TOWN OF JACKSON
PLANNING & BUILDING DEPARTMENT

TRANSMITTAL MEMO

Town of Jackson
- ☒ Public Works/Engineering
- ☒ Building
- ☐ Title Company
- ☒ Town Attorney
- ☒ Police

Joint Town/County
- ☒ Parks and Recreation
- ☒ Pathways
- ☒ Joint Housing Dept

Teton County
- ☐ Planning Division
- ☐ Engineer
- ☐ Surveyor- *Nelson*
- ☐ Assessor
- ☐ Clerk and Recorder
- ☐ Road and Levee

State of Wyoming
- ☐ Teton Conservation
- ☐ WYDOT
- ☐ TC School District #1
- ☐ Game and Fish
- ☐ DEQ

Federal Agencies
- ☐ Army Corp of Engineers

Utility Providers
- ☐ Qwest
- ☐ Lower Valley Energy
- ☐ Bresnan Communications

Special Districts
- ☒ START
- ☒ Jackson Hole Fire/EMS
- ☐ Irrigation Company

Date: May 4, 2023

Item #: P23-085

Planner: Katelyn Page

Phone: 733-0440 ext. 1302

Email: kpage@jacksonwy.gov

Owner
Teton Gables, LLC
PO Box 6467
Jackson, WY 83002

Applicant
Grace Spa
PO Box 2117
Jackson, WY 83001

REQUESTS:

The applicant is submitting a request for a Basic Use Permit for the property located at 155 W. Gill Ave, Ste 108, legally known as LOTS 8, 9, & 10, BLK. 1, ORIGINAL TOWNSITE, TOWN OF JACKSON PIDN: 22-41-16-28-4-06-011

For questions, please call Katelyn Page at 733-0440, x1302 or send an email to the address shown below. Thank you.

Please respond by: **May 18, 2023 (Sufficiency)**
May 25, 2023 (with Comments)

RESPONSE: For Departments not using SmartGov, please send responses via email to:
planning@jacksonwy.gov

April 17, 2023

Katelyn S. Page
Associate Planner
Town of Jackson
PO Box 1687
Jackson, WY 83001

RE: Project Narrative for grace spa, 155 West Gill Avenue, Suite 108 – Basic Use Permit

Dear Katelyn:

The following is a "project narrative" in response to your recent request for the Basic Use Permit for Grace Spa.

The Spa has been in business since March, 2015 and formerly located at 55 E. Pearl Street, Jackson, WY. The Pearl Street location was purchased by Crystal Creek Capital and the lease was terminated. The Spa found a new location at 155 West Gill Street, Suite 108. The interior of the space was renovated to accommodate the Spa needs and all building permits were submitted and approved.

Employees – We do not have any employees. We pay commission based independent contractors. We currently use 8 independent contractors and the number has not changed from our prior location.

Hours - Our hours of use are Monday-Friday 9:30am-5:30pm, occasional Saturday appointments and Sunday - closed.

Typical operations of the spa encounter 2-5 patrons at a time who will be in the building for 1-2 hours for services such as: hair color/cut, pedicure, manicure, facial, massage and waxing.

Parking – Independent Contractors utilize 2-5 parking spots for anywhere from 2-8 hours in a typical day on public streets. Patrons will utilize the 25 plus shared spots on site and public street parking for 2-5 spots rotating on average 1-2 hours per visit.

Affordable Housing – We have Independent Contractors that have adequate, stable housing either through ownership or rental situations. Please see our Housing Mitigation Plan checklist attached.

It is my understanding that you will review "The Basic Use Permit" application and then notify me. I look forward to your review results. Please feel free to phone me at 307-413-5631 c. with any questions or requests for additional information.

Thank you,

Sincerely,

Grace Mahoney
Owner, grace spa

PLANNING PERMIT APPLICATION
Planning & Building Department

150 E Pearl Ave.
P.O. Box 1687
Jackson, WY 83001

ph: (307) 733-0440
www.townofjackson.com

For Office Use Only

Fees Paid_____ Date & Time Received _____

Application #s _____ _____ _____

Please note: *Applications received after 3 PM will be processed the next business day.*

PROJECT.

Name/Description: grace spa

Physical Address: 155 W. Gill Avenue, Suite 108, Jackson, WY 83001

Lot, Subdivision: Lots 8, 9 and 10, Block 1, Original Town Site TOJ PIDN: _____

PROPERTY OWNER.

Name: Teton Gables, LLC Phone: 407-952-1735

Mailing Address: PO Box 6467, Jackson, WY ZIP: 83002

E-mail: tyler@wyomingpropertymanagement.com

APPLICANT/AGENT.

Name: Grace Mahoney Phone: 307-413-5631

Mailing Address: PO Box 2117 ZIP: 83001

E-mail: grace@gracespajh.com

DESIGNATED PRIMARY CONTACT.

_____Property Owner X_____Applicant/Agent

TYPE OF APPLICATION. *Please check all that apply; review the type of application at www.townofjackson/200/Planning*

Use Permit

X_____Basic Use

_____Conditional Use

_____Special Use

Relief from the LDRs

_____Administrative Adjustment

_____Variance

_____Beneficial Use Determination

_____Appeal of an Admin. Decision

Physical Development

_____Sketch Plan

_____Development Plan

_____Design Review

Subdivision/Development Option

_____ Subdivision Plat

_____Boundary Adjustment (replat)

_____Boundary Adjustment (no plat)

_____Development Option Plan

Interpretations

_____Formal Interpretation

_____Zoning Compliance Verification

Amendments to the LDRs

_____LDR Text Amendment

_____Map Amendment

Miscellaneous

_____**Other:**_____

_____ Environmental Analysis

PRE-SUBMITTAL STEPS. *To see if pre-submittal steps apply to you, go to www.townofjackson.com/200/Planning and select the relevant application type for requirements. Please submit all required pre-submittal steps with application.*

Pre-application Conference #: _____ Environmental Analysis #: _____

Original Permit #: _____ Date of Neighborhood Meeting: _____

SUBMITTAL REQUIREMENTS. *Please ensure all submittal requirements are included. The Planning Department will not hold or process incomplete applications. Partial or incomplete applications will be returned to the applicant. Go to www.townofjackson.com/200/Planning and select the relevant application type for submittal requirements.*

Have you attached the following?

_____ **Application Fee.** Fees are cumulative. Go to www.townofjackson.com/200/Planning and select the relevant application type for the fees.

X **Notarized Letter of Authorization.** A notarized letter of consent from the landowner is required if the applicant is not the owner, or if an agent is applying on behalf of the landowner. Please see the Letter of Authorization template at http://www.townofjackson.com/DocumentCenter/View/845/LetterOfAuthorization-PDF.

_____ **Response to Submittal Requirements**. The submittal requirements can be found on the TOJ website for the specific application. If a pre-application conference is required, the submittal requirements will be provided to applicant at the conference. The submittal requirements are at www.townofjackson.com/200/Planning under the relevant application type.

Note: Information provided by the applicant or other review agencies during the planning process may identify other requirements that were not evident at the time of application submittal or a Pre-Application Conference, if held. Staff may request additional materials during review as needed to determine compliance with the LDRs.

Under penalty of perjury, I hereby certify that I have read this application and associated checklists and state that, to the best of my knowledge, all information submitted in this request is true and correct. I agree to comply with all county and state laws relating to the subject matter of this application, and hereby authorize representatives of Teton County to enter upon the above-mentioned property during normal business hours, after making a reasonable effort to contact the owner/applicant prior to entering.

Signature of Property Owner or Authorized Applicant/Agent — Date: 5/1/21

Tyler Davis — Name Printed

Agent — Title

Town of Jackson
150 E Pearl Avenue
PO Box 1687, Jackson, WY 83001
P: (307)733-3932 F: (307)739-0919
www.jacksonwy.gov

Date: 4/18/2023

LETTER OF AUTHORIZATION

NAMING APPLICANT AS OWNER'S AGENT

PRINT full name of property owner as listed on the deed when it is an individual OR print full name and title of President or Principal Officer when the owner listed on the deed is a corporation or an entity other than an individual

Being duly sworn, deposes and says that Teton Gables LLC is the owner in fee of the premises located at:
Name of property owner as listed on deed

Address of Premises: 155 W. Gill Avenue, Suite 108

Legal Description: Lots 8, 9 & 10, Block 1, Original Town Site, TOJ
Please attach additional sheet for additional addresses and legal descriptions

And, that the person named as follows: Name of Applicant/agent: grace spa, Grace Mahoney

Mailing address of Applicant/agent: PO Box 2117, Jackson, WY 83001

Email address of Applicant/agent: grace@gracespajh.com

Phone Number of Applicant/agent: 307-201-1888

Is authorized to act as property owner's agent and be the applicant for the application(s) checked below for a permit to perform the work specified is this(these) application(s) at the premises listed above:

☐ Development/Subdivision Plat Permit Application ☐ Building Permit Application

☐ Public Right of Way Permit ☐ Grading and Erosion Control Permit ☒ Business License Application

☐ Demolition Permit ☐ Home Occupation ☒ Other (describe) Basic Use Permit

Under penalty of perjury, the undersigned swears that the foregoing is true and, if signing on behalf of a corporation, partnership, limited liability company or other entity, the undersigned swears that this authorization is given with the appropriate approval of such entity, if required.

Property Owner Signature

Owner / Organizer
Title if signed by officer, partner or member of corporation, LLC (secretary or corporate owner) partnership or other non-individual Owner

STATE OF Wyoming)
) SS.
COUNTY OF Teton)

TRIINU JENAS HANSEN – NOTARY PUBLIC
COUNTY OF TETON
STATE OF WYOMING
MY COMMISSION EXPIRES JUNE 16, 2024

The foregoing instrument was acknowledged before me by Tyler Davis this 18th day of April 2023. WITNESS my hand and official seal.

Notary Public

My commission expires: June 16th, 2024

Housing Mitigation Plan

updated 1/8/21

Development of a new house, hotel, or commercial space generates the need for employees. The construction workforce builds the space, the commercial workforce or residential service workforce works in the space, and first responders are needed to protect the space. Only about 27% of the employees generated by development can afford housing in the community, but the community's "community first" character goal is that 65% of employees live locally. To bridge this affordability gap, each development is required to include affordable workforce housing proportional to the employees it generates.
These housing mitigation requirements are established in Division 6.3 of the Land Development Regulations. This worksheet is intended to assist in meeting the requirements for a project. However, an error in the worksheet does not amend the actual standard; if you find an error please notify the Planning Department. Fill in the highlighted cells, all the other cells will autopopulate.

Calculating the Requirement (Sec. 6.3.2 & 6.3.3)

Step 1: Location

Town of Jackson

The applicable regulations vary by jurisdiction please identify the location of your project using the above dropdown options.

The required housing is based on the existing and proposed use of the site. Step 2 is to enter the existing use and Step 3 is to enter the proposed use. Section 6.3.2 of the LDRs establishes the applicability of the affordable workforce housing standards and Section 6.3.3 establishes the specifics on calculation of the requirement. Enter each use in its own row, add rows if needed. If a building has multiple units with the same use, describe each unit in its own row. (For example: if a duplex is composed of a 2,300 sf attached unit and a 1,700 sf attached unit, put each unit in its own row do not put in 4,000 sf of attached single-family.) If a unit type (e.g. apartment floor plan, or commercial tennant space) is replicated exactly multiple times, you may use the "Use Quantity" column to avoid adding multiple rows.

Step 2: Existing Development

Housing is only required for new development. Please describe the existing use of the site so that it can be credited from the housing requirement. The definition of existing use is Section 6.3.2.A.1 of the LDRs. Generally, the existing use to enter is the use with the highest housing requirement that either existed in 1995, or has been permitted since 1995. Please attach proof of existence.

Existing Use (Sec. 6.3.2.A)	Housing Requirement (Sec. 6.3.3.A)	Use Size: bedrooms	Use Size: habitable sf	Use Quantity	Housing Required
Service	0.000216*sf	0	1748	1	0.377

Existing Workforce Housing Credit 0.377

Step 3: Proposed Development

Please describe the proposed use of the site to determine if affordable workforce housing is required as part of the development. Describe the end result of the proposed development. (For example: in the case of an addition do not enter the square footage of the addition, enter the size of the unit upon completion of the addition.)

Proposed Use	Housing Requirement (Sec. 6.3.3.A)	Use Size: bedrooms	Use Size: habitable sf	Use Quantity	**Housing Required**
service	0.000216*sf	0	1748	1	**0.377**

Affordable Workforce Housing Required: 0.000 units

Fee-in-Lieu Amount: $ -

If the amount of required affordable workforce housing is less than one unit, you may pay the above fee in-lieu of providing the required housing. If you elect to pay the fee, your Housing Mitgation Plan is complete. If the requirement is greater than one unit, or you would like to provide a unit to meet the requirement, please proceed to the Unit Type Sheet.

GRACE SPA INTERIOR REMODEL

155 WEST GILL AVE, JACKSON WYOMING, 83001

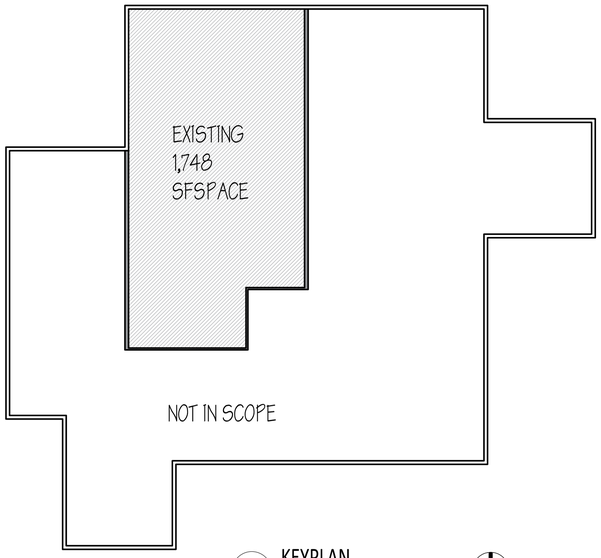
ISSUE FOR PERMIT CORRECTIONS

10.05.2022

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE OWNER OR CONTRACTOR, MECHANICAL CONTRACTOR OR SUBCONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION CODES. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS.IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

SCOPE OF WORK

1. 1,748 SF OF SPA BUILD OUT AND TENANT IMPROVEMENTS AT 155 W GILL AVENUE
2. PLUMBING AT CRAWLSPACE



1 KEYPLAN
N.T.S

PROJECT DATA

BUILDING OCCUPANCY CLASSIFICATION	B BUSINESS
BUILDING CONSTRUCTION TYPE	TYPE V-B ORDINARY
NUMBER OF STORIES	1
NUMBER OF DWELLING UNITS	0
ZONING DISTRICT	CR-2
PROPERTY INDEX NUMBER	22-41-16-28-4-06-011

APPLICABLE CODES BY JURISDICTION

ZONING CODE	TOJ LAND DEVELOPMENT REGULATIONS, LATEST EDITION
BUILDING CODE	2021 IRC WITH LOCAL AMENDMENTS, LATEST EDITION
ENERGY CODE	2021 IECC WITH LOCAL AMENDMENTS
MECHANICAL CODE	2021 IMC WITH LOCAL AMENDMENTS
ELECTRICAL CODE	2021 NEC WITH LOCAL AMENDMENTS
PLUMBING CODE	2021 IPC WITH LOCAL AMENDMENTS
ACCESSIBILITY CODE	2017 ICC A117.1
FIRE PROTECTION CODE	2021 IFC WITH LOCAL AMENDMENTS
WILDLIFE	2021 ICC WUIC

DRAWING SHEET INDEX

COVER SHEET
G0.0 GENERAL NOTES
A1.00 EXISTING PLANS
D1.00 DEMOLITION PLANS
A1.01 PROPOSED PLAN
A1.02 REFLECTED CEILING PLANS/ELECTRICAL
A2.00 INTERIOR ELEVATIONS
A8.00 SCHEDULES AND DIAGRAMS
M0.1 NOTES, LEGEND, ABBREVIATIONS
M0.2 MECHANICAL SPECIFICATIONS
M0.3 MECHANICAL SPECIFICATIONS
M0.4 MECHANICAL SPECIFICATIONS
M0.5 SCHEDULES
M0.6 DETAILS
M1.0 FIRST FLOOR MECHANICAL PLAN
P1.0 BASEMENT DOMESTIC PLUMBING PLAN
P1.1 FIRST FLOOR DOMESTIC PLUMBING PLAN
P1.2 BASEMENT SANITARY PLUMBING PLAN
P1.3 FIRST FLOOR SANITARY PLUMBING PLAN
E0.00 ELECTRICAL COVER SHEET
ED1.00 ELECTRICAL DEMO PLAN
E0.01 LIGHTING COMPLIANCE
E1.00 LIGHTING PLAN
E2.00 POWER PLAN
E2.01 MECHANICAL POWER PLAN
E3.00 SINGLE LINE DIAGRAM
E4.00 EXISTING PANEL SCHEDULES
E5.00 DETAILS

AREA MAP

PROJECT TEAM MEMBERS

TENANT	GRACE MAHONEY
ARCHITECT	NORTHWORKS ARCHITECTS & PLANNERS 185 E Hansen Ave Jackson, Wyoming 83001
MEP ENGINEER	TATE COLBERT 23 Mathew Avenue Burlington VT 05408
GENERAL CONTRACTOR	WEST FORK CONSTRUCTION 240 E Hansen Ave, Jackson, WY 83001

PROFESSIONAL CERTIFICATIONS

LICENSED ARCHITECT
EDMUND AUSTIN DEPREE
No. C-3004
STATE OF WYOMING

NORTHWORKS
185 E. HANSEN AVE P.O. BOX 4027 JACKSON HOLE, WY 83001 T: 307-201-5324

GRACE SPA
PERMIT CORRECTIONS
2221
2022.10.05

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
ACOUST.	ACOUSTICAL
AT	ACOUSTICAL TILE
ADJ	ADJACENT OR ADJUSTABLE
AC	AIR CONDITIONER
ACCU	AIR CONDITIONING CONDENSER UNIT
A.B.	ANCHOR BOLT
ALT	ALTERNATE
ALUM	ALUMINUM
ARCH.	ARCHITECTURAL
ARCHT	ARCHITECT
A.D.	AREA DRAIN
ASSY.	ASSEMBLY
ATTN.	ATTENUATING
AVE	AVENUE
BSMT	BASEMENT
BTWN	BETWEEN
BIT	BITUMINOUS
BLKG	BLOCKING
BLVD	BOULEVARD
BD	BOARD
BOT	BOTTOM
B.O.	BOTTOM OF
BLDG	BUILDING
BYO	BY OWNER
CAB	CABINET
CPT	CARPET
C.I.	CAST IRON
CLG	CEILING
CT	CERAMIC TILE
COD	CARBON MONOXIDE DETECTOR
CIRCUM.	CIRCUMFERENCE
COL	COLUMN
CONC.	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
COORD.	COORDINATE
CLO	CLOSET
CONTR.	CONTRACTOR
C.A.	CONTROL JOINT
C.S.	COUNTERSINK
CU. FT.	CUBIC FEET
DTL.	DETAIL
DIA.	DIAMETER
DIM(S) .	DIMENSION(S)
DIST.	DISTANCE
D.H.	DOUBLE HUNG
DN.	DOWN
DR(S).	DOOR(S)
DS.	DOWN SPOUT
DBL.	DOUBLE
DWG.	DRAWING
FT	FEET (FOOT)
FIN.	FINISHED
FR.	FIRE RATING
F.E.	FIRE EXTINGUISHER
FHS	FIRE HOSE STATION
FLR.	FLOOR
FD.	FLOOR DRAIN
FTG.	FOOTING
FDN.	FOUNDATION
FUR.	FURRED (FURRING)
FURN.	FURNACE
GA.	GAUGE
GAL	GALLON
GALV.	GALVANIZED
GC.	GENERAL CONTRACTOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
GL	GLASS, GLAZING
GWB.	GYPSUM WALLBOARD
GYP. BD.	GYPSUM WALLBOARD
HB	HOSE BIBB
HC	HOLLOW CORE
HDWD	HARDWOOD
HM	HOLLOW METAL
HORIZ.	HORIZONTAL
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IN.	INCH(ES)
I.D.	INSIDE DIAMETER
INT.	INTERIOR
JT	JOINT
JUNCT.	JUNCTION
KIT	KITCHEN
LAM	LAMINATE
LAV	LAVATORY
L	LENGTH (LONG)
LT	LIGHT
LF	LINEAR FEET

MANUF.	MANUFACTURER
MAS.	MASONRY
M.O.	MASONRY OPENING
MATL.	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MTD.	MOUNTED
MTL	METAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MULL.	MULLION
N.R.C.	NOISE REDUCTION COEFFICIENT
N.	NORTH
N/A	NOT APPLICABLE
N.I.C.	NOT IN CONTRACT
NOM.	NOMINAL
NTS	NOT TO SCALE
NO.	NUMBER
O.C.	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
O.D.	OUTSIDE DIAMETER
OSB	ORIENTED STRAND BOARD
O.H.	OVERHEAD
PNT	PAINT
PTD	PAINTED
PBD	PARTICLE BOARD
PLAS	PLASTIC
PLAM	PLASTIC LAMINATE
PL	PLATE
PLUMB	PLUMBING
PWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PT	POINT
PVC	POLYVINYL CHLORIDE
PROP.	PROPERTY
QT	QUARRY TILE
RAD	RADIUS
REF	REFRIGERATOR
REINF.	REINFORCED
REQ'D.	REQUIRED
RA	RETURN AIR
R	RISER
R.D.	ROOF DRAIN
RM	ROOM
R.O.	ROUGH OPENING
SA	SUPPLY AIR
SC	SOLID CORE
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SECT	SECTION
SHT	SHEET
SIM.	SIMILAR
SO.	SOUTH
SPEC.	SPECIFICATION
SPKLR	SPRINKLER
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	STAINLESS STEEL
ST	STONE
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STO	STORAGE
STRUC	STRUCTURAL
TEL	TELEPHONE
TV/HDTV	TELEVISION (HIGH DEFINITION)
TC	TERRA COTTA
THK.	THICK
THKNESS	THICKNESS
T&G	TONGUE AND GROOVE
T.1.	TOP OF
T	TREAD
TYP.	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UL	UNDERWRITERS LABORATORY
VAP. BAR.	VAPOR BARRIER
VEN	VENEER
VERT	VERTICAL
VCT	VINYL COMPOSITION TILE
VT	VINYL TILE
VB	VINYL BASE
VIF	VERIFY IN FIELD
WC	WATER CLOSET
WH	WATER HEATER
WP	WATERPROOF
WR	WATER RESISTANT
WWF	WELDED WIRE FABRIC
W.	WEST
WI	WIDTH
WIN	WINDOW
W/	WITH
W/O	WITHOUT
WD	WOOD
WK PT	WORK POINT

GENERAL NOTES

1. ALL WORK PERFORMED MUST COMPLY WITH ALL APPLICABLE BUILDING CODES.THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, STATE AND NATIONAL CODES AND ORDINANCES.
2. SUPPLEMENTAL TO THESE DOCUMENTS, THE GENERAL CONTRACTOR SHALL REFER TO THE "GENERAL CONDITIONS FOR CONSTRUCTION", AS GIVEN IN AIA DOCUMENT A-201, ARTICLE 1-14, INCLUSIVE
3. THESE DRAWINGS INDICATE THE GENERAL SCOPE OF THE PROJECT IN TERMS OF THE ARCHITECTURAL DESIGN CONCEPT, DIMENSIONS, MAJOR ELEMENTS AND MATERIALS. THESE DRAWINGS DO NOT NECESSARILY INDICATE OR DESCRIBE ALL WORK REQUIRED FOR THE FULL COMPLETION OF THE PROJECT.
4. THE GENERAL CONTRACTOR AND HIS OR HER SUBCONTRACTORS SHALL FURNISH ALL OF THOSE ITEMS AND LABOR REQUIRED FOR THE FULL COMPLETION OF THIS PROJECT IN A FIRST-CLASS WORKMANSHIP LIKE MANNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS AND CONDITIONS BEFORE EXECUTION OF ANY WORK AND SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT IN WRITING.
6. THE ENTIRE INSTALLATION OF THE WORK SHALL BE PERFORMED IN A FIRST-CLASS WORKMANSHIP MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL. ACCEPTANCE BY THE OWNER SHALL BE A CONDITION OF THE CONTRACT.
7. ALL WORK PERFORMED TO BE INSTALLED BY LICENSED TRADESMEN AND SHALL COMPLY WITH APPLICABLE INDUSTRY QUALITY STANDARDS.
8. WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE PROJECT DRAWINGS.
9. GENERAL CONTRACTOR SHALL REMAIN RESPONSIBLE FOR COMPLIANCE WITH THE PROVISIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ACT, (OSHA) LATEST EDITION.
10. GENERAL CONTRACTOR SHALL GUARANTEE ALL WORK FOR ONE YEAR AFTER THE DATE OF FINAL COMPLETION.
11. GENERAL CONTRACTOR SHALL MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD, A CERTIFICATE OF INSURANCE FOR ALL LIABILITIES, WITH A HOLD HARMLESS CLAUSE, PROTECTING OWNER AND ARCHITECT.
12. THE GENERAL CONTRACTOR SHALL VERIFY ALL LAYOUTS WITH THE ARCHITECT AS REQUIRED BEFORE PROCEEDING WITH THE WORK.
13. THE PREMISES SHALL BE KEPT IN A BROOM-SWEPT FINISH CONDITION DURING ALL PHASES OF THE CONSTRUCTION. ALL CONTRACTORS AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR CLEANING UP AND DISPOSING OF THEIR LITTER AND LEFTOVER MATERIALS ON A REGULAR BASIS AND LEAVE THE PROJECT IN A BROOM-SWEPT FINISH CONDITION UPON THE COMPLETION OF THEIR PORTION OF THE PROJECT.
14. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS DELIVERED TO THE SITE.
15. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE AND COMPLETE PROTECTION OF ALL ITEMS ON-SITE THAT ARE "EXISTING TO REMAIN".
16. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING EXCHANGE OF ALL SUBMITTALS, INCLUDING MATERIAL SAMPLES AND SHOP DRAWINGS, BETWEEN SUB-CONTRACTORS AND ARCHITECT.
17. THE GENERAL CONTRACTOR SHALL NOT PLACE ANY LOAD UPON, NOR CUT INTO, NOR MODIFY ANY EXISTING FLOOR, WALL OR ROOF STRUCTURAL SYSTEM UNLESS SPECIFICALLY NOTED ON PROJECT DRAWINGS.
18. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS, METHODS, TECHNIQUES, PROCEDURES, AND COORDINATING FOR ALL PORTIONS OF THE WORK.
19. ALL EXCAVATION, SHORING, AND THE ENGINEERING OF EXCAVATION AND SHORING SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
20. INSTALLATION OF FLOORS, WALLS BEAMS, COLUMNS, AND/OR HEADERS MAY REQUIRE SHORING AND/OR BRACING. BEFORE STARTING ANY WORK, THE GENERAL CONTRACTOR SHALL INVESTIGATE THOROUGHLY TO DETERMINE THE EXTENT AND TYPE OF BRACING BEST SUITED TO THE CONDITIONS AND TO ALLOW INSTALLATION OF THE WORK.
21. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL INCOMING SITE UTILITIES.
22. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES IN ORDER TO AVOID INTERFERENCES, PRESERVE MAXIMUM HEAD ROOM AND AVOID OMISSIONS. THE GENERAL CONTRACTOR AND ALL SUB-CONTRACTORS ARE RESPONSIBLE FOR REVIEWING AND COORDINATING ALL NEW WORK WITH ALL EXISTING CONDITIONS.
23. THE GENERAL CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ALL DISCREPANCIES AND SHALL OBTAIN CLARIFICATION FOR DESIGN INTENT OR ADDITIONAL DETAILS AND INFORMATION WHERE REQUIRED.
24. ALL CHANGES PROPOSED BY THE GENERAL CONTRACTOR IN ANY DETAIL, SYSTEM OR MATERIAL (INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND OTHER CONSULTANT WORK) SHALL BE PROPOSED AND SUBMITTED IN WRITING FOR REVIEW BY THE ARCHITECT AND OWNER.
25. THE GENERAL CONTRACTOR IS TO PROVIDE TEMPORARY FENCING, BARRICADES, AND LEGIBLE SIGNAGE AROUND THE ENTIRE SITE TO BE PROTECTED AND AT ANY INTERIOR FLOOR OPENINGS THAT MIGHT CAUSE A HAZARD.
26. ALL SUBCONTRACTORS ARE RESPONSIBLE FOR THE IMMEDIATE INSTALLATION OF PROTECTIVE MATERIALS AND SUPPLIES INSTALLED BY THEIR WORKPERSONS. ALL SUBCONTRACTORS ARE RESPONSIBLE FOR THE REPLACEMENT OF PROTECTIVE MATERIALS INSTALLED BY OTHERS IF REMOVED BY THEIR WORKPERSONS.
27. ALL DISSIMILAR METALS AND MATERIALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID MOLECULAR BREAKDOWN.
28. THE GENERAL CONTRACTOR SHALL PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR PROPER OPERATION AND MAINTENANCE OF EQUIPMENT AND SYSTEMS. REVIEW ALL ACCESS PANEL LOCATIONS AND SPECIFICATIONS WITH ARCHITECT PRIOR TO CONSTRUCTION / FABRICATION.
29. THE GENERAL CONTRACTOR SHALL PROVIDE ALL FIRE STOPS / FIRE STOPPING, SAFING INSULATION, FIRE PROOFING INSULATION, FIRE STOP SEALANT, ETC. AS REQUIRED BY APPLICABLE CODES. THIS INCLUDES ALL FIRE STOPPING REQUIRED FOR NEW/EXISTING OPENINGS, PENETRATIONS AT FIRE-RATED ASSEMBLIES, AND STRUCTURAL MEMBERS.
30. THE GENERAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF HVAC DUCTS, GRILLS, AND LIGHT FIXTURES WITH THE FRAMING MEMBERS. IN CASE OF CONFLICT, LIGHTING AND DIFFUSER LAYOUT SHALL GOVERN.
31. DIMENSIONS ARE GIVEN TO FACE OF ROUGH FRAMING AND FACE OF MASONRY, UNLESS OTHERWISE NOTED.

PAINTING AND FINISHES

1. PAINTING: ALL SURFACES SHALL BE SANDED LIGHTLY BETWEEN COATS. ALL WOODWORK SHALL BE CAULKED AT JOINTS AND DRYWALL CONNECTIONS. ALL DRYWALL SHALL BE ROLLED AND ALL CABINETRY SHALL HAVE A FINAL LIGHT BRUSH COAT APPLIED IN FIELD.
2. PAINT SHEEN SCHEDULE:
   - 2.1. WALLS: EGGSHELL
   - 2.2. CEILINGS: EGGSHELL
   - 2.3. INTERIOR TRIM & DOORS: SEMI-GLOSS
   - 2.4. PROTECT FINISHED FLOORING FROM ALL TRAFFIC AND STAINAGE DURING THE CONSTRUCTION PERIOD.

DEMOLITION NOTES

1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL DEMOLITION.

2. THE GENERAL CONTRACTOR SHALL REVIEW ALL DESIGN DOCUMENTS, INCLUDING DRAWING AS PREPARED BY STRUCTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERS PRIOR TO DEMOLITION. CONTRACTOR SHALL COORDINATE DEMOLITION SCOPE WITH NEW/FINAL WORK SCOPE AND REPORT ANY DISCREPANCIES WITH OWNER AND ARCHITECT.

3. ALL ITEMS THAT ARE NOT INDICATED TO BE REMOVED (INCLUDING ITEMS TO BE SALVAGED) SHALL BE FULLY PROTECTED FROM DAMAGE DURING DEMOLITION. CONTRACTOR SHALL EXERCISE CAUTION TO AVOID DAMAGE TO ITEMS ADJACENT TO ZONES OF DEMOLITION.

4. ANY DAMAGE INFLICTED UPON EXISTING ITEMS OR SURFACES THAT ARE TO REMAIN SHALL BE REFINISHED, REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, BUILDING MANAGEMENT AND ARCHITECT AT NO ADDITIONAL COST.

5. ALL ITEMS OF EXISTING EQUIPMENT, MATERIALS, FIXTURES, ETC., SHALL REMAIN THE PROPERTY OF THE TENANT. ALL SALVAGED AND/OR REUSABLE ITEMS SALVAGED DURING DEMOLITION OPERATIONS SHALL BE REMOVED AND RETAINED FOR LATER REINSTALLATION. ITEMS INSPECTED AND REJECTED BY THE OWNER OR ARCHITECT SHALL BE DISPOSED OF BY THE GENERAL CONTRACTOR.

6. DEMOLITION DRAWINGS PROVIDED ARE INTENDED TO SHOW THE GENERAL NATURE OF THE EXISTING CONDITIONS AND EXTENT OF WORK. DRAWINGS ARE NOT TO BE CONSIDERED AS A RECORD DRAWING OF EXISTING CONDITIONS. GENERAL CONTRACTOR TO VERIFY ALL WORK IN FIELD PRIOR TO COMMENCEMENT.

7. THE GENERAL CONTRACTOR SHALL SUBMIT A SCHEDULE OF METHODS AND OPERATIONS OF DEMOLITION FOR OWNER AND ARCHITECT REVIEW FOR ALL DEMOLITION WORK. THE SCHEDULE SHALL INCLUDE THE COORDINATION REQUIRED WITH EXISTING BUILDING SYSTEMS FOR ALL TRADES, INCLUDING SHUTOFF, CAPPING OR REROUTING OF UTILITIES, AND THE CONSTRUCTION OF ANY TEMPORARY UTILITY LINES.

8. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEW OF ALL EXISTING STRUCTURAL CONDITIONS PRIOR TO COMMENCEMENT OF DEMOLITION.

9. THE GENERAL CONTRACTOR SHALL PROVIDE TEMPORARY AND/OR PERMANENT SUPPORT AS NECESSARY TO MAINTAIN STRUCTURAL INTEGRITY OF ALL ADJACENT AND EXISTING STRUCTURES TO BE AFFECTED BY THE DEMOLITION.

SHOP DRAWINGS AND MOCK UPS

1. SHOP DRAWINGS AND/OR PRODUCT SUBMITTALS ARE TO BE PROVIDED TO THE ARCHITECT FOR REVIEW AND APPROVAL AS FOLLOWS:
   - 1.1. EXTERIOR DOORS

2. FULL SCALE MOCK UPS AND/OR SAMPLES ARE TO BE PROVIDED FOR THE ARCHITECT'S REVIEW AS FOLLOWS:
   - 2.1. FLASHINGS, DRIP EDGES,
   - 2.2. EXTERIOR SIDING
   - 2.3. EXTERIOR TRIM

FIRE SPRINKLERS

1. FIRE SPRINKLERS TO BE INSTALLED PER IBC 903.3.1.1 WITHIN THE EXISTING STRUCTURE.
2. FIRE ALARM AND SPRINKLER DESIGN TO BE APPROVED PER AHJ.

DRYWALL

1. DRYWALL SHALL BE ⅝" TYPE 'X' MIN. THICKNESS ON ALL WALLS AND CEILINGS, UNLESS OTHERWISE NOTED.
2. AT ALL BATHROOMS, INSTALL WATER RESISTANT RATED DRYWALL. PROVIDE ½" THICK CEMENTITIOUS BOARD AT ALL TILE WORK.
3. ALL DRYWALL SHALL BE SCREWED, TAPED, AND SANDED AS PER MANUFACTURER'S SPECIFICATIONS TO ACHIEVE THE APPEARANCE OF ONE CONTINUOUSLY SMOOTH SURFACE.
4. PROVIDE METAL CORNER REINFORCEMENT TRIM AT ALL OUTSIDE CORNER CONDITIONS.
5. FINISH DRYWALL JOINTS AND CONCEAL ALL FASTENERS USING USG PERF-A-TAPE SYSTEM OR EQ.
6. APPLY FINISHING COMPOUND, SAND, AND REPEAT AS NEEDED TO CONCEAL ALL JOINTS AND FASTENERS.
7. CLEAN ALL SURFACES AND LEAVE READY FOR PAINT.

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE CONCEALED WITHIN WALL/FLOOR/CEILING STRUCTURE. ALL WORK SHALL CONFORM TO ALL APPLICABLE CODE REQUIREMENTS INCLUDING THE INSTALLATION OF GFCI EQUIPMENT AS NECESSARY. CONTRACTOR SHALL MAKE ALL CONNECTIONS REQUIRED FOR MECHANICAL TRADES.
2. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ENGINEERING OF PANEL BOARD LAY OUT AND CIRCUITING.
3. FURNISH AND INSTALL ALL ELECTRICAL FIXTURES.
4. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND ENGINEERING OF PANEL BOARD LAYOUT AND CIRCUITING.
5. ALL CONVENIENCE OUTLETS SHALL BE INSTALLED AT +18" O.C., MOUNTED VERTICALLY. ALL SWITCHES TO BE INSTALLED AT +42" O.C. ABOVE ROUGH FLOOR, MOUNTED VERTICALLY, UNLESS OTHERWISE NOTED.
6. FURNISH AND INSTALL GROUND FAULT CIRCUIT INTERRUPTER (GFCI) AT ALL WET LOCATIONS AS INDICATED ON PLANS AND ALL LOCATIONS AS REQUIRED BY CODE.
7. GANG ALL SWITCHES UNDER ONE FACE PLATE WHERE POSSIBLE.
8. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY OUTLETS AND LIGHTING AT APPROPRIATE TIMES, VERIFY SCHEDULE WITH GENERAL CONTRACTOR.
9. EXISTING ELECTRICAL SERVICE TO BE MAINTAINED, UNDERGROUND - COORDINATE WITH LOWER VALLEY ENERGY
10. THE SERVICE DISCONNECTING MEANS SHALL BE LOCATED ON THE EXTERIOR OF THE BUILDING
11. ALL EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH A LIGHT IN THE IMMEDIATE VICINITY OF THE TOP LANDING OF THE STAIRS EXCEPT THAT ALL EXTERIOR STAIRWAYS TO THE BASEMENT SHALL BE PROVIDED WITH A LIGHT AT THE BOTTOM LANDING
12. ALL SWITCH & OUTLET COVERPLATES TO BE LUTRON DECORA STYLE OR EQUAL.
13. ALL COVERED EXTERIOR OUTLETS TO BE HUBBELL TAYMAC OR ARLINGTON

METAL WORK

1. PROVIDE AND INSTALL ALL STRUCTURAL AND MISCELLANEOUS METAL WORK AS SHOWN ON OR INFERRED FROM THE DRAWINGS.
2. ALL STRUCTURAL STEEL TO BE SHOP PRIMED. PROVIDE DETAILED SHOP DRAWINGS FOR ALL STEEL FABRICATION FOR ARCHITECT AND STRUCTURAL ENGINEERING REVIEW.

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CONCRETE

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE' (ACI 318-83) AND 'SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS' (ACI 301-84) LATEST EDITIONS.
2. SEE STRUCUTRAL DRAWINGS FOR CONCRETE DIMENSIONS, SPECIFICATIONS, AND REQUIREMENTS.
3. ALL PERIMETER WALL AND COLUMN FOOTINGS SHALL BE A MINIMUM OF 3'-6" BELOW FINISHED GRADE OR AS INDICATED ON DRAWINGS.
4. THE CONCRETE WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO ALLOW REASONABLE TIME TO SET SLEEVES, INSERTS, AND OTHER ACCESSORIES WHICH MUST BE IN POSITION BEFORE THE CONCRETE IS PLACED.
5. ALL CONCRETE WHICH DOES NOT CONFORM TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, INCLUDING STRENGTH, TOLERANCES, AND FINISHING, SHALL BE CORRECTED AS DIRECTED BY THE GENERAL CONTRACTOR AT THE CONCRETE SUBCONTRACTOR'S EXPENSE.
6. WATER USED IN MIXING CONCRETE SHALL BE CLEAN AND FREE FROM OILS, ACIDS, AND INJURIOUS AMOUNTS OF ALKALIS, ORGANIC MATERIALS, OR OTHER DETERIOUS SUBSTANCES.
7. SUBCONTRACTOR TO REVIEW ALL MEASUREMENTS WITH ACTING GENERAL CONTRACTOR PRIOR TO PLACEMENT OF CONCRETE.
8. FURNISH AND INSTALL ALL METAL ANCHORS, INSERTS, TIES, EXPANSION JOINT FILLERS, AND ALL DAMPROOFING AS REQUIRED.
9. FURNISH AND INSTALL ALL ANCHOR BOLTS AT APPROPRIATE OR SPECIFIED LOCATIONS. ANCHOR BOLTS SHALL BE SPACED PER STRUCUTRAL (MAX. 12" FROM CORNERS) WITH 3"SQ PLATE WASHERS AND NUTS INCLUDED.
10. FURNISH AND INSTALL ASPHALTIC DAMPROOFING WITH 1" XPS INSULATION BOARD ON SOIL SIDE OF ALL FOUNDATION WALLS, EXCEPT WITHIN 0'-8" OF FINAL FINISHED GRADE, IN STRICT ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
11. ALL INTERIOR SLABS SHALL BE PLACED OVER 10MIL HEAVY PLASTIC VAPOR BARRIER OVER A MIN. OF 0'-4" COMPACTED GRAVEL OVER A COMPACTED SOIL SUB-GRADE.
12. ALL SLABS SHALL HAVE REINFORCEMENT PER STRUCTURAL.
13. ALL EXPOSED EXTERIOR FLAT WORK, TERRACES, ETC., SHALL HAVE A NON-SLIP BRUSHED FINISHED SURFACE. INTERIOR SLABS TO HAVE FLOAT FINISH. PITCH ALL SLABS TO DRAIN.
14. ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED BY SUITABLE MEANS DURING PLACING IF VIBRATORS ARE USED. DO NOT OVER-VIBRATE OR TRANSPORT CONCRETE ALONG TO FORMS BY VIBRATING.
15. SUBCONTRACTOR TO CONFIRM ALL SCORING WITH ARCHITECT & GENERAL CONTRACTOR PRIOR TO POURING OF CONCRETE.

MECHANICAL

1. INSTALL PER MECHANICAL DRAWINGS AND SPECIFICATIONS:
   - 1.1. ALL DUCTWORK SHALL BE MINIMUM 24 GAUGE SHEET METAL.
   - 1.2. INSULATE ALL DUCTWORK RUNS IN UNHEATED OR UNCONDITIONED SPACES.
   - 1.3. FURNISH AND INSTALL DIFFUSER GRILLES AND TRIM.
   - 1.4. FURNISH AND INSTALL ALL CONTROL WIRING.
   - 1.5. ALL RETURN AIR DUCTS SHALL BE LINED AND BAFFLED PER MECHANICAL.
   - 1.6. FURNISH AND INSTALL VENTS FOR DRYER, BATHROOM EXHAUST FANS, AND WATER HEATER. ASSUME STANDARD METAL LOUVERS AND BOOTS AT EXTERIOR LOCATIONS.
2. PROVIDE PROGRAMMABLE THERMOSTATS FOR BOTH ZONES

CARPENTRY

1. CARPENTER SHALL VERIFY AND COORDINATE ALL FLOOR JOISTS AND ROOF TRUSSES AND STRUCTURAL WOOD MEMBER LOCATIONS AND SIZES WITH GENERAL CONTRACTOR.
2. CARPENTER SHALL FURNISH ALL LABOR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE ROUGH CARPENTRY WORK AS SHOWN ON THE DRAWINGS. ROUGH CARPENTRY SHALL INCLUDE ALL ROUGH HARDWARE, BOLTS, SCREWS, NAILS, FRAMING CLIPS, STRAPS, ANCHORS, ETC.
3. INSTALL DOUBLE FLOOR JOISTS BELOW PARTITIONS WHERE PARTITION RUNS PARALLEL TO JOISTS. INSTALL SOLID BRIDGING BELOW PARTITIONS PERPENDICULAR TO FLOOR JOIST FRAMING. INSTALL DOUBLE FLOOR JOISTS UNDER BATHTUBS AND LAUNDRY TRAYS.
4. ALL WOOD IN CONTACT WITH CONCRETE, MASONRY, OR SOIL SHALL BE OF PRESSURE TREATED LUMBER. ALL MECHANICAL FASTENERS IN CONTACT WITH PT LUMBER SHALL BE HOT-DIPPED GALVANIZED, STAINLESS, OR APPROVED FOR CONTACT BY TESTING AGENCY.
5. INSTALL ALL HORIZONTAL MEMBERS (BEAMS, LINTELS, JOISTS, ETC.) WITH CROWN UP.
6. FURNISH AND INSTALL 2X BLOCKING FOR BATHROOM ACCESSORIES, CABINETRY, PLUMBING FIXTURES, ELECTRICAL FIXTURES, ETC. COORDINATE LOCATION AND REQUIRED SIZE OF BLOCKING WITH GENERAL CONTRACTOR OR MANUFACTURER REQUIREMENTS.
7. CARPENTER SHALL INSTALL TEMPORARY RAILINGS, STAIRS, ETC. AS NEEDED AND REQUIRED BY CODE.
8. EXTERIOR SHEATHING SHALL BE FASTENED WITH GALVANIZED NAILS. ROOF SHEATHING SHALL BE CLIPPED AS PER A.P.A. STANDARDS.
9. EXTERIOR SHEATHING SHALL BE PLYWOOD OR OSB. THICKNESS SHALL BE MIN. ½", UNO BY STRUCTURAL ENGINEER. ALL EXTERIOR SHEATHING TO RECEIVE TYVEK HOME WRAP OR EQ. PRODUCT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. JOINTS SHALL BE TAPED.
10. VERIFY ALL DOOR AND WINDOW ROUGH OPENINGS WITH GENERAL CONTRACTOR AND DOOR/WINDOW MANUFACTURER.
11. ASSUME ENGINEERED WOOD I-JOIST SYSTEM FOR ALL FLOOR JOISTS, UNLESS OTHERWISE NOTED.
12. ALL FLOOR JOISTS SHALL BE BRACED LATERALLY WITH SOLID BLOCKING. AT WOOD FLOOR TRUSS SYSTEM, COMPLY WITH MANUFACTURER'S SPECIFICATIONS FOR BRACING.
13. WOOD TRUSS DIAGRAMS AND SHOP DRAWINGS SHALL BE SUPPLIED BY TRUSS MANUFACTURER AND SEALED BY REGISTERED ENGINEER. WOOD TRUSS CONTRACTOR/SUPPLIER SHALL DESIGN ALL TRUSSES, TRUSS BRACING, TRUSS BRIDGING, AND ALL ASSOCIATED CONNECTIONS INCLUDING END CONNECTIONS & HOLD-DOWNS TO CONFORM TO THE CONSTRUCTION DOCUMENTS.
14. SUBFLOOR SHALL BE APA RATED ¾" T&G EXTERIOR GRADE PLYWOOD GLUED AND NAILED UNLESS OTHERWISE NOTED.
15. THE MAXIMUM STAIR RISER SHALL BE 0'-7 ¾" AND THE MINIMUM TREAD DEPTH SHALL BE 0'-10". ALL RISERS SHALL BE CLOSED. ALL STAIRS SHALL MAINTAIN A MINIMUM HEADROOM CLEARANCE OF 6'-8" FROM EDGE OF NOSING. CONTRACTOR SHALL VERIFY ALL STAIR CONDITIONS IN FIELD.
16. FIRESTOP ALL SOFFITS AND CUT-PLATES. ALL FLOOR CONSTRUCTION THROUGH WHICH HEAT OR EXHAUST PASS THROUGH SHALL BE DRAFTSTOPPED.
17. ALL EXTERIOR DECKING, JOISTS, AND POSTS SHALL BE OF PRESSURE TREATED LUMBER. ALL EXTERIOR HANDRAILS, BALUSTERS, AND TRIP WORK SHALL BE OF PAINTED STEEL UNLESS OTHERWISE NOTED.
18. AT FLOOR TRUSSES W/AN OPEN WEB DESIGN, PROVIDE DRAFTSTOPPING FOR ALL OPEN AREAS WHICH EXCEED 1000SF TO DIVIDE SUCH AREAS INTO EQUAL AREAS OF LESS THAN 1000SF (IRC R302.12)
19. ANY WALL WHICH CONTAINS ANY PLUMBING LINES 1-1/2" IN DIAMETER OR GREATER SHALL BE IN A MINIMUM 2X6" WALL (SEC. 171.350(A))
20. STAIRS WITH FOUR OR MORE RISERS SHALL HAVE A CONTINUOUS, GRASPABLE HANDRAIL INSTALLED ON AT LEAST ONE SIDE OF THE STAIRWAY. THE HANDRAIL SHALL HAVE BOTH ENDS RETURNED TO THE WALL (SECTION R311.5.6)
21. THE MINIMUM STAIR GUARD RAIL HEIGHT SHALL BE 36". THE GUARDRAIL SHALL BE CONSTRUCTED SO AS TO NOT ALLOW THE PASSAGE OF A 4" SPHERE.

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	ISSUED DATE	ISSUED FOR
	06.15.2022	ISSUE FOR PERMIT

PROFESSIONAL SEAL

LICENSED ARCHITECT
EDMUND AUSTIN DEPREE
No. C-3004
STATE OF WYOMING

PROJECT
GRACE SPA
LOCATION

2221	Project No.
SC	Drawn By
AJ	Checked By
Discipline	Drawing No.
G	0.0

Drawing Name

GENERAL NOTES

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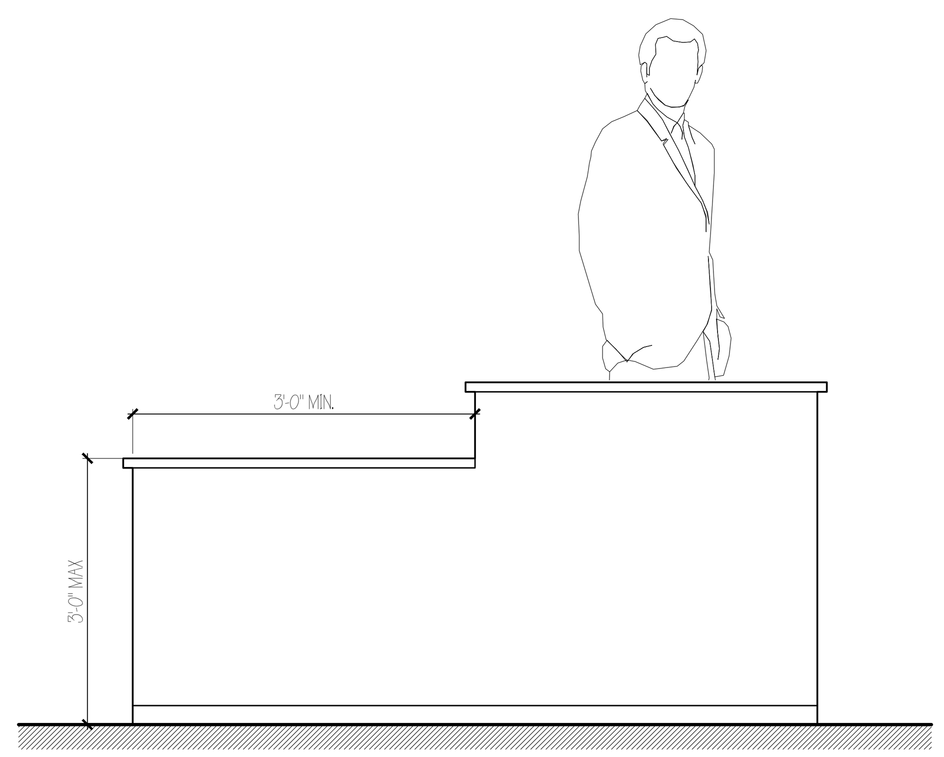
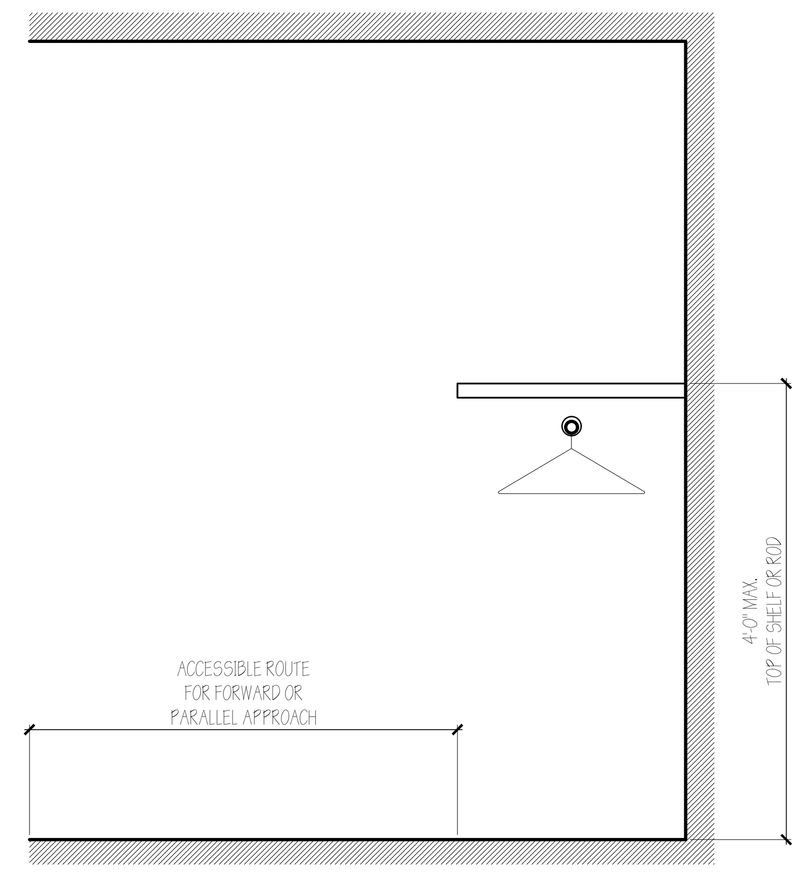
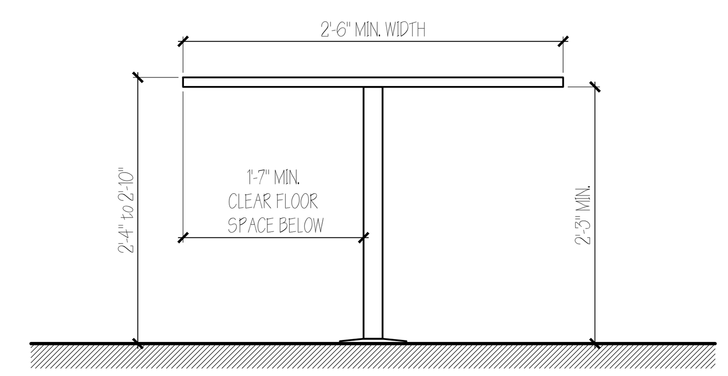
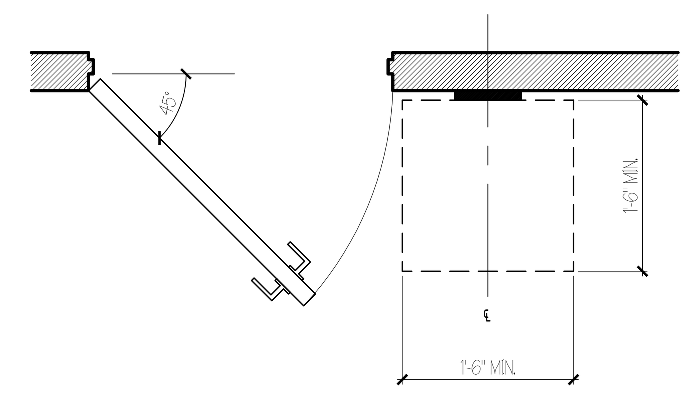
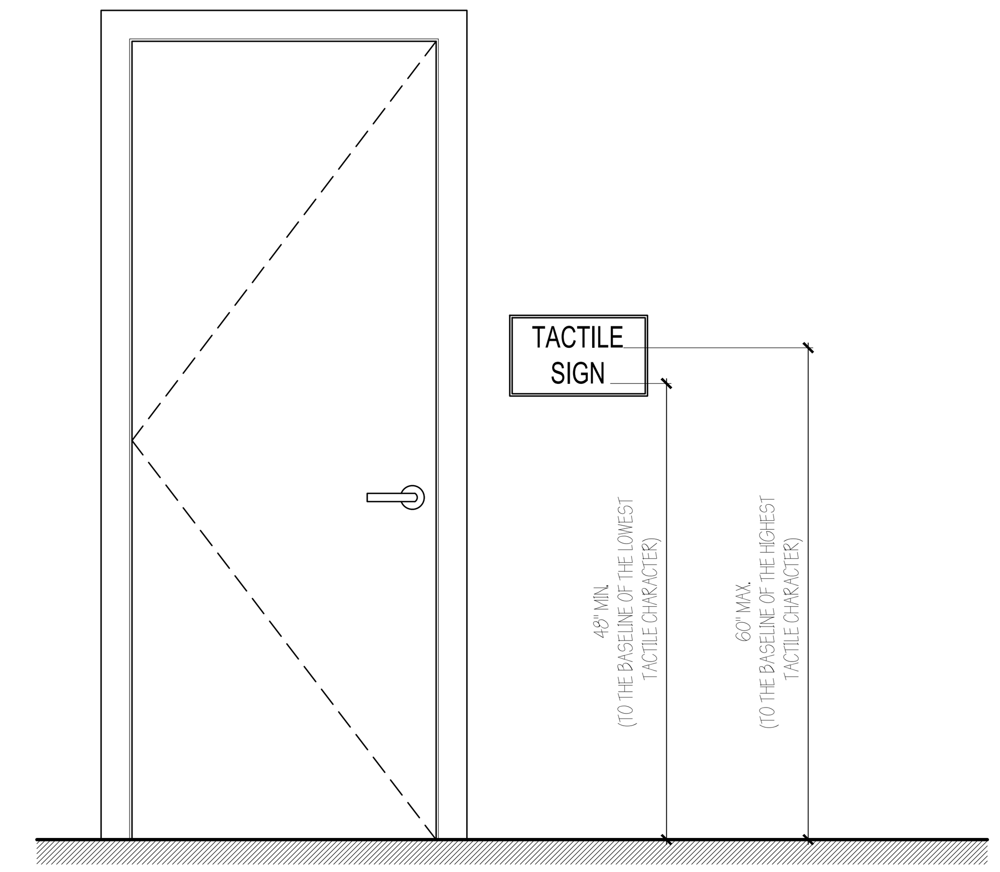
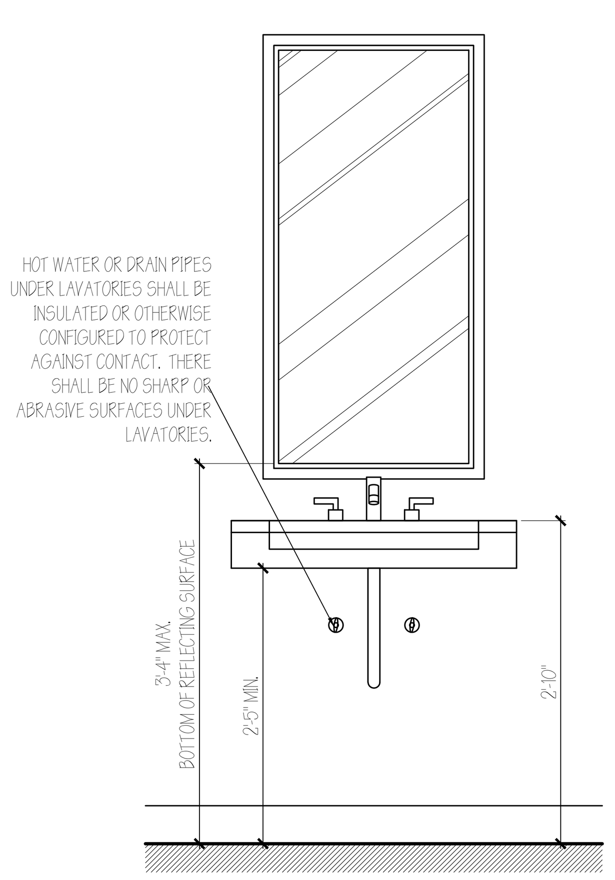






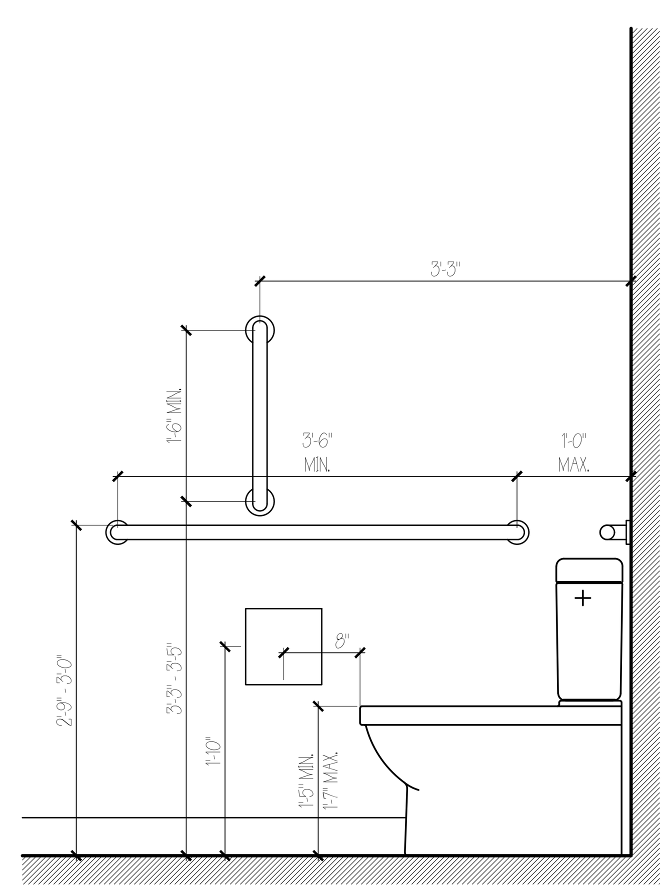


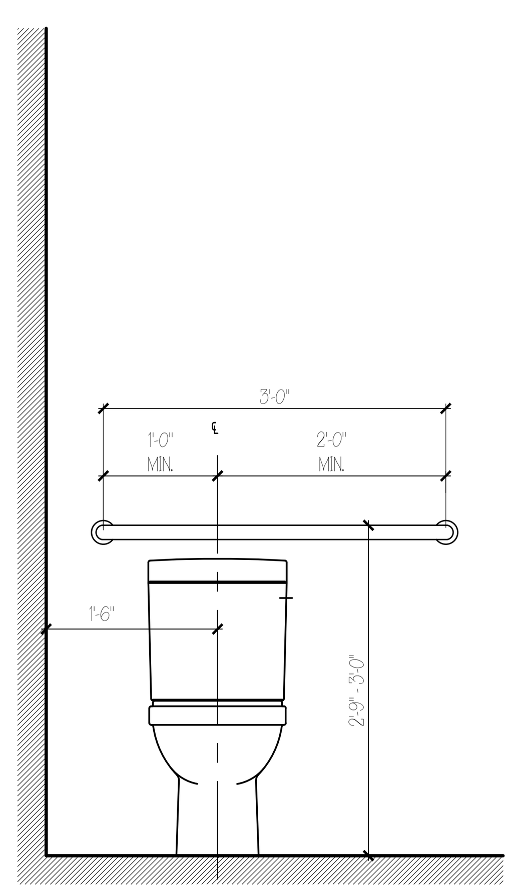




RESTROOM VANITY

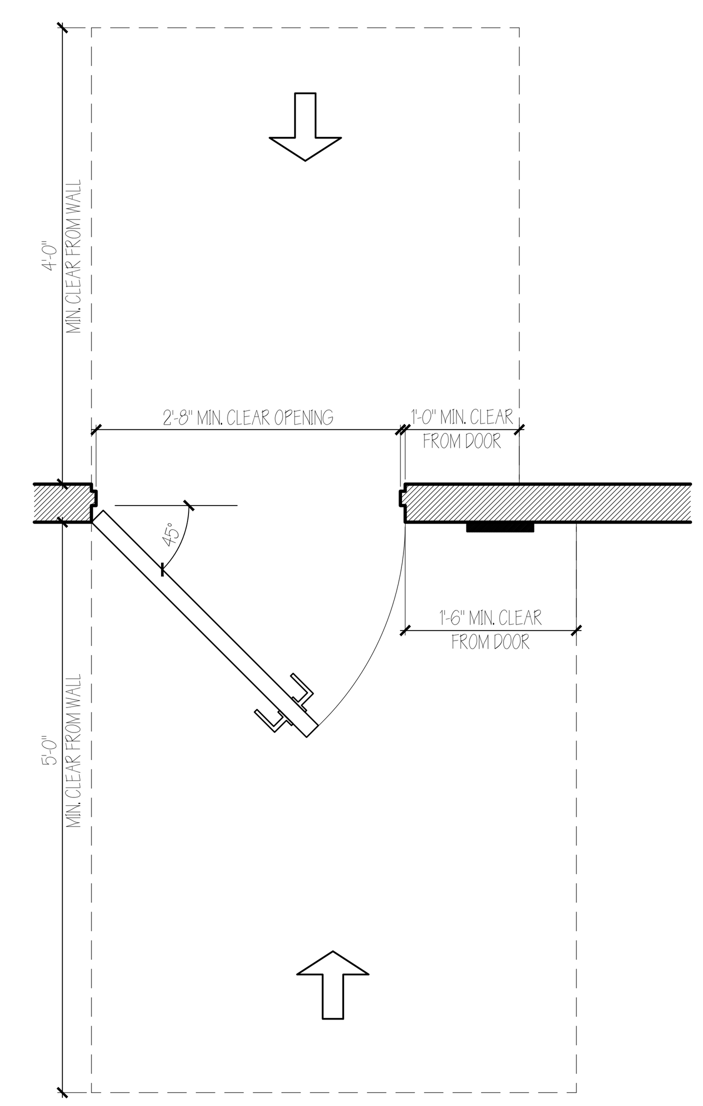
PER ICC/ANSI A117.1-2017 CHAPTER 6.603.3 AND 606.





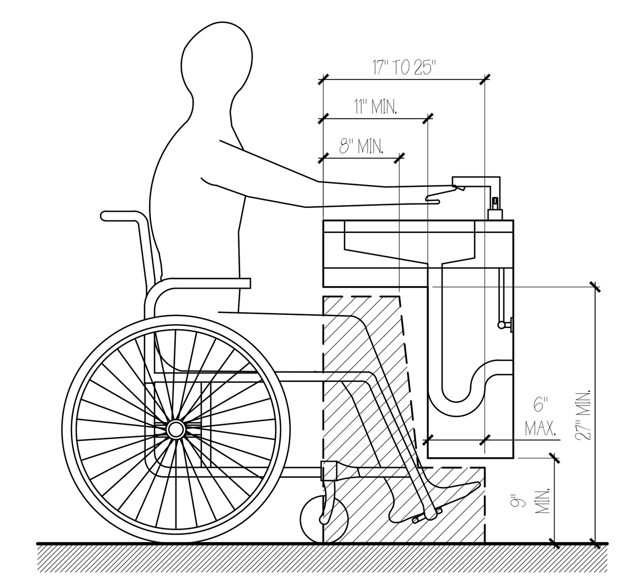
RESTROOM WC LOCATION & GRAB BARS

PER ICC/ANSI A117.1-2017 CHAPTER 6.604.5 AND 604.10.7



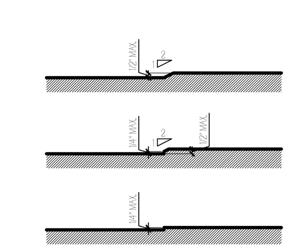
FRONT APPROACH CLEARANCES AT DOORS

PER ICC A117.1-2017



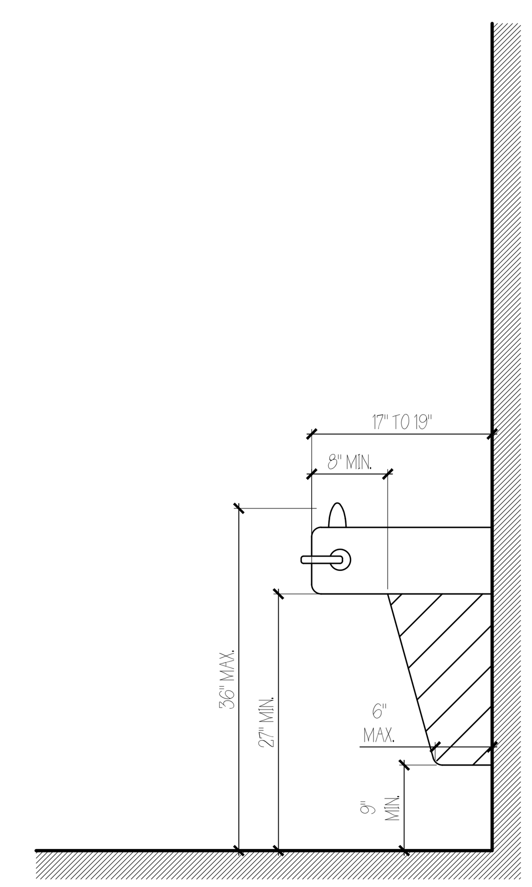
RESTROOM LAVATORY - KNEE & TOE CLEARANCE

PER ICC/ANSI A117.1-2017 CHAPTER 3.306.2 AND 6.603.3 AND 606.



ACCESSIBLE THRESHOLD REQUIREMENTS

PER ICC/ANSI A117.1-2017 CHAPTER 3.303.2 AND 303.3



DRINKING FOUNTAIN

PER ICC/ANSI A117.1-2017 CHAPTER 6.602.4

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PROFESSIONAL SEAL

LICENSED ARCHITECT
EDMUND AUSTIN DEPREE
No. C-3004
STATE OF WYOMING

PROJECT
GRACE SPA
LOCATION

2221	Project No.
SC	Drawn By
AJ	Checked By
Discipline	Drawing No.
G	0.1

Drawing Name

ACCESSIBILITY NOTES

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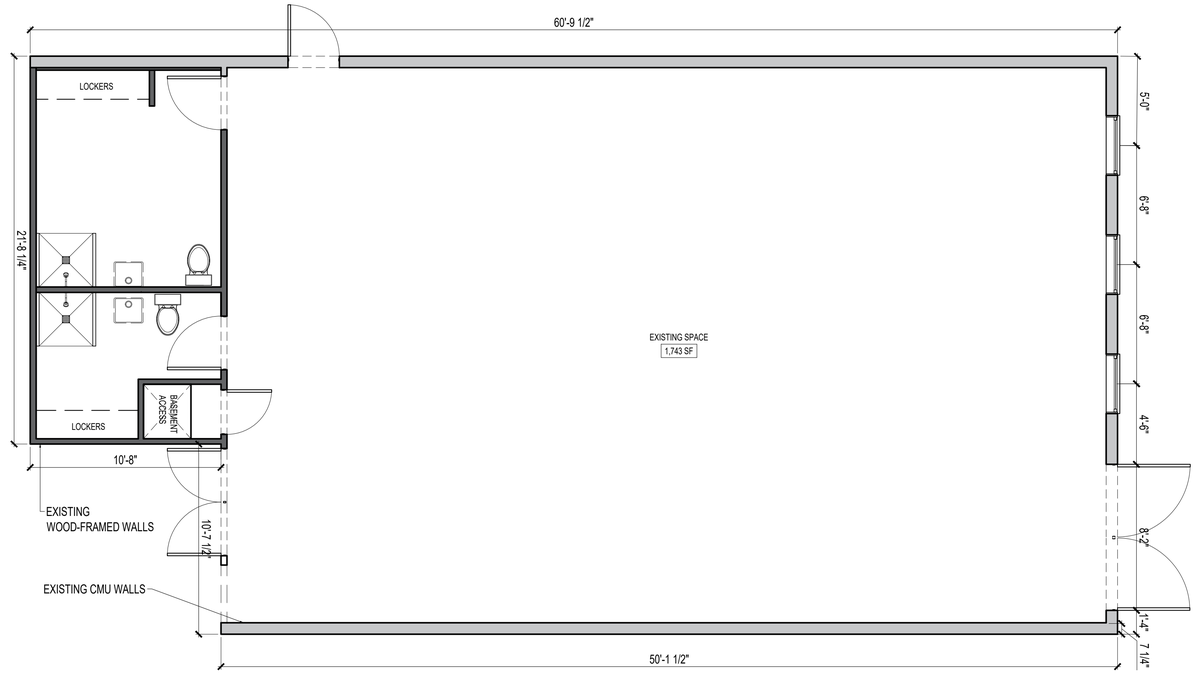
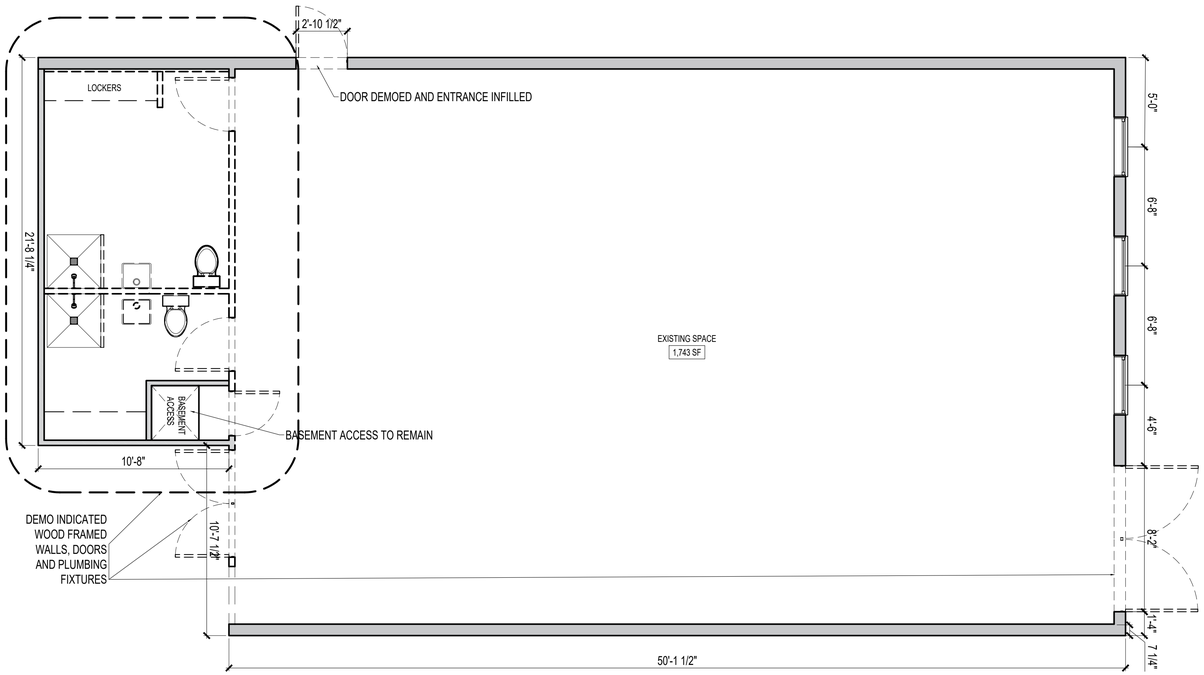


A EXISTING PLAN
SCALE: 1/4" = 1'-0"
NORTH



B DEMOLITION PLAN
SCALE: 3/8" = 1'-0"
NORTH

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DEMO LEGEND

- EXISTING WALL TO BE DEMOLISHED
- EXISTING CMU WALL (ALL TO REMAIN)
- EXISTING WOOD FRAMED WALL TO REMAIN

	ISSUED DATE	ISSUED FOR
	06.15.2022	ISSUE FOR PERMIT

PROFESSIONAL SEAL

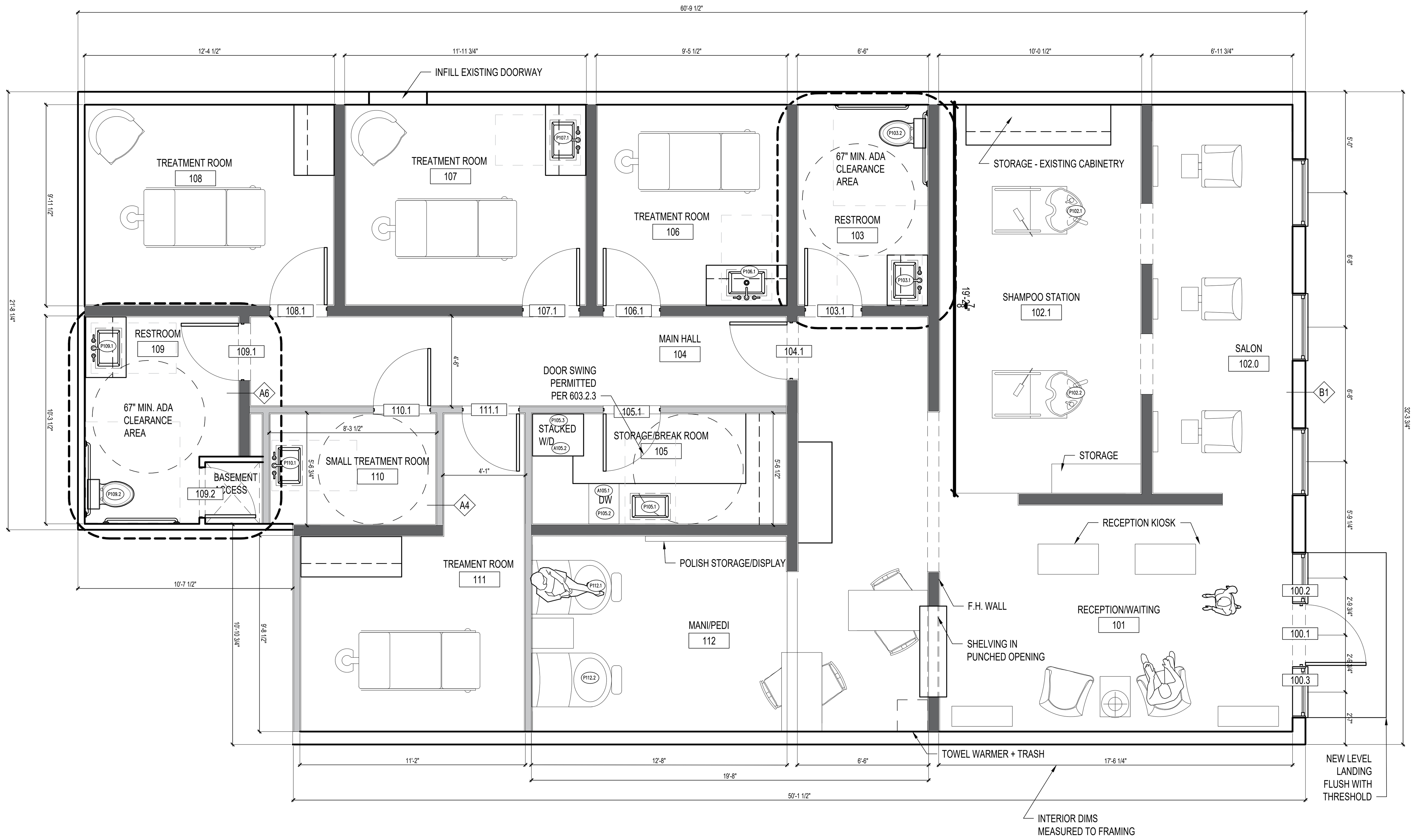
LICENSED ARCHITECT
EDMUND AUSTIN DEPREE
No. C-3004
STATE OF WYOMING

PROJECT
GRACE SPA
LOCATION

2221	Project No.
SC	Drawn By
AJ	Checked By
Discipline	Drawing No.
D	1.00

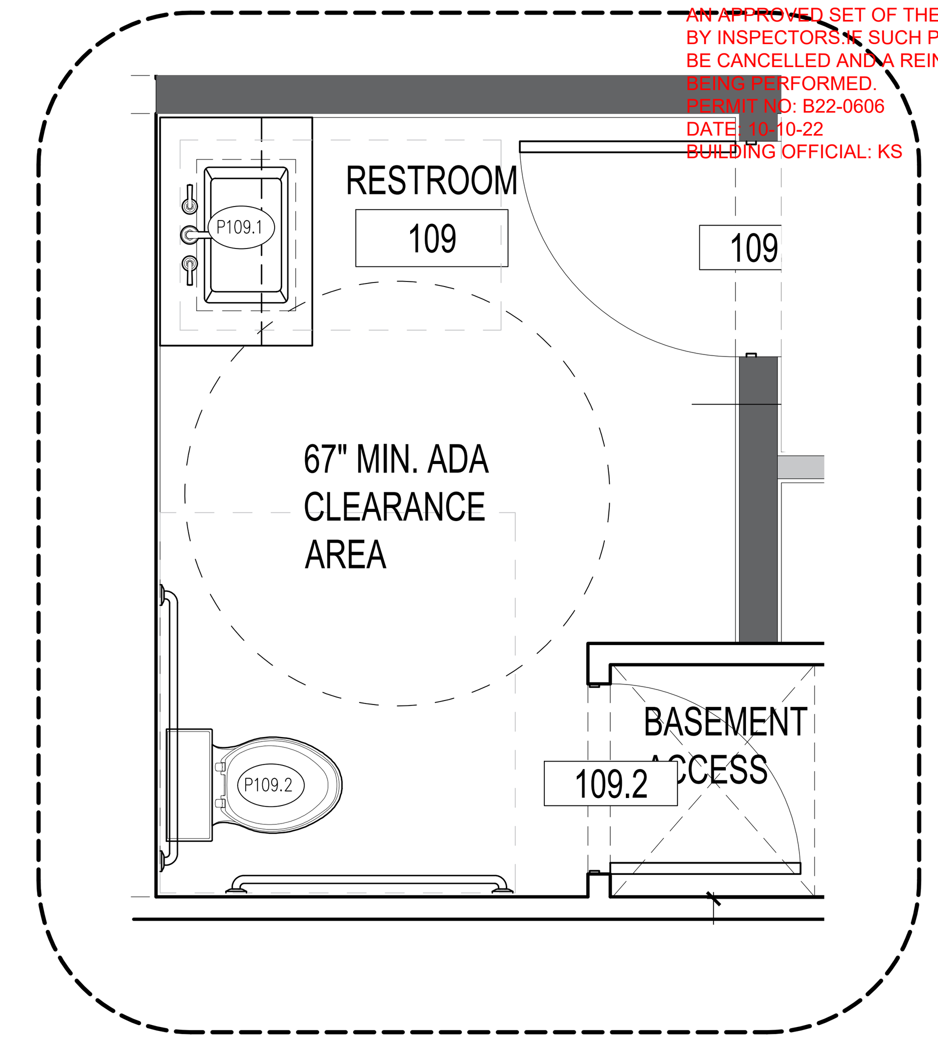
Drawing Name
DEMOLITION PLAN

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS. IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

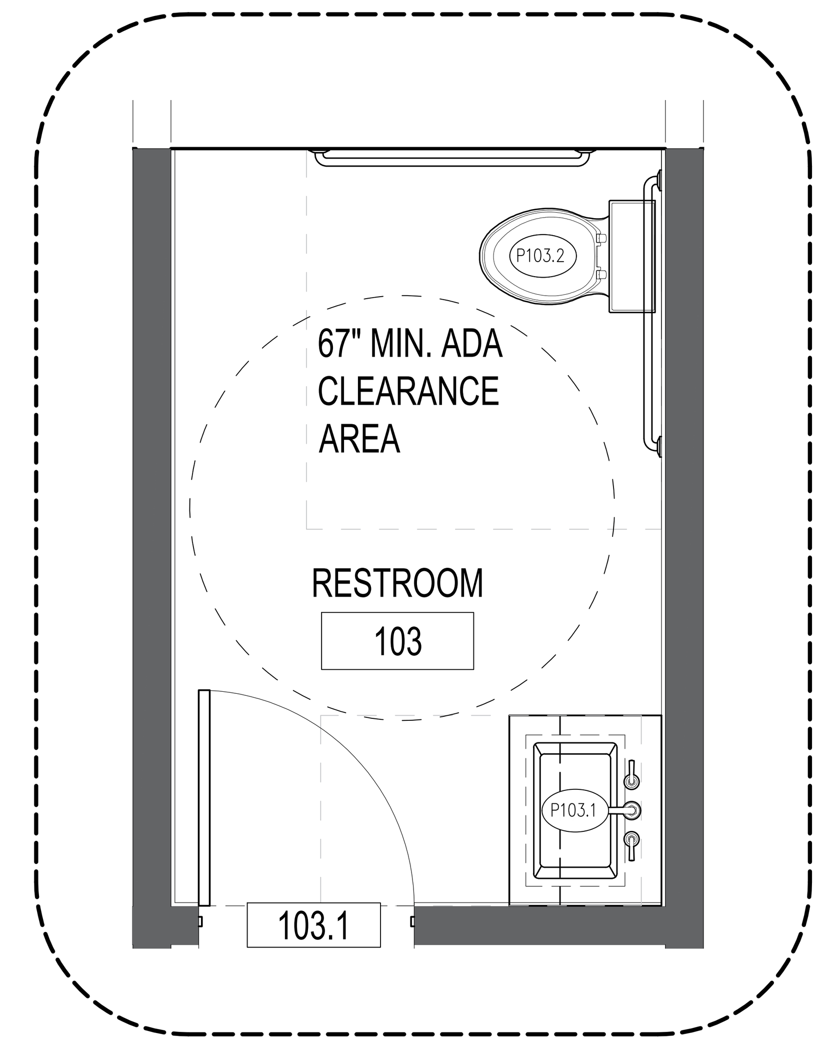


A PROPOSED PLAN
SCALE: 1/4" = 1'-0"

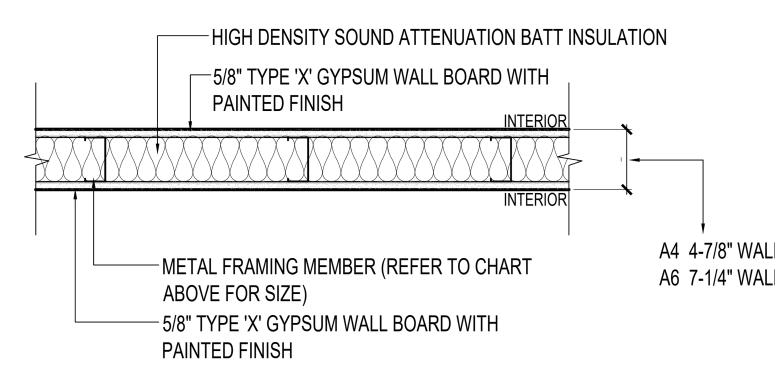
NORTH



B RESTROOM 109 DETAIL
SCALE: 1/2" = 1'-0"



C RESTROOM 103 DETAIL
SCALE: 1/2" = 1'-0"



Ax WALL PARTITION-1 HOUR RATED (UL U305)
SCALE: 1" = 1'-0"

ROOM NO.	ROOM NAME	KEY NO.	ITEM	MFR.	MODEL	FINISH	NOTES
102	SALON	P101.1	SALON WASH BASIN FILLER	TBD	TBD	TBD	
		P101.2	SALON WASH BASIN FILLER	TBD	TBD	TBD	
103	RESTROOM	P103.1	LAVETORY SINK	TBD	TBD	TBD	ADA COMPLIANT
		P103.1	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
		P103.2	TOILET	TBD	TBD	TBD	ADA COMPLIANT
105	STORAGE/BREAK ROOM	P105.1	LAVETORY SINK	TBD	TBD	TBD	ADA COMPLIANT
		P105.2	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
		P105.2	DISHWASHER HOOKUP	TBD	TBD	TBD	
		P105.3	WASHER HOOKUP	TBD	TBD	TBD	ADA COMPLIANT
		A105.1	DISHWASHER	TBD	TBD	TBD	ADA COMPLIANT
		A105.2	STACKED WASHER DRYER	BY OWNER	BY OWNER	BY OWNER	
106	TREATMENT ROOM	P106.1	LAVETORY SINK	TBD	TBD	TBD	ADA COMPLIANT
		P106.2	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
107	TREATMENT ROOM	P107.1	LAVETORY SINK	TBD	TBD	TBD	
		P107.1	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
109	RESTROOM	P109.1	LAVETORY SINK	TBD	TBD	TBD	ADA COMPLIANT
		P109.1	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
		P109.2	TOILET	TBD	TBD	TBD	ADA COMPLIANT
110	SMALL TREATMENT ROOM	P110.1	LAVETORY SINK	TBD	TBD	TBD	ADA COMPLIANT
		P110.1	LAVETORY FAUCET	TBD	TBD	TBD	ADA COMPLIANT
112	MANI/PEDI AREA	P112.1	PEDI UNIT FILLER	TBD	TBD	TBD	
		112.2	PEDI UNIT FILLER	TBD	TBD	TBD	

D PLUMBING AND APPLIANCE SCHEDULE

DOOR NO.	ROOM	INT/EXT	FUNCTION	WIDTH	HEIGHT	MFR.	MODEL	STICKING	PANEL STYLE
101.1	RECEPTION/WAITING	EXT	LH SWING	36"	80"	TBD	TBD	TBD	TBD
101.2	SIDELIGHT	EXT	FIXED SIDELIGHT	24"	80"	TBD	TBD	TBD	TBD
101.3	SIDELIGHT	EXT	FIXED SIDELIGHT	24"	80"	TBD	TBD	TBD	TBD
103.1	RESTROOM	INTERIOR	LH SWING	34"	80"	TBD	TBD	TBD	TBD
104.1	MAIN HALL	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	GLASS
105.1	STORAGE/BREAK ROOM	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	TBD
106.1	TREATMENT ROOM	INTERIOR	LH SWING	34"	80"	TBD	TBD	TBD	TBD
107.1	TREATMENT ROOM	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	TBD
108.1	TREATMENT ROOM	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	TBD
109.1	RESTROOM	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	TBD
109.2	RESTROOM	INTERIOR	RH SWING	34"	80"	TBD	TBD	TBD	TBD
110.1	SHOWER	INTERIOR	LH SWING	34"	80"	TBD	TBD	TBD	TBD
111.1	TREATMENT ROOM	INTERIOR	LH SWING	34"	80"	TBD	TBD	TBD	TBD

E DOOR SCHEDULE

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WALL TYPE LEGEND

- A4 NEW 3-5/8" METAL STUD WALL
- A6 NEW 6" METAL STUD WALL
- B1 EXISTING CMU WALL - TO BE PAINTED

ISSUED DATE	ISSUED FOR
06.15.2022	ISSUE FOR PERMIT

PROFESSIONAL SEAL

LICENSED ARCHITECT
EDMUND AUSTIN DEPREE
No. C-3004
STATE OF WYOMING

PROJECT
GRACE SPA
LOCATION

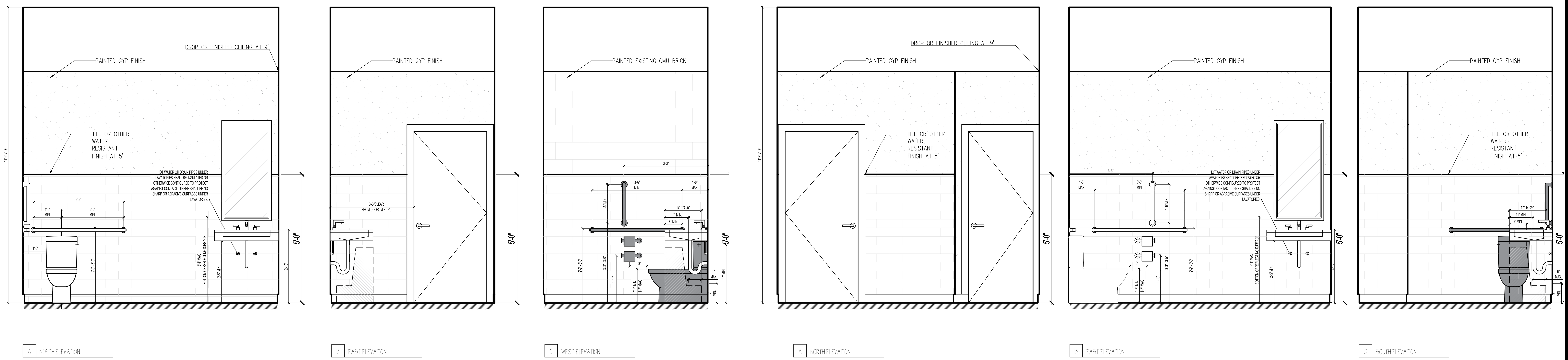
2221	Project No.
SC	Drawn By
AJ	Checked By

Discipline
A

Drawing No.
1.01

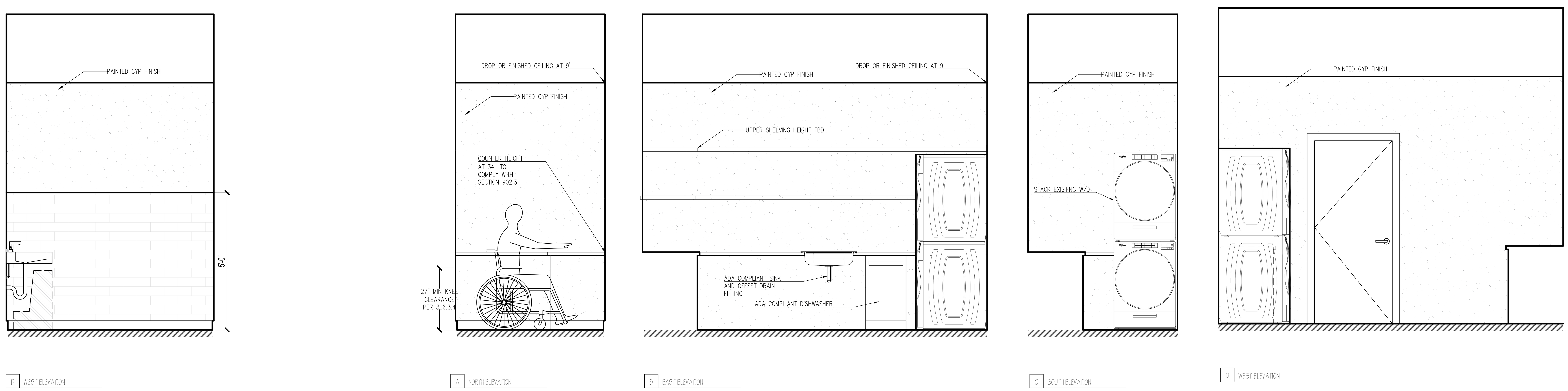
Drawing Name
PROPOSED FLOOR PLAN

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS.IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS



1 RESTROOM 103 ELEVATIONS
SCALE: 1/4" = 1'-0"

2 RESTROOM 109 ELEVATIONS
SCALE: 1/4" = 1'-0"



2 RESTROOM 109 ELEVATIONS
SCALE: 1/4" = 1'-0"

3 BREAK ROOM 105 ELEVATIONS
SCALE: 1/4" = 1'-0"

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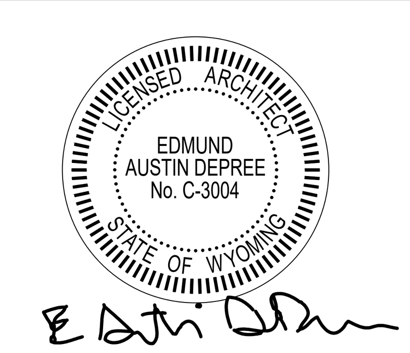

PROJECT
GRACE SPA
LOCATION

2221	Project No.
SC	Drawn By
AJ	Checked By
Discipline	Drawing No.
A	2.00

Drawing Name
INTERIOR ELEVATIONS

SYMBOL LEGEND

- SMOKE DETECTOR
- DUCT PROBE TEMPERATURE SENSOR
- DUCT AVERAGING TEMPERATURE SENSOR
- AIR FLOW STATION
- FREEZE STAT
- PIPE WELL TEMPERATURE SENSOR
- RELATIVE HUMIDITY SENSOR
- ULTRA VIOLET LIGHT
- DIFFERNTIAL PRESSURE SENSOR
- STATIC PRESSURE SENSOR
- DIGITAL INPUT OR OUTPUT
- VFD SPEED OUTPUT
- VFD POWER CONSUMPTION OUTPUT
- CONTROL VALVE WITH ELECTRIC ACTUATOR
- CONTROL VALVE WITH ELECTRIC ACTUATOR
- DUCT MOUNTED HUMIDIFIER
- WATER PUMP
- VARIABLE FREQUENCY DRIVE
- CHILLED WATER COOLING COIL
- DIRECT EXPANSION COOLING COIL
- HOT WATER HEATING COIL
- FAN
- PIPING
- FACE AND BYPASS HEATING COIL
- AIR DAMPER WITH ELECTRONIC ACTUATOR
- AIR FILTER
- Abandoned In Place — SIGNIFIES EQUIPMENT THAT HAS BEEN ABANDONED IN PLACE
- DUCTWORK
- EXTERIOR WALL OR ROOF
- FLEXIBLE DUCT CONNECTION
- CONNECTION TO EXISTING
- LIMIT OF DEMOLITION
- THERMOSTAT/CONTROLLER
- HEAT RECOVERY VENTILATOR CONTROLLER

DEFINITIONS

ADJ.	ADJUSTABLE
AFS	AIR FLOW STATION
AI	ANALOG IN
AO	ANALOG OUT
CC	COOLING COIL
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CMD	COMMAND
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
DAT	DISCHARGE AIR TEMPERATURE
DHW	DOMESTIC HOT WATER
DI	DIGITAL IN
DN	ROUTE DOWN
DO	DIGITAL OUT
DP	DIFFERENTIAL PRESSURE
E	EXISTING
EA	EXHAUST AIR
ETR	EXISTING TO REMAIN
F	DEGREES FARENHEIT
FF	FINAL FILTER
FRZ	FREEZE-STAT
H	ENTHALPY
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
LAT	LEAVING AIR TEMPERATURE
LPR	LOW PRESSURE RETURN
LPS	LOW PRESSURE STEAM
MAT	MIXED AIR TEMPERATURE
MOA	MINIMUM OUTSIDE AIR
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NFC	NOT FOR CONSTRUCTION
OA	OUTSIDE AIR
PF	PRE FILTER
PHC	PREHEAT COIL
PID	PROPORTIONAL–INTEGRAL–DERIVATIVE
POS	POSITION
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
S	SANITARY DRAIN PIPE
S/T HX	SHELL AND TUBE HEAT EXCHANGER
SAT	SUPPLY AIR TEMPERATURE
SP	STATIC PRESSURE
SST	START STOP
T	TEMPERATURE
U	ROUTE UP
V	SANITARY VENT PIPE
VIF	VERIFY IN FIELD
VSD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF

APPLICABLE CODES:

2021 INTERNATIONAL ENERGY CONSERVATION CODE
2020 NATIONAL ELECTRICAL CODE - NFPA 70
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL FIRE CODE AND INTERNATION W.U.I.
2021 INTERNATIONAL FUEL GAS CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL PLUMBING CODE
ALL LOCAL AMMENDMENTS

GENERAL NOTES:

COORDINATION
THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING AND FULLY UNDERSTANDING ALL ASPECTS OF THE CONTRACT DOCUMENTS INCLUDING COORDINATION BETWEEN THE DRAWINGS AND EXISTING CONDITIONS. ANY DISCREPANCIES SHALL BE BROUGHT IMMEDIATELY TO THE DESIGN ENGINEER ATTENTION IN WRITING FOR CLARIFICATION.

EXISTING CONDITIONS
THE CONTRACTOR SHALL FIELD VERIFY AND INVESTIGATE EXISTING BUILDING CONDITIONS IN ORDER TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF DEMOLITION AND NEW CONSTRUCTION AS DESCRIBED IN THESE DOCUMENTS. THE CONTRACTOR SHALL REASONABLY DETERMINE THE IMPACT THAT DEMOLITION AND NEW CONSTRUCTION WILL HAVE ON EXISTING BUILDING SYSTEMS, INCLUDING BUT NOT LIMITED TO STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, COMMUNICATION, FIRE PROTECTION SYSTEMS AND ALL OTHER FACTORS THAT WILL AFFECT THE PROJECT. THE CONTRACTOR SHALL FIELD VERIFY ALL CONNECTION SIZES FOR NEW DAMPERS AND DUCTWORK BEFORE FABRICATION. FAILURE TO DO SO WILL NOT BE GROUNDS FOR ADDITIONAL COSTS TO THE OWNER AFTER PROJECT HAS BEEN AWARDED.

MECHANICAL GENERAL NOTES:

A. QUALITY OF WORK
1. CONTRACT DOCUMENTS FOR MECHANICAL WORK (HVAC AND PLUMBING) ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY. CONSULT ELECTRICAL AND STRUCTURAL CONSTRUCTION DRAWINGS FOR FAMILIARITY WITH CONDITIONS AFFECTING WORK. VERIFY ALL SPACES IN WHICH WORK WILL BE PERFORMED BY ON-SITE MEASUREMENTS. DO NOT SCALE DRAWINGS.
2. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTUNANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATION, CONTRACT DOCUMENTS AND APPLICABLE CODES AND REGULATIONS.
3. "PROVIDE" AND/OR "INSTALL" SHALL MEAN "FURNISH AND INSTALLATION" AND SHALL INCLUDE ALL EQUIPMENT, DEVICES, HARDWARE, MOUNTS, LABOR, RIGGING, SUBCONTRACTS, ETC. THAT RESULT IN A COMPLETE AND FUNCTIONAL PROJECT. CONTRACTOR SHOULD ASSUME ALL WORK AS SHOWN ON THESE PLANS IS FOR "FURNISH AND INSTALLATION"I.E. A PRODUCT THAT IS DESIGNATED "OWNER FURNISHED".
4. PROVE ALL EQUIPMENT, ACCESSORIES, SUPPORTS, FITTINGS AND ALL OTHER INCIDENTAL MATERIAL NEEDED FOR THE COMPLETE AND OPERATING INSTALLATION, MINOR ITEMS TO FINISH THE WORK SUCH AS PATCHING, BLOCKING, TRIM, TOUCH-UP PAINT, ETC., SHALL BE PROVIDED WHETHER OR NOT INDICATED IN THE CONTRACT DOCUMENTS.
5. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
6. THE LOCATION OF EXISTING UTILITIES IS ONLY SHOWN IN AN APPROXIMATE WAY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AN REPAIR ALL DAMAGED CAUSED BY FAILURE TO EXACTLY LOCATE AN PRESERVE ANY AND ALL UTILITIES UNLESS OTHERWISE INDICATED.
7. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS IN STRAIGHT SECTIONS OF PIPE OR DUCT AS RECOMMENDED BY THE MANUFACTURER.
8. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OR EQUIPMENT ARE REQUIRED, THE PRODUCTS OF ONE MANUFACTURER SHALL BE USED.
9. ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER. BY THE GENERAL CONTRACTOR AFTER FINAL ACCEPTANCE.

B. DUCTWORK
1. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
2. ALL GALVANIZED DUCTWORK SHALL BE FABRICATED FROM LOCK-FORMING QUALITY, G-90 SHEET METAL.
3. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
4. FLEXIBLE DUCTWORK SHALL BE PERMITTED FOR CONNECTIONS TO SUPPLY DIFFUSERS. FLEXIBLE DUCTWORK SHALL NOT EXCEED 6' IN LENGTH.
5. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH: LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
6. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFFS. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. INSTALL FLAGGING ON ADJUSTABLE DAMPERS SO AS TO BE EASILY VISIBLE.
7. ALL DUCTWORK LOCATED IN THE CEILING PLENUM SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION.
8. HORIZONTAL DUCTWORK HANGERS AND SUPPORT SHALL BE INSTALLED WITH THE SPACING AS FOLLOWS:
   - 8.1. EQUIVALENT DUCT DIAMETER <5", MAXIMUM HANGER SPACING IS 8FT.
   - 8.2. EQUIVALENT DUCT DIAMETER 5"-38" MAXIMUM HANGER SPACING IS 6 FT.
   - 8.3. EQUIVALENT DUCT DIAMETER >38", MAXIMUM HANGER SPACING IS 4 FT.
   - 8.4. SEE HVAC SPECIFICATION FOR HANGER REQUIREMENTS.
9. VERTICAL DUCTWORK HANGERS AND SUPPORT SHALL BE INSTALLED WITH THE SPACING AS FOLLOWS:
   - 9.1. EQUIVALENT DUCT DIAMETER <5", MAXIMUM HANGER SPACING IS 8FT.
   - 9.2. EQUIVALENT DUCT DIAMETER 5"-38" MAXIMUM HANGER SPACING IS 6 FT.
   - 9.3. EQUIVALENT DUCT DIAMETER >38", MAXIMUM HANGER SPACING IS 4 FT.
   - 9.4. FLEXIBLE DUCT ANY DIAMETER, MANUFACTUERER'S RECOMMENDATION BUT NOT MORE THAN EVERY 5 FEET. DUCT SAG SHALL BE LIMITED TO 1/2" PER FOOT BETWEEN HANGERS.
   - 9.5. ACCEPTABLE DUCT SUPPORT EQUIPMENT INCLUDES DUCT STRAPPING, AND UNISTRUT BRACKETS HUNG WITH $\frac{3}{4}$" THREADED ROD AND APPROPRIATE CEILING HANGERS.
   - 9.6. SEE HVAC SPECIFICATION FOR ADDITIONAL HANGER REQUIREMENTS.

D. PIPING
1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
2. FABRICATE PIPING FROM FIELD VERIFIED DIMENSIONS. PRIOR TO FABRICATING PIPING VERIFY CEILING CLEARANCES WITH STRUCTURE, DUCTS, ETC. COORDINATE THE INSTALLATION OF BOTH MECHANICAL AND PLUMBING PIPING WITH SPRINKLER PIPING. INSTALL PIPING AFTER ALL DUCTWORK IS INSTALLED TO REDUCE CONFLICTS.
3. SEE SPECIFICATION FOR ACCEPTABLE PIPING MATERIALS.
4. PROVIDE SHUTOFF BALL VALVES VALVES AT ALL NEW BRANCHES BRANCHES.
5. PROVIDE INSULATION ON ALL NEW PIPING PER MECHANICAL AND PLUMBING SPECIFICATIONS.
6. SEE SPECIFICATION FOR PIPING HANGER SPACING.

TOWN OF JACKSON
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PERMIT NO: B22-0606
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NORTHWORKS
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	08.21.2022	ISSUE FOR PERMIT

Professional Engineer
TATE J. COLBERT
17980
WYOMING

PROJECT
GRACE SPA
LOCATION

	Project No.
TC	Drawn By
TC	Checked By
Discipline: M	Drawing No.: 0.1

Drawing Name
NOTES, LEGEND, ABBREVIATIONS

HVAC SPECIFICATIONS:

1. GENERAL:
   - 1.A. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIAL WHICH VIOLATED ANY OF THE ABOVE LAWS AND REGULATION. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH A VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
   - 1.B. INVESTIGATE EACH SPACE THROUGH WHICH EQUIPMENT MUST BE MOVED OR INSTALLED. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH AVAILABLE RESTRICTIVE SPACES. ASCERTAIN FROM BUILDING OWNER AT WHAT TIMES OF DAY EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
   - 1.C. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN THEIR PRICE FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ENGINEER/OWNER. COORDINATION WITH THE EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES IS REQUIRED.
   - 1.D. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
   - 1.E. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
   - 1.F. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18 INCH X 18 INCH) AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID.
   - 1.G. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK WILL BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES IN MAKING UP THE WORK PROPOSAL.
   - 1.H. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING WORK TO ENSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. ALL SYSTEM SHUTDOWNS AFFECTING OTHER AREAS SHALL BE COORDINATED WITH BUILDING OWNER. INSTALL ISOLATION VALVES AT POINT OF CONNECTION TO THE EXISTING PIPING. PROVIDE TEMPORARY DUCT CAPS AND/OR CONNECTIONS TO MINIMIZE SHUTDOWN TIME.
   - 1.I. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND APPROVED MANNER. RESTORE EXISTING WORK DISTURBED WHILE INSTALLING NEW WORK TO ACCEPTABLE CONDITION AS DETERMINED BY ARCHITECT.
   - 1.J. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW SYSTEM.
   - 1.K. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
   - 1.L. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL.
   - 1.M. PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
   - 1.N. ALL PRESENT MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT AND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ENGINEER OR AS NOTED TO BE RELOCATED ON THE DRAWINGS SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
   - 1.O. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
   - 1.P. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
   - 1.Q. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
   - 1.R. UNLESS OTHERWISE SPECIFICALLY SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
   - 1.S. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
   - 1.T. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
   - 1.U. SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT A CAREFUL EXAMINATION OF THE PORTIONS OF THE EXISTING BUILDING, EQUIPMENT, ETC., WHICH AFFECT THIS WORK, AND THE ACCESS TO SUCH SPACES, HAS BEEN MADE AND THAT THE CONTRACTOR IS FAMILIAR WITH EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE EXECUTION OF THE WORK. LATER CLAIMS SHALL NOT BE MADE FOR LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN DURING SUCH AN EXAMINATION. THE ON-SITE INSPECTION SHALL VERIFY EXISTING DUCTWORK, PIPING (SIZES, CLEARANCES, ETC.) AND CONDITIONS.
   - 1.V. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
   - 1.W. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED THEIR EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
   - 1.X. GUARANTEE:
     - 1.X.1. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNERS PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
     - 1.X.2. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY W0RKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
     - 1.X.3. THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF ALL SYSTEMS UNTIL THE FINAL ACCEPTANCE OF THE WORK.
     - 1.X.4. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE A 5-YEAR WARRANTY.
   - 1.Y. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
   - 1.Z. DEFINITIONS:
     - 1.Z.1. "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
     - 1.Z.2. "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
     - 1.Z.3. "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
     - 1.Z.4. "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
     - 1.Z.5. "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN ENCLOSURES.
     - 1.Z.6. "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
     - 1.Z.7. "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
2. SCOPE OF WORK:
   - 2.A. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
   - 2.B. THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
   - 2.C. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT PROVIDE COMPLETE SET OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, DUCTWORK, PIPING AND CONTROL SYSTEMS INDICATING CAPACITY DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ENGINEER.
   - 2.D. WITHIN 15 DAYS AFTER AWARD OF CONTRACT, SUBMIT FOR REVIEW, A LIST OF ALL MATERIAL AND EQUIPMENT MANUFACTURER'S PRODUCTS THAT ARE PROPOSED, AS WELL AS NAMES OF ALL SUBCONTRACTORS WHOM THIS TRADE PROPOSES TO UTILIZE ON THIS PROJECT.
3. SHOP DRAWINGS:
   - 3.A. INDICATE ON EACH SUBMISSION: PROJECT NAME AND LOCATION, ENGINEER, ITEM IDENTIFICATION AND APPROVAL STAMP OF PRIME CONTRACTOR, SUBCONTRACTOR NAMES AND PHONE NUMBERS, REFERENCE TO THE APPLICABLE DESIGN DRAWING OR SPECIFICATION ARTICLE, DATE AND SCALE.
   - 3.B. THE WORK DESCRIBED IN ALL SHOP DRAWING SUBMISSION SHALL BE CAREFULLY CHECKED FOR ALL CLEARANCES (INCLUDING THOSE REQUIRED FOR MAINTENANCE AND SERVICING), FIELD CONDITIONS, MAINTENANCE OF ARCHITECTURAL CONDITIONS AND PROPER COORDINATION WITH ALL TRADES ON THE JOB.
   - 3.C. EACH SUBMITTED SHOP DRAWING IS TO INCLUDE A CERTIFICATION THAT ALL RELATED JOB CONDITIONS HAVE BEEN CHECKED AND VERIFIED AND THAT THERE ARE NO CONFLICTS.
   - 3.D. ALL SHOP DRAWINGS ARE TO BE SUBMITTED TO ALLOW AMPLE TIME FOR CHECKING IN ADVANCE OF FIELD REQUIREMENTS. ALL SUBMITTALS TO BE COMPLETE AND CONTAIN ALL REQUIRED AND DETAILED INFORMATION. SHOP DRAWINGS WITH MULTIPLE PARTS SHALL BE SUBMITTED AS A PACKAGE.
   - 3.E. IF SUBMITTALS DIFFER FROM THE CONTRACT DOCUMENT REQUIREMENTS, MAKE SPECIFIC MENTION OF SUCH DIFFERENCES IN A LETTER OF TRANSMITTAL, WITH REQUEST FOR SUBSTITUTION, TOGETHER WITH REASONS FOR SAME.
   - 3.F. SUBMISSIONS:
     - 3.F.1. PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT, VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC "PDF" FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE ENGINEER.
   - 3.G. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
     - 3.G.1. DUCTWORK LAYOUT AND SHEET METAL DESIGNS.
       - 3.G.1.1. SHEETMETAL SHOP STANDARDS SHALL BE COMPILED DIRECTLY FROM THE "SMACNA DUCT CONSTRUCTION STANDARDS- METAL AND FLEXIBLE" MANUAL. MODIFICATIONS FOR A SPECIFIC PROJECT, IF ANY, SHALL BE INDICATED DIRECTLY ON THE SMACNA TEMPLATES. MODIFIED SHOP STANDARDS NOT TAKEN DIRECTLY FROM THE SMACNA TEMPLATES WILL NOT BE ACCEPTED. ANY DEVIATIONS FROM SMACNA SHALL BE NOTED.
     - 3.G.2. REGISTERS, GRILLES AND DIFFUSERS.
     - 3.G.3. DUCTWORK, PIPING AND EQUIPMENT LABELS.
     - 3.G.4. DUCTWORK PIPNG AND EQUIPMENT INSULATION.
     - 3.G.5. AIR BALANCE REPORT.
     - 3.G.6. HEAT PUMP UNITS.
     - 3.G.7. EXHAUST FANS.
     - 3.G.8. PUMPS.
     - 3.G.9. VALVES
     - 3.G.10. VIBRATION AND SEISMIC ISOLATION.
     - 3.G.11. AUTOMATIC CONTROL SYSTEMS AND DEVICES.
     - 3.G.12. SEQUENCE OF OPERATIONS
   - 3.H. COORDINATION DRAWINGS: PLANS, DRAWN TO SCALE INDICATING COORDINATION BETWEEN THE TRADES USING INPUT FROM INSTALLERS OF THE ITEMS INVOLVED:
     - 3.H.1. COORDINATION WITH SUSPENDED CEILING COMPONENTS, STRUCTURAL MEMBERS TO WHICH DUCT WILL BE ATTACHED, SIZE AND LOCATION OF INITIAL ACCESS MODULES FOR ACOUSTICAL TILE, PENETRATIONS OF SMOKE BARRIERS AND FIRE-RATED CONSTRUCTION, LIGHTING FIXTURES, AIR OUTLETS AND INLETS, SPEAKERS,SPRINKLERS,ACCESS PANELS,PERIMETER MOLDINGS SHALL BE PERFORMED.
4. AS-BUILTS AND EQUIPMENT OPERATING INSTRUCTIONS:
   - 4.A. PROVIDE ALL COORDINATION DRAWINGS, DUCTWORK AND PIPING SHOP DRAWINGS IN AUTOCAD FORMAT,VERSION COMPATIBLE WITH OWNER. ALL CATALOG CUTS AND SUBMITTALS TO BE PROVIDED IN ELECTRONIC "PDF" FORMAT THE ARCHITECT WILL FORWARD ALL SUBMISSIONS TO THE ENGINEER.
   - 4.B. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS IN ELECTRONIC FORMAT. CONTRACTOR SHALL DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
   - 4.C. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 INCH X 11 IN FORMAT. THE CONTRACTOR SHALL GIVE ONE COPY OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
   - 4.D. THE INSTRUCTIONS SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.
   - 4.E. FINAL "AS-BUILT" DRAWINGS INDICATING AS INSTALLED CONDITIONS SHALL BE PROVIDED TO THE ENGINEER AFTER COMPLETION OF THE INSTALLATION.
5. SUBSTITUTIONS:
   - 5.A. NO SUBSTITUTE MATERIAL OR MANUFACTURER OF EQUIPMENT SHALL BE PERMITTED WITHOUT A FORMAL WRITTEN SUBMITTAL TO THE ENGINEER WHICH INCLUDES ALL DIMENSIONAL, PERFORMANCE AND MATERIAL SPECIFICATIONS. ANY CHANGES IN LAYOUT, ELECTRICAL CHARACTERISTICS, STRUCTURAL REQUIREMENTS OR DESIGN DUE TO THE USE OF A SUBSTITUTION SHALL BE SUBMITTED TO THE ENGINEER AS PART OF THIS PROPOSAL. THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR THE SUBSTITUTION AND ALL CHANGES RESULTING FROM THE SUBSTITUTION. ALL ITEMS SHALL BE SUBMITTED FOR REVIEW IN CONJUNCTION WITH THE SUBMITTAL OF THE SUBSTITUTION. ANY SUBSTITUTION MUST BE SUBMITTED WITH AN EXPLANATION WHY A SUBSTITUTION IS BEING UTILIZED. IF THE SUBSTITUTED ITEM DEVIATES FROM THE SPECIFIED ITEM, THOSE DEVIATIONS ARE TO BE IDENTIFIED ON A LINE BY LINE BASIS. IF THE SUBSTITUTE IS BEING UTILIZED FOR FINANCIAL REASONS, THE ASSOCIATED CREDIT MUST BE SIMULTANEOUSLY SUBMITTED.
   - 5.B. ALL SUBSTITUTED EQUIPMENT SHALL CONFORM TO SPACE REQUIREMENTS AND PERFORMANCE REQUIREMENTS SHOWN ON CONTRACT DOCUMENTS. CONTRACTOR SHALL REPLACE ANY EQUIPMENT THAT DOES NOT MEET THESE REQUIREMENTS AT HIS OWN EXPENSE. ANY MODIFICATIONS TO ASSOCIATED SYSTEMS OR ADDITIONAL COSTS ATTRIBUTED TO THIS SUBSTITUTION SHALL BE AT THIS CONTRACTOR'S EXPENSE.
   - 5.C. CONTRACTOR SHALL SUBMIT BID BASED ON SPECIFIED ITEMS AND SHALL SUPPLY AS AN ALTERNATE PRICE ANY SUBSTITUTIONS.
6. ACCESS DOORS IN GENERAL CONSTRUCTION
   - 6.A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE (MINIMUM 18 INCH X 18 INCH) AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT, DEVICES, VALVES, DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID.
7. SHEET METAL WORK:
   - 7.A. DUCT CONSTRUCTION, INCLUDING SHEET METAL THICKNESSES, SEAM AND JOINT CONSTRUCTION, REINFORCEMENTS, AND HANGERS AND SUPPORTS, SHALL COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION" AND PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
   - 7.B. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL
   - 7.C. DESCRIPTION OF DUCTWORK PRESSURE CLASS AND EQUIPMENT:
     - 7.C.1. 2 INCH DUCT CLASS AND LESS: ALL LOW PRESSURE DUCTWORK. SEAL CLASS "B", LEAKAGE CLASS 24 (RECTANGULAR) OR CLASS 12 (ROUND).
   - 7.D. GENERAL FABRICATION REQUIREMENTS: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE", LATEST EDITION, BASED ON INDICATED STATIC-PRESSURE CLASS UNLESS OTHERWISE INDICATED.
     - 7.D.1. THE FOLLOWING FITTING CONNECTIONS AND DUCT CONSTRUCTION GAUGES ARE NOT ACCEPTABLE
       - 7.D.1.A. DRIVE SLIP [T-1, T-2] FITTING CONNECTIONS
       - 7.D.1.B. 26 GAUGE DUCTWORK
     - 7.D.2. TRANSVERSE JOINTS: SELECT JOINT TYPES AND FABRICATE ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, "TRANSVERSE (GIRTH) JOINTS", FOR STATIC-PRESSURE CLASS, APPLICABLE SEALING REQUIREMENTS, MATERIALS INVOLVED, DUCT SUPPORT INTERVALS, AND OTHER PROVISIONS IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE." FITTINGS AND/OR JOINTS OF TWO DIFFERENT GAUGES, CONNECTED JOINT RATING SHALL MEET MORE STRINGENT CONDITIONS.
     - 7.D.3. USE THE FOLLOWING SMACNA TRANSVERSE (GIRTH) JOINTS
   - 7.E. DUCT SUPPORTS:
     - 7.E.1. RIGID ROUND, RECTANGULAR, AND FLAT OVAL METAL DUCTS SHALL BE INSTALLED WITH SUPPORT SYSTEMS INDICATED IN SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS" SECTION 5 TABLES 5-1, 5-2 AND 5-3 AND FIGURE 5-10 TO 5-10. THEY SHALL BE INSTALLED AS REQUIRED TO MAINTAIN ALIGNMENT. HORIZONTAL DUCTS SHALL HAVE A SUPPORT WITHIN 2 FEET OF EACH ELBOW AND WITHIN 4 FEET OF EACH BRANCH INTERSECTION. UPPER ATTACHMENTS TO STRUCTURES SHALL HAVE AN ALLOWABLE LOAD NOT MORE THAN ONE-FOURTH OF THE FAILURE LOAD.
     - 7.E.2. FLEXIBLE DUCT SHALL BE SUPPORTED AT THE MANUFACTURER'S RECOMMENDED INTERVALS BUT AT LEAST EVERY 5 FEET. MAXIMUM PERMISSIBLE SAG IS 1/2" PER FOOT OF SPACING BETWEEN SUPPORTS. A CONNECTION TO ANOTHER DUCT OR EQUIPMENT IS CONSIDERED A SUPPORT POINT.
   - 7.F. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL," EXCEPT PROVIDE BEARING AT ONE END OF DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.
     - 7.F.1. PROVIDE MANUAL VOLUME DAMPERS TO PROPERLY PROVIDE MANUAL BALANCING VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE AIR DISTRIBUTION SYSTEM. IF THE LOCATION OF BALANCING DAMPERS ARE NOT DEFINED ON THE DRAWINGS, THE FOLLOWING MINIMUM STANDARDS SHALL GOVERN:
       - 7.F.1.A. LOW PRESSURE: ALL SUPPLY AIR MAIN BRANCHES FROM TRUNK, EACH SPLIT, AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
       - 7.F.1.B. LOW PRESSURE: ALL EXHAUST AND RETURN BRANCHES FROM TRUNK, EACH SPLIT AND ALL SUB-BRANCHES FROM MAINS SHALL BE PROVIDED WITH BALANCING DAMPERS.
       - 7.F.1.C. AS NOTED ON PLANS
   - 7.G. FLEXIBLE DUCTS:
     - 7.G.1. FLEXIBLE DUCT SHALL BE USED ONLY FOR FINAL CONNECTIONS TO OUTLETS, SIX FOOT LENGTH MAXIMUM WITH GRADUAL BENDS OR OFFSETS. ELBOWS SHALL BE SUPPORTED BY A MANUFACTURERS PACKAGED ELBOW SUPPORT (FLEXFLOW).
     - 7.G.2. TEAR RESISTANT, RUGGED FLEXIBLE DUCT DESIGNED FOR HIGH PRESSURE ENGINEERED HVAC SYSTEMS. UL181 CLASS I INSULATED AND NON-INSULATED AIR DUCT FABRICATED WITH A UNIQUE AND EXTREMELY TOUGH HEAVY COATED FIBERGLASS FABRIC. SOLID MECHANICAL UNION OF FABRIC AND CORROSION RESISTANT GALVANIZED STEEL CREATE AN EXTRAORDINARY DURABLE SEAM. THERMALLY INSULATED TO AN R VALUE OF 8.0 AND OFFERED WITH A CHOICE OF FIRE RETARDANT POLYETHYLENE OR REINFORCED METALIZED PROTECTIVE VAPOR BARRIERS SUITABLE FOR UP TO 10 INCHES FOR SIZES UP TO 12 INCH DIAMETER, 6 INCHES FOR SIZES 14 TO 16 INCH DIAMETER, AND 4 INCHES FOR 18 TO 20 INCH DIAMETERS.
     - 7.G.3. FLEXIBLE DUCT CONNECTORS: CLAMPS SHALL BE STAINLESS STEEL BANDS WITH CADMIUM PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM GEAR ACTION TO SUIT DUCT SIZE.
     - 7.G.4. MANUFACTURED BY FLEXMASTER TYPE 4, THERMAFLEX MODEL M-KC.
   - 7.H. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.
     - 7.H.1. PROVIDE MINIMUM 20 INCH X 14 INCH ON MAIN DUCTS, AND 12 INCH X 6 INCH ON BRANCH DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS HUMIDIFIERS, DUCT SMOKE DETECTORS, AUTO DAMPERS, AND LOUVERS.
     - 7.H.2. ALL ACCESS DOORS TO BE HINGED, WITH LATCH SIMILAR TO VENTLOCK NO. 100.
   - 7.I. FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ PER SQUARE YD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE WITH METAL COLLARS. ALLOW MINIMUM MOVEMENT OF 1 INCH.
   - 7.J. TURNING VANES: GALVANIZED STEEL SMALL DOUBLE-THICKNESS VANES WITH 2 INCH INSIDE RADIUS.
   - 7.K. ALL DUCT DIMENSIONS INDICATED ON PLANS ARE CLEAR INSIDE DIMENSIONS.
   - 7.L. AUTOMATIC DAMPERS: COMPLETE WITH LINKAGE AND ELECTRIC OPERATOR. OPPOSED BLADE DAMPER OR GALVANIZED STEEL MIN. 4 INCH, MAX. 8 INCH WIDE WITH COMPRESSIBLE EDGE SEALS TO PREVENT LEAKAGE. FACTORY-ASSEMBLE STEEL LINKAGE AND SHAFT WITH NYLON OR OIL-IMPREGNATED BRONZE BEARINGS. MOTOR WITH SUFFICIENT POWER TO LIMIT LEAKAGE TO 10 CFM PER SQUARE FEET. LINKAGE TO WITHSTAND LOAD EQUAL TO TWICE MAXIMUM OPERATING FORCE WITHOUT DEFLECTION. DAMPER MOUNTED IN WELDED STEEL CHANNEL FRAME.
   - 7.M. WIRE MESH SCREEN (WMS): NO. 16 USSG, 3/4 SQUARE MESH, IN 1 INCH WIDE GALVANIZED STEEL ENCLOSING FRAME. FLANGED DUCT OPENING TO RECEIVE FRAME.
   - 7.N. EXPOSED DUCTWORK:
     - 7.N.1. WHERE DUCTWORK IS INDICATED TO BE EXPOSED TO VIEW IN OCCUPIED SPACES, PROVIDE MATERIALS WHICH ARE FREE FROM VISUAL IMPERFECTIONS, INCLUDING PITTINGS, SEAM MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS. PROVIDE FINISHES WHICH WILL ALLOW PAINTING. PROVIDE FLAT TYPE SEAMS AND JOINTS FOR ALL EXPOSED DUCT CONSTRUCTION.
8. AIR OUTLETS:
   - 8.A. GENERAL:
     - 8.A.1. MARGIN TYPES, COLORS, FINISH AND METHODS OF ATTACHMENT FOR ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE COORDINATED WITH ARCHITECTURAL CEILING AND WALL DETAILS AND SPECIFICATIONS. FINISH SHALL MATCH COLOR SAMPLE AS APPROVED:
     - 8.A.2. FRAME TYPE SUITABLE FOR MOUNTING IN CEILING OR WALL CONSTRUCTION AS INDICATED ON ARCHITECTURAL PLANS.
     - 8.A.3. EXACT LOCATION OF ALL AIR OUTLETS AS PER ARCHITECTURAL PLANS.
     - 8.A.4. PROVIDE MOUNTING AND BLOCKING
     - 8.A.5. SUITABLE FOR OPERATION AT 20% EXCESS AND 20% LESS THAN NOTED CAPACITY FOR CONSTANT VOLUME SYSTEMS AND AT 20% EXCESS AND 60% LESS THAN NOTED CAPACITY FOR VARIABLE VOLUME SYSTEMS.
     - 8.A.6. MANUFACTURER RESPONSIBLE FOR EXAMINING APPLICATION OF EACH OUTLET AND GUARANTEE THAT EACH WILL PROVIDE REQUIRED NC LEVELS AND COMFORT SPACE CONDITIONS WITHOUT DRAFTS THROUGHOUT OPERATING RANGE.
     - 8.A.7. PROVIDE SHEETMETAL BLANK OFF AS REQUIRED FOR 1 WAY, 2 WAY OR 3 WAY DIFFUSERS, OR DIFFUSERS WITH PATTERNS IDENTIFIED ON DRAWINGS.
     - 8.A.8. PROVIDE BLANKING FOR PROPER COVERAGE AND BLOW WITHOUT PRODUCING OBJECTIONABLE NOISE OR AIR MOTION AT OCCUPIED LEVEL.
     - 8.A.9. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
       - 8.A.9.A. TITUS
       - 8.A.9.B. PRICE
   - 8.B. REGISTERS AND GRILLES
     - 8.B.1. RETURN AND EXHAUST REGISTERS: STEEL OR ALUMINUM ALLOY CONSTRUCTION.
9. TESTING AND BALANCING
   - 9.A. ALL AIR AND WATER BALANCING SHALL BE BY AN INDEPENDENT CONTRACTOR NOT AFFILIATED WITH THE MECHANICAL CONTRACTOR AND IN ACCORDANCE WITH LOCAL STANDARDS. CONTRACTOR SHALL UTILIZE BASE BUILDING BALANCING CONTRACTOR OR APPROVED EQUAL, CONTACT BUILDING MANAGEMENT.
   - 9.B. CONTRACTOR TO BALANCE ENTIRE SYSTEM TO AIR AND/OR WATER QUANTITIES AS SHOWN ON ALL RELATED DRAWINGS FOR THIS JOB, AND AS DESCRIBED HEREIN. BALANCING MUST BE DONE IN THE PRESENCE OF A BUILDING ENGINEER.
   - 9.C. AIR BALANCING SHALL BE ACCOMPLISHED BY ADJUSTMENT OF FANS AND BRANCH DAMPERS FOR MAJOR ADJUSTMENTS. AIR SUPPLY OUTLETS TO BE BALANCED TO A UNIFORM SUPPLY ACROSS ENTIRE FACE. ADJUSTMENT OF TERMINAL DAMPERS AND DEVICES SHALL BE FOR TRIM OR MINOR ADJUSTMENTS ONLY. THIS SHALL BE DONE TO PERMIT THE LEAST NOISE GENERATION IN THE TERMINAL AREAS AND UTILIZE MINIMUM FAN ENERGY.
   - 9.D. FANS, AIR HANDLING UNITS SHALL BE BALANCED TO WITHIN +5% OF THEIR DESIGN CAPACITIES. ALL OTHER AIR AND WATER QUANTITIES SHALL BE BALANCED TO WITHIN +10% OF THEIR DESIGN QUANTITIES.
   - 9.E. UPON COMPLETION OF THE INSTALLATION, THE CONTRACTOR SHALL REBALANCE ANY EXISTING PORTIONS OF THE AIR DISTRIBUTION SYSTEM AND WATER DISTRIBUTION SYSTEMS AFFECTED BY THE RENOVATION AND ALSO BALANCE ALL NEW WORK.
   - 9.F. IF DISCREPANCIES EXIST IN THE REPORT THAT REQUIRE FIELD VERIFICATION, THE TESTING AND BALANCING COMPANY IN THE PRESENCE OF THE ENGINEER SHALL VISIT THE JOBSITE FOR FIELD VERIFICATION OF THE REPORT.
   - 9.G. THE CONTRACTOR SHALL PROVIDE ALL LABOR, PRESSURE GAUGES, FLOW METERS, SHEAVES AND BELTS REQUIRED TO BALANCE SYSTEMS.

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS.IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

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	08.21.2022	ISSUE FOR PERMIT

Professional Engineer TATE J. COLBERT 17980 Date WYOMING

PROJECT
GRACE SPA
LOCATION

	Project No.
TC	Drawn By
TC	Checked By
Discipline M	Drawing No. 0.2

Drawing Name
MECHANICAL SPECIFICATIONS

1.A. BALANCING REPORT SHALL BE PROVIDED ON NEBB OR AABC-TYPE FORMS.
9.B. BALANCING AND TESTING SHALL PERFORMED AND SUPERVISED BY A CERTIFIED NEBB OR AABC TECHNICIAN.
9.C. THE PERFORMANCE AND CAPACITY OF ALL SYSTEMS AND EQUIPMENT TO BE DEMONSTRATED BY THE CONTRACTOR.

10. INSULATION - GENERAL REQUIREMENTS
10.A. ALL INSULATION MATERIALS, INCLUDING JACKETS, FACING, ADHESIVE, COATINGS, AND ACCESSORIES ARE TO BE FIRE HAZARD RATED AND LISTED BY UNDERWRITERS LABORATORIES, INC. USING STEINER TUNNEL TEST METHOD FOR FIRE HAZARD CLASSIFICATION OF BUILDING MATERIALS, STANDARD UL 723 (ASTM E-84), (ASA A2.5-1963). FLAMESPREAD: MAXIMUM 25. FUEL CONTRIBUTED AND SMOKE DEVELOPED: MAXIMUM 50. FLAMEPROOFING TREATMENTS SUBJECT TO DETERIORATION FROM MOISTURE OR HUMIDITY ARE NOT ACCEPTABLE.
10.B. PRODUCTS SHALL NOT CONTAIN ASBESTOS, LEAD, MERCURY, OR MERCURY COMPOUNDS.
10.C. DEFINITIONS:
10.C.1. EXPOSED: INDOOR DUCTS, PIPING OR EQUIPMENT LOCATED IN MECHANICAL EQUIPMENT ROOMS AND IN AREAS WHICH WILL BE VISIBLE WITHOUT REMOVING CEILINGS OR OPENING ACCESS PANELS.
10.C.2. CONCEALED: INDOOR DUCTS, PIPING OR EQUIPMENT WHICH IS NOT EXPOSED.
10.C.3. OUTDOOR: DUCTS, PIPING OR EQUIPMENT WHICH IS EXPOSED TO THE WEATHER.

11. DUCTWORK INSULATION
11.A. INSULATE ALL DUCTWORK IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED.

INSULATION SCHEDULE - DUCTWORK

SERVICE	LOCATION	MATERIAL	FINISH
SUPPLY/RETURN	CONCEALED	D-1	VAPORSEAL
RETURN	CONCEALED IN UNCONDITIONED SPACE	D-1	VAPORSEAL
SUPPLY/RETURN	EXPOSED	D-2	VAPORSEAL
RETURN	EXPOSED IN UNCONDITIONED SPACE	D-2	VAPORSEAL
SUPPLY/RETURN/ EXHAUST	OUTDOOR EXPOSED	D-3	VAPORSEAL

11.B. REINSULATE ALL DUCTWORK AND PIPING WHICH IS EXISTING AND DAMAGED DURING CONSTRUCTION OR SHOWN OR REQUIRED TO BE RELOCATED. INSULATE WITH SAME MATERIAL AND THICKNESS
11.C. OUTDOOR DUCTWORK
11.C.1. FOR OUTDOOR DUCTWORK OR DUCTWORK EXPOSED TO THE ELEMENTS IN ADDITION TO INSULATION AND FINISHES SPECIFIED, APPLY TWO (2) COATS OF WEATHERPROOF MASTIC AND EMBED INTO WET COAT TWO (2) LAYERS OF GLASS CLOTH OVER INSULATION JACKET. SMOOTH MEMBRANE TO AVOID WRINKLES AND OVERLAP ALL SEAMS AT LEAST 3". APPLY A SECOND COAT OF SAME COATING TO THE ENTIRE SURFACE. TOP CENTER OF RECTANGULAR DUCT SHALL PITCH TO EACH SIDE TO AVOID TRAPPING OF WATER IN THE CENTER.
11.D. MATERIAL:
11.D.1. TYPE D-1: MINIMUM 1-LB DENSITY FIBERGLASS BLANKET HAVING AN INSTALLED (25%COMPRESSED) R-VALUE OF 6.0 MINIMUM AT 75 DEG F MEAN TEMPERATURE WITH FACTORYAPPLIED FOIL-SKRIM-KRAFT FACING SIMILAR TO MANVILLE MICROLITE.
11.D.2. TYPE D-2: 3 LB. FIBERGLASS BOARD WITH A MINIMUM INSTALLED R-VALUE OF 6.0 AT 75 DEG F MEAN TEMPERATURE WITH A MINIMUM DENSITY OF 3 LB. THE INSULATION SHALL BE PROVIDED WITH A FACTORY-APPLIED ALL PURPOSE OR ALL SERVICE FACING. THE INSULATION SHALL BE EQUAL TO MANVILLE TYPE 814 SPIN-GLAS AP.
11.D.3. TYPE D-3: MINIMUM 6 LB FIBERGLASS BOARD WITH A MINIMUM INSTALLED R-VALUE OF 12.0 AT 75 DEG F MEAN TEMPERATURE WITH FACTORY APPLIED ALL PURPOSE OR ALL SERVICE FACING. SIMILAR TO MANVILLE 817 SPIN-GLAS AP.
11.E. INSTALLATION:
11.E.1. FIBERGLASS BLANKET: 2 INCH LAP STRIPS AT ALL SEAMS. SECURE BOTTOM OF ALL DUCTS OVER 24 INCH WIDE WITH MIN. 2 ROWS OF WELD PINS 12 INCH ON CENTER. SECURE ALL SEAMS WITH FOIL VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE.
11.E.2. FIBERGLASS BOARD: SEAL JOINTS AND BREAKS IN FACING WITH 3 INCH WIDE TAPE TO MATCH FACING AND ADHERE WITH VAPOR SEAL ADHESIVE. APPLY 5 INCH WIDE TAPE AT CORNERS, WELD PINS ON TOP, SIDES AND BOTTOM.

12. PIPING INSULATION
12.A. INSULATE ALL PIPING IN ACCORDANCE WITH INSULATION SCHEDULE EXCEPT AS OTHERWISE NOTED. INSULATION SCHEDULE - PIPING SERVICE SIZE MATERIAL FINISH

SERVICE	SIZE	MATERIAL	FINISH
LOW TEMP (40°-100°F)	UP TO 8"	P-1	VAPORSEAL
FITTINGS & VALVES LOW TEMP (40°-100°F)	UP TO 8"	P-4	VAPORSEAL F-1
HOT (101°-200°F)	UP TO 8"	P-1	---
FITTINGS & VALVES HOT (101°-200°F)	UP TO 8"	P-4	--- F-1
COLD WATER MAKEUP, COLD CONDENSATE, EQUIPMENT DRAINS BELOW 60°F	ALL	P-1	VAPORSEAL

12.B. PIPING, VALVES AND FITTINGS TO BE INSULATED:
12.B.1. LOW TEMPERATURE PIPING SYSTEMS - 40 TO 100 DEG F INCLUDING:
12.B.1.A. GLYCOL WATER SUPPLY AND RETURN.
12.B.1.B. CONDENSATE DRAIN PIPING.
12.B.2. LOW TEMPERATURE HOT PIPING SYSTEMS - 100° TO 200°F INCLUDING:
12.B.2.A. LOW TEMPERATURE HOT WATER SUPPLY AND RETURN.
12.C. MATERIAL:
12.C.1. TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS-CORNING 650 ASJ.
12.C.2. TYPE P-4: MINIMUM 1 LB DENSITY FIBERGLASS FITTING INSERTS, MAXIMUM 0.28 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO MANVILLE HI-LO TEMP INSULATION INSERTS.
12.C.3. TYPE P-6: MINIMUM 6 LB MOLDED FOAMED PLASTIC. MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN TEMPERATURE. MAXIMUM 0.17 PERMEANCE. SIMILAR TO ARMSTRONG ARMAFLEX II.
12.D. FINISH
12.D.1. TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE ZESTRON.
12.D.2. TYPE F-2: WHITE VAPOR BARRIER COATING WITH 10X10 OR 20X20 MESH WHITE GLASS, POLYESTER OR NYLON CLOTH REINFORCING MEMBRANE, MINIMUM 31 MIL DRY FILM THICKNESS, SIMILAR TO FOSTER TITE-FIT, UL LABEL.
12.D.3. TYPE F-4: ALUMINUM JACKETING WITH MINIMUM 0.016 INCH WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.
12.D.4. TYPE F-6: WHITE FINISHING AND INSULATING CEMENT APPLIED OVER HEXAGONAL WIRE MESH. CEMENT SIMILAR TO KEENE SUPERSLICK.
12.E. OUTDOOR PIPING:
12.E.1. FOR ALL PIPING, FITTINGS AND VALVES LOCATED OUTDOORS, INCREASE SCHEDULED INSULATION THICKNESS BY A MINIMUM OF 1 INCH AND PROVIDE F-4 FINISH. PROVIDE VAPORSEAL ON ALL OUTDOOR PIPES, VALVES AND FITTINGS SUBJECT TO CONDENSATION.
12.E.2. COORDINATE WITH ELECTRICAL CONTRACTOR FOR ALL HEAT TRACING REQUIREMENTS AND PIPING LENGTH REQUIREMENTS. ELECTRICAL TO PROVIDE CABLING AND THERMOSTAT.
12.F. INSTALLATION
12.F.1. BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED.
12.F.2. ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 INCH LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE REQUIRED. STAPLES NOT PERMITTED. REFRIGERANT PIPING INSULATION SHALL HAVE MITERED FITTINGS.
12.F.3. ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION.
12.F.4. INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT DAMAGE.

13. VIBRATION ISOLATION
13.A. FURNISH AND INSTALL ALL NECESSARY VIBRATION ISOLATORS, VIBRATION HANGERS, MOUNTING PADS, RAILS, ETC., TO ISOLATE VIBRATION AND SOUND FROM BEING TRANSMITTED TO THE BUILDING STRUCTURE. ALL VIBRATION PRODUCTS SHALL BE SPECIFICALLY DESIGNED FOR THEIR INTENDED USE. PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND DUCTWORK. ETC.
13.B. MANUFACTURER OF THE VIBRATION ISOLATION EQUIPMENT SHALL HAVE THE FOLLOWING RESPONSIBILITIES.
13.B.1. SUBMIT TYPE, SIZE, DEFLECTION, LOCATION AND DETAILS INCLUDING FREE HEIGHT FOR EACH ISOLATOR PROPOSED FOR ITEMS IN THE SPECIFICATION AND ON THE DRAWINGS.
13.B.2. SUBMIT DETAILS OF ALL STEEL FRAMES AND CONCRETE INERTIA BASES TO BE USED IN CONJUNCTION WITH THE ISOLATION IN THIS SPECIFICATION AND IN THE DRAWINGS.
13.B.3. CLEARLY OUTLINE THE PROCEDURES FOR INSTALLING AND ADJUSTING THE ISOLATORS OR HANGERS.
13.B.4. GUARANTEE THE SPECIFIED ISOLATION SYSTEMS DEFLECTION AND THAT A MINIMUM OF 90% EFFICIENCY WILL BE OBTAINED.
13.C. PROVIDE INSTALLATION INSTRUCTIONS, DRAWINGS AND FIELD SUPERVISION TO ASSURE PROPER INSTALLATION AND PERFORMANCE.
13.D. ISOLATION SYSTEMS SHALL BE MANUFACTURER BY MASON INDUSTRIES, VIBRATION ELIMINATOR COMPANY, AMBER BOOTH, VIBRATION MOUNTINGS AND CONTROLS.
13.E. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

14. PIPING - GENERAL REQUIREMENTS
14.A. COMPLETE WITH: PIPE, FITTINGS, VALVES, STRAINERS, MOTORIZED VALVE OPERATORS, STRAINERS, HANGERS, SUPPORTS, GUIDE, SLEEVES, AND ACCESSORIES.
14.B. ALL ITEMS SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
14.B.1. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
14.B.2. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).
14.B.3. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
14.B.4. MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY (MSS).
14.C. GASKETS: ONE PIECE RING TYPE 1/16 INCH MINIMUM THICKNESS KLINGER C4400 ONLY (OR APPROVED EQUAL, SUBMIT FOR APPROVAL BEFORE USE).
14.D. COPPER TUBE BRAZING
14.D.1. ALL BRAZING SHALL BE DONE IN ACCORDANCE WITH ALL CODES APPLICABLE TO THE PARTICULAR SERVICE. BRAZING FILLER METALS: AWS A5.8, BCUP SERIES, COPPER-PHOSPHORUS ALLOYS FOR JOINING COPPER WITH COPPER; OR BAG-1, SILVER ALLOY FOR JOINING COPPER WITH BRONZE OR STEEL.
14.D.2. QUALIFY PROCESS AND OPERATORS IN ACCORDANCE WITH ASME BOILER AND PRESSURE VESSEL CODE, SECTION IX, "WELDING AND BRAZING QUALIFICATIONS".
14.D.3. BRAZERS SHALL BE QUALIFIED FOR ALL REQUIRED TUBE SIZES, MATERIAL, WALL THICKNESS, AND POSITION IN ACCORDANCE WITH THE AMERICAN SOCIETY OF MECHANICAL ENGINEERING (ASME), SECTION IX, BOILER AND PRESSURE VESSEL CODE.
14.D.3.A. COPIES OF THE CERTIFIED BRAZER QUALIFICATION REPORTS SHALL BE MAINTAINED BY THE RESPONSIBLE BRAZING AGENCY AND THE COMPANY PERFORMING THE BRAZING, AND SHALL BE SUBMITTED TO THE OWNER AND/OR ENGINEER UPON REQUEST.
14.D.3.B. ALL DEFECTIVE BRAZEMENTS SHALL BE CHIPPED OUT AND REPAIRED AT NO COST TO THE OWNER, BASED ON PROCEDURE TO BE SPECIFIED AT THE TIME.
14.D.4. ALL BRAZING FOR SYSTEMS USED FOR THE DISTRIBUTION OF REFRIGERANT FOR HEAT PUMP SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE HEAT PUMP MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. THIS INCLUDES ALL MATERIALS, PURGING WITH APPROPRIATE GAS.
14.E. GASKETS
14.E.1. PIPE-FLANGE GASKET MATERIALS: SUITABLE FOR CHEMICAL AND THERMAL CONDITIONS OF PIPING SYSTEM CONTENTS. ASME B16.21, NONMETALLIC, FLAT, ASBESTOS-FREE, 1/8-INCH MAXIMUM THICKNESS UNLESS THICKNESS OR SPECIFIC MATERIAL IS INDICATED.
14.F. ALL PRESSURIZED PIPING TO BE TESTED HYDROSTATICALLY TO 150 PSI OR 150% OF OPERATING PRESSURE, WHICHEVER IS GREATER, BUT NEVER EXCEED TEST PRESSURE ANSI B16.1 BASIS. TEST DURATION TO BE 2 HOURS WITH NO PRESSURE CHANGE CORRECTED FOR TEMPERATURE CHANGE. REPAIR OR REPLACE LEAKS OR DEFECTS WITHOUT ADDITIONAL COST.
14.G. HEAT PUMP REFRIGERANT PIPING SHALL BE TESTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
14.H. EXPANSION COMPENSATION
14.H.1. ALL PIPING SHALL BE INSTALLED TO COMPENSATE FOR EXPANSION TO PROTECT THE BUILDING, EQUIPMENT AND PIPING SYSTEMS. PROVIDE ALL GUIDES, ANCHORS, EXPANSION LOOPS, SUPPLEMENTAL STEEL AND APPROVED TYPE EXPANSION JOINTS AS INDICATED OR REQUIRED FOR CONTROL OF EXPANSION.
14.I. SYSTEM FILLING
14.I.1. SYSTEMS OR PORTIONS OF SYSTEMS TO BE TESTED SHALL HAVE PROVISIONS FOR FILLING, VENTING (AIR REMOVAL), DRAINAGE AND TEST PRESSURE CONNECTION.
14.I.2. LIQUID USED FOR TESTING SHALL BE CLEAN CITY WATER MIXED WITH CHEMICALS SPECIFIED BY THE BASE BUILDING WATER TREATMENT CONTRACTOR. THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THE BUILDING WATER TREATMENT CONTRACTOR AND PROVIDE ALL REQUIRED LABOR. PROVIDE TEMPORARY METERING AND MIXING DEVICES AS REQUIRED. THE HVAC CONTRACTOR SHALL OBTAIN ALL REQUIREMENTS FROM THE BUILDING MANAGEMENT.
14.J. FLUSHING AND CLEANING AND TREATMENT
14.J.1. FLUSHING, CLEANING, AND PASSIVATING IN ACCORDANCE WITH THE OWNER'S WATER TREATMENT SPECIFICATION. THE HVAC CONTRACTOR SHALL HIRE THE SERVICES OF THE BASE BUILDING WATER TREATMENT CONTRACTOR AND PROVIDE ALL LABOR. COORDINATE WITH THE OWNER'S WATER TREATMENT COMPANY AND PROVIDE ALL SPECIFICATION REQUIREMENTS AND REQUIRED LABOR. COORDINATE ALL REQUIREMENTS WITH BASE BUILDING MANAGEMENT FOR BASE BUILDING VENDOR.
14.K. PROVIDE DIELECTRIC FITTINGS WHERE DISSIMILAR METALS ARE TO BE JOINED
14.L. DRAIN DOWN FOR NEW PIPING CONNECTION TO EXISTING:
14.L.1. CONTRACTOR TO OBTAIN SCHEDULE AND COORDINATE WITH BUILDING MANAGEMENT FOR SYSTEM DRAIN DOWN AND CONNECTION INTO EXISTING BUILDING PIPING. ALL COSTS ASSOCIATED WITH DRAIN DOWN ARE TO BE INCLUDED AS PART OF BID.
14.M. ALL INSTRUMENTATION (PRESSURE GAUGES AND THERMOMETERS) SHALL BE RATED FOR THE SAME PRESSURE AND TEMPERATURE AS PIPING SYSTEM AND RATED SPECIFICALLY FOR THE SAME SERVICE AS THE PIPING. PRESSURE GAUGES ARE TO BE LIQUID FILLED WITH 1% ACCURACY. SELECT GAUGES AND THERMOMETERS SO THAT THE MID-POINT IS AT THE WORKING PRESSURE AND TEMPERATURE. INSTRUMENTS TO BE MANUFACTURED BY WEISS INSTRUMENTS OR APPROVED EQUAL.
14.M.1. PROVIDE THERMOMETERS IN PIPING AS INDICATED ON THE DRAWINGS AND AT THE INLET AND OUTLET OF EACH HYDRONIC COIL, HEAT EXCHANGER AND PIECE OF EQUIPMENT THAT INVOLVES A DIFFERENTIAL TEMPERATURE. THERMOMETERS TO BE ORGANIC LIQUID FILLED.
14.M.2. PROVIDE PRESSURE GAUGES IN PIPING AS INDICATED ON THE DRAWINGS AND AT SUCTION AND DISCHARGE OF EACH PUMP AND AT INLETS AND OUTLETS OF EACH HYDRONIC COIL, HEAT EXCHANGER AND PIECE OF EQUIPMENT THAT INVOLVES A DIFFERENTIAL PRESSURE.
14.N. PIPE SUPPORTS:
14.N.1. PROVIDE ADEQUATE SUPPORT FOR PIPE AND CONTENTS TO PREVENT SAGGING, VIBRATION, OR SWAYING AND ALLOW FOR EXPANSION AND CONTRACTION. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE STRUCTURE CANNOT SUPPORT POINT LOADS.
14.N.2. HORIZONTAL PIPING TO BE SUPPORTED BY FORGED STEEL ADJUSTABLE CLEVIS TYPE HANGER. MAXIMUM SPACING AS FOLLOWS:
14.N.2.A. COPPER 1 INCH AND SMALLER: 5 FEET
14.N.2.B. COPPER 1-1/2 INCH TO 2-1/2 INCH: 8 FEET
14.N.2.C. COPPER 3 INCH: 10 FEET
14.N.2.D. PROVIDE ADDITIONAL SUPPORTS AT CHANGES IN DIRECTION , BRANCH PIPING AND RUNOUTS OVER 5 FEET AND CONCENTRATE LOADS DUE TO VALVES, STRAINERS AND OTHER SIMILAR ITEMS.
14.N.3. ROD SIZE:
14.N.3.A. PIPE 2 INCH AND SMALLER: 3/8 INCH
14.N.3.B. PIPE 2-1/2 INCH TO 3 INCH: 1/2 INCH
14.N.3.C. PIPE 4 INCH TO 8 INCH: 3/4 INCH
14.N.3.D. PIPE 10 INCH TO 12 INCH: 7/8 INCH
14.N.4. VERITCAL PIPING
14.N.4.A. BASE ELBOW SUPPORT WITH BEARING PLATE ON STRUCTURAL SUPPORT.
14.N.4.B. GUIDES AT EVERY SECOND FLOOR (SPACING NOT TO EXCEED 25 FEET).
14.N.4.C. TOP SUPPORT HANGER OR SADDLE IN HORIZONTAL CONNECTION WITH PROVISIONS FOR EXPANSION.
14.N.4.D. INTERMEDIATE STEEL RISER CLAMP SUPPORT BOLTED AND WELDED TO PIPE BEARING ON STRUCTURAL STEEL OR BEARING PLATE AT FLOOR.
14.N.4.E. FOR MULTIPLE PIPES, COORDINATE GUIDES, BEARING PLATES AND ACCESSORY STEEL.
14.O. VALVES - GENERAL REQUIREMENTS
14.O.1. VALVE PRESSURE AND TEMPERATURE RATINGS: NOT LESS THAN INDICATED AND AS REQUIRED FOR SYSTEM PRESSURES AND TEMPERATURES.
14.O.2. VALVE SIZES: SAME AS UPSTREAM PIPING UNLESS OTHERWISE INDICATED.
14.O.3. VALVE-END CONNECTIONS:
14.O.3.A. FLANGED: WITH FLANGES ACCORDING TO ASME B16.1 FOR IRON VALVES
14.O.3.B. FLANGED: WITH FLANGES ACCORDING TO ASME B16.5 FOR STEEL VALVES
14.O.3.C. FLANGED: WITH FLANGES ACCORDING TO ASME B16.24 FOR BRONZE VALVES.
14.O.3.D. SOLDER JOINT: WITH SOCKETS ACCORDING TO ASME B16.18.
14.O.3.E. THREADED: WITH THREADS ACCORDING TO ASME B1.20.1.
14.O.3.F. VALVE BYPASS AND DRAIN CONNECTIONS: MSS SP-45.
14.O.4. GENERAL-DUTY VALVE APPLICATIONS: UNLESS OTHERWISE INDICATED, USE THE FOLLOWING VALVE TYPES:
14.O.4.A. SHUTOFF SERVICE EXCEPT STEAM: BALL, BUTTERFLY OR GATE VALVES.
14.O.4.B. SHUTOFF SERVICE, STEAM: GATE VALVES.
14.O.4.C. THROTTLING SERVICE EXCEPT STEAM: BALL, BUTTERFLY, PLUG VALVES.
14.O.4.D. THROTTLING SERVICE, STEAM: GLOBE VALVES.
14.O.5. INSTALL SHUTOFF DUTY VALVES AT EACH BRANCH CONNECTION TO SUPPLY MAINS, AT SUPPLY CONNECTION TO EACH PIECE OF EQUIPMENT, UNLESS ONLY ONE PIECE OF EQUIPMENT IS CONNECTED IN THE BRANCH LINE. INSTALL THROTTLING DUTY VALVES AT EACH BRANCH CONNECTION TO RETURN MAINS, AT RETURN CONNECTIONS TO EACH PIECE OF EQUIPMENT, AND ELSEWHERE AS INDICATED.
14.O.6. INSTALL CALIBRATED BALANCING VALVES IN THE RETURN WATER LINE OF EACH HEATING OR COOLING ELEMENT AND ELSEWHERE AS REQUIRED TO FACILITATE SYSTEM BALANCING.
14.O.7. INSTALL SPRING LOADED CHECK VALVES AT EACH PUMP DISCHARGE AND ELSEWHERE AS REQUIRED TO CONTROL FLOW DIRECTION.
14.O.8. THREADED CONNECTIONS ARE NOT TO BE USED FOR GLYCOL SYSTEMS.

15. LOW TEMPERATURE WATER SYSTEMS, BELOW 100 PSIG, -20 TO 200 DEG F OPERATING TEMPERATURES.
15.A. MATERIAL SHALL BE STEEL IN ACCORDANCE WITH ASTM A 53, SEAMLESS, GRADES A OR B, OR TYPE L COPPER FOR PIPING 4 INCH AND BELOW.
15.A.1. WALL THICKNESS SHALL BE:
15.A.1.A. TO 2 INCH: SCHEDULE 40 WITH THREADED ENDS OR SCHEDULE 40 WITH SOCKET WELD ENDS.
15.A.1.B. -1/2 INCH TO 10 INCH: SCHEDULE 40, BUTT WELD ENDS ONLY.
15.A.1.C. 2 INCH AND LARGER: 0.375 INCH WALL THICKNESS UP TO 250 PSIG, BUTT WELD ENDS ONLY.
15.A.1.D. 4 INCH AND SMALLER TYPE L, DRAWN-TEMPER COPPER TUBING, WROUGHT-COPPER FITTINGS, AND BRAZED JOINTS
15.A.1.E. NO THREADED JOINTS ARE ALLOWED IN GLYCOL SYSTEMS
15.B. BALL VALVES
15.B.1. 3 INCHES AND SMALLER- THREADED OR SOLDERED, 3 PIECE, CLASS 150 PSI STEAM, 600 PSI COLD WORKING PRESSURE (CWP), FULL PORT, ASTM B584 CAST BRONZE BODY, CHROME PLATED BRASS BALL WITH BRASS STEM, BLOW OUT PROOF STEM DESIGN, PTFE SEATS, PTFE STEM PACKING, ZINC PLATED STEEL LEVER WITH VINYL COVERED GRIP, THREADED ENDS OR SOLDER ENDS AS REQUIRED BY PIPING SYSTEM.
15.B.2. GLYCOL, 2 INCHES AND SMALLER- SOCKET WELDED - 3 PIECE, CLASS 150 PSI STEAM, 1000 PSI COLD WORKING PRESSURE (CWP), FULL PORT, 2 INCHES AND SMALLER, ASTM A108 CARBON STEEL BODY, ASTM A108 CHROME PLATED BALL AND STEM, BLOW OUT PROOF STEM DESIGN, PTFE SEATS, PTFE STEM PACKING, ZINC PLATED STEEL LEVER WITH VINYL COVERED GRIP, SOCKET WELD ENDS
15.B.2.A. MANUFACTURERS - BRONZE BALL VALVES, CONBRACO INDUSTRIES INC., APOLLO DIVISION, CRANE CO.; CRANE VALVE GROUP; JENKINS VALVES, STOCKHAM DIVISION, JAMESBURY INC., MILWAUKEE VALVE COMPANY
15.B.3. GREATER THAN 3 INCH- FLANGE, ANSI FLANGED, CLASS 150 PSI STEAM, 285 PSI COLD WORKING PRESSURE (CWP), REDUCED PORT, 2½ INCHES TO 10 INCHES, ASTM A216 WCB CAST CARBON STEEL BODY , ASTM A216 WCB CHROME PLATED BALL, ASTM A108 CARBON STEEL STEM, BLOW OUT PROOF STEM DESIGN, PTFE SEATS, GRAPHITE STEM PACKING,GALVANIZED PIPE LEVER, RAISED FACE FLANGE ENDS.
15.B.3.A. MANUFACTURERS - STEEL BALL VALVES, CONBRACO INDUSTRIES INC.; APOLLO DIVISION, CRANE CO.; CRANE VALVE GROUP; STOCKHAM DIVISION, JAMESBURY INC., COOPER CAMERON CORP.; COOPER CAMERON VALVES DIV., MILWAUKEE VALVE COMPANY
15.C. SPRING LOADED LIFT DISC CHECK VALVES
15.C.1. 2 INCH AND SMALLER, 200 PSI COLD WORKING PRESSURE (CWP) UP TO 150ºF, CAST IRON BODY AND CAP, SCREWED CAP, EPDM SEAL, STAINLESS STEEL STEM, STAINLESS STEEL SPRING, BRASS DISC ,THREADED ENDS
15.C.2. 2½ INCH TO 12 INCH, 200 PSI COLD WORKING PRESSURE (CWP) UP TO 150ºF, ASTM A126 GRADE B CAST IRON, GLOBE STYLE, BODY, ASTM B62 BRONZE DISC AND SEAT, STAINLESS STEEL SPRING, SILICON BRONZE GUIDE PINS AND BUSHINGS, ANSI CLASS 125 FLANGED END CONNECTIONS,
15.C.3. MANUFACTURERS - SPRING LOADED LIFT DISC CHECK VALVES, MUELLER STEAM SPECIALTY CO., MILWAUKEE VALVE CO., TITAN FLOW CONTROL, INC.
15.D. SWING CHECK VALVES
15.D.1. 2 INCHES AND SMALLER, BRONZE SWING CHECK VALVES, MSS SP-80, CLASS 150 PSI STEAM, 300 PSI COLD WORKING PRESSURE (CWP), ASTM B 62 CAST - BRONZE BODY AND CAP, "Y" PATTERN, STAINLESS STEEL FREE FLOATING HINGE PIN, THREADED CAP, REGRINDING SEAT, BRONZE DISC, THREADED (STEEL PIPING) END CONNECTION OR SOLDERED (COPPER PIPING) END CONNECTION AS REQUIRED BY PIPING SYSTEM.
15.D.1.A. MANUFACTURERS - BRONZE CHECK VALVES, HORIZONTAL AND VERTICAL, HORIZONTAL, CRANE CO.; CRANE VALVE GROUP; JENKINS VALVES, CRANE VALVES, STOCKHAM DIVISION, GRINNELL CORPORATION, WALWORTH COMPANY, NIBCO INC, VERTICAL, CINCINNATI VALVE CO
15.D.2. 2½ INCH TO 12 INCH, ASME B16.10, IRON SWING CHECK VALVES, CLASS 125 PSI STEAM, 200 PSI COLD WORKING PRESSURE (CWP), CAST IRON BODY AND CAP, REPLACEABLE BRONZE SEAT RING, 6 INCH AND SMALLER: SOLID BRONZE DISC, 8 INCH AND LARGER: CAST IRON DISC WITH BRONZE FACING, REPLACEABLE BRASS HINGE PIN, FLANGED ENDS
15.D.2.A. MANUFACTURERS - IRON SWING CHECK VALVES, CRANE CO.; CRANE VALVE GROUP; JENKINS VALVES, STOCKHAM DIVISION, GRINNELL CORPORATION, CINCINNATI VALVE CO., NIBCO INC.
15.E. BALANCING VALVES
15.E.1. 2 INCH AND SMALLER, 300 PSI COLD WORKING PRESSURE (CWP) UP TO 250ºF, BRONZE BODY, "Y" PATTERN GLOBE STYLE DESIGN, EPDM O-RING SEALS. 4 TURN DIGITAL HANDWHEEL FOR BALANCING, HIDDEN MEMORY FEATURE WITH LOCKING TAMPER-PROOF SETTING.
15.E.2. 2½ INCH AND LARGER , 300 PSI COLD WORKING PRESSURE (CWP) UP TO 250ºF, BRONZE BODY, "Y" PATTERN GLOBE STYLE DESIGN, EPDM O-RING SEALS. 8, 12, 0R 16 TURN DIGITAL HANDWHEEL FOR BALANCING, HIDDEN MEMORY FEATURE WITH LOCKING TAMPER-PROOF SETTING. ANSI CLASS 125 FLANGED END CONNECTIONS
15.E.3. MANUFACTURERS - BALANCING VALVES, TOUR AND ANDERSSON, MACON, ARMSTRONG.
15.F. Y-STRAINERS
15.F.1. SYSTEMS OF COPPER CONSTRUCTION, WORKING PRESSURE: TO 250 PSIG, NON-CHOCK. SIZES 1/4 INCH TO 2 INCH: CLASS 250. CONNECTIONS: THREADED. BODY: BRONZE, ASTM B62, WITH MACHINED SEAT FOR SCREEN RETENTION. CAP: BRONZE, ASTM B62, WITH MACHINED SEAT FOR SCREEN RETENTION. SCREEN: 20 MESH, 304 STAINLESS STEEL, ASTM 240. FREE AREA NOT LESS THAN 2-1/2 TIME INLET AREA. BLOWOFF OUTLET: WITH FEMALE NPT TAPPING, MUELLER MODEL NO. 352M.
15.F.2. SYSTEMS OF COPPER CONSTRUCTION, WORKING PRESSURE TO 225 PSIG CLASS 150; TO 400 PSIG CLASS 300. SIZES 2-1/2 INCH TO 12 INCH: CONNECTIONS: FLANGED. BODY: BRONZE, ASTM B62 (85-5-5-5) OR BRONZE ASTM B61. ALUMINUM BRONZE ASTM A148-90 FOR SIZES 8 INCH AND LARGER. WITH MACHINED SEAT FOR SCREEN RETENTION. COVER: MATERIAL TO MATCH BODY. WITH MACHINED SEAT FOR SCREEN RETENTION. SCREEN TO 8 INCH: 1/8 INCH PERFORATIONS, 304 STAINLESS STEEL, ASTM 240. FREE AREA NOT LESS THAN 2-1/2 TIMES INLET AREA. SCREEN 10 INCH AND LARGER: 5/32 INCH PERFORATIONS, 304 STAINLESS STEEL, ASTM 240. FREE AREA NOT LESS THAN 2-1/2 TIMES INLET AREA. BLOWOFF OUTLET: WITH FEMALE NPT TAPPING., MUELLER MODEL NO. 851 OR 851M FOR CLASS 150, MUELLER MODEL. NO. 852 FOR CLASS 300.
15.G. PROVIDE 1/2 INCH DRAIN VALVE WITH CAPPED HOSE CONNECTION AT ALL LOW POINTS. PROVIDE 3/4 INCH GATE VALVE TO DRAIN SYSTEMS IN EQUIPMENT ROOMS.
15.H. PROVIDE MANUAL AIR VENTS LINE SIZE AIR CHAMBER WITH 1/2 INCH GLOBE VALVE AT ALL HIGH POINTS AND WHERE FLOW DIRECTION CHANGES FROM HORIZONTAL TO DOWNWARD.
15.I. PITCH WATER PIPING EXCEPT AS NOTED:
15.I.1. UP TO 1 INCH: 1 INCH IN 40 FEET
15.I.2. 1-1/2 INCH AND LARGER: 1 INCH IN 100 FEET
15.J. CONDENSATE DRAIN PIPING
15.J.1. PIPE: PVC SCHEDULE 40
15.J.2. FITTINGS: CHEMICAL ADHESIVE BONDING PRESS FITTING
15.J.3. PITCH, EXCEPT AS NOTED:
15.J.3.A. 1 INCH IN 4 FEET PREFERRED
15.J.3.B. 1 INCH IN 8 FEET MINIMUM

16. ELECTRICAL WORK
16.A.1. SEE ELECTRICAL SHEET E1.4 FOR ELECTRICAL REQUIREMENTS.

17. EQUIPMENT, DUCT AND PIPING TAGS AND LABELS
17.A. METAL LABELS FOR EQUIPMENT
17.A.1. INSTALL LABELS ON EACH MAJOR ITEM OF MECHANICAL EQUIPMENT.
17.A.2. MATERIAL AND THICKNESS: BRASS, 0.032-INCH MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE.
17.A.3. MINIMUM LABEL SIZE: LENGTH AND WIDTH VARY FOR REQUIRED LABEL

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PERMIT NO.: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

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Professional Engineer
TATE J. COLBERT
17980
Date
WYOMING

PROJECT
GRACE SPA
LOCATION

	Project No.
TC	Drawn By
TC	Checked By
Discipline	Drawing No.
M	0.3

Drawing Name
MECHANICAL SPECIFICATIONS

CONTENT, BUT NOT LESS THAN 2-1/2 BY 3/4 INCH.

17.A.4. MINIMUM LETTER SIZE: 1/4 INCH FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES (600 MM), 1/2 INCH FOR VIEWING DISTANCES UP TO 72 INCHES, AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-FOURTHS THE SIZE OF PRINCIPAL LETTERING.

17.A.5. FASTENERS: STAINLESS-STEEL RIVETS OR SELF-TAPPING SCREWS.

17.A.6. ADHESIVE: CONTACT-TYPE PERMANENT ADHESIVE, COMPATIBLE WITH LABEL AND WITH SUBSTRATE.

17.A.7. LABEL CONTENT: INCLUDE EQUIPMENT'S DRAWING DESIGNATION OR UNIQUE EQUIPMENT NUMBER, DRAWING NUMBERS WHERE EQUIPMENT IS INDICATED (PLANS, DETAILS, AND SCHEDULES), PLUS THE SPECIFICATION SECTION NUMBER AND TITLE WHERE EQUIPMENT IS SPECIFIED.

17.A.8. EQUIPMENT LABEL SCHEDULE: FOR EACH ITEM OF EQUIPMENT TO BE LABELED, ON 8-1/2-BY-11-INCH BOND PAPER. TABULATE EQUIPMENT IDENTIFICATION NUMBER AND IDENTIFY DRAWING NUMBERS WHERE EQUIPMENT IS INDICATED (PLANS, DETAILS, AND SCHEDULES), PLUS THE SPECIFICATION SECTION NUMBER AND TITLE WHERE EQUIPMENT IS SPECIFIED. EQUIPMENT SCHEDULE SHALL BE INCLUDED IN OPERATION AND MAINTENANCE DATA.

17.B. PIPE AND DUCT LABELS

17.B.1. PIPE AND DUCT LABELS SHALL BE INSTALLED AT MAXIMUM INTERVALS OF 50 FEET ON STRAIGHT RUNS AND 25 FEET IN AREAS OF CONGESTED PIPING AND EQUIPMENT.

17.B.2. GENERAL REQUIREMENTS FOR MANUFACTURED PIPE LABELS: PREPRINTED, COLOR-CODED, WITH LETTERING INDICATING SERVICE, AND SHOWING FLOW DIRECTION.

17.B.3. SELF-ADHESIVE PIPE AND DUCT LABELS: PRINTED PLASTIC WITH CONTACT-TYPE, PERMANENT ADHESIVE BACKING.

17.B.4. PIPE AND DUCT LABEL CONTENTS: INCLUDE IDENTIFICATION OF PIPING SERVICE USING SAME DESIGNATIONS OR ABBREVIATIONS AS USED ON DRAWINGS, PIPE SIZE, AND AN ARROW INDICATING FLOW DIRECTION.

17.B.4.A. FLOW-DIRECTION ARROWS: INTEGRAL WITH PIPING OR DUCT SYSTEM SERVICE LETTERING TO ACCOMMODATE BOTH DIRECTIONS, OR AS SEPARATE UNIT ON EACH PIPE OR DUCT LABEL TO INDICATE FLOW DIRECTION.

17.B.4.B. LETTERING SIZE: AT LEAST 1-1/2 INCHES HIGH.

17.C. VALVE TAGS

17.C.1. INSTALL TAGS ON VALVES AND CONTROL DEVICES IN PIPING SYSTEMS, EXCEPT CHECK VALVES; VALVES WITHIN FACTORY-FABRICATED EQUIPMENT UNITS; SHUTOFF VALVES; FAUCETS; CONVENIENCE AND LAWN-WATERING HOSE CONNECTIONS; AND HVAC TERMINAL DEVICES AND SIMILAR ROUGHING-IN CONNECTIONS OF END-USE FIXTURES AND UNITS. LIST TAGGED VALVES IN A VALVE SCHEDULE.

17.C.2. VALVE TAGS: STAMPED OR ENGRAVED WITH 1/4-INCH LETTERS FOR PIPING SYSTEM ABBREVIATION AND 1/2-INCH NUMBERS.

17.C.2.A. TAG MATERIAL: BRASS, 0.032-INCH MINIMUM THICKNESS, AND HAVING PREDRILLED OR STAMPED HOLES FOR ATTACHMENT HARDWARE.

17.C.2.B. FASTENERS: BRASS WIRE-LINK OR BEADED CHAIN; OR S-HOOK.

17.D. VALVE SCHEDULES

17.D.1. FOR EACH PIPING SYSTEM, ON 8-1/2-BY-11-INCH BOND PAPER, TABULATE VALVE NUMBER, PIPING SYSTEM, SYSTEM ABBREVIATION (AS SHOWN ON VALVE TAG), LOCATION OF VALVE (ROOM OR SPACE), NORMAL-OPERATING POSITION (OPEN, CLOSED, OR MODULATING), AND VARIATIONS FOR IDENTIFICATION. MARK VALVES FOR EMERGENCY SHUTOFF AND SIMILAR SPECIAL USES. VALVE TAG SCHEDULE SHALL BE INCLUDED IN OPERATION AND MAINTENANCE DATA.

18. EQUIPMENT

18.A. PROVIDE ALL EQUIPMENT AND ACCESSORIES OF THE SIZES AND CAPACITIES AS SCHEDULED AND AS INDICATED ON THE DRAWINGS.

18.B. INSTALL EQUIPMENT IN ACCORDANCE WITH APPROVED SHOP DRAWINGS, MANUFACTURERS INSTRUCTIONS AND ALL CODES AND REGULATIONS WHICH APPLY.

18.C. PROVIDE EQUIPMENT SUPPORTS AND/OR MOUNTINGS AS INDICATED ON THE DRAWING, IN VIBRATION SPECIFICATION AND AS FOLLOWS:

18.C.1. FLOOR MOUNTED EQUIPMENT - PROVIDE DIMENSIONS FOR A 4 INCH CONCRETE HOUSEKEEPING PAD WITH ALL REQUIRED WATERPROOFING TO THE CONSTRUCTION MANAGER.

18.C.2. EQUIPMENT ON FLOOR STANDS - PROVIDE FLOOR STAND OF STRUCTURAL STEEL OR STEEL PIPES AND FITTINGS ATTACHED TO FLOOR.

18.C.3. ROOF MOUNTED EQUIPMENT - PROVIDE PREFABRICATED ISOLATED ROOF CURB WITH INTEGRAL VIBRATION ISOLATORS.

18.C.4. CEILING MOUNTED EQUIPMENT - PROVIDE SUPPORTS WITH APPROVED SUITABLE ANCHORS SUSPENDED DIRECTLY FROM BUILDING STEEL STRUCTURE.

18.C.5. PROVIDE SUPPLEMENTAL STEEL AS REQUIRED TO ADEQUATELY SUPPORT THE EQUIPMENT LOAD.

18.C.6. EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATION, REFER TO VIBRATION ISOLATION SECTION.

18.D. UP FRONT PURCHASE OF EQUIPMENT:

18.D.1. THE CONTRACTOR SHALL SUBMIT A LIST OF LONG LEAD TIME ITEMS THAT WILL AFFECT THE SCHEDULE OF THE PROJECT IF NOT PURCHASED IMMEDIATELY UP FRONT AT THE START OF THE PROJECT. THE MECHANICAL CONTRACTOR SHALL SUBMIT PROPOSED MANUFACTURER AND LEAD TIMES FOR ALL PROJECT EQUIPMENT AT TIME OF PROJECT AWARD.

18.E. DUCTED AIR SOURCE HEAT PUMP

18.E.1. BASIS OF DESIGN: MITSUBISHI

18.E.2. QUALITY ASSURANCE

18.E.2.A. PERFORMANCE RATINGS: AIR SOURCE HEAT PUMPS SHALL HAVE A MINIMUM HSPF OF 11.2, MINIMUM SEER OF 18.2 AND MINIMUM EER OF 11.2. THE COP AT 47°F OUTSIDE AIR TEMPERATURE SHALL BE NO LESS THAN 3.9. THE EQUIPMENT SHALL BE ENERGY STAR CERTIFIED AND LISTED ON THE NEEP COLD CLIMATE AIR SOURCE HEAT PUMP LIST.

18.E.2.B. MANUFACTURERS THAT DO NOT COMPLY WITH PARAGRAPH 18.E.1 MUST ALSO PROVIDE AT THE OWNER AND ENGINEER'S OPTION PERFORMANCE SUBMITTAL DATA, CONTROLS INTEGRATION SUBMITTAL, AND PERFORMANCE THAT MEETS OR EXCEED PARAGRAPH 18.E.2.B.

18.E.3. SUBMITTALS

18.E.3.A. PROVIDE DIMENSIONAL DRAWINGS AND PRODUCT DATA ON EACH AIR SOURCE HEAT PUMP AND INDOOR AIR HANDLING UNIT.

18.E.3.B. PROVIDE PERFORMANCE CURVES AT THE AHRI STANDARD RATING CONDITIONS.

18.E.3.C. STRICTLY ADHERE TO THE QUALITY ASSURANCE REQUIREMENTS AS STATED IN SECTION 1.4 OF THIS SPECIFICATION.

18.E.4. DELIVERY, STORAGE, AND HANDLING

18.E.4.A. DELIVER MATERIALS TO SITE IN MANUFACTURER'S ORIGINAL, UNOPENED CONTAINERS AND PACKAGING, WITH LABELS CLEARLY INDICATING MANUFACTURER, MATERIAL, PRODUCTS INCLUDED, AND LOCATION OF INSTALLATION.

18.E.4.B. STORE MATERIALS IN A DRY AREA INDOOR, PROTECTED FROM DAMAGE, AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FOR LONG TERM STORAGE, FOLLOW MANUFACTURER'S INSTALLATION, OPERATION AND MAINTENANCE MANUAL.

18.E.4.C. HANDLE AND LIFT AIR SOURCE HEAT PUMPS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PROTECT MATERIALS AND FINISHES DURING HANDLING AND INSTALLATION TO PREVENT DAMAGE. FOLLOW ALL SAFETY WARNINGS POSTED BY THE MANUFACTURER.

18.E.5. WARRANTY

18.E.5.A. SUBMIT, FOR OWNER'S ACCEPTANCE, MANUFACTURER'S STANDARD WARRANTY DOCUMENT EXECUTED BY AUTHORIZED COMPANY OFFICIAL. MANUFACTURER'S WARRANTY IS IN ADDITION TO, AND NOT A LIMITATION OF, OTHER RIGHTS OWNER MAY HAVE UNDER CONTRACT DOCUMENTS.

18.E.5.B. THE WARRANTY OF THIS EQUIPMENT IS TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF 24 MONTHS FROM THE PURCHASE DATE. ANY UNITS OR PARTS, WHICH PROVE DEFECTIVE DURING THE WARRANTY PERIOD, WILL BE REPLACED AT THE MANUFACTURERS' OPTION WHEN RETURNED TO THE MANUFACTURER, TRANSPORTATION PREPAID.

18.E.5.C. MOTOR WARRANTY IS WARRANTED BY THE MOTOR MANUFACTURER FOR A PERIOD OF ONE YEAR. SHOULD MOTORS FURNISHED PROVE DEFECTIVE DURING THIS PERIOD, THEY SHOULD BE RETURNED TO THE NEAREST AUTHORIZED MOTOR SERVICE STATION.

18.E.6. EQUIPMENT

18.E.6.A. BASE AIR SOURCE HEAT PUMP PERFORMANCE AT STANDARD CONDITIONS.

18.E.6.B. EACH HEAT PUMP SHALL BE DIRECT DRIVEN AND PROVIDED WITH INVERTER OR OTHER VARIABLE SPEED CONTROL.

END OF SECTION

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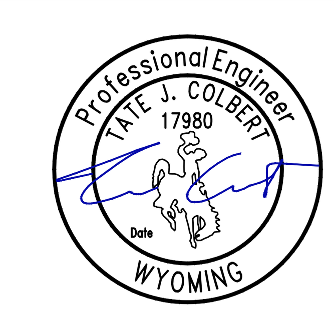

PROJECT
GRACE SPA
LOCATION

	Project No.
TC	Drawn By
TC	Checked By
Discipline	Drawing No.
M	0.4

Drawing Name
MECHANICAL SPECIFICATIONS

AIR HANDLING UNIT SCHEDULE

TAG	SERVICE	LOCATION	TYPE	FAN MOTOR HP	TOTAL CFM	WEIGHT (LBS)	PERFORMANCE DATA						ELECTRICAL DATA				MANUFACTURER AND MODEL	NOTES
							COOLING (95°F)	HEATING (47°F)	HEATING (17°F)	EXT SP ("W.C.)	SEER	EER	MCA	VOLTS	PHASE	HZ		
AHU-1	SPA	MECH.	DUCTED AIR HANDLER	3/4	1750	207	47,500	47,000	29,400	0.8	16.5	12.5	8.5	208/230	1	60	CARRIER FV4CNB006L	1 2 3 4 5 6

NOTES:
1. PROVIDE VIBRATION ISOLATING EQUIPMENT.
2. PROVIDE WITH AND INSTALL DISCONNECT KIT
3. PROVIDE WITH AND INSTALL FAN COIL FILTER CABINET WITH MERV-13 FILTER (P/N: FILCCFNC00).
4. PROVIDE WITH AND INSTALL HORIZONTAL WATER MANAGEMENT KIT.
5. PROVIDE WITH AND INSTALL HORIZONTAL CONVERSION GASKET KIT.
6. PROVIDE WITH AND INSTALL CARRIER COMFORT PRO NON-COMMUNICATING PROGRAMMABLE THERMOSTAT (P/N: 33CSCPACHP-01). PROVIDE 24VAC POWER TO THERMOSTAT AND INSTALL OUTDOOR TEMPERATURE SENSOR (33ZCSENOAT).

AIR-SOURCE HEAT PUMP SCHEDULE

TAG	SERVICE	LOCATION	COMP. TYPE	COND. CFM	WEIGHT (LBS)	DEFROST METHOD	REF'R.	REF'R CHARGE (LBS)	PERFORMANCE DATA			ELECTRICAL DATA					MANUFACTURER AND MODEL	NOTES
									COOLING AMBIENT LIMITS	HEATING AMBIENT LIMITS	HSPF	MOCP	MCA	VOLTS	PHASE	HZ		
HP-1	AHU-1	WEST	SCROLL	4350	328	REVERSE CYCLE	R-410A	13.73	125°F - 55°F	-20°F - 67°F	9	50	29.8	208/230	1	60	CARRIER 25HNB648A0031	1 2 3 4

NOTES:
1. PROVIDE VIBRATION ISOLATING EQUIPMENT BETWEEN UNIT AND EQUIPMENT PAD.
2. PROVIDE INSULATED PRE-CHARGED REFRIGERANT LINESET. SEE PLANS AND MANUFACTURERS INSTALLATION MANUAL FOR REFRIGERANT PIPE SIZING. PROVIDE MINIMUM 1" THICK R-3.5 INSULATION.
3. PROVIDE WITH AND INSTALL FACTORY SNOW STAND (P/N: KHASS0606MPK).
4. PROVIDE WITH AND INSTALL LIQUID LINE SOLENOID VALVE KIT (P/N: KHALS0401LLS)
4. PROVIDE WITH NEW ELECTRICAL CIRCUIT, BREAKER AND OTHER ACCESSORIES TO MEET NEW EQUIPMENT ELECTRICAL REQUIREMENTS.

HEAT RECOVERY VENTILATOR SCHEDULE

TAG	SERVICE	VENTILATION AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE ("W.C.)	DUCT CONNECTION SIZE	SENSIBLE RECOVERY EFFICIENCY (%)	ELECTRICAL DATA			MANUFACTURER AND MODEL	NOTES
						VOLTS/PH.	MCA	MOCP		
HRV-1	AHU-1/SPA	825	0.89	12"Ø	70	230/1	10.8	15	RENEWAIRE HE1XINH	1 2 3

NOTES:
1. PROVIDE WITH RENEWAIRE PERCENTAGE TIMER CONTROL (FM) AND WIRE TO THERMOSTAT ACCORDING TO OPTION 2 IN THE FM INSTRUCTION SHEET.
2. INSTALL PER MANUFACTURER'S INSTRUCTIONS.
3. PROVIDE MOTORIZED DAMPER ON O/A STREAM.

LOUVER SCHEDULE

TAG	SERVICE	AIRFLOW (CFM)	VELOCITY (FPM)	FREE AREA (FT^2)	MATERIAL	DIMENSIONS (WxL)	MANUFACTURER AND MODEL	NOTES
L-1	HRV-1 INTAKE	825	586	1.41	ALUMINUM	28X16	RUSKIN ELF6375X	1 2
L-2	HRV-1 EXHAUST	825	586	1.41	ALUMINUM	28X16	KRUEGER PLQ	1 2

NOTES:
1. PROVIDE WITH OPPOSED BLADE DAMPER.
2. VERIFY MOUNTING IN FIELD PRIOR TO ORDERING.

HOT WATER COIL SCHEDULE

TAG	SERVICE	AIRFLOW (CFM)	CAPACITY (MBH)	ENTERING /LEAVING AIR TEMP	FACE VELOCITY (FPM)	A.P.D. ("W.C.)	AIR FOULING FACTOR	DUCT SIZE	FLUID	EWT/LWT (°F)	FLOW RATE (GPM)	FLUID VELOCITY (FPM)	FLUID PRESSURE DROP (FT. HEAD)	FLUID FOULING FACTOR	VOLTS/PH.	FLUID FREEZING TEMP.	MANUFACTURER AND MODEL	NOTES
HWC-1	AHU-1	1750	62	50°F / 87.2°F	583	0.55	0.005	16"X12"	30% P.G.	140 / 120	7.4	2.58	3.2	0.0025	240/3	8.4°F	GREENHECK HW38W03H12-18X24-RH	1 2 3 4

NOTES:
1. VERIFY COIL CONNECTION SIZE AND ORIENTATION IN FIELD PRIOR TO ORDERING. VERIFY EXISTING PUMP WITH ADEQUATE FLOW (GPM) AND PRESSURE (FT. HEAD) EXISTS FOR HWC-1, PROVIDE AND INSTALL NEW PUMP IF NEEDED.
2. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
3. PROVIDE DUCT MOUNTED FREEZE-STAT ON ENTERING AIR FACE OF COIL TO SHUT DOWN AHU-1 IF TEMPERATURE DROPS BELOW FREEZING.
4. CONNECT HWC-1 TO EXISTING HOT WATER SYSTEM IN BUILDING. CONTROL SHALL BE VIA 2-POSITION CONTROL VALVE OR PUMP.

GRILLE, REGISTER, DIFFUSER SCHEDULE

TAG	SERVICE	AIRFLOW (CFM)	NEW/ EXISTING	MOUNTING	MATERIAL	DIMENSIONS (WxL)	FREE AREA (FT^2)	MANUFACTURER AND MODEL	NOTES
S-1	SUPPLY DIFFUSER	90-270	NEW	DUCT MOUNT	STEEL	10X6	0.42	KRUEGER 585	1 2
S-2	SUPPLY DIFFUSER	40-200	NEW	CEILING	STEEL	12X12	-	KRUEGER PLQ	1 2
R-1	RETURN GRILLE	580-590	NEW	CEILING	STEEL	24X24	-	KRUEGER S85	2
E-1	EXHAUST GRILLE	65-90	NEW	CEILING	STEEL	12X12	-	KRUEGER S85	2

NOTES:
1. PROVIDE WITH OPPOSED BLADE DAMPER.
2. VERIFY MOUNTING IN FIELD PRIOR TO ORDERING.

ELECTRIC DUCT HEATER SCHEDULE

TAG	SERVICE	AIRFLOW (CFM)	TEMP RISE (°F)	DUCT SIZE	ELECTRICAL DATA		MANUFACTURER AND MODEL	NOTES
					VOLTS/PH.	KW		
EDH-1	HRV-1	825	62	16"X12"	240/3	16	INDEECO QUA	1 2 3 4

NOTES:
1. PROVIDE WITH CONTROL OPTION K SCR PROPORTIONAL CONTROL (P/N: 1016941)
2. INSTALL IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
3. COORDINATE OTHER OPTIONS AND ACCESSORIES BASED ON FIELD INSTALLATION.
4. PROVIDE WITH MANUFACTURER'S AIRFLOW SWITCH.

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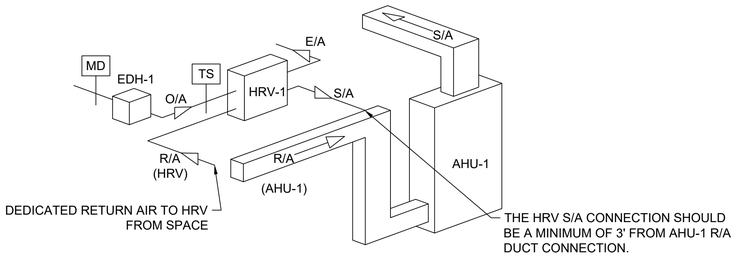
Professional Engineer
TIAFF J. COLBERT
17980
Date
WYOMING

PROJECT
GRACE SPA
LOCATION

	Project No.
TC	Drawn By
TC	Checked By
Discipline	Drawing No.
M	0.5

Drawing Name
SCHEDULES

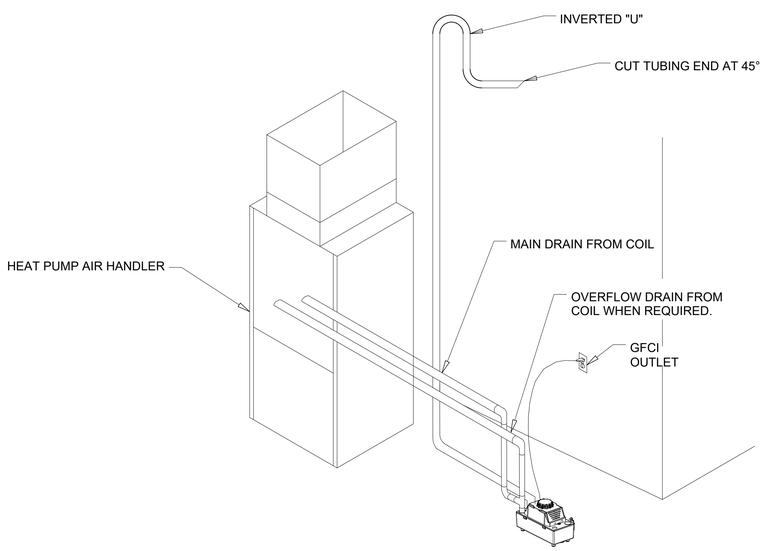


NOTES:

1. AHU-1 BLOWER AND ERV-1 OPERATION ARE INTERLOCKED THROUGH THE HRV-1 CONTROLLER. INTERLOCK SUCH THAT THE HRV-1 CAN ENABLE AHU-1 FAN ANYTIME THE HRV IS SCHEDULED TO BE ON BASED ON OCCUPANCY.
2. INTERLOCK MOTORIZED DAMPER WITH HRV-1 OPERATION. ANYTIME THE HRV-1 IS OPERATING, THE MOTORIZED DAMPER SHALL BE OPEN. ALL OTHER TIMES THE MOTORIZED DAMPER SHALL REMAIN CLOSED.
3. EDH-1 SHALL MODULATE TO MAINTAIN MINIMUM 32°F OUTDOOR AIR ENTERING ERV-1.

1 HRV AND HEAT PUMP CONNECTION DETAIL

SCALE: N.T.S.



NOTES:

1. WIRE THE PUMP SAFETY SWITCH TO SHUT OFF THE HEAT PUMP AND HRV IF AN OVERFLOW IS DETECTED.

2 CONDENSATE PUMP INSTALLATION DETAIL

SCALE: N.T.S.

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Professional Engineer
TAYLOR J. COLBERT
17980
Date
WYOMING

PROJECT
GRACE SPA
LOCATION

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TC	Checked By
Discipline	Drawing No.
M	0.6

Drawing Name
DETAILS

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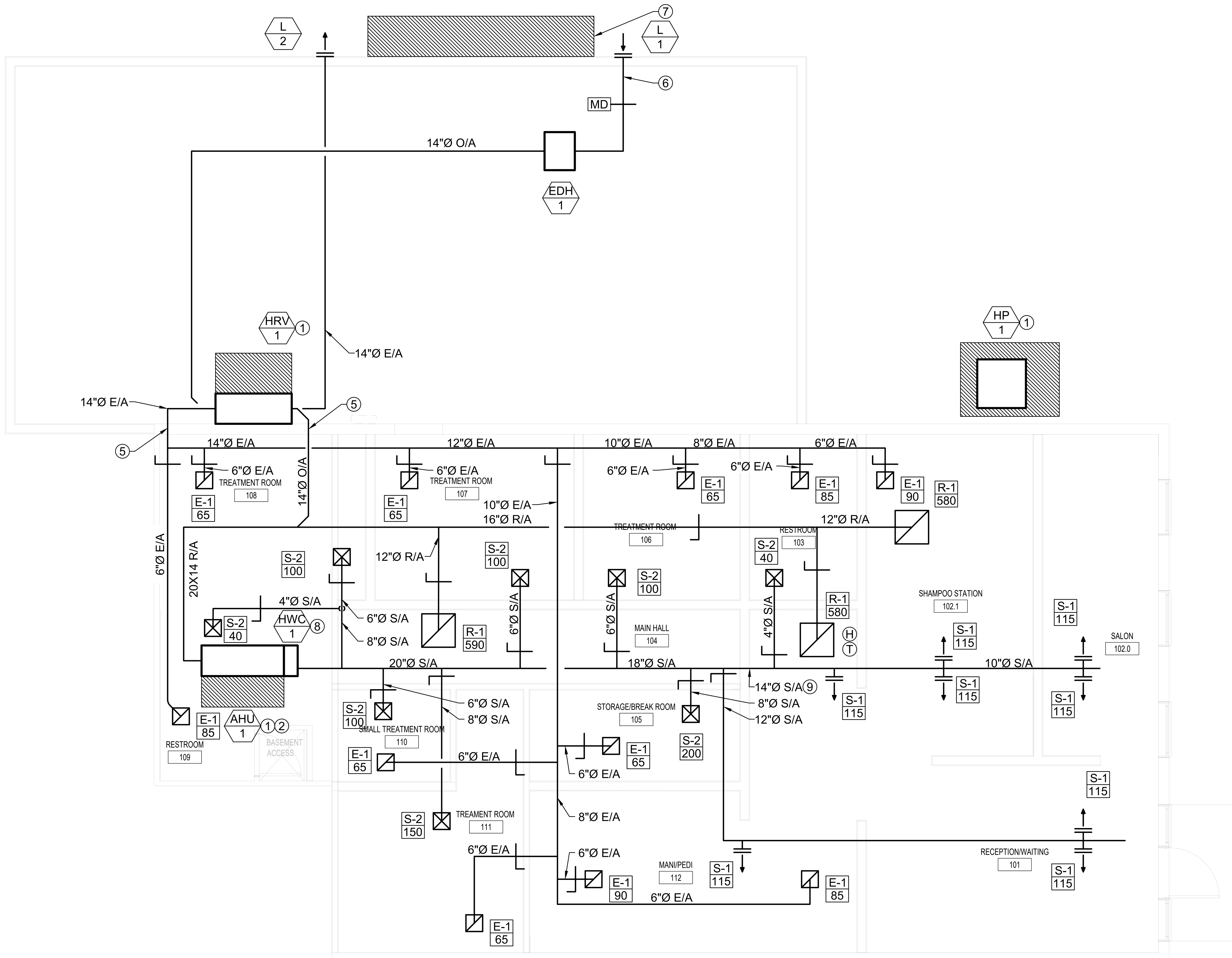

1 FIRST FLOOR MECHANICAL

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

NORTH

SHEET NOTES:

1. CONTRACTOR SHALL BALANCE AIR DISTRIBUTION SYSTEM PER TAGGED AIRFLOW VALUES.
2. CONTRACTOR SHALL PROVIDE APPROPRIATE DUCT INSULATION ON ALL SUPPLY DUCTWORK, AS REQUIRED BY CODE.

KEYED NOTES:

1. MAINTAIN SERVICE CLEARANCES AS SHOWN.
2. PROVIDE AND INSTALL CONDENSATE DISPOSAL LINE. ROUTE TO NEAREST INDIRECT DISPOSAL LOCATION.
3. REMOVE EXISTING PACKAGED TERMINAL HEAT PUMP, RETAIN FOR OWNER USE. REPAIR AND INFILL WALL TO MATCH SURROUNDING INTERIOR AND EXTERIOR FINISHES.
4. ROUTE PUMPED CONDENSATE TO NEAREST SANITARY SEWER LINE. CONNECTION TO SANITARY SEWER SHALL BE MADE VIA INDIRECT RECEIVER.
5. VERIFY REQUIREMENTS OF DUCT PENETRATIONS THROUGH ADJACENT WALL. PROVIDE ALL FIRE-PROOFING AND APPROPRIATE FIRE AND/OR SMOKE DAMPERS AS REQUIRED BY CODE.
6. CONTRACTOR SHALL PROVIDE AND INSTALL CONTINUOUS, FOIL-FACED, R-12 DUCT INSULATION FROM TERMINATION AT LOUVER TO ERV-1.
7. CONTRACTOR SHALL INSTALL THE INTAKE AND EXHAUST AIR LOUVERS IN ACCORDANCE WITH ALL APPLICABLE CODES AND LOWER VALLEY ENERGY STANDARDS. MAINTAIN A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN INTAKE AND EXHAUST AIR LOUVERS, AND A MINIMUM OF 3' OF SEPARATION BETWEEN THE EXHAUST AIR LOUVER AND ANY OPERABLE WINDOWS.
8. CONNECT NEW HOT WATER COIL (HWC-1) TO EXISTING HOT WATER SYSTEM.
9. TRANSITION TO EXPOSED SPIRAL SEAM DUCTWORK. PAINT AND FINISH PER OWNER'S REQUIREMENTS.

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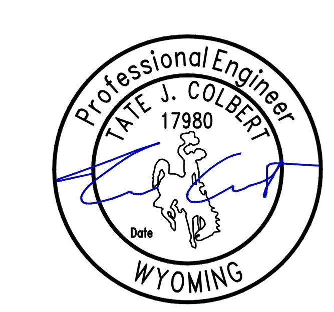

PROJECT
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LOCATION

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Discipline	Drawing No.
M	1.0

Drawing Name
FIRST FLOOR MECHANICAL PLAN

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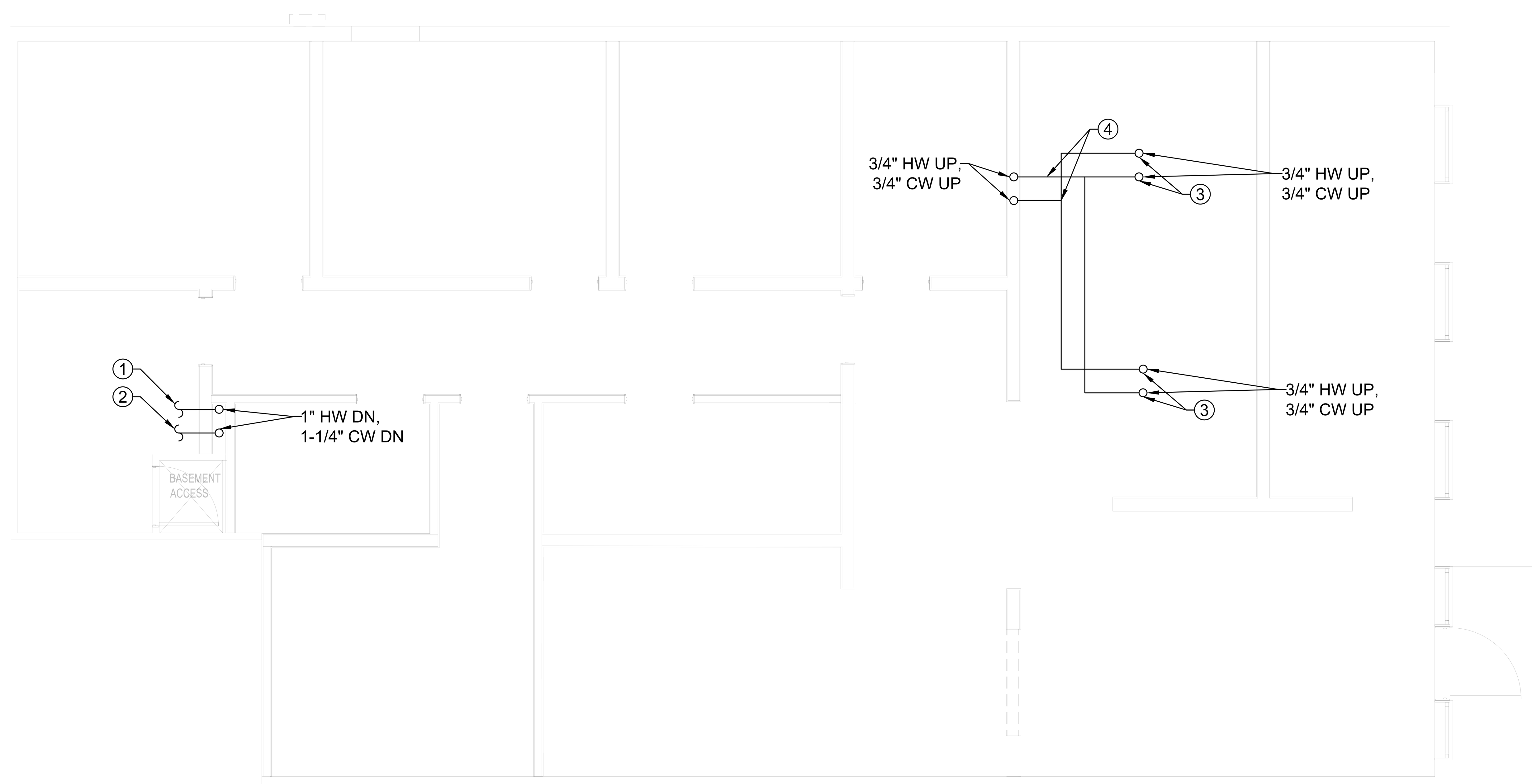
SHEET NOTES:

1. INSULATE ALL SUPPLY AIR DUCTWORK IN ACCORDANCE WITH SPECIFICATIONS.

KEYED NOTES:

1. ROUTE AND CONNECT NEW DOMESTIC HOT WATER PIPING TO THE EXISTING HOT WATER HEATER.
2. ROUTE AND CONNECT NEW DOMESTIC COLD WATER PIPING TO THE EXISTING WATER SERVICE ENTRY. PROVIDE DOUBLE-CHECK BACKFLOW PREVENTER AND PRESSURE REDUCING VALVE IF NECESSARY.
3. ROUTE DOMESTIC HOT AND COLD WATER UNDER SLAB TO SHAMPOO STATION FIXTURE. VERIFY EXACT LOCATION IN FIELD. COORDINATE LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
4. ALL SUB-SLAB DOMESTIC PIPING SHALL BE PROVIDED WITH MINIMUM 1/2" THICK CLOSED CELL FOAM INSULATION WITH VAPOR BARRIER. SEAL ALL SEAMS AND ENDS OF INSULATION.



1 BASEMENT DOMESTIC PLUMBING
SCALE: 1/4" = 1'-0"
NORTH

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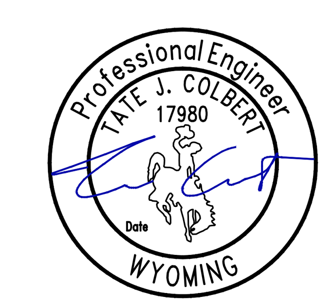

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GRACE SPA
LOCATION

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TC	Checked By
Discipline	Drawing No.
P	1.0

Drawing Name
BASEMENT DOMESTIC PLUMBING PLAN

SHEET NOTES:

1. ROUTE ALL DOMESTIC WATER PIPING ABOVE DROP CEILING.
2. INSTALL ALL DOMESTIC WATER SYSTEMS IN ACCORDANCE WITH THE 2021 INTERNATIONAL PLUMBING CODE WITH LOCAL AMENDMENTS.
2. DRAWINGS ARE DIAGRAMMATIC IN NATURE. ALL PIPE ROUTING AND INSTALLATION SHOULD BE VERIFIED IN FIELD PRIOR TO INSTALLATION.
3. PROVIDE SHUTOFF VALVES IN ALL DOMESTIC WATER PIPING SYSTEM BRANCHES IN WHICH BRANCH SERVE TWO OR MORE FIXTURES.
4. INSTALL ALL PIPING SO ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.

KEYED NOTES:

1. STUB OUT 3/4" DOMESTIC HOT AND COLD WATER LINES FOR PEDICURE STATIONS. VERIFY EXACT LOCATION IN FIELD. COORDINATE LOCATION AND REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
2. ALL DUCTWORK LOCATED IN THE BOILER ROOM TO BE MINIMUM THICKNESS OF 24 GAUGE GALVANIZED SHEET STEEL, INSULATED WITH R-8 FIRE-PROOF INSULATION.
3. PROVIDE CL WARD CRD-50 1-HOUR FIRE DAMPER WITH BOOT WHERE DUCT PENETRATES THE FLOOR ABOVE. INSTALL INTUMESCENT FIRE-CAULK AT ANY GAP BETWEEN BOOT AND FLOOR PENETRATION.
4. PROVIDE 1-HOUR RATED FIRE DAMPER AT FIRST FLOOR PENETRATION. INSTALL INTUMESCENT FIRE-CAULK AT ANY GAP BETWEEN BOOT AND FLOOR PENETRATION.
5. PROVIDE AND INSTALL CONDENSATE DISPOSAL LINE. ROUTE TO NEAREST INDIRECT DISPOSAL LOCATION.

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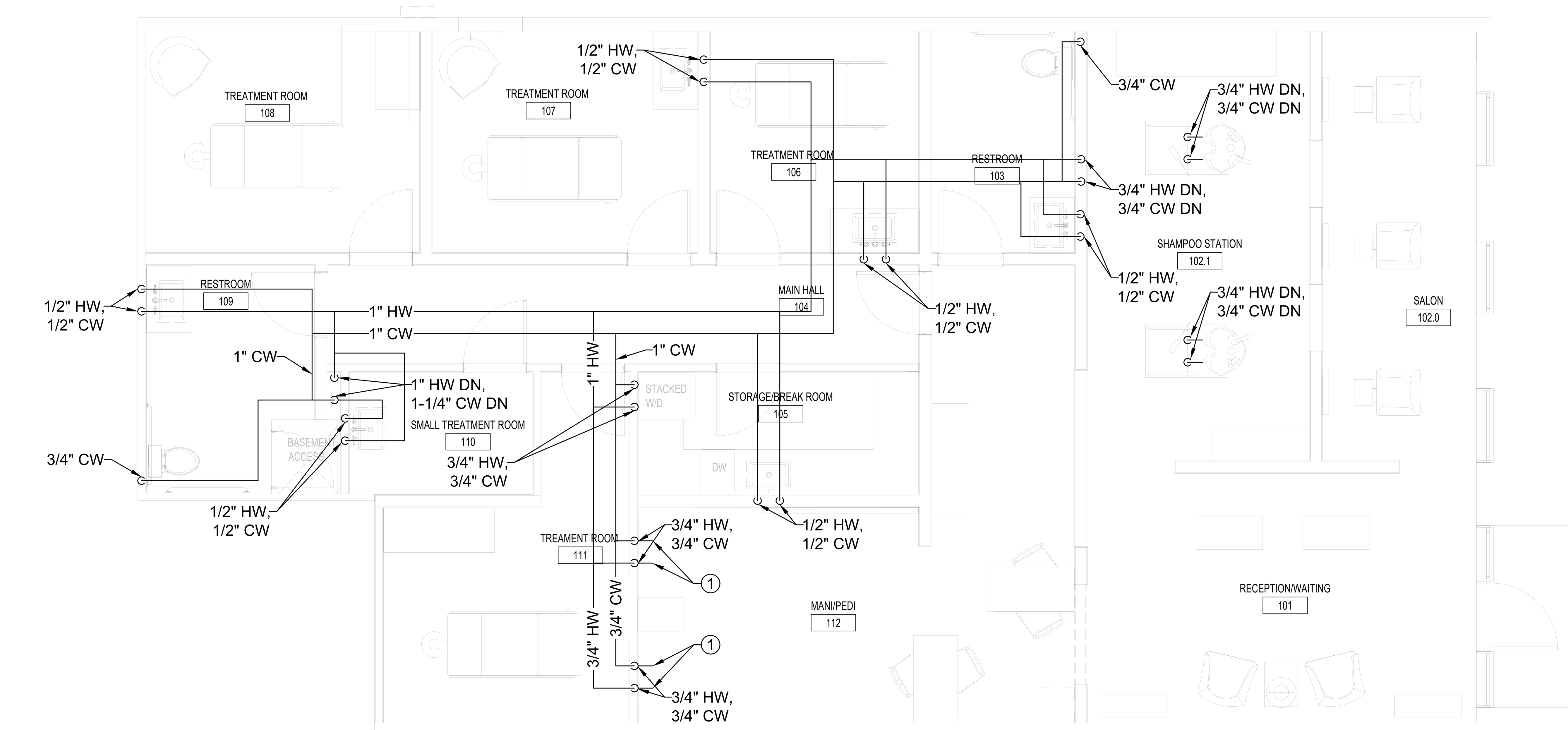

1 FIRST FLOOR DOMESTIC PLUMBING
SCALE: 1/4" = 1'-0"
NORTH

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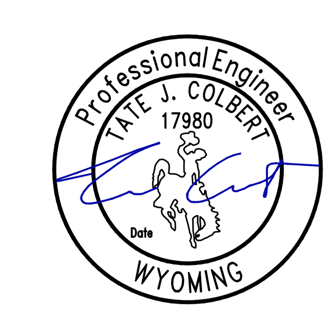

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LOCATION

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FIRST FLOOR DOMESTIC PLUMBING PLAN

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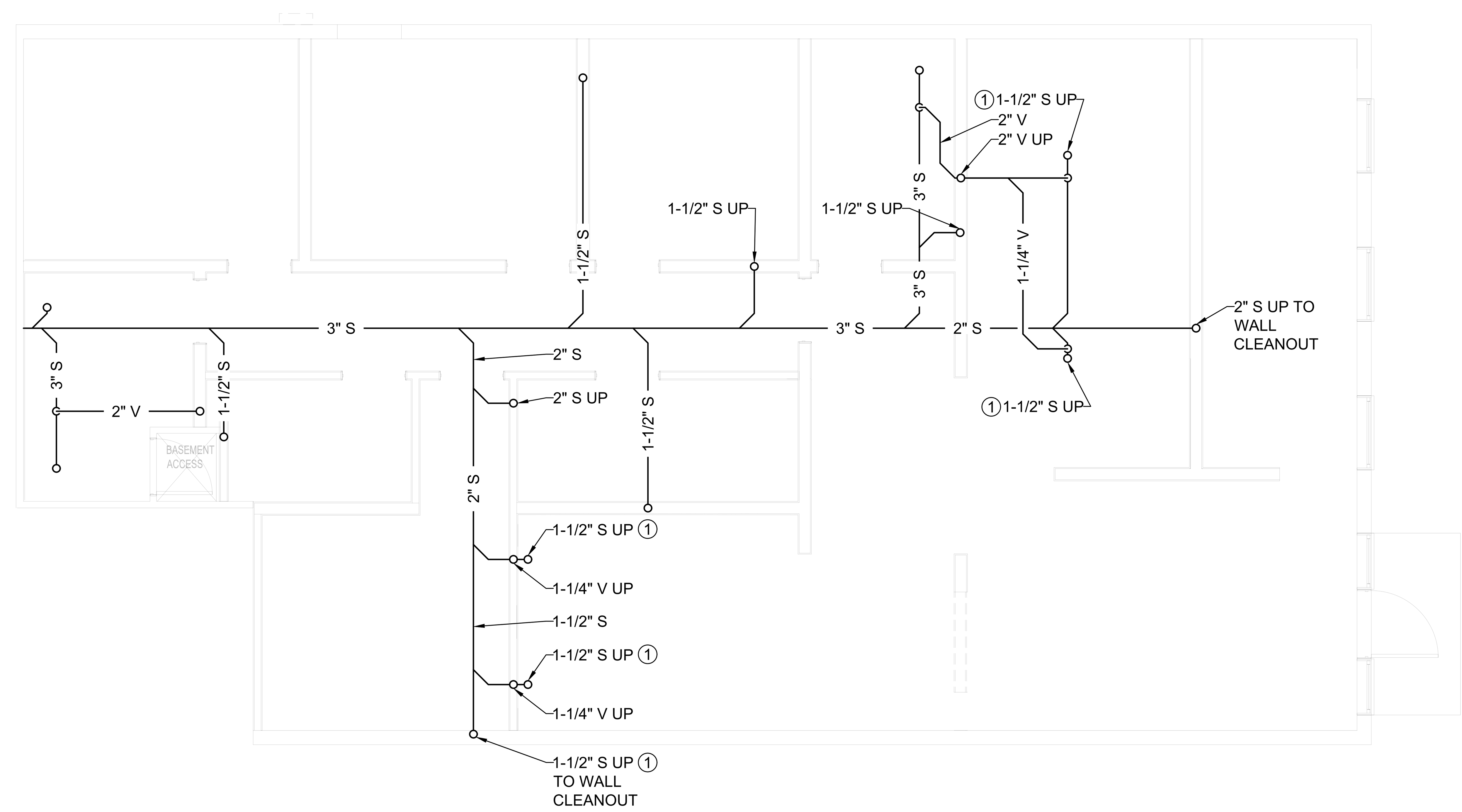
SHEET NOTES:

1. INSTALL ALL DOMESTIC WATER SYSTEMS IN ACCORDANCE WITH THE 2021 INTERNATIONAL PLUMBING CODE WITH LOCAL AMENDMENTS.
2. DRAWINGS ARE DIAGRAMMATIC IN NATURE. ALL PIPE ROUTING AND INSTALLATION SHOULD BE VERIFIED IN FIELD PRIOR TO INSTALLATION.
3. INSTALL HORIZONTAL SANITARY AND VENT PIPING WITH 1/4" PER FT. DOWNWARD SLOPE TOWARDS THE BUILDING DRAIN.
4. PROVIDE CLEANOUTS IN SANITARY DRAINAGE SYSTEMS AT END OF RUNS, AT CHANGES IN DIRECTION, NEAR BASE OF STACKS, EVERY 50 FT. IN HORIZONTAL RUNS, AND ELSEWHERE AS INDICATED.
5. ALL CLEANOUTS SHALL BE THE FULL SIZE OF THE PIPE.

KEYED NOTES:

1. COORDINATE EXACT LOCATION OF SEWER WITH OWNER PRIOR TO ROUGH-IN.



1 BASEMENT SANITARY PLUMBING
SCALE: 1/4" = 1'-0"

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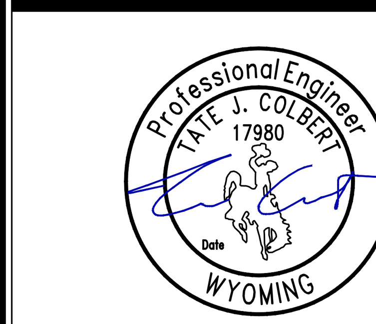

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LOCATION

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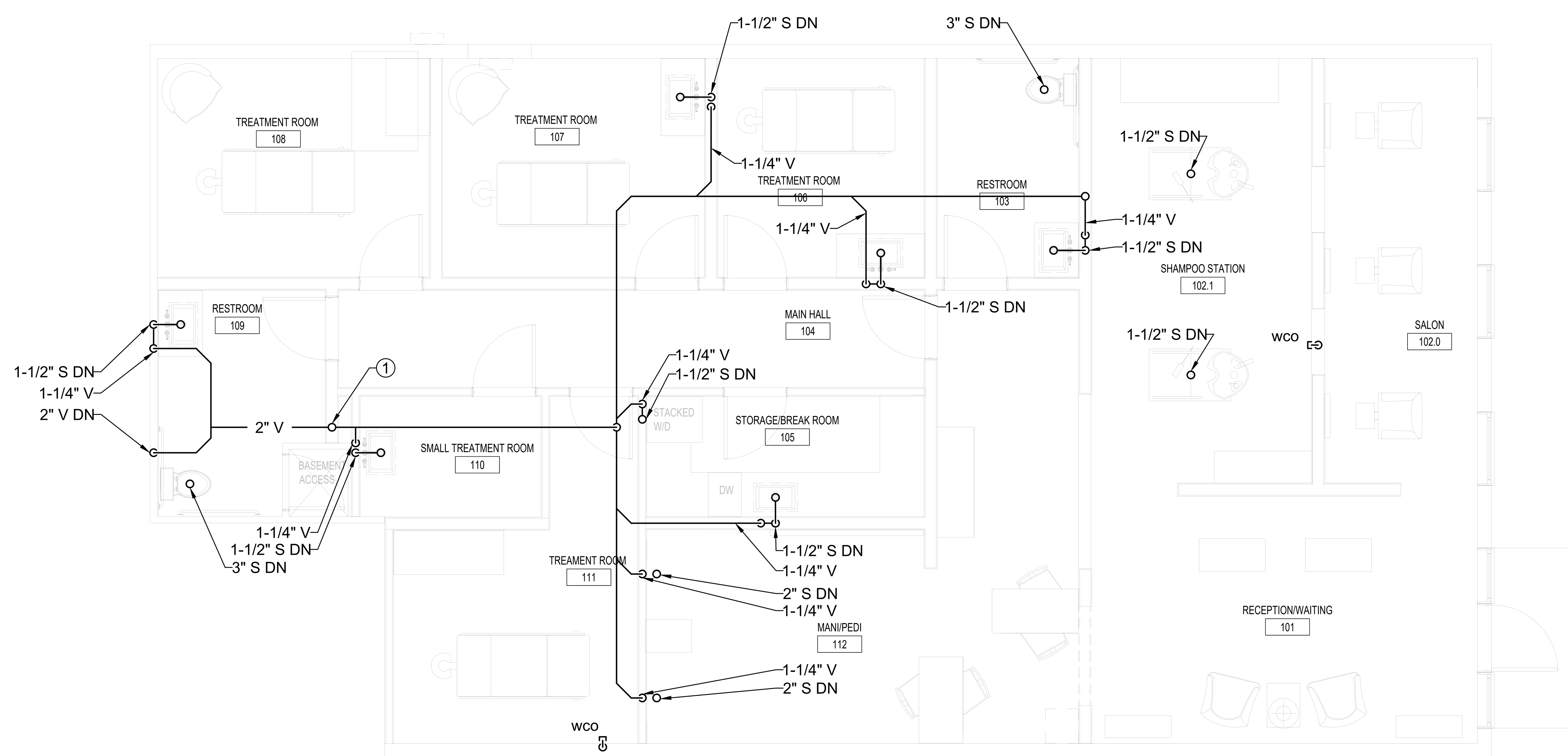
TC	Drawn By
TC	Checked By
Discipline	Drawing No.
P	1.2

Drawing Name
BASEMENT SANITARY PLUMBING PLAN



1 FIRST FLOOR SANITARY PLUMBING
SCALE: 1/4" = 1'-0"
NORTH

SHEET NOTES:

1. INSTALL ALL DOMESTIC WATER SYSTEMS IN ACCORDANCE WITH THE 2021 INTERNATIONAL PLUMBING CODE WITH LOCAL AMENDMENTS.
2. DRAWINGS ARE DIAGRAMMATIC IN NATURE. ALL PIPE ROUTING AND INSTALLATION SHOULD BE VERIFIED IN FIELD PRIOR TO INSTALLATION.
3. INSTALL HORIZONTAL SANITARY AND VENT PIPING WITH 1/4" PER FT. DOWNWARD SLOPE TOWARDS THE BUILDING DRAIN.
4. PROVIDE CLEANOUTS IN SANITARY DRAINAGE SYSTEMS AT END OF RUNS, AT CHANGES IN DIRECTION, NEAR BASE OF STACKS, EVERY 50 FT. IN HORIZONTAL RUNS, AND ELSEWHERE AS INDICATED.
5. ALL CLEANOUTS SHALL BE THE FULL SIZE OF THE PIPE.

KEYED NOTES:

1. CONNECT VENT PIPING TO EXISTING VENT THROUGH ROOF. CONTRACTOR SHALL COORDINATE EXACT LOCATION IN FIELD AND INSPECT EXISTING VENT PIPE FOR APPROPRIATE SIZE AND CONDITION.

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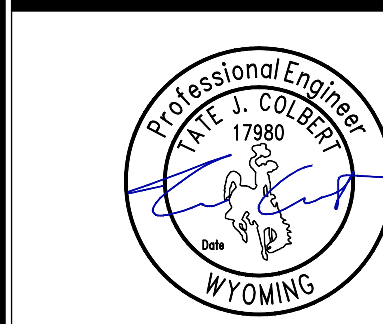

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LOCATION

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Discipline	Drawing No.
P	1.3

Drawing Name
FIRST FLOOR SANITARY PLUMBING PLAN

ELECTRICAL LEGEND - LIGHTING

REFERENCE FIXTURE SCHEDULE FOR MOUNTING TYPE, MOUNTING HEIGHT, AND FIXTURE TYPE.

- DOUBLE FACE EXIT SIGN, CEILING MOUNTED, PROVIDE UNSWITCHED CONDUCTOR.
- WALL MOUNTED DOUBLE FACE EXIT SIGN PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +8'-0" UNO.
- SINGLE FACE EXIT SIGN, CEILING MOUNTED PROVIDE UNSWITCHED CONDUCTOR.
- WALL MOUNTED SINGLE FACE EXIT SIGN PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +8'-0" UNO.
- ARROW INDICATES DIRECTION TO BE SHOWN ON SIGN.
- 1'X1' LIGHT FIXTURE.
- 1'X1' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- TRACK LIGHT
- 1'X4' LIGHT FIXTURE.
- 1'X4' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- 2'X4' LIGHT FIXTURE.
- 2'X4' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- 2'X2' LIGHT FIXTURE.
- 2'X2' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- DIRECT/INDIRECT LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH.
- DIRECT/INDIRECT LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR
- STRIP LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH.
- STRIP LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- RECESSED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- ROUND LIGHT FIXTURE
- ROUND EMERGENCY LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED EMERGENCY LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- POLE LIGHT 1 HEAD WITH POLE
- TC — TIME CLOCK
- PC — PHOTO CONTROL CELL LOCATED 12" ABOVE ROOF FACING NORTH.
- OS — OCCUPANCY SENSOR. PROVIDE RELAYS AND POWER PACKS AS REQUIRED.
- D — LED DRIVER
- EMERGENCY EGRESS LIGHTING WITH OUT FIXTURE HEADS. CONNECT TO AN UNSWITCHED CONDUCTOR.
- EMERGENCY EGRESS LIGHTING. CONNECT TO AN UNSWITCHED CONDUCTOR.
- WALL MOUNTED SINGLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +8'-0" UNO.
- CEILING MOUNTED. SINGLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR.
- CEILING MOUNTED. DOUBLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR.
- XXX — INDICATES FIXTURE TYPE. REFER TO FIXTURE SCHEDULE.
- EXTERIOR WALL PACK
- EMERGENCY EXTERIOR WALL PACK. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR

DEVICES

- S^{x}_{x} — SWITCH, TYPE AS INDICATED. +46"AFF
  - 2 DOUBLE POLE
  - 3 3-WAY
  - 4 4-WAY
  - K KEYED
  - P PILOT LIGHT
  - D DIMMER
  - HP HORSEPOWER RATED
  - TO THERMAL OVERLOAD
  - LV LOW VOLTAGE
  - OS OCCUPANCY SENSOR
  - OR LOW VOLTAGE, MOMENTARY OVERRIDE
  - VS VACANCY SENSOR
  - a SUPERSCRIPT INDICATES LIGHTS TO BE SWITCHED TOGETHER
- DUAL LEVEL SWITCHING, INSIDE AND OUTSIDE LAMPS OF FIXTURE TO BE SWITCHED SEPARATELY.
- DUAL LEVEL SWITCHING WITH OCCUPANCY SENSOR, INSIDE AND OUTSIDE LAMPS OF FIXTURE TO BE SWITCHED SEPARATELY.
- OCCUPANCY SENSOR WITH MANUAL DIMMING, SET FOR 50% AUTOMATIC ON, AUTOMATIC OFF, WITH MANUAL DIMMING.
- SINGLE CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNT SINGLE CONVENIENCE OUTLET
- DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNT DUPLEX CONVENIENCE OUTLET
- EMERGENCY DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- SWITCHED DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNTED SWITCHED DUPLEX CONVENIENCE OUTLET
- USB DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- USB FOURPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FOURPLEX CONVENIENCE OUTLET. +18"AFF UNO
- FLOOR MOUNT FOURPLEX CONVENIENCE OUTLET
- CONNECTION POINT TO EQUIPMENT SPECIFIED, ELECTRICAL CONTRACTOR TO SUPPLY RACEWAY AND CONDUCTORS AND MAKE FINAL CONNECTION TO EQUIPMENT UNDER THIS SECTION. UNO
- FLOOR MOUNTED CONNECTION POINT, SEE NOTE ABOVE FOR REQUIREMENTS
- FLOOR MOUNTED JUNCTION BOX
- JUNCTION BOX
- WALL MOUNTED PUSH BUTTON, MOUNT AT SWITCH HEIGHT UNO
- HC — WALL MOUNTED PUSH BUTTON, HANDICAPPED MOUNT AT SWITCH HEIGHT UNO
- WALL MOUNTED PUSH BUTTON, MOUNT AT SWITCH HEIGHT UNO
- MOTOR STARTER/CONTACTOR, SIZE/POLES NEMA 1 UNO AS INDICATED
- COMBINATION STARTER AND DISCONNECT, SIZE/POLES, STARTER SIZE AS INDICATED, NEMA 1 UNO
- F — FUSED DISCONNECT SWITCH, SIZE/POLES, FUSE SIZES AS INDICATED, NEMA 1 UNO
- NON-FUSED DISCONNECT SIZE/ POLES AS INDICATED, NEMA 1 UNO
- T (unit-#) — THERMOSTAT, +46" AFF PROVIDE CONDUIT, J-BOX, CONDUCTORS AS REQUIRED TO CONTROL ASSOCIATED UNITS. UNO COORDINATE WITH DIVISION 15.
- H (unit-#) — HUMIDISTAT, +46" AFF PROVIDE CONDUIT, J-BOX, CONDUCTORS AS REQUIRED TO CONTROL ASSOCIATED UNITS.
- POWER POLE - DUAL CHANNEL
- REB — RECESSED ENTERTAINMENT BOX
- T — TRANSFORMER
- PANELBOARD. SEE SCHEDULE FOR TYPE.
- EQUIPMENT CABINET, SURFACE MOUNTED
- EQUIPMENT CABINET FLUSH MOUNTED
- SURFACE MULTI-OUTLET RACEWAY
- #/# — MECHANICAL EQUIPMENT CALL OUT
- # — KITCHEN EQUIPMENT CALLOUT

ONE LINE

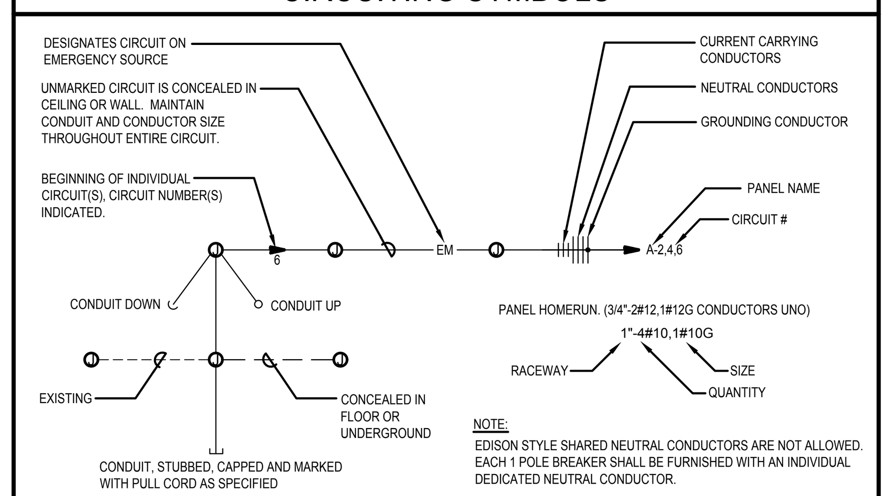
- DELTA WYE TRANSFORMER UNO
- # PANEL NAME VOLTAGE PHASE — PANEL BOARD, SEE SCHEDULE FOR TYPE AND SIZE
- ##A #P — CIRCUIT BREAKER, SIZE AND POLES INDICATED
- ##A — FUSE, SIZE AND TYPE INDICATED, PROVIDE FUSE FOR EACH POLE
- ##A #P — INTERRUPTER SWITCH, SIZE AND POLES INDICATED
- ##A #P — FUSED SWITCH, SIZE/POLES AND FUSE SIZE INDICATED
- ##A #P — DRAW OUT CIRCUIT BREAKER, SIZE AND POLES INDICATED
- ###A #P S — INDIVIDUAL BREAKER WITH SHUNT TRIP, SIZE AND POLES INDICATED. NEMA 1 UNO
- ###A #P — INDIVIDUAL BREAKER, SIZE AND POLES INDICATED. NEMA 1 UNO
- GFP — GROUND FAULT PROTECTION
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSION
- LSIGR — ADJUSTABLE BREAKER SETTINGS (PER SPECIFICATIONS):
  - 'L'-LONG TIME
  - 'S'-SHORT TIME
  - 'I'-INSTANTANEOUS
  - 'G'-GROUND FAULT
  - 'R'-ENERGY REDUCING MAINTENANCE SWITCH W/STATUS INDICATOR
- GROUND
- ST — SHUNT TRIP COIL
- M — MOTOR
- 100A 3P — DISCONNECT SWITCH, SIZE AND POLES INDICATED. NEMA 1 UNO
- OVERHEAD SERVICE DROP
- ###A/3P — GENERATOR SET, MAIN BREAKER SIZE INDICATED
- AUTOMATIC TRANSFER SWITCH (ATS)
- M — METER AND BASE
- N — NEUTRAL
- T — DRY TYPE TRANSFORMER
- PAD MOUNT TRANSFORMER

SECURITY

- CCTV CAMERA POWER SUPPLY
- CCTV SYSTEM POWER SUPPLY
- ADJUSTABLE CAMERA (PAN/TILT/ZOOM)
- FIXED CAMERA
- CAMERA IN OUTDOOR HOUSING
- ADJUSTABLE CAMERA (PAN/TILT/ZOOM) IN OUTDOOR HOUSING
- C — CCTV OUTLET, +18" UNO
- C — CEILING MOUNTED CCTV OUTLET
- K — SECURITY SYSTEM KEYPAD CONTROLLER COORDINATE BOX SIZE AND MUDRING WITH VENDOR
- CR — CARD READER
- M — CEILING MOUNTED MOTION SENSOR
- M +80" — WALL MOUNTED MOTION SENSOR, MOUNTING HEIGHT INDICATED
- PANIC BUTTON - MOUNTED UNDER COUNTER

NOTE:	THIS IS A STANDARD LIST OF COMMONLY USED ELECTRICAL SYMBOLS. SOME OF THE SYMBOLS SHOWN MAY NOT HAVE BEEN USED IN THIS DRAWING PACKAGE.

CIRCUITING SYMBOLS



NOTE:
EDISON STYLE SHARED NEUTRAL CONDUCTORS ARE NOT ALLOWED. EACH 1 POLE BREAKER SHALL BE FURNISHED WITH AN INDIVIDUAL DEDICATED NEUTRAL CONDUCTOR.

FIRE ALARM

- F — PULL STATION, +44" AFF WITH PRE-ALARM COVER
- F — FIRE ALARM HORN, +84" AFF UNO
- F 15 — FIRE ALARM STROBE, +84" AFF UNO, STROBE INTENSITY INDICATED. 'C' INDICATES CEILING MOUNTED
- F 15 — FIRE ALARM HORN/STROBE +84" AFF, UNO, STROBE INTENSITY INDICATED. 'C' INDICATES CEILING MOUNTED
- F — FIRE ALARM BELL, +84" AFF UNO. 'C' INDICATES CEILING MOUNTED
- F — FIRE ALARM CHIME, +84" AFF UNO. 'C' INDICATES CEILING MOUNTED
- F 15 — FIRE ALARM CHIME/STROBE, +84" AFF UNO, STROBE INTENSITY INDICATED. 'C' INDICATES CEILING MOUNTED
- F — SPEAKER STROBE, +84" AFF UNO. 'C' INDICATES CEILING MOUNTED
- EOL — END OF LINE RESISTOR
- FS — FLOW SWITCH, PROVIDE MONITOR MODULE AS REQUIRED
- TS — TAMPER SWITCH, PROVIDE MONITOR MODULE AS REQUIRED
- PS — PRESSURE SWITCH, PROVIDE MONITOR MODULE AS REQUIRED
- FSA — FIRE SYSTEM ANNUNCIATOR, FLUSH MOUNTED +54"UNO
- PIV — POST INDICATOR VALVE, PROVIDE MONITOR MODULE AS REQUIRED
- DH — ELECTROMAGNETIC DOOR HOLDER
- R — RELAY
- CM — CONTROL MODULE
- MM — MONITOR MODULE
- FIRE ALARM KNOX BOX
- FIRE ALARM CONTROL PANEL
- NAC EXTENDER PANEL
- F — FIRE/SMOKE DAMPER
- F — LED INDICATOR LIGHT, CEILING MOUNTED UNO
- F T — LED INDICATOR LIGHT WITH TEST SWITCH, CEILING MOUNTED UNO
- SD — DUCT-MOUNTED SMOKE DETECTOR
- F # — SMOKE DETECTOR, CEILING MOUNTED UNO
  - H HEAT
  - I IONIZATION
  - ID IN DUCT
  - P PHOTOELECTRIC
  - R RELAY
  - WG PROVIDE PROTECTIVE WIRE GUARD
- BS,BR — BEAM DETECTOR, SENDER & RECEIVER

COMMUNICATIONS

- JUNCTION BOX FOR FUTURE TELEPHONE/DATA OUTLET. MOUNT AT 18" A.F.F. UNO. PROVIDE SINGLE-GANG MUD RING WITH BLANK COVER PLATE. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
- #D,#T — TELEPHONE/DATA OUTLET. MOUNT AT 18" A.F.F. UNO. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. INSTALL QUANTITY OF DATA (#D) AND TELEPHONE (#T) CABLES INDICATED TO THE NEAREST DATA RACK. PROVIDE (2) DATA CABLES IF A CABLE QUANTITY IS NOT INDICATED.
- FLOOR MOUNTED BOX FOR FUTURE TELEPHONE/DATA OUTLET. JUNCTION BOX WITH SINGLE-GANG MUD RING. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. PROVIDE BLANK COVER PLATE.
- #D,#T — FLOOR MOUNTED TELEPHONE/DATA OUTLET. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. INSTALL QUANTITY OF DATA (#D) AND TELEPHONE (#T) CABLES INDICATED TO THE NEAREST DATA RACK. PROVIDE (2) DATA CABLES IF A CABLE QUANTITY IS NOT INDICATED.
- IC — INTERCOM SYSTEM CALL BUTTON. +46" UNO.
- SP — CEILING MOUNTED SPEAKER WITH BACKBOX
- SP — WALL MOUNTED SPEAKER, WITH BACKBOX +80" UNO
- V — VOLUME CONTROL, +46" UNO
- TV — TELEVISION OUTLET, +18" AFF UNO. PROVIDE 1-1/4" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE
- TV — CEILING MOUNTED TELEVISION OUTLET
- TTB — TELEPHONE TERMINAL BOARD
- CT-XX — CABLE TRAY, 4" DEEP, WIRE BASKET STYLE, 'XX' INDICATES WIDTH PROVIDE ALL FITTINGS AND SUPPORT HARDWARE REQUIRED

ELECTRICAL ABBREVIATIONS

A	AMPERES
AC	6" ABOVE BACKSPLASH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AF	AMP FRAME
AIC	AMPS INTERRUPTING CAPACITY
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BD	BOTTOM OF DECK
BS	BOTTOM OF STRUCTURE
C	CEILING MOUNTED
C	CONDUIT
CB	CIRCUIT BREAKER
CF	COMPACT FLUORESCENT
CKT	CIRCUIT
CO	CONDUIT ONLY, PROVIDE PULL-LINE
CT	CURRENT TRANSFORMER
CTL	CONTROL
DC	DIRECT CURRENT
(D)	DEMOLITION
DEMO	DEMOLITION
DET	DETAIL
DTT	DOUBLE TWIN TUBE
E	EMERGENCY
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EL	EMERGENCY LIGHT
F	FUSE
(F)	FUTURE
FACP	FIRE ALARM CONTROL PANEL
G/GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
IG	ISOLATED GROUND
IPCO	IDAHO POWER COMPANY
J-BOX	JUNCTION BOX
KA	KILOAMP
KVA	KILO VOLT-AMP
KW	KILOWATT
KWH	KILOWATT HOUR
LCP	LIGHTING CONTROL PANEL
MB	MAIN BREAKER
MBR	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MMC	MODULAR METERING CENTER
MH	METAL HALIDE
MSB	MAIN SWITCH BOARD
MTG	MOUNTING
N	NEUTRAL
(N)	NEW
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OH	OVERHEAD
OS	OCCUPANCY SENSOR
P	POLES
PC	PHOTO-CONTROL
PVC	POLYVINYL CHLORIDE
PWR	POWER
RE:	REFERENCE
REC	RECEPTACLE
(R)	RELOCATED
SF	SQUARE FEET
TBD	TO BE DETERMINED
TDR	TIME DELAY RELAY
TK	TOE KICK
TSP	TWISTED SHIELDED PAIR
TRT	TRIPLE TUBE
TTB	TELEPHONE TERMINAL BOARD
(TYP.)	TYPICAL
UC	UNDERCABINET
UG	UNDERGROUND
U.N.O.	UNLESS NOTED OTHERWISE
V	VOLT
VA	VOLT-AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHER PROOF/NEMA 3R
PROVIDED/ PROVIDE BY INSTALLED/ INSTALL	PROVIDE AND INSTALL / PROVIDED AND INSTALLED BY / PROVIDE AND INSTALL
NOTE:	THIS IS A STANDARD LIST OF COMMONLY USED ELECTRICAL ABBREVIATIONS. SOME OF THE ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED IN THIS DRAWING PACKAGE.

ELECTRICAL GENERAL NOTES

A. THESE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE; THEREFORE, THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL EQUIPMENT AND DEVICE LOCATIONS WITH ARCHITECTURAL, MECHANICAL, AND PLUMBING DIVISIONS PRIOR TO ROUGH-IN. REFER TO AND COORDINATE WITH ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL WORK THAT IS REQUIRED BY THE ELECTRICAL CONTRACTOR.

B. ALL CONDUIT AND JUNCTION BOXES ARE TO BE CONCEALED UNLESS LOCATED WITHIN DEDICATED ELECTRICAL OR MECHANICAL ROOMS. USE OF SURFACE MOUNTED RACEWAYS IN ALL OTHER SPACES MUST BE APPROVED BY THE ARCHITECT FOR EACH LOCATION. WHERE SURFACE RACEWAYS ARE APPROVED, UTILIZE WIREMOLD, OR APPROVED EQUAL, SURFACE MOUNTED RACEWAYS PAINTED TO MATCH SURROUNDING WALLS.

C. REFER TO ARCHITECTURAL ELEVATIONS FOR OUTLET HEIGHTS WHERE THE SPECIFIC OUTLET HEIGHT IS NOT INDICATED. REFER TO THE ELECTRICAL LEGEND FOR THE DEFAULT OUTLET HEIGHT WHEN NOT INDICATED ON ELEVATIONS OR ON AT THE DEVICES.

D. PROVIDE PULL-LINE IN ALL EMPTY CONDUITS.

E. TERMINATE ALL LOW-VOLTAGE CONDUITS WITH INSULATED THROAT BUSHING.

F. MECHANICAL EQUIPMENT INDICATED IS SHOWN IN AN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

G. ALL NON-LOCKING, 120-V, 15 AND 20-AMP RECEPTACLES SHALL BE LISTED TAMPER-RESISTENT RECEPTACLES PER NEC 406.12

FIRE ALARM:

H. INSTALL PLENUM RATED FIRE ALARM CONDUCTORS FROM ALL FIRE ALARM DEVICES INDICATED TO THE FIRE ALARM CONTROL PANEL OR NAC EXTENDER PANEL(S) AS REQUIRED. STUB 3/4" CONDUIT FROM DEVICE TO VOID ABOVE CEILING. PROVIDE NAC EXTENDER PANELS (QUANTITY AS REQUIRED) IN LOCATIONS INDICATED AND CIRCUITING AS REQUIRED FOR A COMPLETE INSTALLATION. CIRCUIT THE FIRE ALARM NOTIFICATION AND INITIATION DEVICES PER THE ELECTRICAL SPECIFICATIONS. FURNISH AND INSTALL ALL APPURTENANCES AND PROGRAMMING REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. REFER TO ELECTRICAL FIRE ALARM SPECIFICATIONS FOR SYSTEM REQUIREMENTS AND SUBMITTAL PROCEDURES.

SITE:

I. CONTRACTOR SHALL COORDINATE WITH AN UNDERGROUND LOCATING SERVICE PRIOR TO COMMENCING WORK. SEE CIVIL DRAWINGS FOR ADDITIONAL SITE INFORMATION. COORDINATE WITH OTHER SITE DISCIPLINES.

J. SITE LIGHTING AND UTILITY EQUIPMENT SHOWN IN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH CIVIL DRAWINGS, PROPERTY LINES, AND UTILITY COMPANIES PRIOR TO ROUGH-IN.

K. REFER TO POLE BASE DETAIL FOR SITE LIGHTING POLE BASE REQUIREMENTS.

L. ROUTE CONDUITS IN COMMON TRENCH WHERE POSSIBLE REFER TO TRENCHING DETAIL.

DEMO:

M. THE ELECTRICAL DEMOLITION DRAWING(S) PROVIDED ARE INTENDED TO ASSIST THE ELECTRICAL CONTRACTOR IN ESTABLISHING AREAS REQUIRING DISCONNECTION, REMOVAL, OR RELOCATION OF ELECTRICAL EQUIPMENT, OUTLETS, WIRING, DEVICES, FIXTURES, ETC. AND MAY NOT INDICATE ALL DEVICES OR THE FULL EXTENT OF DEMOLITION AND RECONNECTION WHICH MAY BE REQUIRED. THE ELECTRICAL CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY EXAMINE ALL REQUIRED DEMOLITION WORK AND INCLUDE ALL LABOR AND INCIDENTALS THAT WILL BE NECESSARY TO PERFORM DEMOLITION RECONNECTION AND TEMPORARY POWER CONNECTIONS IN THE BID.

N. ALL ELECTRICAL DEVICES AND WALLS INDICATED ON THE ELECTRICAL DEMOLITION DRAWING(S) ARE TO REMAIN UNLESS OTHERWISE NOTED.

ELECTRICAL SPECIFICATIONS

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.

B. OBTAIN ALL PERMITS, COORDINATE, FURNISH, INSTALL, CONNECT AND TEST ALL ELECTRICAL EQUIPMENT REQUIRED FOR ALL THE SYSTEMS INSTALLED UNDER THIS CONTRACT TO INSURE COMPLETE AND FULLY OPERATIONAL SYSTEMS.

C. CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF AS-BUILT DRAWINGS. AS-BUILT SET 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.

D. PROTECT ALL EXISTING WORK FROM DAMAGE DURING CONSTRUCTION.

E. 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.

F. COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES.

G. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL ELECTRICAL EQUIPMENT AND DEVICES WITH THE ARCHITECTURAL ELEVATIONS AND DETAILS PRIOR TO ROUGH-IN.

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.

I. ALL MATERIALS AND EQUIPMENT FURNISHED TO THE PROJECT SHALL BE NEW AND SHALL BEAR THE LISTING LABEL OF A NATIONALLY RECOGNIZED TESTING LAB AS DEFINED BY OSHA.

J. ALL ELECTRICAL DEVICES AND TERMINALS SHALL BE RATED 75°C MINIMUM.

K. ALL CONDUCTORS SHALL BE STRANDED COPPER, 600 VOLT RATED. INSULATION TYPE SHALL BE THHN/THWN, FULLY COLOR CODED WITH GAUGE, TYPE AND MANUFACTURER MARKED EVERY 24" ALONG. CONDUCTOR COLOR CODE SHALL BE AS FOLLOWS:

208Y/120 VOLT SYSTEM		480Y/277 VOLT SYSTEM	
PHASE A	- BLACK	PHASE A	- BROWN
PHASE B	- RED	PHASE B	- ORANGE
PHASE C	- BLUE	PHASE C	- YELLOW
NEUTRAL	- WHITE	NEUTRAL	- GRAY
GROUND	- GREEN	GROUND	- GREEN

L. MINIMUM SIZE WIRE FOR POWER AND LIGHTING CIRCUITS SHALL BE #12 AWG. ALL POWER AND LIGHTING CONDUCTORS SHALL BE ROUTED IN 3/4" CONDUIT MINIMUM.

M. EMT OR MC TYPE CABLE IS ALLOWED WHEN CONCEALED IN INTERIOR SPACES. MC TYPE CABLE IS NOT ALLOWED FOR HOMERUNS.

N. MAKE ALL CONNECTIONS TO EQUIPMENT PER MANUFACTURER'S REQUIREMENTS.

O. ALL EQUIPMENT, SWITCHING DEVICES AND PANELS SHALL BE MOUNTED SO AS TO BE ACCESSIBLE AND SHALL BE MOUNTED PLUMB AND SQUARE WITH WALLS.

P. DEVICES AND RACEWAYS PENETRATING FIRE RATED WALLS AND FLOORS SHALL BE SEALED WITH FIRE RESISTIVE MATERIAL, COMPATIBLE WITH CONSTRUCTION PENETRATED, TO MAINTAIN RATING OF THE WALL. SEALANT SYSTEM SHALL BE A U.L. APPROVED SYSTEM AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

Q. FURNISH AND INSTALL PULL CORD IN ALL EMPTY CONDUITS.

R. ALL JUNCTION BOX COVERS WITH POWER WIRING SHALL HAVE THE PANEL AND CIRCUIT LABELED ON THE OUTSIDE SURFACE. ALL LABELS FOR EXPOSED JUNCTION BOXES IN "FINISHED AREAS" SHALL BE LABELED UTILIZING SELF ADHESIVE LABELS PRODUCED BY A MECHANICAL LABELING MACHINE. LABELS FOR JUNCTION BOX COVERS IN CONCEALED LOCATIONS SHALL CONSIST OF THE INFORMATION BEING NEATLY HANDWRITTEN ON THE OUTSIDE SURFACE OF THE COVER WITH A PERMANENT STYLE MARKER.

S. 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.

T. ALL 1 POLE BREAKER CIRCUITS SHALL HAVE AN INDEPENDENT NEUTRAL CONDUCTOR. NO EDISON STYLE SHARED NEUTRAL CONDUCTORS ARE ALLOWED.

U. ALL CONDUCTORS IN ELECTRICAL PANELS, CABINETS AND EQUIPMENT SHALL BE NEATLY TRAINED AND LACED.

V. THE CONTRACTOR SHALL PROVIDE UPDATED CIRCUIT PANEL DIRECTORIES FOR ALL PANELS. DIRECTORIES SHALL BE TYPED.

W. PROVIDE ELECTRICAL SUBMITTALS FOR EQUIPMENT SHOWN AS REQUIRED BY DIVISION 1 SPECIFICATIONS.

X. ELECTRICAL CONTRACTOR SHALL OBTAIN THE AVAILABLE FAULT CURRENT VALUE FROM THE LOCAL UTILITY OR THE ONE-LINE DIAGRAM AND LABEL THE MAIN BREAKER WITH THAT VALUE.

Y. SWITCH AND RECEPTACLE LABELING: IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH DEVICES ARE SERVED. USE MACHINE PRINTED LABEL AND 1/8" TEXT. INSTALL ON THE OUTSIDE OF THE FACEPLATE FOR RECEPTACLES AND INSIDE THE FACEPLATE FOR SWITCHES.

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PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

MUSGROVE ENGINEERING, P.A.
234 S. Whisperwood Way
Boise, ID 83709
208.384.0585
645 West 25th Street
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Project No. 22-385

NORTHWORKS
CHICAGO | JACKSON HOLE | SAN FRANCISCO | PHILADELPHIA
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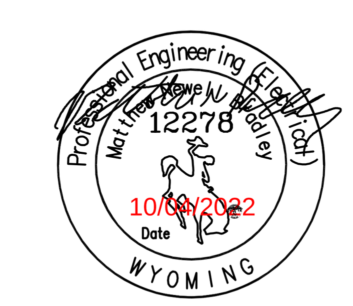
	ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL



Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	0.00

Drawing Name
ELECTRICAL COVER SHEET

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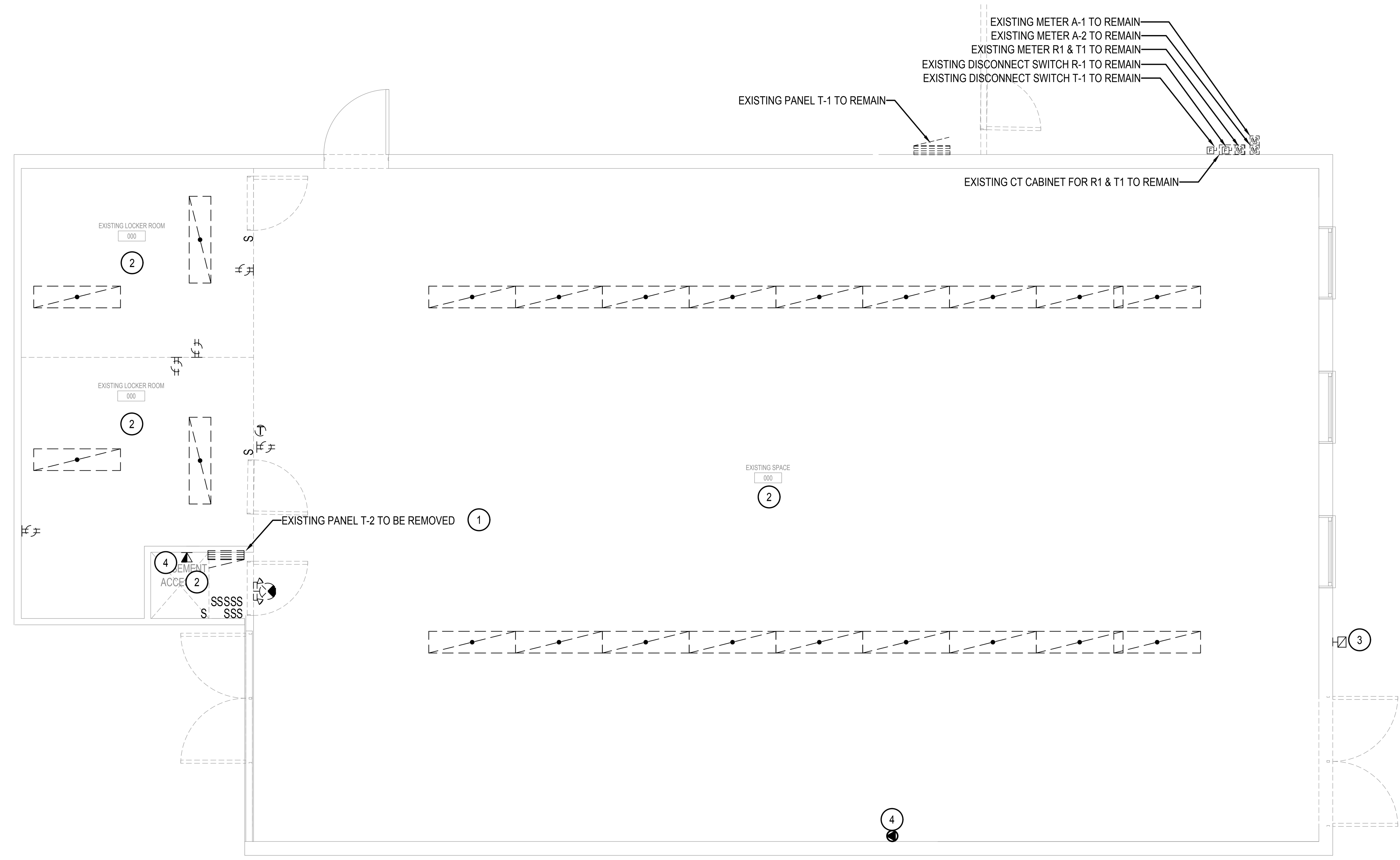
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS



ELECTRICAL DEMOLITION PLAN

1 ELECTRICAL DEMOLITION PLAN
SCALE: 1/8" = 1'-0"

MUSGROVE ENGINEERING, PA
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645 West 25th Street
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Project No. 22-385

KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. EXISTING PANEL TO BE REMOVED, DISCONNECT ALL HOUSE CIRCUITS TO BE MOVED TO NEW HOUSE PANEL, SEE E2.00 AND E4.00 FOR MORE INFORMATION.
2. REMOVE ALL ELECTRICAL DEVICES FROM THIS ROOM.
3. REMOVE EXISTING EXTERIOR LIGHT TO REMAIN.
4. REMOVE EXISTING 30 AMP RECEPTACLE, CONDUIT, AND CONDUCTORS BACK TO ELECTRICAL PANEL BOARD.
5. TELEPHONE RISER CABLE AND 66 BLOCK TO REMAIN.

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ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL

Professional Engineer ing (Electrical)
Matthew N. Bradley
12278
Date 10/10/2022
WYOMING

Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
ED	1.00

Drawing Name
ELECTRICAL DEMOLITION PLAN

TOWN OF JACKSON
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PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

COM*check* Software Version 4.1.5.3

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2012 IECC
Project Title:	GRACE SPA
Project Type:	New Construction

Construction Site:
JACKSON, WY

Owner/Agent:
GRACE SPA
JACKSON, WY

Designer/Contractor:
MATTHEW BRADLEY
MUSGROVE ENGINEERING
645 W 25TH ST
IDAHO FALLS, ID 83402
208-523-2862
MATTB@MUSGROVEPA.COM

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
Reduced Lighting Power, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Retail	1754	1.30	2280
		Total Allowed Watts =	2280

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-Retail				
LED 1: A: LED A Lamp 12W:	1	48	10	480
LED 2: P1: LED Other Fixture Unit 25W:	1	3	16	48
LED 3: P2: LED Other Fixture Unit 36W:	1	2	11	22
LED 4: P3: LED Other Fixture Unit 16W:	1	4	17	68
LED 5: S1: LED Other Fixture Unit 13W:	1	6	16	96
			Total Proposed Watts =	714

Interior Lighting PASSES: Design 69% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2012 IECC requirements in COM*check* Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MATTHEW BRADLEY, P.E. — Name - Title
[signature] — Signature
10-3-22 — Date

COM*check* Software Version 4.1.5.3

Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2012 IECC
Project Title:	GRACE SPA
Project Type:	New Construction
Exterior Lighting Zone	2 (Residential mixed use area (LZ2))

Construction Site:
JACKSON, WY

Owner/Agent:
GRACE SPA
JACKSON, WY

Designer/Contractor:
MATTHEW BRADLEY
MUSGROVE ENGINEERING
645 W 25TH ST
IDAHO FALLS, ID 83402
208-523-2862
MATTB@MUSGROVEPA.COM

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Main entry	6 ft of door	20	Yes	120
			Total Tradable Watts (a) =	120
			Total Allowed Watts =	120
			Total Allowed Supplemental Watts (b) =	600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Main entry (6 ft of door width): Tradable Wattage				
LED 1: F: LED A Lamp 2.5W:	1	1	1	1
			Total Tradable Proposed Watts =	1

Exterior Lighting PASSES: Design 100% better than code

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 2012 IECC requirements in COM*check* Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MATTHEW BRADLEY, P.E. — Name - Title
[signature] — Signature
10-3-22 — Date

COM*check* Software Version 4.1.5.3

Inspection Checklist

Energy Code: 2012 IECC

Requirements: 0.0% were addressed directly in the COM*check* 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.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

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

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.1 [EL22][2]	Automatic controls to shut off all building lighting installed in all buildings.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.1 [EL23][2]	Independent lighting controls installed per approved lighting plans and all manual controls readily accessible and visible to occupants.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL15][1]	Lighting controls installed to uniformly reduce the lighting load by at least 50%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.3 [EL16][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3 [EL17][3]	Sleeping units have at least one master switch at the main entry door that controls wired luminaires and switched receptacles.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.2 [EL18][1]	Occupancy sensors installed in required spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.3 [EL20][1]	Primary sidelighted areas are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2.3 [EL21][1]	Enclosed spaces with daylight area under skylights and rooftop monitors are equipped with required lighting controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL25][2]	Automatic lighting controls for exterior lighting installed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3 [EL4][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.3 [EL19][3]	Fluorescent luminaires with odd numbered lamp configurations that are within 10 feet center to center (if recess mounted) or are within 1 foot edge to edge (if pendant or surface mounted) shall be tandem wired.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.4 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

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

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.6 [EL24][1]	Exterior grounds lighting over 100 W provides >60 lm/W unless on motion sensor or fixture is exempt from scope of code or from external LPD.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.3 [EL8][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	

Additional Comments/Assumptions:

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

MUSGROVE ENGINEERING, P.A.
234 S. Cole Road, Boise, ID 83709, 208.384.0585
645 West 25th Street, Idaho Falls, ID 83402, 208.523.2862
www.musgrovepa.com
Project No. 22-385

NORTHWORKS
CHICAGO | JACKSON HOLE | SAN FRANCISCO | PHILADELPHIA
185 E. Hansen Ave, PO Box 4027 Jackson, WY 83001
T 208-201-5324 www.nwks.com

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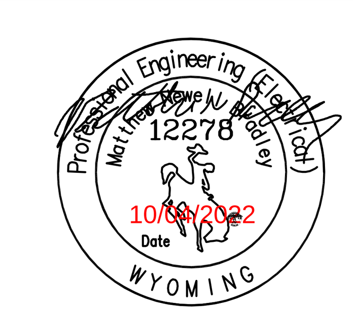
	ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL



Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	0.01

Drawing Name
LIGHTING COMPLIANCE

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS. IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

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645 West 25th Street
Idaho Falls, ID 83402
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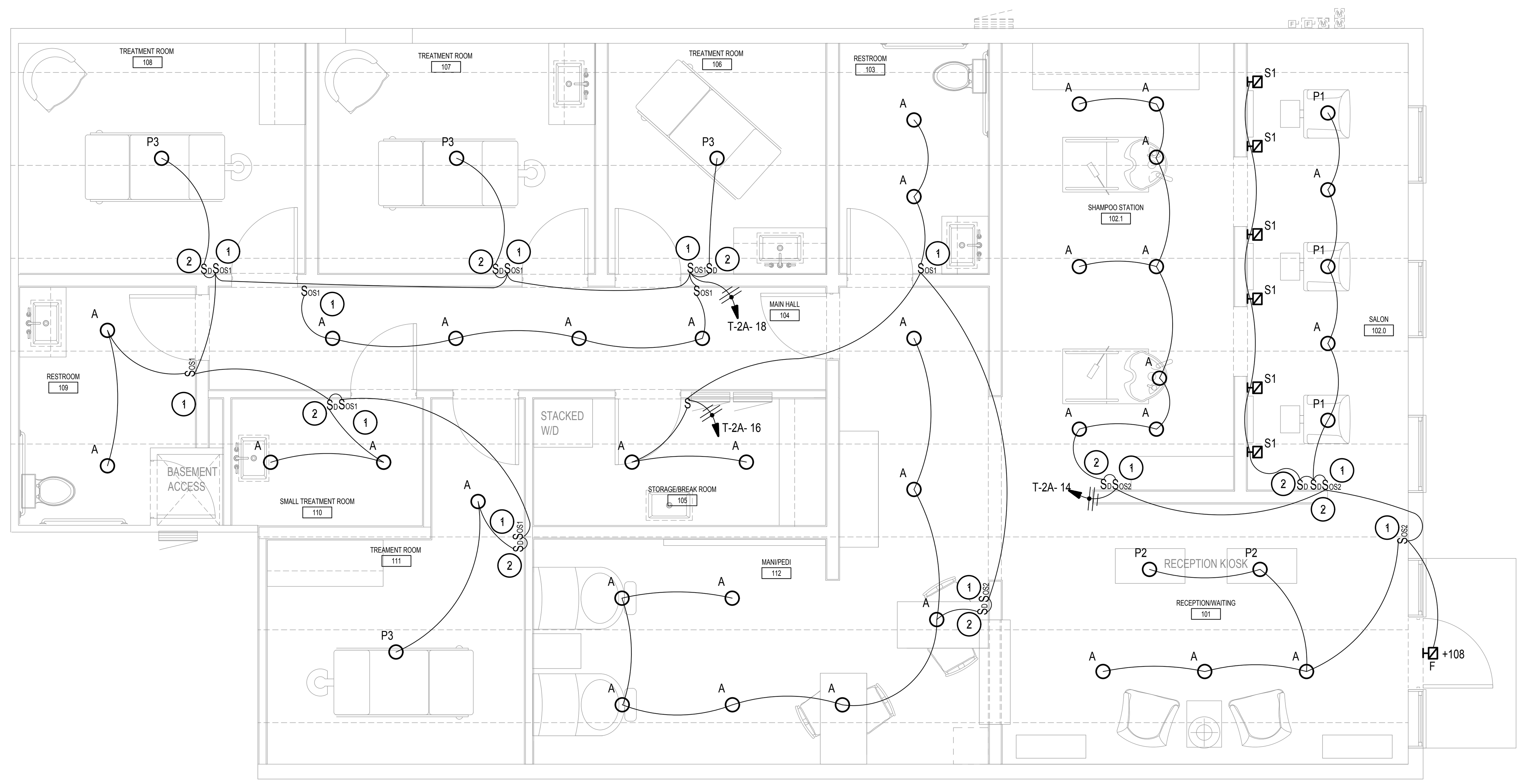
www.musgrovepa.com

Project No. 22-385

KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. INSTALL OCCUPANCY SENSOR SEE DRAWING E5.0 FOR TYPE.
2. INSTALL DIMMER SWITCH SEE DRAWING E5.9 FOR TYPE.



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

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ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL

Professional Engineering (Electrical) 12278 WYOMING
Date 10/.../2022

Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	1.00

Drawing Name
LIGHTING PLAN

TOWN OF JACKSON
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DATE: 10-10-22
BUILDING OFFICIAL: KS

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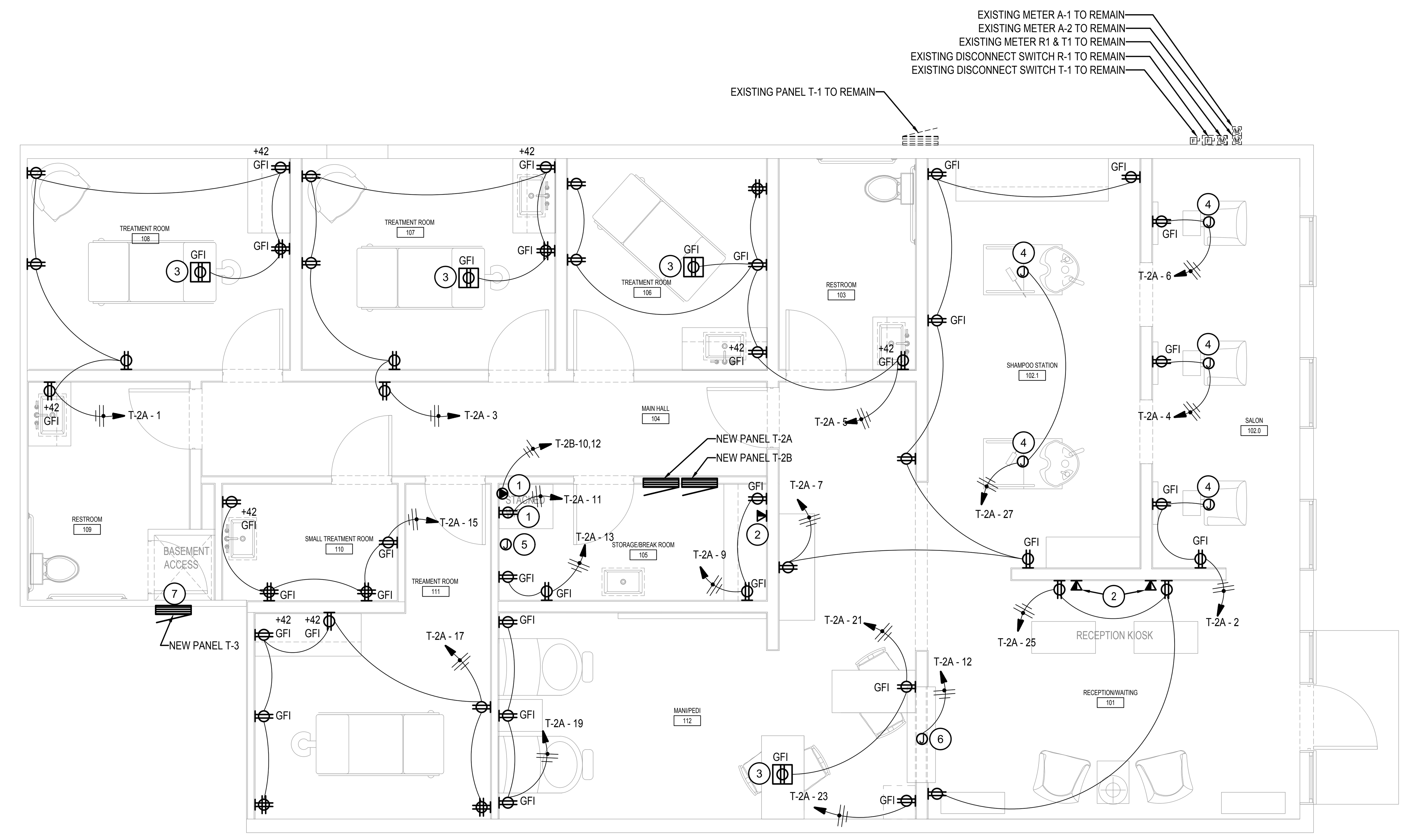


1 POWER PLAN
SCALE: 1/8" = 1'-0"

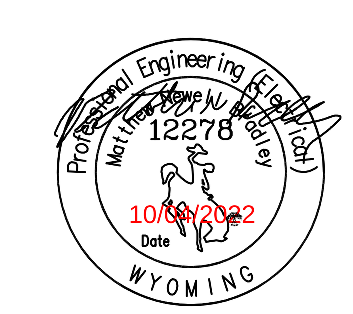
KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. GROUND FAULT INTERRUPTING CIRCUIT BREAKER INSTALLED IN ELECTRICAL PANEL.
2. SEE SHEET E5.0 FOR DATA/TELEPHONE ROUGH-IN ELEVATION DETAIL.
3. SEE SHEET E5.0 FOR POWER FLOOR BOX ROUGH-IN ELEVATION DETAIL.
4. POWER FOR CHAIR, COORDINATE WITH CHAIR SPECIFICATIONS PRIOR TO INSTALLATION.
5. JUNCTION BOX FOR FUTURE WASHER AND DRYER. COORDINATE LOCATION WITH OWNER PRIOR TO WORK.
6. JUNCTION BOX FOR FIREPLACE POWER. COORDINATE LOCATION WITH OWNER PRIOR TO WORK.
7. INTERCEPT FEEDER CONDUCTORS TO PANEL T2-A AND EXTEND TO PANEL R-1. SEE ONE LINE DIAGRAM

ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL



Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	2.00

Drawing Name
POWER PLAN

TOWN OF JACKSON
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PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

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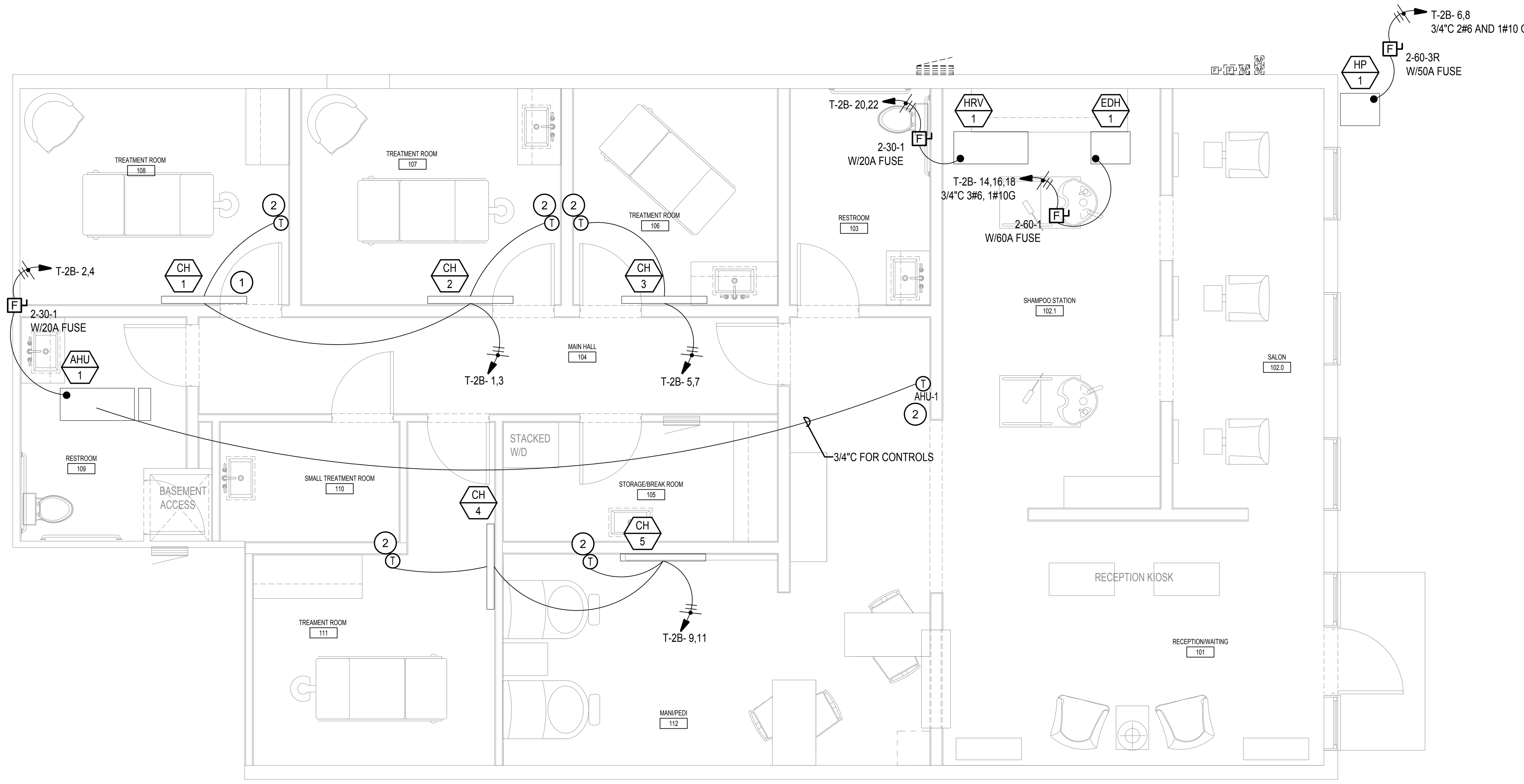
Boise, ID 83709
208.384.0585
645 West 25th Street
Idaho Falls, ID 83402
208.523.2862
www.musgrovepa.com

Project No. 22-385

KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. KING COVE HEATER MODEL #KCV2006-W OR EQUAL.
2. SEE SHEET E5.0 FOR THERMOSTAT ROUGH-IN ELEVATION DETAIL.



1 MECHANICAL POWER PLAN

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

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ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL

Professional Engineer 12278 WYOMING
Date 10/__/2022

Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	2.01

Drawing Name
MECHANICAL POWER PLAN

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS. IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
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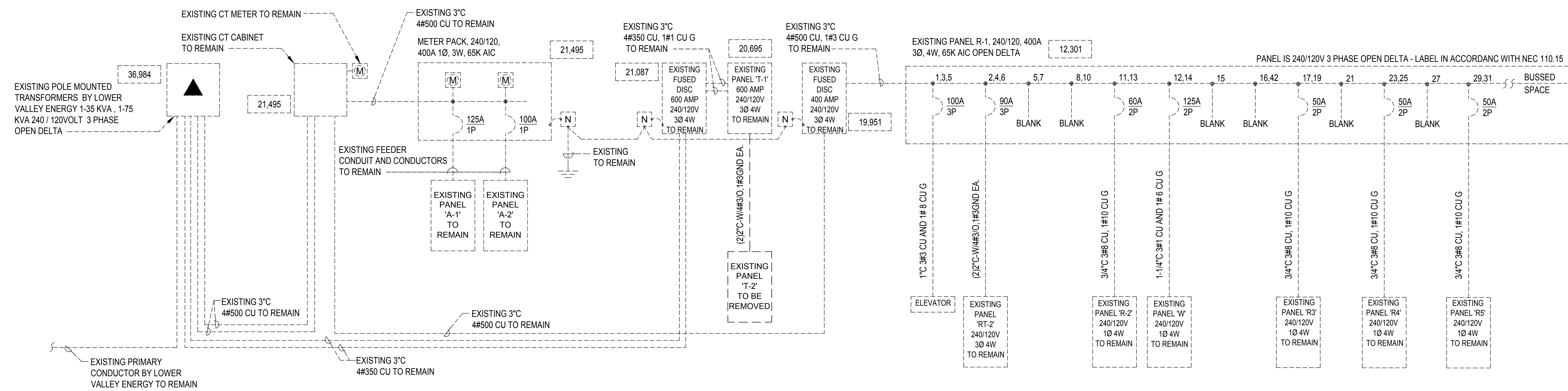
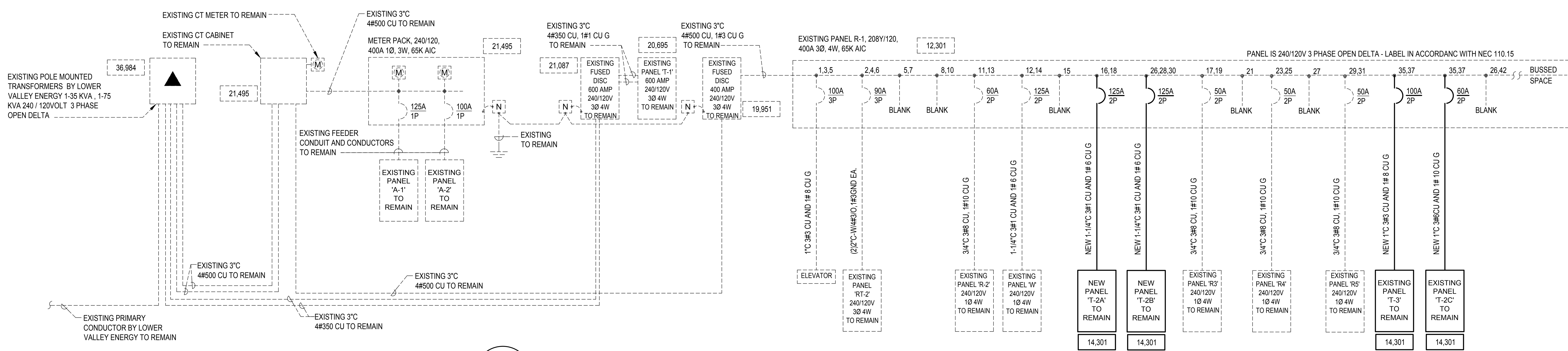


1 EXISTING ONE-LINE DIAGRAM

SCALE: NOT TO SCALE

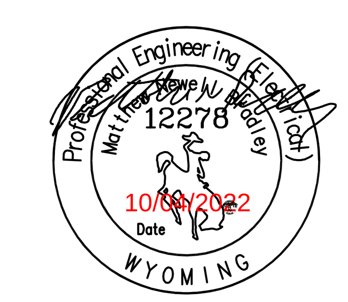


2 REVISED ONE-LINE DIAGRAM

SCALE: NOT TO SCALE

ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL



Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	3.00

Drawing Name
SINGLE LINE DIAGRAM

PANEL: (E)R-1

PROJECT: GRACE SPA

VOLTAGE: 240 / 120 V | 3 PH | 4 WIRE | AMPERE RATING: 400A | WITH 400A CB | MOUNTING: SURFACE

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 22000

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)
2. EXISTING BREAKER
3. INSTALL NEW BREAKER 22K AIC CIRCUIT BREAKER

REMARKS:
ELECTRICAL CONTRACTOR TO VERIFY ALL CIRCUITS PRIOR TO WORK

PANEL IS 240/120V 3 PHASE OPEN DELTA - LABEL IN ACCORDANCWITH NEC 110.15
EXISTING MAXIMUM DEMAND FOR PANEL R-1 51.6 KW 9/9/2022 INCLUDED IN THE TOTAL VA CALCULATION

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	B (240)	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	ELEVATOR	3		0.0	100	3	0			90	3	0.0		3	PANEL RT-2	2
3	***			0.0	**	*		0		**	*	0.0			***	4
5	***			0.0	**	*			0	**	*	0.0			***	6
7	BLANK						0								BLANK	8
9	HIGH LEG							0							HIGH LEG	10
11	PANEL R2	3		0.0	50	2			0	125	2	0.0			PANEL W	12
13	***			0.0	**	*	0			**	*	0.0			***	14
15	HIGH LEG							0							HIGH LEG	14
17	PANEL R3	3		0.0	60	2			10255	**125**	**2**	**85.5**	**10255.0**	**3**	**PANEL T-2A**	18
19	***			0.0	**	*	9100			**	*	**75.8**	**9100.0**	**3**	***	20
21	HIGH LEG			0.0				0							HIGH LEG	22
23	PANEL R4	3		0.0	60	2			0						BLANK	24
25	***			0.0	**	*	8686.2			**125**	**3**	**69.9**	**8686**	**3**	**PANEL T-2B**	26
27	HIGH LEG			0.0				11286.2		**	*	**69.9**	**11286**	**3**	***	28
29	PANEL R5	3		0.0	50	2			9080	**	*	**69.9**	**9080.0**	**3**	***	30
31	***			0.0	**	*	0								BLANK	32
33	HIGH LEG			0.0				0							HIGH LEG	34
35	**PANEL T-3**	3		0.0	**100**	**2**			0	**60**	**2**			**3**	**PANEL T-2C**	36
37	***			0.0	**	*	0			**	*			**3**	***	38
39	HIGH LEG			0.0				0							HIGH LEG	40
41	BLANK			0.0					0						BLANK	42
							34986.2	28486.2	36535.0	VA						
							291.6	237.4	304.5	AMPS					1E+05 TOTAL VA	

PANEL: (E)T-1

PROJECT: GRACE SPA

VOLTAGE: 208 / 120 V | 1 PH | 3 WIRE | AMPERE RATING: 200A | WITH 200A CB | MOUNTING: FLUSH

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 10000 AIC

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)
2. EXISTING BREAKER

REMARKS:
ELECTRICAL CONTRACTOR TO VERIFY ALL CIRCUITS PRIOR TO WORK

EXISTING MAXIMUM DEMAND FOR PANEL T-1 31.5 KW 8/4/2022 INCLUDED IN THE TOTAL VA CALCULATION

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	N/A	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	PANEL T-4	2		0.0	125	6	0			70	3	0.0		2	BOILER	2
3	***	2		0.0	**	*			0	**	*	0.0		2	***	4
5	***	2		0.0	**	*	0			**	*	0.0		2	***	6
7	***	2		0.0	**	*			0	20	1	0.0		2	BOILER CRT	8
9	***	2		0.0	**	*	0								UNUSABLE SPACE	10
11	***	2		0.0	**	*			0	20	1	0.0		2	BOILER CRT	12
13	RT3	2		0.0	90	3	0			20	3	0.0		2	COMPRESSOR	14
15	***	2		0.0	**	*			0	**	*	0.0		2	***	16
17	***	2		0.0	**	*	0			**	*	0.0		2	***	18
19	RT1	2		0.0	90	3			0	50	3	0.0		2	EMERGENCY PUMP IN BASEMENT	20
21	***	2		0.0	**	*	0			**	*	0.0		2	***	22
23	***	2		0.0	**	*			0	**	*	0.0		2	***	24
25	SPARE	2		0.0	50	2	0			125	2	0.0		2	**PANEL T-2 - RELABEL AS SPARE**	26
27	***	2		0.0	**	*			0	**	*	0.0		2	***	28
29	SPARE	2		0.0	70	2	0			125	1	0.0		2	PANEL T-3	30
31	***	2		0.0	**	*			0	**	*	0.0		2	***	32
33	GARAGE RECEPTACLES	2		0.0	20	1	0			30	2	0.0		2	DRYER	34
35	GARAGE RECEPTACLES	2		0.0	20	1			0	**	*	0.0		2	***	36
37	GARAGE RECEPTACLES	2		0.0	20	1	0			20	1	0.0		2	HYDRO TEST UNIT	38
39	GARAGE LIGHTS	2		0.0	20	1			0	20	1	0.0		2	WASHER	40
41	MICROWAVE	2		0.0	20	1	0			20	1	0.0		2	BENCH RECEPTACLES AND HOOD	42
43	FREEZER	2		0.0	20	1			0	20	1	0.0		2	GARAGE RECEPTACLES	44
45	WELDER	2		0.0	50	*	0			20	1	0.0		2	GARAGE RECEPTACLES	46
47	***	2		0.0	**	*			0	20	1	0.0		2	UNIT HEATER	48
49	UNUSABLE SPACE			0.0	20	1	0			20	1	0.0			UNUSABLE SPACE	50
51	UNUSABLE SPACE			0.0	20	1			0	20	1	0.0			UNUSABLE SPACE	52
53	UNUSABLE SPACE			0.0	20	1	0			20	1	0.0			UNUSABLE SPACE	54
							15750.0		15750.0	VA						
							131.3		131.3	AMPS					31500 TOTAL VA	

PANEL: (E)T-2

PROJECT: GRACE SPA

VOLTAGE: 240 / 120 V | 1 PH | 3 WIRE | AMPERE RATING: 225A | WITH 200A CB | MOUNTING: FLUSH

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 10000 AIC

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)
2. EXISTING BREAKER
3. RELOCATE TO NEW PANEL H

REMARKS:
ELECTRICAL CONTRACTOR TO VERIFY ALL CIRCUITS PRIOR TO WORK

PANEL REMOVED AND LOADS DISTRIBUTED BETWEEN 2 PANELBOARDS.

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	N/A	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	SPARE	2		0.0	20	1	0			15	1	0.0		2	SPARE	2
3	EAST LOCKER ROOM RECEPTS	2		0.0	20	1			0	20	1	0.0		2	SPARE	4
5	WEST LOCKER ROOM RECEPTS	2		0.0	20	1	0			20	1	0.0		2,3	WEST RETAIL AREA RECEPTS	6
7	TRACK LIGHITNGT 2ND FLOOR	2,3		0.0	20	1			0	20	1	0.0		2,3	RETAIL MAIN LIGHTING/STAIR FAN	8
9	TRACK AND HALL LIGHTS	2,3		0.0	20	1	0			20	1	0.0		2,3	TRACK LIGHTS RETAIL	10
11	LOCKER/PUBLIC PATH/ LOW STAIR LIGHTS	2,3		0.0	20	1			0	20	1	0.0		2,3	TRACK LIGHTS RETAIL	12
13	PUBLIC BATH RECEPTS & HEATER	2,3		0.0	20	1	0			20	1	0.0		2	POOL LIGHTING	14
15	EAST RETAIL AREA RECEPTS	2,3		0.0	20	1			0	20	1	0.0		2	POOL LIGHTING	16
17	POOL AREA RECEPTS	2		0.0	20	1	0			20	1	0.0		2	SPARE	18
19	SPARE	2		0.0	20	1			0	50	2	0.0		2,3	SUB PANEL T-2(A) CHANGE NAME TO T-2(C)	20
21	LOCKERS EXHAUST FAN	2		0.0	20	1	0			**	*	0.0		2,3	***	22
23	SPARE	2		0.0	20	1			0	20	1	0.0		2	SPARE	24
25	SPARE	2		0.0	20	1	0			20	1	0.0		2	SPARE	26
27	SPARE	2		0.0	20	1			0	20	1	0.0		2	SPARE	28
29	SPARE	2		0.0	20	1	0			20	1	0.0		2	SPARE	30
31	SPARE	2		0.0	20	1			0	20	1	0.0		2	SPARE	32
33	SPARE	2		0.0	20	1	0			20	1	0.0		2	SPARE	34
35	SPARE	2		0.0	20	1			0	20	1	0.0		2	SPARE	36
37	SPARE	2		0.0	20	1	0			20	1	0.0		2	SPARE	38
39	SPARE	2		0.0	20	1			0	20	1	0.0		2	SPARE	40
41	SPARE	2		0.0	20	1	0			20	1	0.0		2	SPARE	42
							0.0		0.0	VA						
							0.0		0.0	AMPS					0 TOTAL VA	

NEW PANEL: T-3

PROJECT: GRACE SPA

VOLTAGE: 240 / 120 V | 1 PH | 3 WIRE | AMPERE RATING: 125A | WITH 125A MLO | MOUNTING: FLUSH

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 10000 AIC

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)
2 GFEP FOR EQUIPMENT PROTECTION (30mA)

REMARKS:
ELECTRICAL CONTRACTOR TO INSTALL TYPED PANEL SCHEDULE WITH ACCURATE DESCRIPTIONS

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	N/A	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	SPARE			0.0	20	1	0			20	1	0.0			SPARE	2
3	SPARE			0.0	20	1			0	20	1	0.0			SPARE	4
5	SPARE			0.0	20	1	0			20	1	0.0			WEST RETAIL AREA RECEPTACLES	6
7	TRACK LIGHITNGT 2ND FLOOR			0.0	20	1			0	20	1	0.0			RETAIL MAIN LIGHTING/STAIR FAN	8
9	TRACK AND HALL LIGHTS			0.0	20	1	0			20	1	0.0			TRACK LIGHTS RETAIL	10
11	LOCKER/PUBLIC PATH/ LOW STAIR LIGHTS			0.0	20	1			0	20	1	0.0			TRACK LIGHTS RETAIL	12
13	PUBLIC BATH RECEPTACLES & HEATER			0.0	20	1	0			20	1	0.0			SPARE	14
15	EAST RETAIL AREA RECEPTACLES			0.0	20	1			0	20	1	0.0			SPARE	16
17	SPARE			0.0	20	1	0			20	1	0.0			SPARE	18
19	SPARE			0.0	20	1			0	20	1	0.0			SPARE	20
21	SPARE			0.0	20	1	0			20	1	0.0			SPARE	22
23	SPARE			0.0	20	1			0	20	1	0.0			SPARE	24
25	SPARE			0.0	20	1	0			20	1	0.0			SPARE	26
27	SPARE			0.0	20	1			0	20	1	0.0			SPARE	28
29	SPARE			0.0	20	1	0			20	1	0.0			SPARE	30
							0.0		0.0	VA						
							0.0		0.0	AMPS					0 TOTAL VA	

NEW PANEL: T-2A

PROJECT: GRACE SPA

VOLTAGE: 240 / 120 V | 1 PH | 3 WIRE | AMPERE RATING: 125A | WITH 125A MLO | MOUNTING: FLUSH

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 10000 AIC

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)

REMARKS:
ELECTRICAL CONTRACTOR TO VERIFY ALL CIRCUITS PRIOR TO WORK

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	N/A	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	RECEPTACLES RR 109, TREATMENT 108		1440	12.0	20	1	2440			20	1	8.3	1000		RECEPTACLES SALON CHAIR 1	2
3	RECEPTACLES TREATMENT 107, HALL		1440	12.0	20	1			1980	20	1	4.5	540		RECEPTACLES SALON CHAIR 2	4
5	RECEPTACLES TREATMENT 106, RR 103		1440	12.0	20	1	1980			20	1	4.5	540		RECEPTACLES SALON CHAIR 3	6
7	RECEPTACLES SHAMPOO		1080	9.0	20	1			1080	30	2	0.0			SPARE	8
9	RECEPTACLES STORAGE/BREAK		360	3.0	20	1	360			**	*	0.0			***	10
11	WASHER	1	1200	10.0	20	1			2800	20	1	13.3	1600		FIREPLACE POWER	12
13	RECEPTACLES STORAGE/BREAK		360	3.0	20	1	1335			20	1	8.1	975		LIGHTING - WAITING, SALON	14
15	RECEPTACLES TREATMENT ROOM 110		1080	9.0	20	1			1980	20	1	7.5	900		LIGHTING - NAILS, RESTROOM, STORAGE	16
17	RECEPTACLES TREATMENT ROOM 111		1440	12.0	20	1	3240			20	1	15.0	1800		LIGHTING - TREATMENT, HALL, RESTROOM	18
19	RECEPTACLES MANI/PEDI		540	4.5	20	1			540	20	1	0.0			SPARE	20
21	RECEPTACLES MANI/PEDI		360	3.0	20	1	360			20	1	0.0			SPARE	22
23	RECEPTACLES MANI/PEDI		180	1.5	20	1			180	20	1	0.0			SPARE	24
25	RECEPTACLES RECEPTION		540	4.5	20	1	540			20	1	0.0			SPARE	26
27	RECEPTACLES SHAMPOO CHAIRS		540	4.5	20	1			540	20	1	0.0			SPARE	28
29	SPARE			0.0	20	1	0			20	1	0.0			SPARE	30
							10255.0		9100.0	VA						
							85.5		75.8	AMPS					19355 TOTAL VA	

NEW PANEL: T-2B

PROJECT: GRACE SPA

VOLTAGE: 240 / 120 V | 3 PH | 4 WIRE | AMPERE RATING: 125A | WITH 125A MLO | MOUNTING: FLUSH

BASIS OF DESIGN PANEL TYPE: PANEL BOARD | NEMA ENCLOSURE TYPE: 1 | PANEL AIC RATING: 10000 AIC

CKT NOTES:
1. GFCI FOR PERSONNEL PROTECTION (5mA)

REMARKS:
ELECTRICAL CONTRACTOR TO VERIFY ALL CIRCUITS PRIOR TO WORK

PANEL IS 240/120V 3 PHASE OPEN DELTA - LABEL IN ACCORDANCWITH NEC 110.15

CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/POLES		LOAD (VA) A	N/A	C	AMPS/POLES		LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	COVE HEATERS (CH-1, CH-2)		1200	10.0	20	2	1907.2			20	2	5.9	707		AIR HANDLING UNIT (AHU-1)	2
3	***		1200	10.0	**	*		1907.2		**	*	5.9	707		***	4
5	COVE HEATER (CH-3)		600	5.0	20	2			600	50	2	0.0			CONDENSING UNIT (HP-1)	6
7	***		600	5.0	**	*	600			**	*	0.0			*** NON-COINCIDENT	8
9	COVEHEATERS (CH-4, CH-5)		1200	10.0	20	2		3200		30	2	16.7	2000	1	DRYER	10
11	***		1200	10.0	**	*			3200	**	*	16.7	2000	1	***	12
13	SPARE			0.0	20	1	5280			60	3	44.0	5280		ELECTRIC DUCT HEATER (EDH-1)	14
15	SPARE			0.0	20	1		5280		**	*	44.0	5280		***	16
17	SPARE			0.0	20	1			5280	**	*	44.0	5280		***	18
19	SPARE			0.0	20	1	899			15	2	7.5	899		HRV-1	20
21	SPARE			0.0	20	1		899		**	*	7.5	899		***	22
23	SPARE			0.0	20	1			0	20	2	0.0			SPARE	24
25	SPARE			0.0	20	1	0			**	*	0.0			***	26
27	SPARE			0.0	20	1		0		30	2	0.0			SPARE	28
29	SPARE			0.0	20	1			0	**	*	0.0			***	30
							8686.2	11286.2	9080.0	VA						
							72.4	94.1	75.7	AMPS					17766 TOTAL VA	

ELECTRICAL LOAD SUMMARY (R-1)

FEEDER	VOLTAGE	CONNECTED LOAD (KVA) LIGHTING	RECEP	MOTORS	KITCHEN	HVAC	ELEC HEAT	WATER HEAT	MISC	EXIST	TOTAL CONNECTED LOAD KVA	AMPS	TOTAL DEMAND LOAD KVA	AMPS
(E)R-1	120/208Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.5	44.5	123.6	44.5	123.6
(E)R-1 X 125%	120/208Y									12.9	12.9	35.9	12.9	35.9
NEW PANEL T-3	120/208Y	INCLUDED IN R-1 EXISTING DEMAND												
NEW PANEL T-2A	120/240	3.7	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.4	80.6	16.5	68.8
NEW PANEL T-2B	120/240	0.0	0.0	0.0	0.0	3.2	21.8	0.0	4.0	0.0	29.1	121.1	29.1	121.1
NEW PANEL T-C	120/240	INCLUDED IN R-1 EXISTING DEMAND												
TOTAL	120/208Y	3.7	15.7	0.0	0.0	3.2	21.8	0.0	4.0	57.4	105.8	294.0	103.9	288.6

ELECTRICAL LOAD SUMMARY (T-1)

FEEDER	VOLTAGE	CONNECTED LOAD (KVA) LIGHTING	RECEP	MOTORS	KITCHEN	HVAC	ELEC HEAT	WATER HEAT	MISC	EXIST	TOTAL CONNECTED LOAD KVA	AMPS	TOTAL DEMAND LOAD KVA	AMPS
(E)T-1	120/208Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.5	31.5	87.5	31.5	87.5
(E)T-1 X 125%	120/208Y									7.9	7.9	21.9	7.9	21.9
TOTAL	120/208Y	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.4	39.4	109.4	39.4	109.4

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS. IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

MUSGROVE ENGINEERING, P.A.
Boise, ID 83709
208.384.0585
645 West 25th Street
Idaho Falls, ID 83402
208.523.2862
www.musgrovepa.com
Project No. 22-385

NORTHWORKS
CHICAGO | JACKSON HOLE | SAN FRANCISCO | PHILADELPHIA
185 E. Hansen Ave, PO Box 4027 Jackson, WY 83001
T 208-201-5324 www.nwks.com

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	ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL

Professional Engineering (Electrical) Matthew Newell Bradley 12278 WYOMING Date 10/04/2022

Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	4.00

Drawing Name
EXISTING PANEL SCHEDULES

TOWN OF JACKSON
APPROVED FOR BUILDING CONSTRUCTION. ANY DEVIATIONS FROM APPROVED PLANS ARE SUBJECT TO PRIOR APPROVAL. APPROVAL OF THESE PLANS DOES NOT RELIEVE THE DESIGN PROFESSIONAL, GENERAL CONTRACTOR, OR SUBCONTRACTORS OF RESPONSIBILITY FOR COMPLIANCE WITH STATE AND LOCAL CONSTRUCTION LAWS. AN APPROVED SET OF THESE PLANS IS TO BE AVAILABLE ON THE JOB SITE FOR USE BY INSPECTORS. IF SUCH PLANS ARE NOT AVAILABLE ON SITE, ANY INSPECTION MAY BE CANCELLED AND A REINSPECTION CHARGE LEVIED PRIOR TO THE INSPECTION BEING PERFORMED.
PERMIT NO: B22-0606
DATE: 10-10-22
BUILDING OFFICIAL: KS

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234 S. Whisperwood Way
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LIGHTING FIXTURE SCHEDULE (22-385)

TYPE	DESCRIPTION	MTG.	LAMPS	WATTS	MFG. & CATALOG NUMBER	OR EQUAL BY	NOTES
A	6" CYLINDAR PENDANT WITH LED LAMP SATCO S9704	PENDANT	LED 3000K	10	VOLUME LIGHTING NO. V9606-5 SATCO NO: S9704	LIGHTOLIER METALUX H.E. WILLIAMS	1
P1	HATTON 2 LIGHT PENDANT WITH LED LAMP SATCO S21351	PENDANT	LED 3000K	16	KICHLER NO. 52258BK SATCO NO: S21351	LIGHTOLIER METALUX H.E. WILLIAMS	1
P2	RUMER 1 LIGHT PENDANT WITH LED LAMP SATCO S11358	PENDANT	LED 3000K	11	KICHLER NO. 43589NBR SATCO NO: S11358	LIGHTOLIER METALUX H.E. WILLIAMS	1
P3	LED PENDANT FINISH BY ARCHITECT	PENDANT	LED 3000K	17	KICHLER NO. 83854XXXXX	LIGHTOLIER METALUX H.E. WILLIAMS	1
S1	HATTON 2 LIGHT SCONCE WITH LED LAMP SATCO S21351	SCONCE	LED 3000K	16	KICHLER NO. 52259BK SATCO NO: S21351	LIGHTOLIER METALUX H.E. WILLIAMS	1
E	INTEGRATED EXIT/UNIT COMBO FIXTURE GREEN EXIT LED	SURFACE	LED	2.32	LITHONIA NO. ECBG LED M6	LIGHTOLIER METALUX H.E. WILLIAMS	1
F	EXTERIOR EGRESS LIGHT COLD WEATHER BATTERY WET LOCATION LISTED, DARK BRONZE	SURFACE	LED	1	LITHONIA NO. AFO-DB-MVOLT-N-SD-CW	LIGHTOLIER METALUX H.E. WILLIAMS	1

LIGHTING FIXTURE SCHEDULE NOTES:

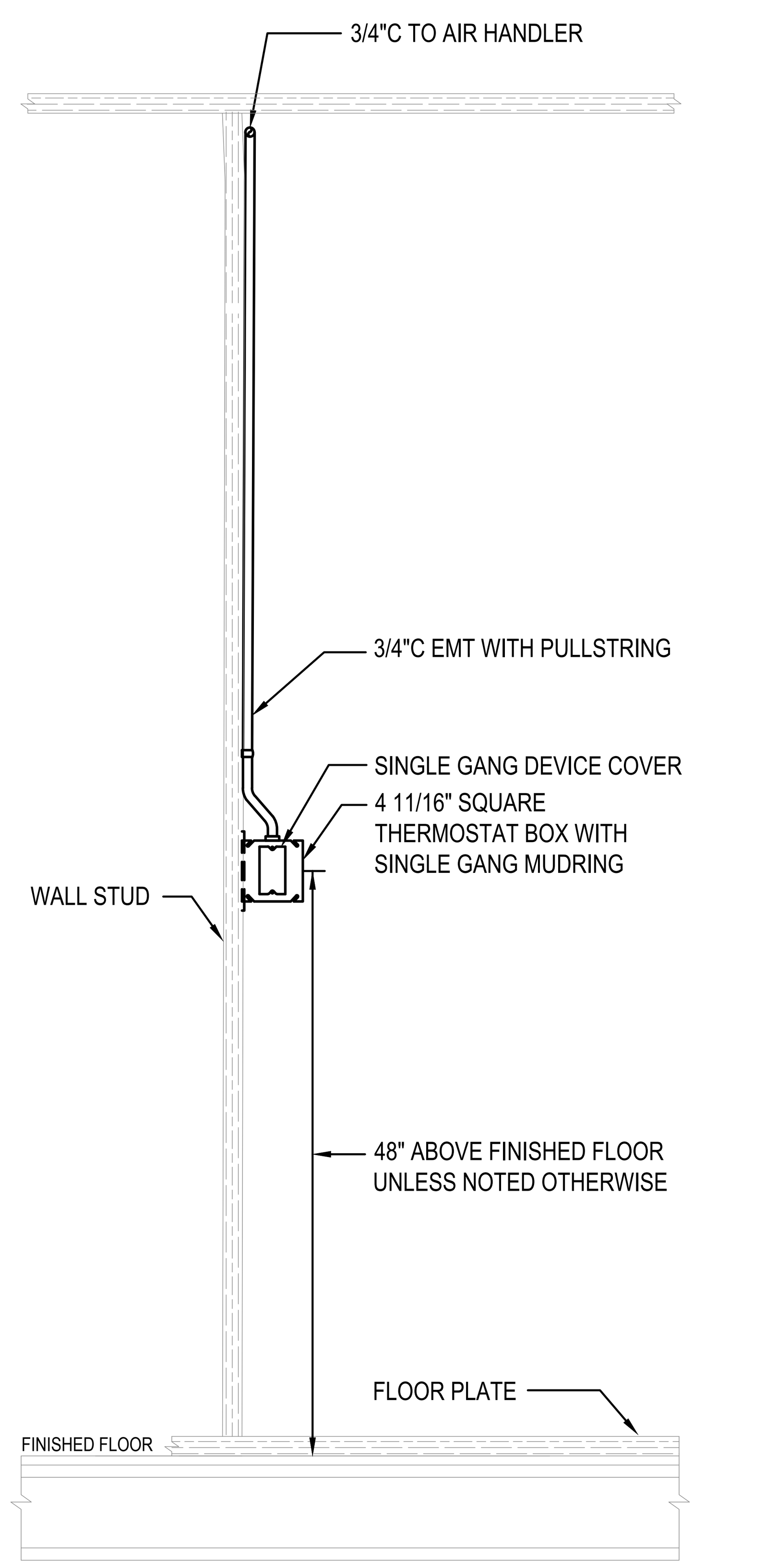
1 SUBSTITUTIONS WILL BE ALLOWED IF SUBMITTED PRIOR TO BID DATE BY THE GREATER OF: 7 BUSINESS DAYS OR THE TIME PERIOD SPECIFIED BY DIVISION 1 SPECIFICATIONS, AND IF DEEMED EQUAL BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING SUBSTITUTED FIXTURES MEET OR EXCEED THE SPECIFICATIONS OF THE FIXTURES SPECIFIED.

SWITCH AND OCCUPANCY SENSOR LEGEND

S_{OS1}	OCCUPANCY SENSOR - WALL MOUNT, SINGLE TECHNOLOGY, 120-277V, SINGLE POLE, MULTI-WAY SENSOR SWITCH WSXA-MWO-XX OR EQUAL
S_{OS2}	OCCUPANCY SENSOR - WALL MOUNT, DUAL TECHNOLOGY, DIMMING, 120-277V, SINGLE POLE, MULTI-WAY SENSOR SWITCH WSXA-MWO-PDT-D-XX OR EQUAL
S_D	DIMMING SWITCH - WALL MOUNT, 120V, LED, ELV ON/OFF/SLIDE DIMMER SWITCH SYNERGY ISD-400-ELV-120-XX OR EQUAL

XX=VERIFY COLOR WITH ARCHITECT PRIOR TO ORDER

EQUAL PRODUCTS FROM WATTSTOPER, LUTRON, LEGRAND, AND EATON WILL BE ACCEPTED

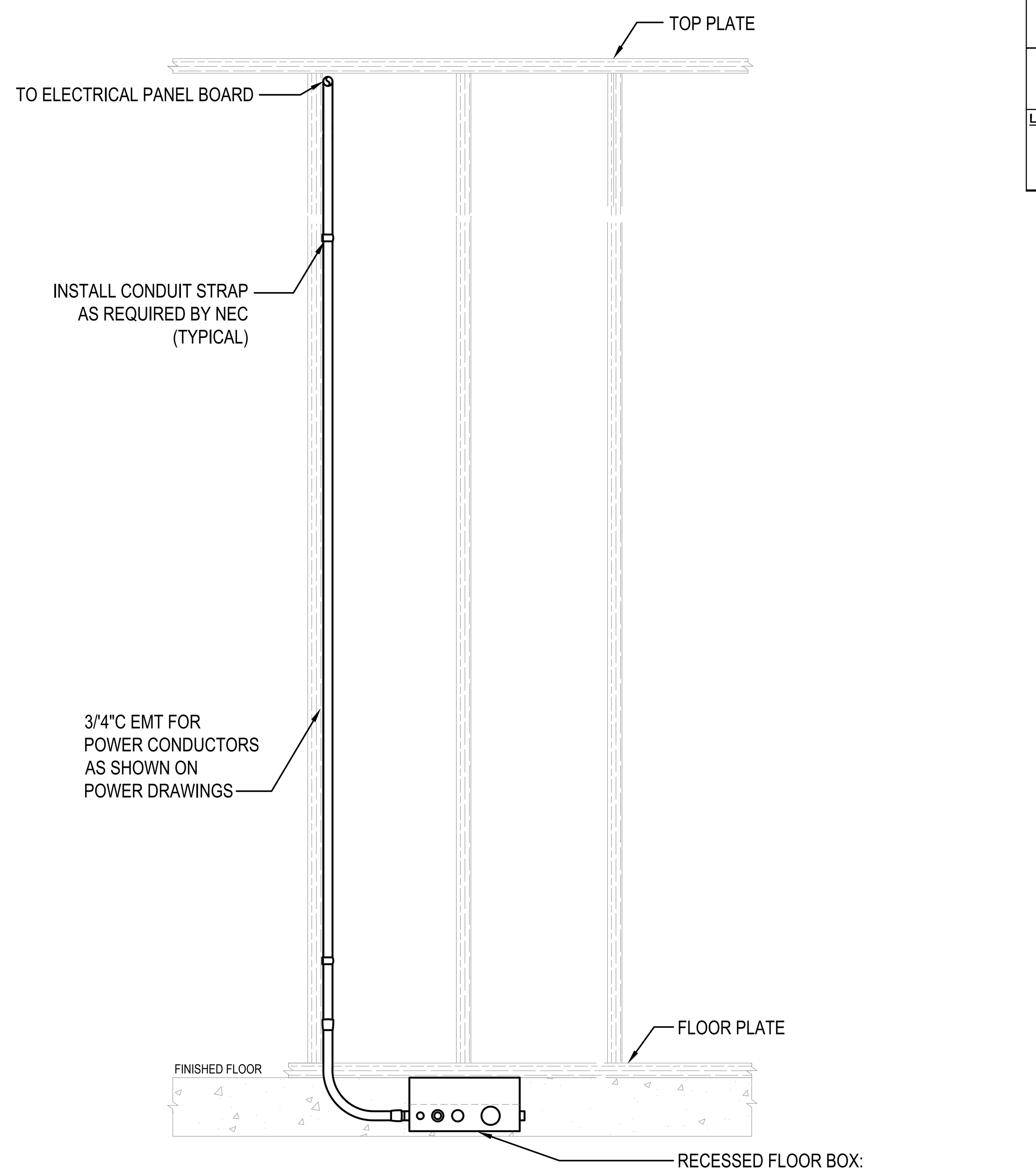


ELECTRICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF THERMOSTAT BOX ROUGH-IN
TYPICAL DETAIL - ACTUAL INSTALLATION MAY VARY

T (unit-#)

1 THRMOSTAT ROUGH-IN ELEVATION

1" = 1'-0"

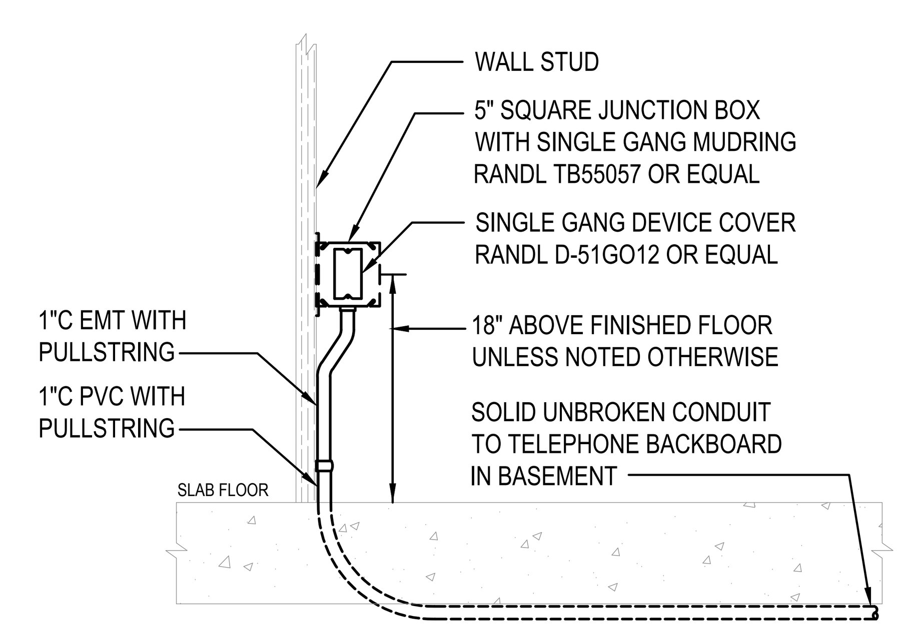


ELECTRICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF DATA/TELEPHONE ROUGH-IN
TYPICAL DETAIL - ACTUAL INSTALLATION MAY VARY

2 POWER FLOOR BOX ROUGH-IN ELEVATION

1" = 1'-0"

ELECTRICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF DATA/TELEPHONE ROUGH-IN



3 DATA TELEPHONE FLOOR FEED ROUGH-IN ELEVATION

1" = 1'-0"

TYPICAL DETAIL - ACTUAL INSTALLATION MAY VARY

ISSUED DATE	ISSUED FOR

PROFESSIONAL SEAL

Professional Engineer Matthew N. Bradley 12278 Wyoming, Date 10/05/2022

Project
GRACE SPA

22385	Project No.
CJ	Drawn By
MNB	Checked By
Discipline	Drawing No.
E	5.00

Drawing Name
DETAILS

Housing Mitigation Plan

updated 1/8/21

Development of a new house, hotel, or commercial space generates the need for employees. The construction workforce builds the space, the commercial workforce or residential service workforce works in the space, and first responders are needed to protect the space. Only about 27% of the employees generated by development can afford housing in the community, but the community's "community first" character goal is that 65% of employees live locally. To bridge this affordability gap, each development is required to include affordable workforce housing proportional to the employees it generates.
These housing mitigation requirements are established in Division 6.3 of the Land Development Regulations. This worksheet is intended to assist in meeting the requirements for a project. However, an error in the worksheet does not amend the actual standard; if you find an error please notify the Planning Department. Fill in the highlighted cells, all the other cells will autopopulate.

Calculating the Requirement (Sec. 6.3.2 & 6.3.3)

Step 1: Location

Town of Jackson

The applicable regulations vary by jurisdiction please identify the location of your project using the above dropdown options.

The required housing is based on the existing and proposed use of the site. Step 2 is to enter the existing use and Step 3 is to enter the proposed use. Section 6.3.2 of the LDRs establishes the applicability of the affordable workforce housing standards and Section 6.3.3 establishes the specifics on calculation of the requirement. Enter each use in its own row, add rows if needed. If a building has multiple units with the same use, describe each unit in its own row. (For example: if a duplex is composed of a 2,300 sf attached unit and a 1,700 sf attached unit, put each unit in its own row do not put in 4,000 sf of attached single-family.) If a unit type (e.g. apartment floor plan, or commercial tennant space) is replicated exactly multiple times, you may use the "Use Quantity" column to avoid adding multiple rows.

Step 2: Existing Development

Housing is only required for new development. Please describe the existing use of the site so that it can be credited from the housing requirement. The definition of existing use is Section 6.3.2.A.1 of the LDRs. Generally, the existing use to enter is the use with the highest housing requirement that either existed in 1995, or has been permitted since 1995. Please attach proof of existence.

Existing Use (Sec. 6.3.2.A)	Housing Requirement (Sec. 6.3.3.A)	Use Size: bedrooms	Use Size: habitable sf	Use Quantity	Housing Required
Service	0.000216*sf	0	1748	1	0.377

Existing Workforce Housing Credit 0.377

Step 3: Proposed Development

Please describe the proposed use of the site to determine if affordable workforce housing is required as part of the development. Describe the end result of the proposed development. (For example: in the case of an addition do not enter the square footage of the addition, enter the size of the unit upon completion of the addition.)

Proposed Use	Housing Requirement (Sec. 6.3.3.A)	Use Size: bedrooms	Use Size: habitable sf	Use Quantity	**Housing Required**
service	0.000216*sf	0	1748	1	**0.377**

Affordable Workforce Housing Required: 0.000 units

Fee-in-Lieu Amount: $ -

If the amount of required affordable workforce housing is less than one unit, you may pay the above fee in-lieu of providing the required housing. If you elect to pay the fee, your Housing Mitgation Plan is complete. If the requirement is greater than one unit, or you would like to provide a unit to meet the requirement, please proceed to the Unit Type Sheet.

Housing Mitigation Plan

upd

Type of Units Required (Sec. 6.3.4)

Step 4: Type of Units Required

The LDRs include a schedule for how many units have to be affordable to each income range and how many units have to have 1, 2, or 3 bedr
LDRs also allow for adjustment, subject to approval by the Housing Director. To propose an adjusted allocation, change the values in the gold c
customized allocation must meet the customization rules provided. If a rule is violated, the cell will turn red. See also Section 6.3.4 of the LDRs

Affordability	LDR Schedule	Proposed	Custom %	Customizati
Units Affordable to Households making 50% Median Income	0.000	0.000	#DIV/0!	Custom % sh
Units Affordable to Households making 80% Median Income	0.000	0.000	#DIV/0!	Custom % sh
Units Affordable to Households making 120% Median Income	0.000	0.000	#DIV/0!	Custom % sh
Workforce Units	0.000	0.000	#DIV/0!	Custom % sh
Total	0.000	0.000	Proposed total sall be >=	

Bedroom Mix	1 Bed/Studio	2 Bedroom	3 Bedroom	Total Units	Total Employees Housed	Customization Rule
LDR Schedule	0.000	0.000	0.000	0.000	0.000	The Proposed total shall
Proposed Allocation	0.000	0.000	0.000	0.000	0.000	than or equal to the Sche
Employees per Unit per LDRs	1.45	2.00	2.10	1.80		

Step 5: Distribution of Affordability by Unit Size

The bedroom mix must be proportionaly distributed among the affordability mix. If you modify the distribution (gold cells) the t
match your allocation totals (they will turn red if they do not). A customized distribution should be within 1 (rounded up or dow
even distribution displayed (it will turn red if it is not). See also Section 6.3.4 of the LDRs.

Requirement Distribution					Even Distribution		
	1 Bed/Studio	2 Bedroom	3 Bedroom	Total	1 Bed/Studio	2 Bedroom	3 Bedroom
Affordable to 50% Median Income	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Affordable to 80% Median Income	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Affordable to 120% Median Income	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Workforce Restriction	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	0.000	0.000	0.000				

Once you have determined the proposed distribution please fill out the Method Sheet regarding how the required housing will be provided.

Grace Spa

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ooms. The
cells; the
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on Rules
hall be ≥ 25%
hall be ≥ 19%
hall be < 43%
hall be < 13%
Required

be greater edule total

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Housing Mitigation Plan

updated 1/8/21

Method for Providing the Required Units (Sec. 6.3.5)

Step 6: Method of Housing Unit Provision

The LDRs require that unlesss impractical, any housing requirement of 1 unit or greater be provided through consturction of housing. If impractical, the units my be provided by dedication of land, use of a banked unit, or restriction of an existing unit. Only as a last option shall a fee be paid. The distribution of housing types selected in Step 5 is reflected in the chart below. The default method for providing a whole housing unit is on-site construction. If you would like to propose an alternate method, or provide the requirement through various methods, adjust the gold cells. A red cell indicates the adjustment does not match Step 5. The intructions cell indicates the standards that apply to each method. In addition, each unit shall comply with the Jackson Teton/County Housing Department Rules and Regulations. Response to the applicable standards shall be provided with this Housing Mitigation Plan. The in-lieu fee will calculate.

Unit Type	Units	Method	Instructions
		Fee In-Lieu	please document compliance with Sec. 6.3.5.C
		Fee In-Lieu	please document compliance with Sec. 6.3.5.C
		Fee In-Lieu	please document compliance with Sec. 6.3.5.C
		Fee In-Lieu	please document compliance with Sec. 6.3.5.C
Total Units:	**0.000**	**Fee In-Lieu:**	**$0.00**

Step 7: Attachments

Please attach to this worksheet any demonstration of existence, independent calculation, rationale for adjustment of unit type, rationale for the proposed method, documentation of the proposed method that is requried by Division 6.3. Please contact the Planning Department with any questions. Information regarding the source of the numbers in this worksheet is available in the Source Sheets.

	Office	Retail	Restaurant Bar
Nexus Study Calculation (Or Subsequent Codified Independent Calculation)			
Construction			
employees per 1,000 sf	1.234	1.234	1.234
sf per room			
Length of Construction Career	30	30	30
employees per 1,000 sf/room	0.041	0.041	0.041
employees per unit	1.774	1.774	1.774
employees who can afford	28.87%	28.87%	28.87%
units per 1,000 sf/room	0.016	0.016	0.016
Post-Construction			
employees per 1,000 sf/room	1.598	1.202	3.911
employees per unit	1.678	1.706	2
Employees who can afford	33.14%	21.30%	19.65%
units per 1,000 sf/room	0.637	0.554	1.571
Fire/EMS			
Fire/EMS employees per 1000 sf	0.00100	0.00100	0.00100
employees per unit	1.797	1.797	1.797
employees who can afford	25.56%	25.56%	25.56%
Fire/EMS units per 1000 sf	0.00042	0.00042	0.00042
Law Enforcement			
Law employees per 1000 sf	0.00301	0.00301	0.00301
employees per unit	1.797	1.797	1.797
employees who can afford	27.09%	27.09%	27.09%
Law units per 1000 sf	0.00122	0.00122	0.00122
Total			
Employees per 1000 sf/room	1.643	1.247	3.956
units per 1,000 sf/room	0.655	0.573	1.589
2018 Policy Decision Upon Adoption + 2020 Policy Update			
Town			
Town Yearround mitigation "rate"	27.5%	27.5%	27.5%
Town Reduction factor	0.38	0.38	0.38
Town Required units per 1,000 sf/room	**0.247**	**0.216**	**0.599**
County			
County Yearround mitigation "rate"	24%	24%	24%
County Reduction factor	0.33	0.33	0.33
County Required units per 1,000 sf/room	**0.215**	**0.188**	**0.523**

Mini Storage	Industrial	Institutional	Lodging	Residential
0.514	0.514	0.927	1.234	1.234
			900	
30	30	30	30	30
0.017	0.017	0.031	0.037	0.041
1.774	1.774	1.774	1.774	1.774
28.87%	28.87%	28.87%	28.87%	28.87%
0.007	0.007	0.012	0.015	0.016
0.02	0.71	1.598	0.487	
1.652	1.652	1.678	2	1.713
26.08%	26.08%	28.18%	22.87%	21.26%
0.009	0.318	0.684	0.188	2.176
0.00100	0.00100	0.00100	0.00100	0.00033
1.797	1.797	1.797	1.797	1.797
25.56%	25.56%	25.56%	25.56%	25.56%
0.00042	0.00042	0.00042	0.00042	0.00014
0.00301	0.00301	0.00301	0.00301	0.00107
1.797	1.797	1.797	1.797	1.797
27.09%	27.09%	27.09%	27.09%	27.09%
0.00122	0.00122	0.00122	0.00122	0.00043
0.041	0.731	1.633	0.528	0.043
0.017	0.326	0.698	0.204	0.017
27.5%	27.5%	27.5%	37%	73%
0.38	0.38	0.38	0.50	1.00
0.007	**0.123**	**0.263**	**0.102**	**0.017**
24%	24%	24%	37%	73%
0.33	0.33	0.33	0.50	1.00
0.006	**0.107**	**0.229**	**0.102**	**0.017**

HOUSEHOLD INCOME IN THE PAST 12 MONTHS (IN 2016 INFLATION-ADJUSTED DOLLARS)
Universe: Households
2012-2016 American Community Survey 5-Year Estimates

Teton County, Wyoming HMI ~ $75,000

	Estimate		
Total:	8,576		
Less than $10,000	196		
$10,000 to $14,999	171		
$15,000 to $19,999	191		
$20,000 to $24,999	561		
$25,000 to $29,999	208		
$30,000 to $34,999	203		
$35,000 to $39,999	340		
$35,000 - $37,499	170	20%	25%
$37,500 - $39,999	170		
$40,000 to $44,999	451		
$45,000 to $49,999	197		
$50,000 to $59,999	510	15%	19%
$60,000 to $74,999	1,231		
$75,000 to $99,999	1,226		
$100,000 to $124,999	862		
$100,000 - $104,999	172.4		
$105,000 - $109,999	172.4		
$110,000 - $114,999	172.4	35%	43%
$115,000 - $119,999	172.4		
$120,000 - $124,999	172.4		
$125,000 to $149,999	573	11%	13%
$150,000 to $199,999	386	19%	
$200,000 or more	1,270		

Median = $75,594

B08202: HOUSEHOLD SIZE BY NUMBER OF WORKERS IN HOUSEHOLD - Universe: Households
2012-2016 American Community Survey 5-Year Estimates

	Teton County, Wyoming Estimate
Total:	8,576
No workers	1,700
1 worker	2,935
2 workers	3,238
3 or more workers	703
1-person household:	2,573
No workers	935
1 worker	1,638
2-person household:	3,203
No workers	639
1 worker	771
2 workers	1,793

	Assumed E	Allocation
1 Bedroom	1.426702	0.428571
2 Bedroom	1.994506	0.428571

3-person household:	1,413
No workers	0
1 worker	251
2 workers	759
3 workers	403
4-or-more-person household:	1,387
No workers	126
1 worker	275
2 workers	686
3 or more workers	300

3 Bedroom	2.092428	0.142857
		1.76515

Cost per Livable sf (based on most recent projects currently being developed, see equation)

$674.29

Most Recent Housing Departement

	Land
174 N. King St.	$ 2,000,000
Redmond Street F	$ 3,645,000
440 W. Kelly	$ 1,703,416

Median Income (based on most recent HUD Family Median Income applied to housing department in-take data based on Rules and Regulations occupan

	1 bed	2 bed	3 bed
50%	$ 38,016.91	$ 48,238.40	$ 51,707.96
80%	$ 60,827.05	$ 77,181.44	$ 82,732.73
120%	$ 91,240.57	$ 115,772.16	$ 124,099.10
200%	$ 152,067.62	$ 192,953.60	$ 206,831.84

Median Income by Persons in Household (HUD)

1	$ 71,540
2	$ 81,760
3	$ 91,980
4	**$ 102,200**
5	$ 110,376
6	$ 118,552
7	$ 126,728

Average Livable Size (set by policy in LDRs, recent Housing Department developments at right for reference)

1 bed	2 bed	3 bed
650	900	1150

Unit sizes in most

174 N. King St
Redmond Street
Grove Phase 1
440 W. Kelly

Max Rental Rate (based on Rules and Regulations that rent shall be based on low end of range spending 30% of income on rent, including utilities)

	1 bed	2 bed	3 bed
50%	$ 2,043.04	$ 3,882.91	$ 4,507.43
80%	$ 6,605.07	$ 9,671.52	$ 10,712.39
120%	$ 13,448.11	$ 18,354.43	$ 20,019.82
200%	$ 22,572.17	$ 29,931.65	$ 32,429.73

Annual Utilities/HOA (estimate from Housing Departm

$ 4,800

Cap Rate (set by policy in LDRs based on reasonable industry standard)

8%

Maximum Sales Price (based on Rules and Regulations that sales price shall be based on the middle of the range and use the mortgage terms at right)

	1 bed	2 bed	3 bed
50%	$ 79,182.46	$ 100,472.02	$ 107,698.49
80%	$ 171,562.00	$ 217,689.38	$ 233,346.74
120%	$ 263,941.55	$ 334,906.73	$ 358,994.98
200%	$ 422,306.47	$ 535,850.77	$ 574,391.97

22%	percent of income toward mortgag
5%	percent down
30	mortgage term
5%	20-year average interest rate

Fee In-Lieu (based on 6.3.4.B.1.a-b that the lower income ranges must be rental and assuming the higher ranges will be sold)

	1 bed	2 bed	3 bed
50%	$ 412,749.72	$ 558,323.58	$ 719,089.29
80%	$ 355,724.36	$ 485,965.98	$ 641,527.35
120%	$ 174,346.22	$ 271,953.24	$ 416,437.21
200%	$ 15,981.29	$ 71,009.20	$ 201,040.22

1 bed, < 50% Me	$ 412,749.72
2 bed, < 50% Me	$ 558,323.58
3 bed, < 50% Me	$ 719,089.29
1 bed, < 80% Me	$ 355,724.36
2 bed, < 80% Me	$ 485,965.98
3 bed, < 80% Me	$ 641,527.35
1 bed, < 120% M	$ 174,346.22
2 bed, < 120% M	$ 271,953.24
3 bed, < 120% M	$ 416,437.21
1 bed, Workforc	$ 15,981.29
2 bed, Workforc	$ 71,009.20
3 bed, Workforc	$ 201,040.22

developments (source: Housing Department)

Construction	Gross sf	Livable sf	Units	Gross/Unit	Livable/Unit	Gross/Livable	Land/Gross
$ 14,000,000	31,531	21,286	30	1,051	710	1.48	$ 60
$ 9,255,000	35,078	18,645	26	1,349	717	1.88	$ 104
$ 3,884,688	12,000	10,000	16	750	625	1.20	$ 142
				1,092	693	1.57	$ 91

ıcy requirements)

Occupancy standards in Rules and Regulations

Bedrooms	Heads	Dependents
1	1 or 2	0 or 1
2	1 or 2	1+
3	1 or 2	2+

Housing Department Applications as of

	Dependants	
Heads	0	1
1	460	62
2	201	98

: recent Housing Department developments (source: Housing Department)

Studio	1 Bed	2 bed	3 bed
395	790	950	
495	588	1081	
535	705	928	
	500		1100

ıent)

Construct/Gross	Total/Gross	
$ 419	$ 478	Land was purchased in 2010, $2,000,000 is the estmated value in 2018 based on comps, gross sf for land cost per gr
$ 264	$ 368	Land was purchased in 2014 for $3,645,000, estmated value to day is about $4.5M.
$ 324	$ 466	
337	$ 428	

6/20/2019

2	3	4	5
28	11	2	0
106	38	6	4

·oss sf includes 1915 sf of retail