ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

PERMIT DOCUMENTS

27 FEB 2023

COLLINS WEBB #: 22066

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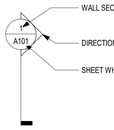
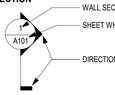
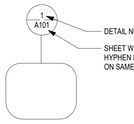
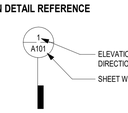
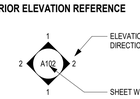
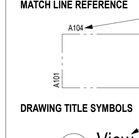


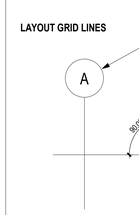


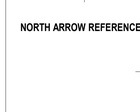


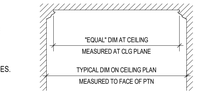


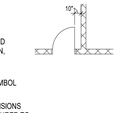


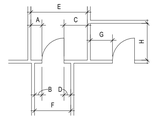


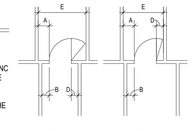


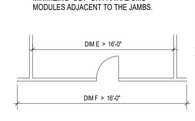


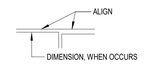












ARCHITECTURAL ABBREVIATIONS

A

&	AND
<	ANGLE
AB	ANCHOR BOLT
ACOUS/ACS	ACOUSTIC(AL)
T.CT	ACOUSTICAL CEILING TILE
ACP	ACOUSTICAL CEILING PANEL
ACS PNL	ACCESS PANEL
AD	AREA DRAIN
ADDL	ADDITIONAL
ADH	ADHESIVE
ADJ	ADJUSTABLE
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AFS	ABOVE FINISH SLAB
AGGR	AGGREGATE
ALUM, AL	ALUMINUM
ALT	ALTERNATE
ANOD	ANODIZED
APPROX	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
ASPH	ASPHALT
ASPH	AT
AVG	AVERAGE

B

BB	BULLETIN BOARD
BD	BOARD
BTWN	BETWEEN
BITUM	BITUMINOUS
BLK / BLKG	BLOCK / BLOCKING
BLDG	BUILDING
BM	BENCHMARK
BMD	BOTTOM OF METAL DECK
BO	BOTTOM OF / BY OTHERS
BOT	BOTTOM
BOS	BOTTOM OF STEEL
BRG	BEARING
BSMT	BASEMENT
BUR	BUILT UP ROOFING SYSTEM

C

[	CHANNEL
CAB	CABINET
CPT	CARPET
CI	CAST IRON
CB	CATCH BASIN
CCR	CARD CONTROL READER
CSWK	CASEWORK
CCT	CUBICLE CURTAIN TRACK
CCTV	CLOSED CIRCUIT TELEVISION
CSP	COMBINATION STANDPIPE
CG	CORNER GUARD
CEM	CEMENT, CEMENTITIOUS
CER	CERAMIC
CT	CERAMIC TILE
CH BD	CHALKBOARD
CL / ℄	CENTER LINE
CLG	CEILING
CLR	CLEAR
CLO	CLOSET
CMU	CONCRETE MASONRY UNIT
CRSC	COLD ROLLED STEEL CHANNEL
CW	COLD WATER
COL	COLUMN
CNTR	COUNTER
CSK	COUNTERSUNK
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CJ	CONTROL JOINT
CG	CORNER GUARD
CORR	CORRUGATED, CORRIDOR
CU	CUBIC

D

D	DEPTH
DBL	DOUBLE
DBL ACT	DOUBLE ACTING
DEG	DEGREE
DEMO	DEMOLISH
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIM PT	DIMENSION POINT
DISP	DISPENSER
DIST	DISTANCE
DK	DECK
DN	DOWN
DR	DRAIN, DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DT	DRAPERY TRACK
DTL	DETAIL
DW	DISHWASHER
DWG/DWGS	DRAWING / DRAWINGS

E

E	EAST
EA	EACH
EDR	EQUIPMENT DRAWING
EG	EDGE GUARD
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELAST	ELASTOMERIC
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
ENGR	ENGINEER
EOS	EDGE OF SLAB
EP	ELECTRICAL PANEL
EPB	ELECTRICAL PANEL BOARD
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESCAL	ESCALATOR
EST	ESTIMATE(D)
EWC	ELECTRIC WATER COOLER
EXC	EXCAVATED
EXH	EXHAUST
EXIST, (E)	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
EX-BR	EXISTING BRICK

F

F/F	FACE TO FACE
FA	FIRE ALARM
FAS	FIRE ALARM STATION
FB	FLAT BAR
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FEC	FIRE EXTINGUISHER CABINET
FE	FIRE EXTINGUISHER
FF	FINISH FACE
FG	FINISH GRADE
FHC	FIRE HOSE CABINET
FH/FEC	FIRE HOSE / FIRE EXTINGUISHER CABINET
FHMS	FLAT HEAD MACHINE SCREW
FHWS	FLAT HEAD WOOD SCREW
FHY	FIRE HYDRANT
FIN	FINISH, FINISHED
FLAM	FLAMMABLE
FLASH	FLASHING
FLEX	FLEXIBLE
FLR	FLOOR
FLUOR	FLUORESCENT
FO	FACE OF
FRT	FIRE RETARDANT TREATMENT
FRZ	FREEZER
FSB	FOLDING SHOWER BENCH
FSTNR	FASTENER
FT	FOOT, FEET
FTG	FOOTING
FURN	FURNITURE
FXTR	FIXTURE

G

G	GAS
GA	GAUGE, GAGE
GAL	GALLON
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFRC	GLASS FIBER REINFORCED CONCRETE
GFRG	GLASS FIBER REINFORCED GYPSUM
GL	GLASS
GLU LAM	GLUE LAMINATED
GLZ	GLAZING
GR	GRADE OR GRADING
GVL	GRAVEL
GYP	GYPSUM
GYP BD	GYPSUM BOARD
GYP PLAS	GYPSUM PLASTER

H

H	HIGH
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HEAD
HDBD	HARDBOARD
HDW,HDW	HARDWARE
HDWD	HARDWOOD
HGT, HT	HEIGHT
HM	HOLLOW METAL
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HPT	HIGH POINT
HR	HOUR
HVAC	HEATING-VENTILATION-AIR CONDITIONING
HW	HOT WATER

I

ID	INSIDE DIAMETER
IN	INCH
INCAND	INCANDESCENT
INCL	INCLUDE, INCLUDING
INFO	INFORMATION
INSUL	INSULATION
INTR	INTERIOR
INV	INVERT
IVT	INTRAVENOUS TRACK

J

JAN	JANITOR
JST	JOIST
JT	JOINT

K

KG	KILOGRAM
KIT	KITCHEN
KPL	KICK PLATE
KS	KNEE SPACE

L

L	LENGTH, LONG
LAB	LABORATORY
LAM	LAMINATE, LAMINATION
LAV	LAVATORY
LB	POUND
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT
LG	LENGTH
LIN	LINEAR
LL	LEAD LINED
LPT	LOW POINT
LT	LIGHT
LT WT	LIGHT WEIGHT
LTG	LIGHTING
LVR	LOUVER

M

M	METERS
MACH	MACHINE
MATL	MATERIAL
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MEDICINE CABINET
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MED	MEDIUM
MET, MTL	METAL
MEMB	MEMBRANE
MFR / MFG	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLDG	MOLDING
MM	MILLIMETERS
MO	MASONRY OPENING
MOD	MODULE, MODULAR
MTD	MOUNTED
MTG	MOUNTING
MVBL	MOVABLE
MULL	MULLION

N

(N)	NEW
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOICE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
NW	NORTHWEST

O

OC	ON CENTER
OA	OVERALL
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED-CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED-OWNER INSTALLED
OPNG	OPENING
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
OVHD	OVERHEAD
OZ	OUNCE

P

PA	PUBLIC ADDRESS
PART	PARTIAL
PBD	PARTICLEBOARD
PBX	PRIVATE TELEPHONE EXCHANGE
PCF	POUNDS PER CUBIC FOOT
PCI	POUNDS PER CUBIC INCH
PERF	PERFORATED
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
PL	PLATE
PLAM	PLASTIC LAMINIATE
PLAS	PLASTER, PLASTIC
PLBG	PLUMBING
PLF	POUNDS PER LINEAR FOOT
PLYWD	PLYWOOD
PNEU	PNEUMATIC
PNL	PANEL
PNL BD	PANEL BOARD
PNT, P	PAINT
PORT	PORTABLE
PP	PUSH PLATE
PPM	PARTS PER MILLION
PR	PAIR
PRCST	PRECAST
PREP	PREPARATION
PREFAB	PREFABRICATION
PRKG	PARKING
PROJ	PROJECT
PROP	PROPERTY
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT / PTD	POINT, PAINT / PAINTED
PTN	PARTITION
PTS	PNEUMATIC TUBE STATION
PVC	POLYVINYL CHLORIDE
PVG	PAVING
PVMT	PAVEMENT
PWR	POWER

Q

QT	QUARRY TILE
QTR	QUARTER
QTY	QUANTITY

R

R	RISER
RA	RETURN AIR
RAD	RADIUS
RB	RESILIENT BASE
RCP	REFLECTED CEILING PLAN
RCPT	RECEPTACLE
RD	ROOF DRAIN
RECT	RECTANGULAR
REF	REFERENCE
REFR	REFRIGERATOR
REG	REGISTER
REINF	REINFORCE (D) (ING) (MENT)
REQD	REQUIRED
REQT	REQUIREMENT
RESIL	RESILIENT
RET	RETURN
REV	REVISION
RF	RESILIENT FLOORING
RH	RIGHT HAND
RHMS	ROUND HEAD MACHINE SCREW
RHWS	ROUND HEAD WOOD SCREW
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RWL	RAIN WATER LEADER

S

S	SOUTH
SA	SUPPLY AIR
SB	SPLASH BLOCK
SC	SOLID CORE
SCHED	SCHEDULE
SCRN	SCREEN
SD	STORM DRAIN
SE	SOUTHEAST
SECT	SECTION
SEG	SEGMENT
SEP	SEPARATION OR SEPARATE
SEP JT	SEPARATION JOINT
SHT	SHEET, SHEETING
SHWR	SHOWER
SHV	SHELVES, SHELVING
SIM	SIMILAR
SK	SINK
SMS	SHEET METAL SCREW
SP	SPACE, SPACED, SPACING
SPEC	SPECIFICATION

S

SPKLR	SPRINKLER
SPKR	SPEAKER
SQ	SQUARE
SS	SANITARY SEWER
SSK	SERVICE SINK
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STAG	STAGGERED
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURAL
STS	SELF-TAPPING STEEL
SUSP	SUSPENDED
SUSP CLG	SUSPENDED CEILING
SVCE	SERVICE
SW	SOUTHWEST
SYMM	SYMMETRICAL
SYST	SYSTEM

T

T	TREAD
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TC	TOP OF CONCRETE, TOP OF CURB
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPORARY
THERM	THERMAL
THK	THICK, THICKNESS
THRES	THRESHOLD
THRU	THROUGH
TMPD GL	TEMPERED GLASS
TO	TOP OF
TOR	TOP OF RAILING
TOS	TOP OF STEEL
TOT	TOTAL
TOW	TOP OF WALL
TP	TOP OF PAVEMENT
TPH	TOILET PAPER HOLDER
TRANS	TRANSPARENT
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TYP	TYPICAL
TW	TOP OF WALL

U

UC	UNDER COUNTER
UL	UNDERWRITERS LABORATORIES
UNF	UNFINISHED
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
UR	URINAL
UTIL	UTILITY

V

VAC	VACUUM
VB	VALVE BOX
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIT	VITREOUS
VP	VENT PIPE
VOL	VOLUME
VWC	VINYL WALL COVERING

W

W	WEST
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
WAINS	WAINSCOT
WC	WATER CLOSET, WALL COVERING
WD	WOOD
WDW	WINDOW
WGL	WIRE GLASS
WCHR	WHEELCHAIR
WM	WIRE MESH
WO	WHERE OCCURS
W/O	WITHOUT
WP	WATERPROOF
WPT	WORKING POINT
WR	WATER RESISTANT
WSCT	WAINSCOT
WSP	WET STANDPIPE
WT	WEIGHT
WTHPRF	WEATHERPROOF
WTRPRF	WATERPROOF
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH

X

XFMR	TRANSFORMER

Y

YD	YARD

TYPICAL ARCHITECTURAL REFERENCE SYMBOLS

WALL SECTION

BUILDING SECTION

EXTERIOR ELEVATION

DETAIL REFERENCE

SECTION DETAIL REFERENCE

INTERIOR ELEVATION REFERENCE

PARTITION TYPE IDENTIFICATION MARK

EQUIPMENT/ACCESSORY IDENTIFICATION MARK

DOOR IDENTIFICATION MARK

WINDOW AND LOUVER TYPE MARK

LEVEL LINE

ROOM NAME AND NUMBER

REVISION EXTENT

KEYED NOTE MARK

MATCH LINE REFERENCE

DRAWING TITLE SYMBOLS

LAYOUT GRID LINES

NORTH ARROW REFERENCE

ARCHITECTURAL DIMENSIONING CONVENTIONS

1. EXCEPT WHERE DIRECTED TO PLACE ITEMS OF THE WORK AT THE "APPROXIMATE LOCATION SHOWN," DO NOT SCALE DRAWINGS FOR DIMENSIONAL INFORMATION.
2. ALL ELEMENTS OF THE DRAWINGS MAY NOT BE DRAWN TO EXACT SCALE. ALL DIMENSIONS REQUIRED ARE SHOWN (OR MAY BE DERIVED FROM THOSE SHOWN OR NOTED) ON THE FLOOR PLANS, DETAIL PLANS, ELEVATIONS, SECTIONS, SCHEDULES, CONFIGURATION DETAILS, AND SPECIFICATIONS. SEE THE NOTES BELOW FOR DIMENSIONING CONVENTIONS USED ON THIS PROJECT.
3. EXCEPT WHERE SPECIFICALLY NOTED TO THE CONTRARY, ALL DIMENSIONS SHOWN ON THE ARCHITECTURAL DRAWINGS CONFORM TO THE FOLLOWING CONVENTIONS:
   A. DIMENSIONS UTILIZING THE "CENTERLINE" SYMBOL ARE MEASURED TO:
      - STRUCTURAL OR DIMENSIONAL GRID LINES.
      - CENTERLINE OF CONCRETE OR CONC MASONRY UNIT WALLS (EXCLUSIVE OF FURRING OR APPLIED FINISHES HAVING THICKNESS). REFER TO THE ARCH PLANS AND SECTIONS, THE STRUCT DRAWINGS, OR PARTITION SCHEDULE TO DETERMINE THE THICKNESS OF CONCRETE OR CONC MASONRY UNIT WALLS.
      - CENTERLINE OF PARTITION ASSEMBLY (EXCLUSIVE OF ANY APPLIED FINISHES HAVING THICKNESS WHICH MAY BE ADDED TO SUCH WALLS) AT PARTITIONS FRAMED WITH METAL STUDS. REFER TO "PARTITION SCHEDULE" TO DETERMINE THICKNESS OF EACH PARTITION TYPE.
      - CENTERLINE OF DOOR, WINDOW, OR LOUVER OPENING.
      - CENTERLINE OF EQUIPMENT OR FURNISHING
      - CENTERLINE OF OTHER FEATURES AS INDICATED.

   B. REFER TO ABBREVIATIONS LEGEND FOR SYMBOL USED TO INDICATE CENTERLINE DIMENSION.

   C. DIMENSIONS UTILIZING THE "FACE OF" SYMBOL ARE MEASURED TO:
      - FACE OF CONCRETE OR CONC MASONRY UNIT WALL (EXCLUSIVE OF APPLIED FINISHES HAVING THICKNESS OR FURRING WHICH MAY BE ADDED TO THE FACE OF SUCH WALLS).
      - FACE OF PARTITION ASSEMBLY (EXCLUSIVE OF ANY APPLIED FINISHES HAVING THICKNESS WHICH MAY BE ADDED TO SUCH WALL) AS DEFINED BY THE PARTITION SCHEDULE. UNLESS NOTED AS A "FACE OF FINISH" OR "CLEAR" DIMENSION (SEE NOTE 'E' BELOW), DIMENSIONS ARE NOT MEASURED TO THE FACE OF APPLIED FINISH. REFER TO THE "PARTITION SCHEDULE" TO DETERMINE THE THICKNESS OF EACH PARTITION TYPE.
      - INSIDE EDGE OF FINISHED DOOR OPENING. REFER TO THE DOOR SCHEDULE FOR ADDITIONAL DIMENSIONAL INFORMATION.
      - DIMENSION OR WORK POINT AS INDICATED ON RELATED ARCH DETAIL PLAN, SECTION, ELEVATION, LAYOUT OR CONFIGURATION DETAIL, OR CONSTRUCTION DETAIL.

   D. REFER TO ABBREVIATIONS LEGEND FOR SYMBOL USED TO INDICATE "FACE OF" DIMENSION.

   E. WHERE "FACE OF FINISH" OR "CLEAR" DIMENSIONS ARE SPECIFICALLY NOTED, THE DIM IS MEASURED TO:
      - FINISH FACES AT THE MOST NARROW OR CONSTRICTED POINTS OF SECTION WHERE DIMENSION IS SHOWN, WHEN THE DIMENSION OCCURS ACROSS AN OPEN SPACE. THIS CASE, A "FACE OF FINISH" DIMENSION IS EQUIVALENT TO A "CLEAR" DIMENSION.
      - FINISH FACES AT THE WIDEST OR MOST EXPANSIVE POINTS OF THE SECTION THE DIMENSION IS SHOWN WHEN THE DIMENSION OCCURS ACROSS AN OBJECT OR GROUP OF OBJECTS.

   F. WHERE "EQUAL" DIMENSIONS ARE USED ON REFLECTED CEILING PLANS TO LOCATE CEILING GRID WORK POINTS, MEASURE DIMENSIONS TO:
      - EDGE OF THE INDICATED CEILING AT THE FACE OF THE ADJACENT APPLIED FINISH MEASURED AT THE PLANE OF THE CEILING.

NOTE NO 3 CONTINUED:

- CAUTION: DUE TO THE POSSIBLE APPLICATION OF APPLIED FINISHES - THICKNESS OF WHICH MAY VARY BETWEEN FLOOR AND CEILING AND IS NOT ACCOUNTED FOR (EXCEPT AS INDICATED BY "FOF" OR "CLEAR") BY THE DIMENSION SHOWN ON THE FLOOR PLANS - THE CONTRACTOR MUST ADJUST, AS NECESSARY, THE FLOOR PLAN DIMENSIONS TO REFLECT THE ACTUAL DIMENSIONS FOUND AT PLANE OF THE CEILING.

4. WHERE DIMENSIONS ARE NOT PROVIDED ON FLOOR PLANS TO LOCATE DOOR OPENINGS, APPLY THE FOLLOWING RULES, **IN ORDER**, TO DETERMINE THE LOCATION OF DOOR OPENINGS:
   A. DOOR OPENINGS MAY BE DIMENSIONED ON DRAWINGS OTHER THAN THE FLOOR PLANS. REFER TO THE SECTIONS, ELEVATIONS, DETAILS, AND DOOR SCHEDULE NOTES FOR ADDITIONAL DIMENSIONAL INFORMATION.
   B. WHERE THE HINGE-SIDE OF A DOOR IS SHOWN ADJACENT TO A WALL - OR WALLS - PERPENDICULAR TO THE WALL IN WHICH THE DOOR OPENING OCCURS:
      - AT DOORS OCCURRING IN METAL FRAMED GYPSUM BOARD PARTITIONS, LOCATE THE HINGE-SIDE OF THE DOOR FINISHED OPENING 4 INCHES FROM THE FACE (EXCLUSIVE OF APPLIED FINISHES) OF THE CLOSEST PERPENDICULAR WALL OR PARTITION ASSEMBLY.

      - AT DOORS OCCURRING IN WALLS OF CONC MASONRY UNIT CONSTRUCTION, LOCATE THE HINGE-SIDE OF THE DOOR FINISHED OPENING 10 INCHES FROM THE FACE (EXCLUSIVE OF APPLIED FINISHES) OF THE CLOSEST PERPENDICULAR WALL OR PARTITION ASSEMBLY.

NOTE NO 4 CONTINUED:

C. WHERE DOOR OCCURS NOT ADJACENT TO A PERPENDICULAR WALL AND EITHER "DIM E" OR "DIM F" IN DIAGRAM BELOW IS 16'-0" OR LESS, LOCATE DOOR UTILIZING THE FOLLOWING MINIMUM DIMENSIONS:
- DIMENSION A = 18 INCHES MIN
- DIMENSION B = 12 INCHES MIN
- DIMENSION C = DOOR WIDTH + 2 INCHES MINIMUM
- DIMENSION D = 4 INCHES MIN AT METAL FRAMED GYP BD PARTITIONS OR - EVEN MULTIPLE OF 1/2 CMU MODULE PLUS 2 INCHES AT CONC MASONRY UNIT WALLS
- DIMENSIONS E AND F = AS SHOWN ON PLANS
- DIMENSION G = 36 INCHES MIN
- DIMENSION H = 60 INCHES MIN

- IF SPACE ALLOWS, CENTER DOOR IN WALL SHOWN ON THE DRAWINGS SO THAT EITHER "DIM A" EQUALS "DIM C" OR "DIM B" EQUALS "DIM D".

D. IF "DIM E" IN DIAGRAMS BELOW IS LESS THAN THE SUM OF 2 TIMES THE DOOR WIDTH PLUS 20 INCHES, LOCATE DOOR SO THAT MINIMUMS STATED BY NOTE NO 4C ABOVE FOR "DIM A", "DIM B," AND "DIM D" ARE MET - MAXIMIZING "DIM A" AND MINIMIZING "DIM D" TO THE EXTENT POSSIBLE.

E. WHERE DOOR IS SHOWN LOCATED IN A LARGE EXPANSE OF OPEN WALL ("DIM E" AND "DIM F" IN DIAGRAM BELOW BOTH EXCEED 16'-0"), PLACE DOOR AT APPROXIMATE LOCATION SHOWN ON THE PLANS. WHERE DOOR OCCURS IN CMU WALL, PLACE DOOR AT APPROXIMATE LOCATION SHOWN WHILE MINIMIZING "CUT" OR PARTIAL CMU MODULES ADJACENT TO THE JAMBS.

5. WHERE WALLS AND/OR PARTITIONS OF UNEQUAL THICKNESS ABUT, ALIGN EXPOSED FACES, UNLESS OTHERWISE NOTED.

REFLECTED CEILING PLAN SYMBOLS:

- CEILING HEIGHT
- GYP. BD.
- SUSP CEILING SYSTEM
- SUPPLY
- RETURN
- EXHAUST
- 2X4 LIGHT FIXTURE
- 1X4 LIGHT FIXTURE
- 2X2 LIGHT FIXTURE DIRECT/INDIRECT
- FLUORESCENT STRIP FIXTURE
- TRACK LIGHTING
- PENDANT FIXTURE
- CAN LIGHT
- FIRE EXIT SIGN
- SPRINKLER HEAD
- SPEAKER
- CONTROL JOINT IN GYP BD CEILING
- 2'X4' LAY-IN CEILING
- 2'X2' LAY-IN CEILING
- SECURITY CEILING
- OPEN TO STRUCTURE
- WOOD VENEER
- T & G WOOD VENEER
- EXTERIOR STUCCO SOFFIT
- EXTERIOR METAL PANEL SOFFIT

TYP DOOR LEGEND

WALL TYPE LEGEND

- EXISTING PARTITION
- DEMOLISHED PARTITION
- CMU PARTITION
- UNRATED PARTITION

GENERAL INFORMATION NOTES:

1. ALL CONTRACTORS AND THEIR SUPERVISORY PERSONNEL SHALL REVIEW THE GENERAL AND SUPPLEMENTARY CONDITIONS TO THE CONTRACT.
2. ALL WORK SHALL CONFORM WITH APPLICABLE BUILDING CODES, REGULATIONS AND ORDINANCES.
3. CONTRACTOR AND/OR OWNER SHALL OBTAIN ALL REQUIRED BUILDING AND OCCUPANCY PERMITS.
4. CONTRACTOR SHALL BECOME FULLY ACQUAINTED WITH CONDITIONS RELATED TO THE WORK.
5. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION AND THE SAFETY OF ALL CONSTRUCTION PERSONNEL AND VISITORS.
6. DRAWINGS CONTAINED IN THIS SET SHALL NOT BE REPRODUCED FOR SHOP DRAWINGS. COPIES OF THESE DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE REJECTED AND RETURNED TO THE CONTRACTOR.
7. EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR CONDITIONS UNDER WHICH THE WORK WILL BE INSTALLED AND REPORT TO THE CONTRACTOR IN WRITING ANY CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY EXECUTION OF THAT INSTALLERS WORK. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE CORRECTED. COMMENCING WITH INSTALLATION SHALL CONSTITUTE ACCEPTANCE OF THE SUBSTRATE AND/OR CONDITIONS.
8. DO NOT SCALE DRAWINGS: FOLLOW WRITTEN DIMENSIONS AND NOTES. CONTACT ARCHITECT FOR CLARIFICATIONS, IF REQUIRED.
9. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD/ WALL (FOG), FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS OTHERWISE NOTED OR INDICATED.
10. NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS. REFER TO WALL TYPES SHEET FOR THICKNESSES.
11. ALL MASONRY WALL THICKNESSES ACTUAL DIMENSIONS REFER TO WALL TYPES SHEET.
12. "TYPICAL", AS USED IN THESE DOCUMENTS, SHALL MEAN THAT THE CONDITION OR DIMENSION IS REPRESENTATIVE OF, OR THE SAME, FOR SIMILAR CONDITIONS THROUGHOUT.
13. IF THERE IS A DISCREPANCY BETWEEN SMALL SCALE AND LARGE SCALE DRAWINGS, (PLAN, SECTION, & DETAIL DRAWINGS, ETC.) - CONTACT ARCHITECT FOR CLARIFICATION. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL GOVERN.
14. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND SPECIFICATIONS - CONTACT ARCHITECT FOR CLARIFICATION. FOR BIDDING PURPOSES: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION: THE MOST EXPENSIVE AND/OR STRICTEST REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHALL GOVERN.
15. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK.
16. ANY AND ALL DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO PROCEEDING WITH THE WORK. IN THESE INSTANCES: NO CHANGE ORDERS OR EXTENSIONS OF TIME WILL BE ALLOWED OR ACCEPTED FOR PROCEEDING WITH THE WORK WITHOUT THE ARCHITECT'S WRITTEN DIRECTION AND APPROVAL. ALSO - CONTRACTOR MUST REPAIR AND/OR REPLACE ANY UNAUTHORIZED WORK, AS INDICATED BY THE ARCHITECT, AT NO ADDITIONAL COST TO THE OWNER.
17. ALL DISSIMILAR METAL MATERIALS SHALL BE ISOLATED WITH AN APPROVED NONMETAL ISOLATION MATERIAL.
18. OPEN EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALL PANELS, AND AT PENETRATIONS OF UTILITIES THROUGH THE BUILDING ENVELOPE, ETC. – SHALL BE SEALED, CAULKED, FLASHED OR WEATHER-STRIPPED AS REQUIRED FOR COMPATIBILITY WITH ADJACENT MATERIALS & TO ELIMINATE AIR LEAKAGE AND WATER ENTRY.
19. PROVIDE SEALANT AND/OR CAULKING BETWEEN DISSIMILAR ADJOINING INTERIOR MATERIALS. (I.E. WINDOW SILLS TO GYP. BD., ACT CEILINGS TO MASONRY WALLS, ETC.)
20. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO FINISH JAMB, ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE OF THE DOOR TO THE INTERSECTING WALL.
21. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND THEIR SERVICE CONNECTIONS WITH THE PROPER UTILITY COMPANY.
22. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE FINAL SIZE AND DEPTH OF THE ELEVATOR PIT, SHAFT, RAIL SUPPORT, HOIST SUPPORT, OVERRUN AND MISC. ELEVATOR REQUIREMENTS WITH THE SELECTED ELEVATOR MANUFACTURER/ SUPPLIER.
23. CONTRACTOR SHALL COORDINATE SIZE, LOCATIONS AND NUMBER OF ALL ROOF OPENINGS AND ROOF ACCESSORIES WITH ALL OTHER TRADES. REFER TO THE ARCHITECTURAL, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS.
24. LOCATIONS AND SIZES OF ALL CONCRETE MECHANICAL AND ELECTRICAL PADS SHALL BE COORDINATED BY THE MECHANICAL AND ELECTRICAL CONTRACTORS, WITH THE SELECTED EQUIPMENT MANUFACTURER/SUPPLIER; AND ARE TO BE APPROVED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
25. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS DETAILED OR NOTED OTHERWISE.
26. AT ALL TELECOMMUNICATION ROOMS: PROVIDE 3/4" X 8'-0" HIGH FIRE-RETARDANT-TREATED WOOD SHEATHING OR PROVIDE PLYWOOD OVER NON-COMBUSTIBLE SHEATHING; BOTTOM TO BE LOCATED AT 4" A.F.F. VERIFY LENGTHS AND LOCATIONS WITH ELECTRICAL DRAWINGS.
27. GLASS DOORS, ADJACENT PANELS AND ALL GLAZED OPENINGS WITHIN 1'-6" OF THE FLOOR, AND WITHIN A 24-INCH ARC OF EITHER VERTICAL EDGE OF A DOOR, ETC., SHALL BE SAFETY GLAZING AS APPROVED FOR IMPACT BY APPLICABLE BUILDING CODES, AND SHALL BE LABELED AS SUCH.
28. ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING.
29. PROVIDE INDEPENDENT FRAMING & ATTACHMENTS TO THE STRUCTURE – ADEQUATE TO SUPPORT THE CEILING SYSTEM, LIGHT FIXTURES, DUCTS, DIFFUSERS, SPRINKLER PIPING AND BUS DUCTS.
30. ALL CLOSETS AND ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISHES AS ADJOINING SPACES.
31. CONTRACTOR TO INSTALL WOOD BLOCKING AND PLYWOOD AS REQUIRED FOR THE MOUNTING OF ALL TOILET ACCESSORIES, MILLWORK/ CASEWORK, HANDRAILS, FIRE EXTINGUISHERS, WALL SPEAKERS, POSTER CASES, TELEVISIONS, ELECTRICAL PANELS, FIRE ALARMS, MEP ITEMS, AND AV EQUIPMENT, ETC.
32. REFER TO SPECIFICATIONS FOR ALL REQUIRED TESTING AND INSPECTIONS.
33. ANY/ ALL PROPRIETARY PRODUCTS DESCRIBED AND/OR DRAWN IN THE DOCUMENTS (BUT NOT SPECIFIED) ARE TO MEET THE MANUFACTURER'S STANDARD CRITERIA WHICH IS NOT LIMITED TO THE FOLLOWING: PERFORMANCE REQUIREMENTS, QUALITY ASSURANCE REQUIREMENTS, APPLICABLE CODES AND INDUSTRY STANDARDS, FABRICATION, ASSEMBLY, HANDLING, DELIVERY, STORAGE, INSTALLATION, OPERATION, ADJUSTMENTS, ETC. PROVIDE THE MANUFACTURER'S STANDARD WARRANTY AND STANDARD FINISH WARRANTY. PROVIDE PRODUCT DATA, SHOP DRAWINGS, SAMPLES, AND MAINTENANCE DATA AS REQUIRED. REFER TO DIVISION 01 SPEC. SECTIONS WHICH ALSO APPLY - SUCH AS SUBSTITUTION PROCEDURES, SUBMITTAL PROCEDURES, QUALITY REQUIREMENTS, REFERENCES, EXECUTION, AND CLOSEOUT PROCEDURES. NOTE: ANY SUBSTITUTIONS MUST MEET THE DESIGN INTENT, AS WELL AS THE CRITERIA DESCRIBED ABOVE.
34. PROVIDE MINIMUM WARRANTY PERIOD OF 18 MONTHS FROM SUBSTANTIAL COMPLETION ON ALL PRODUCTS/ SERVICES.

collins | webb ARCHITECTURE
307B SW Market Street, Lee's Summit, Mo. 64063 P: 816.249.2270
(www.collinsandwebb.com)

PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

ROGER L. WEBB II
NUMBER
A-2016004008

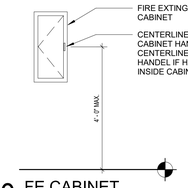
PROFESSIONAL SEAL

G001

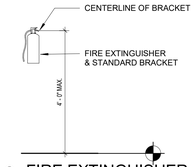
ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

GENERAL INFORMATION

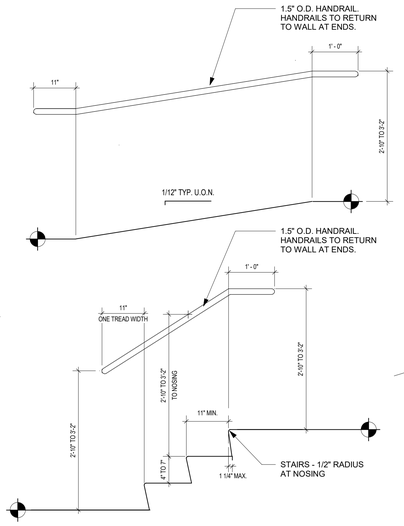
2/23/2023 4:54:18 PM



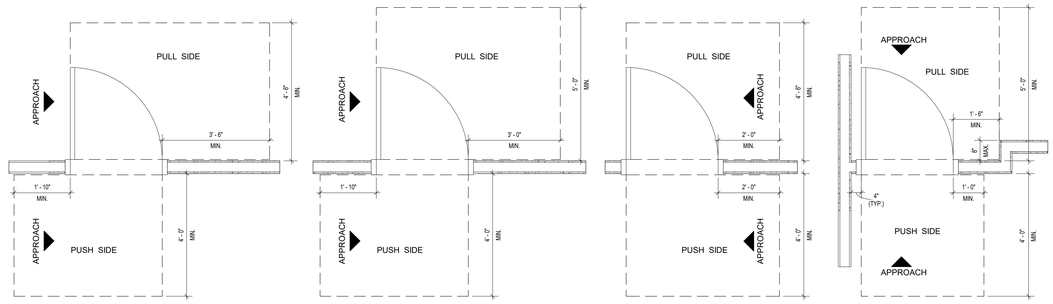
J10 FE CABINET
1/2" = 1'-0"



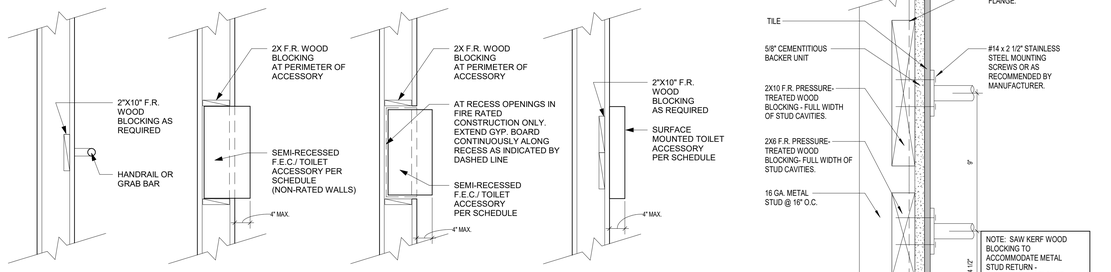
G10 FIRE EXTINGUISHER
1/2" = 1'-0"



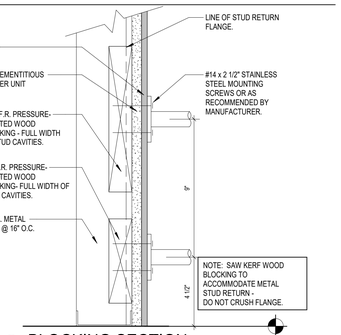
G9 HANDRAIL @ STAIRS AND RAMPS
3/4" = 1'-0"



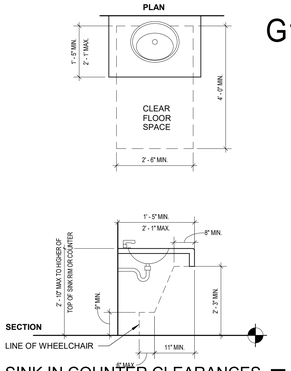
J7 TYP. DOOR APPROACH CLEARANCES
1/2" = 1'-0"



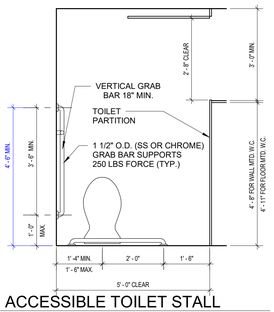
G7 TYPICAL BLOCKING DETAILS
3/4" = 1'-0"



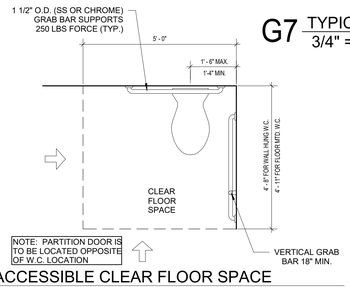
G2 BLOCKING SECTION
3" = 1'-0"



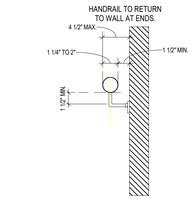
E12 SINK IN COUNTER CLEARANCES
1/2" = 1'-0"



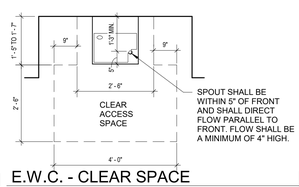
E10 ACCESSIBLE TOILET STALL
1/2" = 1'-0"



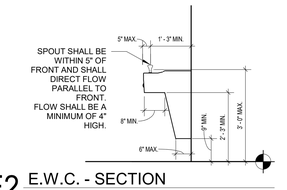
E8 ACCESSIBLE CLEAR FLOOR SPACE
1/2" = 1'-0"



E6 HANDRAIL CLEARANCES
1 1/2" = 1'-0"



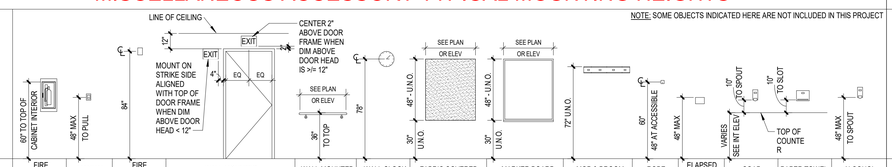
E4 E.W.C. - CLEAR SPACE
1/2" = 1'-0"



E2 E.W.C. - SECTION
1/2" = 1'-0"

MISCELLANEOUS ACCESSORY TYPICAL MOUNTING HEIGHTS

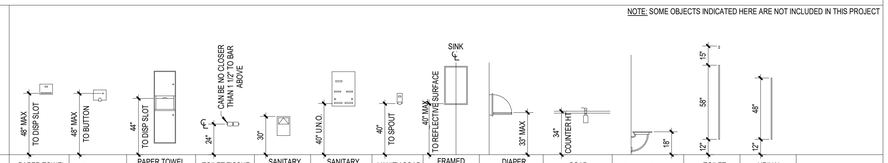
NOTE: SOME OBJECTS INDICATED HERE ARE NOT INCLUDED IN THIS PROJECT



FINISH FLOOR																
ACCESSORY TYPE	FIRE EXTINGUISHER CABINET	MANUAL FIRE PULL	FIRE STROBE/LIGHT/ AUDIBLE ALARM	WALL MOUNTED EXIT SIGN	WALL MOUNTED HANDRAIL	WALL CLOCK	FABRIC COVERED TACK BOARD	MARKER BOARD	MOP & BROOM HOLDER	ROBE HOOK	ELAPSED TIME CLOCK	SOAP DISPENSER	PAPER TOWEL DISPENSER	ALCOHOL DISPENSER
COMMENTS	SEMI RECESSED	SURFACE MOUNTED	SURFACE MOUNTED	WALL MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED

TOILET ACCESSORY TYPICAL MOUNTING HEIGHTS

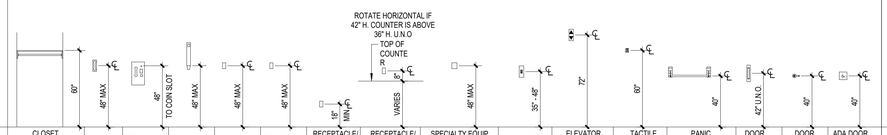
NOTE: SOME OBJECTS INDICATED HERE ARE NOT INCLUDED IN THIS PROJECT



FINISH FLOOR															
ACCESSORY TYPE	PAPER TOWEL DISPENSER	POWER HAND DRYER	PAPER TOWEL DISPENSER & TRASH RECEPTACLE SEMI RECESSED	TOILET TISSUE DISPENSER	SANITARY NAPKIN DISPOSAL	SANITARY NAPKIN DISPENSER	VANITY SOAP DISPENSER	FRAMED VANITY MIRROR	DIAPER CHANGING STATION	SOAP DISPENSER	FOLDING SHOWER SEAT	TOILET PARTITION	URINAL SCREEN
COMMENTS	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	RECESSED & SURFACE	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	COUNTERTOP MOUNTED	SURFACE MOUNTED	WALL MOUNTED	WALL MOUNTED

MISCELLANEOUS ACCESSORY TYPICAL MOUNTING HEIGHTS

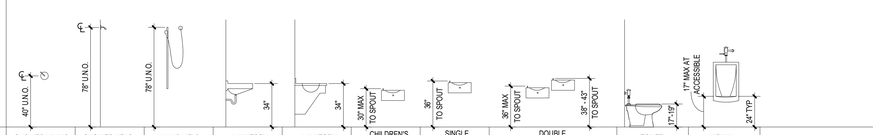
NOTE: SOME OBJECTS INDICATED HERE ARE NOT INCLUDED IN THIS PROJECT



FINISH FLOOR															
ACCESSORY TYPE	CLOSET HANGAR ROD & SHELF	WALL PHONE	TELEPHONE HOUSING	CUP DISPENSER	WALL SWITCH	TELEPHONE OUTLET	RECEPTACLE/ TELEPHONE/ DATA	RECEPTACLE/ TELEPHONE/ DATA	SPECIALTY EQUIP (IE. THERMOSTAT,CARD READER,INTERCOM)	ELEVATOR CALL BUTTON	ELEVATOR VISIBLE SIGNAL INDICATOR	TACTILE CHARACTER INDICATOR	PANIC BAR	DOOR PULL	DOOR LATCH	ADA DOOR OPERATOR
COMMENTS	WALL MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	VARIES

PLUMBING FIXTURE TYPICAL MOUNTING HEIGHTS

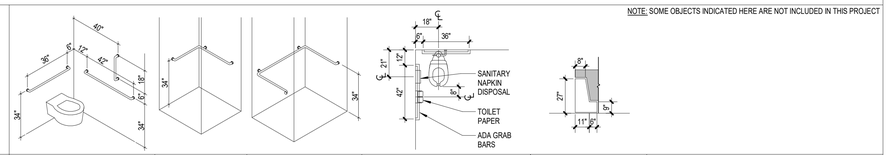
NOTE: SOME OBJECTS INDICATED HERE ARE NOT INCLUDED IN THIS PROJECT



FINISH FLOOR											
ACCESSORY TYPE	SHOWER MIXING VALVE	SHOWER HEAD	HAND HELD SHOWER	LAVATORY	LAVATORY	CHILDREN'S DRINKING FOUNTAIN	SINGLE DRINKING FOUNTAIN	DOUBLE DRINKING FOUNTAIN		TOILET	URINAL
COMMENTS	WALL MOUNTED	WALL MOUNTED	WALL MOUNTED	WALL MOUNTED	COUNTER MOUNTED	WALL MOUNTED	WALL MOUNTED	WALL MOUNTED		WALL/FLOOR MOUNTED	WALL MOUNTED

GRAB BAR TYPICAL MOUNTING HEIGHTS & TOILET ACCESSORY PLANS

NOTE: SOME OBJECTS INDICATED HERE ARE NOT INCLUDED IN THIS PROJECT



FINISH FLOOR						
ACCESSORY TYPE	ADA TOILET GRAB BAR	SHOWER STALL GRAB BAR	ROLL-IN SHOWER STALL GRAB BAR	TYPICAL ACCESSORIES AT ACCESSIBLE TOILET	TYPICAL ADA SINK ENCLOSURE PANEL CLEARANCE	
COMMENTS	SURFACE MOUNTED	SURFACE MOUNTED	SURFACE MOUNTED	NOTE: SANITARY NAPKIN DISPOSAL AT WOMEN'S & UNISEX ONLY		

A11 TYPICAL MOUNTING HEIGHTS
1/4" = 1'-0"

GENERAL NOTES ACCESSIBILITY GUIDELINES:

1. NOTE: ALL DIMENSIONS ARE MEASURED FROM FLOOR, UNLESS NOTED OR SHOWN OTHERWISE.
2. ADA UNOBSTRUCTED REACH RANGES: ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.
3. ELEVATORS: STANDARD CALL BUTTONS: 35" TO 48" TO C.L. & PROTRUDE 1" MAX. ADA CALL BUTTONS: 42" TO C.L. (TYP.) & 48" MAX. (3/4" SMALLEST DIM.). ADA VISIBLE SIGNALS: 72" MIN. TO C.L. (2 1/2" SMALLEST DIM.). TACTILE SIGNAL ON HOISTWAY: 60" TO BASE OF CHARACTERS W/ TACTILE STAR & 2" HIGH CHARACTERS.
4. DOOR HARDWARE (TO CENTER OF HARDWARE): STANDARD MOUNTING HEIGHTS: PUSH PLATES = 42", PULL HANDLES = 42", KNOBS/ LEVERS = 40", PANIC EXIT = 42" CENTERLINE OF BAR. KICKPLATES: WIDTH = DOOR WIDTH MINUS 2", CENTER HEIGHT = 16" FROM B.O. DOOR. THRESHOLDS: STANDARD = 1/2" MAX. AT EXT. SLIDING DOORS = 3/4" MAX., ADA HARDWARE = 3/4" MIN. TO 48" MAX.
5. DRINKING FOUNTAINS & EWC'S (TO SPOUT): STANDARD = 40" TYP., 42" MAX. ADA =36" MAX. (27" MIN. CLEAR KNEE SPACE)
6. COUNTERTOPS (TO SINK RIM/ COUNTERTOP): ADA = 28" MIN. TO 34" MAX.
7. WATER CLOSETS (TO TOP OF SEAT): STANDARD = 14" TO 15". ADA (TO TOP OF SEAT) = 17" TO 19". ADA FLUSH CONTROLS = 44" MAX.
8. URINALS (TO RIM): STANDARD = 24" MAX. ADA =17" MAX. ADA FLUSH CONTROLS = 44" MAX.
9. LAVATORIES (TO SINK RIM/ COUNTERTOP): STANDARD = 36" MAX. ADA = 34" MAX. (29" MIN. CLEAR KNEE SPACE)
10. MIRRORS (TO B.O. REFLECTIVE SURFACE): STANDARD = VARIES. ADA = 40" MAX.
11. GRAB BARS - ADA (TO TOP OF BAR): WATER CLOSETS = 33" MIN. TO 36" MAX. SHOWERS = 33" MIN. TO 36" MAX. (FROM B.O.SHOWER). BATHTUBS: TOP BAR = 33" MIN. TO 36" MAX. BOT. BAR = 9" ABOVE T.O. TUB
12. SHOWER HEADS (FROM FLOOR TO HEAD): STANDARD = 72" TO 84". ADA = SPRAY UNIT W/ HOSE 60" LONG MIN. ADA = FIXED SHOWER HEAD = 48" AFF.
13. SHOWER CONTROLS (TO CONTROL AREA): STANDARD = 48" MAX. (TO TOP). ADA = 38" MIN. TO 48" MAX.
14. SHOWER ROD (FROM FLOOR TO C.L.): STANDARD = 78" MAX.
15. TOILET ROOM PARTITIONS: TOILETS = 12" TO BOT. & 70" TO TOP. URINALS = 18" TO BOT. & 60" TO TOP
16. TOILET PAPER DISPENSERS (TO C.L. OF OUTLET): STANDARD = 24". ADA = 19" MIN. TO 24" MAX.
17. WALL MOUNTED SOAP DISPENSERS (TO C. L. OF PUSH BUTTON): STANDARD = 40". ADA = VARIES. RE: OBSTRUCTED AND UNOBSTRUCTED REACH RANGES. ADA SIDE REACH = 48" MAX. ABOVE SINK /COUNTER.
18. PAPER TOWEL DISPENSER/ WASTE RECEPTACLE (TO TOWEL SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.
19. WARM AIR HAND DRYER (TO PUSH SWITCH): STANDARD = 44" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.
20. SANITARY NAPKIN DISPENSER (TO C.L. OF COIN SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.
21. SANITARY NAPKIN DISPOSAL (TO TOP OF UNIT): STANDARD = 28" MAX. ADA = 19" MIN. TO 24" MAX. (TO OPNG.)
22. TOILET SEAT COVER DISPENSERS (TO OPNG.): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN.
23. SHELVES: ADA = 48" MAX.
24. COAT HOOKS: STANDARD = 68", ADA = 48" MAX.
25. CHALKBOARDS, TACKBOARDS & MARKERBOARDS: STANDARD = 32" TO 39" (TO B.O. BOARD OR CHALKTRAY). STANDARD = 80" (RECOMMENDED, TO T.O. BOARD)
26. THERMOSTATS & CONTROL DEVICES (TO TOP): ADA FORWARD REACH = 48" MAX. ADA SIDE REACH = 48" MAX.
27. LIGHT SWITCHES & CARD READERS (TO C.L.): LOCATE 6" FROM DOOR JAMB. ADA = 48" MAX.
28. CONVENIENCE RECEPTACLES – ELECTRICAL/ TELEPHONE/ DATA (TO C.L.): STANDARD = 18". ADA = 15" MIN.
29. EXIT LIGHTS - WALL MOUNTED: 2" MIN. BELOW CEILING. 2" MIN. ABOVE DOOR FRAME. EQUAL SPACE FROM CEILING TO TOP OF FRAME
30. FIRE EXTINGUISHERS (TO TOP, U.N.O.): GROSS WT. 40 LBS. OR LESS = 60" MAX. GROSS WT. MORE THAN 40 LBS. = 42" MAX. ADA = 40" MAX. (B.O. CABINET)
31. FIRE ALARM PULL STATIONS (TO LEVER): STANDARD = 48" MAX. ADA FORWARD REACH = 48" MAX. ADA SIDE REACH = 48" MAX.
32. SMOKE AND/OR HEAT DETECTORS: STANDARD = CEILING HEIGHT
33. HORN/ SPEAKER/ VISUAL SIGNALS: STANDARD = 80" AFF. OR 6" BELOW CEILING - WHICHEVER IS LOWER.
34. ROOM SIGNAGE (TO C.L.): STANDARD = 60" HIGH AFF. & WITHIN 18" OFLATCH SIDE OF DOOR

CWA collins|webb ARCHITECTURE
307B SW Market Street, Lee's Summit, Mo, 64063 P: 816.249.2270
(www.collinsandwebb.com)

PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

STATE OF MISSOURI
ROGER L. WEBB II
NUMBER A-2016040008
ARCHITECT
PROFESSIONAL SEAL

G002

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

ACCESSIBILITY GUIDELINES

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WALL PRIORITY LEGEND

NOTE: *THIS LEGEND IS FOR GRAPHIC REPRESENTATION ONLY.*

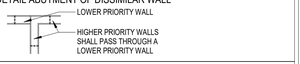
FOUR HOUR FIRE WALL (**4FW**)
THREE HOUR FIRE WALL (**3FW**)
TWO HOUR FIRE WALL (**2FW**)
FOUR HOUR FIRE BARRIER (**4FB**)
THREE HOUR FIRE BARRIER (**3FB**)

TWO HOUR FIRE BARRIER (**2FB**) *(INCLUDES THE FOLLOWING)*
- TWO HOUR SHAFT ENCLOSURE (**2SE**)

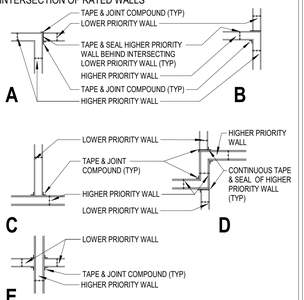
ONE HOUR FIRE BARRIER (**1FB**) *(INCLUDES THE FOLLOWING)*
- ONE HOUR SHAFT ENCLOSURE (**1SE**)

SMOKE TIGHT PARTITION (**X**) *(INCLUDES THE FOLLOWING)*
- SMOKE TIGHT PARTITION TO SMOKE TIGHT CEILING (**XC**)
- SMOKE TIGHT PARTITION WITHIN PLENUM ABOVE CEILING (**XP**)
- SMOKE TIGHT PARTITION SEPARATION OF INTERSTITIAL SPACES (**XI**)

DETAIL ABUTMENT OF DISSIMILAR WALL



INTERSECTION OF RATED WALLS



NOTES:
1. REFER TO WALL TYPES ON SHEET G121-TI FOR WALL COMPONENTS, NUMBER OF GYPSUM BOARD LAYERS, TYPE OF GYPSUM BOARD, AND OTHER SIMILAR INFO.
2. THE HIGHER PRIORITY WALL SHALL PASS THROUGH THE LOWER PRIORITY WALL.
3. TAPING AND SEALING OF HIGHER PRIORITY WALLS SHALL BE CONTINUOUS.
4. ALTERNATE LAYERS OF GYPSUM BOARD SHALL OVERLAP AT CORNER INTERSECTIONS OF MULTI-LAYERED RATED GYPSUM BOARD PARTITIONS.

FIRE & SMOKE RESISTIVE LEGEND DEFINITIONS

FIRE WALLS (FW)

DEFINITION
A FIRE RATED WALL THAT IS CONTINUOUS VERTICALLY FROM FOUNDATION TO ROOF TO SEPARATE CONSTRUCTION INTO SEPARATE BUILDINGS.

USE
FIRE WALLS SERVE TO CREATE SEPARATE BUILDINGS FOR THE FOLLOWING REASONS.
- CONSTRUCTION TYPE VARIES FROM ONE BUILDING TO ANOTHER.
- COMPLIANCE WITH MAXIMUM ALLOWABLE AREA REQUIREMENTS.
- TO SEPARATE BUILDINGS WITH DIFFERENT LEVELS OF FIRE PROTECTION.
- TO ADDRESS A PROPERTY LINE DEFINING DIFFERENT OWNERSHIP.

SPECIAL CONSIDERATIONS
- THE FIRE WALL REQUIRES SUFFICIENT STRUCTURAL STABILITY UNDER FIRE CONDITIONS TO ALLOW THE COLLAPSE OF CONSTRUCTION ON EITHER SIDE WITHOUT COLLAPSE OF THE WALL.
- OPENINGS ARE REQUIRED TO BE PROTECTED.
- OPENINGS ARE LIMITED BASED ON A PERCENTAGE OF WALL LENGTH.
- EXTENDING THE FIRE WALL THROUGH THE ROOF WITH A PARAPET IS REQUIRED FOR SOME CONSTRUCTION CLASSIFICATIONS.
- THE REQUIRED FIRE RATING OF A FIRE WALL IS BASED ON OCCUPANCY GROUPS AND CLASS OF CONSTRUCTION.
- HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER.

FIRE BARRIERS (FB)

DEFINITION
A FIRE RATED WALL CONSTRUCTED TO RESTRICT THE SPREAD OF FIRE. CONTINUITY SHALL BE MAINTAINED FROM TOP OF FLOOR TO UNDERSIDE OF THE FLOOR OR ROOF DECK ABOVE.

USE
FIRE BARRIERS HAVE THE FOLLOWING APPLICATIONS.
- TO CREATE HORIZONTAL EXITS.
- TO SEPARATE EXIT PASSAGEWAYS.
- OCCUPANCY SEPARATIONS.
- TO SEPARATE INCIDENTAL USE AREAS.
- ISOLATION OF HAZARDS.
- TO SEPARATE ROOMS WITH DIFFERENT LEVELS OF FIRE PROTECTION.
- SMOKE BARRIERS AND SHAFT ENCLOSURES ARE FIRE BARRIERS. SEE ADDITIONAL REQUIREMENTS.

SPECIAL CONSIDERATIONS
- WITHIN SOME CONSTRUCTION CLASSIFICATIONS, CONSTRUCTION THAT PROVIDES STRUCTURAL SUPPORT OF A FIRE BARRIER IS REQUIRED TO BE OF THE SAME HOURLY FIRE RATING AS THE FIRE BARRIER, OR BETTER.
- OPENINGS ARE REQUIRED TO BE PROTECTED.
- HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER.

SHAFT ENCLOSURES (SE)

DEFINITION
A SHAFT ENCLOSURE IS A FIRE BARRIER FORMING THE BOUNDARY OF A VERTICAL SHAFT.

USE
PROTECT OPENINGS IN FIRE RATED FLOOR/CEILING ASSEMBLIES.

SPECIAL CONSIDERATIONS
- PENETRATIONS IN SHAFT ENCLOSURES ARE PROHIBITED UNLESS NECESSARY FOR THE FUNCTION OF THE SHAFT. WHERE ALLOWED, OPENINGS ARE REQUIRED TO BE PROTECTED.
- DUCT PENETRATIONS REQUIRE COMBINATION SMOKE AND FIRE DAMPERS EXCEPT FOR EXISTING CONDITIONS THAT ARE GRANDFATHERED.
- HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH, CLOSER, AND PERIMETER SMOKE SEALS.

FIRE PARTITIONS (FP)

DEFINITION
A FIRE RATED PARTITION THAT IS USED FOR THE APPLICATIONS LISTED BELOW. IT SHALL BE CONTINUOUS FROM TOP OF FLOOR TO UNDERSIDE OF A FIRE-RATED FLOOR/CEILING OR ROOF/CEILING ASSEMBLY. WHERE ALLOWED BY CODE EXCEPTION, A FIRE PARTITION SHALL BE ALLOWED TO TERMINATE AT THE UPPER MEMBRANE OF A FIRE RATED CEILING

USE
FIRE PARTITIONS ARE USED IN CERTAIN OCCUPANCIES TO DO THE FOLLOWING.
- SEPARATE DWELLING UNITS
- SEPARATE SLEEPING SPACES
- SEPARATE CORRIDORS FROM ADJACENT SPACES
- SEPARATE ELEVATOR LOBBIES
- SEPARATE TENANT SPACES IN COVERED MALL BUILDINGS

SPECIAL CONSIDERATIONS
- OPENINGS ARE REQUIRED TO BE PROTECTED.
- HARDWARE FOR SWING DOORS SHALL INCLUDE A LATCH AND CLOSER.

BEARING WALLS (BW)

DEFINITION
AN INTERIOR OR EXTERIOR WALL DESIGNED TO SUPPORT FLOOR OR ROOF LOADS. A BEARING WALL IS FIRE-RATED ONLY TO MAINTAIN THE INTEGRITY OF ITSELF AS A FIRE RATED STRUCTURAL ELEMENT. THE WALL DOES NOT SERVE AS A FIRE SEPARATION FROM ONE SIDE TO THE OTHER SIDE.

USE
A VERTICAL, LOAD BEARING STRUCTURAL ELEMENT.

SPECIAL CONSIDERATIONS
- DOORS AND WINDOWS ARE NOT REQUIRED TO BE RATED.
- HVAC DUCT PENETRATIONS ARE NOT REQUIRED TO BE FIRE-DAMPERED.
- PLUMBING, ELECTRICAL, SPRINKLER SYSTEM, AND CABLE PENETRATIONS ARE REQUIRED TO BE FIRE-STOPPED WITH FIRE SEALANT AT BOTH SIDES, FOR WALLS CONSTRUCTED OF HOLLOW CMU OR STUD FRAMING.

ACTIVE FIRE PROTECTION SYSTEMS:

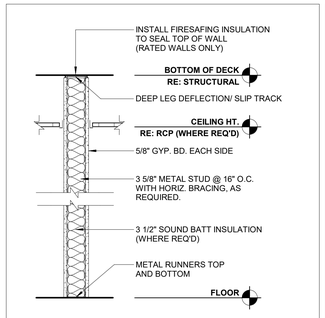
- AUTOMATIC SPRINKLER SYSTEM - PROVIDED THROUGHOUT (903.2.1)
- STANDPIPE SYSTEM - PROVIDED IN STAIRS THROUGHOUT (905)
  1. ADDITIONAL CONNECTIONS PROVIDED AS SHOWN (905)
- ESCALATOR OPING PROTECTED IN ACCORDANCE WITH IBC 712.1.3.1. DRAFT CURTAIN AND CLOSELY SPACED SPRINKLERS.

GENERAL NOTES

1. THE FOLLOWING INFORMATION SERVES TO PROVIDE BUILDING OWNERS WITH CONCISE DEFINITIONS OF WALL TYPES RELATED TO LIFE SAFETY ISSUES. THIS INFORMATION IS NOT MEANT TO BE A SUBSTITUTE FOR APPLICABLE BUILDING CODES.
2. WHEN A WALL HAS MORE THAN ONE CLASSIFICATION, THE MOST RESTRICTIVE REQUIREMENTS FOR EACH CLASSIFICATION SHALL APPLY.
3. FOR NEW CONSTRUCTION, PERIMETER SMOKE-SEALS MAY BE REQUIRED AT FIRE-RATED DOORS IN CERTAIN OCCUPANCIES.

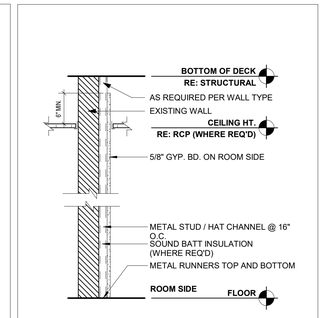
WALL TYPE NOTES:

1. RE: LIFE SAFETY PLAN(S) FOR RATED WALL LOCATIONS.
2. WHERE "FIRE-RATED SEALANT" IS INDICATED ON WALL TYPES: PROVIDE FIRE-RATED SEALANT ABOVE TOP TRACK, UNDER BOTTOM TRACK, AT ALL PENETRATIONS (BOTH SIDES), AND AS REQUIRED BY FIRE RATING UL NUMBER.
3. EXTEND FIRE-RATED WALL CONSTRUCTION BEHIND RECESSED OR BUILT-IN EQUIPMENT, SUCH AS FIRE EXTINGUISHER CABINETS (FEC), ELECTRICAL WATER COOLERS (EWC), ELECTRICAL PANELS, ETC., UNLESS NOTED OTHERWISE.
4. PROVIDE AND INSTALL ALL STIFFENERS, BRACING, BACK-UP PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE INSTALLATION OF ALL CASEWORK AND OF ALL FLOOR MOUNTED OR SUSPENDED MECHANICAL, ELECTRICAL OR LABORATORY EQUIPMENT.
5. WHERE HVAC OR OTHER MECHANICAL, ELECTRICAL AND PLUMBING ITEMS PENETRATE PARTITIONS: STUDS SHALL BE BRACED AND FRAMED TO STRUCTURE AS REQUIRED TO PROVIDE ADEQUATE SUPPORT. ALL PENETRATIONS THROUGH ACOUSTICAL AND FIRE RATED WALLS SHALL BE SEALED TO PROVIDE FIRE, SMOKE, AND/OR ACOUSTICAL ISOLATION OF SPACES WITH APPROPRIATE ACOUSTICAL/ FIRESTOP MATERIAL.
6. THERE SHALL BE NO BACK-TO-BACK ELECTRICAL, TELEPHONE, OR OTHER OUTLETS, EXCEPT WHERE SPECIFICALLY SHOWN.
7. WALL BASE IS NOT SHOWN ON ALL WALL TYPES FOR CLARITY. REFER TO FINISH SCHEDULE.
8. PROVIDE GLASS-MAT, WATER RESISTANT BACKING BOARD AT ALL WET LOCATIONS.
9. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8 INCH BELOW STRUCTURE, UNLESS NOTED OR SHOWN OTHERWISE.
10. PROVIDE AND INSTALL BLOCKING REQUIRED FOR ALL A.V. EQUIPMENT. G.C. TO COORDINATE WITH TI CONSULTANT FOR FINAL LOCATIONS AND SIZE REQUIREMENTS.
11. COMPRESSIBLE FILLER - ACCEPTABLE MATERIALS WOULD BE FIBERGLASS INSULATION OR FIRESTOPPING. VOIDS TO BE COMPLETELY FILLED AND A FIRESTOP SEALANT OVER ANY ENDS. THIS IS TYPICAL FOR ALL ACOUSTICAL WALL ASSEMBLIES WHERE "COMPRESSIBLE FILLER" IS CALLED FOR. THERE CAN BE NO VOIDS IN THE INSTALLATION.
12. PROVIDE A MIN. MSG-12 STUD FOR ALL VERTICAL LONG SPAN WALL TYPES.



WALL TYPE A

TYPE	WALL DESCRIPTION
A	•3 5/8" METAL STUD @ 16" O.C. TO DECK ABOVE •5/8" TYPE "X" GYP. BD. EACH SIDE TO DECK ABOVE •NO SOUND BATT INSUL. •NON RATED
A1	•3 5/8" METAL STUD @ 16" O.C. TO HT OF STUD •5/8" TYPE "X" GYP. BD. EACH SIDE TO DECK ABOVE •3 1/2" SOUND BATT INSUL. TO FULL HEIGHT OF WALL •ACOUSTICAL SEALANT AT FLOOR, DECK, & ALL PENETRATIONS •NON RATED
A2	•3 5/8" METAL STUD @ 16" O.C. TO COUNTER HT, AS DETAILED • 1/2" PLYWOOD EACH SIDE, AT RADIUS 2 LAYERS OF 1/4" PLYWOOD EACH SIDE •NO SOUND BATT INSUL. •NON RATED



WALL TYPE E

TYPE	WALL DESCRIPTION
E2	•3 5/8" METAL STUD @ 16" O.C. TO DECK ABOVE •5/8" TYPE "X" GYP. BD. ONE SIDE •NO SOUND BATT INSUL. •NON RATED
E3	•3 5/8" METAL STUD @ 16" O.C. TO HT OF STUD •5/8" TYPE "X" GYP. BD. ONE SIDE •NO SOUND BATT INSUL. •NON RATED

GENERAL DESCRIPTION

PROJECT NAME: ITAP
PROJECT LOCATION: 230 SW MAIN ST., LEE'S SUMMIT, MO 64063
COUNTY: JACKSON

COLLINS WEBB ARCHITECTURE
307B SW MARKET STREET
LEES SUMMIT, MISSOURI 64063

APPLICABLE CODES:
INTERNATIONAL BUILDING CODE - 2018 ED.
INTERNATIONAL PLUMBING CODE - 2018 ED.
INTERNATIONAL MECHANICAL CODE - 2018 ED.
INTERNATIONAL FUEL GAS CODE - 2018 ED.
NATIONAL ELECTRICAL CODE - 2017 ED.
INTERNATIONAL FIRE CODE - 2018 ED.
ADA STANDARDS FOR ACCESSIBLE DESIGN - 2010 ED.
ICC/ANSI A117.1: ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - 2009 ED.

CODE INFORMATION

		TABLE/SECTION/REFERENCE
BUILDING/PROJECT USE:	RESTAURANT	IBC SECTION 303
CONSTRUCTION TYPE	TYPE VB (SPRINKLED)	IBC TABLE 601
OCCUPANCY CLASSIFICATION	ASSEMBLY (A-2)	IBC SECTION 303
ACTUAL TENANT AREA (GROSS)	3,747 SQ. FT.	

FIRE RESISTIVE REQUIREMENTS

		TABLE/SECTION/REFERENCE
PRIMARY FRAME	0 HRS	TABLE 601
NON-BEARING WALLS	0 HRS	TABLE 601
BEARING WALLS INT./ EXT.	0 INT. / 2 EXT. HRS	TABLE 601
FLOOR CONSTRUCTION (SEPARATING OCCUPANCIES)	0 HRS	TABLE 601
CEILING/ROOF	0 HRS	TABLE 601
CORRIDORS	0 HRS	TABLE 1018.1
UNSEPARATED MIXED USE	0 HRS	SECTION 508

FIRE EXTINGUISHERS

1. PROVIDE PORTABLE FIRE EXTINGUISHERS IN OCCUPANCIES AND LOCATIONS AS REQUIRED BY THE LOCAL FIRE PREVENTION CODE. SEE PLANS FOR SUGGESTED LOCATIONS. NOTIFY ARCHITECT OF ANY PROPOSED RELOCATION OR IF A CONFLICT IS ENCOUNTERED.
2. PORTABLE FIRE EXTINGUISHERS SHALL BE INSTALLED, INSPECTED, AND MAINTAINED IN ACCORDANCE WITH NFPA 10, STANDARD FOR PORTABLE FIRE EXTINGUISHERS.

CEILING HEIGHT NOTES: (IBC 1208)

1. ALL MEANS OF EGRESS TO HAVE A MINIMUM CEILING HEIGHT OF 7'-6" A.F.F., NOR SHALL HAVE ANY PROJECTION FROM THE CEILING BE LESS THAN 6'-8" A.F.F.
2. OCCUPIED SPACES, HABITABLE SPACES AND CORRIDORS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-6" A.F.F.
3. BATHROOMS, TOILET ROOMS, KITCHENS, STORAGE ROOMS AND LAUNDRY ROOMS SHALL HAVE A CEILING HEIGHT OF NOT LESS THAN 7'-0" A.F.F.

INTERIOR FINISHES

IBC TABLE 801.13

GROUP A2 (SPRINKLED)	
INTERIOR EXIT STAIRWAYS AND RAMPS AND EXIT PASSAGEWAYS	CLASS B
CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	CLASS B
ROOMS AND ENCLOSED SPACES	CLASS C

NOTE:
Decorative Materials and Trim (including plastics) must comply with IBC Section 806.

GENERAL EXITING REQUIREMENTS

		TABLE/SECTION/REFERENCE
EXIT TRAVEL DISTANCE	250 FEET	IBC TABLE 1017.2
DEAD END CORRIDOR	20 FEET	IBC SECTION 1020.4
COMMON PATH OF TRAVEL	75' FEET, OR 100' IF OCC. < 50	IBC SECTION 1006.2.1
MIN. CORRIDOR WIDTH	44", OR 36" IF OCC. < 50	IBC SECTION 1020.2

POSTING OF OCCUPANT LOAD

EVERY ROOM OR SPACE THAT IS AN ASSEMBLY OCCUPANCY SHALL HAVE THE OCCUPANT LOAD OF THE ROOM OR SPACE POSTED IN A CONSPICUOUS PLACE, NEAR THE MAIN EXIT OR EXIT ACCESS DOORWAY FROM THE ROOM OR SPACE. POSTED SIGNS SHALL BE OF AN APPROVED LEGIBLE PERMANENT DESIGN AND SHALL BE MAINTAINED BY THE OWNER OR AUTHORIZED AGENT.

EXIT REQUIREMENTS

	TABLE/SECTION/REFERENCE
A. REQUIRED CAPACITY	
1. STAIRS - 0.3" / PERSON 2. OTHER COMPONENTS - 0.2" / PERSON	IBC SECTION 1005.1
B. MINIMUM NUMBER	
1. OCCUPANT LOAD OF 1-500 PERSONS - 2 EXITS PER STORY 2. OCCUPANT LOAD OF 501-1000 PERSONS - 3 EXITS PER STORY 3. OCCUPANT LOAD OF MORE THAN 1000 PERSONS - 4 EXITS PER STORY	IBC SECTION 1006.3.1

SIGNAGE

1. PROVIDE SIGNAGE "IN FIRE EMERGENCY DO NOT USE ELEVATOR, USE EXIT STAIRS" IN ACCORDANCE WITH IBC (3002.3)

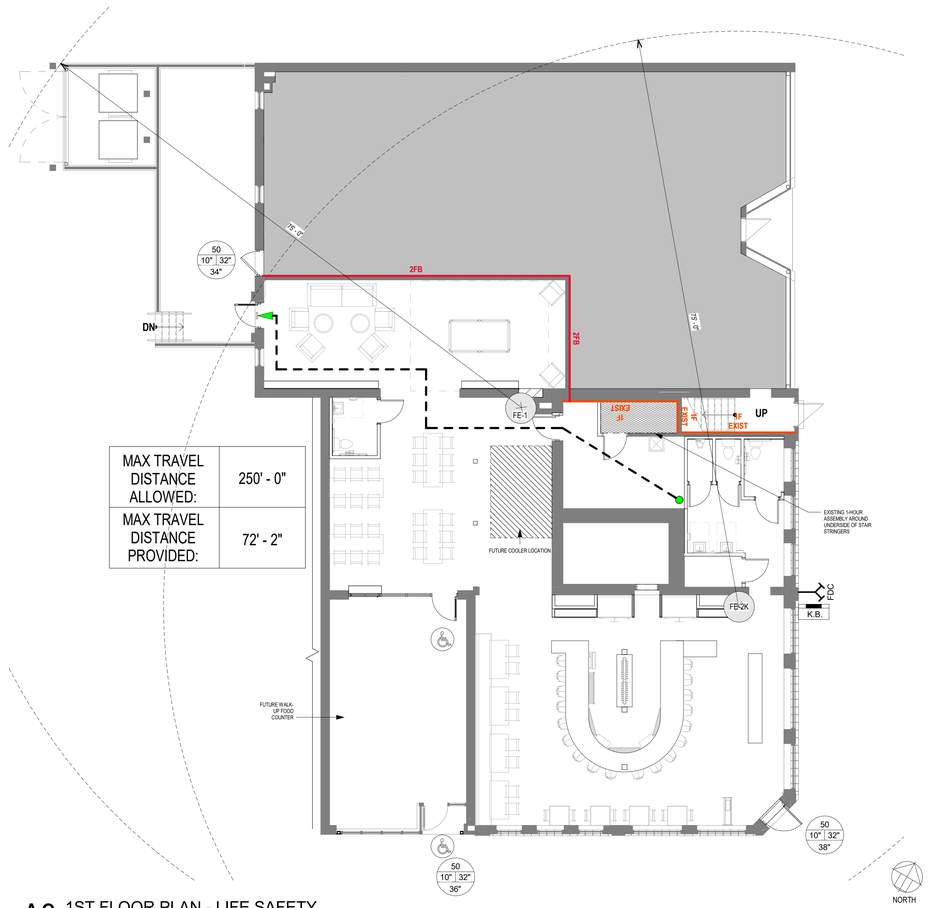
TOTAL OCCUPANT LOAD

			TABLE/SECTION/REFERENCE
BAR/DINING:	58 OCC	15 NET	IBC TABLE 1004.5
BACK BAR:	2 OCC	200 GROSS	
PARTY ROOM:	38 OCC	15 NET	
POOL ROOM:	38 OCC	15 NET	
STORAGE:	1 OCC	500 GROSS	
FUTURE FOOD COUNTER:	13 OCC	200 GROSS/ 15 NET	
TOTAL OCCUPANTS:	150 OCCUPANTS		IBC SECTION 1006.3.1
EXITS REQUIRED THIS LEVEL:	2 EXITS		
EXITS PROVIDED THIS LEVEL:	3 EXITS		

PLUMBING FIXTURE REQUIREMENTS

IBC TABLE 2902.1

A2 OCC WATER CLOSETS		= 1/75 FOR BOTH MALE AND FEMALE
A2 OCC LAVATORIES		= 1/200 FOR BOTH MALE AND FEMALE
A2 OCC DRINKING FOUNTAIN		=1/500
A2 OCC SERVICE SINK		=1
PLUMBING FIXTURES REQUIRED:		
MEN WATER CLOSETS:	75/75	= 1 REQUIRED
WOMEN WATER CLOSETS:	75/75	= 1 REQUIRED
LAVATORIES:	150/200	= 1 REQUIRED
DRINKING FOUNTAINS:		= 1 REQUIRED
SERVICE SINKS:		= 1 REQUIRED
PLUMBING FIXTURES PROVIDED:		
MEN WATER CLOSETS:		= 1 PROVIDED
WOMEN WATER CLOSETS:		= 1 PROVIDED
UNISEX WATER CLOSET:		= 1 PROVIDED
URINALS:		= 1 PROVIDED
LAVATORIES:		= 3 PROVIDED
DRINKING FOUNTAINS:		= RESTAURANT PROVIDED
SERVICE SINKS:		= 1 PROVIDED



A3 1ST FLOOR PLAN - LIFE SAFETY
1/8" = 1'-0"

FIRE RESISTIVE LEGEND

FIRE WALLS
3FW 3FW 3FW 3FW — 3 HOUR FIRE WALL
2FW 2FW 2FW 2FW — 2 HOUR FIRE WALL

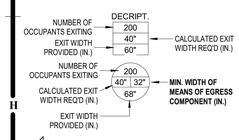
FIRE BARRIERS
2FB 2FB 2FB 2FB — 2 HOUR FIRE BARRIER
1FB 1FB 1FB 1FB — 1 HOUR FIRE BARRIER

SHAFT ENCLOSURES
2S 2S 2S 2S — 2 HOUR SHAFT ENCLOSURE
1SE 1SE 1SE 1SE — 1 HOUR SHAFT ENCLOSURE

FIRE PARTITIONS
1FP 1FP 1FP 1FP — 1 HOUR FIRE PARTITION
0.5FP 0.5FP 0.5FP 0.5FP — 0.5 HOUR FIRE PARTITION
0.5X 0.5X 0.5X 0.5X — 0.5 HOUR CORRIDOR PARTITION

SMOKE BARRIER
SB SB SB SB — 1 HOUR SMOKE BARRIER

BEARING WALLS
2BW 2BW 2BW 2BW — 2 HOUR BEARING WALL
1BW 1BW 1BW 1BW — 1 HOUR BEARING WALL



X" FROM ROOM OR LEVEL
X = CLEAR WIDTH OF OPENING IN INCHES

F.E.C. FIRE RISER CABINET

F.A.C.P. FIRE ALARM CONTROL PANEL

FDC **FIRE DEPARTMENT CONNECTION**

K.B. KNOX BOX

AR AREA OF RESCUE ASSISTANCE

ACCESSIBLE EGRESS COMPONENT

EGRESS PATH

FE-1 INDICATES FIRE EXTINGUISHER CABINET(FE) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE.

FE-2K INDICATES KITCHEN/ BAR FIRE EXTINGUISHER (FE) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE.

FE-3 INDICATES TEMPORARY WALL HUNG FIRE EXTINGUISHER (FE) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE.

DOOR RATING LEGEND (REFER TO DOOR SCHEDULE)

20 MIN. DOOR
45 MIN. DOOR
90 MIN. DOOR

COLLINS | WEBB ARCHITECTURE
307B SW Market Street, Lee's Summit, Mo, 64063 P: 816.249.2270
(www.collinsandwebb.com)

PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

STATE OF MISSOURI
ROGER D. WEBB
NUMBER A-2016040008
ARCHITECT

PROFESSIONAL SEAL

G003

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

CODE INFORMATION AND LIFE SAFETY PLANS

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SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

GENERAL REQUIREMENTS APPLICABLE TO ALL MATERIALS FOR THE PROJECT:

1.NO SUBSTITUTIONS OF MATERIALS WITHOUT COMPLETION OF A SUBSTITUTION REQUEST FORM & APPROVAL OF SUBSTITUTION BY BOTH ARCHITECT & OWNER PROJECT MANAGER. FORM CAN BE REQUESTED FROM ARCHITECT.
2. A CONDENSED SET OF SPECIFICATIONS ARE PROVIDED FOR THE PROJECT. STRICT ADHEARANCE TO MANUFACTURER REQUIREMENTS AND INSTALLATION ARE REQUIRED TO BE FOLLOWED WITH SECTIONS PROVIDED WITHIN. IF REQUIRED THE ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO PRODUCTS OR INSTALLATION REQUIREMENTS.

DIVISION 1 - GENERAL REQUIREMENTS

1. 1 SEE ADMINISTRATIVE SPECIFICATION FOR GENERAL REQUIREMENTS RELATED TO ADMINISTATION OF THIS CONTRACT.

A. CONTRACTOR LICENSES
1. THE CONTRACTOR AND ALL SUBCONTRACTORS INVOLVED IN THE PROJECT SHALL BE REQUIRED TO OBTAIN AND PAY FOR ALL NECESSARY LICENSES AS REQUIRED BY ANY LAW OR AGENCIES HAVING JURISDICTION (AHJ) OVER THE PROJECT.

B. BUILDING PERMITS
1. THE GENERAL CONTRACTOR WILL PAY FOR ALL PERMITS REQUIRED BY ANY AGENCY HAVING JURISDICTION (AHJ) OVER THE PROJECT FOR ALL WORK TO BE PREFORMED BY THE GENERAL CONTRACTOR.

C. UTILITY FEES
1. THE CONTRACTOR SHALL PAY THE NECESSARY FEES TO CONNECT TO EXISTING UTILITIES AT THE PROPERTY LINE OR IN ADJACENT STREETS AND RIGHT OF WAY AS SPECIFIED, NECESSARY, AND/OR INCLUDED IN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL PAY ALL UTILITY COSTS (BILLS) DURING CONSTRUCTION UNTIL OWNER TAKES POSSESSION OF THE FACILITY OR THE FACILITY IS CERTIFIED AS SUBSTANTIALLY COMPLETE.

D. PROTECTION OF FINISHED WORK
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT FINISHED SURFACES. PROTECTION FOR FINISHES SUCH AS DOORS, WALLS AND FLOORS SHOULD BE PROVIDED AS REQUIRED. ANY DAMAGES TO THESE AREAS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR OR REPLACE.

E. GENERAL CONDITIONS
1. ANY DISCREPANCY OR CONFLICT WITHIN OR BETWEEN DRAWINGS AND ANY DISCREPANCY OR CONFLICT BETWEEN ANY DRAWING AND ANY SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. NOTWITHSTANDING, DISCREPANCIES OR CONFLICTS NOT BROUGHT TO THE ARCHITECT'S AND/ OWNERS ATTENTION AND CLARIFIED DURING THE BIDDING OF THE PROJECT WILL BE DEEMED TO HAVE BEEN BID OR PROPOSED IN THE MORE COSTLY OR DIFFICULT MANNER, AND THE BETTER QUALITY OR GREATER QUANTITY OF THE WORK SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH ARCHITECT'S INTERPRETATION.
2. THE GENERAL CONTRACTOR SHALL KEEP A COMPLETE PROTOTYPE SET OF DOCUMENTS ON THE PROJECT SITE AT ALL TIMES FOR REFERENCE DURING CONSTRUCTION.
3. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK, USING THE CONTRACTOR'S BEST SKILLS AND ATTENTION. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
4. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER ALL JOB SITE SAFETY PROCEDURES AND POLICIES. THE GENERAL CONTRACTOR SHALL HAVE A SAFETY COORDINATOR AND BE RESPONSIBLE TO HOLD REGULARLY SCHEDULED SAFETY TRAINING WITH ALL JOB SITE PERSONNEL, INCLUDING ALL SUB CONTRACTOR PERSONNEL.
5. NEITHER THE ARCHITECT'S OR THE OWNERS INSPECTION NOR FAILURE TO INSPECT SHALL RELIEVE THE CONTRACTOR OF ANY OBLIGATION HEREUNDER. IF ANY WORK FAILS TO CONFORM TO THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL PROMPTLY REMEDY AND/OR REPLACE THE SAME AT THE CONTRACTOR'S EXPENSE. NO ACCEPTANCE OR PAYMENT BY THE OWNER OR ARCHITECT SHALL CONSTITUTE A WAIVER OF THE FOREGOING AND NOTHING HEREIN SHALL EXCLUDE OR LIMIT ANY WARRANTIES IMPLIED BY LAW.
6. THE GENERAL CONTRACTOR SHALL SO CONDUCT ITS OPERATIONS AS NOT TO UNREASONABLY INTERFERE WITH TRAFFIC ON PUBLIC THOROUGHFARES ADJACENT OR NEAR TO THE PROJECT SITE.
7. DO NOT SCALE DRAWINGS.

F. PROJECT REQUIREMENTS
1. THE GENERAL CONTRACTOR REPRESENTS THAT IT POSSESSES THE SKILLS REQUIRED FOR THE WORK, ASSUMES THE RESPONSIBILITIES OF AN EMPLOYER FOR PERFORMANCE OF THE WORK, AND ACTS AS AN EMPLOYER OF ONE OR MORE EMPLOYEES BY PAYING WAGES, DIRECTING ACTIVITIES AND PERFORMING OTHER SIMILAR FUNCTIONS. THE GENERAL CONTRACTOR IS AN INDEPENDENT CONTRACTOR, FREE TO DETERMINE THE MANNER IN WHICH THE WORK IS PERFORMED.
2. THE GENERAL CONTRACTOR SHALL PROVIDE, AND MAINTAIN IN GOOD WORKING ORDER, THE FOLLOWING ITEMS FOR USE BY THE PROJECT SUPERINTENDENT DAILY DURING THE ENTIRE DURATION OF THE PROJECT:
   A. LAPTOP WITH INTERNET ACCESS.
   B. DIGITAL CAMERA WITH 'DATE STAMP' CAPABILITY AND WITH PROPER CABLES TO ATTACH TO LAPTOP.
   C. EMAIL ACCESS THROUGH THE LAPTOP.
   D. A PRINTER/SCANNER/FAX MACHINE WITH PROPER CABLES TO ATTACH TO LAPTOP.
   E. CELL PHONE.
3. THE GENERAL CONTRACTOR SHALL HAVE A CONSTRUCTION SUPERINTENDENT ASSIGNED TO THIS PROJECT, AND THIS SUPERINTENDENT SHALL BE ON SITE EVERY DAY THERE IS ANY CONSTRUCTION ON THIS PROJECT. THE SUPERINTENDENT SHALL BE REACHABLE BY PHONE DURING NORMAL BUSINESS HOURS. ONCE ASSIGNED, THE SUPERINTENDENT SHALL NOT BE REMOVED OR REPLACED WITHOUT WRITTEN APPROVAL FROM OWNER & ARCHITECT, UNLESS SPECIFICALLY REQUESTED TO BE REPLACED BY OWNER.
4. THE SUPERINTENDENT WILL BE REQUIRED TO PROVIDE PHOTOGRAPHS (VIA EMAIL USING A DIGITAL CAMERA) TO THE OWNER & ARCHITECT EACH FRIDAY BY NOON CST, SHOWING THE PROGRESS OF CONSTRUCTION. THE GENERAL CONTRACTOR IS ENCOURAGED TO TAKE PHOTOS SEVERAL TIMES EACH WEEK TO HELP MAINTAIN PROOF OF CONSTRUCTION PROGRESS, RECORD UNCOVERED CONDITIONS, RECORD CONDITION AND AMOUNTS OF VENDOR GOODS UPON RECEIPT, AND RECORD CONSTRUCTION THAT VARIES FROM THE CD'S (AS PART OF THE AS-BUILTS). ALL PHOTOS WILL HAVE A 'DATE STAMP'.

G. INSPECTIONS/OBSERVATIONS
1. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO OVERSEE CONSTRUCTION OF THE PROJECT, CONTINUALLY INSPECTING THE WORK, MATERIALS, AND WORKMANSHIP PROVIDED BY ALL OF HIS TRADESMEN, SUBCONTRACTORS, AND SUPPLIERS. EXCELLENCE IN QUALITY OF CONSTRUCTION CAN ONLY BE ACHIEVED IF THE CONTRACTOR ENFORCES HIGH STANDARDS OF ACCEPTABILITY. THE GENERAL CONTRACTOR CANNOT DELEGATE HIS RESPONSIBILITY TO THE SUBCONTRACTORS, BUT MUST CONTINUALLY MONITOR THE WORK OF EACH TRADE ON THE PROJECT.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE AND SCHEDULE ALL AGENCIES HAVING JURISDICTION (AHJ) INSPECTIONS NECESSARY TO OBTAIN THE CERTIFICATE OF OCCUPANCY (CERTIFICATE OF COMPLIANCE). PRIOR TO THE DATE OF THE AGENCY INSPECTION, THE GENERAL CONTRACTOR SHOULD INSPECT THE PROJECT TO INSURE THAT CONSTRUCTION COMPLIES WITH THE AGENCY REQUIREMENTS. SCHEDULING FINAL INSPECTIONS WITH AGENCY REPRESENTATIVES WHEN THE PROJECT IS NOT COMPLETE MUST BE AVOIDED. COPIES OF FINAL INSPECTIONS MUST BE PROVIDED TO OWNER & ARCHITECT AS THEY ARE AVAILABLE.
3. PRIOR TO REQUESTING THE SUBSTANTIAL COMPLETION INSPECTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONDUCT HIS OWN PRE-SUBSTANTIAL COMPLETION INSPECTION OF THE CONSTRUCTION FOR QUALITY OF CONSTRUCTION AND COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS.
4. THE FOLLOWING PEOPLE SHOULD BE IN ATTENDANCE FOR THE SUBSTANTIAL COMPLETION INSPECTION:
   A. GENERAL CONTRACTOR
   B. GENERAL CONTRACTOR SUPERINTENDENT
   C. MECHANICAL CONTRACTOR
   D. ELECTRICAL CONTRACTOR
   E. PLUMBING CONTRACTOR
   F. PAINTING CONTRACTOR
   H. FLOORING CONTRACTOR
5. ITEMS TO BE SUBMITTED AS A PREREQUISITE TO THE REQUEST FOR THE CERTIFICATE OF SUBSTANTIAL COMPLETION AND OWNER / ARCHITECT OBSERVATION OF ITEMS TO BE COMPLETED AND CORRECTED.
   A. GENERAL CONTRACTOR'S PUNCH LISTS
   B. HVAC TEST AND BALANCE REPORT
   C. SPRINKLER SYSTEM ACCEPTANCE INSPECTION REPORT
   D. COPY OF VIDEO OF COMPLETED SEWER SYSTEM
6. THE REVIEW TEAM SHOULD PROCEED IN AN ORGANIZED MANNER THROUGHOUT THE BUILDING INSPECTING EACH SPACE OR ROOM. THE PUNCH LIST GENERATED BY THE SUBSTANTIAL COMPLETION INSPECTION TOUR IS TO BE PREPARED BY THE CONTRACTOR. ALONG WITH THE PUNCH LIST, THE ARCHITECT SHALL PREPARE THE "CERTIFICATE OF SUBSTANTIAL COMPLETION."
7. IMMEDIATELY AFTER RECEIPT OF THE PUNCH LIST, THE GENERAL CONTRACTOR AND SUBCONTRACTORS ARE EXPECTED TO BEGIN CORRECTION OF THE OUTSTANDING ITEMS. AFTER COMPLETION OF PUNCHLIST, THE CONTRACTOR SHALL NOTIFY OWNER & ARCHITECT IN WRITTING THAT FULL LIST OF ITENMS TO BE COMPLETED AND OR CORRECT IS FINALIZED.

H. RECORD (CLOSE-OUT) DOCUMENTS
1. THE OWNER REQUIRES THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO MAINTAIN AN ACCURATE, CURRENT SET OF RECORD DOCUMENTS (AS-BUILTS) AS CONSTRUCTION PROGRESSES. ALL PERTINENT INFORMATION RELATING TO THE PROJECT MUST BE TIMELY MAINTAINED ON THE AS-BUILTS. THE AS-BUILTS MUST BE MAINTAINED ON-SITE IN THE GENERAL CONTRACTOR'S OFFICE AND WILL NOT BE USED FOR ANY OTHER PURPOSE. SINCE THE OWNER WILL OWN AND OPERATE THE FACILITY, IT IS IMPERATIVE THAT ALL PARTIES MAINTAIN ACCURATE INFORMATION REGARDING THE ACTUAL CONSTRUCTION OF THE PROJECT.
ALL DEVIATIONS FROM THE CONTRACT SET OF DRAWINGS MUST BE NOTED ON THE AS-BUILTS IN RED WITH CLOUDS FOR CLEAR IDENTIFICATION. THE OWNER WILL REVIEW THE AS-BUILTS FOR ACCURACY AND COMPLETENESS MONTHLY, DURING THE PAYMENT APPLICATION REVIEW PROCESS. FAILURE TO POST CHANGES TO THE PROJECT ON THE AS-BUILTS AS IDENTIFIED DURING THE ON-SITE MONTHLY REVIEW WILL BE CAUSE TO SUSPEND PAYMENT UNTIL RECTIFIED. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENFORCE THE TIMELY POSTING OF AS-BUILT CHANGES WITH THE SUBCONTRACTORS.

I. FINAL CLOSE-OUT OF THE PROJECT
1. WITHIN THIRTY (30) CALENDAR DAYS AFTER THE FINAL PROJECT SUBSTANTIAL COMPLETION, THE GENERAL CONTRACTOR SHALL COMPILE ALL CLOSE-OUT DOCUMENTS AND SUBMIT THEM TO THE OWNER FOR REVIEW. IF THE CONTRACTOR FAILS TO COMPLETE ITS REQUIREMENTS WITHIN THIS TIMELINE NOTED ABOVE THE CONTRACTOR MAY BE SUBJECT TO ADDITONAL ADMINISTATION FEES.

J. CLOSE-OUT DOCUMENTS
1. THE CATEGORIES LISTED BELOW SHOULD BE SUBMITTED AT THE SAME TIME.
   A. A DISK WITH ALL PHOTOS TAKEN DURING CONSTRUCTION.
   B. CHANGE ORDERS AND ALL ADDENDA ATTACHED AND POSTED TO THE AS-BUILT DRAWINGS.
   C. AS-BUILT DRAWINGS: ONE HARD COPY TO REMAIN ON SITE AND IN PLAN TUBE; ONE ELECTRONIC COPY TO BE SENT WITH CLOSE-OUT PAPERWORK.
   D. MATERIALS SELECTION DATA - PROVIDE ALL APPROVED SUBMITTALS.
   E. OPERATION AND MAINTENANCE MANUALS (O&M) - PROVIDE O&M MANUALS BOXED AND BOUND. THIS ITEM IS OF SIGNIFICANT IMPORTANCE TO MSI FUTURE MAINTENANCE ACTIVITIES.
   F. ALL HVAC TEST AND BALANCE REPORTS.
   H. RELEASE OF LIEN (AIA FORM 706A), PAYMENT OF DEBT (AIA FORM 706),
   I. WARRANTIES, CERTIFICATES, AFFIDAVITS:
2. ALL INFORMATION INCLUDED IN THIS CATEGORY WILL BE FURNISHED IN ONE (1) COPY AND BOUND IN A STURDY THREE-RING BINDER WITH A LABEL ON THE OUTSIDE READING "GENERAL CLOSE-OUT DOCUMENTS" TO INCLUDE AN INDEX OF THE CONTENTS. ALL AIA DOCUMENTS WILL BE ORIGINAL (WITH RED LETTERING ON THE BOTTOM OF THE FORM) AND NOTARIZED. IF THE ELECTRONIC VERSION IS USED A COPY WITH ORIGINAL SIGNATURES WILL BE SUBMITTED. THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR WILL HAVE SEPARATE TABS IDENTIFYING EACH BY NAME. THE GENERAL CONTRACTOR WILL LIST EACH SUBCONTRACTOR ALPHABETICALLY AND WILL CHECK TO INSURE THAT A "RELEASE OF LIEN" - AIA FORM G706A AND A "PAYMENT OF DEBT-AIA FORM G706 IS INCLUDED FOR HIMSELF AND EACH SUBCONTRACTOR. THE GENERAL CONTRACTOR WILL INCLUDE A "CONSENT OF SURETY" - AIA FORM G707. IN ADDITION, THE GENERAL CONTRACTOR WILL INCLUDE BEHIND HIS TAB THE FOLLOWING INFORMATION:
   A. A LIST OF NAMES, BUISNESS ADDRESSES, PHONE NUMBERS AND EMAIL ADRESSES FOR THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR.
   B. AN ANNOTATED COPY OF THE SUBSTANTIAL COMPLETION PUNCH LIST INDICATING ACTION TAKEN ON EACH ITEM.
   C. WARRANTIES, CERTIFICATES AND AFFIDAVITS SHALL BE INCLUDED FOR ANY EQUIPMENT, MATERIALS OR SYSTEMS, COMBINED WITH ALL OF THE ABOVE INFORMATION AND PLACED BEHIND THE TAB OF THE CONTRACTOR THAT ISSUED IT.

DIVISION 4 - MASONRY

04 0500 - MASONRY RESTORATION & TUCKPOINTING

A. REFERENCES
1. AMERICAN CONCRETE INSTITUTE (ACI):
   A. ACI 530.1-02 - SPECIFICATION FOR MASONRY STRUCTURES.
2. ASTM INTERNATIONAL (ASTM):
   A. ASTM C 144 - STANDARD SPECIFICATION FOR AGGREGATE FOR MASONRY MORTAR.
   B. ASTM C 150 - STANDARD SPECIFICATION FOR PORTLAND CEMENT.
   C. ASTM C 207 - STANDARD SPECIFICATION FOR HYDRATED LIME FOR MASONRY PURPOSES.
   D. ASTM C 260 - STANDARD SPECIFICATION FOR AIR-ENTRAINING ADMIXTURES FOR CONCRETE.
   E. ASTM C 270 - STANDARD SPECIFICATION FOR MORTAR FOR UNIT MASONRY.
   F. ASTM C 595 - STANDARD SPECIFICATION FOR BLENDED HYDRAULIC CEMENTS.
   G. ASTM C 780 - STANDARD TEST METHOD FOR PRECONSTRUCTION AND CONSTRUCTION EVALUATION OF MORTARS FOR PLAIN AND REINFORCED MASONRY.
   H. ASTM C 979 - STANDARD SPECIFICATION FOR PIGMENTS FOR INTEGRALLY COLORED CONCRETE.
   I. ASTM C 1093 - STANDARD PRACTICE FOR ACCREDITATION OF TESTING AGENCIES FOR UNIT MASONRY.
   J. ASTM C 1157 - STANDARD PERFORMANCE SPECIFICATION FOR HYDRAULIC CEMENT.
   K. ASTM C 1314 - STANDARD TEST METHOD FOR COMPRESSIVE STRENGTH OF MASONRY PRISMS.
   L. ASTM C 1586 - STANDARD GUIDE FOR QUALITY ASSURANCE OF MORTARS.
   M. ASTM C 1714 - STANDARD SPECIFICATION FOR PRE-BLENDED DRY MORTAR MIX FOR UNIT MASONRY.
   N. ASTM E 329 - SPECIFICATION FOR MINIMUM REQUIREMENTS FOR AGENCIES ENGAGED IN THE TESTING AND/OR INSPECTION OF MATERIALS USED IN CONSTRUCTION.
   O. ASTM E 514 - STANDARD TEST METHOD FOR WATER PENETRATION AND LEAKAGE THROUGH MASONRY.
3. INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC):
   1. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR COLD WEATHER MASONRY CONSTRUCTION.
   2. IMIAC - INTERNATIONAL MASONRY INDUSTRY ALL-WEATHER COUNCIL (IMIAC): RECOMMENDED PRACTICES AND GUIDE SPECIFICATIONS FOR HOT WEATHER MASONRY CONSTRUCTION.
4. THE BRICK INDUSTRY ASSOCIATION (BIA):
   1. BIA TECHNICAL NOTE 20 – CLEANING BRICK.

B. SUBMITTALS
1. PRODUCT DATA: SUBMIT MANUFACTURER'S PRODUCT DATA.
2. QUALITY ASSURANCE/CONTROL SUBMITTALS:
   A. SUBMIT MANUFACTURER'S CERTIFICATES THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
   B. SUBMIT TEST RESULTS PREPARED BY A QUALIFIED INDEPENDENT TESTING LABORATORY.

C. QUALITY ASSURANCE
1. MANUFACTURER QUALIFICATIONS: FIRM SPECIALIZING IN MANUFACTURE OF MASONRY INSTALLATION MATERIALS, INCLUDING MORTARS, WITH MINIMUM 10 YEARS EXPERIENCE.
2. QUALITY ASSURANCE/CONTROL TESTING: TEST REPORTS PREPARED BY A QUALIFIED INDEPENDENT LABORATORY INDICATING COMPLIANCE WITH THE FOLLOWING PERFORMANCE REQUIREMENTS:
3. C.PRE-INSTALLATION MEETING: AT LEAST ONE WEEKS PRIOR TO COMMENCING MASONRY WORK CONDUCT A MEETING AT THE PROJECT SITE TO DISCUSS CONTRACT REQUIREMENTS AND JOB CONDITIONS; REQUIRE THE ATTENDANCE OF MASONRY CONTRACTOR, AND INSTALLERS OF RELATED MATERIALS; NOTIFY ARCHITECT IN ADVANCE OF MEETING.REVIEW DETAILING AND SEQUENCE OF WORK TO BE PERFORMED.
4. STORAGE AND PROTECTION: CEMENTITIOUS MATERIALS SHALL BE MANUFACTURED AND STORED OFF THE GROUND, UNDER COVER AND SHALL BE KEPT DRY IN ACCORDANCE WITH ASTM C1714.

D. PROJECT CONDITIONS
1. MAINTAIN ENVIRONMENTAL CONDITIONS AND PROTECT WORK DURING AND AFTER INSTALLATION TO COMPLY WITH REFERENCED STANDARDS AND MANUFACTURER'S PRINTED RECOMMENDATIONS.
2. DO NOT BUILD OR APPLY MORTAR PRODUCTS ON FROZEN SUBSTRATES.
   1. REMOVE AND REPLACE MORTAR DAMAGED BY FROST OR BY FREEZING CONDITIONS.
3. VENT TEMPORARY HEATERS TO EXTERIOR TO PREVENT DAMAGE TO MASONRY WORK FROM CARBON DIOXIDE BUILD-UP.

E. PRODUCTS
1. BASIS OF DESIGN: SPEC MIX®, INC. WEB: WWW.SPECMIX.COM" WWW.SPECMIX.COM
2. REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED IN ACCORDANCE WITH PROVISIONS OF SUBSTITUTION PROCEDURES.
3. OBTAIN PRODUCTS FROM A SINGLE MANUFACTURER.
4. DESIGN AND PERFORMANCE REQUIREMENTS: PROVIDE MORTAR MIXES THAT HAVE BEEN SELECTED, MANUFACTURED, MIXED AND INSTALLED TO COMPLY WITH THE FOLLOWING:
   A. ASTM C 270.
   B. ASTM C 1714.
5. MORTAR
   A. TUCKPOINT MORTAR: SPEC MIX TUCKPOINT MORTAR . APPLICABLE STANDARDS: ASTM C 144, ASTM C 150, ASTM C 207, ASTM C 270 FOR TUCKPOINT MORTAR, ASTM C 595, ASTM C 780, ASTM C 1093, ASTM C 1157, ASTM C 1314, ASTM C 1586, ASTM C 1714, ACI 530.1, IMIAC.

F. EXECUTION
EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO NOT PROCEED WITH MASONRY WORK UNTIL SURFACES AND CONDITIONS COMPLY WITH REQUIREMENTS INDICATED IN REFERENCED MASONRY INSTALLATION STANDARD AND MANUFACTURER'S PRINTED INSTRUCTIONS.

1. REMOVAL OF EXISTING MORTAR
   A. REMOVAL OF EXISTING MORTAR: CUT OUT EXISTING MORTAR JOINTS (BOTH BED AND HEAD JOINTS) AND REMOVE BY MEANS OF A TOOTHING CHISEL OR A SPECIAL POINTER'S GRINDER, TO A UNIFORM DEPTH OF TO 3/4-INCH (19 MM), OR UNTIL SOUND MORTAR IS REACHED.
      1. TAKE CARE TO NOT DAMAGE EDGES OF EXISTING MASONRY UNITS TO REMAIN.
   B. REMOVE DUST AND DEBRIS FROM THE JOINTS BY BRUSHING, BLOWING WITH AIR OR RINSING WITH WATER. DO NOT RINSE WHEN TEMPERATURE IS BELOW FREEZING.

2. REPLACEMENT OF MASONRY UNITS
   A. REMOVE DAMAGED, SPALLED, LOOSE OR DETERIORATED MASONRY UNITS. CAREFULLY REMOVE ENTIRE UNITS FROM JOINT TO JOINT, WITHOUT DAMAGING SURROUNDING MASONRY, IN A MANNER THAT PERMITS REPLACEMENT WITH FULL SIZE UNITS.
   B. SUPPORT AND PROTECT REMAINING MASONRY THAT SURROUNDS REMOVAL AREA. MAINTAIN FLASHING, REINFORCEMENT, LINTELS, AND ADJOINING CONSTRUCTION IN AN UNDAMAGED CONDITION.
   C. CLEAN MASONRY UNITS SURROUNDING REMOVAL AREAS BY REMOVING MORTAR, DUST, AND LOOSE PARTICLES IN PREPARATION FOR REPLACEMENT.
   D. REPLACE REMOVED UNITS WITH SALVAGED OR NEW UNITS THAT MATCH EXISTING SIZE AND TEXTURE. DO NOT USE BROKEN UNITS UNLESS THEY CAN BE CUT TO USABLE SIZE.
   E. INSTALL REPLACEMENT UNITS INTO BONDING AND COURSING PATTERN OF EXISTING UNITS. IF CUTTING IS REQUIRED, USE A MOTOR-DRIVEN SAW DESIGNED TO CUT MASONRY WITH CLEAN, SHARP, UNCHIPPED EDGES. UNITS MUST BE TOOTHED IN OR COURSING SHALL MATCH SURROUNDING IN PLACE WORK.
   F. MAINTAIN JOINT WIDTH FOR REPLACEMENT UNITS TO MATCH EXISTING JOINTS.
   G. LAY REPLACEMENT UNITS WITH COMPLETELY FILLED BED, HEAD, AND COLLAR JOINTS. BUTTER ENDS WITH SUFFICIENT MORTAR TO FILL HEAD JOINTS AND SHOVE INTO PLACE.
C. MIXING
   1. AS RECOMMENDED BY MANUFACTURER.
   2. RETEMPERING:
   RETEMPER MORTAR AS RECOMMENDED BY MANUFACTURER

G. INSTALLATION OF TUCK POINTING MORTAR
1. INSTALL MORTAR IN ACCORDANCE WITH ACI/ASCE-530.1:
2. IMMEDIATELY PRIOR TO APPLICATION OF MORTAR, DAMPEN JOINTS TO BE TUCK POINTED. PRIOR TO APPLICATION OF POINTING MORTAR, ALLOW MASONRY UNITS TO ABSORB SURFACE WATER.
3. TIGHTLY PACK MORTAR INTO JOINTS IN THIN LAYERS, APPROXIMATELY 1/4-INCH (6 MM) THICK MAXIMUM.
4. ALLOW LAYER TO BECOME "THUMBPRINT HARD" BEFORE APPLYING NEXT LAYER.
5. PACK FINAL LAYER FLUSH WITH SURFACES OF MASONRY UNITS. WHEN MORTAR BECOMES "THUMBPRINT HARD", TOOL JOINTS.
6. HAIRLINE CRACKING WITHIN THE MORTAR OR MORTAR SEPARATION AT EDGE OF A JOINT IS UNACCEPTABLE. COMPLETELY REMOVE SUCH MORTAR AND REPOINT.
7. TOOL JOINTS IN PATCH WORK WITH A JOINTING TOOL TO MATCH THE EXISTING SURROUNDING JOINTS.
8. CLEANING
   A. COMPLY WITH CLEANING PROCEDURES AND RECOMMENDATIONS OF THE MANUFACTURERS OF BOTH THE CLEANING SOLUTION AND THE UNIT MASONRY.
   B. REMOVE EFFLORESCENCE FROM MASONRY WALL EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION, NCMA TEK BULLETIN #8-3A AND/OR BIA TECHNICAL NOTE 20 – CLEANING BRICK.
   C. REMOVE DIRT OR STAINS FROM MASONRY WALLS EXPOSED IN THE FINISHED WORK IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, NCMA TEK BULLETIN #8-2A AND/OR BIA TECHNICAL NOTE 20 – CLEANING BRICK.
   D. COMPLY WITH APPLICABLE ENVIRONMENTAL LAWS AND RESTRICTIONS.
   AFTER MORTAR HAS FULLY HARDENED, THOROUGHLY CLEAN EXPOSED MASONRY SURFACES OF EXCESS MORTAR AND FOREIGN MATTER; USE WOOD SCRAPERS, STIFF-NYLON OR -FIBER BRUSHES, AND CLEAN WATER, SPRAY APPLIED AT LOW PRESSURE.
      1. DO NOT USE METAL SCRAPERS OR BRUSHES.
      2. DO NOT USE ACIDIC OR ALKALINE CLEANERS.

H. PROTECTION
1. PROTECTION: PROTECT NEWLY POINTED JOINTS FROM WEATHER AND ELEMENTS AS RECOMMENDED BY MANUFACTURER AND INDUSTRY STANDARDS, UNTIL POINTED JOINTS ARE SUFFICIENTLY HARD ENOUGH TO PREVENT DAMAGE.
2. PROTECT INSTALLED WORK FROM DAMAGE DUE TO SUBSEQUENT CONSTRUCTION ACTIVITY ON THE SITE.

DIVISION 5 - METALS

05 5213 - PIPE AND TUBE RAILINGS

A. SUBMITTALS:
PRODUCT DATA AND SHOP DRAWINGS WITH PLANS ELEVATIONS AND SEECTIONS INDICATING MEMBER SIZES AND LAYOUT, VERTICAL AND HORIZONTAL DIMENSIONS, EDGE CONDITIONS, AND CONNECTION DETAILS. INCLUDE DETAILS OF EQUIPMENT ASSEMBLIES. INDICATE DIMENSIONS, WEIGHTS, LOADS, REQUIRED CLEARANCES, METHOD OF FIELD ASSEMBLY, COMPONENTS, AND LOCATION AND SIZE OF EACH FIELD CONNECTION. SAMPLES FOR INITIAL SELECTION: FOR EACH TYPE OF EXPOSED FINISH.
1. DELEGATED-DESIGN SUBMITTAL: FOR HANDRAIL AND GUARDRAIL SYSTEMS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

B. DESIGN: METAL TUBE RAILINGS SHALL BE DESIGNED BY FABRICATOR TO SUPPORT CODE-REQUIRED LOADING AND TO MATCH THE CONFIGURATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS. SEE DRAWINGS FOR REQUIRED RAILING ELEVATIONS.

C. FIELD CONDITIONS:
1. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

D. PERFORMANCE REQUIREMENTS:
1. A. DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER,TO DESIGN RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION.
   B. STRUCTURAL PERFORMANCE: RAILINGS, INCLUDING ATTACHMENT TO BUILDING CONSTRUCTION, SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
2. HANDRAILS AND TOP RAILS OF GUARDS:
   A. UNIFORM LOAD OF 50 LBF/ FT. (0.73 KN/M) APPLIED IN ANY DIRECTION.
   B. CONCENTRATED LOAD OF 200 LBF (0.89 KN) APPLIED IN ANY DIRECTION.
   C. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

E. FASTENERS:
1. FASTENERS FOR ANCHORING RAILINGS TO OTHER CONSTRUCTION: SELECT FASTENERS OF TYPE, GRADE, AND CLASS REQUIRED TO PRODUCE CONNECTIONS SUITABLE FOR ANCHORING RAILINGS TO OTHER TYPES OF CONSTRUCTION INDICATED AND CAPABLE OF WITHSTANDING DESIGN LOADS.

F. MISCELLANEOUS MATERIALS:
1. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH SURFACES, WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, STAINS, DISCOLORATIONS, OR BLEMISHES.
2. BRACKETS, FLANGES, AND ANCHORS: CAST OR FORMED METAL OF SAME TYPE OF MATERIAL AND FINISH AS SUPPORTED RAILS UNLESS OTHERWISE INDICATED.
3. PIPE: ASTM A 53/A 53M, TYPE F OR TYPE S, GRADE A, STANDARD WEIGHT (SCHEDULE 40), UNLESS ANOTHER GRADE AND WEIGHT ARE REQUIRED BY STRUCTURAL LOADS.

G. FABRICATION:
1. GENERAL: FABRICATE RAILINGS TO COMPLY WITH REQUIREMENTS INDICATED FOR DESIGN, DIMENSIONS, MEMBER SIZES AND SPACING, DETAILS, FINISH, AND ANCHORAGE , BUT NOT LESS THAN THAT REQUIRED TO SUPPORT STRUCTURAL LOADS.
2. CUT, DRILL, AND PUNCH ALUMINUM CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM) UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
3. FABRICATE CONNECTIONS THAT ARE EXPOSED TO WEATHER IN A MANNER THAT EXCLUDES WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
4. WELDED CONNECTIONS: USE FULLY WELDED JOINTS FOR PERMANENTLY CONNECTING RAILING COMPONENTS. COMPLY WITH REQUIREMENTS FOR WELDED CONNECTIONS IN "FABRICATION" ARTICLE WHETHER WELDING IS PERFORMED IN THE SHOP OR IN THE FIELD.

H. FINISH:
1.FOR NONGALVANIZED-STEEL RAILINGS, PROVIDE NONGALVANIZED FERROUS-METAL FITTINGS, BRACKETS, FASTENERS, AND SLEEVES; HOWEVER, GALVANIZE ANCHORS TO BE EMBEDDED IN EXTERIOR CONCRETE OR MASONRY.
2. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH SSPC-SP 3, "POWER TOOL CLEANING."
3. PRIMER APPLICATION: APPLY SHOP PRIMER TO PREPARED SURFACES OF RAILINGS UNLESS OTHERWISE INDICATED. COMPLY WITH REQUIREMENTS IN SSPC-PA 1, "SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL," FOR SHOP PAINTING. PRIMER NEED NOT BE APPLIED TO SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY.

I. INSTALLATION:
1. SUPPLY COMPONENTS REQUIRED FOR ANCHORAGE FABRICATED FROM SAME MATERIAL AND FINISH AS FABRICATION UNLESS NOTED OTHERWISE. SHIM AND LEVEL FABRICATIONS AS NECESSARY. COAT CONCEALED SURFACES OF FABRICATIONS IN CONTACT WITH CONCRETE, GROUT, MASONRY, WOOD, OR DISSIMILAR METALS WITH BITUMINOUS PAINT.
2. FIT EXPOSED CONNECTIONS TOGETHER TO FORM TIGHT, HAIRLINE JOINTS.
3. PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING RAILINGS. SET RAILINGS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION; MEASURED FROM ESTABLISHED LINES AND LEVELS AND FREE OF RACK.
   1. DO NOT WELD, CUT, OR ABRADE SURFACES OF RAILING COMPONENTS THAT ARE COATED OR FINISHED AFTER FABRICATION AND THAT ARE INTENDED FOR FIELD CONNECTION BY MECHANICAL OR OTHER MEANS WITHOUT FURTHER CUTTING OR FITTING.
   2. SET POSTS PLUMB WITHIN A TOLERANCE OF 1/16 INCH IN 3 FEET.
4. CONTROL OF CORROSION: PREVENT GALVANIC ACTION AND OTHER FORMS OF CORROSION BY INSULATING METALS AND OTHER MATERIALS FROM DIRECT CONTACT WITH INCOMPATIBLE MATERIALS.
5. ADJUST RAILINGS BEFORE ANCHORING TO ENSURE MATCHING ALIGNMENT AT ABUTTING JOINTS.
6. FASTENING TO IN-PLACE CONSTRUCTION: USE ANCHORAGE DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING RAILINGS AND FOR PROPERLY TRANSFERRING LOADS TO IN-PLACE CONSTRUCTION.
7.PROTECT FINISHES OF RAILINGS FROM DAMAGE DURING CONSTRUCTION PERIOD WITH TEMPORARY PROTECTIVE COVERINGS APPROVED BY RAILING MANUFACTURER. REMOVE PROTECTIVE COVERINGS AT TIME OF SUBSTANTIAL COMPLETION.

05 6000- STRUCTURAL METAL STUDS AND TRACK

THIS SECTION IS A DELEGATED DESIGN SUBMITTAL. CONTRACTOR SHALL ENGAGE A STRUCUTRAL ENGINEER LICENSED IN THE JURISDICTION WHRE THIS PROJECT IS LOCATED. ALL FEES SUBJECT OF THIS SERVICE WILL BE PART OF BASE CONTRACT.

A. SUBMITTALS: PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:

1. SHOWING PLANS, SECTIONS, ELEVATIONS, LAYOUTS, PROFILES AND PRODUCT COMPONENT LOCATIONS, INCLUDING ANCHORAGE, BRACING, FASTENERS, ACCESSORIES AND FINISHES.
2. INDICATE COMPONENT DETAILS, FRAMED OPENINGS, BEARING, ANCHORAGE, LOADING, WELDS, TYPE AND LOCATION OF FASTENERS, AND ACCESSORIES.
3. INDICATE METHOD FOR SECURING STUDS AND OTHER COMPONENTS TO TRACKS AND FOR FRAMING CONNECTIONS.
4. SUBMIT CALCULATIONS FOR LOADINGS AND STRESSES UNDER PROFESSIONAL ENGINEER'S SEAL REGISTERED IN THE STATE OF THE PROJECT.

B. QUALITY STANDARD:
1. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS DOCUMENTED EXPERIENCE.
2. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM 3 YEARS DOCUMENTED EXPERIENCE.
3. DESIGN STRUCTURAL ELEMENTS UNDER DIRECT SUPERVISION OF PROFESSIONAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND REGISTERED IN THE STATE OF THE PROJECT.

F. INSTALLATION:
1. FOLLOW MANUFACTURER INSTALLATION GUIDLINES. INSTALLATION SHALL BE COMPLIANT WITH APPLICABLE BUILDING CODES.

DIVISION 6 - WOOD AND PLASTICS

06 1000- ROUGH CARPENTRY

1.PROVIDE SUFFICIENT FIRE RETARDANT TREATED WOOD BLOCKING AT ALL STUDS FOR SECURING OF WALL & CEILING ITEMS, WHETHER FURNISHED BY OWNER OR CONTRACTOR.
2.CONCEALED WOOD IS TO BE FIRE RETARDANT TREATED UNLESS NOTED OTHERWISE.
3.PRESERVATIVE TREATED LUMBER IS REQUIRED FOR ALL ITEMS TO REMAIN IN CONTACT WITH CONCRETE OR MASONRY TO CONFORM TO AWPA STANDARD 5.
4.PLYWOOD SHALL BE CD GRADE APA FIR OR YELLOW PINE. ALL PLY-WOOD TO BE FIRE RATED WHERE WALLS ARE INDICATED AS RATED CONSTRUCTION.
5.BLOCKING SHALL BE CLOSELY FITTED, ACCURATELY SET TO REQUIRED LINES & LEVELS, SECURELY CONNECTED & RIGIDLY FIXED IN PLACE, USING NAILS, SCREWS, &/OR BOLTS AS INDICATED OR REQUIRED BY GOOD PRACTICE AND MANUFACTURER'S RECOMMENDATIONS.

06 2000 - FINISH CARPENTRY

A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS.

B. QUALITY STANDARD: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS"

C. MATERIALS:
1. SOFTWOOD LUMBER: MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH.
2. HARDWOOD LUMBER:MAXIMUM MOISTURE CONTENT OF 6 PERCENT; WITH VERTICAL GRAIN, OF QUALITY SUITABLE FOR SCHEDULED FINISH.
3. SHEET MATERIALS: SOFTWOOD PLYWOOD, EXPOSED TO VIEW: FACE SPECIES AS INDICATED, PLAIN SAWN, MEDIUM DENSITY FIBERBOARD CORE; PS 1 GRADE A-B, GLUE TYPE AS RECOMMENDED FOR APPLICATION.

D. INTERIOR WOODWORK:
1. COMPLETE FABRICATION BEFORE SHIPPING TO PROJECT SITE TO MAXIMUM EXTENT FEASIBLE. DISASSEMBLE ONLY AS NEEDED FOR SHIPPING AND INSTALLING. WHERE NECESSARY FOR FITTING AT PROJECT SITE, PROVIDE FOR SCRIBING AND TRIMMING.
2. BACKOUT AND GROOVE BACKS OF FLAT MEMBERS, KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT WHERE ENDS WILL BE EXPOSED IN FINISHED WORK.

F. INSTALLATION:
1. DO NOT DELIVER OR INSTALL WOODWORK UNTIL BUILDING IS ENCLOSED, WET WORK IS COMPLETED, HVAC IS OPERATING, AND WOODWORK IS CONDITIONED TO PREVAILING CONDITIONS OF SPACE WHERE INSTALLED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT.
2. INSTALL WOODWORK LEVEL AND PLUMB AND SHIM AS REQUIRED WITH CONCEALED SHIMS TO 8 TOLERANCE OF 1 "/96" AND TO COMPLY WITH REFERENCED QUALITY STANDARD FOR GRADE SPECIFIED.
3. SCRIBE AND CUT WOODWORK TO FIT ADJOINING WORK, SEAL CUT SURFACES, AND REPAIR DAMAGED FINISH AT CUTS.
4.INSTALL TRIM WITH MINIMUM NUMBER OF JOINTS POSSIBLE USING FULL-LENGTH PIECES TO GREATEST EXTENT POSSIBLE. STAGGER JOINTS IN ADJACENT AND RELATED MEMBERS.
5. LUMBER FOR TRANSPARENT FINISH (STAINED OR CLEAR): USE PIECES MADE OF SOLID LUMBER STOCK.
6. LUMBER FOR PAINTED FINISH: AT CONTRACTOR'S OPTION, USE PIECES WHICH ARE EITHER GLUED-UP OR MADE OF SOLID LUMBER STOCK.
7. DISCARD UNITS OF MATERIAL WHICH ARE UNSOUND, WARPED, BOWED, TWISTED, IMPROPERLY TREATED, NOT ADEQUATELY SEASONED OR TOO SMALL TO FABRICATE WORK WITH MINIMUM OF JOINTS OR OPTIMUM JOINTING ARRANGEMENTS, OR WHICH ARE DEFECTIVELY MANUFACTURED WITH RESPECT TO SURFACES, SIZES OR PATTERNS.
8. INSTALL THE WORK PLUMB, LEVEL, TRUE AND STRAIGHT WITH NO DISTORTIONS. SHIM AS REQUIRED USING CONCEALED SHIMS.
9. SCRIBE AND CUT WORK TO FIT ADJOINING WORK, AND REFINISH CUT SURFACES OR REPAIR DAMAGED FINISH AT CUTS.
10. SAND WORK SMOOTH AND SET EXPOSED NAILS AND SCREWS.
11. APPLY WOOD FILLER IN EXPOSED NAIL AND SCREW INDENTATIONS.
12. FINISH WORK SHALL BE SMOOTH, FREE FROM ABRASION, TOOL MARKS, RAISED GRAIN MARKINGS, OR SIMILAR DEFECTS ON EXPOSED SURFACES.

06 4100 - ARCHITECTURAL WOOD CASEWORK

A. SUBMITTALS: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS. INDICATE COMPONENT PROFILES, FASTENING METHODS, JOINTING DETAILS, AND ACCESSORIES.
1. SCALE OF DRAWINGS: 1-1/2 INCH TO 1 FOOT, MINIMUM.
2. PROVIDE THE INFORMATION REQUIRED BY AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).
3. SAMPLES: SUBMIT ACTUAL SAMPLES OF ARCHITECTURAL CABINET CONSTRUCTION, MINIMUM 12 INCHES SQUARE, ILLUSTRATING PROPOSED CABINET, COUNTERTOP, AND SHELF UNIT SUBSTRATE AND FINISH.

B. QUALITY STANDARD: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY STANDARDS"

C. QUALITY ASSURANCE:
1. FABRICATOR QUALIFICATIONS: COMPANY SPECIALIZING IN FABRICATING THE PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM FIVE YEARS OF DOCUMENTED EXPERIENCE.

D. CABINETS:
1. QUALITY STANDARD: CUSTOM GRADE, IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS), UNLESS NOTED OTHERWISE.
2. WOOD VENEER FACED CABINET: CONCEALED SURFACES: MANUFACTURER'S OPTION.
3. PLASTIC LAMINATE FACED CABINETS: CUSTOM GRADE.

E. MATERIALS / ACCESSORIES / HARDWARE:
1. LAMINATES AS INDICATED IN SCHEDULES. COMPLY WITH MANUFACTURER INSTRUCTIONS.
2. ADHESIVE: TYPE RECOMMENDED BY FABRICATOR TO SUIT APPLICATION.
3. FASTENERS: SIZE AND TYPE TO SUIT APPLICATION.
4. BOLTS, NUTS, WASHERS, LAGS, PINS, AND SCREWS: OF SIZE AND TYPE TO SUIT APPLICATION; GALVANIZED OR CHROME-PLATED FINISH IN CONCEALED LOCATIONS AND STAINLESS STEEL OR CHROME-PLATED FINISH IN EXPOSED LOCATIONS.
5. CONCEALED JOINT FASTENERS: THREADED STEEL.
6. GROMMETS: STANDARD PLASTIC, PAINTED METAL, OR RUBBER GROMMETS FOR CUT-OUTS, IN COLOR TO MATCH ADJACENT SURFACE.
7. HARDWARE: BHMA A156.9, TYPES AS RECOMMENDED BY FABRICATOR FOR QUALITY GRADE SPECIFIED.
8. ADJUSTABLE SHELF SUPPORTS: STANDARD SIDE-MOUNTED SYSTEM USING RECESSED METAL SHELF STANDARDS OR MULTIPLE HOLES FOR PIN SUPPORTS AND COORDINATED SELF RESTS, POLISHED CHROME FINISH, FOR NOMINAL 1 INCH SPACING ADJUSTMENTS.
9. DRAWER SLIDES: TYPE: EXTENSION TYPES AS INDICATED.
10. HINGES: EUROPEAN STYLE CONCEALED SELF-CLOSING TYPE,[<>] STEEL WITH POLISHED FINISH.
11. SOFT CLOSE ADAPTER: CONCEALED, FRAME-MOUNTED, SCREW-ADJUSTABLE DAMPER ; STEEL WITH POLISHED FINISH.
12. FINISH WORK IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).

F. INSTALLATION:
1.INSTALL NO INTERIOR FINISH CARPENTRY OR MILLWORK UNTIL SPACES ARE ENCLOSED, DRY, AND CAPABLE OF BEING HEATED. MAINTAIN TEMPERATURE BETWEEN 55 F. AND 75 F. FOR 72 HOURS BEFORE BEGINNING INSTALLATION AND FOR DURATION OF PROJECT.
2.VERIFY ADEQUACY OF BACKING AND SUPPORT FRAMING.
3. VERIFY LOCATION AND SIZES OF UTILITY ROUGH-IN ASSOCIATED WITH WORK OF THIS SECTION.
4. SET AND SECURE CUSTOM CABINETS IN PLACE, ASSURING THAT THEY ARE RIGID, PLUMB, AND LEVEL.
5.USE FIXTURE ATTACHMENTS IN CONCEALED LOCATIONS FOR WALL MOUNTED COMPONENTS.
6.USE CONCEALED JOINT FASTENERS TO ALIGN AND SECURE ADJOINING CABINET UNITS.
7.CAREFULLY SCRIBE CASEWORK ABUTTING OTHER COMPONENTS, WITH MAXIMUM GAPS OF 1/32 INCH. DO NOT USE ADDITIONAL OVERLAY TRIM FOR THIS PURPOSE.
8. SECURE CABINETS TO FLOOR USING APPROPRIATE ANGLES AND ANCHORAGES.
9. CLEAN CASEWORK, COUNTERS, SHELVES, HARDWARE, FITTINGS, AND FIXTURES.

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

07 8400 - FIRESTOPPING

A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA ON PRODUCT CHARACTERISTICS, PERFORMANCE RATINGS, AND LIMITATIONS.

B. MANUFACTURERS:
1. 3M FIRE PROTECTION PRODUCTS: WWW.3M.COM/FIRESTOP.COM
2. HILTI, INC : WWW.US.HILTI.COM

C. MATERIALS:
1. FIRESTOPPING MATERIALS: ANY MATERIALS MEETING REQUIREMENTS.
2. PRIMERS, SLEEVES, FORMS, INSULATION, PACKING, STUFFING, AND ACCESSORIES: PROVIDE TYPE OF MATERIALS AS REQUIRED FOR TESTED FIRESTOPPING ASSEMBLY.
3. FIRE RATINGS: REFER TO DRAWINGS FOR REQUIRED SYSTEMS AND RATINGS.

D. ASSEMBLY REQUIREMENTS:
1. HEAD-OF-WALL JOINT SYSTEM FIRESTOPPING AT JOINTS BETWEEN FIRE-RATED WALL ASSEMBLIES AND NON-RATED HORIZONTAL ASSEMBLIES: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E2837 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF FLOOR OR WALL, WHICHEVER IS GREATER.
2. FLOOR-TO-FLOOR, WALL-TO-WALL, AND WALL-TO-FLOOR JOINTS, EXCEPT PERIMETER, WHERE BOTH ARE FIRE-RATED: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E1966 OR UL 2079 TO HAVE FIRE RESISTANCE
F RATING EQUAL TO REQUIRED FIRE RATING OF THE ASSEMBLY IN WHICH THE JOINT OCCURS.
3.THROUGH PENETRATION FIRESTOPPING: USE SYSTEM THAT HAS BEEN TESTED ACCORDING TO ASTM E814 TO HAVE FIRE RESISTANCE F RATING EQUAL TO REQUIRED FIRE RATING OF PENETRATED ASSEMBLY.

E. INSTALLATION:
1. INSTALLATIONS SHALL CONFORM TO UL REQUIREMENTS OF THE ASSEMBLY WHICH FIRESTOPPING IS TO BECOME PART OF THE BUILT ASSEMBLY.

07 9200 - JOINT SEALANTS

A. SUBMITTALS: PRODUCT DATA, AND SCHEDULE OF LOCATIONS FOR EACH TYPE OF SEALANT SUBMITTED.

B. JOINT-SEALANT SCHEDULE: INCLUDE THE FOLLOWING INFORMATION:
1. JOINT-SEALANT APPLICATION, JOINT LOCATION, AND DESIGNATION.
2. JOINT-SEALANT MANUFACTURER AND PRODUCT NAME.
3. JOINT-SEALANT FORMULATION.
4. JOINT-SEALANT COLOR.

C. ENVIRONMENTAL LIMITATIONS: DO NOT PROCEED WITH INSTALLATION OF JOINT SEALANTS WHEN AMBIENT AND SUBSTRATE TEMPERATURE CONDITIONS ARE OUTSIDE LIMITS PERMITTED BY JOINT SEALANT MANUFACTURER OR ARE BELOW 40 deg F (4.4 deg C).

D. COMPATIBILITY: PROVIDE JOINT SEALANTS, JOINT FILLERS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER SERVICE AND APPLICATION CONDITIONS.

E. JOINT SEALANTS:

1. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
2. INTERIOR JOINTS IN CERAMIC TILE AND OTHER HARD SURFACES IN KITCHENS, TOILET ROOMS, AND AROUND PLUMBING FIXTURES: SINGLE COMPONENT, MILDEW-RESISTANT SILICONE SEALANT, ASTM C 920, TYPE S; GRADE NS, CLASS 25; USES NT, G, A, AND O; FORMULATED WITH FUNGICIDE.
3. INTERIOR JOINTS AROUND PERIMETERS OF DOORS AND FRAMES: LATEX SEALANT, SINGLE COMPONENT, NONSAG, MILDEW-RESISTANT, PAINTABLE, ACRYLIC EMULSION SEALANT COMPLYING WITH ASTM C 834.
4. ACOUSTICAL SEALANT FOR EXPOSED INTERIOR JOINTS: NONSAG, PAINTABLE, NONSTAINING, LATEX SEALANT COMPLYING WITH ASTM C 834.
5. ACOUSTICAL SEALANT FOR CONCEALED JOINTS: NONDRYING, NONHARDENING, NONSKINNING, NONSTAINING, GUNNABLE, SYNTHETIC-RUBBER SEALANT RECOMMENDED FOR SEALING INTERIOR CONCEALED JOINTS TO REDUCE TRANSMISSION OF AIRBORNE SOUND.
6. EXTERIOR CONCRETE PANELS, NATURAL STONES, MASONRY, ALUMINUM CURTAINWALLS, METAL PANELS AND WINDOW PERIMETERS.
BASIS OF DESIGN PRODUCTS:
   A. TREMCO INCORPORATED; SPECTREM 1.
   B. DOW CORNING CORPORATION; 790.
   C. PECORA CORPORATION; 890NST.
7. EXTERIOR JOINTS IN HORIZONTAL TRAFFIC SURFACES.
ISOLATION AND CONTRACTION JOINTS IN CAST-IN-PLACE CONCRETE SLABS.
URETHANE JOINT SEALANT: MULTICOMPONENT, NONSAG, TRAFFIC GRADE, CLASS 25.

E. JOINT SEALANT BACKING:
1. GENERAL: PROVIDE SEALANT BACKINGS OF MATERIAL THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS; AND ARE APPROVED FOR APPLICATIONS INDICATED BY SEALANT MANUFACTURER BASED ON FIELD EXPERIENCE AND LABORATORY TESTING.
2. CYLINDRICAL SEALANT BACKINGS: ASTM C 1330, TYPE C (CLOSED-CELL MATERIAL WITH A SURFACE SKIN), AND OF SIZE AND DENSITY TO CONTROL SEALANT DEPTH AND OTHERWISE CONTRIBUTE TO PRODUCING OPTIMUM SEALANT PERFORMANCE.
3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MANUFACTURER FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT. PROVIDE SELF-ADHESIVE TAPE WHERE APPLICABLE.

F. MISCELLANEOUS MATERIALS
1. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.
2. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES.
3. BOND-BREAKER TAPE: POLYETHYLENE TAPE OR OTHER PLASTIC TAPE RECOMMENDED BY SEALANT MFR. FOR PREVENTING SEALANT FROM ADHERING TO RIGID, INFLEXIBLE JOINT-FILLER MATERIALS OR JOINT SURFACES AT BACK OF JOINT.
4. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

G. INSTALLATION: COMPLY WITH ASTM C 1193; ASTM C 919 FOR ACOUSTICAL JOINTS; AND AS FOLLOWS:
1. REMOVE ALL LOOSE MATERIAL, CLEAN AND PRIME JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, AND PROTECT ADJACENT SURFACES.
2. INSTALL BOND-BREAKER TAPE WHERE JOINT BACKINGS ARE NOT USED.
3. INSTALL SEALANT TOOLED CONCAVE, FREE OF AIR POCKETS, FOREIGN EMBEDDED MATTER, RIDGES, AND SAGS, AND PROTECT UNTIL FULLY CURED. SEALANT WITH DUST AND DEBRIS EMBEDDED IN SURFACE SHALL BE CAUSE FOR REJECTION.

DIVISION 8 - OPENINGS

08 0671 - DOOR HARDWARE

A. SUBMITTALS: PRODUCT DATA AND HARDWARE SCHEDULE INDICATING HARDWARE ITEM, FINISH, AND QUANTITY LOCATED ON EACH DOOR WITH DOOR AND HARDWARE SET NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS. REFER TO ARCHITECTURAL PLANS AND HARDWARE SCHEDULES PROVIDED.
1. HARDWARE SUPPLIER SHALL SUBMIT FOUR COPIES OF FINAL HARDWARE SCHEDULE AT EARLIEST POSSIBLE DATE PARTICULARLY WHERE ACCEPTANCE OF HARDWARE SCHEDULE MUST PRECEDE FABRICATION OF OTHER WORK WHICH IS CRITICAL IN THE PROJECT CONSTRUCTION SCHEDULE. INCLUDE WITH SCHEDULE SHOP DRAWINGS OF OTHER WORK AFFECTED BY BUILDERS HARDWARE, AND OTHER INFORMATION ESSENTIAL TO THE COORDINATE REVIEW OF HARDWARE SCHEDULE.
2. KEYING SCHEDULE. SUBMIT SEPARATE DETAILED SCHEDULE INDICATING CLEARLY HOW THE OWNER'S FINAL INSTRUCTIONS ON KEYING OF LOCKS HAS BEEN FULFILLED. ALL KEYING SHALL BE COORDINATED WITH THE OWNER.

B. PRODUCTS: REFER TO HARDWARE SCHEDULE AND ARCHITECTURAL DRAWINGS.
1. STRIKES. PROVIDE MANUFACTURER'S STANDARD WROUGHT BOX STRIKE FOR EACH LATCH OR LOCK BOLT, WITH CURVED LIP EXTENDED TO PROTECT FRAME. FINISH TO MATCH HARDWARE SET. PROVIDE STANDARD (OPEN) STRIKE PLATES FOR INTERIOR DOORS WHERE WOOD DOOR FRAMES ARE USED.
2. IN GENERAL, HARDWARE FINISH SHALL BE US15 (SATIN NICKEL) UNLESS SPECIFIED DIFFERENTLY ON HARDWARE SCHEDULE.
3. SUPPLY CAL ROYAL HDFS3 FLEXIBLE DOOR STOPS IN THE APARTMENT DWELLING UNITS. USE 2 IVHP-23 HINGE STOPS WHERE FLEXIBLE STOPS CANNOT BE USED.
4. SUPPLY OUT SWINGING EXTERIOR DOORS WITH NON REMOVABLE PINS.

C. INSTALLATION:
1. MOUNT HARDWARE UNITS AT HEIGHTS INDICATED IN "RECOMMENDED LOCATIONS FOR BUILDERS HARDWARE FOR STANDARD STEEL DOORS AND FRAMES" BY THE DOOR AND HARDWARE INSTITUTE, EXCEPT AS SPECIFICALLY INDICATED OR REQUIRED TO COMPLY WITH GOVERNING REGULATIONS, AND EXCEPT AS MAY BE OTHERWISE DIRECTED BY ARCHITECT. MOUNT HARDWARE IN UNITS DESIGNATED FOR USE BY THE HANDICAPPED AT HEIGHTS RECOMMENDED FOR USE BY THE HANDICAPPED.
2. INSTALL EACH HARDWARE ITEM IN COMPLIANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. WHEREVER CUTTING AND FITTING IS REQUIRED TO INSTALL HARDWARE ONTO OR INTO SURFACES WHICH ARE LATER TO BE PAINTED OR FINISHED IN ANOTHER WAY, COORDINATE REMOVAL, STORAGE AND REINSTALLATION OR APPLICATION OF SURFACE PROTECTIONS WITH FINISHING WORK SPECIFIED IN THE DIVISION 9 SECTIONS. DO NOT INSTALL SURFACE MOUNTED ITEMS UNTIL FINISHES HAVE BEEN COMPLETED ON THE SUBSTRATE.
3. SET UNITS LEVEL, PLUMB AND TRUE TO LINE AND LOCATION. ADJUST AND REINFORCE THE ATTACHMENT SUBSTRATE AS NECESSARY FOR PROPER INSTALLATION AND OPERATION.
4.DRILL AND COUNTERSINK UNITS WHICH ARE NOT FACTORY PREPARED FOR ANCHORAGE FASTENERS. SPACE FASTENERS AND ANCHORS IN ACCORDANCE WITH INDUSTRY STANDARDS.
5.METAL THRESHOLDS SHALL BE SET IN A SOLID BED OF NON STAINING THIOKOL BASE CAULKING.
6. ADJUST AND CHECK EACH OPERATING ITEM OF HARDWARE AND EACH DOOR, TO ENSURE PROPER OPERATION OR FUNCTION OF EVERY UNIT. REPLACE UNITS WHICH CANNOT BE ADJUSTED TO OPERATE FREELY AND SMOOTHLY AS INTENDED FOR THE APPLICATION MADE.
7.FINAL ADJUSTMENT: WHEREVER HARDWARE INSTALLATION IS MADE MORE THAN ONE MONTH PRIOR TO ACCEPTANCE OR OCCUPANCY OF A SPACE OR AREA, RETURN TO THE WORK DURING THE WEEK PRIOR TO ACCEPTANCE OR OCCUPANCY, AND MAKE FINAL CHECK AND ADJUSTMENT OF ALL HARDWARE ITEMS IN SUCH SPACE OR AREA. CLEAN OPERATING ITEMS AS NECESSARY TO RESTORE PROPER FUNCTION AND FINISH OF HARDWARE AND DOORS. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING AND VENTILATING EQUIPMENT.

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section includes:
   a. Mechanical door hardware for the following:
      a. Swinging doors.
B. Related Sections:
   a. Section 081113 "Hollow Metal Doors and Frames"
   b. Section 081416 "Flush Wood Doors"

1.3 REFERENCES
A. The following reference standards and model code documents shall be used in estimating and detailing door hardware, and shall considered as a standard of quality, function, and performance, as applicable:
   a. I.B.C. - International Building Code (current year adopted).
   b. NFPA-80 - Fire Doors & Windows (current year adopted).
   c. NFPA-101 - Life Safety Code (current year adopted).
   d. NFPA-105 - Smoke Control Door Assembly. (current year adopted)
   e. ANSI-117.1 - 1992 Edition Providing Accessibility and Usability for Physically Handicapped People.
   f. A.D.A.A. G - Americans with Disabilities Act Accessibility Guidelines.

1.4 ACTION SUBMITTALS
A. Product Data: For each type of product indicated. Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
B. Other Action Submittals:
   a. Door Hardware Schedule: Prepared by or under the supervision of Installer, detailing fabrication, and assembly of door hardware, as well as installation procedures and diagrams. Coordinate final door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
      a. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
      b. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule." Double space entries, and number and date each page.
      c. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
      d. Content: Include the following information:
         1)Identification number, location, hand, fire rating, size, and material of each door and frame.
         2)Locations of each door hardware set cross-referenced to Drawings on floor plans and to door and frame schedule.
         3)Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
         4)Fastenings and other pertinent information.
         5)Explanation of abbreviations, symbols, and codes contained in schedule.
         6)Mounting locations for door hardware.
         7)List of related door devices specified in other Sections for each door and frame.
   b. Keying Schedule: Prepared by or under the supervision of Installer, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.5 INFORMATIONAL SUBMITTALS
A. Qualification Data: For Architectural Hardware Consultant.
B. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
C. Warranty: Special warranty specified in this Section.

1.6 CLOSEOUT SUBMITTALS
A. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.

1.7 QUALITY ASSURANCE
A. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as follows:
   a. For door hardware, an Architectural Hardware Consultant (AHC).
B. Source Limitations: Obtain each type of door hardware from a single manufacturer.
C. Fire-Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware rated for use in assemblies complying with NFPA 80 that are listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C, unless otherwise indicated.
D. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meet requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
   a. Air Leakage Rate: Maximum air leakage of0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at the tested pressure differential of 0.3-inch wg (75 Pa) of water.
E. Accessibility Requirements: For door hardware on doors in an accessible route, comply with [the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines.
   a. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
   b. Comply with the following maximum opening-force requirements:
      a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
      b. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
   c. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
   d. Adjust door closer sweep periods so that, from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches (75 mm) from the latch, measured to the leading edge of the door.
F.Keying Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." In addition to Owner, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
   a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
   b. Preliminary key system schematic diagram.
   c. Requirements for key control system.
   d. Requirements for access control.
   e. Address for delivery of keys.
G. Preinstallation Conference: Conduct conference at Project site.
   a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   b. Inspect and discuss preparatory work performed by other trades.
   c. Review sequence of operation for each type of electrified door hardware.
   d. Review required testing, inspecting, and certifying procedures.

1.8 DELIVERY, STORAGE, AND HANDLING
A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.
D. Deliver keys and permanent cores to Owner by registered mail or overnight package service.

1.9 COORDINATION
A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

1.10 WARRANTY
A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
   a. Failures include, but are not limited to, the following:
      a. Structural failures including excessive deflection, cracking, or breakage.
      b. Faulty operation of doors and door hardware.
      c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
   b. Warranty Period: Three years from date of Substantial Completion, unless otherwise indicated.
      a. Manual Closers: 30 years from date of Substantial Completion.
      b. Locks: Mechanical-10 years from date of Substantial Completion. Electronic-1 year from date of Substantial Completion.

1.11 MAINTENANCE SERVICE
A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
B. Maintenance Service: Beginning at Substantial Completion, provide six months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair, or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Provide parts and supplies that are the same as those used in the manufacture and installation of original products.

PART 2 - PRODUCTS

2.1 SCHEDULED DOOR HARDWARE
A. Provide door hardware for each door as scheduled in Part 3 "Door Hardware Schedule" Article to comply with requirements in this Section.
   a. Door Hardware Sets: Provide quantity, item, size, finish, or color indicated, and products equivalent in function and comparable in quality to named products.
B. Designations: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of door hardware are indicated in Part 3 "Door Hardware Schedule" Article. Products are identified by using door hardware designations, as follows:
   a. Named Manufacturers' Products: Manufacturer and product designation are listed for each door hardware type required for the purpose of establishing minimum requirements. Manufacturers' names are abbreviated in Part 3 "Door Hardware Schedule" Article.
   b. References to BHMA Designations: Provide products complying with these designations and requirements for description, quality, and function.

2.2 HINGES
A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
   a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. IVES Hardware; an Allegion company.
      b. Baldwin Hardware Corporation.
      c. Bommer Industries, Inc.

2.3 CYLINDRICAL LOCKS – GRADE 1 SCHLAGE ND
A. Manufacturers and Products:
   a. Scheduled Manufacturer and Product:
      a. Schlage ND series
   b. Acceptable Manufacturers and Products:
      a. Sargent 11-Line
      b. Corbin-Russwin CL3100 series
B. Requirements:
   a. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
   b. Cylinders: Refer to "KEYING" article, herein.
   c. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
   d. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
   e. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
   f. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
   g. Provide electrified options as scheduled in the hardware sets.
   h. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
      a. Lever Design: 17/Sparta.

2.4 EXIT DEVICES VON DUPRIN 99/33
A. Manufacturers and Products:
   a. Scheduled Manufacturer and Product:
      a. Von Duprin 99/33 series
   b. Acceptable Manufacturers and Products:
      a. Falcon 25/24 series; an Allegion Company
      b. Precision APEX 2000 Series

B. Requirements:
   a. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
   b. Cylinders: Refer to "KEYING" article, herein.
   c. Provide touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
   d. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
   e. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
   f. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
   g. Provide flush end caps for exit devices.
   h. Provide exit devices with manufacturer's approved strikes.
   i. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
   j. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
   k. Provide cylinder or hex-key dogging as specified at non fire-rated openings.

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collins | webb ARCHITECTURE
307B SW Market Street, Lee's Summit, Mo. 64063 P: 816.249.2270
(www.collinsandwebb.com)

PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

ROGER L. WEBB II
NUMBER A-2016004008

PROFESSIONAL SEAL

G500

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

GENERAL PROJECT
SPECIFICATIONS

l. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
m. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
n. Provide electrified options as scheduled.
o. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

2.5 KEYING

A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, Appendix A.

2.6 OPERATING TRIM

A. Operating Trim: BHMA A156.6; brass, unless otherwise indicated.
  a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. IVES Hardware; an Allegion company.
    b. Rockwood Manufacturing Company.
    c. Trimco.

2.7 SURFACE CLOSERS

A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves, cast aluminum body, and forged-steel main arm.

B. Comply with manufacturer's written recommendations for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.

C. Closer cylinders, arms, adapter plates, and metal covers shall have a powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI Standard A156.4 and ASTM B117.

D. Closers with pressure relief values will not be acceptable.

E. Supplier to provide any brackets or plates required for proper Installation of door closers.
  a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. LCN Closers; 4040XP Series; an Allegion company.
    b. Corbin Russwin Closers; DC8000 Series.
    c. Sargent Closers; 281 Series.

2.8 METAL PROTECTIVE TRIM UNITS

A. Metal Protective Trim Units: BHMA A156.6; fabricated from 0.050-inch- (1.3-mm-) thick stainless steel; with manufacturer's standard machine or self-tapping screw fasteners.
  a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    a. IVES Hardware; an Allegion company.
    b. Rockwood Manufacturing Company.
    c. Trimco.

2.9 FABRICATION

A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rated labels and as otherwise approved by Architect.
  a. Manufacturer's identification is permitted on rim of lock cylinders only.

B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.

C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware, unless otherwise indicated.
  a. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.

  b. Fire-Rated Applications:
    a. Wood or Machine Screws: For the following:
      1) Hinges mortised to doors or frames; use threaded-to-the-head wood screws for wood doors and frames.
      2) Strike plates to frames.
      3) Closers to doors and frames.
    b. Steel Through Bolts: For the following unless door blocking is provided:
      1) Surface hinges to doors.
      2) Closers to doors and frames.
      3) Surface-mounted exit devices.
  c. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
  d. Fasteners for Wood Doors: Comply with requirements in DHI WDHS.2, "Recommended Fasteners for Wood Doors."
  e. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.10 FINISHES

A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

B. Wood Doors: Comply with DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
  a. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  b. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing. Do not install surface-mounted items until finishes have been completed on substrates involved.
  a. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
  b. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

C. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Thresholds: Set thresholds for doors indicated in full bed of sealant complying with requirements specified in Section 079200 "Joint Sealants."

E. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

F. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame. Apply soffit mounted seals prior to soffit mounted hardware.

3.4 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  a. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DEMONSTRATION

A. Contractor to instruct owner's personnel to adjust, operate, and maintain door hardware and door hardware finishes.

3.7 DOOR HARDWARE SCHEDULE

A. The hardware sets listed below represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware, and missing items should be brought to the attention of the architect with corrections made prior to the bidding process.

Hardware Group No. 1
For use on Door #(s):
T100
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1 EA	PANIC HARDWARE	99-NL-OP-110MD	626	VON
1 EA	CYLINDER	TO MATCH EXISTING SYSTEM	626	SCH
1 EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D	630AM-316	IVE
1 EA	OH STOP	100S	630	GLY
1 EA	SURFACE CLOSER	4040XP EDA	689	LCN
1 EA	KICKPLATE	8400 8" X 2" LDW B-CS	630	IVE
1 EA	RAINDRIP	142AA	AA	ZER
1 EA	GASKETING	429AA-S	AA	ZER
1 EA	DOOR SWEEP	39A	A	ZER
1 EA	THRESHOLD	65A-223	A	ZER

EXISTING DOOR AND FRAME TO BE REUSED. FIELD VERIFY HARDWARE IS COMPATIBLE WITH EXISTING OPENING PRIOR TO ORDERING.

Hardware Group No. 2
For use on Door #(s):
T104
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1 EA	CONT. HINGE	112XY	628	IVE
1 EA	PANIC HARDWARE	99-NL-OP-110MD	626	VON
1 EA	CYLINDER	TO MATCH EXISTING SYSTEM	626	SCH
1 EA	90 DEG OFFSET PULL	8190EZHD 10" (MTG TYPE AS REQ'D	630AM-316	IVE
1 EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1 EA	MOUNTING PLATE	4040XP-18 SRT	689	LCN
1 EA	CUSH SHOE SUPPORT	4040XP-30SRT	689	LCN
1 EA	BLADE STOP SPACER	4040XP-61 SRT	689	LCN
1 EA	RAIN DRIP	142AA	AA	ZER
1 EA	WEATHER STRIPPING	BY DOOR AND FRAME MANUFACTURER	A	ZER
1 EA	THRESHOLD	65A-223	A	ZER

Hardware Group No. 3
For use on Door #(s):
T108A, T109
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	4040XP-61 SRT	652	IVE
1 EA	STOREROOM LOCK	ND80P6D SPA	626	VON
1 EA	OH STOP	90S	630	SCH
3 EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 4
For use on Door #(s):
T105
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1 EA	CLASSROOM LOCK	ND70P6D SPA	626	SCH
1 EA	SURFACE CLOSER	4040XP CUSH	689	LCN
1 EA	KICKPLATE	8400 8" X 2" LDW B-CS	630	IVE
1 EA	WALL STOP	WS406/407CVX	626	IVE
3 EA	SILENCER	SR64	GRY	IVE

Hardware Group No. 5
For use on Door #(s):
T101
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
1 EA	CONT. HINGE	112XY	628	IVE
1 EA	CLASSROOM LOCK	ND70P6D SPA	626	SCH
1 EA	SURFACE CLOSER	4040XP RW/PA	689	LCN
1 EA	MOUNTING PLATE	4040XP-18 SRT	689	LCN
1 EA	BLADE STOP SPACE	4040XP-61 SRT	689	LCN
1 EA	WALL STOP	WS406/407CVX	626	IVE

Hardware Group No. 6
For use on Door #(s):
T103
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1 EA	PRIVACY LOCK	L9040 17A 09-544 L283-722	626	SCH
1 EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1 EA	KICKPLATE	8400 8" X 2" LDW B-CS	630	IVE
1 EA	GASKETING	488SBK PSA	BK	ZER

Hardware Group No. 7
For use on Door #(s):
T108B,108C, 108D
PROVIDE EACH SGL DOOR(S) WITH THE FOLLOWING:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3 EA	HINGE	5BB1HW 4.5 X 4.5	652	IVE
1 EA	PRIVACY LOCK	L9040 17A 09-544 L283-722	626	SCH
1 EA	SURFACE CLOSER	4040XP EDA	689	LCN
1 EA	WALL STOP	WS406/407CVX	625	IVE
1 EA	GASKETING	488SBK PSA	BK	ZER

08 1113 - HOLLOW METAL DOORS AND FRAMES

A. SUBMITTALS: PRODUCT DATA AND SHOP DRAWINGS WITH DETAILS OF EACH OPENING, SHOWING ELEVATIONS, GLAZING, FRAME PROFILES, AND ANY INDICATED FINISH REQUIREMENTS.

B. HOLLOW METAL DOOR AND FRAME MANUFACTURERS:
1. CECO DOOR, AN ASSA ABLOY GROUP COMPANY: WWW.ASSAABLOYDSS.COM.
2. DE LA FONTAINE INC: WWW.DELAFONTAINE.COM
3. REPUBLIC DOORS, AN ALLEGION BRAND: WWW.REPUBLICDOOR.COM
4. STEELCRAFT, AN ALLEGION BRAND: WWW.ALLEGION.COM

C. SOUND-RATED HOLLOW METAL DOORS AND FRAMES:
1. OVERLY DOOR COMPANY: WWW.OVERLY.COM

D. DESIGN CRITERIA:
1. STEEL USED FOR FABRICATION OF DOORS AND FRAMES SHALL COMPLY WITH ONE OR MORE OF THE FOLLOWING REQUIREMENTS; GALVANNEALED STEEL CONFORMING TO ASTM A653/A653M, COLD-ROLLED STEEL CONFORMING TO ASTM A1008/A1008M, OR HOT-ROLLED PICKLED AND OILED (HRPO) STEEL CONFORMING TO ASTM A1011/A1011M, COMMERCIAL STEEL (CS) TYPE B FOR EACH.
2. TYPICAL DOOR FACE SHEETS: FLUSH.
3. GLAZED LIGHTS: NON-REMOVABLE STOPS ON NON-SECURE SIDE; SIZES AND CONFIGURATIONS AS INDICATED ON DRAWINGS. STYLE: MANUFACTURERS STANDARD.
4. HARDWARE PREPARATIONS, SELECTIONS AND LOCATIONS: COMPLY WITH NAAMM HMMA 830 AND NAAMM HMMA 831 OR BHMA A156.115 AND ANSI/SDI A250.8 (SDI-100) IN ACCORDANCE WITH SPECIFIED REQUIREMENTS.
5. ZINC COATING FOR TYPICAL INTERIOR AND/OR EXTERIOR LOCATIONS: PROVIDE METAL COMPONENTS ZINC-COATED (GALVANIZED) AND/OR ZINC-IRON ALLOY-COATED (GALVANNEALED) BY THE HOT-DIP PROCESS IN ACCORDANCE WITH ASTM A653/A653M, WITH MANUFACTURER'S STANDARD COATING THICKNESS, UNLESS NOTED OTHERWISE FOR SPECIFIC HOLLOW METAL DOORS AND FRAMES.
6. HOLLOW METAL PANELS: SAME CONSTRUCTION, PERFORMANCE, AND FINISH AS DOORS.
7. COMBINED REQUIREMENTS: IF A PARTICULAR DOOR AND FRAME UNIT IS INDICATED TO COMPLY WITH MORE THAN ONE TYPE OF REQUIREMENT, COMPLY WITH THE SPECIFIED REQUIREMENTS FOR EACH TYPE; FOR INSTANCE, AN EXTERIOR DOOR THAT IS ALSO INDICATED AS BEING SOUND-RATED MUST COMPLY WITH THE REQUIREMENTS SPECIFIED FOR EXTERIOR DOORS AND FOR SOUND-RATED DOORS; WHERE TWO REQUIREMENTS CONFLICT, COMPLY WITH THE MOST STRINGENT.

E. HOLLOW METAL DOOR:
1. EXTERIOR DOORS: THERMALLY INSULATED.
  A. ASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100).
  B. LEVEL 1 - STANDARD-DUTY.
  C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4.
  D. MODEL 1 - FULL FLUSH.
  E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM.
  F. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION AND IN COMPLIANCE WITH REQUIREMENTS.
  G. DOOR THICKNESS: 1-3/4 INCH, NOMINAL.
  H. TOP CLOSURES FOR OUTSWINGING DOORS: FLUSH WITH TOP OF FACES AND EDGES.
  I. WEATHERSTRIPPING: REFER TO SECTION 08 7100.
  J. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

2. INTERIOR DOORS, NON-FIRE RATED:
  A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100).
  B. LEVEL 1 - STANDARD-DUTY.
  C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4.
  D. MODEL 1 - FULL FLUSH.
  E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM.
  F. DOOR THICKNESS: 1-3/4 INCH, NOMINAL.
  G. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

3. FIRE-RATED DOORS:
  A. BASED ON SDI STANDARDS: ANSI/SDI A250.8 (SDI-100).
  B. LEVEL 1 - STANDARD-DUTY.
  C. PHYSICAL PERFORMANCE LEVEL C, 250,000 CYCLES; IN ACCORDANCE WITH ANSI/SDI A250.4.
  D. MODEL 1 - FULL FLUSH.
  E. DOOR FACE METAL THICKNESS: 20 GAGE, 0.032 INCH, MINIMUM.
  F. FIRE RATING: AS INDICATED ON DOOR SCHEDULE, TESTED IN ACCORDANCE WITH UL 10C AND NFPA 252 ("POSITIVE PRESSURE FIRE TESTS").
  G. TEMPERATURE-RISE RATING (TRR) ACROSS DOOR THICKNESS: IN ACCORDANCE WITH LOCAL BUILDING CODE AND AUTHORITIES HAVING JURISDICTION.
  H. PROVIDE UNITS LISTED AND LABELED BY UL (DIR) OR ITS (DIR). ATTACH FIRE RATING LABEL TO EACH FIRE RATED UNIT.
  I. SMOKE AND DRAFT CONTROL DOORS (INDICATED WITH LETTER "S" ON DRAWINGS AND/OR DOOR SCHEDULE): SELF-CLOSING OR AUTOMATIC CLOSING DOORS IN ACCORDANCE WITH NFPA 80 AND NFPA 105, WITH FIRE-RESISTANCE-RATED WALL CONSTRUCTION RATED THE SAME OR GREATER THAN THE FIRE-RATED DOORS, AND THE FOLLOWING;
    1. MAXIMUM AIR LEAKAGE: 3.0 CFM/SQ FT OF DOOR OPENING AT 0.10 INCH W.G. PRESSURE, WHEN TESTED IN ACCORDANCE WITH UL 1784 AT BOTH AMBIENT AND ELEVATED TEMPERATURES.
    2. GASKETING: PROVIDE GASKETING OR EDGE SEALING AS NECESSARY TO ACHIEVE LEAKAGE LIMIT.
    3. LABEL: INCLUDE THE "S" LABEL ON FIRE-RATING LABEL OF DOOR.
  J. DOOR CORE MATERIAL: MANUFACTURERS STANDARD CORE MATERIAL/CONSTRUCTION IN COMPLIANCE WITH REQUIREMENTS.
  K. DOOR THICKNESS: 1-3/4 INCH, NOMINAL.
  L. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

F. HOLLOW METAL FRAMES:
1. COMPLY WITH STANDARDS AND/OR CUSTOM GUIDELINES AS INDICATED FOR CORRESPONDING DOOR IN ACCORDANCE WITH APPLICABLE DOOR FRAME REQUIREMENTS.
2. INTERIOR DOOR FRAMES, NON-FIRE RATED: FACE WELDED TYPE. FRAME FINISH: FACTORY FINISHED.
  A. FULL LENGTH STOPS
  B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM.
3. DOOR FRAMES, FIRE-RATED: FACE WELDED TYPE. FIRE RATING: SAME AS DOOR, LABELED.
  A. FULL LENGTH STOPS
  B. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM.
4. SOUND-RATED DOOR FRAMES: FULL PROFILE/CONTINUOUSLY WELDED TYPE.
  A. FRAME METAL THICKNESS: 18 GAGE, 0.042 INCH, MINIMUM.
5. FRAMES FOR WOOD DOORS: COMPLY WITH FRAME REQUIREMENTS IN ACCORDANCE WITH CORRESPONDING DOOR.
6. BORROWED LITES GLAZING FRAMES: CONSTRUCTION AND FACE DIMENSIONS TO MATCH DOOR FRAMES, AND AS INDICATED ON DRAWINGS.
7. FRAMES IN MASONRY WALLS: SIZE TO SUIT MASONRY COURSING WITH HEAD MEMBER 4 INCH HIGH TO FILL OPENING WITHOUT CUTTING MASONRY UNITS.
8. FRAMES WIDER THAN 48 INCHES: REINFORCE WITH STEEL CHANNEL FITTED TIGHTLY INTO FRAME HEAD, FLUSH WITH TOP.

G. FINISHES:
1. PRIMER: RUST-INHIBITING, COMPLYING WITH ANSI/SDI A250.10, DOOR MANUFACTURER'S STANDARD.

H. ACCESSORIES:
1. GLAZING: AS INDICATED IN DRAWINGS OR AS SPECIFIED.
2. REMOVABLE STOPS: FORMED SHEET STEEL, SHAPE AS INDICATED ON DRAWINGS, MITERED OR BUTTED CORNERS; PREPARED FOR COUNTERSINK STYLE TAMPER PROOF SCREWS.
3. SILENCERS: RESILIENT RUBBER, FITTED INTO DRILLED HOLE; PROVIDE THREE ON STRIKE SIDE OF SINGLE DOOR, THREE ON CENTER MULLION OF PAIRS, AND TWO ON HEAD OF PAIRS WITHOUT CENTER MULLIONS.
4. TEMPORARY FRAME SPREADERS: PROVIDE FOR FACTORY- OR SHOP-ASSEMBLED FRAMES.

E. INSTALLATION:
1. INSTALL DOORS AND FRAMES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RELATED REQUIREMENTS OF SPECIFIED DOOR AND FRAME STANDARDS OR CUSTOM GUIDELINES INDICATED.
2. INSTALL PREFINISHED FRAMES AFTER PAINTING AND WALL FINISHES ARE COMPLETE.
3. INSTALL FIRE RATED UNITS IN ACCORDANCE WITH NFPA 80.
4. COORDINATE FRAME ANCHOR PLACEMENT WITH WALL CONSTRUCTION.

08 1416 - FLUSH WOOD DOORS

A. SUBMITTALS: PRODUCT DATA, PREFINISHED DOOR SKIN SAMPLES, AND DOOR SCHEDULE INDICATING DOOR AND FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

B. BASIS OF DESIGN: LINCOLN PARK, MASONITE, LE CHATEAU COLLECTION. HOLLOW CORE DOORS OR APPROVED EQUAL

C. DOORS: 1-3/8" THICK PREHING. SIZES, SPECIES, AND DESIGNS AS INDICATED COMPLYING WITH WDMA I.S.1-A
1. GRADE: PREMIUM
2. VENEER MATCHING: BOOK AND RUNNING
3. PAIR MATCHING AND SET MATCHING
4. CONSTRUCTION:
  A. INTERIOR VENEER: FIVE OR SEVEN PLY, STRUCTURAL COMPOSITE LUMBER CORES.
5. SIZES AS INDICATED IN DRAWINGS

D. FABRICATION AND FINISHING:
1. FACTORY FIT DOORS TO SUIT FRAME OPENINGS TO COMPLY WITH REFERENCED STANDARD. COMPLY WITH NFPA 80 FOR FIRE-RESISTANCE RATED DOORS.
2. FACTORY MACHINE DOORS FOR HARDWARE THAT IS NOT SURFACE APPLIED.
3. CUT AND TRIM OPENINGS TO COMPLY WITH REFERENCED STANDARDS.
4. LITE KITS: MATCHING WOOD STOPS
5. FACTORY FINISH DOORS FOR TRANSPARENT FINISH WITH STAIN AND MANUFACTURER'S STANDARD FINISH COMPARABLE TO AWI, SYSTEM TR-4, CONVERSION VARNISH OR AWI SYSTEM TR-6, CATALYZED POLYURETHANE.

E. INSTALLATION:
1. COMPLY WITH WDMA'S "HOW TO STORE, HANDLE, FINISH, INSTALL, AND MAINTAIN WOOD DOORS" ALIGNED AND FITTED IN FRAMES WITH UNIFORM CLEARANCES.
2. SET IN TWO PIECE W.P. SPLIT JAMB FRAMES WITH 1X4 WOOD CASING.

08 3100 - ACCESS DOORS AND PANELS

A. SUBMITTALS: PRODUCT DATA.

B. PRODUCTS: PRIME-PAINTED FLUSH, UNINSULATED ACCESS DOORS FOR WALLS AND CEILINGS WITH TRIMLESS FRAME AND SCREWDRIVER OPERATED LOCK FLUSH WITH FINISHED SURFACE. FIRE-RATED, SELF-LATCHING. AUTOMATIC CLOSING AT FIRE-RATED WALLS OR CEILINGS.

C. INSTALLATION: INSTALL FLUSH TO FINISHED DRYWALL SURFACE WITH FRAME TAPED AND SANDED FLUSH WITH WALL OR CEILING SURFACE AND FINISH TO MATCH ADJACENT SURFACE.

08 4313 - ALUMINUM FRAMED STOREFRONTS

A. SUBMITTALS: PRODUCT DATA: PROVIDE COMPONENT DIMENSIONS, DESCRIBE COMPONENTS WITHIN ASSEMBLY, ANCHORAGE AND FASTENERS, GLASS AND INFILL, DOOR HARDWARE, INTERNAL DRAINAGE DETAILS.
1. HARDWARE SCHEDULE: COMPLETE ITEMIZATION OF EACH ITEM OF HARDWARE TO BE PROVIDED FOR EACH DOOR, CROSS-REFERENCED TO DOOR IDENTIFICATION NUMBERS IN CONTRACT DOCUMENTS.
2. SHOP DRAWINGS: INDICATE SYSTEM DIMENSIONS, FRAMED OPENING REQUIREMENTS AND TOLERANCES, AFFECTED RELATED WORK, EXPANSION AND CONTRACTION JOINT LOCATION AND DETAILS, AND FIELD WELDING REQUIRED.

B. WARRANTY: WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER.
1. CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION.
2. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST FAILURE OF GLASS SEAL ON INSULATING GLASS UNITS, INCLUDING INTERPANE DUSTING OR MISTING. INCLUDE PROVISION FOR REPLACEMENT OF FAILED UNITS.
3. PROVIDE FIVE YEAR MANUFACTURER WARRANTY AGAINST EXCESSIVE DEGRADATION OF EXTERIOR FINISH. INCLUDE PROVISION FOR REPLACEMENT OF UNITS WITH EXCESSIVE FADING, CHALKING, OR FLAKING.

C. BASIS OF DESIGN: KAWNEER_ ENCORE-MEDIUM STILE , ANODIZED.VERIFY FINISH WITH OWNER.
1. OTHER MANUFACTURERS: PROVIDE EITHER THE PRODUCT IDENTIFIED AS "BASIS OF DESIGN" OR AN EQUIVALENT PRODUCT.

D. MATERIALS:
1. ALUMINUM-FRAMED STOREFRONT: FACTORY FABRICATED, FACTORY FINISHED ALUMINUM FRAMING MEMBERS WITH INFILL, AND RELATED FLASHINGS, ANCHORAGE AND ATTACHMENT DEVICES.
2. ALUMINUM FRAMING MEMBERS: TUBULAR ALUMINUM SECTIONS[<>], DRAINAGE HOLES AND INTERNAL WEEP DRAINAGE SYSTEM.
3. EXTRUDED ALUMINUM: ASTM B221 (ASTM B221M).
4. STRUCTURAL STEEL SECTIONS: ASTM A36/A36M; SHOP PRIMED.
5. FASTENERS: STAINLESS STEEL.
6. CONCEALED FLASHINGS: STAINLESS STEEL, 26 GAGE, 0.0187 INCH MINIMUM THICKNESS.
7. SEALANT FOR SETTING THRESHOLDS: NON-CURING BUTYL TYPE.
8. GLAZING GASKETS: TYPE TO SUIT APPLICATION TO ACHIEVE WEATHER, MOISTURE, AND AIR INFILTRATION REQUIREMENTS.

E. FINISHES:
1. CLASS I COLOR ANODIZED FINISH: AAMA 611 AA-M12C22A44 ELECTROLYTICALLY DEPOSITED COLORED ANODIC COATING NOT LESS THAN 0.7 MILS THICK. COLOR AS SELECTED BY OWNER & ARCHITECT.

F. HARDWARE:
1. FOR EACH DOOR, INCLUDE WEATHERSTRIPPING, SILL SWEEP STRIP, AND THRESHOLD.
2. OTHER DOOR HARDWARE: STOREFRONT MANUFACTURER'S STANDARD TYPE TO SUIT APPLICATION.
  A. FINISH ON HAND-CONTACTED ITEMS: POLISHED CHROME.
  B. FOR EACH DOOR, INCLUDE BUTT HINGES, PIVOTS, PUSH HANDLE, PULL HANDLE, EXIT DEVICE, NARROW STILE HANDLE LATCH, AND CLOSER. COORDINATE ADA PUSH BUTTON LOCATION.

G. INSTALLATION:
1. VERIFY DIMENSIONS, TOLERANCES, AND METHOD OF ATTACHMENT WITH OTHER WORK.
2. VERIFY THAT WALL OPENINGS AND ADJOINING AIR AND VAPOR SEAL MATERIALS ARE READY TO RECEIVE WORK OF THIS SECTION.
3. INSTALL WALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
4. ATTACH TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES AND OTHER IRREGULARITIES.
5. ALIGN ASSEMBLY PLUMB AND LEVEL, FREE OF WARP OR TWIST. MAINTAIN ASSEMBLY DIMENSIONAL TOLERANCES, ALIGNING WITH ADJACENT WORK.
6. PROVIDE THERMAL ISOLATION WHERE COMPONENTS PENETRATE OR DISRUPT BUILDING INSULATION.
7. INSTALL SILL FLASHINGS. TURN UP ENDS AND EDGES; SEAL TO ADJACENT WORK TO FORM WATER TIGHT DAM.
8. WHERE FASTENERS PENETRATE SILL FLASHINGS, MAKE WATERTIGHT BY SEATING AND SEALING FASTENER HEADS TO SILL FLASHING.
9. PACK FIBROUS INSULATION IN SHIM SPACES AT PERIMETER OF ASSEMBLY TO MAINTAIN CONTINUITY OF THERMAL BARRIER.
10. SET THRESHOLDS IN BED OF SEALANT AND SECURE.
11. INSTALL HARDWARE USING TEMPLATES PROVIDED. ADJUST OPERATING HARDWARE AND SASH FOR SMOOTH OPERATION.
12. WASH DOWN SURFACES WITH A SOLUTION OF MILD DETERGENT IN WARM WATER, APPLIED WITH SOFT, CLEAN WIPING CLOTHS, AND TAKE CARE TO REMOVE DIRT FROM CORNERS AND TO WIPE SURFACES CLEAN.
13. PROTECT INSTALLED PRODUCTS FROM DAMAGE UNTIL DATE OF SUBSTANTIAL COMPLETION.

08 8000 - GLAZING

A. SUBMITTALS: PRODUCT DATA ON INSULATING GLASS UNIT, GLAZING UNIT, AND [SPANDREL] GLAZING TYPES: PROVIDE STRUCTURAL, PHYSICAL AND ENVIRONMENTAL CHARACTERISTICS, SIZE LIMITATIONS, SPECIAL HANDLING AND INSTALLATION REQUIREMENTS.
1. PRODUCT DATA ON GLAZING COMPOUNDS AND ACCESSORIES: PROVIDE CHEMICAL, FUNCTIONAL, AND ENVIRONMENTAL CHARACTERISTICS, LIMITATIONS, SPECIAL APPLICATION REQUIREMENTS, AND IDENTIFY AVAILABLE COLORS.
2. SAMPLES: SUBMIT TWO SAMPLES [12] BY [12] INCH IN SIZE OF GLASS UNITS.

B. WARRANTY: WARRANTY DOCUMENTATION: SUBMIT MANUFACTURER WARRANTY AND ENSURE THAT FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER.
1. INSULATING GLASS UNITS: PROVIDE A FIVE (5) YEAR MANUFACTURER WARRANTY TO INCLUDE COVERAGE FOR SEAL FAILURE, INTERPANE DUSTING OR MISTING, INCLUDING PROVIDING PRODUCTS TO REPLACE FAILED UNITS

C. STOREFRONT GLAZING BASIS OF DESIGN: GUARDIAN -SUNGUARD _ SNX 62/27 _COATED GLASS, CLEAR. WITH .24 U-VALUE ARGON FILLED.

D. QUALITY STANDARDS:
1. SAFETY GLASS: CATEGORY II MATERIALS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 AND ANSI Z97.1.
2. GLAZING PUBLICATIONS: WHERE APPLICABLE, COMPLY WITH WITH THE PUBLISHED RECOMMENDATIONS OF THE FOLLOWING:
  A. GANA PUBLICATIONS: "GLAZING MANUAL" AND "LAMINATED GLASS DESIGN GUIDE".
  B. SIGMA PUBLICATIONS: SIGMA TM-3000, "VERTICAL GLAZING GUIDELINES".

E. GLASS:
1. FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY q3
2. HEAT-TREATED FLOAT GLASS: ASTM C 1048, TYPE I, QUALITY q3, HEAT STRENGTHENED OR FULLY TEMPERED WHERE INDICATED AND WHERE REQUIRED BY CODE OR INSTALLATION CONDITIONS.
3. MIRROR GLASS: ASTM C 1036, TYPE I, CLASS 1, QUALITY q1, SILVER COATED PER FS DDM411C, 6.0mm THICK, WITH EDGES FLAT POLISHED.

F. FABRICATED GLASS PRODUCTS:
1. SEALED INSULATING-GLASS UNITS: PREASSEMBLED UNITS COMPLYING WITH ASTM E 774 FOR CLASS CBA UNITS WITH TWO SHEETS OF GLASS SEPARATED BY A 1/2-INCH DEHYDRATED SPACE FILLED WITH AIR. EXTERIOR GLASS COLOR TO MATCH EXISTING. INTERIOR GLASS SHALL BE CLEAR.

G. INSTALLATION:
1. COMPLY WITH COMBINED RECOMMENDATIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE CONTAINED IN GANA'S "GLAZING MANUAL".
2. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS.
3. AFTER GLASS INSTALLATION IS COMPLETE, REMOVE GLAZING MATERIALS AND LABELS FROM FINISHED SURFACES, AND THOROUGHLY CLEAN GLASS AND ADJACENT FRAMING AND SURFACES. REPEAT AS NECESSARY PRIOR TO FINAL WALK-THROUGH.

SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS

08 8100 - MIRRORS

A. SUBMITTALS: FOR EACH TYPE OF PRODUCT INDICATED.THE CONTRACTOR SHALL PREPARE, AND SUBMIT TO THE ARCHITECT FOR APPROVAL, COMPLETE SHOP DRAWINGS: INCLUDE MIRROR ELEVATIONS, EDGE DETAILS, MIRROR HARDWARE, AND ATTACHMENTS TO OTHER WORK. WARRANTY: SAMPLE OF SPECIAL WARRANTY.

B. QUALITY ASSURANCE: VINYL CASEMENT WINDOWS- BASIS OF DESIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS.
1. GLAZING PUBLICATIONS: COMPLY WITH GANA'S "GLAZING MANUAL" AND "MIRRORS, HANDLE WITH EXTREME CARE: TIPS FOR THE PROFESSIONAL ON THE CARE AND HANDLING OF MIRRORS."
2. SAFETY GLAZING PRODUCTS: FOR MIRRORS, PROVIDE PRODUCTS COMPLYING WITH TESTING REQUIREMENTS IN 16 CFR 1201 FOR CATEGORY II MATERIALS.
3. PRECONSTRUCTION MIRROR MASTIC COMPATIBILITY TEST: SUBMIT MIRROR MASTIC PRODUCTS TO MIRROR MANUFACTURER FOR TESTING TO DETERMINE COMPATIBILITY OF MASTIC WITH MIRROR BACKING AND SUBSTRATES ON WHICH MIRRORS ARE INSTALLED.

C. WARRANTY: SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MIRROR MANUFACTURER AGREES TO REPLACE MIRRORS THAT DETERIORATE WITHIN SPECIFIED WARRANTY PERIOD. DETERIORATION OF MIRRORS IS DEFINED AS DEFECTS DEVELOPED FROM NORMAL USE THAT ARE NOT ATTRIBUTED TO MIRROR BREAKAGE OR TO MAINTAINING AND CLEANING MIRRORS CONTRARY TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DEFECTS INCLUDE DISCOLORATION, BLACK SPOTS, AND CLOUDING OF THE SILVER FILM.
1. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

D. BASIS OF DESIGN: SILVERED FLAT GLASS MIRRORS
1. GLASS MIRRORS, GENERAL: ASTM C 1503; MANUFACTURED USING COPPER FREE, LOW LEAD MIRROR COATING PROCESS.
2. CLEAR GLASS: MIRROR GLAZING QUALITY; ULTRACLEAR (LOW IRON) FLOAT GLASS WITH A MINIMUM 91 PERCENT VISIBLE LIGHT TRANSMISSION. NOMINAL THICKNESS: 1/4 INCH.
3. TEMPERED CLEAR GLASS: MIRROR GLAZING QUALITY, FOR BLEMISH REQUIREMENTS; AND COMPLY WITH ASTM C 1048 FOR KIND FT, CONDITION A, TEMPERED FLOAT GLASS BEFORE SILVER COATING IS APPLIED. NOMINAL THICKNESS: 1/4 INCH.

E. MIRROR HARDWARE: TOP AND BOTTOM ALUMINUM J CHANNELS: ALUMINUM EXTRUSIONS WITH A RETURN DEEP ENOUGH TO PRODUCE A GLAZING CHANNEL TO ACCOMMODATE MIRRORS OF THICKNESS INDICATED AND IN LENGTHS REQUIRED TO COVER BOTTOM AND TOP EDGES OF EACH MIRROR IN A SINGLE PIECE. FINISH: CLEAR BRIGHT ANODIZED.

1. TOP AND BOTTOM MIRROR MOUNTING CLIPS: #277 MIRROR CLIPS AS MANUFACTURED BY KNAPE & VOGT OR APPROVED EQUAL.
2. FASTENERS: FABRICATED OF SAME BASIC METAL AND ALLOY AS FASTENED METAL AND MATCHING IT IN FINISHED COLOR AND TEXTURE WHERE FASTENERS ARE EXPOSED.

F. INSTALLATION: GENERAL: EXAMINE SUBSTRATES, OVER WHICH MIRRORS ARE TO BE MOUNTED, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH INSTALLATION TOLERANCES, SUBSTRATE PREPARATION, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
A. VERIFY COMPATIBILITY WITH AND SUITABILITY OF SUBSTRATES, INCLUDING COMPATIBILITY OF MIRROR MASTIC WITH EXISTING FINISHES OR PRIMERS.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED AND SURFACES ARE DRY.

1. INSTALL MIRRORS TO COMPLY WITH MIRROR MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH REFERENCED GANA PUBLICATIONS. MOUNT MIRRORS ACCURATELY IN PLACE IN A MANNER THAT AVOIDS DISTORTING REFLECTED IMAGES.
2. INSTALL WALL MOUNTED ANNEALED GLASS MIRRORS IN THE APARTMENT UNITS WITH MIRROR CLIPS. ATTACH MIRROR HARDWARE SECURELY TO MOUNTING SURFACES WITH MECHANICAL FASTENERS INSTALLED WITH
3. ANCHORS OR INSERTS AS APPLICABLE. INSTALL FASTENERS SO HEADS DO NOT IMPOSE POINT LOADS ON BACKS OF MIRRORS.
4. PROTECT MIRRORS FROM BREAKAGE AND CONTAMINATING SUBSTANCES RESULTING FROM CONSTRUCTION OPERATIONS.
5. MAINTAIN ENVIRONMENTAL CONDITIONS THAT WILL PREVENT MIRRORS FROM BEING EXPOSED TO MOISTURE FROM CONDENSATION OR OTHER SOURCES FOR CONTINUOUS PERIODS OF TIME.
6. WASH EXPOSED SURFACE OF MIRRORS NOT MORE THAN FOUR DAYS BEFORE DATE SCHEDULED FOR INSPECTIONS THAT ESTABLISH DATE OF SUBSTANTIAL COMPLETION. WASH MIRRORS AS RECOMMENDED IN WRITING BY MIRROR MANUFACTURER.

DIVISION 9 - FINISHES

09 2116 - GYPSUM BOARD ASSEMBLIES

A. STEEL FRAMING MEMBERS: COMPLY WITH ASTM C754 IN DEPTHS AND GAGES AS INDICATED IN THE CONSTRUCTION DRAWINGS AND AS FOLLOWS:
1. STEEL SHEET COMPONENTS: COMPLY WITH ASTM C645 WITH MANUFACTURER'S STANDARD CORROSION-RESISTANT ZINC COATING.
2. TIE WIRE: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0625" DIAMETER OR DOUBLE STRAND OF .0475" DIAMETER WIRE.
3. WIRE HANGERS: ASTM A 641/A 641M, CLASS 1 ZINC COATING, SOFT TEMPER. .0162" DIAMETER.

B. PANEL PRODUCTS: PROVIDE IN THICKNESS AND TYPE INDICATED IN THE CONSTRUCTION DRAWINGS IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END-TO-END BUTT JOINTS AND AS FOLLOWS:
1. GYPSUM WALLBOARD: ASTM C 36, TYPE 'X' WITH TAPERED EDGES, SAG-RESISTANT TYPE FOR CEILING SURFACES.
2. WATER-RESISTANT GYPSUM BACKING BOARD: ASTM C 630, TYPE 'X' ON ALL TOILET ROOM AND SHOWER ROOM WALLS, BEHIND ALL PLUMBING FIXTURES, AND AS INDICATED.

C. ACCESSORIES:
1. TRIM: ASTM 1047, FORMED FROM GALVANIZED OR ALUMINUM COATED STEEL SHEET, ROLLED ZINC, OR PLASTIC
  a. OUTSIDE CORNERS: PROVIDE CORNER BEAD UNLESS NOTED OTHERWISE
  b. EXPOSED PANEL EDGES: PROVIDE LC-BEAD (J-BEAD) UNLESS NOTED OTHERWISE; USE TEAR-AWAY BEAD WHERE GYP. BD. MEETS WINDOW FRAMES OR CEILING GRID.
  c. CONTROL JOINTS: PROVIDE WHERE INDICATED OR APPROXIMATELY 30'-0" MAX. CONTACT ARCHITECT FOR LOCATIONS IF NOT INDICATED.
2. SOUND-ATTENUATION BLANKETS: ASTM C 665, TYPE I (UNFACED)
3. ACOUSTICAL SEALANT: COMPLY WITH ASTM C 834, NONSAG, PAINTABLE, NONSTAINING LATEX.

D. INSTALLATION:
1. FRAMING: COMPLY WITH ASTM C 754 AND ASTM C 840 AND WITH U.S. GYPSUM'S "GYPSUM CONSTRUCTION HANDBOOK" ISOLATE FRAMING FROM BUILDING STRUCTURE TO PREVENT TRANSFER OF LOADING IMPOSED BY STRUCTURAL MOVEMENT AND PROVIDE BRACING AS NECESSARY FOR PROPER SUPPORT WHETHER INDICATED OR NOT.
2. GYPSUM PANELS AND FINISH: COMPLY WITH ASTM C 840 AND GA-216. ISOLATE GYPSUM BOARD ASSEMBLIES FROM ABUTTING STRUCTURAL AND MASONRY WORK AND FINISH AS FOLLOWS:
  A. LEVEL 1 (EMBED TAPE AT JOINTS): AT CONCEALED AREAS UNLESS A HIGHER LEVEL IS INDICATED OR REQUIRED FOR FIRE-RESISTANCE-RATED ASSEMBLY.
  B. LEVEL 2 (EMBED TAPE AND APPLY SEPARATE FIRST COAT OF JOINT COMPOUND TO TAPE. FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT SUBSTRATES BEHIND TILE.
  C. LEVEL 4 (EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING FLAT, EGGSHELL, OR SATIN SHEEN PAINT OR WALLCOVERING)
  D. LEVEL 5 (EMBED TAPE, APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES, AND APPLY THIN SKIM COAT OF JOINT COMPOUND OVER ENTIRE SURFACE AND SAND SMOOTH AFTER EACH COAT): AT ALL WALLS RECEIVING SEMI-GLOSS OR GLOSS SHEEN PAINT, AND ALL GYPSUM BOARD CEILINGS)

09 2216 - NON-STRUCTURAL METAL FRAMING

A. SUBMITTALS: SHOP DRAWINGS: INDICATE PREFABRICATED WORK, COMPONENT DETAILS, STUD LAYOUT, FRAMED OPENINGS, ANCHORAGE TO STRUCTURE, ACOUSTIC DETAILS, TYPE AND LOCATION OF FASTENERS, ACCESSORIES, AND ITEMS OF OTHER RELATED WORK. DESCRIBE METHOD FOR SECURING STUDS TO TRACKS, SPLICING, AND FOR BLOCKING AND REINFORCEMENT OF FRAMING CONNECTIONS.
1. PRODUCT DATA: PROVIDE MANUFACTURER'S DATA ON PARTITION HEAD TO STRUCTURE CONNECTORS, SHOWING COMPLIANCE WITH REQUIREMENTS.
2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES AND PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION.

B. MANUFACTURERS:
1. CLARKDIETRICH BUILDING SYSTEMS: WWW.CLARKDIETRICH.COM.
2. CEMCO: WWW.CEMCOSTEEL.COM.
3. JAIMES INDUSTRIES: WWW.JAIMESIND.COM
4. STEEL CONSTRUCTION SYSTEMS: WWW.STEELCONSYSTEMS.COM

C. FRAMING MATERIALS:
1. FIRE RATED ASSEMBLIES: COMPLY WITH APPLICABLE CODE AND AS FOLLOWS:
  A. TOP OF FIRE RATED PARTITIONS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1 AND 2] HOUR RATING.
  B. FIRE RATED SHAFT WALL REQUIREMENTS: LISTED ASSEMBLY BY UL, NO. [ON DRAWINGS]; [1] HOUR RATING.

2. NON-LOADBEARING FRAMING SYSTEM COMPONENTS: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 FOR THE SPACING INDICATED, WITH MAXIMUM DEFLECTION OF WALL FRAMING OF L/240 AT 5 PSF.
  A. TRACKS AND RUNNERS: SAME MATERIAL AND THICKNESS AS STUDS, BENT LEG RETAINER NOTCHED TO RECEIVE STUDS WITH PROVISION FOR CRIMP LOCKING TO STUD. STUDS: C SHAPED WITH FLAT OR FORMED WEBS WITH KNURLED FACES.
  B. CEILING CHANNELS: C SHAPED.
  C. FURRING: HAT-SHAPED SECTIONS, MINIMUM DEPTH OF 7/8 INCH.
  D. CONTRACTOR TO PROVIDE BRACING AS REQUIRED TO COMPLETE SYSTEM.
  F. WHERE INDICATED IN DRAWINGS, SHAFT WALL STUDS AND ACCESSORIES: ASTM C645; GALVANIZED SHEET STEEL, OF SIZE AND PROPERTIES NECESSARY TO COMPLY WITH ASTM C754 AND SPECIFIED PERFORMANCE REQUIREMENTS.
  G. CEILING HANGERS: TYPE AND SIZE AS SPECIFIED IN ASTM C754 FOR SPACING REQUIRED.
  H. PARTITION HEAD TO STRUCTURE CONNECTIONS: PROVIDE MECHANICAL ANCHORAGE DEVICES THAT ACCOMMODATE DEFLECTION USING SLOTTED HOLES, SCREWS AND ANTI-FRICTION BUSHINGS, PREVENTING ROTATION OF STUDS WHILE MAINTAINING STRUCTURAL PERFORMANCE OF PARTITION.
  I. FIT, REINFORCE, AND BRACE FRAMING MEMBERS TO SUIT DESIGN REQUIREMENTS.

D. INSTALLATION:
1. COMPLY WITH REQUIREMENTS OF ASTM C754.
2. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK.
3. VERIFY THAT ROUGH-IN UTILITIES ARE IN PROPER LOCATION.
4. EXTEND PARTITION FRAMING TO STRUCTURE WHERE INDICATED AND TO CEILING IN OTHER LOCATIONS.
5. PARTITIONS TERMINATING AT CEILING: ATTACH CEILING RUNNER SECURELY TO CEILING TRACK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. PARTITIONS TERMINATING AT STRUCTURE: ATTACH TOP RUNNER TO STRUCTURE, MAINTAIN CLEARANCE BETWEEN TOP OF STUDS AND STRUCTURE, AND CONNECT STUDS TO TRACK USING SPECIFIED MECHANICAL DEVICES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS; VERIFY FREE MOVEMENT OF TOP OF STUD CONNECTIONS; DO NOT LEAVE STUDS UNATTACHED TO TRACK.
7. FIT RUNNERS UNDER AND ABOVE OPENINGS; SECURE INTERMEDIATE STUDS TO SAME SPACING AS WALL STUDS.
8. ALIGN STUD WEB OPENINGS HORIZONTALLY.
9. SECURE STUDS TO TRACKS USING CRIMPING METHOD. DO NOT WELD.
10. STUD SPLICING IS NOT PERMISSIBLE.
11. FABRICATE CORNERS USING A MINIMUM OF THREE STUDS.
12. DOUBLE STUD AT WALL OPENINGS, DOOR AND WINDOW JAMBS, NOT MORE THAN 2 INCHES FROM EACH SIDE OF OPENINGS.
13. BRACE STUD FRAMING SYSTEM RIGID.
14. COORDINATE ERECTION OF STUDS WITH REQUIREMENTS OF DOOR FRAMES; INSTALL SUPPORTS AND ATTACHMENTS.
15. COORDINATE INSTALLATION OF BUCKS, ANCHORS, AND BLOCKING WITH ELECTRICAL, MECHANICAL, AND OTHER WORK TO BE PLACED WITHIN OR BEHIND STUD FRAMING.
16. BLOCKING: USE WOOD BLOCKING SECURED TO STUDS. PROVIDE BLOCKING FOR SUPPORT OF PLUMBING FIXTURES, WALL CABINETS, TOILET ACCESSORIES, HARDWARE, AND OPENING FRAMES.

09 6500 - RESILIENT FLOORING AND WALL BASE

A. SUBMITTALS: PRODUCT DATA AND (1) SAMPLES OF EACH TILE AND BASE SPECIFIED FOR VERIFICATION PURPOSES.

B. BASIS OF DESIGN:
1. METROFLOR,KONECTO PLANK, PROJECT 54012 OR APPROVED EQUAL.

C. ATTIC STOCK: FURNISH ONE (1) BOX FOR EACH 50 BOXES OR FRACTION THEREOF OF EACH TYPE OF FLOOR TILE AND 20' OF EACH COLOR AND TYPE OF WALL BASE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

D. RESILIENT TILE PRODUCTS: PROVIDE FLOOR TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS COMPLYING WITH THE FOLLOWING:

E. RESILIENT WALL BASE: ASTM TYPE TS (RUBBER, VULCANIZED THERMOSET) 1/8" THICK, FURNISHED IN COILS IN STYLES AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS WITH JOB-FORMED INSIDE AND OUTSIDE CORNERS.

F. INSTALLATION ACCESSORIES:
1. LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED, PORTLAND CEMENT, OR BLENDED HYDRAULIC CEMENT-BASED FORMULATION PROVIDED OR APPROVED BY FLOORING MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS.
2. ADHESIVES: WATER-RESISTANT TYPE RECOMMENDED BY MANUFACTURER TO SUIT RESILIENT PRODUCTS AND SUBSTRATE CONDITIONS. SPREAD ONLY ENOUGH ADHESIVE TO PERMIT INSTALLATION OF MATERIALS BEFORE INITIAL SET.
3. MOLDINGS, TRANSITION AND EDGE STRIPS: SAME MATERIAL AS FLOORING.

G. INSTALLATION:
1. PREPARE CONCRETE SUBSTRATES PER ASTM F 710. VERIFY THAT SUBSTRATES ARE DRY AND FREE OF CURING COMPOUNDS, SEALERS AND HARDENERS.
2. LAY OUT TILES SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HALF-WIDTH.
3. LAY TILES IN PATTERNS INDICATED WITH GRAIN DIRECTION ALTERNATING IN ADJACENT TILES, UNLESS NOTED OTHERWISE.
4. CLEAN, SEAL, AND WAX RESILIENT FLOORING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

H. WALL BASE AND ACCESSORY INSTALLATION:
1. CONFIRM THAT SOLID BACKING IS PROVIDED BEHIND ALL WALL BASE. AREAS WHERE GYPSUM BOARD IS HELD MORE THAN 1/2" ABOVE SLAB SHALL BE FILLED IN PRIOR TO BASE INSTALLATION.
2. INSTALL WALL BASE WITH MANUFACTURER'S RECOMMENDED ADHESIVE IN MAXIMUM LENGTHS POSSIBLE. APPLY TO WALLS, COLUMNS, PILASTERS, CASEWORK, AND OTHER PERMANENT FIXTURES.
3. INSTALL TRANSITION STRIPS WHERE FLOORING MATERIALS MEET OR WHERE EDGE OF TILE IS EXPOSED AS INDICATED IN THE FINISH SCHEDULE.

09 9000 - PAINTING AND COATING

A. SUBMITTALS: PRODUCT DATA AND THREE (3) DRAW-DOWN SAMPLES OF EACH COLOR AND SHEEN SPECIFIED.

B. ATTIC STOCK: FURNISH ONE (1) GALLON OF EACH PAINT COLOR AND SHEEN, IN CONTAINERS, PROPERLY LABELED AND SEALED.

C. PRODUCTS: PROVIDE MANUFACTURER'S BEST QUALITY PAINTS OF COLOR AND SHEEN AS INDICATED IN THE CONSTRUCTION DOCUMENTS THAT ARE FORMULATED AND RECOMMENDED BY MANUFACTURER FOR APPLICATION INDICATED. PROVIDE MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.

D. PAINT SYSTEMS:
1. ALL PAINT, STAIN, AND VARNISH SHALL BE PRODUCTS OF DEVOE, KWAL, SHERWIN WILLIAMS, PPG INDUSTRIES, PRATT & LAMBERT OR APPROVED EQUAL.
2. ALL MATERIAL SHALL BE OF THE STANDARD RESIDENTIAL GRADE OF THE TYPES DESIGNATED.
3. ALL MATERIAL SHALL BE DELIVERED TO THE JOB SITE IN THE ORIGINAL, UNOPENED, LABELED CONTAINERS. COLORS NOT SPECIFICALLY CALLED FOR IN THE PAINT SCHEDULE WILL BE SELECTED BY THE ARCHITECT.

E. APPLICATION / INSTALLATION:
1. EQUIPMENT: APPLY COATINGS BY BRUSH, ROLLER, SPRAY, OR OTHER APPLICATORS ACCORDING TO COATING MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN SPRAYED, EXTERIOR COATINGS SHALL BE BACK-ROLLED FOLLOWING SPRAY APPLICATION. USE ROLLERS FOR FINISH COAT ON INTERIOR WALLS AND CEILINGS.
2. PIGMENTED (OPAQUE) FINISHES: COMPLETELY COVER SURFACES TO PROVIDE A SMOOTH, OPAQUE SURFACE OF UNIFORM APPEARANCE. PROVIDE A FINISH FREE OF CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS.
3. APPLY PRODUCTS PER MANUFACTURER RECOMMENDED GUIDELINES. PRODUCT COVERAGE MINIMUM ONE COAT OF PRIMER AND TWO FINAL COATS ON MATERIALS.APPLY PRODUCTS TO MATERIALS APPROVED BY MANUFCTURER PRODUCT DATA SHEETS.

A. Exterior Work:

1. ALL EXTERIOR GALVANIZED METAL FLASHINGS, CONNECTORS, ETC.	ONE COAT COMMERCIAL METAL ETCH. ONE COAT EXTERIOR METAL PRIMER. TWO COATS EXTERIOR SEMI-GLOSS METAL PAINT.
2. ALL EXPOSED STEEL FRAMES, ANGLES, ETC.	TWO COATS SEMI-GLOSS METAL PAINT. (PRIME COAT CHANNELS, POSTS, RAILINGS, BEAMS, ETC. SURFACES THAT ARE NOT PRIMED.)
3. ALL EXPOSED MISC. FERROUS METAL ITEMS INCLUDING RAILS, PLATES, ANGLES, BOLTS, GRATES, CONDUITS, POSTS, PIPING, ETC.	TWO COATS SEMI-GLOSS METAL PAINT. (PRIME COAT SURFACES THAT ARE NOT PRIMED.)
4. ALL UNPRIMED EXTERIOR MILLWORK, TRIM, SMOOTH WOOD MATERIALS, ETC. SEMI-GLOSS PAINT.	PRIME AND BACK LATEX PRIMER. TWO COATS OF EXTERIOR LATEX SATIN OR
5. PRIMED MILLWORK AND TRIM.	TOUCH-UP PRIME. TWO COATS OF EXTERIOR 100% SATIN OR SEMI-GLOSS ACRYLIC LATEX PAINT.
6. ROUGH SAWN TRIM, BEAMS, COLUMNS, ETC.	ONE COAT PRIMER. TWO COATS EXTERIOR HEAVY BODIED STAIN.
7. PRIMED METAL ENTRY DOORS, FRENCH DOORS AND METAL FRAMES, GARAGE DOORS.	PATCH DENTS, TOUCH UP PRIMER. TWO COATS OF OIL BASE SEMI-GLOSS PAINT INSIDE AND OUTSIDE.
8. ANY OTHER PAINTING REQUIRED BY THE DRAWINGS.	TWO COATS TO MATCH ADJACENT SURFACES.

B. INTERIOR WORK:

1. GYPSUM BOARD WALLS EXCEPT IN KITCHENS, BATHROOMS, LAUNDRIES AND COMMON AREA CORRIDORS, UNLESS SCHEDULED FOR WALLCOVERING	ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF LATEX EGGSHELL WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.) ONE WALL IN EACH APARTMENT UNIT LIVING SPACE AND EACH BEDROOM SHALL BE PAINTED ACCENT COLORS.
2. GYPSUM BOARD WALLS IN KITCHENS, BATHROOMS AND LAUNDRIES UNLESS SCHEDULED FOR WALLCOVERING OR TILE.	ONE COAT OF EPOXY COMPATABLE PRIMER PAINT AND ONE FINISH COAT OF EPOXY EGGSHELL WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.)
3. GYPSUM BOARD WALLS IN COMMON AREA CORRIDORS	ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF SCRUBABLE LATEX FLAT WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.)
4. GYPSUM BOARD CEILINGS.	TWO COATS OF LATEX FLAT PAINT. TWO COATS OF CLASS II VAPOR RETARDER PAINT AT CEILINGS ADJACENT TO ATTICS.
5. DOOR CASINGS, BASE, WOOD, MILL-WORK, ETC. (PRE-PRIMED.)	ONE PRIME COAT OF LATEX PAINT, ONE COAT LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT.
6. PRIMED HARDWOOD DOORS.	ONE COAT OF LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT.
7. ALL MISCELLANEOUS FERROUS METAL, INCLUDING GRILLES, REGISTERS, ETC.	TWO COATS METAL PAINT TO MATCH ADJACENT SURFACES UNLESS FACTORY PREFINISHED WHITE
8. ANY OTHER PAINTING WORK REQUIRED BY THE DRAWINGS.	FINISH TO MATCH SIMILAR CONDITIONS.

09 3000 - TILING

A. SUBMITTALS: PRODUCT DATA FOR SETTING AND GROUTING MATERIALS AND THREE (3) SAMPLES OF EACH TILE SPECIFIED FOR VERIFICATION PURPOSES.

B. ATTIC STOCK: FURNISH 2% OF EACH TYPE OF CERAMIC TILE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

C. BASIS OF DESIGN: SEE DRAWING SCHEDULES.

D. TILE: COMPLY WITH STANDARD GRADE REQUIREMENTS IN ANSI A137.1 "SPECIFICATIONS FOR CERAMIC TILE" FOR PRODUCTS AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS.

E. INSTALLATION MATERIALS:
1. THIN-SET MORTAR:
  A. TYPICAL INTERIOR INSTALLATIONS: LATEX/POLYMER MODIFIED PORTLAND CEMENT COMPLYING WITH ANSI A108.5 AND ANSI 118.4.
2. GROUT:UNSANDED FOR JOINTS 1/16" WIDTH OR LESS, SANDED FOR JOINTS GREATER THAN 1/16" IN COLOR INDICATED IN SCHEDULE OR TO BE SELECTED BY ARCHITECT AND OWNER.
  A. TYPICAL INTERIOR INSTALLATIONS: STANDARD CEMENT GROUT WITH INTEGRAL STAIN INHIBITORS (TEC ACCUCOLOR XT, OR EQUAL)
3. SETTING BED ACCESSORIES: ANSI A 108.1A

F. INSTALLATION METHODS: COMPLY WITH TILE INSTALLATION STANDARDS IN ANSI'S "SPECIFICATIONS FOR THE INSTALLATIONS OF CERAMIC TILE" AND TCA'S "HANDBOOK FOR CERAMIC TILE INSTALLATION" THAT APPLY TO THE MATERIALS AND METHODS INDICATED BELOW:

G. TERMINATIONS:
1. WHERE CUT TILE IS SPECIFIED AS THE TOP COURSE ON WALL WAINSCOTING OR WALL BASE WITH AN EXPOSED TOP EDGE, THE FACTORY EDGE SHALL BE USED AS THE EXPOSED EDGE.

H. CONFLICTS: IF NOT ADDRESSED ON DRAWINGS, WHERE ELECTRICAL DEVICES OR TOILET ACCESSORIES STRADDLE THE TRANSITION FROM THE TOP EDGE OF WAINSCOT WALL TILE TO GYPSUM BOARD SUBSTRATE, CONTACT ARCHITECT FOR RESOLUTION.

I. GROUT JOINTS:
1. JOINT SIZE: SET TILE WITH THE SMALLEST GROUT JOINT ACHIEVABLE AND AS RECOMMENDED BY THE MFR. BASED ON THE TILE PRODUCT AND SUBSTRATE CONDITIONS, UNLESS NOTED OTHERWISE.
2. TILE PATTERN: LAY TILE IN PATTERNS AS INDICATED IN THE CONSTRUCTION DOCUMENTS. ALIGN JOINTS WHERE ADJOINING TILES ON FLOOR, BASE, WALLS, AND TRIM ARE THE SAME SIZE, UNLESS INDICATED OTHERWISE.
3. INSTALLATION: INSTALL GROUT PER MANUFACTURER'S INSTRUCTIONS, EXERCISING CARE TO AVOID REMOVAL OF GROUT COLOR BY USE OF EXCESS WATER DURING INSTALLATION. FADED OR CHALKY GROUT SHALL BE CAUSE FOR REJECTION.
4. SEALER: AFTER FULLY CURED, GROUT SHALL BE SEALED WITH TWO (2) COATS OF COMMERCIAL QUALITY PENETRATING SILICONE SEALER.

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307B SW Market Street, Lee's Summit, Mo, 64063 P: 816.249.2270
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PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

ROGER L. WEBB II
NUMBER A-2016004008

PROFESSIONAL SEAL

G501

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

GENERAL PROJECT SPECIFICATIONS

DIVISION 10 - SPECIALTIES

10 2800 TOILET AND BATH ACCESSORIES
A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.

B. SUBMITTALS
1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
4. INSTALLATION METHODS.

B. INSTALLATION:
1. INSTALLER MUST EXAMINE SUBSTRATES, PREVIOUSLY INSTALLED INSERTS AND ANCHORAGES NECESSARY FOR MOUNTING OF TOILET ACCESSORIES, AND OTHER CONDITIONS UNDER WHICH INSTALLATION IS TO OCCUR, AND MUST NOTIFY CONTRACTOR IN WRITING OF CONDITIONS DETRIMENTAL TO PROPER AND TIMELY COMPLETION OF WORK. DO NOT PROCEED WITH WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED IN MANNER ACCEPTABLE TO INSTALLER.
2. INSTALL ACCESSORIES ACCORDING TO RESPECTIVE MANUFACTURERS' WRITTEN INSTRUCTIONS, USING FASTENERS APPROPRIATE TO SUBSTRATE INDICATED AND RECOMMENDED BY UNIT MANUFACTURER. I NSTALL UNITS LEVEL, PLUMB, AND FIRMLY ANCHORED IN LOCATIONS AND AT HEIGHTS INDICATED. ADHESIVE
INSTALLATIONS ARE NOT PERMITTED.
3. MOUNTING HEIGHTS SHALL BE AS RECOMMENDED BY THE ACCESSORY MANUFACTURER AND AT HEIGHTS RECOMMENDED BY USE FOR PHYSICALLY HANDICAPPED TO COMPLY WITH THE AMERICANS WITH DISABILITIES ACT.
4. GRAB BARS: INSTALL TO WITHSTAND A DOWNWARD LOAD OF AT LEAST 250 LBF, WHEN TESTED ACCORDING TO ASTM F 446.
5. ADJUST ACCESSORIES FOR PROPER OPERATION AND VERIFY THAT MECHANISMS FUNCTION SMOOTHLY.
6. CLEAN AND POLISH ALL EXPOSED SURFACES AFTER REMOVING PROTECTIVE COATINGS.

10 3000 SOLID PLASTIC TOILET COMPARTMENTS
A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES.
B. PRODUCTS
BASIS OF DESIGN: ECLIPSE TOILET PARTITIONS AS MANUFACTURED BY AND SUPPLIED BY SCRANTON
1. STYLE: FLOOR MOUNTED OVERHEAD-BRACED TOILET COMPARTMENTS.
2. DOORS AND PANELS: HIGH DENSITY POLYETHYLENE (HDPE), FABRICATED FROM SEQ CHAPTER 1 EXTRUDED POLYMER RESINS, FORMING SINGLE THICKNESS PANEL.
A. WATERPROOF AND NONABSORBENT, WITH SELF-LUBRICATING SURFACE, RESISTANT TO MARKS BY PENS, PENCILS, MARKERS, AND OTHER WRITING INSTRUMENTS.
B. THICKNESS: 1 INCH (25 MM).
C. EDGES: SHIPLAP.
3. PANEL COLOR: TRADITIONAL SERIES:1. SHALE - ORANGE PEEL.
4. DOORS AND PANELS: HIGH PRIVACY. HEIGHT: 62 INCHES (1575 MM) HIGH AND MOUNTED AT 8 TO 14 INCHES (203 TO 356 MM) ABOVE THE FINISHED FLOOR.

C. SUBMITTALS
1. PRODUCT DATA: MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED, INCLUDING:
2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
4. INSTALLATION METHODS.
5. SHOP DRAWINGS: PROVIDE LAYOUT DRAWINGS AND INSTALLATION DETAILS WITH LOCATION AND TYPE OF HARDWARE REQUIRED.
6. SELECTION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS.

D. POSTS, RAILS AND HARDWARE:
1. METAL POSTS: 82.75 INCHES (2102 MM) HIGH, HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, FASTENED TO FOOT WITH STAINLESS STEEL TAMPER RESISTANT SCREW.
2. HIDDEN SHOE (FOOT): ONE-PIECE MOLDED POLYETHYLENE INVISIBLE SHOE INSERTED INTO METAL POST AND SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW.
3. HEADRAIL CAP AND CORNER CAP: ONE-PIECE MOLDED POLYETHYLENE SECURED TO METAL POST WITH STAINLESS STEEL TAMPER RESISTANT SCREW; ADJUSTABLE TO LEVEL HEADRAIL TO FINISHED FLOOR.
4. WALL BRACKETS: CONTINUOUS HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, INSERTED INTO SLOTTED PANEL AND FASTENED TO PANELS WITH STAINLESS STEEL TAMPER RESISTANT SCREWS.
5. HEADRAIL: HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED FINISH, SECURED TO WALL WITH STAINLESS STEEL TAMPER SCREWS.
6. DOOR HARDWARE:
A. HINGES: EDGE-MOUNTED HELIX STYLE STAINLESS STEEL CONTINUOUS HINGE. CLOSING DEGREE: 5 DEGREES. COMES TO A FULL CLOSE ON ITS OWN WEIGHT.
B. OCCUPANCY INDICATOR LATCH AND HOUSING: MATERIAL: SATIN STAINLESS STEEL. OCCUPANCY INDICATORS: GREEN FOR OCCUPIED AND RED NOT OCCUPIED. SLIDE BOLT AND BUTTON.
C. COAT HOOK AND DOOR BUMPER COMBINATION: MATERIAL: CHROME PLATED ZAMAK. HANDICAP DOOR: EQUIP WITH SECOND DOOR PULL AND DOOR STOP.
D. DOOR PULLS: CHROME PLATED ZAMAK:

E. INSTALLATION:
1. CLEAN SURFACES THOROUGHLY PRIOR TO INSTALLATION.
2. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND APPROVED SHOP DRAWINGS.
3. INSTALL PARTITIONS RIGID, STRAIGHT, PLUMB, AND LEVEL.
4. LOCATE BOTTOM EDGE OF DOORS AND PANELS ____ INCHES ABOVE FINISHED FLOOR.
5. CLEARANCE AT VERTICAL EDGES OF DOORS SHALL BE UNIFORM TOP TO BOTTOM AND SHALL NOT EXCEED 3/8 INCH (9.5 MM).
6. NO EVIDENCE OF CUTTING, DRILLING, AND/OR PATCHING SHALL BE VISIBLE ON THE FINISHED WORK.
7. FINISHED SURFACES SHALL BE CLEANED AFTER INSTALLATION AND BE LEFT FREE OF IMPERFECTIONS.
8. ADJUST DOORS AND LATCHES TO OPERATE CORRECTLY.
9. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT.
10. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

DIVISION 11 - EQUIPMENT

11 3000 - APPLIANCES
A. REFERENCE CONSTRUCTION DRAWINGS FOR QUANTITY, AND LOCATION OF APPLIANCES TO BE FURNISHED BY OWNER.

10 4400 - FIRE PROTECTION SPECIALTIES
A. REFERENCE CONSTRUCTION DRAWINGS FOR TYPE, SIZE AND LOCATIONS OF FIRE EXTINGUISHERS AND CABINETS.

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PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT

228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

STATE OF MISSOURI
ROGER L. WEBB II
NUMBER A-2016004008
ARCHITECT

PROFESSIONAL SEAL

G502

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

GENERAL PROJECT SPECIFICATIONS

2/23/2023 4:54:31 PM

1. ALL WORK SHALL CONFORM TO 2018 INTERNATIONAL BUILDING CODE AS ADOPTED AND AMENDED BY THE CITY OF LEE'S SUMMIT, MISSOURI.
2. DESIGN LOADS
   A. OVERALL BUILDING CLASSIFICATIONS

1.	RISK CATEGORY	II
2.	SNOW IMPORTANCE FACTOR, I_s	1.00
3.	ICE IMPORTANCE FACTOR - WIND, I_w	1.00
4.	SEISMIC IMPORTANCE FACTOR, I_e	1.00

   B. SLAB ON GRADE FLOOR LOADS

1.	LIVE LOAD	100 PSF
2.	CONCENTRATED LOAD	3000 LB ACTING ON AN AREA 4.5 IN. BY 4.5 IN.

   C. ROOF DEAD AND LIVE LOADS

1.	DEAD LOAD TOP CHORD	20 PSF
2.	DEAD LOAD BOT. CHORD	5 PSF
3.	LIVE LOAD TOP CHORD	20 PSF
4.	LIVE LOAD BOT. CHORD	0 PSF (U.N.O)

   D. ROOF SNOW LOADS

1.	GROUND SNOW LOAD, P_g	15 PSF
2.	FLAT ROOF SNOW LOAD, P_f	11.34 PSF
3.	SNOW EXPOSURE FACTOR, C_e	0.9
4.	THERMAL FACTOR, C_t	1.2
5.	SLOPE FACTOR, C_s	0.6
6.	DRIFTING	PER CODE

   E. WIND LOADS

1.	BASIC WIND SPEED (3 SECOND GUST)	107 MPH
2.	EXPOSURE CATEGORY	C
3.	INTERNAL PRESSURE COEFFICIENT, GC_{pi}	+/- 0.18

   F. SEISMIC LOADS

1.	S_S	0.189
2.	S_1	0.105
3.	SITE CLASS	C
4.	S_{DS}	0.164
5.	S_{D1}	0.105
6.	SEISMIC DESIGN CATEGORY	B
7.	SEISMIC FORCE RESISTING SYSTEM	WOOD WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR
8.	DESIGN BASE SHEAR	C_sW
9.	DESIGN RESPONSE COEFFICIENT, C_S	0.025
10.	RESPONSE MODIFICATION COEFFICIENT, R	6.5
11.	ANALYSIS PROCEDURE USED	EQUIVALENT LATERAL FORCE (ELF) PROCEDURE

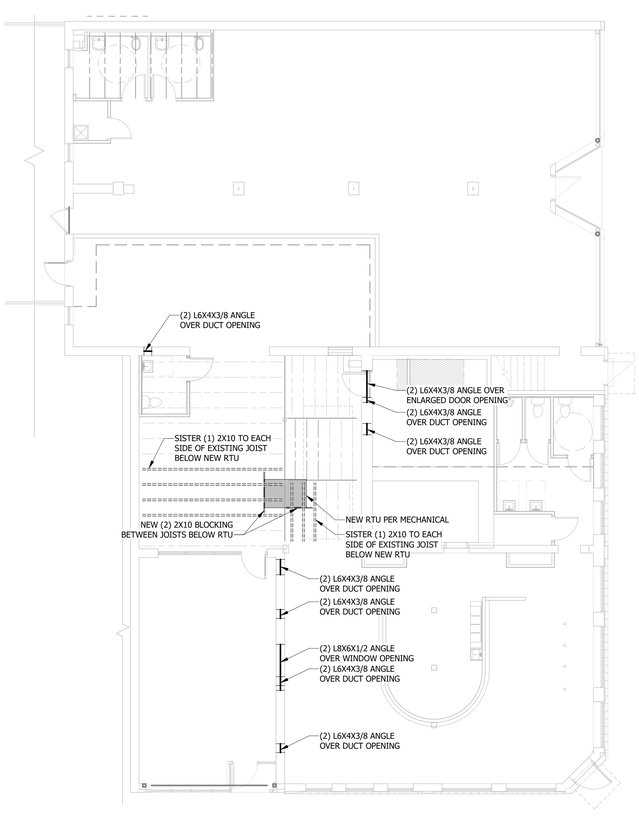
3. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS PRIOR TO FABRICATION.
4. IF DISCREPANCIES EXIST BETWEEN CONTRACT DRAWINGS, AND/OR SHOP DRAWINGS NOTIFY THE ENGINEER OF RECORD.
5. THE CONTRACTOR SHALL REVIEW DRAWINGS FROM ALL OTHER DISCIPLINES FOR PERTINENT MISC. ITEMS OR INFORMATION RELATED TO THE STRUCTURAL WORK AND COORDINATE AS REQUIRED.
6. THE BUILDING IS NOT STRUCTURALLY STABLE UNTIL ALL CONNECTIONS, FRAMING, SHEAR WALLS, PERMANENT BRACING, AND EXTERIOR LOAD-BEARING WALLS ARE COMPLETE AND HAVE ACHIEVED THEIR RESPECTIVE DESIGN STRENGTHS. CONTRACTOR IS SOLELY RESPONSIBLE FOR MAINTAINING STRUCTURAL STABILITY DURING ERECTION AND CONSTRUCTION. TEMPORARY BRACING SYSTEMS ARE NOT TO BE REMOVED UNTIL STRUCTURAL WORK IS COMPLETE.
7. PROVIDE ADEQUATE SHORING DURING CONSTRUCTION TO RESIST FORCES SUCH AS WIND AND UNBALANCED LOADS DUE TO CONSTRUCTION. DO NOT BACKFILL UNTIL CONCRETE HAS CURED 14 DAYS.
8. CONCRETE
   A. CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL CONFORM TO LATEST APPLICABLE AMERICAN CONCRETE INSTITUTE DOCUMENTS, ACI-301, 305, 306, 315, 318, AND 347 UNLESS NOTED OTHERWISE IN THESE CONTRACT DOCUMENTS.
   B. ALL CONCRETE, UNLESS NOTED OTHERWISE, SHALL DEVELOP A 28 DAY COMPRESSIVE STRENGTH AND HAVE MAXIMUM WATER/CEMENT RATIOS AS FOLLOWS:
      1. FOOTINGS, GRADE BEAMS, WALLS, BEAMS, COLUMNS: 4000 PSI (w/c MAX 0.45)
      2. SLAB ON GRADE: 4000 PSI (w/c MAX 0.42)
      3. REFER TO THE SPECIFICATION FOR AIR-ENTRAINED CONCRETE.
   C. SLABS-ON-GRADE SHALL DEVELOP A 90 DAY COMPRESSIVE STRENGTH.
   D. IT IS THE INTENT OF THESE CONCRETE SPECIFICATIONS THAT THE CONTRACTOR SUPPLY CONCRETE MIXES WITH A MINIMUM AMOUNT OF WATER IN ORDER TO LIMIT PLASTIC SHRINKAGE CRACKING IN FRESHLY PLACED CONCRETE. IT IS EXPECTED THAT PRODUCING WORKABILITY FOR CONCRETE MIXES WILL REQUIRE THE ADDITION OF WATER-REDUCING CHEMICAL ADMIXTURES.
   E. CONCRETE MIX DESIGNS SHALL INCLUDE ALL APPLICABLE ADMIXTURES.
   F. CONCRETE SLUMP SHALL BE A MAXIMUM OF 4" +/- 1" (ASTM C-145) AS DELIVERED IN THE FIELD. CONTRACTOR MAY USE CHEMICAL ADMIXTURES TO ATTAIN A MAXIMUM SLUMP OF 8" FOR WORKABILITY IF ADMIXTURE IS TO BE ADDED IN THE FIELD IS SHALL BE ADDED THROUGH THE USE OF AN EXTERNAL MEASURING DEVICE (I.E. 5 GALLON BUCKET).
   G. CONCRETE EXPOSED TO WEATHER, PARKED VEHICLES, AND/OR DEICING CHEMICAL SHALL CONTAIN 6% (+/- 1%) ENTRAINED AIR BY VOLUME.
   H. CHAMFER ALL EXPOSED CORNERS OF CONCRETE WALLS, 3/4" UNLESS NOTED OTHERWISE.
   I. ALL CONTROL JOINTS IN CONCRETE SLABS-ON-GRADE SHALL BE CUT TO 1/3 OF DEPTH WHEN USING WET-CUTTING PROCESS AND 1/4 OF DEPTH WHEN USING EARLY-ENTRY DRY-CUT PROCESS. CUT JOINTS AS SOON AS APPLICABLE PER PROCESS USED AFTER CONCRETE HAS BEEN PLACED WITHOUT DISLODGING AGGREGATE, OR USE A KEYED COLD JOINT.
   J. CUT SLABS-ON-GRADE INTO AREAS OF APPROXIMATELY 225 SQUARE FEET MAINTAINING AS CLOSE TO SQUARE AREAS AS POSSIBLE. LENGTH TO WIDTH RATIOS OF JOINTED PANELS SHALL NOT EXCEED 1.5:1. COORDINATE LOCATIONS OF CONTROL JOINTS WITH ARCHITECT.
   K. CONTROL JOINTS IN WALLS SHALL BE PLACED AT 20'-0" O.C. MAXIMUM UNLESS NOTED OTHERWISE. LOCATE JOINTS BESIDE PIERS INTEGRAL WITH WALLS, NEAR CORNERS, AND IN CONCEALED LOCATIONS WHERE POSSIBLE. CONSTRUCTION JOINTS MAY BE PLACED IN LIEU OF CONTROL JOINTS AT CONTRACTOR'S DISCRETION. COORDINATE LOCATION OF CONTROL JOINTS WITH ARCHITECT.
   L. PRIOR TO PLACING CONCRETE IN ANY LOCATION, IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO HAVE THOROUGHLY CHECKED AND COORDINATED ALL DIMENSIONS, ELEVATIONS, OPENINGS, RECESS, AND BLOCKOUTS AS SHOWN ON ANY CONTRACT DRAWINGS. IN THE EVENT ERRORS, CONFLICTS, OR OMISSIONS EXIST, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE ARCHITECT OR ENGINEER FOR NECESSARY CORRECTIVE ACTION.
   M. EMBEDDED ITEMS ARE TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR PRIOR TO PLACING CONCRETE.
   N. ANCHOR RODS AND ANCHOR BOLTS SHALL BE HELD IN PLACE WITH A RIGID TEMPLATE
   O. HORIZONTAL JOINTS BEYOND THOSE SHOWN IN THE CONTRACT DOCUMENTS SHALL NOT BE CONSTRUCTED WITHOUT THE APPROVAL OF THE ARCHITECT AND ENGINEER.
9. MASONRY
   A. MASONRY UNIT COMPRESSIVE STRENGTH (f'_m) = 1500 PSI. MORTAR - TYPE S.
   B. LINTELS SHALL BE STEEL BEAMS OR MASONRY BOND BEAMS AS SHOWN ON THE PLANS. OPENINGS LESS THAN 4'-0" WIDE SHALL BE A BOND BEAM WITH (2) #5 CONTINUOUS EXTENDING PAST OPENINGS A MIN. OF 2'-0".
   C. GROUT ALL REINFORCED CELLS AND CELLS BELOW GRADE SOLID.
   D. PLACE A BOND BEAM WITH/ (2) #5 CONTINUOUS AT THE TOP OF WALLS & 8'-0" O.C. VERTICALLY.
   E. REINFORCE 8" CMU WALLS WITH #5 @ 32" O.C. VERT. AND 12" CMU WALLS WITH #5 @ 24" O.C. VERT. UNLESS NOTED OTHERWISE. IN ADDITION, REINFORCE WALL CORNERS AND JAMBS OF WINDOWS AND DOORS WITH (2) #5 EXTENDING PAST OPENINGS A MIN. OF 2'-0".
   F. BRACE THE TOPS OF PARTITION WALLS TO THE UNDERSIDE OF DECK.
10. ROUGH CARPENTRY
   A. HEADERS, JOISTS, AND RAFTERS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)

1.	F_B	875 PSI
2.	F_V	135 PSI
3.	F_C	1150 PSI
4.	E	1400 KSI

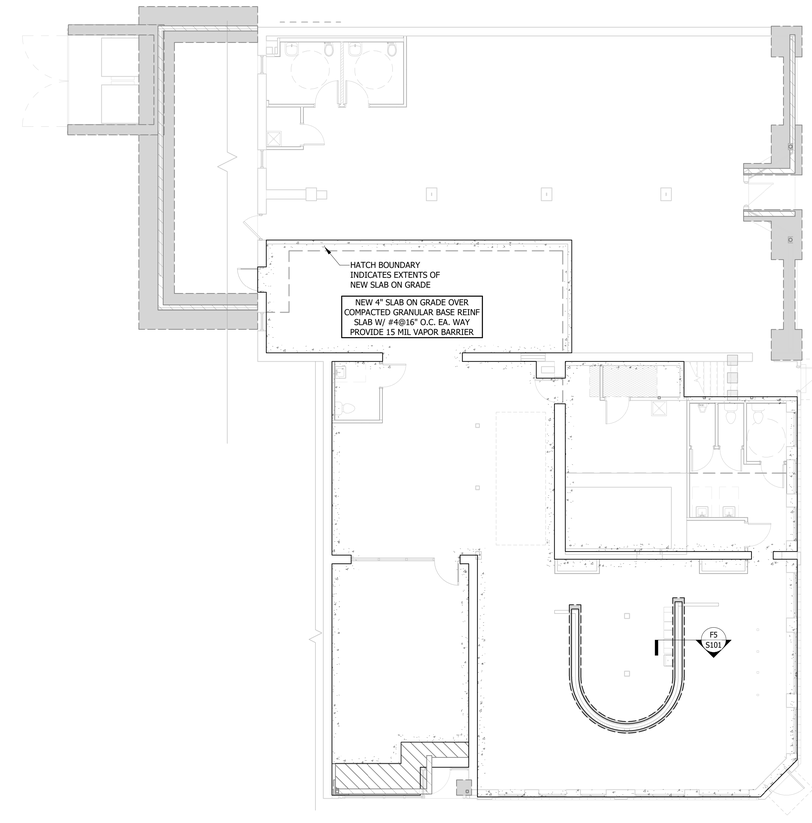
   B. TIMBER FRAMING MEMBERS SHALL MEET OR EXCEED THE FOLLOWING MINIMUM REQUIREMENTS. (EXAMPLE SPECIES: #2 SPRUCE-PINE-FIR)

1.	F_B	875 PSI
2.	F_V	135 PSI
3.	F_C	1150 PSI
4.	E	1400 KSI

   C. ALL LVL MEMBERS SHALL BE 2.0E MICROLLAM OR APPROVED EQUAL.
   D. ALL WOOD FRAMING MEMBERS INDICATED ARE NOMINAL SIZES. PROVIDE ACTUAL DRESSED SIZES, KILN-DRIED, WITH MAXIMUM IN-PLACE MOISTURE CONTENT OF 19%.
   E. ALL BOLTS ARE A36 OR A307, GRADE 1, AND ALL NAILS ARE COMMON WIRE NAILS UNLESS NOTED OTHERWISE.
   F. LAY ALL STRUCTURAL PANELS WITH FACE GRAIN PERPENDICULAR TO SUPPORTING MEMBERS AND OFFSET END JOINTS 4'-0". PANELS TO BE APA RATED AND STAMPED FOR THE LOADING SHOWN IN SECTION 2 "DESIGN" AND SHOULD MATCH THE SUPPORT SPACING SHOWN ON THE PLANS.
   G. ROOF DECKING SHALL BE 3/4" THICK APA RATED EXTERIOR GRADE SHEATHING FASTENED WITH 10d NAILS AT 6" O.C. ON EDGES AND 12" O.C. IN FIELD UNLESS NOTED OTHERWISE.
   H. FASTENER QUALITY, QUANTITY, SIZE, AND SPACING SHALL COMPLY WITH IBC FASTENING SCHEDULE (TABLE 2304.9) UNLESS NOTED OTHERWISE.
   I. ALL WOOD IN CONTACT WITH CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESERVATIVE TREATED.
11. STRUCTURAL STEEL
   A. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, LATEST APPLICABLE EDITION AND AISC CODE OF STANDARD PRACTICE.
   B. ALL STRUCTURAL STEEL FOR WIDE FLANGE SHALL BE A992 GRADE 50 UNLESS NOTED OTHERWISE. ALL ANGLES, PLATES AND CHANNELS SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. ALL RECTANGULAR AND ROUND HSS SHAPES SHALL BE ASTM A500, GRADE B.
   C. ALL BOLTS SHALL BE 3/4" Ø A-325 BOLTS WITH HEAVY HEX HEADS UNLESS NOTED OTHERWISE. ALL CONNECTIONS SHALL HAVE A MINIMUM OF (2) 3/4" Ø BOLTS, BEARING TYPE CONNECTIONS ONLY.
   D. ALL STRUCTURAL STEEL WELDS IN THE SHOP OR IN THE FIELD SHALL BE PERFORMED BY A QUALIFIED WELDER AND SHALL CONFORM TO THE CURRENT REQUIREMENTS OF A.W.S.
   E. SHOP WELDED AND FIELD BOLTED CONNECTIONS ARE PREFERRED UNLESS NOTED OTHERWISE.
   F. THE CONTRACTOR SHALL PROVIDE SHELF ANGLES, GLASS SUPPORTS, LINTELS, AND OTHER MISC. STEEL AS SHOWN ON THESE DRAWINGS AS REQUIRED TO PROVIDE SUPPORT (STABILIZATION) AROUND AND THROUGHOUT THE BUILDING. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL MISC. STEEL DETAILS.



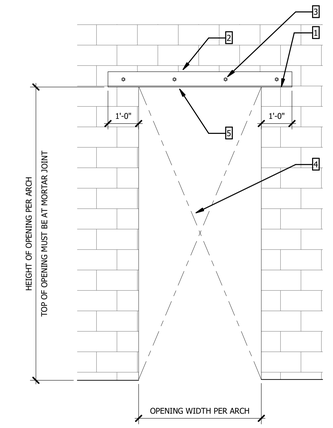
A9 2ND FLOOR PLAN
1/8" = 1'-0"



A5 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

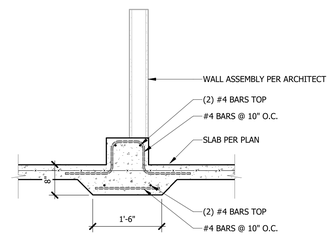
ALL STEEL TO BE HOT-DIPPED GALV.

K2 DOUBLE ANGLE LINTEL
1" = 1'-0"



INSTALL SEQUENCE
1. SAW-CUT EXISTING MORTAR JOINT AT OPENING HEIGHT FULL WIDTH OF OPEING PLUS 1'-0" EITHER SIDE
2. INSTALL ANGLES BOTH SIDES OF OPENING
3. INSTALL THRU-BOLTS FOR LENGTH OF LINTEL. TIGHTEN ALL NUTS AND WASHERS
4. INTERIOR MASONRY REMOVED FROM OPENING
5. WELD PLATE TO UNDERSIDE OF LINTEL

F3 DOUBLE ANGLE LINTEL ELEV.
1/2" = 1'-0"



F5 CONCRETE CURB AT BAR
3/4" = 1'-0"

PLAN NOTES

1. 4" SLAB ON GRADE REINFORCED WITH 6x6 W2.9xW2.9 OVER 4" GRANULAR FILL AND 10 MIL VAPOR BARRIER, UNLESS NOTED OTHERWISE.
2. #4x5'-0" LONG AT ALL RE-ENTRANT CORNERS.
3. REFER TO DETAILS F3/S101 & K2/S101 FOR LINTELS REQUIRED OVER NEW WALL OPENINGS.
4. CONTRACTOR TO COORDINATE ALL FLOOR AND SLAB PENETRATIONS WITH ALL OTHER DISCIPLINES.
5. REFER TO ARCHITECTURAL FOR ALL DIMENSIONS NOT SHOWN ON THESE DRAWINGS.

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STATE OF MISSOURI
ADAM CHRISTOPHER CRANE
NUMBER PE-2009020444
PROFESSIONAL ENGINEER
02.24.23

PROFESSIONAL SEAL

S101

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

STRUCTURAL PLANS AND SECTIONS

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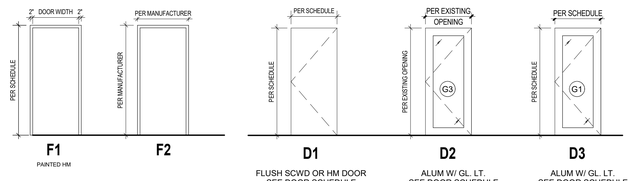
DOOR SCHEDULE									
				DOOR			FRAME		
DOOR #	WIDTH	HEIGHT	ROOM NAME	TYPE	MATERIAL	FINISH	MATERIAL	FINISH	REMARKS
T100	EXIST	EXIST	BAR/DINING	EXIST	EXIST	COORD. W/ OWNER	EXIST	COORD. W/ OWNER	1, 2, 3, 5, 8
T101	3' - 2"	7' - 0"	DELI	D3	ALUM/GLASS	MATCH EXISTING STOREFRONT			1, 3, 6, 7
T103	3' - 0"	7' - 0"	ADA UNISEX RR	D1	SCWD		WD		1, 3, 4
T104	PER EXISTING OPENING	PER EXISTING OPENING	POOL ROOM	D2	ALUM/GLASS	MATCH EXISTING STOREFRONT			3, 4, 5, 7
T105	3' - 0"	7' - 0"	MEP/ITAP STORAGE	D1	SCWD		HM	PAINT	1, 3, 4, 8
T108A	3' - 0"	7' - 0"	UTILITY	D1	SCWD		HM	PAINT	1, 3, 6, 8
T108B	2' - 10"	7' - 0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8
T108C	2' - 10"	7' - 0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8
T108D	3' - 0"	7' - 0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 4, 8
T109	3' - 0"	7' - 0"	RESTROOM	D1	SCWD		HM	PAINT	1, 3, 8

DOOR SCHEDULE REMARKS:

1. MATCH EXISTING MASTER KEYING SYSTEM. COORDINATE WITH BUILDING OWNER.
2. MAINTAIN EXISTING HARDWARE.
3. PROTECT DOOR AND FRAME FROM DAMAGE THROUGHOUT CONSTRUCTION. ANY DAMAGE TO BE REPAIRED/REPLACED PER OWNER DISCRETION.
4. DOOR FRAME 2" OFF FINISHED FACE ON HINGE SIDE, U.N.O.
5. PROVIDE PANIC HARDWARE.
6. MANUALLY LOCKABLE FROM INSIDE OF ROOM. MASTER KEY LOCK ON OUTSIDE OF ROOM.
7. COORDINATE HARDWARE WITH MANUFACTURER.
8. COORDINATE PAINT FINISH WITH OWNER



FRAME TYPES

1/4" = 1'-0"

NOTE:

1. **DOORS TO BE 1 3/4" THICK, UNLESS NOTED OTHERWISE ON DOOR SCHEDULE.**

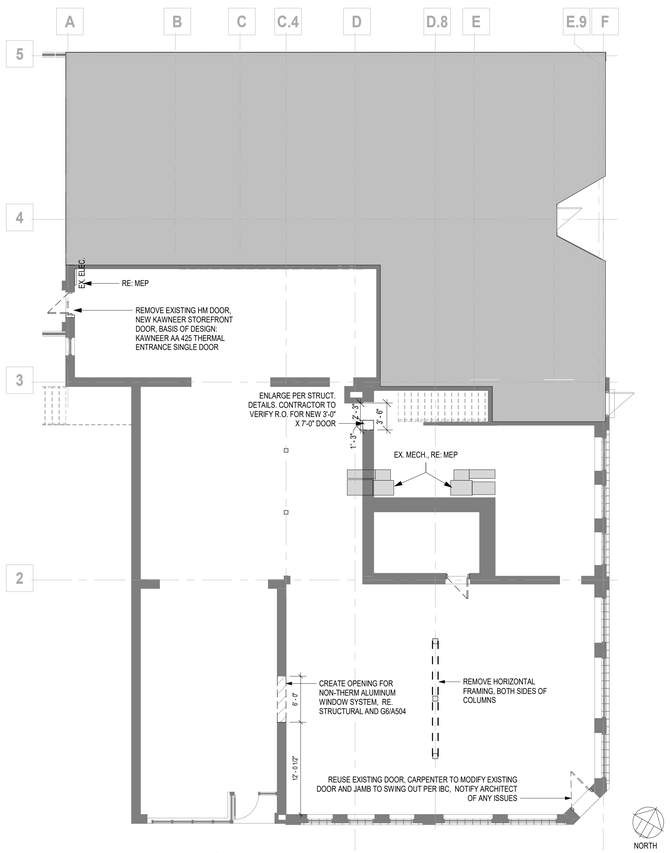
ACCESSORY SCHEDULE						
TYPE MARK	MANUFACTURER	DESCRIPTION	MODEL	WxHxD	FINISH	REMARKS
1	BOBRICK WASHROOM EQUIPMENT, INC.	SOAP DISPENSER - SURFACE MOUNTED	B-2012	4-3/16", 10-17/32", 4-7/32"	SATIN	
2	BOBRICK WASHROOM EQUIPMENT, INC.	SURFACE MOUNTED PAPER TOWEL DISPENSER	B-262	10-3/4", 14", 4"	SATIN	
3	BOBRICK WASHROOM EQUIPMENT, INC.	VERTICAL GRAB BAR, 1-1/2" DIA., SS, 18"	B-6806-18	1-1/2" DIA X 18"	SATIN, WITH PEENED GRIP	
4	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/4" DIA., SS, 42"	B-5806-42	1-1/2" DIA X 42"	SATIN	
5	BOBRICK WASHROOM EQUIPMENT, INC.	DOUBLE ROLL TOILET TISSUE DISPENSER	B-6999	12-3/8", 4-3/4", 6-3/16"	STAINLESS STEEL	
6	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/2" DIA., SS, 36"	B-5806-36	1-1/2" DIA X 36"	SATIN	
7		MIRROR		24"X48"	SATIN	1

ACCESORY SCHEDULE GENERAL NOTES:

A. ACCESSORIES SCHEDULE BASIS OF DESIGN, COORDINATE FINAL SELECTION WITH OWNER

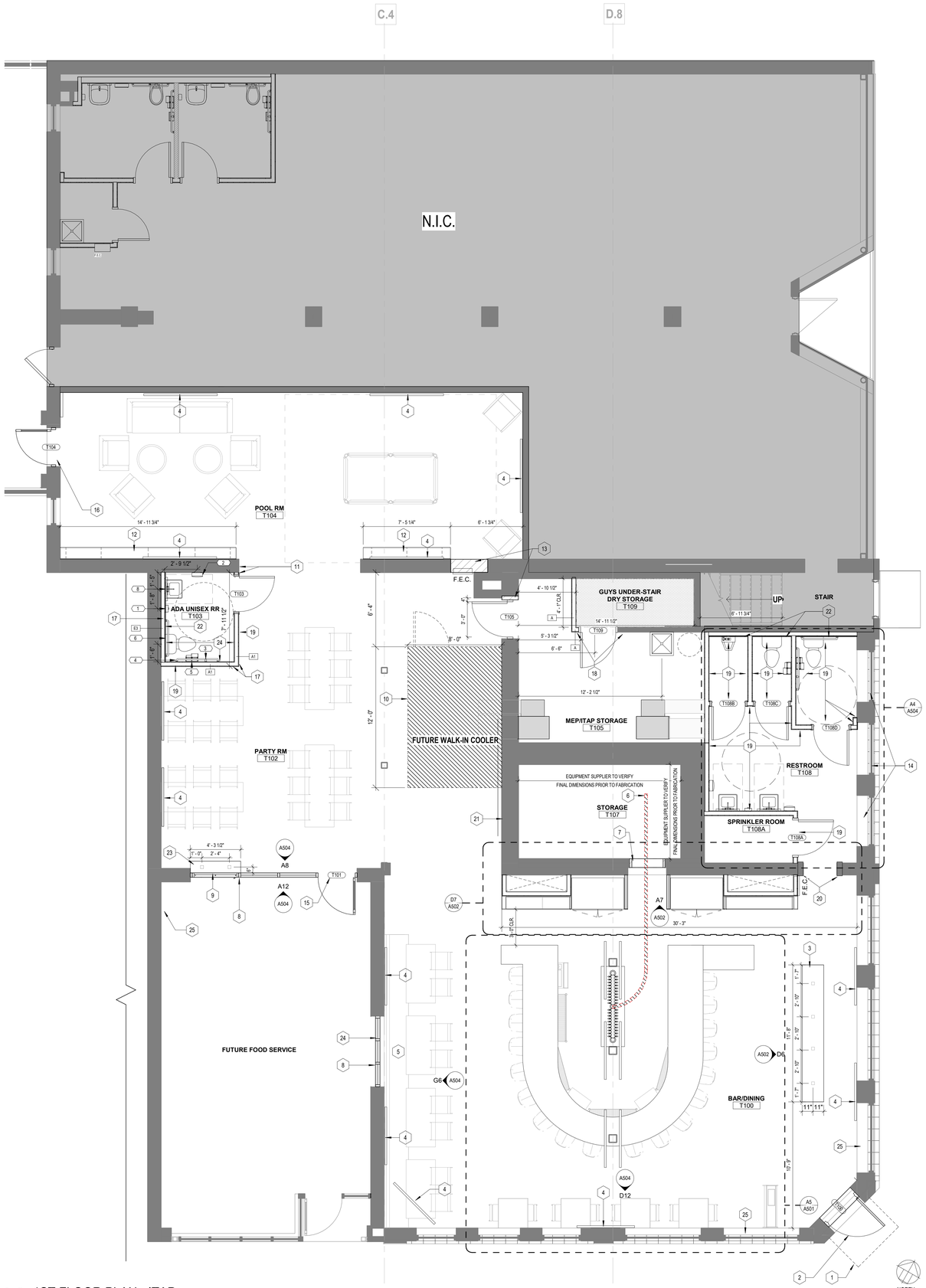
ACCESORY SCHEDULE REMARKS:

1. MIRROS TO BE CENTERED AT SINKS TYP.



1 1ST FLOOR DEMO PLAN - ITAP

1/8" = 1'-0"



A8 1ST FLOOR PLAN - ITAP

1/4" = 1'-0"

GENERAL NOTES: FLOOR PLANS

1. RE: GENERAL ARCHITECTURAL SHEETS FOR ADDITIONAL NOTES AND DETAILS THAT ARE APPLICABLE.
2. ARCHITECTURAL ELEVATION 100'-0"
3. DIMENSIONS SHOWN ON THE FLOOR PLAN ARE TO THE FACE OF GYP. BOARD/ WALL (FOG), FACE OF MASONRY (FOM), FACE OF CONCRETE WALLS (FOC), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
4. NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS AND PER WALL TYPES. SEE GENERAL SHEETS.
5. DOOR OPENINGS NOT LOCATED BY DIMENSION SHALL BE CENTERED IN WALL SHOWN OR LOCATED 4 INCHES FROM FINISH WALL TO HINGE SIDE OF THE DOOR, ALWAYS ALLOWING A MINIMUM OF 18" FROM THE PULL SIDE (STRIKE SIDE) OF THE DOOR TO THE INTERSECTING WALL, OR OTHER PROTRUDING OBJECTS.
6. ALL ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISHES AS THE ADJOINING SPACES.
7. PROVIDE FINISH LEVELS AS DESCRIBED:
   LEVEL 4:
   - ALL WALLS TO BE BROUGHT UP TO LEVEL 4 FINISH.
   - AREAS FOR BACK OF HOUSE EMPLOYEE OPERATIONS WHERE ROOM SIDE WALLS AND/OR CEILINGS HAVE PAINTED SURFACES.
   - CONCESSION AND CIRCULATION CORRIDORS WHERE ROOM SIDE WALLS AND/OR CEILINGS HAVE PAINTED SURFACES.
8. STAIR ENCLOSURES, SHAFT WALLS, EXIT PASSAGE WAYS AND EXTERIOR WALLS TO BE COORDINATED FOR PHASE OF WORK PER MATRIX AND PROJECT SCOPING.
9. MAINTAIN AND PROTECT EXISTING EXPANSION JOINTS DURING CONSTRUCTION. PATCH/REPAIR/REPLACE TO MATCH EXISTING RATINGS AS REQUIRED ON THE SHELL PORTION OF PROJECT.
10. CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES, LOCAL RULES, AND REGULATIONS, AND ALL OTHER CODES, REGULATIONS AND GOVERNING AGENCIES HAVING JURISDICTION WITH ALL APPLICABLE AMENDMENTS UNLESS ALTERED OR CHANGED THROUGH VARIANCES OF OTHER LEGAL PROCEDURES.

FLOOR PLAN KEYED NOTES

MARK	DESCRIPTION
1	SIGNAGE BY OTHERS
2	CARPENTER TO MODIFY EXISTING DOOR AND JAMB TO SWING OUT PER IBC, NOTIFY ARCHITECT OF ANY ISSUES
3	BUILT-IN WOOD HIGHTOP, 42" H, COORD. TOP FINISH W/ OWNER, RE. D6/A502
4	TELEVSIONS BY OWNER, COORD. MOUNTING HT W/ OWNER, OUTLETS IN CEILING ABOVE TVS TYP. RE. ELECTRICAL
5	ALL DINING AND BAR FURNITURE BY OWNER
6	PROVIDE BENDS AND SWEEPS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS, ENDPOINTS, BENDS/TURNS PER EQUIPMENT SUPPLIER RECOMMENDATIONS
7	EQUIPMENT SUPPLIER TO VERIFY FINAL OPENING DIMENSIONS PRIOR TO FABRICATION
8	MULLIONS FINISH TO MATCH EXISTING EXTERIOR STOREFRONT FINISH
9	BASIS OF DESIGN: QUIKSERV SC-4844 MANUAL SELF CLOSING SLIDER, 1/4" TEMPERED GLAZING, RE. A12/A504 AND A8/A504
10	FUTURE COOLER
11	ALIGN F.F.
12	12" DRINK RAIL, COORD. MATERIAL AND FINISH W/ OWNER, CONTRACTOR INSTALLED, CENTERLINE BRACKETS - COUNTERTOP SUPPORT BRACKET FRONT MOUNTING PLUS-10X8 BLACK, 4' MAX OFF CENTER
13	INFILL TO MATCH EXISTING
14	GLAZING TO BE BLACKED OUT
15	COORDINATE HARDWARE REQUIREMENTS W/ OWNER
16	NEW STOREFRONT DOOR, BASIS OF DESIGN: KAWNEER AA 425 THERMAL ENTRANCE SINGLE DOOR. FINISH TO MATCH EXISTING STREET STOREFRONT
17	8' - 6" H WALL
18	EXTEND EXISTING WALL, ALIGN F.F.
19	BASIS OF DESIGN: ALL NEW GYP WALLS TO RECEIVE DALTILE: PORTFOLIO 6"X12" P-36C9TB COVE BASE - IRON GREY
20	ALL EXISTING DOOR AND WINDOW TRIM TO BE PAINTED SW 6992 INKWELL - EGGSHELL FINISH
21	COORD. BRICK FINISH W/ OWNER
22	BASIS OF DESIGN: RESTROOM WET WALLS TO RECEIVE DALTILE - BELEVED 3"X6" 0100 ARTIC WHITE SUBWAY TILE, FULL HT, HORIZONTAL RUNNING BOND INSTALLATION
23	12"D COUNTER, FLOOR MOUNTED, 3"X3" SQUARE SOCKET AND FLANGE, PAINTED TO MATCH STOREFRONT, COORD. COUNTER MATERIAL AND FINISH W/ OWNER, RE. A8/A504
24	NON-THERM ALUMINUM WINDOW SYSTEM, RE. G6/A504
25	COORD. UTILITY STUB-INS FOR FUTURE TENANT W/ OWNER PRIORT TO INSTALLATION OF NEW SLAB

GLASS LITE SCHED.

GLAZING TYPE	DESCRIPTION
G1	1/4" TEMPERED CLEAR GLAZING
G2	1/4" CLEAR GLAZING
G3	1/2" TEMPERED INSULATED CLEAR GLAZING

DOOR SCHED. GENERAL NOTES

1. HM REFERS TO HOLLOW METAL
2. AL REFERS TO ALUMINUM
3. WD REFERS TO WOOD
4. SCWD REFERS TO SOLID CORE WOOD
5. ALL EXTERIOR ALUMINUM DOORS & FRAMES ARE TO BE FINISHED TO MATCH ADJACENT ALUMINUM WINDOW FRAME, U.N.O.
6. REFER TO SPECIFICATION FOR DOOR HARDWARE SET DESIGNATIONS.
7. PROTECT ALL DOORS & FRAMES FROM DAMAGE THROUGHOUT CONSTRUCTION PHASES.

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A101

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FLOOR PLANS, ENLARGED PLANS, AND DETAILS

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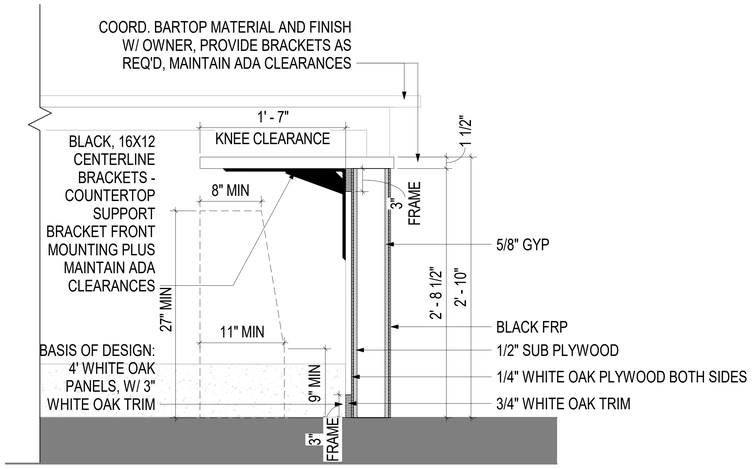
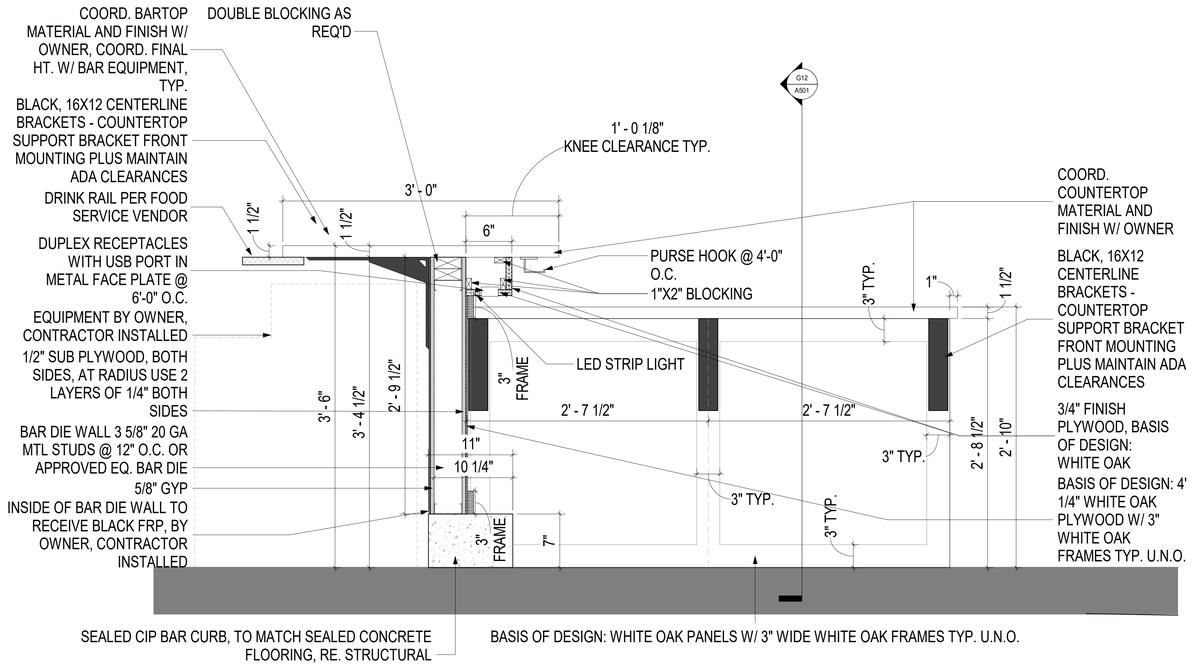
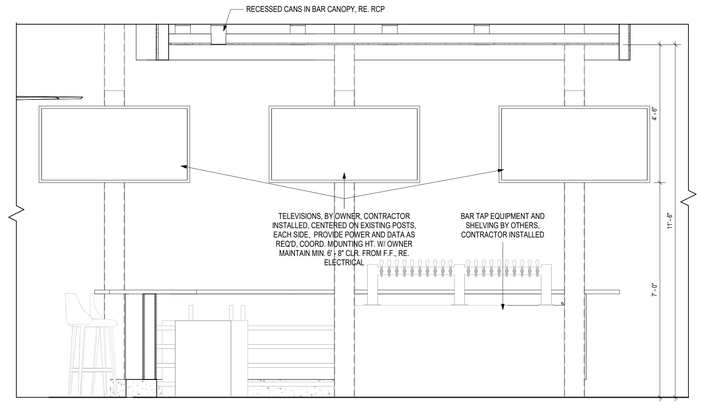


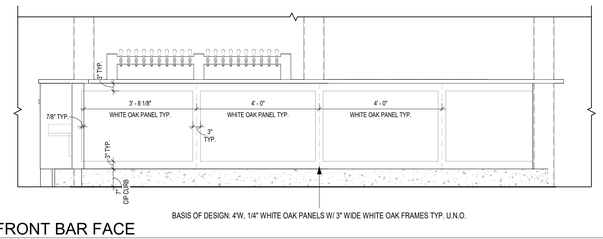
G12 ADA COUNTER SECTION
1 1/2" = 1'-0"



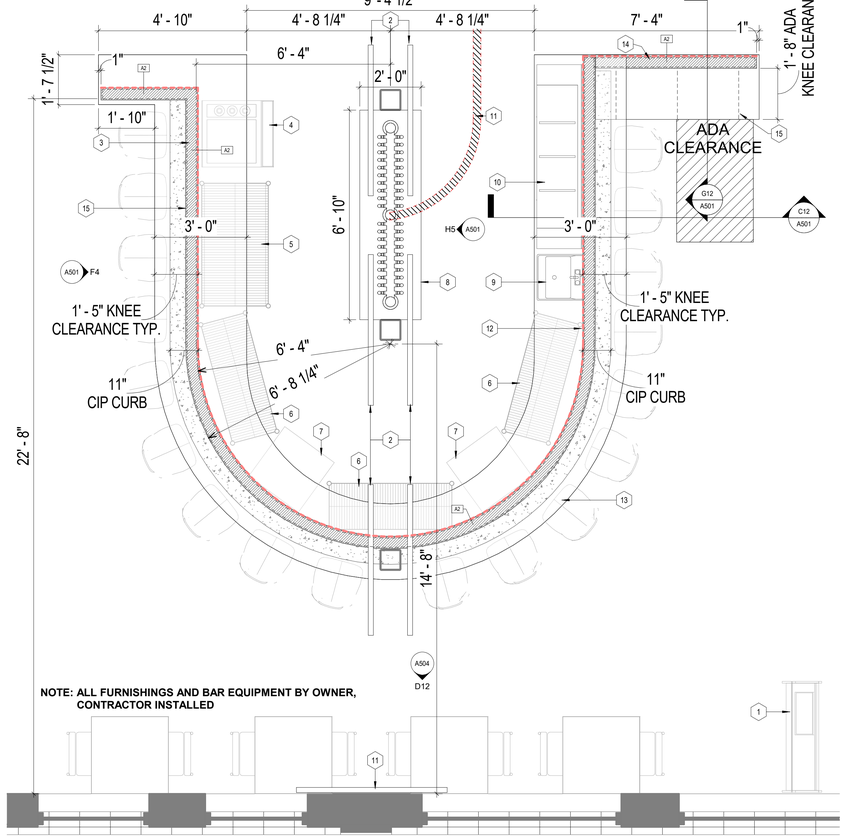
C12 BAR COUNTER AND CURB, ADA COUNTER
1 1/2" = 1'-0"



H5 BACK BAR
1/2" = 1'-0"



F4 FRONT BAR FACE
1/2" = 1'-0"



A5 1ST FLOOR PLAN - ITAP BAR
1/2" = 1'-0"

ENLARGED BAR FLOOR PLAN KEYED NOTES

MARK	DESCRIPTION
1	HOSTESS STAND
2	TELEVISIONS ABOVE, PROVIDE POWER AND DATA AS REQ'D, MOUNTED ON EXISTING POSTS. COORD. MOUNTING HT W/ OWNER, MAINTING MIN. 6' - 8" CLR. FROM F.F., RE. H5/A502
3	4" METAL STUD BAR DIE WALL
4	ICE MACHINE
5	WHISKEY SHELF
6	GLASSWARE SHELF
7	POS STATION, PROVIDE POWER AND DATA AS REQ'D
8	BEER TAPS EQUIPMENT AND SHELVING BY OTHERS, CONTRACTOR INSTALLED
9	HAND SINK
10	DISHWASH SINK
11	PROVIDE BENDS AND SWEEPS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS, ENDPOINTS, BENDS/TURNS PER EQUIPMENT SUPPLIERS RECOMMENDATIONS
12	INSIDE OF BAR DIE WALL TO RECEIVE BLACK FRP, FROM TOP OF CIP CURB TO BOTTOM OF COUNTERTOP
13	COORD. BAR TOP MATERIAL AND FINISH W/ OWNER, CONTRACTOR INSTALLED
14	BAR FACE BASIS OF DESIGN: 4'W, 1/4" WHITE OAK PANELS W/ 3" WIDE WHITE OAK FRAMES TYP.
15	PROVIDE SOLID BLOCKING IN WALL FOR BRACKET LAGS
15	CENTERLINE BRACKETS - COUNTERTOP SUPPORT BRACK FRONT MOUNTING PLUS - 16X12 BLACK - MAINTAIN ADA CLEARANCES

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ENLARGED BAR PLAN, INTERIOR ELEVATIONS + DETAILS

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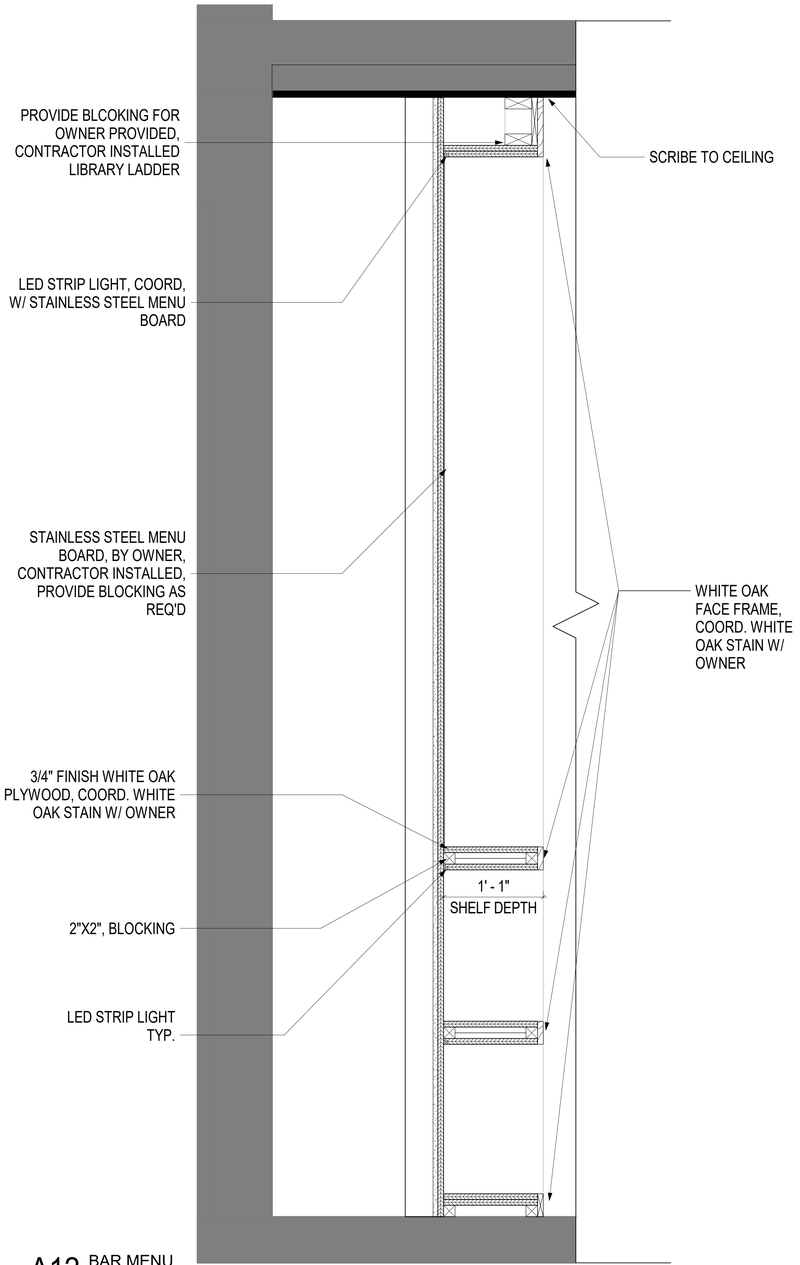
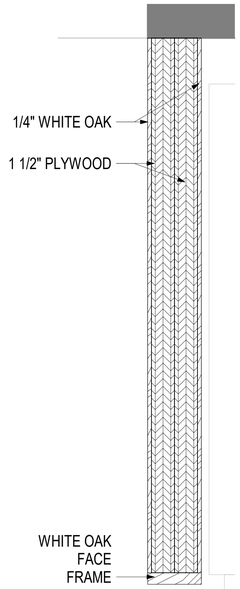
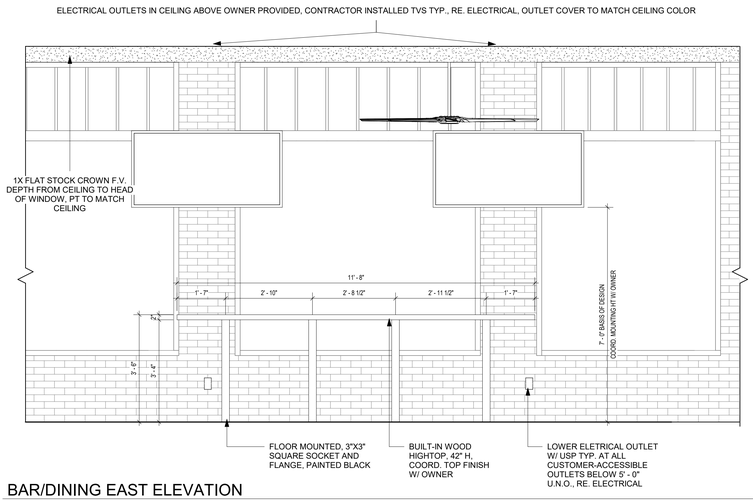


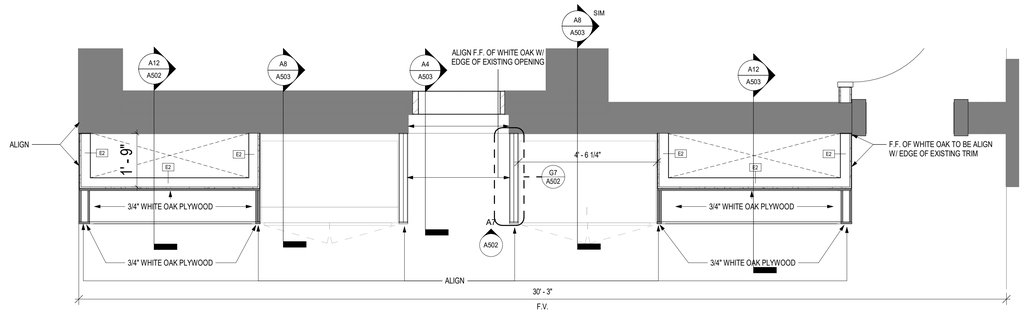
A12 BAR MENU
1 1/2" = 1'-0"



G7 BOURBON SHELVES SIDE PANEL
3" = 1'-0"

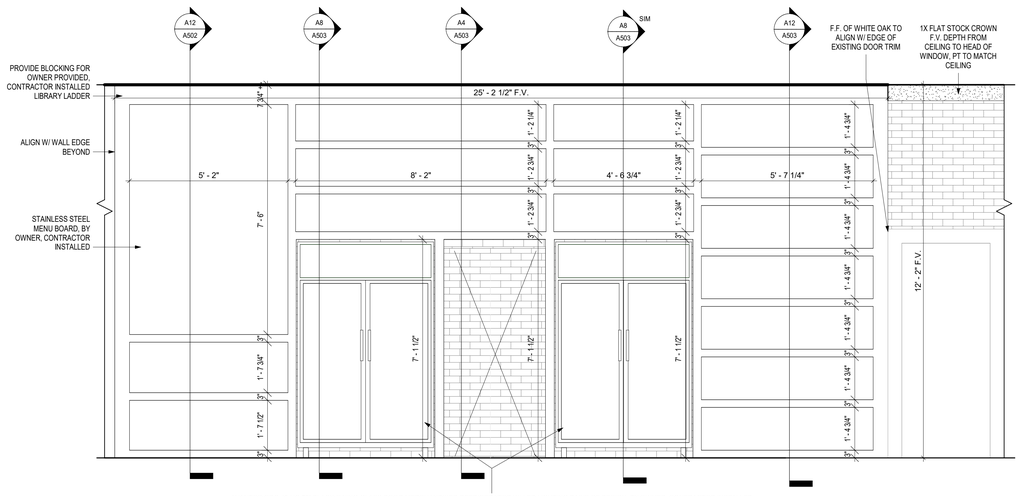


D6 BAR/DINING EAST ELEVATION
1/2" = 1'-0"



PRIOR TO CASEWORK FABRICATION, F.V. EXISTING CONDITIONS AND COORD. W/ OWNER PROVIDED EQUIPMENT

D7 COOLER AND BOURBON SHELVES
1/2" = 1'-0"



AVANTCO GDC-49-HC 53" BLACK SWING GLASS DOOR MERCHANDISER REFRIGERATOR W/ LED LIGHTING BASIS OF DESIGN, BY OWNER, CONTRACTOR INSTALLED

PRIOR TO CASEWORK FABRICATION, F.V. EXISTING CONDITIONS AND COORD. W/ OWNER PROVIDED EQUIPMENT

A7 COOLER AND BOURBON SHELF
1/2" = 1'-0"

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INTERIOR ELEVATIONS + DETAILS

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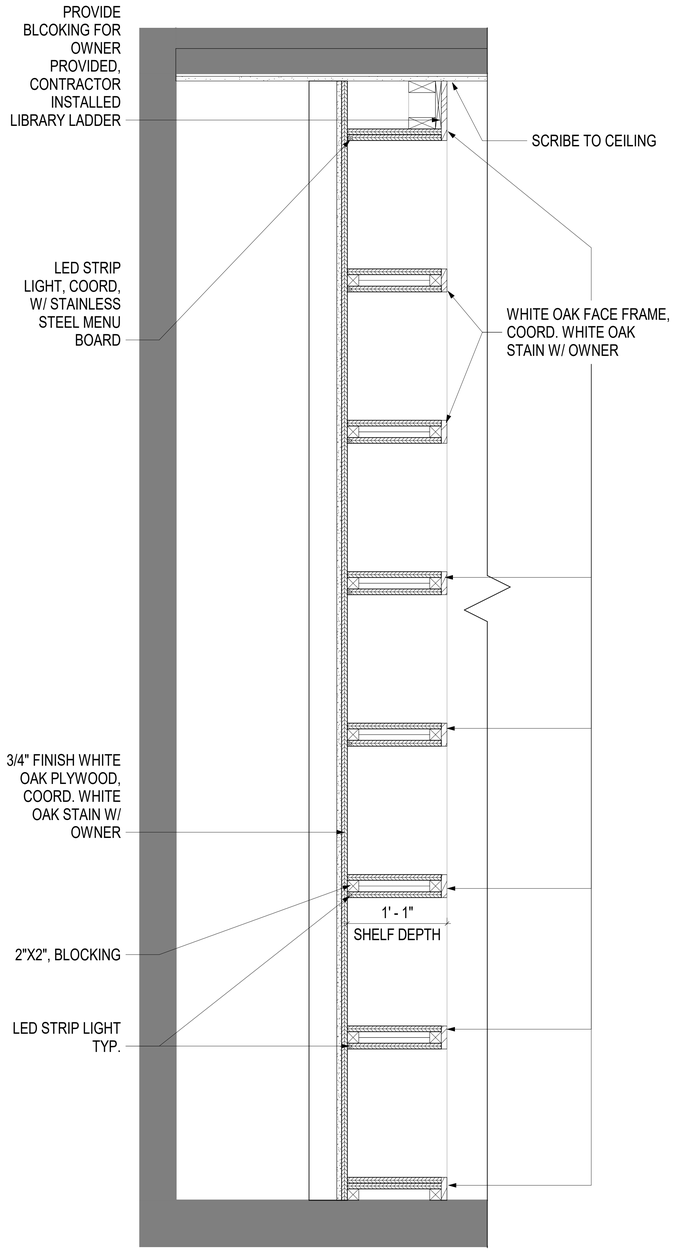
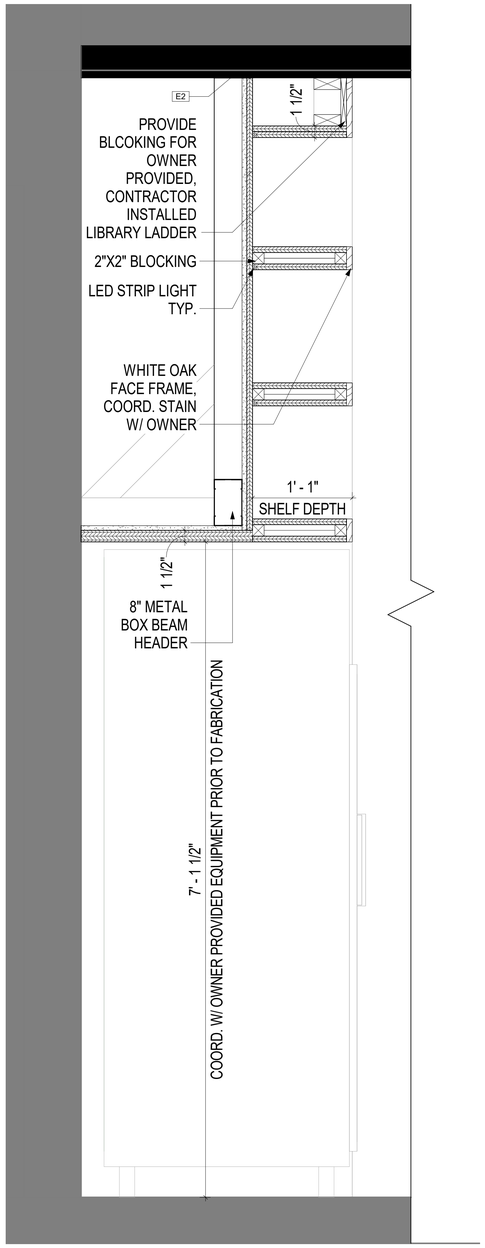
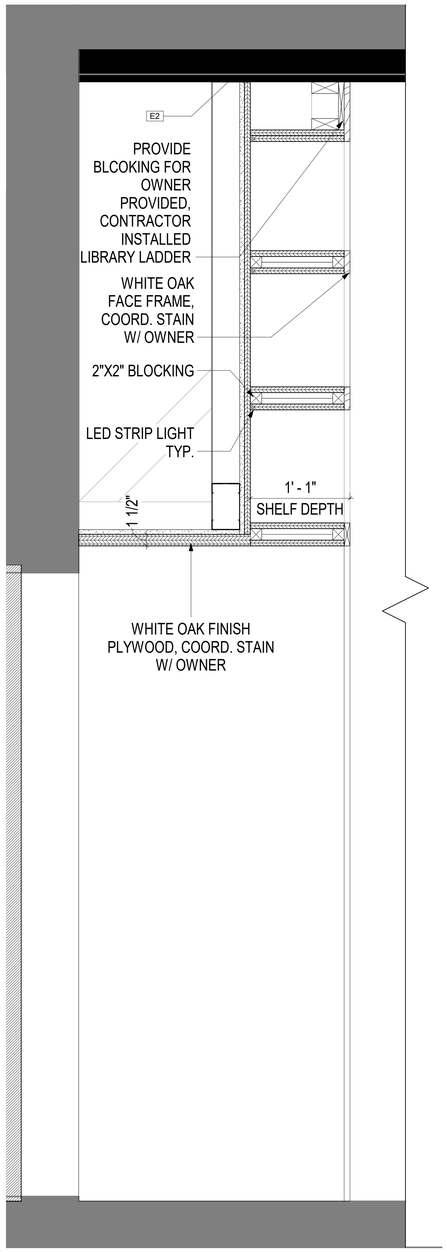


A12 Section 43
1 1/2" = 1'-0"



A8 REACH-IN COOLER W/ SHELVES ABOVE
1 1/2" = 1'-0"



A4 WALK-IN COOLOR OPENING AND SHELVES
1 1/2" = 1'-0"

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INTERIOR DETAILS

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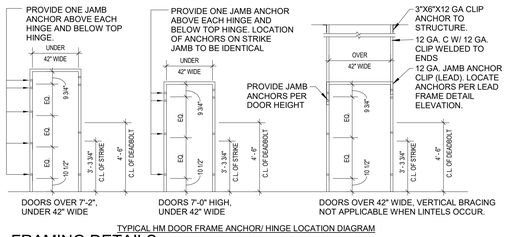
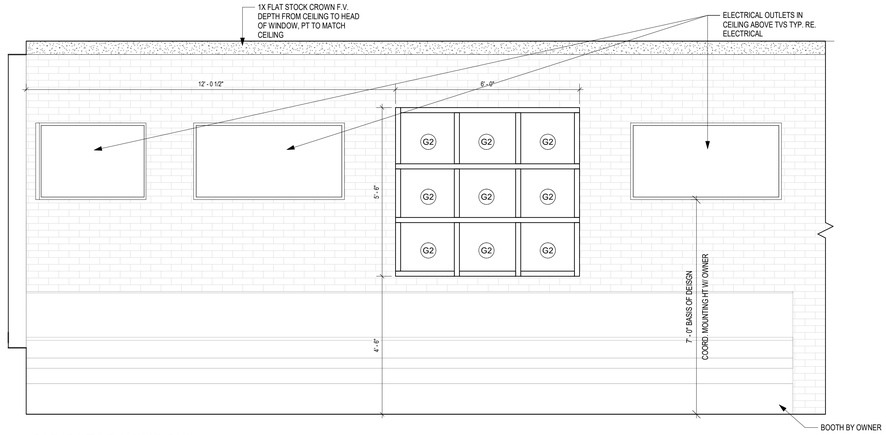
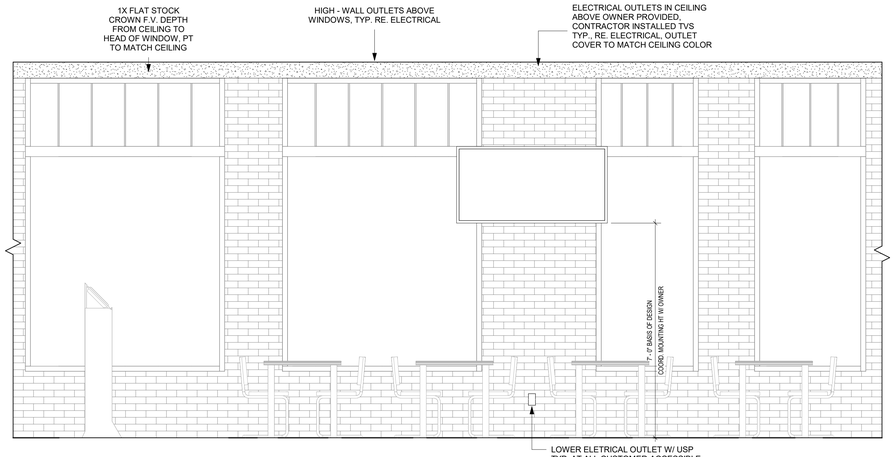


TYPICAL HM DOOR FRAME ANCHOR/ HINGE LOCATION DIAGRAM

G12 FRAMING DETAILS
1/4" = 1'-0"



G6 GUYS/ITAP WINDOW
1/2" = 1'-0"



D12 BAR/DINING SOUTH ELEVATION
1/2" = 1'-0"

GLASS LITE SCHED.

GLAZING TYPE	DESCRIPTION
G1	1/4" TEMPERED CLEAR GLAZING
G2	1/4" CLEAR GLAZING
G3	1/2" TEMPERED INSULATED CLEAR GLAZING

ACCESSORY SCHEDULE

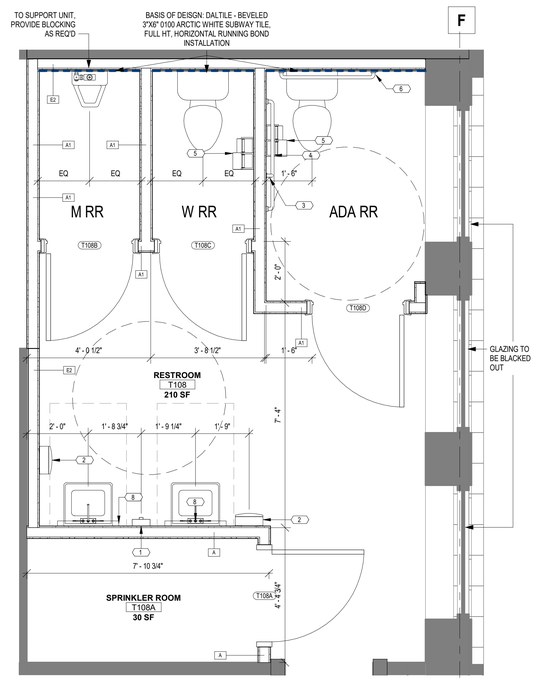
TYPE MARK	MANUFACTURER	DESCRIPTION	MODEL	WxHxD	FINISH	REMARKS
1	BOBRICK WASHROOM EQUIPMENT, INC.	SOAP DISPENSER - SURFACE MOUNTED	B-2012	4-3/16", 10-17/32", 4-7/32"	SATIN	
2	BOBRICK WASHROOM EQUIPMENT, INC.	SURFACE MOUNTED PAPER TOWEL DISPENSER	B-262	10-3/4", 14", 4"	SATIN	
3	BOBRICK WASHROOM EQUIPMENT, INC.	VERTICAL GRAB BAR, 1-1/2" DIA., SS, 18"	B-6806-18	1-1/2" DIA X 18"	SATIN, WITH PEENED GRIP	
4	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/4" DIA., SS, 42"	B-5806-42	1-1/2" DIA X 42"	SATIN	
5	BOBRICK WASHROOM EQUIPMENT, INC.	DOUBLE ROLL TOILET TISSUE DISPENSER	B-6999	12-3/8", 4-3/4", 6-3/16"	STAINLESS STEEL	
6	BOBRICK WASHROOM EQUIPMENT, INC.	GRAB BAR, 1-1/2" DIA., SS, 36"	B-5806-36	1-1/2" DIA X 36"	SATIN	
7		MIRROR		24"X48"	SATIN	1

ACCESORY SCHEDULE GENERAL NOTES:

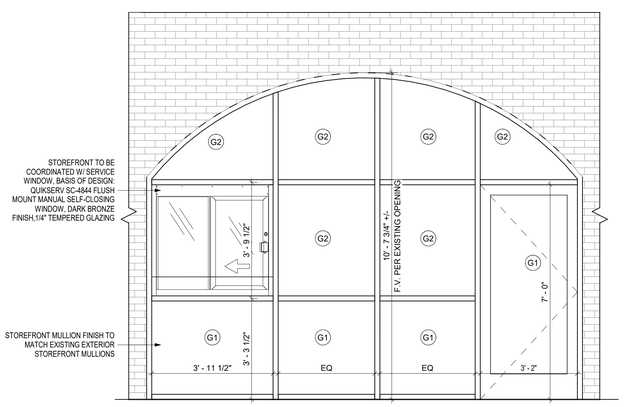
A. ACCESSORIES SCHEDULE BASIS OF DESIGN, COORDINATE FINAL SELECTION WITH OWNER

ACCESORY SCHEDULE REMARKS:

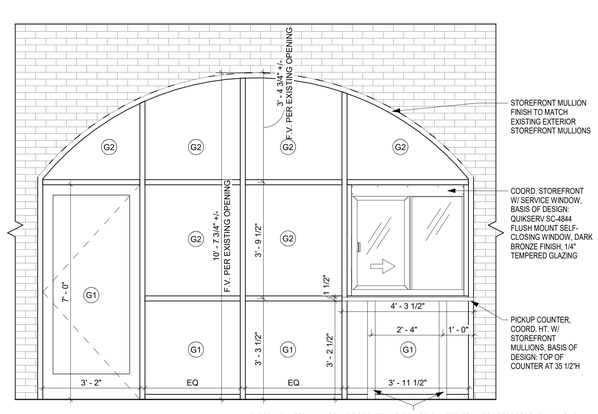
1. MIRROS TO BE CENTERED AT SINKS TYP.



A4 ENLARGED PLAN - RESTROOM BLOCK
1/2" = 1'-0"



A12 GUYS/PARTY ROOM STOREFRONT
1/2" = 1'-0"



A8 PARTY ROOM/GUYS STOREFRONT
1/2" = 1'-0"

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ENLARGED RESTROOM BLOCK PLAN + INTERIOR DETAILS

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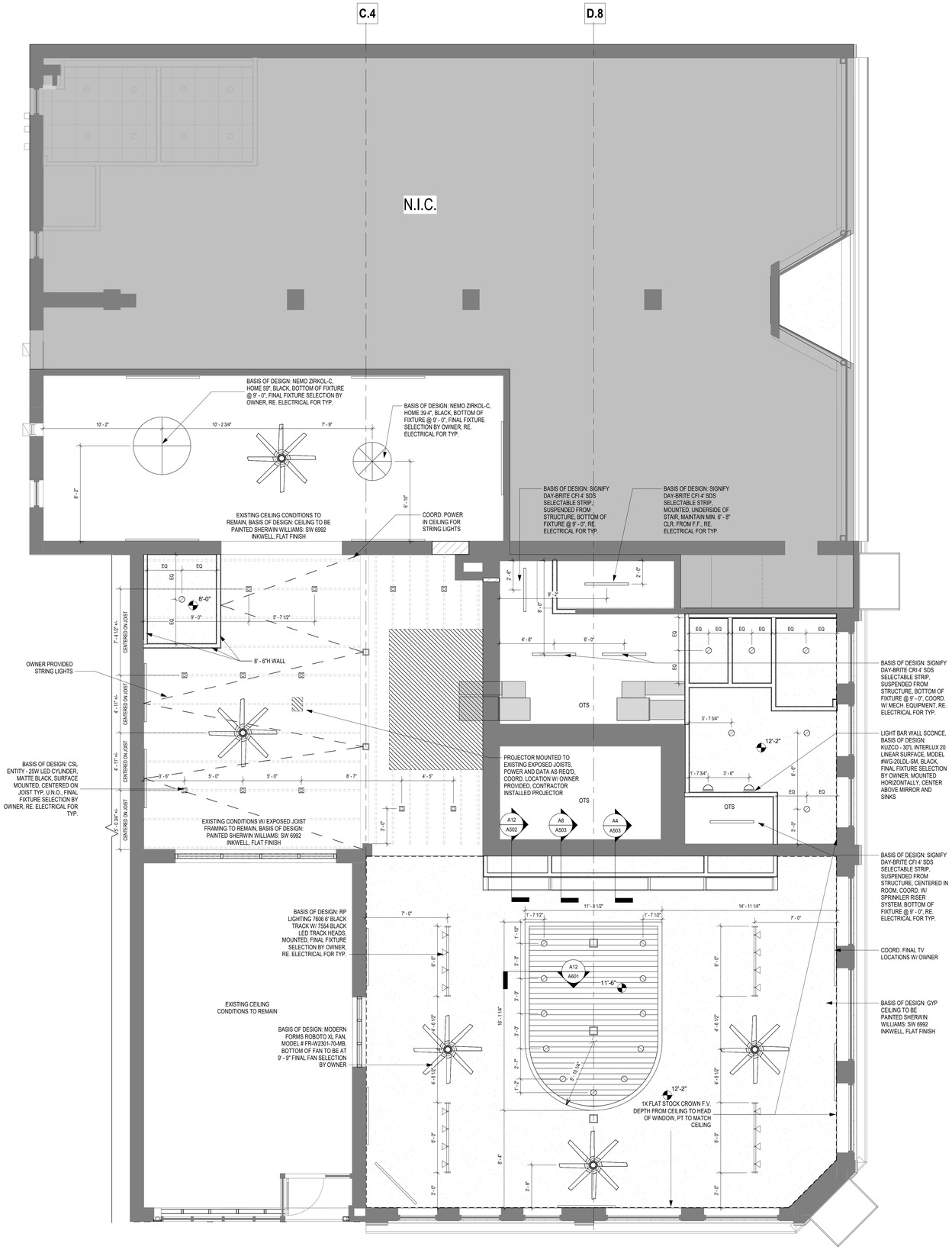
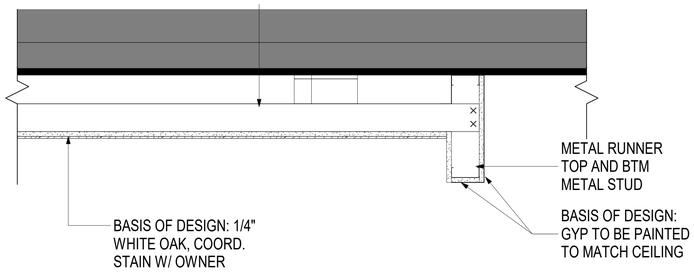


MTL. C-JOIST TO MATCH STUD LAYOUT AT 16" O.C.



GENERAL NOTE: ALL EXPOSED CEILING CONDUIT TO BE PAINTED TO MATCH CEILING

A12 BAR CANOPY
1 1/2" = 1'-0"

A8 OVERALL RCP - UPPER LEVEL
1/4" = 1'-0"

GENERAL NOTES - REFLECTED CEILING PLANS:

1. RE: SHEET G001 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
2. DIMENSIONS SHOWN ON THE REFLECTED CEILING PLANS ARE TO THE FACE OF GYP. BOARD (FOG), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE.
3. ALL CEILINGS TO BE 9'-0" A.F.F., UNLESS NOTED OTHERWISE.
4. ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING.
5. AT ALL GYP. BD. SOFFITS: EXTEND GYP. BD. UP 6 INCHES ABOVE ADJACENT CEILING.
6. RE: DETAILS FOR ADDITIONAL CONDITIONS AND CEILING HEIGHT INFORMATION.
7. RE: FINISH LEGEND AND FINISH SCHEDULE FOR ROOM CEILING FINISHES.
8. CEILING TILES/GRID TO BE CENTERED IN THE ROOM, UNLESS NOTED OTHERWISE.
9. RECESSED LIGHTING, SPEAKERS, SMOKE DETECTORS, ETC. AND PENDANT LIGHT FIXTURES - SHALL BE CENTERED IN CEILING TILE OR GYP. BD. CEILING, UNLESS NOTED OTHERWISE.
10. RE: INTERIOR ELEVATIONS FOR LOCATION OF WALL MOUNTED LIGHT FIXTURES.
11. RE: ELECTRICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON LIGHT FIXTURE SCHEDULE.
12. RE: MECHANICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON DIFFUSERS.
13. COORDINATE ALL PENDANT MOUNTED LIGHT FIXTURES IN EQUIPMENT AREAS WITH EXPOSED STRUCTURE.
14. COORDINATE ALL CEILING MOUNTED EQUIPMENT WITH CASEWORK BELOW.
15. IF THERE IS A CONFLICT BETWEEN ANY ABOVE-CEILING MECHANICAL / ELECTRICAL / PLUMBING WORK & THE SCHEDULED OR SHOWN CEILING HEIGHT, CONTACT THE ARCHITECT IMMEDIATELY FOR CLARIFICATION.
16. REF. MECH DWGS FOR LOCATIONS OF SOUND ISOLATION BELOW AND OR AROUND MECH EQUIPMENT.
17. PROVIDE OVERALL CEILING COORDINATION DRAWING SHOWING ALL DEVICES DURING SHOP SUBMITTAL PROCESS.

CEILING PLAN LEGEND

*SOME SYMBOLS MAY NOT BE USED IN THIS PROJECT.

	WOOD VISUAL WC-5A OR WC-5B / PRICE BOTH MATERIALS FOR CLIENT APPROVAL
	5/8" GYPSUM BOARD BULKHEAD, CEILING OR SOFFIT. SEE APPLICABLE DETAILS AND SECTIONS.
	RECESSED CAN LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	BASIS OF DESIGN: CSL ENTITY - 25W LED CYLINDER, MATTE BLACK, SURFACE MOUNTED, CENTERED ON JOIST TYP, U.N.O., FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	SUSPENDED OR MOUNTED SIGNIFY DAY-BRITE CFI LINEAR 4' SDS SELECTABLE STRIP LIGHT SEE ELECTRICAL DRAWINGS FOR TYPE.
	LIGHT BAR WALL SCONCE, BASIS OF DESIGN: KUZCO - 30"L INTERLUX 20 LINEAR SURFACE, MODEL #WG-20LDL-SM, BLACK, FINAL FIXTURE SELECTION BY OWNER, MOUNTED HORIZONTALLY, CENTER ABOVE MIRROR AND SINKS
	BASIS OF DESIGN: NEMO ZIRKOL-C, HOME 59", BLACK, BOTTOM OF FIXTURE @ 9' - 0", FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	BASIS OF DESIGN: NEMO ZIRKOL-C, HOME 39.4", BLACK, BOTTOM OF FIXTURE @ 9' - 0", FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	BASIS OF DESIGN: RP LIGHTING 7606 6' BLACK TRACK W/ 7554 BLACK LED TRACK HEADS, MOUNTED, FINAL FIXTURE SELECTION BY OWNER, RE. ELECTRICAL FOR TYP.
	EMERGENCY WALL MOUNTED LIGHT FIXTURE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	EMERGENCY EXIT LIGHT FIXTURE (CEILING MOUNTED). SEE ELECTRICAL DRAWINGS FOR TYPE.
	EMERGENCY EXIT LIGHT FIXTURE (WALL MOUNTED). SEE ELECTRICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED RETURN AIR GRILLE. SEE MECHANICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED SUPPLY DIFFUSER. SEE MECHANICAL DRAWINGS FOR TYPE.
	EXHAUST DUCT. SEE MECHANICAL DRAWINGS FOR TYPE.
	CEILING MOUNTED SPEAKER GRILLE. SEE ELECTRICAL DRAWINGS FOR TYPE.
	SPRINKLER HEAD. SEE PLUMBING DRAWINGS FOR TYPE.

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REFLECTED CEILING PLAN

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ELECTRICAL ABBREVIATIONS

AC	ALTERNATING CURRENT
AHU	AIR HANDLING UNIT
A. OR AMPS.	AMPERES
AFC	ABOVE FINISH COUNTER
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
BTC	BRANCH TO CONNECTION POINT AND CONNECT EQUIPMENT
C	CONDUIT ("E.C." IS EMPTY CONDUIT)
CF	CEILING FAN
CM	COFFEE MAKER
CT	COOKTOP
D	DEDICATED CIRCUIT
DCO	DUPLEX CONVIENCE OUTLET
DP	DISPOSAL
DW	DISHWASHER
DY	DRYER
EMT	ELECTRICAL METALLIC TUBING
EF	EXHAUST FAN
EWC	ELECTRIC WATER COOLER (WATER-COOLED DRINKING FOUNTAIN)
EX	EXISTING
FCU	FAN COIL UNIT
GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFIP	GROUND FAULT INTERRUPTER PROTECTED
GRD	GROUND
H	HORIZONTAL MOUNT (RECEPTACLE)
HD	VENTILATION HOOD
HP	HORSEPOWER
HT	HEAT TRACE POWER (PROVIDE W/ 20A/1P GFI BREAKER)
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HZ	HERTZ
IG	ISOLATED GROUND (DUPLEX RECEPTS. - NEMA 5-20RIG)
KCM	THOUSAND CIRCULAR MILLS
KVA	KILOVOLT-AMPERES (1000 VOLT-AMPERES)
KW	KILOWATTS (1000 WATTS)
MLO	MAIN LUGS ONLY
MCB	MAIN CIRCUIT BREAKER
MW	MICROWAVE (COORD MTG HT W/ ARCHITECT)
NIC	NOT IN CONTRACT
NEC	NATIONAL ELECTRICAL CODE
NF	NOT FUSED
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PNL	PANEL
PH OR Ø	PHASE
P	POLE
PVC	POLYVINYL CHLORIDE
RF	REFRIGERATOR
RG	RANGE
SPD	SURGE PROTECTIVE DEVICE
T	TAMPERPROOF RECEPTACLE
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION RECEPTACLE
UC	UNDERCOUNTER REFRIGERATOR (OR ICE MACHINE)
UL	UNDERWRITERS LABORATORIES
U.N.O.	UNLESS NOTED OTHERWISE
V	VOLTS
VA	VOLT-AMPERES
VD	VENDING MACHINE (24"AFF)
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WA	WASHER
WD	WARMING DRAWER
WO	WALL OVEN
WP	WEATHERPROOF
WP/WR	WEATHERPROOF/WEATHER RESISTANT
W/UNIT	DISCONNECT IS SUPPLIED WITH THE UNIT

GENERAL ELECTRICAL NOTES

1. COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, REQUIREMENTS OF THE AHJ AND ALL LOCAL & STATE CODES.
2. DO NOT SCALE FROM THESE DRAWINGS.
3. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES.
4. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRINGS AND BUSHINGS.
5. ALL JUNCTION BOXES SHALL HAVE A COVER.
6. COORDINATE EACH LIGHT FIXTURE INSTALLATION(S) W/ ACTUAL CEILING TO BE FURNISHED.
7. ALL BRANCH CIRCUITS WITHOUT A CONDUCTOR & CONDUIT INDICATED SHALL BE ROUTED TO A 20A-1P BREAKER W/ 2#12, 1#12EG,3/4"C.
8. ALL BRANCH CIRCUIT CONDUCTORS SHALL NOT BE SMALLER THAN #12 AWG AND ALL CONDUIT SHALL NOT BE SMALLER THAN 3/4"C. UNLESS SPECIFICALLY NOTED OTHERWISE.
9. ALL CIRCUITS (LIGHTING AND POWER) SHALL BE PROVIDED WITH DEDICATED NEUTRALS UNLESS NOTED OTHERWISE. WHERE NEUTRALS ARE INDICATED TO BE SHARED, MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH 2P OR 3P BREAKERS AS REQUIRED PER NEC210.4.
10. ALL CIRCUITS (LIGHTING AND POWER) SHALL BE PROVIDED WITH AN INSULATED EQUIPMENT GROUND CONDUCTOR SIZED IN ACCORDANCE WITH THE NEC. THE RACEWAY SHALL NOT BE USED AN EQUIPMENT GROUND.
11. ALL FIXTURES SHALL BE SUPPORTED FROM EACH CORNER (INDEPENDENT OF THE SUSPENDED CEILING) WITH 12 GAUGE WIRE CONNECTED TO STRUCTURAL SYSTEM OF BUILDING. THE INSTALLATION SHALL MEET OR EXCEED THE SEISMIC REQUIREMENTS OF LOCAL AND NATIONAL CODES.
12. ELECTRICAL DEVICE MOUNTING HEIGHTS, UNO:

PANELBOARDS	78" AFF TO TOP OF PANEL
SWITCHES	46" AFF TO CENTER OF SWITCH
RECEPTACLES	18" AFF TO CENTER OF RECEPTACLE
TELE/DATA OUTLETS	48" AFF TO CENTER OF RECEPTACLE
APARTMENT LOADCENTERS	PER ANSI A117.1 REQUIREMENTS (VERIFY WITH LOCAL INSPECTOR)

13. ELECTRICAL EQUIPMENT (PANELBOARDS, TRANSFORMERS, DISTRIBUTION EQUIPMENT, ETC.) IS SHOWN TO SCALE ON THE FLOOR PLANS.
14. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING EQUIPMENT THAT WILL FIT WITHIN THE SPACES SHOWN ON THE PLANS AND COMPLYING WITH ALL CODE REQUIRED CLEARANCES.
15. ELECTRICAL CONTRACTOR TO LABEL ALL DEVICES (RECEPTACLES, SWITCHES, PANELBOARDS, DISCONNECTS, ETC.) WITH CIRCUIT NUMBER AND PANELBOARD DESIGNATION. RECEPTACLES, SWITCHES, AND SIMILAR DEVICES TO HAVE PRE-PRINTED, SELF ADHESIVE LABEL.
16. PANELBOARDS, DISCONNECT SWITCHES, AND SIMILAR DEVICES TO HAVE ENGRAVED, SELF-ADHESIVE, LAMINATED ACRYLIC LABEL (BLACK W/ WHITE LETTERING).
17. PROVIDE TYPE-WRITTEN PANELBOARD SCHEDULES FOR ALL ELECTRICAL PANELBOARDS.

ELECTRICAL SYMBOLS

LIGHTING FIXTURES/DEVICES

SYMBOL	DESCRIPTION	MOUNTING
A	DOWNLIGHT (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING
A	DIRECTIONAL DOWNLIGHT (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING
A	WALL MOUNTED LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL
A	LINEAR LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING OR SUSPENDED
A	2X4 LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING
A	2X2 LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	CEILING
	HATCHING ON FIXTURE INDICATES FIXTURE TO HAVE EMERGENCY BACK-UP	
X3	TWO HEAD EMERGENCY LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL OR CEILING
X1 M	EMERGENCY EXIT SIGN. PROVIDE ARROW(S) AS INDICATED. SHADING INDICATES FACE (LETTER INDICATES FIXTURE TYPE) REFER TO LIGHT FIXTURE SCHEDULE	WALL OR CEILING
S	SINGLE POLE SWITCH 20A (120/277V)	WALL - 48" AFF
S_3	THREE WAY SWITCH 20A (120/277V)	WALL - 48" AFF
S_4	FOUR WAY SWITCH 20A (120/277V)	WALL - 48" AFF
	WALL BOX DIMMER SWITCH	WALL - 48" AFF
V_X V_X	CEILING OR WALL MOUNTED OCCUPANCY SENSOR (LETTER INDICATES SENSOR TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	WALL OR CEILING
X	LOW-VOLTAGE CONTROL STATION (LETTER INDICATES CONTROL STATION TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	WALL - 48" AFF
PC X	PHOTOCELL SENSOR (LETTER INDICATES SENSOR TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	FIELD VERIFY
PP	POWERPACK (LETTER INDICATES POWERPACK TYPE) REFER TO LIGHTING CONTROLS SCHEDULE	ACCESSIBLE CEILING

COMMUNICATION/LOW-VOLTAGE DEVICES

SYMBOL	DESCRIPTION	MOUNTING
CR	CARD READER (VERIFY EXACT REQUIREMENTS)	
	DATA, TELEPHONE, OR COMBO TELE/DATA OUTLET PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING	WALL - 18" AFF
	DATA, TELEPHONE, OR COMBO TELE/DATA OUTLET PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING	FLOOR OR CEILING
TV	TELEVISION OUTLET	WALL OR CEILING
	SPEAKER OUTLET	FIELD VERIFY
TTB	TELEPHONE TERMINAL BOARD	WALL
	SECURITY CAMERA OUTLET	FIELD VERIFY
	PUSH BUTTON	

NOTE: NOT ALL SYMBOLS MAY BE USED.

POWER EQUIPMENT/DEVICES

SYMBOL	DESCRIPTION	MOUNTING
	SWITCHBOARD OR DISTRIBUTION PANEL REFER TO PANEL SCHEDULES	
	DRY-TYPE TRANSFORMER REFER TO PLANS FOR KVA RATING	
	120/208V, 3Ø, 4W PANELBOARD REFER TO PANEL SCHEDULES	
	277/480V, 3Ø, 4W PANELBOARD REFER TO PANEL SCHEDULES	
J	JUNCTION BOX	WALL OR CEILING
30/20FS	FUSED SAFETY SWITCH (E.G. 30/20/3 INDICATES A 30A, 3-POLE SWITCH WITH 20A FUSES)	
30/NFS	NON-FUSED SAFETY SWITCH (E.G. 30/NF/3 INDICATES A 30A, 3-POLE SWITCH WITHOUT FUSES)	
SM	MOTOR RATED SWITCH	
	MOTOR	
	NEMA 5-20R SIMPLEX RECEPTACLE	WALL - 18" AFF
	NEMA 5-20R DUPLEX RECEPTACLE	WALL - 18" AFF
	NEMA 5-20R DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER	WALL - 6" ABOVE FINISHED COUNTER U.N.O.
	NEMA 5-20R QUAD-PLEX RECEPTACLE	WALL - 18" AFF
	NEMA 5-20R SPLIT RECEPTACLE. TOP OUTLET WIRED HOT. BOTTOM OUTLET SWITCHED.	WALL - 18" AFF
	SPECIAL PURPOSE RECEPTACLE REFER TO PLANS FOR NEMA CONFIGURATION	WALL - 18" AFF OR CEILING
USB	NEMA 5-20R - DUPLEX RECEPTACLE WITH USB PORTS SIMILAR TO HUBBELL #USB20AC5W	WALL - 18" AFF
	NEMA 5-20R DUPLEX RECEPTACLE MOUNTED ON CEILING	CEILING - FLUSH
FB1	HUBBELL CFB4 SERIES FLOOR BOX (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
FB2	HUBBELL B24 SERIES FLOOR BOX (OR EQUAL) WITH (1) DUPLEX RECEPTACLE AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
FB3	HUBBELL B24 SERIES FLOOR BOX (OR EQUAL) FOR POWER AND DATA CONNECTIONS TO PRE-WIRED FURNITURE VERIFY EXACT CONNECTION WITH FURNITURE VENDOR	FLOOR - FLUSH
FA1	HUBBELL S1PT SERIES 4" POKE-THRU (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION CONNECTION CAPABILITY	FLOOR - FLUSH
FA2	HUBBELL S1PTFF SERIES 4" POKE-THRU (OR EQUAL) FOR POWER AND DATA CONNECTIONS TO PRE-WIRED FURNITURE VERIFY EXACT CONNECTION WITH FURNITURE VENDOR	FLOOR - FLUSH
FA3	HUBBELL S1R6 SERIES 6" POKE-THRU (OR EQUAL) WITH (2) DUPLEX RECEPTACLES AND DATA/COMMUNICATION AND A/V CONNECTION CAPABILITY	FLOOR - FLUSH
	CONDUIT IN OR UNDER FLOOR/GRADE	
	CONDUCTOR HOME RUN - (): HOT, (I) NUETRAL, (E) EQUIPMENT GROUND, & ( ) ISOLATED GROUND	
	EQUIPMENT CONNECTION	
	CONDUIT IN CEILING OR WALL	

NOTE: NOT ALL SYMBOLS MAY BE USED.

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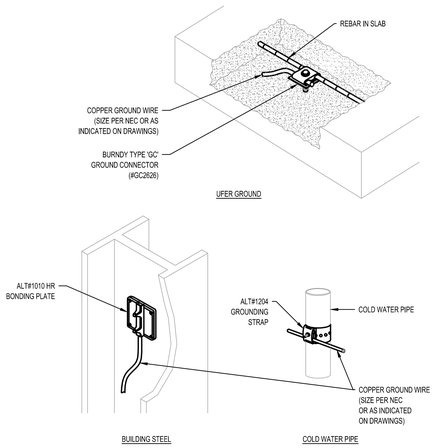
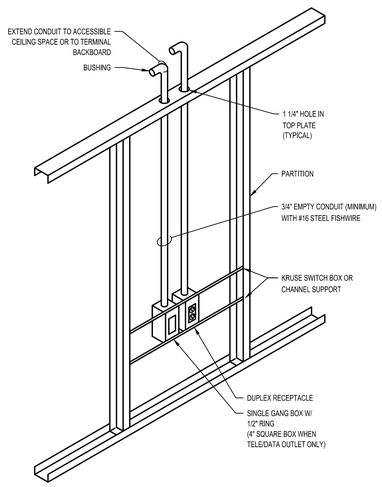
ELECTRICAL NOTES, SYMBOLS & ABBREVIATIONS



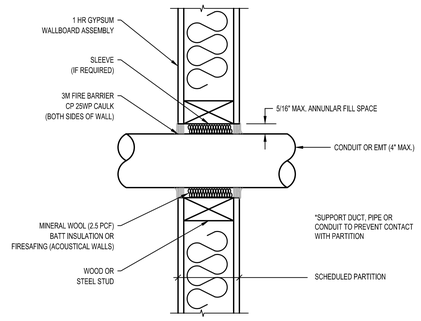
1 TYPICAL GROUND CONNECTION DETAILS

SCALE: NOT TO SCALE



2 OUTLET IN HOLLOW PARTITION

SCALE: NOT TO SCALE



3 TYPICAL FIRE RATED PENETRATION THROUGH A GYP WALL ASSEMBLY

SCALE: NOT TO SCALE

FIRE RATED PENETRATION NOTES:

-FOR UL WALL SYSTEM NO. WL1001 (FORMERLY NO. 147)
F-RATINGS - 1,2,3 & 4 HR (SEE ITEMS #2 & #3)
T RATINGS - 0,1,2,3,4 (SEET ITEM #3)
L RATING @ 400 F - LESS THAN 1 CFM/SQ. FT., (SEE ITEM #3)

1. WALL ASSEMBLY - THE 1,2,3 OR 4 HR FIRE-RATED GYPSUM WALL BOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR PARTITION DESIGN IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION FEATURES:
   A. STUDS - WALL FRAMING MAY CONSIST OR EITHER WOOD STUDS (MAX. 2 HR FIRE RATED ASSEMBLIES) OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM 2X4 IN. LUMBER SPACED 16 IN. O.C. WITH NOM 2X4 IN. LUMBER AND PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN. 3-3/8 IN. WIDE BY 1-3/8 IN. DEEP. CHANNELS SPACED MAX 24 IN. O.C.
   B. WALLBOARD, GYPSUM - NOM 1/2 OR 5/8 IN.THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES, THE GYPSUM WALLBOARD RYPS, THICKNESS, NUMBER OF LAYERS, FASTENER TYPE AND SHEET ORIENTATION SHALL BE SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES DESIGN IN THE UL FIRE R RESISTANCE DIRECTORY. MAX DIAM OF OPENING IS 13-1/2 IN.
2. PIPE OR CONDUIT - NOM 12 IN. DIAM (OR SMALLER) SCHEDULE 10 (OR HEAVIER), STEEL PIPE NOM 6 IN. DIAM (OR SMALLER) STEEL CONDUIT, NOM 4 IN. DIAM (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR TYPE L OR (OR HEAVIER) COPPER TUBING NOM 1 IN. DIAM (OR SMALLER) FLEXIBLE STEEL CONDUIT . WHEN COPPER PIPE OR FLEXIBLE STEEL CONDUIT IS USED, MAX F RATING OF FIRESTOP SYSTEM ITEM CONSTRUCTED USING STEEL CHANNEL STUDS. A MAX OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
3. FILL, VOID OR CAVITY MATERIAL - CAULK - CAULK FILL MATERIAL INSTALLED TO COMPLETELY FILL ANULAR SPACE BETWEEN PIPE OR CONDUIT AND GYPSUM WALLBOARD AND WITH A MIN 1/4 IN. DIAM BOARD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL. CAULK INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAX PIPE OR CONDUIT DIAM (IN)	ANULAR SPACE (IN)	F RATING (HR)	T RATING (HR)
1	0 TO 3/16	1 OR 2	0 + 1 OR 2
1	1/4 TO 1/2	3 OR 4	3 OR 4
4	0 TO 1/4	1 OR 2	0
6	1/4 TO 1/2	3 OR 4	0
12	1/4 TO 1/2	1 OR 2	0

*WHEN COPPER PIPE IS USED, T RATING IS 0 NOM.
MINNESOTA MINING & MFG. CO.• TYPES CP-25 S/L, CP-25 N/I, CP-25 WS, CP-25 WS+ (NOTE: L RATINGS APPLY WHEN TYPE CP-25 WS+ CAULK IS USED.

4 FIRE RATED PENETRATION NOTES

SCALE: NOT TO SCALE

5 BACK-TO-BACK BOX ARRANGEMENT FOR NOISE CONTROL

SCALE: NOT TO SCALE

DETAIL NOTE:
SIZE ALL JUNCTION BOXES FOR A MINIMUM OF (4) FLEXIBLE CONDUIT CONNECTIONS.

6 TYPICAL RECESSED DOWNLIGHT FIXTURE DETAIL

SCALE: NOT TO SCALE

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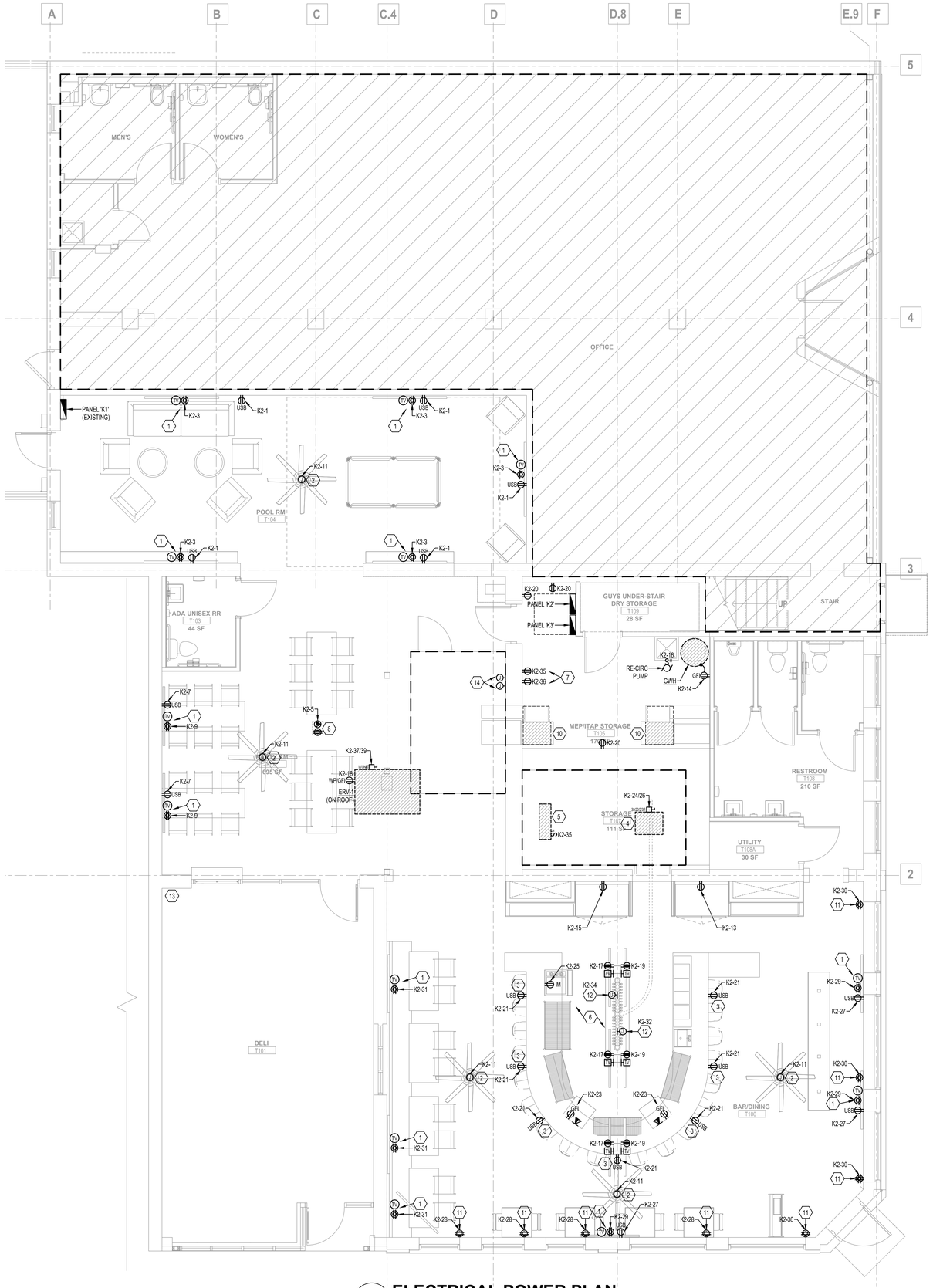
ELECTRICAL DETAILS



1 **ELECTRICAL POWER PLAN**

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

GENERAL NOTES

(NOT ALL NOTES APPLY)

1. REFERENCE SHEET E101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. REFERENCE SHEET E102 FOR ELECTRICAL DETAILS.
3. COORDINATE MOUNTING HEIGHTS AND LOCATIONS FOR ALL DEVICES WITH ARCHITECT AND/OR INTERIOR ELEVATIONS PRIOR TO ROUGH-IN.

KEYED NOTES:

1. OVERHEAD POWER AND DATA FOR TV. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
2. POWER FOR OVERHEAD FANS. VERIFY EXACT LOCATION AND EXACT CONTROL REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN.
3. RECEPTACLES TO BE MOUNTED ON FACE OF BAR BELOW COUNTER. COORDINATE EXACT LOCATION WITH BAR SUPPLIER AND OWNER PRIOR TO ROUGH-IN. RECEPTACLES TO BE SILVER COLOR WITH STAINLESS STEEL COVER PLATE.
4. CONDENSING UNIT FOR WALK-IN COOLER. FIELD VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
5. EVAPORATOR FOR WALK-IN COOLER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ROUGH-IN.
6. FIELD VERIFY EXACT CONNECTION REQUIREMENTS OF ALL BAR EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
7. POWER FOR GLYCOL SYSTEM AND CO2/NITROGEN BLENDER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.
8. POWER AND DATA FOR OVERHEAD PROJECTOR. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN.
9. FIELD VERIFY EXACT CONNECTION REQUIREMENTS OF ALL KITCHEN EQUIPMENT WITH OWNER PRIOR TO ROUGH-IN.
10. EXISTING FURNACE AND ASSOCIATED CONDENSING UNIT TO REMAIN.
11. PROVIDE CEILING MOUNTED SHOW WINDOW RECEPTACLE WITHIN 18" OF THE TOP OF THE WINDOW AS REQUIRED PER NEC 210.62. FIELD COORDINATE EXACT LOCATION WITH OWNER/ARCHITECT PRIOR TO ROUGH-IN. RECEPTACLES SHALL BE CONTROLLED ON A TIME-OF-DAY SCHEDULE. REFER TO DETAIL 2 ON SHEET E301 FOR ADDITIONAL INFORMATION.
12. POWER FOR UNDER COUNTER GLASS WASHER. FIELD VERIFY EXACT ELECTRICAL REQUIREMENTS AND LOCATION PRIOR TO ROUGH-IN.
13. STUB (20) 3/4" EMPTY CONDUITS WITH PULL STRINGS FROM PANEL 'K3' LOCATION INTO THIS SPACE FOR FUTURE TENANT BRANCH CIRCUITING.
14. PROVIDE JUNCTION BOX ON BRICK WALL WITH 3/4" CONDUITS AND PULL STRINGS STUBBED INTO THE MECHANICAL ROOM FOR WALK-IN COOLER CIRCUITS FOR FUTURE TENANT.

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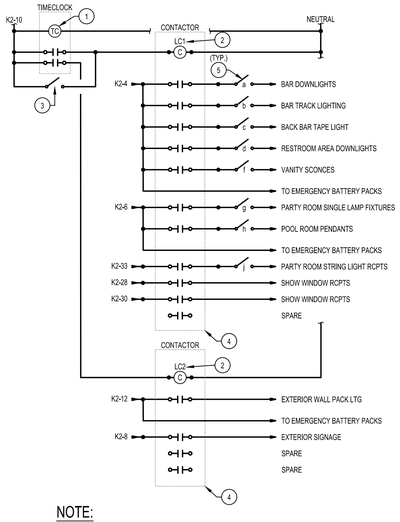
ELECTRICAL POWER PLAN

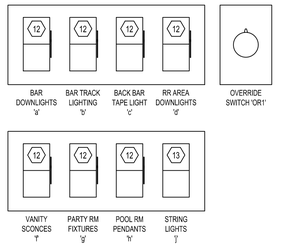


NOTE:

THIS DETAIL IS SCHEMATIC IN NATURE. PROVIDE ALL WIRING, COMPONENTS AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEM.

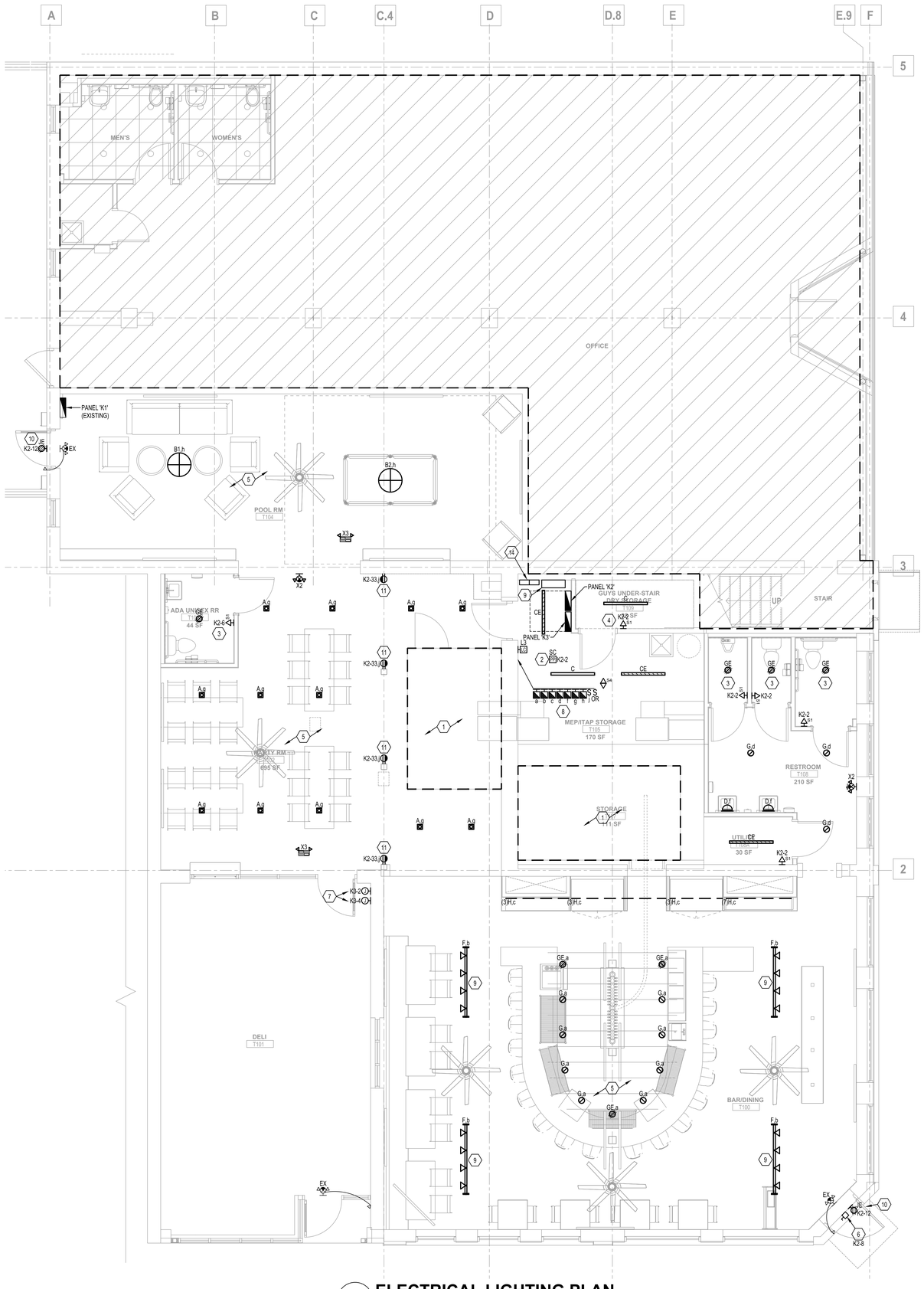
2 LIGHTING CONTROLS DETAIL

SCALE: NO SCALE



3 OVERRIDE SWITCHBANK DETAIL

SCALE: NO SCALE



1 ELECTRICAL LIGHTING PLAN

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

GENERAL NOTES

(NOT ALL NOTES APPLY)

1. REFERENCE SHEET E101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. REFERENCE SHEET E102 FOR ELECTRICAL DETAILS.
3. COORDINATE MOUNTING HEIGHTS AND LOCATIONS FOR ALL DEVICES WITH ARCHITECT AND/OR INTERIOR ELEVATIONS PRIOR TO ROUGH-IN.
4. CIRCUIT ALL EXIT SIGNS TO NEAREST EMERGENCY LIGHTING CIRCUIT (OR NEAREST LIGHTING CIRCUIT IF NO GENERATOR).
5. VERIFY ALL EXISTING BRANCH CIRCUITING. CONTRACTOR SHALL WIRE FIXTURES IN ACCORDANCE WITH SWITCHING INDICATED. CONNECTED LOAD ON 277V-20A CIRCUITS SHALL NOT EXCEED 4000W, 120V-20A CIRCUITS SHALL NOT EXCEED 1800W.
6. CIRCUIT NUMBERS ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS.
7. EXISTING, RELOCATED, AND EXISTING TO REMAIN FIXTURES SHALL BE REFURBISHED AND CLEANED. REPLACE BAD BALLASTS/DRIVERS AS WELL AS DIM, OR BURNED OUT LAMPS. LAMP COLOR AND WATTAGE TO MATCH EXISTING.
8. FIXTURES LABELED 'EX' ARE EXISTING FIXTURES TO REMAIN.

KEYED NOTES:

1. LIGHTING IN THIS AREA IS INTEGRAL TO WALK-IN COOLER UNIT.
2. LIGHTING CONTROL INTENT FOR THIS AREA IS FOR FIXTURES TO BE MANUAL 'ON'/AUTO 'OFF' VIA OCCUPANCY SENSOR WITH MANUAL OVERRIDE AVAILABLE VIA THE LOW-VOLTAGE CONTROL STATION.
3. LIGHTING CONTROL INTENT FOR THIS AREA IS FOR FIXTURES TO BE AUTO 'ON'/AUTO 'OFF' VIA OCCUPANCY SENSOR WITH MANUAL OVERRIDE AVAILABLE VIA THE OCCUPANCY SENSOR SWITCH.
4. LIGHTING CONTROL INTENT FOR THIS AREA IS FOR FIXTURES TO BE MANUAL 'ON'/AUTO 'OFF' VIA OCCUPANCY SENSOR WITH MANUAL OVERRIDE AVAILABLE VIA THE OCCUPANCY SENSOR SWITCH.
5. LIGHTING CONTROL INTENT FOR THIS AREA IS FOR FIXTURES TO BE 'ON'/'OFF' VIA TIME-OF-DAY SCHEDULE WITH MANUAL OVERRIDE AVAILABLE VIA THE WALL BOX DIMMER SWITCH.
6. PROVIDE NEMA 3R, LOCKABLE DISCONNECT SWITCH FOR EXTERIOR SIGNAGE. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. CONTROL INTENT IS FOR SIGNAGE TO BE 'ON'/'OFF' VIA TIME-OF-DAY SCHEDULE THRU TIMECLOCK. REFER TO DETAIL 2 (THIS SHEET) FOR ADDITIONAL INFORMATION.
7. PROVIDE 1P-20A CIRCUIT CAPPED IN JUNCTION BOX FOR FUTURE TENANT LIGHTING.
8. MANUAL OVERRIDE LIGHTING CONTROL SWITCHBANK. FIELD VERIFY EXACT LOCATION WITH OWNER PRIOR TO ROUGH-IN. REFER TO DETAIL 3 (THIS SHEET) FOR ADDITIONAL INFORMATION.
9. PROVIDE ISOLITE #E3MINI-250VA-LC-MB (OR EQUAL) FOR EMERGENCY BACKUP OF BAR AREA TRACK LIGHTING (SWITCHLEG 'b'). CONTROL INTENT IS FOR FIXTURES TO ENERGIZE 'ON'/OFF' VIA TIME-OF-DAY SCHEDULE WITH MANUAL CONTROL FROM THE WALL BOX DIMMER, DURING LOSS OF NORMAL POWER. FIXTURES SHALL ENERGIZE FULL 'ON'.
10. EXTERIOR LIGHTING TO BE 'ON'/OFF' VIA TIME-OF-DAY SCHEDULE.
11. SWITCHED RECEPTACLE FOR STRING LIGHTING. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN. CONTROL INTENT IS FOR THE RECEPTACLES TO ENERGIZE 'ON'/OFF' VIA TIME-OF-DAY SCHEDULE WITH MANUAL CONTROL FROM THE WALL SWITCH.
12. PROVIDE WALLBOX DIMMER SIMILAR TO LUTRON DIVA SERIES (OR EQUAL). FIELD VERIFY COMPATIBILITY OF FIXTURES WITH WALLBOX DIMMER PRIOR TO ORDERING.
13. PROVIDE STANDARD TOGGLE SWITCH.
14. TIME SWITCH AND LIGHTING CONTACTORS FOR LIGHTING CONTROLS. REFER TO LIGHTING CONTROLS DETAIL (THIS SHEET) FOR ADDITIONAL INFORMATION.

LIGHTING CONTROL KEYED NOTES:

1. PROVIDE TORK DIGITAL SERIES, MODEL DGLC200A-NC (2-CHANNEL) TIMECLOCK (OR EQUAL). COORDINATE TIME-OF-DAY SCHEDULES WITH OWNER.
2. PROVIDE SQUARE D MODEL 8903 ELECTRICALLY HELD LIGHTING CONTACTORS (LC1 & LC2) WITH POLE QUANTITY AS REQUIRED.
3. PROVIDE PARAGON #SWP2H 2-HOUR SPRING WOUND OVERRIDE SWITCH (OR EQUAL).
4. PROVIDE NEMA 1 ENCLOSURE TO HOUSE ALL CONTACTORS INDICATED.
5. REMOTE MANUAL SWITCH(ES). REFER TO LIGHTING PLAN FOR ADDITIONAL INFORMATION.

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ELECTRICAL LIGHTING PLAN

LIGHTING FIXTURE SCHEDULE

FIXT. TYPE	DESCRIPTION & MANUFACTURER OPTIONS	LAMPS NO.	LAMPS TYPE	FIXT. VOLT	TOTAL WATTS	FINISH	REMARKS/MOUNTING	NOTES
A	Surface Mounted LED Cylinder M# CSL LTG #SS4021-25-2-S	1	LED	UNV	25W	Coord. w/ Architect	Coord. w/ Architect	1
B1	59" LED Pendant M# NEMO LTG #ZIRKOL-C	1	LED	120V	68W	Coord. w/ Architect	Coord. w/ Architect	1
B2	39.4" LED Pendant M# NEMO LTG #ZIRKOL-C	1	LED	120V	45W	Coord. w/ Architect	Coord. w/ Architect	1
C	Linear LED Strip w/ 0-10V Dimming M# SIGNIFY #FSS-4-40L-UNV-DIM	1	LED	UNV	29.9W	Standard	Pendant (Verify Ht w/ Architect)	1
CE	Linear LED Strip w/ Emergency Battery Pack and 0-10V Dimming M# SIGNIFY #FSS-4-40L-UNV-DIM-EMLED	1	LED	UNV	29.9W	Standard	Pendant (Verify Ht w/ Architect)	2
D	Surface Wall Mount Linear LED Fixture w/ 0-10V Dimming M# INTER LUX #WG-20LDI-SW	1	LED	UNV	6W/FT	Coord. w/ Architect	Wall (Refer Arch Elevation)	1
F	Track Lighting w/ LED Track Heads and Triac Dimming M# RP LTG #7606 (TRACK) M# RP LTG #7554 (TRACK HEAD)	1	LED	120V	8W/ HEAD	Coord. w/ Architect	Coord. w/ Architect	1
G	4" LED Downlight w/ 0-10V Dimming M# LIGHTOLIER #4-R-R-_-P4R-DL-25-CL-Z10-U	1	LED	UNV	26W	Standard	Recessed (Ceiling - Provide Flange)	
GE	4" LED Downlight w/ 0-10V Dimming and Emergency Battery Backup M# LIGHTOLIER #4-R-R-_-P4R-DL-25-CL-Z10-U-EM6	1	LED	UNV	26W	Standard	Recessed (Ceiling - Provide Flange)	2
H	LED Tape Light at Bar Back Shelving. Provide all Power Leads, Jumpers, Channel and Power Supplies as Required for a Complete and Operational System. M# TIVOLI #TPLD-HO-I-_-24	1	LED	120V	4.4W/FT	Standard	Coord. w/ Architect	
J	LED Exterior Wall Pack w/ Emergency Battery Pack M# LSI #XWS-LED-2L-FTW-UNV-DIM-80CRI-CWBB	1	LED	UNV	15W	Standard	Wall (Refer Arch Elevation)	2
X1	LED Exit Sign, Single/Double Sided, Universal Mount, Emergency Battery Pack. Provide Arrows as Indicated. M# DUAL LITE #EVE-U-R-W-E EVENLITE #TLX-EM-RU-W (OR EQUAL)	1	LED	UNV	2W		Wall/Ceiling/Pendant	2
X2	Combination LED Exit Sign and Emergency Light Fixture, Universal Mount, Emergency Battery Pack. Provide Arrows as Indicated. M# DUAL LITE #EVC-U-R-W	1	LED	UNV	2W		Wall/Ceiling/Pendant	2
X3	LED Emergency Light w/ (2) 2-Watt Adjustable LED Heads and Emergency Battery Backup M# DUAL LITE #EV4D-02L	2	LED	UNV	5W	White	Surface (Wall/Ceiling)	2
X4	Combination LED Exit Sign and Emergency Light Fixture w/ Exterior Rated Remote Emergency Heads, Universal Mount, Emergency Battery Pack. Provide Arrows as Indicated. M# DUAL LITE #EVC-U-R-W-D4 WITH EVO-D-X	1	LED	UNV	5W		Wall/Ceiling/Pendant	1,2

NOTES:
1. Coordinate Exact Mounting Height and Location of All Fixtures With Owner and Architect Prior to Rough-In.
2. Circuit Emergency Battery Packs and Exit Signs to Local Lighting Circuit Ahead of Any Means of Control for Proper Operation.

LIGHTING CONTROLS SCHEDULE

FIXTURE TAG	MANUFACTURER	MODEL #	SETTINGS	DESCRIPTION	NOTES
SC	ACUITY BRANDS: nLIGHT	nPP16 SERIES	REFER TO PLANS FOR CONTROL INTENT	ON/OFF ROOM SWITCH CONTROLLER LINE VOLTAGE - SINGLE RELAY	1,2,4
L3	ACUITY BRANDS: nLIGHT	nPODM	-	ON/OFF LOW VOLTAGE SWITCH WITH 1-CHANNEL CONTROL	1,6
S1	SENSOR SWITCH	WSX SERIES	REFER TO PLANS FOR CONTROL INTENT	WALL MOUNT OCCUPANCY SENSOR LINE VOLTAGE - SINGLE RELAY	1
S4	ACUITY BRANDS: nLIGHT	nCM-10 SERIES	-	CEILING MOUNT OCCUPANCY SENSOR - LARGE MOTION LOW VOLTAGE	3
WIRE	-	-	-	CAT5, CAT5e, OR CAT 6. STANDARD OR SOLID. TERMINATED AS RJ45 TIA/EIA-568B	

NOTES:
1. COORDINATE ALL MODEL NUMBERS WITH MANUFACTURER PRIOR TO ORDERING. PROVIDE DEVICES TO MEET CONTROL INTENT INDICATED ON THE DRAWINGS.
2. PROVIDE 6'-0" OF EXCESS CONTROL WIRING, COILED AND TIED, BETWEEN CEILING MOUNTED OCCUPANCY SENSOR AND CORRESPONDING LOAD CONTROLLER.
3. MODIFY LOCATIONS OF CEILING MOUNTED OCCUPANCY SENSORS AS REQUIRED SO THAT NO OCCUPACNY SENSORS IS WITHIN 4'-0" OF AN HVAC SUPPLY DIFFUSER.
4. LOCATE DEVICE ABOVE CEILING OR AT STRUCTURE IN ACCESSIBLE LOCATION. LOCATIONS SHOWN ON DRAWINGS ARE SCHEMATIC. ADD ACCESS PANEL WITHIN CEILING IF NECESSARY. COORDINATE ACCESS PANEL LOCATION AND SPECIFICATION DIRECTLY WITH ARCHITECT.
5. LOCATION SHOWN ON PLAN FOR REFERENCE ONLY. CONTRACTOR MAY RELOCATE BRIDGE PORTS FOR A MORE ECONOMICAL LAYOUT IF DESIRED.
6. PROVIDE DEVICES WITH DEFAULT MANUFACTURE MARKINGS ON BUTTONS.
7. ROUTE RECEPTACLE CIRCUIT INDICATED ON PLAN AS "CONTROLLED RECEPTACLES" THROUGH PLUG LOAD CONTROLLER FOR AUTOMATIC ON/OFF CONTROL VIA OCCUPACNY SENSOR. ONE CONTROLLED CIRCUIT PER PLUG CONTROLLER.
8. DEVICE TO BE INSTALLED IN SINGLE GANG BOX. COORDINATE TIME-OF-DAY SCHEDULES WITH OWNER FOR ZONES TO BE ON TIME-OF-DAY CONTROL.
9. PENDANT MOUNT DEVICE TO 1/2" KNOCKOUT ON JUNCTION BOX AS REQUIRED.

PANEL K1 (EXISTING)

VOLTAGE/PHASE: **208Y/120V, 3PH, 4W** — BUS AMPERAGE: **400A** — MAIN TYPE: **400A MCB**
AFC VALUE: **EXISTING** — AIC RATING: **EXISTING** — MOUNTING: **SURFACE (NEMA 1)**
GROUNDS: **EG (PER T250.66)** — ISOLATED GROUND BUS: **NO** — SERVICE ENTRANCE RATED: **YES**

ALL LOADS IN VA

LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	DESCRIPTION	AMP	P	WIRE	CKT #	PHASE	CKT #	WIRE	P	AMP	DESCRIPTION	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
				3459				EXISTING	40	3	EX	1	A	2	EX	3	40	EXISTING			3459					
				3459								3	B	4							3459					
				3459								5	C	6							3459					
				3459				EXISTING	50	3	EX	7	A	8	EX	3	30	EXISTING			3459					
				3459								9	B	10							3459					
				3459								11	C	12							3459					
					3459			EXISTING	40	3	EX	13	A	14		1	20	EXISTING						500		
					3459							15	B	16		2	20	EXISTING						500		
					3459							17	C	18										500		
		1920						EXISTING	20	1	EX	19	A	20		1	20	EXISTING						500		
		1920						EXISTING	20	1	EX	21	B	22		1	20	EXISTING						500		
								SPACE ONLY				23	C	24		1	20	EXISTING						500		
								SPACE ONLY				25	A	26		1	20	EXISTING						500		
								SPACE ONLY				27	B	28				SPACE ONLY								
								SPACE ONLY				29	C	30				SPACE ONLY								
								SPACE ONLY				31	A	32				SPACE ONLY								
								SPACE ONLY				33	B	34				SPACE ONLY								
								SPACE ONLY				35	C	36				SPACE ONLY								
1428	1800	3486	0	0	5877	0	0	PANEL 'K2' (ITAP)	200	3	RD	37	A	38	RD	3	200	PANEL 'K3' (GUYS)	800	0	1500	0	0	0	6385	0
950	3060	2586	0	0	4277	0	0					39	B	40					1200	0	1500	0	0	0	5749	0
877	900	1725	0	0	4800	0	0					41	C	42					0	720	500	0	0	0	4256	0
								EXISTING	200	3		43	A	44				UNUSABLE SPACE								
												45	B	46												
												47	C	48												
3255	5760	11638	0	20754	25331	0	0	TOTALS										TOTALS	2000	720	24254	0	0	3500	16391	0

NEC CODE REFERENCES
* 100% OF 1ST 10 KVA, 50% OF REMAINING
** 125% OF LARGEST MOTOR + 100% SUM OF REMAINING MOTORS
*** ELEVATOR DEMAND FACTOR BASED ON NEC T620.14.

PANEL ABBREVIATIONS
GF - GROUND FAULT BREAKER
ST - SHUNT TRIP BREAKER
AF - ARC FAULT BREAKER
GF/AF - COMBO ARC/GROUND FAULT BREAKER
EX - EXISTING CIRCUIT AND WIRING TO REMAIN
EM - PROVIDE EMERGENCY LOCKING TAB
FA - FIRE ALARM, PROVIDE RED LOCKING TAB
LCK - PROVIDE PADLOCKABLE BREAKER
RD - REFER TO RISER DIAGRAM FOR WIRE SIZE
RP - CIRCUIT CONTROLLED VIA RELAY PANEL

PANEL NOTES

PHASE LOAD SUMMARY

TOTAL	PHASE	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
41991	A	2228	1800	13824	0	6918	10836	6385	0
39538	B	2150	3060	12924	0	6918	8736	5749	0
32073	C	877	1620	9143	0	6918	9259	4256	0

PANEL LOAD SUMMARY

TOTAL		LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
113602	CONNECTED VA	5255	6480	35892	0	20754	28831	16391	0
--	DEMAND FACTORS	1.25	*	**	1.00	1.00	1.00	1.00	1.00
114916	DEMAND VA	6569	6480	35892	0	20754	28831	16391	0
0	SHOW WINDOW DEMAND								
0	TRACK LTG DEMAND								
0%	SPARE								
114916	DEMAND VA + SPARE								
319.0	TOTAL DESIGN AMPS								

PANEL K2

VOLTAGE/PHASE: **208Y/120V, 3PH, 4W** — BUS AMPERAGE: **200A** — MAIN TYPE: **MLO**
AFC VALUE: **VERIFY** — AIC RATING: **VERIFY** — MOUNTING: **SURFACE (NEMA 1)**
GROUNDS: **EG (PER T250.122)** — ISOLATED GROUND BUS: **NO** — SERVICE ENTRANCE RATED: **NO**

ALL LOADS IN VA

	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	DESCRIPTION	AMP	P	WIRE	CKT #	PHASE	CKT #	WIRE	P	AMP	DESCRIPTION	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	
		900							POOL RM USB RCPTS	20	1	12	1	A	2	12	1	20	RR/BOH LTG	228								
						1500			POOL RM TV RCPTS	20	1	12	3	B	4	12	1	20	BAR/DINE/RR AREA LTS	950								TC
						1000			PARTY RM PROJECTOR	20	1	12	5	C	6	12	1	20	PARTY/POOL RM LTG	862								TC
		360							PARTY RM USB RCPTS	20	1	12	7	A	8	12	1	20	EXT. SIGNAGE	1200								TC
						600			PARTY RM TV RCPTS	20	1	12	9	B	10	12	1	20	TIMECLOCK						200			
			225						BAR/PARTY/POOL FANS	20	1	12	11	C	12	12	1	20	EXT. WALLPACK LTG	15								TC
GF						377			GLASS DOOR COOLER 1	20	1	12	13	A	14	12	1	20	WATER HEATER RCPT						600			
GF						377			GLASS DOOR COOLER 2	20	1	12	15	B	16	12	1	20	RE-CIRC PUMP			100						
						900			W BACKBAR TV RCPTS	20	1	12	17	C	18	12	1	20	ROOF RCPT		180							
						900			E BACKBAR TV RCPTS	20	1	12	19	A	20	12	1	20	STOR RM RCPT		540							
		1260							UNDER BAR USB RCPTS	20	1	12	21	B	22	12	1	20	WALK-IN EVAPORATOR			500						
						1000			BAR POS STATIONS	20	1	12	23	C	24	12	2	20	WALK-IN COND. UNIT			1500						
GF						1500			ICE MACHINE	20	1	12	25	A	26							1500						
		540							BAR AREA USB RCPTS	20	1	12	27	B	28	12	1	20	SHOW WINDOW RCPTS		720							TC
						900			S/E BAR TV RCPTS	20	1	12	29	C	30	12	1	20	SHOW WINDOW RCPTS		720							TC
						900			W BAR TV RCPTS	20	1	12	31	A	32	10	1	25	GLASS WASHER #1						1600			
TC		540							STRING LT RCPTS	20	1	12	33	B	34	10	1	25	GLASS WASHER #2						1600			
						500			GLYCOL SYSTEM	20	1	12	35	C	36	12	1	20	CO2/NITROGEN BLEND						500			
			1986						ERV-1	25	2	10	37	A	38				SPACE ONLY									
			1986										39	B	40				SPACE ONLY									
									SPACE ONLY				41	C	42				SPACE ONLY									
									SPACE ONLY				43	A	44				SPACE ONLY									
									SPACE ONLY				45	B	46				SPACE ONLY									
									SPACE ONLY				47	C	48				SPACE ONLY									
									SPACE ONLY				49	A	50				SPACE ONLY									
									SPACE ONLY				51	B	52				SPACE ONLY									
									SPACE ONLY				53	C	54				SPACE ONLY									
									SPACE ONLY				55	A	56				SPACE ONLY									
	0	3600	4198	0	0	10454	0	0	TOTALS										TOTALS	3255	2160	3600	0	0	4500	0	0	

NEC CODE REFERENCES
* 100% OF 1ST 10 KVA, 50% OF REMAINING
** 125% OF LARGEST MOTOR + 100% SUM OF REMAINING MOTORS
*** ELEVATOR DEMAND FACTOR BASED ON NEC T620.14.

PANEL ABBREVIATIONS
GF - GROUND FAULT BREAKER
ST - SHUNT TRIP BREAKER
AF - ARC FAULT BREAKER
GF/AF - COMBO ARC/GROUND FAULT BREAKER
IG - PROVIDE ISOLATED GROUND
EM - PROVIDE EMERGENCY LOCKING TAB
FA - FIRE ALARM, PROVIDE RED LOCKING TAB
LCK - PROVIDE PADLOCKABLE BREAKER
OL - REFER TO ONE-LINE DIAGRAM FOR WIRE SIZE
TC- CIRCUIT CONTROLLED VIA TIME CLOCK

PANEL NOTES

PHASE LOAD SUMMARY

TOTAL	PHASE	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
12591	A	1428	1800	3486	0	0	5877	0	0
10874	B	950	3060	2586	0	0	4277	0	0
8302	C	877	900	1725	0	0	4800	0	0

PANEL LOAD SUMMARY

TOTAL		LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
31766	CONNECTED VA	3255	5760	7798	0	0	14954	0	0
--	DEMAND FACTORS	1.25	*	**	1.00	1.00	1.00	1.00	1.00
32580	DEMAND VA	4069	5760	7798	0	0	14954	0	0
0	SHOW WINDOW DEMAND								
0	TRACK LTG DEMAND								
0%	SPARE								
32580	DEMAND VA + SPARE								
90.4	TOTAL DESIGN AMPS								

PANEL K3

VOLTAGE/PHASE: **208Y/120V, 3PH, 4W** — BUS AMPERAGE: **200A** — MAIN TYPE: **MLO**
AFC VALUE: **VERIFY** — AIC RATING: **VERIFY** — MOUNTING: **SURFACE (NEMA 1)**
GROUNDS: **EG (PER T250.122)** — ISOLATED GROUND BUS: **NO** — SERVICE ENTRANCE RATED: **NO**

ALL LOADS IN VA

	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	DESCRIPTION	AMP	P	WIRE	CKT #	PHASE	CKT #	WIRE	P	AMP	DESCRIPTION	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
							792		ITEM #K1	20	1	12	1	A	2	12	1	20	GENERAL LIGHTING CKT	800							
GF							500		ITEM #K2A	20	1	12	3	B	4	12	1	20	EXT. LIGHTING CKT	1200							
GF							500		ITEM #K2B	20	1	12	5	C	6	12	1	20	WALK-IN EVAPORATOR			500					
GF							967		ITEM #K3 MIXER	15	2	12	7	A	8	12	2	20	WALK-IN COND. UNIT			1500					
							967						9	B	10							1500					
GF							1500		ITEM #K4	15	1	12	11	C	12				SPACE ONLY								
GF							1040		ITEM #K5 CONVEYOR OVEN	15	2	12	13	A	14				SPACE ONLY								
							1040						15	B	16				SPACE ONLY								
GF							396		ITEM #K6A	15	1	12	17	C	18				SPACE ONLY								
GF							396		ITEM #K6B	15	1	12	19	A	20				SPACE ONLY								
GF							396		ITEM #K6C	15	1	12	21	B	22				SPACE ONLY								
GF							404		ITEM #K8	15	1	12	23	C	24				SPACE ONLY								
GF							1800		ITEM #K9	15	1	12	25	A	26				SPACE ONLY								
GF							1456		ITEM #K10 PANINI PRESS	20	2	12	27	B	28				SPACE ONLY								
							1456						29	C	30				SPACE ONLY								
GF							1390		ITEM #K11A	15	1	12	31	A	32				SPACE ONLY								
GF							1390		ITEM #K11B	15	1	12	33	B	34				SPACE ONLY								
		720							COUNTER USB RCPTS	20	1	12	35	C	36				SPACE ONLY								
									SPARE	20	1		37	A	38				SPACE ONLY								
									SPARE	20	1		39	B	40				SPACE ONLY								
									SPARE	20	1		41	C	42				SPACE ONLY								
	0	720	0	0	0	0	16391	0	TOTALS										TOTALS	2000	0	3500	0	0	0	0	0

NEC CODE REFERENCES
* 100% OF 1ST 10 KVA, 50% OF REMAINING
** 125% OF LARGEST MOTOR + 100% SUM OF REMAINING MOTORS
*** ELEVATOR DEMAND FACTOR BASED ON NEC T620.14.

PANEL ABBREVIATIONS
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ST - SHUNT TRIP BREAKER
AF - ARC FAULT BREAKER
GF/AF - COMBO ARC/GROUND FAULT BREAKER
IG - PROVIDE ISOLATED GROUND
EM - PROVIDE EMERGENCY LOCKING TAB
FA - FIRE ALARM, PROVIDE RED LOCKING TAB
LCK - PROVIDE PADLOCKABLE BREAKER
OL - REFER TO ONE-LINE DIAGRAM FOR WIRE SIZE
RP - CIRCUIT CONTROLLED VIA RELAY PANEL

PANEL NOTES

PHASE LOAD SUMMARY

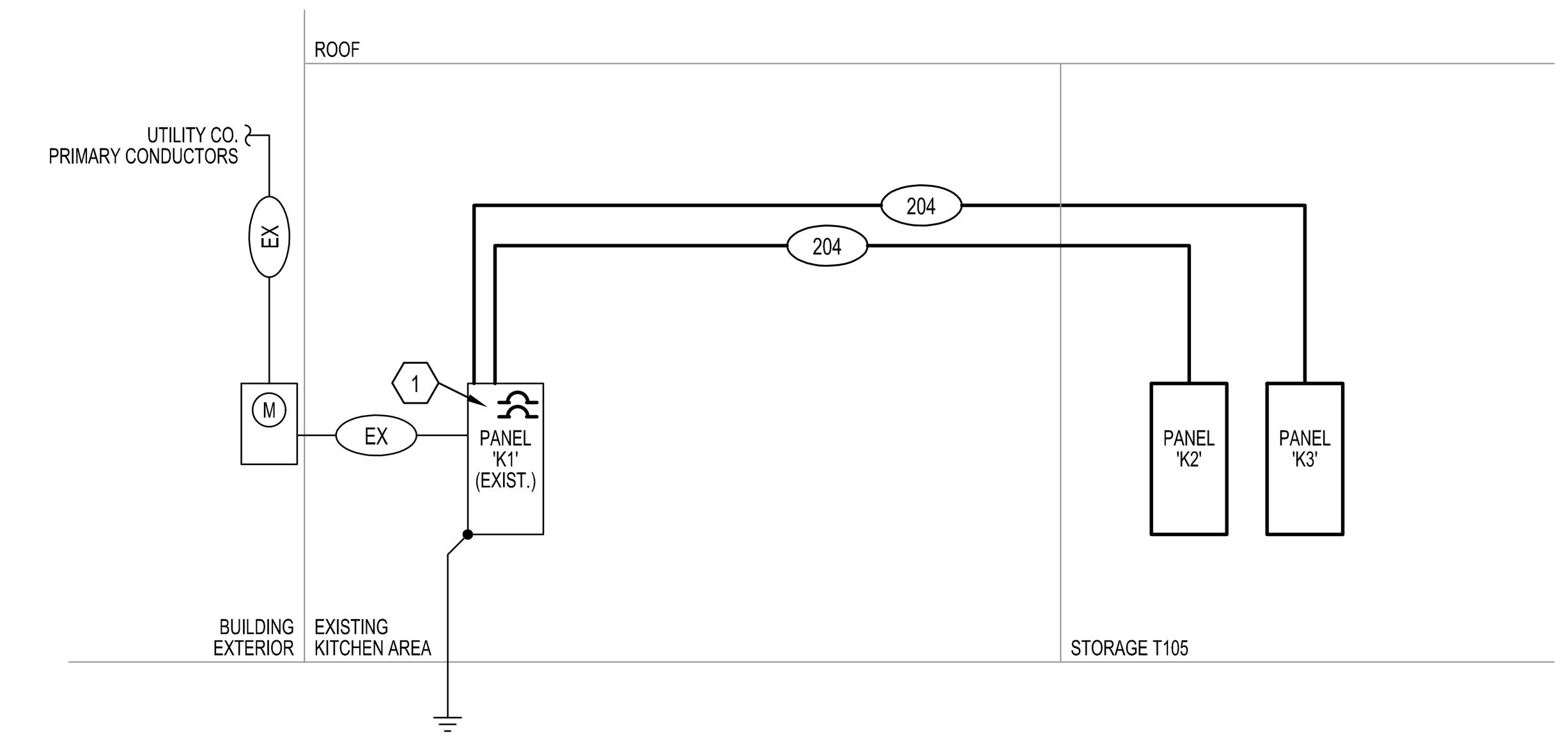
TOTAL	PHASE	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
8685	A	800	0	1500	0	0	0	6385	0
8449	B	1200	0	1500	0	0	0	5749	0
5476	C	0	720	500	0	0	0	4256	0

PANEL LOAD SUMMARY

TOTAL		LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV
22611	CONNECTED VA	2000	720	3500	0	0	0	16391	0
--	DEMAND FACTORS	1.25	*	**	1.00	1.00	1.00	1.00	1.00
23111	DEMAND VA	2500	720	3500	0	0	0	16391	0
0	SHOW WINDOW DEMAND								
0	TRACK LTG DEMAND								
0%	SPARE								
23111	DEMAND VA + SPARE								
64.1	TOTAL DESIGN AMPS								

GENERAL NOTES

1. THIS RISER DIAGRAM REPRESENTS (AS ACCURATELY AS POSSIBLE) THE SHELL BUILDING ELECTRICAL DISTRIBUTION SYSTEM. FIELD VERIFY ALL SIZES OF EQUIPMENT, CONDUCTORS, FUSES, ETC. ALL EQUIPMENT AND CONDUCTORS ARE NEW UNLESS NOTED OTHERWISE. NOTIFY ENGINEER OF ANY MAJOR DISCREPANCIES.



1 ELECTRICAL RISER DIAGRAM

SCALE: NO SCALE

FEEDER SCHEDULE

THHN/THWN COPPER CONDUCTORS W/ EG CONDUCTOR
XHHW ALUMINUM CONDUCTORS W/ EG CONDUCTOR

CODE	SETS	CONDUCTORS & GROUND: CONDUCTORS	CONDUCTORS & GROUND: RACEWAY	AMPS
204	-	4#3/0,1#6G. (CU)	2"	200
EX		EXISTING CONDUCTORS TO REMAIN		

NOTES:
1. ALL CONDUCTORS AMPACITY BASED ON THE NEC TABLE 310-16 FOR CONDUCTORS W/ 75°C INSULATION.
2. ALL RACEWAY SIZES (EMT/RMC/PVC 40) BASED ON THE NEC TABLE 4(CHAPTER 9), 40% FILL COLUMN.
3. ELECTRICAL CONTRACTOR TO VERIFY ALL EQUIPMENT CONDUCTOR TERMINATION TEMPERATURE RATINGS (IE, 60°C OR 75°C). ADJUST CONDUCTOR AMPACITY AND CONDUIT SIZES ACCORDINGLY.
4. VERIFY MAXIMUM NO. OF SETS OF SERVICE ENTRANCE CONDUCTORS ALLOWED W/ UTILITY CO.
5. EQUIPMENT GROUNDING CONDUCTORS BASED ON T250.122. GROUND TO BE ADJUSTED PER T250.66 FOR SEPARATELY DERIVED SYSTEMS.
6. ALUMINUM FEEDERS NOT TO BE USED ON TRANSFORMER SECONDARY CONDUCTORS.

VOLTAGE DROP CHART

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR 1Ø CIRCUITS

BRANCH CIRCUIT RATING (AMPS)	WIRE SIZE (AWG)	MAXIMUM LENGTH OF BRANCH CIRCUIT (FEET): 120V	208V	240V	277V	480V
20A	#12	50	90	110	125	200
	#10	80	150	175	200	350
	#8	140	230	280	320	550
	#6	215	375	430	500	870
30A	#10	50	100	110	130	225
	#8	80	160	180	210	360
	#6	135	250	280	325	560
	#4	220	400	450	525	910

NOTES:
1. PROVIDE BRANCH CIRCUIT CONDUCTORS AS INDICATED IN THE TABLE ABOVE FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS. WHERE BRANCH CIRCUITS SERVE DEDICATED EQUIPMENT, THE CONTRACTOR MAY PERFORM VOLTAGE DROP CALCULATIONS BASED ON ACTUAL EQUIPMENT CONNECTED LOAD AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO A MAXIMUM OF 3%.
2. CONDUCTOR SIZES ARE BASED ON SOLID COPPER CONDUCTORS FOR WIRES SMALLER THAN #6 AND STRANDED COPPER CONDUCTORS FOR WIRES #6 AND LARGER, IN A SINGLE METAL CONDUIT.
3. LIMITS FOR CONDUCTOR LENGTH SHOWN ARE BASED ON A MAXIMUM OF 3% VOLTAGE DROP TO COMPLY WITH THE NEC FOR CIRCUITS LOADED UP TO 80% OF THE BRANCH BREAKER RATING. FIELD VERIFY EXACT BRANCH CIRCUIT LENGTHS AND PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

UNLESS NOTED OTHERWISE, WIRE SIZES CALLED OUT IN PANEL SCHEDULES DO NOT ACCOUNT FOR VOLTAGE DROP. CONTRACTOR SHALL INCREASE WIRE SIZES AS REQUIRED UTILIZING VOLTAGE DROP TABLE PROVIDED.

GENERAL NOTES
(NOT ALL NOTES APPLY)

1. REFERENCE SHEET E1.01 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. COORDINATE MOUNTING HEIGHTS AND LOCATIONS FOR ALL DEVICES WITH ARCHITECT AND/OR INTERIOR ELEVATIONS PRIOR TO ROUGH-IN.
3. FIELD VERIFY ALL ELECTRICAL WORK WITH OWNER PRIOR TO START OF PROJECT.

KEYED NOTES:

1. RE-USE EXISTING 3P-200A BREAKERS IN EXISTING PANEL 'K1' TO SERVE NEW PANELS 'K2' AND 'K3'.

collins | webb ARCHITECTURE
307B SW Market St., Lee's Summit, Missouri 64063 | 816.249.2270 | www.collinsandwebb.com

PERMIT DOCUMENTS

ITAP - LEE'S SUMMIT
228 SW MAIN ST.
LEE'S SUMMIT, MO 64063

REVISION DATES:

PROFESSIONAL SEAL: STATE OF MISSOURI — RYAN BREWER — NUMBER PE-2020010759 — PROFESSIONAL ENGINEER — 02/27/2023

E401

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

ELECTRICAL RISER DIAGRAM & SCHEDULES

16000 - ELECTRICAL

GENERAL

DESCRIPTION

DIVISION 16 OF THE SPECIFICATIONS COVERS ALL ELECTRICAL WORK FOR THE PROJECT. WORK SHALL INCLUDE LABOR, MATERIAL AND ACCESSORIES NECESSARY TO ACCOMPLISH THE WORK AS SPECIFIED AND SHOWN ON THE DRAWINGS, INCLUDING CONNECTION AND CHECKOUTS OF EQUIPMENT FURNISHED BY OTHERS (OTHER TRADES, THE OWNER AND OTHER CONTRACTORS), AND TO ALL EQUIPMENT ITEMS AND AS INDICATED ON DRAWINGS OR AS REQUIRED.

THE ARCHITECTURAL SPECIFICATIONS AND DRAWINGS INCLUDING THE GENERAL - CONDITIONS, INCLUDING ALL SUPPLEMENTS ISSUED THERETO, INSTRUCTIONS TO BIDDERS, AND OTHERS PERTINENT DOCUMENTS ISSUED BY THE ARCHITECT ARE A PART OF THESE SPECIFICATIONS AND ELECTRICAL DRAWINGS. THIS TRADE SHALL CONSULT THEM FOR INSTRUCTIONS WHICH APPLY. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF THE ELECTRICAL LAYOUT AND WORK INCLUDED. ELECTRICIAN SHALL FOLLOW DRAWINGS IN LAYOUT THE ELECTRICAL WORK AND CONSULT THE DRAWINGS AND LAYOUTS OF OTHER TRADES TO VERIFY LOCATION AND SPACES IN WHICH WORK WILL BE INSTALLED.

CODES, PERMITS, INSPECTION AND COMMISSIONING

INSTALLATION SHALL COMPLY WITH ALL LAWS APPLYING TO ELECTRICAL WORK IN EFFECT, INCLUDING THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (N.E.C.), THE NATIONAL ELECTRICAL SAFETY CODE, ALL LOCAL GOVERNING CODES AND ORDINANCES, WITH THE REGULATIONS OF THE SERVING ELECTRICAL UTILITY COMPANY. PROVIDE ALL REQUIRED PERMITS AND INCLUDE THE COST OF SAME IN THE COST OF THE PROJECT. OBTAIN AND PAY FOR (WITHOUT ADDITIONAL EXPENSE TO THE OWNER) ALL REQUIRED INSPECTIONS AND REVIEWS. PROVIDE FOR AND PAY ALL EXPENSES (WITHOUT ADDITIONAL EXPENSE TO THE OWNER) ASSOCIATED WITH LIGHTING AND LIGHTING CONTROLS COMMISSIONING. ALL COMMISSIONING DOCUMENTATION SHALL BE CERTIFIED AND GIVEN TO OWNER AND DESIGN PROFESSIONAL.

QUALITY ASSURANCE

THE FOLLOWING INDUSTRY STANDARDS AS APPLICABLE TO ELECTRICAL WORK SHALL APPLY TO THE WORK OF THIS DIVISION EXCEPT THAT, WHERE THE REQUIREMENTS OF THESE SPECIFICATIONS ARE MORE THAN THE LISTED STANDARD, THESE SPECIFICATIONS SHALL TAKE PRECEDENCE:

UL - UNDERWRITERS' LABORATORIES
NEMA - NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION
NECA - NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
ANSI - AMERICAN NATIONAL STANDARDS INSTITUTE
ASTM - AMERICAN SOCIETY OF TESTING MATERIALS.

ALL MATERIALS SHALL BE NEW, UL LISTED AND LABELED WHERE LABELED MATERIALS ARE AVAILABLE, UNDAMAGED AND FREE OF DEFECTS AT TIME OF INSTALLATION. MATERIALS OR EQUIPMENT DAMAGED IN SHIPMENT OR OTHERWISE DAMAGED PRIOR TO OR DURING INSTALLATION SHALL NOT BE REPAIRED AT THE JOB SITE, BUT SHALL BE REPLACED WITH NEW MATERIALS. WHEN THE MANUFACTURER'S NAME APPEARS IN THESE SPECIFICATIONS AND DRAWINGS, IT SHALL BE CONSTRUED THAT THE MANUFACTURER HAS TO MEET THE FULL REQUIREMENTS OF THE SPECIFICATIONS AND DRAWINGS.

SUBMITTALS

SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR EQUIPMENT TO THE ARCHITECT FOR ENGINEER'S REVIEW ELECTRONICALLY OR HARD COPIES. INCLUDE SUFFICIENT INFORMATION TO INDICATE COMPLETE COMPLIANCE WITH SPECIFICATIONS. PROVIDE SUBMITTALS AS EARLY AS REQUIRED TO SUPPORT THE PROJECT SCHEDULE. ALLOW ONE WEEK FOR ENGINEER REVIEW TIME. THE ENGINEER'S SUBMITTAL REVIEWS WILL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS IN DIMENSIONS, DETAILS, SIZE OF MEMBERS, OR QUANTITIES; OR FOR OMITTING COMPONENTS OR FITTINGS; OR FOR NOT COORDINATING ITEMS WITH ACTUAL BUILDING CONDITIONS AND/OR OTHER TRADES.

OWNER RECORDS

ACCUMULATE DURING THE PROGRESS OF THE JOB, THE FOLLOWING DATA IN DUPLICATE, AND PREPARE IN A NEAT BROCHURE OR PACKET FOLDER TO BE TURNED OVER TO THE OWNER AT SUBSTANTIAL COMPLETION: RECORD DRAWINGS PER ABOVE.

ALL WARRANTIES, GUARANTEES, AND MANUFACTURER'S DIRECTION ON EQUIPMENT & MATERIAL FURNISHED.

COMPLETE PLAIN ENGLISH STEP-BY-STEP OPERATING INSTRUCTIONS FOR THE ELECTRICAL SYSTEM. ONE COPY OF THESE INSTRUCTIONS SHALL BE FRAMED AND POSTED AS DIRECTED ON THE PREMISES.

CERTIFIED LIGHTING AND LIGHTING CONTROLS COMMISSIONING AS REQUIRED BY CURRENTLY ADOPTED ENERGY CODE REQUIREMENTS.

MANUFACTURERS' NAMES AND CATALOG NUMBERS

IN SOME INSTANCES, SPECIFIC REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURER'S NAME AND MODEL OR CATALOG NUMBERS. USE OF NAMES AND CATALOG NUMBERS DOES NOT INDICATE THAT THE EQUIPMENT SPECIFIED IN NECESSARILY AN "OFF THE SHELF" ITEM. VARIANCES MAY BE DUE TO REQUIREMENT OF DESIRED FINISH, MATERIAL OR OTHER MODIFICATION.

IN THE CASE OF PANELBOARDS, SAFETY SWITCHES AND OTHER EQUIPMENT REQUIRING WIRE AND CABLE TERMINATIONS, ASCERTAIN THAT LUG SIZES AND WIRING GUTTERS OR WIRING SPACE ALLOWED IS PROPER FOR THE WIRES AND CABLES CONTAINED THEREIN.

WHEN APPROVAL IS GIVEN FOR THE USE OF EQUIPMENT DIFFERING FROM THAT SHOWN ON DRAWINGS IN REGARD TO FOUNDATIONS, SPACE FOR PIPING, DUCTWORK, WIRING, INSULATION, ETC. CHANGES REQUIRED TO ACCOMPLISH SUCH DIFFERENCES SHALL BE ACCOMPLISHED AT NO COST TO THE OWNER.

PROTECTION OF EQUIPMENT

ELECTRICAL EQUIPMENT SHALL BE PROTECTED FROM THE WEATHER, IN PARTICULAR, DRIPPING OR SPLASHING WATER, AT ALL TIMES DURING SHIPMENT, STORAGE AND CONSTRUCTION. MANUFACTURER'S RECOMMENDATIONS WITH REGARD TO STORAGE, PROTECTION, AND HANDLING SHALL BE FOLLOWED.

SHOULD ANY APPARATUS BE SUBJECTED TO POSSIBLE INJURY DUE TO WATER, IT SHALL BE THOROUGHLY DRIED AND PUT THROUGH A DIELECTRIC TEST, AT THE EXPENSE OF THE CONTRACTOR, TO ASCERTAIN THE SUITABILITY OF THE APPARATUS OR IT SHALL BE REPLACED WITHOUT ADDITIONAL COST TO THE OWNER.

DAMAGED OR DEFECTIVE EQUIPMENT: INSPECT ALL ELECTRICAL EQUIPMENT AND MATERIALS PRIOR TO INSTALLATION. INSTALLATION OR PLACEMENT INTO SERVICE OF DAMAGED MATERIALS WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER IS PROHIBITED. REPLACE OR REPAIR TO NEW CONDITION, AS CERTIFIED BY THE MANUFACTURER, AND TEST DAMAGED EQUIPMENT IN COMPLIANCE WITH INDUSTRY STANDARDS AT NO ADDITIONAL COST TO THE OWNER. EQUIPMENT REQUIRED FOR THE TESTING SHALL BE PROVIDED BY THE CONTRACTOR.

WORKING CLEARANCE

THE SIZE OF ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS IS BASED ON DIMENSIONS OF A PARTICULAR MANUFACTURER, (GENERALLY THE FIRST NAMED). WHILE OTHER MANUFACTURERS MAY BE ACCEPTABLE, IT IS THE RESPONSIBILITY OF THE TRADE TO DETERMINE IF THE EQUIPMENT PROPOSED WILL FIT IN THE ALLOCATED SPACE.

INSTALL ALL EQUIPMENT IN A MANNER TO PERMIT ACCESS TO ALL SURFACES. MAINTAIN PROPER CLEARANCE TO MEET ALL SAFETY AND OPERATING CODES, PARTICULARLY N.E.C. INCLUDE ALL REQUIREMENTS DICTATED BY OPERATION, CONTROL, ADJUSTMENT, MAINTENANCE AND POSSIBLE REPLACEMENT OF EQUIPMENT IN DETERMINING CLEARANCE.

SHOULD THERE BE APPARENT VIOLATIONS OF N.E.C. CLEARANCE, NOTIFY THE ARCHITECT-ENGINEER BEFORE PROCEEDING WITH CONNECTION OR PLACEMENT OF EQUIPMENT.

COORDINATION

INSTALLATION STUDIES ARE REQUIRED TO COORDINATE THE ELECTRICAL WORK WITH THE WORK OF OTHER TRADES. PREPARE COORDINATION DRAWINGS AT ACCURATE SCALE WHERE SEVERAL ELEMENTS OF ELECTRICAL OR COMBINED MECHANICAL/STRUCTURAL/ELECTRICAL WORK MUST BE SEQUENCED AND POSITIONED WITH PRECISION IN ORDER TO FIT INTO THE AVAILABLE SPACE.

SHOW THE ACTUAL PHYSICAL DIMENSIONS REQUIRED FOR PROPER INTEGRATION OF EQUIPMENT WITH BUILDING SYSTEMS.

PROVIDE APPROVED SHOP DRAWINGS TO ALL REQUIRED DISCIPLINES AND VERIFY FINAL ELECTRICAL CHARACTERISTICS BEFORE ROUGHING POWER FEEDS TO ANY EQUIPMENT. WHEN ELECTRICAL DATA ON APPROVED SHOP DRAWINGS DIFFERS FROM CONTEMPLATED DESIGN, MAKE NECESSARY ADJUSTMENTS TO THE WIRING, DISCONNECTS, AND BRANCH-CIRCUIT PROTECTION FOR THE EQUIPMENT ACTUALLY INSTALLED AT NO ADDITIONAL COST TO THE OWNER.

DAMAGE FROM INTERFERENCE CAUSED BY INADEQUATE COORDINATION SHALL BE RECTIFIED AT NO ADDITIONAL COST TO THE OWNER.

WORKMANSHIP

ALL WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.

ANY MATERIAL ITEMS OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THESE SPECIFICATIONS OR VISA-VERSA, OR ANY ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION SHALL BE PROVIDED WITHOUT ADDITIONAL COST TO THE OWNER.

THIS TRADE SHALL DO OR HAVE DONE BY COMPETENT TRADESMEN ALL CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF THIS WORK. NO CUTTING IN CONSTRUCTIVE PARTS OF THE BUILDING LIKELY TO IMPAIR ITS STRENGTH SHALL BE DONE WITHOUT THE ARCHITECT-ENGINEER'S WRITTEN APPROVAL.

EXCAVATION AND BACKFILL

EXCAVATION, TRENCHING AND BACKFILLING ARE SPECIFIED IN SECTION EXCAVATION TRENCHING AND BACKFILLING FOR UTILITIES. CONDUIT IS TO BE INSTALLED AS SPECIFIED FOR PIPELINES. CONDUIT INSTALLED BENEATH FLOOR SLAB SHALL BE A MINIMUM OF 6" BELOW SLAB. BACKFILL OVER CONDUIT SHALL BE COMPACTED AS FOR SLAB BEDDING MATERIAL. REFER TO STRUCTURAL DRAWINGS FOR DETAILS OF CONDUIT (PIPE) PENETRATION OF EXTERIOR FOOTINGS. COMPLETE INSTALLATION SHALL CONFORM TO N.E.C.

PENETRATIONS

COORDINATE SLEEVE SELECTION AND APPLICATION WITH SELECTION AND APPLICATION OF FIRE-STOPPING SPECIFIED IN ARCHITECTURAL SPECIFICATIONS.

ROOFS: COORDINATE ALL ROOF PENETRATIONS WITH ENGINEER, OWNER, AND AS APPLICABLE, THE ROOFING CONTRACTOR PROVIDING A ROOF WARRANTY. KEEP ALL RACEWAY PENETRATIONS WITHIN MECHANICAL EQUIPMENT CURBS WHEREVER POSSIBLE. COORDINATE WITH DIVISION 15. FLASH AND COUNTERFLASH ALL OPENINGS THROUGH ROOF, AND/OR PROVIDE PRE-FABRICATED MOLDED SEALS COMPATIBLE WITH THE ROOF CONSTRUCTION INSTALLED, OR AS REQUIRED BY THE ENGINEER, OWNER, OR ROOFING CONTRACTOR. ALL ROOF PENETRATIONS SHALL BE LEAKTIGHT AT THE TERMINATINO OF THE WORK AND SHALL NOT VOID ANY NEW OR EXISTING ROOF WARRANTIES.

WALLS AND FLOORS - SLEEVES FOR RACEWAYS AND CABLES:
STEEL PIPE SLEEVES: ASTM A 53/A 53M, TYPE E, GRADE B, SCHEDULE 40, GALVANIZED STEEL, PLAIN ENDS AND DRIP RINGS.

CAST IRON PIPE SLEEVES: CAST OR FABRICATED "WALL PIPE", EQUIVALIENT TO DUCTILE-IRON PRESSURE PIPE, WITH PLAIN ENDS AND INTEGRAL SATERSTOP, UNLESS OTHERWISE INDICATED.

FIRESTOPPING: FIRE RESISTANT THROUGH PENETRAION SEALANTS - TWO PART, FOAMED-IN-PLACE, SILICONE SEALANT FORMULATED FOR USE IN THROUGH-PENETRAION FIRE-STOPPING AROUND CABLES, RACEWAYS, AND CABLE TRAY PENETRAIONS THROUGH FIRE-RATED WALLS AND FLOORS. SEALANTS AND ACCESSORIES SHALL HAVE FIRE-RESISTANCE RATINGS INDICATED, AS ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES IN ACCORDANCE WITH ASTM E 814, BY UNDERWRITER'S LABORATORIES, INC., OR OTHER NRTL ACCEPTABLE TO AHJ.
ACCEPTABLE MANUFACTURERS - HILTI, INC., 3M CORP, RECTORSEAL, SPECIFY TECHNOLOGY INC., UNITED STATES GYPSUM COMPANY.

ELECTRICAL SERVICE

SERVICE SHALL BE AS SHOWN ON DRAWINGS.

PROVIDE SECONDARY SERVICE INTO THE BUILDING WITH CONDUIT AND WIRING AS SHOWN ON THE PLANS, INCLUDING, BUT NOT LIMITED TO, UNDERGROUND RACEWAYS AND CABLES AND SECONDARY CONNECTIONS TO UTILITY TRANSFORMERS AS REQUIRED BY SERVING ELECTRICAL UTILITY COMPANY. COORDINATE ALL REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.

PROVIDE ALL REQUIRED GROUNDING FOR A COMPLETE SERVICE ENTRANCE GROUNDING SYSTEM. PERMANENTLY AND EFFECTIVELY GROUND AND BOND THE ELECTRICAL INSTALLATION IN A THOROUGH AND EFFICIENT MANNER, AND IN CONFORMANCE (AT A MINIMUM) WITH N.E.C. OR THESE DOCUMENTS, WHERE THEY EXCEED CODE REQUIREMENTS. USE BARE OR INSULATED CONDUCTORS, AS SPECIFIED HEREIN, AND OTHER MATERIALS INDICATED ON THE DRAWINGS.

PROVIDE ALL NECESSARY ENCLOSURES REQUIRED BY THE OWNER FOR THE UTILITY COMPANY METERING. REFER TO DRAWINGS FOR MINIMUM REQUIREMENTS. COORDINATE WITH UTILITY COMPANY PRIOR TO BID FOR ALL REQUIREMENTS.

PRODUCTS

GENERAL

ALL EQUIPMENT OF A PARTICULAR KIND, SUCH AS WIRING DEVICES AND PANELBOARDS AND ALL LIGHTING FIXTURES OF THE SAME TYPE, SHALL BE THE PRODUCT OF THE SAME MANUFACTURER.

PROVIDE ACCESS PANELS FOR ALL EQUIPMENT AND DEVICES REQUIRING SUCH PANELS. SIZE AS REQUIRED FOR PROPER ACCESS AND MAINTENANCE, MINIMUM ACCEPTABLE IS 12 IN BY 12 IN CLEAR OPENING WHERE HAND ACCESS ONLY IS REQUIRED.

PROVIDE LABELS FOR EACH MOTOR CONTROLLER, SAFETY SWITCH, RELAY, PANELBOARD, CONTACTOR, TIMER, CONTROL DEVICE, METER AND CIRCUIT BREAKER. LABELS SHALL BE LAMINATED, PHENOLIC STRIPS 1/16" THICK, AND ENGRAVED TO SHOW BLACK LETTERS ON A WHITE BACKGROUND NOT LESS THAN 1/4" HIGH. SIZE STRIPS TO PROPERLY FIT MANUFACTURER'S BRACKETS AND BE LEGIBLE. WHERE MANUFACTURER'S BRACKETS ARE NOT PROVIDED, MOUNT LABELS WITH PROPER SCREWS, OR AN APPROVED ADHESIVE.

RACEWAYS

CONDUIT, RIGID STEEL; GALVANIZED OR SHERADIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.L. FITTINGS SHALL BE PIPE THREADED, MALLEABLE IRON. CONNECTORS SHALL BE INSULATED THROAT TYPE.

CONDUIT, PVC: POLYVINYLCHLORIDE SCHEDULE 40 PIPE SPECIFICALLY MANUFACTURED AND LABELED (UL STANDARD 651) FOR USE AS ELECTRICAL CONDUIT. FITTINGS SHALL BE EITHER SOCKET WELDED TYPE OR PIPE THREADED WITH INSULATED THROAT.

CONDUIT, FLEXIBLE METALLIC: GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH GALVANIZED OR SHERADIZED FITTINGS. LISTED PER UL-L. FITTINGS SHALL BE OF THE SQUEEZE TYPE WITH INSULATED THROATS.

CONDUIT, LIQUIDTIGHT FLEXIBLE METALLIC: GALVANIZED, INTERLOCKED SPIRALLY WOUND STEEL STRIP WITH OVERALL JACKET OF LIQUID TIGHT PVC, UL LISTED. FITTINGS SHALL BE STEEL OR MALLEABLE IRON INSULATED THROAT, WATERTIGHT.

ELECTRIC METALLIC TUBING: GALVANIZED OR SHERADIZED AND MANUFACTURED IN ACCORDANCE WITH ANSI STANDARD C80.3. FITTINGS 1/2 INCH THROUGH 2 INCH TRADE SIZE SHALL BE COMPRESSION TYPE, MANUFACTURED FROM MALLEABLE IRON OR STEEL, AND RAIN AND/OR CONCRETE-TIGHT AS REQUIRED BY INSTALLATION. POT METAL OR DIE CAST TYPE FITTINGS ARE PROHIBITED. CONNECTORS SHALL BE INSULATED THROAT TYPE.

CONDUCTORS AND CABLES

GENERAL: SERVICE LATERALS AND PANELBOARD FEEDERS SHALL BE OF ANNEALED (SOFT) COPPER COMPLYING WITH ICEA S-95-658/NEMA WC70; SOLID CONDUCTOR FOR NO. 10 AWG AND SMALLER; CONCENTRIC, COMPRESSED STRANDED FOR NO. 8 AWG AND LARGER. ALL FEEDER CONDUCTORS NO 8 AWG AND LARGER; STRANDED, TYPE THWN-2 OR XHHW-2 INSULATION.

ALL BRANCH CIRCUITS SHALL BE ANNEALED (SOFT) COPPER COMPLYING WITH ICEA S-95-658/NEMA WC70; SOLID CONDUCTOR FOR NO. 10AWG AND SMALLER; CONCENTRIC, COMPRESSED STRANDED FOR NO. 8 AWG AND LARGER. ALL BRANCH CIRCUIT CONDUCTORS NO 8 AWG AND LARGER; STRANDED, TYPE THWN-2 OR XHHW-2 INSULATION. ALL CONDUCTORS, NO 10 AWG AND SMALLER, USED FOR POWER AND LIGHTNG CIRCUITS; SOLID COPPER, TYPE THWN-2 INSULATION (WET OR DAMP LOCATIONS, OR IN CONDUIT BELOW GRADE OR SLAB), TYPE THHN INSULATION (DRY LOCATIONS ONLY ABOVE GRADE), OR DUAL RATED TYPE THHN/THWN-2. ALL BRANCH CIRCUIT WIRING SHALL NOT BE SMALLER THAN NO 12 AWG. IF NO CONDUCTOR SIZE IS INDICATED ON THE DRAWINGS FOR A BRANCH CIRCUIT, PROVIDE CONDUCTORS AND CONDUIT SIZED PER NFPA 70 AND BASED ON THE INDICATED BRANCH CIRCUIT OVERCURRENT PROTECTIVE DEVICE RATING AND NUMBER OF POLES. WHERE NO CIRCUIT SIZE (CONDUCTORS AND OVERCURRENT PROTECTIVE DEVICE) IS INDICATED ON THE DRAWINGS FOR A BRANCH CIRCUIT, PROVIDE THREE NO 12 AWG CONDUCTORS IN 3/4" RACEWAY, AND A 20A SINGLE POLE CIRCUIT BREAKER.

CONDUCTOR INSULATION TYPES; 90-DEGREE C-RATED, TYPE THHN/THWN-2 OR XHHW-2 COMPLYING WITH ICEA S-95-658/NEMA WC70.

COLORS FOR 208/120V CONDUCTORS
PHASE A: BLACK
PHASE B: RED
PHASE C: BLUE
NEUTRAL: WHITE
EQUIPMENT GROUND: GREEN
ISOLATED GROUND: GREEN WITH YELLOW STRIPE

COLORS FOR 480/277V CONDUCTORS
PHASE A: BROWN
PHASE B: ORANGE
PHASE C: YELLOW
NEUTRAL: WHITE
EQUIPMENT GROUND: GREEN

UNLESS NOTED OTHERWISE, SPECIAL PURPOSE CONDUCTORS AND CABLES, SUCH AS LOW VOLTAGE CONTROL AND SHIELDED INSTRUMENT WIRING, SHALL BE AS RECOMMENDED BY THE SYSTEM EQUIPMENT MANUFACTURER.

CONTROL WIRING; STRANDED COPPER CONDUCTORS, 600V INSULATION, OF THE PROPER TYPE, SIZE AND NUMBER AS REQUIRED TO ACCOMPLISH SPECIFIED FUNCTION. MINIMUM SIZE; NO. 14 AWG UNLESS NOTED OTHERWISE.

MC TYPE CABLE CAN BE USED IF ACCEPTED BY LOCAL AUTHORITY AND GOVERNING CODES FOR WHIPS FROM JUNCTION BOX TO LIGHT FIXTURES ONLY. TYPE MC CABLE; 600V, UNJACKETED; ANSI E119 AND E814, UL STANDARDS 44 OR 83 (AS APPLICABLE), AND 1569, NFPA 70 ARTICLE 330; ALUMINUM OR GALVANIZED STEEL INTERLOCKED ARMOR; THHN- OR XHHW-INSULATED CONDUCTORS; COLOR CODE; ICEA METHOD 1, WITH GREEN INSULATED GROUDING CONDUCTOR.

PROVIDE A DEDICATED EQUIPMENT-GROUNDING CONDUCTOR, OR BONDING JUMPER, AS APPLICABLE, IN ALL BRANCH CIRCUITS AND FEEDERS, SIZED IN ACCORDANCE WITH NFPA 70, UNLESS INDICATED AS LARGER ON THE DRAWINGS.

PROVIDE A DEDICATED NEUTRAL (WHERE REQUIRED) AND DEDICATED GROUNDING CONDUCTOR FOR EACH BRANCH CIRCUIT.

VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 2%.

GFCI CIRCUITS: DO NOT USE MULTI-CONDUCTOR CIRCUITS, WITH A SHARED NEUTRAL FOR ANY GFCI CIRCUIT BREAKER OR RECEPTACLE CIRCUIT. BRANCH CIRCUITS FED FROM GFCI CIRCUIT BREAKERS, LIMIT THE ONE-WAY CONDUCTOR LENGTH TO 100 FEET BETWEEN THE PANELBOARD AND THE MOST REMOTE RECEPTACLE OR LOAD ON THE GFCI CIRCUIT.

BOXES

OUTLET BOXES: GALVANIZED PRESSED STEEL WITH GALVANIZED STEEL EXTENSION RINGS OR PLASTER RINGS OR TILE RINGS TO PROVIDE EXPOSED SURFACE FLUSH WITH WALL OR CEILING FINISH. PROVIDE ALL CEILING OUTLET BOXES WITH "NO-BOLT" OR THROUGH AND LOCKNUTTED TYPE FIXTURE STUDS.

JUNCTION AND PULL BOXES: FABRICATE IN ACCORDANCE WITH NEMA AND N.E.C. STANDARDS AND REQUIREMENTS INSOFAR AS MATERIAL, GAUGES, DIMENSIONS, AND FABRICATION METHODS. BOXES SHALL BEAR THE UL LABEL. WHERE BOXES ARE NOT SIZED ON THE DRAWINGS, THEY SHALL BE SIZED IN ACCORDANCE WITH N.E.C. REQUIREMENTS. FINISH IN STANDARD GRAY ENAMEL, WITH SIDES AND BACK SPOT-WELDED IN POSITION AND THE REMOVABLE SCREW COVER MOUNTED WITH BRASS MACHINE SCREWS.

WIRING DEVICES

SWITCHES: HEAVY DUTY AC, RATED 20 AMPERES, 120/277 VOLTS, SINGLE-POLE, DOUBLE-POLE, THREE-POLE, OR FOUR-WAY AS NOTED ON DRAWINGS OR AS REQUIRED FOR THE SWITCHING ARRANGEMENTS IN EACH SPACE. HUBBELL #HBL122** OR EQUAL. COORDINATE SWITCH COLORS WITH COVERPLATES AS DESCRIBED BELOW UNDER "PLATES".

SWITCHES, SPECIAL PURPOSE: KEY OPERATED, HEAVY-DUTY AC, RATED 20 AMPERES, 120/277 VOLTS, SINGLE OR MULTI-POLE AS NOTED OR AS REQUIRED. HUBBELL #HBL122** OR EQUAL.

RECEPTACLES: THREE WIRE GROUNDING TYPE, 120 VOLT RATED, SPECIFICATION GRADE 20 AMPERES DUPLEX UNLESS NOTED OTHERWISE ON DRAWINGS. HUBBELL #5362 OR EQUAL. COORDINATE RECEPTACLE COLOR WITH COVERPLATE AS DESCRIBED BELOW UNDER "PLATES". SINGLE RECEPTACLE, 20 AMPERE, 120 VOLT, SPECIFICATION GRADE. HUBBELL #5361 OR EQUAL.

DUST AND MOISTURE RESISTANT, MELAMINE BODY, GRAY NYLON FACE BACKED BY FABRIC REINFORCED NEOPRENE GASKET SLIT TO PROVIDE WIPING ACTION ON CAP BLADES. PASS & SEYMOUR #6307 OR APPROVED EQUAL. GROUND FAULT CIRCUIT INTERRUPTER, NYLON FACE CLASS A, NEMA 5-20R, SPECIFICATION GRADE. HUBBELL #GF-5362* OR EQUAL.

CORROSION RESISTANT, SIMILAR AND APPROVED EQUAL TO STANDARD RECEPTACLE, EXCEPT FABRICATED FROM YELLOW MELAMINE PLASTIC WITH YELLOW NYLON FACE AND EXPOSED METAL PARTS FINISHED TO RESIST CORROSION. (NEMA 5-15R = HUBBELL #52CM61).

ISOLATED GROUND, DUPLEX OR SIMPLEX THREE WIRE GROUNDING TYPE, SPECIFICATION GRADE, ORANGE FACE, GROUND CONTACT FULLY ISOLATED FROM STRAP AND EQUIPPED WITH SCREW TERMINAL. HUBBELL #IG-5362* OR EQUAL.

RECEPTACLES, SPECIAL PURPOSE: SPECIAL PURPOSE OUTLETS SHALL BE AS SCHEDULED ON DRAWINGS.

PLATES: PROVIDE PLATES FOR ALL OUTLET BOXES. PLATES SHALL BE OF SUITABLE CONFIGURATION FOR THE NUMBER AND TYPE OF DEVICES SERVED, SHALL BE ONE PIECE, SHALL OVERLAP OUTLET BOX EDGE AND ROOM SURFACES, AND SHALL BE SMOOTH FINISH NYLON TYPE OF SAME MANUFACTURER AS THE WIRING DEVICES. VERIFY DESIRED MATERIALS AND COLORS WITH ARCHITECT PRIOR TO INSTALLATION.

STANDARD INTERIOR: IVORY FINISHED ON LIGHT COLORED WALLS - COORDINATE ALL COLORS WITH ARCHITECT

INTERIOR DAMP LOCATIONS: STAINLESS STEEL.

EXTERIOR LOCATIONS: FOR UNATTENDED WET LOCATIONS, PROVIDE IN-USE NEMA 3R, UL LABELED PLATES MOLDED FROM A CLEAR HIGH IMPACT ULTRAVIOLET STABILIZED POLYCARBONATE MATERIAL FOR EASY VERIFICATION THAT CORDS ARE PLUGGED IN AND THAT THE GFCI IS FUNCTIONING. COVER PLATES SHALL BE BY THE SAME MANUFACTURER AS THE WIRING DEVICES; COMPLYING WITH NFPA 70 406.8 (A) OR (B) REQUIREMENTS FOR ATTENDED OR UNATTENDED USE AS APPLICABLE.

ACCEPTABLE MANUFACTURERS: HUBBELL, PASS & SEYMOUR, LEVITON AND COOPER.

CABINETS AND ENCLOSURES

FURNISH AND INSTALL FLUSH CABINETS AND ENCLOSURES AS SHOWN ON THE PLANS AND AS HEREIN SPECIFIED. UNIT SHALL BE PROVIDED WITH DEAD FRONT SUB PANEL, RECESSED AS REQUIRED, TO HOUSE CONTROLS. DOOR SHALL BE PROVIDED WITH CONCEALED HINGES AND FLUSH KEY OPERATED LOCK. DOOR AND TRIM SHALL BE PRIME PAINTED FOR FIELD PAINTING TO MATCH WALL FINISHES. PROVIDE KNOCK-OUTS, LOUVERS AND IDENTIFICATION ENGRAVING AS REQUIRED TO MEET FIELD CONDITIONS. EXACT BACKBOX SIZE TO BE COORDINATED WITH EQUIPMENT SUPPLIER.

CIRCUIT DISCONNECTS

SAFETY SWITCHES: SAFETY SWITCHES SHALL CONSIST OF A BOX, FRONT COVER, AND CIRCUIT PROTECTOR DEVICE ALL MANUFACTURED AND ASSEMBLED IN ACCORDANCE WITH NEMA STANDARDS

THE BOX SHALL BE FABRICATED FROM CODE GAUGE GALVANIZED SHEET STEEL IN ACCORDANCE WITH U.L. LISTING AND LABEL. THE CIRCUIT PROTECTOR DEVICE SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK FUSED OR UNFUSED SWITCH RATED FOR MOTOR CIRCUITS AND/OR SERVICE ENTRANCE DUTY, IF REQUIRED. UNITS SHALL BE FURNISHED FOR SURFACE OR FLUSH MOUNTING WITH EITHER GENERAL PURPOSE OR RAINTIGHT ENCLOSURES, AS REQUIRED. FUSED UNITS SHALL BE FURNISHED COMPLETE WITH PROPER FUSES.

PANELBOARDS

SHALL CONSIST OF BOX, INTERIOR, FRONT, AND CIRCUIT PROTECTIVE DEVICES. THE ASSEMBLY SHALL BE U.L. LABELED AND BE LISTED FOR SERVICE. THE ASSEMBLY SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH NEMA STANDARD PB-1. THE LATEST UL STANDARD (UL-50) AND SHALL HAVE A TURNED EDGE AROUND THE FRONT FOR RIGIDITY AND FOR CLAMPING ON FRONT. PROVIDE STANDARD KNOCKOUTS ON REMOVABLE BOX ENDS. FABRICATE FROM SHEET STEEL AND FINISH WITH BAKED ON GRAY ENAMEL OVER RUST INHIBITOR. EACH FRONT SHALL HAVE A DOOR MOUNTED ON SEMI-CONCEALED HINGES WITH A CYLINDER LOCK, INDEX CARD CIRCUIT DIRECTORY MOUNTED BEHIND CLEAR PLASTIC AND HELD IN A METAL FRAME, AND CONCEALED TRIM CLAMPS FOR MOUNTING TO THE BOX. ALL LOCKS SHALL BE MASTER KEYED AND ALL PANEL DIRECTORIES SHALL BE TYPEWRITTEN.

ALL INTERIORS SHALL BE COMPLETELY FACTORY ASSEMBLED. THE DESIGN OF THE INTERIOR SHALL PERMIT REPLACEMENT OF INDIVIDUAL BRANCH BREAKERS WITHOUT DISTURBING ADJACENT UNITS AND WITHOUT MACHINE DRILLING OR TAPPING. BUS BARS FOR PANELS RATED 600 AMPERES OR MORE SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OR TIN FINISH ALUMINUM (57% CONDUCTIVITY) OF RECTANGULAR CROSS-SECTION. BUS BARS FOR PANELS RATED LESS THAN 600 AMPERES SHALL BE TIN PLATED 98% CONDUCTIVITY COPPER OF RECTANGULAR CROSS-SECTION. BUS BAR CONNECTIONS TO BRANCH CIRCUIT BREAKERS SHALL BE THE PHASE SEQUENCE TYPE AND ACCEPT BOLT-ON TYPE BREAKERS ONLY. PANELBOARD BUS STRUCTURE AND MAIN BREAKER OR MAIN LUGS SHALL BE RATED AS SCHEDULED ON DRAWING. SUCH RATINGS SHALL BE ESTABLISHED BASED ON HEAT RISE TESTS IN ACCORDANCE WITH UL STANDARDS. GROUP INCOMING CABLE LUGS AT ONE END FOR SEPARATION FROM LOAD SIDE CABLES. EQUIPMENT NEUTRAL BUSSING WITH A LUG FOR EACH BRANCH BREAKER POSITION. INTERIOR SHALL MOUNT TO BOX WITHOUT TOOLS.

BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, BOLT-ON THERMAL-MAGNETIC MOLDED CASE CIRCUIT BREAKERS ONE, TWO OR THREE POLE WITH INTEGRAL CROSSBAR FOR MULTI-POLE UNITS, EQUIPPED WITH AN OVERCENTER, TRIP-FREE, TOGGLE-TYPE OPERATING ACTION AND POSITIVE HANDLE INDICATION OF BREAKER STATUS. CIRCUIT BREAKERS SHALL BE UL LISTED IN ACCORDANCE WITH UL STANDARDS.

EACH PANELBOARD, AS A COMPLETE UNIT, SHALL HAVE A SHORT CIRCUIT RATING EQUAL TO OR GREATER THAN THE INTEGRATED EQUIPMENT RATING SHOWN ON DRAWINGS. THE RATING SHALL BE ESTABLISHED BY TESTING WITH THE OVERCURRENT DEVICES MOUNTED IN THE PANELBOARD. THE SHORT CIRCUIT TESTS ON THE OVERCURRENT DEVICES ON THE STRUCTURE SHALL BE MADE SIMULTANEOUSLY BY CONNECTING THE FAULT TO EACH OVERCURRENT DEVICE WITH THE PANELBOARD CONNECTED TO ITS RATED SUPPLY VOLTAGE.

REFER TO PANELBOARD SCHEDULES FOR FULLY RATED OR SERIES-RATED REQUIREMENTS. SERIES-RATED SYSTEMS ARE NOT ALLOWED UNLESS SPECIFICALLY INDICATED ON PANELBOARD SCHEDULES. WHERE ALLOWED, SERIES-RATED SYSTEMS SHALL BE PROPERLY LABELLED BY NEC REQUIREMENTS.

METHOD OF TESTING SHALL BE PER UL STANDARDS. PANELBOARDS SHALL BE MARKED WITH THEIR MAXIMUM SHORT CIRCUIT CURRENT RATING AT THE SUPPLY VOLTAGE.

APPROVED MANUFACTURERS: SQUARE-D CO. OR EQUAL BY GE, SIEMENS AND/OR EATON.

OVERCURRENT PROTECTIVE DEVICES

FUSES OF THE PROPER SIZE, RATING AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED IN EACH FUSIBLE DEVICE. FUSES OF 600 VOLTS AND BELOW SHALL BE UL CLASS RK-1, CURRENT-LIMITING, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERE RMS SYMMETRICAL INTERRUPTING CAPACITY ON NON-MOTOR CIRCUITS AND UL CLASS RK-5, TIME-DELAY, DUAL-ELEMENT, 200,000 AMPERES RMS SYMMETRICAL INTERRUPTING CAPACITY ON MOTOR CIRCUITS.

APPROVED MANUFACTURERS: BUSSMANN, LITTLEFUSE OR FERRAZ-SHAWMUT (ALL FUSES SHALL BE OF SAME MANUFACTURER TO ENSURE SELECTIVE COORDINATION).

CIRCUIT BREAKERS: CIRCUIT BREAKERS OF THE PROPER SIZE, RATING, AND ELECTRICAL CHARACTERISTICS SHALL BE PROVIDED WHERE CALLED FOR ON DRAWINGS. BREAKERS SHALL BE THERMAL MAGNETIC MOLDED-CASE WITH QUICK-MAKE, QUICK-BREAK, OVER CENTER TOGGLE TYPE MECHANISM AND TRIP-FREE HANDLE MECHANISM. THE BREAKER SHALL BE ENCLOSED IN A SUITABLE NEMA RATED ENCLOSURE. BREAKERS SHALL BE OF SAME MANUFACTURER AS THOSE IN THE PANELBOARDS.

TIMESWITCHES

ELECTRONIC TIME SWITCHES: ELECTRONIC, SOLID STATE PROGRAMMABLE UNITS WITH ALPHANUMERIC DISPLAY; COMPLYING WITH UL917. SPST, 30 AMPERE INDUCTIVE OR RESISTIVE, 240VAC, CONTACT RATING. 2 PROGRAMMABLE ON-OFF SET POINTS ON A 24-HOUR SCHEDULE, ALLOWING DIFFERENT SET POINTS FOR EACH DAY OF THE WEEK. ALLOW CONNECTION OF A PHOTOELECTRIC RELAY AS SUBSTITUE FOR ON-OFF FUNCTION OF A PROGRAM. ASTRONOMIC TIME ON ALL CHANNELS. BATTERY BACKUP FOR SCHEDULES AND TIME CLOCK.

OUTDOOR PHOTOELECTRIC SWITCHES

SOLID STATE, WITH SPST DRY CONTACT RATED FOR 1800-VA TUNGSTEN OR 1000-VA INDUCTIVE, TO OPERATE CONNECTED RELAY, CONTACTOR COILS OR MICROPROCESSOR INPUT, COMPLYING WITH UL 773A.

TELEPHONE AND DATA SYSTEMS

FURNISH AND INSTALL A SYSTEM OF PROPERLY SIZED AND PROPERLY LOCATED OUTLETS WITH ASSOCIATED CONNECTING CONDUIT RUNS, EXTENDING TO PULL BOXES AND TELEPHONE BACKBOARD. FURNISH AND INSTALL RACEWAYS, FOR INCOMING SERVICE WHERE INDICATED.
OUTLET BOXES: UNLESS OTHERWISE INDICATED, ALL TELEPHONE OUTLETS AND JUNCTION BOXES SHALL BE PROVIDED AS REQUIRED TO ACCOMMODATE INTERNAL TERMINAL STRIPS BY TELEPHONE CO.

OUTLET COVER PLATES: TELEPHONE OUTLET COVER PLATES SHALL MATCH THOSE SPECIFIED FOR ADJACENT WIRING DEVICES, INCLUDING THOSE WITH SPECIAL FINISHES.

RACEWAYS: MATERIALS FOR TELEPHONE RACEWAY SYSTEM WORK SHALL BE IN ACCORDANCE WITH CORRESPONDING RACEWAYS SPECIFIED HEREIN AND IN OTHER SECTIONS.

VERIFY LOCATION OF WALL OUTLETS BEFORE ROUGHING IN TO ENSURE COORDINATION WITH OWNER'S FINAL INTENDED FURNITURE LAYOUT. PLAN INDICATIONS SHALL NOT BE SCALED UNLESS DIRECTED. OUTLETS SHALL BE RELOCATED WITHIN ROOMS BEFORE ROUGH-IN WHERE DIRECTED BY ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO OWNER.

TELEPHONE SERVICE CONDUIT LAYOUT SHALL HAVE THE JOB SITE APPROVAL OF AN AUTHORIZED REPRESENTATIVE OF THE TELEPHONE CO. COORDINATE WORK SO THAT BOTH TELEPHONE CO. AND OWNER'S REPRESENTATIVES ARE PRESENT AT THE SAME TIME FOR APPROVAL OR CHANGES IN AMPLE TIME FOR ANY REQUIRED CORRECTIONS BEFORE COMPLETION OF PROJECT.

FROM EACH TELEPHONE OUTLET, PROVIDE 3/4" EMT CONDUIT CONCEALED IN WALL TO 6" ABOVE ACCESSIBLE CEILING OR UP TO STRUCTURE WHERE NO CEILING EXISTS, UNLESS SHOWN OTHERWISE ON DRAWINGS.

TELEPHONE TERMINAL BOARD: PRIOR TO INSTALLATION OF TELEPHONE TERMINAL BOARD, THE EXACT LOCATION SHALL BE VERIFIED WITH THE TELEPHONE CO. THE TELEPHONE TERMINAL BOARD SHALL BE PROVIDED WITH A DOUBLE DUPLEX RECEPTACLE LOCATED WHERE INDICATED ON THE DRAWINGS. THE TERMINAL BOARD SHALL BE CONSTRUCTED OF 4' X 8' X 3/4" PLYWOOD WITH TWO (2) COATS OF FLAME RETARDANT PAINT UNLESS NOTED OTHERWISE ON DRAWINGS.

LIGHTING

FIXTURES ARE SPECIFIED IN THE SCHEDULE BY MANUFACTURER'S NAME AND CATALOG NUMBER.

ALL RECESSED LIGHT FIXTURES SHALL BE PROVIDED WITH FACTORY INSTALLED THERMAL PROTECTION.

ALL LAMPS USED ON THIS PROJECT SHALL BE NEW, DELIVERED TO THE JOB SITE IN THE ORIGINAL PACKING CASES AND SLEEVES AND SHALL BE OF THE SAME MANUFACTURER.

PROVIDE FLUORESCENT FIXTURES WITH ELECTRONIC BALLASTS SUITABLE FOR OPERATION OF LAMPS SPECIFIED; TOTAL HARMONIC DISTORTION LESS THAN 20%; FREQUENCY OF OPERATION OF 20 KHZ OR GREATER WITH NO VISIBLE FLICKER; LINE TRANSIENT WITHSTAND RATINGS AS DEFINED IN ANSI/IEEE, CATEGORY A. APPROVED MANUFACTUERERS: ADVANCE OR EQUAL BY MAGNETEK, MOTOROLA OR OSRAM.

HID BALLASTS SHALL BE AUTO TRANSFORMER REACTOR, HIGH POWER FACTOR POTTED AND ENCASED TO MINIMIZE SOUND. APPROVED MANUFACTURERS: GE, SYLVANIA, OR OSRAM.

LED LIGHT FIXTURES ARE TO BE PROVIDED WITH COMPATIBLE DRIVER AND MUST BE COORDINATED WITH CONTROL TYPE INDICATED. CONTRACTOR IS RESPONSIBLE TO ENSURE CONTROLS ARE CAPABLE OF PROPERLY CONTROLLING LIGHT FIXTURES AS INDICATED WITHIN THESE DRAWINGS.

CONTACTORS AND RELAYS

ALL CONTACTORS AND RELAYS SHALL BE UL LISTED AND LABELED, GENERAL PURPOSE, ELECTRICALLY HELD TYPE, IN NEMA 1 ENCLOSURES. WHERE SPECIFICALLY NOTED ON DRAWINGS, UNITS SHALL BE ELECTRICALLY HELD OR MOMENTARY OPERATIONAL TYPE. UNITS SHALL BE FURNISHED WITH LINE OR LOW VOLTAGE CONTROL AS NOTED AND WITH THE CORRECT NUMBER OF POLES AND CURRENT CHARACTERISTICS. WHERE LOW VOLTAGE OPERATION IS INDICATED, PROVIDE PROPER STEPDOWN TRANSFORMERS AND RECTIFIERS. APPROVED MANUFACTURERS: ASCO, OR MANUFACTURER OF APPROVED PANELBOARDS FURNISHED.

TRANSFORMERS

GENERAL PURPOSE, UL-LISTED/LABELED 150 DEGREES C TEMPERATURE RISE ABOVE 40 DEGREES C AMBIENT. INSULATING MATERIALS: EXCEED NEMA ST-020 STANDARDS, RATED FOR 220 DEGREES C, UL-COMPONENT RECOGNIZED INSULATION SYSTEM. PHASES, VOLTAGES, AND SIZES: AS INDICATED ON THE DRAWINGS. SOUND LEVEL: NOT EXCEEDING NEMA STANDARDS FOR THE SIZES INDICATED. FULL-CAPACITY PRIMARY TAPS: BELOW 25 KVA - MINIMUM OF TWO 5% (2-); 25 KVA TO 300 KVA - MINIMUM OF SIX 2.5% (2+, 4-); ABOVE 300 KVA - FOUR 2.5% (2+, 2-). TRANSFORMER CORE AND COIL ASSEMBLIES: MOUNTED ON INTEGRAL VIBRATION-ABSORBING PADS. MAKE FINAL CONDUIT CONNECTIONS TO TRANSFORMERS WITH FLEXIBLE CONDUIT, WITH AT LEAST 6" OF SLACK IN ALL DIRECTIONS. TRANSFORMER ENCLOSURES: FULLY ENCLOSED (EXCEPT FOR VENTILATION OPENINGS), NEMA 2, DRIP-PROOF, FABRICATED OF HEAVY GAUGE SHEET STEEL CONSTRUCTION. MANUFACTURERS: SQUARE D, GENERAL ELECTRIC, ACME, SIEMENS.

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ISSUE DATE: 27 FEB 2023
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ELECTRICAL
SPECIFICATIONS

WIRING OF MECHANICAL EQUIPMENT
PROVIDE ALL RACEWAYS AND POWER WIRING FOR ALL DIVISION 15 EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS, INCLUDING, BUT NOT LIMITED TO, PUMPS, WATER HEATERS, AND HVAC EQUIPMENT, AND ALL LINE-VOLTAGE CONTROL AND INTERLOCK WIRING NOT PROVIDED UNDER DIVISION 15. CONNECT PER MANUFACTURER'S WIRING DIAGRAMS. COORDINATE WITH DIVISION 15 FOR DISCONNECTS FURNISHED WITH EQUIPMENT, AND PROVIDE ALL DISCONNECT SWITCHES AS REQUIRED. AFTER INSTALLING WIRING, VERIFY THAT EACH MOTOR LOAD HAS THE CORRECT PHASE ROTATION.

VERIFY THE ACTUAL "MAXIMUM OVERCURRENT PROTECTION" DEVICE RATINGS AND "MINIMUM CIRCUIT AMPACITY" CONDUCTOR SIZING FOR MECHANICAL EQUIPMENT FROM THE EQUIPMENT NAMEPLATE. BASE ELECTRICAL INSTALLATIONS ON ACTUAL REQUIRED AMPERAGES, WHICH MAY VARY SOMEWHAT FROM THE CONDUCTOR AND EQUIPMENT SIZES SHOWN ON THE DRAWINGS. HOWEVER, IN NO CASE, REDUCE THE SIZE OF CONDUCTORS INDICATED ON THE DRAWINGS WITHOUT AUTHORIZATION FROM THE ENGINEER. PROVIDE PROPERLY SIZED ELECTRICAL WIRING AND EQUIPMENT WITHOUT EXTRA COST TO THE OWNER. NOTIFY THE ENGINEER OF ALL CHANGES REQUIRED IN THE ELECTRICAL INSTALLATION DUE TO EQUIPMENT VARIANCES SO THAT THE EFFECTS ON FEEDERS, BRANCH CIRCUITS, PANELBOARDS, FUSES AND CIRCUIT BREAKERS CAN BE CHECKED PRIOR TO PURCHASING AND INSTALLATION. BE RESPONSIBLE FOR COORDINATING WITH DIVISION 15 TO VERIFY THE ACTUAL AMPACITIES AND CORRECT SIZES OF ALL CONDUCTORS AND OVERCURRENT PROTECTIVE DEVICES FOR ALL EQUIPMENT, AND CORRECT OVERLOAD HEATERS FOR ALL MOTORS, WHEN STARTERS ARE PROVIDED UNDER DIVISION 16.

PROVIDE ALL RACEWAYS, POWER WIRING, AND LINE-VOLTAGE CONTROL AND INTERLOCK WIRING NOT PROVIDED UNDER DIVISION 15, FOR ALL THERMOSTATS, TEMPERATURE CONTROL DEVICES, AND CONTROLS, INCLUDING, BUT NOT LIMITED TO, NIGHT-STATS, WATER HEATER INTERLOCKS, TIME SWITCHES AND OVERRIDE TIMERS. SEE MECHANICAL DRAWINGS FOR LOCATIONS AND TEMPERATURE CONTROL DIAGRAMS. LOW-VOLTAGE CONDUCTORS FOR THERMOSTATS AND TEMPERATURE CONTROL SYSTEMS MAY BE RUN EXPOSED ABOVE FINISHED ACCESSIBLE CEILINGS, IF APPROVED AND LISTED FOR THIS PURPOSE, BUT SHALL BE INSTALLED IN CONDUIT WITHIN WALLS AND WHERE EXPOSED IN THE WORK AREAS.

EXECUTION

METHOD OF PROCEDURE
ERECT EQUIPMENT PARTS AT SUCH TIME AND IN SUCH MANNER AS TO MINIMIZE INTERFERENCES AND DELAYS IN THE EXECUTION OF THE WORK CARE SHALL BE USED IN THE ERECTION AND INSTALLATION OF ALL EQUIPMENT AND MATERIALS TO AVOID MARRING SURFACES OF THE WORK. DAMAGES SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER.

EQUIPMENT REQUIRING ELECTRICAL SERVICE SHALL NOT BE ENERGIZED OR PLACED IN SERVICE UNTIL ALL INTERESTED PARTIES HAVE BEEN DULY NOTIFIED AND ARE PRESENT OR HAVE WAIVED THEIR RIGHT TO BE PRESENT. WHERE EQUIPMENT TO BE PLACED IN SERVICE INVOLVES SERVICE OR CONNECTION FROM ANOTHER CONTRACTOR OR THE OWNER, NOTIFY THE OWNER IN WRITING WHEN THE EQUIPMENT WILL BE READY. THE OWNER SHALL BE NOTIFIED AS FAR IN ADVANCE AS POSSIBLE, OF THE DATE THE VARIOUS ITEMS OF EQUIPMENT WILL BE COMPLETE.

THE WORK OF THIS TRADE INCLUDES ROUGH-IN FOR AND FINAL CONNECTION AND REQUIRED TO ALL MISCELLANEOUS EQUIPMENT FURNISHED BY OTHERS, OR UNDER OTHER DIVISIONS OF THE WORK. THIS SHALL INCLUDE POWER AND CONTROL WIRING. WIRING DEVICES AND COVER-PLATES FOR BUILT-IN EQUIPMENT ARE INCLUDED IN THE WORK OF THIS DIVISION. SAFETY DISCONNECTS AND OTHER MISCELLANEOUS PROTECTIVE DEVICES REQUIRED BY N.E.C. ARE INCLUDED IN THE WORK OF THIS DIVISION. DO ALL ROUGHING-IN AND FINAL CONNECTIONS FROM APPROVED SHOP DRAWINGS ONLY.

COMPLIANCE WITH THE DRAWING AND ANY NOTES THEREON IS REQUIRED. PROVIDE OPENINGS THROUGH WALLS, PARTITIONS, FLOORS, AND ROOFS AS REQUIRED FOR ELECTRICAL WORK.

PROVIDE SLEEVES FOR ELECTRICAL WORK PASSING THROUGH WALLS, PARTITIONS, ROOFS, AND FLOORS. SLEEVES SHALL EXTEND THROUGH FLOORS, WALLS AND PARTITIONS AND SHALL BE CUT FLUSH WITH EACH SURFACE UNLESS OTHERWISE SPECIFIED. FIRE WALL AND/OR FLOOR INTEGRITY SHALL BE RESTORED AFTER PENETRATION. SLEEVES IN CONCRETE AND MASONRY WALLS, CONCRETE FLOORS AND ROOFS, SHALL BE FABRICATED FROM STANDARD GALVANIZED STEEL PIPE WITH ENDS FINISHED SMOOTH, BURR FREE, WITHOUT SHARP EDGES. SLEEVES IN WALLS, ROOFS, AND FLOORS OF OTHER CONSTRUCTION AND THROUGH SUSPENDED CEILINGS SHALL BE FABRICATED FROM 22 U.S. GAUGE GALVANIZED STEEL. FLOOR SLEEVES SHALL EXTEND THREE INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. SPACE BETWEEN FLOOR SLEEVES AND PASSING CONDUIT SHALL BE FILLED WITH DUCT SEAL PACKING AND CAULKED WITH WATERPROOF COMPOUND AS APPROVED. WHERE CONDUITS PASS THROUGH WATERPROOFED FLOORS OR WALLS, SLEEVES SHALL BE FABRICATED SUCH THAT WATERPROOFING CAN BE FLASHED ONTO AND AROUND THE SLEEVE.

RACEWAYS
ALL POWER AND LIGHTING CIRCUITS SHALL BE RUN IN METALLIC RACEWAYS EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. THESE RACEWAYS SHALL BE RUN CONCEALED IN ALL FINISHED AREAS, AND WHERE RUN EXPOSED SHALL BE SQUARE TO THE BUILDING AND HELD TIGHT TO THE BUILDING CONSTRUCTION. LOW VOLTAGE, TELEPHONE, INTERCOM, MUSIC, ALARM AND SECURITY WIRING RUN ABOVE ACCESSIBLE CEILINGS SHALL BE RUN USING INSULATED, PLENUM RATED CABLE. PROVIDE LOW VOLTAGE CABLE IN CONDUIT IF REQUIRED BY LOCAL AHJ. VERIFY ALL REQUIREMENTS PRIOR TO INSTALLATION. METALLIC CONDUIT FOR THESE SYSTEMS SHALL BE PROVIDED ONLY WHERE RUN INSIDE WALLS. THE DRAWINGS INDICATE THE REQUIRED SIZE OF ALL RACEWAYS (EXCEPT AS HEREINAFTER SPECIFIED), THE POINTS OF TERMINATION AND THE SUGGESTED ROUTING. HOWEVER, THE INSTALLER IS RESPONSIBLE FOR PROPER COORDINATION WITH BUILDING STRUCTURE AND THE WORK OF OTHER TRADES. FURNISH ALL REQUIRED BENDS, ELBOWS, FITTINGS, JUNCTION AND PULL BOXES, WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS, THAT MAY BE REQUIRED TO SATISFY CODES AND THE STANDARDS OF GOOD PRACTICE. WHERE CONDUITS FOR BOTH BRANCH AND FEEDER CIRCUITS ARE RUN CONCEALED, THEY MAY BE RUN OUT OF SQUARE TO THE BUILDING PROVIDING THE SHORTEST POSSIBLE RUN IS UTILIZED. RACEWAY SIZES ARE BASED ON THE USE OF COPPER CONDUCTORS AND N.E.C. FILL.

CONDUIT SHALL BE CONSTRUED AS ELECTRICAL RACEWAYS AND SHALL CONFORM TO THE FOLLOWING: CONCEALED IN SUSPENDED CEILINGS AND INTERIOR PARTITIONS - EMT WITH SET SCREW TYPE FITTINGS. UNDERGROUND OR BELOW INTERIOR SLABS - GRS. (NOTE: PVC CONDUIT IS PERMITTED OUTSIDE FOR PARKING AREA LIGHTING, SIGNS, ETC. ELBOWS SHALL BE GRS). EXPOSED ON BUILDING EXTERIOR - GRS.

CONDUIT BENDS SHALL BE MADE TO THE LARGEST POSSIBLE RADIUS FOR EASE IN PULLING CONDUCTORS AND TO PROVIDE A NEATLY INSTALLED APPEARANCE. EQUIPMENT AND CONDITIONS PERMITTING, POWER CONDUIT BENDS SHALL CONFORM TO THE FOLLOWING: 1-1/2 IN. - 18 IN. RADIUS; 2 IN. - 24 IN. RADIUS; 2-1/2 IN. - 24 IN. RADIUS; 3 IN. - 36 IN. RADIUS.

GRS CONDUIT SHALL BE CUT WITH POWER OR HACKSAW AND CLEANLY REAMED TO REMOVE ALL "BURRS" AND ALL FIELD CUT THREADS SHALL BE PAINTED WITH WHITE LEAD BEFORE COUPLINGS ARE APPLIED.

EMPTY CONDUIT SYSTEMS INSTALLED FOR COMMUNICATION SYSTEMS, PUBLIC TELEPHONES, OWNER ITEMS AND OTHER SYSTEMS AS INDICATED ON DRAWINGS SHALL BE INSTALLED COMPLETE WITH NYLON PULL WIRES PROPERLY TAGGED AT BOTH ENDS FOR IDENTIFICATION.

WHERE BUILDING VENTILATION CONDITIONS ARE SUCH THAT AIR MAY FLOW CONTINUOUSLY IN CONDUITS, CAUSING CONDENSATION AND THE COLLECTION OF MOISTURE, THE CONDUITS SHALL BE SEALED AT EACH END WITH A PLIABLE X DUCT SEALING COMPOUND. ALSO SEAL ALL CONDUITS ENTERING AND LEAVING REFRIGERATED EQUIPMENT AND PROVIDE EXPANSION JOINTS PER N.E.C.

ALL CONNECTIONS TO MOTORS, SOLENOID VALVES, PRESSURE SWITCHES, LIMIT SWITCHES, AND SIMILAR APPARATUS SHALL BE FLEXIBLE CONDUIT WHERE PERMITTED. WHERE EQUIPMENT IS INSTALLED OUTDOORS OR EXPOSED TO MOISTURE, USE LIQUIDTIGHT FLEXIBLE CONDUIT WITH WATERTIGHT FITTINGS.

EQUIPMENT LEVELING, HANGERS AND SUPPORTS
SET EACH PIECE INSTALLED UNDER THIS DIVISION TRUE AND LEVEL. ADEQUATELY SUPPORT ALL RACEWAYS FROM THE STRUCTURE USING SCREW CLAMPS TO SECURE TO SAME. ARRANGE SUPPORTS TO PREVENT MOISTURE COLLECTION AND ALLOW ENTRANCE TO BOXES WITHOUT BENDS. INSTALL MULTIPLE CONDUITS USING CHANNEL TRAPEZE SUPPORTS TIGHT TO STRUCTURE ABOVE. USE APPROVED SPACERS TO INSULATE FROM CONTACT WITH BUILDING. SIZE CLAMPS, INSERTS, CHANNELS AND ALL OTHER MEMBERS TO SUPPORT A LOAD EQUAL TO 200% OF THE COMBINED WEIGHT OF ALL SUPPORTED MATERIAL PLUS THE WEIGHT OF A MAN.

WHERE SEVERAL RACEWAYS ARE SUPPORTED ON A COMMON TRAPEZE HANGER, SUPPORTS SHALL BE SPACED TO ACCOMMODATE THE SMALLEST SIZE RACEWAY INVOLVED. SPACE HANGERS AS FOLLOWS:
RIGID CONDUIT: 1/2 AND 3/4 IN. SIZE; 6'-0" ON CENTERS; 1 AND 1-1/4 IN. SIZE; 9'-0" ON CENTERS
ELECTRIC METALLIC TUBING:
1/2 AND 3/4 IN. SIZE; 5'-0" ON CENTERS; 1 AND 1-1/4 IN SIZE; 6'-0" ON CENTERS.

SECURELY ATTACH HANGERS AND SUPPORTS TO CONSTRUCTION BY METHODS RECOMMENDED IN THE "NECA STANDARDS OF INSTALLATION" MANUAL.
COORDINATION WITH MECHANICAL TRADES: THE INTENT OF THE ABOVE CEILING SUPPORTS IS TO COMBINE AS MANY PIPES, CONDUITS, ETC., AS IS POSSIBLE WITHIN SAFE STRUCTURAL LIMITS, ON EACH HORIZONTAL SECTION OF A TRAPEZE HANGER. PRIOR TO SELECTING THE HORIZONTAL MEMBER, ALL TRADES, MECHANICAL AND ELECTRICAL, SHALL COORDINATE ACTUAL NUMBER OF PIPES, CONDUITS, ETC., SUCH THAT FINAL SELECTION RESULTS IN A NEATLY GROUPED, DISCIPLINED AND ACCESSIBLE INSTALLATION.

WIRING INSTALLATION
EXCEPT FOR SUCH ITEMS AS ARE NORMALLY WIRED AT THEIR POINT OF MANUFACTURE AND SO DELIVERED - AND UNLESS SPECIFICALLY NOTED TO THE CONTRARY HEREIN - THE ELECTRICAL TRADE SHALL DO ALL ELECTRICAL WIRING OF EVERY CHARACTER. IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS THAT ALL SYSTEMS AND EQUIPMENT SHALL BE PROVIDED WITH ALL NECESSARY UTILITY CONNECTIONS, COMPLETED TO ALLOW SAFE AND PROPER OPERATION OF SAID SYSTEMS. WHEN IT IS NECESSARY FOR TRADES PERFORMING WORK COVERED BY THIS DIVISION TO MAKE FINAL CONNECTIONS TO ITEMS OF EQUIPMENT BEING FURNISHED BY OTHERS, OR BY OTHER TRADES UNDER OTHER DIVISIONS, ALL SUCH WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THIS DIVISION AND ALL MATERIALS USED SHALL BE AS SPECIFIED HEREIN.

MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE #12 AWG, EXCEPT THAT HOMERUNS LONGER THAN 100 FT, LENGTH FROM THE PANEL TO THE CIRCUIT'S ELECTRICAL LOAD CENTER SHALL BE #10 AWG MINIMUM. WHERE RUNS EXCEED 150', CONTRACTOR MUST ENSURE WIRE SIZE BEING UTILIZED DOES NOT CREATE A VOLTAGE DROP GREATER THAN 3%. REQUEST PROPER WIRE SIZE PRIOR TO INSTALLATION IF A 3% VOLTAGE DROP MAY OCCUR FOR ANY BRANCH CIRCUIT. WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE ENCLOSED IN THE SAME RACEWAY, CONDUCTORS ARE TO BE DERATED PER N.E.C. AND WIRE SIZE INCREASED AS REQUIRED. WHERE THE INCREASED CONDUCTOR SIZE REQUIRES, INCREASE THE RACEWAY SIZE AS WELL. FOR CONTROL WIRING USE #14 AWG MINIMUM. FOR FIXTURE WIRING, AS PERMITTED BY N.E.C., USE #18 AWG MINIMUM. FOR SIGNAL AND COMMUNICATIONS SYSTEMS USE WIRE SIZE AS SPECIFICALLY REQUIRED BY THE SYSTEM SUPPLIER.

MAKE CONNECTIONS TO TERMINALS USING PRESSURE TYPE CONNECTORS. SOLDERED JOINTS ARE PROHIBITED. ALL JOINTS IN CONDUCTORS SHALL BE MADE AT AN ACCESSIBLE LOCATION WITHIN A BOX BY TWISTING THE BARE CONDUCTOR ENDS TOGETHER AND APPLYING A WIRE CONNECTOR IN ALL SIZES UP TO THE MAXIMUM CAPACITY OF THE CONNECTOR. JOINTS SHALL BE TAPED WITH AN APPROVED ELECTRICAL TAPE. SPLICES FOR CONDUCTORS LARGER THAN #10 AWG SHALL BE MADE WITH AN APPROVED COMPRESSION (SQUEEZE) CONNECTOR INSULATED WITH NOT LESS THAN TWO LAYERS OF ELECTRICAL FILL TAPE TO 1.5 TIMES THE THICKNESS OF INSULATION, FOLLOWED BY TWO (MINIMUM) LAYERS OF HALF-LAPPED ELECTRICAL TAPE FOR MECHANICAL PROTECTION. LOCATE ALL SPLICES IN BOXES OR FITTINGS OF PROPER SIZE PER N.E.C.

IDENTIFY ALL WIRES AND CABLES WITH BRADY ADHESIVE WIRE MARKERS AT EACH BOX, PANEL, AND OUTLET. IDENTIFICATION SHALL, AS A MINIMUM, INDICATE THE PANEL AND CIRCUIT SUPPLYING THE OUTLET, AT THE PANEL END, THE LOAD SERVED AND ITS LOCATION SHALL BE INDICATED. PROVIDE A MINIMUM OF 8 IN. SLACK WIRE AT EACH OUTLET FOR MAKING CONNECTION TO THE DEVICE OR TO PROVIDE FOR A FUTURE DEVICE IN THE BOX.

BOXES
EACH BOX SHALL BE OF PROPER SIZE TO ACCOMMODATE THE DEVICE AND FUNCTION FOR WHICH IT IS SHOWN. BOXES FOR WALL DEVICES SHALL BE FURNISHED COMPLETE WITH PLASTER RING OR TILE RING ACCORDING TO WALL CONSTRUCTION WHERE REQUIRED. BOXES FOR INSTALLATION IN MASONRY WALLS SHALL BE SPECIAL SQUARE CORNER MASONRY TYPE. BOXES FOR MOUNTING OF LIGHTING FIXTURES SHALL BE FOUR INCH OCTAGON, EQUIPPED WITH 3/8 IN. "NO-BOLT" FIXTURE STUD. BOXES FOR FLOOR OUTLETS SHALL BE CONCRETE PROOF STEEL BOXES WITH ADJUSTABLE TOPS AND DEVICES AS HEREINAFTER NOTED OR SHOWN. ALL BOXES SHALL BE FURNISHED COMPLETE WITH PROPER COVER AND/OR DEVICE PLATE AND DEVICE. UNLESS OTHERWISE NOTED, PLACE OUTLET BOXES AT THE FOLLOWING HEIGHTS (BOX CENTER TO FINISH FLOOR): WALL SWITCHES 48" AND CONVENIENCE OUTLETS 18" UNLESS NOTED OTHERWISE ON DRAWINGS.

TELEPHONE, ALARM, AND SIGNAL SYSTEM OUTLET BOXES SHALL BE STANDARD OUTLET BOX TYPE WHERE ONLY ONE CONDUIT ENTERS SAME. UNLESS OTHERWISE SPECIFIED OR INDICATED ON DRAWINGS, WHERE TWO OR MORE CONDUITS ENTER, BOX SHALL BE 4-11/16 IN. SQUARE MINIMUM WITH SUITABLE ADAPTER RING.

LOCATE ALL OUTLETS AS INDICATED ON DRAWINGS, HOWEVER, AT INSTALLATION INSPECT ARCHITECTURAL DRAWINGS AND LOCATE LOCAL SWITCHES ON THE STRIKE SIDE OF THE DOOR.

SYSTEM GROUNDING
EQUIPMENT, RACEWAY SYSTEMS, WIRING SYSTEM NEUTRALS, RECEPTACLES AND POWER OUTLETS, MOTORS AND MOTORIZED EQUIPMENT, SHALL BE GROUNDED IN ACCORDANCE WITH N.E.C. ARTICLE 250.

GROUND RECEPTACLES AND POWER OUTLETS TO THE CONDUIT SYSTEM WITH A GREEN GROUNDING CONDUCTOR SIZE IN ACCORDANCE WITH N.E.C. AND CONNECTED BETWEEN THE DEVICE GROUNDING SCREW AND THE OUTLET BOX. CONNECTION TO THE BOX MAY BE A "G" CLIP OR BY A 10/24 SCREW THREADED INTO A HOLE IN THE BACK OF THE BOX AND USED FOR NO OTHER PURPOSE. EQUIPMENT CONNECTED TO THE ELECTRICAL SYSTEM SHALL BE GROUNDED WITHIN INSULATED GREEN GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH N.E.C. AND INSTALLED WITHIN THE RACEWAY. CONDUCTOR SHALL BE CONTINUOUS BETWEEN A GROUNDING SCREW IN THE EQUIPMENT JUNCTION BOX AND A GROUND ATTACHMENT IN THE NEAREST OUTLET BOX IN THE RIGID METALLIC CONDUIT SYSTEM. THIS REQUIREMENT INCLUDES ALL FLEXIBLE CONDUIT.

GENERALLY FOR TELEPHONE AND SUPPLEMENTAL COMMUNICATION SYSTEMS NO 6 AWG CONDUCTOR TO EACH PROTECTOR CABINET, OTHER CABINET, OR DEVICE INSTALLATION SHALL BE CONSIDERED SUFFICIENT, FROM THE SERVICE GROUND (UNLESS INDICATED OTHERWISE).

GROUNDING MATERIAL:
GROUND-RODS - 1/2" DIA., 10' LONG, COPPERWELD
GROUND CONDUCTOR - SIZE AS PER N.E.C. REQUIREMENTS, SOFT DRAWN OR SOFT ANNEALED, COPPER WIRE.
JOINTS AND CONNECTIONS - MOLDED FUSION WELDING PROCESS USING PROPER MOLD AND THE NUMBER, SIZE AND TYPE CARTRIDGE FOR THE JOINT OR CONNECTION. WATERPIPE CONNECTION, SILICON BRONZE APPROVED MECHANICAL CONNECTOR DESIGNED FOR THE PIPE AND CABLE TO BE BONDED.

PANELBOARD INSTALLATION:
MOUNT PANELBOARDS WITH CENTERLINE AT 5 FT.-6IN. ABOVE FINISH FLOOR, EXCEPT THAT THE HIGHEST BREAKER HANDLE SHALL BE BELOW 6 FT.-5 IN. ABOVE FINISH FLOOR. ARRANGE BREAKERS SO THAT THE BREAKER RATING IS VISIBLE WITH THE PANEL FRONT IN PLACE.

PANEL DIRECTORIES, AS A MINIMUM, SHALL BE TYPEWRITTEN AND INDICATE BREAKER POSITION NUMBER AND EQUIPMENT SERVED. THE PANEL IDENTIFICATION SHALL BE LOCATED ON THE PANEL TRIM AND SHALL CONSIST OF A BLACK LAMINATED PHENOLIC LABEL, SCREW MOUNTED, WITH THE PANEL IDENTIFICATION MATCHING PANEL IDENTIFICATION ON DRAWINGS. LABEL ALL CONDUCTORS WITH ADHESIVE WRAP LABELS WITHIN 2 IN. OF THE CONDUCTOR TERMINATION PRIOR TO INSTALLATION OF TRIM.

LIGHTING FIXTURE INSTALLATION
PROVIDE A LIGHTING FIXTURE FOR EACH AND EVERY OUTLET IN ACCORDANCE WITH TYPE DESIGNATION AND FIXTURE SCHEDULE ON THE DRAWINGS. VERIFY THE ARCHITECTURAL FINISHES AND CEILING CONSTRUCTION AND - REGARDLESS OF THE CATALOG NUMBER PREFIXES AND SUFFIXES SHOWN - PROVIDE FIXTURES WITH THE PROPER TRIM, FRAMES, SUPPORTS, AND HANGER AND OTHER MISCELLANEOUS APPURTENANCES TO PROPERLY COORDINATE WITH SAID FINISHES. REINFORCE CEILING CONSTRUCTION AS REQUIRED TO PROPERLY SUPPORT THE WEIGHT OF FIXTURES INSTALLED THEREON.

IMMEDIATELY PRIOR TO FINAL INSPECTION: THOROUGHLY CLEAN ALL FIXTURES INSIDE AND OUT, INCLUDING PLASTICS AND GLASSWARE. ADJUST TRIM TO FIT ADJACENT SURFACES. REPLACE BROKEN OR DAMAGED PARTS. INSTALL NEW LAMPS. ELECTRICALLY AND MECHANICALLY TEST THE SYSTEM FOR PROPER OPERATION.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FROM LOCAL CODE AUTHORITIES AND MAKING ANY REVISIONS DIRECTED BY THEM ON EMERGENCY AND EXIT LIGHTING.

CLEANING
THOROUGHLY CLEAN ALL FIXTURES, SWITCHES, OTHER DEVICES, PANELBOARDS, AND EQUIPMENT PROVIDED OR CONNECTED IN THIS CONTRACT. ALL SURFACES SHALL BE PROPERLY POLISHED AND SHALL BE FREE OF PAINT AND ALL OTHER DIRT OR DEBRIS. TOUCHUP OR COMPLETELY REFINISH ALL EQUIPMENT FURNISHED WITH FACTORY FINISHES THAT IS DAMAGED DURING DELIVERY OR CONSTRUCTION. PROPERLY PROTECT THE FRONTS OF ALL PANELBOARDS, SWITCHBOARDS AND SIMILAR EQUIPMENT TO PREVENT MARRING AND OTHER DEFACING.

AT ALL TIMES, KEEP THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH CAUSED BY THE WORK OF THE TRADESMEN DOING ELECTRICAL WORK. AT COMPLETION OF THE WORK, REMOVE ALL RUBBISH, TOOLS, EQUIPMENT, AND SURPLUS MATERIALS. BROOM CLEAN ALL ASSIGNED SPACES PRIOR TO LEAVING THE PREMISES.

TESTING AND LOAD BALANCING

TEST ALL CIRCUITS TO ASSURE THEM TO BE FREE OF GROUNDS AND SHORTS. LIGHT AND TEST EACH LAMP. PROVE AND TEST THE AVAILABLE VOLTAGE ON THE LOAD SIDE OF EACH DISCONNECT. VERIFY PROPER OPERATION OF THE DISCONNECT. VERIFY THE PHASE SEQUENCE, VOLTAGE, AND ROTATION AT EACH MOTOR IN THE PRESENCE OF THE INSTALLER. RUN EACH MOTOR WITH ITS CONTROL AS NEARLY AS POSSIBLE UNDER OPERATING CONDITIONS FOR A SUFFICIENT LENGTH OVER TIME TO DEMONSTRATE CORRECT ALIGNMENT, WIRING CAPACITY, SPEED, AND OVERALL SATISFACTORY OPERATION. CHECK THAT THE PROPER OVERLOAD HEATERS HAVE BEEN INSTALLED BY READING THE MOTOR NAMEPLATE, ADJUST THE SIZE OF THE OVERLOAD HEATER AS REQUIRED TO MATCH THE MOTOR NAMEPLATE. OPERATE ALL MAIN AND FEEDER SWITCHES AND BREAKERS.

THE VARIOUS BRANCH CIRCUITS SERVED FROM THE LIGHTING PANELBOARDS VARY IN LOADING. CAREFULLY BALANCE THE ACTUAL OPERATING LOAD ON EACH PANELBOARD WHEN ALL LOAD IS TURNED ON AND THE SYSTEM IS OPERATING AT 100% DEMAND, THE UNBALANCE SHALL NOT EXCEED 10%. DURING FINAL INSPECTION, FURNISH THE TEST INSTRUMENTS AND QUALIFIED PERSONNEL TO PERFORM COMPLETE TESTING. COSTS OF ALL TESTING, INCLUDING THE INCIDENT COSTS FOR RETESTING OCCASIONED BY DEFECTS AND FAILURES OF THE EQUIPMENT TO MEET THE SPECIFICATIONS, SHALL BE BORNE BY THE CONTRACTOR.

FURNISH AT THE COMPLETION OF THE PROJECT A FINAL INSPECTION CERTIFICATE FROM THE LOCAL INSPECTING AUTHORITY.

END OF SECTION 16000

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REVISION DATES:

STATE OF MISSOURI
RYAN BREWER
NUMBER PE-2020010759
PROFESSIONAL ENGINEER
02/27/2023

PROFESSIONAL SEAL

E502

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

ELECTRICAL SPECIFICATIONS

MECHANICAL ABBREVIATIONS

(ALPHABETICAL BY ABBREVIATION)

ABBREVIATION	LONG FORM
ABV	ABOVE
AC OR ACU	AIR-CONDITIONING UNIT
AHAP	AS HIGH AS POSSIBLE
AHU	AIR-HANDLING UNIT
AUTO	AUTOMATIC
BLW	BELOW
C	CHILLER
CD	CONDENSATE
CF	CABINET FAN
CFM	CUBIC FEET PER MINUTE
CH	CABINET HEATER
CHP	CHILLED WATER PUMP
CLNG OR CLG	CEILING
CONC	CONCRETE
CP OR CWP	CONDENSER WATER PUMP
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
CRAC OR CACU	COMPUTER ROOM AIR-CONDITIONING UNIT
CREF	CHILLER ROOM EXHAUST FAN
CRU	CONDENSATE (STEAM) RETURN UNIT
CT	COOLING TOWER CELL
CTU	CONDENSATE (STEAM) TRANSFER UNIT
CU	CONDENSING UNIT
DV	CONSTANT VOLUME TERMINAL BOX
DEF	DISHWASER EXHAUST FAN
DMPR	DAMPER
DN	DOWN
EA	EACH
EBH	ELECTRIC BASEBOARD HEATER
EDH	ELECTRIC DUCT-MOUNTED HEATER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
ER	EXHAUST REGISTER
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
FD	FIRE DAMPER
FCU	FAN-COIL UNIT
FF	FINAL FILTER
FFCH	FORCED-FLOW CABINET HEATER
FFU	FAN FILTER UNIT
FP	FAN POWERED TERMINAL BOX
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HUM	HUMIDIFIER
HWP OR HP	HEATING WATER PUMP
HX	HEAT EXCHANGER
KEF	KITCHEN (GREASE HOOD) EXHAUST FAN
KW	KILOWATTS
LD	LINEAR SUPPLY DIFFUSER
MOT	MOTORIZED
MTD	MOUNTED
MUAF	MAKE-UP AIR FAN
MUAHU	MAKE-UP AIR-HANDLING UNIT
OA	OUTSIDE AIR
OAF	OUTSIDE AIR FAN
OPG OR OPNG	OPENING

NOT ALL ABBREVIATIONS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT

MECHANICAL ABBREVIATIONS CONT.

(ALPHABETICAL BY ABBREVIATION)

ABBREVIATION	LONG FORM
PF	PRE-FILTER
PLNM	PLENUM
RA	RETURN AIR
RAF	RETURN AIR FAN
RAG OR RG	RETURN AIR GRILLE
RAR OR RR	RETURN AIR REGISTER
RAS	RETURN AIR SILENCER
RE:	IN REFERENCE TO
RTU	ROOFTOP UNIT
SA	SUPPLY AIR
SAF OR SF	SUPPLY AIR FAN
SAG OR SG	SUPPLY AIR GRILLE
SAR OR SR	SUPPLY AIR REGISTER
SAS	SUPPLY AIR SILENCER
SCHP	SECONDARY CHILLED WATER PUMP
SD	SMOKE DAMPER OR DETECTOR
SPCHP	SPECIAL PROCESS CHILLED WATER PUMP
TA	THROW AWAY (FILTER TYPE)
TDEF	TRUCK DOCK EXHAUST FAN
TEF	TOILET EXHAUST FAN
TRANS	TRANSITION OR TRANSFER
TYP	TYPICAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VF	VENTILATION FAN
VFD	VARIABLE FREQUENCY DRIVE
V V	VARIABLE VOLUME TERMINAL BOX
W/	WITH
XFMR OR TFMR	TRANSFORMER
XT OR EX	EXPANSION TANK

NOT ALL ABBREVIATIONS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT

DUCTWORK LEGEND

(REFER TO SPECIFICATIONS SECTIONS 15815 AND 15820 FOR ADDITIONAL INFORMATION)

SINGLE LINE	DESCRIPTION	DOUBLE LINE
	ROUND ELBOW DOWN	
	ROUND ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30° WHEN POSSIBLE. ARROW SLOPES DN, U.N.O.)	
	ROUND RADIUS ELBOW	
	90° STRAIGHT TEE	
	90° CONICAL TEE	
	45° LATERAL TAP	
	45° LATERAL CONICAL TEE	
	SIZE OR SHAPE TRANSITION	
	ROUND FLEXIBLE DUCT	
	RECTANGULAR ELBOW DOWN	
	RECTANGULAR ELBOW UP	
	OFFSET TO CHANGE ELEVATION (AT 30° WHERE POSSIBLE. ARROW SLOPES DN., U.N.O.)	
	RECTANGULAR RADIUS ELBOW	
	RECTANGULAR ELBOW WITH TURNING VANES	
	SPLIT BRANCH TAKE-OFF WITH SQUARE ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF WITH RADIUS ELBOW & SPLITTER DAMPER	
	SPLIT BRANCH TAKE-OFF TEE WITH STATIONARY SPLITTER DAMPER	
	BRANCH TAKE-OFF WITH 45° LEAD IN TAP	
	INSULATED/LINED DUCTWORK (U.N.O.)	
	SQUARE FACED CEILING DIFFUSER 4-WAY DIRECTIONAL THROW (U.N.O.)	
	ROUND FACED CEILING DIFFUSER	
OR	CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER	
	SIDEALL SUPPLY GRILLE OR REGISTER	
	SUPPLY DUCT RISER	
	RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER	
	MANUAL BALANCING DAMPER	
	AUTOMATIC (MOTOR-OPERATED) DAMPER	
	FIRE DAMPER	
	GRAVITY BACKDRAFT DAMPER	
	COMBINATION FIRE AND SMOKE DAMPER WITH SMOKE DETECTOR	
	SMOKE DAMPER (AUTOMATIC) WITH SMOKE DETECTOR	
	DUCT MOUNTED SMOKE DETECTOR	OR

NOT ALL SYMBOLS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT

STANDARD MECHANICAL SYMBOLS

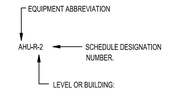
SYMBOL	DESCRIPTION	
	GATE VALVE	VALVES, FITTINGS & DEVICES
	BALL VALVE	
	GLOBE VALVE	
	BUTTERFLY VALVE	
	PLUG VALVE	
	ANGLE VALVE	
	CHECK VALVE	
	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	
	AUTOMATIC CONTROL VALVE (3-WAY)	
	AUTOMATIC CONTROL VALVE (ANGLE)	
	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	
	SOLENOID VALVE	
	PRESSURE REDUCING VALVE	
	PRESSURE RELIEF VALVE	
	GAUGE COCK	
	PRESSURE GAUGE WITH GAUGE COCK	
	THERMOMETER	
	THERMOMETER WELL	
	TEST PLUG	
	FLOW METER	
T	TEMPERATURE SENSOR	
P	PRESSURE SENSOR	
DPS	DIFFERENTIAL PRESSURE SWITCH	
	IMMERSION THERMOSTAT	
	MANUAL AIR VENT	
	AUTOMATIC AIR VENT	
FS	FLOW SWITCH	
	ORIFICE	
	PIPE SLEEVE THRU WALL OR FLOOR	
	EXPANSION JOINT	
	FLEXIBLE PIPE JOINT	
	PIPE GUIDE	
	ANCHOR	
	STRAINER (Y-TYPE)	
	STRAINER (BASKET TYPE)	
	UNION	
	CONCENTRIC REDUCER	
	ECCENTRIC REDUCER	
	DIRECTION OF FLOW	
	DIRECTION OF SLOPE	
T	THERMOSTAT	
H	HUMIDISTAT	
FSC	FAN SPEED CONTROLLER	
CS	CONDENSER WATER SUPPLY	PIPING
CR	CONDENSER WATER RETURN	
D	CONDENSATE DRAIN	

NOT ALL SYMBOLS ON THIS LIST ARE NECESSARILY USED ON THIS PROJECT

OTHER SYMBOLS

SYMBOL	DESCRIPTION
	INDICATES CONNECTION TO EXISTING DUCT OR PIPE

GENERAL EQUIPMENT DESIGNATION KEY:



MECHANICAL GENERAL NOTES

1. PRIOR TO SUBMITTING BID, VISIT THE SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW GENERAL NOTES, SPECIFICATIONS AND ALL OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
2. COORDINATE THE INSTALLATION OF MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. DUCTWORK AND PIPING SHALL BE ROUTED TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES, ETC.
3. TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION DURING WORK. REPAIR ANY DAMAGE CAUSED DURING CONSTRUCTION AT NO COST TO THE OWNER.
4. ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.
5. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING IS SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND SHALL MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. FIELD VERIFY FINAL LOCATIONS TO INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
6. REFER TO ARCHITECTURAL DRAWINGS FOR ALL RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. CHASE AND PENETRATIONS INTENDED FOR DUCTWORK AND PIPING SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
7. COORDINATE LOCATION OF ROOF PENETRATIONS WITH THE EXISTING CONDITIONS AND ARCHITECTURAL DRAWINGS.
8. SEAL ALL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS. FIREPROOF ALL PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.
9. COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL, AND DUCT INSTALLATION REQUIREMENTS.
10. LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES SHALL BE ADJUSTED AS REQUIRED TO ACCOMMODATE FINAL CEILING AND LIGHTING LOCATIONS.
11. DUCTWORK CROSSING FIRE RATED WALL OR OTHER FIRE RATED ASSEMBLIES SHALL BE MINIMUM 26 GAUGE SHEET METAL.
12. PROVIDE FIRE AND/OR FIRE/SMOKE DAMPERS IN DUCTWORK AT CEILINGS AND WALLS AS REQUIRED BY BUILDING CODE AUTHORITY HAVING JURISDICTION. FIRE AND FIRE/SMOKE DAMPERS SHALL CONFORM TO NFPA AS APPLICABLE.
13. PROVIDE WALL AND/OR DUCT ACCESS PANELS OR DOORS FOR ACCESS TO ALL FIRE AND/OR FIRE/SMOKE DAMPERS. ACCESS PANEL OR DOOR SHALL BE MINIMUM SIZE OF 6"x6" AND SHALL BE INSTALLED WITH 12" OF DAMPER. PROVIDE A REMOVABLE DUCT SECTION WHERE DUCT SIZE IS TOO SMALL FOR A 6"x6" ACCESS DOOR.
14. THERMOSTATS AND HUMIDISTATS SHALL BE LOCATED AND SET BY MECHANICAL CONTRACTOR AND WIRED IN CONDUIT BY ELECTRICAL CONTRACTOR. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. MOUNTING HEIGHTS SHALL BE 48" AFF TO MEET ADA REQUIREMENTS UNLESS OTHERWISE NOTED ON PLANS.
15. COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH ANY WALL MOUNTED ITEMS INDICATED ON THE ARCHITECTURAL DRAWINGS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF ANY WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.
16. ALL BRANCH DUCT CONNECTIONS AND TAKE-OFFS TO INDIVIDUAL DIFFUSERS, REGISTERS, AND GRILLES SHALL HAVE A PREFABRICATED 45 DEGREE, HIGH EFFICIENCY, RECTANGULAR/ROUND BRANCH DUCT TAKEOFF FITTING WITH MANUAL BALANCING DAMPER AND LOCKING QUADRANT.
17. BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE NOTED.
18. RIGID DUCTWORK INSULATION: PROVIDE R-6 MINIMUM INSULATION WRAP ON ALL CONCEALED DUCTWORK. PROVIDE R-6 MINIMUM INTERNAL DUCT LINER ON ALL EXPOSED DUCTWORK. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE DIMENSIONS. SHEET METAL SIZES SHALL INCREASE ACCORDINGLY. PROVIDE R-12 MINIMUM INSULATION ON ALL DUCTWORK INSTALLED IN UNCONDITIONED SPACES. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
19. FLEXIBLE DUCT WORK SHALL BE THERMAFLEX TYPE MKE, FLEXMASTER TYPE 8M, OR APPROVED EQUAL, SHALL BE LISTED UNDER 181 AS CLASS 1 AIR DUCT AND SHALL BE PROVIDED WITH INTEGRAL R-6 MINIMUM FIBERGLASS INSULATION. FLEXIBLE DUCTWORK SHALL NOT EXCEED 5'-0" IN LENGTH AND SHALL BE INSTALLED AND SUPPORT TO AVOID SHARP BENDS AND SAGGING.
20. WALL MOUNTED DIFFUSERS AND GRILLES SHALL BE PROVIDED WITH SUITABLE MOUNTING FRAME TO MATCH WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL DRAWINGS.

GENERAL MECHANICAL NOTES:

1. REFER TO ARCHITECTURAL PLANS FOR RATED WALLS AND PARTITIONS VERIFY FIRE AND/OR SMOKE DAMPER LOCATIONS AT DUCTS OR OPENINGS PENETRATING THESE WALLS.
2. REFER TO ARCHITECTURAL PLANS FOR ROOM NAMES AND NUMBERS.
3. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
4. VERIFY LOCATIONS OF THERMOSTATS WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.
5. VERIFY LOCATIONS OF EXPOSED DUCTS WITH ARCHITECT PRIOR TO INSTALLATION.
6. DUCT DIMENSIONS INDICATED ON PLANS ARE FREE AREA DIMENSIONS.
7. SUPPLY AND RETURN AIR DUCT SHALL BE INTERNALLY LINED WHERE SPECIFIED.
8. ALL LOUVER SIZES ON MECHANICAL PLANS ARE GIVEN IN FREE AREA REQUIRED. REFER TO ARCHITECTURAL PLANS FOR DIMENSIONS AND LOCATIONS. 9. COORDINATE TERMINAL BOX AND BALANCING DAMPER LOCATIONS CAREFULLY TO INSURE PROPER AND ADEQUATE ACCESS TO FILTERS, MOTORS, CONTROL VALVES, CONTROL PANLES, ETC. PROVIDE ACCESS PANELS AS SPECIFIED WHERE REQUIRED TO ASSURE THIS ACCESS. 10. CEILING PLENUM SPACE IS VERY TIGHT. WHERE REQUIRED, DUCTS OR PIPES SHALL BE ROUTED BETWEEN LIGHT FIXTURES AND UP AND OVER OTHER DUCTS OR PIPES USING THE SPACES BETWEEN STRUCTURAL JOISTS OR BEAMS WHERE APPLICABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR CAREFULLY COORDINATING ALL TRADES. EXISTING UNKNOWN CONDITIONS MAY AFFECT EXACT DUCT OR PIPE ROUTING, OR EXISTING CONDITIONS MAY NEED TO BE MODIFIED TO ACCOMMODATE DUCTS AND PIPES.

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02/27/2023

PROFESSIONAL SEAL

M101

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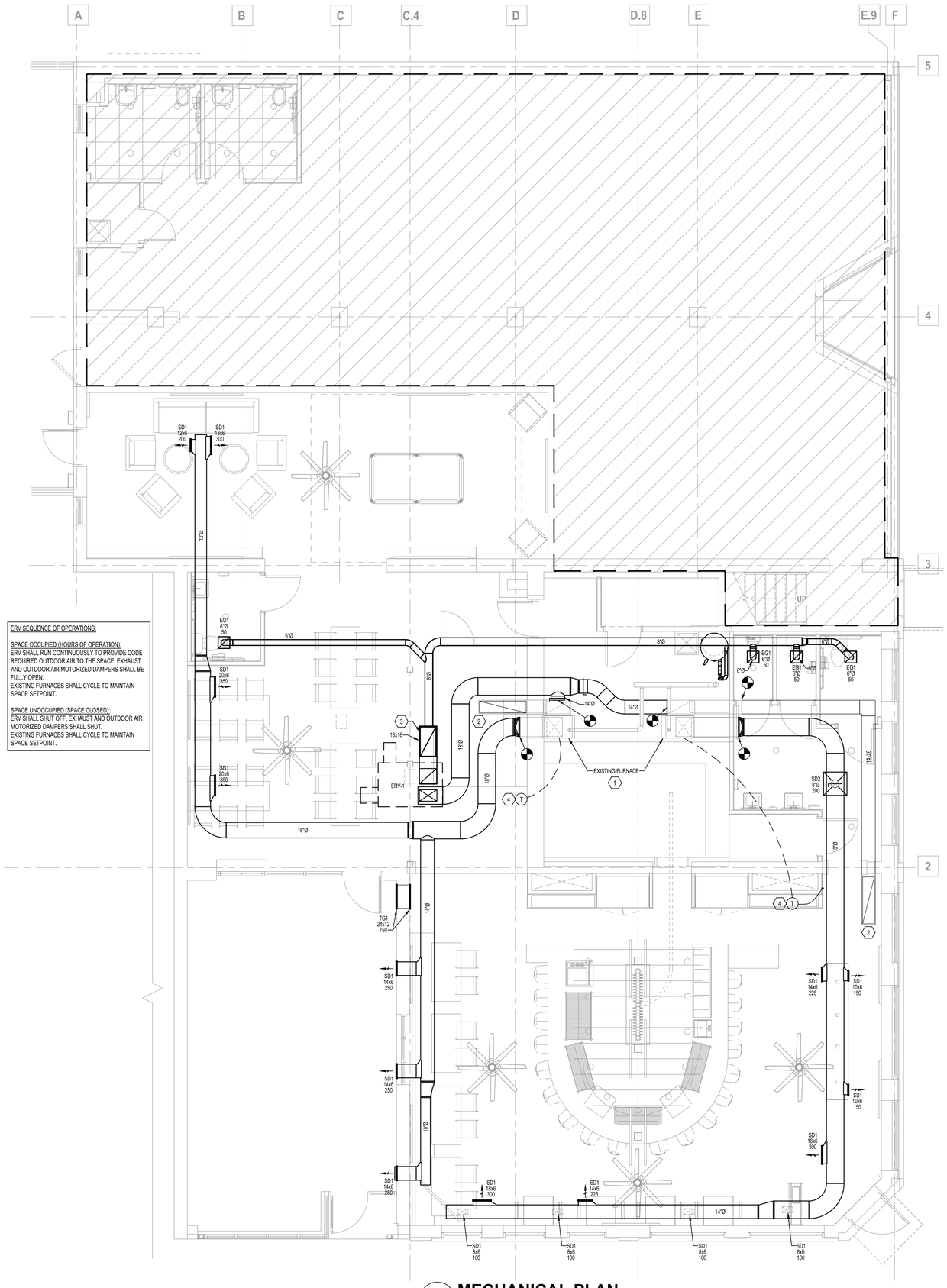
MECHANICAL NOTES, SYMBOLS & ABBREVIATIONS



1 **MECHANICAL PLAN**
SCALE: 1/4" = 1'-0"

GENERAL NOTES
(NOT ALL NOTES APPLY)

1. REFERENCE SHEET M101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.

KEYED NOTES:

1. EXISTING FURNACE AND ASSOCIATED CONDENSING UNIT ON ROOF TO REMAIN. BALANCE SUPPLY AIR TO 1950 CFM.
2. PROVIDE 48"x12" OPENING IN TOP OF RETURN AIR DUCT. COVER OPENING WITH 1/2"x1/2" GALVANIZED HARDWARE CLOTH. MAINTAIN MINIMUM 5" UNOBSTRUCTED FREE AREA ABOVE OPENING FOR AIRFLOW.
3. PROVIDE 16"x30" OPENING IN TOP OF RETURN/EXHAUST DUCT FOR ERV-1. MAINTAIN MINIUM 5" UNOBSTRUCTED FREE AREA ABOVE OPENING FOR AIRFLOW.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER BETWEEN HEATING AND COOLING. MOUNT THERMOSTAT AT 48" AFF. VERIFY FINAL THERMOSTAT LOCATION WITH OWNER.

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02/27/2023
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MECHANICAL PLAN

GRILLE, REGISTER, AND DIFFUSER SCHEDULE

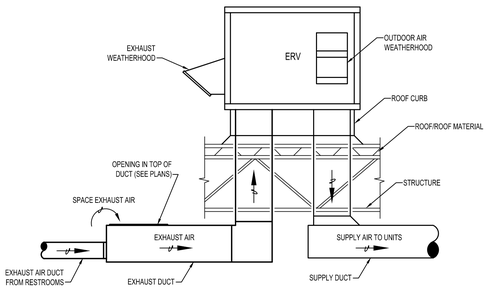
MARK	MANUFACTURER	MODEL	FACE TYPE	MOUNTING LOCATION	FACE SIZE (IN)	NOTES
SD1	TITUS	300FL	LOUVERED	WALL/DUCT	NECK + 1-3/4"	1,2,3,4,5,6
SD2	TITUS	PAS	PERFORATED	CEILING	24"x24"	1,2,3,4,5
EG1	TITUS	PAR	PERFORATED	CEILING	12"x12"	1,2,3,5
TG1	TITUS	350FL	LOUVERED	WALL	NECK + 1-3/4"	1,2,3,5

NOTES:
1 NECK SIZE SHOWN ON DRAWINGS.
2 BAKED ENAMEL FINISH, COORDINATE WITH ARCHITECTURAL PLANS.
3 PROVIDE NECK FOR DUCT CONNECTION.
4 BRANCH DUCT SIZE SHALL BE SAME AS NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.
5 FRAME TYPE TO MATCH CONSTRUCTION OF MOUNTING LOCATION, COORDINATE WITH ARCHITECTURAL PLANS.
6 PROVIDE WITH OPPOSED BLADE DAMPER FOR BALANCING.

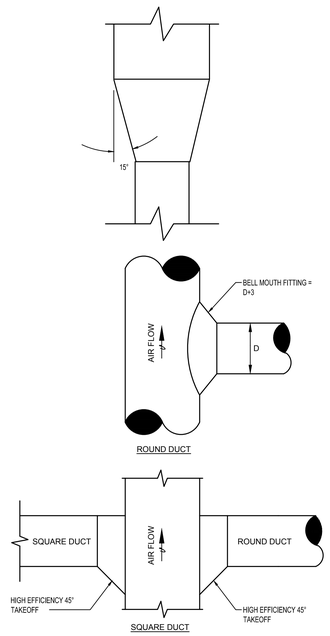
ENERGY RECOVERY VENITLATOR SCHEDULE

MARK	MANUFACTURER	MODEL	WEIGHT (LBS)	OUTSIDE AIR (CFM)	EXHAUST OA (CFM)	SUPPLY FAN		EXHAUST FAN		SUMMER PERFORMANCE		WINTER PERFORMANCE		UNIT ELECTRICAL DATA			NOTES
						HP	ESP (IN. W.C.)	HP	ESP (IN. W.C.)	LAT (DB/WB)	LOAD REDUCTION (MBH)	LAT (DB/WB)	LOAD REDUCTION (MBH)	V/PH/HZ	MCA	MOCP	
ERV-1	GREENHECK	ERVe-20-15H	1000	1,800	1,600	1.0	0.5	0.75	0.5	81.1/67.2	59.1	51.6/42.3	82.9	208/1/60	19.1	25.0	1,2,3,4,5,6

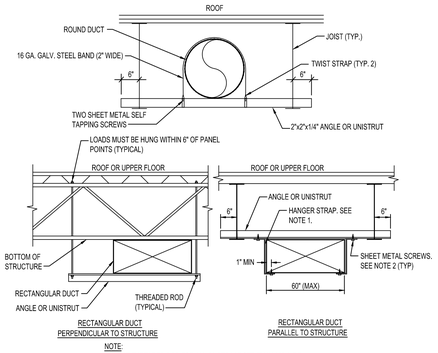
NOTES:
1 EQUIPMENT SIZED FOR OUTDOOR CONDITIONS OF - SUMMER: 95.5°F DB AND 75.3°F WB. WINTER: 9.3°F DB AND 7.0°F WB.
2 EQUIPMENT SIZED FOR INDOOR CONDITIONS OF - SUMMER: 75.0°F DB AND 62.4°F WB (50% RH). WINTER: 72.0°F DB AND 55.6°F WB (35% RH).
3 ENERGY RECOVERY DEVICE SHALL BE POLYMER WHEEL WITH SILICA GEL DESICCANT.
4 UNIT SHALL BE DOWN DISCHARGE WITH SUPPLY AND EXHAUST WEATHERHOODS.
5 PROVIDE WITH MOTORIZED DAMPERS FOR EXHAUST AND OUTDOOR AIR.
6 PROVIDE WITH 14" HIGH ROOF CURB AND FACTORY MOUNTED DISCONNECT SWITCH.



3 **ERV DETAIL**
NOT TO SCALE



2 **DUCT TAKEOFFS AND FITTINGS**
NOT TO SCALE



NOTE:
1. USE THREADED ROD FOR ALL DUCTS LARGER THAN 60" WIDE.
2. SHEET METAL SCREWS MAY BE OMITTED IF HANGER STRAP IS CONTINUOUS AND LOOPS UNDER ENTIRE DUCT.

1 **DUCT HANGERS AND SUPPORTS**
NOT TO SCALE

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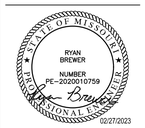

PROFESSIONAL SEAL

M301

ISSUE DATE: 27 FEB 2023
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MECHANICAL
SCHEDULES AND DETAILS

15000 - BASIC MECHANICAL REQUIREMENTS

DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15.

READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND COORDINATE AND THE WORK OF SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. PROVIDE SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.

SCHEDULE THE COMPLETION AND INSPECTION OF WORK AND THE WORK OF SUBCONTRACTORS WORK TO COMPLY WITH THE SCHEDULE AND THE PROJECT COMPLETION DATE.

VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE RESPONSIBILITY IN PERFORMANCE OF WORK.

READ ALL RELEVANT DOCUMENTS, BECOME FAMILIAR WITH THE JOB, SCOPE OF WORK, TYPE OF GENERAL CONSTRUCTION, AND THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. ALSO UNDERSTAND THE PURPOSE FOR WHICH THESE DOCUMENTS HAVE BEEN PREPARED AND BECOME COGNIZANT OF ALL THE DETAILS INVOLVED. COORDINATE WORK WITH THAT OF OTHERS.

DEFINITIONS:

FURNISH - PURCHASE AND DELIVER TO PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT.
INSTALL - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT.
PROVIDE - FURNISH AND INSTALL

GENERAL REQUIREMENTS

PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE OTHERS SHALL BE PROVIDED. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE ARCHITECT-ENGINEER, AS REQUIRED.

THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF CONTRACT.

WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE OWNERS CRITERIA, PROVIDE THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.

ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.

ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD ENGINEERING PRACTICES.

UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW, UNDERWRITERS LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF STATE AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.

CODES

ALL WORK SHALL CONFORM TO THE OWNER'S CRITERIA, THE STATE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY THE OWNER.

LICENSES, PERMITS, COMMISSIONING, INSPECTIONS & FEES

OBTAIN AND PAY FOR ALL LICENSES, PERMITS, COMMISSIONING, INSPECTIONS, AND FEES REQUIRED OR RELATED TO THIS WORK.

PROVIDE TO THE OWNER-ARCHITECT A COMMISSIONING PLAN, PRELIMINARY COMMISSIONING REPORT, FINAL COMMISSIONING REPORT, AND CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS

WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY ARCHITECT-ENGINEER PRIOR TO BID THROUGH SHOP DRAWING SUBMITTAL PROCESS, FOR ACCEPTANCE PRIOR TO INSTALLATION. ANY CHANGES TO ELECTRICAL SERVICE, STRUCTURAL FRAMING, ETC. OR ANY OTHER MODIFICATION THAT IS REQUIRED BY THE USE OF ALTERNATE EQUIPMENT SHALL BE COORDINATED WITH OTHER TRADES AND SHALL INCLUDE ALL COSTS IN BID FOR THE REQUIRED CHANGES. THE USE THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT NO EXPENSE TO THE OWNER.

GUARANTEE

GUARANTEE ALL MATERIALS AND WORK PROVIDED UNDER THIS CONTRACT AND MAKE GOOD, REPAIR OR REPLACE AT NO EXPENSE TO THE OWNER, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE (IN WRITING) OF THE INSTALLATION. EXTENDED WARRANTIES ARE AS SPECIFIED WITH INDIVIDUAL EQUIPMENT.

QUALITY ASSURANCE

INDUSTRY STANDARDS AND CODES: UNLESS MODIFIED BY THESE SPECIFICATIONS, THE DESIGN, MANUFACTURER, TESTING AND METHOD OF INSTALLING ALL MATERIALS, APPARATUS AND EQUIPMENT SHALL CONFORM TO THE FOLLOWING:

1. ARI CODE FOR REFRIGERATION APPARATUS
2. ANSI B9.1 SAFETY CODE FOR MECHANICAL REFRIGERATION
3. STANDARDS OF NATIONAL FIRE PROTECTION ASSOCIATION
4. SMACNA
5. ASHRAE

RECORD DRAWINGS

MAINTAIN ONE COPY OF DRAWINGS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS: LOCATION OF CONCEALED PIPING VALVES AND DUCTS, REVISIONS, ADDENDUMS, AND CHANGE ORDERS, AND SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.

AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. A SET OF REPRODUCIBLE DRAWINGS ALONG WITH ONE SET OF BLUELINES OF THE MOST RECENT SET OF DRAWINGS WITH TEMPERATURE CONTROL DRAWINGS INCLUDED SHALL BE DELIVERED TO THE ARCHITECT UPON COMPLETION OF THE WORK AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

DISCREPANCIES IN DOCUMENTS

DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE ARCHITECT-ENGINEER IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, ARCHITECT-ENGINEER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

PHASING REQUIREMENTS

INCLUDE IN BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE PROJECT'S HVAC, PLUMBING AND SPRINKLER SERVICE IN OPERATION. IF APPLICABLE, SCHEDULE IN WRITING WITH ARCHITECT ONE WEEK PRIOR TO ANY SHUT DOWN OF THE HVAC, PLUMBING OR FIRE PROTECTION SYSTEMS.

DEMOLITION

COORDINATE THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY OTHER. COORDINATE ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.

VERIFY SCOPE OF AND THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. VERIFY ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK, AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS, OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.

CUTTING AND PATCHING

PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF THE WORK UNDER THIS SPECIFICATION. NO CUTTING OF THE STRUCTURE SHALL BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OR ARCHITECT.

PATCHING SHALL BE OF THE SAME WORKMANSHIP, MATERIAL AND FINISH AND SHALL MATCH ACCURATELY ALL SURROUNDING CONSTRUCTION IN A MANNER SATISFACTORY TO THE ARCHITECT.

EXISTING UTILITIES, ETC. THAT ARE DAMAGED DURING THE CONSTRUCTION PERIOD, WHETHER OR NOT DUE TO NEGLIGENCE SHALL BE REPAIRED OR REPLACED AND LEFT IN A CONDITION SUITABLE TO THE ARCHITECT.

SLEEVES

PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR. COORDINATE THROUGH THE ARCHITECT ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY FLOORS OR WALLS.

ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.

SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

HANGERS

HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.

HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING. HANGING FROM METAL DECK IS NOT PERMITTED. HANGERS MUST BE ATTACHED TO UPPER CHORD OF BAR JOIST. WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING, INSTALL TRAPEZE TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, AND OTHER EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO LANDLORD CRITERIA.

HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6" LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION.

HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED.

PROVIDE SWAY AND SEISMIC BRACING WHERE REQUIRED BY CODE.

JOB CONDITIONS

PROTECT MATERIALS, APPARATUS AND EQUIPMENT FROM DAMAGE, MOISTURE, DIRT, DEBRIS AND WORK OF OTHER TRADES.

OPERATION MANUALS AND INSTRUCTIONS

PROVIDE OPERATING AND MAINTENANCE INSTRUCTIONS AT THE COMPLETION OF THE PROJECT. SUBMIT THREE HARD BOUND COPIES TO ARCHITECT.

SCHEDULE A MEETING WITH THE OWNER'S REPRESENTATIVE AT THE SITE TO PROVIDE DETAILED INFORMATION ON THE OPERATING AND MAINTENANCE OF EQUIPMENT.

SUBMITTALS

SUBMIT WITHIN THIRTY (30) DAYS AFTER THE DATE OF NOTICE TO PROCEED AND BEFORE PURCHASING ANY MATERIALS OR EQUIPMENT, SUBMIT TO THE ARCHITECT FOR REVIEW, A COMPLETE LIST, IN SIX (6) COPIES, OF ALL MATERIALS INCORPORATED IN THE WORK. THIS LISTING SHALL BE ARRANGED BY THE ORDER OF OCCURRENCE IN THE SPECIFICATIONS, FOLLOWED BY THE ITEMS ON THE DRAWING NOT SPECIFICALLY INCLUDED IN THE SPECIFICATIONS.

AFTER THE LIST HAS BEEN PROCESSED BY THE ARCHITECT, SUBMIT COMPLETE SHOP DRAWINGS AND PRODUCT DATA OF ALL EQUIPMENT. THESE SUBMITTALS SHALL BE SUBMITTED WITHIN THIRTY (30) DAYS AFTER THE PROCESSING DATE OF THE ORIGINAL SUBMITTAL LIST. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOR (10) WORKING DAYS FOR REVIEW BY ARCHITECT-ENGINEER WITHOUT CAUSING DELAYS OR CONFLICTS IN THE PROJECT'S PROGRESS.

ALL SUBMITTALS SHALL BE COMPLETE AND SHALL BE IN THREE-RING, LOOSE -LEAF BINDERS, NO CONSIDERATION WILL BE GIVEN TO PARTIAL SUBMITTALS, UNLESS NOTED OTHERWISE BY ARCHITECT. EACH ITEM SHALL HAVE A COVER PAGE STATING PROJECT, SPECIFICATION AND PARAGRAPH REFERENCE NUMBER, OR DRAWING REFERENCE NUMBER, AND SCHEDULED EQUIPMENT IDENTIFICATION NUMBER, IF APPLICABLE.

THE REVIEW OF SUBMITTALS DOES NOT RELIEVE RESPONSIBILITY OF SHOP DRAWING ERRORS IN DETAILS, SIZES, QUANTITIES, WIRING DIAGRAM ARRANGEMENTS AND DIMENSIONS WHICH DEVIATE FROM THE SPECIFICATIONS, CONTRACT DRAWINGS AND/OR JOB CONDITIONS AS THEY EXIST.

IF APPARATUS OR MATERIALS ARE SUBSTITUTED FOR THOSE SPECIFIED UNDER THIS SECTION, AND SUCH SUBSTITUTIONS NECESSITATE CHANGES IN OR ADDITIONAL CONNECTIONS, PIPING SUPPORTS OR CONSTRUCTIONS, SAME SHALL BE PROVIDE AT NO ADDITIONAL COST TO THE OWNER. ASSUME COST AND ENTIRE RESPONSIBILITY THEREOF. ARCHITECT'S PERMISSION TO MAKE SUCH SUBSTITUTION SHALL NOT RELIEVE FULL RESPONSIBILITY FOR WORK.

TEST AND BALANCE REPORT: SUBMIT AT FINAL INSPECTION OPERATION AND MAINTENANCE MANUALS: SUBMIT COPIES IN COMPLIANCE WITH SECTION, OPERATION AND MAINTENANCE MANUALS.

15400 - HEATING VENTILATION AND & AIR CONDITIONING

PRODUCTS:

ALL MATERIALS AND EQUIPMENT SHALL BE NEW. SYSTEMS SHALL FUNCTION CORRECTLY AS A WHOLE, AND IN ALL ITS PARTS, UP TO THE SPECIFIED CAPACITY. SYSTEMS OR DEVICES FAILING TO MEET PERFORMANCE REQUIREMENTS SHALL BE REPLACED, ALTERED OR REPAIRED AS REQUIRED TO BRING PERFORMANCE UP TO SPECIFIED REQUIREMENTS. WORK DAMAGED OR MARRED BY SUCH REPLACEMENTS, ALTERATIONS, OR REPAIRS SHALL BE RESTORED TO PRIOR CONDITIONS, AT NO ADDITIONAL COST TO THE OWNER. WHERE MULTIPLE ITEMS OF EQUIPMENT OR MATERIALS ARE REQUIRED, THEY SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER. BEFORE ORDERING EQUIPMENT, THE PHYSICAL DIMENSIONS SHALL BE CHECKED TO VERIFY FIT IN SPACES ALLOTTED ON THE DRAWINGS. INSERTS, PIPE SLEEVES, AND SUPPORTS OF AIR CONDITIONING EQUIPMENT SHALL BE PROVIDED AS SPECIFIED. WHERE SUCH ITEMS ARE TO BE SET OR EMBEDDED IN CONCRETE, MASONRY OR SIMILAR WORK, THE ITEMS SHALL BE FURNISHED AT THE PROPER TIME FOR SETTING OR EMBEDMENT SO AS TO CAUSE NO DELAY. DUCTWORK AND EQUIPMENT ASSEMBLIES SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC. ADDITIONAL DUCTWORK AND APPURTENANCES REQUIRED FOR PROPER OPERATION OF EQUIPMENT SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST.

MANUFACTURER'S NAMES AND CATALOG NUMBERS

SPECIFIC REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURER'S NAMES AND MODEL OR CATALOG NUMBERS. THIS DOES NOT INDICATE THAT THE MATERIAL AND EQUIPMENT SPECIFIED IS NECESSARILY AN "OFF THE SHELF" ITEM; REQUIREMENTS FOR SPECIFIC FINISHES, MATERIALS OR OTHER MODIFICATIONS MAY INTRODUCE VARIANCES FROM MANUFACTURER'S STANDARDS. ASCERTAIN THAT SUCH MODIFICATIONS ARE FULLY CONSIDERED.

DIAGRAMS, NAMEPLATES AND LABELS

EACH MAJOR COMPONENT OF EQUIPMENT SHALL HAVE THE MANUFACTURER'S NAME, ADDRESS AND CATALOG NUMBER ON A PLATE SECURELY AFFIXED IN A CONSPICUOUS PLACE. THE NAMEPLATE OF A DISTRIBUTING AGENT WILL NOT BE ACCEPTED. ALL PIECES OF EQUIPMENT, VALVES, STARTERS, DISCONNECTS, AND ALL PNEUMATIC AND ELECTRIC CONTROL INSTRUMENTS AND APPARATUS SHALL BE IDENTIFIED WITH 1/16" THICK BLACK LAMINATED PLASTIC NAMEPLATES, WITH 3/16" HIGH WHITE LAMINATED LETTERS. SIMILAR AND LIKE EQUIPMENT SHALL BE DESIGNATED WITH NUMERICAL SUFFIX (EXAMPLE: THERMOSTAT, T-1). THE NAMEPLATE IDENTIFICATIONS SHALL COINCIDE WITH ITEMS APPEARING ON DIAGRAMS. PROVIDE A LABEL FOR THE MECHANICAL SYSTEM STATING: (NAME, ADDRESS AND PHONE NUMBER OF CONTRACTOR). LETTERS SHALL BE 1/4" HIGH AND LOCATED IN A CONSPICUOUS PLACE NEAR THE HVAC EQUIPMENT.

EXECUTION

INSTALLATION AND WORKMANSHIP

THE WORK SHALL BE PERFORMED BY QUALIFIED MECHANICS. ALL MATERIALS, APPARATUS AND EQUIPMENT SHALL BE INSTALLED IN NEAT, WORKMANLIKE MANNER. MATERIALS, DEVICES OR EQUIPMENT WHICH, IN THE OPINION OF THE ARCHITECT-ENGINEER, IS IMPROPERLY INSTALLED SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL COST TO THE OWNER. THE WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES. WHERE THE WORK IS DEPENDENT UPON WORK OF OTHER TRADES OR WORK ALREADY IN PLACE, SUCH OTHER WORK AND WORK IN PLACE SHALL BE EXAMINED AND SHALL BE IN PROPER CONDITION AND STATE OF COMPLETION BEFORE CONTINUING THE INSTALLATION. THE INSTALLATION OF WORK SHALL, IN GENERAL, BE AS HIGH AS POSSIBLE AND LOCATED IN ACCORDANCE WITH THE DRAWINGS. DUCTWORK INDICATED SHALL BE FOLLOWED AS ACCURATELY AS POSSIBLE. ANY NECESSARY DEVIATIONS SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT-ENGINEER. PROVIDE DRAWINGS SHOWING PROPOSED CHANGES. APPROVAL IS REQUIRED BEFORE CHANGES SHALL TAKE EFFECT.

CUTTING AND PATCHING

LAYOUT OPENINGS FOR CUTTING BY OTHER TRADES AS REQUIRED. CUTTING OF STEEL, CONCRETE OR ANY OTHER STRUCTURAL PART MUST BE APPROVED IN WRITING BY ARCHITECT-ENGINEER PRIOR TO CUTTING.

WATERPROOFING

DO NOT CUT OR PENETRATE WATERPROOFED SURFACES, OR WATERPROOFING MEMBRANES, WITHOUT FIRST MAKING ARRANGEMENTS FOR REPAIR BY A METHOD APPROVED BY ARCHITECT-ENGINEER.

PROVIDE ALL NECESSARY FLASHING AND COUNTERFLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.

ELECTRICAL WORK

POWER WIRING FROM PANELS TO MOTOR CONTROLLERS AND FROM CONTROLLERS TO MOTORS IS SPECIFIED IN DIVISION 16. MOTOR STARTERS NOT SPECIFIED TO BE FURNISHED WITH THE MOTORS FROM THE FACTORY ARE SPECIFIED IN DIVISION 16. SUBMIT WIRING DIAGRAMS FOR APPROVAL AND FURNISH APPROVED DIAGRAMS TO THE ELECTRICAL CONTRACTOR FOR COORDINATION. ELECTRICAL CONTROL WIRING FOR CONNECTION OF TEMPERATURE CONTROLLERS, PUSH BUTTONS, INTERLOCKS IN MOTOR CONTROLLERS, AND LIKE ITEMS IS SPECIFIED IN THE CONTROL SECTION(S) IN THIS DIVISION. FURNISH ALL EQUIPMENT WITH COMPLETE INTERNAL CONTROL WIRING. ELECTRICAL WORK SPECIFIED IN THIS DIVISION SHALL CONFORM TO APPLICABLE PROVISIONS OF DIVISION 16. ALL CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE MOTORS CONFORMING TO CHARACTERISTICS SHOWN ON ELECTRICAL DRAWINGS.

ACCESS DOORS (ACCESS PANELS)

PROVIDE ACCESS REQUIRED FOR MAINTENANCE, ADJUSTMENT, REMOVAL AND REPAIR OF VALVES, CONTROLS, DAMPERS, EQUIPMENT AND LIKE ITEMS. PROVIDE ACCESS DOORS (ACCESS PANELS) CONFORMING TO REQUIREMENTS OF DIVISION 8 SPECIFICATIONS. PANELS SHALL BE LOCATED TO MAKE ALL ITEMS EASILY ACCESSIBLE.

CLEAN UP

REFER TO GENERAL CONDITIONS FOR CLEAN-UP. CLEAN ALL MATERIALS AND EQUIPMENT OF DIRT, DUST, PAINT, SPOTS AND STAINS, SOIL MARKS AND OTHER FOREIGN MATTER.

FINAL INSPECTION

GIVE NOTICE TO THE ARCHITECT-ENGINEER THAT THE WORK IS READY FOR FINAL INSPECTION.

1. SUBMIT TEST AND BALANCE REPORT AND COMPLETE REQUIREMENTS AS NOTED.
2. SUBMIT LETTER FROM CONTROL MANUFACTURER CERTIFYING THAT CONTROLS HAVE BEEN CHECKED FOR OPERATION AND CALIBRATION, AND THAT THE SYSTEM IS OPERATING AS INTENDED.

FURNISH NECESSARY MECHANICS TO OPERATE SYSTEM, MAKE NECESSARY ADJUSTMENTS AND ASSIST WITH FINAL INSPECTION.

INSTRUCTION OF OWNER'S OPERATING PERSONNEL

INCLUDE THE COST OF THE SERVICES OF QUALIFIED INSTRUCTOR(S) TO INSTRUCT THE OWNER'S OPERATING PERSONNEL IN THE OPERATION, ADJUSTMENT, CARE AND MAINTENANCE OF ALL HVAC EQUIPMENT AND SYSTEMS. INSTRUCTION SHALL BE PERFORMED AT A TIME APPROVED BY THE OWNER AND AFTER ALL HVAC EQUIPMENT AND SYSTEMS ARE INSTALLED, COMPLETE, ADJUSTED AND OPERATING TO SPECIFIED REQUIREMENTS. NOTIFY THE ARCHITECT-ENGINEER WHEN INSTRUCTIONS WILL BE GIVEN. QUALIFICATIONS OF INSTRUCTORS SHALL BE SUBJECT TO APPROVAL OF THE OWNER AND EQUIPMENT MANUFACTURER. ADDITIONAL REQUIREMENTS CONCERNING OPERATION AND MAINTENANCE OF MECHANICAL EQUIPMENT AND SYSTEMS MAY BE SPECIFIED IN OTHER SECTIONS. TWO COPIES OF ACKNOWLEDGEMENT OF ALL REQUIRED INSTRUCTIONS TO OWNER'S OPERATING PERSONNEL, SIGNED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE, SHALL BE SUBMITTED TO THE ARCHITECT-ENGINEER PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT. AN ADDITIONAL COPY OF THIS ACKNOWLEDGMENT IS REQUIRED IN EACH COPY OF OPERATION AND MAINTENANCE MANUALS REQUIRED IN THE SECTION, OPERATION AND MAINTENANCE MANUALS.

OPERATION AND MAINTENANCE MANUALS

FURNISH THREE COPIES OF COMPLETE OPERATION AND MAINTENANCE MANUALS TO THE ARCHITECT-ENGINEER, FOR APPROVAL AND FOR THE OWNER, ON ALL EQUIPMENT AND SYSTEMS. THE MANUALS SHALL BE BOUND IN HARD-BACK, THREE RING LOOSE-LEAF BINDERS. MANUALS SHALL CONTAIN A TITLE SHEET WITH JOB NAME, AND THE NAMES, ADDRESSES AND PHONE NUMBERS OF THE CONTRACTOR, SUBCONTRACTOR, CONTROL SUBCONTRACTOR, RELATED CONTRACTORS AND MATERIAL AND EQUIPMENT SUPPLIERS.

A COPY OF ACKNOWLEDGMENT OF INSTRUCTION TO THE OWNER'S OPERATING PERSONNEL IN THE OPERATION OF ALL MECHANICAL EQUIPMENT AND SYSTEMS, SIGNED BY THE OWNER OR HIS AUTHORIZED REPRESENTATIVE. TYPEWRITTEN OPERATING INSTRUCTIONS FOR THE OWNER'S PERSONNEL DESCRIBING HOW TO STOP AND START EACH PIECE OF EQUIPMENT; HOW TO SET THE TEMPERATURE CONTROL SYSTEM FOR NORMAL OPERATION AND NORMAL RESTARTING PROCEDURES, CAUTION AND WARNING NOTICES. APPROVED SHOP DRAWINGS, PRODUCT DATA AND PARTS AND MAINTENANCE BOOKLET FOR EACH ITEM OF MATERIAL AND EQUIPMENT FURNISHED UNDER DIVISION 15000. RECORD DRAWINGS OF ALL SYSTEMS INCLUDING ELECTRICAL AND CONTROL DIAGRAMS. TEST AND BALANCE REPORT. COPIES OF CERTIFICATES OF INSPECTION. GUARANTEES, INCLUDING EXTENDED GUARANTEES.

DELIVER THE MANUALS TO THE OWNER PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT.

HVAC/HYDRONIC PIPING

CONDENSATE DRAIN

PROVIDE CONDENSATE DRAINS FOR ALL AIR CONDITIONING UNITS AND PIPE AS DENOTED ON DRAWINGS. CONDENSATE DRAIN PIPING SHALL BE INSTALLED WITH TRAP AT THE COIL CONNECTION AND SHALL HAVE A MINIMUM SEAL DEPTH EQUAL TO THE RESPECTIVE AIR HANDLING UNIT FAN STATIC PRESSURE. DEPTH SHALL BE A MINIMUM OF 2".

HVAC INSULATION

LOW PRESSURE DUCTWORK INSULATION

EXTERNAL INSULATION SHALL BE R-6 MINIMUM SCHULLER TYPE SMALLLITE, FSK SPIN-GLAS OR APPROVED EQUAL WITH AN EMBOSSED ALUMINUM FOIL FACING. INTERNAL INSULATION SHALL BE R-6 MINIMUM LINER WITH A COATED AIR SIDE SURFACE TO PREVENT EROSION. APPLY ADHESIVES AND FASTENERS PER SMACNA AND THE MANUFACTURER. ALL TRANSVERSE EDGES TO BE COATED WITH ADHESIVE. ALL CONCEALED DUCTWORK SHALL HAVE EXTERNAL INSULATION, UNCONCEALED DUCTWORK SHALL BE INTERNALLY LINED. DUCTWORK INSTALLED IN UNCONDITIONED SPACES SHALL BE R-12 MINIMUM SCHULLER TYPE SMALLLITE, FSK SPIN-GLAS OR APPROVED EQUAL WITH AN EMBOSSED ALUMINUM FOIL FACING.

ALL AIR SUPPLY DIFFUSERS BACKS AND NECKS, SHALL BE INSULATED WITH R-6 MINIMUM MANVILLE R-SERIES SMALLITE, OR APPROVED EQUAL FIBERGLASS BLANKET INSULATION.

ADHESIVES, MASTIC, SEALANTS

ADHESIVE SHALL BE FOSTER'S 85-20. STUDWELD PINS SHALL BE SEALED WITH FOSTER'S 30-36 ADHESIVE. ALL JOINTS, SEAMS AND BREAKS IN THE VAPOR BARRIER SHALL BE SEALED WITH FOSTER'S 35-00, REINFORCED WITH 4 INCH WIDE GLASS FABRIC.

TERMINAL HEAT TRANSFER UNITS

DESCRIPTION

INSTALL AIR CONDITIONING UNITS OF THE CAPACITIES INDICATED, COMPLETE WITH GAS-FIRED HEATING SYSTEM, WHERE INDICATED ON THE DRAWINGS. UNIT SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE ASME AND ANSI CODES AND SHALL BE LISTED BY UNDERWRITER'S LABORATORIES. UNIT SHALL BE RATED IN ACCORDANCE WITH THE LATEST ARI STANDARD 21. WHERE SPECIFIED OPERATING CONDITIONS ARE OTHER THAN ARI STANDARD CONDITIONS, CAPACITIES SHALL BE INTERPOLATED FROM ARI CONDITIONS.

MANUFACTURER

UNITS SHALL BE TRANE, LENNOX, AAON OR APPROVED EQUAL.

EXHAUST FANS

INLINE EXHAUST FAN

INSTALL DIRECT DRIVE CENTRIFUGAL INLINE EXHAUST FAN BY GREENHECK OR APPROVED EQUAL WITH GALVANIZED STEEL HOUSING, BACKWARD INCLINED ALUMINUM WHEEL, ACCESS PANELS, INTEGRAL DUCT CONNECTION FLANGES, BALL BEARING MOTORS, AND CORROSION RESISTANT FASTENERS. FAN SHALL COME INSTALLED WITH NEMA-1 TOGGLE SWITCH, MOUNTED AND WIRED. SOLID STATE SPEED CONTROLLER SHIPPED LOOSE AND PSC MOTOR.

WATER SOURCE HEAT PUMPS

DESCRIPTION

INSTALL WATER SOURCE HEAT PUMP OF CAPACITIES INDICATED MANUFACTURED BY FLORIDA HEAT PUMP, MCQUAY OR AN APPROVED EQUAL. FACTORY ASSEMBLED AND RATED ACCORDING TO ARI-ISO13526-1. GALVANIZED-STEEL CASING WITH ACCESS PANELS FOR MAINTENANCE AND FILTER REPLACEMENT, KNOCKOUTS FOR ELECTRICAL AND PIPING CONNECTIONS, FLANGED DUCT CONNECTIONS AND CABINET INSULATION OF ½" THICK, MULTI DENSITY, COATED GLASS FIBER. THE UNIT SHALL BE DESIGNED TO OPERATE WITH ENTERING FLUID TEMPERATURES BETWEEN 50°F AND 100°F IN COOLING AND BETWEEN 50°F AND 80°F IN HEATING.

THE UNITS SHALL BE WARRANTED BY THE MANUFACTURER AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR ON ALL PARTS AND FIVE (5) YEARS ON COMPRESSOR.

REFRIGERATION CIRCUITS SHALL UTILIZE R-410A. THE UNIT SHALL CONTAIN SEALED REFRIGERANT CIRCUITS INCLUDING HERMETIC COMPRESSORS, THERMAL EXPANSION VALVE METERING DEVICES, REFRIGERANT DRIER, FINED TUBE AIR-TO-REFRIGERANT HEAT EXCHANGERS, REFRIGERANT REVERSING VALVES AND SERVICE PORTS. COMPRESSORS SHALL BE HIGH EFFICIENCY, DESIGNED FOR HEAT PUMP DUTY, INTERNALLY SPRING ISOLATED (EXCEPT FOR SCROLL TYPE COMPRESSORS) FOR MAXIMUM SOUND ATTENUATION AND MOUNTED ON RUBBER VIBRATION ISOLATORS. COMPRESSOR MOTORS SHALL BE EQUIPPED WITH OVERLOAD PROTECTION. THE FINNED TUBE COIL SHALL BE CONSTRUCTED OF LANCED ALUMINUM FINS NOT EXCEEDING 14 FINS PER INCH. COILS SHALL HAVE A BAKED POLYESTER ENAMEL COATING FOR PROTECTION AGAINST MOST AIRBORNE CHEMICALS. THE COAXIAL WATER-TO-REFRIGERANT HEAT EXCHANGERS SHALL BE CONSTRUCTED OF A CONVOLUTED COPPER INNER TUBE AND STEEL OUTER TUBE WITH A DESIGNED REFRIGERANT WORKING PRESSURE OF 450 PSIG AND A DESIGNED WATER SIDE WORKING PRESSURE OF NO LESS THAN 400 PSIG.

UNITS 6 TONS AND LARGER: THE FANS SHALL BE BELT DRIVEN FORWARD CURVE TYPE WITH DYNAMICALLY BALANCED WHEEL(S). THE FAN HOUSINGS SHALL BE REMOVABLE FROM THE UNIT WITHOUT DISCONNECTING THE SUPPLY AIR DUCTWORK FOR SERVICING OF FAN MOTORS. MOTORS SHALL BE PERMANENTLY LUBRICATED AND HAVE THERMAL OVERLOAD PROTECTION.

UNITS SMALLER THAN 6 TONS: THE FAN SHALL BE DIRECT DRIVE CENTRIFUGAL FORWARD CURVED TYPE WITH A DYNAMICALLY BALANCED WHEEL. FAN HOUSE SHALL BE REMOVABLE FROM UNIT WITHOUT DISCONNECTING THE SUPPLY AIR DUCTWORK FOR SERVICING OF FAN MOTOR. THE MOTOR SHALL BE THREE SPEED PSC TYPE AND BE PERMANENTLY LUBRICATED AND HAVE THERMAL OVERLOAD PROTECTION.

DUCTWORK, LOW PRESSURE, GALVANIZED STEEL

QUALITY ASSURANCE

DUCTS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH "HVAC DUCT CONSTRUCTION STANDARDS" PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA)

JOB CONDITIONS

INSPECT THE DRAWINGS AND VERIFY EXISTING CONDITIONS IN THE FIELD. REPORT CONFLICTS BEFORE STARTING FABRICATION.

DUCT MATERIAL

WEIGHTS AND GAGES SHALL BE IN ACCORDANCE WITH TABLE I OF "HVAC DUCT CONSTRUCTION STANDARDS" PUBLISHED BY SMACNA. DUCT MATERIAL SHALL BE GALVANIZED STEEL.

SPLITTER DAMPERS

SPLITTERS SHALL BE 18 GAGE GALVANIZED STEEL WITH HORIZONTAL AND VERTICAL DIMENSIONS SUFFICIENT TO CLOSE OFF AIR TO BRANCH. PROVIDE VENTLOK NO. 607 END BEARINGS AND VENTLOK NO. 690 DAMPER ASSEMBLY.

VOLUME DAMPERS

VOLUME DAMPERS SHALL BE 18 GAGE STEEL; SINGLE BLADE UP TO 8" X 8", OPPOSED BLADE ON ALL DUCTS OVER 8" X 8". PROVIDE VENTLOK NO. 607 END BEARINGS AND VENTLOK NO. 641 SELF-LOCKING REGULATOR. DAMPER RODS SHALL BE 1/2" SQUARE BARS WITH BLADES SECURELY RIVETED TO BAR.

TURNING VANES

SQUARE AND RECTANGULAR ELBOWS SHALL CONTAIN TITUS NO. AG-225 TURNING VANES.

HANGERS

IN ACCORDANCE WITH CHAPTER IV OF SMACNA.

FLEXIBLE CONNECTIONS

FLEXIBLE CONNECTIONS SHALL BE PROVIDED FOR EACH AIR HANDLING DEVICE TO PREVENT TRANSMISSION OF VIBRATIONS. MAKE FLEXIBLE CONNECTION A MINIMUM OF 4 INCHES WIDE OF VENTGLAS AS MADE BY VENTFABRICS, INC.

INSTALLATION

GENERAL: SPLIT, DIVIDE OR TURN DUCTS AS NECESSARY TO AVOID OBSTRUCTIONS AND, IN SUCH CASES, PROVIDE AIR STREAM DEFLECTORS AND INCREASE SIZE OF DUCT TO AN EQUIVALENT AREA.

SPLITTERS: RIGIDLY ATTACH SPLITTERS TO PIVOT ROD AND OPERATING LINKAGE. SET DAMPER ASSEMBLY ON RAISED INSULATED BASE ON INSULATED DUCTWORK. VOLUME

DAMPERS: SUPPLY AND MAKE-UP AIR DUCTWORK IN CONCEALED SPACES. SET REGULATOR ON RAISED BASE ON INSULATED DUCTWORK. MARK END OF DAMPER ROD TO SHOW DAMPER POSITION.

FLEXIBLE CONNECTIONS: SECURE FLEXIBLE CONNECTIONS TO DUCT AND UNIT WITH GALVANIZED STEEL STRAPS HOLDING THE MATERIAL IN FORMED GALVANIZED STEEL CHANNELS. TEST TO ENSURE PROPER INSTALLATION.

PLUGS: PROVIDE SQUARE HEAD TYPE TEST PLUGS AS REQUIRED FOR INSERTION OF TEST APPARATUS. PROVIDE A RING AND A REMOVABLE INSULATION PLUG WHERE DUCTS ARE INSULATED.

PAINTING: PAINT INTERIOR OF DUCTWORK FLAT BLACK WHERE VISIBLE THROUGH GRILLES AND REGISTERS.

SEALING: DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SMACNA "SEAL CLASS B".

CORRECTIONS

REMOVE ALL DUCTWORK FOUND TO VIBRATE, CHATTER OR PULSATE AND REPLACE WITH NEW DUCTWORK.

DUCTWORK, LOW PRESSURE, FLEXIBLE

DESCRIPTION

PROVIDE WHERE INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, FACTORY FABRICATED AND PRE INSULATED FLEXIBLE DUCTS.

QUALITY ASSURANCE

FLEXIBLE DUCTS, INCLUDING INSULATION AND SEALANTS, SHALL CONFORM TO THE REQUIREMENTS OF NFPA 90A AND UL STANDARD 181 FOR CLASS 1 DUCTS. PERFORMANCE DATA SHALL BE BASED ON TEST PERFORMED IN ACCORDANCE WITH AIR DIFFUSION COUNCIL FLEXIBLE AIR DUCT TEST CODE FD72.

LOW PRESSURE FLEXIBLE DUCTWORK

LOW PRESSURE FLEXIBLE DUCTWORK SHALL CONSIST OF CORROSION RESISTANT SPRING STEEL HELIX BONDED TO A GLASS REINFORCED NEOPRENE SLEEVE INSULATED WITH A MINIMUM OF 1 INCH THICK, 1 POUND DENSITY FIBERGLASS INSULATION WHICH IS IN TURN COVERED WITH AN OUTER VAPOR BARRIER OF FIBER REINFORCED FOIL-SCRIM-KRAFT LAMINATE. INSULATION SHALL HAVE A THERMAL CONDUCTIVITY (K) NO GREATER THAN 0.25 AT 75 DEGREES F. DUCT FOR LOW VELOCITY SYSTEM CONNECTORS SHALL HAVE A WORKING PRESSURE OF NOT LESS THAN 1-1/2 INCHES OF WATER GAGE AND A MAXIMUM OPERATING TEMPERATURE OF NOT LESS THAN 250 DEGREES F.

DUCT CONNECTORS

WHERE FLEXIBLE DUCTS CONNECT TO LOW PRESSURE DUCTS TO FORM RUNOUTS TO INDIVIDUAL OUTLETS, PLENUMS OR LOW PRESSURE TERMINALS, PROVIDE FACTORY FABRICATED FITTINGS COMPLETE WITH MANUAL BALANCING DAMPERS HAVING LOCKING QUADRANTS. WHERE LOW PRESSURE DUCTS ARE INTERNALLY INSULATED THE CONNECTOR SHALL BE FURNISHED WITH AIR EXTENSION TO PROJECT THROUGH AND PROTECT THE INSULATION. FOR CONNECTION TO EQUIPMENT, AUXILIARY SLEEVES SHALL BE PROVIDED TO ALLOW AT LEAST 2 INCHES OF SURFACE FOR CLAMPING OF FLEXIBLE DUCTWORK. SLEEVES SHALL BE SCREWED OR BOLTED TO EQUIPMENT LIP FRAME.

CLAMPS

PROVIDE GALVANIZED SPRING STEEL CLAMPS OR PANDUIT STRAPS AT CONNECTIONS TO DUCT FITTINGS OR DEVICES.

MANUFACTURER

FLEXIBLE DUCTWORK AND COMPONENTS SHALL BE AS MANUFACTURED BY GENERAL ENVIRONMENTAL CORPORATION OR APPROVED EQUAL.

INSTALLATION

INSTALL DUCT CONNECTORS TO LOW PRESSURE DUCTS USING MANUFACTURER'S TEMPLATE FOR ALL HOLES AND SECURE THE CONNECTOR WITH SHEET METAL SCREWS HAVING FIRST APPLIED FOSTER'S 30-02 DUCT SEALANT TO THE ADJOINING SURFACES. DO NOT PRESSURIZE THE SYSTEM FOR 48 HOURS. STRETCH NEW DUCT WHEN REMOVING IT FROM CARTONS WHERE IT MAY HAVE BEEN SHIPPED IN A COMPRESSED STATE. USE THE MINIMUM LENGTH OF FLEXIBLE DUCT REQUIRED TO MAKE THE SPECIFIC CONNECTION UNLESS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. THE MAXIMUM DEVELOPED LENGTH OF FLEX DUCT IS 5'-0". AVOID SHARP BENDS. USE A MINIMUM INSIDE BEND RADIUS EQUAL TO (1) TIMES THE INSIDE DIAMETER OF THE DUCT. SUPPORT HORIZONTAL DUCT RUNS AS DETAILED IN THE CONSTRUCTION DOCUMENTS. ALLOW THE FLEXIBLE DUCT TO EXTEND STRAIGHT AWAY FROM CONNECTORS FOR A FEW INCHES PRIOR TO INITIATING ANY BEND. MAKE CONNECTIONS OF FLEXIBLE DUCT TO RIGID DUCT OR TERMINALS AS FOLLOWS:

1. APPLY FOSTER'S 30-02 SEALANT TO THE INSIDE OF THE FLEXIBLE DUCT TO DEPTH OF 3 INCHES.
2. SLIDE THE FLEXIBLE DUCT OVER THE CONNECTOR AND WRAP WITH MINIMUM OF TWO REVOLUTIONS OF REINFORCED FOIL DUCT TAPE STARTING ABOUT 2 INCHES BACK FROM END OF FLEXIBLE DUCT AND SEALING OVERLAP WITH LAST WRAP.
3. PLACE A CLAMP OR STRAP OVER THE TAPED END AND SECURE FIRMLY.
4. REPAIR ALL DAMAGE TO VAPOR BARRIER WITH FOSTER'S 35-00 REINFORCED WITH 4 INCH WIDE GLASS FABRIC AND A SECOND COAT OF FOSTER'S 35-00.

AIR DISTRIBUTION DEVICES

DESCRIPTION

AIR DISTRIBUTION DEVICES SHALL BE PROVIDED TO DELIVER THE INDICATED VOLUME OF SUPPLY AIR WITHOUT EXCEEDING THE NC RATING AS FOLLOWS:
EMPLOYEE AND CUSTOMER AREAS: NC-30.

DIFFUSERS. GRILLES AND REGISTERS

MANUFACTURER SHALL BE TITUS OR APPROVED EQUIVALENT. FOR MODEL NUMBERS AND TYPES SEE AIR DISTRIBUTION SCHEDULE ON DRAWING. DIFFUSERS, GRILLES, AND REGISTERS SHALL BE OF THE SURFACE, FLUSH, OR LAY-IN MOUNTING CORRESPONDING TO THE CEILING IN WHICH THEY ARE LOCATED. THE FINISH OF THE DIFFUSERS, GRILLE, OR REGISTER FACE PANEL SHALL BE BAKED ENAMEL, OFF WHITE COLOR. WHERE MOUNTING SCREWS ARE REQUIRED IN AIR DISTRIBUTION DEVICES, THEY SHALL BE FINISHED TO MATCH THE ADJACENT SURFACE OF THE DEVICES. SUPPLY AND RETURN GRILLES AND REGISTERS WHICH ARE SURFACE MOUNTED SHALL BE PROVIDED WITH SPONGE RUBBER GASKETED FRAMES TO PREVENT SMUDGING.

DRAINABLE LOUVERS

MANUFACTURER SHALL BE RUSKIN OR APPROVED EQUAL. FOR MODEL NUMBER AND TYPE SEE DRAWING. LOUVER FINISH SHALL BE SANDSTONE COLORED BAKED ENAMEL CONTAINING 50% KYNAR RESINS. LOUVER SHALL INCLUDE GASKETED BACKDRAFT DAMPERS WITH ADJUSTABLE WEIGHTS OR SPRINGS TO PREVENT OUTWARD AIR FLOW. ADJUST AS DIRECTED BY OWNER OR AUTHORITY HAVING JURISDICTION.

INSTALLATION

INSTALL WHERE SHOWN ON DRAWINGS. DIFFUSERS, REGISTERS AND FITTINGS SHALL BE SECURELY ATTACHED TO FINISH SURFACES, OR STRUCTURAL MEMBERS BEHIND FINISH SURFACES. LAY-IN DIFFUSERS MOUNTED IN ACOUSTICAL TILE CEILINGS SHALL BE RIGIDLY MOUNTED, ABOVE THE FACE PANEL, TO THE CEILING SUSPENSION SYSTEM. DRAINABLE LOUVERS SHALL BE INSTALLED AS RECOMMENDED BY MANUFACTURER.

CONTROLS, ELECTRIC

DESCRIPTION

THE WORK CONSISTS OF INSTALLING CONTROLS FOR THE HVAC SYSTEM.

ELECTRICAL

ELECTRICAL WORK AND MATERIALS ASSOCIATED WITH THE CONTROL SYSTEM SHALL BE INSTALLED AS WORK OF THIS SECTION BUT IN ACCORDANCE WITH DIVISION 16. POWER WIRING IS SPECIFIED UNDER DIVISION 16 AND SHOWN ON ELECTRICAL DRAWINGS. ELECTRICAL CONTROL WIRING CONDUIT AND FITTINGS ASSOCIATED WITH THE SPACE TEMPERATURE AND HUMIDITY CONTROL INCLUDING INTERLOCKING WITH MOTOR CONTROLLERS, CONTROL ACCESSORIES AND APPURTENANCES ARE TO BE PROVIDED UNDER THIS SECTION. CONTROL WIRING SHALL BE IN CONDUIT IF REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.

ELECTRIC ROOM THERMOSTATS

THERMOSTAT SHALL BE AS SPECIFIED IN THE DRAWINGS, THERMOSTATS FOR WATER SOURCE HEAT PUMPS SHALL HAVE AUTOMATIC HEATING/COOLING CHANGEOVER AND SHALL E PROVIDED WITH A LOCKABLE COVER.

SMOKE DETECTOR

SMOKE DETECTOR SHALL BE FURNISHED AND WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR AS SHOWN IN THE DRAWINGS. WIRING AND REMOTE ALARM INDICATOR FOR DUCT MOUNTED SMOKE DETECTOR SHALL BE BY ELECTRICAL CONTRACTOR. SMOKE DETECTOR SHALL BE POWERED AS SPECIFIED IN DRAWINGS.

TESTING, ADJUSTING AND BALANCING

TESTING, ADJUSTING AND BALANCING OF ALL WORK SHALL BE MADE BY AN INDEPENDENT CONTRACTOR, WHO IS A CURRENTLY LICENSED ASSOCIATED AIR BALANCING COUNCIL (AABC) OR NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB) BALANCING CONTRACTOR. NO OTHER BALANCE REPORTS WILL BE REVIEWED OR ACCEPTED. ALL BALANCING WORK MUST BE COMPLETE AND DONE IN ACCORDANCE WITH THE MOST RECENT STANDARDS OF THEIR SOCIETY AND AS A MINIMUM SHALL INCLUDE THE INFORMATION AS SHOWN IN THE AIR BALANCE REVIEW CHECKLIST BELOW. PAYMENT OF ALL COSTS FOR TESTING AND BALANCING SHALL BE INCLUDED IN THE BID.

TESTING, ADJUSTING AND BALANCING REPORT MUST BE COMPLETE AND TURNED OVER TO TENANT'S PROJECT MANAGER ONE (1) WEEK PRIOR TO MERCHANDISING DATE. VERIFY THAT ALL EQUIPMENT AND SYSTEMS ARE COMPLETE AND OPERATIONAL ONE WEEK PRIOR TO FINAL BALANCING. IF ALL SYSTEMS ARE NOT OPERATIONAL AT THE TIME OF THE SCHEDULED BALANCING, ADDITIONAL TESTING AND BALANCING, INCLUDING ALL LABOR, TRAVEL EXPENSES, MEALS, HOTEL COSTS, ETC SHALL BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.

PRESENT FOR AIR BALANCE TO VERIFY ACCESSIBILITY TO ALL DEVICES, VERIFY ALL OPERATING SEQUENCES AND INSTALL NEW FILTERS IN ALL UNITS JUST PRIOR TO THE AIR BALANCE. ALLOW TWO DAYS ON SITE FOR BALANCING. THE COMPLETE AIR BALANCE SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION, EXCEPT AS NOTED OTHERWISE. INSTALL A NEW SET OF FILTERS ONE DAY PRIOR TO TURNOVER.

BALANCE AIR AND WATER QUANTITIES TO WITHIN +/- 10% OF THAT INDICATED ON THE DRAWINGS. ANY REQUIRED CHANGES IN SHEAVES, BELTS OR PULLEYS NEEDED TO ACHIEVE SPECIFIED FLOW RATES SHALL BE PERFORMED WITH NO ADDITIONAL COST TO THE OWNER. ALL CONTROL SEQUENCES SHALL BE TESTED (INTERLOCKED EQUIPMENT, SMOKE DETECTORS, SMOKE EVACUATION, ECONOMIZER, ETC.) AND OPERATING STATUS RECORDED IN THE REPORT.

SEVEN (7) COPIES OF THE BALANCE REPORT SHALL BE SUBMITTED FOR APPROVAL.

PERFORM ALL APPLICABLE TESTING AND BALANCING FUNCTIONS REQUIRED FOR THE SYSTEM DESIGNED ON THESE DRAWINGS. ALL SYSTEMS UNABLE TO BE COMPLETELY BALANCED AT THE TIME OF ORIGINAL BALANCE MUST BE BALANCED IN FUTURE AT NO ADDITIONAL EXPENSE TO THE OWNER. RECHECK ANY ITEMS THAT OWNER DEEMS NECESSARY AT NO ADDITIONAL COST TO OWNER.

THE BALANCE REPORT SHALL BE ON THE AABC NATIONAL STANDARD REPORT FORMS OR THE NEBB CERTIFIED REPORT FORMS AS PUBLISHED IN THEIR MOST CURRENT EDITIONS.

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MECHANICAL
SPECIFICATIONS

GENERAL PLUMBING NOTES

1. ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
2. PROVIDE TO OWNER A COPY OF ALL REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS AND ALL PLUMBING SYSTEMS EQUIPMENT MANUALS INCLUDING WARRANTIES.
3. COORDINATE THE COMPLETE INSTALLATION OF SYSTEMS TO AVOID CONFLICT WITH OTHER TRADES.
4. COORDINATE ALL ABOVE SLAB AND UNDER SLAB SANITARY, AND WATER PIPING SYSTEMS TO AVOID CONFLICT WITH ALL OTHER TRADES SYSTEMS, AND COLUMN FOOTINGS. ALL SOIL AND WASTE PIPING SHALL BE GRADED TO A UNIFORM SLOPE OF NOT LESS THAN 1/8" PER FOOT FOR PIPING 4" OR LARGER, AND NOT LESS THAN 1/4" PER FOOT FOR PIPING 3" OR SMALLER.
5. COORDINATE ALL FLOOR DRAINS, CLEANOUTS, AND FLOOR MOUNTED FIXTURES WITH FINISHED FLOOR SLAB ELEVATION TO ENSURE THEY ARE INSTALLED PLUM AND FLUSH WITHOUT CRACKS, RISE IN THE SLAB, OR VOIDS AROUND GRATES OR TOPS. ALL CLEANOUTS SHALL BE INSTALLED ALONG MAINS AT 50'-0" DISTANCE MAXIMUM. ALL FLOOR AND WALL CLEANOUTS SHALL BE ACCESSIBLE FOR MAINTENANCE AND NOT INSTALLED BENEATH EQUIPMENT. ANY DRAIN GRATES THAT ARE DAMAGED AS A RESULT OF OTHER CONSTRUCTION PRIOR TO RELEASE OF THE BUILDING TO THE OWNER SHALL BE REPLACED WITH LIKE GRATE AT NO EXPENSE OF THE OWNER.
6. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
7. PROVIDE TRAP AND SEAL PRIMERS ON ALL FLOOR DRAINS IF REQUIRED BY CODE OR OWNER.
8. PLUMBING VENTS THROUGH THE ROOF ARE LOCATED AT A MINIMUM OF 5'-0" FROM BUILDING PARAPETS AND 10'-0" FROM FRESH AIR INTAKES AND AS REQUIRED TO MEET LOCAL CODES.
9. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
10. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.
11. CONTRACTOR TO FULLY INVESTIGATE ALL EXISTING PIPING TO REMAIN TO INSURE EXISTING PIPING IS IN GOOD REPAIR. IF ANY EXISTING PIPING IS FOUND TO BE DAMAGED REPLACE WITH LIKE.

PLUMBING ABBREVIATIONS

AD	AREA DRAIN, ACCESS DOOR	IE	INVERT ELEVATION
AFC	ABOVE FINISH CEILING	LP	LIQUIFIED PETROLEUM
AFG	ABOVE FINISH GRADE	MBH	1000 BTU PER HOUR
AHU	AIR HANDLING UNIT	N/A	NOT APPLICABLE
BFP	BACKFLOW PREVENTER	ORD	OVERFLOW ROOF DRAIN
BOP	BOTTOM OF PIPE	OST	STORM OVERFLOW
BOS	BOTTOM OF STRUCTURE	PD	PUMP DISCHARGE
CD	CONDENSATE	PIV	POST INDICATOR VALVE
CO	CLEANOUT	PRV	PRESSURE REDUCING VALVE
CW	DOMESTIC COLD WATER	REV	REVISION
DD	DECK DRAIN	RPM	REVOLUTIONS PER MINUTE
DN	DOWN	RTU	ROOF TOP UNIT
ETR	EXISTING TO REMAIN	SAN	SANITARY
EWC	ELECTRIC WATER COOLER	SCW	SOFT DOMESTIC COLD WATER
FCO	FLOOR CLEANOUT	SHW	SOFT DOMESTIC HOT WATER
FFA	FROM FLOOR ABOVE	SDHWR	SOFT RECIRC. HOT WATER
FP	FIRE PROTECTION	ST	STORM
FS	FLOOR SINK	TFA	TO FLOOR ABOVE
G	GAS (NATURAL)	TFB	TO FLOOR BELOW
GCO	GRADE CLEANOUT	TW	TEMPERED WATER
GPM	GALLONS PER MINUTE	UH	UNIT HEATER
HB	HOSE BIBB	V	VENT PIPE
HW	DOMESTIC HOT WATER	VTR	VENT THROUGH ROOF
HWR	HOT WATER RETURN	WCO	WALL CLEANOUT
HWS	HOT WATER SUPPLY	WH	WALL HYDRANT

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GATE VALVE		FLOOR DRAIN / AREA DRAIN
	CHECK VALVE		FLOOR SINK
	PRESSURE	RD	ROOF DRAIN
	SOLENOID VALVE	ORD	OVERFLOW ROOF DRAIN
	GLOBE VALVE (STRAIGHT PATTERN)		HOT WATER RECIRCULATION PUMP
	BUTTERFLY VALVE	VTR	PLUMBING VEVT THRU ROOF
	BALL VALVE		POINT OF CONNECTION (CONNECT NEW TO EXISTING)
	GAS COCK	XXX	PLUMBING EQUIPMENT DESIGNATION
	PLUG VALVE	X / X	PLUMBING RISER OR DETAIL DESIGNATION
FCO	FLOOR CLEAN OUT	S	SANITARY SEWER PIPING
WCO	WALL CLEAN OUT	ST	STORM SEWER PIPING
CO	CLEAN OUT	V	VENT PIPING
	HOSE BIBB	CW	COLD WATER PIPING
	FREEZE PROOF WALL HYDRANT	HW	HOT WATER PIPING
	ELBOW DOWN	HWR	HOT WATER RECIRCULATING PIPING
	ELBOW UP	FW	FILTERED WATER PIPING
	TEE UP	G	GAS PIPING
	TEE DOWN	CD	CONDENSATE PIPING
	STRAINER		
	UNION		
	CAP		

PLUMBING FIXTURE MINIMUM CONNECTION SCHEDULE

DESIGNATION	FIXTURE	C.W.	H.W.	DRAIN	VENT
WC	WATER CLOSET	1"	-	4"	2"
UR	URINAL	3/4"	-	2"	2"
LAV.	LAVATORY	1/2"	1/2"	2"	2"
EWC/DF	ELECTRIC WATER COOLER/DRINKING FOUNTAIN	1/2"	-	2"	2"
MB/SS	MOP BASIN/SERVICE SINK	1/2"	1/2"	3"	2"
SH/BT	SHOWER/BATHTUB	1/2"	1/2"	2"	2"
SK	SINK	1/2"	1/2"	2"	2"

GENERAL NOTES:

1. PITCH ALL DRAINAGE PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM UNLESS OTHERWISE NOTED. PITCH ALL DRAINAGE PIPING 2-1/2" AND SMALLER AT 1/4" PER FOOT.
2. ALL UNDERGROUND DRAINAGE PIPING SHALL BE A MINIMUM OF 2" IN SIZE.
3. PROVIDE TRAP PRIMER UNITS FOR ALL FLOOR DRAINS.
4. VERIFY/COORDINATE LOCATIONS OF ALL FIXTURES, DRAIN, ETC. WITH ARCHITECT PRIOR TO ROUGH-IN.

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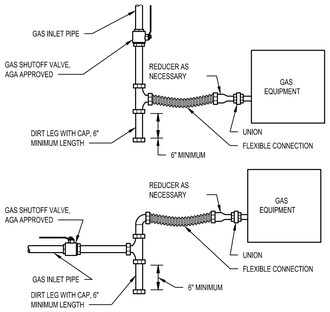
PLUMBING NOTES, SYMBOLS & ABBREVIATIONS

PLUMBING FIXTURE SCHEDULE

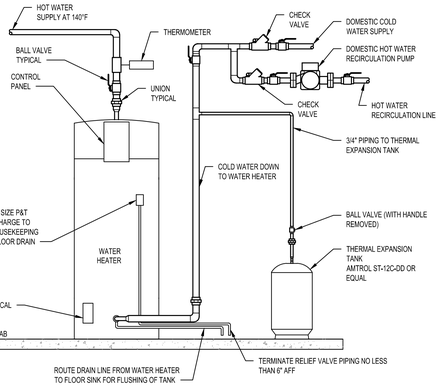
TAG	MANUFACTURER	MODEL	DRAIN	VENT	COLD WATER	HOT WATER	ELECTRICAL REQUIREMENTS	DESCRIPTION
FCO	SIOUX CHIEF	834-4ANR	4"	---	---	---		FLOOR CLEANOUT ABS BODY AND NICKEL-BRONZE COVER
FD	SIOUX CHIEF	832-35ANR	2"	2"	---	---		ADJUSTABLE FLOOR DRAIN WITH GRAY ABS BODY AND ROUND NICKEL-BRONZE STRAINER AND TRAP PRIMER CONNECTION.
FS	SIOUX CHIEF	861-3PNU2	3"	2"	---	---	---	SQUAREMAX PVC FLOOR SINK WITH 3" SCHEDULE 40 HUB CONNECTION AND HALF-OPEN NICKEL-BRONZE RING/STRAINER
LAV	AMERICAN STANDARD	9024.001EC	2"	1-1/2"	1/2"	1/2"		WALL HUNG LAVATORY WITH SELECTRONIC BATTERY-POWERED CENTERSET SINGLE HOLE FAUCET 6055.105. PROVIDE WITH ASSE 1070 COMPLIANT MIXING VALVE AND TRUEBRO LAV GUARD PIPE WRAPS.
RP	TACO	007-BF5	---	---	---	3/4"	115V 0.76 AMPS	IN-LINE CARTRIDGE STYLE CIRCULATOR PUMP. CAPABLE OF 10 FEET OF HEAD AT 3 GPM
UR	AMERICAN STANDARD	6002.001	2"	1-1/2"	3/4"	---	---	PINTBROOK URINAL 0.125 GPF WITH SELECTRONIC 6063.051.002 SENSOR OPERATED DC POWER FLUSH VALVE.
WC1	AMERICAN STANDARD	2462.016	3"	2"	3/4"	---		1.6 GPF, FLUSH TANK WATER CLOSET PRESSURE-ASSISTED SIPHON JET. ELONGATED BOWL WITH CHURCH 9500C WHITE, SOLID PLASTIC, OPEN-FRONT SEAT.
WC2	AMERICAN STANDARD	2467.016	3"	2"	3/4"	---		ADA-COMPLIANT, 1.6 GPF, FLUSH TANK WATER CLOSET PRESSURE-ASSISTED SIPHON JET. ELONGATED BOWL WITH CHURCH 9500C WHITE, SOLID PLASTIC, OPEN-FRONT SEAT.
WCO	JAY R. SMITH	4531S	PER PLAN	---	---	---		CAST IRON CLEANOUT TEE AND COUNTERSUNK PLUG
GWH	BRADFORD WHITE	EF60T-125E-3N			1"	1"	120V 15A SUPPLY	NATURAL GAS FIRED WATER HEATER 60 GALLON 145 GALLON RECOVERY AT 100 %%DF RISE. 95% EFFICIENT PROVIDE WITH AMTROL ST-12 THERMAL EXPANSION TANK.

NOTES:
1. MODELS IN SCHEDULE ARE A BASIS OF DESIGN CONFIRM FINAL FIXTURE MODELS WITH OWNER PRIOR TO PURCHASING.
2. ALL LAVATORIES SHALL BE PROVIDED WITH ANTI-SCALD ASSE 1070 COMPLIANT VALVE.
3. PROVIDE LOOSE KEY STOPS AND FLEXIBLE RISERS.
4. ON LAVATORY INSULATE EXPOSED TAILPIECE, P-TRAP, AND WATER RISERS WITH TRU-BRO INSULATION KIT.
5. PROVIDE FLUSH VALVE HANDLE ON WIDE SIDE OF ROOM.
6. PROVIDE HANDLE STOPS AND FLEXIBLE RISERS.



NOTES:
1. HIGH TENSILE STRENGTH STAINLESS STEEL FLEXIBLE CONNECTION, 12" LENGTH, AGA/CSA APPROVED, PRE-COATED.
2. PAINT ALL EXTERIOR GAS PIPING, YELLOW COLOR.
3. PROVIDE PRESSURE REGULATOR WHERE REQUIRED.

9 GAS EQUIPMENT PIPE CONNECTION
NOT TO SCALE



NOTES:
1. THERMOMETERS TO BE INSTALLED TO BE EASILY READABLE.
2. INSTALL PIPING & EQUIPMENT FOR WATER HEATER WITH REQUIRED CLEARANCES TO ALLOW SPACE FOR REMOVAL & SERVICING AS SHOWN.
3. PROVIDE SEPARATE SUPPORT FROM PIPING FOR RECIRCULATING PUMP.
4. INSTALL WATER HEATER PER MANUFACTURER'S WRITTEN INSTRUCTIONS/RECOMMENDATIONS.
5. ROUTE WATER HEATER P&T RELIEF AND DISCHARGE NEAR FLOOR SINK/DRAIN.
6. PROVIDE VACUUM RELIEF VALVE AS REQUIRED BY LOCAL CODE.
7. PIPE INSULATION NOT SHOWN FOR DRAWING CLARITY.

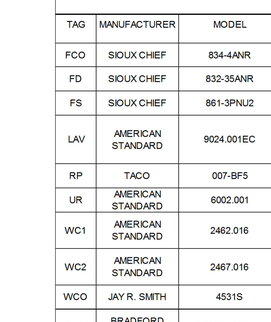
8 WATER HEATER PIPING
NOT TO SCALE

PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD
A	1/2"	1-11
B	3/4"	12-32
C	1"	33-60
D	1-1/4"	61-113
E	1-1/2"	114-154
F	2"	154-330

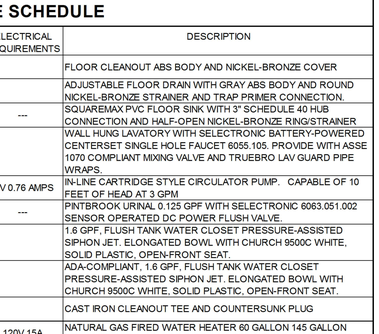
FIXTURE UNIT TABULATION		
FIXTURE	COLD	HOT
VALVE WATER CLOSET	10	--
TANK WATER CLOSET	5	--
URINAL	5	--
LAVATORY/SINK	1.5	1.5
JANITOR'S SINK	3	3
SHOWER/BATHTUB	2	2

PROVIDE WATER HAMMER ARRESTERS ON ALL QUICK CLOSING VALVES, INSTALLED AS CLOSE TO THE FIXTURES AS POSSIBLE TO CONTROL THE EFFECTS OF WATER HAMMER INSTALLATION SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES. DO NOT PROVIDE AIR CHAMBERS. PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUIVALENT WITH PISTON AND O-RING CONSTRUCTION, HAVING PDI #WH-201, ASSE # 1010 AND ANSI # A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL IN LINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE THE UNITS PER THE TABLES SHOWN ABOVE.

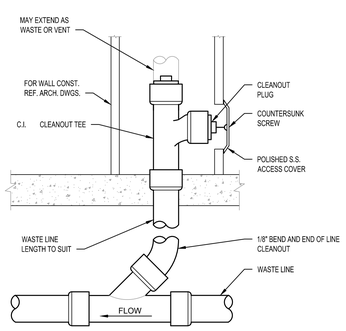
7 WATER HAMMER ARRESTERS
NOT TO SCALE



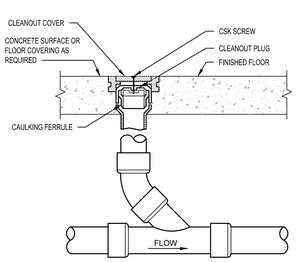
6 TRAP SEAL PRIMER DETAIL
NOT TO SCALE



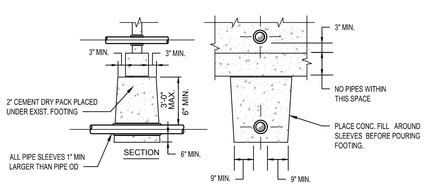
5 VENT THROUGH ROOF DETAIL (VTR)
NOT TO SCALE



4 WALL CLEANOUT
NOT TO SCALE

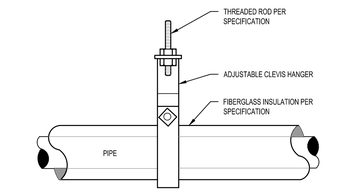


3 FLOOR CLEANOUT
NOT TO SCALE

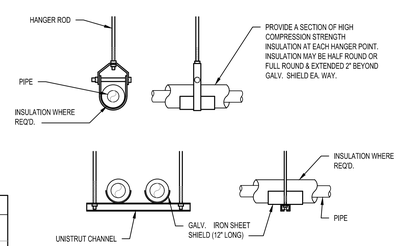


NOT PARALLEL TO FOOTING

2 PIPE AT CONCRETE FOOTING
NOT TO SCALE



WATER PIPING (COPPER TYPE "L")				
PIPE SIZE	WEIGHT / FT. WITH WATER (IN LBS.)	MAX SPACING	LOAD / HGR	ROD SIZE
1/2"	.38	6'	2.28	3/8"
3/4"	.66	6'	3.96	3/8"
1"	1.04	6'	6.24	3/8"
1-1/4"	1.43	6'	8.58	3/8"
1-1/2"	1.92	6'	19.2	3/8"
2"	3.09	10'	30.8	3/8"
2-1/2"	4.52	10'	45.2	3/8"



NOTES:
1. ATTACH SUPPORTS FOR ALL PIPING SUSPENDED FROM THE STEEL STRUCTURE TO THE TOP CORD OF JOISTS OR BEAMS.
2. PROVIDE COPPER OR PLASTIC COATED HANGERS FOR NON-INSULATED COPPER PIPE.

1 PIPE HANGING DETAIL
SCALE: NTS

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RYAN BREWER
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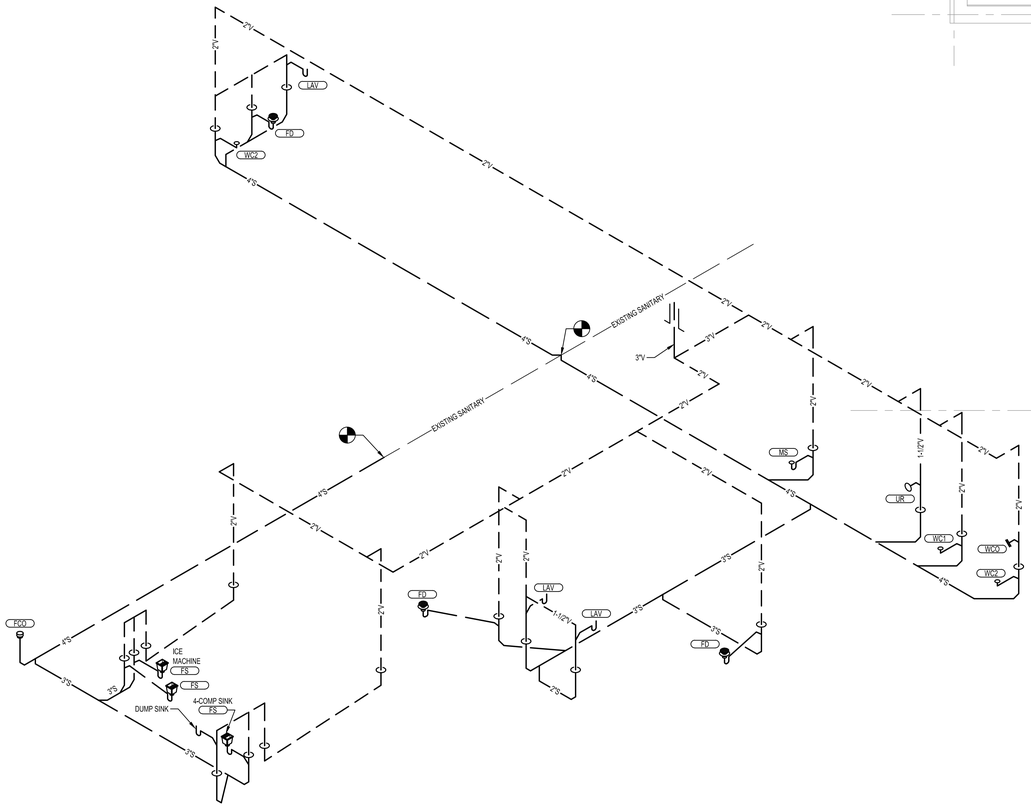
PROFESSIONAL ENGINEER
02/27/2023
PROFESSIONAL SEAL

P102

ISSUE DATE: 27 FEB 2023
COLLINS WEBB #: 22066

PLUMBING DETAILS AND SCHEDULES



1 PLUMBING WASTE AND VENT PLAN

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

GENERAL NOTES

(NOT ALL NOTES APPLY)

1. REFERENCE SHEET P101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
3. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
4. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT SPECIFIED IN PLUMBING FIXTURES AND EQUIPMENT SCHEDULES ON THESE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS INDICATED ON PLUMBING SCHEDULES AND AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.

KEYED NOTES: ⬡

1. ROUTE NEW 4" SANITARY LINE TO EXISTING SANITARY LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, MATERIAL AND AVAILABLE INVERT.
2. ROUTE NEW 4" GREASE WASTE LINE TO EXISTING GREASE WASTE LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, MATERIAL AND AVAILABLE INVERT.
3. 3"V UP THROUGH FLOOR ABOVE TO 3"VTR. COORDINATE FINAL PLACEMENT AND ROUTING THROUGH FLOOR ABOVE WITH ALL ROOF TOP EQUIPMENT AND EXISTING STRUCTURE. MAINTAIN A MINIMUM 10' FROM ALL FRESH AIR INTAKES AND 1' FROM ALL VERTICAL SURFACES.
4. INSTALL COOLER/FREEZER CONDENSATE DRAIN LINES ALONG COOLER WALLS AS HIGH AS POSSIBLE WHILE MAINTAINING A MINIMUM 1/4" PER FOOT FALL. ROUTE PIPING TO EXISTING FLOOR DRAIN AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP PER CODE.
5. ROUTE WATER HEATER T&P DRAIN LINE TO FLOOR DRAIN AND TERMINATE OVER FLOOR DRAIN WITH AIR GAP PER CODE.
6. COORDINATE FINAL LOCATION OF FLOOR SINKS AT BAR WITH OWNER.
7. CAP 4"GW LINE FOR CONTINUATION BY FUTURE TENANT.

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ISSUE DATE: 27 FEB 2023
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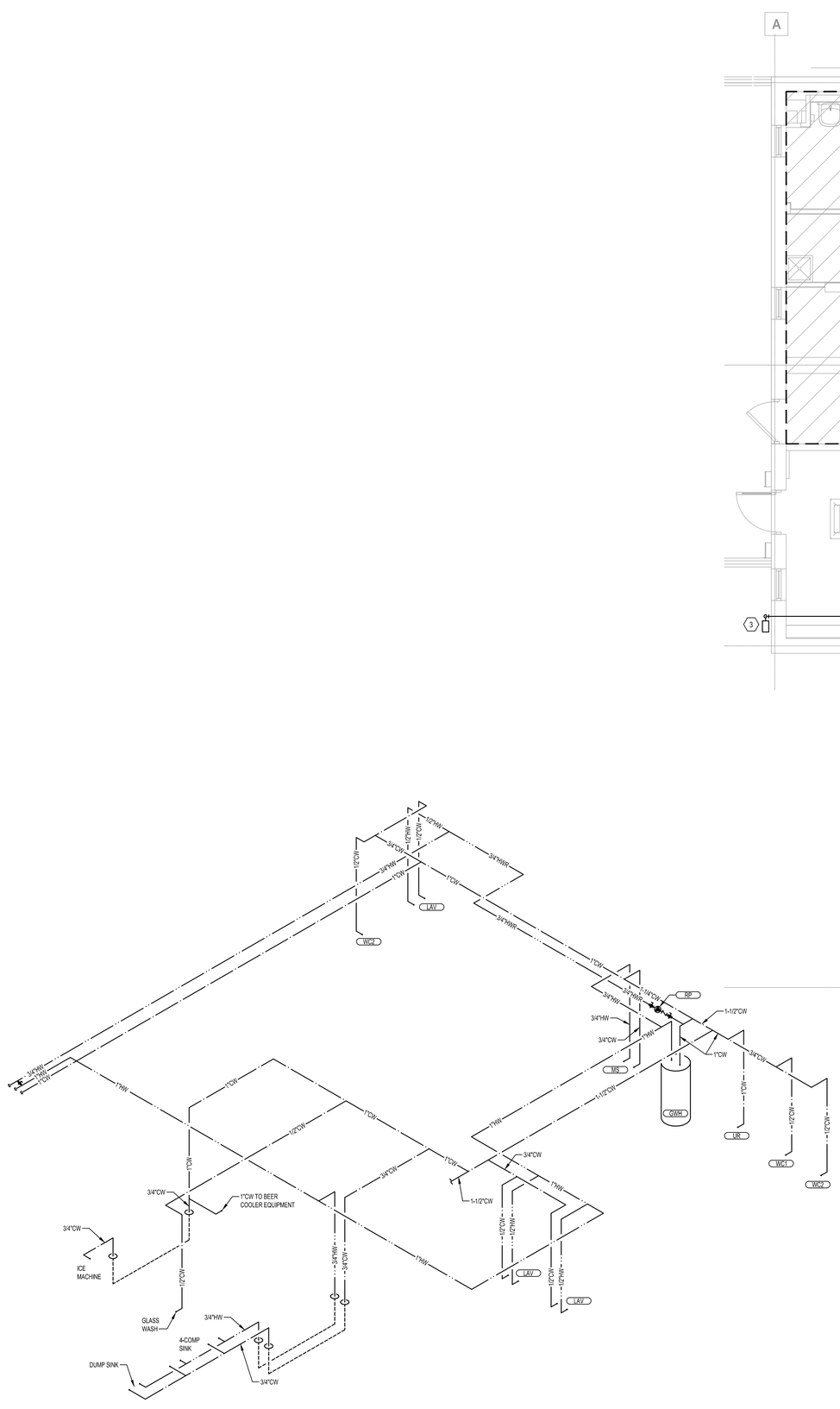
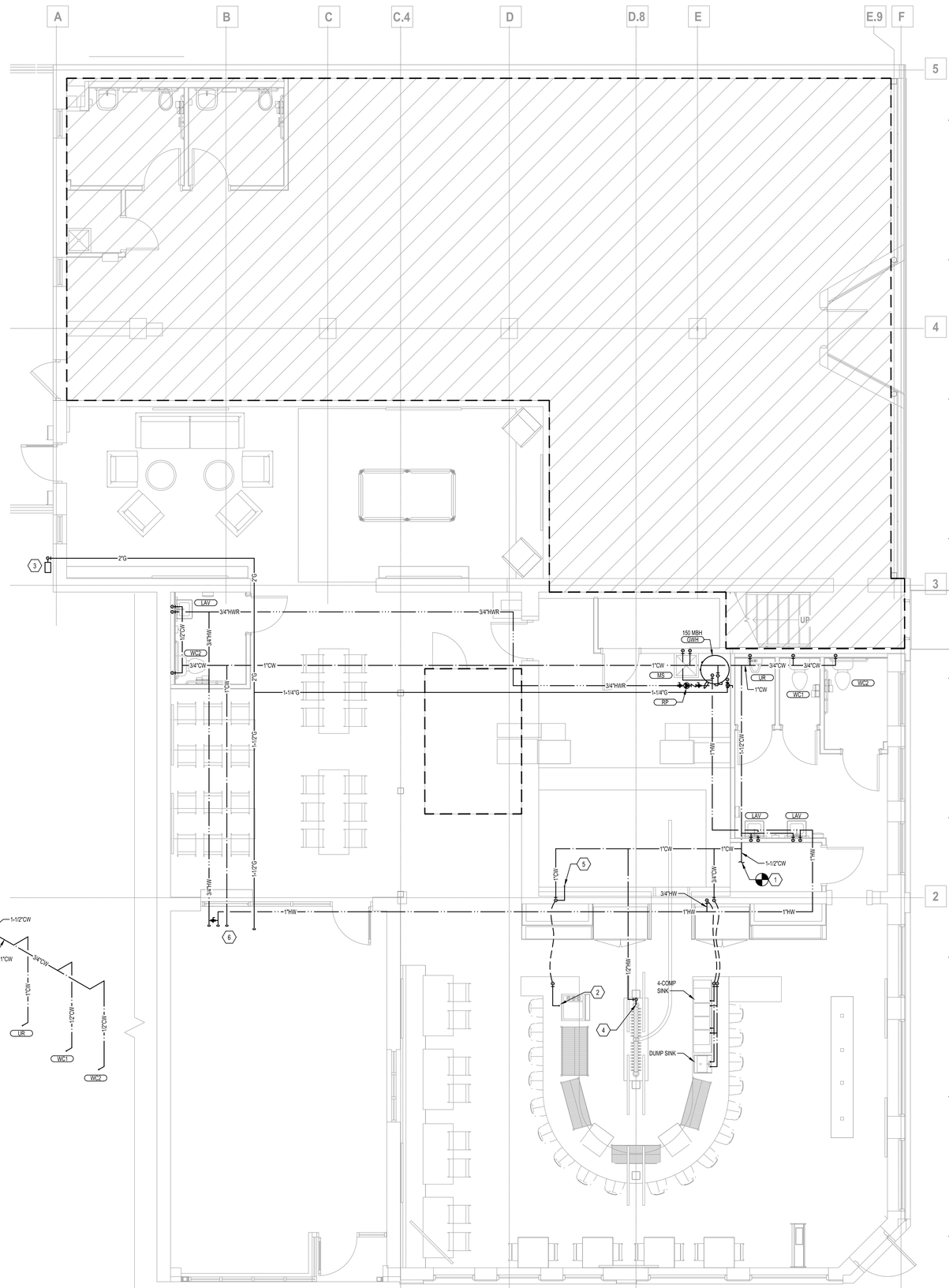
PLUMBING WASTE
AND VENT PLAN



2 PLUMBING WATER RISER

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



1 PLUMBING WATER AND GAS PLAN

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

GENERAL NOTES

(NOT ALL NOTES APPLY)

1. REFERENCE SHEET P101 FOR GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS.
2. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
3. ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS.
4. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT SPECIFIED IN PLUMBING FIXTURES AND EQUIPMENT SCHEDULES ON THESE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS. PROVIDE ALL REQUIRED SHUT-OFFS, BACKFLOW PREVENTERS, PRESSURE REGULATORS, AND CONDENSATE DRAINS INDICATED ON PLUMBING SCHEDULES AND AS REQUIRED BY LOCAL CODES FOR COMPLETE EQUIPMENT INSTALLATION. CONSULT EQUIPMENT SUPPLIER OR OWNER FOR ADDITIONAL FINAL CONNECTION REQUIREMENTS NOT SHOWN ON THESE DRAWINGS.

KEYED NOTES:

1. ROUTE NEW 1-1/2" COLD WATER LINE TO EXISTING COLD WATER LINE IN THIS AREA. FIELD COORDINATE EXACT CONNECTION POINT, LINE SIZE, AND MATERIAL.
2. 3/4"CW UP THROUGH FLOOR TO ICE MACHINE. INSTALL ALL BACKFLOW PREVENTION, VALVING AND FILTERS AS PER MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODES.
3. ROUTE NEW 2"G LINE BACK TO EXISTING GAS METER. FIELD VERIFY EXACT ROUTING WITH LANDLORD AND EXISTING CONDITIONS. ENSURE EXISTING METER IS LARGE ENOUGH FOR NEW TOTAL GAS LOAD. IF EXISTING METER IS FOUND TO NOT BE LARGE ENOUGH COORDINATE WITH UTILITY FOR INSTALLATION OF NEW. NEW PIPING LOAD OF 402 MBH SIZED FOR A DEVELOPED LENGTH OF 150' AT A PRESSURE OF 7" WATER COLUMN.
4. ROUTE 1/2" COLD WATER LINE DOWN TO GLASS WASH COORDINATE WITH OWNER FOR EXACT LOCATION AND REQUIREMENTS.
5. ROUTE 1"CW DOWN IN WALL. STUB 1"CW INTO BEER COOLER FOR CONNECTION TO EQUIPMENT. TERMINATE WITH ALL VALVING AND BACKFLOW PROTECTION AS PER MANUFACTURER'S RECOMMENDATIONS. CONTINUE 3/4"CW BELOW GRADE TO BAR EQUIPMENT.
6. CAP LINES FOR CONTINUATION BY FUTURE TENANT.

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PLUMBING WATER AND GAS PLAN

15400 - PLUMBING WORK

DESCRIPTION
ALL PLUMBING AND ASSOCIATED WORK IN DIVISION 15 IS GOVERNED BY THIS SECTION. PROVIDE LABOR AND MATERIALS NECESSARY TO PROVIDE THE WORK AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. REFER TO OTHER DIVISIONS FOR CONTINUATION OF EXTERIOR AND ALLIED WORK.

QUALITY ASSURANCE
OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS AND CONNECTION FEES REQUIRED BY GOVERNING BODIES IN CONNECTION WITH THE WORK. DELIVER CERTIFICATES OF INSPECTION TO THE OWNER'S REPRESENTATIVE. ALL WORK SHALL COMPLY WITH GOVERNING CODES, ORDINANCES, AND REGULATIONS OF CITY, COUNTY AND STATE.

SUBMITTALS
SHOP DRAWINGS: SUBMIT MATERIALS, PRODUCTS, EQUIPMENT AND SYSTEMS AS SPECIFIED UNDER EACH PLUMBING SECTION IN THIS DIVISION IN ACCORDANCE WITH THE GENERAL CONDITIONS. SHOW PIPE SIZES, LOCATION, SLOPES OF HORIZONTAL RUNS, FITTINGS, VALVES, METERS, GAGES AND CONNECTIONS.

PRODUCT DATA: SUBMIT ON MATERIALS, FIXTURES, AND EQUIPMENT UNLESS OTHERWISE SPECIFIED OR ACKNOWLEDGED IN WRITING.

SAMPLES: SUBMIT WHEN SPECIFIED OR REQUESTED.

RECORD DOCUMENTS
REFER TO GENERAL CONDITIONS FOR REQUIREMENTS CONCERNING RECORD DOCUMENTS. ADDITIONAL REQUIREMENTS MAY BE SPECIFIED IN DIVISION 1. UNLESS SEPIAS OF THE DRAWINGS ARE TO BE FURNISHED BY THE ARCHITECT-ENGINEER FOR PREPARATION OF RECORD DRAWINGS, FURNISH OWNER'S REPRESENTATIVE WITH TWO SETS OF ACCURATELY MARKED COPIES OF THE DRAWINGS, INSTEAD OF ONE SET AS REQUIRED BY THE GENERAL CONDITIONS, INDICATING ALL CHANGES FROM ORIGINAL DRAWINGS AS INSTALLED.

PRODUCT HANDLING
PIPE, FIXTURES AND ACCESSORIES SHALL BE PROTECTED FROM DAMAGE IN SHIPMENT, HANDLING, STORAGE AND INSTALLATION: FROM MOISTURE, DIRT AND DEBRIS. PIPE, CLEANOUT AND FLOOR DRAIN OPENINGS SHALL BE TEMPORARILY PLUGGED WITH TEST PLUGS UNTIL FINAL CONNECTIONS ARE MADE.

GUARANTEE AND SERVICE
REFER TO GENERAL CONDITIONS FOR GUARANTEE. WHERE EXTENDED GUARANTEES ARE CALLED FOR, FURNISH THREE COPIES TO BE INSERTED INTO OPERATION AND MAINTENANCE MANUALS.

GENERAL
PLUMBING SYSTEMS SHALL BE PROVIDED COMPLETE. SHOULD A SYSTEM, OR ANY PART THEREOF FAIL TO MEET PERFORMANCE REQUIREMENTS, NECESSARY REPLACEMENTS, ALTERATIONS OR REPAIRS, AS REQUIRED BY THE OWNER'S REPRESENTATIVE, SHALL BE MADE TO BRING PERFORMANCE UP TO SPECIFIED REQUIREMENTS AND ALL BUILDING CONSTRUCTION AND FINISHES DAMAGED OR MARRED BY SUCH REPLACEMENTS, ALTERATIONS OR REPAIRS SHALL BE RESTORED TO PRIOR CONDITION, AT NO ADDITIONAL COST TO THE OWNER.

WHERE MULTIPLE ITEMS OF EQUIPMENT OR MATERIALS ARE REQUIRED THEY SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER.

INSERTS, PIPE SLEEVES, HANGERS, SUPPORTS, FIXTURES, TRIM DRAINS AND ANCHORAGE OF PLUMBING SHALL BE PROVIDED AS SPECIFIED HEREIN. WHERE SUCH ITEMS ARE TO BE SET OR EMBEDDED IN CONCRETE, MASONRY OR SIMILAR WORK, THE ITEMS SHALL BE FURNISHED AND LAYOUT MADE AT THE PROPER TIME FOR THE SETTING OR EMBEDMENT THEREOF SO AS TO CAUSE NO DELAY IN THE WORK.

MANUFACTURER'S NAMES AND CATALOG NUMBERS
SPECIFIED REFERENCES HAVE BEEN MADE TO ONE OR MORE MANUFACTURER'S NAMES AND MODEL OR CATALOG NUMBERS. THIS DOES NOT NECESSARILY INDICATE THAT THE MATERIAL AND EQUIPMENT SPECIFIED IS AN "OFF THE SHELF" ITEM. REQUIREMENTS FOR SPECIFIC FINISHES, MATERIAL OR OTHER MODIFICATIONS MAY INTRODUCE VARIANCES FROM MANUFACTURERS' STANDARDS. MODIFICATIONS SHALL BE FULLY CONSIDERED.

CHARTS AND TAGS
IN AREAS HAVING VALVES, PROVIDE SINGLE LINE DIAGRAMS FRAMED UNDER GLASS AND MOUNTED ON EQUIPMENT ROOM WALL. THE DIAGRAMS SHALL GIVE NAME, NUMBER DESIGNATION AND LOCATION OF VALVE.

VALVES SHALL BE IDENTIFIED WITH 1/16 INCH THICK WHITE LAMINATED PLASTIC NAMEPLATES WITH 3/16 INCH HIGH BLACK LAMINATED LETTERS. THE NAMEPLATE IDENTIFICATION SHALL COINCIDE WITH ITEMS APPEARING ON DIAGRAMS. ATTACH NAMEPLATES TO VALVES WITH NON-CORROSIVE CHAIN OR WIRE.

ACCESS DOORS
PROVIDE ACCESS DOORS AS INDICATED AND SPECIFIED IN DRAWINGS

INSTALLATION AND WORKMANSHIP
THE WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ANY MATERIAL, APPARATUS OR EQUIPMENT WHICH, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, IS IMPROPERLY INSTALLED SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL COST TO THE OWNER.

THE LOCATION OF PLUMBING PIPING SHALL BE COORDINATED TO ENSURE THAT IT CLEARS OPENINGS AND STRUCTURAL MEMBERS; THAT PIPING INDICATED AS CONCEALED CAN BE PROPERLY CONCEALED IN WALLS OR PARTITIONS AND THAT IT DOES NOT INTERFERE WITH LIGHTS, DUCTWORK OR EQUIPMENT HAVING FIXED LOCATIONS. MAKE NECESSARY HORIZONTAL OR VERTICAL OFFSETS WITH PIPE FITTINGS TO INSTALL THE SYSTEM IN THE AVAILABLE SPACE. CONCEAL OR INSTALL TIGHT TO STRUCTURE (IF EXPOSED) UNLESS OTHERWISE NOTED.

PIPING SHALL BE EXPOSED IN FINISHED AREAS ONLY WHERE INDICATED OR WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

WHERE DRAIN OR WATER CONNECTIONS NECESSARY TO THE OPERATION OF FIXTURES OR EQUIPMENT ARE NOT SPECIFICALLY SHOWN ON DIAGRAMS, EXTEND NECESSARY BRANCHES TO THE CLOSEST INDICATED BRANCH OR MAIN, AT NO ADDITIONAL COST TO THE OWNER.

EACH FIXTURE, EQUIPMENT DRAIN OR FLOOR DRAIN SHALL BE SEPARATELY TRAPPED UNLESS OTHERWISE INDICATED OR SPECIFIED.

PLUMBING PIPING AND EQUIPMENT SHALL NOT BE FIELD PAINTED, OR PRIMED BEYOND THE DEGREE OF APPLICATION FROM THE FACTORY SOURCE, OR EXCEPT AS REQUIRED BY APPLICABLE CODES AND AUTHORITIES HAVING JURISDICATION.

WATERPROOFING
DO NOT CUT OR PENETRATE WATERPROOFED SURFACES OR WATERPROOFING MEMBRANES WITHOUT FIRST MAKING ARRANGEMENTS FOR REPAIR BY A METHOD APPROVED BY THE OWNER'S REPRESENTATIVE.

ACCESS DOORS
INSTALL AS REQUIRED FOR MAINTENANCE, ADJUSTMENT, REMOVAL AND REPAIR OF VALVES, EQUIPMENT AND LIKE ITEMS. DOORS SHALL BE CONVENIENTLY LOCATED AND OF SUFFICIENT SIZE.

PIPING PROVISIONS FOR FIXTURES AND EQUIPMENT SPECIFIED IN OTHER SECTIONS OR FURNISHED BY THE OWNER
ROUGH IN LOCATIONS SHALL BE DETERMINED FOR SERVICES. PROVIDE ALL NECESSARY PLUMBING SERVICES, ACCESSIBLE VALVES ON PLUMBING BRANCHES AND MAKE ALL FINAL CONNECTIONS.

PLUMBING OPERATION AND MAINTENANCE MANUALS

DESCRIPTION
FURNISH TWO COPIES OF COMPLETE OPERATION AND MAINTENANCE MANUALS TO THE OWNER'S REPRESENTATIVE, FOR APPROVAL AND FOR THE OWNER, ON PLUMBING EQUIPMENT AND SPECIALTIES. THE MANUAL SHALL BE BOUND IN HARD-BACK, THREE-RING LOOSE-LEAF BINDERS.

MANUAL CONTENTS
TITLE SHEET WITH JOB NAME, AND THE NAMES, ADDRESSES AND PHONE NUMBERS OF THE CONTRACTOR, SUBCONTRACTOR, CONTROL SUBCONTRACTOR, RELATED CONTRACTOR AND MATERIAL AND EQUIPMENT SUPPLIERS.

INDEX OF CONTENTS
TYPEWRITTEN OPERATING INSTRUCTIONS FOR THE OWNER'S PERSONNEL DESCRIBING HOW TO OPERATE EACH PIECE OF EQUIPMENT, AND CAUTION AND WARNING NOTICES.

APPROVED SHOP DRAWINGS, PRODUCT DATA AND PARTS AND MAINTENANCE BOOKLET FOR EACH ITEM OF PLUMBING, EQUIPMENT SPECIFIED IN DIVISION 15.

COPIES OF CERTIFICATES OF INSPECTION, WHERE INSPECTION IS REQUIRED. GUARANTEES, INCLUDING EXTENDED GUARANTEES.

DELIVERY
DELIVER THE MANUALS TO THE OWNER'S REPRESENTATIVE PRIOR TO SUBMITTING APPLICATION FOR FINAL PAYMENT.

PLUMBING PIPING

DESCRIPTION
FURNISH AND INSTALL PLUMBING PIPING WHERE SHOWN ON DRAWINGS AND AS SPECIFIED.

PIPING MATERIALS
OPTIONS
1. CAST IRON HUBLESS SANITARY PIPE AND FITTINGS: CISPI STD. 301.
2. CAST IRON SOIL PIPE AND FITTINGS, SERVICE WEIGHT: ASTM A 74.
3. CAST IRON SOIL PIPE AND FITTINGS, EXTRA HEAVY WEIGHT: ASTM A 74.
4. STEEL PIPE: ASTM A 53.
5. MALLEABLE IRON FITTINGS, 150 LB.: ASTM A 197.
6. PIPE THREADS: ANSI B2.1.
7. NIPPLES, PIPE (THREADED): FED SPEC. WW-N-351.
8. COPPER WATER TUBE: ASTM B 88.
9. WROUGHT COPPER AND BRONZE SOLDER-JOINT PRESSURE FITTINGS: ANSI B16.29.
10. WROUGHT COPPER AND WROUGHT COPPER ALLOY SOLDER-JOINT DRAINAGE FITTINGS: ANSI BL6.29.
11. CAULKING LEAD: FED. SPEC. QQ-C-40 (2).
12. SHEET LEAD: FED. SPEC. QQ-L-201.
13. SHEET COPPER: ASTM B 152.
14. NO-HUB STAINLESS STEEL COUPLING AND GASKETS: CISPI STD. S-301.
15. WHERE ACCEPTABLE BY LOCAL AUTHORITY HAVING JURISDICTION SOLID WALL ABS PIPING MAY BE USED FOR WASTE PIPING.
    15.A. PVC/ABS PIPING CANNOT BE USED IN RETURN AIR PLENUM APPLICATION.

JOINTS AND CONNECTIONS
OPTIONS
1. CAST IRON, HUB AND SPIGOT: PACKED WITH OAKUM AND FINISHED WITH LEAD NOT LESS THAN 1 INCH DEEP; WELL CAULKED.
2. CAST IRON, NO-HUB: NEOPRENE GASKET AND CORRUGATED 304 STAINLESS STEEL SHIELD IN CONJUNCTION WITH 4 STAINLESS STEEL CLAMPS FOR 4" AND SMALLER, 6 CLAMPS FOR 5" AND LARGER.
3. BETWEEN LEAD AND BRASS: FERRULES OR SOLDERING NIPPLES WITH WIPED JOINTS 3/8" THICK AND 3/4" EACH SIDE OF JOINTS.
4. SCREWED JOINTS: AMERICAN NATIONAL STANDARD WITH PIPE FREE FROM CUTTING AND BURRS. THREE THREADS EXPOSED MAXIMUM.
5. SOLDERED JOINTS: 95-5 TIN-ANTIMONY SOLDER. SLIP JOINTS: USE FOR PLUMBING TRAP SEALS ON INLET SIDE ONLY.
6. BETWEEN COPPER AND FERROUS MATERIALS: INSULATING DIELECTRIC UNION.
7. FLANGED JOINTS: FURNISH WITH COMPANION FLANGE AND CLOTH INSERTED RUBBER GASKET.
8. FLANGED BOLTS: ASTM A 354, MINIMUM GRADE BD, ALLOY STEEL WITH HEX NUTS IN COMPLIANCE WITH ANSI B18.22 AND STANDARD ROLLED STEEL WASHERS.
9. ASSEMBLY FOR HUBLESS PIPING: AS RECOMMENDED BY THE MANUFACTURER.
10. CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCERS, INCREASERS OR REDUCING FITTINGS. BUSHINGS WILL NOT BE PERMITTED.

INSTALLATION
BEFORE INSTALLING PIPE IN ANY PART OF THE SYSTEM, THE PIPE SHALL BE CLEANED INSIDE AND MADE FREE OF OIL, DIRT, AND FOREIGN MATTER. PROPERLY ALIGN AND INSTALL IN NEAT ARRANGEMENT, TRUE TO THE LINES OF THE BUILDING. PITCH LINE AT A CONSTANT SLOPE FOR PROPER DRAINAGE.

EXCEPT AS NOTED OTHERWISE ON DRAWINGS, PIPING SHALL BE HELD AS HIGH AS POSSIBLE, BETWEEN STRUCTURES AND THROUGH JOIST WEBBING, WITH DUE REGARD TO CONFLICTS WITH OTHER SYSTEMS AND THEIR REQUIREMENTS FOR SPACE.

PIPING, INCLUDING NO-HUB PIPING, SHALL BE INSTALLED STRAIGHT AND TRUE TO VERTICAL AND HORIZONTAL LINES. DEFLECTION SHALL NOT EXCEED ONE DEGREE. WHEN NECESSARY TO ACHIEVE THIS ALIGNMENT PROVIDE ADDITIONAL HANGERS OR BRACING.

APPLY LUBRICANT TO SCREW JOINT MALE THREADS.

METAL TO BE SOLDERED SHALL BE CLEANED AND FLUXED AS SUITABLE FOR THE SOLDER USED.

NOTCHING OF COPPER TUBING OR PLASTIC PIPING FOR CONNECTIONS WILL NOT BE PERMITTED.

PLUMBING SPECIALITES

PIPE SLEEVES
SCHEDULE 40 BLACK STEEL, GALVANIZED 26 GAGE STEEL, PROVIDE FOR ALL PIPES THROUGH WALLS AND FLOORS.

ESCUTCHEONS
PROVIDE FOR ALL PIPING THROUGH WALLS, FLOORS AND CEILING WERE PIPING IS EXPOSED TO VIEW IN FINISHED AREA. ESCUTCHEONS SHALL BE CHROMIUM PLATED, TWO PIECE, HINGED WITH SET SCREW.

UNIONS
PROVIDE GROUND JOINT BRASS UNIONS OR FLANGES ON EACH PIPING CONNECTION TO EQUIPMENT.

PROVIDE DIELECTRIC UNIONS BETWEEN COPPER AND STEEL PIPING CONNECTION TO EQUIPMENT.

VACUUM BREAKERS
SHALL CONFORM TO THE REQUIREMENTS OF THE REFERENCED PLUMBING CODE AND SHALL BE PROVIDED FOR HOSE BIBBS, FLUSHOMETERS AND ANY FIXTURE OR EQUIPMENT WATER SUPPLY HAVING A THREADED OUTLET.

FLASHING
VENT FLASHING SHALL COMPLY WITH ROOFING MANUFACTURER'S WRITTEN SPECIFICATIONS

CLEANOUTS
CLEANOUTS ON NO-HUB PIPE SHALL BE STANDARD NO-HUB FITTINGS.
CLEANOUTS ON CAST IRON HUB AND SPIGOT PIPING, SHALL BE CADMIUM PLATED.
APPROVED MANUFACTURERS: ZURN, JOSAM OR JONESPEC.

TRAP PRIMERS
PROVIDE WHERE INDICATED ON DRAWINGS. PRECISION PRODUCTS WITH DISTRIBUTION UNIT OR APPROVED EQUAL.

PIPE SLEEVES
1. EXTEND SLEEVE 1/4 INCH BEYOND FINISHED SURFACE.
2. SET SLEEVE BEFORE POURING CONCRETE.
3. PROVIDE CLEARANCE BETWEEN SLEEVE AND PIPE OR BETWEEN SLEEVE AND INSULATION TO ALLOW FOR PIPE MOVEMENT DUE TO EXPANSION AND CONTRACTION.
4. INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE.
5. CAULK BETWEEN SLEEVE AND PIPE OR SLEEVE AND INSULATION. PREFABRICATED, PRE-INSULATED, "PIPE SHIELDS" WILL BE ACCEPTABLE FOR PIPES PASSING THROUGH FLOORS, EXTERIOR WALLS, FIRE WALLS AND FIRE RESISTIVE WALLS AND PARTIITONS.
6. ESCUTCHEONS: FIT AROUND INSULATION WHERE PRESENT. PROVIDE DEEP ESCUTCHEON PLATES WHERE PIPE SLEEVES EXTEND ABOVE FLOORS.
7. WATER HAMMER ARRESTERS: INSTALL WHERE SHOWN ON DRAWINGS.
8. CLEANOUTS: INSTALL WHERE SHOWN ON DRAWINGS AND AT BASE OF ALL RISERS. PROVIDE ADDITIONAL CLEANOUTS WHERE REQUIRED BY LOCAL CODES AND FOR CONVENIENCE OF TESTING AND ERECTION AT CONTRACTOR'S OPTION.
9. FRAMES AND COVERS SHALL BE FLUSH WITH ADJOINING ARCHITECTURAL FINISH.

PLUMBING VALVES

DESCRIPTION
INSTALL IN ACCESSIBLE LOCATION.
VALVES SHALL NOT BE INSTALLED WITH THE STEMS BELOW THE HORIZONTAL POSITION.

VALVES, GATE, 125# UNION BONNET. RISING STEM
3 INCH AND SMALLER:
1. SCREWED: ITT GRINNELL #3080 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINNELL #3080 SJ OR APPROVED EQUAL.

VALVES, BALL (MAY BE USED IN LIEU OF GATE VALVES UP TO 2"): 2" AND SMALLER NIBCO #T580; TWO PIECE BRONZE BODY, WITH SCREWED ENDS, CHROME PLATED BRONZE BALL WITH CONVENTIONAL PORT, 400 PSI, BLOW OUT PROOF STEM.

VALVES, GLOBE 150# TEFLON DISC. UNION BONNET
3 INCH OR SMALLER:
1. SCREWED: ITT GRINELL #3240 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINELL #3240 SJ OR APPROVED EQUAL.

VALVES, CHECK 125# REMOVABLE REGRINDABLE DISC A. 3 INCH AND SMALLER, HORIZONTAL:
1. SCREWED: ITT GRINELL #3300 OR APPROVED EQUAL.
2. SOLDER JOINT: ITT GRINELL #3300 SJ OR APPROVED EQUAL.

3 INCH AND SMALLER, VERTICAL:
1. FOR SCREWED AND SOLDER JOINT INSTALLATION. SAME AS SECTION A OR APPROVED EQUAL. PROVIDE ADAPTERS FOR SOLDER JOINT CONNECTION. 2.05 HOSE BIBBS A. SEE FIXTURE SCHEDULE ON DRAWINGS. B. PLUG COCKS, 125# BRONZE COCKS. TWO (2) INCH AND SMALLER SHALL BE CRANE NO. 250 OR APPROVED EQUAL.

INSTALLATION
INSTALL VALVES WHERE SHOWN ON DRAWINGS.

PLUMBING HANGERS AND SUPPORTS

DESCRIPTION
PROVIDE HANGERS FOR ALL PIPING NOT INDICATED BELOW GRADE. USE HANGERS CAPABLE OF ADJUSTMENT.

HANGERS AND SUPPORTS
HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE GRINNELL, MODEL NO. 65 OR APPROVED EQUAL.

HANGERS FOR CAST IRON PIPE SHALL BE GRINNELL, MODEL NO. 260 OR APPROVED EQUAL.

HANGERS FOR COPPER TUBING SHALL BE GRINNELL, MODEL NO. 97 C OR APPROVED EQUAL.

TRAPEZE HANGERS OF A TYPE APPROVED BY THE OWNER'S REPRESENTATIVE MAY BE USED WHERE PIPES ARE DESIGNED TO RUN PARALLEL AT THE SAME ELEVATION.

PROVIDE ISOLATION HANGER WITH PROTECTIVE SHIELD, GRINNELL, MODEL NO. 300 103 OR APPROVED EQUAL, FOR ALL INSULATED PIPING. AT HANGER POINTS, PROVIDE 6 INCH LONG SECTION OF 1/2 INCH THICK CALCIUM SILICATE SECTIONAL PIPE INSULATION WITH FACTORY LONGITUDINAL LAP. SEAL BUTT JOINTS WITH INSULATING CEMENT.

STRAP HANGERS: NOT PERMITTED.

RISER CLAMPS: PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL, GRINNELL MODEL NO. 261

INSERTS: IN CONCRETE, GRINNELL MODEL NO. 285 OR APPROVED EQUAL, HAVING ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS READHEAD SD1 OR APPROVED EQUAL. POWDER PROPELLED PERMITTED IN NEW CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED PRIOR TO INSTALLATION. IN EXISTING CONSTRUCTION, START SLUGIN NO. 6800 SERIES OR APPROVED EQUAL.

SIDE BEAM CLAMPS: PROVIDE WHEN SUPPORTING FROM STRUCTURAL STEEL MEMBERS, GRINNELL, MODEL 225 OR APPROVED EQUAL.

OTHER SUPPORTS: OBTAIN OWNER'S REPRENTATIVE APPROVAL FOR OTHER METHODS OF SUPPORT.

SPACING OF HANGERS
PROVIDE HANGER AT EACH CHANGE OF DIRECTION.

SPACE HANGERS AND SUPPORTS TO PREVENT SAGGING AND REDUCE STRAIN ON VALVES AND SPECIALTIES WITH SPACING NO GREATER AND ROD NO SMALLER THAN SHOWN ON THE FOLLOWING TABLE. HANGERS SHALL ALLOW FOR EXPANSION AND CONTRACTION.

FERROUS PIPING AND COPPER TUBING:

DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE	
1/2" THROUGH 1-1/2"	6 FT.	3/8"	
2" THROUGH 3"	10 FT.	1/2"	
4" THROUGH 5"	12 FT.	5/8"	
6" AND LARGER	16 FT.	3/4" D.	

CAST IRON PIPING:

DIAMETER OF PIPE	MAXIMUM SPACING	ROD SIZE	
2" AND 3"	EACH JOINT	3/8"	
4" AND 5"	EACH JOINT	1/2"	
6" AND 8"	EACH JOINT	3/4"	
10" THROUGH 15"	EACH JOINT	3/4"	(TWO HANGERS)

RISER CLAMPS
INSTALL AT EACH LEVEL BELOW THE FLOOR. SUSPEND FROM TWO HANGER RODS AND INSERTS WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED.

TESTING OF PLUMBING PIPING

DESCRIPTION
CONDUCT ALL TESTS AFTER PIPING IS INSTALLED AND BEFORE PIPING IS CONCEALED OR COVERED.

PROVIDE ALL NECESSARY TEMPORARY PIPING CLOSURES.

PROVIDE ALL TESTING EQUIPMENT, MATERIALS AND SUPPLIES.

SYSTEMS SHALL REMAIN UNDER TEST FOR SUFFICIENT LENGTH OF TIME TO PROVE TIGHTNESS THEREOF AND FOR ADEQUATE OBSERVATION BY THE ARCHITECT-ENGINEER.

MATERIALS OTHER THAN THOSE SPECIFIED FOR JOINING WILL NOT BE PERMITTED IN THE PIPING SYSTEMS FOR THE PURPOSE OF STOPPING LEAKS.

ALL LEAKS DISCLOSED BY THE TESTING PROCEDURES SHALL BE REPAIRED AND TESTING REPEATED UNTIL THE SYSTEM IS PROVEN TIGHT.

TESTING REQUIREMENTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

SUBMITTALS
STERILIZATION: PROVIDE A DATED LETTER TO THE ARCHITECT-ENGINEER'S REPRESENTATIVE STATING THAT PIPING SYSTEM HAS BEEN STERILIZED AND FLUSHED AS SPECIFIED.

PIPING TEST
DOMESTIC HOT AND COLD WATER PIPING SHALL BE FILLED, THEN TESTED TO A HYDROSTATIC PRESSURE OF 150 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM OF ONE HOUR.

SANITARY PIPING, PREVIOUS TO CONNECTION OF FIXTURES, SHALL BE FILLED WITH WATER TO THE TOP OF THE SYSTEM AND PROVEN TIGHT. WHEN TESTING THE SYSTEM BY SECTIONS THE MINIMUM HEIGHT OF THE WATER COLUMN SHALL BE 10 FEET. EXAMINE ALL JOINTS FOR LEAKS.

NEW FIRE STANDPIPE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE OF 200 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM OF TWO HOURS.

GAS PIPING SHALL BE TESTED WITH NITROGEN TO 50 PSIG. PRESSURE SHALL BE MEASURED WITH A MANOMETER. MAINTAIN TEST PRESSURE FOR A MINIMUM OF 30 MINUTES.

STERILIZATION
AFTER TESTS ARE COMPLETED ALL WATER SUPPLY SYSTEMS SHALL BE FILLED WITH A SOLUTION CONTAINING 100 PPM OF AVAILABLE CHLORINE AND ALLOWED TO STAND FOR A PERIOD TO TWO HOURS BEFORE BEING FLUSHED WITH CLEAN WATER.

PLUMBING, FIXTURES, TRIM AND DRAINS

MANUFACTURER
MANUFACTURER SHALL BE AS SCHEDULED OR BY APPROVED EQUAL.

PIPING
PIPING TO SERVE FIXTURES AND EQUIPMENT AND EXPOSED TO VIEW IN FINISHED AREAS SHALL BE BRASS, CHROMIUM PLATED.

SUPPORTS
PROVIDE ALL BRACKETS, PLATES, ANCHORS AND FASTENING DEVICES REQUIRED FOR ANCHORING THE FIXTURES RIGIDLY IN PLACE. RISERS TO SHOWER HEADS SHALL BE ANCHORED TO THE WALL CONSTRUCTION TO PREVENT MOVEMENT.

FIXTURES
PROVIDE PLUMBING FIXTURES AS SCHEDULED ON DRAWINGS, AMERICAN STANDARD, KOHLER, ELJER OR APPROVED EQUAL.

PLUMBING DRAINS
FURNISH WITH SEEPAGE FLANGE WHERE INSTALLED WITH PANS OR FLASHING, FURNISH CLAMPING RING.

ALL DRAINS SHALL BE OF THE SAME MANUFACTURER.

FURNISH FLOOR DRAINS WITH PRIMER CONNECTIONS WHERE INDICATED ON THE DRAWINGS. IN LIEU OF CAST-IN PRIMER CONNECTIONS ON THE DRAIN BODY, A TEE BETWEEN THE DRAIN BODY AND THE TRAP, TO RECEIVE THE PRIMER DISCHARGE WILL BE ACCEPTABLE.

PROVIDE FLOOR DRAINS WITH 4 INCH DEEP SEAL TRAPS.

PROVIDE ALL DRAINS AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

INSTALLATION
DRAIN SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS; ACCESSIBLE AND LOCATED TO SUIT EQUIPMENT APPROVED FOR INSTALLATION. WHERE FLUSH VALVES ARE SPECIFIED WITH FIXTURES, THE SUPPLY TO THE VALVE IN EACH ROOM SHALL BE AT THE SAME HEIGHT FOR THE TYPE OF FIXTURE AND THE VALVE SHALL BE SET IN PLACE SO THAT THE CENTER LINE OF THE VALVE DISCHARGE IS DIRECTLY ABOVE THE CENTER LINE OF FIXTURE STUD. BENDING OF NIPPLE BETWEEN THE VALVE AND THE STUD TO ACHIEVE CONNECTION WILL NOT BE PERMITTED.

CHROME PLATED PIPING REQUIRING THE USE OF WRENCH SHALL BE PROTECTED FROM DAMAGE.

BOLT WATER CLOSET CARRIER TO FLOOR.

GAS PIPING

PIPING
SHALL COMPLY WITH THE REQUIREMENTS OF NFPA NO. 54 AND THE LOCAL GAS COMPANY.

PIPE SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE FITTINGS

INSTALLATION
PIPING SHALL COMPLY WITH THE REQUIREMENTS OF NFPA NO. 54 AND THE LOCAL GAS COMPANY.

INSTALL GAS SHUT-OFF AND GAS MANIFOLDS AS INDICATED OR REQUIRED.

DOMESTIC HOT AND COLD WATER

DESCRIPTION
THE WORK INCLUDES FURNISHING AND INSTALLING HOT AND COLD WATER PIPING AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

PIPING
HOT AND COLD WATER PIPING SHALL BE COPPER WATER TUBE HARD TEMPER, TYPE "L" WITH WROUGHT SOLDER FITTINGS ABOVE FLOOR AND SOFT TEMPER TYPE "K" WITH WROUGHT SOLDER FITTINGS BELOW GRADE.

GATE VALVES
SPECIFIED IN SECTION, PLUMBING VALVES .

INSTALLATION
NOTCHING OF PIPE FOR CONNECTION NOT PERMITTED.

WHERE POSSIBILITY OF BACKFLOW FROM THE DRAIN TO THE SUPPLY FITTING EXISTS, INSTALL VACUUM BREAKERS.

NOT MORE THAN ONE LAVATORY, SINK, OR SIMILAR FIXTURE SHALL BE SUPPLIED BY A 1/2 INCH BRANCH. LINEAR DIMENSIONS NOT TO EXCEED 5 FEET.

MAKE CONNECTION TO EQUIPMENT AND FIXTURES INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.

HOT WATER BRANCH CONNECTIONS TO DISTRIBUTION MAINS SHALL BE TOP TAKE-OFF, SWING JOINT TYPE.

ALL PIPING INSTALLED BELOW GROUND SHALL RECEIVE TWO COATS OF KOPPERS NO. 50 OR APPROVED EQUAL.

PLUMBING INSULATION

DESCRIPTION
INSULATION SHALL NOT BE INSTALLED UNTIL TESTING PROCEDURES HAVE BEEN COMPLIED WITH AND ALL SURFACES HAVE BEEN CLEANED AND FREE OF DIRT, GREASE AND COMPLETELY DRIED.

MATERIALS SHALL COMPLY WITH UL 723, FLAME SPREAD RATING, HOT SURFACE TEST PERFORMANCE, AND SMOKE DEVELOPED RATING.

SUBMITTALS
SAMPLES AND MANUFACTURER'S PRODUCT DATA: SUBMIT SAMPLES OF INSULATION AND ADHESIVE AND PRODUCT DATA LISTING RECOMMENDATIONS FOR USE AND COMPLIANCE WITH NFPA 90.

INSULATION
INSULATION FOR HOT AND COLD WATER PIPING, SHALL BE SECTIONAL GLASS FIBER AS MANUFACTURED BY OWENS CORNING FIBERGLASS TYPE ASJ/SSLII OR APPROVED EQUAL, WITH FACTORY APPLIED, ALL PURPOSE, FIRE RETARDANT JACKET.

INSULATION FOR EXPOSED HOT AND COLD WATER PIPING SHALL BE SECTIONAL GLASS FIBER AS MANUFACTURED BY OWENS CORNING FIBERGLASS TYPE ASJ/SSLII OR APPROVED EQUAL, WITH FACTORY APPLIED, .016 EMBOSSED ALUMINUM JACKET.

ADHESIVE SHALL BE BENJAMIN FOSTER 30-36, OR APPROVED EQUAL, WHITE INSULATION LAGGING ADHESIVE.

VAPOR BARRIER MASTIC SHALL BE BENJAMIN FOSTER NO. 82-07, WHITE, OR APPROVED EQUAL.

INSTALLATION
HOT AND COLD WATER PIPING: SHALL BE INSULATED WITH 1/2 INCH THICK GLASS FIBER INSULATION HAVING A FACTORY APPLIED, ALL PURPOSE, FIRE RETARDANT JACKET WITH A MINIMUM R-4.0 PER INCH. CONCEALED AND EXPOSED PIPING SHALL HAVE THE INSULATION APPLIED WITH SIDE AND END JOINTS BUTTED TIGHTLY. SEAL JACKET LEGS AND BUTT JOINT STRIPS WITH ADHESIVE.

INSULATE FITTINGS FOR PIPING UP TO 3 INCHES IPS WITH MOLDED GLASS FIBER. INSULATE FITTINGS FOR PIPING LARGER THAN 3 INCHES WITH MOLDED FITTINGS OR SEGMENTED SECTIONS, WIRED IN PLACE TO THE SAME THICKNESS AS ADJACENT INSULATION. EXPOSED INSULATED PIPING AND FITTINGS SHALL BE JACKETED WITH 6 OUNCE CANVAS PIPING INCLUDING THE FITTING CHANGE FROM HORIZONTAL TO VERTICAL. CONCEALED AND EXPOSED PIPING SHALL HAVE THE INSULATION APPLIED WITH SIDE AND END JOINTS BUTTED TIGHTLY. SEAL OFF ENDS OF INSULATION WITH VAPOR BARRIER MASTIC AT EACH FITTING AND AT 21 FOOT INTERVALS ON CONTINUOUS RUNS.

INSTALL THE FACTORY APPLIED FIRE RETARDANT JACKET VAPOR BARRIER SO THAT IT WILL LAP SMOOTHLY AND SECURELY AT THE LONGITUDINAL LAP AND ADHERE IT WITH VAPOR BARRIER MASTIC. ADHERE 3 INCH WIDE BUTT STRIPS X SMOOTHLY OVER ALL END JOINTS WITH THE VAPOR BARRIER MASTIC TO ASSURE A CONTINUOUS VAPOR BARRIER - NO STAPLES ALLOWED. INSULATE DRAIN BODIES AND FITTINGS WITH METERED SEGMENTS OF PIPE INSULATION, OVERSIZED PIPE INSULATION OR MOLDED FITTINGS. COAT WITH TWO, 1/8 INCH COATS OF VAPOR BARRIER MASTIC REINFORCED WITH GLASS FABRIC EXTENDING 2 INCHES ONTO ADJACENT PIPES. EXPOSED INSULATED PIPING AND FITTINGS SHALL BE JACKETED WITH 8 OUNCE CANVAS. TERMINATE INSULATION NEATLY AT CLEANOUTS ON STORM AND COLD DRAIN PIPING. DO NOT COVER CLEANOUTS.

DOMESTIC WATER HEATING

DESCRIPTION
PROVIDE DOMESTIC WATER HEATING EQUIPMENT WHERE SHOWN ON DRAWINGS AND SPECIFIED.

DISCHARGE PIPE
RELIEF VALVE DISCHARGE SHALL BE COPPER WATER TUBE, TYPE M.

INSTALLATION
WATER HEATER SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS.

DISCHARGE PIPE SHALL HAVE TERMINATING END CUT AT 45 DEGREE ANGLE.

TERMINATE RELIEF VALVE DRAIN AS SHOWN ON THE DRAWINGS.

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PLUMBING SPECIFICATIONS