REECE NICHOLS TENANT IMPROVEMENTS

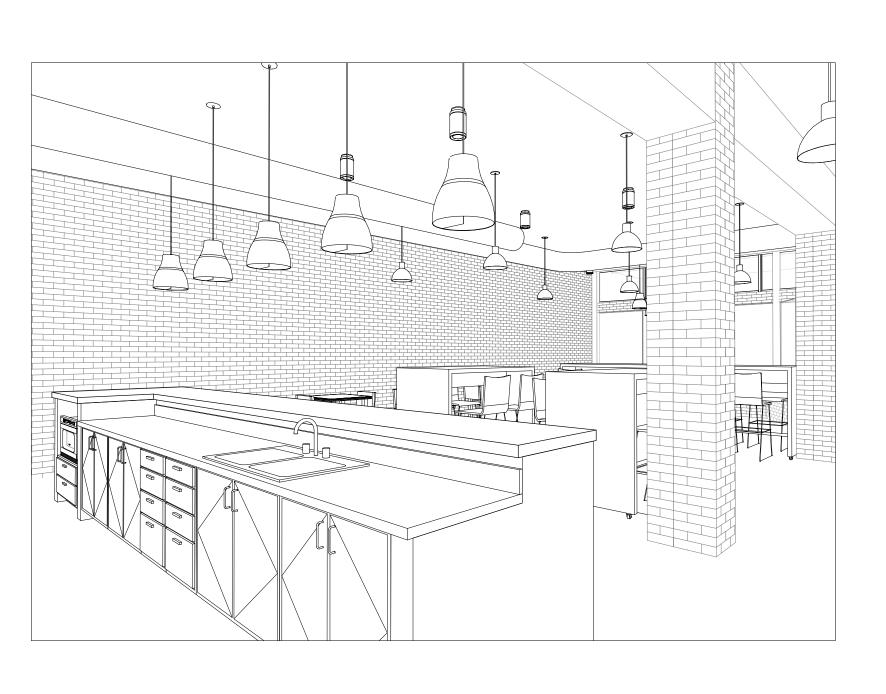
230 SW MAIN ST. LEE'S SUMMIT, MO 64063

PERMIT DOCUMENTS

1 JUNE, 2022

COLLINS WEBB #: 22046

SHEET NUMBER	SHEET NAME
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CS	COVER SHEET
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G003	CODE INFORMATION AND LIFE SAFETY PLANS
G500	GENERAL PROJECT SPECIFICATIONS
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G502	GENERAL PROJECT SPECIFICATIONS
DEMOLITION	-
D101	DEMO PLANS
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A101	FLOOR PLANS
A201	REFLECTED CEILING PLAN, INTERIOR ELEVATIONS, AND DOOR SCHEDULE
A901	FINISH PLAN AND SCHEDULE
MECHANICAL	
M101	MECHANICAL NOTES, SYMBOLS, & ABBREVIATIONS
M201	MECHANICAL FIRST FLOOR PLAN
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E401	ELECTRICAL RISER DIAGRAM & SCHEDULES
E501	ELECTRICAL SPECIFICATIONS
E502	ELECTRICAL SPECIFICATIONS







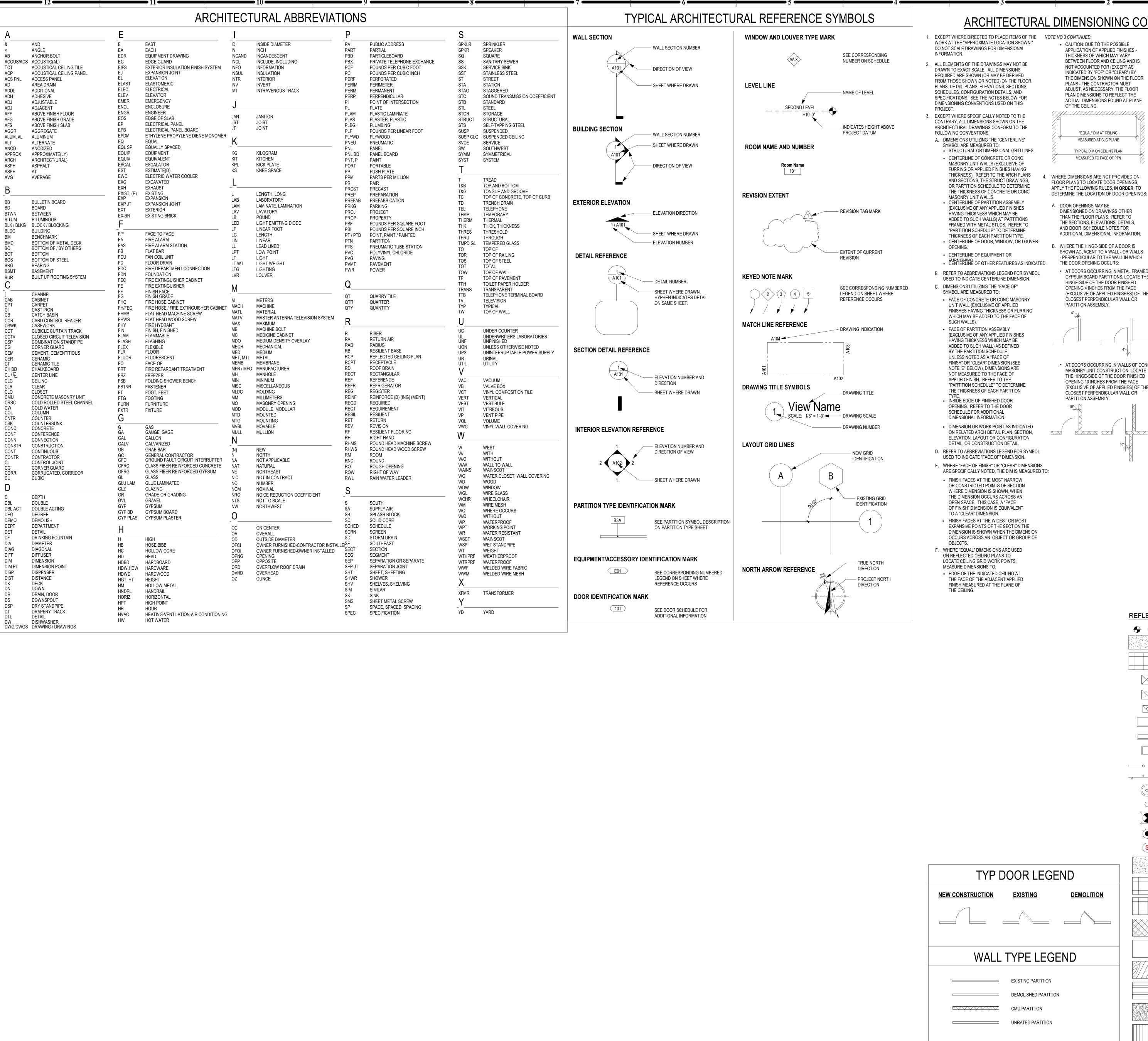


OWNER

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COLLINS WEBB ARCHITECTURE 307B SW MARKET ST. LEE'S SUMMIT, MISSOURI 64063 P: 816.249.2270 www.collinsandwebb.com MEP ENGINEER

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ARCHITECTURAL DIMENSIONING CONVENTIONS

 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.

"EQUAL" DIM AT CEILING MEASURED AT CLG PLANE TYPICAL DIM ON CEILING PLAN MEASURED TO FACE OF PTN

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

 DIMENSION G = 36 INCHES MIN DIMENSION H = 60 INCHES MIN

. 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. . 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.

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

 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".

). 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.

 AT DOORS OCCURRING IN WALLS OF CONC MASONRY UNIT CONSTRUCTION, LOCATE THE HINGE-SIDE OF THE DOOR FINISHED

DIM E > 16'-0"

DIM F > 16'-0"

— DIMENSION, WHEN OCCURS

WHERE WALLS AND/OR PARTITIONS OF

REFLECTED CEILING PLAN SYMBOLS:

CEILING HEIGHT

SUPPLY

RETURN

EXHAUST

2X4 LIGHT FIXTURE

1X4 LIGHT FIXTURE

2X2 LIGHT FIXTURE

FLUORESCENT STRIP FIXTURE

DIRECT/INDIRECT

TRACK LIGHTING

PENDANT FIXTURE

CAN LIGHT

SPEAKER

FIRE EXIT SIGN

SPRINKLER HEAD

- CONTROL JOINT IN

2'X4' LAY-IN CEILING

2'X2' LAY-IN CEILING

OPEN TO STRUCTURE

T & G WOOD VENEER

EXTERIOR STUCCO SOFFIT

EXTERIOR METAL PANEL SOFFIT

WOOD VENEER

GYP BD CEILING

--

 $-\Delta$ ∇ Δ

SUSP CEILING SYSTEM

FACES, UNLESS OTHERWISE NOTED.

ALLOWED OR ACCEPTED FOR PROCEEDING WITH THE WHERE DOOR IS SHOWN LOCATED IN A WORK WITHOUT THE ARCHITECT'S WRITTEN DIRECTION LARGE EXPANSE OF OPEN WALL ("DIM AND APPROVAL. ALSO - CONTRACTOR MUST REPAIR E" AND "DIM F" IN DIAGRAM BELOW AND/OR REPLACE ANY UNAUTHORIZED WORK, AS BOTH EXCEED 16'-0"), PLACE DOOR INDICATED BY THE ARCHITECT, AT NO ADDITIONAL COST AT APPROXIMATE LOCATION SHOWN ON TO THE OWNER. THE PLANS. WHERE DOOR OCCURS IN ALL DISSIMILAR METAL MATERIALS SHALL BE ISOLATED CMU WALL, PLACE DOOR AT WITH AN APPROVED NONMETAL ISOLATION MATERIAL. APPROXIMATE LOCATION SHOWN WHILE OPEN EXTERIOR JOINTS AROUND WINDOW AND DOOR MINIMIZING "CUT" OR PARTIAL CMU MODULES ADJACENT TO THE JAMBS.

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 PROVIDE SEALANT AND/OR CAULKING BETWEEN DISSIMILAR ADJOINING INTERIOR MATERIALS. (I.E. WINDOW SILLS TO GYP. BD., ACT CEILINGS TO MASONRY WALLS,

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 UNEQUAL THICKNESS ABUT, ALIGN EXPOSED THE INTERSECTING WALL. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND THEIR SERVICE CONNECTIONS WITH THE PROPER UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE FINAL SIZE AND DEPTH OF THE ELEVATOR PIT, SHAFT, RAIL ELEVATOR MANUFACTURER/ SUPPLIER.

SUPPORT, HOIST SUPPORT, OVERRUN AND MISC. ELEVATOR REQUIREMENTS WITH THE SELECTED 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. 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. EXCEPT AT FIRE-RATED PARTITIONS, ALL WALL AND

INCH BELOW STRUCTURE, UNLESS DETAILED OR NOTED 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. 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 ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING. PROVIDE INDEPENDENT FRAMING & ATTACHMENTS TO THE STRUCTURE – ADEQUATE TO SUPPORT THE CEILING

COLUMN GYPSUM BOARD FACING SHALL BE HELD AT 5/8

SYSTEM, LIGHT FIXTURES, DUCTS, DIFFUSERS, SPRINKLER PIPING AND BUS DUCTS. ALL CLOSETS AND ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER SHALL HAVE THE SAME FINISHES AS ADJOINING SPACES. 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.

REFER TO SPECIFICATIONS FOR ALL REQUIRED TESTING

PROVIDE MINIMUM WARRANTY PERIOD OF 18 MONTHS FROM SUBSTANTIAL COMPLETION ON ALL PRODUCTS

AND INSPECTIONS. 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, QUALIT REQUIREMENTS, REFERENCES, EXECUTION, AND CLOSEOUT PROCEDURES. NOTE: ANY SUBSTITUTIONS MUST MEET THE DESIGN INTENT, AS WELL AS THE

CRITERIA DESCRIBED ABOVE.

SERVICES.

INFORMATION NOTES: ALL CONTRACTORS AND THEIR SUPERVISORY PERSONNEL SHALL REVIEW THE GENERAL AND SUPPLEMENTARY CONDITIONS TO THE CONTRACT. ALL WORK SHALL CONFORM WITH APPLICABLE BUILDING CODES, REGULATIONS AND ORDINANCES. CONTRACTOR AND/OR OWNER SHALL OBTAIN ALL

REQUIRED BUILDING AND OCCUPANCY PERMITS.

DRAWINGS CONTAINED IN THIS SET SHALL NOT BE

REJECTED AND RETURNED TO THE CONTRACTOR.

DRAWINGS SUBMITTED AS SHOP DRAWINGS WILL BE

EACH INSTALLER MUST EXAMINE SUBSTRATE AND/OR

AND REPORT TO THE CONTRACTOR IN WRITING ANY

EXECUTION OF THAT INSTALLERS WORK. DO NOT

PROCEED UNTIL UNSATISFACTORY CONDITIONS ARE

CORRECTED. COMMENCING WITH INSTALLATION SHALL

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.

ALL MASONRY WALL THICKNESSES ACTUAL DIMENSIONS

"TYPICAL", AS USED IN THESE DOCUMENTS, SHALL MEAN

LARGE SCALE DRAWINGS, (PLAN, SECTION, & DETAIL

CLARIFICATION. FOR BIDDING PURPOSES: THE MOST

EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL

GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION:

REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHAL

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND

CLARIFICATION. FOR BIDDING PURPOSES: THE MOST

ANY DISCREPANCIES BETWEEN THE DRAWINGS AND

ACTUAL CONDITIONS SHALL BE REPORTED TO THE

ARCHITECT IN WRITING FOR RESOLUTION, PRIOR TO

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

EXPENSIVE AND/OR STRICTEST REQUIREMENTS SHALL

GOVERN. FOR CLARIFICATIONS DURING CONSTRUCTION

SPECIFICATIONS - CONTACT ARCHITECT FOR

THE MOST EXPENSIVE AND/OR STRICTEST

PROCEEDING WITH THE WORK.

NOTE: WALL THICKNESSES ARE ACTUAL DIMENSIONS.

REFER TO WALL TYPES SHEET FOR THICKNESSES.

OF, OR THE SAME, FOR SIMILAR CONDITIONS

DRAWINGS, ETC.) - CONTACT ARCHITECT FOR

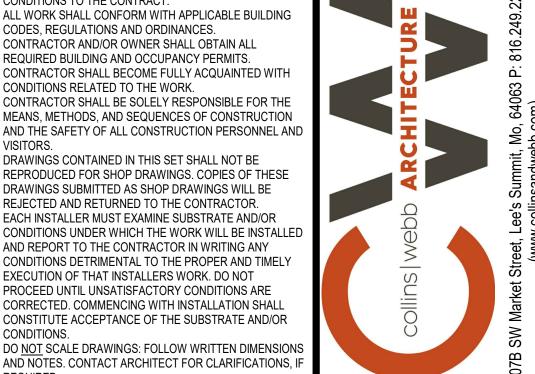
THE MOST EXPENSIVE AND/OR STRICTEST

REFER TO WALL TYPES SHEET

THROUGHOUT

CONDITIONS RELATED TO THE WORK.

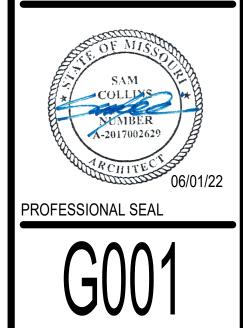
GENERAL



CONSTRUCTION As Noted on Plans Review

THAT THE CONDITION OR DIMENSION IS REPRESENTATIVE IF THERE IS A DISCREPANCY BETWEEN SMALL SCALE AND REQUIREMENTS, AS INDICATED BY THE ARCHITECT, SHAL OШ

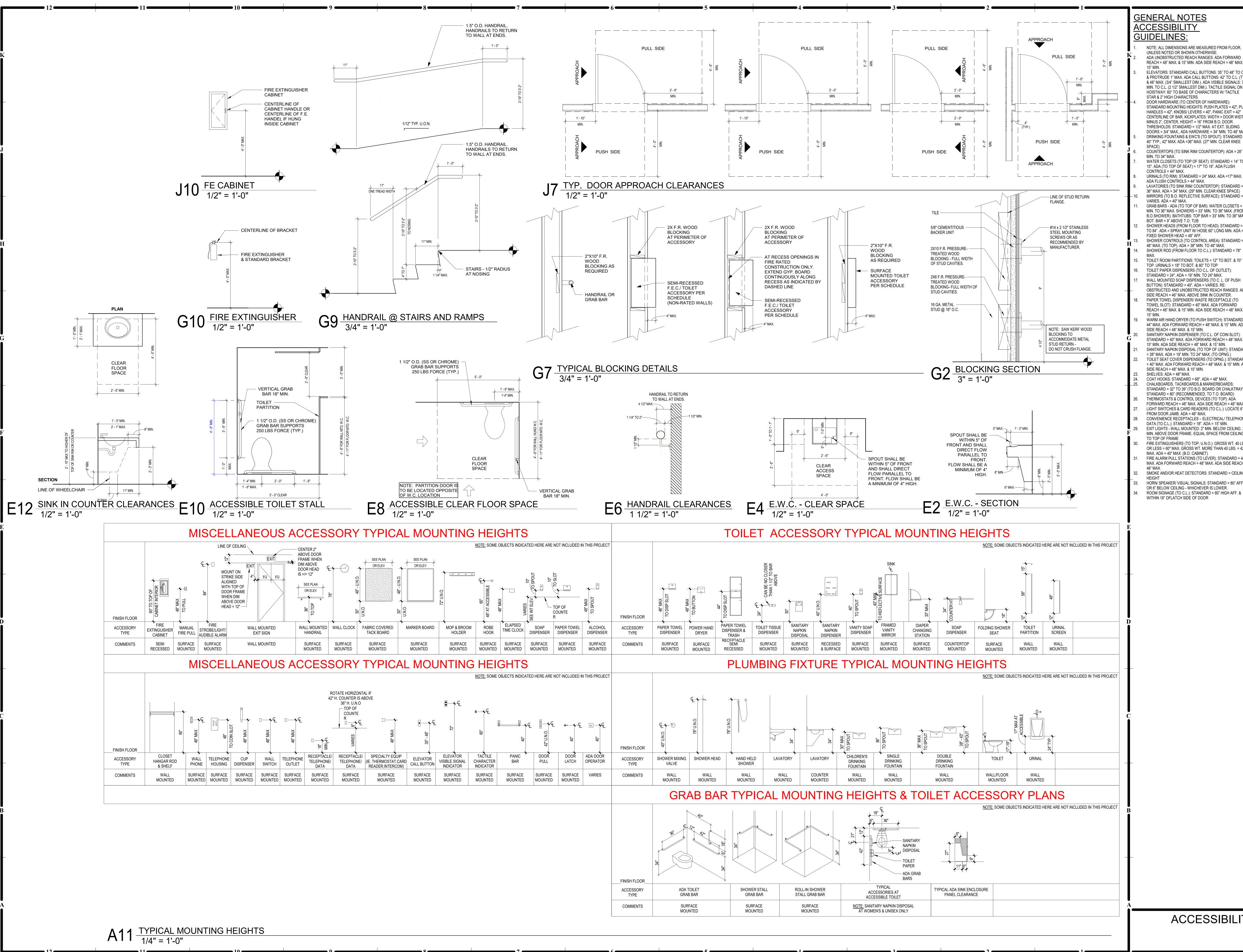
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GENERAL INFORMATION

DSP



GENERAL NOTES ACCESSIBILITY

> NOTE: ALL DIMENSIONS ARE MEASURED FROM FLOOR, UNLESS NOTED OR SHOWN OTHERWISE. ADA UNOBSTRUCTED REACH RANGES: ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & ELEVATORS: STANDARD CALL BUTTONS: 35" TO 48" TO C & PROTRUDE 1" MAX. ADA CALL BUTTONS: 42" TO C.L. (TYF & 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. 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 = 34" MIN. TO 48" MAX.

CONSTRUCTION
As Noted on Plans Review

Lee's Summit, Misson 06/30/2022

DRINKING FOUNTAINS & EWC'S (TO SPOUT): STANDARD = 40" TYP., 42" MAX. ADA =36" MAX. (27" MIN. CLEAR KNEE COUNTERTOPS (TO SINK RIM/ COUNTERTOP): ADA = 28" WATER CLOSETS (TO TOP OF SEAT): STANDARD = 14" TO 15". ADA (TO TOP OF SEAT) = 17" TO 19". ADA FLUSH CONTROLS = 44" MAX. URINALS (TO RIM): STANDARD = 24" MAX. ADA =17" MAX. ADA FLUSH CONTROLS = 44" MAX.

LAVATORIES (TO SINK RIM/ COUNTERTOP): STANDARD = 36" MAX. ADA = 34" MAX. (29" MIN. CLEAR KNEE SPACE) MIRRORS (TO B.O. REFLECTIVE SURFACE): STANDARD = VARIES. ADA = 40" MAX. 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 SHOWER HEADS (FROM FLOOR TO HEAD): STANDARD = 7 TO 84". ADA = SPRAY UNIT W/ HOSE 60" LÓNG MIN. ADA = FIXED SHOWER HEAD = 48" AFF. SHOWER CONTROLS (TO CONTROL AREA): STANDARD =

TOILET ROOM PARTITIONS: TOILETS = 12" TO BOT. & 70" T TOP. URINALS = 18" TO BOT. & 60" TO TOP TOILET PAPER DISPENSERS (TO C.L. OF OUTLET): STANDARD = 24". ADA = 19" MIN. TO 24" MAX. WALL MOUNTED SOAP DISPENSERS (TO C. L. OF PUSH BUTTON): STANDARD = 40". ADA = VARIES. RE: OBSTRUCTED AND UNOBSTRUCTED REACH RANGES. ADA SIDE REACH = 46" MAX. ABOVE SINK IN COUNTER. PAPER TOWEL DISPENSER/ WASTE RECEPTACLE (TO TOWEL SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. &

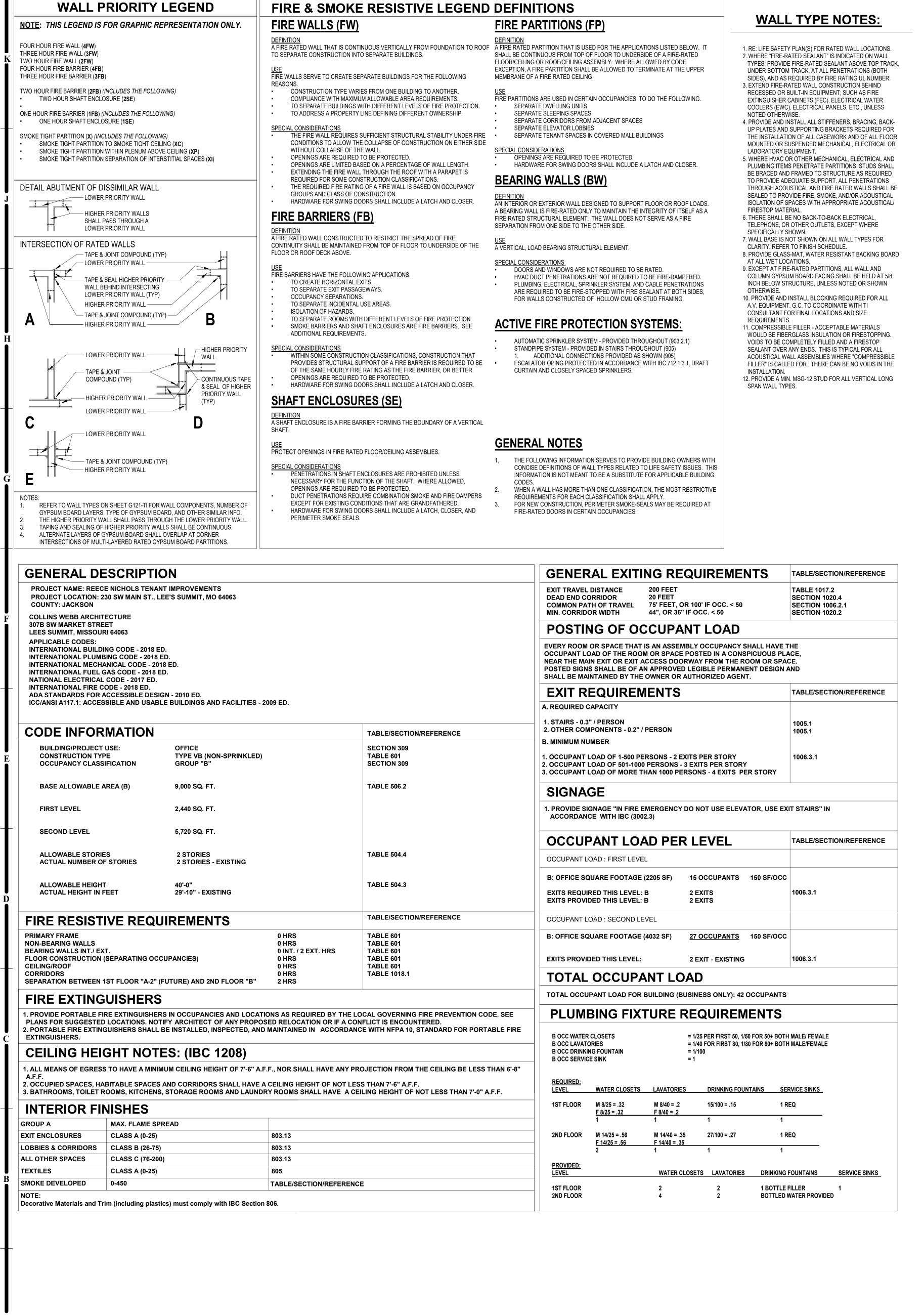
WARM AIR HAND DRYER (TO PUSH SWITCH): STANDARD 44" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPENSER (TO C.L. OF COIN SLOT): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MÁX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SANITARY NAPKIN DISPOSAL (TO TOP OF UNIT): STANDARD = 28" MAX. ADA = 19" MIN. TO 24" MAX. (TO OPNG.) TOILET SEAT COVER DISPENSERS (TO OPNG.): STANDARD = 40" MAX. ADA FORWARD REACH = 48" MAX. & 15" MIN. ADA SIDE REACH = 48" MAX. & 15" MIN. SHELVES: ADA = 48" MAX. COAT HOOKS: STANDARD = 68". ADA = 48" MAX. CHALKBOARDS, TACKBOARDS, & MARKERBOARDS:

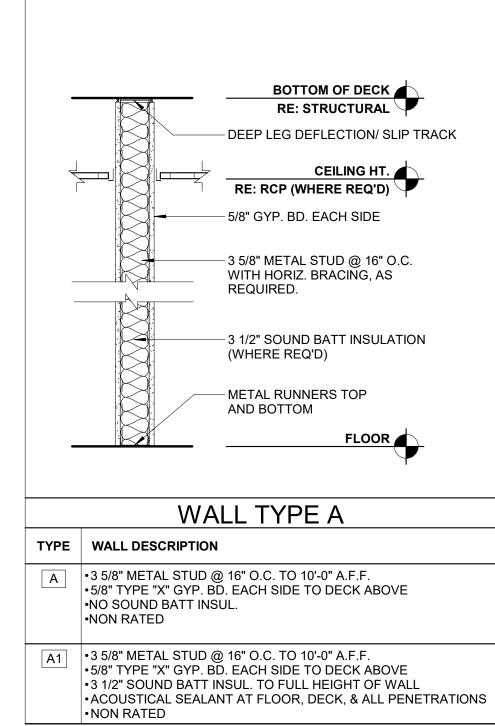
STANDARD = 32" TO 39" (TO B.O. BOARD OR CHALKTRAY) STANDARD = 80" (RECOMMENDED, TO T.O. BOARD) THERMOSTATS & CONTROL DEVICES (TO TOP): ADA FORWARD REACH = 48" MAX. ADA SIDÈ REACH = 48" MAX. LIGHT SWITCHES & CARD READERS (TO C.L.): LOCATE 6' EXIT LIGHTS - WALL MOUNTED: 2" MIN. BELOW CEILING. 2 MIN. ABOVE DOOR FRAME. EQUAL SPACE FROM CEILING FIRE EXTINGUISHERS (TO TOP, U.N.O.): GROSS WT. 40 LBS MAX. ADA = 40" MAX. (B.O. CABINET)

FIRE ALARM PULL STATIONS (TO LEVER): STANDARD = 48" MAX. ADA FORWARD REACH = 48" MAX. ADA SIDE REACH = HORN/ SPEAKER/ VISUAL SIGNALS: STANDARD = 80" AFF OR 6" BELOW CEILING - WHICHEVER IS LOWER. ROOM SIGNAGE (TO C.L.): STANDARD = 60" HIGH AFF. &

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ACCESSIBILITY GUIDELINES





EGRESS DOWN

B5 2ND FLOOR PLAN - LIFE SAFETY 1/16" = 1'-0"

BOTTOM OF DECK RE: STRUCTURAL AS REQUIRED PER WALL TYPE EXISTING WALL CEILING HT. ₹<u>-</u>₩]/// RE: RCP (WHERE REQ'D) - 5/8" GYP. BD. ON ROOM SIDE - METAL STUD / HAT CHANNEL @ 16" - SOUND BATT INSULATION (WHERE REQ'D) - METAL RUNNERS TOP AND BOTTOM ROOM SIDE FLOOR WALL TYPE E TYPE | WALL DESCRIPTION E2 •3 5/8" METAL STUD @ 16" O.C. TO 10'-0" A.F.F. •5/8" TYPE "X" GYP. BD. ONE SIDE •NO SOUND BATT INSUL. •NON RATED E5 •6" METAL STUD @ 16" O.C. TO 10'-0" A.F.F. •5/8" TYPE "X" GYP. BD. ONE SIDE

•NO SOUND BATT INSUL.

NON RATED

BOTTOM OF DECK RE: STRUCTURAL - DEEP LEG DEFLECTION/ SLIP TRACK CEILING₁HT. RE: RCP (WHERE REQ'D) - 5/8" GYP. BD. EACH SIDE - 6" METAL STUD @ 16" O.C. WITH HORIZ. BRACING, AS REQUIRED. - 6" SOUND BATT INSULATION (WHERE REQ'D) - METAL RUNNERS TOP AND BOTTOM WALL TYPE B TYPE | WALL DESCRIPTION B •6" METAL STUD @ 16" O.C. TO 10'-0" A.F.F.

•5/8" TYPE "X" GYP. BD. EACH SIDE TO DECK ABOVE

•6" SOUND BATT INSUL. TO FULL HEIGHT OF WALL

₹ UP

B3 1ST FLOOR PLAN - LIFE SAFETY 1/16" = 1'-0"

NON RATED

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 2 2S 2 HOUR SHAFT ENCLOSURE **ISE 1SE 1SE 1SE** 1 HOUR SHAFT ENCLOSURE **TIRE PARTITIONS 1FP 1FP 1FP 1FP** 1 HOUR FIRE PARTITION .5FP 0.5FP 0.5FP 0.5FP 0.5 HOUR FIRE PARTITION 0.5X 0.5X 0.5X 0.5X 0.5X 0.5 HOUR CORRIDOR PARTITION J SMOKE BARRIER SB SB SB SB 1 HOUR SMOKE BARRIER **BEARING WALLS 2BW 2BW 2BW 2BW** 2 HOUR BEARING WALL IBW 1BW 1BW 1BW 1 HOUR BEARING WALL NUMBER OF OCCUPANTS EXITING 200 40" CALCULATED EXIT EXIT WIDTH WIDTH REQ'D (IN.) PROVIDED (IN.) NUMBER OF MEANS OF EGRESS

FIRE RESISTIVE LEGEND

FIRE WALLS

CALCULATED EXIT 40" 32" MIN. WIDTH OF WIDTH REQ'D (IN.) COMPONENT (IN.) EXIT WIDTH — PROVIDED (IN.) FROM ROOM OR LEVEL X = CLEAR WIDTH OF OPENING IN INCHES FIRE RISER CABINET FIRE ALARM CONTROL PANEL FIRE DEPARTMENT CONNECTION

AREA OF RESCUE ASSISTANCE ACCESSIBLE EGRESS COMPONENT INDICATES FIRE EXTINGUISHER CABINET(FE)

KNOX BOX

(FF-1) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE INDICATES KITCHEN/ BAR FIRE EXTINGUISHER (FE) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE. INDICATES TEMPORARY WALL HUNG FIRE EXTINGUISHER (FE) LOCATION WITH 75'-0" RADIUS COVERAGE AREA. SEE SPECIFICATIONS FOR FE TYPE.

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CONSTRUCTION As Noted on Plans Review

COLLINS WEBB #:

CODE INFORMATION AND LIFE SAFETY PLANS

ARCHITECT WILL ISSUE ADDITIONAL SECTIONS TO PROVIDE CLARITY TO PRODUCTS OR INSTALLATION REQUIREMENTS.

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

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

IE 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.

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

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.

POSSESSION OF THE FACILITY OR THE FACILITY IS CERTIFIED AS SUBSTANTIALLY COMPLETE.

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. . 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 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.

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

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. 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'.

. 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. . 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. 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

INTERNS 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

I. 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." . 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

THE OWNER REQUIRES THE GENERAL CONTRACTOR AND SUBCONTRACTORS TO MAINTAIN AN ACCURATE. CURRENT

SUBCONTRACTORS.

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

SET OF RECORD DOCUMENTS (AS-BUILTS) AS CONSTRUCTION PROGRESSES. ALL PERTINENT INFORMATION RELATING

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.

1. THE CATEGORIES LISTED BELOW SHOULD BE SUBMITTED AT THE SAME TIME. A. A DISK WITH ALL PHOTOS TAKEN DURING CONSTRUCTION.

H. RELEASE OF LIEN (AIA FORM 706A), PAYMENT OF DEBT (AIA FORM 706)

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 (0&M) - PROVIDE 0&M MANUALS BOXED AND BOUND. THIS ITEM IS OF SIGNIFICANT IMPORTANCE TO MSI FUTURE MAINTENANCE ACTIVITIES. F. ALL HVAC TEST AND BALANCE REPORTS.

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

04 0500 - MASONRY RESTORATION & TUCKPOINTING

DIVISION 4 - MASONRY

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.

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.

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.

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-

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

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.

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,

EXAMINE SURFACES TO RECEIVE MASONRY WORK AND CONDITIONS UNDER WHICH MASONRY WILL BE INSTALLED. DO 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

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",

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 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

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.

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

A. <u>SUBMITTALS</u>: 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

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

CODE-REQUIRED LOADING AND TO MATCH THE CONFIGURATIONS INDICATED IN THE CONSTRUCTION DOCUMENTS.

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

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.

SEE DRAWINGS FOR REQUIRED RAILING ELEVATIONS.

UNDER CONDITIONS INDICATED:

PERFORMED IN THE SHOP OR IN THE FIELD.

OR MASONRY.

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.

C. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.

I. 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. 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

I.FOR NONGALVANIZED-STEEL RAILINGS, PROVIDE NONGALVANIZED FERROUS-METAL FITTINGS. BRACKETS. FASTENERS, AND SLEEVES; HOWEVER, GALVANIZE ANCHORS TO BE EMBEDDED IN EXTERIOR CONCRETE OR 2. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH SSPC-SP 3, "POWER TOOL CLEANING." 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

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 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 ICENSED IN THE JURISDICTION WHRE THIS PROJECT IS LOCATED. ALL FEES SUBJECT OF THIS SERVICE WILL BE

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.

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.

1. FOLLOW MANUFACTURER INSTALLATION GUIDLINES. INSTALLATION SHALL BE COMPLIANT WITH APPLICABLE

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. 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. <u>SUBMITTALS</u>: SAMPLES OF FINISH MATERIALS, CATALOG CUTS OF HARDWARE, AND SHOP DRAWINGS INCLUDING DIMENSIONED PLANS, ELEVATIONS, AND SECTIONS.

B. <u>QUALITY STANDARD</u>: ARCHITECTURAL WOODWORK INSTITUTE'S "ARCHITECTURAL WOODWORK QUALITY

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.

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 2. BACKOUT AND GROOVE BACKS OF FLAT MEMBERS, KERF BACKS OF OTHER WIDE, FLAT MEMBERS, EXCEPT

WHERE ENDS WILL BE EXPOSED IN FINISHED WORK.

10. SAND WORK SMOOTH AND SET EXPOSED NAILS AND SCREWS.

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

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 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.

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.

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

2. PROVIDE THE INFORMATION REQUIRED BY AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).

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

CABINE IS:

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

. 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 12. FINISH WORK IN ACCORDANCE WITH AWI/AWMAC/WI (AWS) OR AWMAC/WI (NAAWS).

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. SECURE CABINETS TO FLOOR USING APPROPRIATE ANGLES AND ANCHORAGES. 9. CLEAN CASEWORK, COUNTERS, SHELVES, HARDWARE, FITTINGS, AND FIXTURES.

<u>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</u>

07 1300 - SHEET WATERPROOFING

A. <u>SUBMITTALS</u>:
1. PRODUCT DATA: PROVIDE DATA FOR MEMBRANE. 2.PROVIDE SHOP DRAWINGS: INDICATE SPECIAL JOINT OR TERMINATION CONDITIONS AND CONDITIONS OF INTERFACE WITH OTHER MATERIALS. 3. CERTIFICATE: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED. C. <u>FIELD CONDITIONS</u>:
1. MAINTAIN AMBIENT TEMPERATURES ABOVE 40 DEGREES F FOR 24 HOURS BEFORE AND DURING APPLICATION

1 CONTRACTOR SHALL CORRECT DEFECTIVE WORK WITHIN A FIVE YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION; REMOVE AND REPLACE MATERIALS CONCEALING WATERPROOFING AT NO EXTRA COST TO

<u>BASIS OF DESIGN</u>:1. W.R. MEADOWS, INC; MEL-ROL: WWW.WRMEADOWS.COM

AND UNTIL LIQUID OR MASTIC ACCESSORIES HAVE CURED.

1. SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: LOCATION: LOCATIONS AS IDENTIFIED IN 2. ROLLED, SELF-ADHERED MODIFIED BITUMINOUS SHEET MEMBRANE: THICKNESS: 60 MIL, 0.060 INCH, MINIMUM. THICKNESS: 60 MIL, 0.060 INCH, MINIMUM. CARRIER FILM: 4 MILS, POLYMERIC MEMBRANE:56 MILS, SHEET WIDTH: 36 INCH, MINIMUM.

3. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 4. MEMBRANE SEALANT: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 5. TERMINATION BARS: ALUMINUM; COMPATIBLE WITH MEMBRANE AND ADHESIVES. 6. SURFACE CONDITIONER: COMPATIBLE WITH MEMBRANE 7. ADHESIVES: AS RECOMMENDED BY MEMBRANE MANUFACTURER.

8. THINNER AND CLEANER: AS RECOMMENDED BY ADHESIVE MANUFACTURER, COMPATIBLE WITH SHEET 1. SEALANT FOR CRACKS AND JOINTS IN SUBSTRATES: RESILIENT ELASTOMERIC JOINT SEALANT COMPATIBLE WITH SUBSTRATES AND WATERPROOFING MATERIALS.

1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL TO SUCCESSFUL INSTALLATION. DO NOT APPLY WATERPROOFING TO SURFACES UNACCEPTABLE TO 2. CLEAN AND PREPARE SURFACES TO RECEIVE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S

2. PROTECTION BOARD: PROVIDE TYPE CAPABLE OF PREVENTING DAMAGE TO WATERPROOFING DUE TO

INSTRUCTIONS: VACUUM SUBSTRATE CLEAN. 3. FILL NON-MOVING JOINTS AND CRACKS WITH A FILLER COMPATIBLE WITH WATERPROOFING MATERIALS.SEAL MOVING CRACKS WITH SEALANT AND NON-RIGID FILLER, USING PROCEDURES RECOMMENDED BY SEALANT AND WATERPROOFING MANUFACTURERS 4. INSTALL MEMBRANE WATERPROOFING IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA (WM) APPLICABLE REQUIREMENTS. 5. SELF-ADHERING MEMBRANE: REMOVE RELEASE PAPER LAYER, AND ROLL OUT ONTO SUBSTRATE WITH A

MECHANICAL ROLLER TO PROVIDE FULL CONTACT BOND. 6. OVERLAP EDGES AND ENDS, MINIMUM 3 INCHES, SEAL PERMANENTLY WATERPROOF BY METHOD RECOMMENDED BY MANUFACTURER, AND APPLY UNIFORM BEAD OF SEALANT TO JOINT EDGE. 7. REINFORCE MEMBRANE WITH MULTIPLE THICKNESS OF MEMBRANE MATERIAL OVER JOINTS, WHETHER JOINTS ARE STATIC OR DYNAMIC 8. WEATHER LAP JOINTS ON SLOPED SUBSTRATE IN DIRECTION OF DRAINAGE, AND SEAL JOINTS AND SEAMS. 9. FLEXIBLE FLASHINGS: SEAL ITEMS WATERTIGHT THAT PENETRATE THROUGH WATERPROOFING MEMBRANE

10. SEAL MEMBRANE AND FLASHINGS TO ADJOINING SURFACES. INSTALL TERMINATION BAR ALONG EDGES. INSTALL COUNTERFLASHING OVER EXPOSED EDGES. 11. INSTALLATION OF DRAINAGE PANEL AND PROTECTION BOARD. INSTALLER TO FOLLOW MANUFACTURERS INSTALLATION PROCEDURES 12. UPON COMPLETION OF HORIZONTAL MEMBRANE INSTALLATION, DAM INSTALLATION AREA IN PREPARATION FOR

FLOOD TESTING. FLOOD TO MINIMUM DEPTH OF 1 INCH WITH CLEAN WATER, AND AFTER 48 HOURS INSPECT

MATERIALS AS DIRECTED BY ARCHITECT; REPEAT FLOOD TEST, AND REPAIR DAMAGE TO BUILDING. WHEN AREA

FOR LEAKS. IF LEAKING IS FOUND, REMOVE WATER, REPAIR LEAKING AREAS WITH NEW WATERPROOFING

07 2100 - THERMAL INSULATION A. <u>SUBMITTALS</u>: PRODUCT DATA FOR EACH TYPE OF INSULATION SPECIFIED.

IS PROVEN WATERTIGHT, DRAIN WATER AND REMOVE DAM.

1 FLAME SPREAD INDEX: 25 OR LESS

3. BOARD SIZE: 48 INCH BY 96 INCH.

BACKFILLING AND CONSTRUCTION TRAFFIC.

2. SMOKE DEVELOPED INDEX: 50 OR LESS IN EXPOSED AREAS AND PLENUMS; 450 OR LESS WHERE CONCEALED.

. MINERAL FIBER OR GLASS FIBER BLANKET INSULATION: TYPE I, UNFACED WHERE SPECIFIED WITH SEPARATE VAPOR BARRIER.FIBERS MANUFACTURED FROM GLASS, SLAG WOOL, OR ROCK WOOL. FLEXIBLE PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665; FRICTION FIT.SEE DRAWINGS FOR SPECIFIC TYPES. A. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84. B. SMOKE DEVELOPED INDEX: 450 OR LESS. WHEN TESTED IN ACCORDANCE WITH ASTM E84.

FACING. IF ANY. 2. BOARD INSULATION: BOARD INSULATION AT CAVITY WALL CONSTRUCTION, EXTERIOR WALL BEHIND [RATED AND ACOUSTIC CONDITIONS] WALL FINISH, AND INTERIOR WALL WITH FACER PROVIDING EXPOSED FINISH. A. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578. 1. FLAME SPREAD INDEX (FSI): CLASS A - 0 TO 25. WHEN TESTED IN ACCORDANCE WITH ASTM E84. 2. SMOKE DEVELOPED INDEX (SDI): 450 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.

C. COMBUSTIBILITY: NON-COMBUSTIBLE, WHEN TESTED IN ACCORDANCE WITH ASTM E136, EXCEPT FOR

4. BOARD THICKNESS: 1-1/2 INCH. 5. TYPE AND COMPRESSIVE RESISTANCE: TYPE XI, 5 PSI (35 KPA), MINIMUM. 6. TYPE AND WATER ABSORPTION: TYPE XI. 4.0 PERCENT BY VOLUME, MAXIMUM, BY TOTAL IMMERSION.

. VAPOR RETARDER: 6 MIL POLYETHYLENE AT CONCEALED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/450), FOIL/SCRIM AT PLENUMS AND EXPOSED AREAS (FLAME SPREAD/SMOKE DEVELOPED: 25/50). PROVIDE WHERE INDICATED IN DRAWINGS. 2. TAPE: REINFORCED POLYETHYLENE FILM WITH ACRYLIC PRESSURE SENSITIVE ADHESIVE. APPLICATION: SEALING OF INTERIOR CIRCULAR PENETRATIONS, SUCH AS PIPES OR CABLES.

E. <u>INSTALLATION:</u>
1. DO NOT INSTALL INSULATION ADHESIVES WHEN TEMPERATURE OR WEATHER CONDITIONS ARE DETRIMENTAL TO SUCCESSFUL INSTALLATION. 2. INSTALL INSULATION IN AREAS AND IN THICKNESSES INDICATED OR REQUIRED TO PRODUCE R-VALUES WHERE INDICATED, CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION. 3. INSTALL IN EXTERIOR WALL AND CEILING SPACES WITHOUT GAPS OR VOIDS. DO NOT COMPRESS INSULATION. 4. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS. 5. EXTEND VAPOR RETARDER TO EXTREMITIES OF AREAS TO BE PROTECTED FROM VAPOR TRANSMISSION. SECURE IN PLACE WITH ADHESIVES OR OTHER ANCHORAGE AS RECOMMENDED BY MANUFACTURER. LOCATE SEAMS AT FRAMING MEMBERS, OVERLAP AND SEAL WITH SUITABLE TAPE (DUCT TAPE IS NOT SUITABLE). 6. DO NOT PERMIT INSTALLED INSULATION TO BE DAMAGED PRIOR TO ITS CONCEALMENT.

07 2500 - WEATHER BARRIERS A. <u>SUBMITTALS</u>: PRODUCT DATA: PROVIDE DATA ON MATERIAL CHARACTERISTICS. SHOP DRAWINGS: PROVIDE DRAWINGS OF SPECIAL JOINT CONDITIONS.

B. MOCK-UP: INSTALL AIR BARRIER, VAPOR RETARDER, AND WATER-RESISTIVE BARRIER MATERIALS IN MOCK-UP. C. PRODUCTS: AIR BARRIER, FLUID APPLIED: VAPOR PERMEABLE, ELASTOMERIC WATERPROOFING.

D. <u>BASIS OF DESIGN</u>: BASF CORPORATION; MASTERSEAL AWB 665:

1. SEALANTS, TAPES, AND ACCESSORIES FOR SEALING WEATHER BARRIER AND SEALING WEATHER BARRIER TO ADJACENT SUBSTRATES: AS SPECIFIED OR AS RECOMMENDED BY WEATHER BARRIER MANUFACTURER. 2. FLEXIBLE FLASHING: SHEATHING FABRIC SATURATED WITH AIR BARRIER COATING AND COMPLYING WITH THE APPLICABLE REQUIREMENTS OF ICC-ES AC148. 3. LIQUID FLASHING: ONE PART, FAST CURING, NON-SAG, ELASTOMERIC, GUN GRADE, TROWELABLE LIQUID

3. CLEAN AND PRIME SUBSTRATE SURFACES TO RECEIVE ADHESIVES IN ACCORDANCE WITH MANUFACTURER'S

4. MASTIC COATING: INSTALL BY TROWEL OR ROLLER TO MINIMUM THICKNESS OF 1/4 INCH: USE SHEET SEAL TO

8. AT OPENINGS TO BE FILLED WITH NON-FLANGED FRAMES, SEAL WEATHER BARRIER TO EACH SIDE OF OPENING

1. VERIFY THAT SURFACES AND CONDITIONS ARE READY TO ACCEPT THE WORK OF THIS SECTION. 2. REMOVE PROJECTIONS, PROTRUDING FASTENERS, AND LOOSE OR FOREIGN MATTER THAT MIGHT INTERFERE WITH PROPER INSTALLATION.

1. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. 2. AIR BARRIERS: INSTALL CONTINUOUS AIR TIGHT BARRIER OVER SURFACES INDICATED, WITH SEALED SEAMS AND WITH SEALED JOINTS TO ADJACENT SURFACES. 3. PREPARE SUBSTRATE IN MANNER RECOMMENDED BY COATING MANUFACTURER; TREAT JOINTS IN SUBSTRATE AND BETWEEN DISSIMILAR MATERIALS AS RECOMMENDED BY MANUFACTURER.

JOIN TO ADJACENT CONSTRUCTION, SEAL AIR TIGHT WITH SEALANT. 5. USE FLASHING TO SEAL TO ADJACENT CONSTRUCTION AND TO BRIDGE JOINTS. 6. INSTALL FLASHING OVER SILLS. COVERING ENTIRE SILL FRAME MEMBER. EXTENDING AT LEAST 5 INCHES ONTO WEATHER BARRIER AND AT LEAST 6 INCHES UP JAMBS; MECHANICALLY FASTEN STRETCHED EDGES. 7. AT OPENINGS TO BE FILLED WITH FRAMES HAVING NAILING FLANGES. SEAL HEAD AND JAMB FLANGES USING A CONTINUOUS BEAD OF SEALANT COMPRESSED BY FLANGE AND COVER FLANGES WITH SEALING TAPE AT LEAST 4 INCHES WIDE; DO NOT SEAL SILL FLANGE.

9. AT HEAD OF OPENINGS. INSTALL FLASHING UNDER WEATHER BARRIER EXTENDING AT LEAST 2 INCHES BEYOND FACE OF JAMBS; SEAL WEATHER BARRIER TO FLASHING. 10. AT INTERIOR FACE OF OPENINGS, SEAL GAP BETWEEN WINDOW/DOOR FRAME AND ROUGH FRAMING, USING JOINT SEALANT OVER BACKER ROD.

FRAMING, USING FLASHING AT LEAST 9 INCHES WIDE, COVERING ENTIRE DEPTH OF FRAMING.

07 4643 - ENGINEERED SIDING A. SUBMITTALS: PRODUCT DATA, AND SAMPLES OF LOCATIONS FOR EACH TYPE OF SIDING

VERTICAL SIDING, LP SMARTSIDE PANEL SIDING. CEDAR TEXTURE PANEL 2. HORIZONTAL SIDING, LP SMARTSIDE LAP SIDING, CEDAR TEXTURE LAP.

2. CELLULAR PVC TRIM SHALL BE AS MANUFACTURED BY AZEK BUILDING PRODUCTS OR APPROVED EQUAL. GLUED-UP MEMBERS SHALL BE GLUED WITH MANUFACTURER'S STANDARD ADHESIVE TO CREATE A CHEMICAL BOND AND CUT TO SHAPES INDICATED.

07 3113 - ASPHALT SHINGLES & ACCESSOP" A. <u>SUBMITTALS</u>: PRODUCT DATA, AND TURER AGREES TO REPAIR OR REPLACE ASPHALT SHINGLES THAT FAIL IN 1/2 NSHIP WITHIN SPECIFIED WARRANTY PERIOD. 1. MATERIAL WARRANT) ROM DATE OF SUBSTANTIAL COMPLETION, PRORATED. WITH FIRST FIVE YEAR

C. BASIS OF DESIGN: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE TIMBERLINE 30 SHINGLES AS MANUFACTURED BY GAF ROOFING PRODUCTS OR APPROVED EQUAL WITH GRANULES TREATED TO RESIST ALGAE DISCOLORATION. COLOR SHALL BE SELECTED BY THE ARCHITECT.

I. LAMINATED-STRIP ASPHALT SHINGLES: ASTM D 3462, LAMINATED, MULTI-PLY OVERLAY CONSTRUCTION. GLASS-FIBER REINFORCED. MINERAL-GRANULE SURFACED. AND SELF-SEALING. 2. FELT: ASTM D 226, TYPE I, ASPHALT-SATURATED ORGANIC FELTS, NONPERFORATED. 3. SELF-ADHERING SHEET UNDERLAYMENT, POLYETHYLENE FACED: ASTM D 1970/D 1970M, MINIMUM OF 40-MIL- (1.0-MM-) THICK, SLIP-RESISTING, POLYETHYLENE-FILM-REINFORCED TOP SURFACE LAMINATED TO SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE BACKING; COLD APPLIED. PREFERED PRODUCT GRACE CONSTRUCTION PRODUCTS, ICE AND WATER SHIELD

1. ASPHALT ROOFING CEMENT: ASTM D 4586, TYPE II, ASBESTOS FREE. 2. ROOFING NAILS: ASTM F 1667; ALUMINUM OR HOT-DIP GALVANIZED-STEEL WIRE SHINGLE NAILS, MINIMUM 0.120-INCH DIAMETER, BARBED SHANK, SHARP-POINTED, WITH A MINIMUM 3/8-INCH DIAMETER FLAT HEAD AND OF SUFFICIENT LENGTH TO PENETRATE AT LEAST 1/8 INCH THROUGH THE ROOF SHEATHING. WHERE NAILS ARE IN CONTACT WITH METAL FLASHING, USE NAILS MADE FROM SAME METAL AS

3. FELT UNDERLAYMENT NAILS: ALUMINUM, STAINLESS-STEEL, OR HOT-DIP GALVANIZED-STEEL WIRE WITH LOW-PROFILE CAPPED HEADS OR DISC CAPS, 1-INCH MINIMUM DIAMETER. 4. FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL" THAT APPLY TO DESIGN, DIMENSIONS, METAL, AND OTHER CHARACTERISTICS OF THE ITEM. PREFERED MATERIALS:SHEET METAL: PREFINISHED ALUMINUM.

F. <u>INSTALLATION:</u>

RECOMMENDATIONS IN ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL," AND ASPHALT SHINGLE RECOMMENDATIONS IN NRCA'S "THE NRCA ROOFING AND WATERPROOFING MANUAL." 2. INSTALL STARTER STRIP ALONG LOWEST ROOF EDGE. CONSISTING OF AN ASPHALT SHINGLE STRIP AT LEAST 7 INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE.

4. INSTALL FIRST AND REMAINING COURSES OF ASPHALT SHINGLES STAIR-STEPPING DIAGONALLY ACROSS ROOF DECK WITH MANUFACTURER'S RECOMMENDED OFFSET PATTERN AT SUCCEEDING COURSES, MAINTAINING UNIFORM EXPOSURE 5. FASTEN ASPHALT SHINGLE STRIPS WITH ROOFING NAILS LOCATED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. WHEN AMBIENT TEMPERATURE DURING INSTALLATION IS BELOW 50 DEG F, SEAL ASPHALT

3. EXTEND ASPHALT SHINGLES 3/8 INCH OVER FASCIA AT EAVES AND RAKES.

3. SOFFIT, VENTED / NONVENTED, LP SMARTSIDE SOFFIT. CEDAR TEXTURE.

1. EXTERIOR TRIM SHALL BE LOUISIANA-PACIFIC SMARTSIDE TRIM-FASCIA TREATED ENGINEERED WOOD TRIM OR APPROVED EQUAL, UNLESS OTHERWISE INDICATED, IN SIZES INDICATED ON THE

1. GENERAL: INSTALL PRODUCTS IN ACCORDANCE WITH THE LATEST IN TION GUIDELINES OF THE MANUFACTURER AND ALL APPLICABLE BUILDING CODES AND OTF' ' ES REGULATIONS AND ORDINANCES. REVIEW ALL MANUFACTURER INSTALLATION, M' APPLICABLE DOCUMENTS BEFORE INSTALLATION.

FROM DATE OF SUBSTANTIA. JUMPLETION.

1.INSTALL ASPHALT SHINGLES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS,

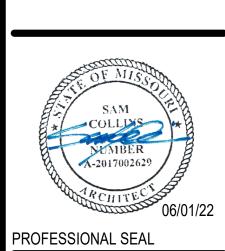
SHINGLES PER APPROVED MANUFACTURER INSTALLATION RECOMMENDATIONS. 6. HIP AND RIDGE CAP SHINGLES: MAINTAIN SAME EXPOSURE OF HIP AND RIDGE CAP SHINGLES AS ROOFING SHINGLE EXPOSURE. LAP RIDGE CAP SHINGLES TO SHED WATER AWAY FROM DIRECTION OF

PREVAILING WINDS. FASTEN WITH ROOFING NAILS OF SUFFICIENT LENGTH TO PENETRATE SHEATHING.

CONSTRUCTION As Noted on Plans Review

230 SW MAIN LEE'S SUMMIT

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COLLINS WEBB #: 22046

GENERAL PROJECT

2. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE MEMBRANE SEAMING PRECAUTIONS AND PERIMETER CONDITIONS REQUIRING SPECIAL ATTENTION.

1. MATERIAL WARRANTY: PROVIDE MEMBRANE MANUFACTURER'S WARRANTY AGREEING TO REPLACE MATERIAL THAT SHOWS MANUFACTURING DEFECTS WITHIN 10 YEARS AFTER INSTALLATION. 2. SYSTEM WARRANTY: PROVIDE MANUFACTURER'S SYSTEM WARRANTY AGREEING TO REPAIR OR REPLACE ROOFING THAT LEAKS OR IS DAMAGED DUE TO WIND OR OTHER NATURAL CAUSES. WARRANTY TERM: 20 YEARS. A. FOR REPAIR AND REPLACEMENT INCLUDE COSTS OF BOTH MATERIAL AND LABOR IN WARRANTY. B. INCLUDE ACCIDENTAL PUNCTURES ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. C. INCLUDE HAIL DAMAGE ACCORDING TO THE MANUFACTURER'S STANDARD WARRANTY TERMS. D. EXCEPTIONS NOT PERMITTED: DAMAGE DUE TO ROOF TRAFFIC. DAMAGE DUE TO WIND OF SPEED GREATER THAN 56 MPH BUT LESS THAN 90 MPH.

. <u>BASIS OF DESIGN</u>: FIRESTONE RUBBERGARD™ EPDM MEMBRANE ,WWW.FIRESTONEBPCO.COM . WIND UPLIFT: DESIGNED TO WITHSTAND WIND UPLIFT FORCES CALCULATED WITH ASCE 7. 2. INSULATION THERMAL RESISTANCE (R-VALUE): 3 PER INCH, MINIMUM; PROVIDE INSULATION OF THICKNESS REQUIRED. MINIMUM R-20

1. MATERIAL: RUBBERGARD EPDM A. B. THICKNESS: 60 MILS (0.060 INCH), MINIMUM. C. SHEET WIDTH: FACTORY FABRICATED INTO LARGEST SHEETS POSSIBLE. D. PRODUCT: FULLY ADHERED

2. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER. 3. VAPOR RETARDER: MATERIAL APPROVED BY ROOF MANUFACTURER COMPLYING WITH REQUIREMENTS OF FIRE RATING CLASSIFICATION; COMPATIBLE WITH ROOFING AND INSULATION MATERIALS. INSTALL WITH FIRE-

4. FLEXIBLE FLASHING MATERIAL: SAME MATERIAL AS MEMBRANE. 5. BASE FLASHING: PROVIDE WATERPROOF, FULLY ADHERED BASE FLASHING SYSTEM AT ALL PENETRATIONS, PLANE TRANSITIONS, AND TERMINATIONS.

.. <u>DECK SHEATHING AND COVER BOARDS:</u>
IF SHEATHING OR COVER BOARD IS REFERENCED IN THE DRAWINGS, PROVIDE PRODUCTS COMPLYING WITH 1. DECK SHEATHING: GYPSUM SHEATHING, ASTM C1396/C1396M, TYPE X SPECIAL FIRE RESISTANT TYPE 2. COVERBOARD: CEMENT ROOF BOARD, COMPLYING WITH ASTM C1325.

1. INSULATION COMPLYING WITH MANUFACTURERES RECOMMENDATIONS.

2. CELLULOSE FIBER BOARD INSULATION: ASTM C208, TYPE II; NATURAL FINISH. 3. EXPANDED POLYSTYRENE (EPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH DRAINAGE CHANNELS ON 4. TAPERED BOARD: SLOPE AS INDICATED; MINIMUM THICKNESS 1/2 INCH; FABRICATE OF FEWEST LAYERS

5. EXTRUDED POLYSTYRENE (XPS) BOARD INSULATION: COMPLIES WITH ASTM C578 WITH NATURAL SKIN SURFACE, DRAINAGE CHANNELS ON ONE FACE.

1. PROVIDE AND INSTALL ONLY ACCESSORIES WHICH COMPLY WITH MANUFACTURERS RECOMMENDATIONS. 2. PROVIDE FIRESTONE PREFINISHED FLASHINGS AND COPINGS FOR ITEMS NOTES IN DRAWING DETAILS.

1. VERIFY THAT SURFACES AND SITE CONDITIONS ARE READY TO RECEIVE WORK. 2. VERIFY DECK IS SUPPORTED AND SECURE.

INCHES WIDE WITH SELF-SEALING STRIP FACE UP AT ROOF EDGE. INSTALL STARTER STRIP ALONG RAKE EDGE. 3. VERIFY DECK IS CLEAN AND SMOOTH, FLAT, FREE OF DEPRESSIONS, WAVES, OR PROJECTIONS, PROPERLY SLOPED AND SUITABLE FOR INSTALLATION OF ROOF SYSTEM. 4. VERIFY DECK SURFACES ARE DRY AND FREE OF RAIN, SNOW OR ICE.

5. VERIFY THAT ROOF OPENINGS, CURBS, AND PENETRATIONS THROUGH ROOF ARE SOLIDLY SET, AND CANT

6. CLEAN SUBSTRATE THOROUGHLY PRIOR TO ROOF APPLICATION. 7. DO NOT BEGIN WORK UNTIL OTHER WORK THAT REQUIRES FOOT OR EQUIPMENT TRAFFIC ON ROOF IS

8. APPLY MANUFACTURER'S RECOMMENDED VAPOR RETARDER OR TEMPORARY ROOF BEFORE ROOF 9. PERFORM WORK IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NRCA (RM) APPLICABLE

REQUIREMENTS 10. REMOVE WRAPPINGS, EMPTY CONTAINERS, PAPER, AND OTHER DEBRIS FROM THE ROOF DAILY. DISPOSE OF DEBRIS IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. 11. REMOVE BITUMINOUS MARKINGS FROM FINISHED SURFACES.

12. IN AREAS WHERE FINISHED SURFACES ARE SOILED BY WORK OF THIS SECTION, CONSULT MANUFACTURER OF SURFACES FOR CLEANING ADVICE AND CONFORM TO THEIR DOCUMENTED INSTRUCTIONS. 13. REPAIR OR REPLACE DEFACED OR DAMAGED FINISHES CAUSED BY WORK OF THIS SECTION.

PROTECTION:

1. PROTECT INSTALLED ROOFING AND FLASHINGS FROM CONSTRUCTION OPERATIONS. 2. WHERE TRAFFIC MUST CONTINUE OVER FINISHED ROOF MEMBRANE, PROTECT SURFACES USING DURABLE

07 6200 - SHEET METAL FLASHING AND TRIM

FABRICATED SHEET METAL ITEMS, INCLUDING FLASHINGS, COUNTERFLASHINGS, AND OTHER ITEMS INDICATED IN

AAMA 611 - VOLUNTARY SPECIFICATION FOR ANODIZED ARCHITECTURAL ALUMINUM 2014 (2015 ERRATA). ASTM C920 - STANDARD SPECIFICATION FOR ELASTOMERIC JOINT SEALANTS 2018.

CDA A4050 - COPPER IN ARCHITECTURE - HANDBOOK CURRENT EDITION. SMACNA (ASMM) - ARCHITECTURAL SHEET METAL MANUAL 2012.

1. SHOP DRAWINGS: INDICATE MATERIAL PROFILE, JOINTING PATTERN, JOINTING DETAILS, FASTENING METHODS, FLASHINGS, TERMINATIONS, AND INSTALLATION DETAILS.

PERFORM WORK IN ACCORDANCE WITH SMACNA (ASMM) AND CDA A4050 REQUIREMENTS AND STANDARD DETAILS, EXCEPT AS OTHERWISE INDICATED.

<u>D. DELIVERY, STORAGE, AND HANDLING</u>
1. STACK MATERIAL TO PREVENT TWISTING, BENDING, AND ABRASION, AND TO PROVIDE VENTILATION. SLOPE METAL SHEETS TO ENSURE DRAINAGE.

2. PREVENT CONTACT WITH MATERIALS THAT COULD CAUSE DISCOLORATION OR STAINING. E. PRODUCTS
PRE-FINISHED ALUMINUM: ASTM B209 (ASTM B209M); 20 GAGE, (0.032 INCH) THICK; PLAIN FINISH

SHOP PRE-COATED WITH MODIFIED SILICONE COATING. 1. FLUOROPOLYMER COATING: HIGH PERFORMANCE ORGANIC FINISH, AAMA 2604; MULTIPLE COAT, THERMALLY CURED FLUOROPOLYMER FINISH SYSTEM.

2. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S STANDARD COLORS. 1. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS.

2. FORM PIECES IN LONGEST POSSIBLE LENGTHS. 3. HEM EXPOSED EDGES ON UNDERSIDE 1/2 INCH; MITER AND SEAM CORNERS. 4. FORM MATERIAL WITH FLAT LOCK SEAMS, EXCEPT WHERE OTHERWISE INDICATED; AT MOVING JOINTS, USE SEALED LAPPED, BAYONET-TYPE OR INTERLOCKING HOOKED SEAMS. 5. FABRICATE FLASHINGS TO ALLOW TOE TO EXTEND 2 INCHES OVER ROOFING GRAVEL. RETURN AND BRAKE

FASTENERS: GALVANIZED STEEL, WITH SOFT NEOPRENE WASHERS. 2. PRIMER: ZINC CHROMATE TYPE. 3. CONCEALED SEALANTS: NON-CURING BUTYL SEALANT.

ACCURATE TO PROFILES.

4. SEAL METAL JOINTS WATERTIGHT

4. EXPOSED SEALANTS: ASTM C920; ELASTOMERIC SEALANT, WITH MINIMUM MOVEMENT CAPABILITY AS 5. RECOMMENDED BY MANUFACTURER FOR SUBSTRATES TO BE SEALED; COLOR TO MATCH ADJACENT MATERIAL.

. SECURE FLASHINGS IN PLACE USING CONCEALED FASTENERS, AND USE EXPOSED FASTENERS ONLY WHERE 2. APPLY PLASTIC CEMENT COMPOUND BETWEEN METAL FLASHINGS AND FELT FLASHINGS. 3. FIT FLASHINGS TIGHT IN PLACE; MAKE CORNERS SQUARE, SURFACES TRUE AND STRAIGHT IN PLANES, AND LINES 07 8100 - APPLIED FIREPROOFING A. SUBMITTALS: PRODUCT DATA: PROVIDE DATA INDICATING PRODUCT CHARACTERISTICS. . TEST REPORTS: REPORTS FROM REPUTABLE INDEPENDENT TESTING AGENCIES FOR PROPOSED PRODUCTS.

INDICATING COMPLIANCE WITH SPECIFIED CRITERIA, CONDUCTED UNDER CONDITIONS SIMILAR TO THOSE ON PROJECT, AS FOLLOWS: A BOND STRENGTH B. BOND IMPACT.

C. COMPRESSIVE STRENGTH. D. FIRE TESTS USING SUBSTRATE MATERIALS SIMILAR THOSE ON PROJECT. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE SPECIAL PROCEDURES.

3. MANUFACTURER'S QUALIFICATION STATEMENT. DO NOT APPLY FIREPROOFING WHEN TEMPERATURE OF SUBSTRATE MATERIAL AND SURROUNDING AIR IS BELOW 40 DEGREES F OR WHEN TEMPERATURE IS PREDICTED TO BE BELOW SAID TEMPERATURE FOR 24 HOURS AFTER APPLICATION.

2. PROVIDE VENTILATION IN AREAS TO RECEIVE FIREPROOFING DURING APPLICATION AND 24 HOURS AFTERWARD, TO DRY APPLIED MATERIAL. 3. PROVIDE TEMPORARY ENCLOSURE TO PREVENT SPRAY FROM CONTAMINATING AIR.

. CORRECT DEFECTIVE WORK WITHIN A TWO YEAR PERIOD AFTER DATE OF SUBSTANTIAL COMPLETION. A. INCLUDE COVERAGE FOR FIREPROOFING TO REMAIN FREE FROM CRACKING, CHECKING, DUSTING, FLAKING, SPALLING, SEPARATION, AND BLISTERING. B. REINSTALL OR REPAIR FAILURES THAT OCCUR WITHIN WARRANTY PERIOD.

1. GCP APPLIED TECHNOLOGIES: WWW.GCPAT.COM/FIREPROOFING 2. ISOLATEK INTERNATIONAL CORP: WWW.ISOLATEK.COM 3. SOUTHWEST FIREPROOFING PRODUCTS COMPANY: WWW.

PROVIDE ASSEMBLIES AS INDICATED ON DRAWING 2. PROVIDE FIRE RESISTANCE RATINGS FOR FOLI A. PRIMARY STRUCTURAL FRAME, INCLI'' S. AND TRUSSES: [1 HOUR]. B BEARING WALLS INTERIOR: [1 HO] AMS AND JOISTS: [1 HOUR]. C. FLOOR CONSTRUCTION, INCL¹

JEAMS AND JOISTS: [1HOUR]. D. ROOF CONSTRUCTION, INC ._ FOR INTERIOR APPLICATIONS, CONCEALED: MANUFACTURER'S HICH WHEN COMBINED WITH WATER IS CAPABLE OF PROVIDING STANDARD FACTORY MIXED N PLYING WITH FOLLOWING REQUIREMENTS: INDICATED FIRE RESISTANCE AND 1. COMPOSITION: GYPSUM-BASED; NOT MINERAL-FIBER-BASED. 2. BOND STRENGTH: 150 POUNDS PER SQUARE FOOT, MINIMUM, WHEN TESTED IN ACCORDANCE WITH ASTM

E736/E736M WHEN SET AND DRY. 3. DRY DENSITY: AS REQUIRED BY FIRE RESISTANCE DESIGN. 4. COMPRESSIVE STRENGTH: 8.33 POUNDS PER SQUARE INCH, MINIMUM. 5. EFFECT OF IMPACT ON BONDING: NO CRACKING, SPALLING OR DELAMINATION, WHEN TESTED IN ACCORDANCE

WITH ASTM E760/E760M. 6. CORROSIVITY: NO EVIDENCE OF CORROSION, WHEN TESTED IN ACCORDANCE WITH ASTM E937/E937M. '. SURFACE BURNING CHARACTERISTICS: MAXIMUM FLAME SPREAD INDEX OF 0 (ZERO) AND MAXIMUM SMOKE DEVELOPED INDEX OF 0 (ZERO), WHEN TESTED IN ACCORDANCE WITH ASTM E84.

1. PRIMER ADHESIVE: OF TYPE RECOMMENDED BY APPLIED FIREPROOFING MANUFACTURER. 2. OVERCOAT: AS RECOMMENDED BY MANUFACTURER OF APPLIED FIREPROOFING MATERIAL. 3. METAL LATH: EXPANDED METAL LATH; MINIMUM WEIGHT OF 1.7 PSF, GALVANIZED FINISH.

4. WATER: CLEAN, POTABLE. 1. VERIFY THAT SURFACES ARE READY TO RECEIVE FIREPROOFING. 2. VERIFY THAT DUCTS, PIPING, EQUIPMENT, OR OTHER ITEMS THAT WOULD INTERFERE WITH APPLICATION OF FIREPROOFING HAVE NOT BEEN INSTALLED.

3. VERIFY THAT VOIDS AND CRACKS IN SUBSTRATE HAVE BEEN FILLED. 4. VERIFY THAT PROJECTIONS HAVE BEEN REMOVED WHERE FIREPROOFING WILL BE EXPOSED TO VIEW AS A 5. PERFORM TESTS AS RECOMMENDED BY FIREPROOFING MANUFACTURER IN APPLICATIONS WHERE ADHESION OF FIREPROOFING TO SUBSTRATE IS IN QUESTION. 6. REMOVE INCOMPATIBLE MATERIALS THAT COULD EFFECT BOND BY SCRAPING, BRUSHING, SCRUBBING, OR

SANDBLASTING. 7. PREPARE SUBSTRATES TO RECEIVE FIREPROOFING IN STRICT ACCORDANCE WITH INSTRUCTIONS OF FIREPROOFING MANUFACTURER. 8. APPLY FIREPROOFING MANUFACTURER'S RECOMMENDED BONDING AGENT ON PRIMED STEEL.

. INSTALL METAL LATH OVER STRUCTURAL MEMBERS AS INDICATED OR AS REC 10. APPLY FIREPROOFING IN UNIFORM THICKNESS AND DENSITY AS NECESSARY TO ACHIEVE REQUIRED RATINGS. 11. INSPECT INSTALLED FIREPROOFING AFTER APPLICATION AND CURING FOR INTEGRITY, PRIOR TO ITS CONCEALMENT.

2. ENSURE THAT ACTUAL THICKNESSES, DENSITIES, AND BOND STRENGTHS MEET REQUIREMENTS FOR SPECIFIED RATINGS AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION (AHJ). 13. REMOVE EXCESS MATERIAL, OVERSPRAY, DROPPINGS, AND DEBRIS. 14. REMOVE FIREPROOFING FROM MATERIALS AND SURFACES NOT REQUIRED TO BE FIREPROOFED.

A. <u>SUBMITTALS</u>: PRODUCT DATA: PROVIDE DATA ON PRODUCT CHARACTERISTICS, PERFORMANCE RATINGS, AND

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

. 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.

. 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

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.

. 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.

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 P. 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 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 4. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

3. 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.

<u>DIVISION 8 - OPENINGS</u>

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

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 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.

B. PRODUCTS: REFER TO HARDWARE SCHEDULE AND ARCHITECTURAL DRAWINGS.

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 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

BASIS OF DESIGN: KWIKSET HALIFAX PRIVACY DOOR LEVER SET WITH SQUARE ROSE, MODEL: 730HFLSQT-514. MATTE BLACK FINISH., U.N.O.

AND VENTILATING EQUIPMENT.

HARDWARE AND DOORS. ADJUST DOOR CONTROL DEVICES TO COMPENSATE FOR FINAL OPERATION OF HEATING

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.

. HOLLOW METAL DOOR AND FRAME MANUFACTURERS: . 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: . OVERLY DOOR COMPANY: WWW.OVERLY.COM

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

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.

OTHERWISE FOR SPECIFIC HOLLOW METAL DOORS AND FRAMES.

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.

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

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 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 K. DOOR THICKNESS: 1-3/4 INCH, NOMINAL.

L. DOOR FINISH: FACTORY PRIMED AND FIELD FINISHED.

F. <u>HOLLOW METAL FRAMES:</u>
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 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

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

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.

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.

A. <u>SUBMITTALS</u>: 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. <u>BASIS OF DESIGN:</u> LINCOLN PARK, MASONITE, LE CHATEAU COLLECTION. HOLLOW CORE DOORS OR APPROVED C. <u>DOORS</u>: 1-3/8" THICK PREHING. SIZES, SPECIES, AND DESIGNS AS INDICATED COMPLYING WITH WDMA I.S.1-A

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.

3. CUT AND TRIM OPENINGS TO COMPLY WITH REFERENCED STANDARDS.

2. SET IN TWO PIECE W.P. SPLIT JAMB FRAMES WITH 1X4 WOOD CASING.

CORRESPONDING TO THOSE USED IN CONSTRUCTION DOCUMENTS.

FITTED IN FRAMES WITH UNIFORM CLEARANCES.

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.

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.

1. COMPLY WITH WDMA'S "HOW TO STORE, HANDLE, FINISH, INSTALL, AND MAINTAIN WOOD DOORS" ALIGNED AND

08 1613 - FIBERGLASS DOORS FRAME SIZES. TYPES, ELEVATIONS, DETAILS, AND HARDWARE WITH DOOR AND HARDWARE NUMBERING

B, DOORS: BASIS OF DESIGN: JELD-WEN-FIBERGLASS DOOR SERIES.LOW- E GLAZING. PROVIDE SIZES, AND DESIGNS AS INDICATED IN ELEVATIONS

08 3100 - ACCESS DOORS AND PANELS A. <u>SUBMITTALS</u>: PRODUCT DATA.

. GRADE: PREMIUM

5. SIZES AS INDICATED IN DRAWINGS

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. <u>INSTALLATION</u>: INSTALL FLUSH TO FINISHED DRYWALL SURFACE WITH FRAME TAPED AND SANDED

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

IN CONSTRUCTION DOCUMENTS. C.H.I OVERHEAD DOORS. 5602 SHORELINE, CARRIAGE HOUSE DESIC TOP, NUMBER #32, COLOR WHITE. 2. WIND LOAD RATING: 115 MPH PER OCAL CODE REQUIREMEN 3. WINDOW DESIGN, STOCKTON, GLASS- FAUX.

1. DOORS SHALL BE COMPLETE WITH ALL HARP' OPENER OR APPROVED EQUAL. OPERAT . MOUNTED MULTI- FUNCTION CONTROL PANEL AND TWO HAND. HELD ROLLING CODF LY AND INSTALL DOOR JAMB KEYPAD. GARAGE DOOR JAMBS SHALL HAVE PHOTO? EACH GARAGE DOOR, PROVIDE TIMERS FOR DOORS TO AUTOMATICALLY CLOSE IF LEFT JÉD PERIOD OF TIME.

1. INSTALL DOOR AS WITH MANUFACTURER'S INSTRUCTIONS. 2 ANCHOR TO ADJACE ✓ WITHOUT DISTORTION OR STRESS R THE SUSPENDED FROM STRUCTURE. SECURE TRACKS TO STRUCTURAL MEMBERS 3. SECURELY BRACE DOO! 4. FIT AND ALIGN DOOR ASSEMBLY INCLUDING HARDWARE, LEVEL AND PLUMB. TO PROVIDE SMOOTH OPERATION. 5. POSITION HEAD AND JAMB WEATHERSTRIPPING TO CONTACT DOOR SECTIONS WHEN CLOSED; SECURE IN POSITION.

6. MAKE WIRING CONNECTIONS BETWEEN POWER SUPPLY AND OPERATOR AND BETWEEN OPERATOR AND CONTROLS. 7. INSTALL ELECTRIC GARAGE DOOR OPENERS IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS. INSTALLATION SHALL INCLUDE GARAGE DOOR SILENCER ISOLATION PADS.

08 4313 - ALUMINUM FRAMED STOREFRONTS A. <u>SUBMITTALS</u>: 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

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

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.

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.

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.

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.

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.

4. ATTACH TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES

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 10. SET THRESHOLDS IN BED OF SEALANT AND SECURE.

11. INSTALL HARDWARE USING TEMPLATES PROVIDED. ADJUST OPERATING HARDWARE AND SASH FOR SMOOTH 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 5313 - VINYL WINDOWS A. SUBMITTALS: THE CONTRACTOR SHALL PREPARE CT FOR APPROVAL, COMPLETE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR ALL WORK INCLUDED IN TO A CONTROL OF THE SHOP DRAWINGS FOR THE SHOP TH ALL NOT PROCEED WITH FABRICATION AND DELIVERY PRIOR TO RECEIVING SUCH APP SIGN: MI 3500 VINYL SINGLE- HUNG WINDOWS. B. <u>BASIS OF DESIGN</u>: VINYL CASEMEN^T LUMB, LEVEL AND IN STRICT ACCORDANCE WITH THE

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 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. <u>STOREFRONT GLAZING BASIS OF DESIGN:</u> GUARDIAN -SUNGUARD _ SNX 62/27 _COATED GLASS, CLEAR. WITH .24 U-D. <u>QUALITY STANDARDS:</u>
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".

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

3. MIRROR GLASS: ASTM C 1036, TYPE I, CLASS 1, QUALITY q1, SILVER COATED PER FS DDM411C, 6.0mm THICK, WITH EDGES FLAT POLISHED.

1. FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY q3

E EARRICATED OF ASS PRODUCTS: SEALED INSULATING-GLASS UNITS: PREASSEMBLED UNITS COMPLYING WITH ASTM F 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

. 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.

CONSTRUCTION As Noted on Plans Review

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COLLINS WEBB

REVISION DATES:

ARCHITECTURE, LLC

GENERAL PROJECT

COLLINS WEBB #: 22046

ROFESSIONAL SEAL

SPECIFICATIONS

<u>SPECIFICATIONS - PRODUCT & INSTALLATION GENERAL REQUIREMENTS</u>

16 CFR 1201 FOR CATEGORY II MATERIALS.

SUBSTRATES ON WHICH MIRRORS ARE INSTALLED.

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

C. <u>WARRANTY:</u> 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.

3. PRECONSTRUCTION MIRROR MASTIC COMPATIBILITY TEST: SUBMIT MIRROR MASTIC PRODUCTS TO MIRROR

MANUFACTURER FOR TESTING TO DETERMINE COMPATIBILITY OF MASTIC WITH MIRROR BACKING AND

D. <u>BASIS OF DESIGN</u>: SILVERED FLAT GLASS MIRRORS 1. GLASS MIRRORS, GENERAL: ASTM C 1503; MANUFACTURED USING COPPER FREE, LOW LEAD MIRROR COATING 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. <u>MIRROR HARDWARE:</u> 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 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

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 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.

A. <u>STEEL FRAMING MEMBERS:</u> COMPLY WITH ASTM C754 IN DEPTHS AND GAGES AS INDICATED IN THE DNSTRUCTION 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 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.

1. TRIM: ASTM 1047, FORMED FROM GALVANIZED OR ALUMINUM COATED STEEL SHEET, ROLLED

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) B. ACOUSTICAL SEALANT: COMPLY WITH ASTM C 834, NONSAG, PAINTABLE, NONSTAINING LATEX.

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 D. LEVEL 5 (EMBÉD 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

09 2216 - NON-STRUCTURAL METAL FRAMING

A. <u>SUBMITTALS</u>: 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.

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

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

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.

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 13. BRACE STUD FRAMING SYSTEM RIGID.

14. COORDINATE ERECTION OF STUDS WITH REQUIREMENTS OF DOOR FRAMES; INSTALL SUPPORTS AND 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. <u>SUBMITTALS</u>: PRODUCT DATA AND (1) SAMPLES OF EACH TILE AND BASE SPECIFIED FOR VERIFICATION PURPOSES.

1. METROFLOR, KONECTO PLANK, PROJECT 54012 OR APPROVED EQUAL.

DOCUMENTS COMPLYING WITH THE FOLLOWING:

C. <u>ATTIC STOCK</u>: 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. <u>RESILIENT TILE PRODUCTS:</u> PROVIDE FLOOR TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION

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

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.

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 HAI F-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

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 3. INSTALL TRANSITION STRIPS WHERE FLOORING MATERIALS MEET OR WHERE EDGE OF TILE IS EXPOSED AS INDICATED IN THE FINISH SCHEDULE

A. <u>SUBMITTALS:</u> PRODUCT DATA AND SAMPLES OF EACH CARPET PRODUCT INDICATED. SUBMIT ACTUAL TILE SAMPLES OF EACH CARPET REQUIRED

B. WARRANTY: PROVIDE SPECIAL PROJECT WARRANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREEING TO REPAIR OR REPLACE DEFECTIVE MATERIALS AND WORKMANSHIP OF CARPETING WORK DURING 1-YEAR WARRANTY PERIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT

C. <u>ATTIC STOCK:</u> FURNISH FULL-WIDTH CARPET EQUAL TO 5% OF EACH TYPE AND COLOR CARPET INSTALLED, PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

5.TRIM CARPET NEATLY AND TIGHT TO WALLS AND AROUND INTERRUPTIONS.

12. INSTALL TRANSITION STRIPS AT CARPET TERMINATIONS

DOCUMENTS.

D. PRODUCTS: PROVIDE CARPET IN PATTERNS AND COLORS AND WITH BACKINGS AS INDICATED IN THE CONSTRUCTION DOCUMENTS WITH CRITICAL RADIANT FLUX CLASSIFICATION CLASS I, NOT LESS THAN 0.45 W/SQ. CM PER ASTM E 648. ORDER ALL MATERIALS FROM THE SAME FACTORY DYE LOT.

TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED. HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT, MILDEW-RESISTANT, NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED, THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER.

F. INSTALLATION: FOR CARPET TILE COMPLY CRI 104, SECTION 13 "CARPET MODULES (TILES)". I. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES. 2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS, ACCORDING TO MANUFACTURER'S WRITTEN CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS 3.BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET. 4.LAY CARPET TILE IN PATTERN AS INDICATED ON CONSTRUCTION DOCUMENTS AND SO WIDTHS AT OPPOSITE EDGES OF ROOM ARE EQUAL AND NOT LESS THAN HALF-WIDTH.

6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED. 7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET. 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS, BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER. 9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS.

10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACF OR MARKED FOR FUTURE CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR. USE NON" MANENT, NONSTAINING MARKING DEVICE. 11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERA MENT OF FOUIPMENT AND FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD THODS RECOMMENDED IN WRITING BY CARPET MANUFACTURER

09 6816 - SHEET CARPETING A. SUBMITTALS: PRODUCT DATA CARPET PRODUCT INDICATED. SUBMIT 18" X 27" SAMPLES OF EACH CARPET REQUIRF ∠XPOSED EDGE STRIPPING. RANTY, SIGNED BY CONTRACTOR, INSTALLER AND MANUFACTURER (CARPET MILL), AGREE REPLACE DEFECTIVE MATERIALS AND WORKMANSHIP OF CARPETING WORK DURING 1-YEAR WA ARR. ERIOD FOLLOWING SUBSTANTIAL COMPLETION. ATTACH COPIES OF PRODUCT

WARRANTIES. C. ATTIC STOCK: FULL-SIZE UNITS EQUAL TO 5 PERCENT OF AMOUNT INSTALLED FOR EACH TYPE INDICATED, BUT NOT LESS THAN 10 SQ. YD.

A. APARTMENT UNIT CARPET SHALL BE SUPPLIED AND INSTALLED UNDER AN ALLOWANCES OF \$8.00/SQUARE YARD FOR THE PURCHASE AND DELIVERY OF THE CARPET MATERIAL ONLY. 1. COSTS FOR THE PAD ACCESSORIES, TAXES, LABOR, ETC. ARE NOT INCLUDED IN THE ALLOWANCES STATED ABOVE BUT SHALL BE INCLUDED IN THE BID PRICE FOR A COMPLETE INSTALLATION. B. CARPET PAD SHALL BE 1/2" - 6# DENSITY REBOND PAD AS REQUIRED FOR A COMPLETE INSTALLATION.

TROWELABLE LEVELING AND PATCHING COMPOUNDS: LATEX-MODIFIED, HYDRAULIC-CEMENT-BASED FORMULATION PROVIDED OR RECOMMENDED BY CARPET MANUFACTURER. 2. ADHESIVES: WATER-RESISTANT. MILDEW-RESISTANT. NONSTAINING TYPE TO SUIT PRODUCTS AND SUBFLOOR CONDITIONS INDICATED, THAT COMPLIES WITH FLAMMABILITY REQUIREMENTS FOR INSTALLED CARPET AND IS RECOMMENDED OR PROVIDED BY CARPET MANUFACTURER. 3. SEAM ADHESIVE: HOT-MELT ADHESIVE TAPE OR SIMILAR PRODUCT RECOMMENDED BY CARPET

MANUFACTURER FOR SEALING AND TAPING SEAMS AND BUTTING CUT EDGES AT BACKING TO FORM SECURE SEAMS AND TO PREVENT PILE LOSS AT SEAMS 4. TACKLESS CARPET STRIPPING: WATER RESISTANT PLYWOOD STRIPS, 3/8" THICK WITH ANGULAR PINS PROTRUDING FROM TOP DESIGNED TO GRIP AND HOLD STRETCHED CARPET AT THE BACKING. PROVIDE STRIPPING WITH 2 ROWS OF PINS. 5. CARPET EDGE GUARD: EXTRUDED ALUMINUM BEND DOWN TYPE EDGE GUARD; WITH CONCEALED GRIPPER TEETH AND MINIMUM 1-1/2" WIDE PUNCHED ANCHORAGE FLANGE AND MINIMUM 5/8" WIDE FACE

1. GENERAL: COMPLY WITH CRI'S "CRI CARPET INSTALLATION STANDARD" AND WITH CARPET MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PREPARING SUBSTRATES. 2. USE TROWELABLE LEVELING AND PATCHING COMPOUNDS, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS, TO FILL CRACKS, HOLES, DEPRESSIONS, AND PROTRUSIONS IN SUBSTRATES, FILL OR LEVEL CRACKS, HOLES AND DEPRESSIONS 1/8 INCH WIDE OR WIDER, AND PROTRUSIONS MORE THAN 1/32 INCH. UNLESS MORE STRINGENT REQUIREMENTS ARE REQUIRED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. 3.BROOM AND VACUUM CLEAN SUBSTRATES TO BE COVERED IMMEDIATELY BEFORE INSTALLING CARPET. 4.UNIT INSTALLATION. STRETCH-IN INSTALLATION WITH PAD. 5.COMPLY WITH CARPET MANUFACTURER'S WRITTEN INSTRUCTIONS AND SHOP DRAWINGS FOR SEAM LOCATIONS AND DIRECTION OF CARPET; MAINTAIN UNIFORMITY OF CARPET DIRECTION AND LAY OF PILE. AT DOORWAYS, CENTER SEAMS UNDER THE DOOR IN CLOSED POSITION. 6.INSTALL PATTERN PARALLEL TO WALLS AND BORDERS UNLESS OTHERWISE INDICATED.

7.DO NOT BRIDGE BUILDING EXPANSION JOINTS WITH CARPET 8. CUT AND FIT CARPET TO BUTT TIGHTLY TO VERTICAL SURFACES, PERMANENT FIXTURES, AND BUILT-IN FURNITURE INCLUDING CABINETS, PIPES, OUTLETS, EDGINGS, THRESHOLDS, AND NOSINGS. BIND OR SEAL CUT EDGES AS RECOMMENDED BY CARPET MANUFACTURER. 9. EXTEND CARPET INTO TOE SPACES, DOOR REVEALS, CLOSETS, OPEN-BOTTOMED OBSTRUCTIONS, REMOVABLE FLANGES, ALCOVES, AND SIMILAR OPENINGS.

10. MAINTAIN REFERENCE MARKERS, HOLES, AND OPENINGS THAT ARE IN PLACE OR MARKED FOR FUTURE CUTTING BY REPEATING ON CARPET AS MARKED ON SUBFLOOR. USE NONPERMANENT, NONSTAINING MARKING DEVICE. 11. PROTECT CARPET AGAINST DAMAGE FROM CONSTRUCTION OPERATIONS AND PLACEMENT OF EQUIPMENT AND FIXTURES DURING THE REMAINDER OF CONSTRUCTION PERIOD. USE PROTECTION METHODS RECOMMENDED

IN WRITING BY CARPET MANUFACTURER.

09 9000 - PAINTING AND COATING A. <u>SUBMITTALS:</u> PRODUCT DATA AND THREE (3) DRAW-DOWN SAMPLES OF EACH COLOR AND SHEEN

B. <u>ATTIC STOCK:</u> 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.

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.

 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

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.

1. ALL EXTERIOR GALVANIZED METAL FLASHINGS, CONNECTORS, ETC.

A. Exterior Work:

ONE COAT COMMERCIAL METAL ETCH ONE COAT EXTERIOR METAL PRIMER. TWO COATS EXTERIOR SEMI-GLOSS METAL PAINT. TWO COATS SEMI-GLOSS METAL PAINT. 2. ALL EXPOSED STEEL FRAMES, ANGLES, (PRIME COAT CHANNELS, POSTS, RAILINGS, BEAMS, ETC.

SURFACES THAT ARE NOT PRIMED.) 3. ALL EXPOSED MISC. FERROUS METAL ITEMS TWO COATS SEMI-GLOSS METAL PAINT. INCLUDING RAILS, PLATES, ANGLES, BOLTS, (PRIME COAT SURFACES THAT ARE NOT PRIMED.) GRATES, CONDUITS, POSTS, PIPING, ETC.

4. ALL UNPRIMED EXTERIOR MILLWORK. PRIME AND BACK LATEX PRIMER. TWO COATS OF EXTERIOR LATEX SATIN OR TRIM, SMOOTH WOOD MATERIALS, ETC. SEMI-GLOSS PAINT.

5. PRIMED MILLWORK AND TRIM.

ACRYLIC LATEX PAINT. ONE COAT PRIMER. TWO COATS EXTERIOR 6. ROUGH SAWN TRIM, BEAMS, COLUMNS, HEAVY BODIED STAIN.

7. PRIMED METAL ENTRY DOORS, FRENCH DOORS AND METAL FRAMES, GARAGE DOORS.

8. ANY OTHER PAINTING REQUIRED BY

PATCH DENTS, TOUCH UP PRIMER. TWO COATS OF OIL BASE SEMI-GLOSS PAINT INSIDE AND OUTSIDE. TWO COATS TO MATCH ADJACENT

TOUCH-UP PRIME. TWO COATS OF

EXTERIOR 100% SATIN OR SEMI-GLOSS

THE DRAWINGS. SURFACES. B. INTERIOR WORK:

1. GYPSUM BOARD WALLS EXCEPT IN KITCHENS, BATHROOMS, LAUNDRIES AND COMMON AREA CORRIDORS, UNLESS SCHEDULED FOR WALLCOVERING

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. ONE COAT OF EPOXY COMPATABLE PRIMER PAINT AND

ONE FINISH COAT OF EPOXY EGGSHELL WALL

PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL

ONE COAT OF PRIME LATEX PAINT AND

BATHROOMS AND LAUNDRIES UNLESS SCHEDULED FOR WALLCOVERING OR TILE. 3. GYPSUM BOARD WALLS IN COMMON

2. GYPSUM BOARD WALLS IN KITCHENS,

AREA CORRIDORS

4. GYPSUM BOARD CEILINGS.

PRIMED HARDWOOD DOORS.

ONE COAT OF PRIME LATEX PAINT AND ONE FINISH COAT OF SCRUBABLE LATEX FLAT WALL PAINT. (TWO COATS IF REQUIRED TO ACHIEVE FULL COVERAGE.) TWO COATS OF LATEX FLAT PAINT.

TWO COATS OF CLASS II VAPOR RETARDER

PAINT AT CEILINGS ADJACENT TO ATTICS.

ONE PRIME COAT OF LATEX PAINT, ONE

COVERAGE.)

5. DOOR CASINGS, BASE, WOOD, MILL-WORK, ETC. (PRE-PRIMED.)

COAT LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT. ONE COAT OF LATEX PAINT AND ONE FINISH COAT OF LATEX SEMI-GLOSS PAINT. TWO COATS METAL PAINT TO MATCH ADJACENT SURFACES UNLESS FACTORY

7. ALL MISCELLANEOUS FERROUS METAL, INCLUDING GRILLES, REGISTERS, ETC. 8. ANY OTHER PAINTING WORK REQUIRED

PREFINISHED WHITE FINISH TO MATCH SIMILAR CONDITIONS.

BY THE DRAWINGS.

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

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

C. <u>BASIS OF DESIGN</u>: SEE DRAWING SCHEDULES.

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

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:

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.

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 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

4. SEALER: AFTER FULLY CURED, GROUT SHALL BE SEALED WITH TWO (2) COATS OF COMMERCIAL

OR CHALKY GROUT SHALL BE CAUSE FOR REJECTION.

QUALITY PENETRATING SILICONE SEALER.

A. SUBMITTALS: PRODUCT DATA ONLY

09 5100 - ACOUSTICAL CEILINGS

B. <u>ATTIC STOCK:</u> FURNISH 2% OF EACH TYPE OF CEILING TILE PACKAGED WITH PROTECTIVE COVERING AND LABELED FOR STORAGE.

D. <u>SUSPENSION SYSTEM:</u> PROVIDE HEAVY DUTY, DIRECT-HUNG, SUSPENSION SYSTEMS AS INDICATED IN

THE CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM C 635. FURNISH ALUMINUM GRID IN

C. <u>ACOUSTICAL TILE PRODUCTS</u>: PROVIDE CEILING TILE IN TYPE AND SIZES INDICATED IN THE CONSTRUCTION DOCUMENTS COMPLYING WITH ASTM E 1264, CLASS A MATERIALS, TESTED PER ASTM

SHOWERS, KITCHENS, AND OTHER HIGH-HUMIDITY AREAS. 1. ATTACHMENT DEVICES: SIZE FOR FIVE (5) TIMES THE DESIGN LOAD INDICATED IN ASTM C 635, TABLE 1, DIRECT HUNG UNLESS OTHERWISE INDICATED. 2. WIRE HANGERS, BRACES, AND TIES: ZINC-COATED CARBON-STEEL WIRE; ASTM A 641/ (A 641 M), CLASS 1 ZINC COATING, SOFT TEMPER WITH A YIELD STRENGTH AT LEAST THREE (3) TIMES THE HANGER DESIGN LOAD (ASTM C 635, TABLE 1, DIRECT HUNG), BUT NOT LESS THAN 0.135" DIAMETER WIRE 3. SEISMIC STRUTS: MANUFACTURER'S STANDARD PRODUCT DESIGNED TO ACCOMMODATE SEISMIC FORCES. 4. HOLD-DOWN CLIPS: PROVIDE HOLD-DOWN CLIPS ON CEILING TILE IN ENTRANCE VESTIBULES, COMPUTER ROOMS EMPLOYING DRY CHEMICAL FIRE-SUPPRESSION SYSTEMS, AND OTHER AREAS AS INDICATED.

. SEQUENCE WORK TO ENSURE ACOUSTICAL CEILINGS ARE NOT INSTALLED UNTIL BUILDING IS ENCLOSED, SUFFICIENT HEAT IS PROVIDED, DUST GENERATION ACTIVITIES HAVE TERMINATED. AND OVERHEAD WORK IS COMPLETED, TESTED, AND APPROVED. 2. INSTALL CEILING GRID AS INDICATED TO BE SYMMETRICAL ABOUT BOTH AXES OF EACH ROOM USING NOT LESS THAN HALF-SIZE TILE UNLESS INDICATED OTHERWISE ON THE REFLECTED CEILING PLAN. 3. SUPPORT SUSPENSION SYSTEM INDEPENDENTLY OF DUCTS, PIPES, AND CONDUITS. 4. SUPPORT FIXTURE LOADS USING SUPPLEMENTARY HANGERS LOCATED WITHIN 6" OF EACH CORNER OR SUPPORT FIXTURES INDEPENDENTLY. 5. PROVIDE MATCHING PERIMETER MOLDING INSTALLED IN BEAD OF ACOUSTICAL SEALANT AT ALL LOCATIONS WHERE CEILING INTERSECTS VERTICAL SURFACES. USE MATCHING PRE-FORMED

CLOSURES AT ROUND OR CURVED OBSTRUCTIONS.

6. FIELD-CUT EDGES SHALL MATCH PROFILE OF FACTORY EDGES

F. <u>INSTALLATION:</u> COMPLY WITH ASTM C 636 AND CISCA'S "CEILING SYSTEMS HANDBOOK".

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

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.

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.

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.

10 3000 SOLID PLASTIC TOILET COMPARTMENTS

A. REFERENCE CONSTRUCTION DRAWINGS & SCHEDULES FOR TYPE, QUANTITY, AND LOCATIONS OF TOILET AND BATH ACCESSORIES. BASIS OF DESIGN: ECLIPSE TOILET PARTITIONS AS MANUFACTURED BY AND SUPPLIED BY SCRANTON

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).

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.

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.

REPRESENTING MANUFACTURER'S FULL RANGE OF AVAILABLE COLORS AND PATTERNS. METAL POSTS: 82.75 INCHES (2102 MM) HIGH, HEAVY DUTY EXTRUDED ALUMINUM, CLEAR ANODIZED

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.

D. DOOR PULLS: CHROME PLATED ZAMAK:

8. ADJUST DOORS AND LATCHES TO OPERATE CORRECTLY.

9. PROTECT INSTALLED PRODUCTS UNTIL COMPLETION OF PROJECT

DIVISION 10 - SPECIALTIES

AND BATH ACCESSORIES.

INSTALLATIONS ARE NOT PERMITTED. 6. CLEAN AND POLISH ALL EXPOSED SURFACES AFTER REMOVING PROTECTIVE COATINGS.

 STYLE: FLOOR MOUNTED OVERHEAD-BRACED TOILET COMPARTMENTS. 2. DOORS AND PANELS: HIGH DENSITY POLYETHYLENE (HDPE), FABRICATED FROM SEQ

C. EDGES: SHIPLAP.

HARDWARE REQUIRED.

5. SHOP DRAWINGS: PROVIDE LAYOUT DRAWINGS AND INSTALLATION DETAILS WITH LOCATION AND TYPE OF 6. SELECTION SAMPLES: FOR EACH FINISH PRODUCT SPECIFIED, TWO COMPLETE SETS OF COLOR CHIPS

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.

FINISHED SURFACES SHALL BE CLEANED AFTER INSTALLATION AND BE LEFT FREE OF IMPERFECTIONS.

10. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS BEFORE SUBSTANTIAL COMPLETION.

A. REFERENCE CONSTRUCTION DRAWINGS FOR TYPE, SIZE AND LOCATIONS OF FIRE EXTINGUISHERS

DIVISION 11 - EQUIPMENT

DISPENSERS, AND SIMILAR ITEMS.

FURNISHED BY OWNER.

12 3661 STONE COUNTERTOPS

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

2. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS. 3. SAMPLES: FOR EACH STONE TYPE INDICATED.

1. FIELD MEASUREMENTS: VERIFY DIMENSIONS OF CONSTRUCTION TO RECEIVE STONE COUNTERTOPS BY FIELD MEASUREMENTS BEFORE FABRICATION.

1. SOURCE LIMITATIONS FOR STONE: OBTAIN STONE FROM A SINGLE QUARRY WITH RESOURCES TO MATERIALS OF CONSISTENT QUALITY IN APPEARANCE AND PHYSICAL PROPERTIES. 2. QUARTZ: MATERIAL STANDARD: COMPLY WITH ASTM C 615. 3. ALL COUNTERTOPS SHALL BE GRANITE AS SELECTED BY THE OWNER WITH SQUARE EDGES AND MATCHING SIDE AND BACKSPLASHES. TOP AND BOTTOM EXPOSED EDGES SHALL BE SLIGHTLY EASED. 5. WATER CLEANABLE EPOXY ADHESIVE: ANSI A118.3., WATER • CLEANABLE EPOXY GROUT: ANSI A118.3, CHEMICAL RESISTANT, WATER. CLEANABLE, TILE SETTING AND GROUTING EPOXY. 6. SEALANT FOR COUNTERTOPS: MILDEW • RESISTANT JOINT SEALANT: MILDEW RESISTANT, SINGLE

1. SELECT MATERIAL FOR INTENDED USE TO PREVENT FABRICATED UNITS FROM CONTAINING CRACKS, SEAMS, AND STARTS THAT COULD IMPAIR STRUCTURAL INTEGRITY OR FUNCTION. 2. FABRICATE STONE COUNTERTOPS IN SIZES AND SHAPES REQUIRED TO COMPLY WITH REQUIREMENTS 3. GENERAL: COMPLY WITH RECOMMENDATIONS IN MIA'S "DIMENSION STONE DESIGN MANUAL VI." 4. NOMINAL THICKNESS: PROVIDE THICKNESS INDICATED, BUT NOT LESS THAN 3 CM (EXCEPT APARTMENT

5. SPLASHES: PROVIDE 3/4• INCH THICK BACKSPLASHES AND END SPLASHES UNLESS OTHERWISE INDICATED. 6. JOINTS: FABRICATE COUNTERTOPS WITHOUT JOINTS WHEREVER POSSIBLE 7. CUTOUTS & HOLES:UNDERCOUNTER FIXTURES: MAKE CUTOUTS FOR UNDERCOUNTER FIXTURES IN SHOP USING TEMPLATE OR PATTERN FURNISHED BY FIXTURE MANUFACTURER. FORM CUTOUTS TO SMOOTH, EVEN CURVES. 8. COUNTER MOUNTED FIXTURES: PREPARE COUNTERTOPS IN SHOP FOR FIELD CUTTING OPENINGS FOR COUNTER MOUNTED FIXTURES. MARK TOPS FOR CUTOUTS AND DRILL HOLES AT CORNERS OF CUTOUT LOCATIONS. MAKE CORNER HOLES OF LARGEST RADIUS PRACTICAL. 9. FITTINGS: DRILL COUNTERTOPS IN SHOP FOR PLUMBING FITTINGS, UNDERCOUNTER SOAP

2. GENERAL: INSTALL COUNTERTOPS BY ADHERING TO SUPPORTS WITH WATER CLEANABLE EPOXY

INDICATED, WITH UNIFORM JOINTS OF WIDTHS INDICATED AND WITH EDGES AND FACES ALIGNED ACCORDING TO ESTABLISHED RELATIONSHIPS. 1. SPACE JOINTS WITH 1/16∙ INCH GAP FOR FILLING WITH SEALANT. USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING. CLAMP UNITS TO TEMPORARY BRACING, SUPPORTS, OR EACH OTHER TO ENSURE THAT COUNTERTOPS ARE PROPERLY ALIGNED AND JOINTS ARE OF SPECIFIED WIDTH. 5. COMPLETE CUTOUTS NOT FINISHED IN SHOP. MASK AREAS OF COUNTERTOPS ADJACENT TO CUTOUTS TO PREVENT DAMAGE WHILE CUTTING. USE POWER SAWS WITH DIAMOND BLADES TO CUT STONE. MAKE BEVELING IS REQUIRED FOR CLEARANCE. EASE EDGES SLIGHTLY TO PREVENT SNIPPING. 6. INSTALL BACKSPLASHES AND END SPLASHES BY ADHERING TO WALL WITH WATER • CLEANABLE EPOXY

USE TEMPORARY SHIMS TO ENSURE UNIFORM SPACING. 7. GROUT JOINTS TO COMPLY WITH ANSI A108.10. REMOVE TEMPORARY SHIMS BEFORE GROUTING. TOOL GROUT UNIFORMLY AND SMOOTHLY WITH PLASTIC TOOL 8. APPLY SEALANT TO JOINTS AND GAPS SPECIFIED FOR FILLING WITH SEALANT; COMPLY WITH SECTION 079200 "JOINT SEALANTS." REMOVE TEMPORARY SHIMS BEFORE APPLYING SEALANT. 9. ASSURE THAT SEAMS ARE SMOOTH, LEVEL AND TIGHT. SEAMS SHALL BE FILLED ENTIRELY SO FLUSH WITH COUNTERTOP, POLISH SURFACE AT SEAM, ASSURE THAT FILLER IS "NON- YELLOWING." 10. CLEANING: CLEAN COUNTERTOPS AS WORK PROGRESSES. REMOVE ADHESIVE, GROUT, MORTAR, AND SEALANT SMEARS IMMEDIATELY. CLEAN STONE COUNTERTOPS NO FEWER THAN SIX DAYS AFTER COMPLETION OF INSTALLATION, USING CLEAN WATER AND SOFT RAGS. DO NOT USE WIRE BRUSHES. ACID TYPE

10 4400 - FIRE PROTECTION SPECIALTIES

A. REFERENCE CONSTRUCTION DRAWINGS FOR QUANTITY, AND LOCATION OF APPLIANCES TO BE

B. SUBMITTALS: INCLUDE PLANS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK: 1. PRODUCT DATA: FOR EACH STONE, STONE ACCESSORY, AND MANUFACTURED PRODUCT.

COMPONENT, NONSAG, NEUTRAL CURING, SILICONE. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. 7. GROMMETS: 2 INCH ROUND GROMMETS BY DOUG MOCKETT & COMPANY, INC. OR APPROVED EQUAL.

UNIT BATHROOM COUNTERTOPS SHALL BE NOT LESS THAN 2CM). GAGE BACKS TO PROVIDE UNITS OF

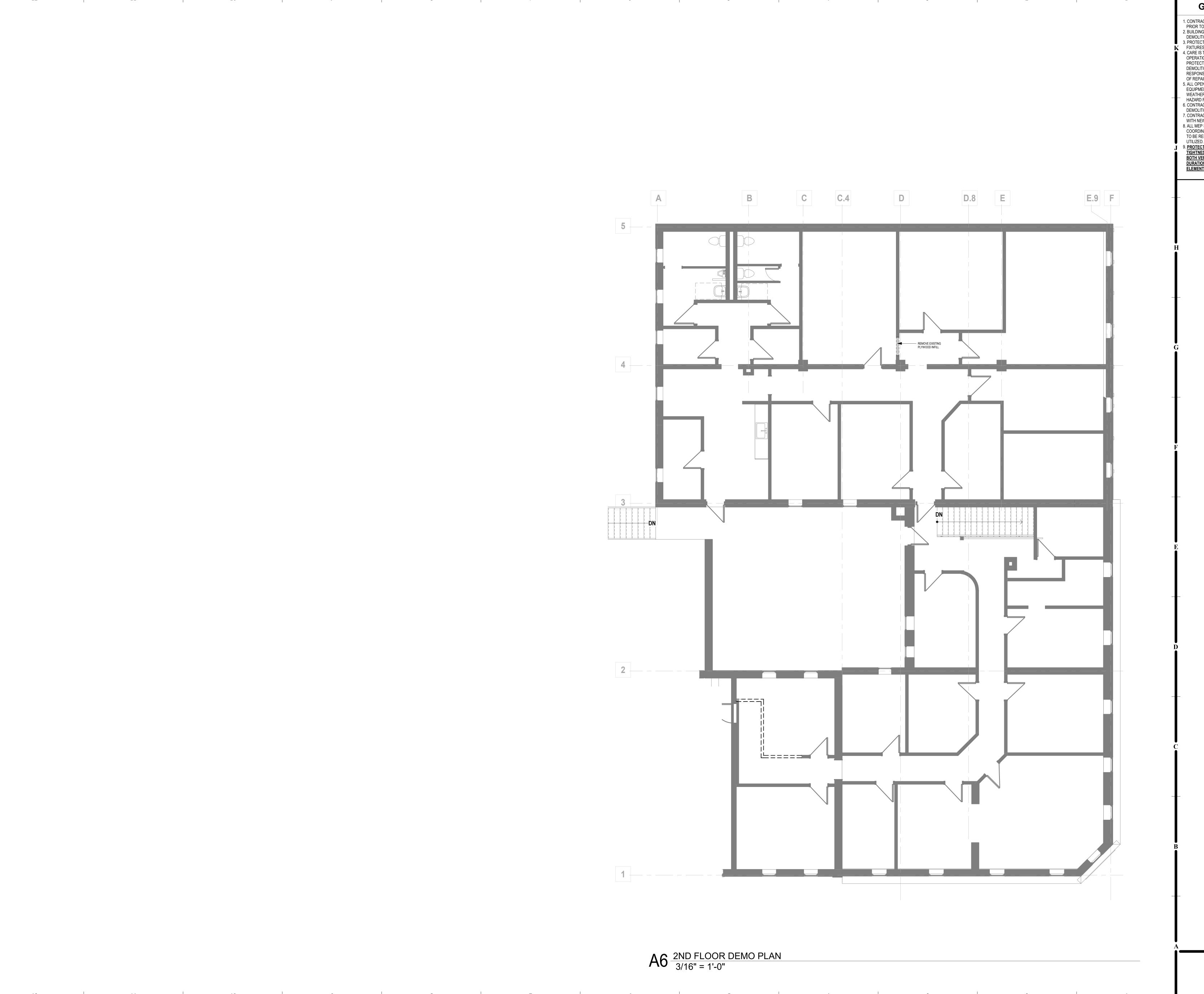
1. GENERAL: INSTALL COUNTERTOPS OVER PLYWOOD SUBTOPS WITH FULL SPREAD OF WATER CLEANABLE 3. SET STONE TO COMPLY WITH REQUIREMENTS INDICATED. SHIM AND ADJUST STONE TO LOCATIONS

CUTOUTS TO ACCURATELY FIT ITEMS TO BE INSTALLED, AND AT RIGHT ANGLES TO FINISHED SURFACES UNLESS ADHESIVE. LEAVE 1/16. INCH GAP BETWEEN COUNTERTOP AND SPLASHES FOR FILLING WITH SEALANT.

CLEANING AGENTS, CLEANING COMPOUNDS WITH CAUSTIC OR HARSH FILLERS, OR OTHER MATERIALS OR METHODS THAT COULD DAMAGE STONE. 11.SEALER APPLICATION: APPLY STONE SEALER TO COMPLY WITH STONE PRODUCER'S AND SEALER MANUFACTURER'S WRITTEN INSTRUCTIONS.

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COLLINS WEBB #: 22046 **GENERAL PROJECT**



GEN. DEMO NOTES

1. CONTRACTOR TO VISIT PROJECT SITE AND BUILDING, PRIOR TO BID.
2. BUILDING AND SITE TO REMAIN SECURE DURING DEMOLITION AND CONSTRUCTION.

2. STATE OF THE PROJECT SITE AND BUILDING DEMOLITION AND CONSTRUCTION. 3. PROTECT ALL ITEMS TO REMAIN (WALLS, PLUMBING FIXTURES, PIPING, HVAC UNITS, COLUMNS, ETC).

4. CARE IS TO BE EXERCISED IN THE DEMOLITION OPERATIONS. EXISTING SURFACES TO REMAIN SHALL BE PROTECTED. ANY DAMAGE INCURRED AS A RESULT OF DEMOLITION SHALL BE THE CONTRACTOR'S OF REPAIRING SUCH DAMAGE. HAZARD FREE. 6. CONTRACTOR TO REPAIR ANY AREAS DAMAGED DURING DEMOLITION. 7. CONTRACTOR TO COORDINATE DEMOLITION OPENINGS
WITH NEW PLANS AND ELEVATIONS. 8. ALL MEP SYSTEMS TO BE REMOVED TO BE FULLY UTILIZED.

RESPONSIBILITY. THE CONTRACTOR SHALL BEAR THE COST 5. ALL OPENINGS IN WALLS AND ROOFS RESULTING FROM EQUIPMENT AND/OR PIPE REMOVAL SHALL BE SEALED WEATHERTIGHT. ALL CONDITIONS SHALL BE LEFT SAFE AND COORDINATED WITH EXISTING CONDITIONS. ALL SYSTEMS TO BE REMOVED COMPLETELY THAT ARE NOT BEING RE-9. PROTECT EXISTING CONDITIONS AND MAINTAIN WEATHER
TIGHTNESS FOR ALL OCCUPIED/UNOCCUPIED SPACES,
BOTH VERTICALLY AND HORIZONTALLY FOR THE ENTIRE
DURATION THAT THE BUILDING IS EXPOSED TO THE
ELEMENTS. PATCH/REPAIR/REPLACE AS REQUIRED.

CONSTRUCTION
As Noted on Plans Review

Lee's Summit, Missouri 06/30/2022

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ISSUE DATE: 1 JUNE, 2022
COLLINS WEBB #: 22046

DEMO PLANS



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 OTHÉR PROTRUDING OBJECTS. 6. ALL ALCOVES WITHOUT A SPACE IDENTIFICATION NUMBER

SHALL HAVE THE SAME FINISHES AS THE ADJOINING 7. PROVIDE FINISH LEVELS AS DESCRIBED:

- 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. RE: FINISH LEGEND, FINISH SCHEDULE AND

SPECIFICATIONS FOR DOOR AND DOOR FRAME FINISHES. 9. STAIR ENCLOSURES, SHAFT WALLS, EXIT PASSAGE WAYS AND EXTERIOR WALLS TO BE COORDINATED FOR PHASE OF WORK PER MATRIX AND PROJECT SCOPING. 10. MAINTAIN AND PROTECT EXISTING EXPANSION JOINTS DURING CONSTRUCTION. PATCH/REPAIR/REPLACE TO MATCH EXISTING RATINGS AS REQUIRED ON THE SHELL

PORTION OF PROJECT. 11. 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.

12. PAINT SW 6990 CAVIAR (P1) 10'-0" A.F.F. TO DECK FOR ALL 13. ALL EXPOSED CONDUIT AND DUCTWORK TO REMAIN UNPAINTED/UNFINISHED.

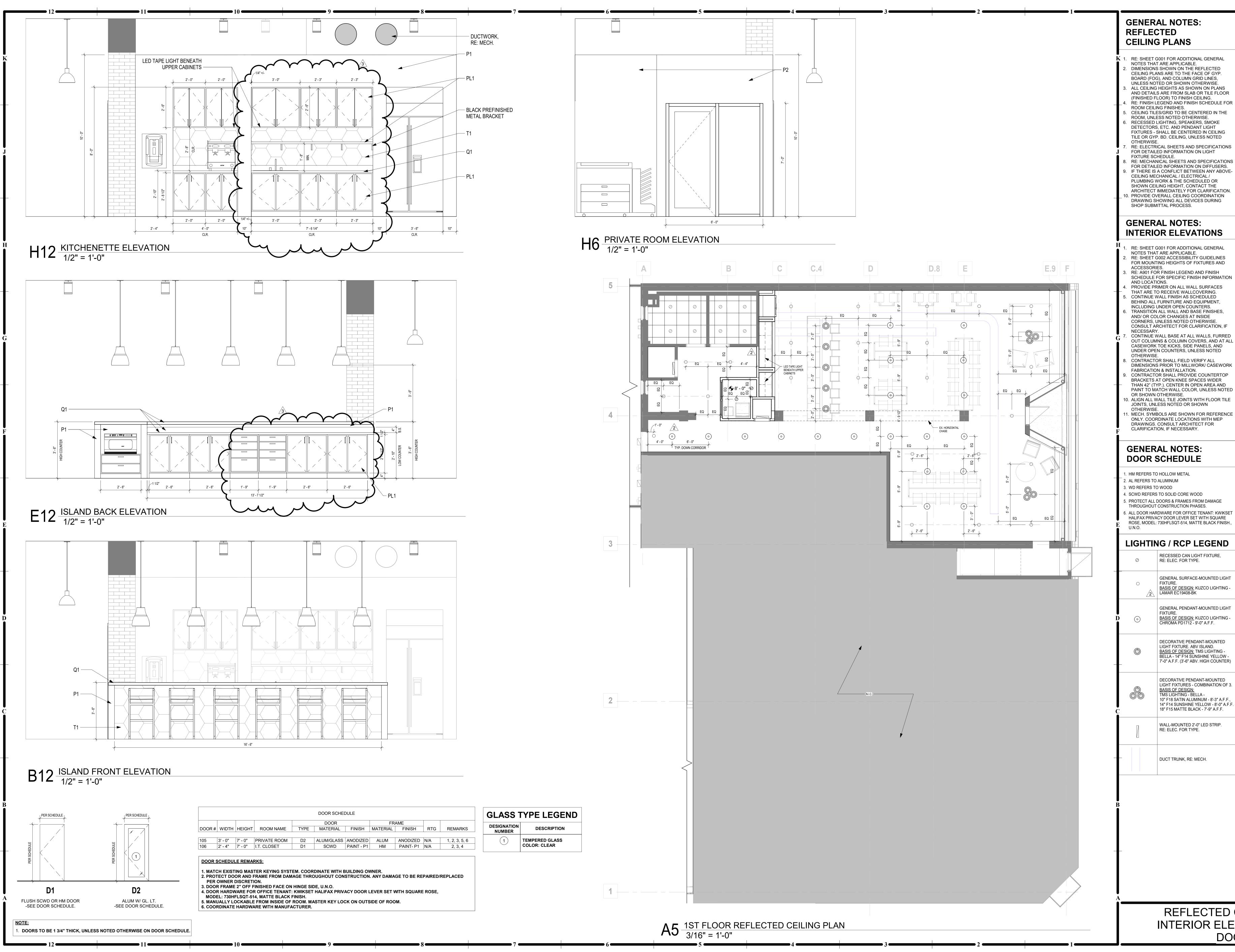
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FLOOR PLANS



REFLECTED **CEILING PLANS**

> K 1. RE: SHEET G001 FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE. DIMENSIONS SHOWN ON THE REFLECTED CEILING PLANS ARE TO THE FACE OF GYP. BOARD (FOG), AND COLUMN GRID LINES, UNLESS NOTED OR SHOWN OTHERWISE. ALL CEILING HEIGHTS AS SHOWN ON PLANS AND DETAILS ARE FROM SLAB OR TILE FLOOR (FINISHED FLOOR) TO FINISH CEILING. RE: FINISH LEGEND AND FINISH SCHEDULE FOR ROOM CEILING FINISHES. CEILING TILES/GRID TO BE CENTERED IN THE ROOM, UNLESS NOTED OTHERWISE. RECESSED LIGHTING, SPEAKERS, SMOKE DETECTORS, ETC. AND PENDANT LIGHT FIXTURES - SHALL BE CENTERED IN CEILING

TILE OR GYP. BD. CEILING, UNLESS NOTED RE: ELECTRICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON LIGHT FIXTURE SCHEDULE. RE: MECHANICAL SHEETS AND SPECIFICATIONS FOR DETAILED INFORMATION ON DIFFUSERS. IF THERE IS A CONFLICT BETWEEN ANY ABOVE-CEILING MECHANICAL / ELECTRICAL / PLUMBING WORK & THE SCHEDULED OR SHOWN CEILING HEIGHT, CONTACT THE

GENERAL NOTES: INTERIOR ELEVATIONS

RE: SHEET G001 FOR ADDITIONAL GENERAL

NOTES THAT ARE APPLICABLE. RE: SHEET G002 ACCESSIBILITY GUIDELINES FOR MOUNTING HEIGHTS OF FIXTURES AND

RE: A901 FOR FINISH LEGEND AND FINISH SCHEDULE FOR SPECIFIC FINISH INFORMATION AND LOCATIONS. PROVIDE PRIMER ON ALL WALL SURFACES

THAT ARE TO RECEIVE WALLCOVERING. CONTINUE WALL FINISH AS SCHEDULED BEHIND ALL FURNITURE AND EQUIPMENT, INCLUDING UNDER OPEN COUNTERS.

TRANSITION ALL WALL AND BASE FINISHES, AND/ OR COLOR CHANGES AT INSIDE CORNERS, UNLESS NOTED OTHERWISE. CONSULT ARCHITECT FOR CLARIFICATION, IF CONTINUE WALL BASE AT ALL WALLS, FURRED OUT COLUMNS & COLUMN COVERS, AND AT ALL

UNDER OPEN COUNTERS, UNLESS NOTED CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO MILLWORK/ CASEWORK FABRICATION & INSTALLATION. CONTRACTOR SHALL PROVIDE COUNTERTOP BRACKETS AT OPEN KNEE SPACES WIDER THAN 42" (TYP.). CENTER IN OPEN AREA AND

OR SHOWN OTHERWISE. 10. ALIGN ALL WALL TILE JOINTS WITH FLOOR TILE JOINTS, UNLESS NOTED OR SHOWN 1. MECH. SYMBOLS ARE SHOWN FOR REFERENCE ONLY. COORDINATE LOCATIONS WITH MEP

GENERAL NOTES: DOOR SCHEDULE

1. HM REFERS TO HOLLOW METAL 2. AL REFERS TO ALUMINUM 3. WD REFERS TO WOOD

4. SCWD REFERS TO SOLID CORE WOOD 5. PROTECT ALL DOORS & FRAMES FROM DAMAGE

THROUGHOUT CONSTRUCTION PHASES. 6. ALL DOOR HARDWARE FOR OFFICE TENANT: KWIKSET HALIFAX PRIVACY DOOR LEVER SET WITH SQUARE ROSE, MODEL: 730HFLSQT-514, MATTE BLACK FINISH.,

LIGHTING / RCP LEGEND

RECESSED CAN LIGHT FIXTURE, RE: ELEC. FOR TYPE. GENERAL SURFACE-MOUNTED LIGHT

BASIS OF DESIGN: KUZCO LIGHTING -GENERAL PENDANT-MOUNTED LIGHT BASIS OF DESIGN: KUZCO LIGHTING -CHROMA PD1712 - 9'-0" A.F.F.

DECORATIVE PENDANT-MOUNTED LIGHT FIXTURE. ABV ISLAND. BASIS OF DESIGN: TMS LIGHTING -BELLA - 14" F14 SUNSHINE YELLOW -7'-0" A.F.F. (3'-6" ABV. HIGH COUNTER)

DECORATIVE PENDANT-MOUNTED LIGHT FIXTURES - COMBINATION OF 3. 10" F18 SATIN ALUMINUM - 8'-3" A.F.F., 14" F14 SUNSHINE YELLOW - 8'-0" A.F.F 18" F15 MATTE BLACK - 7'-9" A.F.F.

> WALL-MOUNTED 2'-0" LED STRIP. RE: ELEC. FOR TYPE.

DUCT TRUNK, RE: MECH.

PROFESSIONAL SEAL

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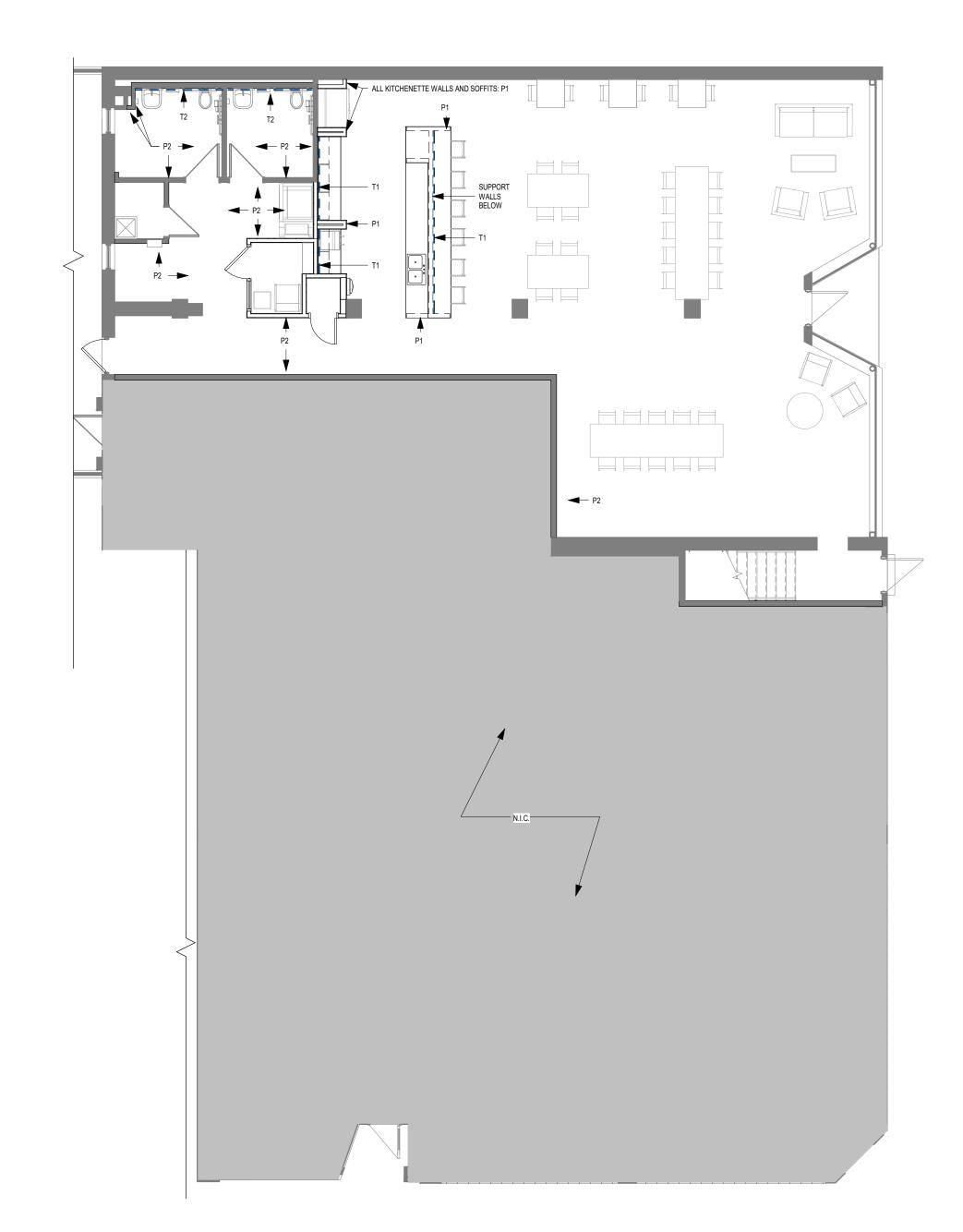
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8/02/22

COLLINS WEBB #: 22046

REFLECTED CEILING PLAN, INTERIOR ELEVATIONS, AND DOOR SCHEDULE

FINISH LEGEND							
SYMBOL	MATERIAL	MANUFACTURER	ТҮРЕ	COLOR	TYP. AREA / REMARKS		
FLOOR FINISH							
SC1	SEALED CONCRETE				ALL FLOORS		
WALL BASE							
RB1	RUBBER BASE	ALLSTATE	TRADITIONAL	#A09 (BLACK)	ALL GYP. WALLS		
WALL FINISH							
P1	INTERIOR LATEX PAINT	SHERWIN WILLIAMS	PROMAR 200, ZERO VOC - EGGSHELL	SW 6990 CAVIAR	KITCHENETTE WALLS / SOFFITS, ISLAND SUPPORT WALLS, ALL DOORS		
P2	INTERIOR LATEX PAINT	SHERWIN WILLIAMS	PROMAR 200, ZERO VOC - EGGSHELL	SW 7009 PEARLY WHITE	ALL WALLS, U.N.O.		
T1	COLORBODY PORCELAIN TILE	DALTILE	UNIFORM MOSAICS	WHITE UC10	KITCHENETTE BACKSPLASH, FRONT OF ISLAND SUPPORT WALL		
T2	GLAZED CERAMIC TILE	DALTILE	3X12 WALL TILE	SPIRIT MM30, COORD. W/ OWNER	RESTROOMS WET WALL - TILE WAINSCOT TO 6'-0" A.F.F W/ P2 ABOVE		
TG3	TILE GROUT - EPOXY (1/16" GROUT JOINTS)	MAPEI		10 BLACK	TO BE USED WITH T1		
MILLWORK / CASEV	/ORK						
PL1	PLASTIC LAMINATE	WILSONART	38 FINE VELVET TEXTURE FINISH	MISSION MAPLE 7990	ALL CASEWORK AND OPEN SHELVING IN KITCHENETTE		
Q1	QUARTZ	WILSONART		CLOUDS REST Q4049	ALL COUNTERTOPS - KITCHENETTE AND PRIVATE ROOM		
CEILING FINISH							
ACT1	ACOUSTICAL CEILING TILE (24"x24")	ARMSTRONG	FINE FISSURED - 1830, SQUARE EDGE	WHITE	RESTROOMS		
ACT1 GRID	15/16" EXPOSED TEE SYSTEM	ARMSTRONG	PRELUDE XL	WHITE	TO BE USED W/ ACT1		
P1	EXISTING CEILINGS	SHERWIN WILLIAMS	PROMAR 200, ZERO VOC - FLAT	SW 6990 CAVIAR	EXISTING CEILINGS THROUGHOUT - PAINT LINE AT ALL GYP. WALLS = 10'-0" A.F.F. TO DECI		
P3	GYP. CEILINGS	SHERWIN WILLIAMS	PROMAR 200, ZERO VOC - FLAT	SW 7005 PURE WHITE	PRIVATE ROOM		
CONTACTS							
DALTILE	JAIME RUFFING	DALTILE	JAIME.RUFFING@DALTILE.COM				
WILSONART	MANDY BRIDGES	VIRGINIA TILE	MANDY.BRIDGES@VIRGINIATILE.COM				



A4 1ST FLOOR FINISH PLAN 1/8" = 1'-0"

GENERAL NOTES: WALL FINISH / WALL PROTECTION PLANS

RE: G-SHEETS FOR ADDITIONAL GENERAL NOTES THAT ARE APPLICABLE.
 RE: FINISH LEGEND & FINISH SCHEDULE FOR SPECIFIC FINISH INFORMATION & LOCATIONS.
 CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING FOR WALL PROTECTION ATTACHMENT. THIS INCLUDES, BUT IS NOT LIMITED TO: HANDRAILS, POSTER CASES, TV MONITORS, BATHROOM ACCESSORIES, FIRE EXTINGUISHERS AND EQUIPMENT. RE: ROUGH CARPENTRY SPECIFICATION SECTION FOR CLARIFICATION.
 CONTRACTOR SHALL PROVIDE MANUFACTURER'S STANDARD ACCESSORY MOLDING OR TRIM FOR WALL PROTECTION ITEMS, UNLESS NOTED OTHERWISE.

NOT IN ARCHITECTURAL SCOPE

— — — — WALL TILE (T)

WALL FINISH LEGEND

Collins | webb ARCHITECTURE

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CONSTRUCTION
As Noted on Plans Review

KEECE NICHOLS IENANI IMPROVEMENI

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REVISION DATES:

REVISION DATES:



ISSUE DATE: 1 JUNE, 2022
COLLINS WEBB #: 22046

FINISH PLAN AND SCHEDULE

MECHANICAL NOTES, SYMBOLS

& ABBREVIATIONS

ABBREVIATION	LONG FORM
V	ABOVE
OR ACU	AIR-CONDITIONING UNIT
AP	AS HIGH AS POSSIBLE
U	AIR-HANDLING UNIT
 ГО	AUTOMATIC
V	BELOW
	CHILLER
	CONDENSATE
	CABINET FAN
M	CUBIC FEET PER MINUTE
	CABINET HEATER
)	CHILLED WATER PUMP
IG OR CLG	CEILING
NC	CONCRETE
OR CWP	CONDENSER WATER PUMP
<u> </u>	CONDENSER WATER SUPPLY
	CONDENSER WATER SOFFET
AC OR CACU	COMPUTER ROOM AIR-CONDITIONING UNIT
EF	CHILLER ROOM EXHAUST FAN
 U	CONDENSATE (STEAM) RETURN UNIT
<u> </u>	COOLING TOWER CELL
 J	CONDENSATE (STEAM) TRANSFER UNIT
)	CONDENSING UNIT
	CONSTANT VOLUME TERMINAL BOX
F	DISHWASER EXHAUST FAN
- PR	DAMPER DAMPER
	DOWN
1	EACH STOLE PASSED AND LIFATED
 	ELECTRIC BASEBOARD HEATER
1	ELECTRIC DUCT-MOUNTED HEATER
	EXHAUST COULE
	EXHAUST GRILLE
	EXHAUST REGISTER
H	ELECTRIC UNIT HEATER
1	EXHAUST
	FIRE DAMPER
J	FAN-COIL UNIT
	FINAL FILTER
:H	FORCED-FLOW CABINET HEATER
	FAN FILTER UNIT
	FAN POWERED TERMINAL BOX
M	GALLONS PER MINUTE
	HEATING COIL
M	HUMIDIFIER
/P OR HP	HEATING WATER PUMP
	HEAT EXCHANGER
=	KITCHEN (GREASE HOOD) EXHAUST FAN
	KILOWATTS
	LINEAR SUPPLY DIFFUSER
Γ	MOTORIZED
)	MOUNTED
AF	MAKE-UP AIR FAN
AHU	MAKE-UP AIR-HANDLING UNIT
	OUTSIDE AIR
	OUTSIDE AIR FAN
OR ORNO	ODENING

OPENING

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

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				
VV	VARIABLE VOLUME TERMINAL BOX				
W/	WITH				
XFMR OR TFMR	TRANSFORMER				

(REFEF SINGLE	R TO SPECIFICATIONS SECTIONS 15815 AND 15820 FOR ADDITIONAL INIT	
LINE	DESCRIPTION	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	
<u> </u>	ROUND FLEXIBLE DUCT	£
	RECTANGULAR ELBOW DOWN	>
X	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	<u> </u>
	INSULATED/LINED DUCTWORK (U.N.O.)	
- 	SQUARE FACED CEILING DIFFUSER 4-WAY DIRECTIONAL THROW (U.N.O.)	\
	ROUND FACED CEILING DIFFUSER	\bar{\bar{\bar{\bar{\bar{\bar{\bar{
OR OR	CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER	-
<u></u>	SIDEALL SUPPLY GRILLE OR REGISTER	1
	SUPPLY DUCT RISER	
	RETURN, EXHAUST OR OUTSIDE AIR DUCT RISER	
+	MANUAL BALANCING DAMPER	<u> </u>
+•	AUTOMATIC (MOTOR-OPERATED) DAMPER	
+	FIRE DAMPER	
+	GRAVITY BACKDRAFT DAMPER	
100	COMBINATION FIRE AND SMOKE DAMPER WITH SMOKE DETECTOR	
+0	SMOKE DAMPER (AUTOMATIC) WITH SMOKE DETECTOR	
<u>S</u>	DUCT MOUNTED SMOKE DETECTOR	S OR S

DUCTWORK LEGEND

	STANDARD	
V	IECHANICAL SYMBOLS	
SYMBOL	DESCRIPTION	
→	GATE VALVE	
	BALL VALVE	
— >∞	GLOBE VALVE	
	BUTTERFLY VALVE	
	PLUG VALVE	
<u> </u>	ANGLE VALVE	╛
<u> </u>	CHECK VALVE	╛
<u> </u>	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	╛
-	AUTOMATIC CONTROL VALVE (3-WAY)	
*	AUTOMATIC CONTROL VALVE (ANGLE)	1
<u> </u>	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	1
<u> </u>	SOLENOID VALVE	1
	PRESSURE REDUCING VALVE	7
À	PRESSURE RELIEF VALVE	1
<u></u>	GAUGE COCK	1
, S	PRESSURE GAUGE WITH GAUGE COCK	1
<u> </u>	THERMOMETER	1
<u> </u>	THERMOMETER WELL	┪
•	TEST PLUG	┪
	FLOW METER	1
Φ	TEMPERATURE SENSOR	1
	PRESSURE SENSOR	1
— <u>DP</u> —	DIFFERENTIAL PRESSURE SWITCH	
Ф	IMMERSION THERMOSTAT	7
	MANUAL AIR VENT	
<u>_</u>	AUTOMATIC AIR VENT	
FŞ	FLOW SWITCH	╛
	ORIFICE	
 	PIPE SLEEVE THRU WALL OR FLOOR	╛
<u> </u>	EXPANSION JOINT	
<u>~</u>	FLEXIBLE PIPE JOINT	4
=	PIPE GUIDE	4
<u> </u>	ANCHOR	4
	STRAINER (Y-TYPE)	4
<u> </u>	STRAINER (BASKET TYPE)	4
	UNION CONCENTRIC REDUCER	4
	CONCENTRIC REDUCER	\dashv
	DIRECTION OF FLOW	\dashv
	DIRECTION OF SLOPE	\dashv
<u> </u>	THERMOSTAT	\dashv
 ⊕	HUMIDISTAT	\dashv
<u> </u>		4

SYMBOL	DESCRIPTION	
₩	GATE VALVE	
	BALL VALVE	
- >∞\-	GLOBE VALVE	
	BUTTERFLY VALVE	
	PLUG VALVE	
I	ANGLE VALVE	
- \{\bar{\bar{\bar{\bar{\bar{\bar{\ba	CHECK VALVE	
———	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	
- ₽	AUTOMATIC CONTROL VALVE (3-WAY)	
7-	AUTOMATIC CONTROL VALVE (ANGLE)	
-	AUTOMATIC CONTROL VALVE (STRAIGHT THROUGH)	
-	SOLENOID VALVE	
—	PRESSURE REDUCING VALVE	
À	PRESSURE RELIEF VALVE	
- - -	GAUGE COCK	_
<u>, F</u>	PRESSURE GAUGE WITH GAUGE COCK	_
$\overline{\parallel}$	THERMOMETER	_
Y	THERMOMETER WELL	_
•	TEST PLUG	_
(F)	FLOW METER	_
Φ	TEMPERATURE SENSOR	_
®	PRESSURE SENSOR	_
	DIFFERENTIAL PRESSURE SWITCH	_
	IMMERSION THERMOSTAT	_
<u> </u>	MANUAL AIR VENT	_
<u>~</u>	AUTOMATIC AIR VENT	_
FS	FLOW SWITCH	_
	ORIFICE	_
==	PIPE SLEEVE THRU WALL OR FLOOR	_
	EXPANSION JOINT	_
<u>~</u>	FLEXIBLE PIPE JOINT	_
_=	PIPE GUIDE	_
	ANCHOR	_
	STRAINER (Y-TYPE)	_
Ť	STRAINER (BASKET TYPE)	_
_ <u></u>	UNION	_
<u> </u>	CONCENTRIC REDUCER	_
	ECCENTRIC REDUCER	_
<u> </u>	DIRECTION OF FLOW	_
	DIRECTION OF SLOPE	_
①	THERMOSTAT	_
<u> </u>	HUMIDISTAT	_
(FSC)	FAN SPEED CONTROLLER	_
cs	CONDENSER WATER SUPPLY	_
— CR —	CONDENSER WATER RETURN	_
		_

INDICATES CONNECTION TO EXISTING DUCT OR PIPE

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

GENERAL EQUIPMENT **DESIGNATION KEY:**

─ EQUIPMENT ABBREVIATION LEVEL OR BUILDING:

MECHANICAL GENERAL NOTES

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

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

TAKE NECESSARY PRECAUTIONS TO AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION DURING WORK. REPAIR ANY DAMAGE CAUSED DURING

ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY THE

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

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

COORDINATE LOCATION OF ROOF PENETRATIONS WITH THE EXISTING CONDITIONS AND

SEAL ALL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS. FIREPROOF ALL PENETRATIONS THROUGH FIRE RATED

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. LOCATION OF CEILING DIFFUSERS, REGISTERS, AND GRILLES SHALL BE ADJUSTED AS REQUIRED TO

DUCTWORK CROSSING FIRE RATED WALL OR OTHER FIRE RATED ASSEMBLIES SHALL BE MINIMUM 26

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

. 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

5. 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

BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS OUTLET NECK SIZE UNLESS OTHERWISE

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

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

0. WALL MOUNTED DIFFUSERS AND GRILLES SHALL BE PROVIDED WITH SUITABLE MOUNTING FRAME TO

RIGID DUCTWORK INSULATION: PROVIDE R-6 MINIMUM INSULATION WRAP ON ALL CONCEALED

RELOCATION OF ANY WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION. . 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.

SPACES. REFER TO SPECIFICATIONS FOR MORE INFORMATION.

SHALL BE INSTALLED AND SUPPORT TO AVOID SHARP BENDS AND SAGGING.

MATCH WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL DRAWINGS.

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

OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.

ELECTRICAL PANELS, LIGHTING FIXTURES, ETC.

CONSTRUCTION AT NO COST TO THE OWNER.

EQUIPMENT.

ARCHITECTURAL DRAWINGS.

GAUGE SHEET METAL.

TO NFPA AS APPLICABLE.

SMALL FOR A 6"x6" ACCESS DOOR.

OTHERWISE NOTED ON PLANS.

MECHANICAL CONTRACTOR UNLESS OTHERWISE NOTED.

VERIFIED WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.

COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS.

ACCOMMODATE FINAL CEILING AND LIGHTING LOCATIONS.

0	THER SYMBOLS	
SYMBOL	DESCRIPTION	
_		

GENERAL NOTES

. REFERENCE SHEET M101 FOR GENERAL NOTES, SYMBOLS,

CONSTRUCTION
As Noted on Plans Review

KEYED NOTES:

PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER BETWEEN HEATING AND COOLING AND 5-DEGREE DEADBAND. MOUNT AT 48" AFF. 2. CONNECT TO EXISTING SUPPLY AIR DUCTWORK FROM EXISTING SUSPENDED FURNACE. FIELD VERIFY EXACT

RETURN GRILLE, OUTDOOR AIR DUCTWORK, AND FLUE/VENT PIPING TO REMAIN. FIELD VERIFY EXACT

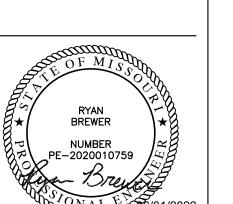
3. EXISTING SUSPENDED FURNACE, RETURN DUCTWORK,

LOCATION. BALANCE SUPPLY AIR TO 1400 CFM AND OUTDOOR AIR TO 200 CFM. 4. EXISTING EXHAUST FAN AND ASSOCIATED EXHAUST DUCTWORK TO REMAIN.

5. UNDERCUT DOOR MINIMUM 1" FOR AIRFLOW.

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PROFESSIONAL SEAL

ISSUE DATE: 01 JUNE, 2022 COLLINS WEBB #:

MECHANICAL FIRST FLOOR PLAN

COLLINS WEBB #:

MECHANICAL SPECIFICATIONS

15000 - BASIC MECHANICAL REQUIREMENTS

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

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

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. WHICH THESE DOCUMENTS HAVE BEEN PREPARED AND BECOME COGNIZANT OF ALL THE HVAC, PLUMBING OR FIRE PROTECTION SYSTEMS. DETAILS INVOLVED. COORDINATE WORK WITH THAT OF OTHERS.

FURNISH - PURCHASE AND DELIVER TO PROJECT SITE COMPLETE WITH EVERY NECESSARY OTHER. COORDINATE ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT. INSTALL - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION VERIFY SCOPE OF AND THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND 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 IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OR ARCHITECT. WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF

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

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.

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 MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL 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

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 PROTECT MATERIALS, APPARATUS AND EQUIPMENT FROM DAMAGE, MOISTURE, DIRT, 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 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) SCHEDULE A MEETING WITH THE OWNER'S REPRESENTATIVE AT THE SITE TO PROVIDE MONTHS FROM THE DATE OF ACCEPTANCE (IN WRITING) OF THE INSTALLATION. EXTENDED DETAILED INFORMATION ON THE OPERATING AND MAINTENANCE OF EQUIPMENT. 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,

CONTRACT DRAWINGS, SUCH AS: LOCATION OF CONCEALED PIPING VALVES AND DUCTS.

REVISIONS, ADDENDUMS, AND CHANGE ORDERS, AND SIGNIFICANT DEVIATIONS MADE

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 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 THE REVIEW OF SUBMITTALS DOES NOT RELIEVE RESPONSIBILITY OF SHOP DRAWING THEREON. A SET OF REPRODUCIBLE DRAWINGS ALONG WITH ONE SET OF BLULINES OF THE MOST RECENT SET OF DRAWINGS WITH TEMPERATURE CONTROL DRAWINGS INCLUDED SHALL BE DELIVERED TO THE ARCHITECT UPON COMPLETION OF THE WORK AND JOB CONDITIONS AS THEY EXIST.

PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.

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.

INCLUDE IN BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF TYPE OF GENERAL CONSTRUCTION, AND THE ARCHITECTURAL, STRUCTURAL, MECHANICAL THE PROJECT'S HVAC, PLUMBING AND SPRINKLER SERVICE IN OPERATION. IF APPLICABLE, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. ALSO UNDERSTAND THE PURPOSE FOR SCHEDULE IN WRITING WITH ARCHITECT ONE WEEK PRIOR TO ANY SHUT DOWN OF THE

COORDINATE THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY

ASSOCIATED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. VERIFY ALL PRESUMED ABANDONED EQUIPMENT, PIPES, DUCTWORK, CONCRETE, MASONRY OR SIMILAR WORK, THE ITEMS SHALL BE FURNISHED AT THE 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

PERFORM ALL CUTTING AND PATCHING AS REQUIRED FOR THE INSTALLATION OF TH NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH WORK UNDER THIS SPECIFICATION. NO CUTTING OF THE STRUCTURE SHALL BE PERMITTED

PATCHING SHALL BE OF THE SAME WORKMANSHIP, MATERIAL AND FINISH AND SHALL

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.

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 PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

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.

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.

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.

ERRORS IN DETAILS, SIZES, QUANTITIES, WIRING DIAGRAM ARRANGEMENTS AND DIMENSIONS WHICH DEVIATE FROM THE SPECIFICATIONS, CONTRACT DRAWINGS AND/OR

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

5400 - HEATING VENTILATION AND & AIR CONDITIONING

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 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.

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

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 MATCH ACCURATELY ALL SURROUNDING CONSTRUCTION IN A MANNER SATISFACTORY TO 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.

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 SEALED WITH FOSTER'S 35-00, REINFORCED WITH 4 INCH WIDE GLASS FABRIC. 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 <u>TERMINAL HEAT TRANSFER UNITS</u> 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.

AYOUT 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.

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.

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

MOTORS CONFORMING TO CHARACTERISTICS SHOWN ON ELECTRICAL DRAWINGS. 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.

PROVISIONS OF DIVISION 16. ALL CONTROL WIRING SHALL BE IN CONDUIT. PROVIDE

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.

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.

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. SERVICING OF FAN MOTOR. THE MOTOR SHALL BE THREE SPEED PSC TYPE AND BE QUALIFICATIONS OF INSTRUCTORS SHALL BE SUBJECT TO APPROVAL OF THE OWNER AND PERMANENTLY LUBRICATED AND HAVE THERMAL OVERLOAD PROTECTION. EQUIPMENT MANUFACTURER. ADDITIONAL REQUIREMENTS CONCERNING OPERATION AND MAINTENANCE OF MECHANICAL EQUIPMENT AND SYSTEMS MAY BE SPECIFIED IN OTHER SECTIONS. TWO COPIES OF ACKNOWLEDGMENT 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 DIMENSIONS SUFFICIENT TO CLOSE OFF AIR TO BRANCH. PROVIDE VENTLOK NO. 607 END 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

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".

OR APPROVED EQUAL WITH AN EMBOSSED ALUMINUM FOIL FACING. INTERNAL INSULATION DAMPER ASSEMBLY ON RAISED INSULATED BASE ON INSULATED DUCTWORK. VOLUME 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 ON RAISED BASE ON INSULATED DUCTWORK. MARK END OF DAMPER ROD TO SHOW 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

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

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

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

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

EXHAUST FANS

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 SWITCH, MOUNTED AND WIRED. SOLID STATE SPEED CONTROLLER SHIPPED LOOSE AND PSC MOTOR.

WATER SOURCE HEAT PUMPS

50°F AND 80°F IN HEATING.

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

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.

CONNECTIONS, FLANGED DUCT CONNECTIONS AND CABINET INSULATION OF 1/2" THICK,

ENTERING FLUID TEMPERATURES BETWEEN 50°F AND 100°F IN COOLING AND BETWEEN

MULTI DENSITY, COATED GLASS FIBER. THE UNIT SHALL BE DESIGNED TO OPERATE WITH

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 NOT PRESSURIZE THE SYSTEM FOR 48 HOURS. STRETCH NEW DUCT WHEN REMOVING IT BE CONSTRUCTED OF A CONVOLUTED COPPER INNER TUBE AND STEEL OUTER TUBE WITH FROM CARTONS WHERE IT MAY HAVE BEEN SHIPPED IN A COMPRESSED STATE. USE THE 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 EXTEND STRAIGHT AWAY FROM CONNECTORS FOR A FEW INCHES PRIOR TO INITIATING FAN MOTORS. MOTORS SHALL BE PERMANENTLY LUBRICATED AND HAVE THERMAL

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

DUCTWORK, LOW PRESSURE, GALVANIZED STEEL

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)

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

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

SPLITTERS SHALL BE 18 GAGE GALVANIZED STEEL WITH HORIZONTAL AND VERTICAL

BEARINGS AND VENTLOK NO. 690 DAMPER ASSEMBLY VOLUME DAMPERS SHALL BE 18 GAGE STEEL; SINGLE BLADE UP TO 8" X 8", OPPOSED

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

BLADE ON ALL DUCTS OVER 8" X 8". PROVIDE VENTLOK NO. 607 END BEARINGS AND

IN ACCORDANCE WITH CHAPTER IV OF SMACNA.

WITH BLADES SECURELY RIVETED TO BAR.

EQUIVALENT AREA.

LEXIBLE 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.

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

EXTERNAL INSULATION SHALL BE R-6 MINIMUM SCHULLER TYPE SMALLLITE, FSK SPIN-GLAS SPLITTERS: RIGIDLY ATTACH SPLITTERS TO PIVOT ROD AND OPERATING LINKAGE. SET DAMPERS: SUPPLY AND MAKE-UP AIR DUCTWORK IN CONCEALED SPACES. SET REGULATOR

> 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

PAINTING: PAINT INTERIOR OF DUCTWORK FLAT BLACK WHERE VISIBLE THROUGH GRILLES ELECTRICAL CONTRACTOR. SMOKE DETECTOR SHALL BE POWERED AS SPECIFIED IN AND REGISTERS.

SEALING: DUCTWORK SHALL BE SEALED IN ACCORDANCE WITH SMACNA "SEAL CLASS B". REMOVE ALL DUCTWORK FOUND TO VIBRATE, CHATTER OR PULSATE AND REPLACE WITH

NEW DUCTWORK DUCTWORK, LOW PRESSURE, FLEXIBLE

PROVIDE WHERE INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, FACTORY

REQUIREMENTS OF NFPA 90A AND UL STANDARD 181 FOR CLASS 1 DUCTS. PERFORMANCE

FABRICATED AND PRE INSULATED FLEXIBLE DUCTS. FLEXIBLE DUCTS, INCLUDING INSULATION AND SEALANTS, SHALL CONFORM TO THE

DUCT FITTINGS OR DEVICES.

DATA SHALL BE BASED ON TEST PERFORMED IN ACCORDANCE WITH AIR DIFFUSION COUNCIL FLEXIBLE AIR DUCT TEST CODE FD72. LOW PRESSURE FLEXIBLE DUCTWORK SHALL CONSIST OF CORROSION RESISTANT SPRING PRESENT FOR AIR BALANCE TO VERIFY ACCESSIBILITY TO ALL DEVICES, VERIFY ALL CORROSION RESISTANT FASTENERS. FAN SHALL COME INSTALLED WITH NEMA-1 TOGGLE STEEL HELIX BONDED TO A GLASS REINFORCED NEOPRENE SLEEVE INSULATED WITH A OPERATING SEQUENCES AND INSTALL NEW FILTERS IN ALL UNITS JUST PRIOR TO THE AIR MINIMUM OF 1 INCH THICK, 1 POUND DENSITY FIBERGLASS INSULATION WHICH IS IN TURN BALANCE. ALLOW TWO DAYS ON SITE FOR BALANCING. THE COMPLETE AIR BALANCE

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 OTHERWISE. INSTALL A NEW SET OF FILTERS ONE DAY PRIOR TO TURNOVER. 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. WHERE FLEXIBLE DUCTS CONNECT TO LOW PRESSURE DUCTS TO FORM RUNOUTS TO

FOR MAINTENANCE AND FILTER REPLACEMENT, KNOCKOUTS FOR ELECTRICAL AND PIPING 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.

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

PROVIDE GALVANIZED SPRING STEEL CLAMPS OR PANDUIT STRAPS AT CONNECTIONS TO

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 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

ANY BEND. MAKE CONNECTIONS OF FLEXIBLE DUCT TO RIGID DUCT OR TERMINALS AS

1. APPLY FOSTER'S 30-02 SEALANT TO THE INSIDE OF THE FLEXIBLE DUCT TO DEPTH OF 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.

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

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.

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.

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 VENTLOK NO. 641 SELF-LOCKING REGULATOR. DAMPER RODS SHALL BE 1/2" SQUARE BARS DAMPERS WITH ADJUSTABLE WEIGHTS OR SPRINGS TO PREVENT OUTWARD AIR FLOW.

> 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.

ADJUST AS DIRECTED BY OWNER OR AUTHORITY HAVING JURISDICTION.

THE WORK CONSISTS OF INSTALLING CONTROLS FOR THE HVAC SYSTEM.

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

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 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

AUTHORITY HAVING JURISDICTION.

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.

SHALL TAKE PLACE WITH OUTSIDE AIR DAMPERS IN MINIMUM POSITION, EXCEPT AS NOTED 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.

BALANCED AT THE TIME OF ORIGINAL BALANCE MUST BE BALANCED IN FUTURE AT NO

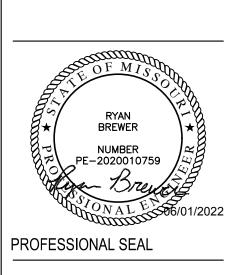
ADDITIONAL EXPENSE TO THE OWNER. RECHECK ANY ITEMS THAT OWNER DEEMS

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

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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PLUMBING NOTES, SYMBOLS & ABBREVIATIONS

GENERAL PLUMBING NOTES

- ALL WORK SHALL BE IN CONFORMANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
- PROVIDE TO OWNER A COPY OF ALL REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS AND ALL PLUMBING SYSTEMS EQUIPMENT MANUALS INCLUDING WARRANTIES.
- COORDINATE THE COMPLETE INSTALLATION OF SYSTEMS TO AVOID CONFLICT WITH OTHER TRADES. 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"
- 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

PER FOOT FOR PIPING 3" OR SMALLER.

- ALL EXPOSED PIPES PENETRATING FINISHED WALLS SHALL BE EQUIPPED WITH WALL ESCUTCHEONS. PROVIDE TRAP AND SEAL PRIMERS ON ALL FLOOR DRAINS IF REQUIRED BY CODE OR OWNER.
- 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.
- ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM CEILING AREA OR ACCESS DOORS PROVIDED IN WALL.
- 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.
- 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	ΙΕ	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			

WATER HAMMER ARRESTOR SCHEDULE

J	SHOCK ARRESTORS/SHOCK ABSORBERS/WATER HAMMER ARRESTERS SELECTION TABLES (SIOUX CHIEF 650 SERIES ARRESTER MODEL NUMBERS USED AS GUIDE. OTHER MANUFACTURER'S ARRESTERS ARE ACCEPTABLE).
	REFER TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS FOR LOCATIONS OF SHOCK ARRESTERS.

THIS TABLE INDICATES THE FIXTURE UNIT WEIGHTS FOR MOST POPULAR PLUMBING I CODES MAY VARY AND SHOULD BE REVIEWED PRIOR TO USING TABLE 1.	FIXTURES. CERTAIN LOCA

	TYPE OF SUPPLY	PUBLIC		PRIVATE	
FIXTURE	CONTROL	C.W.	H.W.	C.W.	H.W.
WATER CLOSET	FLUSH VALVE	10	-	6	-
WATER CLOSET	FLUSH TANK	5	-	3	-
PEDESTAL URINAL	FLUSH VALVE	10	-	-	-
STALL OR WALL URINAL	FLUSH VALVE	5	-	-	-
STALL OR WALL URINAL	FLUSH TANK	3	-	-	-
LAVATORY	FAUCET	1 1/2	1 1/2	1	1
BATHTUB	FAUCET	2	3	1 1/2	1 1/2
SHOWER HEAD	MIXING VALVE	2	3	1	2
BATHROOM GROUP	FLUSH VALVE CLOSET	-	-	8	3
BATHROOM GROUP	FLUSH TANK CLOSET	-	-	6	3
SEPARATE SHOWER	MIXING VALVE	-	-	1	2
SERVICE SINK	FAUCET	3	3	-	-
LAUNDRY TUBS (1-3)	FAUCET	-	-	3	3
COMBINATION FIXTURE	FAUCET	-	-	3	3

THIS TABLE INDICATES FIXTURE UNIT RATINGS FOR P.D.I. CERTIFIED WATER HAMMER ARRESTER CATEGORIES AND THE CORRESPONDING SMITH HYDROTROL FOR EACH CATEGORY. WHERE SEVERAL FIXTURES ARE INSTALLED IN A BRANCH USUALLY ONLY ONE FIXTURE VALVE AT A TIME WILL BE CLOSED. TABLE 2 TAKES INTO CONSIDERATION OTHER DESIGN FACTORS INCLUDING THE SIMULTANEOUS USAGE OF ONE OR MORE FIXTURES, PIPE SIZE, LENGTH, FLOW PRESSURE AND VELOCITY. THEREFORE, THIS METHOD OFFERS A SIMPLE FAST DETERMINATION OF THE PROPER SIZE WATER HAMMER ARRESTER FOR A GIVEN BATTERY OF PLUMBING FIXTURES.

P.D.I. SYMBOLS	А	В	С	D	E	F
HYDRARESTER	652	653	654	655	656	657
FIXTURE UNIT RATING	1-11	12-32	33-60	61-113	114-154	155-330

WHEN WATER PRESSURE IN LINE EXCEEDS 65psi, SPECIFY THE NEXT LARGER HYDROTROL.

▲ PLUMBING AND DRAINAGE INSTITUTE ESTABLISHED THESE SIZE SYMBOLS TO CORRESPOND TO THOSE UNITS COVERED BY THE CERTIFICATION AND TESTING PROGRAM DESCRIBED IN P.D.I. STANDARD MANUAL WH-201.

SHOCK ARRESTORS/SHOCK ABSORBERS/WATER HAMMER ARRESTERS SELECTION TABLES (SIOUX CHIEF 65
SERIES ARRESTER MODEL NUMBERS USED AS GUIDE. OTHER MANUFACTURER'S ARRESTER'S ARE
ACCEPTABLE).

TABLE 1

THIS TABLE INDICATES THE FIXTURE UNIT WEIGHTS FOR MOST POPULAR PLUMBING FIXTURES.	CERTAIN LOC
CODES MAY VARY AND SHOULD BE REVIEWED PRIOR TO USING TABLE 1.	

	TYPE OF SUPPLY		WEIGHT IN FIXTURE UNIT PUBLIC PRI		
FIXTURE	CONTROL	C.W.	H.W.	C.W.	H.W.
WATER CLOSET	FLUSH VALVE	10	-	6	-
WATER CLOSET	FLUSH TANK	5	-	3	-
PEDESTAL URINAL	FLUSH VALVE	10	-	-	-
STALL OR WALL URINAL	FLUSH VALVE	5	-	-	-
STALL OR WALL URINAL	FLUSH TANK	3	-	-	-
LAVATORY	FAUCET	1 1/2	1 1/2	1	1
BATHTUB	FAUCET	2	3	1 1/2	1 1/2
SHOWER HEAD	MIXING VALVE	2	3	1	2
BATHROOM GROUP	FLUSH VALVE CLOSET	-	-	8	3
BATHROOM GROUP	FLUSH TANK CLOSET	-	-	6	3
SEPARATE SHOWER	MIXING VALVE	-	-	1	2

SK
GENERAL NOTES:

PRIOR TO ROUGH-IN.

- 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.
- ALL UNDERGROUND DRAINAGE PIPING SHALL BE A MINIMUM OF 3" IN SIZE.
- PROVIDE TRAP PRIMER UNITS FOR ALL FLOOR DRAINS.
- VERIFY/COORDINATE LOCATIONS OF ALL FIXTURES, DRAIN, ETC. WITH ARCHITECT

PLUMBING SYMBOLS SYMBOL DESCRIPTION ### FLOOR DRAIN / AREA DRAIN

FLOOR SINK

O ORD

(O) RD ROOF DRAIN

OVERFLOW ROOF DRAIN

PLUMBING VEVT THRU ROOF

POINT OF CONNECTION (CONNECT NEW

PLUMBING RISER OR DETAIL DESIGNATION

HOT WATER RECIRCULATING PIPING

HOT WATER RECIRCULATION PUMP

TO EXISTING)

XXX PLUMBING EQUIPMENT DESIGNATION

SANITARY SEWER PIPING

STORM SEWER PIPING

COLD WATER PIPING

HOT WATER PIPING

FILTERED WATER PIPING

CONDENSATE PIPING

VENT PIPING

GAS PIPING

T APPLICABLE	7	CHECK VALVE
ERFLOW ROOF DRAIN	_ 	PRESSURE
ORM OVERFLOW	S	
MP DISCHARGE	_——↓	SOLENOID VALVE
ST INDICATOR VALVE	Г	OLODE VALVE (OTDAIOUT DATTE
ESSURE REDUCING VALVE	→ ₩ −	GLOBE VALVE (STRAIGHT PATTE
VISION	Г	BUTTEBELY
VOLUTIONS PER MINUTE	-(1)	BUTTERFLY VALVE
OF TOP UNIT	Г	
NITARY	———	BALL VALVE
FT DOMESTIC COLD WATER	Г	
FT DOMESTIC HOT WATER	-1Öl-	GAS COCK
ET DECIDO LICTAVATED		DI 110 \ (A1 \ (E

SYMBOL DESCRIPTION

GATE VALVE

—**℘**— PLUG VALVE FLOOR CLEAN OUT WALL CLEAN OUT CLEAN OUT

TEE DOWN +STRAINER UNION

——— ELBOW UP

HOSE BIBB

FREEZE PROOF WALL HYDRANT

PLUMBING FIXTURE MINIMUM CONNECTION COLIEDING

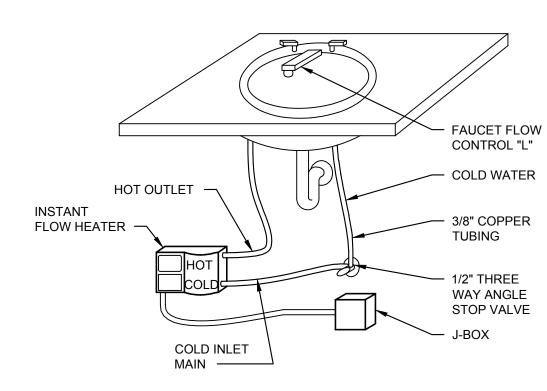
DESIGNATION	FIXTURE	C.W.	H.W.	DRAIN	VENT
WC	WATER CLOSET	1"	-	4"	2"
UR	URINAL	3/4"	-	2"	2"
LAV.	LAVATORY	1/2"	1/2"	2"	2"
EWC/DF	ELECTRIC WATER COOLER/DRINKING FOUNTAIN	1/2"	-	2"	2"
MB/SS	MOP BASIN/SERVICE SINK	1/2"	1/2"	3"	2"
SH/BT	SHOWER/BATHTUB	1/2"	1/2"	2"	2"
SK	SINK	1/2"	1/2"	2"	2"

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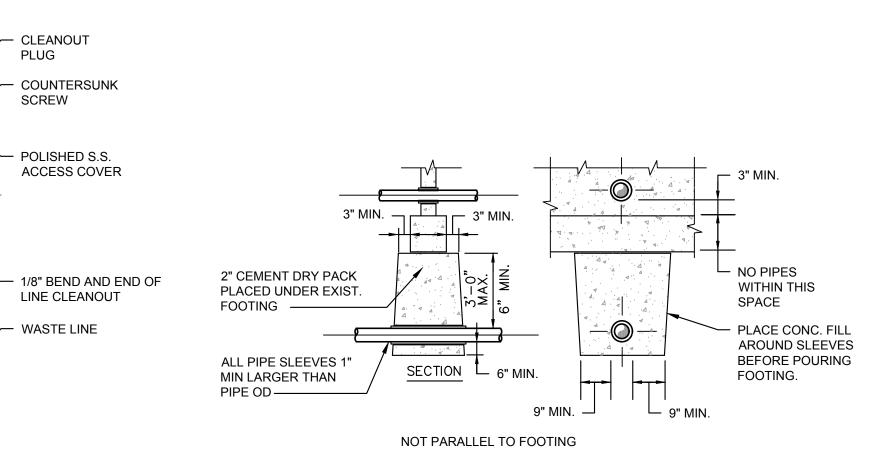
PLUMBING DETAILS & SCHEDULES

				PLU	MBIN	IG FI	XTUF	RE SCHED	ULE
	TAG	MANUFACTURER	MODEL	DRAIN	VENT	COLD WATER	HOT WATER	ELECTRICAL REQUIREMENTS	DESCRIPTION
\ \	EWC	ELKAY	LBWDC00	2"	1-1/2"	1/2"	~	115V, 260 WATTS	IN-WALL COMMERCIAL FILTERED WATER DISPENSER.
7	IMB	SIOUX CHIEF	696			1/2"			ICE MAKER BOX WITH SHUTOFF AND MINI ARRESTOR.
-	SK1	ELKAY	LRAD202265PD	2"	1-1/2"	1/2"	1/2"	120\/ 1/3HP	STAINLESS STEEL DROP-IN ADA SINK WITH LKGT1041 SINGLE HOLE FAUCET WITH PULL-OUT SPRAY. PROVIDE WITH ASSE 1070 COMPLIANT MIXING VALVE AND INSINKERATOR BADGER 1 GARBAGE DISPOSER.

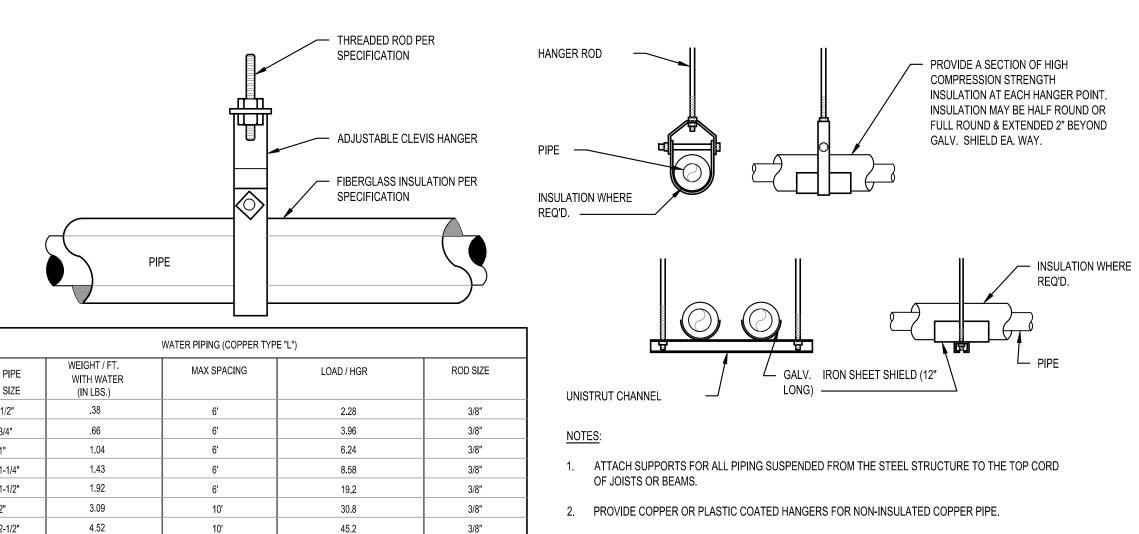
1. FIXTURES SPECIFIED IN SCHEDULE ARE A BASIS OF DESIGN CONFIRM EXACT FIXTURE MODELS WITH OWNER PRIOR TO PURCHASING.



5 INSTANTANEOUS WATER HEATER NOT TO SCALE







WALL CLEANOUT
NOT TO SCALE

PLUG

- COUNTERSUNK

POLISHED S.S.
ACCESS COVER

MAY EXTEND AS WASTE OR VENT

FOR WALL CONST.

REF. ARCH. DWGS.

C.I. CLEANOUT TEE

WASTE LINE LENGTH TO SUIT

PIPE HANGING DETAIL

BAR STRUCTURE— VENT TOP TO BE INSTALLED AS HIGH AS POSSIBLE, REFER TO CODE. CLEANOUT — 2" SIZE BELOW FLOOR ARRANGEMENT SHOWN IS SCHEMATIC. ADJUST AS REQUIRED TO SUIT ACTUAL CONDITIONS. REFER TO FLOOR PLANS. PROVIDE SIMILAR SEPARATE SYSTEM FOR EACH FIXTURE. REFER TO LOCAL

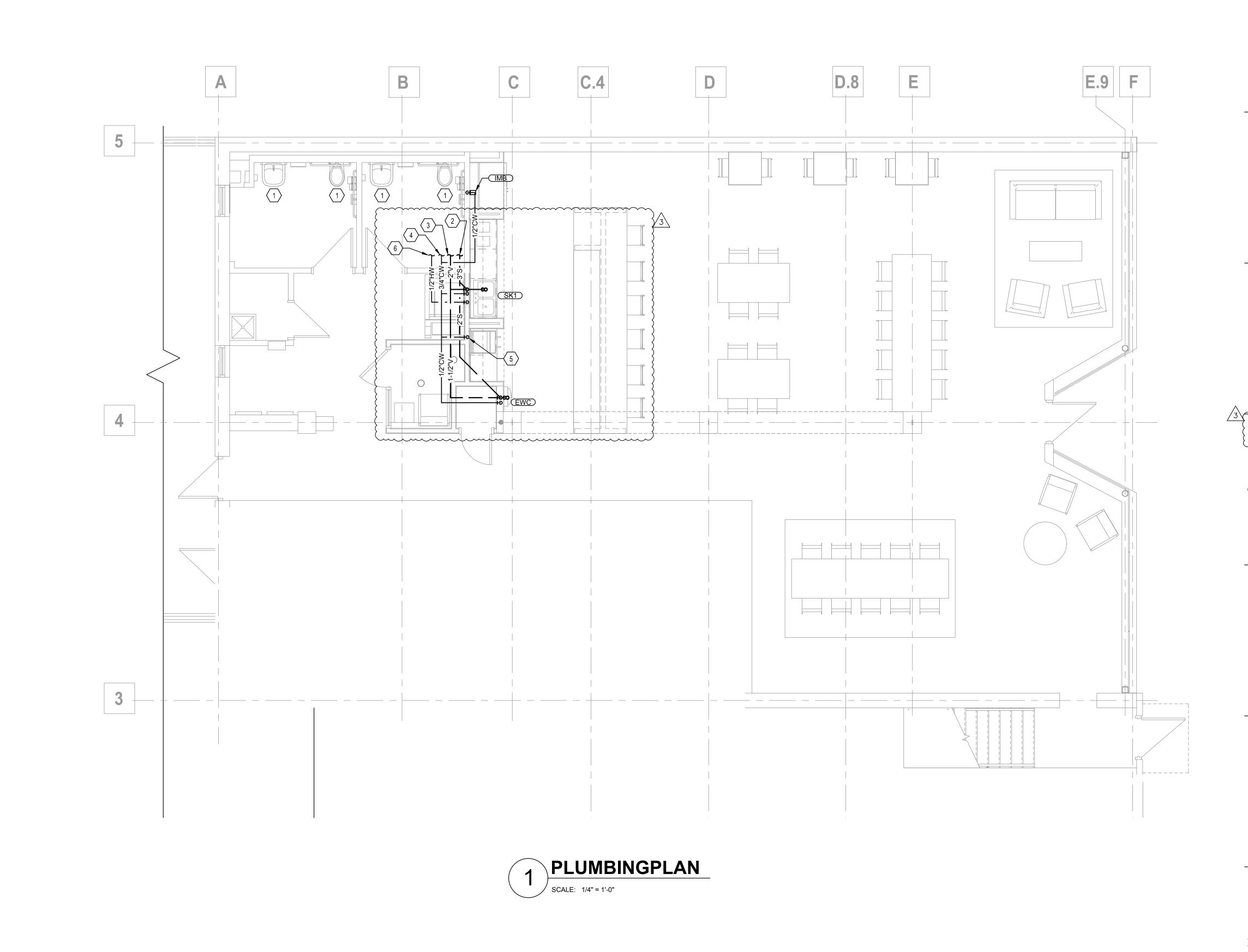
CONNECT TO VENT STACK OR

HEADER MINIMUM 6" ABOVE

4 ISLAND FIXTURE VENTING

NOT TO SCALE

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GENERAL NOTES

(NOT ALL NOTES APPLY) . REFERENCE SHEET P101 FOR GENERAL NOTES, SYMBOLS, ROUTED IN PIPE CHASES SHALL BE ACCESSIBLE FROM

AND ABBREVIATIONS. 2. ALL SHUT-OFF OR BALANCING VALVES TO PLUMBING 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

KEYED NOTES:

. EXISTING PLUMBING FIXTURE TO REMAIN. 2. CONNECT NEW SANITARY PIPING INTO EXISTING SANITARY PIPING IN THIS AREA. FIELD VERIFY EXACT CONNECTION POINT, LINE SIZE, MATERIAL, AND AVAILABLE

3. CONNECT NEW VENT PIPING INTO EXISTING VENT PIPING IN THIS AREA. FIELD VERIFY EXACT CONNECTION POINT, LINE SIZE, AND MATERIAL. 4. CONNECT NEW COLD WATER PIPING INTO EXISTING COLD

WATER PIPING IN THIS AREA. FIELD VERIFY EXACT CONNECTION POINT, LINE SIZE, AND MATERIAL. 5. ROUTE 1/2"CW DOWN IN WALL, TURN PIPING OUT OF WALL AND TERMINATE WITH SHUTOFF VALVE FOR CONNECTION

TO COFFEE MAKER.

6. CONNECT NEW HOT WATER PIPING INTO EXISTING HOT WATER PIPING IN THIS AREA. FIELD VERIFY EXACT CONNECTION POINT, LINE SIZE, AND MATERIAL.

230 SW MAIN ST. LEE'S SUMMIT, MO

08.02.22

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RYAN BREWER

PROFESSIONAL SEAL

ISSUE DATE: 01 JUNE, 2022 COLLINS WEBB #: 22046

PLUMBING PLAN

COLLINS WEBB #: **PLUMBING SPECIFICATIONS**

15400 - PLUMBING WORK

ALL PLUMBING AND ASSOCIATED WORK IN DIVISION 15 IS GOVERNED BY THIS SECTION. PROVIDE LABOR AND MATERIALS NECESSARY TO PROVIDE THE WORK LOCATED AND OF SUFFICIENT SIZE. 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.

SHOP DRAWINGS: SUBMIT MATERIALS, PRODUCTS, EQUIPMENT AND SYSTEMS AS TO THE OWNER'S REPRESENTATIVE, FOR APPROVAL AND FOR THE OWNER, ON SPECIFIED UNDER EACH PLUMBING SECTION IN THIS DIVISION IN ACCORDANCE WITH THE GENERAL CONDITIONS. SHOW PIPE SIZES, LOCATION, SLOPES OF

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

HORIZONTAL RUNS, FITTINGS, VALVES, METERS, GAGES AND CONNECTIONS.

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

THE DRAWINGS, INSTEAD OF ONE SET AS REQUIRED BY THE GENERAL

CONDITIONS, INDICATING ALL CHANGES FROM ORIGINAL DRAWINGS AS

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 SPECIFIED. OPERATION AND MAINTENANCE MANUALS.

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 13. SHEET COPPER: ASTM B 152. FOR THE SETTING OR EMBEDMENT THEREOF SO AS TO CAUSE NO DELAY IN THE 14. NO-HUB STAINLESS STEEL COUPLING AND GASKETS: CISPI STD. S-301.

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"

JOINTS AND CONNECTIONS ITEM. REQUIREMENTS FOR SPECIFIC FINISHES, MATERIAL OR OTHER MODIFICATIONS MAY INTRODUCE VARIANCES FROM MANUFACTURERS' STANDARDS. MODIFICATIONS SHALL BE FULLY CONSIDERED.

CHARTS AND TAGS

COST TO THE OWNER.

IN AREAS HAVING VALVES, PROVIDE SINGLE LINE DIAGRAMS FRAMED UNDER GLASS AND MOUNTED ON EQUIPMENT ROOM WALL, THE DIAGRAMS SHALL GIVE 3. 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 5. 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 9. OPINION OF THE OWNER'S REPRESENTATIVE, IS IMPROPERLY INSTALLED SHALL BE REMOVED AND REINSTALLED IN AN APPROVED MANNER AT NO ADDITIONAL

THE LOCATION OF PLUMBING PIPING SHALL BE COORDINATED TO ENSURE THAT IT INSTALLATION CLEARS OPENINGS AND STRUCTURAL MEMBERS; THAT PIPING INDICATED AS CONCEALED CAN BE PROPERLY CONCEALED IN WALLS OR PARTITIONS AND THAT CLEANED INSIDE AND MADE FREE OF OIL, DIRT, AND FOREIGN MATTER. IT DOES NOT INTERFERE WITH LIGHTS, DUCTWORK OR EQUIPMENT HAVING FIXED PROPERLY ALIGN AND INSTALL IN NEAT ARRANGEMENT, TRUE TO THE LINES OF 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 REGARD TO CONFLICTS WITH OTHER SYSTEMS AND THEIR REQUIREMENTS FOR 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 VERTICAL AND HORIZONTAL LINES. DEFLECTION SHALL NOT EXCEED ONE 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.

INSTALL AS REQUIRED FOR MAINTENANCE, ADJUSTMENT, REMOVAL AND REPAIR

OF VALVES, EQUIPMENT AND LIKE ITEMS. DOORS SHALL BE CONVENIENTLY

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

FURNISH TWO COPIES OF COMPLETE OPERATION AND MAINTENANCE MANUALS 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 TRAP PRIMERS WARNING NOTICES.

APPROVED SHOP DRAWINGS, PRODUCT DATA AND PARTS AND MAINTENANCE OWNER'S REPRESENTATIVE WITH TWO SETS OF ACCURATELY MARKED COPIES OF BOOKLET FOR EACH ITEM OF PLUMBING, EQUIPMENT SPECIFIED IN DIVISION 15. COPIES OF CERTIFICATES OF INSPECTION, WHERE INSPECTION IS REQUIRED.

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

GUARANTEES, INCLUDING EXTENDED GUARANTEES.

FURNISH AND INSTALL PLUMBING PIPING WHERE SHOWN ON DRAWINGS AND AS

PIPING MATERIALS

OPTIONS 1. CAST IRON HUBLESS SANITARY PIPE AND FITTINGS: CISPI STD. 301. CAST IRON SOIL PIPE AND FITTINGS, SERVICE WEIGHT: ASTM A 74. CAST IRON SOIL PIPE AND FITTINGS, EXTRA HEAVY WEIGHT: ASTM A 74. STEEL PIPE: ASTM A 53.

MALLEABLE IRON FITTINGS, 150 LB.: ASTM A 197. PIPE THREADS: ANSI B2.1. NIPPLES, PIPE (THREADED): FED SPEC. WW-N-351.

COPPER WATER TUBE: ASTM B 88. WROUGHT COPPER AND BRONZE SOLDER-JOINT PRESSURE FITTINGS: ANSI

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.

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.

1. CAST IRON, HUB AND SPIGOT: PACKED WITH OAKUM AND FINISHED WITH LEAD NOT LESS THAN 1 INCH DEEP; WELL CAULKED. 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. BETWEEN LEAD AND BRASS: FERRULES OR SOLDERING NIPPLES WITH WIPED JOINTS 3/8" THICK AND 3/4" EACH SIDE OF JOINTS. SCREWED JOINTS: AMERICAN NATIONAL STANDARD WITH PIPE FREE FROM CUTTING AND BURRS. THREE THREADS EXPOSED MAXIMUM.

SOLDERED JOINTS: 95-5 TIN-ANTIMONY SOLDER. SLIP JOINTS: USE FOR PLUMBING TRAP SEALS ON INLET SIDE ONLY. BETWEEN COPPER AND FERROUS MATERIALS: INSULATING DIELECTRIC

FLANGED JOINTS: FURNISH WITH COMPANION FLANGE AND CLOTH INSERTED RUBBER GASKET. FLANGED BOLTS: ASTM A 354, MINIMUM GRADE BD, ALLOY STEEL WITH HEX NUTS IN COMPLIANCE WITH ANSI B18.22 AND STANDARD ROLLED STEEL

ASSEMBLY FOR HUBLESS PIPING: AS RECOMMENDED BY THE MANUFACTURER.

10. CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCERS, INCREASERS OR

BEFORE INSTALLING PIPE IN ANY PART OF THE SYSTEM, THE PIPE SHALL BE

REDUCING FITTINGS. BUSHINGS WILL NOT BE PERMITTED.

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

PIPING, INCLUDING NO-HUB PIPING, SHALL BE INSTALLED STRAIGHT AND TRUE TO NECESSARY BRANCHES TO THE CLOSEST INDICATED BRANCH OR MAIN, AT NO 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

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

PROVIDE FOR ALL PIPING THROUGH WALLS, FLOORS AND CEILING WERE PIPING IS ADJUSTMENT FROM 3/4 INCH THROUGH 1-1/4 INCH. IN METAL DECKS READHEAD EXPOSED TO VIEW IN FINISHED AREA. ESCUTCHEONS SHALL BE CHROMIUM PLATED, TWO PIECE, HINGED WITH SET SCREW.

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

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

SHALL CONFORM TO THE REQUIREMENTS OF THE REFERENCED PLUMBING CODE

AND SHALL BE PROVIDED FOR HOSE BIBBS, FLUSHOMETERS AND ANY FIXTURE OR PROVIDE HANGER AT EACH CHANGE OF DIRECTION. EQUIPMENT WATER SUPPLY HAVING A THREADED OUTLET.

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.

DISTRIBUTION UNIT OR APPROVED EQUAL. EXTEND SLEEVE 1/4 INCH BEYOND FINISHED SURFACE. SET SLEEVE BEFORE POURING CONCRETE.

PROVIDE WHERE INDICATED ON DRAWINGS. PRECISION PRODUCTS WITH

PROVIDE CLEARANCE BETWEEN SLEEVE AND PIPE OR BETWEEN SLEEVE AND INSULATION TO ALLOW FOR PIPE MOVEMENT DUE TO EXPANSION AND INSULATION SHALL PASS CONTINUOUS THROUGH THE SLEEVE. 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. ESCUTCHEONS: FIT AROUND INSULATION WHERE PRESENT. PROVIDE DEEP ESCUTCHEON PLATES WHERE PIPE SLEEVES EXTEND ABOVE FLOORS. WATER HAMMER ARRESTERS: INSTALL WHERE SHOWN ON DRAWINGS CLEANOUTS: INSTALL WHERE SHOWN ON DRAWINGS AND AT BASE OF ALL PROVIDE ALL NECESSARY TEMPORARY PIPING CLOSURES. 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

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

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

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 SCREEWED ENDS, CHROME PLATED BRONZE BALL WITH CONVENTIONAL PORT, 400 PSI, BLOW OUT PROOF

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

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. 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

PLUMBING HANGERS AND SUPPORTS DESCRIPTION

INSTALL VALVES WHERE SHOWN ON DRAWINGS.

HANGERS CAPABLE OF ADJUSTMENT. HANGERS AND SUPPORTS HANGERS FOR BLACK OR GALVANIZED STEEL PIPE SHALL BE GRINNELL, MODEL

PROVIDE HANGERS FOR ALL PIPING NOT INDICATED BELOW GRADE. USE

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

STRAP HANGERS: NOT PERMITTED. RISER CLAMPS: PROVIDE RISER CLAMPS FOR VERTICAL PIPING AT EACH LEVEL,

INSULATING CEMENT.

GRINNELL MODEL NO. 261

PIPE INSULATION WITH FACTORY LONGITUDINAL LAP. SEAL BUTT JOINTS WITH ALL DRAINS SHALL BE OF THE SAME MANUFACTURER. FURNISH FLOOR DRAINS WITH PRIMER CONNECTIONS WHERE INDICATED ON THE

> DISCHARGE WILL BE ACCEPTABLE. PROVIDE FLOOR DRAINS WITH 4 INCH DEEP SEAL TRAPS.

PROVIDE ALL DRAINS AS SCHEDULED ON DRAWINGS OR APPROVED EQUAL.

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

INSERTS: IN CONCRETE, GRINNELL MODEL NO. 285 OR APPROVED EQUAL, HAVING 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 AND SPECIFIED. 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

CHROME PLATED PIPING REQUIRING THE USE OF WRENCH SHALL BE PROTECTED WATER HEATER SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS.

BOLT WATER CLOSET CARRIER TO FLOOR.

SD1 OR APPROVED EQUAL. POWDER PROPELLED PERMITTED IN NEW

MEMBERS, GRINNELL, MODEL 225 OR APPROVED EQUAL.

APPROVED EQUAL.

METHODS OF SUPPORT.

EXPANSION AND CONTRACTION.

FERROUS PIPING AND COPPER TUBING:

1/2" THROUGH 1-1/2" 6 FT. 3/8"

2" THROUGH 3" 10 FT. 1/2"

4" THROUGH 5" 12 FT. 5/8"

2" AND 3" EACH JOINT 3/8"

6" AND 8" EACH JOINT 3/4"

TESTING OF PLUMBING PIPING

CONCEALED OR COVERED.

ARCHITECT-ENGINEER.

HAVING JURISDICTION.

FLUSHED AS SPECIFIED.

BE 10 FEET. EXAMINE ALL JOINTS FOR LEAKS.

PLUMBING, FIXTURES, TRIM AND DRAINS

AREAS SHALL BE BRASS, CHROMIUM PLATED.

STANDARD, KOHLER, ELJER OR APPROVED EQUAL.

PIPING TEST

OF ONE HOUR.

30 MINUTES.

FIXTURES

PLUMBING DRAINS

FURNISH CLAMPING RING.

STERILIZATION

10" THROUGH 15" EACH JOINT 3/4"

CAST IRON PIPING:

4" AND 5"

6" AND LARGER 16 FT. 3/4" D.

DIAMETER OF PIPE MAXIMUM SPACING ROD SIZE

DIAMETER OF PIPE MAXIMUM SPACING ROD SIZE

EACH JOINT 1/2"

SPACING OF HANGERS

CONSTRUCTION WHERE TYPE AND LOCATION ARE APPROVED PRIOR TO

INSTALLATION. IN EXISTING CONSTRUCTION, START SLUGIN NO. 6800 SERIES OR

SIDE BEAM CLAMPS: PROVIDE WHEN SUPPORTING FROM STRUCTURAL STEEL

OTHER SUPPORTS: OBTAIN OWNER'S REPRENTATIVE APPROVAL FOR OTHER

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

CONDUCT ALL TESTS AFTER PIPING IS INSTALLED AND BEFORE PIPING IS

SYSTEMS SHALL REMAIN UNDER TEST FOR SUFFICIENT LENGTH OF TIME TO

PROVE TIGHTNESS THEREOF AND FOR ADEQUATE OBSERVATION BY THE

WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY THE AUTHORITY

STERILIZATION: PROVIDE A DATED LETTER TO THE ARCHITECT-ENGINEER'S

REPRESENTATIVE STATING THAT PIPING SYSTEM HAS BEEN STERILIZED AND

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

NEW FIRE STANDPIPE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE

GAS PIPING SHALL BE TESTED WITH NITROGEN TO 50 PSIG. PRESSURE SHALL BE

MEASURED WITH A MANOMETER. MAINTAIN TEST PRESSURE FOR A MINIMUM OF

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

PIPING TO SERVE FIXTURES AND EQUIPMENT AND EXPOSED TO VIEW IN FINISHED

FOR ANCHORING THE FIXTURES RIGIDLY IN PLACE. RISERS TO SHOWER HEADS

SHALL BE ANCHORED TO THE WALL CONSTRUCTION TO PREVENT MOVEMENT.

PROVIDE PLUMBING FIXTURES AS SCHEDULED ON DRAWINGS, AMERICAN

FURNISH WITH SEEPAGE FLANGE WHERE INSTALLED WITH PANS OR FLASHING,

MANUFACTURER SHALL BE AS SCHEDULED OR BY APPROVED EQUAL.

OF 200 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM OF TWO HOURS.

PROVIDE ALL TESTING EQUIPMENT, MATERIALS AND SUPPLIES.

IN THE PIPING SYSTEMS FOR THE PURPOSE OF STOPPING LEAKS.

TESTING REPEATED UNTIL THE SYSTEM IS PROVEN TIGHT.

SHALL COMPLY WITH THE REQUIREMENTS OF NFPA NO. 54 AND THE LOCAL GAS

PIPE SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH MALLEABLE FITTINGS

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

THE WORK INCLUDES FURNISHING AND INSTALLING HOT AND COLD WATER PIPING AS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.

INSTALL AT EACH LEVEL BELOW THE FLOOR. SUSPEND FROM TWO HANGER RODS PIPING AND INSERTS WHERE THE INSTALLATION OF ESCUTCHEON PLATES IS REQUIRED. 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.

SPECIFIED IN SECTION, PLUMBING VALVES.

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.

MATERIALS OTHER THAN THOSE SPECIFIED FOR JOINING WILL NOT BE PERMITTED MAKE CONNECTION TO EQUIPMENT AND FIXTURES INDICATED ON THE DRAWINGS

ALL LEAKS DISCLOSED BY THE TESTING PROCEDURES SHALL BE REPAIRED AND

HOT WATER BRANCH CONNECTIONS TO DISTRIBUTION MAINS SHALL BE TOP TAKE-OFF, SWING JOINT TYPE.

TESTING REQUIREMENTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING ALL PIPING INSTALLED BELOW GROUND SHALL RECEIVE TWO COATS OF KOPPERS NO. 50 OR APPROVED EQUAL

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.

DOMESTIC HOT AND COLD WATER PIPING SHALL BE FILLED, THEN TESTED TO A MATERIALS SHALL COMPLY WITH UL 723, FLAME SPREAD RATING. HOT SURFACE HYDROSTATIC PRESSURE OF 150 PSIG. MAINTAIN TEST PRESSURE FOR A MINIMUM 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

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.

PROVIDE ALL BRACKETS, PLATES, ANCHORS AND FASTENING DEVICES REQUIRED 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

PROVIDE DOMESTIC WATER HEATING EQUIPMENT WHERE SHOWN ON DRAWINGS

DISCHARGE PIPE RELIEF VALVE DISCHARGE SHALL BE COPPER WATER TUBE, TYPE M.

DISCHARGE PIPE SHALL HAVE TERMINATING END CUT AT 45 DEGREE ANGLE.

TERMINATE RELIEF VALVE DRAIN AS SHOWN ON THE DRAWINGS.

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CONSTRUCTION
As Noted on Plans Review

Lee's Summit, Missouri 06/30/2022

OF MISSON
RYAN BREWER NUMBER PE-2020010759
Brest Stonal E 506/01/2022
PROFESSIONAL SEAL

ISSUE DATE: 01 JUNE, 2022 COLLINS WEBB #: 22046

ELECTRICAL NOTES, SYMBOLS & **ABBREVIATIONS**

	ELECTRICA	JE VDDIJI		
AC	ALTERNATING CURRENT	KCM	THOUSAND CIRCULAR MILLS	
AHU	AIR HANDLING UNIT	KVA	KILOVOLT-AMPERES (1000 VOLT-AMPERES)	
A. OR AMPS.	AMPERES	KV	KILOVOLT (1000 VOLTS)	
AFC	ABOVE FINISH COUNTER	KW	KILOWATTS (1000 WATTS)	
AFCI	ARC FAULT CIRCUIT INTERRUPTER	KWH	KILOWATT HOURS	
AFF	ABOVE FINISHED FLOOR	MLO	MAIN LUGS ONLY	
		MCB	MAIN CIRCUIT BREAKER	
AIC	AMPERES INTERRUPTING CAPACITY (SYMMETRICAL)	MW	MICROWAVE (COORD MTG HT W/ ARCHITECT)	
ATS	AUTOMATIC TRANSFER SWITCH	NIC	NOT IN CONTRACT	
ВСР	BUILDING CONTROL POWER (FOR HVAC/BUILDING CONTROLS)	NEC	NATIONAL ELECTRICAL CODE	
		NC	NORMALLY CLOSED	
BTC	BRANCH TO CONNECTION POINT AND CONNECT EQUIPMENT	NO	NORMALLY OPEN	
BTF	BRANCH TO FIXTURE, FURNISH AND INSTALL RECEPTACLE	NF	NOT FUSED	
С	CONDUIT ("E.C." IS EMPTY CONDUIT)	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	
CF	CEILING FAN	OFOI	OWNER FURNISHED OWNER INSTALLED	
CM	COFFEE MAKER	PNL	PANEL	
CT	COOKTOP	PH OR Ø	PHASE	
	DEDICATED CIRCUIT	Р	POLE	
DCO	DUPLEX CONVIENCE OUTLET	PVC	POLYVINYL CHLORIDE	
DP	DISPOSER	RF	REFRIGERATOR	
DW	DISHWASHER	RG	RANGE	
DY	DRYER	SPD	SURGE PROTECTIVE DEVICE	
EMT	ELETRICAL METALLIC TUBING	T	TAMPERPROOF RECEPTACLE	
= EF	EXHAUST FAN	TC	TIMECLOCK	
ER	EXISTING TO BE REMOVED	TTB	TELEPHONE TERMINAL BOARD	
ETP	ELECTRONIC TRAP PRIMER	TV	TELEVISION RECEPTACLE	
EWC	ELECTRIC WATER COOLER (WATER-COOLED DRINKING FOUNTAIN)	UC	UNDERCOUNTER REFRIGERATOR (OR ICE MACHINE)	
EX	EXISTING	UF	UNDERFLOOR	
FLEX	FLEXIBLE CONDUIT	UG	UNDERGROUND	
FCU	FAN COIL UNIT	UL	UNDERWRITERS LABORATORIES	
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	U.N.O.	UNLESS NOTED OTHERWISE	
GFI	GROUND FAULT INTERRUPTER	V	VOLTS	
GFIP	GROUND FAULT INTERRUPTER PROTECTED	VA	VOLT-AMPERES	
GRD	GROUND	VD	VENDING MACHINE (24"AFF)	
H	HORIZONTAL MOUNT (RECEPTACLE)	VFD	VARIABLE FREQUENCY DRIVE	
HD	VENTILATION HOOD	W	WATTS	
HP	HORSEPOWER	WA	WASHER	
<u>"</u> ⊣T	HEAT TRACE POWER (PROVIDE W/ 20A/1P GFI BREAKER)	WD	WARMING DRAWER	
HVAC	HEATING, VENTILATING, & AIR CONDITIONING	WO	WALLOVEN	
HZ	HERTZ	WP	WEATHERPROOF	
IG	ISOLATED GROUND (DUPLEX RECEPTS NEMA 5-20RIG)	WP/WR	WEATHER ROOF WEATHER RESISTANT	
KA	KILOAMPERE (1000 AMPERES)	W/UNIT	DISCONNECT PROVIDED WITH UNIT	

1. DO NOT SCALE FROM THESE DRAWINGS.

2. REFER TO ARCHITECTURAL DRAWINGS AND REFLECTED CEILING PLA 3. COORDINATE EACH LIGHT FIXTURE INSTALLATION(S) W/ ACTUAL CEIL

4. ALL BRANCH CIRCUITS W/O CONDUCTOR & CONDUIT INDICATIONS SH 5. INDIVIDUAL COMPONENTS OF THIS LIGHT FIXTURE SCHEDULE SHALL LIGHT FIXTURE SCHEDULE AND ALL SUPPORTING INFORMATION IN TI

ARCHITECT. IN THE CASE OF A CONFLICT, CONTRACTOR SHALL BASE . ALL CIRCUITS (LIGHTING AND POWER) SHALL BE PROVIDED WITH DEI

PROVIDED WITH 2P OR 3P BREAKERS AS REQUIRED PER NEC210.4. . ELECTRICAL EQUIPMENT (PANELBOARDS, TRANSFORMERS, DISTRIBU

SWITCHBOARDS SHOWN ON PLANS WITH BACKS AGAINST A WALL SH 9. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR 10. IF THE ELECTRICAL CONTRACTOR PROVIDES EQUIPMENT THAT DOES

DESIGN INDICATED ON THESE DRAWINGS, HE SHALL PAY ALL COSTS INVOLVED TO CORRECT THE INSTALLATION.

11. ELECTRICAL CONTRACTOR TO LABEL ALL DEVICES (RECEPTACLES, SWITCHES, AND SIMILAR DEVICES TO HAVE PRE-PRINTED, SELF ADHESIVE LABEL. 12. PANELBOARDS, DISCONNECT SWITCHES, AND SIMILAR DEVICES TO HAVE ENGRAVED, SELF-ADHESIVE, LAMINATED ACRYLIC LABEL (BLACK W/ WHITE LETTERING).

NERAL ELECTRICAL NOTES
PLANS FOR EXACT LOCATIONS OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES.
CEILING TO BE FURNISHED.
S SHALL BE ROUTED TO 20A-1P BREAKER W/ 2#12,1#12EG,3/4"C.
ALL NOT BE INTERPRETED SEPARATELY FROM THE ENTIRE SCHEDULE. THAT IS, THE ENTIRE FIXTURE SPECIFICATION INCLUDING ALL COLUMNS IN THE
N THESE DOCUMENTS. ANY CONFLICT BETWEEN MODEL NUMBERS AND OTHER COLUMNS OF THE SCHEDULE SHALL BE IDENTIFIED IN WRITING TO THE
ASE BID ON THE MORE EXPENSIVE INTERPRETATION.
DEDICATED NEUTRALS UNLESS NOTED OTHERWISE. WHERE NEUTRALS ARE INDICATED TO BE SHARED, MULTIWIRE BRANCH CIRCUITS SHALL BE
k.
RIBUTION EQUIPMENT, ETC.) IS SHOWN TO SCALE ON THE FLOOR PLANS.
SHALL BE FRONT ACCESSIBLE ONLY. EQUIPMENT REQUIRING REAR ACCESS WILL NOT BE ACCEPTABLE.
OR TO PROVIDE EQUIPMENT THAT WILL FIT IN THE SPACES ALLOWED FOR ON THE PLANS AND COMPLY WITH ALL THE CODE REQUIRED CLEARANCES.
DES NOT FIT IN THE SPACES INDICATED, OR THAT WILL NOT LEAVE THE REQUIRED CODE CLEARANCES, OR EQUIPMENT REQUIRING CHANGES IN THE
TS INVOLVED TO CORRECT THE INSTALLATION

1				E	LECTRICAL SYMBO	DLS				
SYN	MBOL	DESCRIPTION	MOUNTING		DESCRIPTION	MOUNTING	SYMBOL	DESCRIPTION	MOUNTING	
	O _A	LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING	Ю	20A - 125V/2P/3W GROUNDING SIMPLEX RECEPTACLE (NEMA 5-20R)	WALL - 15"AFF	'LA'	PANELBOARD 208Y/120V, 3Ø,4W (REFERENCE PANEL SCHEDULES)		I
1	ô _A	DIRECTIONAL/WALLWASHER LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING	₽	20A - 125V/2P/3W GROUNDING DUPLEX RECEPTACLE (NEMA 5-20R)	WALL - 15"AFF U.N.O.	'HA'	PANELBOARD 480Y/277V, 3∮,4W (REFERENCE PANEL SCHEDULES)		
К	O _A	LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	WALL	₽	20A - 125V/2P/3W GROUNDING DUPLEX RECEPTACLE (NEMA 5-20R)	WALL - 6" ABOVE FINISHED COUNTER U.N.O.	'DPA'	DISTRIBUTION PANEL (REFERENCE PANEL SCHEDULES)		
ØA	\ HØ 'A	LIGHT FIXTURE ON EMERGENCY (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING/WALL	₩	20A - 125V/2P/3W GROUNDING QUAD-PLEX RECEPT. (NEMA 5-20R)	WALL - 15"AFF	'TR-LA'	DRY TYPE TRANSFORMER		_
 	—	FLUORESCENT STRIP LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING/ SUSPENDED	₽	SPLIT RECEPTACLE. TOP OUTLET WIRED HOT. BOTTOM OUTLET SWITCHED. (NEMA 5-20R)	WALL - 15"AFF	 Ф О	JUNCTION BOX	WALL - AS NOTED CEILING	
	A A	FLUORESCENT LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING	₩ 😡	SPECIAL PURPOSE OUTLET (NEMA CONFIG. AS NOTED)	WALL - 15"AFF U.N.O./CEILING	60/40	NON-FUSED DISCONNECT SWITCH U.N.O. (E.G. 60/40 INDIC. 60A SWITCH/40A FUSES)		
	A A	FLUORESCENT LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	WALL	•	20A - 125V/2P/3W GROUNDING SIMPLEX RECEPTACLE (NEMA 5-20R)	FLOOR - FLUSH		MOTOR STARTER		,
	//// A	FLUORESCENT LIGHT FIXTURE ON EMERGENCY (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING	•	20A - 125V/2P/3W GROUNDING DUPLEX RECEPTACLE (NEMA 5-20R)	FLOOR - FLUSH	⊠-	COMBINATION MOTOR STARTER/ DISCONNECT SWITCH		
	///// A	FLUORESCENT LIGHT FIXTURE ON EMERGENCY (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	WALL	*	20A - 125V/2P/3W GROUNDING QUADRAPLEX RECEPT. (NEMA 5-20R)	FLOOR - FLUSH	D'	ENCLOSED CIRCUIT BREAKER		
\ //// //	//////////////////////////////////////	FLUORESCENT STRIP LIGHT FIXTURE ON EMERGENCY (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING/ SUSPENDED	•	20A - 125V/2P/3W GROUNDING DUPLEX RECEPTACLE (NEMA 5-20R)	CEILING - FLUSH	Sp	MANUAL MOTOR SWITCH ("P" INDICATES PILOT LIGHT)		_
4	₽ _{XB}	BATTERY PACK EMERGENCY TWO HEAD LIGHT FIXTURE (LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	WALL - 9'-0"AFF	-	,		/2/	MOTOR (# INDICATES HORSEPOWER)		
▼ XA	γ 1€1	EXIT LIGHT (ARROW(S) AS INDICATED, SHADE INDICATES FACE, LETTER INDICATES FIXTURE TYPE - SEE SCHEDULE)	CEILING/WALL	PK1	POKE-THRU, 4" CORE. WIREMOLD RC4 SERIES W/ COM75 ADAPTER, OR EQUAL, W/ 2-DUPLEX RECEPTS & 4-RJ45	FLOOR - FLUSH		CONDUIT IN OR UNDER FLOOR/GRADE		
	S	SINGLE POLE SWITCH 20A (120/277V)	2 WALL - 48"AFF		DATA/COMM PORTS - COORD. W/ LV CONSULTANT.			CONDUIT EXPOSED]
	S_3	THREE WAY SWITCH 20A (120/277V)	2 WALL - 48"AFF	PK2	POKE-THRU, 4" CORE. WIREMOLD 4FF SERIES OR EQUAL, FOR POWER AND DATA FURNITURE FEED, DATA FEED TO ACCOMMODATE MINIMUM OF 10 CAT6 CABLES.	FLOOR - FLUSH		CONDUCTOR HOME RUN - () HOT, () NUETRAL, () EQUIPMENT GROUND, & () ISOLATED GROUND		
	S ₄	FOUR WAY SWITCH 20A (120/277V)	2 WALL - 48"AFF	РКЗ	POKE-THRU, 3" CORE. WIREMOLD RC7AFF SERIES W/ COM50 ADAPTOR OR EQUAL, FOR POWER AND DATA FURN.	FLOOR - FLUSH		EQUIPMENT CONNECTION		_
	S _K	KEY OPERATED SWITCH	2 WALL - 48"AFF		FEED (TYP. SINGLE SERVICE).	120017 120017		CONDUIT IN CEILING OR WALL		
	S _{DS}	DOOR SWITCH	WALL	PK4	POKE-THRU, 3" CORE. WIREMOLD RC9AM2 SERIES OR EQUAL, FOR LARGE CAPACITY DATA FURNITURE FEED, TO ACCOMMODATE MINIMUM OF 20 CAT6 CABLES.	FLOOR - FLUSH	<u></u>	SECURITY CAMERA OUTLET	CEILING/WALL	
	S _D	PILOT LIGHT SWITCH	2 WALL - 48"AFF		POKE-THRU, 6" CORE. WIREMOLD 6ATCFF SERIES OR EQUAL, FOR POWER AND DATA FURNITURE FEED, TO	FLOOR - FLUSH		(PAN/TILT/ZOOM) SECURITY CAMERA OUTLET	CEILING/WALL	{ ,
	S _{TS}	TIME SWITCH	WALL	PK5	ACCOMMODATE MINIMUM OF 20 CAT6 CABLES.	FLOOR - FLOSH		(FIXED) SECURITY DOOR STATUS CONTACTS		
	H A	DIMMER SWITCH (SIZE AS REQUIRED)	2 WALL - 48"AFF	PK6	POKE-THRU, 6" CORE. WIREMOLD 6ATCPAV SERIES OR EQUAL, A/V STYLE POKE-THRU. COORDINATE POKE-THRU REQUIREMENTS W/ LV CONSULTANT.	FLOOR - FLUSH	EL EL	ELECTRICAL LOCK		
\Rightarrow	₹	OCCUPANCY SENSOR/SENSOR EQUIPMENT (LETTER INDICATES SENSOR TYPE - SEE SCHEDULE)	2 CEILING/WALL		11110 (CEQUITEMENTO 11) EV 03/1032/71111		•	PUSH BUTTON		_
	VX H□	LOW-VOLTAGE CONTROL STATION	2 WALL - 48"AFF	+	WIREMOLD RFB4 SERIES FLOOR BOX, OR EQUAL, W/					
	PC	PHOTOELECTRIC CELL		FB1	2-DUPLEX RECEPTS, COORDINATE DATA/COMM REQUIREMENTS W/ LV CONSULTANT.	FLOOR - FLUSH				
	CR	CARD READER (VERIFY JUNCTION BOX REQUIREMENTS)		FB2	WIREMOLD 880S SERIES FLOOR BOX, OR EQUAL, 2 OR 3 GANG BOXES AS REQUIRED. COORDINATE DATA/COMM REQUIREMENTS W/ LV CONSULTANT.	FLOOR - FLUSH				
	PP	POWER PACK	2 ACCESSIBLE	_	WIREMOLD 880S SERIES FLOOR BOX, OR EQUAL, FOR	<u> </u>				
	K	DATA, TELEPHONE, OR COMBO TELE/DATA OUTLET	CEILING WALL - 15"AFF	FB3	FURNITURE FEED. COORDINATE DATA/COMM REQUIREMENTS W/ LV CONSULTANT.	FLOOR - FLUSH				
		PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING DATA, TELEPHONE, OR COMBO TELE/DATA OUTLET	FLOOR	_						-
	TTB'	PROVIDE PULLSTRING IN CONDUIT TO ACCESSIBLE CEILING TELEPHONE TERMINAL BACKBOARD	WALL	-						
			WALL - AS NOTED	1						
	<u>©</u>	CLOCK OUTLET	OR REF. ARCH. DWGS. WALL							
		TELEVISION OUTLET	FLOOR							
	(TV)	TELEVISION OUTLET								
(⊕ #-#	SPEAKER OUTLET (#-#) INDICATES TYPE-ZONE	CEILING							_

1) ALL ELECTRICAL SYMBOLS NOT NECESSARILY USED.

(a,b,c,..) INDICATES SWITCHING SCHEME TO RELATED FIXTURES.

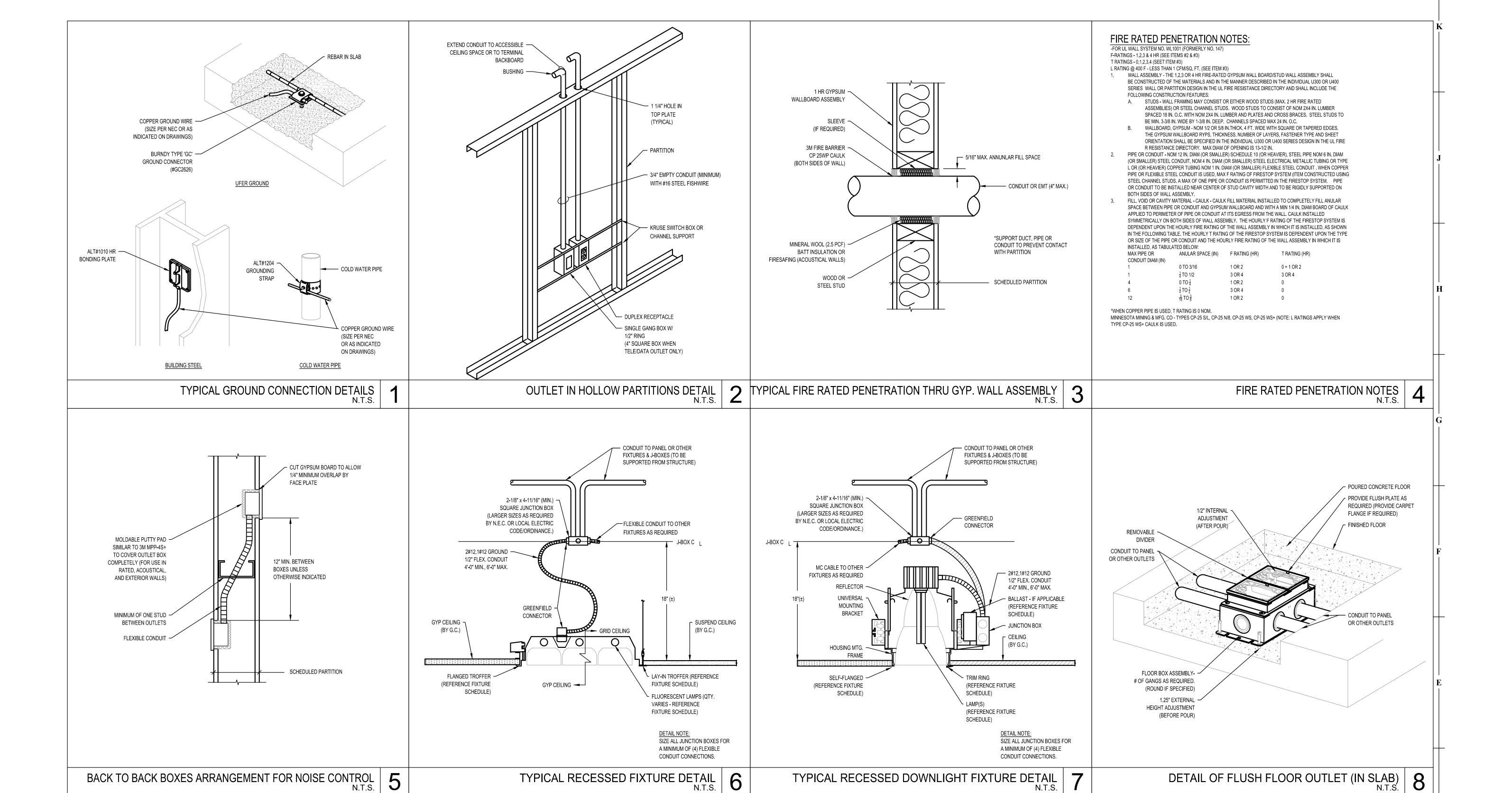
CONSTRUCTION
As Noted on Plans Review

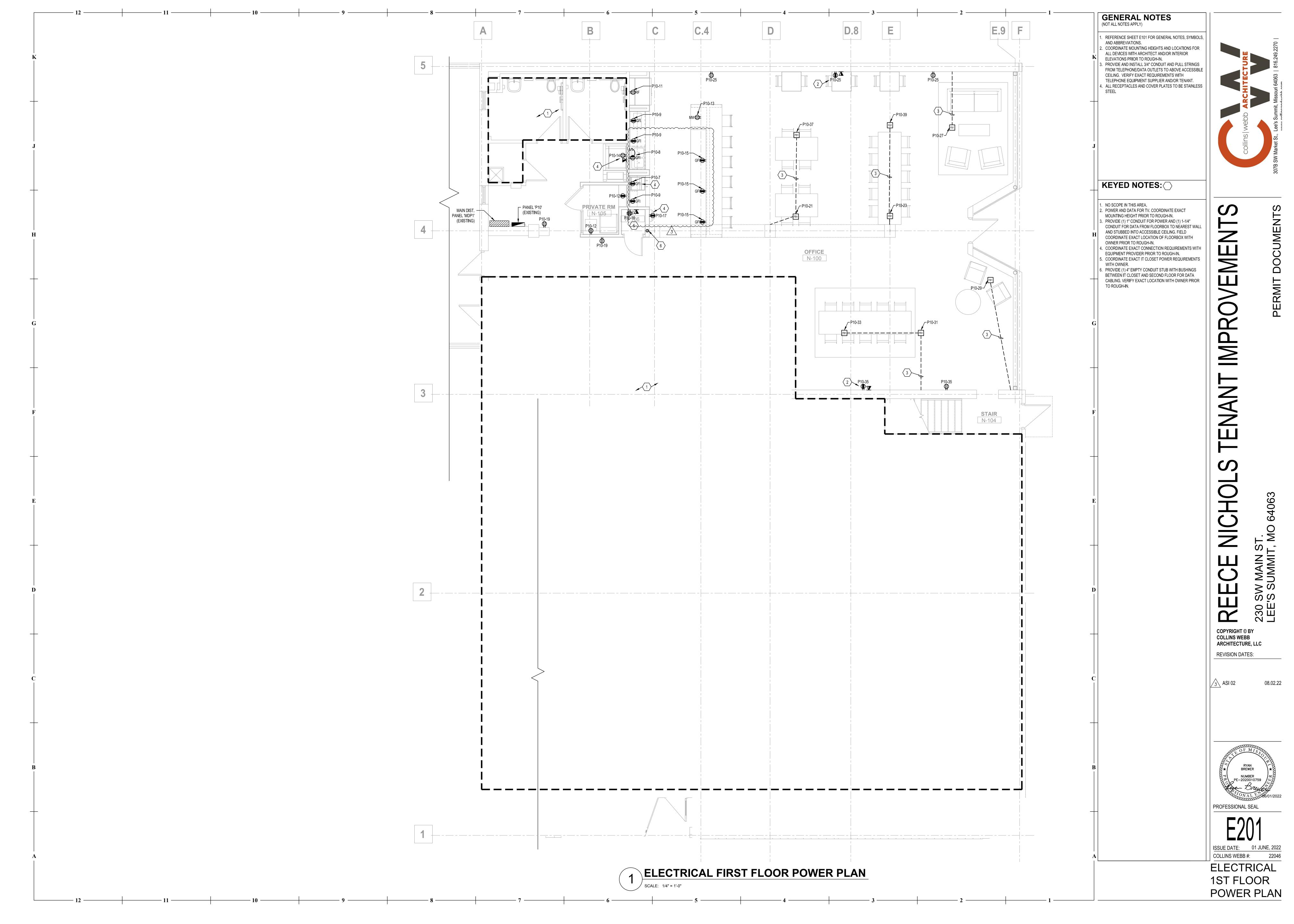
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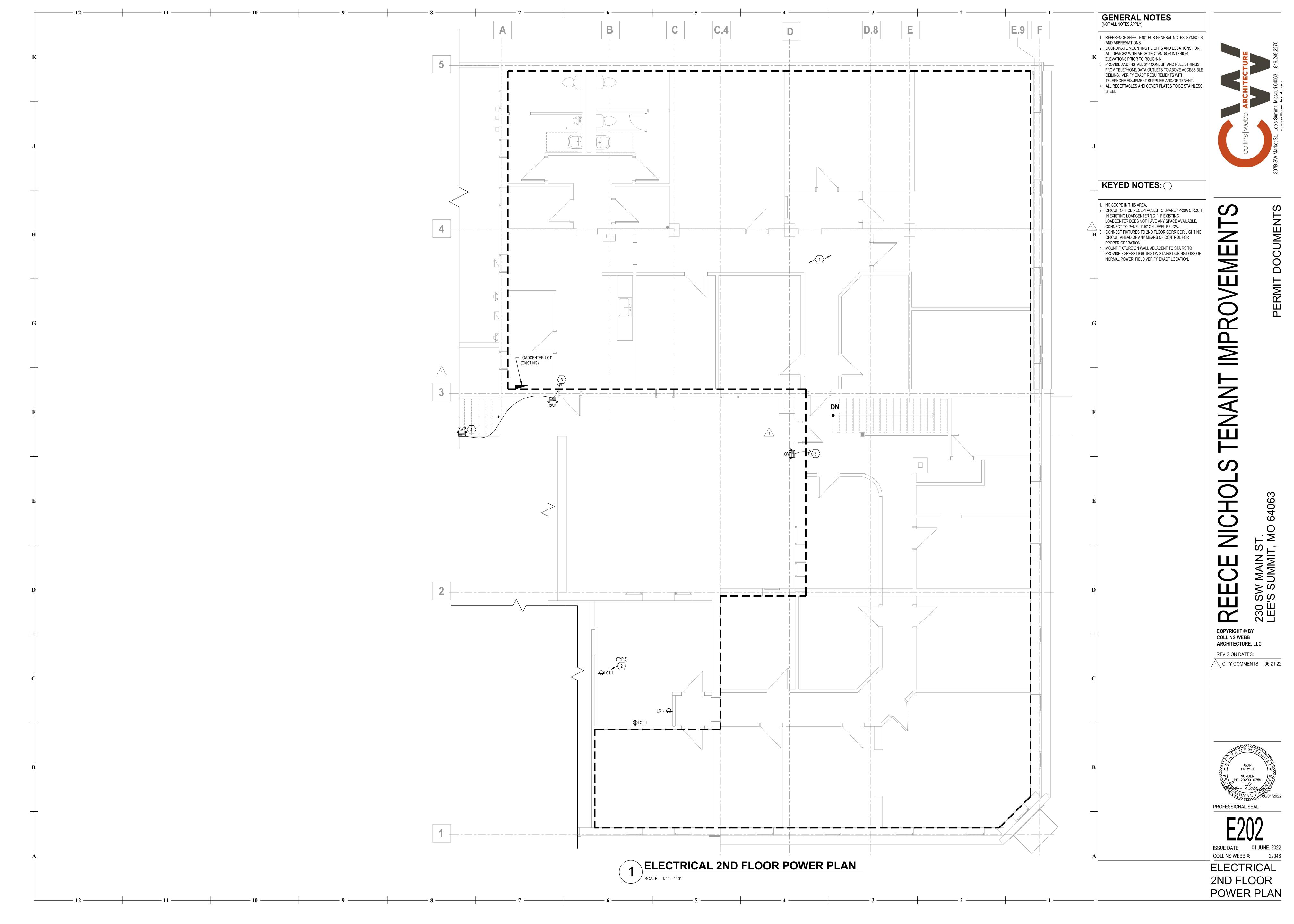
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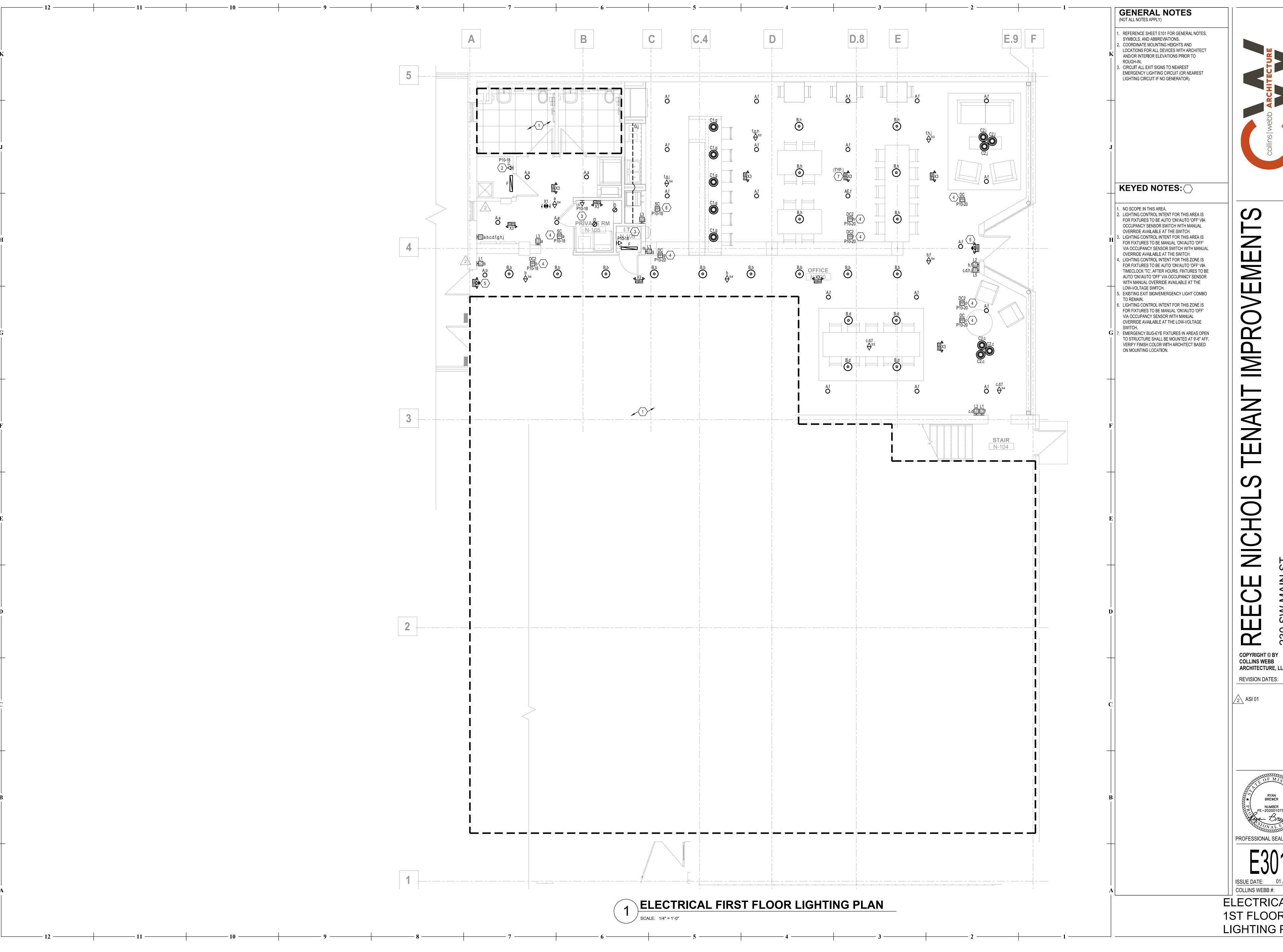
DETAILS

PROFESSIONAL SEAL





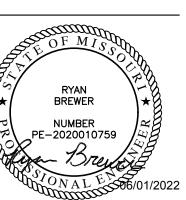






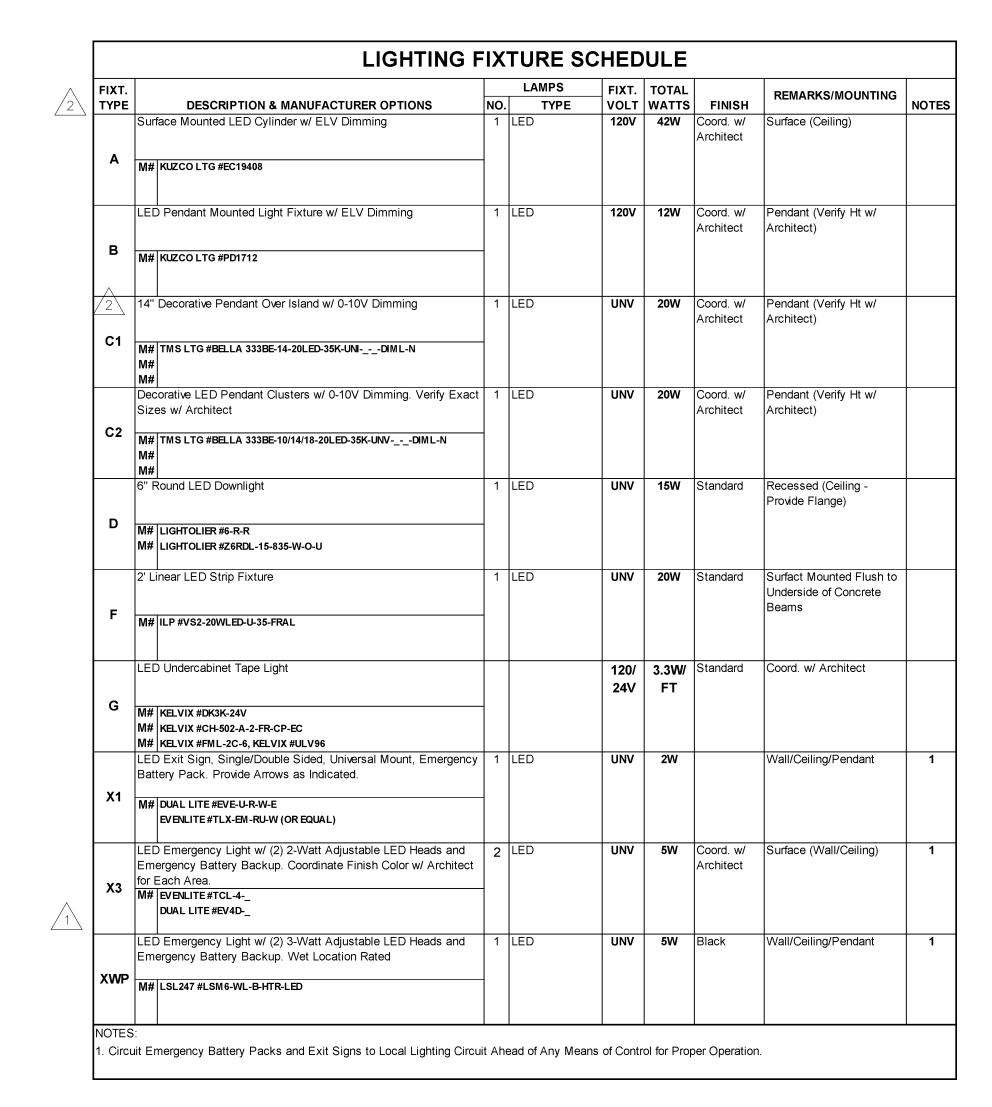
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REVISION DATES:



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ELECTRICAL 1ST FLOOR LIGHTING PLAN



		LIGHTIN	G CONTROLS	SCHEDULE	
IXTURE TAG	MANUFACTURER	MODEL #	SETTINGS	DESCRIPTION	NOTES
DC	ACUITY BRANDS: nLIGHT	nPP16-D SERIES	ON: MANUAL	ON/OFF ROOM 0-10V DIMMING CONTROLLER	1,2,4
			OFF: 20 MINUTE DELAY	LINE VOLTAGE - SINGLE RELAY	
DCA	ACUITY BRANDS: nLIGHT	nPP16-D SERIES	ON: AUTOMATIC	ON/OFF ROOM 0-10V DIMMING CONTROLLER	1,2,4
			OFF: 20 MINUTE DELAY	LINE VOLTAGE - SINGLE RELAY	
DC2	ACUITY BRANDS: nLIGHT	nSP5 PCD-(2W,3W,MLV,ELC 12	ON: MANUAL	MLV, ELV, 2-WIRE, 3-WIRE DIMMING POWER PACK	1,2,4
			OFF: 20 MINUTE DELAY		
DC2A	ACUITY BRANDS: nLIGHT	nSP5 PCD-(2W,3W,MLV,ELC 12	ON: AUTOMATIC	MLV, ELV, 2-WIRE, 3-WIRE DIMMING POWER PACK	1,2,4
			OFF: 20 MINUTE DELAY		
SCA	ACUITY BRANDS: nLIGHT	nPP16 SERIES	ON: AUTOMATIC	ON/OFF ROOM SWITCH CONTROLLER	1,2,4
			OFF: 20 MINUTE DELAY	LINE VOLTAGE - SINGLE RELAY	
L1	ACUITY BRANDS: nLIGHT	nPODM-DX	-	ON/OFF AND DIMMING LOW VOLTAGE SWITCH	1,6
				WITH 1-CHANNEL CONTROL	
L2	ACUITY BRANDS: nLIGHT	nPODM-2P-DX	-	ON/OFF AND DIMMING LOW VOLTAGE SWITCH	1,6
				WITH 2-CHANNEL CONTROL	
L3	ACUITY BRANDS: nLIGHT	nPODM	-	ON/OFF LOW VOLTAGE SWITCH	1,6
				WITH 1-CHANNEL CONTROL	
L5	ACUITY BRANDS: nLIGHT	nPODM-4P	-	ON/OFF AND DIMMING LOW VOLTAGE SWITCH	1,6
				WITH 4-CHANNEL CONTROL	
S1	SENSOR SWITCH	WSX SERIES	ON: AUTOMATIC	WALL MOUNT OCCUPANCY SENSOR	1
			OFF: 20 MINUTE DELAY	LINE VOLTAGE - SINGLE RELAY	
S3	ACUITY BRANDS: nLIGHT	nCM-9 SERIES	-	CEILING MOUNT OCCUPANCY SENSOR - SMALL MOTION	3
				LOW VOLTAGE	
S4	ACUITY BRANDS: nLIGHT	nCM-10 SERIES	-	CEILING MOUNT OCCUPANCY SENSOR - LARGE MOTION	3
				LOWVOLTAGE	
WIRE	-	-	-	CAT5, CAT5e, OR CAT 6. STANDARD OR SOLID.	
				TERMINATED AS RJ45 TIA/EIA-568B	
TC	ACUITY BRANDS: nLIGHT	nDTC-WH	-	nLIGHT LOW VOLTAGE DIGITAL TOUCHSCREEN W/ TIMECLOCK	8

- 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 MA 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.

VOLTAGE/PHASE: 208Y/120V, 3PH, 4W BUS AMPERAGE: 400A MAIN TYPE: 400A MCB							AFC VALUE: EXISTING AIC RATING: 22,000A MOUNTING: SURFACE (NEMA 1)								GROUNDS: EG (PER T250.66) ISOLATED GROUND BUS: NO SERVICE ENTRANCE RATED: YES										
												ALL LOADS IN V	/A												
LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	DESCRIPTION	AMP	P WIRE	CKT#	PHASE	CKT#	WIRE	Р	AMP	DESCRIPTION	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	I EL
				2786							1	Α	2									2018			
				2786				COND. UNIT 'CU-1'	40	3 EX	3	В	4	EX	3	30	COND. UNIT 'CU-5'					2018			
				2786				1			5	С	6	1								2018			\top
				2786							7	Α	8									2018			Т
				2786				COND. UNIT 'CU-2'	40	3 EX	9	В	10	EX	3	30	COND. UNIT 'CU-6'					2018			Т
				2786				1			11	С	12	1								2018			
											13	Α	14									3459			
								SPACEONLY		3	15	В	16	EX	3	50	COND. UNIT 'CU-7'					3459			Т
								1			17	С	18	1								3459			Т
											19	Α	20		1	20	SPARE								Т
								SPACEONLY		3	21	В	22		1	20	SPARE								Т
											23	С	24		1	20	SPARE								Т
											25	Α	26		1	20	SPARE								Т
								SPACEONLY		3	27	В	28		1	20	SPARE								Т
											29	С	30		1	20	SPARE								Т
								SPARE	20	1	31	Α	32		1	20	SPARE								Т
								SPARE	20	1	33	В	34		1	20	SPARE								T
								SPARE		1	35	С	36		1	20	SPARE								
								SPARE		1	37	Α	38		1	20	SPARE								
								SPARE		1	39	В	40	Ex.	2	200	LOAD CENTER 'LC1'						10000		
								SPARE	20	1	41	С	42		_								10000		
										.	43	Α	44		١. ا			1178	1620	2040	0	0	4500	0	
								SUB-FEED BREAKER		3	45	В	46	EX	3	200	PANELBOARD 'P10'	0	2880	1290	0	0	0	0	
											47	С	48					388	1800	0	0	0	1760	0	+
0	0	0	0	16716	0	0	0	TOTALS									TOTALS	1566	6300	3330	0	22485	26260	0	┸
				NEC	CODER	EFERENCE	s											PHA	SELOAD	SUMMAR	Y				_
	OF 1ST 10 H															DTAL	PHASE	LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	1 E
	OF LARGES					OTORS										2405	A	1178	1620	2040	0	13067	4500	0	Т
ELEV.	ATOR DEW	ND FACTO	DR BASED	ON NEC TO	20.14.											7237	В	0	2880	1290	0	13067	10000	0	
															2	7015	С	388	1800	0	0	13067	11760	0	
				PAI		EVIATION												PAI	NEL LOAD	SUMMAR	Υ				
	DUND FAUL		₹					GENCY LOCKING TAB								6657	CONNECTED VA	1566	6300	3330	0	39201	26260	0	
	INT TRIP BR							ROVIDE RED LOCKING TAB							1	-	DEMAND FACTORS	1.25	•	**	1.00	1.00	1.00	1.00	
	FAULT BR							LOCKABLE BREAKER							7	7048	DEMAND VA	1957	6300	3330	0	39201	26260	0	
	COMBO A R							LINE DIA GRAM FOR WIRE ST	ZE							0	SHOW WINDOW DEMAND								
- EXIS	STING CIRCL	JIT AND WI	RING TO R	EMA IN			UIT CONTR	ROLLED VIA RELAY PANEL								0	TRACK LTG DEMAND								
					PANEL N	NOTES										0%	SPA RE								
																7048	DEMAND VA + SPARE								
															1 2	213.9	TOTAL DESIGN AMPS								

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		E/PHASE: PERAGE: NN TYPE:	225A	OV, 3PH, 4	ıw						A	AFC VALUE: NC RATING: MOUNTING:		EMA 1)					SE		GF ED GROU NTRANCE	ND BUS:		T250.12	!)
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LTG	RCPT	MOTOR	HEAT	COOL	MISC	KITCHEN	ELEV	DESCRIPTION	AMP	Р	WIRE	CKT#	PHASE	CKT#	WIRE	Р	AMP	DESCRIPTION	LTG	RCPT	MOTOR	HEAT	COOL	MISC	КПС
								LIGHTING	20	1	EX	1	Α	2	EX	1	20	FURNACE 'F-1'			1176				
		114						EXHAUST FANS	20	1	EX	3	В	4	EX	1	20	FURNACE 'F-2'			1176				
	360							ROOF RCPT	20	1	EX	5	С	6	EX	1	20	WATER HEATER WH-1'						500	
					1800			COFFE MACHINE	20	1	12	7	Α /	\sim	~~~	₩	-30	PHSPOSAL V	$\overline{}$	$\overline{}$	-364~	~~	~~	\sim	$\overline{}$
	540							COUNTER ROPTS	20	1	12	9	в (10		1	20	SPARE							
					1000			REFRIGERATOR	20	1	12	11	c		<u> </u>	怀	<u> </u>	PRINATERM 195 RSP19-	$\overline{}$	₩	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$	$\overline{}$
					1200			MICROWAVE	20	1	12	13	Α	14	12	1	20	COPY MACHINE						1500	
	540							ISLAND COUNTER ROPTS	20	1	12	15	В	16	12	1	20	IT CLOSET QUAD ROPT		360					
					260			BOTTLE FILLER	20	1	12	17	С	18	12	1	20	BOH HALL/IT/JAN LTG	388						
	360							HALL RCPTS	20	1	12	19	Α	20	12	1	20	OFFICE AREA LTG	1178						
	360							SML TABLE FLRBOXES	20	1	12	21	В	22		1	20	SPARE							
	360							LG TABLE FLRBOXES	20	1	12	23	С	24		1	20	SPARE							
	540							OPEN AREA WALL ROPTS	20	1	12	25	Α	26		1	20	SPARE							
	360							SITTING AREA FLRBOX	20	1	12	27	В	28		1	20	SPARE							
	360							ENTRY AREA FLRBOX	20	1	12	29	С	30		1	20	SPARE							
	360							FLRBOX NEAR STAIRS	20	1	12	31	Α	32		1	20	SPARE							
	360							FLRBOX NEAR STAIRS	20	1	12	33	В	34		1	20	SPARE							
	360							STAIR WALL ROPTS	20	1	12	35	С	36		1	20	SPARE							
	360							SML TABLE FLRBOX	20	1	12	37	Α	38		1	20	SPARE							
	360							LG TABLE FLRBOX	20	1	12	39	В	40		1	20	SPARE							
								SPARE	20	1		41	С	42		1	20	SPARE							
0	5580	114	0	0	4260	0	0	TOTALS										TOTALS	1566	720	3216	0	0	2000	С
				NE	C CODE RI	FERENCES	3			1									PHA	ASELOAD	SUMMAR	Y			
* 100% C	OF 1ST 10 H	CVA, 50%	OF REMAIN	NING						1						T	OTAL	PHASE	LTG	RCPT	MOTOR	HEAT	COOL	MISC	КПС
** 125% C	DF LARGES	T MOTOR	+ 100% SU	JM OF REM	MAINING MO	TORS											9338	A	1178	1620	2040	0	0	4500	С
*** ELEVA	TOR DEMA	ND FACTO	OR BASED	ON NEC TO	620.14.												4170	В	0	2880	1290	0	0	0	С
																	3948	С	388	1800	0	0	0	1760	C
				PA	NEL ABBR	EVIATIONS	3			1								•	PAI	NEL LOAD	SUMMAR	Y			
GF - GRO	UND FAUL	T BREAKE	₹			EM - PROV	IDE EMER	GENCY LOCKING TAB		1						<u> </u>	7456	CONNECTED VA	1566	6300	3330	0	0	6260	0
	NT TRIP BR					FA - FIRE	ALARM, F	ROVIDE RED LOCKING TAB										DEMAND FACTORS	1.25		**	1.00	1.00	1.00	1.0
	FAULT BR					LCK - PRO	VIDE PA D	LOCKABLE BREAKER								<u> </u>	7847	DBMAND VA	1957	6300	3330	0	0	6260	0
GF/AF - C	OMBO A R	C/GROUNE	FAULT BE	REAKER		OL - REFE	R TO ONE	-LINE DIA GRAM FOR WIRE SIZ	E								0	SHOW WINDOW DEMAND							
SP - REFE	R TO SITE	PLAN				RP - CIRCU	JIT CONTE	OLLED VIA RELAY PANEL									0	TRACK LTG DEMAND	1						
					PANEL I					1							0%	SPA RE	1						
										1						Η.	7847	DEMAND VA + SPARE							
										1							49.5	TOTAL DESIGN AMPS	i						

BRANCH CIRCUIT VOLTAGE DROP WIRING SCHEDULE FOR SINGLE PHASE CIRCUITS

BRANCH CKT	WIRE SIZE		MAXIMUM E	BRANCH CIRCUIT LE	NGTHS (FT)	
RATING (A)	(AWG)	120V	208V	240V	277V	480V
	12	50	100	110	150	250
20A	10	100	175	200	250	425
ZUA	8	150	275	325	375	675
	6	250	450	550	625	1000
	10	50	100	125	150	275
30A	8	100	175	200	250	400
JUA	6	150	300	350	400	700
	4	275	500	575	650	1000

- 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%. CONDUCTOR SIZES ARE BASED ON MAXIMUM OF 7 CURRENT CARRYING COPPER CONDUCTORS IN A SINGLE STEEL CONDUIT.
- LIMITS FOR CONDUCTOR LENGTH SHOWN ARE BASED ON A MAXIMUM OF 3 PERCENT VOLTAGE DROP TO COMPLY WITH THE NEC FOR CIRCUITS LOADED GREATER THAN 64% OF BRANCH BREAKER RATING. THE CONTRACTOR SHALL PROVIDE CONDUCTORS APPROPRIATELY SIZED TO LIMIT VOLTAGE DROP TO 3%.

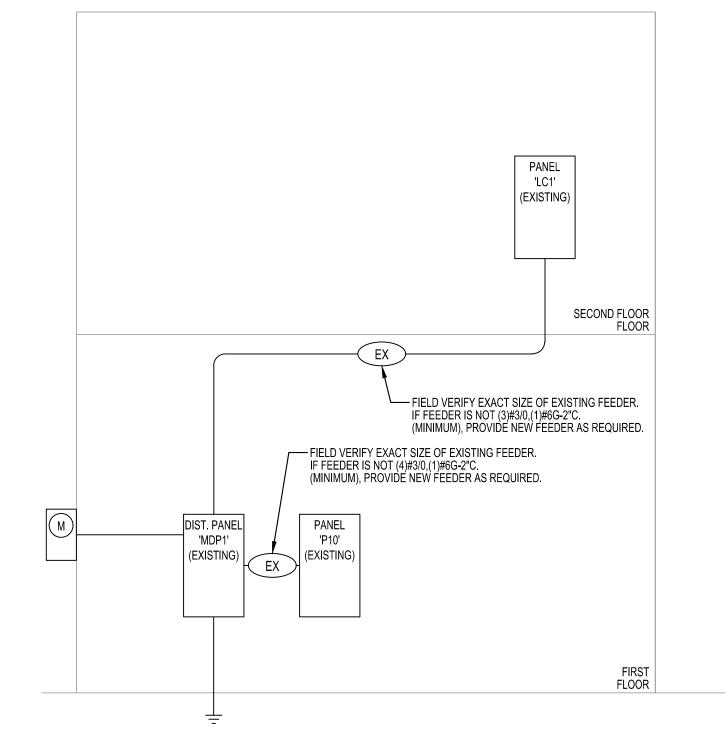
WIRE SIZES CALLED OUT IN PANEL SCHEDULES DO NOT ACCOUNT

FOR VOLTAGE DROP. CONTRACTOR TO INCREASE WIRE SIZES AS

REQUIRED UTILIZING VOLTAGE DROP TABLE PROVIDED.

GENERAL NOTES

1. THIS ONE-LINE DIAGRAM REPRESENTS (AS ACCURATELY AS POSSIBLE) THE ELECTRICAL DISTRIBUTION SYSTEM. FIELD VERIFY ALL SIZES OF EQUIPMENT, CONDUCTORS, FUSES, ETC. ALL EQUIPMENT AND CONDUCTORS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.





SCALE: NO SCALE



KEYED NOTES:

GENERAL NOTES

SYMBOLS, AND ABBREVIATIONS.

ELEVATIONS PRIOR TO ROUGH-IN.

REFERENCE SHEET E101 FOR GENERAL NOTES,

ALL DEVICES WITH ARCHITECT AND/OR INTERIOR

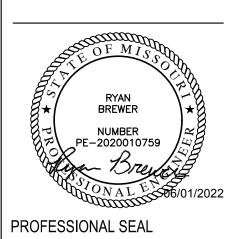
CEILING. VERIFY EXACT REQUIREMENTS WITH

TELEPHONE EQUIPMENT SUPPLIER AND/OR TENANT.

(NOT ALL NOTES APPLY)

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REVISION DATES:



COLLINS WEBB #: 22046

ELECTRICAL RISER DIAGRAM & SCHEDULES

COLLINS WEBB #:

ELECTRICAL SPECIFICATIONS

16000 - ELECTRICAL

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

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 TO THE OWNER) ASSOCIATED WITH LIGHTING AND LIGHTING CONTROLS COMMISSIONING. ALL COMMISSIONING DOCUMENTATION SHALL BE CERTIFIED AND GIVEN TO OWNER AND DESIGN PROFESSIONAL.

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.

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

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

MANUFACTURER'S NAME AND MODEL OR CATALOG NUMBERS. USE OF NAMES TRAY PENETRAIONS THROUGH FIRE-RATED WALLS AND FLOORS. SEALANTS AND PROPER TYPE, SIZE AND NUMBER AS REQUIRED TO ACCOMPLISH SPECIFIED AND CATALOG NUMBERS DOES NOT INDICATE THAT THE EQUIPMENT SPECIFIED IN ACCESSORIES SHALL HAVE FIRE-RESISTANCE RATINGS INDICATED, AS 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.

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

DAMAGED OR DEFECTIVE EQUIPMENT: INSPECT ALL ELECTRICAL EQUIPMENT AND REQUIREMENTS. 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.

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

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 QUIPMENT 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.

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

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 REVIEWS. PROVIDE FOR AND PAY ALL EXPENSES (WITHOUT ADDITIONAL EXPENSE 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.

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 CONDUCTOR FOR NO. 10 AWG AND SMALLER; CONCENTRIC, COMPRESSED 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 ALL BRANCH CIRCUITS SHALL BE ANNEALED (SOFT) COPPER COMPLYING WITH AND PATCHING NECESSARY FOR THE INSTALLATION OF THIS WORK. NO CUTTING ICEA S-95-658/NEMA WC70; SOLID CONDUCTOR FOR NO. 10AWG AND SMALLER; IN CONSTRUCTIVE PARTS OF THE BUILDING LIKELY TO IMPAIR ITS STRENGTH SHALL BE DONE WITHOUT THE ARCHITECT-ENGINEER'S WRITTEN APPROVAL.

EXCAVATION AND BACKFIL

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.

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 IN SOME INSTANCES, SPECIFIC REFERENCES HAVE BEEN MADE TO ONE OR MORE THROUGH-PENETRAION FIRE-STOPPING AROUND CABLES, RACEWAYS, AND CABLE CONTROL WIRING; STRANDED COPPER CONDUCTORS, 600V INSULATION, OF THE ESTABLISHED BY TESTING IDENTICAL ASSEMBLIES IN ACCORDANCE WITH ASTM E 814, BY UNDERWRITER'S LABORATORIES, INC., OR OTHER NRTL ACCEPTABLE TO

> ACCEPTABLE MANUFACTURERS - HILTI, INC., 3M CORP, RECTORSEAL, SPECIFY TECHNOLOGY INC., UNITED STATES GYPSUM COMPANY.

SERVICE SHALL BE AS SHOWN ON DRAWINGS.

PRODUCT OF THE SAME MANUFACTURER.

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 SHOULD ANY APPARATUS BE SUBJECTED TO POSSIBLE INJURY DUE TO WATER, IT 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

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

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

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.

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,

ELECTRIC METALLIC TUBING: GALVANIZED OR SHERADIZED AND MANUFACTURED 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.

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

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 UNATTENDED USE AS APPLICABLE. 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 SHALL BE FURNISHED COMPLETE WITH PROPER FUSES.

AS RECOMMENDED BY THE SYSTEM EQUIPMENT MANUFACTURER.

FUNCTION. MINIMUM SIZE; NO. 14 AWG UNLESS NOTED OTHERWISE.

MC TYPE CABLE CAN BE USED IF ACCEPTED BY LOCAL AUTHORITY AND 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 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.

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, 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.

WITCHES: 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).

IN ACCORDANCE WITH ANSI STANDARD C80.3. FITTINGS 1/2 INCH THROUGH 2 INCH STRAP AND EQUIPPED WITH SCREW TERMINAL. HUBBELL #IG-5362* OR EQUAL. RECEPTACLES, SPECIAL PURPOSE: SPECIAL PURPOSE OUTLETS SHALL BE AS

ISOLATED GROUND, DUPLEX OR SIMPLEX THREE WIRE GROUNDING TYPE

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

ACCEPTABLE MANUFACTURERS: HUBBELL, PASS & SEYMOUR, LEVITON AND

SCHEDULED ON DRAWINGS.

FURNISH AND INSTALL FLUSH CABINETS AND ENCLOSURES AS SHOWN ON THE PLANS AND AS HEREIN SPECIFIED. UNIT SHALL BE PROVIDED WITH DEAD FRONT OUTLET COVER PLATES: TELEPHONE OUTLET COVER PLATES SHALL MATCH SUB PANEL, RECESSED AS REQUIRED, TO HOUSE CONTROLS. DOOR SHALL BE THOSE SPECIFIED FOR ADJACENT WIRING DEVICES, INCLUDING THOSE WITH 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 RACEWAYS: MATERIALS FOR TELEPHONE RACEWAY SYSTEM WORK SHALL BE IN REQUIRED TO MEET FIELD CONDITIONS. EXACT BACKBOX SIZE TO BE COORDINATED WITH EQUIPMENT SUPPLIER.

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 TELEPHONE SERVICE CONDUIT LAYOUT SHALL HAVE THE JOB SITE APPROVAL OF SHALL BE HEAVY DUTY, QUICK-MAKE, QUICK-BREAK FUSED OR UNFUSED SWITCH AN AUTHORIZED REPRESENTATIVE OF THE TELEPHONE CO. COORDINATE WORK 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 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. TELEPHONE CO. THE TELEPHONE TERMINAL BOARD SHALL BE PROVIDED WITH A GOVERNING CODES FOR WHIPS FROM JUNCTION BOX TO LIGHT FIXTURES ONLY. PROVIDE STANDARD KNOCKOUTS ON REMOVABLE BOX ENDS. FABRICATE FROM DOUBLE DUPLEX RECEPTACLE LOCATED WHERE INDICATED ON THE DRAWINGS. SHEET STEEL AND FINISH WITH BAKED ON GRAY ENAMEL OVER RUST INHIBITOR. THE TERMINAL BOARD SHALL BE CONSTRUCTED OF 4' X 8' X 3/4" PLYWOOD WITH EACH FRONT SHALL HAVE A DOOR MOUNTED ON SEMI-CONCEALED HINGES WITH TWO (2) COATS OF FLAME RETARDANT PAINT UNLESS NOTED OTHERWISE ON STEEL INTERLOCKED ARMOR; THHN- OR XHHW-INSULATED CONDUCTORS; COLOR 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

> 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 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.

DIRECTORIES SHALL BE TYPEWRITTEN.

BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, BOLT-ON THERMAL-MAGNETIC SYLVANIA, OR OSRAM. MOLDED CASE CIRCUIT BREAKERS ONE, TWO OR THREE POLE WITH INTEGRAL CROSSBAR FOR MULTI-POLE UNITS, EQUIPPED WITH AN OVERCENTER, TRIP-FREE, LED LIGHT FIXTURES ARE TO BE PROVIDED WITH COMPATIBLE DRIVER AND MUST TOGGLE-TYPE OPERATING ACTION AND POSITIVE HANDLE INDICATION OF AND FABRICATION METHODS. BOXES SHALL BEAR THE UL LABEL. WHERE BOXES 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

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

SPECIFICATION GRADE, ORANGE FACE, GROUND CONTACT FULLY ISOLATED FROM 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.

> 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.

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.

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.

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

ACCORDANCE WITH CORRESPONDING RACEWAYS SPECIFIED HEREIN AND IN

RELOCATED WITHIN ROOMS BEFORE ROUGH-IN WHERE DIRECTED BY

ARCHITECT-ENGINEER WITHOUT ADDITIONAL COST TO OWNER.

REQUIRED CORRECTIONS BEFORE COMPLETION OF PROJECT.

SO THAT BOTH TELEPHONE CO. AND OWNER'S REPRESENTATIVES ARE PRESENT AT THE SAME TIME FOR APPROVAL OR CHANGES IN AMPLE TIME FOR ANY

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 DRAWINGS.

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

BRANCH CIRCUIT BREAKERS SHALL BE THE PHASE SEQUENCE TYPE AND ACCEPT 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

IN THE ORIGINAL PACKING CASES AND SLEEVES AND SHALL BE OF THE SAME

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

OR OSRAM.

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

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.

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

TO REMOVE ALL "BURRS" AND ALL FIELD CUT THREADS SHALL BE PAINTED WITH WHITE LEAD BEFORE COUPLINGS ARE APPLIED.

WATER HEATERS, AND HVAC EQUIPMENT, AND ALL LINE-VOLTAGE CONTROL AND EMPTY CONDUIT SYSTEMS INSTALLED FOR COMMUNICATION SYSTEMS, PUBLIC TELEPHONES, OWNER ITEMS AND OTHER SYSTEMS AS INDICATED ON DRAWINGS GROUND RECEPTACLES AND POWER OUTLETS TO THE CONDUIT SYSTEM WITH A SHALL BE INSTALLED COMPLETE WITH NYLON PULL WIRES PROPERLY TAGGED AT GREEN GROUNDING CONDUCTOR SIZE IN ACCORDANCE WITH N.E.C. AND BOTH ENDS FOR IDENTIFICATION.

> WHERE BUILDING VENTILATION CONDITIONS ARE SUCH THAT AIR MAY FLOW MOISTURE, THE CONDUITS SHALL BE SEALED AT EACH END WITH A PLIABLE X 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

EQUIPMENT LEVELING, HANGERS AND SUPPORTS

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

1/2 AND 3/4 IN. SIZE; 5'-0" ON CENTERS; 1 AND 1-1/4 IN SIZE; 6'-0" ON CENTERS

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 CONDUCTORS WITH ADHESIVE WRAP LABELS WITHIN 2 IN. OF THE CONDUCTOR 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 WITH THE PROPER TRIM, FRAMES, SUPPORTS, AND HANGER AND OTHER

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.

AND EQUIPMENT PROVIDED OR CONNECTED IN THIS CONTRACT. ALL SURFACES WHERE MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE ENCLOSED IN SHALL BE PROPERLY POLISHED AND SHALL BE FREE OF PAINT AND ALL OTHER THE SAME RACEWAY, CONDUCTORS ARE TO BE DERATED PER N.E.C. AND WIRE DIRT OR DEBRIS. TOUCHUP OR COMPLETELY REFINISH ALL EQUIPMENT PARTITIONS, ROOFS, AND FLOORS. SLEEVES SHALL EXTEND THROUGH FLOORS, SIZE INCREASED AS REQUIRED. WHERE THE INCREASED CONDUCTOR SIZE FURNISHED WITH FACTORY FINISHES THAT IS DAMAGED DURING DELIVERY OR WALLS AND PARTITIONS AND SHALL BE CUT FLUSH WITH EACH SURFACE UNLESS REQUIRES, INCREASE THE RACEWAY SIZE AS WELL. FOR CONTROL WIRING, USE CONSTRUCTION. PROPERLY PROTECT THE FRONTS OF ALL PANELBOARDS, OTHERWISE SPECIFIED. FIRE WALL AND/OR FLOOR INTEGRITY SHALL BE #14 AWG MINIMUM. FOR FIXTURE WIRING, AS PERMITTED BY N.E.C., USE #18 AWG SWITCHBOARDS AND SIMILAR EQUIPMENT TO PREVENT MARRING AND OTHER RESTORED AFTER PENETRATION. SLEEVES IN CONCRETE AND MASONRY WALLS, MINIMUM. FOR SIGNAL AND COMMUNICATIONS SYSTEMS USE WIRE SIZE AS DEFACING. SPECIFICALLY REQUIRED BY THE SYSTEM SUPPLIER.

CONSTRUCTION AND THROUGH SUSPENDED CEILINGS SHALL BE FABRICATED SOLDERED JOINTS ARE PROHIBITED. ALL JOINTS IN CONDUCTORS SHALL BE FROM 22 U.S. GAUGE GALVANIZED STEEL. FLOOR SLEEVES SHALL EXTEND THREE MADE AT AN ACCESSIBLE LOCATION WITHIN A BOX BY TWISTING THE BARE INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. SPACE BETWEEN CONDUCTOR ENDS TOGETHER AND APPLYING A WIRE CONNECTOR IN ALL SIZES SPACES PRIOR TO LEAVING THE PREMISES. FLOOR SLEEVES AND PASSING CONDUIT SHALL BE FILLED WITH DUCT SEAL UP TO THE MAXIMUM CAPACITY OF THE CONNECTOR. JOINTS SHALL BE TAPED PACKING AND CAULKED WITH WATERPROOF COMPOUND AS APPROVED. WHERE WITH AN APPROVED ELECTRICAL TAPE. SPLICES FOR CONDUCTORS LARGER CONDUITS PASS THROUGH WATERPROOFED FLOORS OR WALLS, SLEEVES SHALL THAN #10 AWG SHALL BE MADE WITH AN APPROVED COMPRESSION (SQUEEZE) CONNECTOR INSULATED WITH NOT LESS THAN TWO LAYERS OF ELECTRICAL FILL TEST ALL CIRCUITS TO ASSURE THEM TO BE FREE OF GROUNDS AND SHORTS. 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 DISCONNECT. VERIFY THE PHASE SEQUENCE, VOLTAGE, AND ROTATION AT EACH

FUNCTION FOR WHICH IT IS SHOWN. BOXES FOR WALL DEVICES SHALL BE WITH PROPER COVER AND/OR DEVICE PLATE AND DEVICE. UNLESS OTHERWISE FURNISH AT THE COMPLETION OF THE PROJECT A FINAL INSPECTION 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.

OTHERWISE SPECIFIED OR INDICATED ON DRAWINGS, WHERE TWO OR MORE CONDUITS ENTER, BOX SHALL BE 4-11/16 IN. SQUARE MINIMUM WITH SUITABLE

STRIKE SIDE OF THE DOOR.

WIRING OF MECHANICAL EQUIPMENT PROVIDE ALL RACEWAYS AND POWER WIRING FOR ALL DIVISION 15 EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS, INCLUDING, BUT NOT LIMITED TO, PUMPS. 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 MOISTURE, USE LIQUIDTIGHT FLEXIBLE CONDUIT WITH WATERTIGHT FITTINGS. 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, PLUS THE WEIGHT OF A MAN. 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

METHOD OF PROCEDUR 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.

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. 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 BE FABRICATED SUCH THAT WATERPROOFING CAN BE FLASHED ONTO AND AROUND THE SLEEVE.

ALL POWER AND LIGHTING CIRCUITS SHALL BE RUN IN METALLIC RACEWAYS N.E.C. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE. THESE RACEWAYS SHALL BE RUN CONCEALED IN ALL FINISHED AREAS, AND WHERE RUN EXPOSED SHALL BE IDENTIFY ALL WIRES AND CABLES WITH BRADY ADHESIVE WIRE MARKERS AT SUFFICIENT LENGTH OVER TIME TO DEMONSTRATE CORRECT ALIGNMENT, WIRING SQUARE TO THE BUILDING AND HELD TIGHT TO THE BUILDING CONSTRUCTION. EACH BOX, PANEL, AND OUTLET. IDENTIFICATION SHALL, AS A MINIMUM, INDICATE CAPACITY, SPEED, AND OVERALL SATISFACTORY OPERATION. CHECK THAT THE LOW VOLTAGE, TELEPHONE, INTERCOM, MUSIC, ALARM AND SECURITY WIRING THE PANEL AND CIRCUIT SUPPLYING THE OUTLET. AT THE PANEL END, THE LOAD PROPER OVERLOAD HEATERS HAVE BEEN INSTALLED BY READING THE MOTOR RUN ABOVE ACCESSIBLE CEILINGS SHALL BE RUN USING INSULATED, PLENUM SERVED AND ITS LOCATION SHALL BE INDICATED. PROVIDE A MINIMUM OF 8 IN. NAMEPLATE. ADJUST THE SIZE OF THE OVERLOAD HEATER AS REQUIRED TO RATED CABLE. PROVIDE LOW VOLTAGE CABLE IN CONDUIT IF REQUIRED BY LOCAL SLACK WIRE AT EACH OUTLET FOR MAKING CONNECTION TO THE DEVICE OR TO MATCH THE MOTOR NAMEPLATE. OPERATE ALL MAIN AND FEEDER SWITCHES AND AHJ. VERIFY ALL REQUIREMENTS PRIOR TO INSTALLATION. METALLIC CONDUIT PROVIDE FOR A FUTURE DEVICE IN THE BOX. 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 EACH BOX SHALL BE OF PROPER SIZE TO ACCOMMODATE THE DEVICE AND ROUTING. HOWEVER, THE INSTALLER IS RESPONSIBLE FOR PROPER COORDINATION WITH BUILDING STRUCTURE AND THE WORK OF OTHER TRADES. FURNISHED COMPLETE WITH PLASTER RING OR TILE RING ACCORDING TO WALL 100% DEMAND, THE UNBALANCE SHALL NOT EXCEED 10%. DURING FINAL FURNISH ALL REQUIRED BENDS, ELBOWS, FITTINGS, JUNCTION AND PULL BOXES, CONSTRUCTION WHERE REQUIRED. BOXES FOR INSTALLATION IN MASONRY WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS, THAT MAY BE REQUIRED WALLS SHALL BE SPECIAL SQUARE CORNER MASONRY TYPE. BOXES FOR TO SATISFY CODES AND THE STANDARDS OF GOOD PRACTICE. WHERE CONDUITS MOUNTING OF LIGHTING FIXTURES SHALL BE FOUR INCH OCTAGON, EQUIPPED FOR BOTH BRANCH AND FEEDER CIRCUITS ARE RUN CONCEALED, THEY MAY BE WITH 3/8 IN. "NO-BOLT" FIXTURE STUD. BOXES FOR FLOOR OUTLETS SHALL BE EQUIPMENT TO MEET THE SPECIFICATIONS, SHALL BE BORNE BY THE RUN OUT OF SQUARE TO THE BUILDING PROVIDING THE SHORTEST POSSIBLE RUN CONCRETE PROOF STEEL BOXES WITH ADJUSTABLE TOPS AND DEVICES AS IS UTILIZED. RACEWAY SIZES ARE BASED ON THE USE OF COPPER CONDUCTORS HEREINAFTER NOTED OR SHOWN. ALL BOXES SHALL BE FURNISHED COMPLETE 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 TELEPHONE, ALARM, AND SIGNAL SYSTEM OUTLET BOXES SHALL BE STANDARD FOR PARKING AREA LIGHTING, SIGNS, ETC. ELBOWS SHALL BE GRS). EXPOSED ON OUTLET BOX TYPE WHERE ONLY ONE CONDUIT ENTERS SAME. UNLESS BUILDING EXTERIOR - GRS.

CONDUIT BENDS SHALL BE MADE TO THE LARGEST POSSIBLE RADIUS FOR EASE IN ADAPTER RING. 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 INSPECT ARCHITECTURAL DRAWINGS AND LOCATE LOCAL SWITCHES ON THE IN. - 24 IN. RADIUS; 3 IN. - 36 IN. RADIUS.

GRS CONDUIT SHALL BE CUT WITH POWER OR HACKSAW AND CLEANLY REAMED

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.

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.

WITHIN INSULATED GREEN GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH

CONTINUOUS BETWEEN A GROUNDING SCREW IN THE EQUIPMENT JUNCTION BOX

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

JOINTS AND CONNECTIONS - MOLDED FUSION WELDING PROCESS USING PROPER

MECHANICAL CONNECTOR DESIGNED FOR THE PIPE AND CABLE TO BE BONDED.

MOUNT PANELBOARDS WITH CENTERLINE AT 5 FT.-6IN. ABOVE FINISH FLOOR,

PANEL DIRECTORIES, AS A MINIMUM, SHALL BE TYPEWRITTEN AND INDICATE

A BLACK LAMINATED PHENOLIC LABEL, SCREW MOUNTED, WITH THE PANEL

IDENTIFICATION MATCHING PANEL IDENTIFICATION ON DRAWINGS. LABEL ALL

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

FINISHES. REINFORCE CEILING CONSTRUCTION AS REQUIRED TO PROPERLY

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

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FROM LOCAL

THOROUGHLY CLEAN ALL FIXTURES, SWITCHES, OTHER DEVICES, PANELBOARDS,

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

LIGHT AND TEST EACH LAMP. PROVE AND TEST THE AVAILABLE VOLTAGE ON THE LOAD SIDE OF EACH DISCONNECT. VERIFY PROPER OPERATION OF THE

MOTOR IN THE PRESENCE OF THE INSTALLER. RUN EACH MOTOR WITH ITS CONTROL AS NEARLY AS POSSIBLE UNDER OPERATING CONDITIONS FOR A

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

INSPECTION, FURNISH THE TEST INSTRUMENTS AND QUALIFIED PERSONNEL TO

COSTS FOR RETESTING OCCASIONED BY DEFECTS AND FAILURES OF THE

CERTIFICATE FROM THE LOCAL INSPECTING AUTHORITY.

PERFORM COMPLETE TESTING. COSTS OF ALL TESTING, INCLUDING THE INCIDENT

CODE AUTHORITIES AND MAKING ANY REVISIONS DIRECTED BY THEM ON

SUPPORT THE WEIGHT OF FIXTURES INSTALLED THEREON.

EMERGENCY AND EXIT LIGHTING.

TESTING AND LOAD BALANCING

CONTRACTOR.

END OF SECTION 16000

IDENTIFICATION SHALL BE LOCATED ON THE PANEL TRIM AND SHALL CONSIST OF

BREAKER POSITION NUMBER AND EQUIPMENT SERVED. THE PANEL

TERMINATION PRIOR TO INSTALLATION OF TRIM.

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

MOLD AND THE NUMBER, SIZE AND TYPE CARTRIDGE FOR THE JOINT OR

CONNECTION. WATERPIPE CONNECTION, SILICON BRONZE APPROVED

AND A GROUND ATTACHMENT IN THE NEAREST OUTLET BOX IN THE RIGID METALLIC CONDUIT SYSTEM. THIS REQUIREMENT INCLUDES ALL FLEXIBLE

N.E.C. AND INSTALLED WITHIN THE RACEWAY. CONDUCTOR SHALL BE

(UNLESS INDICATED OTHERWISE).

SOFT ANNEALED, COPPER WIRE.

WITH THE PANEL FRONT IN PLACE.

GROUND-RODS - 1/2" DIA., 10' LONG, COPPERWELD

CONTINUOUSLY IN CONDUITS, CAUSING CONDENSATION AND THE COLLECTION OF EQUIPMENT CONNECTED TO THE ELECTRICAL SYSTEM SHALL BE GROUNDED DUCT SEALING COMPOUND. ALSO SEAL ALL CONDUITS ENTERING AND LEAVING

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 GROUND CONDUCTOR - SIZE AS PER N.E.C. REQUIREMENTS, SOFT DRAWN OR 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

ELECTRIC METALLIC TUBING:

SECURELY ATTACH HANGERS AND SUPPORTS TO CONSTRUCTION BY METHODS

CONTRARY HEREIN - THE ELECTRICAL TRADE SHALL DO ALL ELECTRICAL WIRING MISCELLANEOUS APPURTENANCES TO PROPERLY COORDINATE WITH SAID 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 THE WORK OF THIS TRADE INCLUDES ROUGH-IN FOR AND FINAL CONNECTION AND 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 OPERATION. USED SHALL BE AS SPECIFIED HEREIN.

MINIMUM WIRE SIZE FOR BRANCH CIRCUITS SHALL BE #12 AWG, EXCEPT THAT

MAKE CONNECTIONS TO TERMINALS USING PRESSURE TYPE CONNECTORS.

LOCATE ALL OUTLETS AS INDICATED ON DRAWINGS, HOWEVER, AT INSTALLATION