	MOTORS AND OTHER NON	-Continuo	us or mi La	SCELLANI RGEST M	eous Otor T	LOAD: LOAD: OTALS:	14.9 0.9 22.5	100% 125% 105%	14.9 1.1 23.7	All of MININ	ther I IUM F	loads exc EEDER:	cluding ma	aximum mot	or load.	

P	PANEL 'D'						NOTES:	NEW PANE	Elboard							
2	08Y/120-VOLT, 3-PHASE, 4-WIRE	A.I.C.	RATING:	10000												
1	00-AMP MLO	мс)UNTING:	SURFAC	Έ											
СКТ	L DAD	RFF	BRKR	LOAD	B	RFAKFR		PHASE AMP	S	BRFAK	(FR	LOAD	BRKR	RFF	I OAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	A	B	C C	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS – SOUTH OFFICE			7.1	1	20	12.1			20	1	5.0	GFCI		REC – WATER COOLER	2
3	LTS – NORTH OFFICE			8.1	1	20		14.1		20	1	6.0			REC - OFFICE 103/WS #11	4
5	MICROWAVE			8.3	1	20			17.3	20	1	9.0			REC – CONFERENCE 102	6
7	SPARE				1	20	7.5			20	1	7.5			REC – BREAKROOM 104	8
9	LTS – EXTERIOR			5.7	1	20		13.2		20	1	7.5			REC - RESTROOMS	10
11	REC – CONVENIENCE/STORAGE/SUPPLIES			4.5	1	20			10.5	20	1	6.0			REC - WS #7,8,9,10	12
13	SPARE				1	20	6.0			20	1	6.0			REC – WS # 5,6,12,13	14
15	WATER COOLER		GFCI	3.0	1	20		9.0		20	1	6.0			REC – WS #1,2,3,4	16
17	MICROWAVE			8.3	1	20			12.8	20	1	4.5			REC - COPY COUNTER	18
19	REC - EXTERIOR OFFICE WEST			1.5	1	20	4.5			20	1	3.0			REC – BREAKROOM CNTR	20
21	SPARE				1	20		1.5		20	1	1.5			REC - COPY MACHINE RM 108	22
23	MICROWAVE			8.3	1	20			9.8	20	1	1.5			REC – JANITOR CLOSET	24
25	SPARE				1	20	0.0			20	1				SPARE	26
27	SPARE				1	20		0.0		20	1				SPARE	28
29	REC – REFRIGERATOR		GFCI	8.0	1	20			12.5	20	1	4.5			REC - IT ROOM	30
31	SPARE				1	20	4.5			20	1	4.5			REC - IT ROOM	32
33	SPARE				1	20		0.0		20	1				SPARE	34
35	BREAK ROOM COFFEE MAKER			12.0	2	20			12.0	20	1				SPARE	36
37	**			12.0	*	**	12.0			20	1				SPARE	38
39	SPARE				1	20		0.0		20	1				SPARE	40
41	TRAP PRIMER TP-1			1.5	1	20			10.5	20	1	9.0			REC – CONFERENCE 102	42
							ACTUAL KVA	DEMAND Factor	Demand Kva							
	L	Ghting and) other	CONTINU	Jous	LOAD:	2.7	125%	3.4	Exclu	des t	rack and	l show w	indow ligh	nting.	
				TRAC	k li	Ghting:	0.0	N/A	0.0	Track	leng	th:	0 ft			
				SHOW	V WI	NDOWS:	0.0	N/A	0.0	Show	wind	low lengt	h: 0 ft			
				RECEPT	ACLE	LOAD:	10.9	96%	10.4	100%	of t	the first	10 kVA,	plus 50%	over 10 kVA.	
			KIICHE	N LUUIPI	MENI Attai V	LUAD:	6.4 0.0	/0%	4.5	Based	i on	D pieces	s of equi	pment.	aling and other electric bast	
		HL COROTHE	RING (U RNON-	CONCIDENT	VIAL) 'NTAI		0.0	100% 0%	0.0	Incluc	ies s	pace neo	u in exc	ess of co	ioning and other electric heat.	
	HEALING			WF	INTAL		0.0	0%	0.0							
	MOTORS AND OTHER NON-	CONTINUOU	s or Mi	SCELI ANF	EOUS		0.0	100%	0.0	All of	her l	oads exc	ludina m	iaximum r	motor load.	
			LA	RGEST M	OTOR	LOAD:	0.0	125%	0.0							
						TOTALS:	20.0	92%	18.3	MINIM	UM F	EEDER:	51-AMP	S		

P.	ANEL 'B'						NOTES:	EXISTING	Commercia	L BOLT	-0N	CIRCUIT	BREAKER	PANELBOA	RD.	
2	40/120-VOLT,1-PHASE,3-WIRE	A.I.C	C. RATING:	10000			NEW BR	ANCH CIRCL	IIT BREAKEI	r Indic	ATED	BY BOLI) text.	BREAKER SH	HALL BE COMPATIBLE WITH EXISTING PANEL	
1	00-AMP MLO	N	NOUNTING	SURFA	CE											
СКТ	LOAD	REF	BRKR	LOAD	B	REAKER		PHASE AMP	S	BREAK	(ER	LOAD	BRKR	REF	LOAD	СКТ
NO	DESCRIPTION	NO	TYPE	AMPS	P	AMP	L1		12	AMP	P	AMPS	TYPE	NO	DESCRIPTION	NO
1	LTS – MEZZANINE			4.5	1	20	6.0			20	1	1.5			REC - RESTROOM	2
3	SPARE				2	60			6.0	20	1	6.0			REC – GENERAL CONVENIENCE	4
5	**				*	**	7.5			20	1	7.5			REC – FOREMAN OFFICE	6
7	SPARE				2	30			5.0	20	1	5.0			LTS – REC – OUTSIDE DECK	8
9	**				*	**	0.0			20	1				SPARE	10
11	WATER HEATER	WH1		28.0	2	40			28.0	20	1				SPARE	12
13	**	**		28.0	*	**	28.0			20	1				SPARE	14
15	HOT WATER RECIRC PUMP RP-1	RP-1		0.7	1	20			0.7						BUSSED SPACE	16
17	BUSSED SPACE						0.0								BUSSED SPACE	18
19	BUSSED SPACE								0.0						BUSSED SPACE	20
21	BUSSED SPACE						0.0								BUSSED SPACE	22
23	BUSSED SPACE				-				0.0						BUSSED SPACE	24
								DEMAND	DEMAND							
							KVA	FACTOR	KVA							
	l	LIGHTING A	nd other	CONTIN	IUOUS	LOAD:	7.3	125%	9.1	Exclu	des t	rack and	l show w	indow lighti	ing.	
				TRAC	CK LK	GHTING:	0.0	N/A	0.0	Track	leng	th:	0 ft	•	-	
				SHO	W WI	NDOWS:	0.0	N/A	0.0	Show	wind	low lengt	h: 0 ft			
				RECEP	TACLE	LOAD:	2.4	100%	2.4	100%	of t	he first	10 kVA,	plus 50% (over 10 kVA.	
			KITCHE	EN EQUIF	PMENT	LOAD:	0.0	100%	0.0	Based	d on	0 pieces	of equi	pment.		
		ן די הי הי היי	HEATING (NIAL)	LOAD:	0.0	100%	0.0	Includ	les s	pace hea	nt in exc	ess of coo	ling and other electric heat.	
	HEATI	NGURUIF	IER NON-	-CUINCIDI			0.0	0%	0.0							
	MOTORS AND OTHER NON-			WE ISCELLAN	LLULK IFALIS		0.0	0% 100%	0.0	All of	hor l	ande av	Judina m	avimum m	ator load	
	MOTORS AND OTHER NON-		03 UN M 14	RCFST N	INTOR		0.0	125%	0.0	All OL		ouus ext	uuniy n			
					10101	TOTAL S:	9.7	119%	11.6	MINIM	UM F	FFDFR	48-AMP	S		
P/	ANEL 'GAS'															
24 1(40/120-volt, 3-phase, 4-wire 00-amp mlo	A.I.C	:. Rating: Mounting:	10000 Surfa	CE		NOTES:	Existing	Commercial	L BOLT-	-0N	CIRCUIT	BREAKER	Panelboai	RD.	
24 1(CKT	40/120-VOLT, 3-PHASE, 4-WIRE 00-AMP MLO LOAD	A.I.C	:. Rating: <u>Iounting:</u> B rkr	10000 SURFAC	CE BF	REAKER	NOTES:	Existing •	COMMERCIA	l Bolt·	-on Er	CIRCUIT	BREAKER	PANELBOAI	RD.	СКТ
24 1(CKT NO	40/120-VOLT, 3-PHASE, 4-WIRE 00-AMP MLO LOAD DESCRIPTION	A.I.C N REF NO	c. Rating: <u>Iounting:</u> Brkr Type	10000 SURFAC LOAD AMPS	CE BF	REAKER AMP	NOTES:	Existing Phase AMP B	COMMERCIA S C	BREAK	-ON Er P	Circuit Load Amps	BREAKER BRKR TYPE	Panelboai Ref NO	rd. Load Description	CKT NO
24 1(CKT NO 1	40/120-VOLT, 3-PHASE, 4-WIRE 00-AMP MLO LOAD DESCRIPTION GENERATOR MAIN	A.I.C N REF NO	: Rating: <u>Iounting</u> : Brkr Type	10000 SURFAC LOAD AMPS	CE Bf P 2	REAKER AMP 30	NOTES: A 0.0	Existing Phase Amp B	COMMERCIAI S C	BOLT BREAK AMP 30	-ON ER P 2	circuit Load Amps	Breaker Brkr Type	PANELBOAI	RD. Load Description Main	CKT NO 2
24 1(CKT NO 1 3	40/120-VOLT, 3-PHASE, 4-WIRE 00-AMP MLO LOAD DESCRIPTION GENERATOR MAIN **	A.I.C N REF NO	c. Rating: <u>Iounting:</u> Brkr Type	10000 SURFAC LOAD AMPS	CE BF P 2 *	EAKER AMP 30 **	NOTES: A 0.0	EXISTING Phase Amp B 0.0	COMMERCIAI S C	BREAK AMP 30 **	-ON ER P 2 *	CIRCUIT LOAD AMPS	Breaker Brkr Type	PANELBOAN REF NO	RD. LOAD DESCRIPTION MAIN **	CKT NO 2 4
24 1(CKT NO 1 3 5	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP	A.I.C N REF NO	:. Rating: <u>Iounting:</u> Brkr Type	10000 SURFA(LOAD AMPS	DE BF P 2 * 2	EAKER AMP 30 ** 20	NOTES: A 0.0	PHASE AMP B 0.0	COMMERCIAI	BREAK AMP 30 ** 20	-ON ER P 2 * 2	circuit Load Amps	BREAKER BRKR TYPE	PANELBOAN REF NO	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP	CKT NO 2 4 6
24 10 CKT NO 1 3 5 7	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP **	A.I.C N REF NO	C. Rating: <u>Iounting</u> : BRKR TYPE	10000 SURFAC LOAD AMPS	BF P 2 * 2 *	AMP 30 ** 20 ** 20	NOTES: A 0.0 0.0	PHASE AMP B 0.0	COMMERCIAI	BREAK AMP 30 ** 20 **	-ON ER P 2 * 2 *	Circuit Load Amps	BREAKER BRKR TYPE	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP **	CKT NO 2 4 6
24 10 CKT NO 1 3 5 7 9	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR	A.I.C M REF NO	: Rating: <u>10Unting:</u> Brkr Type	10000 SURFAC LOAD AMPS	CE BF P 2 * 2 * 1	EAKER AMP 30 ** 20 ** 20	NOTES: A 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0	COMMERCIAI	BREAK AMP 30 ** 20 ** 20	-ON ER P 2 * 2 * 2	Load Amps	BREAKER BRKR TYPE	PANELBOAN REF NO	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM	CKT NO 2 4 6 8 10
24 10 CKT NO 1 3 5 7 9 11	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR	A.I.C NO	C. RATING: <u>AOUNTING:</u> BRKR TYPE	10000 SURFAC LOAD AMPS	BF P 2 * 2 * 1 2	AMP 30 ** 20 ** 20 20 20	NOTES: A 0.0 0.0	PHASE AMP B 0.0 0.0	COMMERCIAI	BREAK AMP 30 ** 20 ** 20 20	-ON ER P 2 * 2 * 1 1	LOAD	BREAKER BRKR TYPE	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN	CKT NO 2 4 6 8 10 12
24 10 CKT NO 1 3 5 7 9 9 11 13	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR **	A.I.C M REF NO	C. RATING: <u>10UNTING:</u> BRKR TYPE	10000 SURFA(AMPS	DE P 2 * 2 * 1 2 *	EAKER 30 ** 20 ** 20 ** 20 **	NOTES: A 0.0 0.0 0.0	PHASE AMP B 0.0 0.0	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20	-ON ER P 2 * 2 * 1 1 1	LOAD	BREAKER BRKR TYPE	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM	CKT NO 2 4 6 8 10 12 14
24 10 CKT NO 1 3 5 7 9 11 13 15	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	A.I.C M REF NO	C. RATING: <u>10UNTING:</u> BRKR TYPE	10000 SURFAC AMPS	BF P 2 * 2 * 1 2 * 1	EAKER 30 ** 20 ** 20 ** 20 ** 20 **	NOTES: A 0.0 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 0.0	COMMERCIAI	BREAK AMP 30 *** 20 20 20	-ON ER P 2 * 2 * 1 1 1 1	LOAD AMPS	BREAKER BRKR TYPE	PANELBOAN REF NO I	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE	CKT NO 2 4 6 8 10 12 14 16
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	A.I.C NO	C. RATING: <u>AOUNTING:</u> BRKR TYPE	10000 SURFAC AMPS	DE BF P 2 * 2 * 1 2 *	AMP 30 ** 20 ** 20 ** 20 **	NOTES:	PHASE AMP B 0.0 0.0 0.0	COMMERCIAI	BREAK AMP 30 ** 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1	LOAD AMPS	BREAKER	PANELBOAI REF NO 	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE	A.I.C M REF NO	C. RATING: <u>10UNTING:</u> BRKR TYPE	10000 SURFAC AMPS	BI P 2 * 2 * 1 2 * 1	EAKER 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 **	NOTES:	EXISTING O	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1	LOAD AMPS	BREAKER	PANELBOAN REF NO I	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE	CKT NO 2 4 6 8 10 12 14 16 18
24 1(CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C NO	C. RATING: <u>AOUNTING:</u> BRKR TYPE	10000 SURFAC AMPS	DF P 2 * 2 * 1 2 * 1 2 * 1 2 * •	AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD:	NOTES: A 0.0 0.0 0.0 0.0 0.0	EXISTING PHASE AMP 0.0 0.0 0.0 0.0 0.0 0.0	COMMERCIAI S C 0.0 0.0 0.0 0.0	BREAK AMP 30 ** 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1	LOAD AMPS	BREAKER	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C REF NO	C. RATING: <u>10UNTING:</u> BRKR TYPE	10000 SURFAC AMPS	BI P 2 * 2 * 1 2 * 1 2 * 1 2 *	REAKER 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD:	NOTES: A 0.0 0.0 0.0 ACTUAL KVA	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0 0 0 0 0 0 0	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1	LOAD	BREAKER	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C NO	RATING: <u>10UNTING:</u> BRKR TYPE		DE BF P 2 * 2 * 1 2 * 1 2 * 1 TOTAL UOUS	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 1 LOAD:	NOTES: A 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 DEMAND FACTOR 125%	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 des t	LOAD AMPS	BREAKER BRKR TYPE	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C	RATING: <u>AOUNTING:</u> BRKR TYPE	10000 SURFAC AMPS	DE BF P 2 * 2 * 1 2 * 1 2 * 1 2 * 0 TOTAL WOUS X	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: CHTING:	NOTES: A 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0	PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0 0 DEMAND FACTOR 125% N/A	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20 20 20 20 7 rack	-ON ER P 2 * 1 1 1 1 des ti lengt	CIRCUIT	BREAKER BRKR TYPE	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C REF NO JGHTING AN	RATING: <u>10UNTING:</u> BRKR TYPE 	10000 SURFAC AMPS	CE P 2 * 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 2 * * * 2 * * * *	REAKER 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: HTING: IDOWS:	NOTES: A 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 0.0 DEMAND FACTOR 125% N/A N/A	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1 1 1 1 0 es tu lengi wind	CIRCUIT	BREAKER BRKR TYPE show w 0 ft h: 0 ft	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C REF NO JGHTING AF	RATING: <u>10UNTING:</u> BRKR TYPE	10000 SURFAC AMPS	DE BF P 2 * 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * * 1 2 * * * 1 2 * * * *	REAKER AMP 30 *** 20 *** 20 *** 20 *** 20 20 *** 1 LOAD: HTING: IOOWS: LOAD:	NOTES: A 0.0 0.0 0.0 0.0 ACTUAL KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 0.0 DEMAND FACTOR 125% N/A N/A N/A 100%	COMMERCIAI S C 0.0 0.0 0.0 0.0 DEMAND KVA 0.0 0.0 0.0 0.0 0.0 0.0 0.0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIRCUIT	BREAKER BRKR TYPE show w 0 ft h: 0 ft 10 kVA,	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. wer 10 kVA.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C NO	RATING: <u>10UNTING:</u> BRKR TYPE U U ND OTHER KITCHE	10000 SURFAC AMPS	CE BF P 2 * 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 1 2 * * * 1 2 * * * *	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: LOAD: LOAD:	NOTES: A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING 0 PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 DEMAND FACTOR 125% N/A N/A 100% 100%	COMMERCIAI S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 ** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIRCUIT LOAD AMPS rack and th: ow lengt he first 0 pieces	BREAKER BRKR TYPE show w 0 ft h: 0 ft 10 kVA, 5 of equi	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. over 10 kVA.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules	A.I.C MEF NO JGHTING AN	RATING: <u>AOUNTING:</u> BRKR TYPE ND OTHER KITCHE IEATING (10000 SURFAC LOAD AMPS	CE P 2 * 2 * 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 2 * * * 2 * * * 2 * * * 2 * * * 2 * * * * 2 *	EAKER AMP 30 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** 20 ** LOAD: LOAD: LOAD: LOAD: LOAD:	NOTES: A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0 DEMAND FACTOR 125% N/A N/A 100% 100%	COMMERCIAI S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIRCUIT LOAD AMPS rack and th: ow lengt he first 0 pieces pace hec	BREAKER BRKR TYPE show w 0 ft h: 0 ft 10 kVA, i of equi t in exc	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. wer 10 kVA. ing and other electric heat.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE <u>DO-AMP MLO</u> LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules L HEATIN	A.I.C MEF NO JGHTING AF	RATING: <u>10UNTING:</u> BRKR TYPE U U U U U U U U U U U U U	10000 SURFAC AMPS	DUCUS WWIN TACLE ENTAL	EAKER 30 30 4** 20 4** 20 *** 20 *** 20 20 *** 20 *** 20 *** LOAD: LOAD: LOAD: LOAD: LOAD: LOAD: LOAD:	NOTES: A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0	COMMERCIAI S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIRCUIT	BREAKER BRKR TYPE show w 0 ft h: 0 ft 10 kVA, c of equi t in exc	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. wer 10 kVA. ing and other electric heat.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE DO-AMP MLO LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules L HEATIN HOTOPE AND OTHER NON		RATING: <u>IOUNTING:</u> BRKR TYPE IOUNTING: BRKR TYPE IOUNTING:	10000 SURFAC AMPS	CE BF P 2 * 2 * 1 2 * 1 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 1 2 * * * 2 * * * 2 * * * *	EAKER AMP 30 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 ** 20 20 20 ** 20 20 20 ** 20 ** 20 20 ** 20 20 ** 20 ** 20 * 20 ** 20 * 20 * 20 * 20 * 20 * 20 * 20 * * 20 * 20 * 20 * * 20 * 20 * 20 * 20 * 20 * * * 20 * 20 * 20 * 20 * * * 20 * * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * 20 * * * *	NOTES: A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING 0 PHASE AMP B 0.0 0.0 0.0 0.0 0.0 0.0 0.0	COMMERCIAI S C 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	LOAD AMPS	BREAKER BRKR TYPE show w 0 ft h: 0 ft 10 kVA, c of equi t in exc	PANELBOAN	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. over 10 kVA. ing and other electric heat.	CKT NO 2 4 6 8 10 12 14 16 18
24 10 CKT NO 1 3 5 7 9 9 11 13 15 17	40/120-VOLT, 3-PHASE, 4-WIRE <u>DO-AMP MLO</u> LOAD DESCRIPTION GENERATOR MAIN ** GAS PUMP ** OVERHEAD DOOR, 3RD DOOR PANEL SURGE PROTECTOR ** BUSSED SPACE PROJECT #22123 Panel Schedules L HEATIM MOTORS AND OTHER NON-	A.I.C M REF NO JGHTING AF AG OR OTH -CONTINUO	RATING: <u>ADUNTING:</u> BRKR TYPE ADU ND OTHER KITCHE IEATING (I IER NON- US OR MI	10000 SURFAC AMPS AMPS	CE BF P 2 * 2 * 1 2 * 1 2 * * 1 2 * * 1 2 * * 1 2 * * 1 2 * * * 1 2 * * * 1 2 * * * *	EAKER AMP 30 ** 20 ** 20 20 ** 20 20 ** ECAL 20 20 ** ECAL 20 20 ** ECAL 20 20 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 20 ECAL 20 20 ECAL 20 3 ECAL 20 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20 ECAL 20	NOTES: A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	EXISTING 0 PHASE AMP: B 0.0 0.0 0.0 0.0 0.0 0.0 0.0	COMMERCIAI	BREAK AMP 30 *** 20 20 20 20 20 20 20 20 20 20 20 20 20	-ON ER P 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CIRCUIT	BREAKER BRKR TYPE show w 0 ft 10 kVA, 10 kVA, 10 kVA, 10 kVA, 10 kVA,	PANELBOAI	RD. LOAD DESCRIPTION MAIN ** DIESEL PUMP ** GAS SYSTEM CO-RAY-VAC FAN PHONE SYSTEM BUSSED SPACE 01/25/23 ng. wer 10 kVA. ing and other electric heat. btor load.	CKT NO 2 4 6 8 10 12 14 16 18

AVAILABLE FAULT CURRENT HAS NOT YET BEEN MADE AVAILABLE FROM UTILITY. EQUIPMENT WITHSTAND AND AIC RATING MAY BE CALCULATED ONCE ACTUAL FAULT CURRENT VALUES ARE PROVIDED. FINAL EQUIPMENT REQUIREMENTS WILL BE BASED ON ACTUAL FAULT CURRENT VALUES FROM UTILITY. FOR ANY FIELD ALTERATIONS OF SINGLE LINE LAYOUT, A FAULT CURRENT STUDY, BY THE CONTRACTOR, SHALL BE REQUIRED.

1 SINGLE LINE DIAGRAM SCALE NONE

