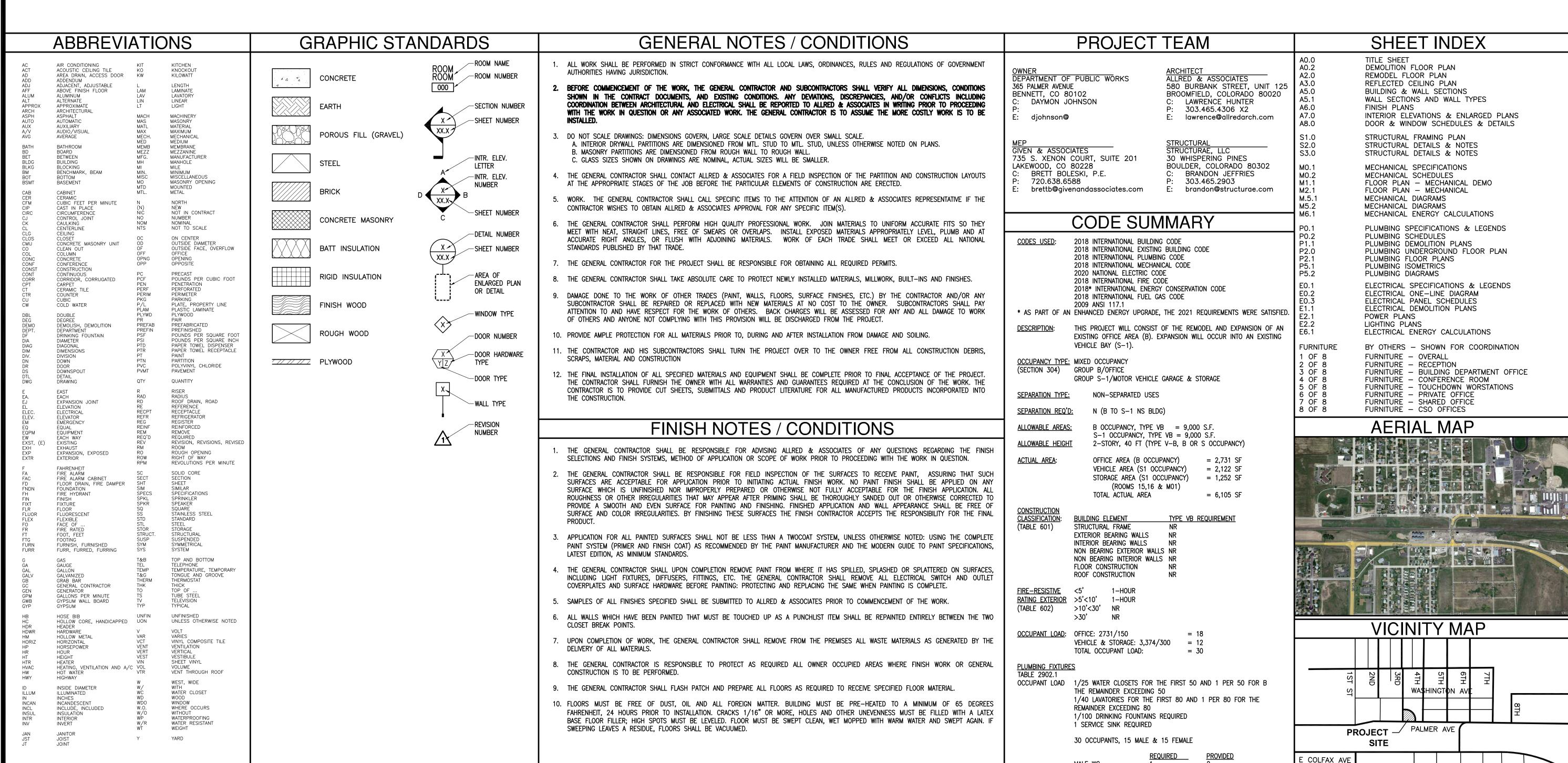
# BENNETT COMMUNITY SAFETY OFFICE EXPANSION & REMODEL

365 PALMER AVENUE BENNETT, COLORADO 80102



MALE LAV FEMALE WC FEMALE LAV

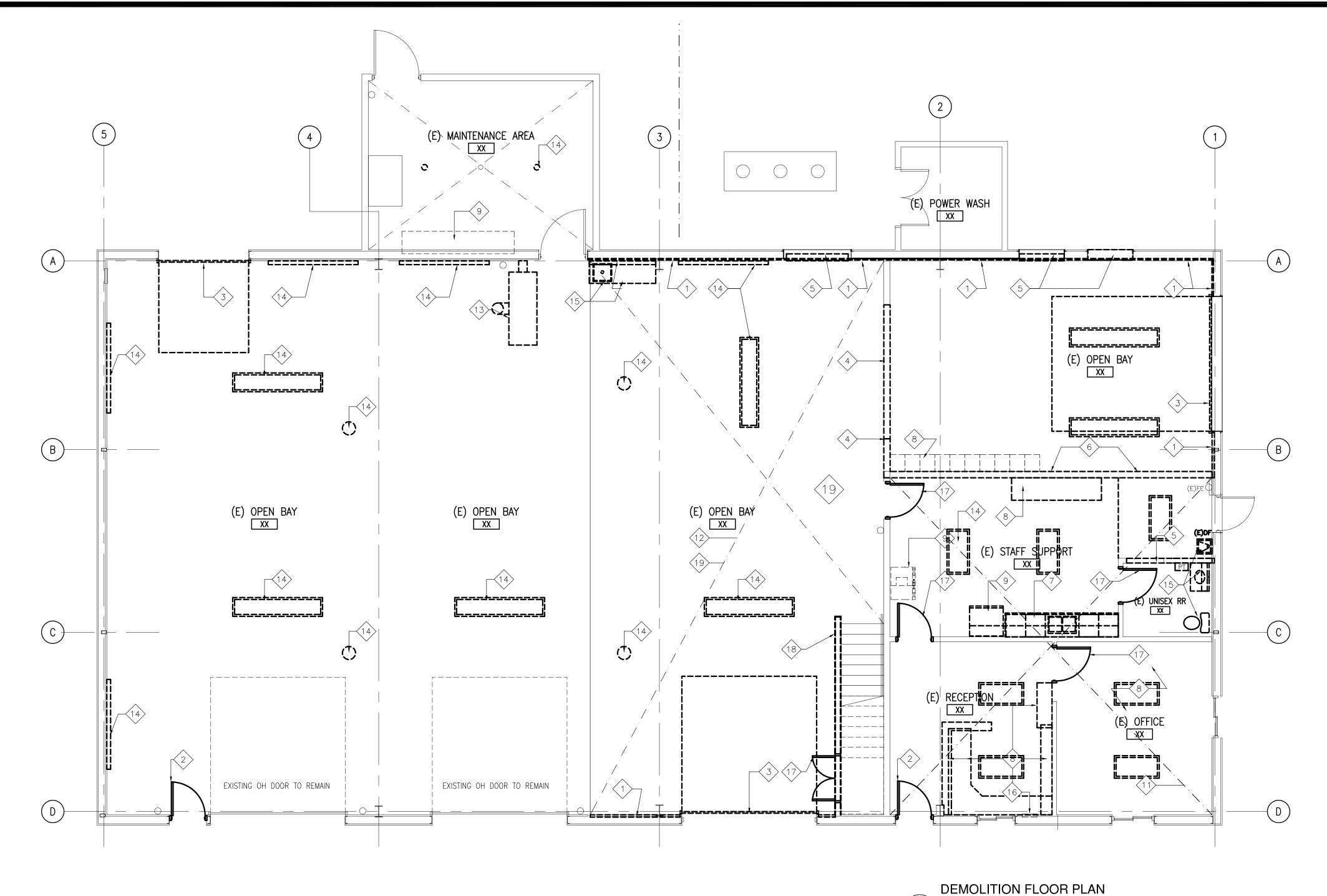
DRINKING FOUNTAIN SERVICE SINK

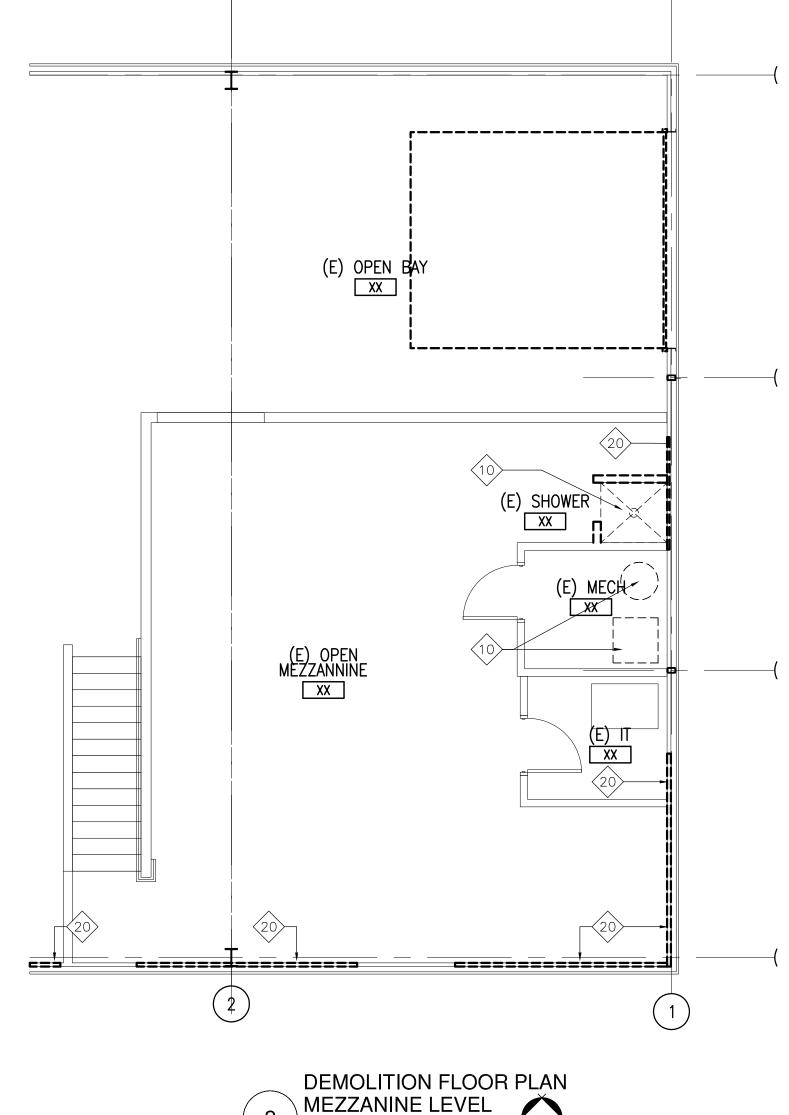
NOTE: 2 SINGLE-USER ACCESSIBLE UNISEX RESTROOMS PROVIDED

1\* BOTTLE FILLING STATION

REVISION NAME

ISSUE DATE: 2023.07.24





DEMOLITION GENERAL NOTES

PROTECT ALL OF THE EXISTING PORTIONS OF THE BUILDING THAT ARE TO REMAIN FROM DAMAGED DURING DEMOLITION OR CONSTRUCTION. ALL DAMAGED AREAS TO BE PATCHED, REPAIRED AND REFINISHED TO "LIKE-NEW" CONDITIONS AT NO ADDITIONAL COST TO THE OWNER. IF IN THE OPINION OF THE CONTRACTOR EXISTING IMPROVEMENTS TO REMAIN WILL BE DAMAGED OR REQUIRE REMOVAL THE GENERAL CONTRACTOR IS TO INCLUDE THE COST OF REPAIR OR REPLACEMENT IN THE BASE BID.

- PATCH, REPAIR & FINISH TO "LIKE NEW" CONDITION AT ALL REMOVED WALL & CEILING FIXTURES, EQUIPMENT & ACCESSORIES.
- MAINTAIN THE BUILDING IN A WEATHER TIGHT CONDITION DURING CONSTRUCTION WORK.
- LEGALLY REMOVE ALL CONSTRUCTION DEBRIS FROM THE SITE AS SOON AS PRACTICAL. NO ON-SITE SALE OF SALVAGED MATERIALS OR BURNING OF DEBRIS ON SITE SHALL BE PERMITTED.
- MAINTAIN THE SITE IN A SAFE CONDITION FOR THE PUBLIC AT ALL TIMES.
- DURING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL MAINTAIN FIRE EXTINGUISHERS PER LOCAL BUILDING
- THE GENERAL CONTRACTOR IS TO COORDINATE SCHEDULING OF ALL WORK WITH BUILDING OWNER.
- THE GENERAL CONTRACTOR IS TO FIELD VERIFY ALL EXISTING DIMENSIONS. NOTIFY ARCHITECT & OWNER OF ANY DISCREPANCIES THAT MAY OCCUR.
- RELOCATE EXISTING THERMOSTATS, SWITCHES, FIRE ALARM SYSTEMS, OR ANY OTHER DEVICES THAT ARE IN CONFLICT WITH DEMOLITION.
- 10. THE GENERAL CONTRACTOR IS TO COORDINATE/REMOVE (E) GYP. BD. WALLS, CEILINGS, AND ASSOCIATED ASSEMBLIES & (E) ACOUSTICAL TILE CEILINGS AND GRID AS NEEDED FOR (N) CONSTRUCTION. PROVIDE (N) MATERIALS AS REQUIRED TO MATCH (E).
- 1. THE GENERAL CONTRACTOR IS TO PROVIDE AND COORDINATE ALL DEMOLITION ACTIVITIES REQUIRED FOR THE INSTALLATION OF ALL (N) & REMOVED ARCHITECTURAL, MECHANICAL AND ELECTRICAL SYSTEMS. PROVIDE (N) MATERIALS AS REQUIRED TO MATCH (E).

#### DEMOLITION FLAG NOTES

PLACEMENT. RE: STRUCTURAL.

- DEMO EXISTING INTERIOR PARTIAL HT (7 FT) BUTLER INTERIOR WAINSCOT IN ITS ENTIRETY. REMOVE ALL SURFACE-MOUNT AND IN-WALL WET AND DRY UTILITIES. CONFIRM WITH OWNER AND MEP. DO NOT ORPHAN ANY DOWNSTREAM, ACTIVE VEHIICLE BAY UTILITIES THAT ARE SCHEDULED TO REMAIN.
- REMOVE AND SALVAGE EXISTING EXTERIOR HM DOOR IN ITS ENTIRETY. PREP OPENING TO RECEIVE A NEW HM DOOR (SWING DIRECTION CHANGE). RE: DOOR SCHEDULE AND A2.1 FOR NEW DOOR SPECS.
- REMOVE AND SALVAGE EXISTING COILING OVERHEAD DOOR IN ITS ENTIRETY AND RETURN TO OWNER. PREP OPENING TO RECEIVE NEW STOREFRONT. RE: WINDOW SCHEDULE FOR R.O. MODIFICATIONS.
- DEMO EXISTING INTERIOR PARTITION IN ITS ENTIRETY. REMOVE ALL SURFACE-MOUNT AND IN-WALL UTILITIES, INCLUDING POWER, DATA & COMM. TAKE BACK TO NEAREST J-BOX.
- DEMO EXISTING BUTLER EXTERIOR WALL AS REQUIRED FOR NEW DOOR/WINDOW PLACEMENT. RELOCATE
- DRY & WET UTILITIES AS REQUIRED. RE: DOOR SCHEDULE AND WINDOW SCHEDULES. DEMO EXISTING MEZZANINE BEARING WALL. SHORE AS REQUIRED. PREP FOR NEW POST AND BEAM
- DEMO EXISTING CABINETRY/CASEWORK IN ITS ENTIRETY. TAKE WET AND DRY UTILITIES BACK TO WALL CAVITY. CAP AS NEEDED AND PREP FOR NEW CONSTRUCTION PER A2.1.
- REMOVE AND SALVAGE EXISTING OFFICE FURNITURE. CONFIRM DISPOSITION WITH OWNER.
- REMOVE AND SALVAGE EXISTING EQUIPMENT. CONFIRM DISPOSITION WITH OWNER.

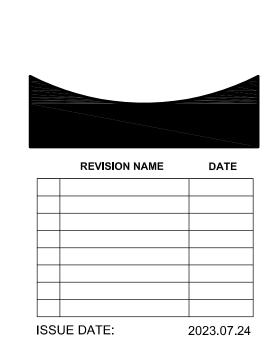
#### DEMOLITION FLAG NOTES

DISPOSITION WITH OWNER.

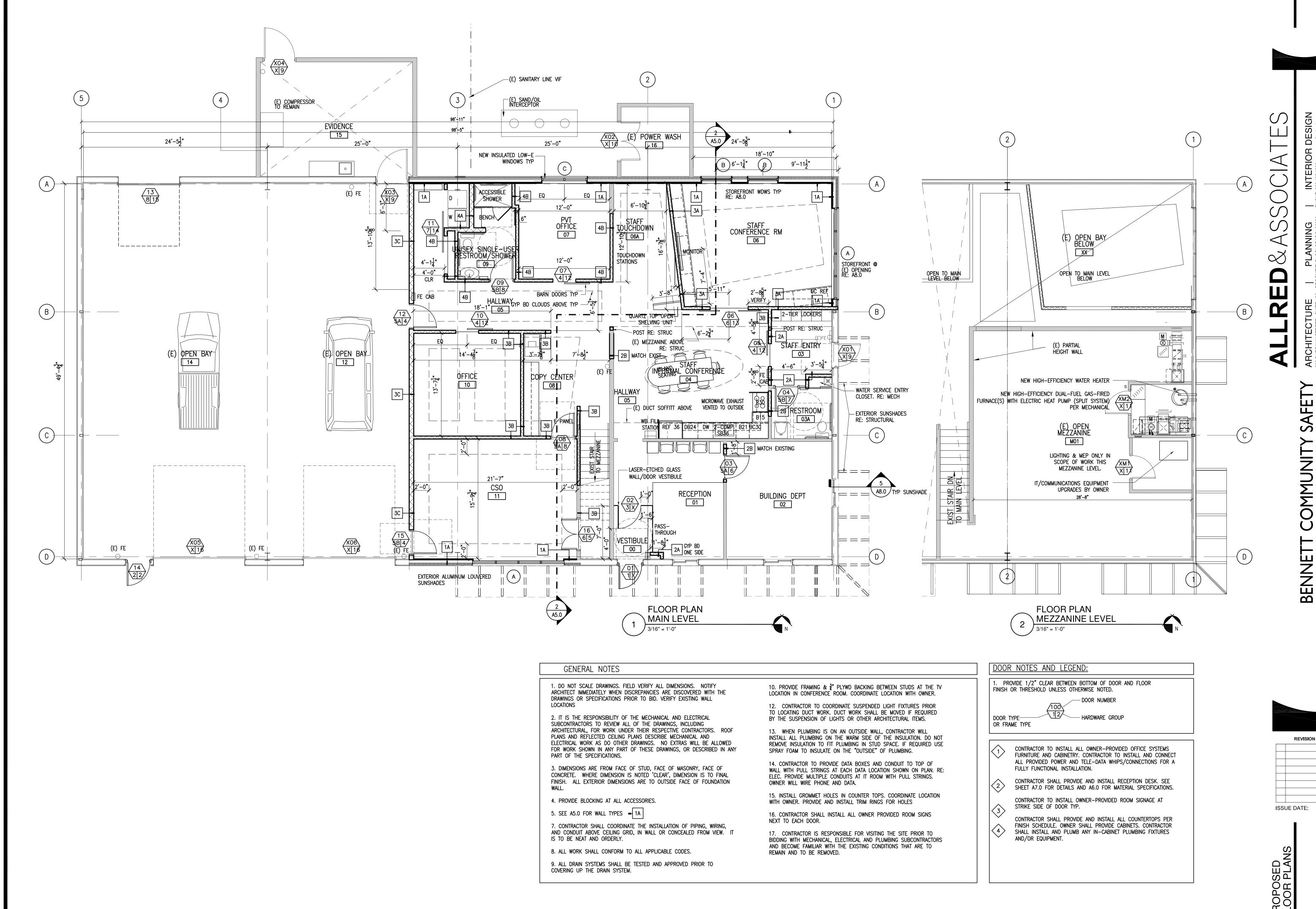
- DEMO EXISTING FURNACE & DHW HEATER. PREP FOR REPLACEMENT EQUIPMENT RE: MECHANICAL.
- DEMO EXISTING FLOOR FINISH AND APPLIED WALL FINISH IN EXISTING OFFICE AREA TYPICAL THROUGHOUT. PREP DRYWALL TO RECEIVE NEW FINISHES.
- REMOVE ALL SLAB-INSTALLED MOUNTING HARDWARE CLEAN AND PREP SLAB TO RECEIVE NEW FINISHES FOR OFFICE EXPANSION INTO THIS AREA. FOR OFFICE EXPANSION INTO THIS AREA.
- REMOVE AND SALVAGE EXISTING OIL—FIRED CABINET UNIT HEATER (CUH).
- REMOVE AND SALVAGE EXISTING LIGHT FIXTURE. TYPICAL ALL EXISTING LIGHT FIXTURES. CONFIRM
- DEMO EXISTING PLUMBING FIXTURE. RE: PLUMBING FOR NEW FIXTURE LOCATIONS AND REQUIRED ROUGH—IN RELOCATION AND/OR REMOVAL.
- ROUGH-IN RELOCATION AND/OR REMOVAL.
- (16) DEMO EXISTING ELECTRICAL PANEL. RE ELECTRICAL FOR NEW PANEL LOCATION AND REROUTING. DEMO EXISTING INTERIOR WOOD DOOR, CASING AND TRIM. PREP OPENING TO RECEIVE A NEW DOOR OR A CASED OPENING. RE: FLOOR PLAN.
- REMOVE WD CAP AND DRYWALL ON SLOPED OUTER WALL OF STAIR. FRAMING, STRINGER AND STAIR TO REMAIN. PREP TO SISTER NEW FRAMING, DRYWALL AND FINISH FOR 12 FT H WALL.
- 29 PATCH DRYWALL, REPAIR, SAND FINISH AND PAINT.

OR A CASED OPENING. RE: FLOOR PLAN.

DEMO EXISTING FINISH AT INSIDE FACE OF (E) EXTERIOR WALL AS REQUIRED FOR PLACEMENT OF FRAMING SUPPORT AT AWNINGS. RE: STRUCTURAL 3/S2.0 AND ARCHI.

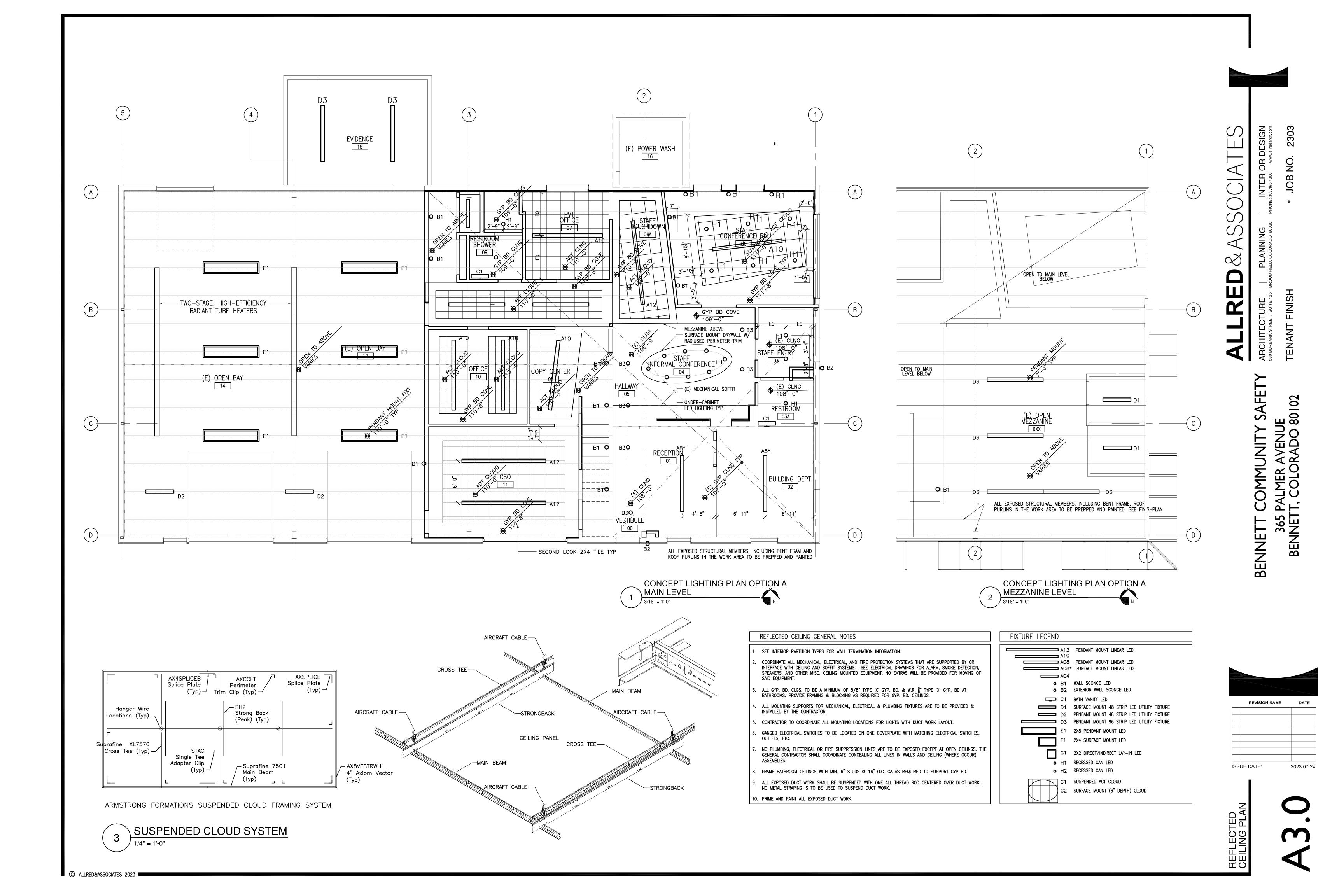


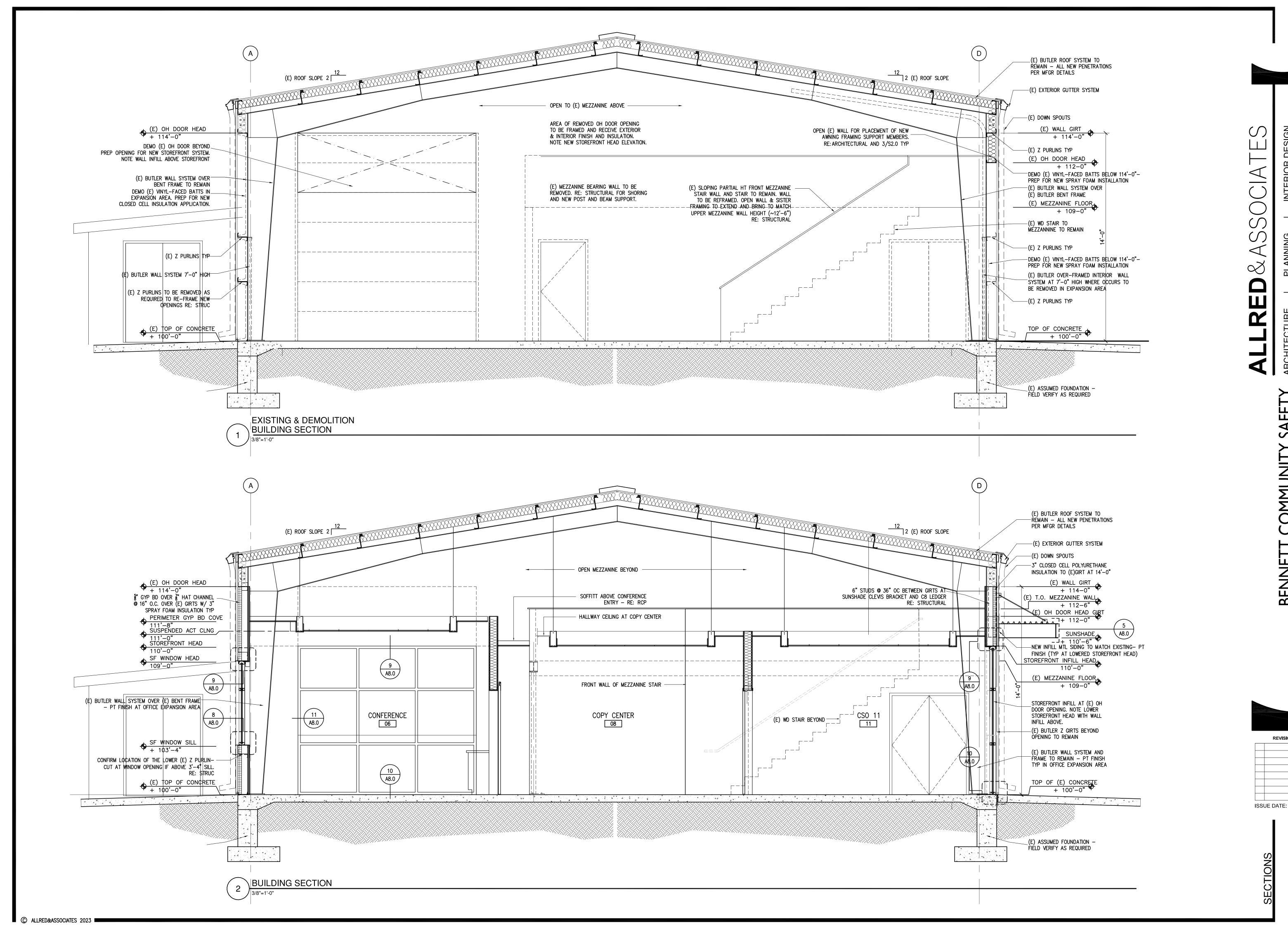
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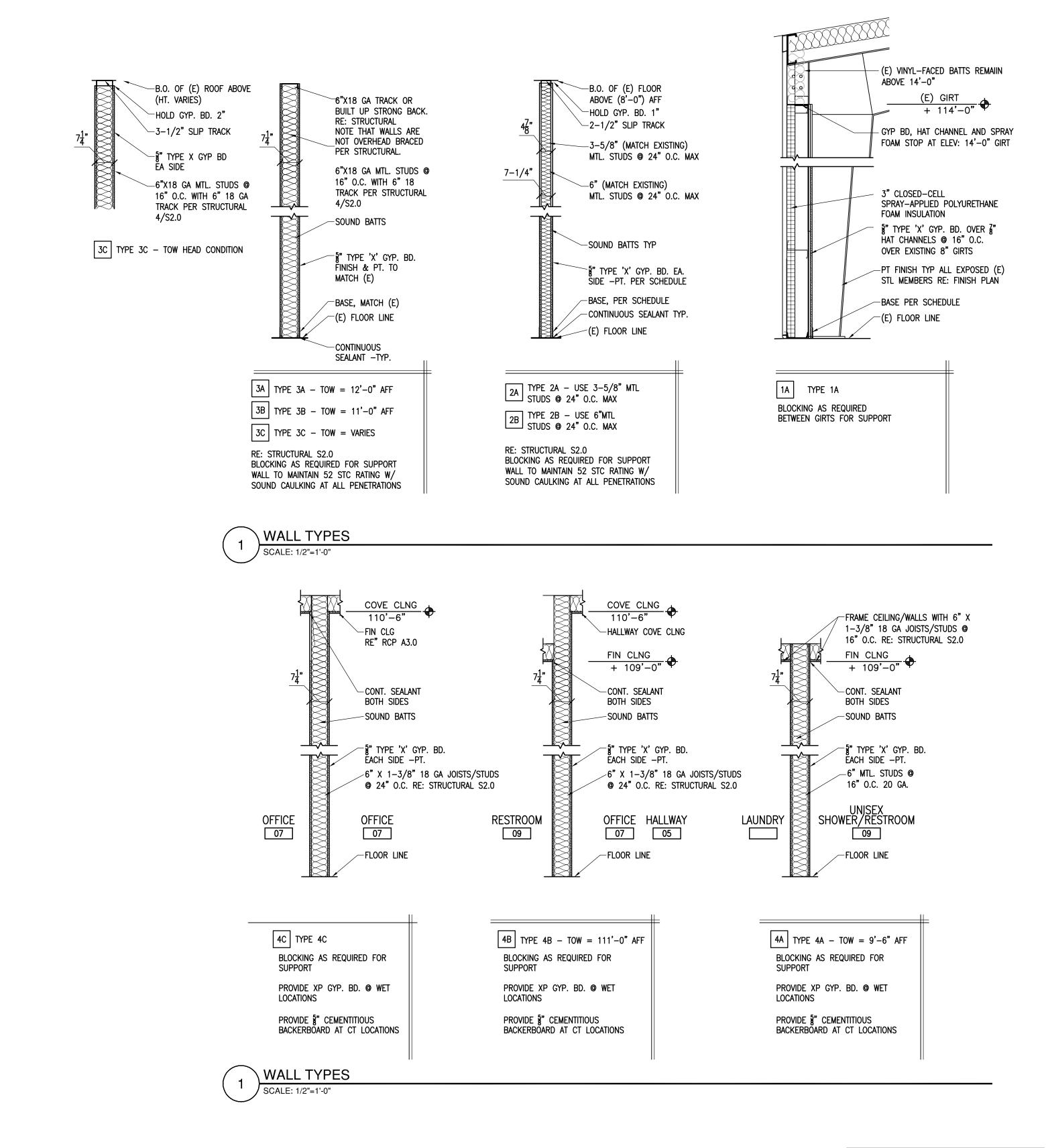
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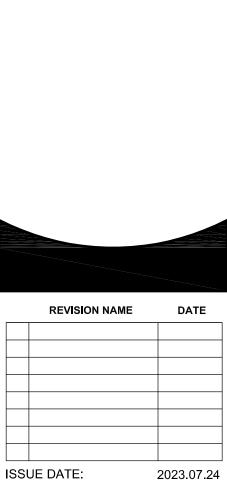




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2023.07.24





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365 PALMER AVENUE
BENNETT, COLORADO 80102

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SECTIONS & WALL TYPES

WALL TYPE NOTES

ASSEMBLIES.

PROVIDE BLOCKING AS REQUIRED FOR SUPPORT AT ALL WALL & CEILING

2. PROVIDE §" CEMENTITIOUS BACKERBOARD AT ALL TILE LOCATIONS.

PROVIDE WR GYP. BD. @ ALL WET LOCATIONS INCLUDING BUT NOT LIMITED TO JAN CLOSET, DRINKING FOUNTAIN LOCATION & AREAS @ BREAK ROOM &

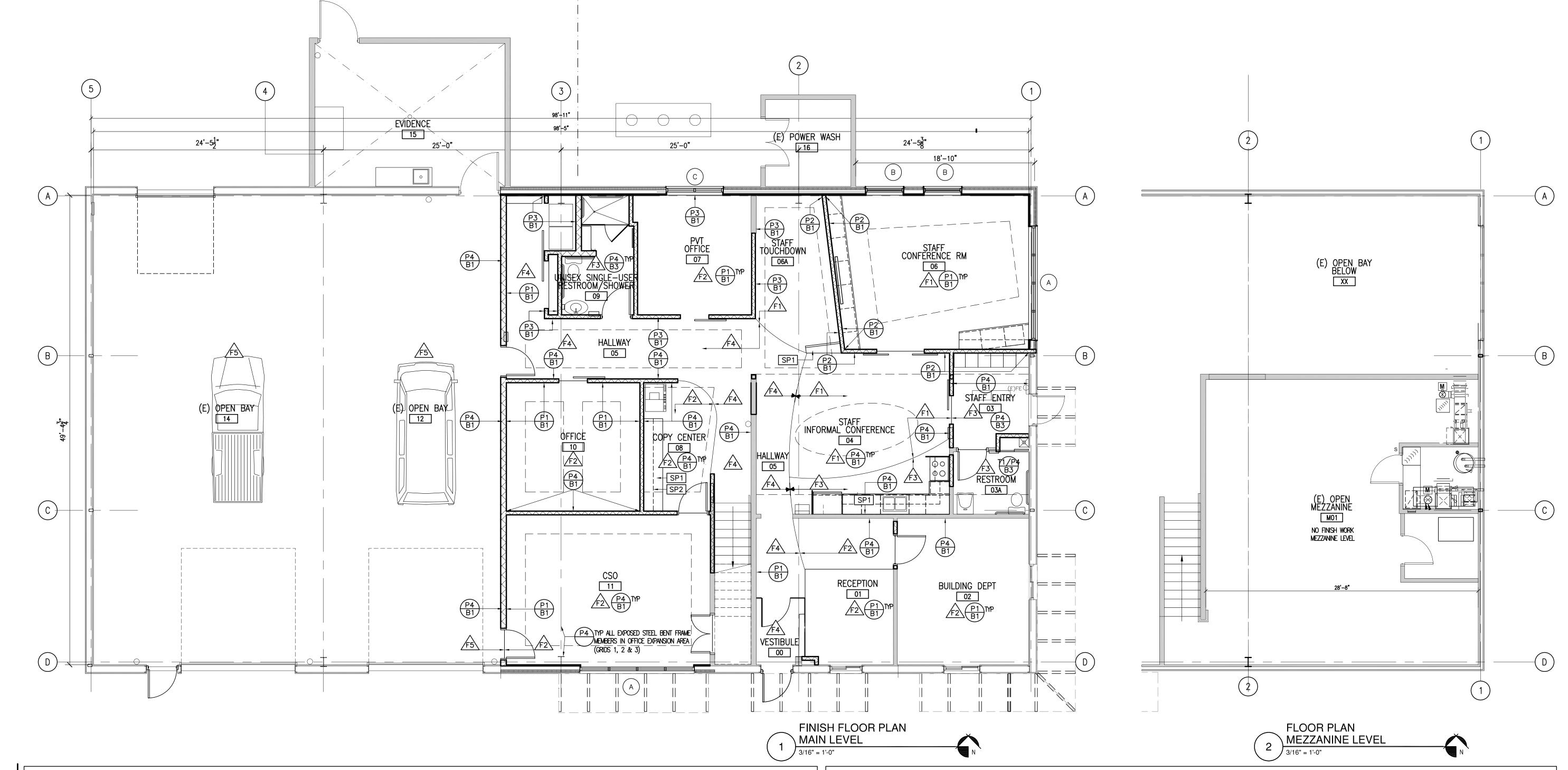
4. PROVIDE SOUND BATT INSULATION @

5. SOUND ISOLATION CAULKING AT ALL

CONFERENCE ROOM SINKS.

TOILET ROOM CEILINGS.

JOINT PENETRATIONS.



#### GENERAL FINISH NOTES

- 1. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ADVISING ALLRED & ASSOCIATES OF ANY QUESTIONS REGARDING THE FINISH SELECTIONS & FINISH SYSTEMS, METHOD OF APPLICATION OR SCOPE OF WORK PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
- 2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD INSPECTION OF THE SURFACES TO RECEIVE PAINT, ASSURING THAT SUCH SURFACES ARE ACCEPTABLE FOR APPLICATION PRIOR TO INITIATING ACTUAL FINISH WORK. NO PAINT FINISH SHALL BE APPLIED ON ANY SURFACE WHICH IS UNFINISHED NOR IMPROPERLY PREPARED OR OTHERWISE NOT FULLY ACCEPTABLE FOR THE FINISH APPLICATION. ALL ROUGHNESS OR OTHER IRREGULARITIES THAT MAY APPEAR AFTER PRIMING SHALL BE THOROUGHLY S&ED OUT OR OTHERWISE CORRECTED TO PROVIDE A SMOOTH & EVEN SURFACE FOR PAINTING & FINISHING. FINISHED APPLICATION & WALL APPEARANCE SHALL BE FREE OF SURFACE & COLOR IRREGULARITIES. BY FINISHING THESE SURFACES THE FINISH CONTRACTOR ACCEPTS THE RESPONSIBILITY FOR THE FINAL PRODUCT.
- 3. APPLICATION FOR ALL PAINTED SURFACES SHALL NOT BE LESS THAN A TWOCOAT SYSTEM, UNLESS OTHERWISE NOTED: USING THE COMPLETE PAINT SYSTEM (PRIMER & FINISH COAT) AS RECOMMENDED BY THE PAINT MANUFACTURER & THE MODERN GUIDE TO PAINT SPECIFICATIONS, LATEST EDITION, AS MINIMUM ST&ARDS.
- 4. THE GENERAL CONTRACTOR SHALL UPON COMPLETION REMOVE PAINT FROM WHERE IT HAS SPILLED, SPLASHED OR SPLATTERED ON SURFACES, INCLUDING LIGHT FIXTURES, DIFFUSERS, FITTINGS, ETC. THE GENERAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL SWITCH & OUTLET COVERPLATES & SURFACE HARDWARE BEFORE PAINTING: PROTECTING & REPLACING THE SAME WHEN PAINTING IS COMPLETE.
- 5. SAMPLES OF ALL FINISHES SPECIFIED SHALL BE SUBMITTED TO ALLRED & ASSOCIATES PRIOR TO COMMENCEMENT OF THE WORK.
- 6. ALL WALLS WHICH HAVE BEEN PAINTED WITH A SATIN/SEMI-GLOSS FINISH MUST BE TOUCHED UP AS A PUNCHLIST ITEM SHALL BE REPAINTED ENTIRELY BETWEEN THE TWO CLOSET BREAK POINTS.
- 7. UPON COMPLETION OF WORK, THE GENERAL CONTRACTOR SHALL REMOVE FROM THE PREMISES ALL WASTE MATERIALS AS GENERATED BY THE DELIVERY OF ALL MATERIALS.
- 8. THE GENERAL CONTRACTOR IS RESPONSIBLE TO PROTECT AS REQUIRED ALL OWNER OCCUPIED AREAS WHERE FINISH WORK OR GENERAL CONSTRUCTION IS TO BE PERFORMED.
- 9. THE GENERAL CONTRACTOR SHALL FLASH PATCH & PREPARE ALL FLOORS AS REQUIRED TO RECEIVE SPECIFIED FLOOR
- 10. THE CARPET CONTRACTOR SHALL INSPECT THE SUBFLOOR PRIOR TO COMMENCEMENT OF THE WORK. THEY SHALL NOTIFY ALLRED & ASSOCIATES IN WRITING OF ANY CONDITIONS WHICH WILL PREVENT HIM FROM PRODUCING SATISFACTORY FINISH WORK.

- 11. FLOORS MUST BE FREE OF DUST, OIL & ALL FOREIGN MATTER. BUILDING MUST BE PRE—HEATED TO A MINIMUM OF 65 DEGREES FAHRENHEIT, 24 HOURS PRIOR TO INSTALLATION. CRACKS 1/16" OR MORE, HOLES & OTHER UNEVENNESS MUST BE FILLED WITH A LATEX BASE FLOOR FILLER; HIGH SPOTS MUST BE LEVELED. FLOOR MUST BE SWEPT CLEAN, WET MOPPED WITH WARM WATER & SWEPT AGAIN. IF SWEEPING LEAVES A RESIDUE, FLOORS SHALL BE VACUUMED.
- 12. THE CARPET CONTRACTORS SHALL ASSUME FULL RESPONSIBILITY FOR ANY UNACCEPTABLE FINISH WORK CAUSED BY SUBFLOOR CONDITIONS.
- 13. THE GENERAL CONTRACTOR SHALL THOROUGHLY CLEAN ALL RUBBER BASE AFTER INSTALLATION IS COMPLETED.
- 14. INSTALL SCHLUTER TRANSITION STRIPS AT ALL TRANSITIONS.
- 15. THE CARPET CONTRACTOR IS TO PROVIDE & INSTALL ALL NECESSARY VINYL REDUCING STRIPS &/ OR METAL SADDLES AS REQUIRED AT ALL CARPET/MATERIAL TRANSITION POINTS. COLOR SPECIFICATION BY ALLRED & ASSOCIATES.
- 16. CARPETS SHALL BE LAID WITH TIGHT BUTT SEAMS LAID TRUE WITH AN APPROVED BR& OF WATERPROOF QUICK RELEASE CEMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 17. SPOTS &/OR SMEARS OF CARPET CEMENT SHALL PROMPTLY BE REMOVED WITH APPROVED SOLVENT.
- 18. ALL EXCESS PIECES OF USABLE CARPET SHALL BE STACKED, TAGGED & LEFT WITH THE OWNER FOR FUTURE USE.
- 19. THE GENERAL CONTRACTOR SHALL THOROUGHLY VACUUM CLEAN ALL CARPETED AREA AFTER INSTALLATION IS COMPLETE, & SHALL MAINTAIN CONDITION THROUGH TENANT'S MOVE—IN.
- 20. ALL TILE SEALANT TO BE WATER-BASED, NON-EPOXY, HEAVY DUTY COATING.
- 21. PROVIDE SCHLUTER DILEX-HK COVE AT PORCELAIN WALL TO FLOOR TRANSITION AT ALL TOILET ROOMS.
- 22. ALL FINISHED GYP BD WALLS SHALL BE FINISHED TO A LEVEL 4 FINISH.
- 23. EXTEND FINISH UNDER BASE CABINETS UNO.
- 24. INSTALL ALL MATERIALS PER MANUFACTURERS RECOMMENDATIONS.
- 25. BONDO, SAND & PAINT ALL EXPOSED BEAMS, PLATES & TUBE STEEL.

## FINISH SCHEDULE

#### FLOOR FINISH SPECIFICATION:

CARPET 1:
CARPET TILE: 12X48 DIRECT GLUE DOWN
MAN. BY: PATCHCRAFT:

STYLE: ABERDEEN 10455; COLOR: GEARY 00525

- CARPET 2:
  CARPET TILE: 12X48 DIRECT GLUE DOWN
  MAN. BY: PATCHCRAFT
  STYLE: TBD TILE COLOR: TBD
- PORCELAIN TILE:

  MAN. BY: ARIZONA TILE

  RECTIFIED PORCELAIN TILE 12X24

  COLOR: CITY LIFE ASH; LFT/LHT MORTAR
- LVT 1:
  18"X18" LUXURY VINYL TILE
  MAN. BY: MANNINGTON COMMERCIAL;
  NATURE'S PATHS—STONE
- STYLE: TBD COLOR: TBD

  CONCRETE SEALER:
  SILOXANE WATER-BASED SEALER
- INDICATES CHANGE IN FLOORING MATERIAL TYPE.

# WALL FINISH SPECIFICATION:

# PRIMARY WALL PAINT FINISH: BENJAMIN MOORE COLOR: SOFT CHAMOIS OC-13; SATIN

BENJAMIN MOORE

SEMI-GLOSS & SATIN

BENJAMIN MOORE
COLOR: CAROLINA GULL 2138–40; SATIN
ACCENT WALL PAINT FINISH

ACCENT WALL PAINT FINISH

- COLOR: LIGHT KHAKI 2148–40; SATIN

  ACCENT WALL PAINT FINISH
  BENJAMIN MOORE
  COLOR: NANTUCKET GREY HC–111;
- ACCENT WALL & CEILING PAINT FINISH
  BENJAMIN MOORE
  COLOR: MOUNTAIN PEAK WHITE 2148-70; SATIN
- PORCELAIN TILE:

  MAN. BY: ARIZONA TILE

  RECTIFIED PORCELAIN TILE 12X24 TO 48" AFF

  W/ 3X12 BULLNOSE CAP AT TOP OF WAINSCOT

  COLOR: CITY LIFE ASH; LFT/LHT MORTAR

# WALL BASE SPECIFICATION:

- 4" RUBBER BASE
  MAN. BY: ROPPE
  COLOR: BLACK 100
- TIN

  4" RUBBER BASE
  MAN. BY: ROPPE
  COLOR: TBD
  - TILE: 3"X12" BULLNOSE TILE BASE
    W/ SCHLUTER DILEX—HK COVE.
    TOP OF TILE BASE TO BE 4" A.F.F.
    TYPICAL AT ALL WALLS WITHOUT
    WALL TILE. MAN. BY ARIZONA TILE;
    ETHOS COLOR: BEIGE. GROUT: MAN.
    BY LATICRETE. COLOR: \_; \_. ALL

NON-EPOXY SEALER.

TILE TO BE SEALED WITH (1) COAT

# CEILING FINISH SPECIFICATION:

- PAINT FINISH: ALL PAINTABLE CEILINGS RECEIVE: BENJAMIN MOORE
- COLOR: MOUNTAIN PEAK WHITE; 2148–70; SATIN.

  PAINT FINISH: ALL PAINTABLE UPPER PERIMETER
  COVE CEILINGS RECEIVE: BENJAMIN MOORE
- COLOR: BLACK SATIN; SATIN.

  TBD

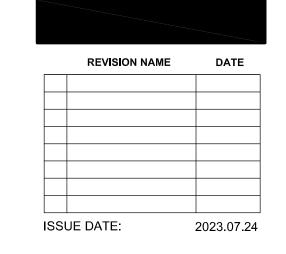
## SPECIAL FINISH SPECIFICATION:

- SP1 QUARTZ COUNTERTOP, CAMBRIA 3 CM
  COLOR: WOODCRAFT; CAMBRIA MATTE FINISH
- P-LAM. BASE AND UPPER CABINETS
  MAN. BY: WILSONART LAMINATE.
  BASE COLOR: TBD
  UPPER COLOR: TBD
- SP3

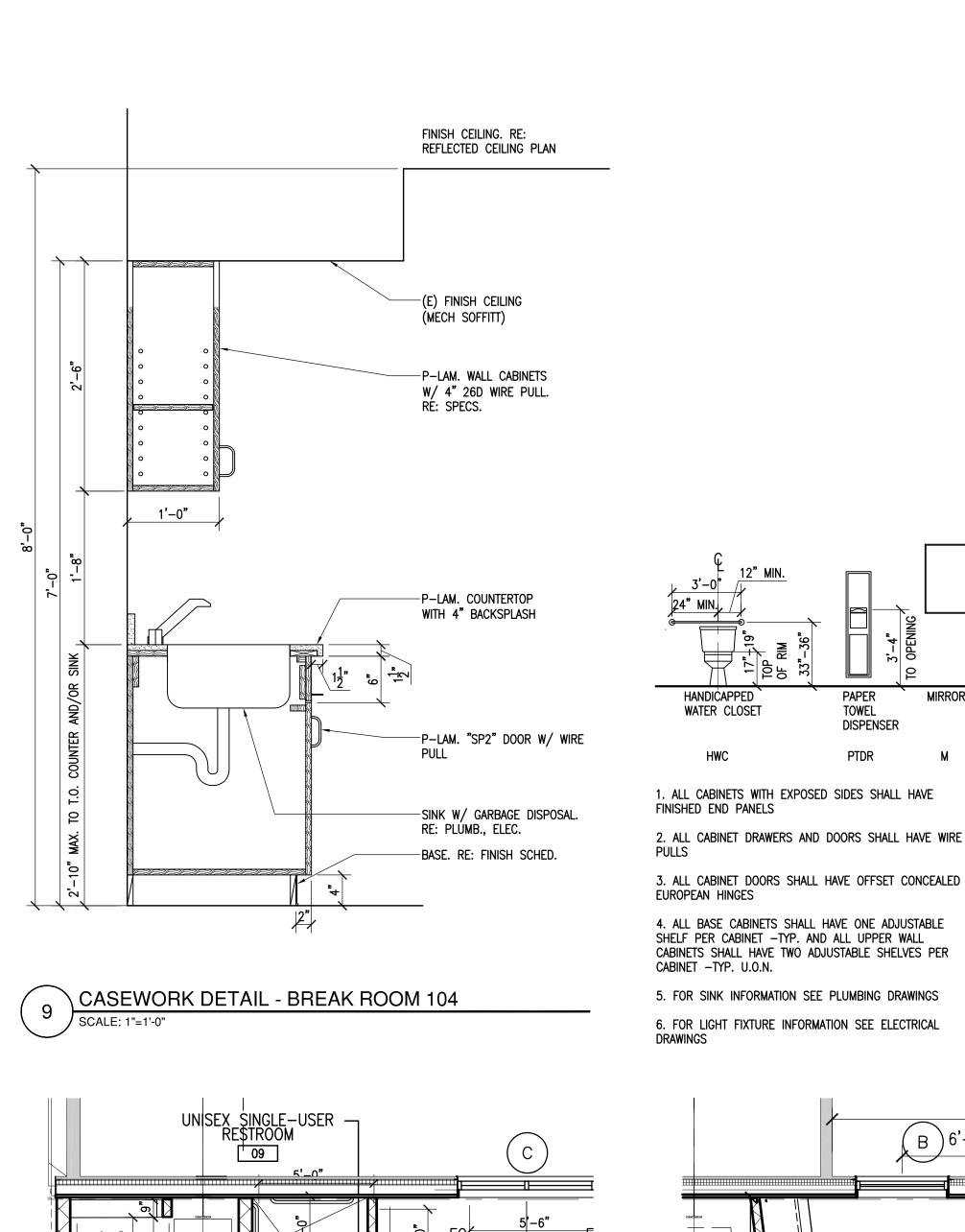
  ALTERNATE COUNTERTOP
  P-LAM. COUNTERTOP w/4" BACKSPLASH
  MAN. BY: WILSONART LAMINATE.
  COLOR: TBD;

## FINISH PLAN SPECIFIC NOTES

- ALL WOOD DOORS TO BE STAINED BLACK WITH A CLEAR FINISH TOPCOAT.
- ALL SLIDING DOOR FINISHED OPENINGS TO RECEIVE SS SATIN FINISH CORNER GUARDS TO 48" AFF ON BOTH SIDES & CORNERS OF THE OPENING (4 TOTAL PER OPENING)
- PROVIDE LOW PROFILE SCHLUTER TRANSITION STRIPS AT ALL TILE/CARPET TRANSITIONS.
- EXISTING CONCRETE SLAB TO BE PREPARED TO RECEIVE NEW FINISHES. CLEAN & FILL CRACKS. VERIFY MOISTURE CONTENT IS BELOW FINISH MATERIAL INSTALLATION REQUIREMENTS. IF SLAB SLOPE IS  $> \frac{1}{16}$  /FT., LEVEL SLAB. NOTE THAT SLAB AREAS RECEIVING NEW FINISHES WERE USED AS VEHICLE BAYS AND SUBJECTED TO VARIOUS AUTOMOTIVE CONTAMINANTS.
- ALL EXPOSED MECHANICAL, ELECTRICAL & PLUMBING IN OFFICE EXPANSION AREA ARE PAINTED P1 SEMI-GLOSS. ALL EXISTING EXPOSED STRUCTURE (BENT FRAME COLUMN/BEAM & EXPOSED WIND GIRTS) IN OFFICE EXPANSION AREA TO BE PAINTED PAINTED P4 SEMI-GLOSS



NISH PI



4 12

CS0

7'-1"

ENLARGED PLAN -WEST

HANDICAPPED `

WATER CLOSET

12'-0"

OFFICE 07

HALLWAY

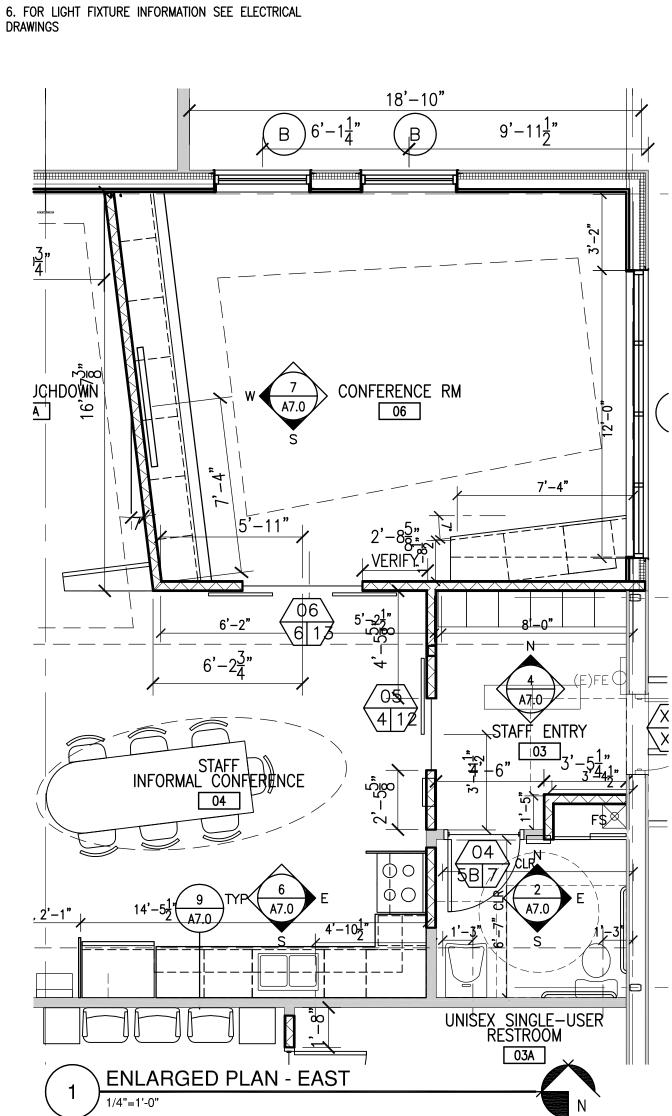
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\ A7.0 /

05 7'-8

TOWEL

DISPENSER



TOILET PAPER

CORNERS.

DESKS WITH OWNER

DISPENSER

HANDICAPPED

EXTINGUISHER

CABINET

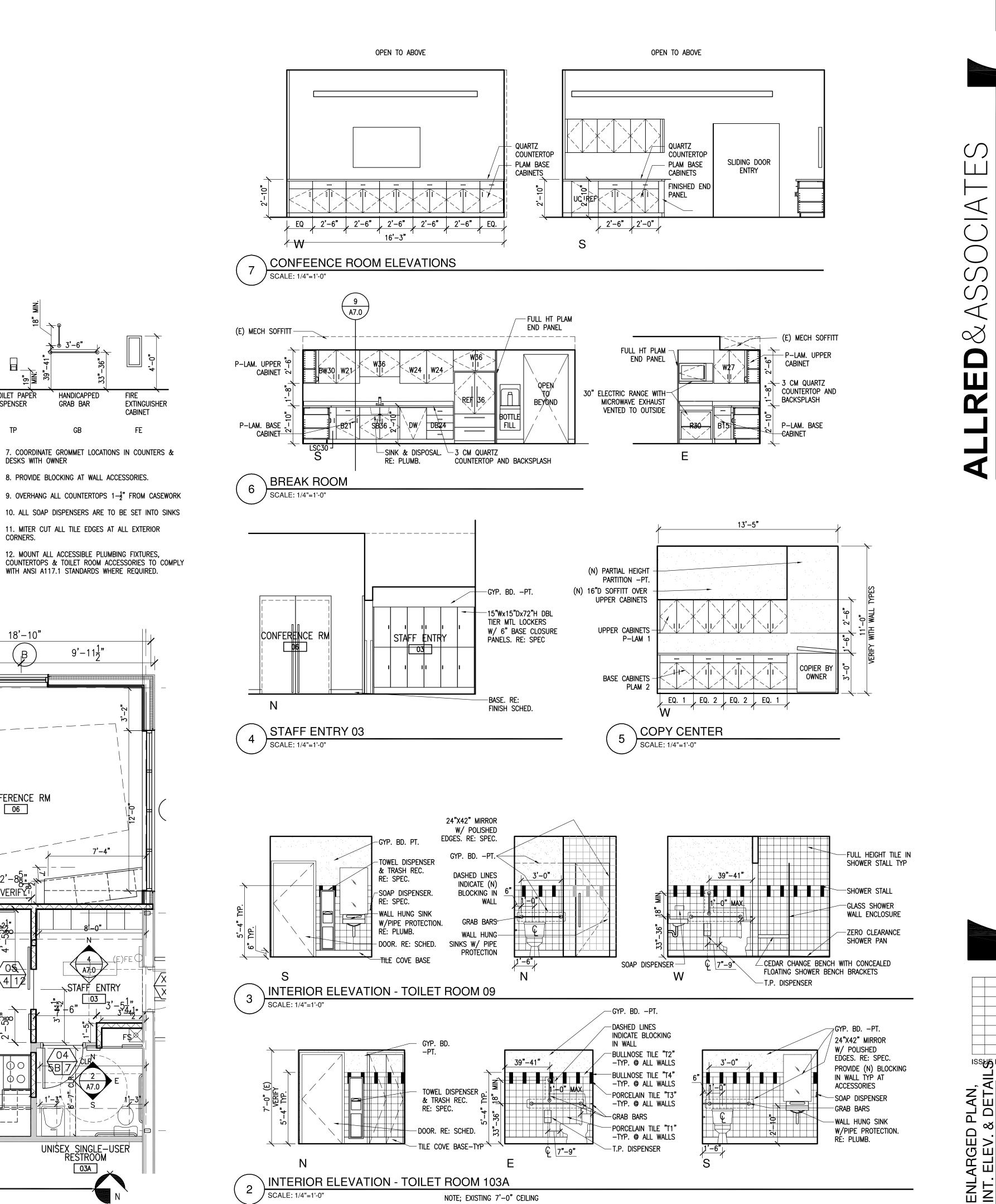
GRAB BAR

8. PROVIDE BLOCKING AT WALL ACCESSORIES.

11. MITER CUT ALL TILE EDGES AT ALL EXTERIOR

12. MOUNT ALL ACCESSIBLE PLUMBING FIXTURES,

WITH ANSI A117.1 STANDARDS WHERE REQUIRED.



**INTERIOR ELEVATION - TOILET ROOM 103A** 

NOTE; EXISTING 7'-0" CEILING

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

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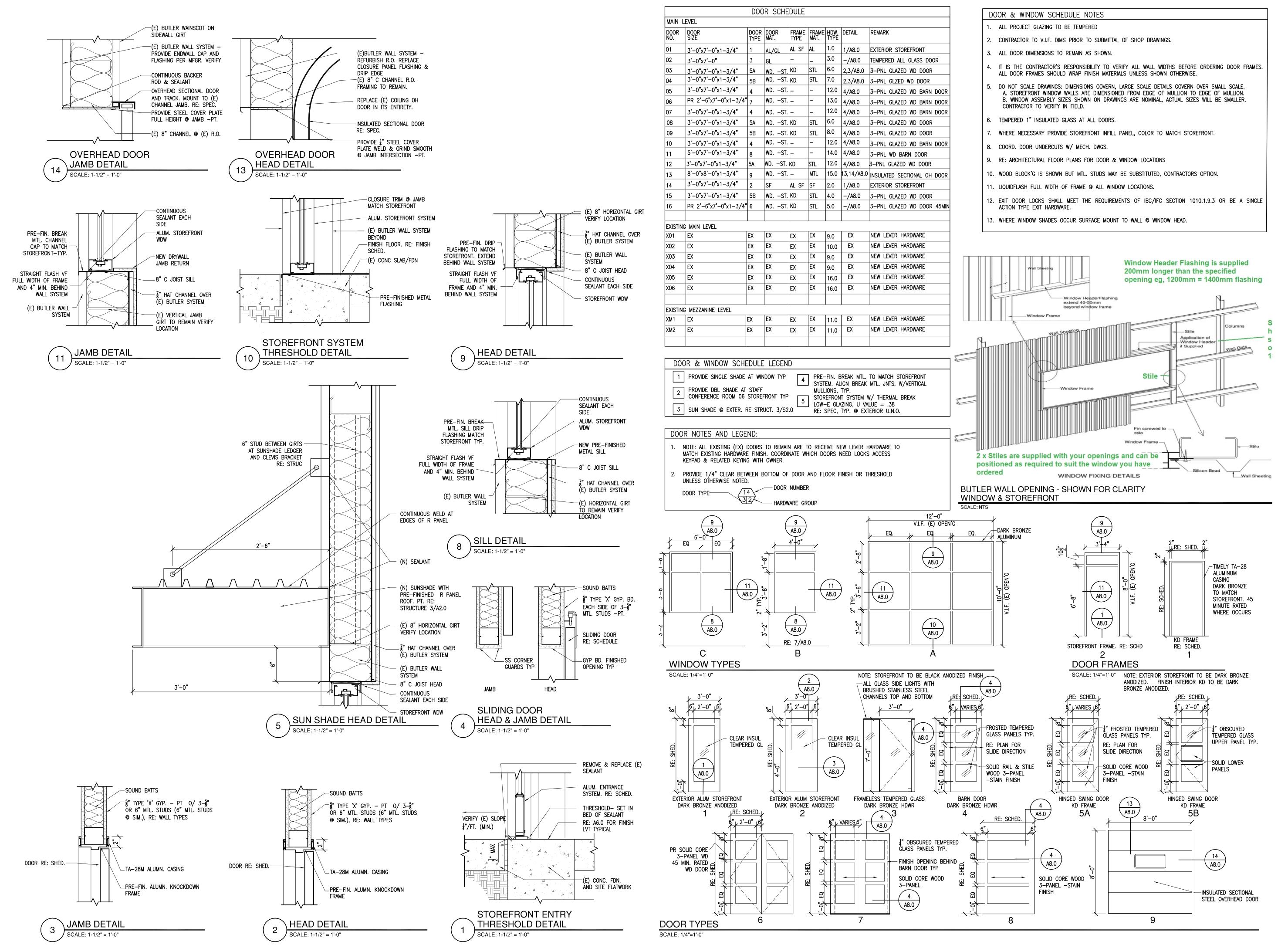
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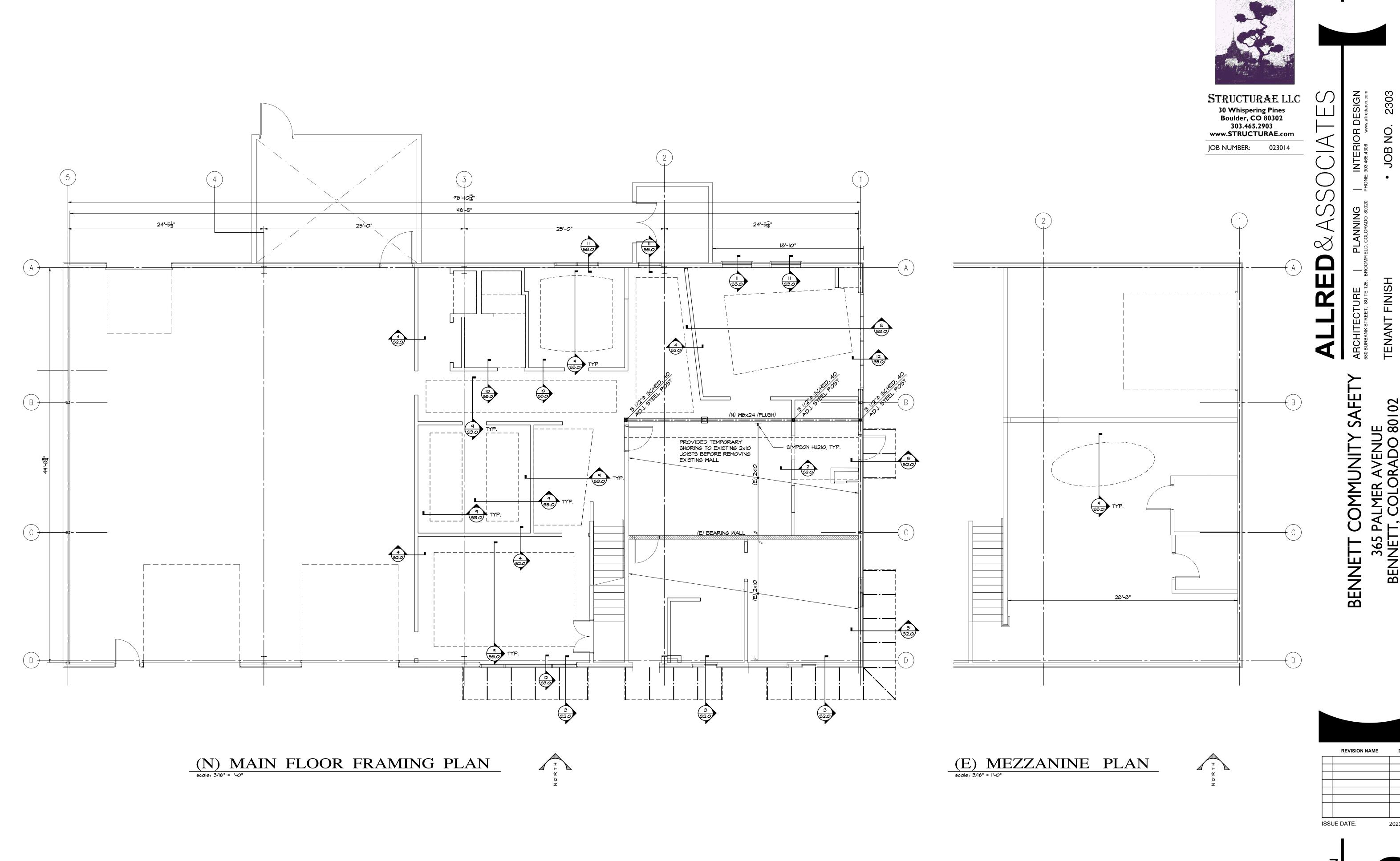
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REVISION NAME ISSUE DATE: 2023.07.24

DOOR & WINDOW SCHEDULE & DTL



NOTES

\* ROOF SNOW LOAD

\* ROOF DEAD LOAD

\* WIND

30 psf

16.7 psf

115 MPH (EXPOSURE "C")

#### GENERAL:

DESIGN LIVE LOADS:

\* SEISMIC CLASSIFICATION

\* THESE DRAWINGS ARE BASED ON LIMITED EXISTING INFORMATION, CONTRACTOR SHALL NOTIFY ENGINEER OF CONDITIONS DIFFERENT FROM DRAWN AND DETAILED.

ZONE B

\* SECTIONS OR DETAILS SHOWN OR NOTED APPLY TO SIMILAR CONDITIONS ELSEWHERE NOT SPECIFICALLY SHOWN OR NOTED.

\* THESE PLANS HAVE BEEN ENGINEERED FOR CONSTRUCTION AT ONE SPECIFIC BUILDING SITE. BUILDER ASSUMES ALL RESPONSIBILITY FOR USE OF THESE PLANS AT ANY OTHER LOCATION.

\* GENERAL CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS AND REPORTING ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER IMMEDIATELY.

#### STRUCTURAL STEEL:

\* ANGLES: ASTM A36 / A572 GR50 (Fy=50 ksi). \* PLATES AND BARS: ASTM A36 (Fy=36 ksi).

\* WIDE FLANGE BEAMS: ASTM A572 (Fy=50 ksi)

\* BOLTS: ASTM A325-N - STRUCTURAL MEMBERS.
ASTM A307 - ANCHOR AND MISCELLANEOUS BOLTS.

\* ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE STANDARDS SET FORTH IN THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION.

\* WELD MATERIAL: ETOXX ELECTRODES. \* WELDING MAY ONLY BE PERFORMED BY

\* WELDING MAY ONLY BE PERFORMED BY AWS CERTIFIED WELDERS. \* PROVIDE SPECIAL INSPECTION FOR STRUCTURAL WELDING.

#### EXISTING FOUNDATIONS:

#### \* CAISSONS OR FOOTINGS SHALL BE EXISTING.

#### METAL STUDS:

\* CONFORM TO THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS, AISI COLD FORMED STEEL SPECIFICATIONS AND 2003 IBC ON COLD FORMED FRAMING.

\* VERIFY ALL FINISHES, DIMENSIONS AND ELEVATIONS WITH ARCH.

AND STRUCTURAL DRAWINGS.

\* IMMEDIATELY NOTIFY ENGINEER OF CONDITIONS ENCOUNTERED IN FIELD

\* METAL STUDS AND TRACKS ARE 16 OR 18 GAUGE TYPE XJ (15/8" FLANGES) STUDS AS SPECIFIED BY THE METAL STUD MANUFACTURER'S ASSOCIATION, (MSMA), UNLESS SPECIFICALLY NOTED OTHERWISE. STANDARD TRACK SHALL HAVE 1/4" LEGS.

MATERIAL STRENGTHS SHALL BE AS FOLLOWS:

16 GAGE MEMBERS (AND HEAVIER): Fy = 50 ksi., E = 29,000 ksi.

18 GAGE MEMBERS (AND LIGHTER): Fy = 33 ksi., E = 29,000 ksi.

\* FRAMING MEMBERS SHALL HAVE THE MINIMUM PHYSICAL PROPERTIES AS GIVEN BY THE METAL STUD MANUFACTURER'S ASSOCIATION.

\* FASTEN STUD TRACK TO CONCRETE SURFACE BELOW W/ POWDER ACTUATED FASTENERS, (PAF's) @ 12" o.c. STAGGERED, TYPICAL UNLESS NOTED OTHERWISE.

\* DO NOT LOCATE PUNCH OUTS OF STUDS ABOVE OR BELOW THE MAIN
CONNECTIONS TO THE STRUCTURAL EDGE ANGLES WITHIN A DISTANCE EQUAL
TO THE DEPTH OF THE STUD ABOVE OR BELOW THE CONNECTION. PROVIDE

A ROW OF CRC CHANNEL BRIDGING AT NEAREST PUNCHOUT TO MAIN CONNECTIONS AT THE STRUCTURAL EDGE ANGLES.

\* DO NOT SPLICE STUDS UNLESS SPECIFICALLY DETAILED, ABUTTING LENGTHS OF TRACK SHALL BE SECURELY ANCHORED TO A COMMON STRUCTURAL

ELEMENT, BUTT-WELDED OR SPLICED.

\* LOCATE 16 GA. I 1/2" COLD ROLLED CHANNEL BRIDGING AT MID-SPAN OF STUDS LESS THAN OR EQUAL TO 10'-0" IN LENGTH AND AT 4'-0" o.c. MAXIMUM AT OTHER LENGTHS OF STUDS OR JOISTS. WELD BRIDGING TO EA. STUD W/ I" OF 1/8" FILLET WELD, MIN.

\* ADDITIONAL SPECIFICATIONS SHALL BE PER THE THE METAL STUD MANUFACTURER'S ASSOCIATION'S RECOMMENDATIONS UNLESS SPECIFICALLY NOTED ON THESE DOCUMENTS.

#### \* FASTENERS: SCREWS:

#IO "TRAXX" SELF DRILLING FASTENERS AS MANUFACTURED BY
THE ITM BUILDEX COMPANY OR APPROVED EQUAL. MATCH REQUIRED
DRILL POINT TYPE WITH MATERIAL THICKNESS. SPACING AND EDGE
DISTANCE SHALL NOT BE MORE THAN 0.570" - #IO.
WEI DS.

LIGHT GAGE FRAMING WELDING SHALL BE COMPLETED IN CONFORMANCE WITH AWS DI.3-81 "STRUCTURAL WELDING CODE - SHEET METAL". ALL WELDERS SHALL BE QUALIFIED IN ACCORDANCE WITH AWS D.I.1. WELDING SHALL BE DONE WITH AWS A5.1 OR A5.5 E60XX ELECTRODES. TOUCH UP ALL WELDS WITH RUST-RESISTING ZINC RICH PAINT. USE THE MAXIMUM AND THE PERMISSION ON THE THICKNESS OF

THE MEMBERS AND THEIR CONFIGURATION.

POWDER ACTUATED FASTENERS:

ANCHORS INTO CONCRETE; RAWL 0.143" P SMOOTH SHANK, 0.3

ANCHORS INTO CONCRETE; RAWL 0.143" \$\phi\$ SMOOTH SHANK, 0.300" HEAD DRIVE PIN, 14" EMBEDMENT, OR APPROVED EQUAL. SPACING \$ EDGE DISTANCE SHALL NOT BE MORE THAN 3". ANCHORS INTO STEEL; RAWL 0.143" \$\phi\$ KNURLED SHANK, 0.300" HEAD DRIVE PIN, 14" EMBEDMENT, OR APPROVED EQUAL. SPACING SHALL NOT EXCEED 1/2" AND EDGE DISTANCE SHALL NOT EXCEED 1/2".

PROVIDE HILTI KMIKBOLT 3 OR APPROVED EQUAL CORROSION RESISTANT EXPANSION ANCHORS. UNLESS SPECIFICALLY NOTED OTHERWISE FOLLOW MANUFACTURERS MINIMUM REQUIRED EDGE DISTANCES AND SPACING.

#### MASONRY \* MASONRY

\* MASONRY SHALL BE EXISTING. SEE SHELL STRUCTURAL DRAWINGS, TYP.

## SPECIAL INSPECTIONS: \* AS REQUIRED BY IBC 1704 THE FOLLOWING ITEMS SHALL BE SPECIAL INSPECTED BY THE

ENGINEER OF RECORD.

\* STRUCTURAL STEEL

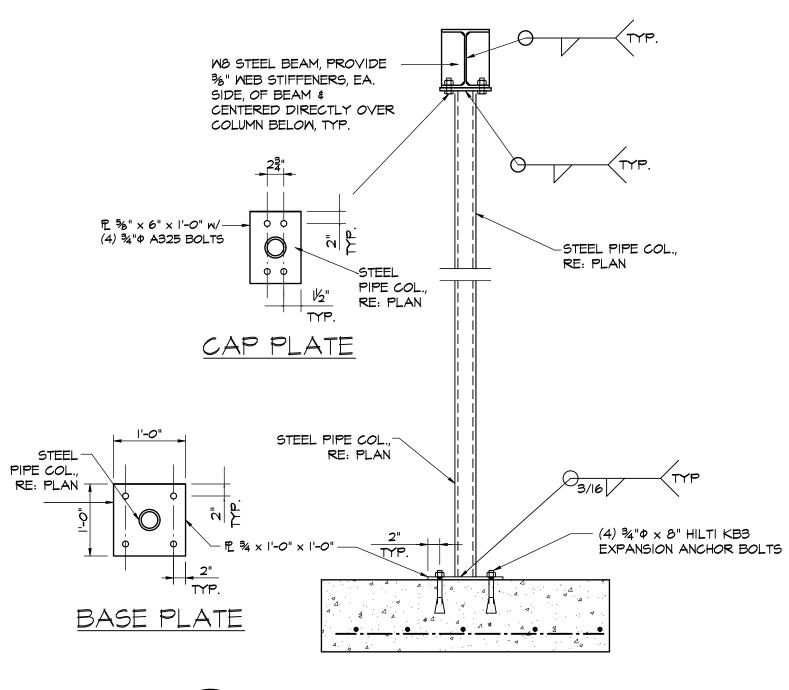
\* MASONRY REINFORCING

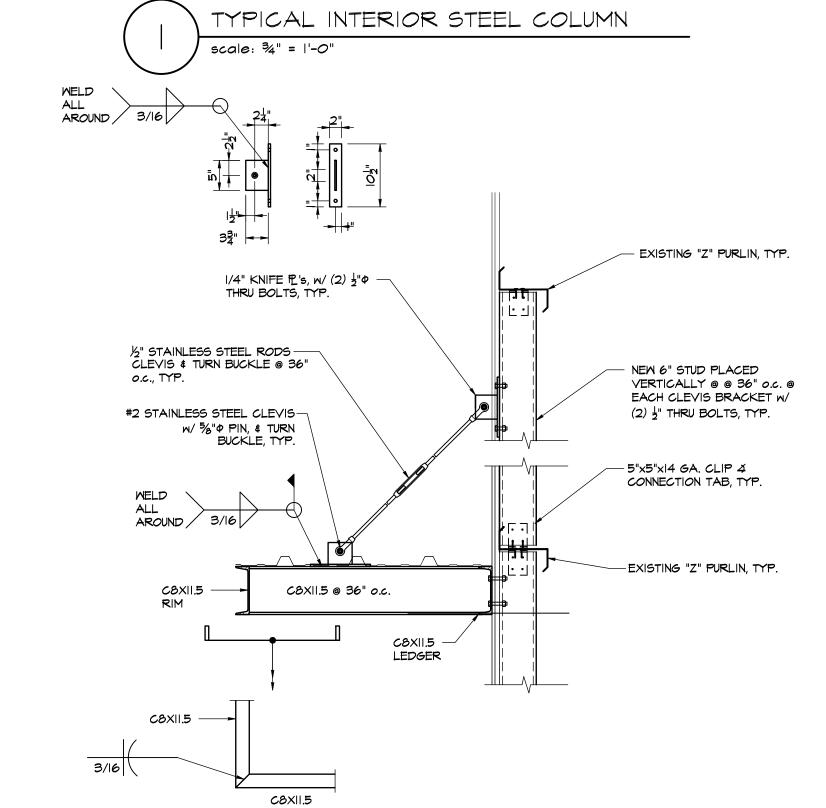
\* MASONRY REINFORCING

\* HIGH-STRENGTH BOLTING

\* WELDING

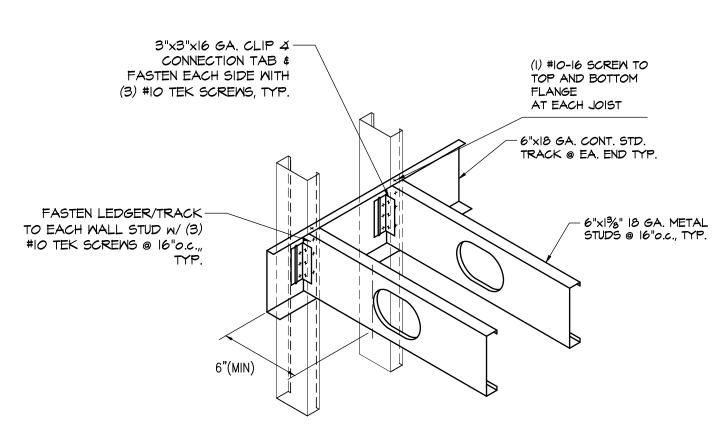
\* PLEASE CALL ENGINEER 24 HOURS PRIOR TO SCHEDULE A FIELD VERIFICATION OF THE SPECIAL INSPECTIONS LISTED ABOVE.





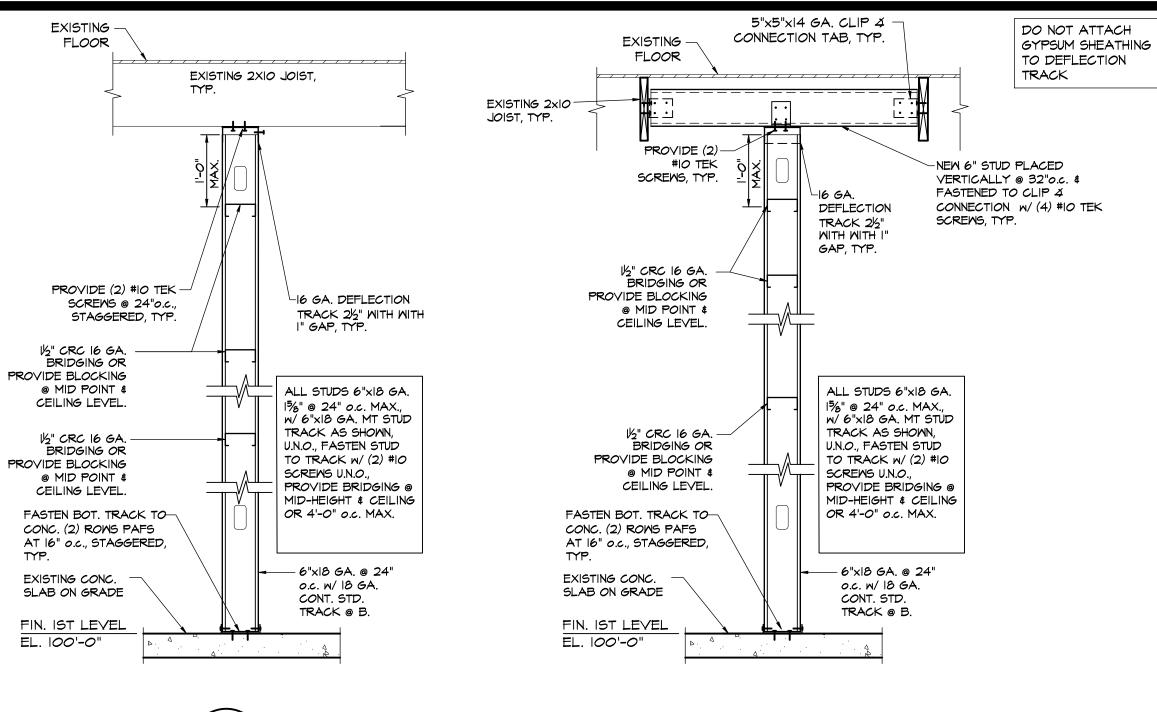


JOIST CONNECTION TO LIGHT GAUGE WALL STUDS

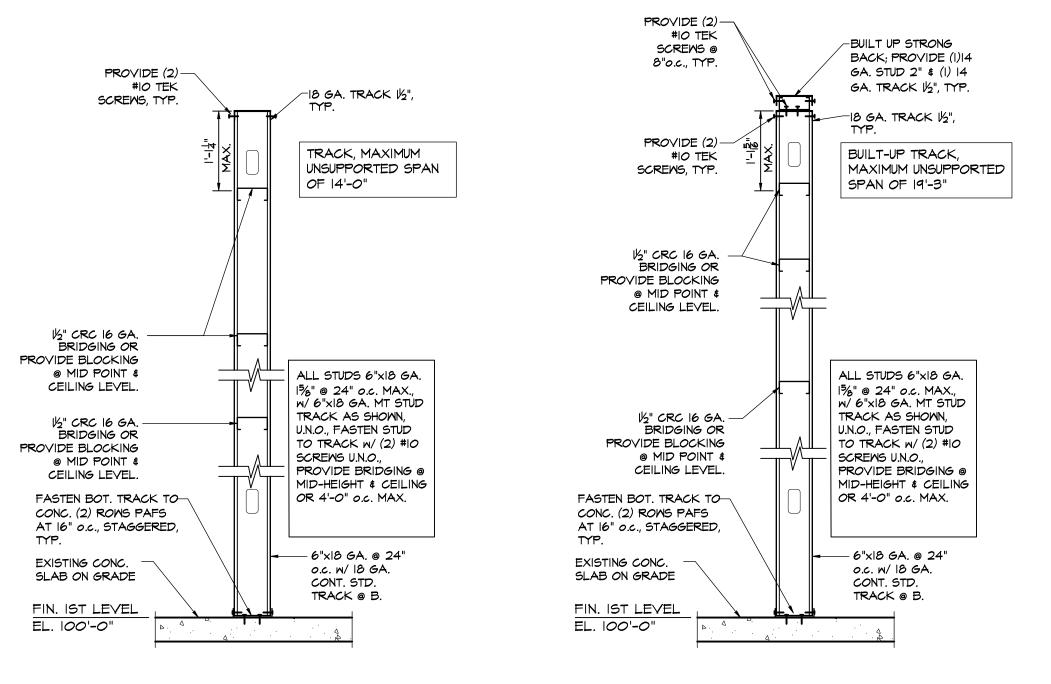


5 CEILING LEDGER

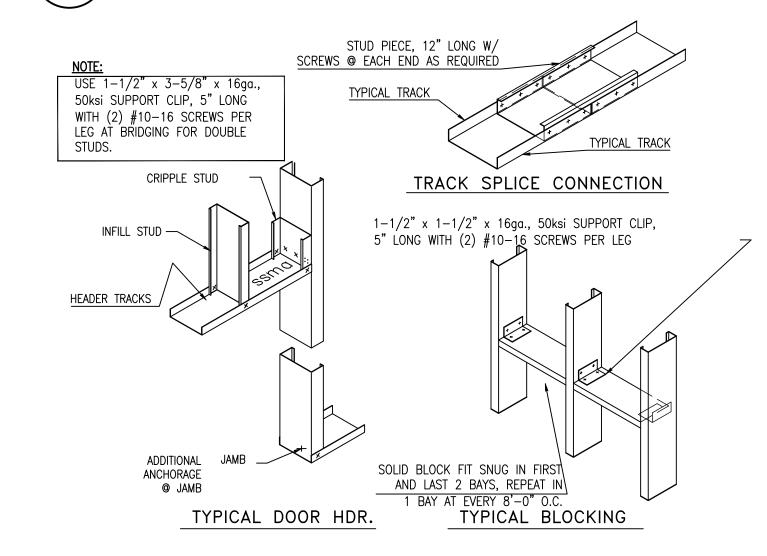
scale: 3/4" = 1'-0"







# TYPICAL LIGHT GAUGE STEEL PARTITION WALL scale: 3/4" = 1'-0"



TYPICAL LIGHT GAUGE STEEL DETAILS

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



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023014

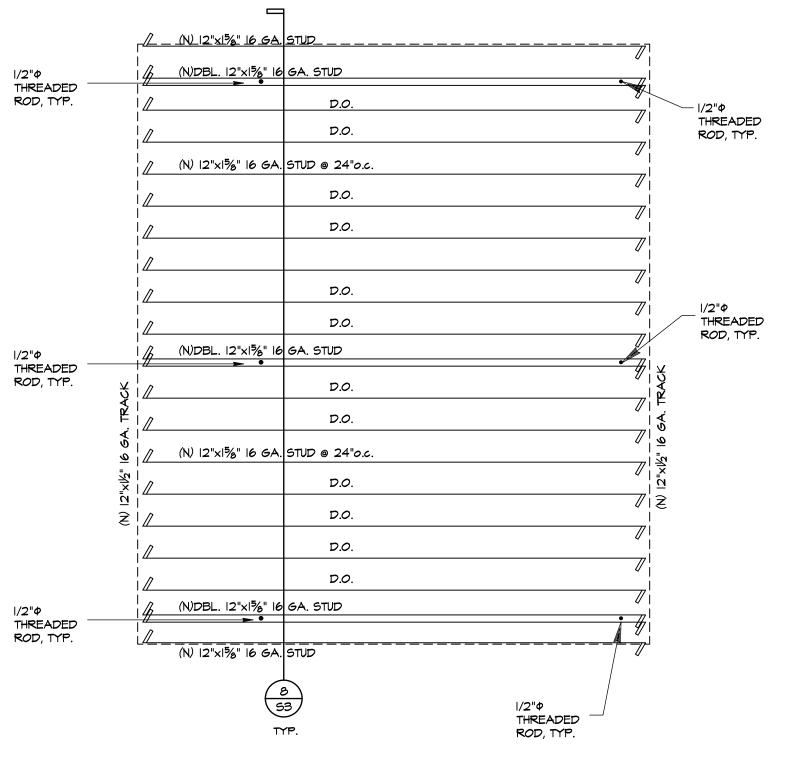
JOB NUMBER:

BENNETT COMMUNITY SAFETY
365 PALMER AVENUE
BENNETT, COLORADO 80102

REVISION NAME DATE

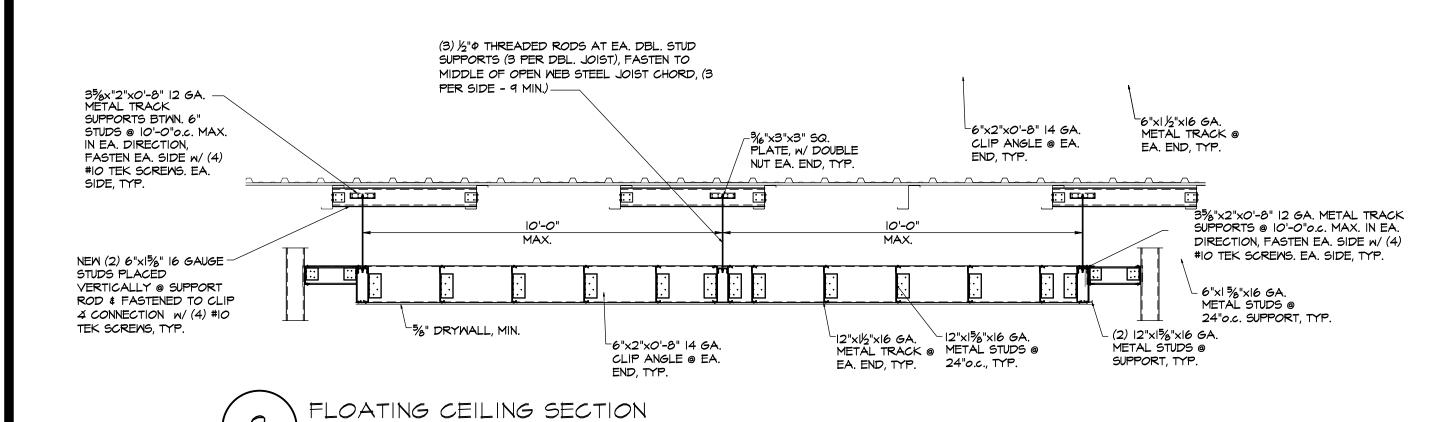
SSUE DATE: 2023.06.14

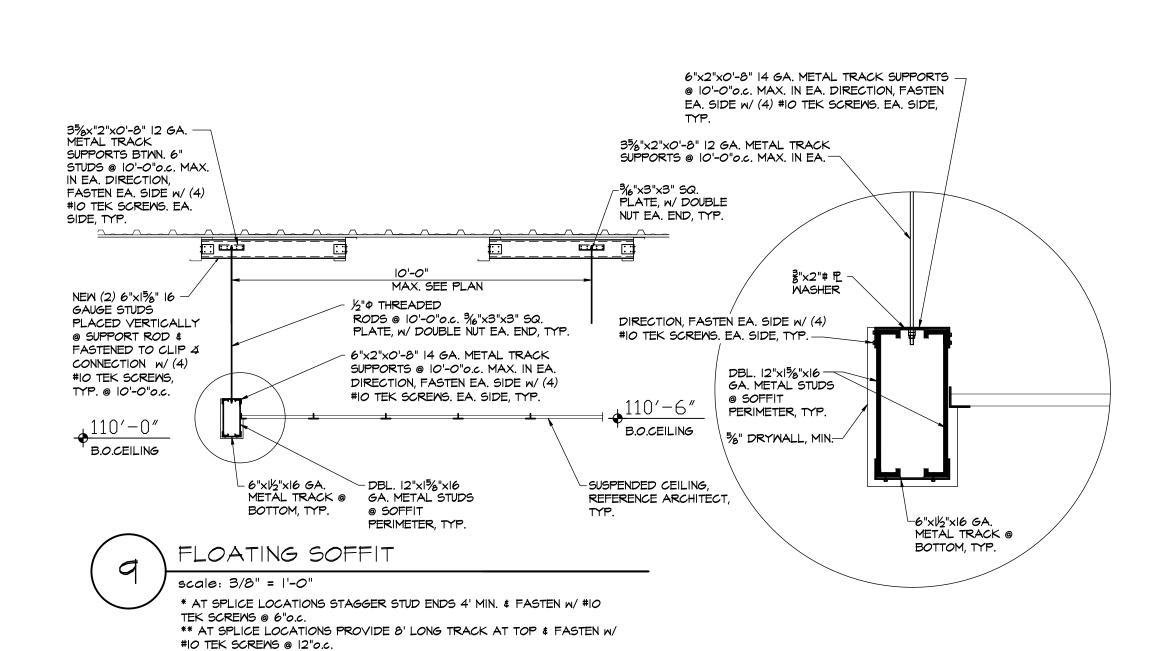
**S**2.0

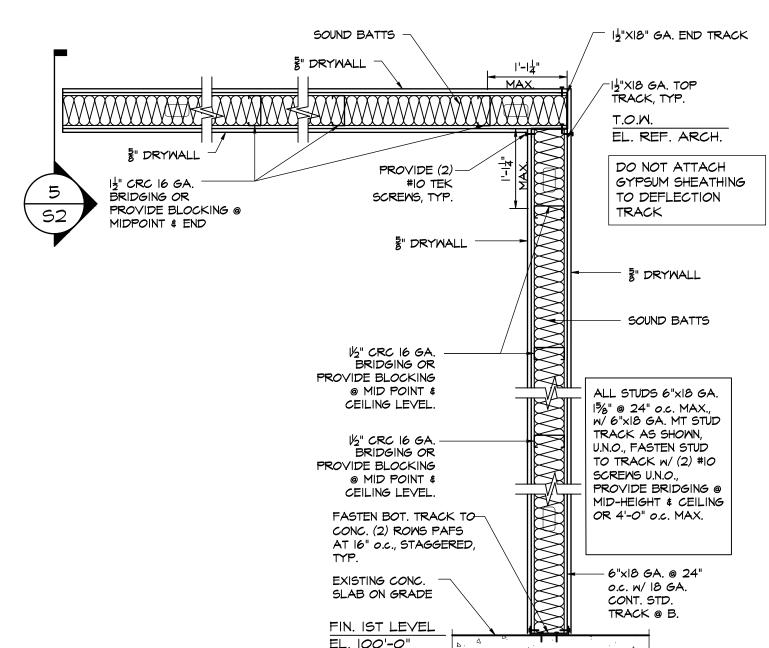


FLOATING CEILING PLAN scale: 1/4" = 1'-0"

scale: 3/8" = 1'-0"







LIGHT GA. STEEL PRIVACY PARTITION WALL & CEILING scale: 34" = 1'-0"

-EXISTING "Z" PURLIN, TYP.

NEW 6" STUD PLACED

TEK SCREWS, TYP.

VERTICALLY @ EA. WIND.

JAMB. & FASTENED TO CLIP

4 CONNECTION W/ (4) #10

CUT EXISTING Z PURLIN AS NECESSARY TO INSTALL

NEW WINDOW OPENING, TYP.

– 5"x5"x|4 GA. CLIP 4 CONNECTION TAB, TYP.

-EXISTING "Z" PURLIN, TYP.

EXISTING 8" C

CHANNEL BOT.

TRACK, TYP.

TYP. LIGHT GAUGE STL. WINDOW OPENING

(E) PURLIN ELEV.

(E) PURLIN ELEV.

(E) PURLIN ELEV.

EXISTING BUTLER M-24 -

EL. 104'-0"

WALL SYSTEM

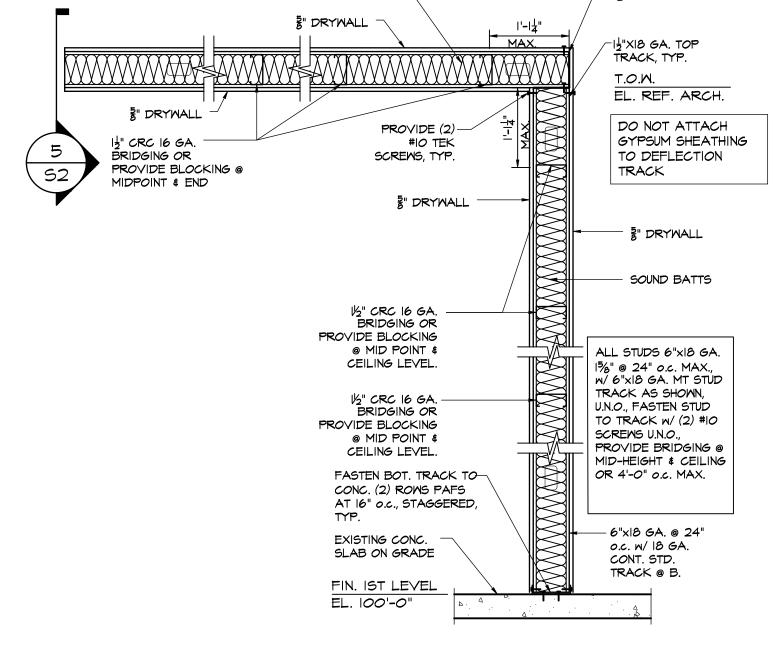
FIN. IST LEVEL

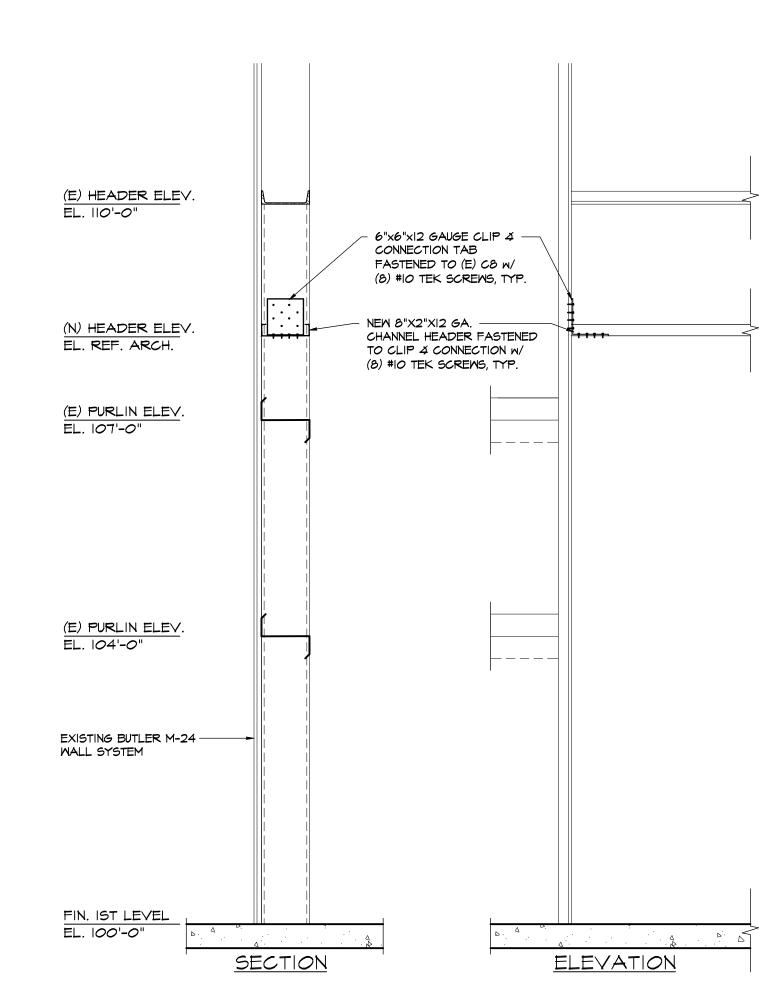
scale: 3/4" = 1'-0"

EL. 100'-0"

EL. 107'-0"

EL. 114'-0"





TYP. LIGHT GAUGE STL. STORE FRONT OPENING scale: 3/4" = 1'-0"

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JOB NUMBER:

DESIGN

SAFET JE 80102 ER A COMMU BENNET

REVISION NAME ISSUE DATE: 2023.06.14

THIS SHEET SPECIFICATION SHALL GOVERN IN LIEU OF SEPARATE BOUND SPECIFICATIONS. UPON ISSUANCE SHOULD CONFLICTS ARISE BETWEEN THE SHEET AND THE BOUND SPECIFICATION THEN THE MORE STRINGENT OF THE TWO SHALL PREVAIL.

- A. MECHANICAL PLANS MAY INCLUDE SCOPE INFORMATION FOR OTHER TRADES. GENERAL CONTRACTOR TO FACILITATE COORDINATION OF PERTINENT INFO TO ALL REQUIRED CONTRACTORS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BID TO CONFIRM A COMPLETE SYSTEM IS INCLUDED.
- B. MECHANICAL DESIGN SHALL CONFORM TO ADOPTED CODES AND ALL LOCAL AMENDMENTS. PROJECT SHALL BE COORDINATED WITH ALL BUILDING SERVICES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL MECHANICAL SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.
- C. DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL OR CIVIL DRAWINGS BY OTHER DESIGN PROFESSIONALS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WHETHER OR NOT INDICATED ON THESE DRAWINGS.
- D. ANY SCALE, DIMENSION OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. DESIGN IS DIAGRAMMATIC IN NATURE AND IS 12. ELECTRIC HEATING UNITS PROVIDED TO CONVEY DESIGN INTENT ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE SITE CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING ALL DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO ALL DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID FOR ALL ESTIMATING PURPOSES.
- COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT/ENGINEER FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF WORK MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST. PROVIDE OFFSETS AT CHANGES OF DIRECTION AND TO AVOID OBSTRUCTIONS
- F. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED CONTRACTORS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL, ASTM, ETC. AND SHALL BEAR THE LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS
- G. CONFIRM ACTUAL VOLTAGES, PHASE AND CHARACTERISTICS OF EQUIPMENT AND APPARATUS FURNISHED BY CONTRACTOR, TENANT, OTHER TRADES, DIVISIONS AND/OR EXISTING. CONFIRM PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED TO THE INSTRUCTIONS OF THESE PLANS AND SPECIFICATIONS, SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR DIRECTION PRIOR TO PROCEEDING.
- H. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF DISCREPANCIES EXIST CONTACT THE ARCHITECT/ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.
- CONTRACTOR TO ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICES ON ALL EQUIPMENT AND PROVIDE ALL NECESSARY
- J. SUBMIT MANUFACTURER'S LITERATURE (SHOP DRAWINGS) FOR MATERIALS AND EQUIPMENT. SUBMITTAL SHALL INCLUDE EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS. EQUIPMENT CUTSHEETS OR CATALOG COPIES ARE NOT ACCEPTABLE. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR THEIR AGENCIES. ANY SUBSTITUTED EQUIPMENT FROM SCHEDULED SHALL BE EQUAL TO THAT SCHEDULED IN CONTROLS, ACCESSORIES, AND PERFORMANCE REGARDLESS OF MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE SUBSTITUTED EQUIPMENT REALIZED BY OTHER CONTRACTORS OR THE DESIGN TEAM.
- K. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NEW EQUIPMENT AND DEVICES IN A LIKE NEW STATE AT TIME OF PROJECT CLOSEOUT. PROTECT EQUIPMENT AND DEVICES AS REQUIRED AGAINST PHYSICAL DAMAGE, DEBRIS, RAIN, SNOW, WIND, DIRT, SUN FADING, RUST, CORROSION OR ANY OTHER DEGRADATION. CONTRACTOR TO REPAIR OR REPLACE ANY EQUIPMENT OR DEVICES AS REQUIRED.

- A. PROVIDE MECHANICAL SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMERS, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL MECHANICAL SYSTEM. CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES OR RETAIN SUB-CONTRACTORS AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BID.
- PROVIDE SUPPLEMENTAL STEEL AND SUPPORTS AS REQUIRED FOR INSTALLATION OF MECHANICAL MATERIALS, EQUIPMENT, AND APPARATUS.
- PROVIDE VIBRATION ISOLATION ON ALL MECHANICAL EQUIPMENT.
- INSTALL FLEXIBLE DUCT CONNECTORS ON ALL AIR HANDLING AND VAV TYPE EQUIPMENT DUCT CONNECTIONS.
- ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE
- CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION, ELEVATION, EXTENT, MATERIAL, AND FINISH. UTILIZE AN INDEPENDENT BALANCER WITH NEBB AND/OR AABC CERTIFICATION. MECHANICAL SYSTEM SHALL BE BALANCED TO 10% DISCREPANCY OF THE CFM INDICATED ON THE PLANS. IF THERE IS AN AIR BALANCE DISCREPANCY GREATER THAN 10%, BALANCE CONTRACTOR SHALL CONTACT ENGINEER. A BALANCING METHOD MUST BE PROVIDED FOR ALL AIR HANDING EQUIPMENT. PROVIDE A FINAL COPY OF THE BALANCE REPORT TO THE BUILDING DEPARTMENT AND ENGINEER OF RECORD UPON COMPLETION OF THE HVAC SYSTEM. RESIDENTIAL UNITS SHALL BE PROVIDED WITH A PROJECT SPECIFIC BALANCING PLAN AS REQUIRED BY THE RESPECTIVE ENERGY
- G. FIRE STOP ALL PIPING, DUCTING, AND WIRING MATERIALS PASSING THROUGH RATED STRUCTURES OR ASSEMBLIES USING U.L. LISTED PRODUCTS FOR ALL APPLICABLE
- PENETRATIONS IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS. H. PROVIDE DUCT SMOKE DETECTORS FOR AUTOMATIC EQUIPMENT SHUTOFF IN AIR-MOVING SYSTEMS THAT RETURN IN EXCESS OF 2000 CFM TO ENCLOSED SPACES WITHIN BUILDINGS. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE AIR HANDLING UNIT AUTOMATIC SHUT-DOWN WIRING AND DUCT/SMOKE DETECTOR WIRING WHEN REQUIRED, DETECTORS SHALL BE COMPATIBLE WITH BUILDING FIRE ALARM SYSTEM.
- THE CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY OTHERS, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, DAMPERS, MOTORS, ETC AND THE PROPER SERVICING OF EQUIPMENT INSTALLED UNDER THIS CONTRACT. AT TIME OF BID THE MECHANICAL CONTRACTOR AND GC SHALL COORDINATE TO ENSURE THAT ALL ACCESS PANELS (INCLUDING FIRE AND/OR SMOKE RATED MODELS) ARE INCLUDED. IN LIEU OF ACCESS PANELS IN HARD LID ARCHITECTURAL CEILINGS, PROVIDE REMOTE CABLE DAMPERS FOR BALANCING DEVICES.
- PROVIDE SEISMIC AND/OR WIND LOADING SECUREMENT DETAILS AS REQUIRED BY THE LOCAL JURISDICTION. THE MECHANICAL CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT AND/OR CURB SUPPLIER(S) TO OBTAIN THE DRAWINGS AND INSTALL THE SYSTEM AS REQUIRED BY THE MANUFACTURER. MECHANICAL CONTRACTOR TO SELECT ATTACHMENT AND MOUNTING SYSTEM(S) BASED ON ATTACHING TO THE DESIGNED SUBSTRATE AND STRUCTURE WITHOUT REQUIRING ADDITIONAL REINFORCEMENT BY OTHERS. IF ANY SUBSTRATE AND/OR STRUCTURE IS REQUIRED FOR PROPER REINFORCEMENT, MECHANICAL CONTRACTOR TO COORDINATE WITH
- GENERAL CONTRACTOR FOR ALL POTENTIAL REQUIREMENTS PRIOR TO BID. K. PROVIDE PRE-ENGINEERED DUCT STAND SYSTEMS WITH A PROFESSIONAL ENGINEER STAMP & SIGNATURE THAT CERTIFIES DUCT STAND SYSTEM COMPLIES WITH ASCE7/SBC WIND LOADING BUILDING CODE REQUIREMENTS. REFER TO WIND LOADING REQUIREMENTS PER STRUCTURAL DESIGN CRITERIA. IF DUCT STAND MANUFACTURER REQUIRES AN ADDITIONAL FEE FOR WIND LOADING DESIGN, THIS FEE SHALL BE INCLUDED IN CONTRACTOR'S BID. SHOP DRAWINGS OF ROOFTOP DUCT
- SYSTEM AND DUCT STAND LAYOUT WITH ENGINEER STAMP TO BE SUBMITTED TO ARCHITECT/ENGINEER OF RECORD FOR REVIEW. FIELD LABEL ALL MECHANICAL EQUIPMENT AND PIPING AS INDICATED ON THE PLANS PER MECHANICAL AND LOCAL CODE REQUIREMENTS. INDICATE DIRECTION OF FLOW
- M. PROVIDE 2" DEEP AUXILIARY DRAIN PAN WITH SEPARATE DRAIN LINE UNDER HEATING AND COOLING COILS (AIR HANDLING UNITS, FAN COIL UNITS, INLINE PUMPS, ETC) AND PROVIDE A WATER-LEVEL MONITORING DEVICE ON ALL DOWNFLOW EQUIPMENT WITHOUT A SECONDARY COIL WHERE CONDENSATION OR LEAKAGE CAN OCCUR. ALTERNATELY, IF ALLOWED IN LOCAL JURISDICTION, PROVIDE AN OVERFLOW CONDENSATE KILL SWITCH.
- N. PROVIDE MANUFACTURERS RECOMMENDED MODIFICATIONS (SUCH AS HEAT TRACE AND ROUTING CHANGES) TO CONDENSING GAS FIRED EQUIPMENT LOCATED IN POTENTIAL FREEZING SPACES (SUCH AS ATTICS). COORDINATE WITH ELECTRICAL CONTRACTOR FOR HEAT TRACE CIRCUITING & INSTALLATION.
- O. ALL PROVIDED MATERIALS LOCATED IN A RETURN AIR PLENUM SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS DETERMINED BY AN INDEPENDENT TESTING LAB. CONTRACTOR SHALL COORDINATE AT TIME OF BID WITH OTHER TRADES.

- A. PIPING MATERIALS, FITTINGS, VALVES, AND SPECIALTIES SHALL BE PROVIDED PER THE SYSTEM, MAXIMUM PRESSURE AT LOWEST POINT IN PIPING SYSTEM, AND SIZE
  - 1. REFRIGERANT PIPING 1-3/8" AND SMALLER SHALL BE ASTM B280 ACR OR ASTM B88 TYPE K ACR, ANNEALED COPPER TUBE WITH WROUGHT COPPER FITTINGS AND
- SLIVER ALLOY (BAg-1) BRAZED JOINTS. 2. CONDENSATE DRAIN PIPING MATERIALS SHALL BE:
- a. TYPE M COPPER WITH SOLDERED JOINTS OR
- b. CPVC PER MANUFACTURER'S REQUIREMENTS. PROVIDE EXPANSION LOOPS, SWING JOINTS, OR MECHANICAL EXPANSION COMPENSATING DEVICES AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION OF ALL PIPING SYSTEMS. EXPANSION SYSTEM SIZING SHALL BE IN ACCORDANCE WITH MATERIALS DATA SHEETS AND MANUFACTURER RECOMMENDATIONS
- C. SYSTEMS INSTALLED WITH DIS-SIMILAR MATERIALS MUST BE JOINED WITH DIELECTRIC FITTINGS PER MANUFACTURERS' REQUIREMENTS TO PREVENT GALVANIC CORROSION
- D. SLEEVES MUST BE PROVIDED FOR PIPING SYSTEMS ROUTED THROUGH MASONRY OR CONCRETE ASSEMBLIES. SLEEVES SIZES, MATERIALS AND FIRE-STOPPING SHALL BE COORDINATED PER PLAN WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND ARCHITECTURAL ASSEMBLIES' REQUIREMENTS.
- ANY PIPING SYSTEM OR SUPPORT/HANGER LOCATED IN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NO MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. ALTERNATIVELY, COMBUSTIBLE MATERIALS SHALL BE FULLY ENCLOSED IN MATERIALS LISTED AND LABELED FOR INSTALLATION WITHIN A PLENUM AND LISTED FOR THE APPLICATION.

#### DUCTWORK

- A. DUCTWORK SHALL BE GALVANIZED SHEET METAL INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. INSTALL TURNING VANES IN ALL ELBOWS. ALL SPIN-IN FITTINGS AND RUNOUTS TO ANY REGISTERS, RETURN, OR EXHAUST TERMINAL SHALL BE PROVIDED WITH MANUAL VOLUME DAMPERS. SUPPORT DUCTS EVERY 10' AND AT EACH
- CHANGE OF DIRECTION PER IMC 603.10 AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS. B. ALL DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SMACNA STANDARDS. THE DUCT PRESSURE CLASS SHALL BE AS NOTED ON PLANS OR CORRESPONDING TO THE
- MAXIMUM EQUIPMENT ESP ON EACH SYSTEM. THE DUCTWORK SHALL BE SEALED TIGHT. LEAKAGE MAY NOT EXCEED 10% OF DESIGN AIRFLOW AT DESIGN PRESSURE. C. ALL EXPOSED ROUND DUCTWORK SHALL BE SPIRAL DUCT. NO JOINTS OR CONNECTIONS SHALL HAVE ANY VISIBLE SEALANT FROM THE EXTERIOR SO THE DUCTWORK HAS A CLEAN AND WORKMAN LIKE APPEARANCE.
- D. DUCT SIZES GIVEN ARE NET INSIDE FREE AREA.
- EQUIPMENT FLEXIBLE DUCTWORK CONNECTION NOT TO EXCEED 10 INCHES IN LENGTH WITH A MAX. 25 FLAME/50 SMOKE INDEX.
- FLEXIBLE DUCTWORK TO AIR DEVICES SHALL HAVE A MAXIMUM STRETCHED LENGTH OF 6 FEET. SUITABLE FOR RETURN AIR PLENUM PRESSURIZED EXHAUST DUCTWORK LOCATED RETURN AIR PLENUM SHALL BE SEALED WITH SMACNA SEAL CLASS "A" DUCT SEALANT.
- ALL FLUE GAS DUCTWORK TO MATCH THE EQUIPMENT CATEGORY SERVED WITH MATERIALS APPROVED BY THE MANUFACTURER UNLESS OTHERWISE NOTED ON PLANS.
- ALL EXHAUST TERMINALS MUST BE 3'-0" AWAY FROM IN ELEVATION FROM OPERABLE PORTION OF WINDOW AND DOORS. MC TO OFFSET AS REQUIRED. . ALL DIRECT VENT TERMINALS MUST BE 4'-0" AWAY IN ELEVATION HORIZONTALLY OR BELOW AND AT LEAST 1'-0" ABOVE ANY OPERABLE PORTION OF A WINDOW OR DOOR. MC TO OFFSET AS REQUIRED.
- K. IF MC INSTALLATION RESULTS IN LONGER DRYER DUCT VENT LENGTHS THAN NOTED THEN THE OWNER/ ARCH MUST BE INFORMED TO ENSURE PROPER DRYERS ARE
- INSTALL PERMANENT NAMEPLATE AT ALL DRYER CONNECTIONS WITH 1/4" TEXT STATING THE REQUIRED DUCT LENGTH AND ELBOWS FOR EACH. WHERE THE EXHAUST DUCT EQUIVALENT LENGTH EXCEEDS 35 FEET, THE EQUIVALENT LENGTH OF THE EXHAUST DUCT SHALL BE IDENTIFIED ON A PERMANENT LABEL OR TAG. EACH 4" 90-DEGREE ELBOW TO BE CALCULATED AS 5 FEET EQUIVALENT LENGTH AND EACH 4" 45-DEGREE ELBOW TO BE CALCULATED AS 2 FEET 6 INCHES PER IMC TABLE 504.8.4.1. THE LABEL OR TAG SHALL BE LOCATED WITHIN 6 FEET OF THE EXHAUST DUCT CONNECTION. CONTRACTOR SHALL VERIFY ALL DUCT LENGTHS WITH FIELD CONDITIONS.

- A. ALL ROUND CONCEALED RIGID SUPPLY DUCTWORK SHALL BE EXTERNALLY WRAPPED WITH NOMINAL 1-1/2" THICK (MINIMUM R-6.0) FIBER GLASS INSULATION WITH FIRE
- B. OUTDOOR AIR INTAKE DUCTS SHALL BE EXTERNALLY WRAPPED WITH NOMINAL 1-1/2" THICK (MINIMUM R-6.0) FIBER GLASS INSULATION WITH FIRE RETARDANT VAPOR BARRIFR
- C. WHEN LOCATED IN UNCONDITIONED SPACES ALL RECTANGULAR DUCTWORK SHALL BE LINED WITH 1-1/2" THICK 2 POUND DENSITY (MINIMUM R-6.0) FIBER GLASS ACOUSTIC DUCT LINER. D. ALL DUCTWORK EXPOSED TO OUTDOOR AMBIENT TYPE CONDITIONS (UNCONDITIONED ATTICS; FOR EXAMPLE: EXHAUST, SUPPLY, RETURN, ETC) SHALL BE EXTERNALLY WRAPPED AND INTERNALLY LINED (MINIMUM R-12.0). ALL OUTDOOR DUCTWORK SHALL HAVE DUCTLINER (MINIMUM R-12.0). DUCTWORK SHALL BE SEALED WEATHERPROOF
- PER SMACNA GUIDELINES. RECTANGULAR DUCT WORK IN RETURN AIR PLENUM SHALL BE LINED WITH 1/2" THICK 2 POUND DENSITY (MINIMUM R2.1) MAT-LACED ACOUSTIC DUCT LINER.
- CONDENSATE DRAIN PIPING SHALL BE 1/2-INCH-THICK INSULATION. PROVIDE WITH AN ALL-SERVICE JACKET WHEN EXPOSED. G. INSULATE REFRIGERANT SUCTION LINES WITH 3/4" FOAM PLASTIC CLOSED CELL INSULATION. WHERE INSULATION IS EXPOSED TO EXTERIOR CONDITIONS PROVIDE AN ALL-WEATHER JACKET.

#### AIR INLETS AND OUTLETS

- . FURNISH AND INSTALL AIR INLETS AND OUTLETS AS SCHEDULED ON THE PLANS. B. OUTLETS SHALL HAVE A WHITE BAKED ENAMEL FINISH TO MATCH CEILING OR WALL.

- FURNISH AND INSTALL CENTRIFUGAL EXHAUST FANS AS SCHEDULED ON THE PLANS
- FURNISH AND INSTALL ROOF CURBS AND BACKDRAFT DAMPERS. C. FURNISH AND INSTALL UNITS COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROL NECESSARY FOR OPERATION.

#### 9. FURNACES WITH HEAT PUMP

- A. FURNISH AND INSTALL NATURAL GAS FURNACE UNITS AS SCHEDULED ON THE PLANS. ACCEPTABLE MANUFACTURERS ARE TRANE, CARRIER, OR YORK. B. FURNISH AND INSTALL HEAT PUMP AND MATCHING INDOOR EVAPORATOR COILS OF THE SAME MANUFACTURER AS SCHEDULED ON THE PLANS. PROVIDE
- REFRIGERANT LINE SETS SIZED PER MANUFACTURERS RECOMMENDATIONS.
- C. FURNISH AND INSTALL UNIT COMPLETE WITH ALL OPERATIONAL AND SAFETY CONTROLS FOR SATISFACTORY OPERATION. D. FURNISH AND INSTALL FACTORY FURNISHED PROGRAMMABLE THERMOSTAT. MOUNT AT +42 INCHES AFF.

F. PROVIDE SECONDARY DRAIN PAN FOR AIR HANDLING UNIT. TERMINATE DRAIN TO NEAREST APPROVED RECEPTOR.

INSPECT AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO ATTEMPTING TO SET UNITS. PROVIDE 4-INCH-THICK CONCRETE PAD OR CONDENSING UNIT MANUFACTURED PAD.

- A. FURNISH AND INSTALL ELECTRIC HEATING EQUIPMENT AS SCHEDULED AND INDICATED ON THE PLANS.
- B. ELECTRIC UNIT HEATERS SHALL BE FURNISHED COMPLETE WITH ALL MOUNTING HARDWARE AND ACCESSORIES INCLUDING SPACE THERMOSTAT AND/OR SELF-CONTAINED THERMOSTAT AS REQUIRED FOR OPERATION.
- PROVIDE WHITE COLOR FINISH UNLESS OTHERWISE INDICATED. . ALL UNITS SHALL BE UL LISTED.
- MC SHALL REVIEW SURFACE VERSUS RECESS MOUNTING OPTIONS WITH GC PRIOR TO ORDERING EQUIPMENT. ASK FOR CLARIFICATION IF CONFLICTS ARISE DUE TO RATED WALLS, RATED CEILING, STRUCTURE, ETC.

#### 13. RADIANT HEATING UNITS

- A. FURNISH AND INSTALL NATURAL GAS FIRED RADIANT HEATING UNITS AND ASSOCIATED ACCESSORIES AS SCHEDULED ON THE PLANS. B. UNITS SHALL BE COMPLETE WITH PLUGS FOR ELECTRICAL CONNECTION, SPACE THERMOSTATS, TUBE EXTENSIONS, FLUES, AND ROOF CAPS AS REQUIRED. UNITS SHALL BE UL AND AGA RATED.
- 15. CONTROL SYSTEM
- A. FURNISH AND INSTALL A COMPLETE SYSTEM OF ELECTRIC/ELECTRONIC CONTROL FOR THE SYSTEMS INSTALLED TO PROVIDE THE FOLLOWING SEQUENCES OF OPERATION
- B. SYSTEMS SHALL BE INDEPENDENT AND STAND ALONE IN OPERATION AND SEQUENCE. C. FURNACE AND CONDENSING UNITS 1. UNIT SHALL BE STARTED AND STOPPED FROM AN INDEPENDENT PROGRAMMABLE THERMOSTAT. ALL OPERATIONAL AND SAFETY INTERLOCKS SHALL BE
- MECHANICAL CONTRACTOR IN ACCORDANCE WITH LOCAL CODE JURISDICTIONS. 2. UNITS SHALL MAINTAIN LOCAL SPACE TEMPERATURE BY THE USE OF ELECTRIC REFRIGERATION AND NATURAL GAS HEATING SECTIONS. DURING OCCUPIED HOURS THE UNIT FAN SHALL RUN CONTINUOUSLY WITH THE INTERLOCKED OUTSIDE AIR DAMPER OPEN TO PROVIDE SPACE

WIRED INCLUDING UNIT SHUT DOWN FROM DUCT SMOKE DETECTORS FURNISHED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE

- VENTILATION. 4. DURING UNOCCUPIED HOURS THE UNIT FAN SHALL CYCLE ON A CALL FOR HEATING OR COOLING AND THE OUTSIDE AIR DAMPER SHALL BE CLOSED.
- D. ELECTRIC HEAT 1. LOCAL ELECTRIC UNIT HEATERS SHALL BE CONTROLLED BY LOCAL SPACE THERMOSTATS WITH HEAT OFF: FAN AUTO AND CONTINUOUS SWITCHES OR SELF-CONTAINED UNIT SPACE THERMOSTATS AS APPROPRIATE. EXHAUST FANS
- EXHAUST FANS TO BE CONTROLLED AS INDICATED ON THE SCHEDULES.
- F. GAS UNIT HEATERS LOCAL GAS FIRED UNIT HEATERS SHALL BE CONTROLLED BY LOCAL SPACE THERMOSTATS WITH HEAT OFF, FAN AUTO, AND CONTINUOUS FAN

AE	BBREVIATIONS
(D)	DEMO
(E) (N)	EXISTING NEW
AAV	AIR ADMITTANCE VALVE
AD	AREA DRAIN
AFF AHU	ABOVE FINISH FLOOR AIR HANDLING UNIT
В	BOILER
BB	BASEBOARD
BF BFP	BOOSTER FAN BACKFLOW PREVENTER
BT	BATH TUB
BV	BALL VALVE
CD CFM	CONDENSATE DRAIN CUBIC FEET PER MINUTE
CH	CHILLER
CS	CLINICAL SINK
CV CV	CONDENSING UNIT CHECK VALVE
CUH	CABINET UNIT HEATER
DCW	DOMESTIC COLD WATER
DF DHW	DRINKING FOUNTAIN DOMESTIC HOT WATER
DSN	DOWN SPOUT NOZZLE
EVC	EVAPORATIVE COOLER
EC ECO	ELECTRICAL CONTRACTOR END OF LINE CLEANOUT
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ERU ER	ENERGY RECOVERY UNIT EXISTING REMOVED
ERR	EXISTING REMOVED & RELOCATED
EW EWC	EMERGENCY EYEWASH ELECTRIC WATER COOLER
EWH	ELECTRIC WATER COOLER ELECTRIC WATER HEATER
F	FURNACE
FCO FCU	FLOOR/GRADE CLEANOUT FAN COIL UNIT
FD	FLOOR DRAIN
FS G	FLOOR SINK GAS
GC	GENERAL CONTRACTOR
GM	GAS METER
GPH GPM	GALLONS PER HOUR GALLONS PER MINUTE
GR	GAS REGULATOR
GUH GW	GAS UNIT HEATER GREASE WASTE
GWH	GAS WATER HEATER
HB	HOSE BIB
HP HX	HEAT PUMP HEAT EXCHANGER
IM	ICE MAKER BOX
LAV LS	LAVATORY LAUNDRY SINK
MAU	MAKE-UP AIR UNIT
MC	MECHANICAL CONTRACTOR
MF NIC	MEASURE FLOW NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NTS OA	NOT TO SCALE OUTSIDE AIR
OP. BLD	OPPOSED BLADE DAMPER
ORD	OVER FLOW ROOF DRAIN
P PC	PUMP PLUMBING CONTRACTOR
DET	DADALLEL CAN TEDMINAL

FM	CUBIC FEET PER MINUTE	
CH	CHILLER	
CS	CLINICAL SINK	
CU CV	CONDENSING UNIT CHECK VALVE	
UH	CABINET UNIT HEATER	
CW	DOMESTIC COLD WATER	
DF	DRINKING FOUNTAIN	
)HW DSN	DOMESTIC HOT WATER DOWN SPOUT NOZZLE	
EVC	EVAPORATIVE COOLER	
EC	ELECTRICAL CONTRACTOR	
ECO	END OF LINE CLEANOUT	
EDH EF	ELECTRIC DUCT HEATER   EXHAUST FAN	
ERU	ENERGY RECOVERY UNIT	
ER	EXISTING REMOVED	
ERR EW	EXISTING REMOVED & RELOCATED EMERGENCY EYEWASH	
WC	ELECTRIC WATER COOLER	
WH	ELECTRIC WATER HEATER	
F	FURNACE	
CO CU	FLOOR/GRADE CLEANOUT FAN COIL UNIT	
FD	FLOOR DRAIN	
FS	FLOOR SINK	
G GC	GAS GENERAL CONTRACTOR	
GM	GAS METER	
3PH	GALLONS PER HOUR	
SPM CD	GALLONS PER MINUTE	
GR GUH	GAS REGULATOR GAS UNIT HEATER	
GW	GREASE WASTE	
HWE	GAS WATER HEATER	
HB HP	HOSE BIB HEAT PUMP	
HX	HEAT EXCHANGER	
IM	ICE MAKER BOX	
_AV	LAVATORY LAUNDRY SINK	
LS //AU	MAKE-UP AIR UNIT	
MC	MECHANICAL CONTRACTOR	
MF	MEASURE FLOW	
NIC NC	NOT IN CONTRACT NORMALLY CLOSED	
NO	NORMALLY OPEN	
NTS	NOT TO SCALE	
OA	OUTSIDE AIR	
P. BLD ORD	OPPOSED BLADE DAMPER OVER FLOW ROOF DRAIN	
P	PUMP	
PC	PLUMBING CONTRACTOR	
PFT PRV	PARALLEL FAN TERMINAL PRESSURE REDUCING VALVE	
PSI	POUNDS PER SQUARE INCH	
SIG	PRESSURE GAUGE	
RA RAR	RETURN AIR RETURN AIR REGISTER	
RD	ROOF DRAIN	
RE	RELOCATE EXISTING	
EFL/S	REFRIGERANT LIQUID/SUCTION LINE	
RH RTU	RADIANT HEATER ROOF TOP UNIT	
SA	SUPPLY AIR	
SAR	SUPPLY AIR REGISTER	
SF SFT	SUPPLY FAN SERIES FAN TERMINAL	
SH	SHOWER	
SK	SINK	
SOI	SAND/OIL INTERCEPTOR	
SS F&P	SERVICE SINK TEMPERATURE & PRESSURE	
TD	TRENCH DRAIN	
ГҮР	TYPICAL	
UR /AV	URINAL VARIABLE AIR VOLUME	
/VT	VARIABLE AIR VOLUME  VARI TRAC	
WB	WASHER BOX	
WC	WATER CLOSET/WATER COLUMN	
VC0	WALL CLEANOUT COLUMN	

WALL HYDRANT **DESIGN CRITERIA** TOWN OF BENNETT, CO JURISDICTION PROJECT ALTITUDE MECHANICAL CODE 2018 INTERNALTIONAL MECHANICAL CODE 2018 INTERNATIONAL ENERGY **ENERGY CODE** CONSERVATION CODE DESIGN WEATHER STATION **DENVER - INTL (725650)** CLIMATE ZONE SUMMER DESIGN TEMP DB / MCWB 94.8°F / 59.8°F WINTER DESIGN TEMP DB -1°F INDOOR COOLING SET POINT 75°F DB / 61°F WB INDOOR HEATING SET POINT 70°F

REFS:	— — REFRIGERANT HOT GAS
SUPPLY UP	CEILING SUPPLY DIFFUSER
SUPPLY DOWN	CEILING RETURN AIR REGISTER
RETURN UP  RETURN DOWN	CEILING EXHAUST AIR REGISTER
EXHAUST UP	ROUND CEILING DIFFUSER
EXHAUST DN	CEILING LINEAR SUPPLY/RETURN
HHHH FLEXIBLE DUCT	SIDEWALL SUPPLY/RETURN REGISTE
YPE - NECK QTY@ CFM AIR DEVICE TAG	MVD MANUAL VOLUME DAMPER  M— MOTORIZED DAMPER
TAG MECHANICAL EQUIPMENT TAG	BDD S BACK DRAFT DAMPER
# - # MARK TYPE PLAN CODE	F FIRE DAMPER
VRF FAN COIL/CONTROLLER EQUIPMENT TAG  SYSTEM BRANCH ID	SMOKE DAMPER
OUTDOOR UNIT SYSTEM  YPE -MARK EQUIPMENT TAG	FS FIRE SMOKE DAMPER
FUTURE WORK	RADIATION DAMPER
DEMO WORK	R
——— EXISTING WORK	CEILING EXHAUST FAN
(POC) POINT OF CONNECTION (POD) POINT OF DISCONNECTION	FAN COIL UNIT
T THERMOSTAT  S SENSOR - CO/CO2/NO2	ROOF TOP UNIT
H HUMIDASTAT	FURNACE
PUMP	CONDENSING UNIIT
O→ ELBOW UP	
ELBOW DOWN	PARALLEL FAN POWERED VAV BOX
TEE UP	VAV BOX
TEE DOWN	
BALL VALVE	→ ELECTRIC UNIT HEATER
BUTTERFLY VALVE	
CHECK VALVE	

MECHANICAL SHEET LIST

TITLE

SHEET SPECIFICATIONS

MECHANICAL SCHEDULES

FLOOR PLANS - MECHANICAL DEMO

FLOOR PLANS - MECHANICAL

MECHANICAL DIAGRAMS

MECHANICAL DIAGRAMS

MECHANICAL ENERGY CALCULATIONS

NUMBER

M0.2

M1.1

M2.1

M5.1

M5.2

SHEET TOTAL: 7

MECHANICAL LEGEND

— - — - — - CHWR— - — - — CHILLED WATER RETURN

—— - - — - - - - - HWS- — - - - — - - —

— - - - — - - - — -HWR— - - - - — - - - —

— - — - — - — - — CONDENSER WATER RETURN

CHILLED WATER SUPPLY

HOT WATER SUPPLY

HOT WATER RETURN

REFRIGERANT LIQUID LINE

CONDENSER WATER SUPPLY

ENE ENE

**REVISION NAME** 

ISSUE DATE:

735 S. Xenon Ct. #201 Lakewood, Colorado 80228 Ph: 303.716.1270 Fax: 303.716.1272 www.givenandassociates.com Given Project # 23059

Vot (CFM) = REQUIRED OUTDOOR AIR INTAKE FLOW

\*\* FLOOR AREA BASED ON NET OCCUPIABLE AREA.

(1) PERFORMANCE BASED ON PROJECT ELEVATION.

(2) PROVIDE CONCENTRIC VENT KIT PER MFR RECOMMENDATION.

(3) FLUE SIZING BASED ON MFR. IOM. FIELD INSTALLATION TO COMPLY WITH EQUIV. TOTAL LENGTH AND QTY OF ELBOW REQUIREMENTS.

(4) FILTER RACK, CONDENSATE OVERFLOW KILL SWITCH, CONDENSATE NEUTRALIZATION KIT.

(5) PROVIDE 24V MOTORIZED DMAPER AND INTERLOCK FURNACE WITH MOTORIZED DAMPER (NC) TO BE OPEN WHEN FURNACE IS RUNNING TO PROVIDE VENTILATION.

(6) PROVI	E 7-DAY PROGRA	AMMABLE T-STAT WIT	TH HEATPUMP AS	S THE PRIMARY SO	URCE OF HEAT WI	TH THE GAS FIRI	ED FURNACE AS BACK	UP.																
PLAN		MODEL		OA	ESP			INPUT	OUT	EFF	COMB. INLET	FLUE CONN.	COOLING COIL						ELECTRICAL DATA	١			INTERLOCK	
MARK	MFR.	NO.	CFM.	CFM	(IN)	HP	FUEL	MBH(SL)	MBH(ALT)	%	SIZE (IN)	SIZE (IN)	MODEL	EDB	EWB	TOTAL COOLING	SENS. COOLING	APD	VOLT	PH	MCA	MOCP	PLAN CODE	REMARKS
FUR-1	CARRIER	59TP6B080V21	1600	385	0.8	1	NATURAL GAS	80	61.8	96.5	3	3	CAPMP6121ALA	80	63	43.94	41.10	0.3	120 V	1	14.7	20	HP-1	(1)(2)(3)(4)(5)(6)
FUR-2	CARRIER	59TP6B080V21	1600	285	0.8	1	NATURAL GAS	80	61.8	95.5	3	3	CAPMP6121ALA	80	63	43.94	41.10	0.3	120 V	1	14.7	20	HP-2	(1)(2)(3)(4)(5)(6)

(2) PROVIDE VIBRATION ISOLATION MOUNTING, WALL CAP, EC MOTOR W/ SPEED CONTROLLER & BACKDRAFT DAMPER.

(5) FAN SHALL BE CONTROLLED BY A WALL MOUNTED TSTAT TO RUN FAN WHEN SPACE TEMPERATURE IS ABOVE 80°F (ADJ).

(4) FAN SHALL BE CONTROLLED WITH A TIME CLOCK TO OPERATE DURING OCCUPIED HOURS.

MECHANICAL EQUIPMENT	COORDINATION SCHEDULE			
REMARKS: (1) MC TO TO COORDINATE LOCATION AND QUATITION (2) REFER TO GARAGE EXHAUST CONTROL DETAIL.				
PLAN		ELECTRICAL DAT	Α	
MARK	DESCRIPTION	VOLT	PH	REMARKS
M	MOTORIZED DAMPER	120 V	1	(1)

FAN SCHEDULE

(1) SELECTION BASED ON PROJECT ELEVATION.

(3) FAN SHALL INTERLOCKED WITH LIGHTING CONTROL.

HEAT	PUMP C	ONDENSI	NG UNIT S	SCHEDUL	E								
REMARKS:	•	ITH HARD-START K	IT MFR TXV KIT 1 (	OW-AMBIENT COO	LING KIT + OUTDO	OR THERMOSTAT							
` '		BE SIZED PER MAI				ore merwoom.							
PLAN		MODEL	C00	LING		HEATING			ı	ELECTRIC	AL DATA		
MARK	MFR.	NO.	TC	SC	MBH AT 47°F	MBH AT 17°F	HSPF2	SEER2	VOLT.	PH	MCA	MOCP	REMARKS
HP-1	CARRIER	25TPA	43.94	41.10	48.13	29.46	7.8	14.3	208	1	32.8	50	(1)(2)
HP-2	CARRIER	25TPA	43.94	41.10	48.13	29.46	7.8	14.3	208	1	32.8	50	(1)(2)

RADI	ANT HEA	TER SCHE	DULE						
REMARKS	<u>:</u>								
(1) BASED	ON LOW INTENSI	TY, DIRECT VENT, WI	ITH DIRECT SPA	RK IGNITION SYSTEM	M @ PROJECT ELE	VATION.			
(2) REFER	S TO STRAIGHT T	UBE CONFIGURATION	N.						
(3) PROVID	DE WITH HEAT RE	FLECTOR SHIELD, AN	ND REMOTE WIR	ED TSTAT					
(4) PROVID	DE WITH 2-STAGE	GAS CONTROL VALV	/Ε.						
PLAN					REFLECTOR	ELEC.	TRICAL D	ATA	
MARK	MANUF.	MODEL	<b>FUEL TYPE</b>	HEATING INPUT	LENGTH	VOLT	PH	MCA	REMARKS
RH-1	SOLARONICS	MSTA 150/100N40	NG	150	40'	120 V	1	2.3	(1)(2)(3)(4)
RH-2	SOLARONICS	MSTA 150/100N40	NG	150	40'	120 V	1	2.3	(1)(2)(3)(4)

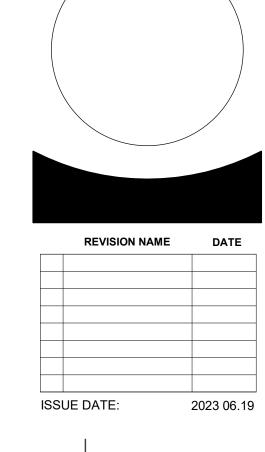
GARAGE EX	KHAUST FANS	):												
(6) PROVIDE	E VIBRATION I	SOLATION MOUN	NTING, WALL CAP, EC MOTO	OR W/ SPEED CONTROLLER & BACKDRAFT	DAMPER.									
7) PROVIDE	E VIBRATION I	SOLATION MOUN	NTING, BELT DRIVE, BACKDI	RAFT DAMPER, WALL COLLAR, SHUTTER G	UARD W/ BIRD SCREI	EN & OSHA FAN GI	JARD.							
8) INTERLO	OCK FAN WITH	I GARAGE EXHAL	JST CONTROL PANEL. REFE	ER TO SHEET M5.2.										
					AIRFLOW					ELECTRICAL DATA	1			
PLAN		MODEL				ESP			WEIGHT					
MARK	MFR.	NO.	LOCATION	STYLE	CFM	(IN H20)	RPM	SONES	LBS	VOLT	PH	HP	WATTS	REMARKS
EF-1	COOK	GCVF-100	EAST RESTROOM	CEILING EXHAUST FAN	70	0.375	926	2.0	17	120	1		10	(1)(2)(3)
EF-2	COOK	GCVF-180	NORTH RESTROOM	CEILING EXHAUST FAN	120	0.375	1061	3.0	17	120	1		19	(1)(2)(4)
EF-3	COOK	GCVF-180	IT CLOSET	CEILING EXHAUST FAN	250	0.375	1613	7.0	17	120	1		78	(1)(2)(5)
GEF-1	COOK	GNVF-180	GARAGE	INLINE EXHAUST FAN	110	0.375	1613	3.0	19	120	1		19	(1)(6)(8)
GEF-2	COOK	XMWH	GARAGE	BELT DRIVE PROPELLER FAN	1500	0.375	1101	18	184	120	1	1/2		(1)(7)(8)

REMARKS:										
(1) VERIFY F	NISH TYPE & COLOR	WITH ARCHITEC	T / ID PRIOR TO SUI	BMITTING FOR A	PPROVAL.					
(2) COORDIN	ATE FRAME SELECTI	ON WITH FINAL F	RCP.							
3) PROVIDE	ROUND COLLAR ADA	PTER.								
4) REFERS	O ELECTRIC VAV DIF	FUSER WITH RE	MOTE WIRED TSTA	T. COORDIANTE	120V CONNECTION W	/ITH EC.				
PLAN MARK	MFR	MODEL	MATERIAL	FINISH	FACE PATT	DAMPER	NC MAX	SIZE	INLET	REMAR S
٨	TITUS	TMS	STL	WHITE	SQUARE CONE	NONE	<35	24X24	NOTED	(1)(2)
Α	TITUS	PAR	STL	WHITE	PERFORATED	NONE	<35	24X24	NOTED	(1)(2)
В	11103		0.71	WHITE	LOUVERED	NONE	<35	NOTED	SAME	(1)(2)(3
	TITUS	300RL	STL	VVI II I L					0.1.15	(4)(0)(0
В		300RL 350RL	STL	WHITE	LOUVERED	NONE	<35	NOTED	SAME	(1)(2)(3

REMARKS:										
(2) PROVID	S TO DRAINABLE STYI E LINE VOLTAGE MO' FINISH TYPE & COLO	TORIZED DAMPER	₹.			BIRDSCREEN.  REQUIRED PERFO	DRMANCE			FRAME S
						I I I I I I I I I I I I I I I I I I I	FREE AREA	PRESSURE DROP	VELOCITY	110 4112 0
PLAN MARK	MFR	MODEL	MATERIAL	SERVICE	DAMPER	AIRFLOW	[SF]	[IN WC]	[FPM]	HEIG

SYSTEM - TYPE			PER 2018 IMC & A	SHRAE 62.	1-2010							
ZONE	FLOOR	SPACE TYPE	AREA (SF)	Rp	Ra	# / 1000SF	# OCCUPANTS	Vbz	Ez	Voz	Ev	Vot
FUR-2											1	
PVT Office	1	Office space	151	5	0.06	5	1	14	0.8	18	0.9	20
Staff Touchdown	1	Office space	154	5	0.06	5	3	24	0.8	30	0.9	34
Hallway	1	Corridors	220	0	0.06	0	0	13	8.0	17	0.9	18
Staff Conference Room	1	Conference / meeting	328	5	0.06	50	16	100	8.0	125	0.9	138
Staff Entry	1	Reception areas	79	5	0.06	30	3	20	0.8	25	0.9	27
Open Mezzanine	Mezz	Storage rooms	872	0	0.12	0	0	105	8.0	131	0.9	145
-	'				1					TOTAL RE	QUIRED	383
										TOTAL SU	IPPLIED	385
<u>FUR-1</u>												ı
0.00		0.00	100	_	2.22		_					
Office	1	Office space	190	5	0.06	5	4	31	0.8	39	0.9	44
Copy Center	1	Office space	96	5	0.06	5	1	11	0.8	13	0.9	15
Staff Informal Conference	1	Conference / meeting	318	5	0.06	50	6	49	0.8	61	0.9	68
CSO	1	Office space	338	5	0.06	5	6	50	0.8	63	0.9	70
Reception	1	Reception areas	222	5	0.06	30	4	33	8.0	42	0.9	46
Building Department	1	Conference / meeting	213	5	0.06	50	3	28	8.0	35	0.9	39
										TOTAL RE		281
I										TOTAL SU	IPPLIED	285
Vbz = Rp * Pz + Ra * Az												
Rp = OUTDOOR AIRFLOW RATE	•	•										
Ra = OUTDOOR AIRFLOE RATE	REQUIRED PER	UNIT AREA (CFM/ SQFT)										
Az = ZONE FLOOR AREA (sqft)												
Pz = ZONE POPULATION; OCCU	JPANTS											
Vbz (CFM) = BREATHING ZONE	OUTDOOR AIR F	LOW										
Voz = Vbz/ Ez												
Ez = ZONE AIR DISTRIBUTION E	FFECTIVENESS											
Voz (CFM) = ZONE OUTDOOR A	IR FLOW											
Vot = Vbz/ Ev												
Ev = SYSTEM VENTILATION EFF	FICIENCY											

ELECTR	IC UNIT H	IEATER S	CHEDULE						
REMARKS:									
1) PROVIDE WI	TH FACTORY MOUN	NTING ACCESSORI	S. VERIFY MOUNTII	NG HEIGHTS PRIOR TO	FIELD INSTALLATION	١.			
2) UNITS TO BE	PROVIDED WITH B	BUILT-IN FAN DELA	// AUTO THERM PRO	OTECTION.					
3) INTEGRAL T-	STAT TO ENERGIZI	E HEATER AT A TEN	MPERATURE AT 55°F	(ADJ) OR BELOW.					
PLAN					E	ELECTRICAL DATA	4		
MARK	MFR.	MODEL	STYLE	LOCATION	CONTROL	VOLT	PH	WATTS	REMARKS
CUH-1	MARKEL	E3035DWBW	CEILING HUNG	POWER WASH	INTEGRAL TSTAT	120 V	1	1,500	(1)(2)(3)
	MARKEL	F1F5103N	SUSPENDED	EVIDENCE	INTEGRAL TSAT	208 V	1	3,300	(1)(2)(3)
EUH-1	WARNEL	1 11 0 10011						1	
EUH-1 UH-1-1	MARKEL	E3313T2RP	WALL HEATER	ENTRY	INTEGRAL TSTAT	120 V	1	1,500	(1)(2)(3)
			WALL HEATER WALL HEATER	ENTRY ENTRY	INTEGRAL TSTAT INTEGRAL TSTAT	120 V 120 V	1 1	1,500 1,500	(1)(2)(3) (1)(2)(3)
UH-1-1	MARKEL	E3313T2RP					1 1 1	· '	



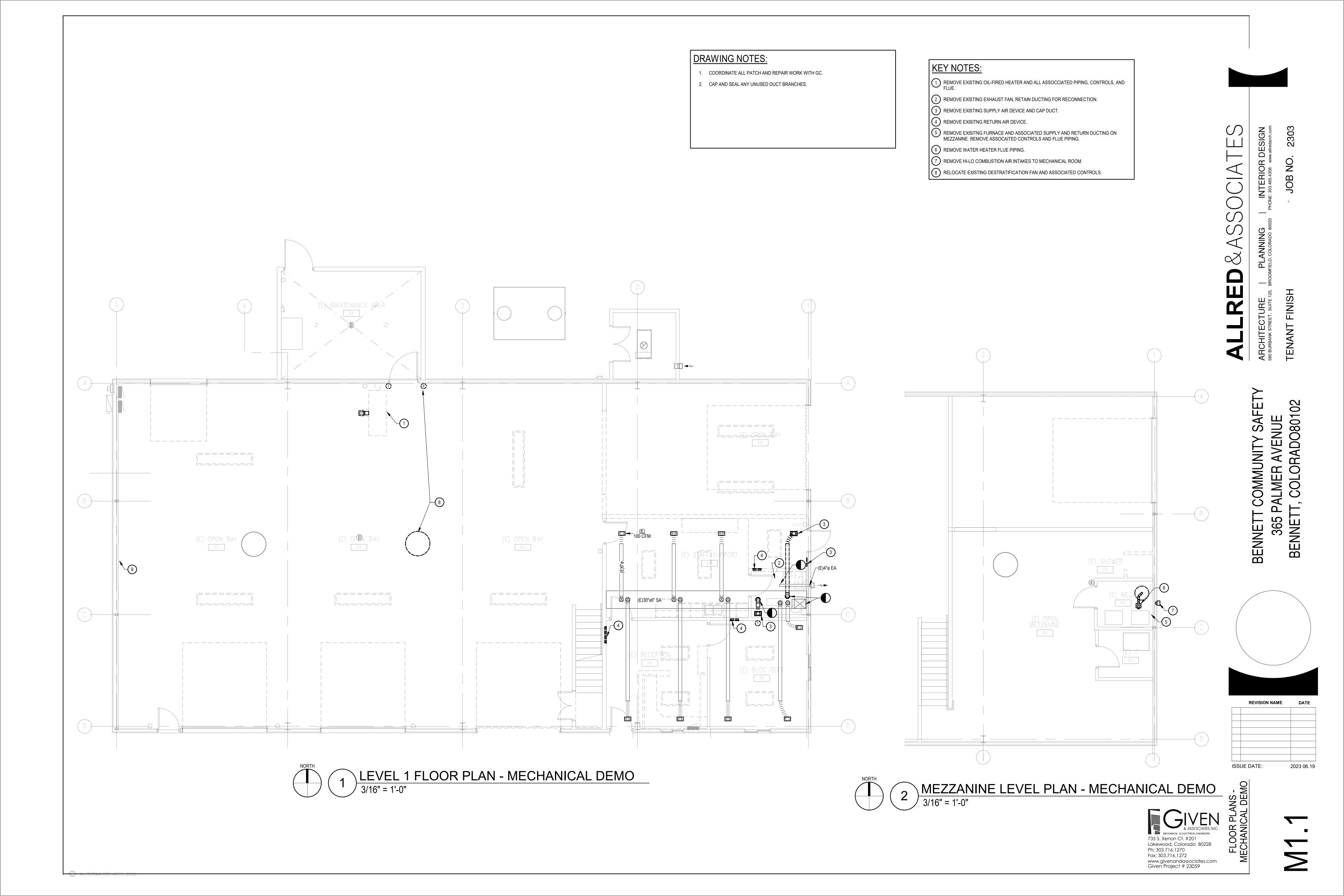
BENNETT COMMUNITY SAFETY 365 PALMER AVENUE BENNETT, COLORADO80102

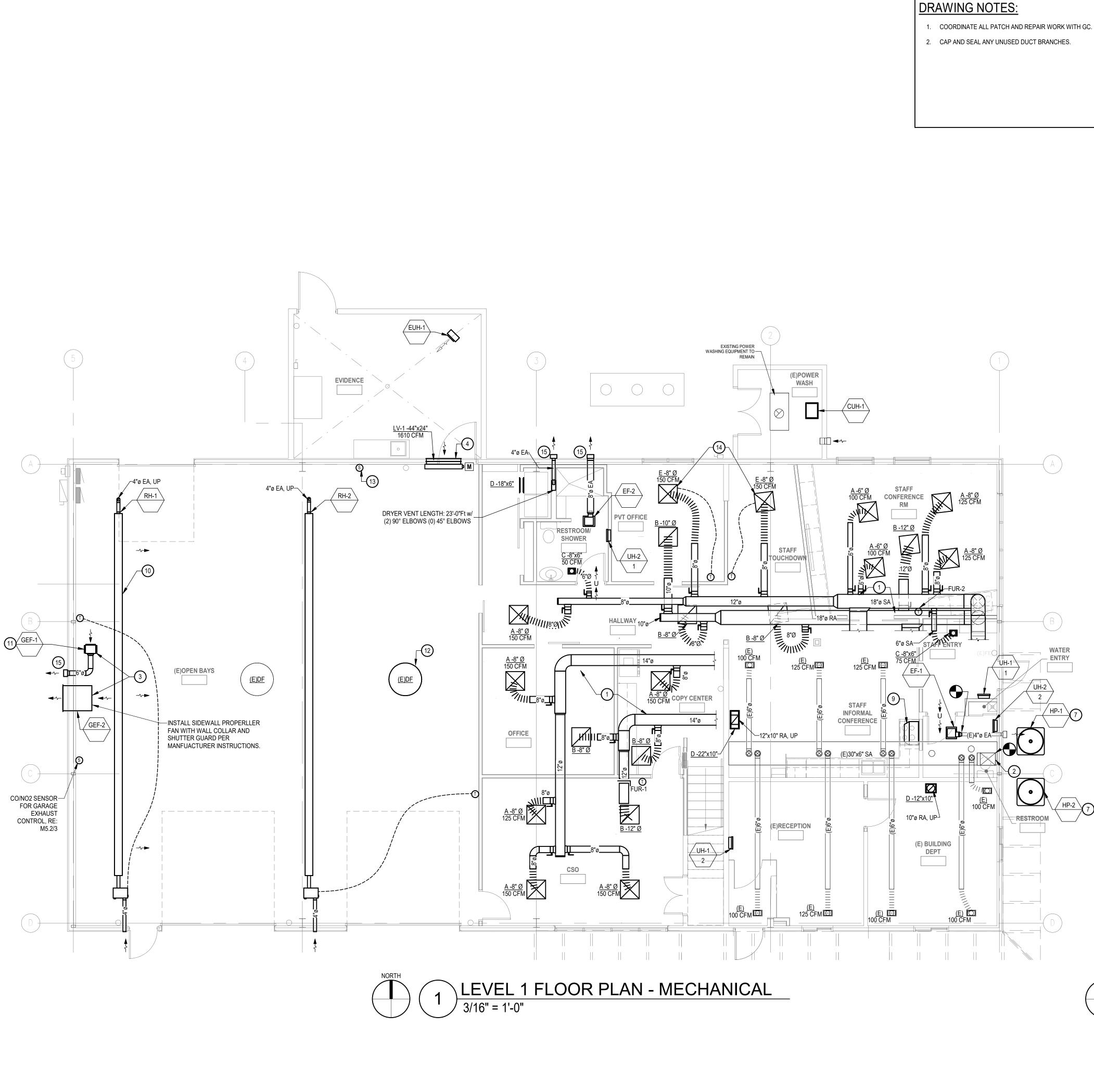
RECHANICAL & ELECTRICAL ENGINEERS

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Given Project # 23059

WIDTH 44"

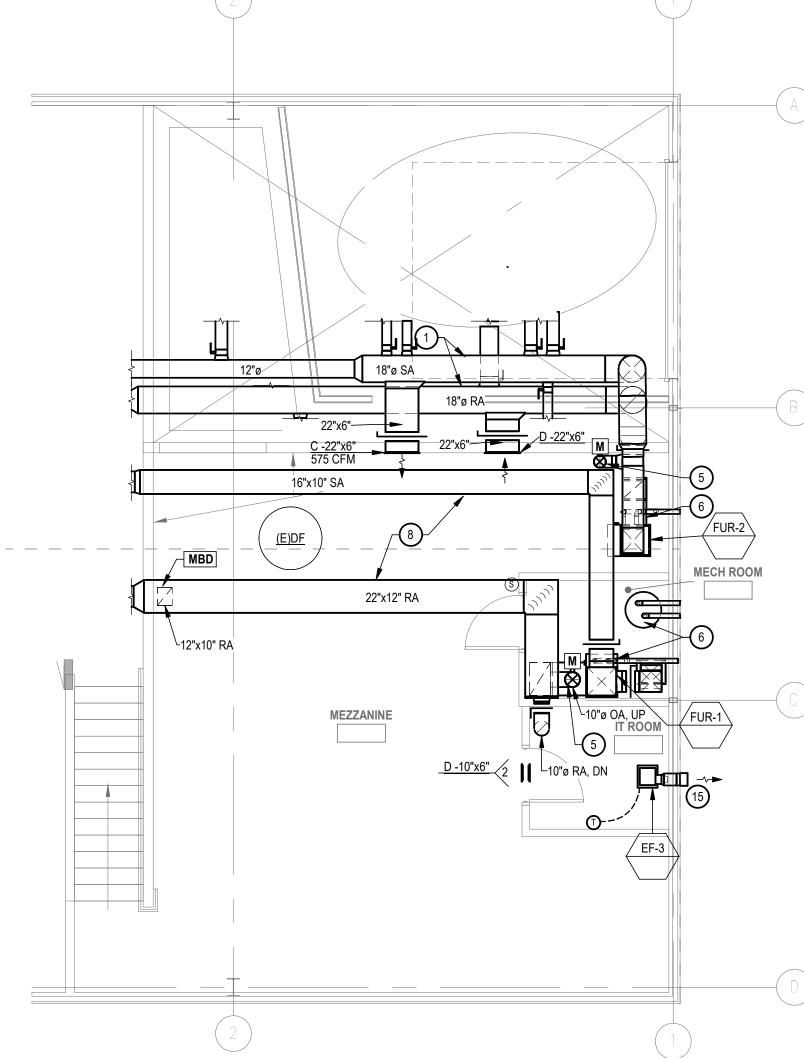
REMARKS





# **KEY NOTES:**

- 1) ROUND DUCTWORK OVER THE NEW OFFICE SPACE SHALL BE SPIRAL ROUND CONSTRUCTION. VERIFY PAINTING/FINISH REQUIREMENTS WITH ARCHITECT.
- (2) CONNECT NEW SUPPLY DUCT TO EXISTING DUCT TRUNK IN SOFFIT BELOW.
- (3) INSTALL GARAGE EXHAUST FANS ~13' ABOVE FLOOR. 4 INSTALL INTAKE LOUVER HIGH IN ALL ABOVE ATTACHED STORAGE ROOM. ~10' ABOVE
- (5) ROUTE THE OUTSIDE AIR AIR DUCT UP THROUGH ROOF AND TERMINATE WITH GOOSENECK. PROVIDE MOTORIZED DAMPER INTERLOCKED WITH FURNACE AND BALANCING DAMPER IN OUTSIDE INTAKE AND RETURN DUCTS.
- (6) ROUTE CPVC FLUE AND COMBUSTION AIR PIPES FROM GAS FIRED EQUIPMENT TO EXTERIOR WALL. VERIFY SIZING AND ROUTING REQUIREMENTS AND TERMINATE PER MANUFACTURER INSTALLATION INSTUCTIONS.
- 7 INSTALL CONDENSING UNIT ON CONCRETE PAD. MC TO ROUTE REFRIGERANT LINES TO ASSOCIATED INDOOR DX COIL. COORDINATE LINE SIZE AND ROUTING REQUIREMENTS WITH MANUFACTURER INSTALLATION INSTRUCTIONS.
- (8) ROUTE NEW SUPPLY AND RETURN DUCTWORK AS HIGH AS POSSIBLE ACROSS MEZZANINE BELOW STRUCTURE.
- 9 RANGE HOOD PROVIDED BY OWNER, INSTALL EXHAUST DUCTWORK UP TO ROOF TERMINATION PER MANUFACTURER ISNTALLATION INSTRUCTIONS.
- (10) INSTALL RADIANT TUBE HEATER ANGLED 30° IN TOWARDS GARAGE SPACE.
- (11) EXHAUST INTAKE OPEN TO GARAGE, PROVIDE WIRE MESH OVER OPENING.
- (12) RELOCATED DESTRATIFICATION FAN. EXTEND WIRING AS REQUIRED. 13 RELOCATED DESTRATIFICATION FAN SPEED COTNROLLER. EXTEND WIRING AS
- REQUIRED. VAV DIFFUSERS, PROVIDE WITH FACTORY 120V/24V TRANSFORMER. CORRDINATE LINE VOLTAGE CONNECTION WITH EC.
- (15) PROVIDE ANGLED WALL CAP AT EXHAUST TERMINATION.



MEZZANINE LEVEL PLAN - MECHANICAL
3/16" = 1'-0"



DESI

INTERIOR | NE: 303.465.4306 ww

AVENUE ORADO80102

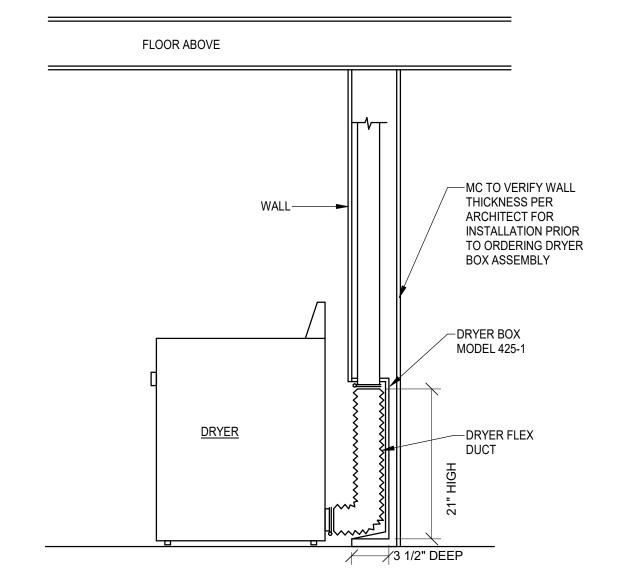
BENNETT COMMUNITY 365 PALMER AVEN BENNETT, COLORADO

BENNETT

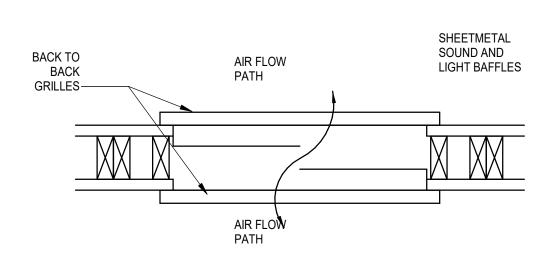
REVISION NAME

ISSUE DATE:

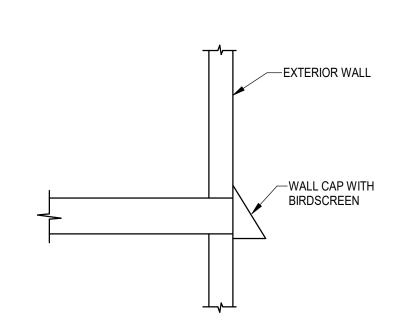
BRANCH DUCT DIAGRAM



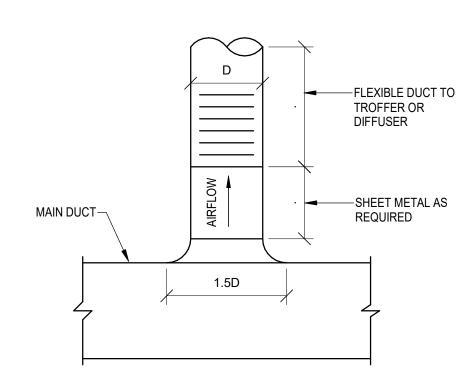
DRYER BOX DIAGRAM
N.T.S.



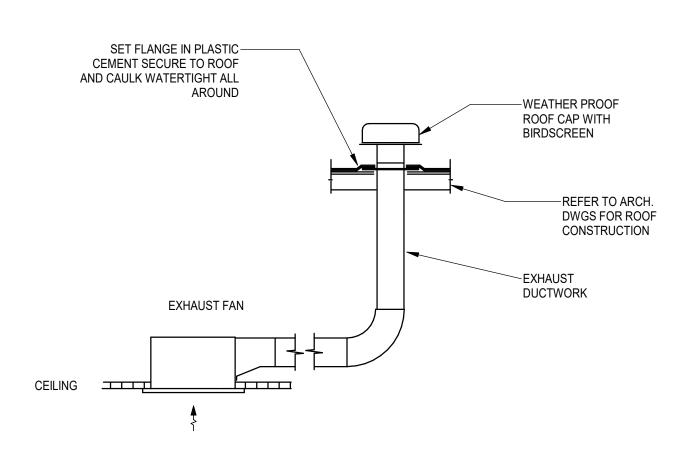
AIR TRANSFER DIAGRAM



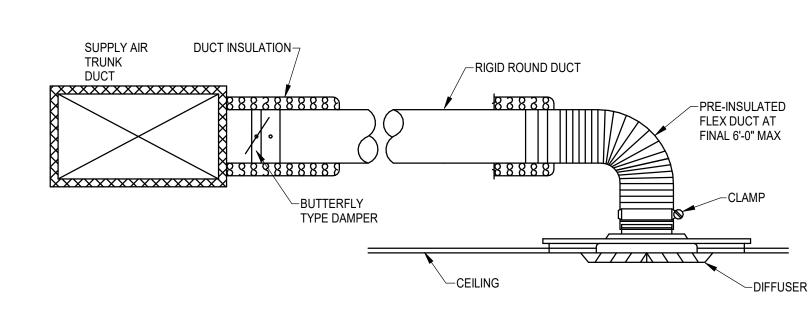
EXHAUST WALL CAP DIAGRAM N.T.S.



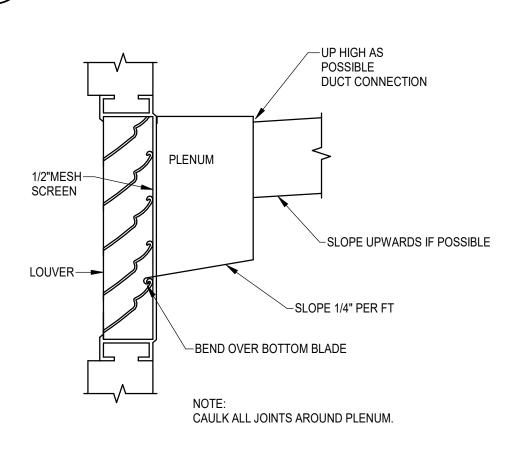
CIRCULAR BRANCH DUCT DIAGRAM



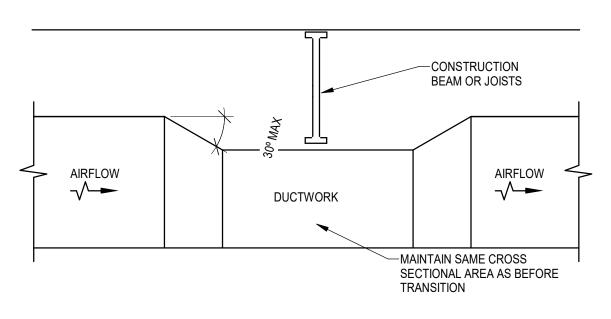
EXHAUST FAN DIAGRAM N.T.S.



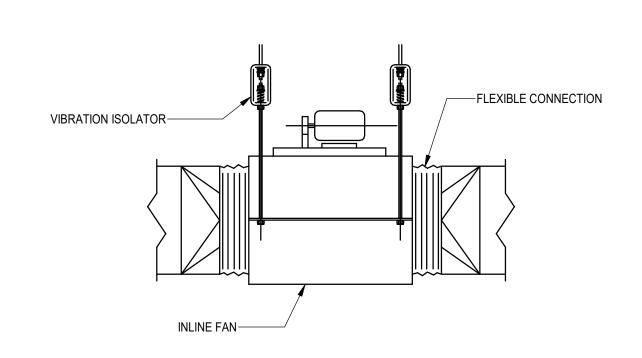
DIFFUSER INSTALLATION DIAGRAM



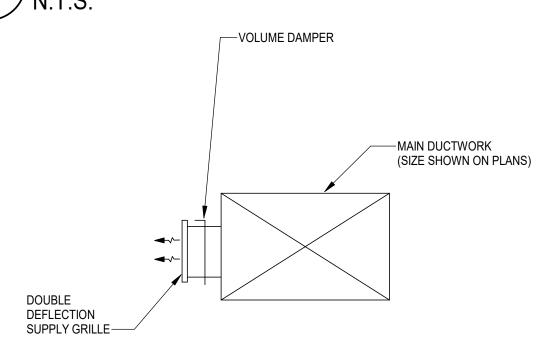
LOUVER CONNECTION DIAGRAM N.T.S.



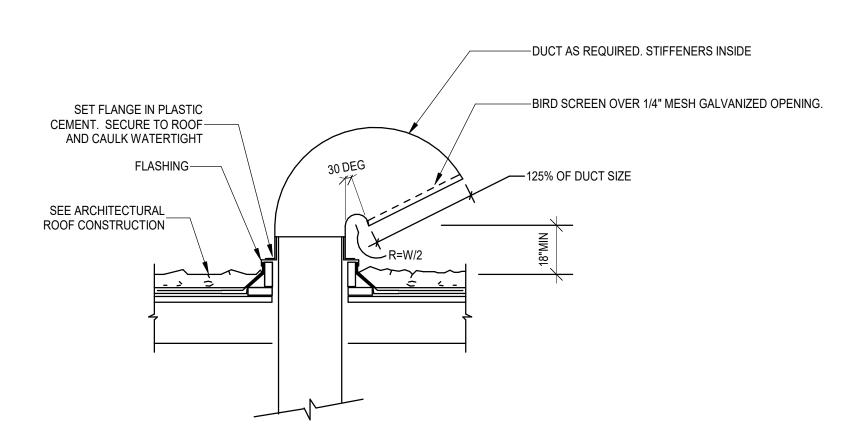
\ DUCT OFFSET DIAGRAM



6 INLINE FAN SUPPORT DIAGRAM
N.T.S.



**EXPOSED DUCT INSTALLTION DIAGRAM** 



GOOSENECK TERMINATION



RED&ASSOCIA

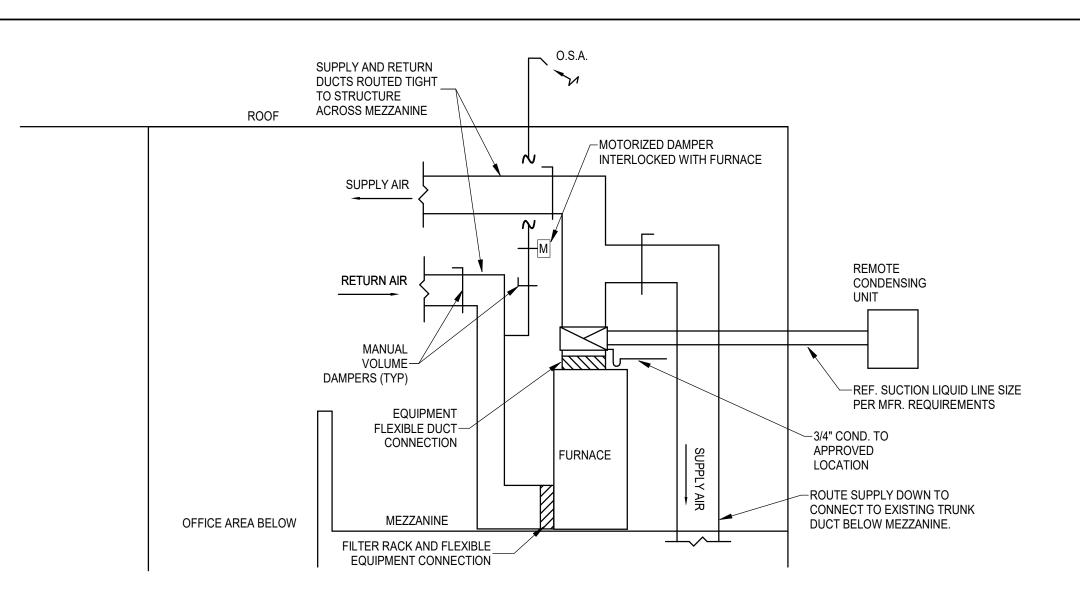
INTERIOR DES

BENNETT COMMUNITY SAFETY 365 PALMER AVENUE BENNETT, COLORADO80102

BENNETT

REVISION NAME

ISSUE DATE:



///////

**GARAGE** 

GARAGE EXHAUST REQUIRED PER IMC 404.2, MIN CFM FOR PARKING GARAGE: CONTINOUS: [GARAGE(2,122 SF)] \* 0.05 CFM/SF = 106 CFM, 110 CFM PROVIDED

GARAGE SENSOR EVENT: 2,122 SF\* 0.70 CFM/SF = 1,485 CFM, 1,500 CFM PROVIDED

-INTAKE LOUVER WITH

MOTORIZED DAMPER

-CO AND NO2 CONTROL PANEL

TYPICAL CO AND NO2

SENSORS IN GARAGE

SUPPLY AND RETURN DUCTS ROUTED OUT OVER \_\_ O.S.A. CONFERENCE ROOM TIGHT TO STRUCTURE. ROOF -MOTORIZED DAMPER INTERLOCKED WITH FURNACE SUPPLY AIR REMOTE RETURN AIR CONDENSING UNIT VOLUME-DAMPERS (TYP) -REF. SUCTION LIQUID LINE SIZE PER MFR. REQUIREMENTS -EQUIPMENT -3/4" COND. TO FLEXIBLE DUCT APPROVED FURNACE CONNECTION LOCATION MEZZANINE CONFERENCE FILTER RACK AND FLEXIBLE ROOM BELOW EQUIPMENT CONNECTION

FUR-2 COORDINATION DIAGRAM

# FUR-1 COORDINATION DIAGRAM

GEF

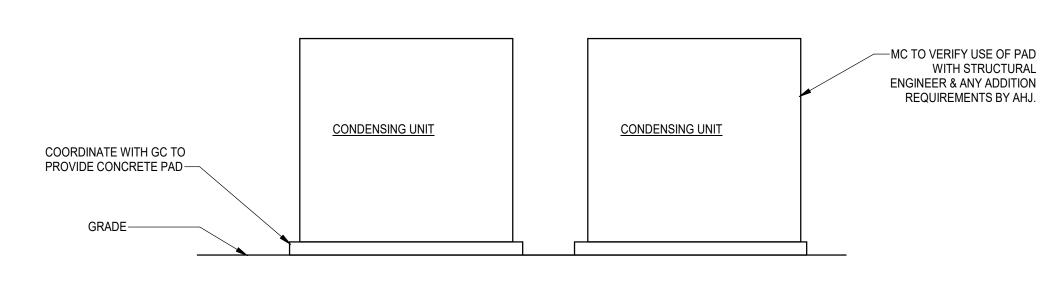
GEF

#### **GARAGE GAS DETECTION SEQUENCE OF OPERATION**

- A. THE GARAGE GAS DETECTION SYSTEM SHALL HAVE A DEDICATED MICROPROCESSOR-BASED CONTROLLER THAT SHALL MONITOR AND CONTROL THE GARAGE GAS DETECTION SYSTEM IN A STAND-ALONE MODE OR AS A PART OF THE BUILDING AUTOMATION SYSTEM. THE CONTROLLER SHALL HAVE A LOCAL DISPLAY
- B. THE SYSTEM SHALL CONSIST OF EXHAUST FANS, NATURAL MAKEUP AIR AND MULTIPLE GAS DETECTION SENSORS LOCATED PER SUPPLIER REQUIREMENTS AND RECOMMENDATIONS. THE PLANS ARE ONLY A GUIDE, ALL REQUIRED SENSOR LOCATIONS SHALL BE INCLUDED IN THE BID.
- C. COORDINATE WITH EC TO PROVIDE POWER CONNECTION FOR CONTROL PANEL AND LINE VOLTAGE WIRING AND RELAYS FOR ALL CONTROLLED FANS AND DMAPERS.
- D. THE SENSORS SHALL BE ONE OF THE FOLLOWING TYPES:
- MACURCO CM21A VULCAIN Q2
- 3. ERIS G SERIES 4. MSA Z GUARD
- E. SENSOR EVENT THRESHOLDS
- 1. CO: 25 PPM NO2: 1.0 PPM
- EACH SENSOR SHALL HAVE AN INTEGRAL ALARM LIGHT FOR 25, 50 AND 200 PPM CO AS A MINIMUM. AS AN ALTERNATE, A SERIES OF LIGHTS SHALL BE MOUNTED AT EACH SENSOR FOR THIS PURPOSE.
- G. THE CONTROLLER SHALL MONITOR THE FAN STATUS AND IF THE FAN FAILS TO START AN AUDIBLE ALARM SHALL BE SOUNDED IN THE GARAGE TO ANNUNCIATE THE FAILURE. THE FAILURE SHALL AUTOMATICALLY RESET WHEN FAN STATUS IS ESTABLISHED.
- H. GEF-1 SHALL OPERATE CONTINUOUSLY.
- THE SYSTEM SHALL MONITOR ALL OF THE GAS DETECTION SENSORS IN THE GARAGE AND DETERMINE THE MAXIMUM VALUE OF ALL OF THE SENSORS. IF THE MAXIMUM VALUE EXCEEDS THE MINIMUM SETPOINT (ADJ.) GEF-2 SHALL OPERATE AND THE INTAKE LOUVER SHALL OPEN. WHEN THE MAXIMUM VALUE DROPS BELOW 80% OF MINIMUM SETPOINT THRESHOLD (ADJ.) THE GEF-2 SHALL TURN OFF AND THE LOUVER SHALL CLOSE. SYSTEM TO EXHAUST A MINIMUM OF 0.75 CFM/SQFT AT HIGH SPEED.
- J. IF ANY SENSOR FAILS THE FAN SHALL OPERATE CONTINUOUSLY AND THE AUDIBLE ALARM SHALL BE SOUNDED. IF ANY SENSOR READING RISES ABOVE 100 PPM CO OR 2.0 PPM NO2, THE AUDIBLE ALARM SHALL BE SOUNDED.
- K. PROVIDE A MANUAL TIMED OVERRIDE CONTROL THAT ALLOWS THE OCCUPANTS TO TURN ON GEF-2 AND OPEN INTAKE LOUVER.
- L. POINTS LIST:
  - I. AIP CARBON MONOXIDE SENSORS (AS REQUIRED) 2. AIP NITROGEN DIOXIDE SENSORS (AS REQUIRED)
  - 3. AOP FAN ANALOG SPEED REQUEST
  - 4. BIP FAN STATUS 5. BOP ALARM LIGHT, HORN WITH SILENCE BUTTON
  - 6. ALM FAN FAILURE
  - 7. STPT FAN ENABLE LEVEL 8. STPT FAN DISABLE LEVEL

END OF SEQUENCE

CONDENSING UNIT DIAGRAM -VIBRATION ISOLATION MTD.



GARAGE EXHAUST DIAGRAM AND SEQUENCE

735 S. Xenon Ct. #201 Lakewood, Colorado 80228 Ph: 303.716.1270 Fax: 303.716.1272 www.givenandassociates.com Given Project # 23059

ISSUE DATE:

NTERIOR : 303.465.4306 wm

SAFET

BENNETT

**REVISION NAME** 

NETT COMMUNITY (365 PALMER AVEN NNETT, COLORADO)

BENNETT,

**↑** COMcheck Software Version 4.1.5.5 **Mechanical Compliance Certificate** 

Project Information Energy Code: Climate Zone:

Bennett Community Safety Building Bennett, Colorado Alteration

Project Type: Owner/Agent:

Mechanical Systems List Quantity System Type & Description 2 FUR-1,2 (Single Zone):

> Cooling: 1 each - Split System, Capacity = 44 kBtu/h, Air-Cooled Condenser, No Economizer, Economizer exception: None Proposed Efficiency = 15.00 SEER, Required Efficiency: 13.00 SEER Fan System: FUR -- Compliance (Motor nameplate HP method): Passes FAN 1 Supply, Constant Volume, 1600 CFM, 1.0 motor nameplate hp, 0.0 fan efficiency grade

Heating: 1 each - Unit Heater, Gas, Capacity = 150 kBtu/h Proposed Efficiency = 92.00% Ec, Required Efficiency: 80.00 % Ec. Fan System: None 1 CUH-1 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 5 kBtu/h

FAN 2 Supply, Constant Volume, 100 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade EUH-1 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 11 kBtu/h

EAN 3 Supply, Constant Volume, 400 CEM, 0.1 motor nameplate hp, 0.0 fan efficiency grade 2 UH-1-1.2 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 5 kBtu/h

FAN 4 Supply, Constant Volume, 175 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade 2 UH-2-1,2 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 3 kBtu/h

Project Title: Bennett Community Safety Building

Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 1 of 14 Plumbing Rough-In Inspection Complies? Comments/Assumptions

have controls that start the pump Does Not upon receiving a signal from the action of a user of a fixture or □Not Observable appliance and limits the temperature of the water entering the cold-water piping to 104°F. upon receiving a signal from the action of a user of a fixture or □Not Observable appliance and limits the temperature of the water entering the cold-water piping to 104°F. 7 Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temporature and linguage and limits the temporature. ☐Not Observable appliance and limits the temperature of the water entering the cold-water piping to 104°F.

Demand recirculation water systems □Complies C404.7 [PL8]<sup>3</sup> Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or action of a user of a fixture or large and limits the temperature □Not Observable appliance and limits the temperature of the water entering the cold-water piping to 104°F. Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or □Not Observable appliance and limits the temperature Not Applicable of the water entering the cold-water piping to 104°F. Demand recirculation water systems
have controls that start the pump
upon receiving a signal from the
action of a user of a fixture or
appliance and limits the temperature

Not Applicable ture Not Applicable piping to 104°F. Additional Comments/Assumptions

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 6 of 14

Final Inspection Comments/Assumptions C303.3, C408.2.5. 3 Furnished O&M manuals for HVAC systems within 90 days of system acceptance. □Complies □Does Not □Not Applicable C403.2.2 | HVAC systems and equipment capacity does not exceed calculated loads. □ Complies □ Does Not □ Not Observal □Not Observable □Not Applicable 1 controlled by a thermostat control. Does Not Minimum one humidity control device per installed Does Not Observable per installed humidification/dehumidification Not Applicable c403.2.4. Heating and cooling to each zone is Complies C403.2.4. Heating and cooling to each zone is controlled by a thermostat control. | Does Not | Minimum one humidity control device | Not Observable | per installed | Not Observable | humidification/dehumidification | Not Applicable C403.2.4. Heating and cooling to each zone is

1 controlled by a thermostat control.

[FI47] Minimum one humidity control device per installed per installed humidification/dehumidification Not Applicable system.

C403.2.4. Heating and cooling to each zone is controlled by a thermostat control.

[FI47] Minimum one humidity control device per installed humidification/dehumidification

Not Applicable humidification/dehumidification deadband. Does Not □Not Observable ■Not Applicable 403.2.4. Temperature controls have setpoint ☐Complies overlap restrictions. Does Not □Not Observable □Not Applicable C403.2.4. Each zone equipped with setback controls using automatic time clock or [Fl39]³ controls using automatic time clock or □Does Not □Does Not □Not Observal □Not Observable

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building

Quantity System Type & Description

FAN 5 Supply, Constant Volume, 70 CFM, 0.1 motor nameplate hp, 0.0 fan efficiency grade

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

Signature

**△** COM*check* Software Version 4.1.5.5 Inspection Checklist

Report date: 06/19/23

Comments/Assumptions

Energy Code: 2018 IECC Requirements: 0.0% were addressed directly in the COMcheck software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided

Plan Review Complies? Comments/Assumptions Plans, specifications, and/or Complies calculations provide all information Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable □Not Observable □Not Applicable engineering standards and handbooks. Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building

Mechanical Rough-In Inspection Complies?

Report date: 06/19/23 Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 3 of 14

Comments/Assumptions

C403.8.4 Motors for fans that are not less than ☐Complies [ME142]² 1/12 hp and less than 1 hp are ☐Does Not electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed. C403.8.4 Motors for fans that are not less than [ME142]<sup>2</sup> 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.

CMO3.8.4 Motors for each control of the means to adjust motor speed.

Complies

Does Not

Not Observable

Not Applicable means to adjust motor speed. 103.8.4 Motors for fans that are not less than Complies [ME142]² 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the □Not Applicable means to adjust motor speed. 103.8.5 Each DX cooling system > 65 kBtu ☐Complies [ME143]2 and childer water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section. C403.8.5 [Bach DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section. 403.8.5 Each DX cooling system > 65 kBtu ☐Complies [ME143]<sup>2</sup> and chiller water/evaporative cooling □Does Not system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section. detailed requirements of this section. C403.8.5 Each DX cooling system > 65 kBtu ☐Complies ☐ME143]<sup>2</sup> and chiller water/evaporative cooling ☐Does Not system with fans > 1/4 hp are designed to vary the indoor fan airflow Shot Observable as a function of load and comply with detailed requirements of this section. □Not Observable ☐Not Applicable C403.2.2 Natural or mechanical ventilation is provided in accordance with

provided in accordance with Does Not International Mechanical Code Chapter 4. Mechanical ventilation has Capability to reduce outdoor air supply Not Applicable 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mr Page 8 of 14

Does Not

Final Inspection Comments/Assumptions C408.2.5. Final commissioning report due to building owner within 90 days of [Fl30]<sup>1</sup> receipt of certificate of occupancy. □Complies □Does Not

☐Not Applicable

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanica\Comcheck\23059 Mc Page 4 of 14

Mechanical Rough-In Inspection Complies?

C403.7.6.1 and C403.7.6.2).

Section # Footing / Foundation Inspection Complies?

C403.12.2 Snow/ice melting system and freeze protection systems have sensors and C403.12.3 controls configured to limit service for pavement temperature and outdoor temperature. future connection to

Additional Comments/Assumptions:

Report date: 06/19/23

or spaces >>500 TtZ and >25
people/1000 ft2 occupant density and
served by systems with air side
economizer, auto modulating outside
air damper control, or design airflow
>3,000 cfm.

☐Does Not
☐Not Observable
☐Not Applicable C403.7.6 HVAC systems serving guestrooms in [ME141]<sup>3</sup> Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.4 Exhaust air energy recovery on Systems meeting Table C403.7.4(1) □Does Not and C403.7.4(2). □Not Observa □Not Observable
□Not Applicable C403.7.5 (Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria. C403.11.1 HVAC ducts and plenums insulated in accordance with C403.11.1 and C403.11.2 constructed in accordance with [ME60]<sup>2</sup> C403.11.2, verification may need to occur during Foundation Inspection. C403.4.1. Heating for vestibules and air curtains ☐Complies 4 with integral heating include [ME63]<sup>2</sup> automatic controls that shut off the Does Not automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F. C403.3.3 Hot gas bypass limited to: <=240  $\square$ Complies [ME35]<sup>1</sup> kBtu/h - 50% >240 kBtu/h - 25%  $\square$ Does Not □Not Observable C408.2.2. Air outlets and zone terminal devices have means for air balancing. Complies Does Not □Not Observable C403.5, Refrigerated display cases, walk-in C403.5.1, coolers or walk-in freezers served by C403.5.2 [ME123]³ condensers not located in a □Not Applicable □Not Applicable condensing unit, have fan-powered Not Applicable

Comments/Assumptions

Comments/Assumptions

condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2.. Additional Comments/Assumptions: 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 9 of 14

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Report date: 06/19/23 Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 10 of 14

Section # Plumbing Rough-In Inspection Complies?

C404.5., C404.5.1 to pipe length and volume C404.5.2 requirements. Refer to section details. Heated water supply piping conforms Complies

C404.5., Heated water supply piping conforms C404.5.1, to pipe length and volume C404.5.2 requirements. Refer to section details.

C404.5., C404.5.1, to pipe length and volume C404.5.2 requirements. Refer to section details.

C404.5., Heated water supply piping conforms C404.5.1, to pipe length and volume C404.5.2 requirements. Refer to section details.

C404.5, Heated water supply piping conforms Complies

C404.5.2 to pipe length and volume Lipoes Not requirements. Refer to section details. Not Observable

C404.6.3 Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

heater and storage tank have controls Does Not that limit operation from startup to < 5 minutes after end of heating cycle.

heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.

C404.6.3 Pumps that circulate water between a DComplies heater and storage tank have sectors.

C404.6.3 Pumps that circulate water between a Complies

C404.6.3 Pumps that circulate water between a lacomplies heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cvcle.

cycle.

C404.6.3
[PL7]³

Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating

C404.6.3

C504

C404.6.3

C505

C605

C706

C707

Project Title: Bennett Community Safety Building

C404.6.3 Pumps that circulate water between a Complies heater and storage tank have contact.

C404.5.1, to pipe length and volume

C404.5, Heated water supply piping conforms Complies Does Not .404.5.1, to pipe length and volume C404.5.2 requirements. Refer to section details. ☐Not Observable

□Not Applicable

□Not Applicable

☐Not Applicable

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

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Comments/Assumptions

Report date: 06/19/23

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SAFE

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RAD0801 AVENUE

COMMU PALMER T, COLOF Д BENNE 36

**REVISION NAME** 

ISSUE DATE: 2023 06.19

MECHANICAL & ELECTRICAL ENGINEERS 735 S. Xenon Ct. #201 Lakewood, Colorado 80228 Ph: 303.716.1270 Fax: 303.716.1272 www.givenandassociates.com

Given Project # 23059

Designer/Contractor

Heating: 1 each - Central Furnace, Gas, Capacity = 80 kBtu/h
Proposed Efficiency = 96.00% Et, Required Efficiency: 80.00 % Et or 80% AFUE

No minimum efficiency requirement applies
Fan System: 100 CFM -- Compliance (Motor nameplate HP method): Passes

No minimum efficiency requirement applies
Fan System: 400 CFM -- Compliance (Motor nameplate HP method): Passes

No minimum efficiency requirement applies Fan System: 175 CFM -- Compliance (Motor nameplate HP method) : Passes

No minimum efficiency requirement applies Fan System: 70 CFM -- Compliance (Motor nameplate HP method): Passes Report date: 06/19/23

Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mc Page 2 of 14

# Mechanical Rough-In Inspection Complies? C402.2.6 Thermally ineffective panel surfaces of ☐Complies
[ME41]³ sensible heating panels have ☐Does Not
insulation >= R-3.5. ☐Not Observ □Not Observable □Not Applicable C403.11.3 HVAC piping insulation insulated in accordance with Table C403.11.3. Complies Insulation exposed to weather is ☐Not Observable protected from damage and is provided with shielding from solar

C403.8.3 Fans have efficiency grade (FEG) >= Complies

C403.8.4 Motors for fans that are not less than Complies Canal Can

means to adjust motor speed.

[ME142] I/12 h and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the

the design point of operation <= 15%
of maximum total efficiency of the

| One of the content of

[ME117]<sup>2</sup> 67. The total efficiency of the fan at ☐Does Not

C403.11.3 HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation. □Not Observable ☐Not Applicable C403.11.3 HVAC piping insulation insulated in [ME61]<sup>2</sup> accordance with Table C403.11.3. Does Not Insulation exposed to weather is □Not Observable protected from damage and is provided with shielding from solar C403.11.3 HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation. C403.11.3 HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation. C403.11.3 HVAC piping insulation insulated in [ME61]<sup>2</sup> accordance with Table C403.11.3. Does Not Insulation exposed to weather is protected from damage and is provided with shielding from solar | Available | C403.8.1 | HVAC fan systems at design | C403.8.1 | C403.8.1 | HVAC fan systems at design | C403.8.1 | C403.

C403.8.4 Motors for fans that are not less than | Complies | ME142|<sup>2</sup> 1/12 hp and less than 1 hp are | Does Not [ME142]² 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the □Not Applicable 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: Bennett Community Safety Building

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Final Inspection Complies? Comments/Assumptions C403.2.4. Automatic Controls: Setback to 55°F
2.1, (heat) and 85°F (cool); 7-day clock, 2C403.2.4. hour occupant override, 10-hour

Not Observa backup □Not Applicable □Complies □Does Not C403.2.4. Systems include optimum start □Not Observable Not Applicable C403.2.4. Systems include optimum start Does Not □Not Observable Not Applicable Does Not ☐Not Observable C403.2.4. Systems include optimum start □Complies □Does Not ☐Not Observable □Not Applicable C403.2.4. Systems include optimum start □Complies □Does Not □Not Observable ☐Not Applicable C408.2.1 Commissioning plan developed by registered design professional or □Complies □Does Not registered design professional or approved agency. □Not Observable □Not Applicable C408.2.3. HVAC equipment has been tested to Complies ensure proper operation. ☐Not Observable ☐Not Applicable C408.2.3. HVAC control systems have been 2 tested to ensure proper operation, [Fi10]¹ calibration and adjustment of controls. 

Not Observable 

Not Applicable C408.2.4
[Fi29]¹

Preliminary commissioning report completed and certified by registered design professional or approved agency.

□Not Applica
□Complies
□Does Not
□Not Observabl

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mt Page 12 of 14 Comcheck.cck

□Not Observable
□Not Applicable

□Not Observable

□Not Observable

□Not Applicable

C408.2.5. Furnished HVAC as-built drawings

[FI7]<sup>3</sup> acceptance.

submitted within 90 days of system Does Not

C408.2.5. An air and/or hydronic system
3 balancing report is provided for HVAC
[Fl43]¹ systems. □Complies
□Does Not
□Not Observa

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3) Project Title: Bennett Community Safety Building Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Mechanical\Comcheck\23059 Mr Page 13 of 14
Comcheck.cck

#### 01. BASIC REQUIREMENTS

- A. PLUMBING PLANS MAY INCLUDE SCOPE INFORMATION FOR OTHER TRADES. GENERAL CONTRACTOR TO FACILITATE COORDINATION OF PERTINENT INFO TO ALL REQUIRED CONTRACTORS. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO BID TO CONFIRM A COMPLETE SYSTEM IS
- B. PLUMBING DESIGN SHALL CONFORM TO ADOPTED CODES AND ALL LOCAL AMENDMENTS. PROJECT SHALL BE COORDINATED WITH ALL BUILDING SERVICES AND SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL PLUMBING SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.
- C. DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL, STRUCTURAL OR CIVIL DRAWINGS BY OTHER DESIGN PROFESSIONALS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WHETHER OR NOT INDICATED ON THESE DRAWINGS.
- D. ANY SCALE, DIMENSION OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. DESIGN IS DIAGRAMMATIC IN NATURE AND IS PROVIDED TO CONVEY DESIGN INTENT ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE SITE CONDITIONS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING ALL DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO ALL DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE PRIOR TO BID FOR ALL ESTIMATING PURPOSES.
- E. COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT/ENGINEER FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF WORK MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST. PROVIDE OFFSETS AT CHANGES OF DIRECTION AND TO AVOID OBSTRUCTIONS AT NO ADDITIONAL COST TO OWNER.
- F. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED CONTRACTORS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL, ASTM, CISPI, ETC. AND SHALL BEAR THE LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.
- G. CONFIRM ACTUAL VOLTAGES. PHASE AND CHARACTERISTICS OF EQUIPMENT, FIXTURES AND APPARATUS FURNISHED BY CONTRACTOR, TENANT, OTHER TRADES, DIVISIONS AND/OR EXISTING. CONFIRM PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED TO THE INSTRUCTIONS OF THESE PLANS AND SPECIFICATIONS, SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT/ENGINEER FOR DIRECTION PRIOR TO PROCEEDING.
- H. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS, RECOMMENDATIONS AND DETAILS UNLESS OTHERWISE NOTED IN THESE PLANS. IF DISCREPANCIES EXIST CONTACT THE ARCHITECT/ENGINEER PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN.
- CONTRACTOR TO ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO PERFORM STARTUP SERVICES ON ALL EQUIPMENT AND PROVIDE ALL NECESSARY ADJUSTMENTS FOR PROPER OPERATION.
- J. SUBMIT MANUFACTURER'S LITERATURE (SHOP DRAWINGS) FOR MATERIALS AND EQUIPMENT. SUBMITTAL SHALL INCLUDE EQUIPMENT PERFORMANCE DATA AT ELEVATION AND/OR LOCAL CONDITIONS. EQUIPMENT CUTSHEETS OR CATALOG COPIES ARE NOT ACCEPTABLE. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR THEIR AGENCIES. ANY SUBSTITUTED EQUIPMENT FROM SCHEDULED SHALL BE EQUAL TO THAT SCHEDULED IN CONTROLS, ACCESSORIES, AND PERFORMANCE REGARDLESS OF MANUFACTURER. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COSTS ASSOCIATED WITH THE SUBSTITUTED EQUIPMENT REALIZED BY OTHER CONTRACTORS OR THE DESIGN TEAM.
- K. AT TIME OF BID THE CONTRACTORS SHALL ENSURE THE SITE TO BUILDING UTILITY CONNECTIONS ARE INCLUDED. CONTRACTORS TO COORDINATE INVERT AND SIZING OF ALL PLUMBING LEAVING OR ENTERING THE BUILDING. CONTRACTORS SHALL CONTACT DESIGN TEAM DURING THE BID PROCESS IF THERE IS A DISCREPANCY BETWEEN THE CIVIL DOCUMENTS AND THE PLUMBING DOCUMENTS. COORDINATE WITH SITE CONTRACTOR TO BRING ALL UNDERGROUND PLUMBING TO A MINIMUM OF 5' OFF OF BUILDING FOUNDATION UNLESS NOTED OTHERWISE.
- L. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL NEW EQUIPMENT, FIXTURES AND DEVICES IN A LIKE NEW STATE AT TIME OF PROJECT CLOSEOUT. PROTECT EQUIPMENT, FIXTURES AND DEVICES AS REQUIRED AGAINST PHYSICAL DAMAGE, DEBRIS, RAIN, SNOW, WIND, DIRT. SUN FADING. RUST, CORROSION OR ANY OTHER DEGRADATION. CONTRACTOR TO REPAIR OR REPLACE ANY EQUIPMENT OR DEVICES AS REQUIRED.

#### 02. BASIC MATERIALS

- A. PROVIDE PLUMBING SYSTEM CONTROLS, CONTROLLERS, CONTROL TRANSFORMER, DISCONNECTS, STARTERS, CONTROL WIRING, ASSOCIATED CONTROL POWER WIRING, AND ALL WORK NECESSARY FOR A COMPLETE AND OPERATIONAL PLUMBING SYSTEM. CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES OR RETAIN SUB-CONTRACTORS AS REQUIRED TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM PRIOR TO BID.
- B. PROVIDE SUPPLEMENTAL STEEL AND SUPPORTS AS REQUIRED FOR INSTALLATION OF PLUMBING MATERIALS, EQUIPMENT, AND APPARATUS.
- PROVIDE VIBRATION ISOLATION AND FLEXIBLE CONNECTIONS ON ALL EQUIPMENT WITH ROTATING OR OSCILLATING COMPONENTS AND PUMPS OVER 1
- C. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO THE INSTALLATION OF ANY EXPOSED WORK THE CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION, ELEVATION, EXTENT, MATERIAL, AND FINISH.
- D. UNLESS NOTED ELSEWHERE ON PLAN, PROVIDE ASSE 1003 PRESSURE REDUCING VALVE ASSEMBLY AT BUILDING WATER SERVICE ENTRY. OUTLET PRESSURE TO BE SET TO MAINTAIN A MAXIMUM STATIC PRESSURE OF 80 PSI AT ANY FIXTURE.
- PROVIDE DRAINAGE SYSTEM CLEANOUTS AS REQUIRED BY LOCAL CODES.

'RECOMMENDED INSTALLATION PRACTICES".

- F. PROVIDE QUARTER TURN BRANCH AND ZONE SHUT-OFF VALVES ON ALL WATER LINES EXTENDING FROM MAINS
- THE CONTRACTOR SHALL LOCATE AND FURNISH FOR INSTALLATION BY OTHERS, ALL ACCESS PANELS AS REQUIRED FOR ACCESS TO VALVES, ACTUATORS, MOTORS, DEVICES, ETC AND THE PROPER SERVICING OF EQUIPMENT INSTALLED UNDER THIS CONTRACT. AT TIME OF BID THE CONTRACTOR AND GC SHALL COORDINATE TO ENSURE THAT ALL ACCESS PANELS (INCLUDING FIRE AND/OR SMOKE RATED MODELS) ARE INCLUDED.
- H. PROVIDE SEISMIC AND/OR WIND LOADING SECUREMENT DETAILS AS REQUIRED BY THE LOCAL JURISDICTION. THE CONTRACTOR SHALL COORDINATE WITH THE EQUIPMENT SUPPLIER(S) TO OBTAIN THE DRAWINGS AND INSTALL THE SYSTEM AS REQUIRED BY THE MANUFACTURER. CONTRACTOR TO SELECT ATTACHMENT AND MOUNTING SYSTEM(S) BASED ON ATTACHING TO THE DESIGNED SUBSTRATE AND STRUCTURE WITHOUT REQUIRING ADDITIONAL REINFORCEMENT BY OTHERS. IF ANY SUBSTRATE AND/OR STRUCTURE IS REQUIRED FOR PROPER REINFORCEMENT, CONTRACTOR TO COORDINATE WITH GENERAL CONTRACTOR FOR ALL POTENTIAL REQUIREMENTS PRIOR TO BID.
- . FIRE STOP ALL PIPING AND WIRING MATERIALS PASSING THROUGH RATED STRUCTURES OR ASSEMBLIES USING U.L. LISTED PRODUCTS FOR ALL APPLICABLE PENETRATIONS IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
- J. FIELD LABEL ALL PLUMBING EQUIPMENT AND PIPING AS INDICATED ON THE PLANS PER PLUMBING AND LOCAL CODE REQUIREMENTS. INDICATE
- K. TAG ALL ZONE VALVES WITH CONSECUTIVE NUMBERING ON PERMANENT HARD PLASTIC OR METAL TAB AND PROVIDE SCHEDULE LISTING ITEMS, AREA SERVED, SIZE AND VALVE TYPE. SUBMIT FINAL VALVE SCHEDULE FOR REVIEW.
- L. ALL PROVIDED MATERIALS LOCATED IN A RETURN AIR PLENUM SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS DETERMINED BY AN INDEPENDENT TESTING LAB. CONTRACTOR SHALL COORDINATE AT TIME OF BID WITH OTHER TRADES.
- M. UTILIZE AN INDEPENDENT BALANCER WITH NEBB AND/OR AABC CERTIFICATION. RECIRCULATING PLUMBING SYSTEM SHALL BE BALANCED TO 10% DISCREPANCY OF THE GPM INDICATED ON THE PLANS. IF THERE IS A DISCREPANCY GREATER THAN 10%. BALANCE CONTRACTOR SHALL CONTACT ENGINEER. A BALANCING METHOD MUST BE PROVIDED FOR ALL CIRCULATING SYSTEMS. PROVIDE A FINAL COPY OF THE BALANCE REPORT TO THE ENGINEER OF RECORD UPON COMPLETION OF THE PLUMBING SYSTEMS. RESIDENTIAL UNITS SHALL BE PROVIDED WITH A PROJECT SPECIFIC BALANCING PLAN AS REQUIRED BY THE RESPECTIVE ENERGY PROGRAM AND AHJ.

#### 03. PIPING

- A. SANITARY, VENT, GREASE, SAND OIL, AND STORM PIPING ABOVE AND BELOW GRADE SOLID CORE (NO CELL CORE) PVC: SCHEDULE 40 PIPE (140F MAX) AND SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1784, ASTM D 1785 AND ASTM D 2665. INJECTION MOLDED PVC DWV FITTINGS SHALL CONFORM TO ASTM D 2665. FABRICATED PVC DWV FITTINGS SHALL CONFORM TO ASTM F 1866. PIPE AND FITTINGS SHALL BE MANUFACTURED AS A SYSTEM AND BE THE PRODUCT OF ONE MANUFACTURER. ALL PIPE AND FITTINGS SHALL BE MANUFACTURED IN THE UNITED STATES. ALL SYSTEMS SHALL UTILIZE A SEPARATE WASTE AND VENT SYSTEM. PIPE AND FITTINGS SHALL CONFORM TO NSF INTERNATIONAL STANDARD 14. INSTALLATION SHALL COMPLY WITH THE LATEST INSTALLATION INSTRUCTIONS PUBLISHED BY MANUFACTURER AND SHALL CONFORM TO ALL APPLICABLE PLUMBING. BUILDING, AND FIRE CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D 2321 AND ASTM F 1668. SOLVENT CEMENT JOINTS SHALL BE MADE IN A TWO STEP PROCESS WITH COLORED PRIMER CONFORMING TO ASTM F 656 AND SOLVENT CEMENT CONFORMING TO ASTM D 2564. THE SYSTEM SHALL BE PROTECTED FROM CHEMICAL AGENTS, FIRE STOPPING MATERIALS, THREAD SEALANT, PLASTICIZED VINYL PRODUCTS, OR OTHER AGGRESSIVE CHEMICAL AGENTS NOT COMPATIBLE WITH PVC COMPOUNDS. SYSTEMS SHALL BE HYDROSTATICALLY TESTED AFTER INSTALLATION.
- B. DOMESTIC WATER PIPING (WATER ENTRY, MECH ROOMS) ABOVE/BELOW GRADE: ABOVE GRADE COPPER SHALL BE ASTM B 88, TYPE L COPPER WITH WROUGHT OR FORGED FITTINGS AND LEAD FREE SOLDERED OR MECHANICALLY PRESSED-CONNECTED JOINT PRO PRESS OR EQUAL.
- C. DOMESTIC WATER PIPING (MAINS, DISTRIBUTION) ABOVE/BELOW GRADE: SOLVENT SOCKET WELDED CPVC PIPE MEETING ASTM D2846 W/ CELL CLASS 24448 PER ASTM D1784 FOR FLOWGUARD GOLD CTS (1/2" THRU 2") PIPE UTILIZING A 1-STEP SOLVENT CEMENT CONFORMING TO ASTM F493. IF THE AHJ REQUIRES PRIMER, THEN A PRIMER CONFORMING TO ASTM F656 SHOULD BE USED. CONTRACTOR SHALL HAVE ALL INSTALLERS BE BONDED QUALIFIED TO ASME B 31.3. CORZAN CPVC SCHEDULE 80 PIPE W/ CELL CLASS 24448 UP TO 6" AND 23447 8" AND G. ALL PRIMERS AND CEMENTS SHALL BE LISTED WITH NSF FOR POTABLE WATER.
- a. REVIEW ALL ANCILLARY PRODUCT (CAULK, FIRE SEALANT, COATED HANGERS, ETC...) WITH THE LUBRIZOL SYSTEM COMPATIBLE PROGRAM AND/OR RECEIVE WRITTEN DOCUMENTATION FROM ANCILLARY PRODUCT MANUFACTURER SHOWING "COMPATIBILITY" WITH CPVC. b. CONTRACTOR SHALL SUBMIT PROOF OF TRAINING BY CPVC MANUFACTURER WITHIN LAST 2-YEARS OF START OF THIS PROJECT FOR

- A. CONDENSATE DRAIN PIPING SHALL BE TYPE M COPPER WITH SOLDERED JOINTS, OR CPVC IF ALLOWED BY LOCAL AUTHORITY HAVING
- B. GAS PIPING USED FOR THE INSTALLATION, EXTENSION, ALTERATION, AND/OR REPAIR OF ANY GAS PIPING SYSTEM SHALL BE BLACK STEEL PIPE ASTM A53 ERW (TYPE E) GRADE B, OR FURNACE-WELDED (TYPE F) GRADE A, STANDARD WALL, SCHEDULE 40. ALL A53 PIPING SHALL BE THIRD PARTY TESTED TO MEET THE CODE AND EACH LENGTH SHALL BE STENCILED WITH MFG., LENGTH, ASTM 53 & PIPE TYPE.
- C. GAS PIPING 3 INCHES AND LARGER SHALL BE SCHEDULE 40 STEEL WITH WELDED JOINTS. GAS PIPING 2-1/2 INCHES AND SMALLER SHALL BE SCHEDULE 40 STEEL. MALLEABLE THREADED FITTINGS OR MECHANICALLY PRESS-CONNECTED (MEGA PRESS) MEETING ASTM A53.
- D. GAS PIPING BELOW GRADE SHALL BE SCHEDULE 40 STEEL, AND WRAPPED WITH PROTECTIVE PIPE COVERING AND VENTED IN ACCORDANCE WITH LOCAL JURISDICTIONS HAVING AUTHORITY.
- E. SEMI RIGID FLEXIBLE GAS PIPING BY TRACPIPE MAY BE USED IF APPROVED BY LOCAL JURISDICTIONS. SYSTEM RESIZING FOR CSST SUBSTITUTIONS IS THE PC'S RESPONSIBILITY.
- PROVIDE EXPANSION LOOPS, SWING JOINTS, OR MECHANICAL EXPANSION COMPENSATING DEVICES AS REQUIRED TO ACCOUNT FOR THERMAL EXPANSION OF ALL PIPING SYSTEMS. EXPANSION SYSTEM SIZING SHALL BE IN ACCORDANCE WITH MATERIALS DATA SHEETS AND
- G. ANY PIPING SYSTEM LOCATED IN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NO MORE THAN 25 AND A SMOKE-DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
- FIRE STOP ALL PIPING MATERIALS PASSING THROUGH FIRE RATED STRUCTURES OR FIRE RATED ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. USE CURRENTLY LISTED U.L. CLASSIFIED PRODUCTS, TESTED BY ASTM E814. USE FOR ALL APPLICABLE PIPE PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS, OR FLOOR CEILING ASSEMBLIES IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

#### 04. INSULATION

- A. PIPING INSULATION TO BE INSTALLED AS PER BELOW. WHEN CONFLICTING INSULATION REQUIREMENTS ARE LISTED, THE MORE STRINGENT
- INSULATION SHALL BE INSTALLED PER IECC SECTION & TABLE C403 MINIMUM PIPE INSULATION THICKNESS AND TABLE C404 PIPING VOLUME AND MAXIMUM PIPING LENGTHS. HOT & RETURN WATER PIPING (105°-140°) 1-1/4" AND SMALLER SHALL HAVE 1" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET, 1-1/2" AND LARGER SHALL HAVE 1-1/2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET (K-VALUE OF 0.21-0.28). 141°-200° 1 1/4" AND SMALLER SHALL HAVE 1 1/2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET, 1-1/2" AND LARGER SHALL HAVE 2" FIBER GLASS INSULATION WITH AN ALL-SERVICE JACKET (K-VALUES OF 0.25-0.29). EXCEPTION: PIPING SURROUNDED BY BUILDING INSULATION WITH A THERMAL RESISTANCE OF NOT LESS THAN R-3.
- DOMESTIC COLD & HOT WATER PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING ATTICS, COVERED PARKING AND CRAWL SPACES SHALL BE INSULATED WITH MINIMUM 2-INCH FIBERGLASS INSULATION.
- D. SANITARY, DOMESTIC COLD, AND HOT WATER PIPING IN AN EXTERIOR WALL, CEILING, OR FLOOR THAT IS ADJACENT TO AN UNCONDITIONED SPACE SHALL BE INSTALLED TO THE WARM SIDE OF THE BUILDING INSULATION
- E. IN COLD ENVIRONMENTS (99% WINTER DESIGN DB <34F):
- 1. HORIZONTAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING COVERED PARKING AND CRAWL SPACES SHALL BE HEAT-TRACED AND INSULATED WITH 1-INCH FIBERGLASS INSULATION.
- 2. VERTICAL SANITARY AND STORM PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING EXTERIOR WALLS, COVERED PARKING AND CRAWL SPACES SHALL BE INSULATED WITH 1-INCH FIBERGLASS INSULATION.
- 3. DOMESTIC COLD & HOT WATER PIPING EXPOSED TO OUTDOOR TYPE AMBIENT CONDITIONS INCLUDING ATTICS, COVERED PARKING AND CRAWL SPACES SHALL BE HEAT-TRACED AND INSULATED WITH MINIMUM 2-INCH FIBERGLASS INSULATION.
- 4. PROVIDE MINIMUM 1-INCH THICK INSULATION ON DOMESTIC WATER LINES IN AN EXTERIOR WALL, CEILING, OR FLOOR THAT IS ADJACENT TO AN UNCONDITIONED SPACE.

#### 05. PLUMBING FIXTURE

- A. FURNISH AND INSTALL PLUMBING FIXTURES AS SCHEDULED ON THE PLANS.
- B. PROVIDE CHROME PLATED ANGLE STOPS AND ESCUTCHEON PLATES ON ALL EXPOSED FIXTURE RUNOUTS
- C. PROVIDE INSULATION AND ROUGH IN AS REQUIRED FOR COMPLIANCE WITH ADA REQUIREMENTS.
- PROVIDE ALL ACCESSORIES AND SPECIALTY ITEMS AS REQUIRED FOR A COMPLETE FIXTURE INSTALLATION.
- 06. REDUCED PRESSURE BACKFLOW PREVENTER
- FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTER FOR THE PRIMARY DOMESTIC COLD WATER SERVICE IN ACCORDANCE WITH STATE, LOCAL, AND JURISDICTIONAL WATER DISTRICT REQUIREMENTS.
- B. FURNISH AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTER FOR MECHANICAL EQUIPMENT REQUIRED OF THIS OR OTHER SECTIONS OF THESE SPECIFICATIONS.

### 07. NATURAL GAS FIRED WATER HEATERS

- A. SPECIAL ATTENTION MUST BE PAID TO GAS FIRED EQUIPMENT FLUE/COMBUSTION AIR LENGTHS, SIZES, AND MATERIAL.
- B. FURNISH AND INSTALL NATURAL GAS FIRED, GLASS LINED WATER HEATERS AS SCHEDULED ON THE PLANS.

SECTION 3 PIPING TO VERIFY MATERIALS ACCEPTABLE IN MECHANICAL/WATER ENTRY ROOM.

MINIMUM 2FT OF DOMESTIC WATER PIPE SHALL BE COPPER OFF ALL WATER CONNECTIONS TO WATER HEATER. REFER TO SHEET SPEC

a. WATER HEATERS SHALL BE COMPLETE, SHALL BE AGA LABELED, AND MEET THE REQUIREMENTS OF LOCAL MUNICIPALITIES.

#### 08. CIRCULATING PUMP

A. FURNISH AND INSTALL A NSF RATED DOMESTIC HOT WATER RETURN CIRCULATOR AS SCHEDULED ON THE PLANS. PROVIDE RETURN LINE AQUASTAT AND WIRE COMPLETE TO CYCLE CIRCULATOR TO PROVIDE 120 OR 140 DEGREES RETURN WATER TEMPERATURE (ADJUSTABLE).

#### PLUMBING LEGEND CONCENTRATE ----- CONDENSATE — - — - — DCW — - — - — DOMESTIC COLD WATER — - - - — - - — 120° — - - - — DOMESTIC HOT WATER —— - - - - —— 120°R —— - - - - —— DOMESTIC HOT WATER RECIRC AFF —— GREASE WASTE ----- MEDICAL COMPRESSED AIR AHU — OXYGEN — REVERSE OSMOSIS — ROOF DRAIN — OVERFLOW ROOF DRAIN — SAND OIL SANITARY SEWER CD CFM —— SCA ———— SCAVENGER AIR — VAC — VACUUM SUCTION CS — (A)XX — TYPICAL PIPE ABOVE/ON ROOF CU — (E)XX ———— TYPICAL PIPE EXISTING CUH DCW **FIXTURES** VALVES DHW I 🖒 BALL VALVE WALL CLEAN OUT ECO | END OF LINE CLEANOUT EDH | ELECTRIC DUCT HEATER GATE VALVE FLOOR CLEANOUT ERU | ENERGY RECOVERY UNIT │ 🔀 GLOBE VALVE AREA DRAIN CHECK ERR O FLOOR DRAIN VALVE EW EWC | ELECTRIC WATER COOLER PRESSURE REDUCING VALVE (PRV) O FLOOR SINK FULL COVER EWH | ELECTRIC WATER HEATER FLOOR SINK 3/4 COVER FCO FLOOR/GRADE CLEANOUT FCU FAN COIL UNIT HOH TEE UP FLOOR SINK 1/2 COVER FD TEE DOWN OH ELBOW UP GPH C ELBOW DOWN GPM O BATH TUB/SHOWER/MOP SINK GUH GW GWH POINT OF CONNECTION (POC) Ō—⊃Ŏ 2-COMPARTMENT SINK HB O—>>> DRINKING FOUNTAIN/URINAL HX LAV WASHER BOX MAU MC O WATER CLOSET STACK O WATER CLOSET GENERAL NOTES: ALL ITEMS CONNECTING TO POTABLE WATER SHALL MEET THE LEAD FREE STANDARD PLUMBING PLANS REFERENCE FINISHED FLOOR TO FINISHED FLOOR ABOVE. SANITARY PRV SHOWN IS FOR FIXTURES ABOVE UNLESS NOTED OTHERWISE. PSI FIELD VERIFY ALL ROUTING OF PLUMBING LINES WITH OTHER TRADES. FIELD ADJUST PSIG | PRESSURE GAUGE ROUTING ACCORDINGLY TO MAKE SYSTEM WORK WITH OTHER TRADES. PV | PLUG VALVE PROVIDE ASSE1070 MIXING VALVE AT ALL PUBLIC FIXTURES AS REQUIRED PER LOCAL PC TO PROVIDE VACUUM BREAKERS AT LOCATIONS WHERE HOSES AND NOZZLES ARE USE, I.E. JANITOR SINKS, BEAUTY SINKS, KITCHEN SPRAYERS, DISHWASHERS, AND BATHS. INSTALL CHECK VALVES ON BOTH COLD AND HOT WATER LINES TO FIXTURE. ALL DRAINAGE LINES 2-1/2" AND UNDER TO BE SLOPED AT 1/4" PER FOOT, 3"-6" TO BE RTU ROOF TOP UNIT SLOPED AT 1/8" PER FOOT, AND 8" AND OVER TO BE SLOPED AT 1/16" PER FOOT UNLESS RVM

- NOTED OTHERWISE. GREASE WASTE SHALL BE SLOPED AT 1/4" ONLY PER CODE. START TRENCHING FOR NEW SANITARY LINE AT FURTHEST FIXTURE (HIGHEST POINT IN
- SYSTEM) FROM CIVIL CONNECTION POINT TO BUILDING 8. FIELD ROUTE ALL CONDENSATE LINES. T&P VALVES, AND DRAIN VALVES FROM MECHANICAL AND PLUMBING EQUIPMENT TO SANITARY SEWER RECEPTOR OR
- STORM/GRADE PER LOCAL CODE AND JURISDICTION 9. REFER TO ARCHITECTURAL DRAWINGS FOR FINAL HEIGHTS AND/OR LOCATIONS OF
- SHOWER FIXTURES. 10. WATER CLOSETS ON BEAMS OR COLUMNS TO BE OFFSET 18" OFF FINISHED WALL.
- 11. PEX PIPING IS AN APPROVED PIPING MATERIAL FOR DISTRIBUTION TO ALL FIXTURES OFF WATER MAINS 12. DO NOT SECURE ANY PIPING TO EXPANSION JOINT WALLS. 13. ENSURE THAT THE DOMESTIC HOT WATER PIPING AND COIL SERVING THE POOL AIR
- HANDLER REHEAT ARE OPEN DURING PIPING SYSTEM CHLORINATION BY KILLING THE POWER TO THE VALVE DURING THE FLUSHING (IT WILL SPRING OPEN). 14. MC TO FURNISH AND INSTALL REFRIGERANT LINES BETWEEN ICE MACHINES AND THEIR RESPECTIVE REMOTE CONDENSING UNITS.

CODE & DES	IGN CRITERIA
JURSIDICTION:	BENNETT, COLORADO
PLUMBING CODE(S):	YEAR UPC, ICP IFGC, ETC
LOCAL ADDENDUMS:	NO
WATER PRESSURE:	70 PSI STATIC
GAS PRESSURE:	LESS THAN 2 PSI
PEAK RAINFALL RATE:	3" PER HOUR
S-O-I DISCHARGE TO:	SANITARY

ELEVATOR PUMP REQUIRED: N/A

CONDENSATE DISCHARGE: SANITARY

FULLY SPRINKLERED: NO

NUMBER OF FLOORS: 2

	WC WCO	WATER CLOSET/WATER COLUMN WALL CLEANOUT COLUMN WALL HYDRANT
F	PLUMBIN	NG SHEET LIST
NUMBER		TITLE
P0.1	F	PLUMBING SPECS & LEGENDS
P0.2		PLUMBING SCHEDULES
P1.1	FL	OOR PLANS - PLUMBING DEMO
P2.0	UNDEF	RGROUND FLOOR PLAN - PLUMBING
P2.1		FLOOR PLANS - PLUMBING
P5.1		PLUMBING ISOMETRICS
P5.2		PLUMBING DIAGRAMS
HEET TOTAL: 7		

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**ABBREVIATIONS** 

AIR ADMITTANCE VALVE

ABOVE FINISH FLOOR

BACKFLOW PREVENTER

CONDENSATE DRAIN

CUBIC FEET PER MINUTE

AIR HANDLING UNIT

EXISTING

AREA DRAIN

BASEBOARD

BATH TUB

BALL VALVE

CHILLER

CLINICAL SINK

CHECK VALVE

EXHAUST FAN

FURNACE

FLOOR DRAIN

FLOOR SINK

GAS METER

CONDENSING UNIT

CABINET UNIT HEATER

DRINKING FOUNTAIN

DOMESTIC HOT WATER

DOWN SPOUT NOZZLE

EVAPORATIVE COOLER

EXISTING REMOVED

EMERGENCY EYEWASH

GENERAL CONTRACTOR

GALLONS PER HOUR

GAS REGULATOR

GAS UNIT HEATER

**GREASE WASTE** 

HEAT EXCHANGER

MAKE-UP AIR UNIT

NOT IN CONTRACT

NORMALLY CLOSED

NORMALLY OPEN

NOT TO SCALE OUTSIDE AIR

RETURN AIR

SUPPLY AIR

SF SUPPLY FAN

SS | SERVICE SINK

TYPICAL

VARI TRAC

WASHER BOX

URINAL

SH | SHOWER

SK SINK

SAR SUPPLY AIR REGISTER

SFT | SERIES FAN TERMINAL

SOI SAND/OIL INTERCEPTOR

TRENCH DRAIN

SA

T&P

TYP

VAV

VVT

WB

**ROOF DRAIN** 

RELOCATE EXISTING

RADON/VAPOR MITIGATION

TEMPERATURE & PRESSURE

VARIABLE AIR VOLUME

RADIANT HEATER

MEASURE FLOW

MECHANICAL CONTRACTOR

OVER FLOW ROOF DRAIN

PLUMBING CONTRACTOR

PARALLEL FAN TERMINA

PRESSURE REDUCING VALVE

POUNDS PER SQUARE INCH

ICE MAKER BOX

LAUNDRY SINK

HOSE BIB

HEAT PUMP

LAVATORY

GALLONS PER MINUTE

GAS WATER HEATER

EXISTING REMOVED & RELOCATED

ELECTRICAL CONTRACTOR

DOMESTIC COLD WATER

**BOOSTER FAN** 

FUTURE

BOILER

NFW

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 $\mathbf{m}$ 

REVISION NAME ISSUE DATE: 2023 06.19

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REMARKS

WATTS

ISSUE DATE:

REVISION NAME

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JNITY SAFET AVENUE RADO80102

PLUMBING FIXTURES

1. ALL PUBLIC SINKS TO HAVE OPEN GRID STRAINERS.

2. ALL NON-PUBLIC SINKS TO HAVE POP-UP STRAINERS.

3. ALL FIXTURES TO BE PROVIDED W/ FLEXIBLE WATER LINES, ANGLE STOPS (INCLUDING DISHWASHER CONNECTIONS), TRAP WRAP, ESCUTCHEON PLATES AS REQUIRED PER FIXTURE INSTALL AND CODE.

4. ALL INSTALLATIONS SHALL COMPLY WITH MANUFACTURER'S INSTRUCTIONS, AND STATE AND LOCAL CODES.

5. PROVIDE BACKFLOW PROTECTION ON FIXTURES AS REQUIRED PER LOCAL CODE.

6. TRIP LEVERS SHALL BE TO WIDE/OPEN SIDE OF TOILET.

7. GOOSE NECK FAUCETS TO BE PROVIDE WITH SPOUT SWIVEL RESTRICTION SETTING OR SHALL BE SET STATIONARY WITHOUT SWIVEL.

8. PROVIDE TRIM KIT ON OPEN SHOWER FLANGE OR EXTEND FINISHING DRYWALL OVER FLANGE AS REQUIRED AT RATED WALLS.

PLAN	ADA	DESCRIPTION		CONNE	ECTIONS							FIXTURE				
MARK	ADA	DESCRIPTION	DCW	DHW	WASTE	VENT	MANUFACTURER	MODEL NAME	MODEL #	FLOW RATE	DIMENSIONS	MOUNTING	RIM HEIGHT	FINISH	MISC	REMARKS
BF-1	YES	BOTTLE FILLER	1/2"		2"	2"	ELKAY	EZH2O	LZ8WSSSMC		17-7/8"x11-7/8"x41-1/4"	WALL		STAINLESS STEEL	INFRARED SENSOR, 120/60/1 POWER, 8 GPH	
		WALL HANGER					ZURN		Z1225			FLOOR		DURA-COATED STEEL	TOP & BOTTOM ADJUSTABLE SUPPORT PLATES	
FD-1	NO	FLOOR DRAIN			2"	2"	ZURN		ZN415B-VP		5" DIA. STRAINER	FLOOR		NICKEL-BRONZE	VANDAL PROOF TOP, TRAP GUARD	
FS-1	NO	FLOOR ISINK			4"	2"	ZURN		ZN1901-2-VP		12"x12"x11-1/8"	FLOOR		NICKEL-BRONZE	VANDAL PROOF STRAINER, 1/2 GRATE, TRAP GUARD	
FS-2	NO	FLOOR SINK			2"	2"	ZURN									
LAV-1	YES	WALL HUNG LAVATORY			2"	2"	AMERICAN STD	DECLYN	0321.075		18-1/2"x17"x7-3/4", 14-1/4"x10-3/4"x6" BOWL	WALL		WHITE VITREOUS CHINA	SINGLE HOLE, REAR OVERFLOW, FAUCET LEDGE	
		FAUCET	1/2"	1/2"			AMERICAN STD	NEXTGEN SELECTRONIC	775B105	0.5 GPM	6-7/8" SPOUT	DECK		POLISHED CHROME	BATTERY POWERED, SENSOR OPERATED FAUCET	
		WALL HANGER					ZURN		Z1231			FLOOR		DURA-COATED STEEL	ADJSUTABLE SUPPORT PLATE, CONCEALED ARMS	
SH-1	YES	SHOWER			2"	2"	COMFORT DESIGNS		SST6333 BF .75		63"x33"x78-3/4"	FLOOR		WHITE FIBERGLASS	STAINLESSS STEEL GRAB BARS, FOLD UP SEAT	
		SHOWER TRIM	1/2"	1/2"			DELTA	TECK COMMERCIAL	T13H332	1.5 GPM		WALL		POLISHED CHROME	SHOWER, HANDSHOWER, DIVERTER VALVES, 24" SLIDE BAR	
		SHOWER VALVE					DELTA	TECK COMMERCIAL	R10700-UNWS			WALL		ROUGH BRASS	1/2" UNIVERSAL INLETS, 1/2" THREADED OUTLETS, PRESSURE BALANCED	
SK-1	YES	BREAK ROOM SINK			2"	2"	ELKAY	LUSTERTONE CLASSIC	LRAD332255		33"x22"x5-1/2", (2)13-1/2"x16"x5-1/8" BOWLS	DROP-IN		STAINLESS STEEL	REAR CENTER DRAIN, SINGLE FAUCET HOLES	
		SINK FAUCET	1/2"	1/2"			ELKAY	GOURMET	LKGT1041	1.75 GPM	10-1/8" SPOUT	DECK		POLISHED CHROME	PULL-OUT SPRAY, SINGLE LEVER HANDLE	
		GARBAGE DISPOSAL					INSINKERATOR		BADGER 5		6-5/16" DIA x 1-1/2"	FLANGE		CONDOR GREY	1/2 HP. 120V/1 PHASE POWER, 6.3 AMPS, POWER CORD	
SK-2		UTILITY SINK			2"	2"	FIAT		DL-1		22-1/8"x17"x12-3/8" BOWL	DROP-IN		WHITE MOLDED PLASTIC	SELF-RIMMING FLANGE, LOCKING CORNER BARS	
		SINK FAUCET	1/2"	1/2"			FIAT		A1000		6-3/4" SWING SPOUT	DECK		POLISHED CHROME	4" CENTERSET, 4" WRIST BLADE HANDLES, HOSE ADAPTOR	
WB-1	NO	WASHER WALL BOX	1/2"	1/2"	3"	2"	SIOUX CHIEF	OX BOX	696-2313MF		11-1/2"x7-1/4"x3-1/2"	WALL		WHITE ABS	1/4" TURN VALVES, STAINLESS STEEL ARRESTERS	
WC-1	YES	WATER CLOSET	1/2"		3"	2"	AMERICAN STD	CADET 3	270AA.101	1.28 GPF	12" ROUGH-IN, 30-1/4"x17-3/8"x30"-1/4"	FLOOR	16-1/2"	WHITE VITREOUS CHINA	3" FLUSH VALVE	
		SEAT					AMERICAN STD		5901.100			BOWL		WHITE PLASTIC	OPEN FRONT SEAT LESS COVER	

HEATER	SCHEDULE
\	OCHEDULE

GWH-1

(1) PROVIDE LIMITED 6-YEAR TANK & PARTS WARRANTY, HARD WATER/SCALE OR RUST IN SYSTEM SHALL NOT VOID WARRANTY.

(2) 1ST YR SHALL COVER ANY FREIGHT, PARTS, DIAGNOSTICS, AND LABOR WITH ANY WATER HEATER ISSUES, PROVIDED BY MANUFACTURER.

(3) STARTUPS TO BE PERFORMED BY FACTORY AUTHORISED REPRESENATIVE.

(4) CPVC (NO PVC) CA/FLUE LENGTH 125' MAX EACH (DEVELOPED LENGTH). PROVIDE COMBUSTION AIR FILTER. USE LONG RADIUS ELBOWS FOR BENDS.

PLUMBING PUMP SCHEDULE

GRUNDFOS

PLAN MARK MANUFACTURER

(3) PROVIDE ALL VALVES REQUIRED PER LOCAL CODE ON DISCHARGE PIPE.

MODEL#

UPS 15-35 SFC

(5) PROVIDE CONDENSATE NEUTRALIZATION KIT.

(6) SET WATER HEATER TO MAINTAIN SET POINT OF 130F (ADJUSTABLE).

(7) PROVIDE 2 1/2" DRAIN PAN AND ROUTE 1 1/4" DRAIN LINE TO FLOOR SINK.

(8) PROVIDE WEE	KLEY 2 HOUR SCHE	EDULED SHOCK CYCLE AS	DICTATED BY MAN	UFACTURER TO AS	SSURE LEGONELLA	CONTROL.
PLAN MARK	MANUFACTURER	MODEL#	TANK GALLONS	THERMAL	<b>ENERGY FACTOR</b>	ALTITUDE (F

E WEE	KLEY Z HOUR SCHE	DULED SHOCK CYCLE AS	DICTATED BY MAN	JFACTURER TO A	ASSURE LEGUNELLA	CONTROL.								
ARK	MANUFACTURER	MODEL#	TANK GALLONS	THERMAL	ENERGY FACTOR	ALTITUDE (EEET)	ELIEL	INPUT MBH	GPH RECOVERY	CA & FLUE SIZE	RISE (F)	ELECTRIC	CAL DATA	Р
ANN	WANUFACTURER	WIODEL #	TANK GALLONS	EFFICIENCY	ENERGI FACTOR	ALTITUDE (FEET)	FUEL	INFOI WIDH	GPH RECOVERT	(IN)	KISE (F)	VOLT	PHASE	N
-1	AO SMITH	GPDX 50L-200	50	92%	0.73	5300	NAT GAS	62.0	73	3"	90	120 V	1	1,2

(1) CANNED ROTOR PUMP. CERAMIC SHAFT & RADIAL BEARINGS, CARBON AXIAL BEARING, STAINLESS STEEL ROTOR CANM BEARING PLATE & PUMP HOUSING.

(2) 3-SPEED PUMP, SPEED SETTING 2, INTERLOCK WITH AQUASTAT SET TO MAINTAIN 120F ADJ., INTERLOCK WITH TIME CLOCK TO OPERATE DURING BUILDING OPERATIONAL HOURS..

HEAD (FT)

FUEL	INDUT MOU	CDU DECOVEDY	CA & FLUE SIZE	DICE (E)	ELECTRI	CAL DATA	DEMARKS
FUEL	INPUT MBH	GPH RECOVERY	(IN)	RISE (F)	VOLT	PHASE	REMARKS
NAT GAS	62.0	73	3"	90	120 V	1	1,2,3,4,5,6,7,8

VOLT

120

1750

**ELECTRICAL DATA** 

PHASE

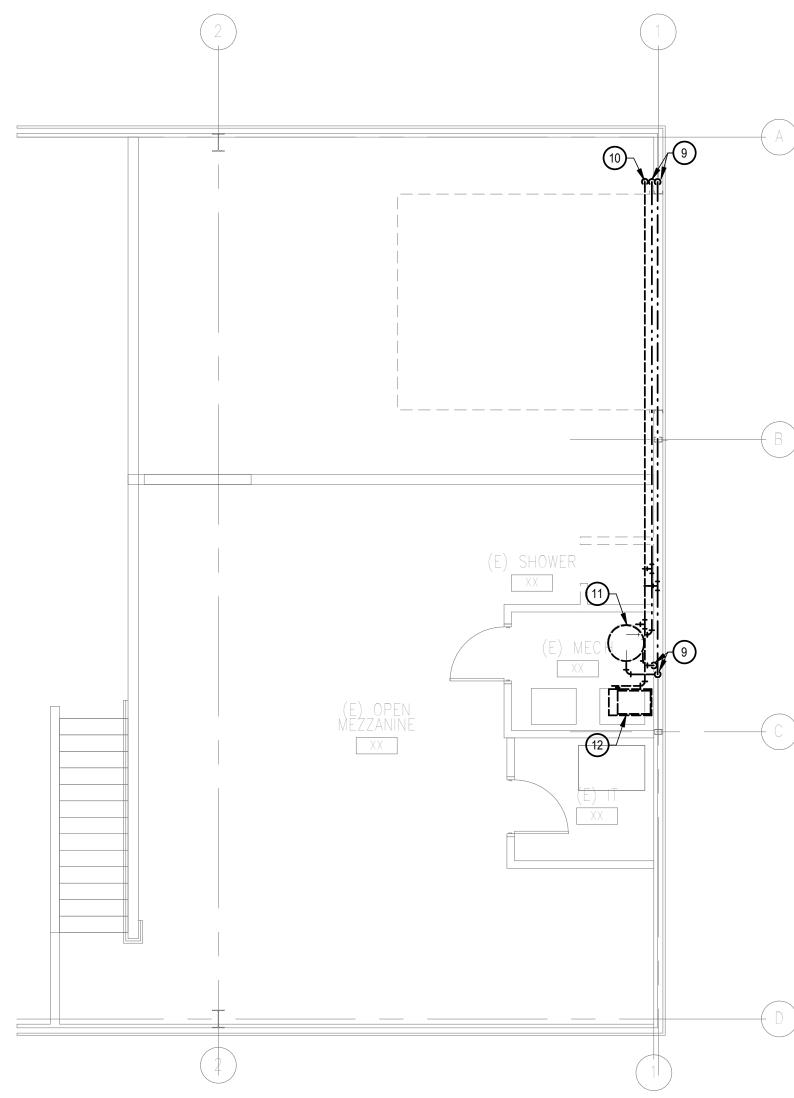
# **DRAWING NOTES:**

- 1. PLUMBING PLANS ARE BASED ON LIMITED FIELD SURVEY CONDUCTED ON 5/17/2023. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON WHICH NEW WORK IS DEPENDENT INCLUDING PIPE SIZE, MATERIAL, LOCATION & ELEVATION/INVERT PRIOR TO STARTING WORK.
- 2. ROOF DRAINAGE BY ARCHITECTURAL GUTTERS & DOWNSPOUTS. SEE
- 3. ALL SANITARY SEWER PIPING TO BE SLOPED TO COMPLY WITH IPC TABLE 704.1.
- NATURAL GAS PIPE SIZING IS BASED ON LONGEST LENGTH METHOD, 2018 IFGC EQUIVALENT LENGTH OF PIPING.
- (E)AIR COMPRESSOR & ASSOCIATED PIPES, BRANCHES & AIR CONNECTIONS SHALL REMAIN WITHIN GARAGE AREA. P.C. SHALL REMOVE (E)COMPRESSED AIR

# KEY NOTES:

- (E)NATURAL GAS SERVICE BY XCEL ENERGY SHALL REMAIN.
- (E)GAS METER BY XCEL ENERGY SHALL REMAIN. SEE NEW WORK PLAN FOR ADDITIONAL INFORMATION.
- REMOVE (E)NATURAL GAS PIPING ON WALL/GRADE TO (E)PRESSURE WASHER. SEE NEW WORK PLAN FOR PIPE REINSTALLATION.
- (4) REMOVE (E)NATURAL GAS PIPING ON WALL ABOVE CEILING LEVEL.
- REMOVE (E)DOMESTIC WATER PIPING ON WALL ABOVE CEILING LEVEL & ALL ASSOCIATED DROPS/BRANCHES TO POINTS SHOWN.
- 6 REMOVE (E)LAVATORY & ALL ASSOCIATED DOMESTIC WATER, WASTE & VENT PIPING IN WALL/ BELOW SLAB.
- REMOVE (E)SINK & ASSOCIATED DOMESTIC WATER BRANCH PIPING ABOVE CEILING/IN WALL. TEMPORARY CAP (E)WASTE & VENT ROUGH INS IN PREPARATION FOR NEW
- 8 REMOVE (E)WATER CLOSET & ALL ASSOCIATED DOMESTIC WATER, WASTE & VENT PIPING IN WALL/ BELOW SLAB.
- 9 REMOVE (E)DOMESTIC WATER PIPING UP/DN FROM MEZZANINE.
- 10 REMOVE (E)GAS PIPING UP/DN FROM MEZZAINE.
- REMOVE (E)DOMESTIC WATER HEATER & ALL ASSOCIATED DOMESTIC WATER, GAS & CONDENSATE PIPING.
- REMOVE (E)GAS & CONDENSATE PIPING SERVING REMOVED FURNACE.
- (E)EXTERNAL WALL HYDRANT & ASSOCIATED BRANCH PIPING SHALL REMAIN. REMOVE (E)DOMESTIC WATER SERVICE DN IN WALL THRU SLAB. REMOVE (E)DOMESTIC

WATER SERVICE INCLUDING (E)TAP & METER IN PREPARATION FOR NEW WORK.



MEZZANINE LEVEL PLAN - PLUMBING DEMO
3/16" = 1'-0"



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2023 06.19

- ARCHITECURAL PLANS FOR ADDITIONAL INFORMATION.
- TABLE 402.4(2), 6.0" WC OUTLET PRESSURE, 0.5" WC PRESSURE DROP, 250' TOTAL
- PIPING WITHIN NEW OFFICE AREA. CAP & SEAL PIPING AIRTIGHT AT DEMISING

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(E) OF BAY

 $_{1} = - = - = - = -$ 

(E) OPEN BAY

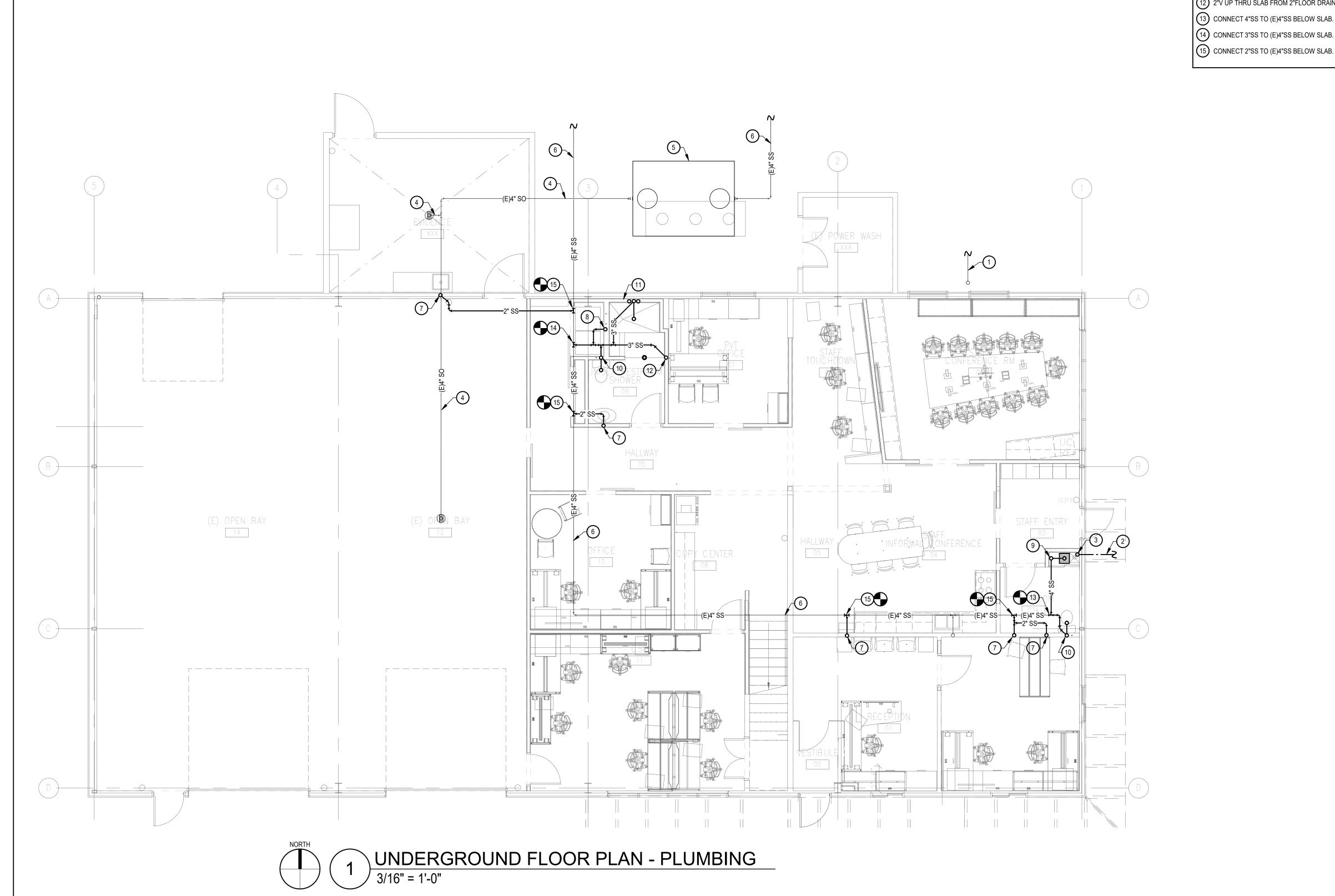
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(E) OPEN BAY

BENNETT

REVISION NAME

ISSUE DATE:



# **KEY NOTES:**

(E)NATURAL GAS SERVICE BELOW GRADE BY XCEL ENERGY SHALL REMAIN. 1. PLUMBING PLANS ARE BASED ON LIMITED FIELD SURVEY CONDUCTED ON 5/17/2023. PC SHALL FIELD VERIFY ALL EXISTING CONDITIONS ON WHICH NEW

**DRAWING NOTES:** 

WORK IS DEPENDENT INCLUDING PIPE SIZE, MATERIAL, LOCATION &

ROOF DRAINAGE BY ARCHITECTURAL GUTTERS & DOWNSPOUTS. SEE

3. ALL SANITARY SEWER PIPING TO BE SLOPED TO COMPLY WITH IPC TABLE 704.1.

(E)AIR COMPRESSOR & ASSOCIATED PIPES, BRANCHES & AIR CONNECTIONS SHALL REMAIN WITHIN GARAGE AREA. P.C. SHALL REMOVE (E)COMPRESSED AIR

PIPING WITHIN NEW OFFICE AREA. CAP & SEAL PIPING AIRTIGHT AT DEMISING

NATURAL GAS PIPE SIZING IS BASED ON LONGEST LENGTH METHOD, 2018 IFGC TABLE 402.4(2), 6.0" WC OUTLET PRESSURE, 0.5" WC PRESSURE DROP, 250' TOTAL EQUIVALENT LENGTH OF PIPING.

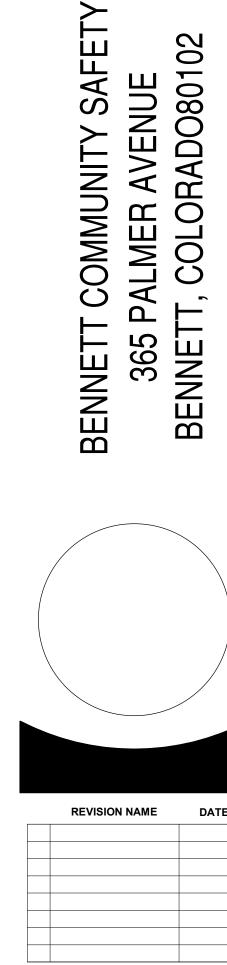
ELEVATION/INVERT PRIOR TO STARTING WORK.

ARCHITECURAL PLANS FOR ADDITIONAL INFORMATION.

- 2 1-1/4"DCW BELOW BRADE FROM 1" DOMESTIC WATER TAP & METER.
  - 3 1-1/4"DCW UP THRU SLAB ABOVE.
  - (E)4"SO BELOW SLAB/GRADE SHALL REMAIN.
  - (E)SAND-OIL INTERCEPTOR SHALL REMAIN.
  - 6 (E)4"SS BELOW SLAB/GRADE SHALL REMAIN. 7) 2"SS DN THRU SLAB FROM ABOVE.
  - 8 3"SS DN THRU SLAB FROM ABOVE.
  - 9 2"V UP THRU SLAB FROM 4"FLOOR SINK WASTE CONNECTION. (10) 2"V UP THRU SLAB FROM 3" WATER CLOSET WASTE CONNECTION.
  - (11) 2"V UP THRU SLAB FROM 2" SHOWER WASTE CONNECTION.
  - (12) 2"V UP THRU SLAB FROM 2"FLOOR DRAIN WASTE CONNECTION.
  - (13) CONNECT 4"SS TO (E)4"SS BELOW SLAB.
  - (14) CONNECT 3"SS TO (E)4"SS BELOW SLAB.

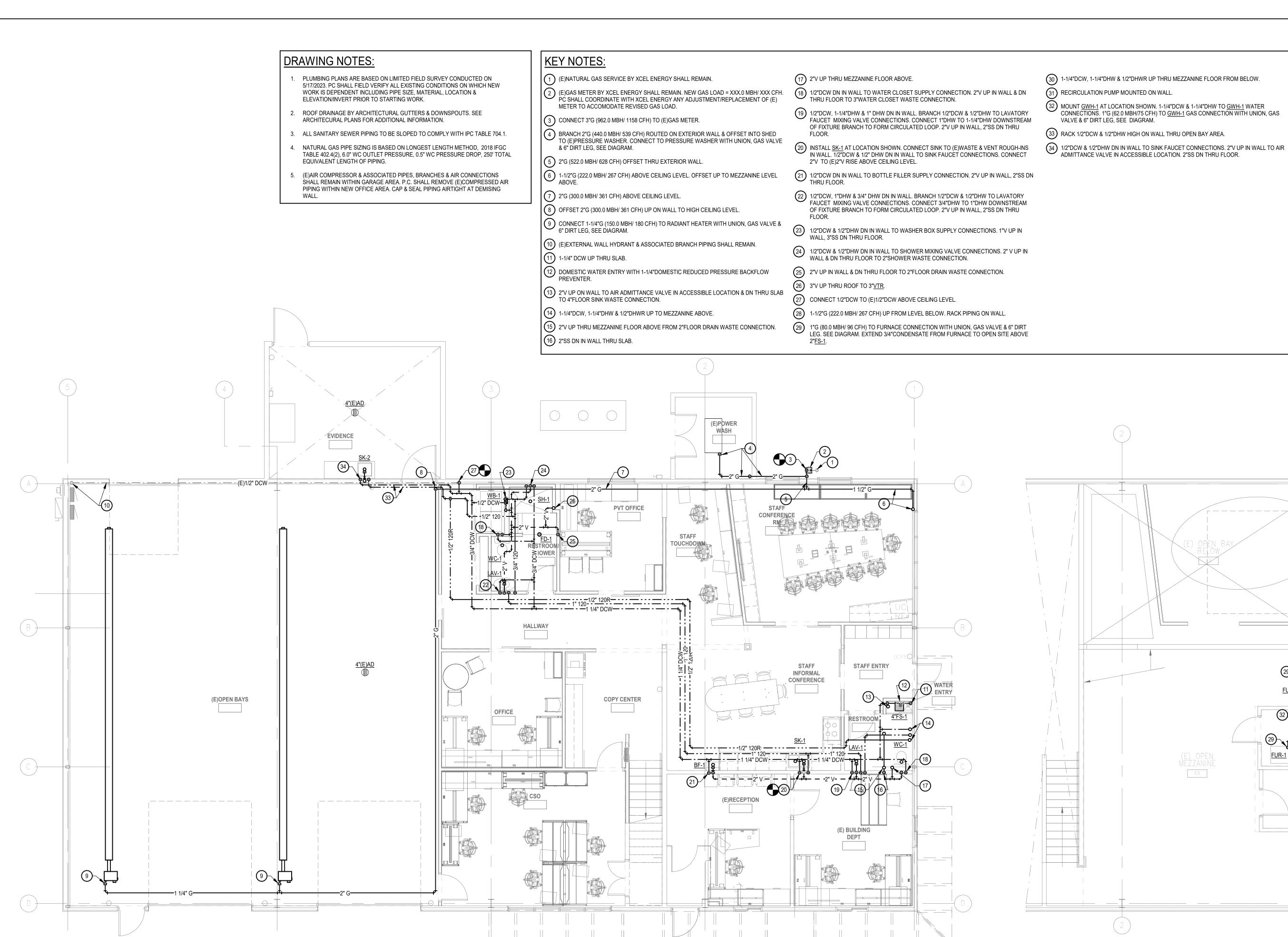
RECHANICAL & ELECTRICAL ENGINEERS

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Given Project # 23059



ISSUE DATE:

INTERIOR I



LEVEL 1 FLOOR PLAN - PLUMBING
3/16" = 1'-0"

365 PALMER, BENNETT, COLOF **BENNETT** REVISION NAME

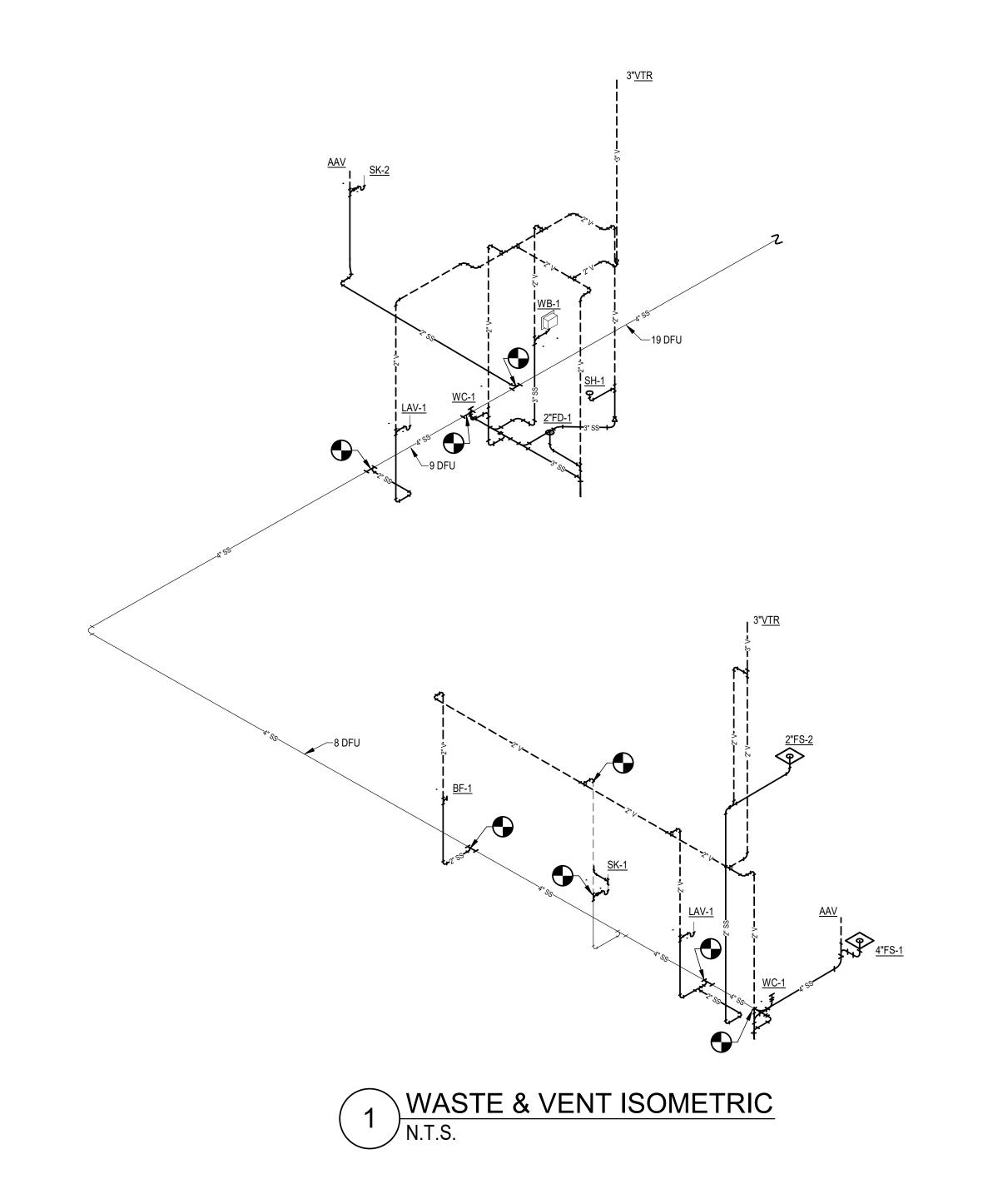
COMMC

MEZZANINE LEVEL PLAN - PLUMBING

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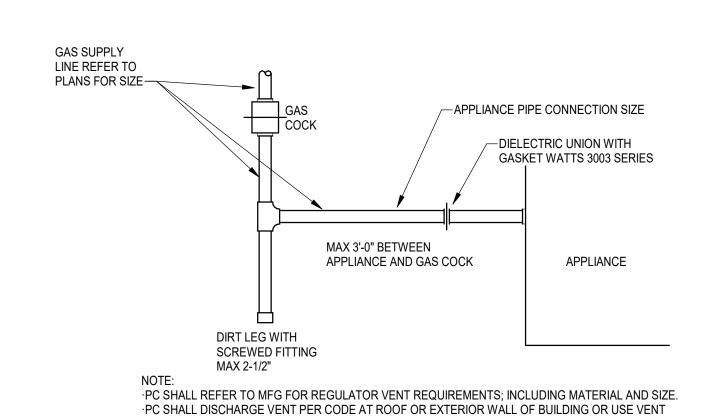


REVISION NAME

BENNETT COMMUNITY SAFETY 365 PALMER AVENUE BENNETT, COLORADO80102

INTERIOR DESIGN
ONE: 303.465.4306 www.allredarch.com ARCHITECTURE | 580 BURBANK STREET, SUITE 125, BR

HALF GRATE-FINISHED FLOOR FINISHED FLOOR FLOOR DRAIN, FLOOR SINK, OR HUB DRAIN GENERAL NOTES: FLOOR DRAIN, OR HUB DRAIN-PC SHALL BE RESPONSIBLE FOR AIR GAP DIMENSIONS IN ACCORDANCE WITH LOCAL CODE AMENDMENTS AND JURISDICTIONAL REQUIREMENTS. -DRAIN OUTLET RIM OF FLOOR SINK SHAL BE FLUSH OR DRAIN OUTLET-SLIGHTLY BELOW FINISED FLOOR COORDINATE WITH ARCHITECTURAL AND OTHER TRADES. PC IS RESPONSIBLE TO VERIFY FLUSH MOUNTING SINK WITH LOCAL CODES AND JURISDICTION. IF FLUSH MOUNTING FLOOR SINK IS NOT ALLOWED NOTIFY ENGINEER PRIOR TO ROUGH IN.

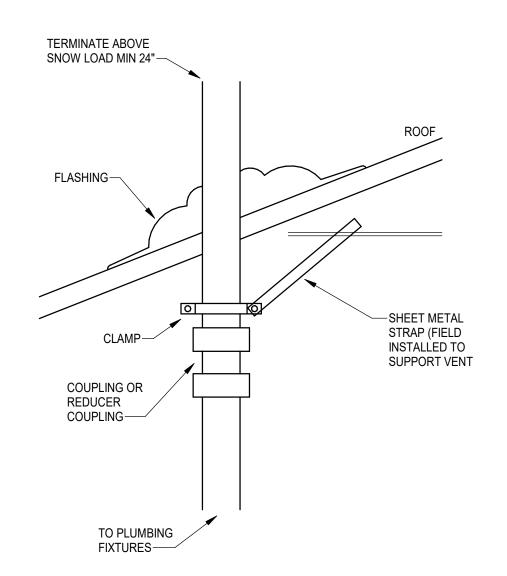


INDIRECT CONNECTION DIAGRAM

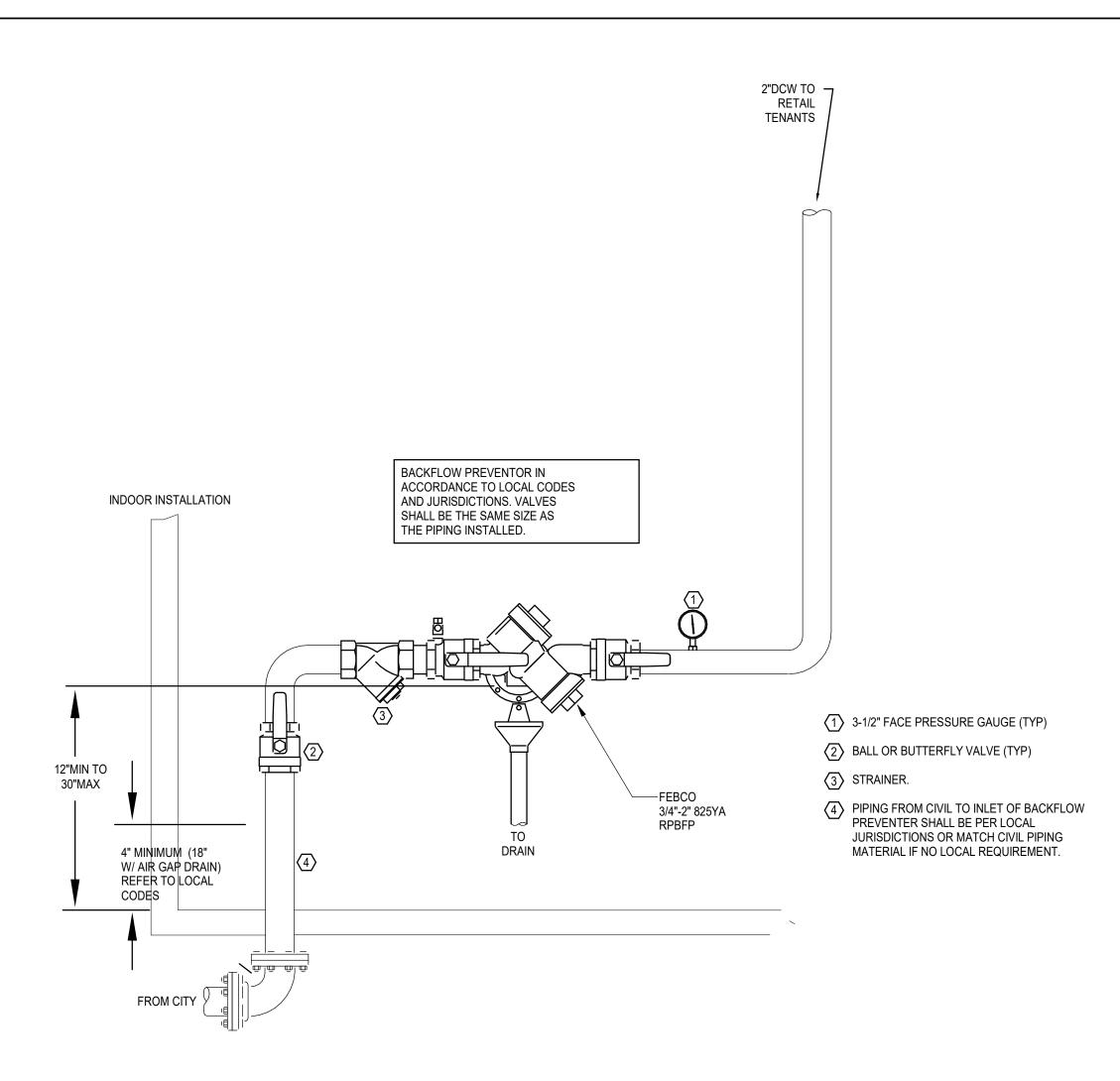
TYPICAL GAS PIPE CONNECTION DIAGRAM

·GAS COCK SHALL BE LOCATED WHERE ACCESSIBLE FROM STANDING ON THE FLOOR

LIMITERS IF ALLOWED PER JURISDICTION.

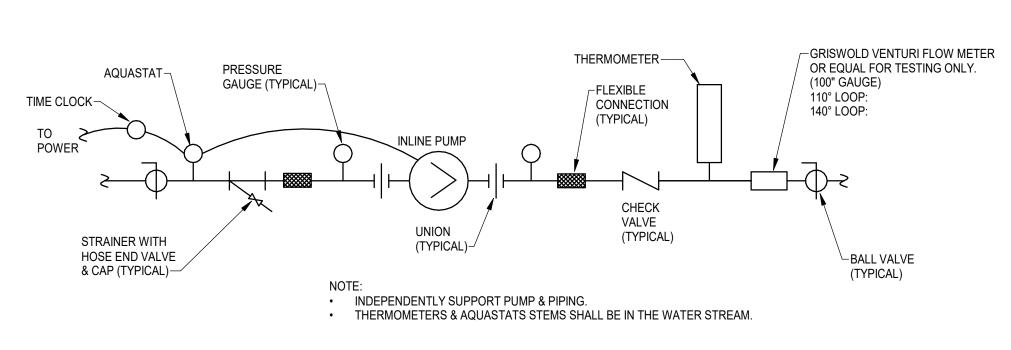


VENT PIPE DIAGRAM - SLOPED ROOF

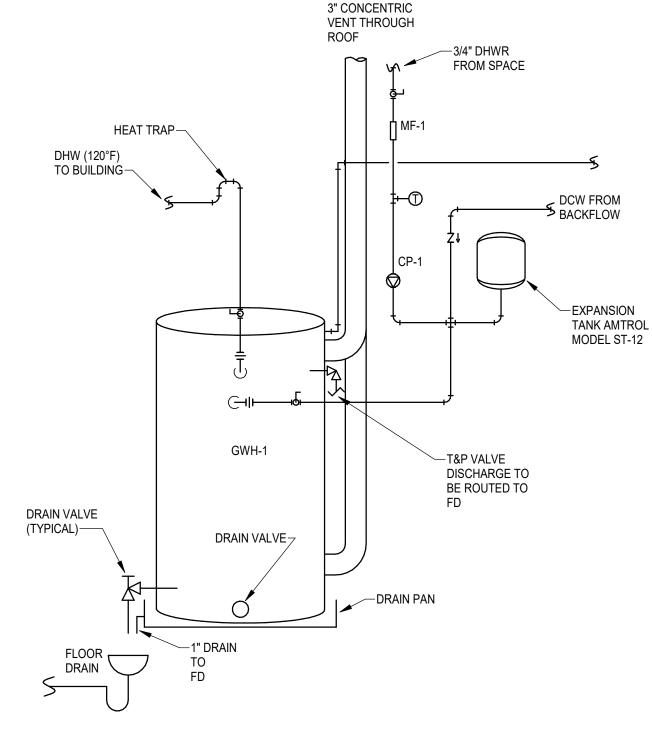


DOMESTIC WATER ENTRY -STRAINER FLUSH WITH FLOOR STRAP— DRAIN HEAD -DRAIN BODY —TRAP GUARD ASSE 1072 APPROVED.

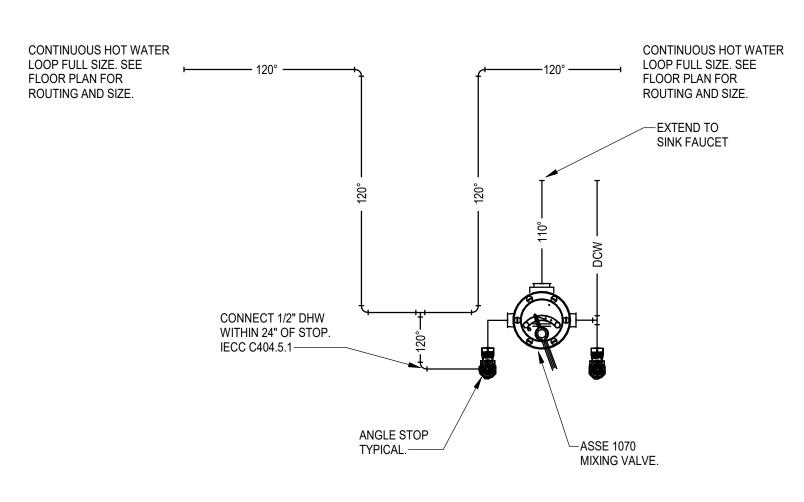
FLOOR DRAIN W/ TRAP GUARD DIAGRAM



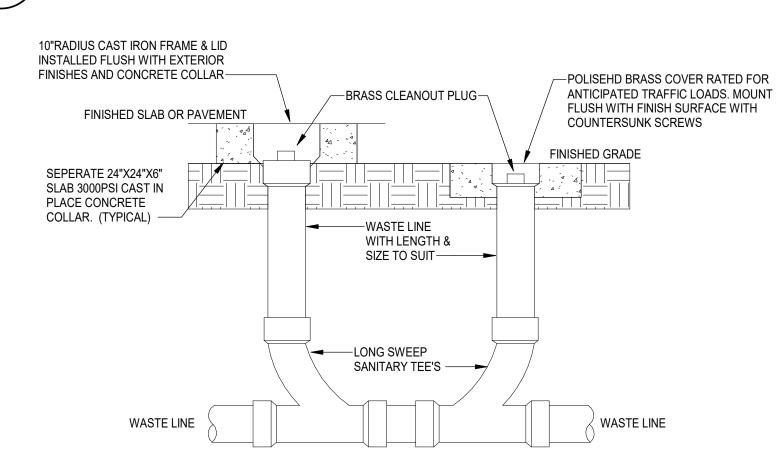
INLINE AQUASTAT PUMP DIAGRAM



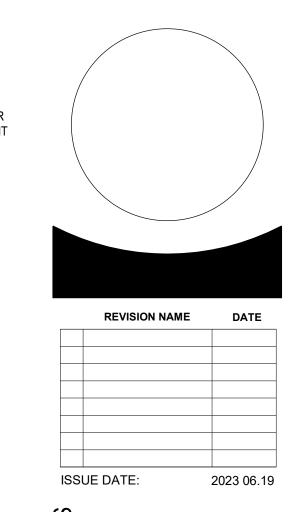
GAS WATER HEATER DIAGRAM



HOT WATER TO PUBLIC FIXTURE DIAGRAM



2-WAY CLEANOUT DIAGRAM



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## **ELECTRICAL SPECIFICATIONS**

THIS SHEET SPECIFICATION SHALL GOVERN IN LIEU OF SEPARATE BOUND SPECIFICATIONS. IF BOUND SPECIFICATIONS ARE ALSO ISSUED WITH THE JOB, THEN THE MORE STRINGENT REQUIREMENT BETWEEN THE TWO SHALL PREVAIL. CONTACT ARCHITECT/ENGINEER AT THE TIME OF BID IF CLARIFICATION IS REQUIRED.

#### 1. BASIC REQUIREMENTS

- A. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT LOCAL CODES, ORDINANCES, AND REGULATIONS, NATIONAL ELECTRIC CODE, LOCAL HEALTH DEPARTMENT REGULATIONS, AND APPLICABLE NFPA CODES. PAY FOR ALL FEES AND PERMITS AS ARE NECESSARY FOR THE COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEMS INCLUDING UTILITY CHARGES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL UTILITY REQUIREMENTS.
- B. PROJECT SHALL INCLUDE ALL ITEMS NECESSARY FOR COMPLETE AND FULLY OPERATIONAL TENANT AND BUILDING ELECTRICAL SYSTEMS. MAKE CONNECTIONS TO AND EXTEND SYSTEMS INSTALLED BY OTHERS AND/OR FURNISHED BY OTHERS. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR COMPLETE AND FULLY OPERATIONAL SYSTEMS WHETHER OR NOT SPECIFICALLY SPECIFIED AND/OR SHOWN ON THE PLANS.
- C. DO NOT SCALE FROM THESE DRAWINGS. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS BY OTHERS FOR DIMENSIONS AND FOR ESTIMATING DISTANCES. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS AND SPECIFICATIONS RELATING TO THE JOB WETHER OR NOT INDICATED ON THESE DRAWINGS.
- D. ANY SCALE, DIMENSION OR QUANTITIES SHOWN ON THE DRAWINGS ARE FOR ENGINEERING CALCULATION PURPOSES ONLY. THE ELECTRICAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ESTIMATING AND DETERMINING ALL DISTANCES AND QUANTITIES RELATED TO THE PROJECT. REFER TO ARCHITECTURAL OR CIVIL DRAWINGS BY OTHERS AND VERIFY EXISTING CONDITIONS ON SITE FOR ALL ESTIMATING PURPOSES.
- E. COORDINATE WITH OTHER TRADES FOR A COORDINATED INSTALLATION WITHIN THE AVAILABLE SPACE. WHERE CROWDED CONDITIONS EXIST, PREPARE COORDINATION DRAWINGS SHOWING ALL TRADE CONFLICTS AND SUBMIT TO ARCHITECT FOR APPROVAL AND DIRECTION PRIOR TO ROUGH-IN AND/OR INSTALLATION. RELOCATION OF OUTLETS AND/OR DEVICES MADE PRIOR TO ROUGH-IN SHALL BE DONE AT NO ADDITIONAL COST.
- F. ALL WORK SHALL BE PERFORMED BY PROPERLY LICENSED ELECTRICIANS OR UNDER THEIR DIRECT SUPERVISION. ALL MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE APPLICABLE STANDARDS OF UL AND SHALL BEAR THE UL LABEL AS EVIDENCE THAT THE MATERIAL AND/OR EQUIPMENT MEETS THIS REQUIREMENT.
- G. SUBMIT MANUFACTURERS LITERATURE (SHOP DRAWINGS) FOR RACEWAYS AND FITTINGS, BOXES, WIRE, CABLES, WIRING DEVICES, NAME PLATES, LEGEND PLATES, LABELS, PANELBOARDS, FUSES, CIRCUIT BREAKERS, SWITCH GEAR, AND SAFETY SWITCHES. SUBMITTAL SHALL BEAR THE APPROVAL OF THE GENERAL CONTRACTOR FOR COMPLIANCE WITH COORDINATION AND THESE SPECIFICATIONS PRIOR TO SUBMITTAL TO ARCHITECT AND/OR HIS AGENCIES.
- H. ALL SWITCH BOARDS, DISTRIBUTION BOARDS, PANELBOARDS, DISCONNECT SWITCHES, TRANSFORMERS AND SIMILAR ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH ENGRAVED PLASTIC-LAMINATE LABELS INDICATING THE EQUIPMENT NAME SPECIFIED ON THE PLANS OR THE LOAD SERVED BY THE EQUIPMENT. ALL PANELBOARDS SHALL BE PROVIDED WITH REMOVEABLE, TYPED PANEL SCHEUDLES WITH CLEAR PLASTIC COVERS AFFIXED TO THE FACE OR INSIDE OF THE PANEL DOOR. PANEL SCHEDULES SHALL CLEARLY INDICATE THE SPECIFIC LOAD SERVED BY EACH INDIVIDUAL CIRCUIT BREAKER OR DISCONNECT SWITCH AND SHALL REFLECT THE FINAL, AS-BUILT CONDITIONS AT COMPLETION OF WORK. THE IDENTIFICATION SHALL INCLUDE SUFFICIENT DETAIL TO ALLOW EACH CIRCUIT TO BE DISTINGUISHED FROM ALL OTHERS. SPARE POSITIONS SHALL BE LABELED ACCORDINGLY.
- I. CONTRACTOR SHALL THOROUGHLY REVIEW THE PLANS AND SPECIFICATIONS OF ALL DIVISIONS AND TRADES, ESPECIALLY THE ARCHITECTURAL DRAWINGS. ELECTRICAL REQUIREMENTS OF OTHER TRADES AND DIVISIONS INCLUDING PRODUCTS SPECIFIED, MOUNTING INSTRUCTIONS, AND MATERIAL SELECTIONS SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR. IF A CONFLICT EXISTS, CONTRACTOR SHALL OBTAIN A CLARIFICATION AND DIRECTIONS FROM THE ARCHITECT PRIOR TO ROUGH IN OR PROCEEDING WITH THE WORK.
- J. FURNISHED EQUIPMENT.
- a. MAKE FINAL CONNECTIONS TO FURNISHED EQUIPMENT AS REQUIRED.
- b. RECEIVE AND COMPLETELY INSTALL FURNISHED EQUIPMENT, MATERIALS, AND APPARATUS FURNISHED BY OTHERS FOR INSTALLATION OF A COMPLETE ELECTRICAL SYSTEM.
- c. REVIEW CONSTRUCTION DOCUMENTS AND INSTALLATION INSTRUCTIONS FOR MATERIALS AND EQUIPMENT FURNISHED FOR INSTALLATION BY THIS CONTRACTOR. INSTALL ALL EQUIPMENT AND APPARATUS IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND SUGGESTED PRACTICES, PROVIDE SUPPLEMENTAL AND INCIDENTAL MATERIALS INCLUDING CORDS, PLUGS, AND RECEPTACLES AS MAY BE REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM.
- d. CONFIRM ALL CONNECTION REQUIREMENTS AND ROUGH-IN CONDITIONS PRIOR TO INSTALLATION. CERTAIN DATA IS GIVEN BUT NOT GUARANTEED. PROVIDE ROUGH-IN AND FINAL TERMINATION INCLUDING APPROPRIATE PLUGS AND DISCONNECTS AS MAY BE REQUIRED. PREPARE A DETAILED ROUGH-IN DRAWING FOR APPROVAL PRIOR TO ROUGH-IN.
- K. CONFIRM ACTUAL VOLTAGES, PHASE AND CHARACTERISTICS OF EXISTING EQUIPMENT AND APPARATUS AND EQUIPMENT AND APPARATUS FURNISHED BY TENANT, OTHER TRADES, AND/OR DIVISIONS. CONFIRM PRIOR TO ROUGH-IN. IF DISCREPANCIES ARE NOTED TO THE INSTRUCTIONS OF THESE PLANS AND SPECIFICATIONS, SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT FOR DIRECTION PRIOR TO ROUGH-N OR PROCEEDING WITH THE WORK.
- L. ALL WORK IN FINISHED AREAS SHALL BE CONCEALED UNLESS SPECIFICALLY NOTED AS EXPOSED ON THE PLANS. PRIOR TO INSTALLATION OF ANY EXPOSED WORK THIS CONTRACTOR SHALL VERIFY AND OBTAIN ARCHITECTURAL APPROVAL OF LOCATION AND EXTENT.
- M. UNLESS OTHERWISE SPECIFIED ALL OUTLETS ARE 18" AFF. IF OUTLET IS SPECIFIED UNDER OR ABOVE COUNTER, CONFIRM HEIGHT WITH ARCHITECT.
- N. COORDINATE WITH MECHANICAL AND PLUMBING ENGINEERED DRAWINGS AND PROVIDE ELECTRICAL CONNECTIONS FOR ALL EQUIPMENT AS SCHEDULED, INCLUDING BUT NOT LIMITED TO ALL HVAC EQUIPMENT, PUMPS, WATER HEATERS, FIRE SMOKE DAMPERS, ETC.

#### 2. ELECTRICAL SERVICE

- A. NEW 208Y/120 VOLT, 3 PHASE, 4 WIRE ELECTRICAL SERVICE IS REQUIRED.
- B. E.C. TO CONTACT THE LOCAL UTILITY TO VERIFY TRANSFORMER SIZE, LOCATION, CONNECTION LOCATION AND TYPE, AND TO COORDINATE INSTALLATION OF ALL UTILITY METERING AND SERVICE ENTRANCE EQUIPMENT PRIOR TO INSTALLATION OF EQUIPMENT.
- C. E.C. TO VERIFY SCOPE OF WORK REQUIREMENTS, INCLUDING BUT NOT LIMITED TO: CONDUIT, WIRE, CONNECTION CABINETS, PULLING OF WIRE AND HOUSE KEEPING PADS. E.C. TO PROVIDE SERVICE CO-ORDINATION AND APPLICATION.

#### B. DEMOLITION AND CONTINUITY OF SERVICE

- A. ALL UNUSED ELECTRICAL RACEWAYS, DEVICES, DEVICE APPLICATIONS, WIRE AND CABLE LOCATED IN THE AREA TO BE RENOVATED SHALL BE REMOVED. INFORMATION ON EXISTING ELECTRICAL EQUIPMENT, PANELS WIRING, AND DEVICES INDICATED AS BEING REUSED IN THIS PROJECT IS AS ACCURATE AS COULD BE OBTAINED FROM A CURSORY SURVEY. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS FOR THE INFORMATIONAL GUIDANCE OF THE PREDICATIONS AND LOCAL CODES. THIS CONTRACTOR SHALL MAKE NECESSARY CORRECTIONS TO EXISTING SYSTEMS AS ARE REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM. SHOULD INSUFFICIENT CAPACITY, CAPABILITY, OR INCOMPATIBLE ELECTRICAL TERMINATIONS BE PRESENT THIS CONTRACTOR SHALL SUBMIT THE NOTED DISCREPANCIES TO THE ARCHITECT FOR DIRECTION PRIOR TO ROUGH-IN OR PROCEEDING WITH THE WORK.
- B. ELECTRICAL SERVICE TO THE BUILDING MAY BE INTERRUPTED ONLY AT A TIME COORDINATED WITH AND APPROVED BY THE BUILDING MANAGER. IN GENERAL THIS WILL BE ALLOWED DURING OFF HOURS AND ON WEEKENDS FOR LIMITED PERIODS OF TIME.

#### 4. BASIC MATERIALS

- A. RACEWAYS AND FITTINGS: RACEWAYS EMBEDDED IN CONCRETE OR MASONRY WALLS SHALL BE IN EMT OR PVC; IN HOLLOW NON MASONRY WALLS AND ABOVE CEILINGS SHALL BE EMT OR MC CABLE; RACEWAY EXPOSED TO SEVERE PHYSICAL DAMAGE SHALL BE RGS; AND RACEWAYS BETWEEN VIBRATING EQUIPMENT SHALL BE FMT. MC CABLE IS NOT ALLOWED FOR BRANCH CIRCUIT HOMERUN CONDUITS FROM LAST DEVICE OR JUNCTION BOX TO PANELBOARD. CONDUITS IN OR BELOW SLAB ON GRADE OR IN CONTACT WITH BARE EARTH SHALL BE PVC OR RGS.
- B. CONDUCTORS: ALL CONDUCTORS SHALL BE COPPER RATED FOR 600 VOLTS AND HAVE MINIMUM 75 DEGREES C INSULATION. MINIMUM SIZE SHALL BE #12 AWG. ALL BUILDING WIRING SHALL BE THHN/THWN. EXTERIOR WIRING SHALL BE XHHW. ALUMINUM CONDUCTORS ARE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS RATED 100 AMPERES AND GREATER. INCREASE CONDUCTOR SIZE TO MAINTAIN A MAXIMUM 3% VOLTAGE DROP ON ANY FEEDER OR BRANCH CIRCUIT, OR A MAXIMUM OF 5% TOTAL VOLTAGE DROP. ALL WIRES ON THE SAME LEG OR PHASE SHALL HAVE THE SAME COLOR CODE.
- C. EXISTING ALUMINUM CONDUCTORS: WHERE CONNECTIONS ARE MADE TO EXISTING ALUMINUM CONDUCTORS BEING REUSED IN THIS PROJECT, CONNECTIONS SHALL BE MADE WITH LOCALLY APPROVED UL LISTED COPPER TO ALUMINUM CONNECTIONS.
- D. TYPE NM OR NMC CABLES ARE PERMITTED IN CONSTRUCTION TYPES III, IV, & V AS ALLOWED BY NEC 334 AND APPROVED BY OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION CHANGES DUE TO THESE CABLES USE IN LIEU OF CONDUIT.

E. PROVIDE SEPARATE (DEDICATED) NEUTRAL CONDUCTOR FOR EACH DEDICATED EQUIPMENT

CIRCUIT; SHARED NEUTRAL CONDUCTORS ARE NOT PERMITTED FOR DEDICATED CIRCUITS.
WHERE PERMITTED, SHARED NEUTRAL CONDUCTORS SHALL BE COPPER NO. 10 AWG MINIMUM.

F. PROVIDE METALLIC OUTLET, PULL AND JUNCTION BOXES AS REQUIRED. ALL POWER, CONTROL, OR INSTRUMENTATION, WIRING GREATER THAN 24 VOLTS SHALL BE IN CONDUIT. CLASS 2 LOW

VOLTAGE WIRING SHALL BE PLENUM RATED WHERE INSTALLED WITHIN ENVIRONMENTAL AIR

- G. PROVIDE RECEPTACLES, GFI RECEPTACLES, SPECIAL PURPOSE RECEPTACLES AND SWITCHES OF ONE MANUFACTURER. PROVIDE COMMERCIAL GRADE DIMMERS FOR CIRCUITS INDICATED. STAB-IN CONNECTION WILL NOT BE APPROVED. SEE ARCHITECTURAL DRAWINGS FOR SPECIAL MOUNTING LOCATIONS, ORIENTATION, AND COLORS. CONFIRM RECEPTACLE, SPECIAL RECEPTACLE AND SWITCH MOUNTING HEIGHT AND ORIENTATION WITH ARCHITECT PRIOR TO ROUGH-IN. WHERE NEW OUTLETS AND DEVICES ARE INSTALLED, MAINTAIN ADA MOUNTING HEIGHTS AND REQUIREMENTS UNLESS SPECIFICALLY DIRECTED OTHERWISE.
- H. PANELBOARDS AND SAFETY SWITCHES SHALL BE OF ONE MANUFACTURER AND SHALL BE COMPLETE WITH PROTECTIVE DEVICES, ENCLOSURES, BUSSES, GROUNDS, ISOLATED GROUND BUS, AND NEUTRAL BARS AS REQUIRED.
- I. SWITCHBOARDS ARE TO BE PROVIDED WITH FULLY RATED HORIZONTAL BUS THROUGHOUT ENTIRE LENGTH OF GEAR. PROVIDE MEANS FOR INSTALLATION OF FUTURE SECTIONS (FUTURE BUS EXTENSIONS). PROVIDE SPACE FOR INSTALLATION OF FUTURE OVERCURRENT DEVICES, EQUAL TO 20% OF AMPERE RATING OF GEAR.
- J. PROVIDE ARC FLASH HAZARD WARNING LABELS ON ALL ELECTRICAL EQUIPMENT PER NEC 110.16.

#### GROUNDING

PLENUMS.

- A. PROVIDE COPPER GROUNDING CONDUCTORS AND COPPER CLAD STEEL MADE ELECTRODES IN ACCORDANCE WITH THE NEC. BARE COPPER OR GREEN INSULATED WIRE IS ACCEPTABLE.
- B. ALL EQUIPMENT SHALL BE CONTINUOUSLY GROUNDED. AN EQUIPMENT GROUNDING CONDUCTOR IS TO BE INSTALLED IN ALL FEEDER AND BRANCH CIRCUITS.

#### 6. LIGHTING

- A. PROVIDE ALL ACCESSORIES REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. FOR RECESSED FIXTURES, PROVIDE PLASTER FRAMES AND FLANGES SUITABLE FOR CEILING. CLEAN AND SERVICE FIXTURES. PROVIDE ACCESSORIES AND INCIDENTAL ITEMS AS REQUIRED FOR FIXTURES FURNISHED BY OTHERS FOR INSTALLATION.
- B. FINAL LOCATION OF ALL FIXTURES SHALL BE AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS AND/OR ELEVATIONS AND DETAILS.
- C. INSTALL ACCESSORIES AND MODIFY FIXTURES AS REQUIRED FOR COMPLIANCE WITH REQUIREMENTS OF LOCAL DEPARTMENT OF HEALTH. OBTAIN ARCHITECTURAL APPROVAL FOR ANY SUBSTITUTION OR MODIFICATION TO FIXTURES GIVEN.
- D. PROVIDE TENTING OR OTHER SUITABLE MEANS TO KEEP NON-IC RATED FIXTURES A MINIMUM OF 3"
  (OR MANUFACTURER REQUIRED DISTANCE) FROM INSULATION.
- E. ALL EXIT SIGNS AND EMERGENCY LIGHTING BATTERY UNITS SHALL BE WIRED AHEAD OF ANY CONTROL DEVICES; FED FROM AN UNSWITCHED CIRCUIT.

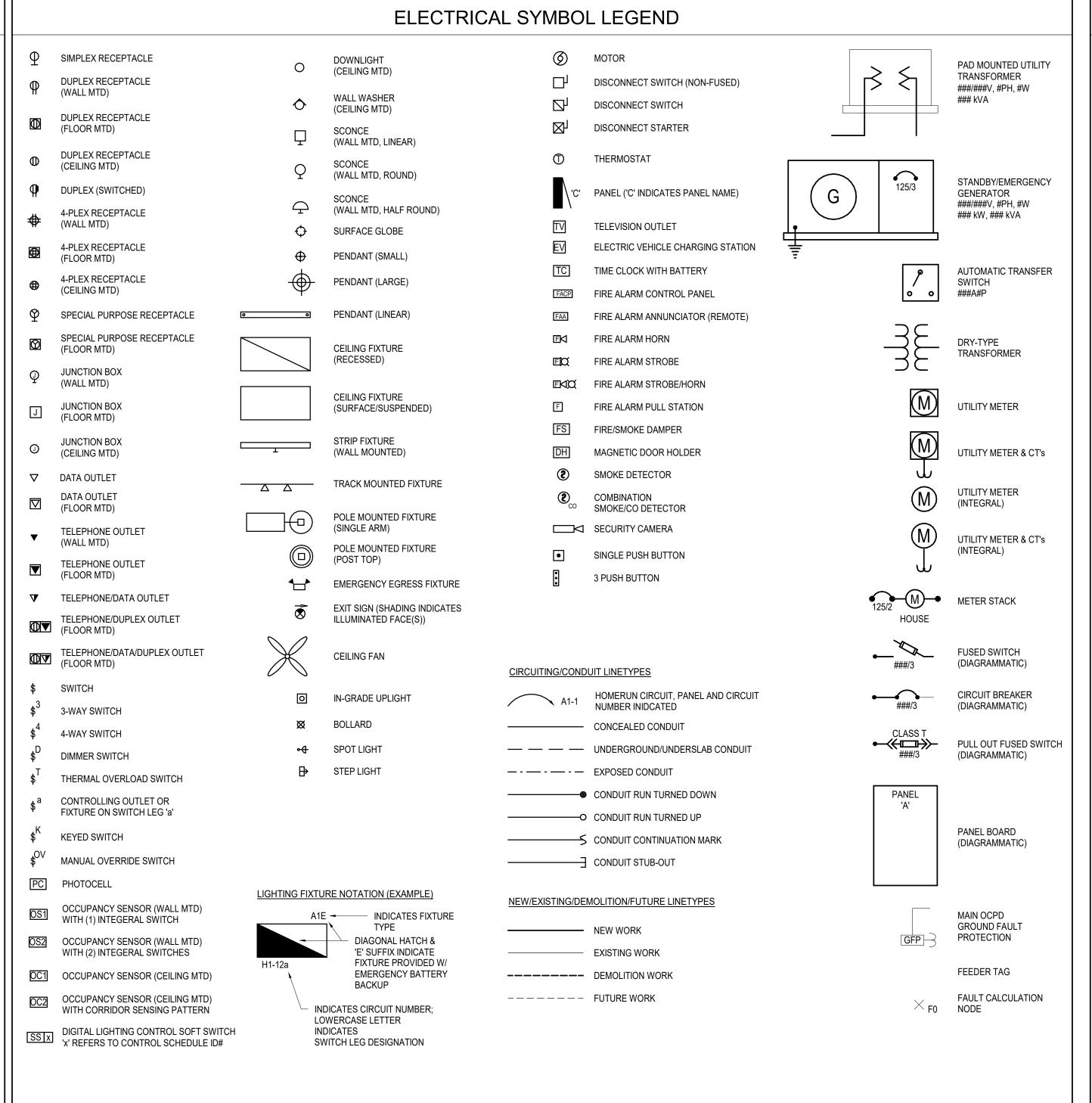
#### 7. TELEPHONE/DATA PROVISIONS

- A. INSTALL OUTLET BOX WITH CONDUIT TO ABOVE THE CEILING. INSTALL CABINET AND/OR FIXTURE OUTLETS IN COORDINATION WITH ARCHITECTURAL AND MILLWORK DETAILS WITH CONDUITS OR RACEWAYS TO ABOVE NEW FINISHED CEILING.
- B. PROVIDE PULL BOXES WITH PULL WIRE (ROPE) IN ALL OUTLETS.
- C. PROVIDE COVER PLATES FOR ALL OUTLETS. COLOR SELECTED BY ARCHITECT. CONFIRM ALL MOUNTING HEIGHTS AND ORIENTATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.

# 8. FIRE ALARM SYSTEM

- A. THESE DRAWINGS ARE NOT INTENDED TO SPECIFY FIRE ALARM SYSTEM REQUIREMENTS. FIRE ALARM SYSTEM REQUIREMENTS SHALL BE DETERMINED BY OTHERS.
- B. FIRE ALARM SYSTEM SHALL BE DESIGNED, SIGNED AND SEALED BY A FIRE ALARM PROFESSIONAL AND BE APPROVED BY THE LOCAL FIRE DISTRICT.
- C. FURNISH AND INSTALL ALL DUCT SMOKE DETECTORS AS MAY BE REQUIRED.
- D. FURNISH AND INSTALL ALL FIRE ALARM HORNS AND LIGHTS AND STROBES AS MAY BE REQUIRED.

#### ND



CODES AND	DESIGN CRITERIA
JURISDICTION	BENNETT, CO
ELECTRICAL CODE	2020 NEC
ENERGY CODE	2018 IECC
ELECTRIC UTILITY	CORE Electric

ELECTRICAL SHEET LIST								
NUMBER	TITLE							
E0.1	ELECTRICAL SPECS & LEGENDS							
E0.2	ELECTRICAL ONE-LINE DIAGRAM							
E0.3	ELECTRICAL PANEL SCHEDULES							
E1.1	FLOOR PLANS - POWER DEMO							
E2.1	FLOOR PLANS - POWER							
E2.2	FLOOR PLANS - LIGHTING							
E6.1	ELECTRICAL ENERGY CALCULATIONS							

#### A / AMP AMPERE ABOVE COUNTER ABOVE FINISHED FLOOR ABOVE COUNTER GFI DEVICE AIR HANDLING UNIT FAULT CURRENT CAPACITY ALUMINUM CONDUIT CLG CEILING COPPER CIRCUIT **CURRENT TRANSFORMER** DYR DRYER DISHWASHER DW **EXISTING** ELECTRICAL CONTRACTOR EXHAUST FAN **EMERGENGY** WATER COOLER EWC EXP EXPLOSION PROOF GROUND GD GARBAGE DISPOSER GFI **GROUND FAULT INTERRUPTER** EXHAUST HOOD HORSEPOWER MICROWAVE MDP MAIN DISTRIBUTION PANELBOARD MANHOLE MOUNTED MULTI-VOLTAGE MVOLT NEUTRAL NITE LIGHTING PHASE REF REFRIGERATOR **RANGE** (RL) RELOCATE(D) ROOF TOP UNIT THERMAL SWITCH TELEPHONE TERMINAL BOARD UNDERGROUND UG VOLT VOLT-AMPERE VFD VARIABLE FREQUENCY DRIVE WALL WG WEATHERPROOF GFI WP WEATHERPROOF WARMING DRAWER WRM WSH WASHER

**ABBREVIATIONS** 

MOUNTING HEIGHT

REVISION NAME DATE

RAD0801

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**S** O

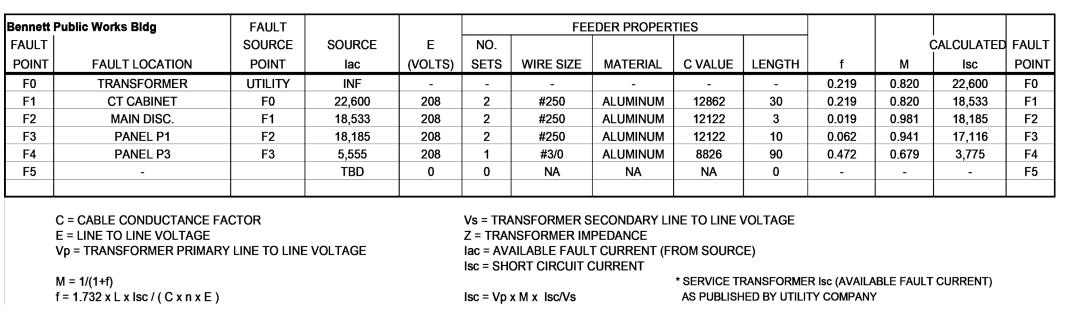
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REVISION NAME DATE

SSUE DATE: 2023 06.19

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Given Project # 23059

<u>=</u>0.1



OFFICE

PANEL 'P3'

(E) PANEL 'P3'

1

# IMMEDIATELY.

**DRAWING NOTES:** 1. EXISTING CONDITIONS ARE BASED ON A CURSORY SURVEY. CONTRACTOR TO VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES

# **KEY NOTES:**

- EXISTING OFFICE PANEL SHALL BE REMOVED, DEMOLISHED, AND REPLACED WITH NEW PANEL IN A NEW LOCATION. PROVIDE NEW FEEDER TO NEW LOCATION AS INDICATED.
- 2 EXISTING MAIN ELECTRICAL PANEL SHALL BE REMOVED, DEMOLISED, AND REPLACED WITH NEW PANEL AT THE SAME LOCATION. PROVIDE NEW FEEDER AS INDICATED AND REVCONNECT ALL EXISTING LOADS TO REMAIN AS INDICATED ON THE PANEL
- 3 EXISTING MAIN DISCONNECT TO REMAIN. REPLACE EXISTING FUSES WITH NEW 400 AMP FUSES AND CONNECT TO NEW FEEDERS AS SHOWN.
- (4) MAINTAIN EXISTING GROUNDING ELECTRODE SYSTEM CONNECTIONS. E.C. TO VERIFY EXISTING GROUNDING ELECTRODES MEET OR EXCEED THE FOLLOWING SIZES: #2 CU TO COLD WATER PIPE AND BUILDING STEEL, #4 TO UFER GROUND (IF AVAILABLE), #6 CU TO GROUND ROD (IF AVAILABLE). REPLACE EXISTING GROUNDING ELECTRODE CONDUCTORS IF SMALLER THAN THESE SIZES NOTED.

EEDER SC	CHEDULE
)U	2 [(4 250 KCMIL AL) 2-1/2"PVC.]
)	2 [(4 250 KCMIL AL + 1 #1 AWG AL G.) 2-1/2"C.]
5U	(4 300 KCMIL AL) 2-1/2"PVC.
5	(4 300 KCMIL AL + 1 #2 AWG AL G.) 2-1/2"C.
)	(4 #3/0 AWG AL + 1 #4 AWG AL G.) 2"C.
)-1	(3 #1/0 AWG AL + 1 #6 AWG AL G.) 2"C.
	44 110 4 140 0 14 4 110 4 140 0 14 0 14

\ELECTRICAL ONE-LINE DIAGRAM

OUTDOOR GARAGE

(E) POLE MOUNTED UTILITY TRANSFORMER

UTILITY METER

NEW WEATHERHEAD-

∕−(E) WEATHERHEAD

(E) 400/3P MAIN DISC. 400A FUSES CT CAB 208/120V 3 PH

(E) GROUNDING ELECTRODE SYSTEM 4

M

(E) PANEL 'P1'

PANEL 'P1'

(E)PANEL 'P2'

90

-NEW OVERHEAD

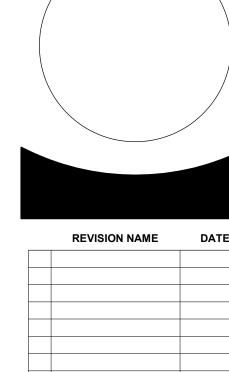
←(E) OVERHEAD SERVICE DROP

SERVICE DROP

120/208 VOLTAGE, 3 PHASE, 4 WIRES

3 x 15kVA

GRADE



ISSUE DATE:

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SAFET

BENNETT

AVENUE RADO80102

BENNETT COMMUNITY S 365 PALMER AVENI BENNETT, COLORADO8

VOLTAGE: 120/208 WYE PHASE: 3 WIRES: 4						SUPPL	LOSURE LY FROM DUNTING	l: P1			MAINS TYPE: MLO MAINS RATING: 150 MCB RATING: -						
CIRCUIT DESCRIPTION		KR TING	BKR TYPE	СКТ		А		3		;	СКТ	BKR TYPE		KR TING	CIRCUIT DESCRIPTION	CUIT DESCRIPTION	
RECEPTACLES ROOM	20	1		1	1260	720					2		1	20		RECEPTACLES	
RECEPTACLES	20	1		3			900	180			4	G	1	20	UND	ER COUNTER REF.	
RECEPTACLES	20	1		5					1080	130	6		1	20	LIGHTING -	CONFERENCE / OFFICES	
HAND DRYER	20	1	G	7	1000	19					8		1	20	LIGHTING	G - RESTROOM SHOWER	
COPIER	20	1		9			180	190			10		1	20	LIGH	ITING - RESTROOM	
RECEPTACLES	20	1		11					1080	13	12		1	20	LIGH	ITING - MEZZANINE	
RECEPTACLES ROOM	20	1		13	1620	1500					14		1	20		UH-1-1	
RECEPTACLES	20	1		15			1440	750			16		1	15		UH-2-2	
DISHWASHER	40	1	G	17					1980	750	18		1	15		UH-2-1	
RECEPTACLES	20	1		19	1440	1500					20		1	20		UH-1-2	
RANGE	50	2	G	21			4000				22						
RANGE	30	2	"	23					4000	78	24		1	20		EF-3	
MICROWAVE	20	1	G	25	1500	1411					26		1	20		FUR-1	
UNDER COUNTER FREEZER	20	1	G	27			180	1411			28		1	20		FUR-2	
UNDERCOUNTER REF.	20	1	G	29					180	1500	30		1	20		CUH-1	
DRYER	20	2		31	1250	3411					32		2	50		HP-1	
DRIER	20			33			1250	3411			34		2	30		ПГ-1	
RECEPTACLES	20	1		35					900	3411	36		2	50		HP-2	
RECEPTACLES STAFF CONFERENCE RM	20	1		37	900	3411					38		2	30		пг-2	
RECEPTACLES	20	1		39			1080	1200			40	G	1	20		WASHER	
HAND DRYER	20	1		41					1000	600	42		1	20		GWH-1 / CP-1	
TOTAL CONNECTI	D VOLT	-AMPS	S PER F	PHASE	209	942	161	172	167	702							
PHASE IMBALANCE	LOA	D CLA	SSIFICA	ATION	LO	AD		)F	DEM	IAND					PANEL TOTA	LS	
				HTING		23		00%		04							
PHASE A 17 %		RE	CEPTA			320	75.2			910	1	TOT	AL CO	ONN. LO	AD (VA):	53816 VA	
PHASE B 10 %				TORS		29	112.			82	1				ND (VA):	49340 VA	
PHASE C 7 %				CHEN		0	<b>.</b>	0%	<del>                                     </del>	0	1				(AMPS):	149 A	
		MISC	CELLAN			00		00%		00	1				(AMPS):	137 A	
			CTRIC			000		00%		000	1						
				HVAC		644		00%		644	1						

VOLTA PHA	L: (E) P2 GE: 120/208 WYE SE: 3 ES: 4		SUPPLY FROM: MAINS F													RATING: NS TYPE: MLO RATING: 100 RATING: -			
CIRCUIT DESCRIPTION			BKR RATING		СКТ		A		В		С		BKR TYPE	BKR RATING		CIRC	UIT DESCRIPTION		
BAY	2 LIFT (E)	20	1		1	0	0					2		1	20	WEST V	VALL RECEPTACLE (E)		
BAY	2 LIFT (E)	20	1		3			0	0			4		1	20		WEST WALL (E)		
Ç	SPARE	20	1		5					0	0	6		1	20	S. '	WALL RECEPT (E)		
WEST GA	TE OPENER (E)	20	1		7	0						8		1			SPACE		
(	SPACE SPACE		1 9									10		1			SPACE		
9			- 1 - 11									12		1			SPACE		
	TOTAL CONNE	ECTED VOLT	-AMPS	S PER P	HASE		0		0	0		<u> </u>							
PHASE IMB/	ALANCE	LOAI	D CLA	SSIFICA	ATION	LC	LOAD		DF D							PANEL TOTALS			
				LIG	HTING		0	0.0	00%	(	)					•			
PHASE A	%		RE	CEPTA	CLES		0	0.0	00%	(	)		TOT	AL CO	NN. LO	AD (VA):	0 VA		
PHASE B	%			МО	TORS		0	0.0	00%	(	)			TOTA	L DEMA	ND (VA):	0 VA		
PHASE C	%			KIT	CHEN		0	0.0	00%	(	)		TOTAL	CONN	I. LOAD	(AMPS):	0 A		
			MISC	ELLAN	EOUS		0	0.0	00%	(	)		TO	TAL D	EMAND	(AMPS):	0 A		
			ELE	CTRIC	HEAT		0	0.0	00%	(	)								
					HVAC		0	0.0	00%		)								

REMARKS												
								LA	MP			
TAG	MOUNTING	DESCRIPTION	MANUFACTURER	MODEL	VOLT	QTY	WATTS	SOURCE	TEMP	LUMENS	DIMMING	REMARKS
A8	PENDANT MOUNT	8' LINEAR	STARTREK	BEAMD-08-500-WD-3500K-U	120 V	1	40W	LED	3500K	4000		
A10	PENDANT MOUNT	10' LINEAR	STARTREK	BEAMD-10-500-WD-3500K-U	120 V	1	50W	LED	3500K	5000		
A12	PENDANT MOUNT	12' LINEAR	STARTREK	BEAMD-12-500-WD-3500K-U	120 V	1	60W	LED	3500K	6000		
B1	WALL MOUNTED	WALL SCONCE	WAC LIGHTING	WS-W43011-BK/AB	120 V	1	15W	LED	3000K	417		
B2	WALL MOUNTED	EXTERIOR WALL SCONCE	WAC LIGHTING	WS-W43011-BK/AB	120 V	1	15W	LED	3000K	417		
ВЗ	CEILING (RECESSED)	6" RECESSED DOWNLIGHT	EVO GOTHAM	EVO6DLR	120 V	1	19.7W	LED	3500K	2000		
B4	WALL MOUNTED	EXTERIOR WALL PACK	LITHONIA LIGHTING	DSXW2 LED 20C 700 40K T4M MVOLT	120 V	1	71W	LED	4000K	7534		
B8	CEILING (SURFACE)	8' LINEAR	STARTREK	BEAMD-08-500-WD-3500K-U	120 V	1	40W	LED	3500K	4000		
С	WALL MOUNTED	VANITY	LITHONIA LIGHTING	FMVCSLS 24IN MVOLT	120 V	1	27W	LED	3000K	1550		
D1	CEILING (SURFACE)	48" LINEAR	LITHONIA LIGHTING	CLX-L48-SEF-FDL-MVOLT	120 V	1	31.8W	LED	4000K	5000		
D2	PENDANT MOUNT	48" LINEAR	LITHONIA LIGHTING	CLX-L48-SEF-FDL-MVOLT	120 V	1	31.8W	LED	4000K	5000		
D3	PENDANT MOUNT	96" LINEAR	LITHONIA LIGHTING	CLX-L96-SEF-FDL-MVOLT	120 V	1	63.7W	LED	4000K	1000		
D4	WALL MOUNTED	48" LINEAR	LITHONIA LIGHTING	CLX-L48-SEF-FDL-MVOLT	120 V	1	31.8W	LED	4000K	3000		
E1	CEILING (SUSPENDED)	HIGH BAY	LITHONIA LIGHTING	CPHB 18000LM SEF GCL WD MVOLT GZ10 50K	120 V	1	133W	LED	5000K	18000		
EM	WALL MOUNT 7'-6" AFF	DUAL HEAD EM EGRESS (INTERIOR)	LITHONIA LIGHTING	ELM2L	120 V	2	2.4W	LED	4000K	635		
EM2	WALL ABOVE DOOR, 8'-0" AFF	EXTERIOR EMERGENCY LIGHT	LITHONIA LIGHTING	AFF-PEL-DBLBXD-UVOLT-LTP-SDRT-WT-CW	120 V	1	20.39W	LED	4000K	635		
H1	CEILING (RECESSED)	4" RECESSED DOWNLIGHT	LITHONIA LIGHTING	LDN4 35/ 20 MVOLT	120 V	1	22.12W	LED	3500K	2000		
X1	WALL ABOVE DOOR 8'-0" AFF	SINGLE FACED EXIT SIGN	LITHONIA LIGHTING	LQM-S-W-3-G-120/277-EL N	120 V	1	0.66W	LED				

MECHANICAL EQUIPMENT CONNECTIONS
GENERAL NOTES:

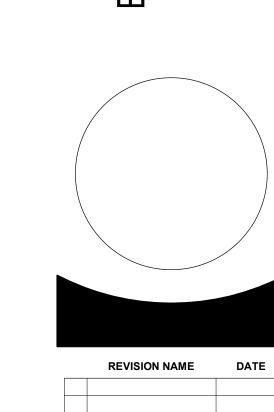
A. PROVIDE DISCONNECTING MEANS FOR EACH PIECE OF EQUIPMENT AS INDICATED IN THE 'DISC' COLUMN.

INTERLOCK FAN WITH GARAGE EXHAUST CONTROL PANEL.
 INTERLOCK FAN WITH LIGHTS IN ROOM.
 FAN TO BE CONTROLLED BY A TIMECLOCK NEXT TO THE ELECTRICAL PANEL.

				ELECTRIC HEAT	SINGLE	MOTOR	ι	JNIT EQUIPMEI	NT		OVERCURREN	IT PROTECTI	ON		
PLAN MARK	DESCRIPTION	VOLT	PHASE	WATTS	WATTS	HP	WATTS	FLA	MCA	MOCP	СВ	DISC	FUSE	FEEDER	REMARKS
RH-2	GAS-FIRED TUBE HEATER	120 V	1				150	1.25	2.3		20A1P			[2#12AWG+1#12AWG GND 3/4"C]	
RH-1	GAS-FIRED TUBE HEATER	120 V	1				150	1.25	2.3		20A1P			[2#12AWG+1#12AWG GND 3/4"C]	
HP-2	Split System Condensing Unit	208 V	1					26.24	32.8	50	50A2P	60A	50A	[3#6AWG CU, 1#10AWG CU, 1"C]	
HP-1	Split System Condensing Unit	208 V	1					26.24	32.8	50	50A2P	60A	50A	[3#6AWG CU, 1#10AWG CU, 1"C]	
GWH-1	GAS WATER HEATER	120 V	1					2			15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
GEF-2	EXHAUST FAN	120 V	1			1/2	1176	9.8	12.25		20A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	1
GEF-1	EXHAUST FAN	120 V	1		19		19	0.16	0.2		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	1
FUR-2	GAS-FIRED FURNACE	120 V	1				1416	11.8	14.7	20	20A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
FUR-1	GAS-FIRED FURNACE	120 V	1				1416	11.8	14.7	20	20A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
EF-3	EXHAUST FAN	120 V	1		78		78	0.65	0.81		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
EF-2	EXHAUST FAN	120 V	1		19		19	0.16	0.2		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	3
EF-1	EXHAUST FAN	120 V	1		10		10	0.08	0.1		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	2
UH-2-1	ELECTRIC UNIT HEATER	120 V	1	750				6.3	7.8		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
UH-2-2	ELECTRIC UNIT HEATER	120 V	1	750				6.3	7.8		15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
UH-1-1	ELECTRIC UNIT HEATER	120 V	1	1,500				12.5	15.6		20A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
UH-1-2	ELECTRIC UNIT HEATER	120 V	1	1,500				12.5	15.6		20A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
EUH-1	ELECTRIC UNIT HEATER	208 V	1	3,300			3,300	15.8	19.8		20A2P	30A		[2#12AWG+1#12AWG GND 3/4"C]	
CUH-1	ELECTRIC UNIT HEATER	120 V	1	1,500				8.3	10.4	15	15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	
CP-1	CIRCULATION PUMP	120 V	1				84	0.7	0.9	15	15A1P	HPRS		[2#12AWG+1#12AWG GND 3/4"C]	

PANEL: P1  VOLTAGE: 120/208 WYE  PHASE: 3  WIRES: 4						SUPPL	Y FROM	E: NEMA I: 6: SURF						MAINS	RATING: 22K IS TYPE: MLO RATING: 400 RATING: -
CIRCUIT DESCRIPTION		KR ING	BKR TYPE	СКТ		A	ı	3		C	СКТ	BKR TYPE		KR TING	CIRCUIT DESCRIPTION
(E) W. WALL RECEPTACLES	20	1		1	360	20942					2				
EUH-1	30	2		3 5			1650	16172	1650	16702	4 6	-	3	150	P3
(E) N. WALL RECEPT	20	1		7	1080	8646					8				
(E) S. WALL RECEPT	20	1		9			180	8646			10		3	90	(E) SUB PANEL (P2)
MOTORIZED DAMPER	20	1		11					180	8646	12				
GEF-1/GEF-2	20	1		13	1177	2912					14		2	40	(E) EVICTING?
EXTERIOR LIGHTING	20	1		15			65	2912			16		2	40	(E) EXISTING?
(E) SE. GDO	20	1		17					1440	720	18		1	15	(E) W. MEZZANINE RECEPT.
(E) S. GDO	20	1		19	1440	2522					20				
(E) SW. GDO	20	1		21			1440	2522			22		3	30	(E) HOTSY
(E) SHOP FANS	20	1		23					1000	2522	24				
OPEN BAY AREA LIGHTING	20	1		25	13	552					26		1	20	RH-1 / RH-2
(E) EXISTING?	20	1		27			1000	1456			28			00	(E) MELDEDO
(E) WASH BAY RECEPT.	20	1		29					1440	1456	30		2	20	(E) WELDERS
(E) WASH BAY RECEPT.	20	1		31	1440	540					32		1	15	(E) MEZZANINE RECEPT
(E) N. GDO	20	1		33			1000	1000			34		1	20	(E) EXISTING?
(E) EAST GDO	20	1		35					1000	1000	36		1	15	(E) MEZZANINE FAN
(E) WALL PACK LIGHTS	20	1		37	0	2522					38				,
(E) EXISTING?	20	1		39			1440	2522			40		3	50	(E) AIR COMPRESSOR
SPARE	20	1		41					0	2522	42				. ,
SPARE	20	1		43	0	0					44		1	20	SPARE
SPARE	20	1		45			0	0			46		1	20	SPARE
SPARE	20	1		47					0	0	48		1	20	SPARE
SPARE	20	1		49	0	0					50		1	20	SPARE
SPARE	20	1		51			0	0			52		1	20	SPARE
SPARE	20	1		53					0	0	54		1	20	SPARE
SPARE	20	1		55	0	0					56		1	20	SPARE
SPARE	20	1		57			0	0			58		1	20	SPARE
SPARE	20	1		59					0	0	60		1	20	SPARE
TOTAL CONNE	CTED VOLT	-AMPS	PER P	HASE	44	147	420	005	402	278					
1															
PHASE IMBALANCE	LOA	D CLA	SSIFIC <i>E</i>			DAD		)F		IAND					PANEL TOTALS
				HTING		81		.00%		26					
PHASE A 5 %		RE	CEPTA			147		74%	48574		1				<b>AD (VA)</b> : 126430 VA
PHASE B 0 %				TORS		105		.59%		158	1				ND (VA): 88355 VA
PHASE C 4 %				CHEN		0		00%		0	1				(AMPS): 351 A
			CELLANI			152		.00%		152		TO	TAL D	DEMAND	(AMPS): 245 A
		ELE	CTRIC			300		.00%		300	1				
AKER TYPE ABBREVIATIONS:				HVAC	13	644	100	.00%	13	644					





REVISION NAME	DATE
ISSUE DATE:	2023 06.

ASSOCIATES INC

MECHANICAL & ELECTRICAL ENGINEERS

735 S. Xenon Ct. #201

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Given Project # 23059

BENNETT COMMUNITY SAFETY 365 PALMER AVENUE BENNETT, COLORADO80102

ARCHITECTURE | 580 BURBANK STREET, SUITE 125, BROON TENANT FINISH

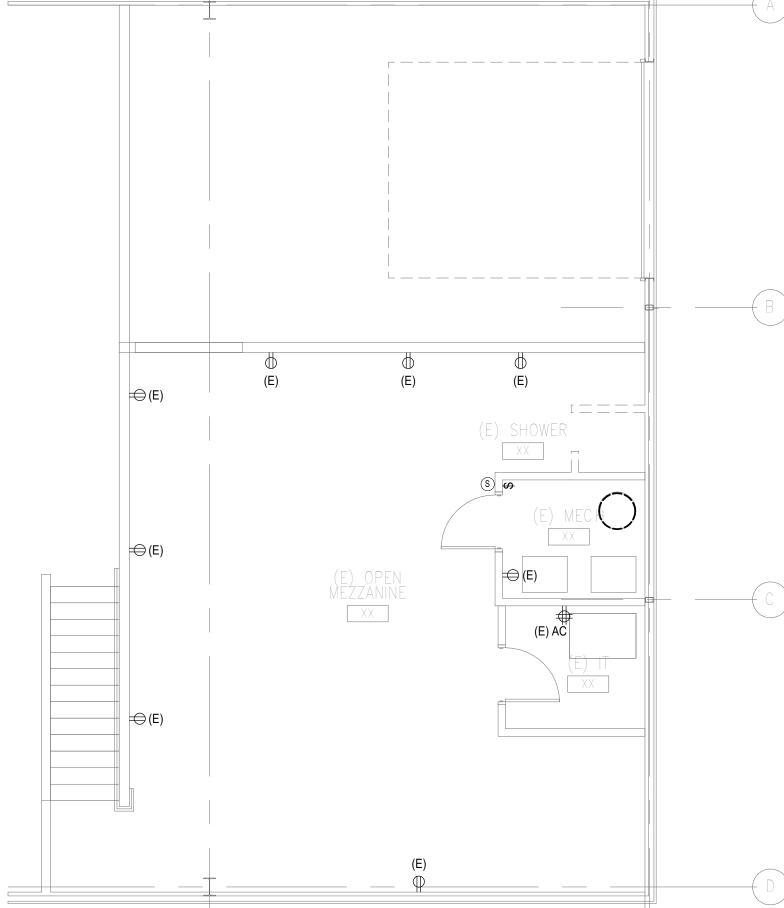
PLANNING | INTERIOR DESIGN

MFIELD, COLORADO 80020 PHONE: 303.465.4306 www.allredarch.com

# **DRAWING NOTES:** 1. VERIFY DEMOLITION COPE WITH ARCHITECT, OWNER, AND OTHER TRADE PRIOR TO BEGINNING OF WORK. 2. ALL ABANDONED CONDUIT AND CIRCUIT AND CONDUCTORS SHALL BE DEMOLISHED BACK TO PANEL. TURN UNUSED CIRCUIT BREAKERS TO "OFF" POSITION AND MARK AS "SPARE" ON PANEL SCHEDULE. MAINTAIN EXISTING WIRING/CIRCUITING TO ALL EXISTING DEVICES SHOWN ONTHIS PLAN AS REQUIRED. ALL OTHER EXISTING DEVICES, OUTLETS, AND ASSOCIATED CONDUITS AND WIRING RENDERED UNUSED BY THIS PROJECT SHALL BE REMOVED BACK TO SOURCE ELECTRICAL PANEL OR NEAREST REMAINING OUTLET OR DEVICE. WHERE REMOVAL OF EXISTING WIRING INTERRUPTS ELECTRICAL CONTINUITY OF CIRCUITS WHICH ARE TO REMAIN IN USE, FURNISH AND INSTALL NECASSARY WIRES, CONDUITS, JUNCTION BOXES, ETC. TO ENSURE ELECTRICAL 4. COORDINATE DISPOSAL OR STORAGE OF REMOVED FIXTURES WITH OWNER. 5. EXISTING AND RELOCATED ELECTRICAL DEVICES SHALL BE CLEANED AND RESTORED TO LIKE NEW CONDITION. ENSURE DEVICES ARE FULLY FUNCTIONAL AND, IF NOT, REPLACED WITH NEW. 6. ALL EXISTING LIGHTING AND LIGHTING CONTROLS AND ASSOCIATED CONDUIT AND WIRE SHALL BE REMOVED BACK TO PANEL, UNLESS NOTED OTHERWISE. \_\_\_<u>\_\_\_</u> C=<u>T</u>=3 (E) UTILITY COMETER (E) MAIN DISC 1 1 (E) OPEN BAY LEVEL 1 FLOOR PLAN - POWER DEMO 3/16" = 1'-0"

# KEY NOTES:

- DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES. REMOVE CONDUIT AND CONDUCTORS TO NEAREST JUNCTION BOX ABOVE CEILING. PREPARE FOR CONNECTION TO NEW LIGHTING DEVICES.
- RELOCATE EXISTING FAN. EXTEND THE WIRING, CONDUIT CONDUCTORS TO NEW MOUNTING LOCATION AS REQUIRED. CONNECT TO EXISTING CIRCUIT AND CONTORLS.



MEZZANINE LEVEL PLAN - POWER DEMO
3/16" = 1'-0"

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Given Project # 23059

2023 06.19

REVISION NAME

AVENUE RADO80102

BENNETT COMMUNITY (365 PALMER AVEN)
BENNETT, COLORADO

**EUH-1** 

<u>UH-2-1</u> P3-18

LEVEL 1 FLOOR PLAN - POWER
3/16" = 1'-0"

PVT OFFICE P3-2

STAFF TOUCHDOWN

P3-19

STAFF INFORMAL .CONFERENCE

MOTORIZED\_

<u>RH-2</u> P1-26

METER METER

(E)

(E) <u>GEF-1</u> P1-13

<u>RH-1</u> P1-26

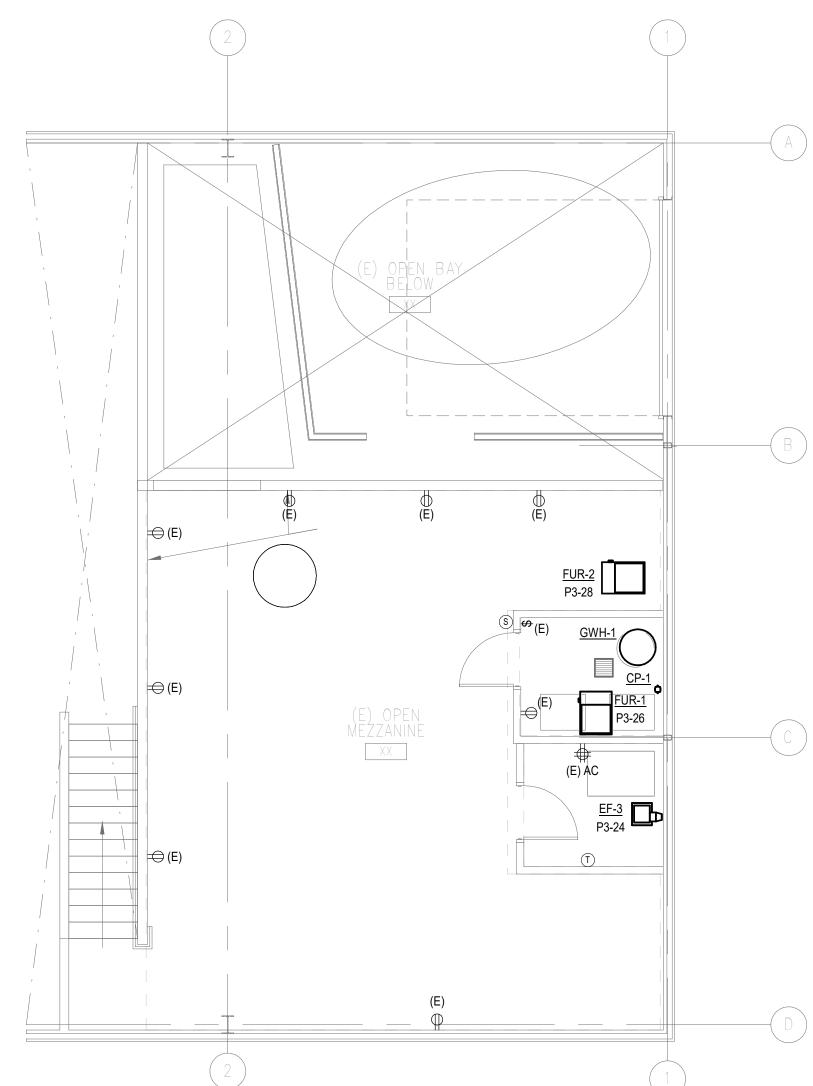
(E) MAIN DISC.

- 1. WIRE SIZE SHALL BE MINIMUM #10 AWG FOR EXTERIOR LIGHTING AND SIGN CIRCUITSM THWN SOLID COPPER UNLESS OTHERWISE NOTES. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE. INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL LENGTH OF ANY BRANCH EXCEEDS 200 FEET. ALL WIRING SHALL BE IN APPROVED RACEWAY.
- 2. ALL OUTLIETS AND EQUIPMENT SHALL BE CIRCUITED TO PANEL AS NOTED. NUMBERS INDICATE CIRCUITING.
- 3. ALL EXTERIOR MOUNTED RECEPTACLES, JUNCTION BOXES AND CONDUIT SHALL BE WEATHERPROOF.
- 4. PROVIDE AUTOMATIC RECEPTACLE CONTROLS IN ALL ENCLOSED OFFICES CONFERENCE ROOMS, BREAKROOMS AND OPEN OFFICE AREAS. AUTOMATIC CONTROLS SHALL CONSIST OF SPLIT CONTROLLED RECEPTACLES WITH THE TOP HALF OF EACH RECEPTACLE BEING CONTROLLED BY AN OCCUPANCY SENSOR IN THE ROOM / AREA. PROVIDE PERMANENT MARKING ON ALL RECEPTACLES WITH AUTOMATIC CONTROL.

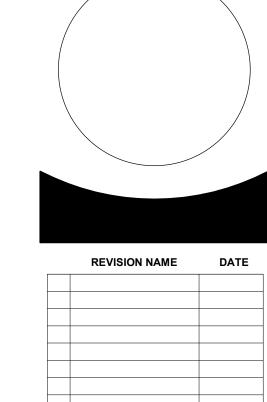
STAFF ENTRY

# **KEY NOTES:**

- PROVIDE FLUSH FLOOR MOUNTED COMBINATION DATA AND DUPLEX RECEPTACLE WITH (1) 3/4"C. FOR POWER AND (1) 1"C. FOR DATA BACK TO WALL AS SHOWN.
- PROVIDE NEMA 14-50R RECEPTACLE FOR RANGE WITH 3#6 CU, 1#10 CU G., 1"C. BACK TO PANEL.
- 3 TO AVOID SAW CUTTING THE FLOOR, PROVIDE SURFACE FLOOR MOUNTED COMBINATION DATA AND QUADRUPLEX RECEPTACLE WITH 1"C. FOR POWER AND 1'-1/4"C. FOR DATA UP TO ACCESSIBLE CEILING SPACE. CONDUITS ARE OVERSIZED FOR POTENTIAL FUTURE CONVERSION TO ELECTRIFIED FEED.
- PROVIDE RECEPTACLE TYPE NEMA 14-30R WITH WIRE SIZE 3#10, 1#10 G., 3/4"C.
- 5 PROVIDE JUNCTION BOX FOR HAND DRYER. COORDINATE WITH ARCHITECT FOR EXACT LOCATION BEFORE ROUGH-IN.
- 6 EXISTING POWER WASH EQUIPMENT AND ALL ELECTRICAL CONNECTIONS AND CIRCUITS TO REMAIN.
- (7) EXISTING AIR COMPRESSOR AND ALL ELECTRICAL CONNECTIONS AND CIRCUITS TO
- 8 PROVIDE ELECTRCIAL CONNECTION FOR ALL VAV CONTROLERS IN THE AREA TO CIRCUIT NOTED. COORDINATE EXACT CONNECTION REQUIREMENTS WITH MECHANICAL
- 9 FAN SHALL BE INTERLOCKED WITH GARAGE EXHAUST CONTROL PANEL. REFER TO DETAIL 3/M5.2 FOR ADDITIONAL INFORMATION AND PROVIDE INTERLOCK WIRING AS
- (10) PROVIDE 24/7/365 TIMECLOCK TO CONTROL EXHAUST FAN EF-2. PROVIDE RECEPTACLE FOR MICROWAVE. COORDINATE WITH ARCHITECT FOR EXACT







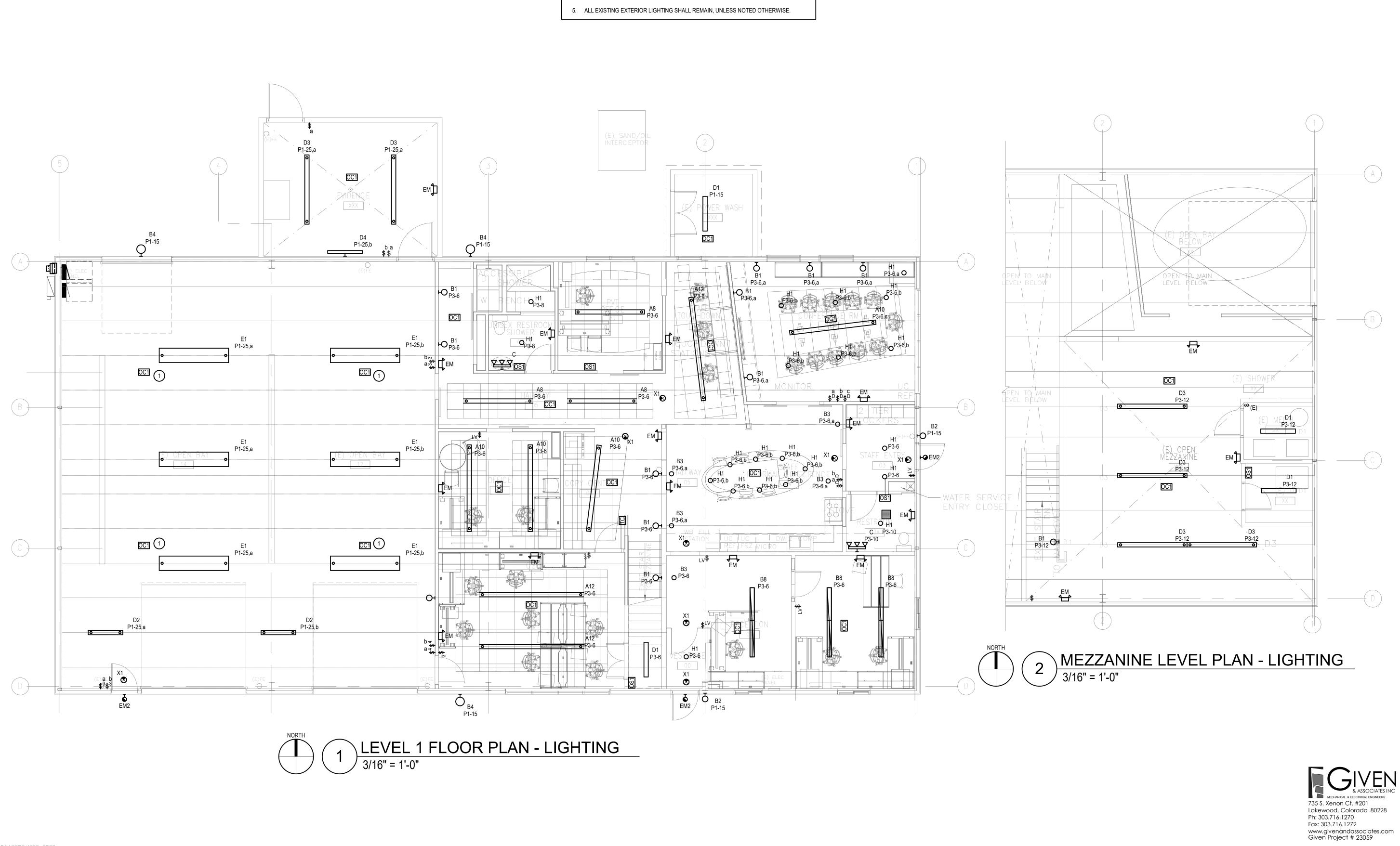
8. ASSOCIATES INC
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Given Project # 23059

ISSUE DATE:

INTERIOR | NE: 303.465.4306 ww

RADO80102

BENNETT COMMUNITY 365 PALMER AVE BENNETT, COLORADO BENNETT



**DRAWING NOTES:** 

APPROVED RACEWAY.

WIRE SIZE SHALL BE MINIMUM #12 AWG, THWN SOLID COPPER UNLESS OTHERWISE NOTED. PROVIDE GROUND WIRE WHERE REQUIRED BY CODE.

LENGTH OF ANY BREANCH EXCEEDS 100 FEET. ALL WIRING SHALL BE IN

INDICATE CIRCUIT, LOWER CASE LETTERS UBDUCATE SWITCHING ZONE.

COORDINATE LIGHT FIXTURE MOUNTING WITH OTHER CEILING MOUNTED

INCREASE WIRE SIZE TO COMPENSATE FOR VOLTAGE DROP WHERE TOTAL

ALL LIGHTING SHALL BE CIRCUITED TO PANEL AS NOTED ON DRAWINGS. NUMBERS

3. ALL EXIT SIGNS AND EGRESS LIGHTS SHALL BE CONNECTED TO LIGHTING CIRCUIT IN AREA AND WIRED TI AN UN-SWITCHED HOT LEG.

EQUIPMENT. VERIFY EQUIPMENT LOCATIONS WITH MECHANICAL, PLUMBING AND

**KEY NOTES:** 

1) LOW VOLTAGE HIGH BAY OCCUPANCY SENSOR SHALL TURN LIGHT FIXTURES OFF

AFTER 20 MINUTES OF THE ROOM BECOMING VACANT. SENSOR LOCATION FOR REFRENCE ONLY. COORDINATE SENSOR LOCATIONS WITH LIGHTING CONTROLS REPRESENTATIVE PRIOR TO ROUGH-IN.

INTERIOR I

BENNETT COMMUNITY SAFETY 365 PALMER AVENUE BENNETT, COLORADO80102

2023 06.19

REVISION NAME

ISSUE DATE:

#### **Project Information**

Energy Code: 2018 IECC Project Title: Project Type: Alteration

Designer/Contractor: Construction Site: Owner/Agent:

#### Allowed Interior Lighting Power

B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watt (B X C)
1113	0.93	1035
645	1.07	690
131	0.85	111
151	0.81	122
147	0.56	82
289	0.66	191
2121	0.35	742
308	0.69	213
86	0.46	40
	Total Allowed Watts	= 3226
_	Floor Area (ft2)  1113 645 131 151 147 289 2121 308	Floor Area (ft2)         Allowed Watts / ft2           1113         0.93           645         1.07           131         0.85           151         0.81           147         0.56           289         0.66           2121         0.35           308         0.69           86         0.46

#### **Proposed Interior Lighting Power**

[EL21]<sup>2</sup>

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Offices (Common Space Types:Office - Enclosed 1113 sq.ft.)				
LED 1: A8: 8' LINEAR: LED Linear 33W:	1	1	40	40
LED 2: A10: 10' LINEAR: LED Linear 33W:	1	2	40	80
LED 3: A12: 12' LINEAR: LED Linear 33W:	1	2	40	80
LED 4: B8: 8' LINEAR: LED Linear 33W:	1	3	40	120
LED 17: B3: 6" DOWNLIGHT: Other:	1	1	20	20
Conferece Rooms (Common Space Types:Conference/Meeting/Multipurpose 645 sq.fl	<u>t.)</u>			
LED 5: H1: 4" RECESSED DOWNLIGHT: Other:	1	15	22	330
LED 6: A10: 10' LINEAR: LED Linear 33W:	1	1	40	40
LED 7: B1: WALL SCONCE: Other:	1	5	40	200
LED 16: B3: 6" DOWNLIGHT: Other:	1	4	20	79
Restrooms (Common Space Types:Restrooms 131 sq.ft.)				
LED 8: H1: 4" RECESSED DOWNLIGHT: Other:	1	3	22	66
LED 9: C: VANITY: LED Other Fixture Unit 28W:	1	2	27	54
Work stations (Common Space Types:Office - Open Plan 151 sq.ft.)				
LED 10: A12: 12' LINEAR: LED Linear 33W:	1	1	40	40
Copy Center ( Common Space Types:Copy/Print Room 147 sq.ft.)				
LED 11: A10: 10' LINEAR: LED Linear 33W:	1	1	40	40

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

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

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B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1	2	40	80
1 1	2 2	40 40	80 80
1 1	6 2	133 32	798 64
1 1	2 1	64 32	127 32
1	1 Total Propos	32 sed Watts =	32 2481
	Lamps/	Lamps/ Fixture     # of Fixtures       1     2       1     2       1     2       1     6       1     2       1     2       1     1       1     1       1     1       1     1       1     1       1     1       1     1	Lamps/ Fixture         # of Fixtures         Fixture Watt.           1         2         40           1         2         40           1         2         40           1         6         133           1         2         32           1         2         64           1         1         32

## Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project 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 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

	·	
Name - Title	Signature	

Project Title: Report date: 06/20/23 Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Electrical\COMcheck\Bennett Page 2 of 7
Public Works Bldg Remodel\_Electrical COMcheck.cck

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3. 1,	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	□Complies □Does Not □Not Observable □Not Applicable	
C405.2.4 [EL26] <sup>1</sup>	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.4 [EL27] <sup>1</sup>	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	□Complies □Does Not □Not Observable □Not Applicable	
C405.3 [EL6] <sup>1</sup>	Exit signs do not exceed 5 watts per face.	□Complies □Does Not □Not Observable □Not Applicable	
C405.6 [EL26] <sup>2</sup>	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL27] <sup>2</sup>	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	□Complies □Does Not □Not Observable □Not Applicable	
C405.8.2, C405.8.2. 1 [EL28] <sup>2</sup>	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	□Complies □Does Not □Not Observable □Not Applicable	
C405.9 [EL29] <sup>2</sup>	Total voltage drop across the combination of feeders and branch circuits <= 5%.	□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)

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Public Works Bldg Remodel\_Electrical COMcheck.cck

**▲ COM***check* Software Version 4.1.5.5 **Inspection Checklist** 

Energy Code: 2018 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] <sup>1</sup>	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	

Additional Comments/Assumptions:

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

Project Title: Report date: 06/20/23 Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Electrical\COMcheck\Bennett Page 3 of 7
Public Works Bldg Remodel\_Electrical COMcheck.cck

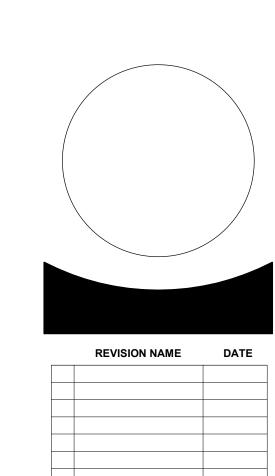
Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5. 2 [FI17] <sup>3</sup>	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	□Complies □Does Not □Not Observable □Not Applicable	
C405.4.1 [FI18] <sup>1</sup>	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	□Complies □Does Not □Not Observable □Not Applicable	See the Interior Lighting fixture schedule for values.
C408.1.1 [FI57] <sup>1</sup>	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	□Complies □Does Not □Not Observable □Not Applicable	
C408.2.5. 1 [FI16] <sup>3</sup>	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	□Complies □Does Not □Not Observable □Not Applicable	
C408.3 [FI33] <sup>1</sup>	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	□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)

Data filename: G:\A-jobs\Bennett Public Works Bldg Remodel - 23059\Engrfile\Electrical\COMcheck\Bennett Page 6 of 7 Public Works Bldg Remodel\_Electrical COMcheck.cck

NNETT COMMUNITY SAFETY 365 PALMER AVENUE NNETT, COLORADO80102 BENNETT



ISSUE DATE:

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