

LEGEND	
	CEILING SUPPLY DIFFUSER
	CEILING RETURN AIR GRILLE
	CEILING EXHAUST GRILLE
	SIDE-WALL OR DUCT MOUNTED REGISTER
	SLOT DIFFUSER
	MANUAL VOLUME DAMPER
	FIRE DAMPER, FIRE SMOKE DAMPER
	THERMOSTAT
	HUMIDSTAT
	CO2 MONITOR
	MOTORIZED DAMPER
	EXISTING WORK
	NEW WORK
	SMOKE DETECTOR
	PRESSURE REGULATOR VALVE 5 PSI TO 7 WATER GAUGE
	TEMPERATURE SENSOR
	BACKDRAFT DAMPER
	POINT OF CONNECTION
	POINT OF DISCONNECTION

MECHANICAL DRAWING LIST	
M1.0	MECHANICAL SCHEDULES AND LEGENDS
M2.0	MECHANICAL FLOOR PLAN
M3.0	MECHANICAL DETAILS
M4.0	MECHANICAL SPECIFICATIONS

NEW AIR TERMINAL SCHEDULE				
TAG	MANUFACTURER	MODEL	TYPE	NOMINAL FACE SIZE
S1	TITUS	TDC	CEILING DIFFUSER SUPPLY	24"X24"
R1		300RL	CEILING MOUNTED RETURN GRILLE	24"X24"
R2		PAR		12"X24"

NOTES:  
1) ALL DIFFUSERS : CONTRACTOR SHALL COORDINATE WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS TO ENSURE PROPER AIR DEVICE BORDER SELECTION.  
2) REFER ARCHITECTURAL DRAWINGS FOR CEILING TYPE.  
3) COORDINATE COLOR/FINISH WITH ARCHITECT.  
4) PROVIDE VOLUME CONTROL DAMPER/OPOSED BLADE DAMPER AS ACCESSORY FOR ALL AIR TERMINAL FOR AIR

VENTILATION CALCULATION INTERNATIONAL MECHANICAL CODE 2018											
SL NO	ROOM NAME	AREA	OCCUPANCY AS PER IMC 2018/1000SQ.FT.	OCCUPANCY AS PER IMC 2018	FINAL OCCUPANCY	CFM/SQ.FT	CFM/PERSON	OA CFM	EFFECTIVENESS 0.8	REQUIRED OA CFM	PROVIDED OA CFM
1	RECEPTION	376	30	12	12	0.06	5	83	0.8	103	105
2	SKINCARE 2	94	10	1	2	0.06	5	16	0.8	20	20
3	SKINCARE 3	96	10	1	2	0.06	5	16	0.8	20	20
4	SKINCARE 4	96	10	1	2	0.06	5	16	0.8	20	20
5	SKINCARE 5	96	10	1	2	0.06	5	16	0.8	20	20
6	STORAGE	18	0	0	0	0.12	0	2	0.8	3	5
7	HALLWAY	180	0	0	0	0.06	0	11	0.8	14	15
-	-	956	-	-	20	-	-	-	-	198	205

ABBREVIATIONS			
A/C	ABOVE CEILING	ID	INSIDE DIMENSION
AD	ACCESS DOOR	IN	INCHES
ADJ	ADJUSTABLE		
AFF	ABOVE FINISHED FLOOR	KW	KILOWATTS
AUTO	AUTOMATIC		
AC	AIR CONDITIONING		
AHU	AIR HANDLING UNIT	LAT	LEAVING AIR TEMPERATURE
		LB	POUNDS
BAL	BALANCING	LG	LINEAR GRILLE
BDD	BACKDRAFT DAMPER	LRG	LINEAR RETURN GRILLE
B/F	BELOW FLOOR	LWR	LOOP WATER RETURN
B/G	BELOW GRADE	LWS	LOOP WATER SUPPLY
B/FLY	BUTTERFLY		
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BCO	BASE CLEANOUT	MAX	MAXIMUM
		MD	MANUAL DAMPER
		MOD	MOTOR OPERATED DAMPER
CFM	CUBIC FEET PER MINUTE	MFR	MANUFACTURER
CBCR	CURVED BLADE CEILING REGISTER		
CSD	CEILING SUPPLY DIFFUSER		
CU	CONDENSING UNIT		
CW	COLD WATER (DOMESTIC)	NC	NORMALLY CLOSED
CHWS	CHILLED WATER SUPPLY	NG	NATURAL GAS
CHWR	CHILLED WATER RETURN	NFWH	NON-FREEZE WALL HYDRANT
CWS	CONDENSER WATER SUPPLY	NO	NORMALLY OPEN
CWR	CONDENSER WATER RETURN	NOM	NOMINAL
CON	CONCENTRIC		
CO	CLEANOUT	OA	OUTSIDE AIR
COND	CONDENSATE	OD	OUTSIDE DIMENSION
		OBD	OPOSED BLADE DAMPER
db	DRY BULB		
DN	DOWN		
DR	DRAIN	PIU	POWERED INDUCTION UNIT
dp	DITTO	PSI	POUNDS PER SQUARE INCH
dB	DECIBELS		
DWG	DRAWING		
		RA	RETURN AIR
		RAD	RADIUS
EA	EACH	RG	RETURN AIR GRILLE
EAT	ENTERING AIR TEMPERATURE	RED	REDUCER
ECC	ECENTRIC	RL	REFRIGERANT LIQUID
EF	EXHAUST FAN	RS	REFRIGERANT SUCTION / RETURN SLOTS
EOD	EMERGENCY OVERFLOW DRAIN	RTU	ROOFTOP UNIT
ER	EXHAUST REGISTER	RR	RETURN REGISTER
ESP	EXTERNAL STATIC PRESSURE		
EWIT	ENTERING WATER TEMPERATURE	SP	STATIC PRESSURE
EXH	EXHAUST	SPS	STATIC PRESSURE SENSOR
EFF	EFFICIENCY	SA	SUPPLY AIR
EG	EXHAUST AIR GRILLE	SAN	SANITARY
		SD	SMOKE DAMPER / SLOT DIFFUSER
F	FAHRENHEIT	SEN	SENSIBLE
FCO	FLOOR CLEAN OUT	SO	SQUARE
FCU	FAN COIL UNIT	SR	SUPPLY REGISTER
FSD	FIRE/SMOKE DAMPER	ST	STORM
FD	FIRE DAMPER OR FLOOR DRAIN	SS	SPLIT SYSTEM
FL DR	FLOOR DRAIN (only)	SS	SUPPLY AIR GRILLE
FLR	FLOOR		
FOB	FLAT ON BOTTOM	TEMP	TEMPERATURE
FOR	FUEL OIL RETURN	TG	TRANSFER GRILLE
FOS	FUEL OIL SUPPLY	TYP	TYPICAL
FOT	FLAT ON TOP		
FPM	FEET PER MINUTE		
FPS	FEET PER SECOND		
FT	FEET	UON	UNLESS OTHERWISE NOTED
G	GATE	V	VENT
GA	GAUGE	VA	VALVE
GPM	GALLONS PER MINUTE	VTR	VENT THRU ROOF
GL	GLOBE	VAV	VARIABLE AIR VOLUME
GCO	GRADE CLEANOUT		
		wb	WET BULB
HD	HUB DRAIN	WC	WATER COLUMN
HP	HORSEPOWER	WHA	WATER HAMMER ARRESTOR
HTG	HEATING	WT	WEIGHT
HW	HOT WATER (DOMESTIC)	W	WASTE
HWR	HOT WATER RETURN		
HWRR	HOT WATER REVERSE RETURN		
HWS	HOT WATER SUPPLY		
Hz	HERTZ		

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MECHANICAL  
SCHEDULES AND  
LEGENDS

SHEET NUMBER:

M1.0

SKIN CARE REMODEL

**FIELD VERIFY ALL CONDITIONS**

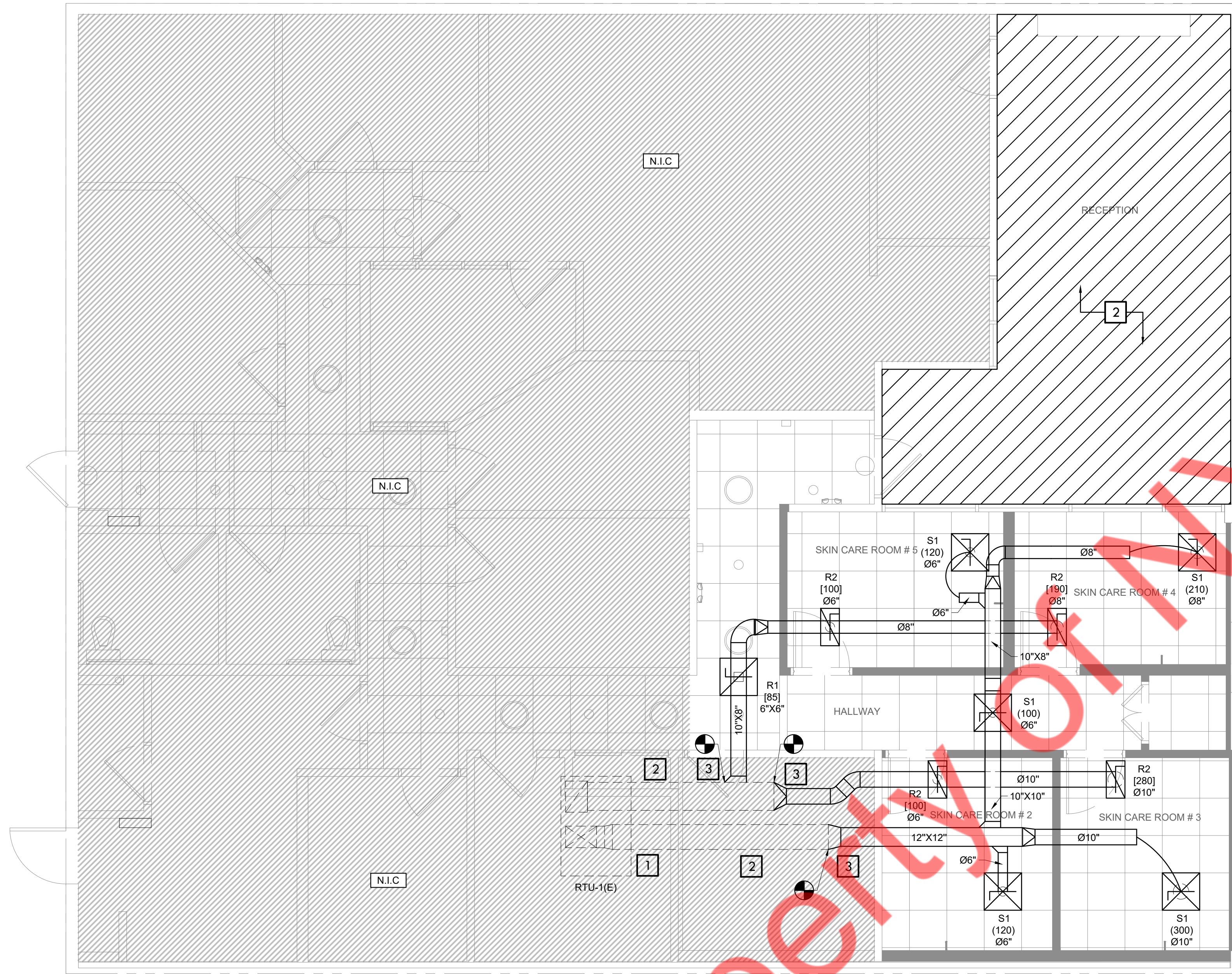
- DESIGN DRAWINGS ARE SCHEMATIC. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
- THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.
- BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

**GENERAL NOTES**

- PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALL PERMITS, INSPECTIONS, LICENSES AND FEES. FURNISH ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.
- THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPES, FIXTURES, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DO NOT SCALE THE DRAWINGS FOR DIMENSIONS. TAKE ALL DIMENSIONS, MEASUREMENTS, EQUIPMENT LOCATIONS, LEVELS, ETC. FROM THE ARCHITECTURAL DRAWINGS AND FROM THE EQUIPMENT TO BE FURNISHED. PIPING MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES OR TO AVOID CONFLICTS WITH OTHER TRADES. THE DESIGN INTENT (I.E. PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, ETC) CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ARCHITECT. THE COST OF THESE DEVIATIONS TO AVOID INTERFERENCE SHALL BE PART OF THE ORIGINAL CONTRACT BID.
- CONFERENCE AND COOPERATE WITH ALL OTHER TRADES TO COORDINATE THEIR WORK. COORDINATION SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO MATERIALS AND EQUIPMENT ROUTED IN CEILING AND WALL CAVITIES, EQUIPMENT ARRANGEMENT IN MECHANICAL SPACES, INCLUDING EQUIPMENT CLEARANCE REQUIREMENTS, ELEVATIONS AND DIMENSIONS OF STRUCTURAL MEMBERS AND OPENINGS, ETC. NOTIFY THE ARCHITECT OF ANY CONFLICTS.
- BASE FINAL INSTALLATION OF MATERIALS AND EQUIPMENT ON ACTUAL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE. FIELD MEASURE FOR MATERIALS AND EQUIPMENT REQUIRING EXACT FIT. NO EXTRAS WILL BE GIVEN FOR THE CONTRACTOR'S FAILURE TO FIELD COORDINATE.
- THE OWNER OR ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR FOR MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THE WORK.
- LOCATE ALL EQUIPMENT THAT MUST BE SERVICED, OPERATED, OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. EQUIPMENT SHALL INCLUDE (BUT NOT LIMITED TO) VALVES, MOTORS, CONTROLLERS, SWITCHGEAR AND DRAINPOINTS IF REQUIRED FOR BETTER ACCESSIBILITY. FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE ALLOWED TO PROVIDE FOR BETTER ACCESSIBILITY. ANY CHANGES SHALL BE APPROVED BY THE ARCHITECT AND CONSTRUCTION MANAGER/GENERAL CONTRACTOR PRIOR TO MAKING THE CHANGE.
- PROVIDE ACCESS DOORS, WALL OPENINGS, ROOF OPENINGS OR ANY OTHER CONSTRUCTION REQUIREMENT NEEDED TO ACCOMMODATE THE MECHANICAL EQUIPMENT. LOCATIONS OF THESE OPENINGS SHALL BE SUBMITTED IN SUFFICIENT TIME TO BE INSTALLED IN THE NORMAL COURSE OF WORK.
- COORDINATE ELECTRICAL REQUIREMENTS OF APPROVED MECHANICAL EQUIPMENT WITH THE ELECTRICAL SUB-CRONTACTOR PRIOR TO THE PURCHASE AND INSTALLATION OF ANY ELECTRICAL EQUIPMENT, DEVICES, WIRING, OR CONDUIT.
- PROVIDE GENERAL CONTROL WIRING, THERMOSTATS, MOTORIZED DAMPERS AND CONDUIT ASSOCIATED WITH HVAC EQUIPMENT. COORDINATE THE LOCATION OF ALL THERMOSTATS, ROOM SENSORS, ETC WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO INSTALLATION. IF A CONFLICT WITH MILLWORK, LIGHT SWITCHES, WINDOWS, ETC EXISTS, NOTIFY THE ARCHITECT OF THE POTENTIAL INTERFERENCE PRIOR TO INSTALLATION. INSTALL THERMOSTATS WITH PROTECTIVE LOCKING COVER, CENTERED AT 4'-0" ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED. COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA).
- ALL DIMENSIONS SHOWN ON THE DRAWINGS FOR DUCTWORK ARE NET INSIDE CLEAR DIMENSIONS. FOR RECTANGULAR DUCT, THE FIRST FIGURE OF THE DUCT SIZE INDICATES THE DIMENSION OF THE FACE SHOWN. VERIFY THAT THE DUCTWORK SPECIFIED WILL FIT IN THE SPACE AVAILABLE USING THE ARCHITECTURAL, STRUCTURAL AND ELECTRICAL DRAWINGS AS REFERENCE PRIOR TO FABRICATION AND INSTALLATION. ROUND DUCT OF EQUAL NET INSIDE CLEAR AREA MAY BE USED IN LIEU OF RECTANGULAR DUCT.
- PROVIDE TURNING VANES ON ALL RECTANGULAR SUPPLY, OUTDOOR AIR, EXHAUST AND RETURN DUCTWORK INCLUDING THE TOP AND BOTTOM OF VERTICAL DUCTS.
- PROVIDE A LOCKING QUADRANT VOLUME DAMPER AT THE TAP OF EACH RUN-OUT TO DIFFUSERS FOR BALANCING PURPOSES, UNLESS OTHERWISE INDICATED. THE RUN-OUT DUCT SIZE IS THE SAME SIZE AS THE DIFFUSER OR GRILLE NECK SIZE UNLESS OTHERWISE INDICATED.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF ALL FIRE RATED WALLS AND CEILINGS. PROVIDE FIRE DAMPERS AND/OR COMBINATION FIRE/SMOKE DAMPERS IN DUCTWORK AT ALL LOCATIONS WHERE DUCTS PASS THROUGH FIRE RATED ASSEMBLY. MECHANICAL SUB-CRONTACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING FIRE AND FIRE/SMOKE DAMPERS. COORDINATE CONSTRUCTION REQUIREMENTS AND PROVISIONS FOR CONNECTIONS TO FIRE ALARM SYSTEM.
- ALL DUCTWORK SHALL BE SHEET METAL FABRICATED IN ACCORDANCE WITH SMACNA STANDARDS. ALL DUCT WORK ASSOCIATED WITH CONSTANT VOLUME SYSTEMS SHALL BE CONSTRUCTED TO 2" W.G. AND SEALED TO SMACNA CLASS B. SEAL ALL SEAMS WITH MASTIC SEALANT U-181 LISTED FOR THE APPLICATION USED. SEALANT SHALL BE DESIGNED FOR USE ON METAL DUCT AND FLEXIBLE DUCT.
- ALL RECTANGULAR AND ROUND SUPPLY AND RETURN DUCTWORK LOCATED IN EXPOSED INTERIOR AREAS SHALL BE INTERNALLY LINED WITH DUCT LINER AND EXTERNALLY PAINTED. REFER TO ARCHITECT FOR COLOR SELECTION.
- PROVIDE VIBRATION ISOLATORS FOR MOTOR DRIVEN EQUIPMENT UNLESS NOTED OTHERWISE. PROVIDE ISOLATION AS INDICATED OR AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- SOME DUCTS SHOWN ON EACH FLOOR PLAN MAY BE SHOWN WITH AN OFFSET FOR CLARITY.
- SEAL ALL DUCT PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS WITH AN APPROVED FIRE PROOFING MATERIAL.
- ALL EQUIPMENT SHALL HAVE IDENTIFICATION TAGS. TAGS SHALL BE PLASTIC LAMINATE, WHITE FACE WITH 1/2" TALL BLACK LETTERS. THE TAG SHALL MATCH THE UNIT DESIGNATIONS SHOWN ON THE SCHEDULES.
- EXPAND OR REDUCE DUCTS AT EQUIPMENT CONNECTIONS BASED ON THE EQUIPMENT PURCHASED, WITH TRANSITIONS NOT TO EXCEED 30 DEGREES. SIZES SHOWN ON SCHEDULES, ETC. ARE FOR GUIDANCE ONLY. ASPECT RATIO SHALL BE NO GREATER THAN 4:1, PER SMACNA'S GUIDELINES.
- ALL DUCTS WITH A DIMENSION GREATER THAN 12" PASSING THRU A NON-RATED WALL SHALL HAVE THE OPENING FRAMED IN WITH METAL STUDS.
- WHERE DAMPERS ARE LOCATED ABOVE HARD CEILINGS PROVIDE CONCEALED YOUNG REGULATORS. REGULATORS SHALL NOT BE LOCATED IN CORRIDORS, PATIENT CARE, OR TREATMENT AREAS. EACH REGULATOR SHALL BE LABELED PER THE SPECIFICATIONS.
- TEST AND BALANCE SHALL BE PERFORMED BY AN AABC LICENSED FIRM IN THE TESTING, ADJUSTING, AND BALANCING (TAB) BUSINESS FOR A MINIMUM OF 10 YEARS. AABC FIRM SHALL SUBMIT A REPORT TO THE ENGINEER OF RECORD INDICATING EQUIPMENT NAMEPLATE DATA, DESIGN PERFORMANCE, INITIAL TESTED PERFORMANCE, AND FINAL ADJUSTED PERFORMANCE. REPORT SHALL BE SUBMITTED IN A TIMELY FASHION PRIOR TO JOB CLOSE-OUT. TAB SHALL BE PERFORMED ON ALL EXISTING SYSTEMS MODIFIED AS PART OF THIS CONTRACT. TAB FIRM SHALL PERFORM A FUNCTIONAL PERFORMANCE TEST OF THE SYSTEM BASED ON THE CONTRACT DOCUMENTS HEREIN SHALL AND RELAY ALL DISCREPANCIES AND OUTSTANDING CONSTRUCTION ITEMS RELATING TO THE MECHANICAL EQUIPMENT AND PERFORMANCE TO THE ENGINEER OF RECORD.

**KEYED NOTES**

- EXISTING MECHANICAL ROOFTOP UNIT ALONG WITH ALL ASSOCIATED SUPPORTS AND DUCT DROPS TO REMAIN. CONTRACTOR TO ENSURE RTU IS WORKING AT THEIR 100% RATED CAPACITY. VERIFY IN FIELD PRIOR TO BID. BALANCE THE AIRFLOW AS PER VENTILATION REQUIREMENT PROVIDED ON SHEET M-1.0. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID AND START OF WORK.
- EXISTING DUCTWORK TO REMAIN. CONTRACTOR SHALL CLEAN AND REFURBISH TO "LIKE NEW" CONDITION. VERIFY EXACT LOCATION, ROUTE AND SIZE IN FIELD. PATCH AND SEAL DUCTWORK AIRTIGHT. INSPECT, PATCH, REPAIR, AND/OR REPLACE INSULATION AS REQUIRED. COORDINATE IN FIELD PRIOR TO BID.
- CONTRACTOR TO PROVIDE NEW DUCTWORK FROM THE POINT OF CONNECTION SHOWN ON THE PLAN.



2 SCALE N.T.S NOTES

1 SCALE 1/4" = 1' - 0" MECHANICAL FLOOR PLAN

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ISSUE DATE: 06/06/2025  
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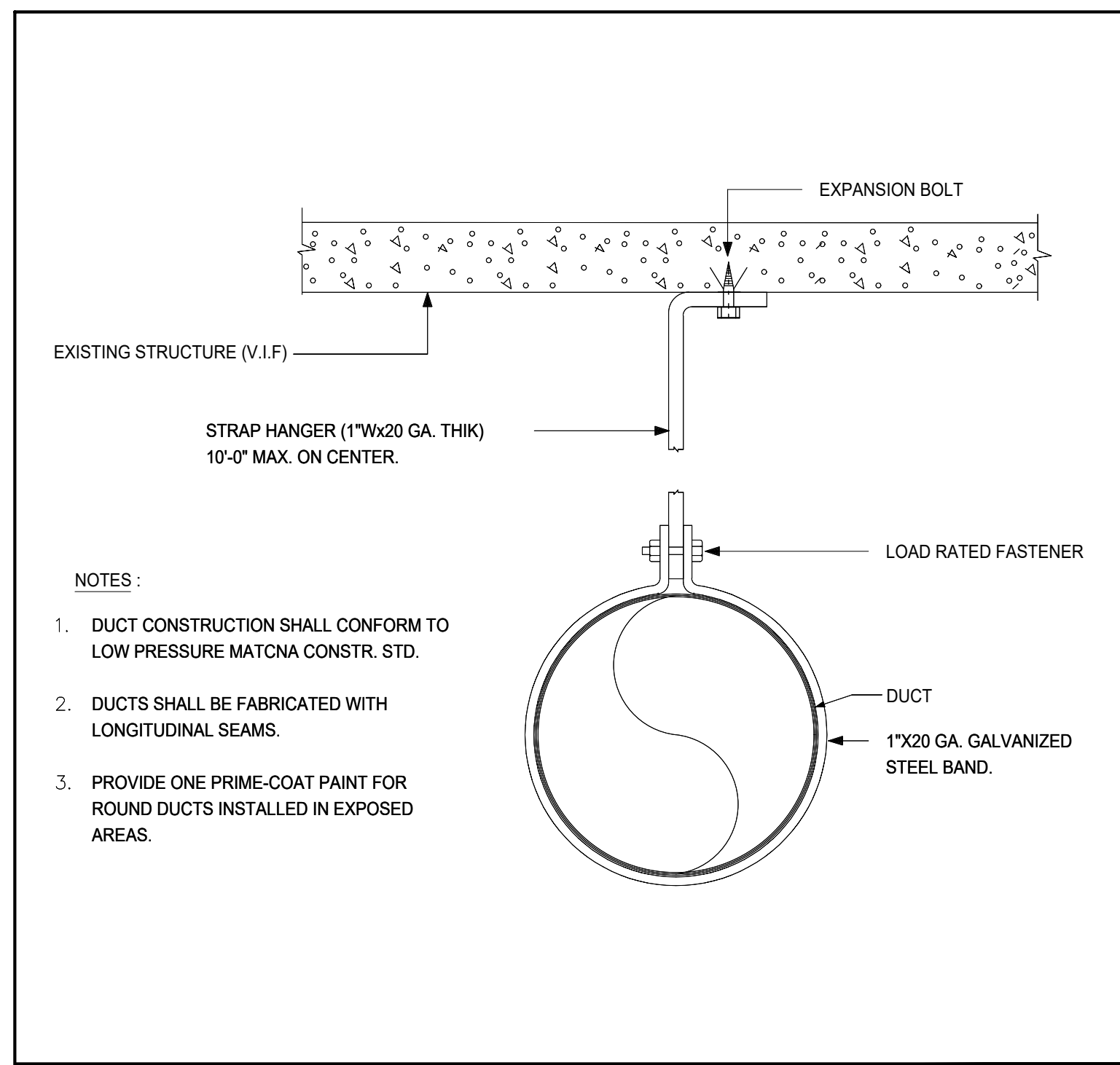
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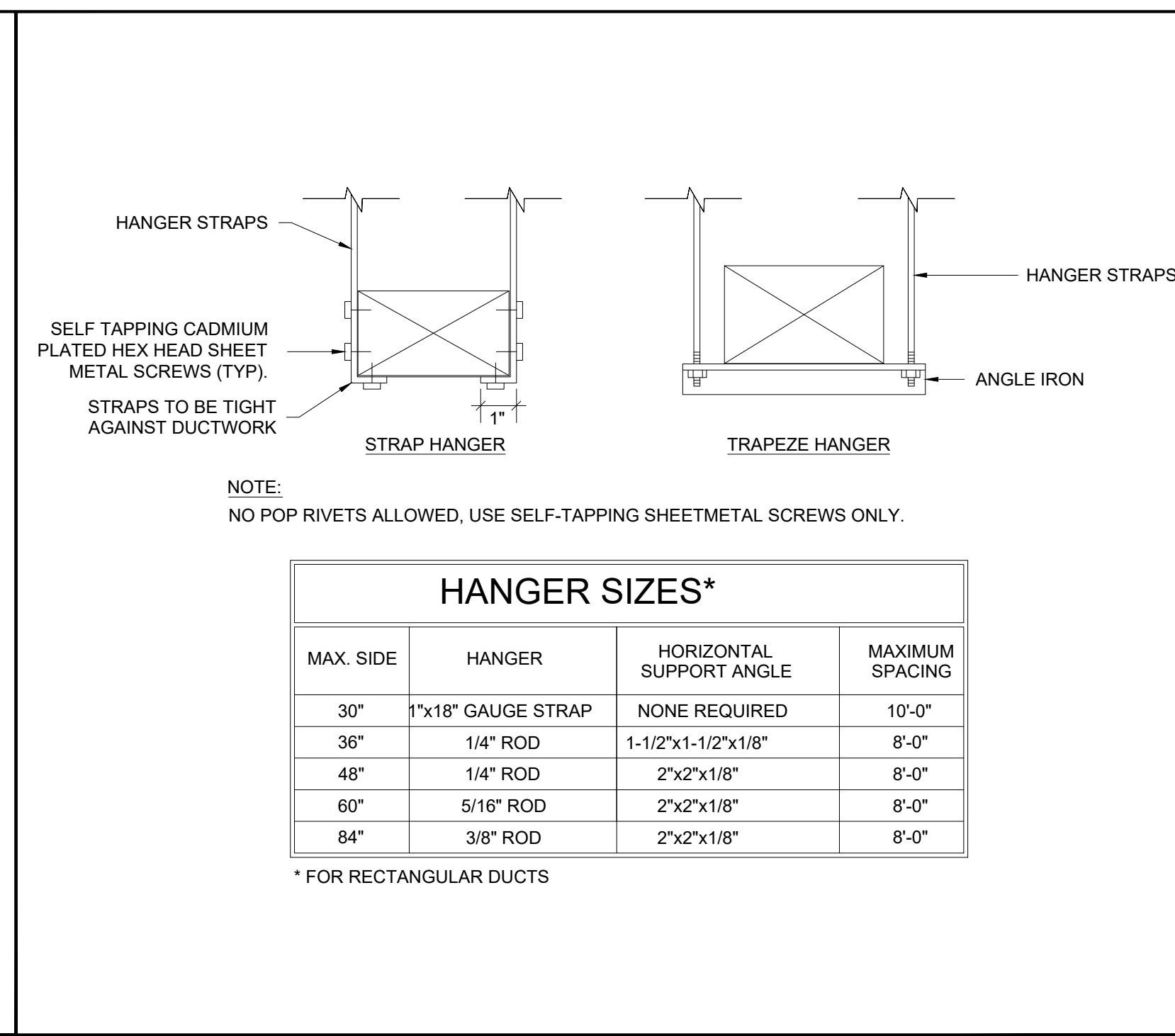
MECHANICAL FLOOR PLAN

SHEET NUMBER:

**M2.0**  
**SKIN CARE REMODEL**



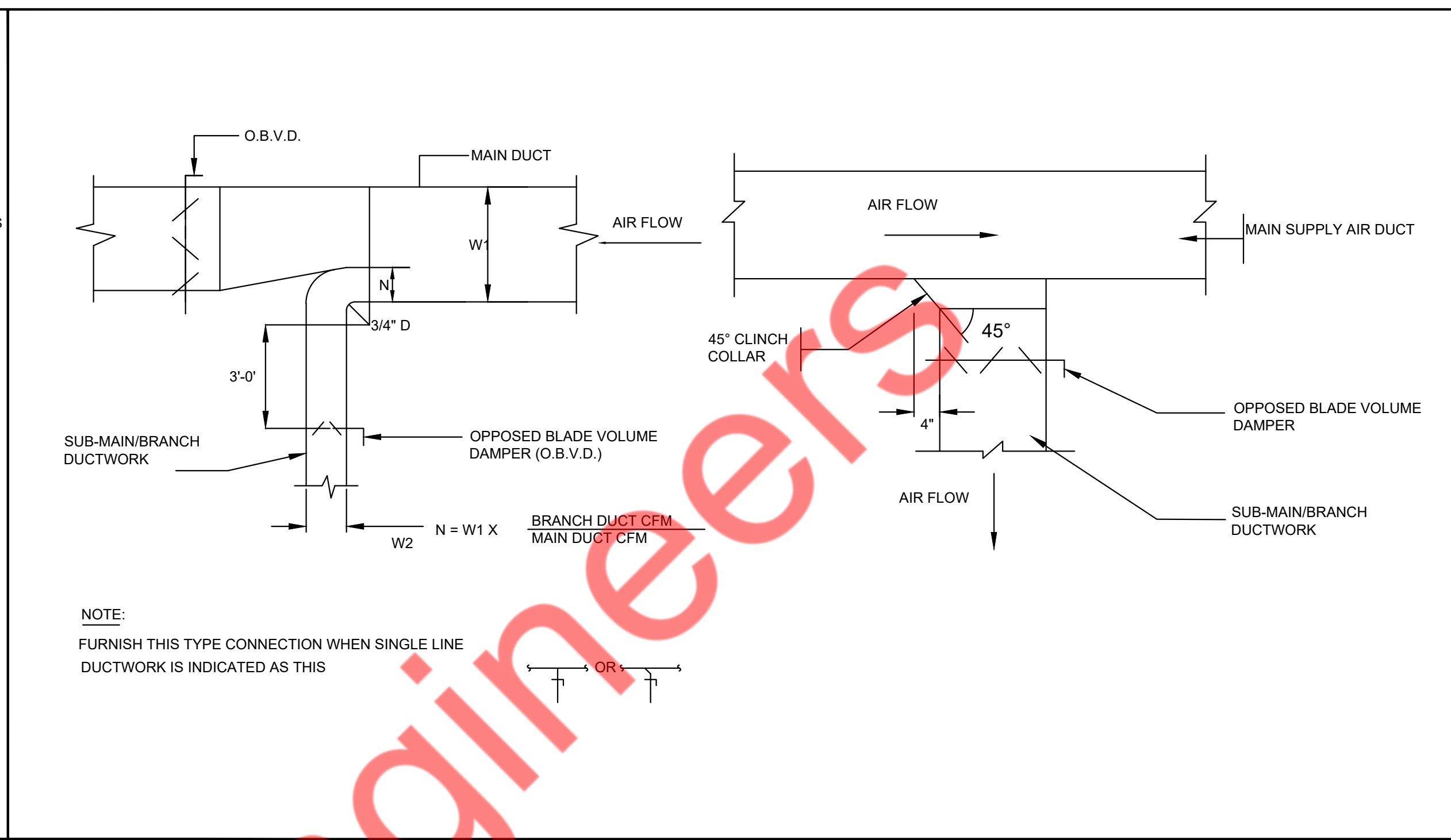
- NOTES:
- DUCT CONSTRUCTION SHALL CONFORM TO LOW PRESSURE MATCHNA CONSTR. STD.
  - DUCTS SHALL BE FABRICATED WITH LONGITUDINAL SEAMS.
  - PROVIDE ONE PRIME-COAT PAINT FOR ROUND DUCTS INSTALLED IN EXPOSED AREAS.



**HANGER SIZES\***

MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROD	1-1/2"x1-1/2"x1/8"	8'-0"
48"	1/4" ROD	2"x2"x1/8"	8'-0"
60"	5/16" ROD	2"x2"x1/8"	8'-0"
84"	3/8" ROD	2"x2"x1/8"	8'-0"

\* FOR RECTANGULAR DUCTS

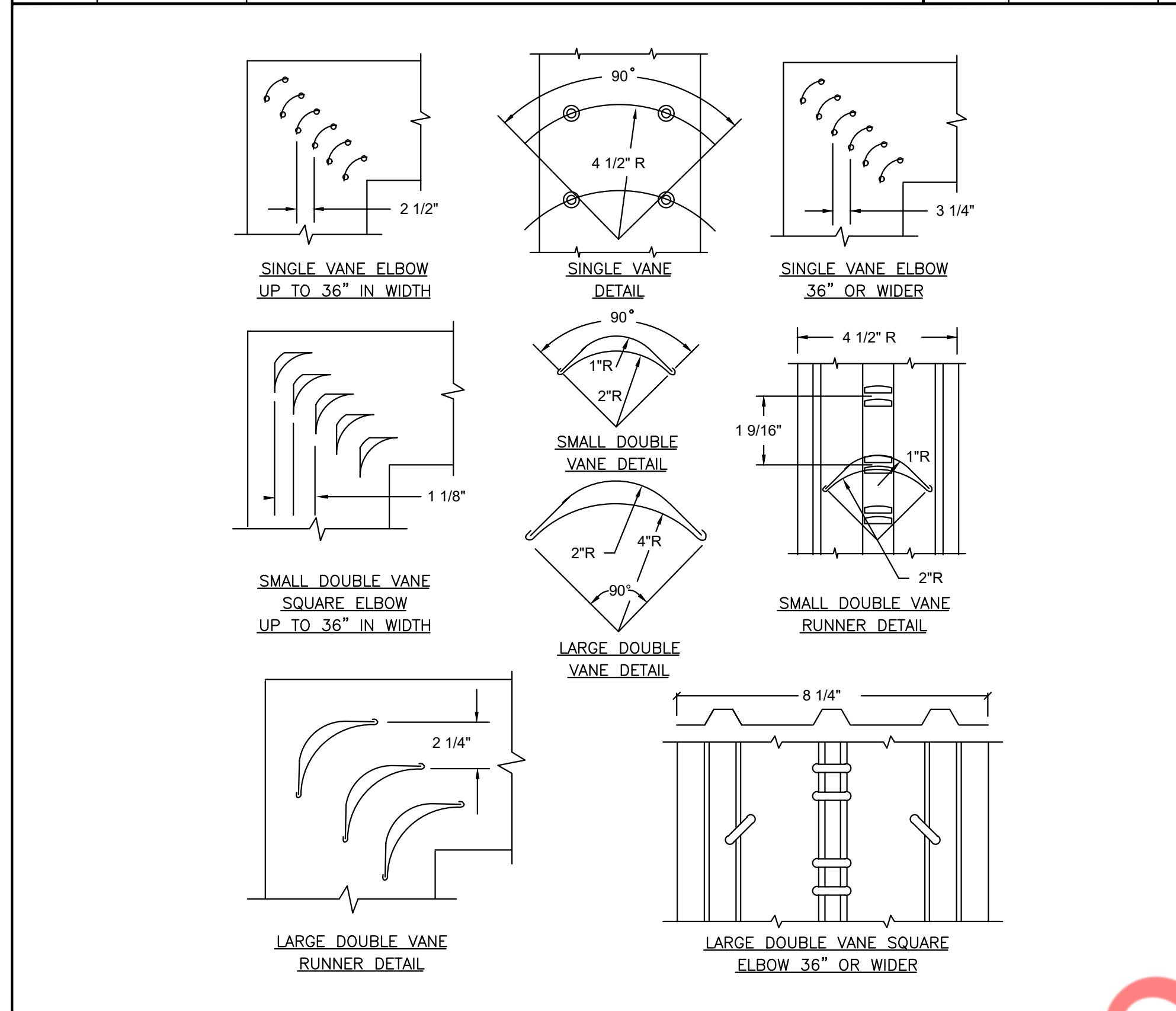


NOTE:  
FURNISH THIS TYPE CONNECTION WHEN SINGLE LINE DUCTWORK IS INDICATED AS THIS

1 SCALE N.T.S. ROUND DUCT HANGING DETAILS

2 SCALE N.T.S. DUCT HANGING DETAILS

3 SCALE N.T.S. SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION



4 SCALE N.T.S. LOW VELOCITY DUCTWORK ELBOWS

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MECHANICAL DETAILS

SHEET NUMBER:

M3.0

SKIN CARE REMODEL

SECTION 1 - SUPPLEMENTARY CONDITIONS FOR MECHANICAL WORK

1.1.1 GENERAL CONDITIONS

- A. ALL WORK COVERED BY THIS SECTION OF THESE SPECIFICATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE RESPECTIVE DRAWINGS, INFORMATION OF INSTRUCTIONS TO BIDDERS, GENERAL REQUIREMENTS AND THE SUPPLEMENTARY GENERAL CONDITIONS OF THESE SPECIFICATIONS.
- B. BIDDERS SHALL DETERMINE THE CONTENTS OF A COMPLETE SET OF DRAWINGS AND SPECIFICATIONS AND BE AWARE THAT THEY MAY BE BIDDING FROM A PARTIAL SET OF DRAWINGS, APPLICABLE ONLY TO THE VARIOUS SEPARATE CONTRACT, SUBCONTRACTS OR TRADES AS MAY BE ISSUED FOR BIDDING PURPOSES ONLY. THE CONTRACT DOCUMENTS ARE THE COMBINED ARCHITECTURAL, STRUCTURAL, PLUMBING, HEATING, VENTILATING AND AIR CONDITIONING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. ALL DRAWINGS AND SPECIFICATIONS ARE ON FILE IN THE ARCHITECT'S OFFICE, AND EACH BIDDER SHALL THOROUGHLY ACQUAINT HIMSELF WITH ALL OF THE DETAILS OF THE COMPLETE SET OF DRAWINGS AND SPECIFICATIONS BEFORE SUBMITTING HIS BID. ALL DRAWINGS AND SPECIFICATIONS FORM A PART OF THE CONTRACT DOCUMENTS FOR EACH SEPARATE CONTRACT. THEY SHALL BE CONSIDERED AS BOUND THEREWITH IN THE EVENT PARTIAL SETS OF PLANS AND SPECIFICATIONS SHALL BE DEEMED EVIDENCE OF THE REVIEW AND EXAMINATION OF ALL DRAWINGS, SPECIFICATIONS AND ADDENDA ISSUED FOR THIS PROJECT. NO ALLOWANCES WILL BE MADE BECAUSE OF THE CONTRACTOR'S UNFAMILIARITY WITH ANY PORTION OF THE COMPLETE SET OF DOCUMENTS.
- C. ALL EQUIPMENT AND MATERIALS SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.

1.1.2 SCOPE

- A. THE WORK INCLUDED UNDER THIS SPECIFICATION CONSISTS OF THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, ETC. WHICH ARE APPLICABLE AND NECESSARY TO COMPLETE THE INSTALLATION OF THE SYSTEMS SPECIFIED HEREIN; ALL AS DESCRIBED IN THESE SPECIFICATIONS, AS ILLUSTRATED ON THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE ARCHITECT.
- B. IN GENERAL, THE VARIOUS LINES AND DUCTS TO BE INSTALLED BY THE VARIOUS TRADES UNDER THIS SPECIFICATION SHALL BE RUN AS INDICATED AS SPECIFIED HEREIN, AS REQUIRED BY PARTICULAR CONDITIONS AT THE SITE AND AS REQUIRED TO CONFORM TO THE GENERALLY ACCEPTED STANDARDS SO AS TO COMPLETE THE WORK IN A NEAT AND SATISFACTORILY WORKABLE MANNER. RUN WORK PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING UNLESS OTHERWISE NOTED.
- C. THE CONSTRUCTION DETAILS FOR THE BUILDING ARE ILLUSTRATED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. EACH CONTRACTOR SHALL THOROUGHLY ACQUAINT HIMSELF WITH THE DETAILS BEFORE SUBMITTING HIS BID, AS NO ALLOWANCE WILL BE MADE BECAUSE OF THE CONTRACTOR'S UNFAMILIARITY WITH THESE DETAILS. PLACE ALL INSERTS TO ACCOMMODATE THE ULTIMATE INSTALLATION OF PIPE HANGERS IN THE FORMS BEFORE CONCRETE IS POURED. SET SLEEVES IN PLACE IN FORMS BEFORE CONCRETE IS POURED, AND IN MASONRY WALLS WHILE THEY ARE UNDER CONSTRUCTION. ALL CONCEALED LINES SHALL BE INSTALLED AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION TO PRECEED THAT GENERAL CONSTRUCTION.

1.1.3 INSPECTION OF SITE

- A. THE CONTRACTORS SHALL VISIT THE SITE, VERIFY ALL EXISTING ITEMS SHOWN ON PLANS OR SPECIFIED HEREIN, AND FAMILIARIZE HIMSELF WITH THE WORKING CONDITIONS, HAZARDS, EXISTING GRADES, ACTUAL FOUNDATIONS, SOIL CONDITIONS, AND LOCAL REQUIREMENTS INVOLVED. AND SUBMISSION OF BIDS SHALL BE DEEMED EVIDENCE OF SUCH VISIT. ALL PROPOSALS SHALL TAKE THE EXISTING CONDITIONS INTO CONSIDERATION, AND THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.

1.1.4 UTILITIES, LOCATIONS AND ELEVATIONS

- A. LOCATIONS AND ELEVATIONS OF THE VARIOUS UTILITIES INCLUDED WITHIN THE SCOPE OF THIS WORK HAVE BEEN OBTAINED FROM CITY AND/OR OTHER SUBSTANTIALLY RELIABLE SOURCES AND ARE OFFERED SEPARATELY FROM THE CONTRACT DOCUMENTS, AS A GENERAL GUIDE ONLY, WITHOUT GUARANTEE AS TO ACCURACY. THE CONTRACTOR SHALL EXAMINE THE SITE, SHALL VERIFY TO THEIR OWN SATISFACTION THE LOCATIONS, ELEVATIONS AND AVAILABILITY OF ALL UTILITIES AND SERVICES REQUIRED AND SHALL ADEQUATELY INFORM THEMSELVES AS TO THEIR RELATION TO THE WORK; THE SUBMISSION OF BIDS SHALL BE DEEMED EVIDENCE THEREOF.

1.1.5 CODE REQUIREMENTS

- A. ALL WORK SHALL COMPLY WITH THE PROVISIONS OF THESE SPECIFICATIONS, AS ILLUSTRATED ON THE ACCOMPANYING DRAWINGS, OR AS DIRECTED BY THE ARCHITECT, AND SHALL SATISFY ALL APPLICABLE LOCAL, COUNTY, ORDINANCES, OR REGULATIONS OF THE GOVERNING BODIES, AND ALL AUTHORITIES HAVING JURISDICTION OVER THE WORK, OR SERVICES THEREIN, IN ALL CASES WHERE ALTERATIONS TO, OR DEVIATIONS FROM THE DRAWINGS AND SPECIFICATIONS ARE REQUIRED BY THE AUTHORITY HAVING JURISDICTION, THE CONTRACTOR SHALL REPORT SAME IN WRITING TO THE OWNER AND SECURE HIS APPROVAL BEFORE PROCEEDING. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROVIDE COMPLETE UTILITY SERVICE CONNECTIONS, AS DIRECTED, AND SUBMIT, AS REQUIRED, ALL NECESSARY DRAWINGS, PERMITS, AND INSPECTIONS NECESSARY IN CONNECTION WITH HIS WORK AND PAY ALL LOCAL FEES ON ACCOUNT THEREOF. IN THE ABSENCE OF OTHER APPLICABLE LOCAL CODES ACCEPTABLE TO THE ARCHITECT, THE NATIONAL ELECTRICAL CODE AND INTERNATIONAL PLUMBING CODE SHALL APPLY TO THIS WORK.

1.1.6 RECORDS FOR THE OWNER

- A. THE CONTRACTOR SHALL OBTAIN AT HIS OWN EXPENSE A COMPLETE, FULL-SIZE SET OF PRINTS ON WHICH HE SHALL KEEP AN ACCURATE RECORD OF THE INSTALLATION OF ALL MATERIALS AND SYSTEMS COVERED BY HIS CONTRACTUAL AGREEMENT. THE RECORD SHALL INDICATE THE LOCATION OF ALL EQUIPMENT AND THE ROUTING OF ALL SYSTEMS. ALL CONDUIT BURIED IN CONCRETE SLABS, WALLS, AND BELOW GRADE SHALL BE LOCATED BY DIMENSION UNLESS A SURFACE INDICATED BY EACH TRACE INDICATES THE EXACT LOCATION. HE SHALL THEN OBTAIN AT HIS OWN EXPENSE ONE COMPLETE REPRODUCIBLE SET OF THE ORIGINAL DRAWINGS ON WHICH HE SHALL NEATLY TRANSFER HIS NOTATIONS AND DELIVER THESE DRAWINGS TO THE ENGINEER AT JOB COMPLETION BEFORE THE FINAL PAYMENT FOR DELIVERY TO THE OWNER.
- B. IN ADDITION TO THE ABOVE, THE CONTRACTOR SHALL ACCUMULATE DURING THE JOB PROGRESS THE FOLLOWING DATA IN DUPLICATE PREPARED IN A NEAT BOUND BOOK OR PACKET FOLDER BONDING FOR SUBSEQUENT DELIVERY TO THE OWNER. THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF BINDING INTO A BOOK:
  1. ALL WARRANTIES, GUARANTEE, AND MANUFACTURER'S DIRECTIONS ONEQUIPMENT AND MATERIAL COVERED BY THE CONTRACT.
  2. COPIES OF APPROVED SHOP DRAWINGS AND SUBMITTALS.
  3. COPIES OF SEQUENCE OF OPERATIONS FOR ALL EQUIPMENT COVERED BY CONTRACT.

1.1.7 MATERIALS AND WORKMANSHIP

- A. ALL MATERIALS, UNLESS OTHERWISE SPECIFIED, SHALL BE NEW, FREE FROM ANY DEFECTS AND OF THE BEST QUALITY OF THEIR RESPECTIVE KINDS. ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURER, MODEL AND QUALITY, UNLESS OTHERWISE SPECIFIED.
- B. ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, ADJUSTED AND CONDITIONED AS RECOMMENDED BY THE MANUFACTURERS, OR ALL INDICATED IN THEIR PUBLISHED LITERATURE, UNLESS SPECIFICALLY HEREIN SPECIFIED TO THE CONTRARY. ALL WORK UNDER THIS CONTRACT SHALL BE PERFORMED BY COMPETENT WORKMEN AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER PROVIDING A THOROUGH AND COMPLETE INSTALLATION. WORK SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION, INCLUDING THE SHIELDING OF SOFT OR FRAGILE MATERIALS AND THE TEMPORARY PLUGGING OF OPEN LINES DURING CONSTRUCTION. AT COMPLETION, THE INSTALLATION SHALL BE THOROUGHLY CLEANED, AND ALL TOOLS, EQUIPMENT, OBSTRUCTION OR DEBRIS PRESENT AS A RESULT OF THIS CONTRACT SHALL BE REMOVED FROM THE PREMISES.

1.1.8 STORAGE AND PROTECTION

- A. PROVIDE ADEQUATE FACILITIES FOR ITEMS FURNISHED UNDER THESE SPECIFICATIONS WHICH ARE SUBJECT TO DAMAGE IF EXPOSED TO ELEMENTS. TAKE SUCH PRECAUTIONS AS NECESSARY TO PROPERLY PROTECT APPARATUS FROM DAMAGE. FAILURE TO COMPLY WITH THIS PROVISION WILL BE SUFFICIENT CAUSE FOR REJECTION OF THE PARTICULAR APPARATUS INVOLVED.

1.1.9 COOPERATION

- A. ALL WORK UNDER THESE SPECIFICATIONS SHALL BE ACCOMPLISHED IN CONJUNCTION WITH OTHER TRADES ON THIS PROJECT IN A MANNER WHICH WILL ALLOW EACH TRADE ADEQUATE TIME AT THE PROPER STAGE OF CONSTRUCTION TO FULFILL HIS WORK.
- B. MAINTAINING CONTACT AND BEING FAMILIAR WITH THE PROGRESS OF THE GENERAL CONSTRUCTION AND THE TIMELY INSTALLATION OF SLEEVES AND INSERTS, ETC., BEFORE CONCRETE IS PLACED SHALL BE THE RESPONSIBILITY OF THIS TRADE, AS WILL THE INSTALLATION OF THE REQUIRED SYSTEMS IN THEIR SEVERAL STAGES, AT THE PROPER TIME TO EXPEDITE THIS CONTRACT AND AVOID UNNECESSARY DELAYS IN THE PROGRESS OF OTHER CONTRACTS, AND MEET ALL REQUIREMENTS OF PROGRESS SCHEDULES SET UP BY THE ARCHITECT.
- C. SHOULD ANY QUESTION ARISE BETWEEN TRADES AS TO THE PLACING OF LINES, DUCTS, CONDUITS, FIXTURES OR EQUIPMENT, OR SHOULD IT APPEAR DESIRABLE TO REMOVE ANY GENERAL CONSTRUCTION WHICH WOULD AFFECT THE APPEARANCE OR STRENGTH OF THE STRUCTURE, REFERENCE SHALL BE MADE TO THE ARCHITECT FOR INSTRUCTION.

1.1.10 SCHEDULE OF MATERIAL AND EQUIPMENT

- A. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL A COMPLETE SCHEDULE OF MATERIAL AND EQUIPMENT WHICH IS TO BE INSTALLED UNDER THE CONTRACT. THE SCHEDULE SHALL BE SUBMITTED WITHIN 30 DAYS AFTER THE AWARD OF THIS CONTRACT AND PRIOR TO THE INSTALLATION OR FABRICATION OF ANY OF THE MATERIAL INVOLVED. THE SCHEDULE SHALL INCLUDE FOR MATERIALS THE MANUFACTURER'S NAME, CATALOG NUMBER, TYPE AND TRADE NAME, IN ADDITION, FOR EQUIPMENT, ATTACH MANUFACTURER'S ENGINEERING DATA AND SHOP DRAWING SHEET.

1.1.11 SHOP DRAWINGS AND SUBMITTALS:

- A. PROVIDE SUBMITTALS AND SHOP DRAWINGS (3 COPIES MINIMUM) FOR THE FOLLOWING EQUIPMENT AND LAYOUT:
  1. DUCTWORK FABRICATION DETAILS AND LAYOUT AT 1/8" = 1'-0" SCALE.
  2. MECHANICAL EQUIPMENT CUT SHEETS INCLUDING ALL PERFORMANCE CHARACTERISTICS, ACCESSORIES, DRAWINGS, WIRING DIAGRAMS, ETC. ACCESSORIES SHALL BE CLEARLY LABELED TO SHOW WHAT IS AND IS NOT PROVIDED.
  3. PIPING DETAILS SHOWING MATERIALS USED AND JOINING/SEALING METHODS.
  4. PIPING LAYOUT AT 1/8" = 1'-0" SCALE.
- B. EQUIPMENT SHALL NOT BE ORDERED UNTIL APPROVED BY THE ARCHITECT AND ENGINEER OF RECORD. THE CONTRACTOR SHALL ALLOW TWO (2) WEEKS FOR DESIGN TEAM REVIEW OF SUBMITTALS.

1.1.12 DRAWINGS AND SPECIFICATIONS

- A. THE DRAWINGS SHOW, DIAGRAMMATICALLY, THE LOCATIONS OF THE VARIOUS LINES, DUCTS, CONDUITS, FIXTURES AND EQUIPMENT AND THE METHOD OF CONNECTING AND CONTROLLING THEM. IT IS NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL AND ALL FITTINGS REQUIRED FOR A COMPLETE SYSTEM, THE SYSTEMS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE ITEMS SHOWN ON THE DRAWINGS. EXACT LOCATIONS OF THESE ITEMS SHALL BE DETERMINED BY REFERENCE TO THE GENERAL PLANS AND MEASUREMENTS AT THE BUILDING AND COOPERATION WITH OTHER SUB-CONTRACTORS AND, IN ALL CASES, SHALL BE SUBJECT TO THE APPROVAL OF THE CONTRACTOR. THE CONTRACTOR RESERVES THE RIGHT TO MAKE ANY REASONABLE CHANGE IN THE LOCATION OF ANY PART OF THIS WORK WITHOUT ADDITIONAL COST TO THE OWNER.
- B. SHOULD ANY CHANGES BE DEEMED NECESSARY BY THE CONTRACTOR IN ITEMS SHOWN ON THE CONTRACT DRAWINGS, SHOP DRAWINGS AND DESCRIPTIONS, THE REASON FOR THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE OWNER FOR APPROVAL.
- C. EXCEPTIONS AND INCONSISTENCIES IN PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE CONTRACTOR'S ATTENTION BEFORE BIDS ARE SUBMITTED; OTHERWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ANY AND ALL CHANGES AND ADDITIONS THAT MAY BE NECESSARY TO ACCOMMODATE HIS PARTICULAR APPARATUS.
- D. THE CONTRACTOR SHALL LAY OUT HIS WORK MAINTAINING ALL LINES, GRADES AND DIMENSIONS ACCORDING TO THESE DRAWINGS WITH DUE CONSIDERATION FOR OTHER TRADES AND VERIFY ALL DIMENSIONS AT THE SITE PRIOR TO ANY FABRICATION OR INSTALLATION. SHOULD THE LAYOUT BE IMPRACTICAL, THE CONTRACTOR SHALL BE NOTIFIED BEFORE ANY INSTALLATION OR FABRICATION AND THE EXISTING CONDITIONS SHALL BE INVESTIGATED AND PROPER CHANGES EFFECTED WITHOUT ANY ADDITIONAL COST.
- E. TITLES OF SECTIONS AND PARAGRAPHS IN THESE SPECIFICATIONS ARE INTRODUCED MERELY FOR CONVENIENCE AND ARE NOT TO BE CONSTRUED AS A CORRECT OR COMPLETE SEGREGATION TO FABRICATION OF THE VARIOUS UNITS OF MATERIAL AND/OR WORK. THE ARCHITECT DOES NOT ASSUME ANY RESPONSIBILITY, EITHER DIRECT OR IMPLIED, FOR OMISSIONS OR DUPLICATIONS BY THE CONTRACTOR OR ANY SUB-CONTRACTOR DUE TO REAL OR ALLEGED ERROR IN THE ARRANGEMENT OF MATTER IN THE CONTRACT DOCUMENTS.

1.1.13 ARCHITECT'S APPROVAL

- A. IN ANY STATEMENT UNDER THIS CONTRACT WHERE "APPROVAL" IS REQUIRED OR REQUESTED, IT IS UNDERSTOOD THAT SUCH APPROVAL MUST BE OBTAINED FROM THE ARCHITECT IN WRITING BEFORE PROCEEDING WITH THE PROPOSAL, AND AN ADEQUATE NUMBER OF COPIES OF ANY SUCH PROPOSAL SHALL BE SUBMITTED TO THE ARCHITECT.
- B. THE APPROVAL BY THE ARCHITECT OF ANY MATERIALS, CHANGES, DRAWINGS, ETC., SUBMITTED BY THE CONTRACTOR WILL BE CONSIDERED AS GENERAL ONLY AND TO AID THE CONTRACTOR IN EXPEDITING HIS WORK. SUCH APPROVAL MAY BE GIVEN DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR FROM THE NECESSITY OF FURNISHING THE MATERIALS AND PERFORMING ALL WORK AS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

1.1.14 LOCAL RESTRICTIONS

- A. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL RULES AND REGULATIONS OF THE CITY, COUNTY AND STATE, OR ANY OTHER AUTHORITY HAVING JURISDICTION OVER THIS PROJECT. IF IT IS THE CONTRACTOR'S OPINION THAT ANY WORK OR MATERIALS SHOWN ON THE DRAWINGS OR SPECIFICATIONS DO NOT COMPLY WITH THESE RULES AND REGULATIONS AS TO SIZE, TYPE, CAPACITY AND QUALITY, HE MUST MAKE IT KNOWN PRIOR TO THE SUBMISSION OF HIS BID, WHICH SHALL BE DEEMED EVIDENCE OF COMPLIANCE, OTHERWISE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROVAL OF ALL WORK OR MATERIAL AND, IN THE EVENT THAT SUCH AUTHORITY SHOULD INDICATE DISAPPROVAL, HE SHALL CORRECT SAME WITH MATERIALS APPROVED BY THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

1.1.15 ELECTRICAL WIRING

- A. EXCEPT FOR SUCH ITEMS AS ARE NORMALLY WIRED UP AT THEIR POINT OF MANUFACTURE AND SO DELIVERED, AND UNLESS SPECIFICALLY NOTED TO THE CONTRARY HEREIN, THE ELECTRICAL SUBCONTRACTOR WILL DO ALL ELECTRIC WIRING OF EVERY CHARACTER FOR POWER SUPPLY. THE MECHANICAL SUBCONTRACTOR SHALL ERECT ALL MOTORS IN PLACE READY FOR CONNECTION AND SHALL FURNISH WITH EACH SUCH MOTOR A STARTER OF THE TYPE SPECIFIED AND DELIVER IT IN GOOD CONDITION TO THE ELECTRICAL SUBCONTRACTOR AT THE JOB. THE ELECTRICAL SUBCONTRACTOR WILL MOUNT ALL SUCH STARTERS, AS DIRECTED, FURNISHING SUPPORTING STRUCTURES WHERE NECESSARY. THE OWNER AND OTHER SUBCONTRACTORS SHALL FURNISH WITH EACH ITEM REQUIRING ELECTRICAL CONNECTIONS, THE NECESSARY INSTRUCTIONS AND WIRING DIAGRAMS TO THE ELECTRICAL SUBCONTRACTOR. THE ELECTRICAL SUBCONTRACTOR SHALL REFER TO THE SPECIFICATIONS TO DETERMINE THE SCOPE OF THE WORK.

1.1.16 LARGE APPARATUS AND EQUIPMENT

- A. ALL LARGE APPARATUS AND EQUIPMENT WHICH IS SPECIFIED OR SHOWN TO BE FURNISHED OR INSTALLED UNDER THIS CONTRACT, AND WHICH MAY BE TOO LARGE TO BE MOVED INTO ITS FINAL POSITION THROUGH THE NORMAL BUILDING OPENINGS PLANNED, SHALL BE PLACED BY THIS SUBCONTRACTOR IN ITS APPROXIMATE FINAL POSITION. THIS SHALL BE ACCOMPLISHED THROUGH COOPERATION AND COORDINATION WITH OTHER SUBCONTRACTORS BEFORE ANY OBSTRUCTING STRUCTURE IS INSTALLED. ALL APPARATUS SHALL BE CRIBBED UP FROM THE FLOOR BY THIS SUBCONTRACTOR AND CARED FOR AS SPECIFIED UNDER "STORAGE AND PROTECTION" OR AS DIRECTED BY THE ARCHITECT.

1.1.17 RESPONSIBILITY

- A. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE SATISFACTORY AND COMPLETE EXECUTION OF ALL WORK INCLUDED. HE SHALL PRODUCE COMPLETE FINISHED OPERATING SYSTEMS AND PROVIDE ALL INCIDENTAL ITEMS REQUIRED AS PART OF HIS WORK, REGARDLESS OF WHETHER SUCH ITEM IS PARTICULARLY SPECIFIED OR INDICATED.

1.1.18 CLEAN UP

- A. CLEAN UP TRASH AND DEBRIS CAUSED BY THE WORK OF THIS SECTION, KEEPING PREMISES, STREETS, SIDEWALKS AND ADJACENT AREAS CLEAN AND NEAT AT ALL TIMES. DISPOSE OF SUCH MATERIALS OUTSIDE THE LIMITS OF THE PROJECT SITE TO APPROVED LOCATIONS.

1.1.19 PAINTING

- A. UPON COMPLETION, CLEAN ALL PIPES AND EQUIPMENT BEFORE PAINTING. PAINTING OF MECHANICAL EQUIPMENT AND PIPING IS SPECIFIED IN ARCHITECTURAL PAINTING SECTION.

1.1.20 ACCESS DOORS

- A. ACCESS DOORS ARE TO BE PROVIDED BY THE CONTRACTOR. CONTRACTOR WILL CLOSELY COORDINATE LOCATIONS OF VALVES, ETC. IN ORDER TO HAVE ACCESS TO ALL CONCEALED PORTIONS OF THE SYSTEM REQUIRING PERIODIC SERVICE. PREPARE SHOP DRAWINGS FOR COORDINATION OF ALL ACCESS DOORS, LOCATING SAME FOR INSTALLATION BY GENERAL CONTRACTOR. ACCESS DOOR LOCATIONS SHALL BE APPROVED BY ARCHITECT OR OWNER BEFORE INSTALLATION.

1.1.21 EXCAVATION AND BACKFILLING

- A. PROVIDE NECESSARY EXCAVATING AND BACKFILLING FOR THE INSTALLATION OF WORK SPECIFIED IN THIS DIVISION. TRENCHES FOR UNDERGROUND PIPING AND CONDUIT SHALL BE EXCAVATED TO REQUIRED DEPTHS WITH BELL HOLES PROVIDED AS NECESSARY TO INSURE UNIFORM BEARINGS. ARE SHOULD BE TAKEN NOT TO EXCAVATE BELOW DEPTH, AND ANY EXCAVATION BELOW DEPTH SHALL BE REFILLED WITH SAND OR GRAVEL FIRMLY COMPACTED. WHERE ROCK OR HARD OBJECTS ARE ENCOUNTERED, THEY SHALL BE EXCAVATED TO A GRADE SIX INCHES (6") BELOW THE LOWERMOST PART OF THE PIPE AND REFILLED TO THE PIPE GRADE AS SPECIFIED. AFTER THE PIPE HAS BEEN INSTALLED, TESTED AND APPROVED, THE TRENCHES SHALL BE BACKFILLED IN GRADE WITH APPROVED MATERIAL, WELL TAMPED OR PUDDLED COMPACTLY IN PLACE. DO NOT PROCEED WITH BACKFILL OPERATIONS UNTIL THE ARCHITECT OR CONTRACTOR HAS INSPECTED PIPING. ALL PIPING OUTSIDE THE BUILDING SHALL BE INSTALLED BELOW THE FROST LINE, WHERE STREETS, SIDEWALKS, ETC. ARE DISTURBED, CUT OR DAMAGED BY THIS WORK, THE EXPENSE OF REPAIRING SAME IN A MANNER APPROVED BY THE ARCHITECT SHALL BE A PART OF THIS CONTRACT.

1.1.22 SLEEVES AND ESCUTCHEONS

- A. ALL PIPING OTHER THAN SANITARY SEWER LINES AND PVC OR POLYBUTAL PASSING THROUGH CONCRETE FLOOR SLABS SHALL BE COMPLETELY ISOLATED IN 1/2" THICK FLEXIBLE FOAM PLASTIC INSULATION 6" BELOW THE SLAB TO 2" ABOVE THE SLAB. IF PIPES PASS THROUGH GRADE BEAMS, THE INSULATION THICKNESS SHALL BE 3/8" SANITARY SEWER LINES PASSING GRADE BEAMS SHALL BE WRAPPED WITH TWO (2) PLY OF 1/8" FELT TO ISOLATE THE PIPE FROM THE CONCRETE.
- B. ESCUTCHEONS EXCEPT AS SPECIFICALLY NOTED OR SPECIFIED SHALL BE INSTALLED ON ALL PIPES PASSING EXPOSED THROUGH THE FLOORS, WALLS OR CEILINGS. ESCUTCHEONS SHALL BE CHROME PLATED SECTIONAL FLOOR AND CEILING PLATES AND SHALL FIT SNUGLY AND NEATLY AROUND PIPE OR PIPE INSULATION OR INSULATED LINES. SOLID CHROME PLATES WITH SETSCREWS SHALL BE USED IF SECTIONAL PLATES DO NOT FIT PROPERLY OR STAY IN PLACE.

1.1.23 FLASHINGS

- A. FLASH AROUND ALL PIPES PASSING THROUGH THE ROOF IN CONNECTION WITH THIS CONTRACT WITH STANDARD MANUFACTURED FLASHINGS, FLASHINGS SHALL BE SHEET METAL WITH RUBBER GASKETS. FLASHINGS SHALL EXTEND INTO ROOFING AND UP PIPE DISTANCES IN ACCORDANCE WITH THE LOCAL CODE.

1.1.24 EXPANSION OF PIPING

- A. THIS SUBCONTRACTOR SHALL FURNISH AND INSTALL ALL DEVICES REQUIRED TO PERMIT THE EXPANSION AND CONTRACTION OF ALL PIPE WORK INSTALLED PARTICULARLY IN WATER SUPPLY AND CIRCULATING SYSTEMS. IN THE MAIN WATER AND CIRCULATING LINES, HE SHALL EMPLOY EXPANSION JOINTS AS REQUIRED OR WHERE DIRECTED.
- B. SHOULD THE INSTALLATION OF MECHANICAL EXPANSION JOINTS BECOME NECESSARY IN THE OPINION OF THE ARCHITECT, JOINTS 1-1/2" AND SMALLER SHALL BE FULTON SYLPHON NO. 111 PACKLESS EXPANSION JOINTS. JOINTS ON 2" AND LARGER LINES SHALL BE DOSCO FLEXCONS OR TUBE TURN, BELLOW TYPE EXPANSION JOINTS WITH THE PROPER NUMBER OF BELLOW SECTIONS OF STAINLESS STEEL.
- C. ANCHOR ALL LINES HAVING EXPANSION JOINTS SO THAT EXPANSION AND CONTRACTION EFFECT IS EQUALLY DISTRIBUTED. VERIFY EXACT LOCATIONS OF ANCHORS WITH THE ARCHITECT PRIOR TO MAKING INSTALLATION. THESE LINES HAVING EXPANSION JOINTS SHALL BE ACCURATELY GUIDED ON BOTH SIDES OF EACH JOINT. THESE GUIDES SHALL CONSIST OF SADDLES AND "E" CLAMPS PROPERLY ARRANGED AND SUPPORTED. SUBMIT COMPLETE DETAILS FOR APPROVAL.

1.1.25 FLAME SPREAD PROPERTIES OF MATERIALS

- A. ALL MATERIALS AND ADHESIVES USED FOR ACOUSTICAL LININGS AND INSULATION, JACKETS, TAPES, ETC. SHALL CONFORM TO INTERIM FEDERAL STANDARD FLAME-SPREAD PROPERTIES OF MATERIALS, INC. FED. STD. NO. 00336A (COMM. NBS). THE CLASSIFICATION SHALL NOT EXCEED NO. 2, WITH THE RANGE OF INDICES BETWEEN 0 AND 25 FOR THESE CLASSIFICATIONS AS LISTED IN THE FEDERAL SPECIFICATIONS FOR THE BASIC MATERIALS, THE FINISHES, ADHESIVES, ETC. AS SPECIFIED FOR EACH SYSTEM, AND SHALL BE SUCH THAT WHEN COMPLETELY ASSEMBLED THE TOTAL WILL NOT EXCEED AN INDEX OF 50 IN CLASSIFICATION 111 AS LISTED IN THE FEDERAL SPECIFICATIONS. MODIFICATIONS SHALL BE MADE TO INSULATING MATERIALS, ETC. AS REQUIRED TO COMPLY WITH THE FEDERAL SPECIFICATIONS.

1.1.26 GUARANTEE

- A. THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE IN TRIPlicate, WARRANTING ALL MATERIALS, EQUIPMENT AND LABOR FURNISHED BY HIM TO BE FREE OF ALL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. HE SHALL FURTHER GUARANTEE THAT ALL EQUIPMENT SHALL MEET THE CHARACTERISTICS, CAPACITIES AND WORKMANSHIP SPECIFIED AND WITHIN THE WARRANTY PERIOD, THE DEFECTS AND/OR EQUIPMENT WILL BE REPAIRED OR MADE GOOD WITHOUT COST TO THE OWNER. THE CONTRACTOR FURTHER AGREES TO CORRECT WARRANTY DEFICIENCIES WITHIN 48 HOURS OF NOTIFICATION BY MANAGEMENT.
- B. REFERENCE DOCUMENTS: CONDITIONS OF THE CONTRACT AND DIVISION 01 "GENERAL REQUIREMENTS" ARE MADE A PART OF THIS SECTION WHETHER ATTACHED HERETO OR NOT.

SECTION 4 - HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

4.1.1 SCOPE

- A. PROVIDE COMPLETE AIR SUPPLY, RETURN, OUTSIDE AIR AND EXHAUST SYSTEMS INCLUDING FANS, TERMINAL DEVICES AND OTHER COMPONENTS SPECIFIED HEREIN.

4.1.2 SUBMITTALS

- A. SHOP DRAWINGS: SUBMIT COMPLETE SHOP DRAWINGS, IN ACCORDANCE WITH SECTION 1.1 INDICATING MATERIALS, QUANTITIES, SIZES AND INSTALLATION DETAILS.

4.1.3 ORIENTATION

- A. INSTALL MATERIALS AND EQUIPMENT AT PROPER TIME TO KEEP PACE WITH THE GENERAL CONSTRUCTION AND THE WORK OF THE OTHER TRADES INVOLVED.

4.1.4 WARRANTY

- A. THE MECHANICAL SUB-CONTRACTOR SHALL WARRANTY ALL MATERIAL, WORKMANSHIP AND EQUIPMENT FOR A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE BY THE OWNER. THE WARRANTY SPECIFICALLY IMPLIES THAT ANY DEFECTIVE PORTION BECOMING APPARENT DURING THIS PERIOD WILL BE REPAIRED, REPLACED OR OTHERWISE MADE GOOD AT NO ADDITIONAL COST TO THE OWNER. IT SHALL FURTHER INCLUDE REPLACEMENT OR REFRIGERANT LOSS NOT DUE TO OWNER NEGLIGENCE. COMPRESSORS SHALL CONTAIN AN ADDITIONAL FOUR-YEAR WARRANTY.

4.2 DUCTWORK

- A. RIGID DUCTWORK: ALL AIR CONDITIONING AND EXHAUST DUCTWORK, PLENUM, CASINGS AND SHEET METAL, CONNECTIONS SHALL BE FABRICATED OF NEW JOINT-FORMING QUALITY GALVANIZED PRIME GRADE SHEETS.
- B. RECTANGULAR LOW PRESSURE DUCTS: CONSTRUCTED OF THE FOLLOWING MINIMUM GAUGES:

LARGEST DIMENSION OF DUCT	GAUGE OF METAL
UP TO 12"	NO. 26 U.S. GAUGE
13" TO 30"	NO. 24 U.S. GAUGE
31" TO 54"	NO. 22 U.S. GAUGE
- C. ROUND LOW PRESSURE DUCTS: "SNAP-LOK" AS MANUFACTURED BY UNITED SHEET METAL COMPANY.
- D. RECTANGULAR DUCTWORK FITTINGS: FABRICATED PER SMACNA STANDARDS FOR LOW-PRESSURE DUCTWORK(2-INCH PRESSURE CLASS).
- E. ROUND DUCTWORK FITTINGS: AS MANUFACTURED BY UNITED SHEET METAL CO., AND/OR AS DETAILED ON THE DRAWINGS.
- F. FLEXIBLE CONNECTIONS: CONNECTIONS TO AIR CONDITIONING UNITS AND FANS SHALL BE FLEXIBLE CONNECTIONS WHICH SHALL BE NEOPRENE COATED GLASS FABRIC WEIGHING NOT LESS THAN 30 OUNCES PER SQUARE YARD AND AT LEAST 1/16" THICK.
- G. AT THE CONTRACTOR'S OPTION, 2" INSULATED FLEXIBLE DUCT MAY BE USED FOR FINAL RUN OUT TO AIR DEVICES WHEN INSTALLED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. FLEXIBLE RUN OUTS SHALL NOT EXCEED 5-FEET EXTENDED LENGTH.
- H. SURFACE-BURNING CHARACTERISTICS FOR SEALANTS AND GASKETS SHALL BE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO UL 723; CERTIFIED BY AN NRTL.
- I. ACCESS DOORS SHALL BE PROVIDED FOR ACCESS TO ALL DAMPPERS, FUSIBLE LINKS, AND WHERE REQUIRED FOR MAINTENANCE AND CLEANING. ACCESS DOORS SERVING INSULATED DUCTS SHALL BE DOUBLE-SKIN DOORS WITH ONE INCH OF INSULATION ON THE DOOR, WHERE DUCT SIZE PERMITS, THE ACCESS DOORS SHALL BE 16-INCHES. ACCESS DOORS SHALL BE AS MANUFACTURED BY MILCOR.

4.3.1 INSULATION

- A. ALL RECTANGULAR SHEET METAL DUCTS SHALL BE INSULATED WITH 2.5-INCH" THICK, 3/4" LB DENSITY FIBERGLASS-FACED INSULATION, OR AS REQUIRED TO MEET A MINIMUM INSTALLED R-VALUE OF 8.0. INSTALL WITH ALL JOINTS OVERLAPPED AND NEATLY SEALED.
- B. ALL ROUND SHEET METAL DUCTS SHALL BE INSULATED WITH 2.5" THICK, 3/4" LB DENSITY FIBERGLASS-FACED INSULATION, OR AS REQUIRED TO MEET A MINIMUM INSTALLED R-VALUE OF 8.0. INSTALL WITH ALL JOINTS OVERLAPPED AND NEATLY SEALED WITH UL 181 LISTED SEALANT.
- C. INSULATE REFRIGERANT PIPING WITH 3/8" THICK ARMAFLEX. APPLY INSULATION WITH ALL JOINTS FIRMLY BUTTED TOGETHER.

4.4.1 FILTERS

- A. FILTERS SHALL BE 1" THROW AWAY TYPE AND SHALL BE FARR 30-30 FILTER OR EQUAL TYPE BY CAMBRIDGE OR MICROTRON. MAXIMUM VELOCITY THROUGH FILTER MEDIA SHALL BE 500 FPM.

4.5.1 AIR DISTRIBUTION DEVICES

- A. AIR DISTRIBUTION DEVICES SHALL BE FURNISHED WITH FRAME STYLES, DEFLECTING DEVICE, DAMPERS AND OTHER ACCESSORIES AS SHOWN ON THE SCHEDULE, AS MANUFACTURED BY TITUS OR APPROVED EQUAL BY METAL-AIRE, PRICE, OR KRUEGER.
  - B. WALL LOUVERS SHALL BE RECESSED FRAME DOUBLE WEATHER STOP WITH BIRD SCREEN. PROVIDE RUSKIN MODEL L545 OR APPROVED EQUAL BY GREENHECK OR SEMCO.
  - C. FURNISH AND INSTALL SCREENS ON ALL DUCT, FAN OR OTHER MECHANICAL OPENINGS OR EQUIPMENT FURNISHED BY THIS CONTRACTOR, WHICH LEAD TO OR ARE OUTDOORS. SCREENS SHALL BE 16 GAUGE, ONE-HALF INCH MESH IN REMOVABLE GALVANIZED FRAMES.
- 4.6.6 SYSTEM CHARGING AND STARTUP
- A. SUPPLY THE INITIAL CHARGE OF REFRIGERANT AS REQUIRED TO COMPLETELY CHARGE THE SYSTEM. ANY LOSS OF REFRIGERANT OR OIL DURING TESTING PERIOD OR INITIAL RUNS SHALL BE REPLACED BY THE MECHANICAL SUB-CONTRACTOR AT HIS COST.
  - B. THE SYSTEMS SHALL BE CHARGED ONLY AFTER THEY HAVE BEEN TESTED AND RENDERED FREE OF LEAKS AND THOROUGHLY EVACUATED USING A VACUUM PUMP AND A RELIABLE VACUUM DEHYDRATION INDICATOR, FOLLOWING STANDARD RECOMMENDED PROCEDURES.
  - C. MECHANICAL SUB-CONTRACTOR SHALL OPERATE ALL SYSTEMS UNTIL THE SATISFACTORY PERFORMANCE OF SPECIFICATION REQUIREMENTS IS DEMONSTRATED TO THE COMPLETE SATISFACTION OF THE CONTRACTOR. PRIOR TO AND DURING OPERATION, ALL CONTROLS AND OTHER APPURTENANCES AND DEVICES SHALL BE ADJUSTED AND CALIBRATED. TEST ALL SAFETY DEVICES AND MAKE READY FOR AUTOMATIC OPERATION. ALL SYSTEMS SHALL BE CALIBRATED, AND ALL FANS AND OTHER ROTATING PARTS SHALL BE PROPERLY LUBRICATED AND CHECKED FOR CORRECT ALIGNMENT.
  - D. THE MECHANICAL SUB-CONTRACTOR DURING OPERATION AND BALANCING PERIODS, SHALL INSTRUCT THE CONTRACTOR'S AND OWNER'S PERSONNEL IN THE OPERATION AND CONTROL OF THE SYSTEMS AND MAINTENANCE SCHEDULE.

SECTION 5 - SYSTEM BALANCING

5.1.1 SCOPE

- A. TESTING, ADJUSTMENT AND START-UP OF MECHANICAL SYSTEMS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY THE AMERICAN AIR BALANCE COUNCIL OR SIMILAR ORGANIZATION. TESTING, ADJUSTING AND BALANCING SHALL BE PERFORMED BY AN INDEPENDENT 3RD PARTY CONTRACTOR. ALL NECESSARY TEST EQUIPMENT, INSTRUMENTS, MATERIALS AND LABOR REQUIRED FOR PERFORMING ALL THE TESTS DESCRIBED SHALL BE PROVIDED AS PART OF THE WORK OF THE DIVISION.
- B. UPON COMPLETION OF THE INSTALLATION AND START-UP OF THE MECHANICAL EQUIPMENT, CHECK, ADJUST AND BALANCE SYSTEMIC COMPONENTS TO OBTAIN OPTIMUM CONDITIONS IN EACH CONDITIONED SPACE IN THE BUILDING.
- C. PRIOR TO REQUESTING A FINAL INSPECTION, THIS SUB-CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ARCHITECT/ENGINEER OF RECORD COMPLETE REPORTS ON THE BALANCE AND OPERATIONS OF THE SYSTEM, BEARING THE SEAL OF A CERTIFIED AIR BALANCE TECHNICIAN. IN THIS REPORT, THE ORIGINAL CONDITIONS MEASURED AT STARTUP AND FINAL CONDITIONS AFTER BALANCING OF ALL EQUIPMENT SHALL BE CLEARLY INDICATED.
- D. MAKE AN INSPECTION IN THE BUILDING DURING THE OPPOSITE SEASON FROM THAT IN WHICH THE INITIAL ADJUSTMENTS WERE MADE AND, AT THE TIME, MAKE ANY NECESSARY MODIFICATIONS TO THE INITIAL ADJUSTMENTS REQUIRED TO PRODUCE OPTIMUM OPERATION OF THE SYSTEMIC COMPONENTS TO PRODUCE THE PROPERTY CONDITIONS IN EACH CONDITIONED SPACE.

5.1.2 WORK INCLUDED

- A. THE BALANCING TECHNICIAN SHALL BE RESPONSIBLE FOR INSPECTING, ADJUSTING, BALANCING AND LOGGING THE DATA ON THE PERFORMANCE OF FANS, ALL DAMPERS IN THE DUCT SYSTEMS AND ALL AIR DISTRIBUTION DEVICES. THE MECHANICAL CONTRACTOR AND THE SUPPLIERS OF THE EQUIPMENT INSTALLED SHALL ALL COOPERATE WITH THE BALANCING TECHNICIAN TO PROVIDE ALL NECESSARY DATA ON THE DESIGN AND PROPER APPLICATION OF THE SYSTEMATIC COMPONENTS AND SHALL FURNISH ALL LABOR AND MATERIALS REQUIRED TO ELIMINATE ANY DEFICIENCIES OR IMPROPER-PERFORMANCE. DURING THE BALANCING, THE TEMPERATURE REGULATION SHALL BE ADJUSTED FOR PROPER RELATIONSHIP BETWEEN CONTROLLING INSTRUMENTS AND CALIBRATED BY THE TEMPERATURE CONTROLS SUB-CONTRACTOR USING DATA SUBMITTED BY THE BALANCING TECHNICIAN. THE TOTAL VARIATION SHALL NOT EXCEED 3 DEGREES FROM THE PRESENT MEDIAN TEMPERATURE DURING THE ENTIRE TEMPERATURE SURVEY PERIOD.
- B. IN ALL FAN SYSTEMS, BALANCE THE AIR QUANTITIES TO BE BETWEEN PLUS 10- TO MINUS 5-PERCENT OF THE VALUES SHOWN ON THE PLANS. IT SHALL BE THE OBLIGATION OF THE MECHANICAL CONTRACTOR TO FURNISH OR REVISE FAN DRIVES AND/OR MOTORS, IF NECESSARY, WITHOUT COST TO THE CONTRACTOR, TO ATTAIN THE SPECIFIED AIR VOLUME.

5.1.3 REPORT

- A. BEFORE FINAL ACCEPTANCE IS MADE, THE BALANCING TECHNICIAN SHALL PREPARE A DETAILED, WRITTEN REPORT.
- B. THE DATA SHALL BE NEATLY ENTERED ON APPROPRIATE FORMS TOGETHER WITH ANY TYPED SUPPLEMENTS REQUIRED TO COMPLETELY DOCUMENT ALL RESULTS.
- C. WRITTEN EXPLANATIONS OF ANY ABNORMAL CONDITIONS SHALL BE INCLUDED. ALL THIS SHALL BE ASSEMBLED INTO A SUITABLE BROCHURE, AND A TOTAL OF FOUR COPIES SHALL BE PROVIDED.
- D. THE TYPED TEST DATA SHEETS AND CORRELATION OF THE TEST RESULTS SHALL BE CERTIFIED TO BE TRUE AND CORRECT BY A CERTIFIED AIR BALANCE TECHNICIAN OVER THE SIGNATURE OF THE SUBCONTRACTOR. SUCH SIGNATURE SHALL BE EXECUTED BY AN OFFICER IF THE SUBCONTRACTING FIRM IS A CORPORATION, A PARTNER IF A PARTNERSHIP, OR BY THE OWNER IS A SOLE OWNERSHIP. THIS DATA SHALL BE DELIVERED TO DESIGNATED MEMBERS OF THE BUILDING OPERATING PERSONNEL NOT LESS THAN THREE DAYS AFTER THE TESTS ARE COMPLETE SETTINGS, READING, ETC. SHALL BE PREPARED AND SUBMITTED IN QUADRUPLICATE.

5.1.4 INSTRUCTIONS

- A. DURING THE TEST PERIODS, THE BALANCING TECHNICIAN SHALL INSTRUCT THE BUILDING MAINTENANCE PERSONNEL IN THE CONSTRUCTION AND OPERATION OF ALL EQUIPMENT.

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REV#	DESCRIPTION	DATE
1	CLIENT COMMENTS	6/27/2025

ISSUE DATE:	06/06/2025
PROJECT NUMBER:	9248-23
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MECHANICAL  
SPECIFICATIONS

SHEET NUMBER:

M4.0  
SKIN CARE REMODEL

**PLUMBING SYMBOLS AND ABBREVIATIONS**

NOTE: ALL SYMBOLS AND ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS

**GENERAL NOTES**

- PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALL PERMITS, INSPECTIONS, LICENSES AND FEES. FURNISH ALL LABOR, EQUIPMENT, SUPPLIES AND MATERIALS NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEMS.
- THE DRAWINGS AND SPECIFICATIONS INDICATE THE GENERAL DESIGN AND ARRANGEMENT OF PIPES, FIXTURES, EQUIPMENT, SYSTEMS, ETC. INFORMATION SHOWN IS DIAGRAMMATIC IN CHARACTER AND DOES NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, FITTING, ETC. DO NOT SCALE THE DRAWINGS FOR DIMENSIONS. TAKE ALL DIMENSIONS, MEASUREMENTS, EQUIPMENT LOCATIONS, LEVELS, ETC FROM THE ARCHITECTURAL DRAWINGS AND FROM THE EQUIPMENT TO BE FURNISHED. PIPING MAY BE RELOCATED OR OFFSET FOR PROPER CLEARANCES OR TO AVOID CONFLICTS WITH OTHER TRADES. THE DESIGN INTENT (I.E. PITCHES, VELOCITIES, PRESSURE DROPS, VOLTAGE DROPS, ETC) CANNOT BE GREATLY ALTERED WITHOUT THE APPROVAL OF THE ARCHITECT. THE COST OF THESE DEVIATIONS TO AVOID INTERFERENCE'S SHALL BE PART OF THE ORIGINAL CONTRACT BID.
- EACH SUBCONTRACTOR SHALL CONFER AND COOPERATE WITH ALL OTHER TRADES TO COORDINATE THEIR WORK. COORDINATION SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO MATERIALS AND EQUIPMENT ROUTED IN CEILING AND WALL CAVITIES, EQUIPMENT ARRANGEMENT IN MECHANICAL SPACES, INCLUDING EQUIPMENT CLEARANCE REQUIREMENTS, ELEVATIONS AND DIMENSIONS OF STRUCTURAL MEMBERS AND OPENINGS, ETC. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY CONFLICTS.
- BASE FINAL INSTALLATION OF MATERIALS AND EQUIPMENT ON ACTUAL DIMENSIONS AND CONDITIONS AT THE PROJECT SITE. FIELD MEASURE FOR MATERIALS AND EQUIPMENT REQUIRING EXACT FIT. NO EXTRAS WILL BE GIVEN FOR THE CONTRACTORS FAILURE TO FIELD COORDINATE.
- THE OWNER OR ENGINEER ARE NOT RESPONSIBLE FOR THE CONTRACTOR'S SAFETY PRECAUTIONS OR FOR MEANS, METHODS, TECHNIQUES, CONSTRUCTION SEQUENCES, OR PROCEDURES REQUIRED TO PERFORM THE WORK.
- THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT THAT MUST BE SERVICED, OPERATED, OR MAINTAINED IN FULLY ACCESSIBLE POSITIONS. EQUIPMENT SHALL INCLUDE (BUT NOT LIMITED TO) VALVES, SHOCK ABSORBERS, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS SWITCHGEAR, AND DRAIN POINTS IF REQUIRED FOR BETTER ACCESSIBILITY. FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM THE DRAWINGS MAY BE ALLOWED TO PROVIDE FOR BETTER ACCESSIBILITY. ANY CHANGES SHALL BE APPROVED BY THE ARCHITECT AND CONSTRUCTION MANAGER/GENERAL CONTRACTOR PRIOR TO MAKING THE CHANGE.
- THE CONTRACTOR SHALL PROVIDE ACCESS DOORS, WALL OPENINGS, ROOF OPENINGS OR ANY OTHER CONSTRUCTION REQUIREMENT NEEDED TO ACCOMMODATE THE PLUMBING EQUIPMENT. LOCATIONS OF THESE OPENINGS SHALL BE SUBMITTED IN SUFFICIENT TIME TO BE INSTALLED IN THE NORMAL COURSE OF WORK.
- THE CONTRACTOR SHALL COORDINATE ELECTRICAL REQUIREMENTS OF PLUMBING EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO THE PURCHASE AND INSTALLATION OF ANY ELECTRICAL GEAR OR CONDUIT.
- PROVIDE VIBRATION ISOLATORS FOR MOTOR DRIVEN PLUMBING EQUIPMENT UNLESS NOTED OTHERWISE. PROVIDE ISOLATION AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
- THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL WALL CLEANOUTS, ACCESS DOORS, ETC WITH THE ARCHITECT AND ALL OTHER TRADES PRIOR TO INSTALLATION. IF A CONFLICT WITH MILLWORK, LIGHT SWITCHES, WINDOWS, ETC EXISTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF THE POTENTIAL INTERFERENCE PRIOR TO INSTALLATION.
- PLUMBING VENTS THROUGH THE ROOF SHALL BE A MINIMUM OF 10 FEET FROM ALL OUTSIDE AIR INTAKES AND A MINIMUM OF 5 FEET FROM EXTERIOR PERIMETER WALLS.
- SOME PIPES SHOWN ON EACH FLOOR PLAN MAY BE SHOWN WITH AN OFFSET FOR CLARITY.
- PLUMBING FIXTURES AND TRIM OF LIKE KIND SHALL BE OF THE SAME MANUFACTURER THROUGHOUT THE PROJECT. TYPICAL CATEGORIES INCLUDE THE FOLLOWING:
  - WATER CLOSETS, LAVATORIES, URINALS
  - ELECTRIC WATER COOLERS, DRINKING FOUNTAIN
  - FAUCETS, MIXING VALVES
  - TAIL PIECE, FIXTURE TRAPS, ESCUTCHEONS, ARM EXTENSIONS, STRAINERS
  - FIXTURE CARRIERS, FLOOR DRAINS, FLOOR SINKS, ROOF DRAINS, OVERFLOW DRAINS.
  - COUNTER TOP SINKS.
- PROVIDE WATER HAMMER ARRESTERS BETWEEN THE NEXT TO LAST AND LAST FIXTURE AT EACH BATTERY OF PLUMBING FIXTURES IN ACCORDANCE WITH THE WATER HAMMER ARRESTER SCHEDULE AND THE PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201.
- ALL SANITARY WASTE PIPING WITHIN THE BUILDING ENVELOPE SHALL HAVE MINIMUM SLOPES AS REQUIRED BY THE LOCAL CODE AUTHORITY. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS INDICATED ON FLOOR PLANS PRIOR TO INSTALLATION OF ANY SITE UTILITIES AND CONNECTION INTO EXISTING SERVICES.
- COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA). PLUMBING CONTRACTOR SHALL PROVIDE PLUMBING FIXTURES WITH FLUSH VALVE HANDLES LOCATED ON THE WIDE SIDE OF EACH STALL.
- SEAL ALL PIPE PENETRATIONS THROUGH FIRE RATED BUILDING ELEMENTS WITH AN APPROVED FIRE PROOFING MATERIAL.
- ALL FLOOR DRAIN AND FLOOR SINK TRAPS SHALL USE TRAP PRIMERS.
- CONTRACTOR SHALL INSTALL NEW ISOLATION VALVES AT BRANCH CONNECTION TO EACH RESTROOM ON DOMESTIC HOT AND COLD WATER SUPPLY LINES. ACCESS PANELS TO BALL VALVE SHUT OFF SHALL BE INSTALLED AS REQUIRED BY GENERAL NOTE 7.

**PLUMBING SYMBOLS LIST**

PLUMBING LEGENDS		PLUMBING ABBREVIATIONS	
	SANITARY SEWER	CW	COLD WATER
	EXISTING SANITARY SEWER	HW	HOT WATER
	VENT PIPING	HWR	HOT WATER RETURN
	EXISTING VENT PIPING	SAN	SANITARY
	COLD WATER	VTR	VENT THRU ROOF
	EXISTING COLD WATER	V	VENT
	HOT WATER	AFF/AFG	ABOVE FINISHED FLOOR/GRADE
	RECIRCULATING HOT WATER	AHJ	AUTHORITY HAVING JURISDICTION
	EXISTING HOT WATER	BFP	BACKFLOW PREVENTER
	UNDERGROUND SANITARY	ETR	EXISTING TO REMAIN
	EXISTING UNDERGROUND SANITARY	FCO	FLOOR CLEANOUT
	PIPE UP OR DOWN	GC	GENERAL CONTRACTOR
	PIPE UP	IW	INDIRECT WASTE
	UNION	PC	PLUMBING CONTRACTOR
	ISOLATION VALVE	WCO	WALL CLEANOUT
	CLEANOUT	WH	WATER HEATER
	BACKFLOW PREVENTER	ET	EXPANSION TANK
	POINT OFF CONNECTION	RCP	RE CIRCULATION PUMP
	RE-CIRCULATION PUMP	FD	FLOOR DRAIN
	HUB / FLOOR DRAIN	HD	HUB DRAIN
	HUB / FLOOR DRAIN	TYP	TYPICAL
	CONDENSATE DRAIN	CD	CONDENSATE DRAIN
	FRANCHISE	VLL	VERIFY WITH LANDLORD
	EQUIPMENT VENDOR	SPS	SEE PLUMBING SCHEDULE
	CONTRACTORS CHOICE	VIF	VERIFY IN FIELD
	OWNERS CHOICE	SK	SINK
	THERMOSTATIC MIXING VALVE	WHA	WATER HAMMER ARRESTOR
	NOT IN CONTRACT		

**PLUMBING DRAWING LIST**

P1.0	PLUMBING SCHEDULES, NOTES AND LEGENDS
P1.1	PLUMBING SPECIFICATIONS
P2.0	PLUMBING SANITARY SEWER AND VENT PLAN
P2.1	PLUMBING DOMESTIC WATER PLAN
P2.2	PLUMBING ISOMETRICS
P3.0	PLUMBING DETAILS

**APPLICABLE CODES**

- 2018 INTERNATIONAL BUILDING CODE (IBC) AMENDMENTS
- 2018 INTERNATIONAL FIRE CODE (IFC) AMENDMENTS
- 2018 INTERNATIONAL MECHANICAL CODE (IMC) AMENDMENTS
- 2018 INTERNATIONAL PLUMBING CODE (IPC) AMENDMENTS
- 2018 INTERNATIONAL FUEL GAS CODE (IFGC) AMENDMENTS
- 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) AMENDMENTS
- 2017 NATIONAL ELECTRIC CODE (NEC) AMENDMENTS

**PLUMBING FIXTURE SCHEDULE**

MARK	SYMBOL	MANUFACTURER	CATALOG NUMBER	FIXTURE DESCRIPTION	REMARKS
WCO		ZURN	Z1446	WALL CLEANOUT	WALL CLEANOUT. DURA-COATED CAST IRON BODY. GAS AND WATERTIGHT ABS TAPERED THREAD PLUG. ROUND, SMOOTH STAINLESS STEEL ACCESS COVER WITH SECURING SCREW.
SK-1		PROFLO	PFSR151561A	SINK	15"X15" ONE HOLE 6.0 22 GAUGE STAINLESS STEEL BAR SINK (SKIN CARE). COORDINATE FAUCET FOR SKIN CARE SINK WITH ARCHITECT PRIOR TO BID.

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REV#	DESCRIPTION	DATE
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PLUMBING SCHEDULES,  
 NOTES AND LEGENDS

SHEET NUMBER:

**P1.0**

**SKIN CARE REMODEL**

SECTION 1 - GENERAL

1.01 DESCRIPTION

- A. THE PLUMBING CONTRACTOR SHALL BE A LICENSED INSTALLER OF PLUMBING SYSTEMS IN THE CITY WHERE WORK IS PERFORMED.
- B. THE CONTRACTOR SHALL BE QUALIFIED WITH AT LEAST 5 YEARS OF SUCCESSFUL INSTALLATION EXPERIENCE ON PROJECTS WITH WORK SIMILAR TO THAT REQUIRED FOR THIS PROJECT.
- C. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE BUILDING CODE OF THE LATEST EDITION.

1.02 VERIFYING CONDITIONS

- A. EXAMINE ALL DRAWINGS COVERING THE WORK OF THIS SECTION AND REFER TO OTHER DRAWINGS, INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, WHICH MAY AFFECT THE WORK OF THIS SECTION OR REQUIRE COORDINATION BY SAME.
- B. BEFORE STARTING ANY WORK, EXAMINE AND THOROUGHLY CHECK DRAWINGS, DIMENSIONS, SPECIFICATIONS, AND ADJOINING OR UNDERLYING CONDITIONS IN WHICH THE WORK OF THIS SECTION IS TO BE PERFORMED.
- C. REPORT, IN WRITING, TO THE ARCHITECT ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK OF THIS SECTION. DO NOT COMMENCE WORK UNTIL ANY AND ALL SUCH CONDITIONS HAVE BEEN CORRECTED BY THE TRADE OR TRADES RESPONSIBLE.
- D. FAILURE TO NOTIFY THE ARCHITECT OF UNSATISFACTORY CONDITIONS WILL BE CONSTRUED AS AN ACCEPTANCE OF ALL CONDITIONS.
- E. THE EXECUTION OF THE WORK OF THIS SECTION CONSTITUTES ACCEPTANCE OF THE BASE OR ADJOINING WORK AND OTHER CONDITIONS AS BEING SATISFACTORY IN EVERY RESPECT AND LATER CLAIMS OF DEFECTS IN SUCH CASES WILL NOT BE ALLOWED.
- F. THE DRAWINGS INDICATE AND THE SPECIFICATIONS DESCRIBE THE GENERAL ARRANGEMENT AND THE APPROXIMATE LOCATION OF EQUIPMENT, FIXTURES, PIPING, ETC. EXACT LOCATIONS MAY BE ADJUSTED IN THE FIELD TO SUIT EXISTING CONDITIONS.
- G. THE CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE OWNER, MAKE ALL REASONABLE MODIFICATIONS IN THE WORK AS MAY BE REQUIRED TO PREVENT CONFLICT WITH THE WORK OF OTHER TRADES, OR FOR THE PROPER INSTALLATION PLUMBING FIXTURES AND EQUIPMENT.

1.03 SHOP DRAWINGS AND SAMPLES

- A. SUBMIT SHOP DRAWINGS AND SAMPLES WITH ALL DETAILS AND INFORMATION, AS REQUIRED FOR THE WORK OF THIS SECTION AND IN ACCORDANCE WITH GENERAL CONDITIONS OR AS REQUESTED BY THE ARCHITECT OR ENGINEER
- B. SUBMIT FOR APPROVAL: SAMPLES OF MATERIALS, AFFIDAVITS, CERTIFICATES, ETC., AS REQUIRED BY THE GENERAL CONDITIONS OR AS REQUESTED BY THE ARCHITECT
- C. SUBMIT FOR APPROVAL SHOP DRAWINGS AND CATALOG CUTS OF THE FOLLOWING:
  1. PLUMBING TAGS AND EQUIPMENT
  2. VALVES
  3. PIPE AND FITTINGS
  4. HANGERS
  5. INSULATION
  6. WATER HEATERS
  7. VACUUM BREAKERS
  8. PIPING LAYOUT
  9. GREASE INTERCEPTORS
  10. BACKFLOW PREVENTION DEVICES

1.04 AS-BUILT DRAWINGS

- A. THE CONTRACTOR SHALL KEEP A SET OF PLANS ON THE JOB, NOTING DAILY ALL CHANGES MADE IN CONNECTION WITH THE FINAL INSTALLATION INCLUDING EXACT DIMENSIONED LOCATIONS OF ALL NEW AND UNCOVERED EXISTING UTILITY PIPING OUTSIDE THE BUILDING.
- B. PREPARE AND SUBMIT "AS-BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

1.05 TESTS

- A. ALL PLUMBING SYSTEMS SHALL BE SUBJECT TO AN OPERATING TEST UNDER DESIGN CONDITIONS TO ENSURE PROPER SEQUENCE AND OPERATION THROUGHOUT THE RANGE OF OPERATION REGARDLESS OF THE SEASON.
- B. ALL NEW PLUMBING SYSTEMS SHALL BE OPERATED SEPARATELY AND COINCIDENT WITH OTHER SYSTEMS FOR A PERIOD OF TIME TO DEMONSTRATE TO THE SATISFACTION OF THE OWNER, ENGINEER AND ARCHITECT THE ABILITY OF THE EQUIPMENT TO MEET CAPACITY AND PERFORMANCE REQUIREMENTS WHILE MAINTAINING DESIGN CONDITIONS IN ACCORDANCE WITH THE TRUE INTENT AND PURPOSE OF THESE SPECIFICATIONS
- C. MAKE ADJUSTMENTS AS REQUIRED TO ENSURE PROPER FUNCTIONING OF ALL SYSTEMS.

1.06 CLEANING

- A. ALL PIPING, FIXTURES, EQUIPMENT, ETC., INSTALLED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED AND PROTECTED DURING CONSTRUCTION AND PUT INTO FIRST-CLASS OPERATING CONDITION BEFORE BEING OFFERED FOR ACCEPTANCE.
- B. UPON COMPLETION OF ALL WORK, THE PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN ALL PLUMBING FIXTURES AND LEAVE ALL ITEMS READY FOR USE BY THE OWNER. ALL FLOOR DRAINS SHALL BE CLEANED AND MANUFACTURERS PROTECTIVE COVERINGS SHALL BE REMOVED.

1.07 LAWS, ORDINANCES, ETC.

- A. THE WORK OF THIS CONTRACTOR MUST COMPLY WITH ALL LOCAL LAWS, ORDINANCES AND RULES. THIS CONTRACTOR MUST HAVE THE NECESSARY INSPECTIONS MADE BY THESE AUTHORITIES, PAY ALL THE REQUIRED FEES, AND FURNISH THE OWNER WITH CERTIFICATES OF APPROVAL BEFORE FINAL PAYMENT ON THIS CONTRACT IS MADE. HE SHALL APPLY, PAY FOR, AND OBTAIN ALL PERMITS.

1.08 SUPERVISION

- A. THIS CONTRACTOR SHALL HAVE A COMPETENT FOREMAN IN CHARGE OF THE WORK WHO SHALL BE ON THE SITE DURING THE INSTALLATION OF THE MATERIAL FURNISHED UNDER THIS SPECIFICATION UNTIL SAME HAS BEEN PUT IN COMPLETE OPERATIVE CONDITION AND ACCEPTED BY THE OWNER. 1.09 CUTTING AND PATCHING
- B. THIS CONTRACTOR SHALL DO ALL CUTTING AND PATCHING FOR PLUMBING WORK AND SHALL COORDINATE SAME WITH ALL OTHER TRADES. ALL CUTTING SHALL BE SUBJECT TO TRADE REGULATIONS. NO CUTTING OF STRUCTURAL MEMBERS SHALL BE DONE WITHOUT THE APPROVAL OF THE ARCHITECT.

SECTION 2 - MATERIAL

2.01 GENERAL

- A. THE PLUMBING SYSTEMS SHALL BE COMPLETE WITH ALL PIPES, FITTINGS, TRAPS, VALVES, HANGERS AND SUPPORTS, INSULATION, ETC. AND ALL OTHER ITEMS NECESSARY FOR COMPLETE AND OPERATING APPROVED TYPE SYSTEM.
- B. MANUFACTURERS: FIRMS REGULARLY ENGAGED IN MANUFACTURE OF PRODUCTS OF THIS TYPE WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS.
- C. UL COMPLIANCE: PROVIDE COMPONENTS WITH UL LISTING AND LABELING WHEN THERE IS AN APPLICABLE UL CATEGORY.
- D. PROVIDE MATERIALS, PRODUCTS, AND FABRICATIONS THAT COMPLY WITH ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS AND RECOMMENDATIONS REGARDING LEAD CONTENT AND CONTRIBUTION OF LEAD TO POTABLE WATER, THAT HAVE NO LEAD OR LEAD ALLOYS IN CONTACT WITH POTABLE WATER, AND THAT DO NOT CONTRIBUTE TO OR CAUSE LEAD IN POTABLE WATER.
- E. PROVIDE MATERIALS, PRODUCTS, AND FABRICATIONS THAT COMPLY WITH ENVIRONMENTAL PROTECTION AGENCY (EPA) REQUIREMENTS AND RECOMMENDATIONS REGARDING LEAD CONTENT AND CONTRIBUTION OF LEAD TO POTABLE WATER, THAT HAVE NO LEAD OR LEAD ALLOYS IN CONTACT WITH POTABLE WATER, AND THAT DO NOT CONTRIBUTE TO OR CAUSE LEAD IN POTABLE WATER.

2.02 SANITARY WASTE AND VENT PIPE AND FITTINGS

- A. SANITARY SEWER - CAST IRON, COPPER, OR PVC PIPING MAY BE USED EXCEPT THAT ALL PIPING BELOW GRADE SHALL BE PVC. VENTS TWO (2") INCHES IN SIZE AND SMALLER MAY COPPER PIPING.

2.04 COLD WATER AND HOT WATER PIPE AND FITTINGS

- A. DOMESTIC COLD AND HOT WATER PIPING SHALL BE COPPER TYPE "L" WITH WROUGHT COPPER FITTINGS.
- B. ALL SUPPLIES THROUGH WALLS TO FIXTURES SHALL BE 85% RED BRASS WITH THREADED BRASS FITTINGS. ALL EXPOSED PIPING IN FINISHED SPACES SHALL BE CHROME PLATED 85% RED BRASS.

2.06 EXPANSION JOINTS AND ANCHORS

- A. PROPER PROVISIONS SHALL BE MADE FOR EXPANSION AND CONTRACTION OF ALL PIPES AND THE PIPING SHALL BE ARRANGED WITH ALL NECESSARY PIPE EXPANSION LOOPS AND SWING JOINTS.
- B. MAINS AND BRANCHES MUST BE SO INSTALLED WITH SWING CONNECTIONS SO AS TO PERMIT FREE EXPANSION OF PIPING.

2.07 HANGERS AND SUPPORTS

- A. FURNISH ALL NECESSARY HANGERS, SUPPORTS, INSERTS, CLAMPS, ETC. AS REQUIRED. ALL HANGERS AND SUPPORTS SHALL BE OF HEAVY CONSTRUCTION AND SUITABLE FOR THE SIZE OF PIPE TO BE SUPPORTED. ALL INSERTS AND HANGERS SHALL BE INSTALLED TO CLEAR WORK OF OTHER TRADES.
- B. ALL HORIZONTAL CAST IRON PIPING SHALL BE SUPPORTED ON FIVE (5) FOOT CENTERS AND AT ALL JOINTS. ALL HORIZONTAL SCREWED PIPING SHALL BE SUPPORTED BY HANGERS SPACED NOT OVER TEN (10) FEET APART. ALL BRANCHES SHALL HAVE SEPARATE HANGERS. HANGERS SHALL BE CLEVIS TYPE, CONSTRUCTED OF HEAVY BAR STEEL STOCK, WITH PROPER SIZE SUSPENSION ROD AND LOCKNUTS. WHERE PIPING IS SUPPORTED FROM THE FLOOR, PROVIDE ADJUSTABLE PIPE SADDLE SUPPORT WITH U-BOLT.
- C. WHERE PIPES ARE TO BE INSULATED, THE HANGERS SHALL BE OF AMPLE SIZE TO PROVIDE FOR THE COVERING SPECIFIED AND BE PROVIDED WITH GALVANIZED STEEL INSULATION SHIELDS.
- D. ALL HANGERS, RODS, BEAM CLAMPS, ETC. SHALL BE SHOP ZINC COATED.
- E. ALL HORIZONTAL COPPER TUBING SHALL BE SUPPORTED BY HANGERS NOT OVER SIX (6) FEET APART FOR PIPES 1-1/4 INCH AND SMALLER AND NOT OVER TEN (10) FEET APART FOR PIPING 1-1/2 INCH AND LARGER. ALLOW BRANCHES SHALL HAVE SEPARATE HANGERS. HANGERS SHALL BE CLEVIS TYPE WITH COPPER BOTTOM SUPPORT. IF CHANNEL OR ANGLE IRON TRAPEZOID HANGERS ARE USED, THE SPACE ON HANGERS FOR THE COPPER TUBING SHALL BE WRAPPED WITH LEAD SHIELDS TO ISOLATE TUBING.
- F. IN AREAS OF STEEL CONSTRUCTION, PIPE HANGERS SHALL BE SUPPORTED BY BEAM CLAMPS. COORDINATE WITH ENGINEER FOR MAXIMUM LOADING. BEAM CLAMPS SHALL BE STEEL WITH BOLT, NUT AND SOCKET THREADED FOR ROD CONNECTION AND SHALL BE F & S MANUFACTURING COMPANY FIG. #45, CENTRAL IRON, GRINNELL COMPANY, OR APPROVED EQUAL.

2.08 INSULATION

- A. COVER ALL HOT WATER PIPE WITH 1 INCH THICK AND ALL COLD WATER PIPE WITH 1/2 INCH THICK MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. FITTINGS AND VALVES SHALL BE INSULATED WITH MANVILLE ZESTON 2000 PVC INSULATED FITTING COVERS. INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL INSULATION MATERIAL SHALL COMPLY WITH THE LOCAL CODE REQUIREMENTS FOR OF A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50.

2.09 VALVES

- A. STOP VALVES, EXCEPT FIXTURE STOPS, ON HOT AND COLD WATER LINES 2 IN. AND SMALLER SHALL BE FULL PORT 400 LB. NON-SHOCK BRONZE BALL VALVES, NIBCO T-595-Y FOR THREADED CONNECTIONS, AND NIBCO S-595-Y FOR COPPER TO COPPER, OR APPROVED OTHER.
- B. GLOBE VALVES UP TO AND INCLUDING 3 IN. SHALL BE SCREW-OVER BONNET, COMPOSITION DISC, BRASS, NIBCO T-211 FOR THREADED CONNECTIONS AND S-211 FO SOLDER CONNECTIONS, OR APPROVED OTHER.
- C. CHECK VALVES SHALL BE OF THE SWING-TYPE, SIZES UP TO AND INCLUDING 3 IN. SHALL BE ALL BRASS, 125 LB. S.W.P., NIBCO T-413 FOR THREADED CONNECTIONS & NIBCO S-413 FOR SOLDER CONNECTIONS OR APPROVED OTHER.

2.10 VALVE TAGS AND CHART

- A. EACH VALVE, EXCEPT VALVES AT FIXTURES, SHALL HAVE A 2 INCH DIAMETER BRASS TAG WITH 1 INCH HIGH NUMERAL STAMPED THEREON, SECURED TO THE VALVE BY MEANS OF BRASS'S HOOK OR BRASS CHAIN. EACH SYSTEM TO HAVE A LETTER DESIGNATION IDENTIFYING SOURCE AS WELL.
- B. THE CONTRACTOR SHALL FURNISH AN APPROVED, NEATLY DRAWN VALVE CHART, PROPERLY FRAMED, SHOWING THE USE AND LOCATION OF EACH VALVE THAT IS TAGGED.

2.11 SHOCK ARRESTORS

- A. SHOCK ARRESTORS SHALL BE JONESPEC MODEL #55000 SERIES OR APPROVED EQUAL.

2.12 BACKFLOW PREVENTION DEVICES

- A. VACUUM BREAKER (TYPE"A") - CAST BRASS C.P. IF EXPOSED TO PUBLIC VIEW SIMILAR TO WATTS NO. 288A. (NOT SUBJECT TO CONSTANT PRESSURE.)
- B. VACUUM BREAKER (TYPE"B") - CAST BRASS C.P. IF EXPOSED TO PUBLIC VIEW SIMILAR TO WATTS NO. 909-S.
- C. VACUUM BREAKER (TYPE"C") - CAST BRASS C.P. IF EXPOSED TO PUBLIC VIEW SIMILAR TO WATTS NO. 800MCQT. (CONSTANT PRESSURE V.B.)
- D. VACUUM BREAKER (TYPE"D") - CAST BRASS C.P. IF EXPOSED TO PUBLIC VIEW SIMILAR TO WATTS NO. N9C. (CONSTANT PRESSURE V.B.)

2.13 CONNECTION TO MISC. EQUIPMENT

- A. PROVIDE ALL NECESSARY PIPE, FITTINGS, VALVES, ETC. EXCEPT AS OTHERWISE SPECIFIED AND MAKE ALL FINAL PLUMBING PIPING CONNECTIONS, INCLUDING WASTE, VENT, HOT AND COLD WATER, ETC., TO ALL EQUIPMENT REQUIRING SAME, FURNISHED "UNDER ANOTHER SECTION OF THE SPECIFICATIONS"

2.14 CONDENSATE DRAIN PIPING

- A. CONDENSATE DRAIN PIPING SHALL BE TYPE "M" COPPER OR SCHEDULE 40 PVC, WHERE PERMITTED BY LOCAL CODE.

2.15 GUARANTEE

- A. THIS CONTRACTOR SHALL GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM DATE OF ACCEPTANCE BY THE OWNERS, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PARTS OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITHIN THE PERIOD OF THE GUARANTEE.
- B. WHERE SPECIAL GUARANTEES COVERING INSTALLATION, OPERATION OR PERFORMANCE OF ANY SYSTEMS OR APPLIANCES FURNISHED UNDER THIS CONTRACT ARE REQUIRED, THE FULL RESPONSIBILITY FOR THE FULFILLMENT OF SUCH GUARANTEES MUST BE ASSUMED BY THE CONTRACTOR, WHO SHALL OBTAIN WRITTEN GUARANTEES, IN TRIPLICATE, WHICH SHALL BE FILED WITH THE ARCHITECT BEFORE FINAL ACCEPTANCE.
- C. CONTRACTOR WILL BE RESPONSIBLE FOR ALL LEAKS IN ALL PIPES FOR A PERIOD OF ONE YEAR FROM THE DATE OF COMPLETION OF WORK UNDER THIS CONTRACT. CONTRACTOR SHALL REPAIR AT NO COST TO THE OWNER, ALL SUCH LEAKS WHICH OCCUR AFTER COMPLETION OF THIS CONTRACT UPON 24 HOURS NOTICE THEREOF BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR. LEAKS WHICH OCCUR PRIOR TO THE COMPLETION OF THIS CONTRACT SHALL BE REPAIRED AT ONCE. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED BY SUCH LEAKS AND THE REPAIR THEREOF AND WILL REIMBURSE THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR FOR ALL EXPENSE INCURRED THEREBY.
- D. DISINFECTION THE POTABLE WATER SYSTEM SHALL BE DISINFECTED PRIOR TO USE BY A METHOD OF DISINFECTION IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE 2018, CHAPTER 6 SECTION 610. THE POTABLE WATER PURITY TEST RESULT FROM A ARIZONA CERTIFIED TESTER SHALL BE SUBMITTED FOR ENGINEER'S REVIEW AND APPROVAL.

2.16 PLUMBING FIXTURES AND EQUIPMENT

- A. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING FIXTURES AND APPLIANCES, UNLESS OTHERWISE NOTED, AND MAKE ALL FINAL CONNECTIONS AS REQUIRED.
- B. REFER TO ARCHITECTURAL PLANS AND/OR SPECIFICATIONS FOR EXACT PLUMBING FIXTURE TYPE, MAKE AND MOUNTING HEIGHTS.

WHEN REQUIRED, IT IS THE OWNER'S RESPONSIBILITY TO CONTRACT WITH A COMMISSIONING AUTHORITY TO COMPLY WITH LOCAL CODES.

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PLUMBING SPECIFICATIONS

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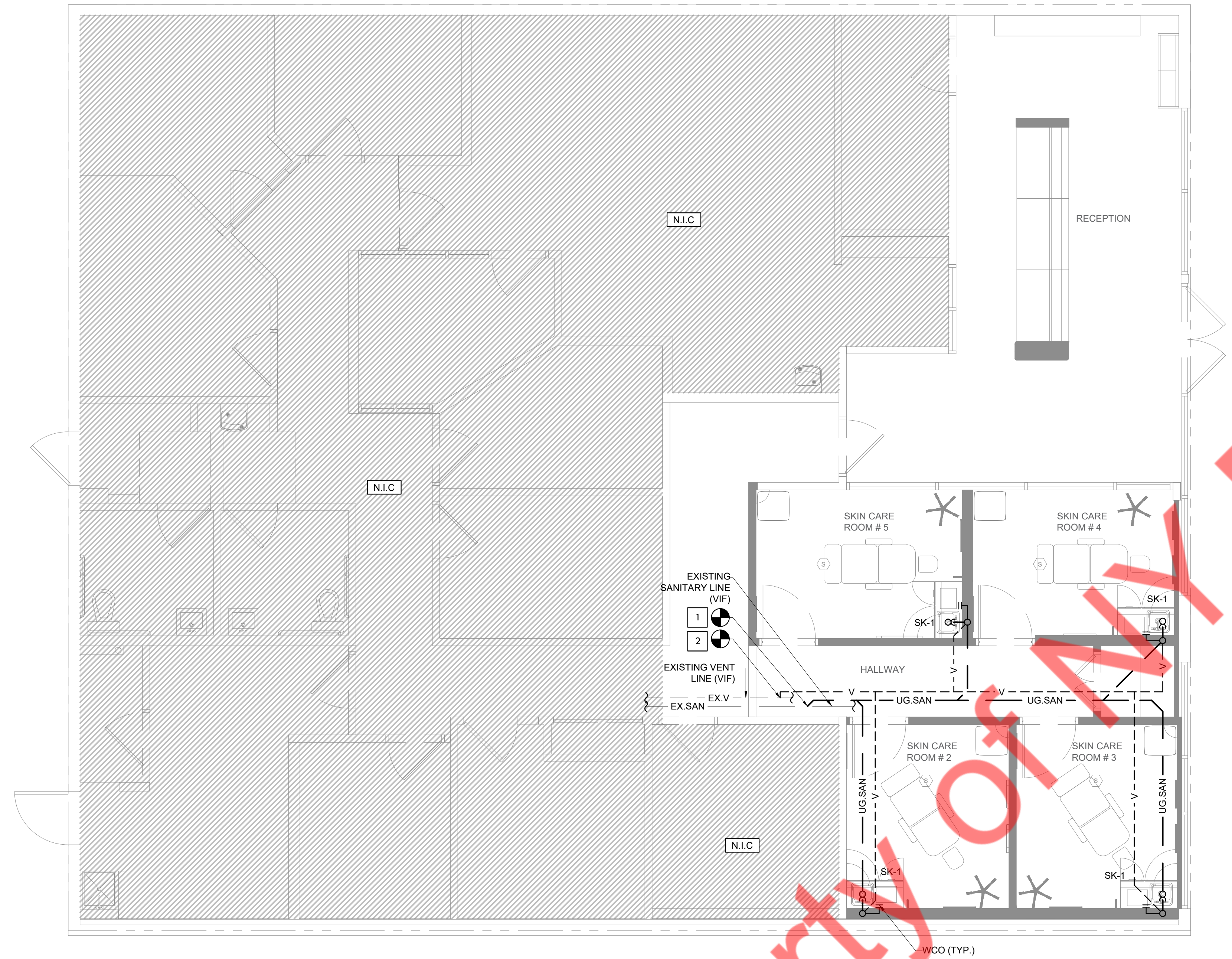
SKIN CARE REMODEL

**GENERAL NOTES:**

1. ANY CHANGES AND/ OR UPGRADES TO EXISTING PLUMBING SYSTEMS SHALL COMPLY WITH ALL CODES. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
2. PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS, FURROUT THE WALL AS NECESSARY.
3. EXHAUST AND PLUMBING VENTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKE, AND 5'-0" FROM ANY DEMISING WALL VERTICAL PLANE.
4. ANY UNUSED PLUMBING EQUIPMENT, PIPING, ETC., WITHIN OR SERVING THE PREMISES MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. DO NOT ABANDON IN PLACE.
5. ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF. SLEEVES MUST EXTEND A MINIMUM OF 4" AFF.
6. REFER TO RISER DIAGRAM FOR ALL WASTE AND VENT SIZES.
7. TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.
8. THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS AND PIPES TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.
9. NO 90° HORIZONTAL TURNS SHALL BE USED IN THE SANITARY PIPING SYSTEM. ALL HORIZONTAL TURNS SHALL BE MADE WITH 45° ELBOWS WITH PIPE IN BETWEEN THE TWO ELBOWS.
10. COORDINATE OVERALL PIPING DIAMETER (INCLUDING INSULATION) WITH WALL DEPTH.
11. NOTIFY ARCHITECT IF OVER ALL PIPE DIAMETER EXCEEDS WALL DEPTH.
12. ALL HORIZONTAL SANITARY, WASTE PIPING SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, IN DIRECTION OF FLOW.

**SANITARY AND VENT KEYED NOTES:**

1. EXTEND AND CONNECT NEW 3" SANITARY PIPING TO THE EXISTING SANITARY PIPE IN THE SPACE. CONTRACTOR SHALL VERIFY THE EXISTING SANITARY PIPE SIZE, ROUTING, INVERT, DIRECTION OF FLOW & TIE-IN CONNECTION PRIOR TO BID.
2. CONNECT NEW 2" VENT LINE TO EXISTING VENT PIPING IN THE SPACE. CONTRACTOR TO FIELD-VERIFY THE SIZE AND LOCATION OF THE EXISTING VENT LINE PRIOR TO CONNECTION. REROUTE AND UPGRADE THE VENT LINE IF REQUIRED



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1	SCALE 1/4" = 1' - 0"	PLUMBING SANITARY SEWER AND VENT PLAN
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2	SCALE N.T.S.	NOTES
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**PLUMBING SANITARY  
 SEWER AND VENT PLAN**

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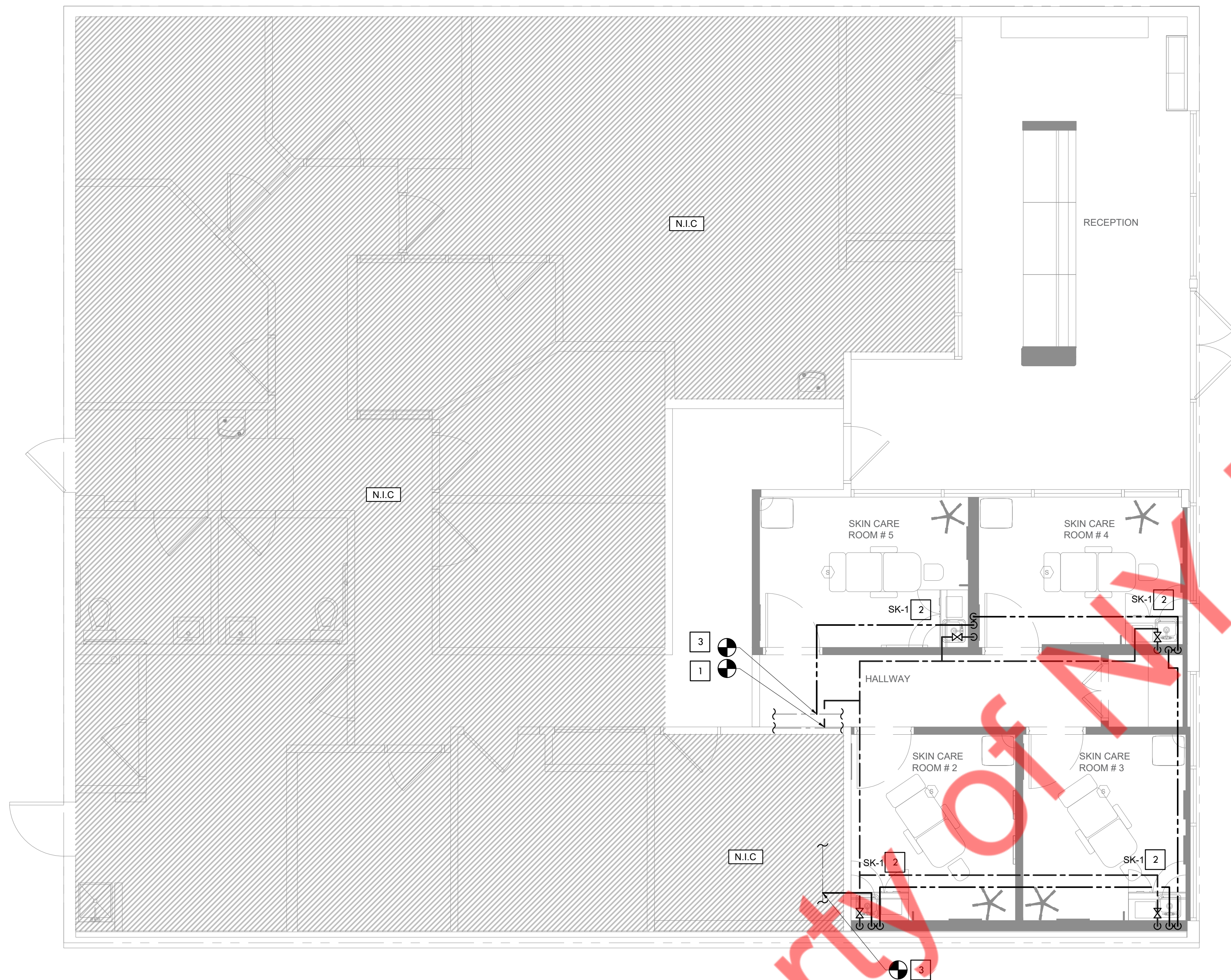
**SKIN CARE REMODEL**

**GENERAL NOTES:**

1. ANY CHANGES AND/ OR UPGRADES TO EXISTING PLUMBING SYSTEMS SHALL COMPLY WITH ALL CODES. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
2. PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS, FURROUT THE WALL AS NECESSARY.
3. ANY UNUSED PLUMBING EQUIPMENT, PIPING, ETC., WITHIN OR SERVING THE PREMISES MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. DO NOT ABANDON IN PLACE.
4. ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF. SLEEVES MUST EXTEND A MINIMUM OF 4" AFF.
5. IF NOT ALREADY EXISTING, INSTALL A SHUT OFF VALVE ON DOMESTIC WATER LINE INSIDE SPACE.
6. TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.
7. REFER TO RISER DIAGRAM FOR ALL WATER SUPPLY SIZES.
8. THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS AND PIPES TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.
9. ROUTE HW WATER LOOP DOWN IN WALL TO FIXTURE. MINIMIZE DISTANCE FROM THE LOOP TO HOT WATER DISCHARGE.
10. COORDINATE OVERALL PIPING DIAMETER (INCLUDING INSULATION) WITH WALL DEPTH.
11. NOTIFY ARCHITECT IF OVER ALL PIPE DIAMETER EXCEEDS WALL DEPTH.

**WATER SUPPLY KEYED NOTES:**

1. CONNECT NEW 3/4" CW LINE TO EXISTING CW LINE IN THE SPACE. CONTRACTOR TO FIELD VERIFY THE SIZE, LOCATION AND PRESSURE OF THE EXISTING COLD WATER LINE PRIOR TO CONNECTION. REROUTE AND UPGRADE IF REQUIRED.
2. PROVIDE APPROVED ASSE 1070 THERMOSTATIC MIXING VALVE(TMV) SET TO 110°F AT SINK.
3. CONNECT NEW 1/2" HW LINE TO EXISTING HW LOOP IN THE SPACE. CONTRACTOR TO FIELD VERIFY THE SIZE AND LOCATION OF THE EXISTING HOT WATER LOOP PRIOR TO CONNECTION. REROUTE AND UPGRADE IF REQUIRED.



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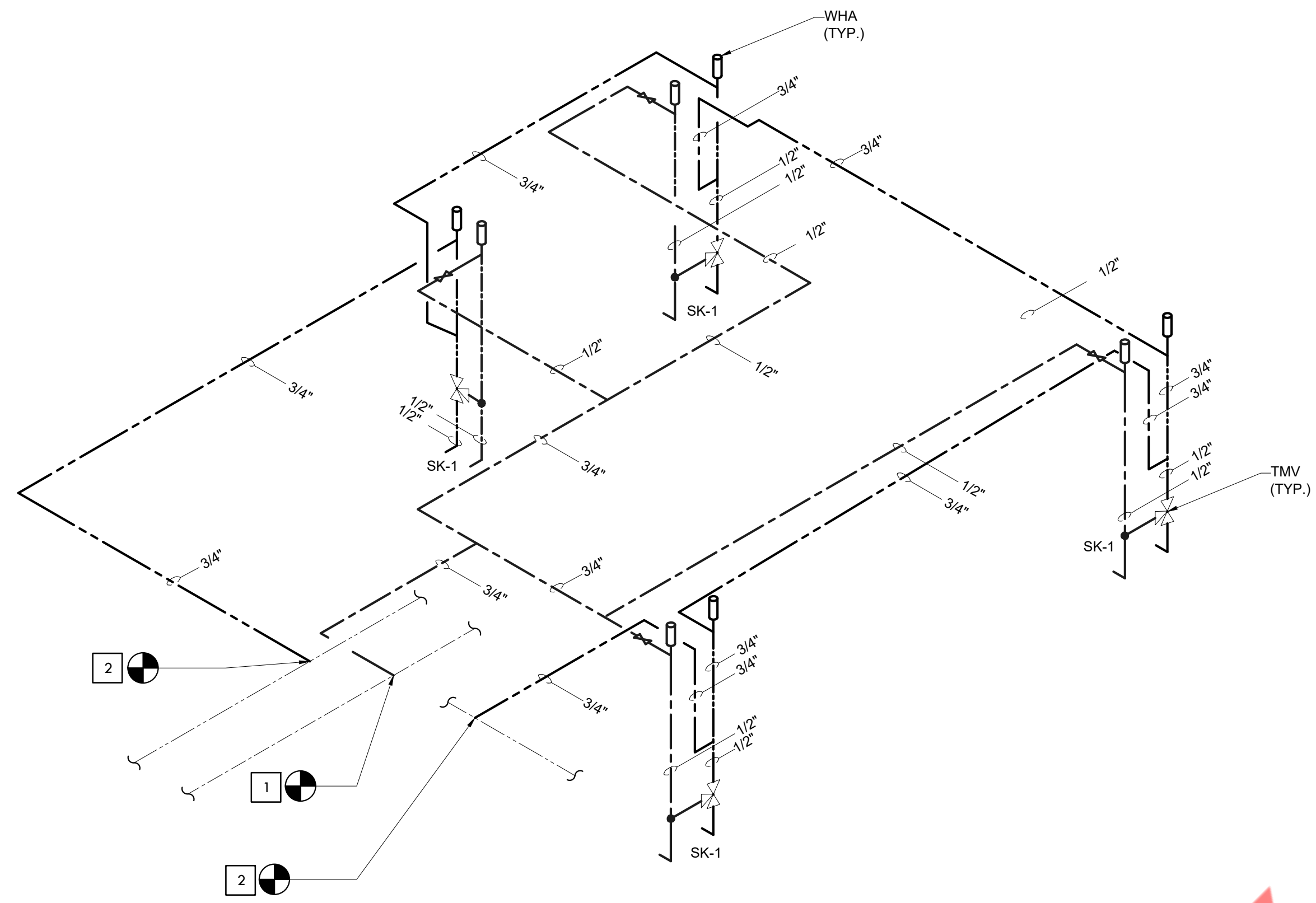
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**PLUMBING DOMESTIC  
 WATER PLAN**

SHEET NUMBER:

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**SKIN CARE REMODEL**

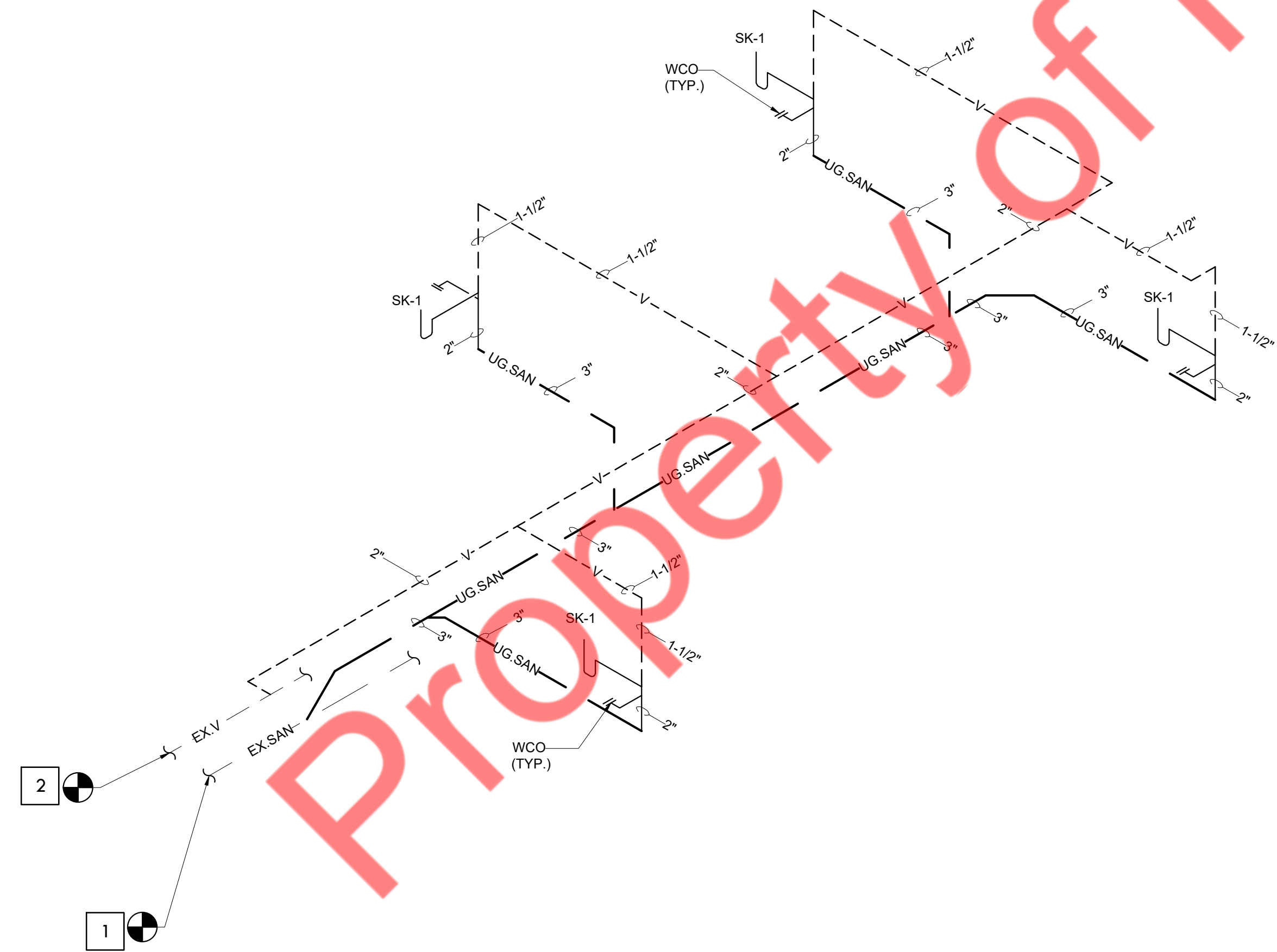


**DOMESTIC WATER KEYED NOTES:**

- 1 CONNECT NEW 3/4" CW LINE TO EXISTING CW LINE IN THE SPACE. CONTRACTOR TO FIELD VERIFY EXISTING WATER LINE SIZE AND LOCATION.
- 2 CONNECT NEW 3/4" HW LINE TO EXISTING HW LOOP IN THE SPACE. CONTRACTOR TO FIELD VERIFY EXISTING HOT WATER LOOP SIZE AND LOCATION.

1 SCALE NTS DOMESTIC WATER ISOMETRIC

2 SCALE NTS NOTES



**SANITARY AND VENT KEYED NOTES:**

- 1 EXTEND AND CONNECT NEW 3" SANITARY PIPING TO THE EXISTING SANITARY PIPE IN THE SPACE. CONTRACTOR SHALL VERIFY THE EXISTING SANITARY PIPE SIZE, ROUTING, INVERT, DIRECTION OF FLOW & TIE-IN CONNECTION PRIOR TO BID.
- 2 CONNECT NEW 2" VENT LINE TO EXISTING VENT LINE CONNECTION IN THE SPACE. CONTRACTOR TO FIELD VERIFY EXISTING VENT LINE SIZE AND LOCATION.

3 SCALE NTS SANITARY SEWER AND VENT ISOMETRIC

4 SCALE NTS NOTES

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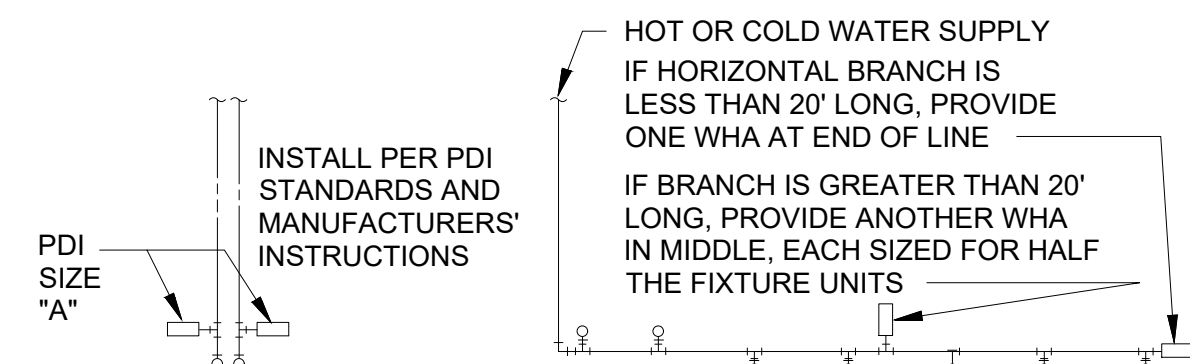
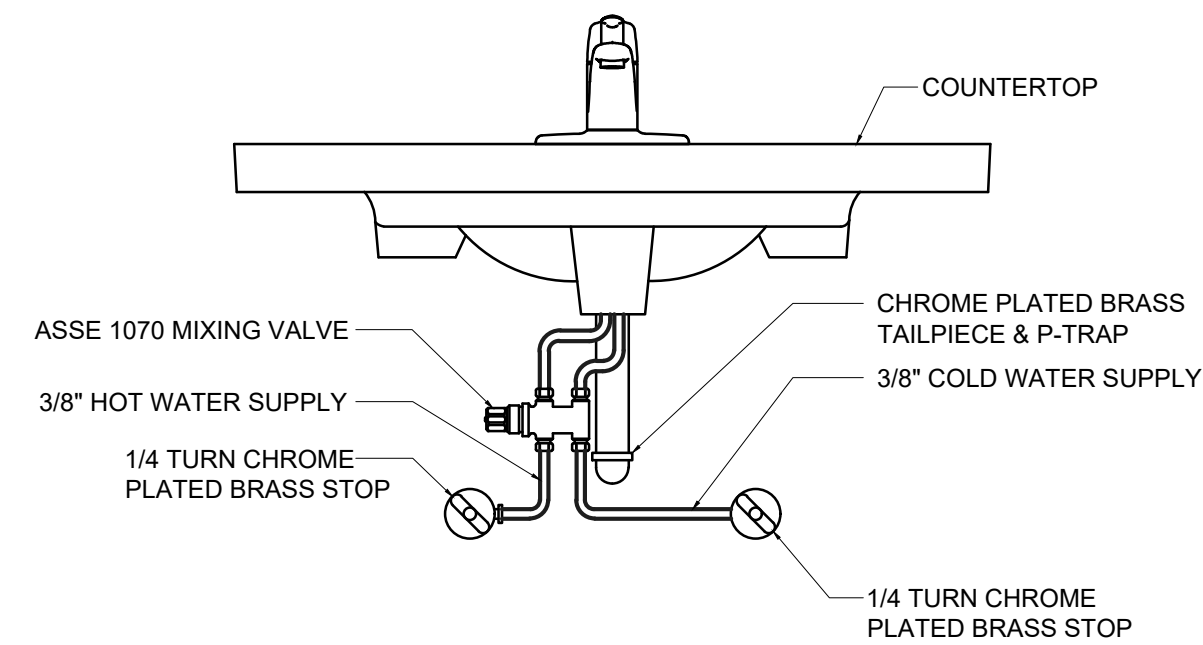
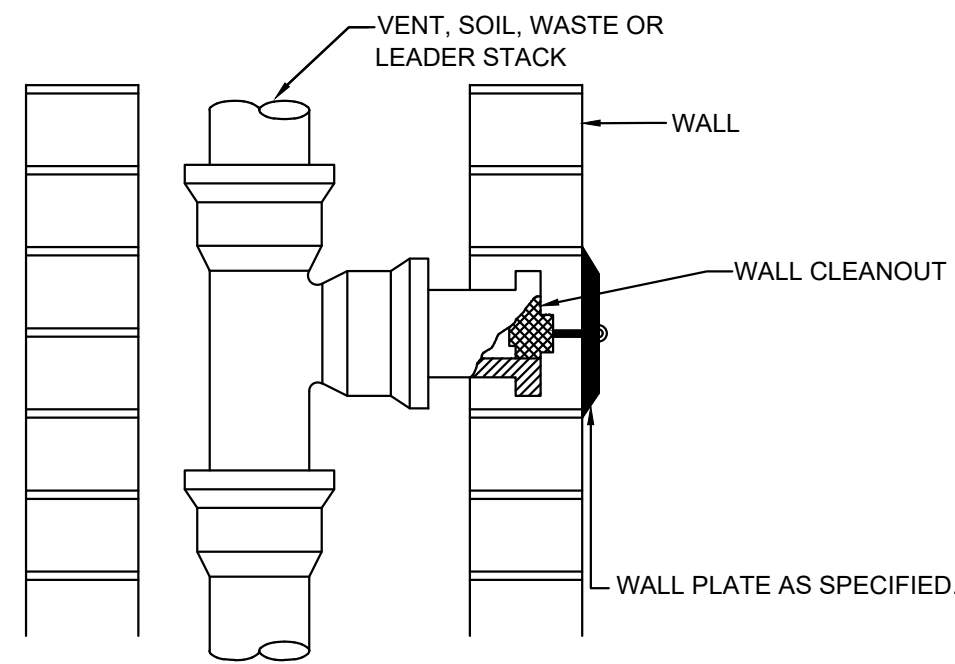
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 PLUMBING ISOMETRICS

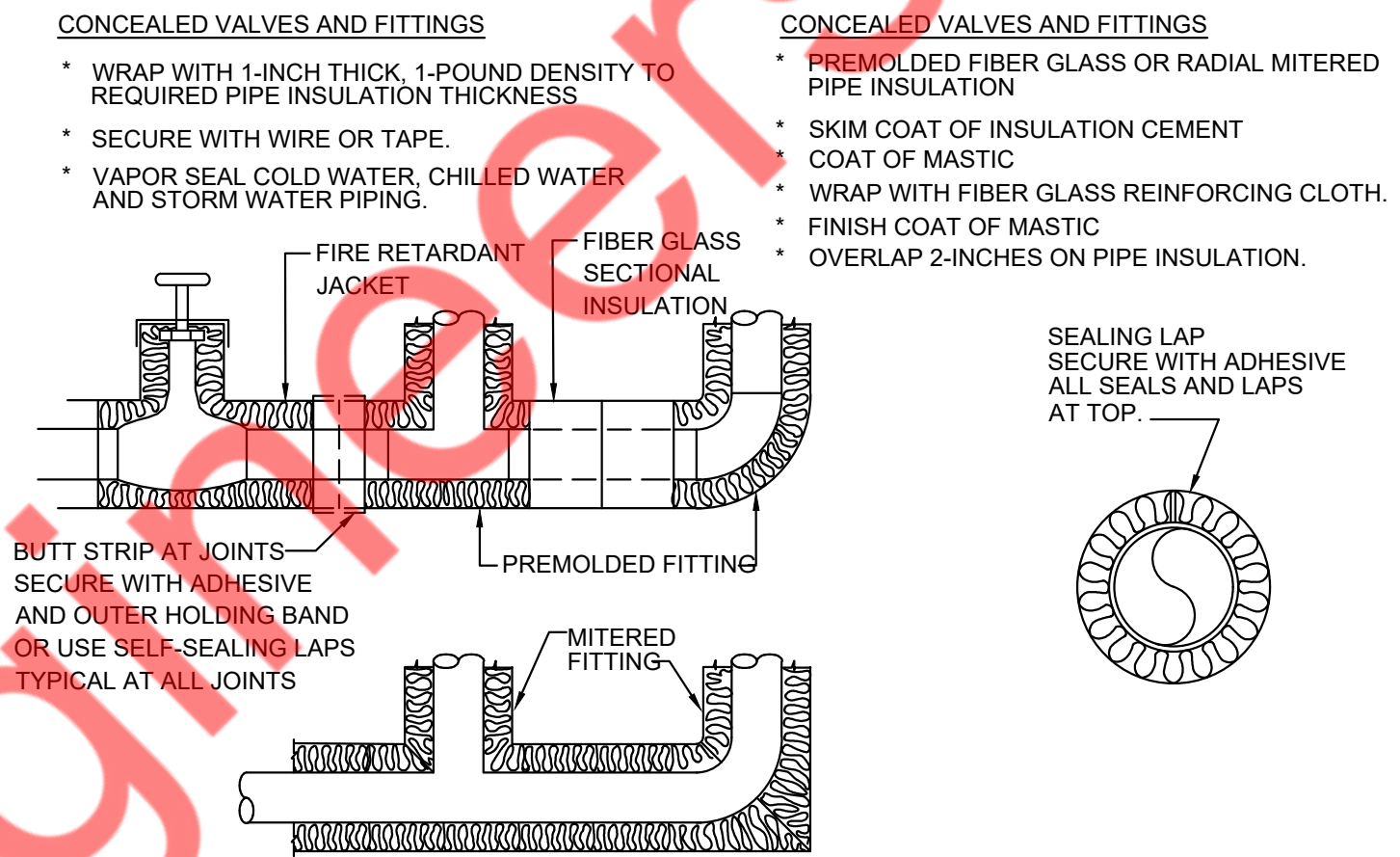
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SINGLE FIXTURE			MULTIPLE FIXTURES		
PDI SIZE	PIPE SIZE	FIXTURE UNIT LOAD	FIXTURE UNIT TABULATION		
			FIXTURE	COLD	HOT
A	1/2"	1-11	VALVE WATER CLOSET	5	--
B	3/4"	12-32	URINAL	5	--
C	1"	33-60	COUNTER SINK	1.5	1.5
D	1-1/4"	61-113	LAVATORY	1.5	1.5
E	1-1/2"	114-154	MOP BASIN	2.25	2.25
F	2"	155-330	WATER COOLER	.25	--

PROVIDE WATER HAMMER ARRESTERS BY SIOUX CHIEF, PRECISION PLUMBING PRODUCTS, WATTS OR APPROVED EQUAL WITH PISTON AND O-RING CONSTRUCTION HAVING PDI #WH-201, ASSE #1010 AND ANSI #A112.26.1M CERTIFICATION. INSTALL IN HORIZONTAL OR VERTICAL POSITION, BUT NEVER UPSIDE DOWN. INSTALL INLINE WITH WATER FLOW DIRECTION IF POSSIBLE. SIZE UNITS PER TABLES ABOVE.



1 SCALE N.T.S. WALL CLEAN OUT DETAIL

2 SCALE N.T.S. MIXING VALVE DETAILS

3 SCALE N.T.S. WATER HAMMER ARRESTOR

4 SCALE N.T.S. PIPE INSULATION DETAIL

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**ELECTRICAL SYMBOL LEGEND**

SYMBOL	DESCRIPTION	ON CENTER MTG. HT.
	CONCEALED CONDUIT IN CEILING OR WALL	
	CONCEALED CONDUIT IN FLOOR OR UNDERGROUND	
	CIRCUIT HOMERUN TO PANEL; EACH ARROWHEAD 1 CIRCUIT	
	FLEXIBLE CONDUIT OR S.O. CORD	
	EXPOSED CONDUIT	
	CONDUIT STUBBED UP OR TURNED DOWN	
	WALL MOUNTED DUPLEX RECEPTACLE OUTLET	18" OR UNO
	WALL MOUNTED G.F.C.I. DUPLEX RECEPTACLE OUTLET	18" OR UNO
	WALL MOUNTED DOUBLE DUPLEX RECEPTACLE OUTLET	18" OR UNO
	FLOOR MOUNTED DUPLEX/ QUAD RECEPTACLE	
	CEILING FLOOR MOUNTED DUPLEX RECEPTACLE	
	JUNCTION BOX	
	WALL MOUNTED COMBINATION DATA/VOICE OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.	18" OR UNO
	WALL MOUNTED VOICE OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.	18"
	WALL MOUNTED DATA OUTLET. PROVIDE JUNCTION BOX WITH 3/4" CONDUIT TO ABOVE CEILING.	18"
	277/480 VOLT OR 120/208 VOLT PANELBOARD AS NOTED ON PLAN DRAWINGS	
	RECESSED MOUNTED 120/208 VOLT PANELBOARD	
	LIGHT FIXTURE (REFER LIGHTING FIXTURE SCHEDULE ON LIGHTING PLAN)	
	EXIT SIGN - CEILING, WALL MT.	
	LIGHT FIXTURE ON EMERGENCY CIRCUIT	
	CEILING MOUNTED OCCUPANCY SENSOR	
	TIME CLOCK	
	LIGHTING CONTACTORS	

**ELECTRICAL ABBREVIATIONS:**

F.B.O.	FURNISHED BY OTHERS
AFF/AFG	ABOVE FINISHED FLOOR/ABOVE FINISHED GRADE
BC	BELOW CEILING
AC	ABOVE COUNTER
WP	WEATHER PROOF
E, EX/RE/N	EXISTING/RELOCATED/NEW
GFI	GROUND FAULT INTERRUPTING CIRCUIT
E.C.	EMPTY CONDUIT (PROVIDE PULLSTRING IN ALL EMPTY CONDUIT)
FPMR	FUSE PER MANUFACTURER'S RECOMMENDATION
UNO	UNLESS NOTED OTHERWISE
N.I.C.	NOT IN CONTRACT

- NOTES:**
- COORDINATE LOCATION AND SPECIFIC MOUNTING HEIGHT WITH ARCHITECT.
  - MOUNTING HEIGHTS SHALL BE AS INDICATED IN THE LEGEND UNLESS OTHERWISE NOTED ON THE PLANS

**ELECTRICAL DRAWING LIST:**

E1.0	ELECTRICAL LEGEND, DETAILS & GENERAL NOTES
E1.1	ELECTRICAL SPECIFICATIONS
E2.0	ELECTRICAL LIGHTING PLAN
E2.1	ELECTRICAL POWER PLAN
E3.0	ELECTRICAL PANEL SCHEDULES & RISER DIAGRAM
E4.0	ENERGY FORMS

- FIELD VERIFY ALL CONDITIONS**
- DESIGN DRAWINGS ARE SCHEMATIC. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.
  - THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.
  - BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES. THE PLANS AND SPECIFICATIONS NOT WITHSTANDING, THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.
  - ELECTRICAL CONTRACTOR SHALL VERIFY EXACT AMP DRAW ON ALL EXISTING CIRCUITS/PANELS TO BE REVISED TO ENSURE OVERLOADING CONDITION DOES NOT OCCUR PRIOR TO ADDING ADDITIONAL ITEMS TO CIRCUITS/PANELS.

**ELECTRICAL GENERAL NOTES**

- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE NYS ELECTRICAL CODE 2017 (ADOPTS NFPA 70, 2017 WITH AMENDMENTS), LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING LOCAL CODES, LAWS, AND REGULATIONS.
- CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
- CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
- FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
- SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK), NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
- LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
- VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELINGS, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
- CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
- ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS.
- CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
- MINIMUM SIZE OF CONDUIT SHALL BE 3/4", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
- CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
- PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS, SHALL BE CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVIDED WHERE REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN UNFINISHED AREAS AND INSTALLED CONCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
- SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
- FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING AND POWER PLANS.
- ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAIN TIGHT INSTALLATION. ALL BUILDING EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
- ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
- ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER TO ALL GENERAL, MECHANICAL, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
- ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE FLOOR SLAB.
- ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE APPROVED FOR THAT APPLICATION.
- OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE-RATED BOXES OR PUTTY PADS ARE UTILIZED.
- COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
- COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
- REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL LUMINARIES AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS.
- REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
- LIGHTING FIXTURES DESIGNATED AS EMERGENCY TYPE OR PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL DEVICE.
- NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT INDICATES CIRCUIT NUMBERS IN PANELBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.
- PROVIDE RACEWAY, BACK-BOXES, GROUNDING PROVISIONS AND 120V POWER AS NECESSARY FOR LOW VOLTAGE SYSTEMS (SECURITY, TELEPHONE DATA, CABLE TELEVISION, PAGING, INTERCOM, ETC. AS APPLICABLE TO PROJECT). REFER TO ASSOCIATED CONSULTANT'S DRAWING FOR EXACT REQUIREMENTS AND LOCATIONS OF DEVICES.
- PROVIDE HANDLE TIES TO ALLOW FOR SIMULTANEOUS DISCONNECTION OF CONDUCTORS IN ANY MULTI-BRANCH CIRCUITS WITH A SHARED NEUTRAL.

**AUTOMATIC MODE OPERATION**

- WHEN SENSOR ACTIVATES, LOAD TURNS ON.
- LOAD TURNS OFF, WHEN SENSOR TIMES OUT.

**RECOMMENDED WIRE**

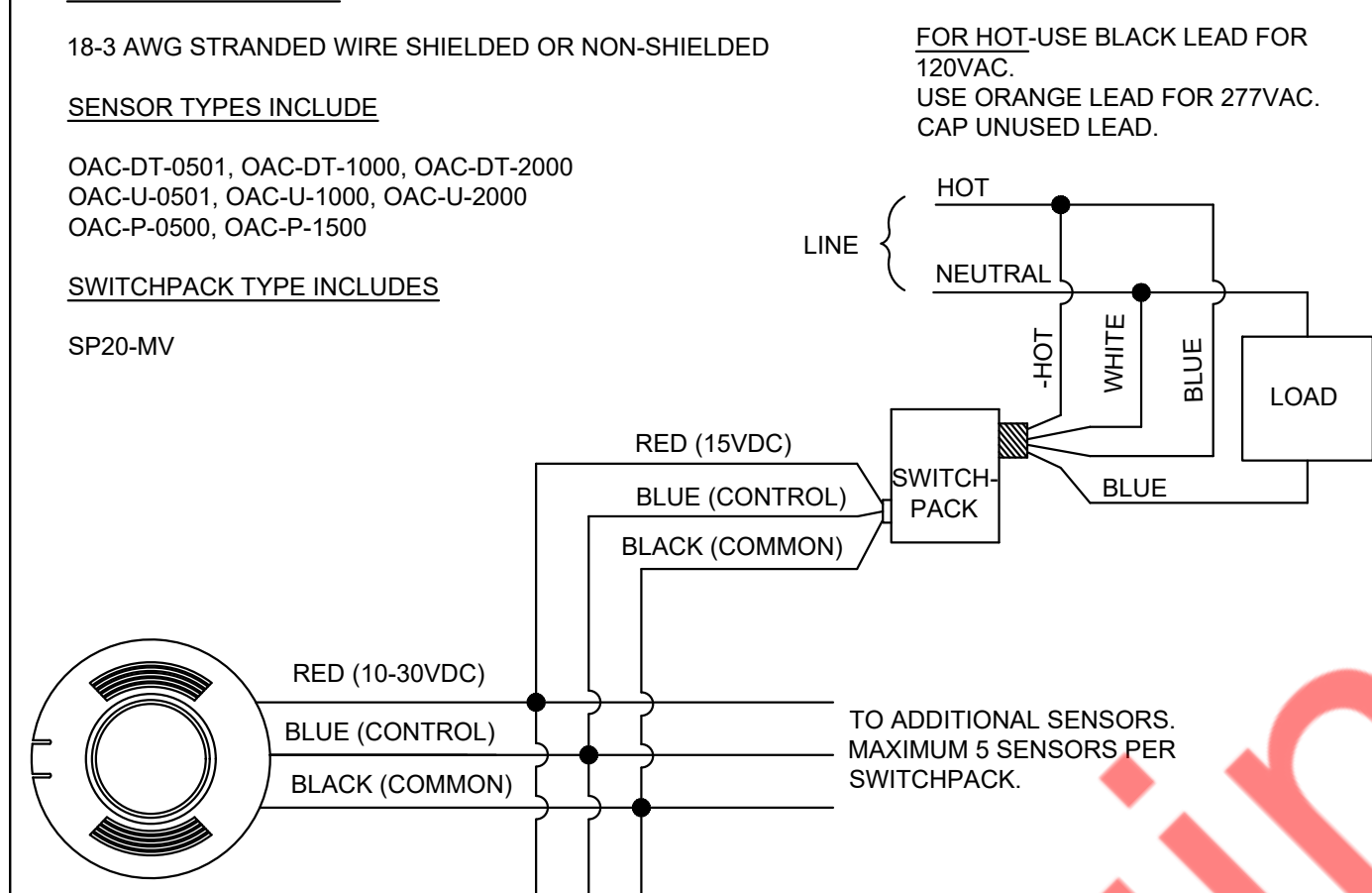
18-3 AWG STRANDED WIRE SHIELDED OR NON-SHIELDED

**SENSOR TYPES INCLUDE**

OAC-DT-0501, OAC-DT-1000, OAC-DT-2000  
OAC-U-0501, OAC-U-1000, OAC-U-2000  
OAC-P-0500, OAC-P-1500

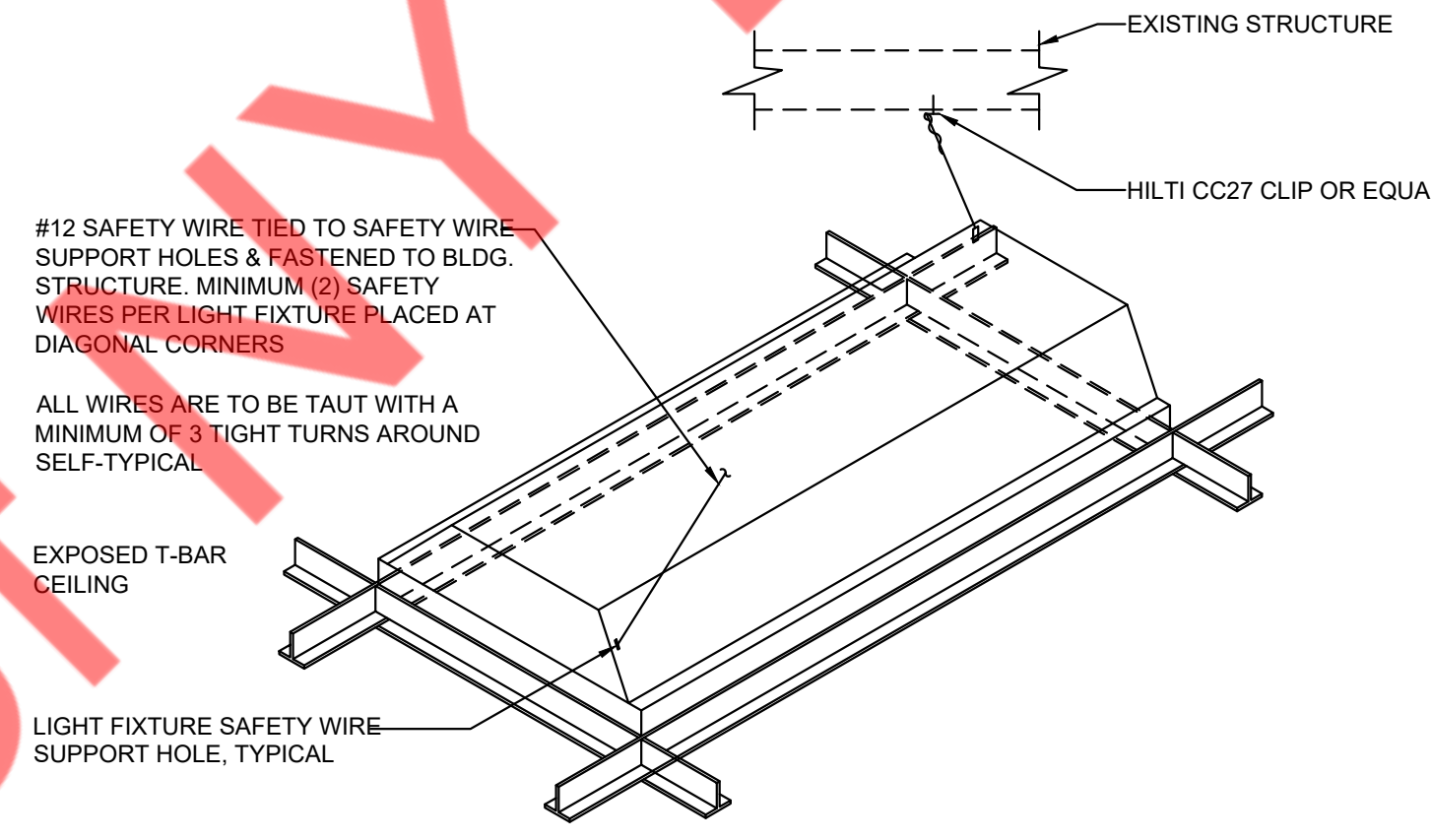
**SWITCHPACK TYPE INCLUDES**

SP20-MV



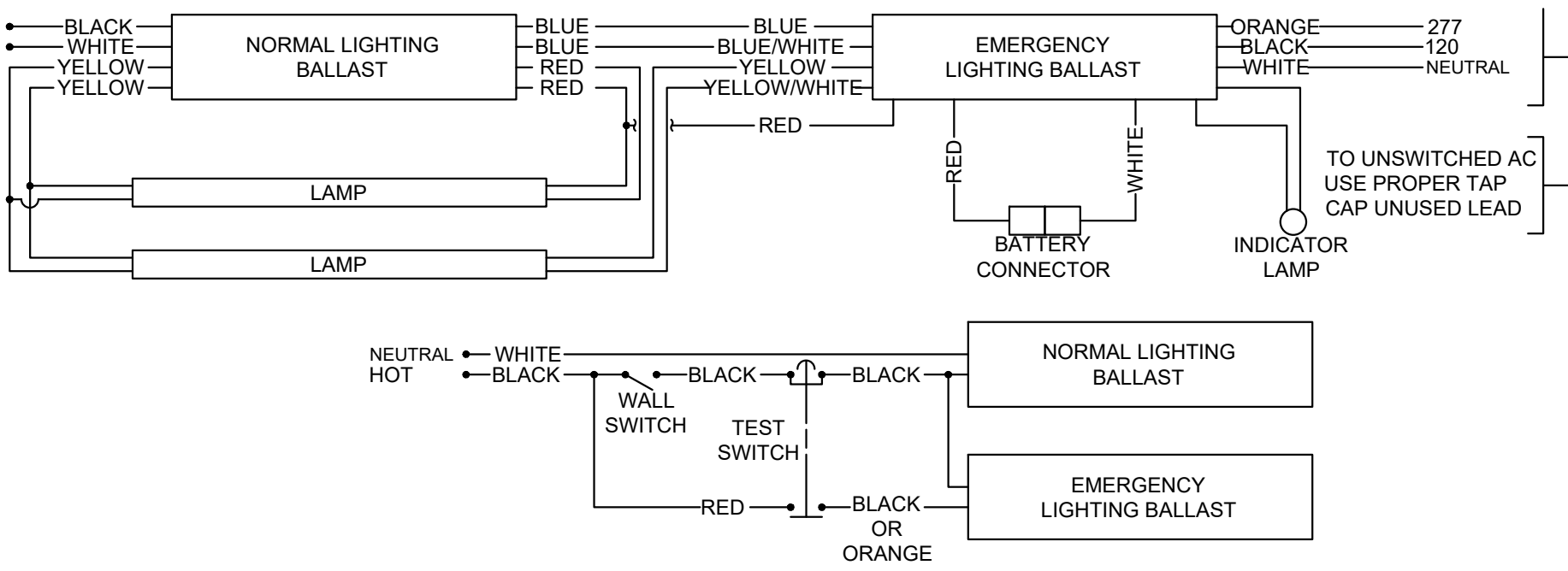
**OCCUPANCY - AUTO ON/OFF. WIRING DIAGRAM - LOW VOLTAGE CEILING SENSOR**

N.T.S



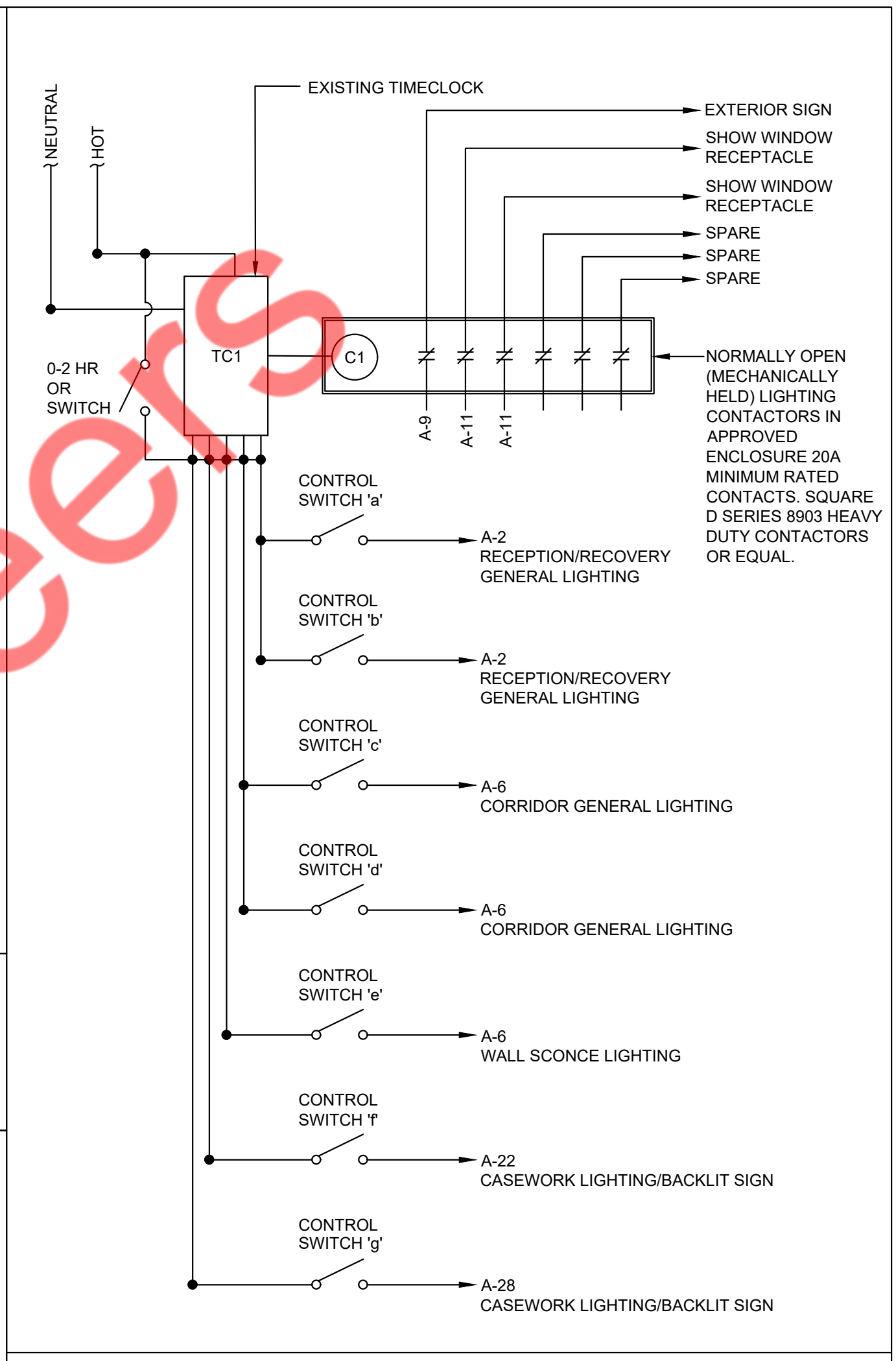
**RECESSED FIXTURE SUPPORT DETAIL**

N.T.S



**EMERGENCY LIGHTING WIRING DIAGRAM**

N.T.S



**LIGHTING CONTROL DETAIL**

N.T.S

**NY ENGINEERS**  
NEARBY ENGINEERS  
382 NE 191ST STREET SUITE  
49674, MIAMI, FL 33179  
PH-914.257.3455  
WWW.NY-ENGINEERS.COM



REV#	DESCRIPTION	DATE
1	CLIENT COMMENTS	6/27/2025

ISSUE DATE: 06/06/2025  
PROJECT NUMBER: 9248-23  
DRAWN BY: NYE  
CHECKED BY: NYE

SEAL:

State License  
SHEET TITLE:

**ELECTRICAL LEGEND, DETAILS & GENERAL NOTES**

SHEET NUMBER:

**E1.0**

I. GENERAL REQUIREMENTS

- GENERAL CONDITIONS:** ALL CONDITIONS AND REQUIREMENTS UNDER THE "GENERAL CONDITIONS", THE "SUPPLEMENTARY GENERAL CONDITIONS", THE "SPECIAL CONDITIONS" SHALL BECOME A PART OF THIS SPECIFICATION, AND BIDDERS WILL EXAMINE ALL DRAWINGS AND READ ALL PARTS OF THE SPECIFICATIONS TO AVOID OMISSIONS, DUPLICATIONS AND TO INSURE COMPLETE EXECUTION OF ALL WORK FOR ELECTRICAL.
- GENERAL:** THE WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT AND INCIDENTAL COSTS NECESSARY TO FURNISH AND INSTALL ALL ELECTRICAL WORK, EQUIPMENT, LAMPS, ETC. INDICATED ON THE DRAWINGS, AS SPECIFIED HEREIN, OR BOTH.
  - THE ELECTRICAL SUBCONTRACTORS QUOTING ON THEIR SPECIFIC SCOPE OF WORK / SERVICES TO CONTACT THE LOCAL BUILDING DEPARTMENT / AGENCY TO DISCUSS CODE ISSUES / IDIOSYNCRASIES REGARDING THEIR SERVICES AND THE QUOTE ASSOCIATED WITH THE SERVICES TO THE GENERAL CONTRACTOR FOR THIS PROJECT. THIS CONTRACTOR TO BE FAMILIAR WITH THE SITE WHERE SUCH SERVICES / WORK WILL BE PERFORMED, THIS SPECIFIC USE AND THE IDIOSYNCRASIES ASSOCIATED WITH THE LIFE, SAFETY AND HEALTH ASSOCIATED WITH THIS WORK AND TO INDICATE ON THE QUOTE ANY ITEMS REQUIRED THAT ARE NOT NECESSARILY SHOWN ON THE DRAWINGS / SPECIFICATIONS.
  - THE TENANT'S GENERAL CONTRACTOR AND/OR HIS ELECTRICAL SUBCONTRACTOR IS TO VERIFY ALL EQUIPMENT SPECIFICATIONS AND REQUIREMENTS WITH THE TENANT OR THE TENANT'S CONSTRUCTION REPRESENTATIVE PRIOR TO START OF CONSTRUCTION. THIS CONTRACTOR TO VERIFY AMPERAGE AND VOLTAGE SPECIFICATIONS AND REQUIREMENTS (SERVISE AND PANEL SPECIFICATION) WITH THE ELECTRICAL SUBCONTRACTOR IN COORDINATION WITH EQUIPMENT SPECIFICATIONS FOR EQUIPMENT SUPPLIED BY THE TENANT, THE CONTRACTORS OR OTHER SOURCES (AS SPECIFIED BY THE ARCHITECT) AS A DOUBLE CHECK TO ASCERTAIN PROPER INSTALLATION OF EQUIPMENT AT THE CORRECT VOLTAGE/ AMPERAGE.
  - THE ELECTRICAL SUBCONTRACTOR IS REQUIRED TO VISIT THE SITE DURING BIDDING AND VERIFY LOCATIONS OF WHERE THE ELECTRICAL EQUIPMENT IS TO BE INSTALLED TO BE BROUGHT UP TO ANY EXISTING SERVICE AND WHAT IS INDICATED TO BE INSTALLED OR "EXISTING TO REMAIN" AND IF NEW SERVICE IS INDICATED, TO VERIFY IF DIFFERENT THAN THE DRAWINGS, SIZE OF FEEDER PIPES, REQUIRED DISTANCES AND POSSIBLE ADDITIONAL WORK REQUIRED AT THE ELECTRICAL DISTRIBUTIONS ROOM. ANY DISCREPANCIES BETWEEN DESIGNED AND ACTUAL TO BE TOLD TO THE GENERAL CONTRACTOR AND BE INDICATED ON THE BID FORM.
  - THE GENERAL CONTRACTOR IS RESPONSIBLE FOR OBTAINING APPROVAL FROM THE BUILDING AND ELECTRICAL INSPECTORS FOR ALL CONCEALED WORK PRIOR TO CLOSING UP WALLS, FLOORS AND CEILINGS.
  - TENANT'S GENERAL CONTRACTOR SHALL BRING IN ALL ADDITIONAL SERVICES, ADEQUATE FOR TENANT'S NEEDS AS REQUIRED, INCLUDING BUT NOT LIMITED TO ELECTRIC, SPRINKLER, SOIL (WASTE), DOMESTIC WATER LINES, OUTSIDE TOILET EXHAUST AIR, FIRE ALARM, TELEPHONE AND DATA.
  - SCOPE:** FURNISH LABOR, MATERIALS, TOOLS, EQUIPMENT, ETC., REQUIRED FOR A COMPLETE INSTALLATION OF ELECTRICAL SYSTEMS AND WORK, IN ACCORDANCE WITH LOCAL CODES AND GOVERNING BODIES HAVING JURISDICTION, AS SHOWN ON DRAWINGS, AND AS SPECIFIED, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
    - NEW SERVICE -- TENANT'S CONTRACTOR IS TO REUSE EXISTING ELECTRICAL SERVICE OR CONDUIT ONLY; FURNISH AND INSTALL NEW ELECTRICAL SERVICE WIRE AND EXTEND BOTH CONDUIT AND WIRE TO POINT OF ALL NEW PANELS, TRANSFORMERS, WIREWAYS, TROUGHS, TIME CLOCKS, ETC.. SINCE SPACE MAY OR MAY NOT BE MEASURED OR REVIEWED BY TENANT'S ARCHITECT, THE ACTUAL LOCATION OF SERVICE AND PANEL LOCATIONS MAY NOT BE KNOWN. THE ELECTRICAL SUBCONTRACTOR, IN REVIEW OF THE PREMISES IS REQUIRED TO INSTALL PANELS IN LOCATION AS NOTED ON DRAWINGS AND MUST INCLUDE IN HIS BID ANY EXTENSION OF CONDUIT AND WIRE, NEW DISCONNECTS, RELOCATION OR INSTALLATION OF PANELS, TROUGHS, WIREWAYS, ETC. TO MAKE THE SYSTEM WHOLE AND TO UPGRADE AS NECESSARY TO MEET CODE REQUIREMENTS. INSTALL NEW SERVICE INCLUDING CONDUIT AND WIRE FROM DEMISED PREMISES TO LANDLORD'S ELECTRICAL ROOM IF THE EXISTING SERVICE NEEDS TO BE UPGRADED FROM WHAT TENANT WAS ORIGINALLY TOLD SERVICE WOULD BE, OR THE SERVICE NEEDS TO BE MOVED BECAUSE ITS EITHER SHOWN TO BE MOVED OR IS EXISTING NOW IN THE PATH OF FUTURE PARTITION OR OTHER SERVICES.
    - EXISTING SERVICE -- TENANT'S CONTRACTOR IS TO REUSE EXISTING ELECTRICAL SERVICE WIRE, CONDUIT AND ELECTRICAL EQUIPMENT; CUT AND EXTEND TO POINT OF NEW ELECTRICAL EQUIPMENT. ALL EXISTING ELECTRICAL EQUIPMENT WHICH IS REUSED TO BE BROUGHT UP TO "LIKE NEW" CONDITION AND THE LATEST N.E.C. STANDARD. SINCE SPACE MAY OR MAY NOT BE MEASURED OR REVIEWED BY TENANT'S ARCHITECT, THE ACTUAL LOCATION OF SERVICE AND PANEL LOCATIONS MAY NOT BE KNOWN. THE ELECTRICAL SUBCONTRACTOR, IN REVIEW OF THE PREMISES IS REQUIRED TO INSTALL PANELS IN LOCATION AS NOTED ON DRAWINGS AND MUST INCLUDE IN HIS BID ANY EXTENSION OF CONDUIT AND WIRE, NEW DISCONNECTS, RELOCATION OR INSTALLATION OF PANELS, TROUGHS, WIREWAYS, ETC. TO MAKE SYSTEM WHOLE AND TO UPGRADE AS NECESSARY TO MEET CODE REQUIREMENTS. INSTALL NEW SERVICE INCLUDING CONDUIT AND WIRE FROM DEMISED PREMISES TO LANDLORD'S ELECTRICAL ROOM IF THE EXISTING SERVICE NEEDS TO BE UPGRADED FROM WHAT TENANT WAS ORIGINALLY TOLD SERVICE WOULD BE, OR THE SERVICE NEEDS TO BE MOVED BECAUSE ITS EITHER SHOWN TO BE MOVED OR IS EXISTING NOW IN THE PATH OF FUTURE PARTITION OR OTHER SERVICES. IF SERVICE IS ADEQUATE BUT MUST BE RELOCATED, CUT AND EXTEND EXISTING WIRE AND CONDUIT TO POINT OF ALL NEW PANELS, DISCONNECTS, TROUGHS, TIME CLOCKS, ETC.
    - POWER DISTRIBUTION SYSTEMS AND TRANSFORMER.
    - ELECTRICAL ENERGIZING -- MISCELLANEOUS FAN AND MOTOR.
    - MOTOR POWER WIRING SYSTEM.
    - TELEPHONE EMPTY CONDUIT SYSTEM (INCLUDING TERMINAL BOXES AND OUTLETS).
    - CONVENIENCE RECEPTACLE SYSTEM, DOOR ALARM/ ENTRY SYSTEM/ SECURITY.
    - SOUND SYSTEM, INTERCOM SYSTEM - FURNISHED AND INSTALLED BY THIS CONTRACTOR IF REQUIRED BY CLIENT, EMERGENCY LIGHT SYSTEM AND BATTERIES FURNISHED BY CLIENT AND INSTALLED BY THIS CONTRACTOR.
    - GROUNDING IN ACCORDANCE WITH NATIONAL ELECTRIC CODE AND ALL MALL REQUIREMENTS.
    - LOCK OUTS FOR ALARM SYSTEMS, CASH REGISTERS, GRILLE AT ENTRY (IF APPLICABLE) AS REQUIRED. SEE PANEL SCHEDULE FOR CIRCUITS.
    - SMOKE DETECTORS FURNISHED AND INSTALLED WITHIN STORE TO INCLUDE LOCATIONS AND INTERNAL / EXTERNAL WIRING IF REQUIRED BY LANDLORD OR FIRE MARSHAL.
    - ELECTRICAL SUBCONTRACTOR, WHEN BIDDING THIS WORK, TO CHECK TO MAKE SURE THAT SERVICE WIRE, CONDUIT, DISCONNECTS, ETC., ARE ADEQUATE FOR TENANT'S NEEDS. IF ADDITIONAL SERVICE IS REQUIRED, INCLUDE NEW CONDUIT AND SERVICE FEED OR DISCONNECTS, METER BASE AND METER (IF APPLICABLE), ETC., TO BRING SUCH SERVICE UP TO TENANT'S NEEDS.
    - FURNISH AND INSTALL ALL CONDUIT AND WIRING, DISCONNECTS, BREAKERS, BALANCING OF LOADS, ETC. FOR HOOKUP OF ALL H.V.A.C. EQUIPMENT, UNIT(S), OR INLINE HEATERS WHETHER SUCH HEATERS OR EQUIPMENT / UNITS ARE SHOWN OR NOT.
    - FURNISH AND INSTALL A TWENTY FOUR (24) HOUR, SEVEN (7) DAY TIME CLOCK INCLUDING ALL INTEGRAL WIRING AND LOAD BALANCING (PANEL) FOR CONTROLLING THE STOREFRONT SIGN AND SHOW WINDOW LIGHTING, WHETHER SUCH WORK IS OR IS NOT SHOWN ON PLANS / OR SPECIFICATIONS.
    - ALL ELECTRICAL ROUGH-IN TO BE NEW AND THE ORIGINAL SERVICES TO THE DEMISED PREMISES TO BE REUSED, CUT AND EXTEND TO POINT OF ALL NEW ELECTRICAL EQUIPMENT (IF ANY EQUIPMENT IS REUSED, UPGRADE SAME TO "LIKE NEW" CONDITION AND THE LATEST N.E.C. STANDARDS) BY THE TENANT'S CONTRACTOR UNLESS NOTED OTHERWISE ON DRAWINGS. TENANT'S GENERAL CONTRACTOR TO FIELD VERIFY THAT ALL UTILITY LINES ARE AT OR ADJACENT TO TENANT'S SPACE AS NOTED AND AT THE SIZE SPECIFIED. IF THE UTILITIES ARE NOT IN LOCATIONS AS NOTED ON THE DRAWINGS OR OF A SIZE LARGER OR SMALLER THAN NOTED, THIS CONTRACTOR IS TO NOTIFY THE TENANT'S ARCHITECT IMMEDIATELY.
    - THE TENANT'S ELECTRICAL SUBCONTRACTOR IS TO PROVIDE A NEW CIRCUIT DIRECTORY(IES) WITH PROPER PHASING AND BALANCING, WHICH IS TO CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AND UNDERWRITER'S CODE.

- THE SIGN(S) JUNCTION BOX PERMIT IS TO BE INCLUDED IN THE WORK FOR THE ELECTRICAL SUBCONTRACTOR AND THE BOX IS TO BE SUPPLIED BY THIS CONTRACTOR AND PROPERLY LABELED.
- FURNISH AND INSTALL NEW (OR REFURBISH IF EXISTING) TOILET EXHAUST WITH ASSOCIATED DUCTWORK, ROOF PENETRATIONS, OR HOOK UP TO COMMON EXHAUST DUCT WITH BACKDRIFT DAMPER ETC., INCLUDING ASSOCIATED ELECTRICAL HOOKUP AND PANEL CONNECTIONS, WHETHER SUCH WORK IS SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.
- IF A SMOKE EVACUATION AND / OR DETECTION SYSTEM OCCURS FOR THIS SPACE, IT SHALL BE LEFT INTACT DURING CONSTRUCTION AND ANY NEW WORK, MODIFICATIONS AND/ OR REWIRING TO BE COMPLETED DURING CONSTRUCTION PHASE TO POINT OF NEW PANELS, WHETHER SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.
- ENGINEER, FURNISH AND INSTALL ANY AND ALL REQUIRED SMOKE EVACUATION, SMOKE DETECTION AND FIRE ALARM SYSTEMS, INCLUDING ANY AND ALL PARTS AND LABOR, TO MEET LOCAL CODE, LANDLORD REQUIREMENTS AND FIRE MARSHAL SPECIFICATIONS WHETHER SHOWN OR NOT SHOWN ON PLANS AND SPECIFICATIONS.
- THE ELECTRICAL SUBCONTRACTOR TO COORDINATE WITH OTHER ENGINEERING DRAWINGS AND INCLUDE COSTS (LABOR AND MATERIALS) NECESSARY FOR OTHER ELECTRICAL EQUIPMENT / FIXTURES NOT SHOWN ON THESE ELECTRICAL DRAWINGS, BUT SHOWN ON OTHER ENGINEERING DRAWINGS.
- THE TENANT'S GENERAL CONTRACTOR AND/ OR ELECTRICAL SUBCONTRACTOR IS TO INSTALL EMERGENCY AND EXIT LIGHTING, AS REQUIRED BY LOCAL CODE OR AGENCIES HAVING JURISDICTION OVER THE PROJECT. THE EXIT/ EMERGENCY LIGHTING SHOULD BE PROPERLY LABELED AND APPROVED TYPE LOCKOUTS INSTALLED.
- SUBSTITUTIONS:** CATALOG AND MANUFACTURER'S NUMBERS IN THIS SECTION AND ON THE DRAWINGS ARE FOR THE PURPOSE OF ESTABLISHING STANDARDS OF QUALITY AND TYPE OF MATERIALS TO BE USED. PRODUCTS OR OTHER MANUFACTURERS MAY BE USED IF SIMILAR AND EQUAL IN QUALITY AND DESIGN IN THE OPINION OF THE OWNER OR OWNER'S ARCHITECT AND ARE SPECIFICALLY APPROVED BY THE OWNER OR OWNER'S ARCHITECT. IN WRITING, PRIOR TO CLOSE OF BIDDING. REQUESTS FOR APPROVAL OF SUBSTITUTIONS SHALL BE IN WRITING, AND SHALL INCLUDE REPORTS OF TESTS, PERFORMANCE DATA OR OTHER PROOF OF EQUALITY TO THE ITEM SPECIFIED.
- SHOP DRAWINGS & SUBMITTALS:** PRIOR TO THE COMMENCEMENT OF WORK, SUBMIT ONE (1) SET OF THE FOLLOWING ITEMS TO THE OWNER'S ARCHITECT IN THE FORM OF SHOP DRAWINGS, DETAILS OR CATALOG CUTS FOR THE RECORD: LIGHTING AND POWER PANELS, WIRING DEVICES, SAFETY SWITCHES, TRANSFORMER, TIME CLOCKS AND ANY OTHER ITEMS AS REQUESTED BY THE OWNER OR THE OWNER'S ARCHITECT.
  - BY SUBMITTING SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND SIMILAR SUBMITTALS, THE CONTRACTOR REPRESENTS TO THE CLIENT AND ARCHITECT THAT THE CONTRACTOR HAS (1) REVIEWED AND APPROVED THEM, (2) DETERMINED AND VERIFIED MATERIALS, FIELD MEASUREMENTS AND FIELD CONSTRUCTION CRITERIA RELATED THERETO, OR WILL DO SO AND (3) CHECKED AND COORDINATED THE INFORMATION CONTAINED WITHIN SUCH SUBMITTALS WITH THE REQUIREMENTS OF THE WORK AND OF THE CONTRACT DOCUMENTS.
  - THE CONTRACTOR SHALL PERFORM NO PORTION OF THE WORK FOR WHICH THE CONTRACT DOCUMENTS REQUIRE SUBMITTAL AND REVIEW OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNTIL THE RESPECTIVE SUBMITTAL HAS BEEN APPROVED BY THE ARCHITECT.
  - THE WORK SHALL BE IN ACCORDANCE WITH APPROVED SUBMITTALS EXCEPT THAT THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY ANY APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE CLIENT IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND
    - THE ARCHITECT HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION AS A MINOR CHANGE IN THE WORK, OR A CHANGE ORDER OR CONSTRUCTION CHANGE DIRECTIVE HAS BEEN ISSUED AUTHORIZING THE DEVIATION.
    - THE CONTRACTOR SHALL DIRECT SPECIFIC ATTENTION IN WRITING OR ON RESUBMITTED SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS, TO REVISIONS OTHER THAN THOSE REQUESTED BY THE ARCHITECT ON PREVIOUS SUBMITTALS. IN THE ABSENCE OF SUCH WRITTEN NOTICE, THE ARCHITECT'S APPROVAL OF A RESUBMISSION SHALL NOT APPLY TO SUCH REVISIONS.
- THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES OR SIMILAR SUBMITTALS BY THE ARCHITECT'S APPROVAL THEREOF.
- WORKMANSHIP:**
  - USE EXPERIENCED, WELL-QUALIFIED CRAFTSMEN, IN GOOD STANDING WITH THEIR RESPECTIVE LABOR UNIONS.
  - USE CAPABLE AND EXPERIENCED SUPERINTENDENTS, AUTHORIZED BY THE CONTRACTOR TO INSTRUCT WORK, MAKE JOB DECISIONS AND ACT FOR THE CONTRACTOR IN ALL MATTERS PERTAINING TO THE CONTRACT.
- PERMITS, TESTS AND INSPECTIONS:**
  - APPLY FOR, SECURE AND PAY FOR ALL REQUIRED PERMITS, FEES, LICENSES AND ROYALTIES TO ACCOMPLISH THE WORK.
  - APPLY FOR, SECURE AND PAY FOR ALL REQUIRED TESTS AND INSPECTIONS TO ACCOMPLISH THE WORK IN CONFORMANCE WITH ALL CODES AND JURISDICTIONS.
  - FURNISH SIGNED CERTIFIED AND ACCEPTABLE COPIES OF ALL ITEMS COVERED IN (A) AND (B) ABOVE TO THE OWNER FOR HIS RECORDS.
  - COMPLY WITH RULES AND REGULATIONS OF JURISDICTIONAL AUTHORITIES AND MALL OR LEASE SPECIFICATIONS AND REPORT ANY DEVIATIONS TO OWNER.
- CODES, RULES AND REGULATIONS: INCLUDE IN ELECTRICAL BID ANY ADDITIONAL MATERIALS AND LABOR, THAT MAY BE REQUIRED FOR COMPLIANCE WITH ALL GOVERNING LAWS, RULES AND REGULATIONS, EVEN THOUGH THE WORK IS NOT MENTIONED IN THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS. NOTHING IN THE PLANS OR SPECIFICATIONS SHALL BE DEEMED AS AUTHORITY TO VIOLATE ANY GOVERNING CODE.
- ACCURACY OF DATA:**
  - THE DATA GIVEN HEREIN AND ON THE DRAWINGS ARE AS EXACT AS COULD BE SECURED, BUT THEIR ABSOLUTE ACCURACY IS NOT GUARANTEED. THE SPECIFICATIONS AND DRAWINGS ARE FOR THE ASSISTANCE AND GUIDANCE OF THE CONTRACTOR. EXACT LOCATIONS, DISTANCES, LEVELS, ETC., WILL BE GOVERNED BY THE BUILDING AND THE CONTRACTOR SHALL USE THE DATA CONTAINED HEREIN WITH THIS UNDERSTANDING.
  - THE EXACT LOCATION OF EACH AND EVERY OUTLET OF EACH WIRING SYSTEM, NOT DIMENSIONED ON THE DRAWINGS, SHALL BE AS DIRECTED BY THE OWNER, THE OWNER'S ARCHITECT OR HIS SELECTED REPRESENTATIVE.
- CLEANUP:** REMOVE ALL SURPLUS MATERIAL, EQUIPMENT AND DEBRIS INCIDENTAL TO THIS WORK AND LEAVE THE PREMISES IN A CONDITION ACCEPTABLE TO THE OWNER.
- GUARANTEE:** FURNISH A WRITTEN CERTIFIED GUARANTEE, IN ACCEPTABLE FORM TO THE OWNER, AGAINST ANY DEFECTIVE WORKMANSHIP, MATERIAL AND OPERATING EQUIPMENT. THIS GUARANTEE SHALL BE IN FULL FORCE AND EFFECTIVE FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE OF THE INSTALLATION.
- TEMPORARY ELECTRIC SERVICE: THE ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL WIRING FOR CONSTRUCTION USE AS FOLLOWS: THE SERVICE ENTRANCE AND FEEDER SHALL BE 60 AMPS, SINGLE PHASE, 3 WIRE 120/208 VOLT FUSED MAIN DISCONNECT. THE FEEDER TO SERVE THE TEMPORARY DISTRIBUTION WIRING PROVIDING TEMPORARY LIGHTING IN ALL AREAS AS INDICATED ON DRAWINGS AND WHEREVER REQUIRED FOR THE OPERATION OF 120 VOLT SINGLE PHASE PORTABLE TOOLS AND EQUIPMENT NOT TO EXCEED 1 H.P.. THE WIRING SHOULD BE EXTENDED ALSO, SO THERE IS A 120 VOLT SINGLE PHASE OUTLET WITHIN 75 FEET OF ANY PORTION OF THE BUILDING. PROVIDE GROUND FAULT PROTECTION FOR ALL REQUIRED RECEPTACLES NOT

TO BECOME A PERMANENT PART OF THE INSTALLATION.

- STRUCTURAL CONDITIONS: NOTCHING AND BORING OF STRUCTURAL MEMBERS WILL NOT BE PERMITTED. IF CONDUIT, BOXES, ETC. NEED TO BE HUNG FROM STRUCTURAL STEEL, ONLY HANG FROM TOP FLANGE OF BEAMS AND TOP CHORDS AND ONLY AT PANEL POINTS OF JOISTS/ TRUSSES.
- COOPERATION WITH OTHER CONTRACTORS: THIS CONTRACTOR SHALL COOPERATE WITH ALL OTHER CONTRACTORS FURNISHING LABOR MATERIALS AND ALL WORK, SO THAT THE WORK AS A WHOLE SHALL BE EXECUTED AND COMPLETED WITHOUT CONFLICT OR DELAY. IN THE EVENT OF ANY MECHANICAL OBSTRUCTION, AS PLUMBING OR AIR CONDITIONING DUCTS IN WAY OF ELECTRICAL EQUIPMENT, IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO NOTIFY THE OWNERS' ARCHITECT BEFORE COMMENCING ANY WORK.

II. BASIC MATERIALS AND METHODS

- RACEWAYS AND BOXES:**
  - WHERE SIZES OF RACEWAY OR BOXES ARE NOT INDICATED, THE CONTRACTOR SHALL SIZE THESE ITEMS AS REQUIRED FOR THE INSTALLATION.
  - FLEXIBLE METAL CONDUIT AS ALLOWABLE BY CODE SHALL BE USED FOR FINAL CONNECTION OF LIGHTING FIXTURES AND WIRING DEVICES TO BE INSTALLED IN HUNG CEILINGS.
  - WORK INSTALLED IN METAL PARTITIONS SHALL BE RUN IN CONCEALED ELECTRIC METALLIC TUBING OR FLEXIBLE CONDUIT AS REQUIRED BY GOVERNING CODE AND LANDLORD.
  - BRANCH CIRCUIT WORK CHASED INTO EXISTING CONSTRUCTION FOR CONCEALMENT UNDER PATCHED FINISHES, MAY BE INSTALLED IN RIGID CONDUIT, OR EMT.
  - CONDUITS THAT RUN EXPOSED ON EXTERIOR OF BUILDING SHALL BE RIGID CONDUIT WITH WEATHER TIGHT, CORROSION RESISTANT FITTINGS.
  - FLEXIBLE STEEL CONDUITS SHALL BE USED IN MAKING UP SHORT, FLEXIBLE CONNECTIONS TO ROTATING OR VIBRATING MACHINERY, MINIMUM 12" LENGTH AND FOR CONNECTIONS BETWEEN JUNCTION BOXES IN HUNG OR FURRED CEILING FIXTURES.
  - ALL INTERIOR FEEDERS OR EXPOSED FEEDERS TO THE PUBLIC'S EYE, SHALL BE INSTALLED IN RIGID CONDUIT OR EMT.
  - ALL INTERIOR LOW VOLTAGE WIRING SHALL BE INSTALLED IN RIGID CONDUIT OR EMT WHERE REQUIRED BY CODE.
  - MINIMUM SIZE CONDUIT SHALL BE 3/4" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
  - ALL WORK RUN IN UNEXCAVATED AREAS, CRAWL SPACES, TUNNELS, OR UNDERGROUND SHALL BE INSTALLED IN RIGID CONDUIT.
  - ALL WORK RUN EXPOSED WITHIN THE BUILDING MAY BE INSTALLED IN RIGID STEEL CONDUIT OR ELECTRICAL METALLIC TUBING.
  - ALL WORK RUN CONCEALED WITHIN HUNG OR FURRED CEILINGS, METAL STUD PARTITIONS AND THE LIKE, MAY BE INSTALLED IN RIGID STEEL CONDUIT, ELECTRIC METALLIC TUBING EXCEPT THAT WIRING IN OR THROUGH SLABS SHALL BE IN RIGID CONDUIT.
  - GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS SHALL BE PROVIDED FOR ALL INTERIOR OUTLETS FOR LIGHTING, SWITCHES, RECEPTACLES, CLOCKS, SIGNALS, AND THE LIKE.
  - PROVIDE GALVANIZED FITTINGS FOR EXPOSED WORK, THREADED FOR CONDUIT CONNECTIONS AND PROVIDE WITH SUITABLE COVERS.
  - THE OUTLETS FOR LOCAL SWITCHES SHALL BE INSTALLED ADJACENT TO THE TRIM ON THE STRIKING SIDE OF THE DOOR, REGARDLESS OF THE LOCATIONS INDICATED ON THE DRAWINGS; THEREFORE, CHECK ALL DOOR SWINGS BEFORE INSTALLING CONDUIT AND OUTLETS.
- GROUNDING:**
  - ALL MAJOR PARTS NOT CARRYING CURRENT, INCLUDING THE FOLLOWING ITEMS BELOW, SHALL BE PROPERLY GROUNDED:
    - SECONDARY FEEDER CONDUIT AND EQUIPMENT ENCLOSURES.
    - PANEL BOARD ENCLOSURES, PULL AND JUNCTION BOXES, CABLE TROUGHS.
    - ALL CONDUITS, METAL MOLDING AND OUTLET BOXES.
    - FAN AND EQUIPMENT HOUSINGS EXPOSED ON THE STRUCTURE OR ON GRADE.
  - ALL CASH REGISTER OUTLETS TO BE ISOLATED AND SEGREGATED.
- SAFETY SWITCHES:** PROVIDE WHERE SHOWN OR AS REQUIRED, HEAVY-DUTY, METAL ENCLOSED, EXTERNALLY OPERATED FUSED, OR UNFUSED, SAFETY SWITCHES, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED. THE OPERATING MECHANISM SHALL BE SO DESIGNED THAT THE SWITCHES MAY BE LOCKED IN THE "ON" OR "OFF" POSITIONS. WHERE "WEATHERPROOF" SAFETY SWITCHES ARE INDICATED OR REQUIRED, THESE SHALL BE AS SPECIFIED ABOVE EXCEPT ENCLOSURES SHALL BE NEMA III, RAIN TIGHT.
- MOTOR AND OTHER WIRING:**
  - PROVIDE ALL REQUIRED CONDUIT, WIRING AND SAFETY SWITCHES FOR ALL MOTORS, AND ANY OTHER ELECTRICAL EQUIPMENT INSTALLED OR CONNECTED UNDER THIS DIVISION.
  - ALL MOTORS WILL BE FURNISHED AND SET UNDER OTHER DIVISION, THE WORK OF THIS DIVISION SHALL INCLUDE PROVIDING ALL CONNECTIONS SO AS TO BE COMPLETE.
  - ALL STARTING DEVICES, MOTOR CONTROLLERS, FLOAT SWITCHES, LEVEL SENSORS, ALARM DEVICES, REMOTE CONTROL PUSH BUTTONS, ETC., WILL BE FURNISHED BY THE VARIOUS CONTRACTORS, UNLESS OTHERWISE NOTED HEREIN. BUT THIS CONTRACTOR SHALL SET THESE DEVICES AND PROVIDE ALL CONNECTIONS.
  - FOR EACH THERMOSTAT (BY H.V.A.C.), PROVIDE 4" x 4" OUTLET BOX WITH 3/4" EMPTY CONDUIT STUBBED UP INTO CEILING AND BUSHED. PROVIDE STEEL DRAG WIRE FOR EACH LOCATION.

WIRING DEVICES:

- WIRING DEVICE COLOR SHALL BE WHITE, UNLESS OTHERWISE NOTED.
- PROVIDE TOTALLY ENCLOSED, 20 AMPERE, 120/277 VOLT, QUIET A/C GENERAL USE SNAP SWITCHES.
- SWITCHES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, P&S OR LEVITON. PROVIDE NEMA CONFIGURATION S-20R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED FOR 20 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- RECEPTACLES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, P&S OR LEVITON.
- RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS.
- PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND WORKMANSHIP EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.
- PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
  - FINISHED AREAS: THERMOPLASTIC-COLOR TO MATCH DEVICE.
  - UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL AS APPROPRIATE FOR THE TYPE OF BOX.
  - EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKET, WEATHERPROOF, CROUSE-HINDS "WLRD" FOR DUPLEX RECEPTACLES AND WLRs FOR SINGLE RECEPTACLES OR EQUAL.
  - 1.8d TELEPHONE COMMUNICATIONS, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND SWITCHES. ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE BY THIS CONTRACTOR.
  - 1.8e WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVER PLATE.
- LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS OTHERWISE INDICATED. THE

- LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.
  - LOCATE RECEPTACLES APPROXIMATELY 1'-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL.
- WIRES AND CABLES:**
  - ALL WIRE FOR LIGHT AND POWER INSTALLATIONS SHALL BE HIGH CONDUCTIVITY COPPER, 600 VOLT INSULATED IN ACCORDANCE WITH THE NATIONAL BOARD OF FIRE UNDERWRITERS STANDARDS FOR TYPE "THW" WIRES, EXCEPT AS NOTED ON THE DRAWINGS OR OTHERWISE SPECIFIED HEREIN.
  - NO WIRE SHALL BE SMALLER THAN NO. 12 A.W.G.. ALL WIRES NO. 8 AND LARGER SHALL BE STRANDED.
  - WIRES SHALL BE COLOR CODED.
  - ALL WIRES SHALL BE POLARIZED.
  - CIRCUIT WORK BETWEEN OUTLET BOXES AND EACH RECESSED LIGHTING FIXTURE SHALL BE TYPE "AF" WIRE.
  - HOME RUNS AND BRANCH WIRING FOR 120 VOLT CIRCUITS SHALL BE AS FOLLOWS:
 

LENGTH	HOME RUN WIRE SIZE	CIRCUIT WIRE SIZE
110 TO 50'	12	12
50 TO 100'	10	12
100' TO 150'	8	12

6. LIGHTING AND POWER PANELS:

- PANELS SHALL BE CIRCUIT BREAKER TYPE INSTALLED IN CODE GAUGE GALVANIZED SHEET STEEL CABINETS, FLUSH OR SURFACE MOUNTED AS INDICATED ON THE DRAWINGS. THE PANEL SECTIONS SHALL BE MOUNTED AWAY FROM THE BACK OF THE CABINETS IN SUCH A MANNER THAT THERE WILL BE NO SPACE BETWEEN THE CABINET TRIMS AND FRAMES. THE GUTTER SPACES ON ALL SIDES, TOPS AND BOTTOMS SHALL BE OF SUFFICIENT SIZE TO PREVENT OVERCROWDING OF WIRES AND CABLES AND TO PROVIDE SUFFICIENT VENTILATION TO PREVENT OVERHEATING OF THE CIRCUIT BREAKERS. EACH CABINET SHALL BE COMPLETE WITH HINGED DOORS, CYLINDER LOCK, DIRECTORY FRAME AND NEATLY TYPED DIRECTORY CHARTS. ALL PANELS SHALL BE KEVED ALIKE. INSTALL AN ANGLE PIECE ON INSIDE OF EACH TRIM FOR EASE OF INSTALLATION.
- THE BRANCH CIRCUIT BREAKERS, IN GENERAL, SHALL BE MOLDED CASE, BOLT-ON TYPE, RATED 10,000 AIC ON 120/208V, 100 AMPERE FRAME, THERMAL MAGNETIC TRIP SINGLE, TWO OR THREE POLE AS SHOWN ON THE DRAWINGS. ALL MULTIPLE POLE BREAKERS FOR PANELS WHERE INDICATED ON THE DRAWING SCHEDULES. MAIN BREAKER CHARACTERISTICS SHALL BE AS INDICATED ON THE DRAWINGS. MAIN BUSS WORK OF ALL PANELS SHALL, AS A MINIMUM, BE DESIGNED TO CARRY THE FULL RATING OF THE FEEDER SWITCH SUPPLYING THE PANEL, AT A CIRCUIT DENSITY OF 800 AMPERES PER SQUARE INCH OF CROSS SECTION. BUSS WORK SHALL BE HIGH CONDUCTIVITY COPPER (277 / 480V CIRCUIT BREAKERS SHALL BE RATED AT 14,000 A.I.C.).
- PANEL SECTIONS SHALL BE SUCH THAT NO LIVE PARTS ARE EXPOSED AFTER INSTALLATION. THEY SHALL BE SO ARRANGED THAT EACH BREAKER IS READILY REMOVABLE FROM THE PANEL WITHOUT DISTURBING ADJACENT BREAKERS. ELECTRICAL CONTRACTOR TO PROVIDE TYPED BREAKER LIST.
- PHASE LEGS SHALL BE ALTERNATELY BUSSED** TO EACH CIRCUIT BREAKER IN A MANNER TO AFFECT BALANCING THE BRANCH CIRCUIT CONNECTIONS AS NEARLY AS POSSIBLE OVER EACH PHASE.
- DRY TYPE TRANSFORMERS (IF NEW IS REQUIRED):**
  - THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A DRY TYPE AIR COOLED INDOOR POWER TRANSFORMER, AS RATED ON THE DRAWINGS AND HEREINAFTER SPECIFIED.
  - THE TRANSFORMER SHALL BE PROVIDED WITH SUITABLE VIBRATION DAMPERS. SAME TO BE PLACED BETWEEN THE CORE AND THE COILS OF THE ENCLOSURE.
  - THE TRANSFORMER SHALL HAVE CLASS 'H' INSULATION, AND THE WIRING TEMPERATURE RISE SHALL NOT EXCEED 150 DEGREES CELSIUS UNDER FULL LOAD IN AN AMBIENT TEMPERATURE OF 40 DEGREES CELSIUS.
  - THE TRANSFORMER ENCLOSURE SHALL BE PRIMED INSIDE AND OUT WITH A ZINC-COATED CHROMATE IRON OXIDE RUST INHIBITING PRIMER AND FINISHED ASA61 GRAY ENAMEL.
  - THE MAXIMUM ACCEPTABLE NOISE LEVEL SHALL NOT EXCEED THE FOLLOWING: 0 TO 150 kVA - 42 db

III. SPECIFIC ELECTRICAL SPECIFICATIONS

- SEE ELECTRICAL DRAWINGS - LANDLORD'S CRITERIA:** THE ELECTRICAL CONTRACTOR IS TO BECOME FAMILIARIZED WITH LANDLORD'S CRITERIA FOR THIS LOCATION AND INCLUDE ANY WORK REQUIRED OF THIS CRITERIA, WHICH IS NOT SPECIFICALLY NOTED IN THESE DRAWINGS AND SPECIFICATIONS.

IV. TELEPHONE

- PROVIDE 3/4" EMT IN WALLS WITH DRAG STRING AT EACH LOCATION.

V. MISCELLANEOUS

- ALUMINUM WIRE IS STRICTLY PROHIBITED FOR THIS PROJECT.
- DURING DEMOLITION, ANY ELECTRICAL EQUIPMENT, FIXTURE SYSTEMS, CONDUIT AND WIRE ARE TO BE REMOVED AS NOTED AND NOT REUSED. THIS UNUSED EQUIPMENT, FIXTURE SYSTEMS, CONDUIT, AND WIRE MAY NOT BE ABANDONED AND LEFT WITHIN THE SPACE. THEY MUST BE REMOVED TO AN APPROVED DISPOSAL SITE.

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**ELECTRICAL SPECIFICATIONS**

SHEET NUMBER:

**E1.1**

**SKIN CARE REMODEL**

1	SCALE	ELECTRICAL SPECIFICATIONS
	N.T.S.	

—	NEW
---	EXISTING

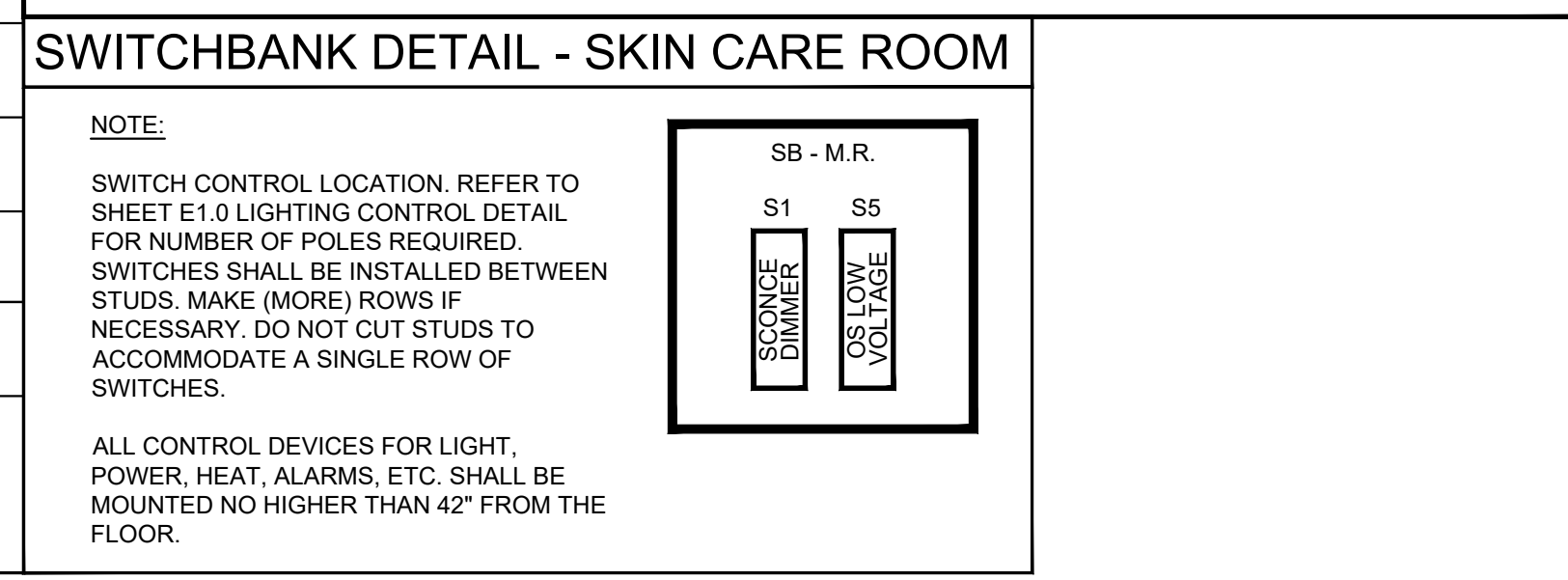
- GENERAL NOTES:**
- COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS WITH ARCHITECTURAL PLANS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, DETAILS, AND LIGHTING NOTES FOR FURTHER INFORMATION OF DEVICE PLACEMENT AND OTHER RELEVANT INFORMATION.
  - HATCHED AREA IS NOT IN SCOPE OF WORK.
  - 'E' DENOTES EXISTING FIXTURE/DEVICE TO REMAIN. 'R' DENOTES EXISTING FIXTURE/DEVICE TO BE RELOCATED.
  - VERIFY PROPER FUNCTIONALITY OF ALL EXISTING AND RELOCATED LIGHT FIXTURES, THEIR CONTROL DEVICES, AND EXIT SIGNS. PROVIDE REPLACEMENTS AS REQUIRED IF ANY ARE NOT OPERATING AS INTENDED OR HAVE ABOVE NORMAL WEAR OR DEFECTS.
  - SEE ELECTRICAL SYSTEM AND EQUIPMENT SCHEDULE FOR LIGHTING POWER DENSITY INFORMATION.
  - PROVIDE AN UNSWITCHED 'HOT' FROM BUILDING EMERGENCY DISTRIBUTION, TO ALL IDENTIFIED EGRESS FIXTURES SHOWN.
  - ALL SWITCHES FOR LIGHTS, SHADES, ETC. WHICH ARE SHOWN TO BE MOUNTED IN THE SAME GENERAL AREA SHALL BE GANGED TOGETHER AND SHARE A MULTI-GANG COVER PLATE WHERE POSSIBLE.
  - REFER TO SHEET E-2.1 & E-3.0 FOR LOCATION OF ELECTRICAL DISTRIBUTION PANELS.
  - LOWER CASE LETTERS IN LIGHTING FIXTURES AND ADJACENT TO SWITCHES IN EACH INDIVIDUAL ROOM/AREA INDICATE WHICH LIGHT FIXTURE IS TO BE CONTROLLED FROM EACH CORRESPONDING SWITCH IN THAT ROOM/AREA.
  - ALL CONTROL CABLING PROVIDED AS A PART OF ANY LIGHTING CONTROL SYSTEM SHALL BE PLENUM RATED.
  - CIRCUIT HOMERUN DESIGNATIONS ARE NOTED FOR DESIGN INTENT ONLY BASED ON FIELD OBSERVATIONS OF EXISTING PANEL SCHEDULES, WHERE AVAILABLE. CONTRACTOR TO CONFIRM ALL SPARE CIRCUIT BREAKERS AND THOSE MADE AVAILABLE DUE TO DEMOLITION.
  - LIGHT SWITCHES ARE TO BE MOUNTED AT 48" AFF (UNLESS OTHERWISE NOTED).
  - ALL EMERGENCY/EXIT LIGHTING ON LOCAL CIRCUIT SHALL BE CONNECTED AHEAD OF LOCAL SWITCH (HOT) FOR CONTINUOUS OPERATION, UNLESS ROUTED THROUGH INVERTER. PROVIDE 90 MINUTE BATTERY BACKUP.
  - DAYLIGHT SENSORS, OCCUPANCY SENSORS, DIMMING, AND ANY OTHER CONTROLS SHALL BE VERIFIED TO BE COMPATIBLE WITH LIGHT FIXTURE DRIVERS.
  - CONTRACTOR SHALL PROVIDE THE LIGHTING CONTROLS AND ALL REQUIRED DEVICES/ACCESSORIES/WIRING AS PER IECC 2018 CODE REQUIREMENTS.

- KEYED NOTES: #**
- EXISTING LIGHTING & CONTROLS SHALL REMAIN. E.C. SHALL VERIFY THE EXACT LIGHTING CONTROLS, CIRCUITRY & OPERABLE CONDITION IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
  - SWITCHBANK LOCATION. REFER TO SWITCHBANK DETAIL ON THIS SHEET AND LIGHTING CONTROL DETAIL ON SHEET E1.0 FOR ADDITIONAL INFORMATION.
  - CONNECT ALL NEW LIGHTING FIXTURE TO THE EXISTING LIGHTING FIXTURES IN THE HALLWAY. EXISTING CIRCUITS AND CONTROLS TO REMAIN. FIELD VERIFY THE OPERABLE CONDITION IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
  - PROVIDE TOGGLE SWITCH FOR UNDER-CABINET MOUNTED LIGHT ACCORDING TO MANUFACTURER'S INSTRUCTIONS. E.C. SHALL COORDINATE THE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN. BASE BID ACCORDINGLY.
  - PROVIDE NEW J-BOX FOR AUDIO CONTROLS. REFER TO THE VOLUME CONTROL SCHEDULE ON THIS SHEET FOR MORE INFORMATION. ALIGN SWITCH WITH THE NEARBY LIGHTING SWITCHBANK. E.C. SHALL COORDINATE THE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN. BASE BID ACCORDINGLY.
  - NEW SPEAKER LOCATION. E.C. SHALL COORDINATE EXACT LOCATION AND POWER REQUIREMENT WITH LOW VOLTAGE VENDOR/ARCHITECT/OWNER. BASE BID ACCORDINGLY.
  - PROVIDE CEILING MOUNTED OCCUPANCY SENSOR. MANUAL ON/AUTOMATIC OFF. SET OFF TIME FOR 20 MINUTES.
  - EMERGENCY LIGHT. CONNECT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.
  - EXISTING SWITCHBANK FOR HALLWAY SHALL REMAIN. E.C. SHALL VERIFY THE EXACT LOCATION & OPERABLE CONDITION IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.

**LIGHTING FIXTURE SCHEDULE:**

MARK	SYMBOL	FIXTURE DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLT	LAMP DESCRIPTION	REMARKS
LR3A		LED DOWNLIGHT	CED	LED MICRODISK-62882	120	14W	6" FLUSH REMODEL FIXTURE KIT
L7A		LED SCONCE	AFX	COLS0518L30D1BK	120	19W	BLACK RECTANGULAR WALL SCONCE
L8		16" LED DOWNLIGHT	KUZCO	FM7916-BOR	120	26W	BLACK SURFACE MOUNTED DRUM LIGHT
EM		WALL MOUNTED EMERGENCY FIXTURE	MERU	EXISTING	120	2W	WALL MOUNTED EMERGENCY FIXTURE
(E)		16" LED DOWNLIGHT	EXISTING	EXISTING	120	EXISTING	-
(E)		LED DOWNLIGHT	EXISTING	EXISTING	120	EXISTING	-
(E)		WALL MOUNTED EMERGENCY FIXTURE	EXISTING	EXISTING	120	EXISTING	-
(E)		LED SCONCE	EXISTING	EXISTING	120	EXISTING	-

- LIGHT FIXTURE SCHEDULE NOTES:**
- ALL FIXTURES QUANTITIES, LOCATIONS AND MODEL NUMBERS SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS PRIOR TO ORDERING. DO NOT ORDER FROM THESE PLANS.
  - ENSURE ALL LIGHTING EXPOSED TO PLENUM IS PLENUM RATED



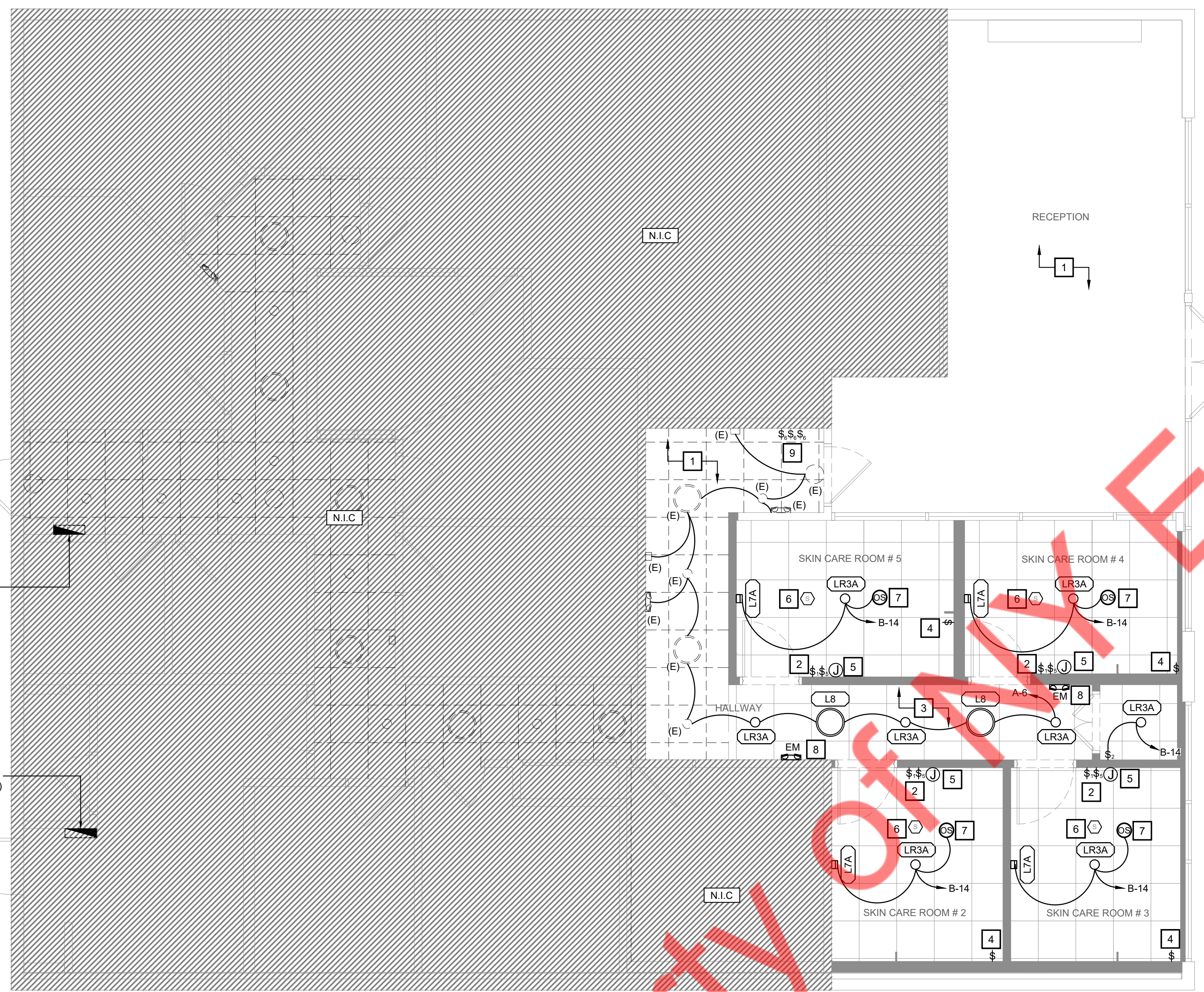
**LIGHTING CONTROL SCHEDULE**

TAG	SYMBOL	DESCRIPTION	MODEL	LOCATION
S1		DIMMER SWITCH	LEVITON 6674-POW	THERAPY ROOMS1, SKIN CARE1
S2		DIMMER SWITCH	LEVITON ODD10-IDW	STORAGE, OFFICE, CHANGING ROOM
S5		LOW VOLTAGE KEYPADS	LEVITON PLVSW-1LW	SKIN CARE, THERAPY, EMPLOYEE LOUNGE
S6		THREE WAY TOGGLE	HUBBELL #1223	HALLWAY L1 FIXTURES, RECEPTION

NOTES:  
1. IN JURISDICTIONS WHERE ENERGY CODE REQUIRES OCCUPANCY SENSORS, CONTRACTOR TO INSTALL CEILING MOUNTED OS, WATTSTOPPER #DT-300 WITH A WATTSTOPPER #BZ-150 POWER PACK (MANUAL ON).  
2. TIE INTO EXHAUST FAN.

**VOLUME CONTROL SCHEDULE**

TAG	SYMBOL	DESCRIPTION	MODEL	LOCATION
V1		COMMERCIAL ATTENUATOR	ATLAS SOUND AT10-(PA)	THERAPY ROOMS, SALON, RECOVERY ROOM



(E) 225A, 120/208V, 3PH, 4W ELECTRICAL PANEL 'A' (SC-1)

(E) 225A, 120/208V, 3PH, 4W ELECTRICAL PANEL 'B' (SC-2)

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

LIGHTING PLAN

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ELECTRICAL LIGHTING PLAN

SHEET NUMBER:

E2.0

SKIN CARE REMODEL

—	NEW
---	EXISTING

**GENERAL NOTES:**

- ELECTRICAL CONTRACTOR SHALL VERIFY ALL CONNECTION REQUIREMENTS FOR ALL EQUIPMENT SUPPLIED BY OTHERS PRIOR TO ROUGH-IN. COORDINATE NEMA PLUG CONFIGURATION FOR EQUIPMENT AND PROVIDE MATCHING RECEPTACLE WHERE APPLICABLE.
- COORDINATE MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS WITH OTHER TRADES.
- COORDINATE EXACT LOCATION, QUANTITIES, AND INSTALLATION REQUIREMENTS OF EQUIPMENT IN MILLWORK.
- ALL EXTERIOR DISCONNECTS SHALL BE WEATHERPROOF.
- PROVIDE GROUNDING IN ACCORDANCE WITH NEC 250. PROVIDE A #6 CU GROUND TO ANY NEW METAL GAS PIPING SYSTEMS. FINAL CONNECTION TO ALL HARD-WIRED EQUIPMENT SHALL BE MADE WITH LIQUID-TITE FLEXIBLE CONDUIT.
- PROVIDE SEAL-OFFS FOR ALL CONDUITS ENTERING OR LEAVING WALK-IN BOXES.
- ALL CIRCUITS SHALL HAVE AN INSULATED GROUND WIRE SIZED PER NEC 250 BUT NOT SMALLER THAN #12 AWG.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL DISCONNECT SWITCHES, CONDUIT, AND WIRE FOR EQUIPMENT. INSTALL UNDER SUPERVISION OF EQUIPMENT SUPPLIER.
- ALL DEDICATED CIRCUITS TO HAVE ORANGE RECEPTACLES EXCEPT MIRRORS. AND ALL WIRES ARE DIRECT HOME RUNS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ROUGH-IN FOR ALL LOW VOLTAGE CABLING. COORDINATE WITH LOW VOLTAGE CONTRACTOR. REFER TO DETAIL ON THIS SHEET.
- ELECTRICAL CORES INTO THE CEILING SPACE BELOW THE PREMISES MUST BE PIPED WITH HARD CONDUIT TIGHT TO THE DECK AND J-BOXES OR TRANSFER BOXES AT THE CORE.
- ALL SLAB AND WALL PENETRATION TO USE FM APPROVED FIRE CAULK.
- ALL BUILDING CORE ELECTRIC ROOMS AND PANELBOARDS SHALL BE CLEANED OF ALL DUST AND DEBRIS UPON COMPLETION OF WORK.
- ALL ELECTRICAL OUTLETS WITHIN THE LEASED PREMISE WILL BE PROPERLY LABELED TO REFLECT ELECTRICAL PANEL AND BREAKER NUMBERS FROM ELECTRICAL ROOM.
- ELECTRICAL AND DATA RUNS UNDER THE TENANT'S SLAB SHALL BE IN HARD CONDUIT, INSTALLED TIGHT TO DECK.
- ALL CIRCUITS INSIDE ELECTRIC ROOM, MECHANICAL ROOM AND CORE AREAS SHALL BE IN CONDUIT.
- TAMPER RESISTANT RECEPTACLES SHALL BE PROVIDED FOR RECEPTION DESK AS PER NEC 406.12.

**KEYED NOTES: #**

- EXISTING ELECTRICAL PANELS. E.C. SHALL COORDINATE WITH ARCHITECT/LANDLORD IN FIELD FOR EXACT LOCATION. BASE BID ACCORDINGLY. E.C. SHALL MAINTAIN CLEARANCE FOR ELECTRICAL PANEL PER NEC 110.26 (A) (1). REFER SHEET E-3.0 ELECTRICAL RISER DIAGRAM FOR MORE INFORMATION.
- AT THIS LOCATION, STUB CONDUITS UP THROUGH WALL. ALL TEL/DATA CONDUITS SHALL BE STUBBED INTO ACCESSIBLE CEILING SPACE ABOVE. FINAL PLACEMENT OF CONDUITS STUB-UP AT FLOOR SHALL BE COORDINATED WITH TENANT REPRESENTATIVE PRIOR TO THE START OF ANY SAW-CUT AND OR TRENCHING. BASE BID ACCORDINGLY.
- EXISTING SHOW WINDOW RECEPTACLE AND ITS ELECTRICAL CONNECTION SHALL REMAIN. CONTRACTOR TO VERIFY EXACT LOCATION OPERABLE CONDITION AND THE REQUIREMENTS OF SHOW WINDOW AS PER NEC 210.62. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- FOR RECEPTION DESK PROVIDE COMBINATION USB CHARGER WITH TAMPER RESISTANT RECEPTACLE. COOPER TR7746 (NO SUBSTITUTIONS). MOUNT RECEPTACLE DATA 12" BELOW COUNTER NEAR LOCATION OF CABLE HOLES. E.C. SHALL COORDINATE EXACT FINAL LOCATION AND MOUNTING HEIGHT WITH ARCHITECT/OWNER PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- PROVIDE (4) 1" CONDUITS TO RECEPTION DESK. (2) CONDUITS TO BE DEDICATED FOR POWER AND (2) CONDUITS TO BE DEDICATED FOR DATA/VOICE. E.C. SHALL COORDINATE EXACT FINAL LOCATION WITH ARCHITECT/OWNER/ LOW VOLTAGE VENDOR PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- PROVIDE SWITCH AND J-BOX AS REQUIRED FOR LOW VOLTAGE CASEWORK LIGHTING. COORDINATE ALL REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN. SEE ARCHITECTURAL FOR FURTHER COORDINATION. SWITCH TO BE LOCATED IN OFFICE. BASE BID ACCORDINGLY.
- EXISTING TENANT SIGNAGE WITH ITS ELECTRICAL CONNECTION SHALL REMAIN. CONTRACTOR TO VERIFY EXACT LOCATION. ELECTRICAL CONNECTION AND OPERABLE CONDITION IN FIELD. PROVIDE NEW IF FOUND INOPERABLE. BASE BID ACCORDINGLY.
- COORDINATE DEVICE INSTALLATION AND LOCATIONS WITH OWNER PRIOR TO ROUGH-IN.



(E) 225A, 120/208V, 3PH, 4W  
ELECTRICAL PANEL 'A' (SC-1)

(E) 225A, 120/208V, 3PH, 4W  
ELECTRICAL PANEL 'B' (SC-2)

**EQUIPMENT SCHEDULE:**

ITEM NO.	QTY.	ELECTRICAL				EQUIPMENT SCHEDULE			NOTES
		VOLTS	PHASE	AMPS	KW	NEMA	EQUIPMENT CATEGORY	MANUFACTURER/ VENDOR	
ME-4	4	120	#	-	1.2	NEMA-5-15P	TOWEL WARMER	L & R	PROVIDED BY FRANCHISEE
M-R40-2	1	-	-	-	-	-	WALL HANGING SHELF ILLUMINATED RETAIL FIXTURE, 4 FT SECTION	RETAIL FIRST	INCLUDES BLOCKING, DRIVE ENCLOSURES AND PRICE CHANNELS

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ELECTRICAL POWER PLAN

SHEET NUMBER:

**E2.1**

**SKIN CARE REMODEL**

### ELECTRICAL PANEL SCHEDULE

PANELBOARD PANEL TYPE NEMA TYPE ENCLOSURE	'A' (SC-1) MLO	VOLTAGE 120 / 208 V	PHASE BUS RATING	3 WIRE			4 WIRE							
				225A	225A	225A	225A	225A	225A					
NO.	EQT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR	TOTAL WATTS	PHASE	TOTAL WATTS	BKR	WIRE SIZE	POLE	DESCRIPTION	EQT TAG	NO.
1	(E)	EWIC	1	12	20	200	A	96	20	12	1	LTG-RECEPTION RECOVERY	(E)	TC 2
3	(E)	TOWEL WARMERS	1	12	20	768	B	272	20	12	1	LTG-THERAPY/SKIN CARE	(E)	4
5	(E)	CORRIDOR REC	1	12	20	540	C	389	20	12	1	LTG-CORRIDOR	(E)	TC 6
7	(N)	CORRIDOR/LOBBY REC	1	12	20	1,080	A	20	20	1		SPARE	(E)	8
9	TC	(E) SIGN	1	12	20	1,200	B	1,080	20	12	1	IT RECEPTACLE	(E)	10
11	TC	(E) SHOW WINDOW RECEPTACLE	1	12	20	1,200	C	20	20	1		SPARE	(E)	12
13	(E)	RECOVERY ROOM REC	1	12	20	1,440	A	388	20	12	1	LTG-RR/BREAKOFF/FICE/	(E)	14
15	(E)	LED BED RECEPTACLE	1	12	20	1,800	B	1,800	20	12	1	TABLE WARMER	(N)	16
17	(E)	LED BED RECEPTACLE	1	12	20	1,800	C	1,800	20	12	1	TABLE WARMER	(N)	18
19	(E)	MILLWORK LTG RECEPT	1	12	20	540	A	150	20	12	1	TIMECLOCK	(E)	20
21	(E)	MILLWORK LTG RECEPT	1	12	20	540	B	560	20	12	1	BACKLIT SIGN/CASEWORK LTG	(E)	TC 22
23		SPARE	1	20			C	58	20	12	1	THERAPY TAPE LIGHTS	(E)	24
25	(E)	CAMERA CEILING RECEPTACLES	1	12	20	1,440	A	1,800	20	12	1	TABLE WARMER	(E)	26
27		SPARE	1	20			B	560	20	12	1	BACKLIT SIGN/CASEWORK LTG	(E)	TC 28
29	(E)	BREAK ROOM RECEPTACLES	1	12	20	720	C	1,000	20	12	1	REFRIGERATOR	(E)	GFCI 30
31	(E)	BREAK ROOM RECEPTACLES	1	12	20	720	A	990	20	12	1	THERAPY RECEPTACLES	(E)	32
33		SPARE	1	20			B					SPARE	(E)	34
35		SPARE	1	20			C	1,260	20	12	1	THERAPY RECEPTACLES	(E)	36
37							A	4,500						38
39	(E)	RTU #1	3	8	50		B	4,500				RTU #2	(E)	40
41							C	4,500						42

ALL PHASES TO BE BALANCED TO WITHIN 7%  
A= 16,834 WATTS  
B= 16,680 WATTS  
C= 16,987 WATTS

(E) EXISTING TO REMAIN  
(N) NEW CIRCUIT  
GFCI GROUND FAULT CURRENT INTERRUPTER  
IG CIRCUITS WITH ISOLATED GROUND  
TC CIRCUITS ON TIMECLOCK  
EMS ROUTING TO THE EMS PANEL  
C BREAKER LOCK  
a,b,c SWITCHES CONTROLLING LIGHTS

### ELECTRICAL PANEL SCHEDULE

PANELBOARD PANEL TYPE NEMA TYPE ENCLOSURE	B'(SC-2) MLO	VOLTAGE 120 / 208 V	PHASE BUS RATING	3 WIRE			4 WIRE							
				225A	225A	225A	225A	225A	225A					
NO.	EQT TAG	DESCRIPTION	POLE	WIRE SIZE	BKR	TOTAL WATTS	PHASE	TOTAL WATTS	BKR	WIRE SIZE	POLE	DESCRIPTION	EQT TAG	NO.
1	(E)	STEREM/MAG LIGHT REC	1	12	20	1,428	A	900	20	12	1	OFFICE RECEPTACLE	(E)	2
3	(N)	THERAPY RECEPTACLES	1	12	20	1,260	B	1,248	20	12	1	STEREM/MAG LIGHT REC	(N)	4
5	(E)	THERAPY RECEPTACLES	1	12	20	1,260	C	1,248	20	12	1	STEREM/MAG LIGHT REC	(N)	6
7	(N)	STEREM/MAG LIGHT REC	1	12	20	1,248	A	360	20	12	1	RECEPTION QUAD RECEPTACLE	(N)	8
9	(N)	STEREM/MAG LIGHT REC	1	12	20	1,248	B	360	20	12	1	RECEPTION QUAD RECEPTACLE	(N)	10
11	(E)	EWIC	1	12	20	200	C	360	20	12	1	RECEPTION QUAD RECEPTACLE	(N)	12
13	(N)	ACCU RECEPTACLE	1	12	20	180	A	200	20	12	1	SKIN CARE ROOM LTG	(N)	14
15	(E)	WASHER	1	12	20	500	B	20	20	1		SPARE	(E)	16
17	(E)						C	560	20	12	1	LOBBY CASEWORK LTG	(N)	18
19		SPARE					A	2,496	30	10	2	DRYER	(E)	20
21							B	2,496						22
23	(N)	TOWEL WARMERS	1	12	20	1,152	C	540	20	12	1	HVAC RECEPTACLES	(E)	24
25	(N)	TOWEL WARMERS	1	12	20	1,152	A	1,152	20	12	1	TOWEL WARMERS	(E)	26
27	(N)	THERAPY RECEPTACLES	1	12	20	1,260	B	1,152	20	12	1	TOWEL WARMERS	(N)	28
29	(N)	THERAPY RECEPTACLES	1	12	20	1,260	C	1,152	20	12	1	TOWEL WARMERS	(N)	30
31	(N)	THERAPY RECEPTACLES	1	12	20	1,260	A					SPARE	(E)	32
33		SPARE					B					SPARE	(E)	34
35		SPARE					C	200	20	12	1	RECIRCULATION PUMP	(E)	GFCI 36
37		SPARE					A	3,840						38
39							B	3,840						40
41	(E)	WATER HEATER	2	8	40	2,995	A	3,840	40	8	3	RTU #3	(E)	42

ALL PHASES TO BE BALANCED TO WITHIN 7%  
A= 14,216 WATTS  
B= 16,359 WATTS  
C= 14,767 WATTS

(E) EXISTING TO REMAIN  
(N) NEW CIRCUIT  
GFCI GROUND FAULT CURRENT INTERRUPTER  
IG CIRCUITS WITH ISOLATED GROUND  
TC CIRCUITS ON TIMECLOCK  
EMS ROUTING TO THE EMS PANEL  
C BREAKER LOCK  
a,b,c SWITCHES CONTROLLING LIGHTS

### ELECTRICAL LOAD SUMMARY - PANEL A

DESCRIPTION	NEC CONNECTED KW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND KW
LIGHTING-120V	2.3	120	1	1.25	2.9
EXTERIOR SIGN	1.2	120	1	1.25	1.5
RECEPTACLES	15.2	120	1	>10KW=10*[0.5*(KW-10)]	12.6
S/W OUTLETS	1.2	120	1	1.25	1.5
EQUIPMENT	6.2	208	1	1.00	6.2
MECHANICAL	24.3	208	3	1.00	24.3
HOT WATER HEATER	0.0	208	1	1.00	0.0
TOTALS	50.4				49.0

NOTES:  
\* USE GREATER VALUE OF THE TWO CATEGORIES.  
\*\* 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.  
\*\*\* N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW)  
MINUS ACTUAL SHOW WINDOW LIGHTING KVA.

N.E.C. DEMAND KVA x 1.732 = 48,952      MINIMUM FEEDER AMPERAGE  
SYSTEM VOLTAGE x 1.732 = 136 AMPS      USE (EXISTING) 200AMP SERVICE

### ELECTRICAL LOAD SUMMARY - PANEL B

DESCRIPTION	NEC CONNECTED KW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND KW
LIGHTING-120V	0.8	120	1	1.25	1.0
EXTERIOR SIGN	0.0	120	1	1.25	0.0
RECEPTACLES	21.3	120	1	>10KW=10*[0.5*(KW-10)]	15.7
S/W OUTLETS	0.0	120	1	1.25	0.0
EQUIPMENT	5.8	208	1	1.00	5.8
MECHANICAL	11.5	208	3	1.00	11.5
HOT WATER HEATER	6.0	208	1	1.00	6.0
TOTALS	45.3				39.9

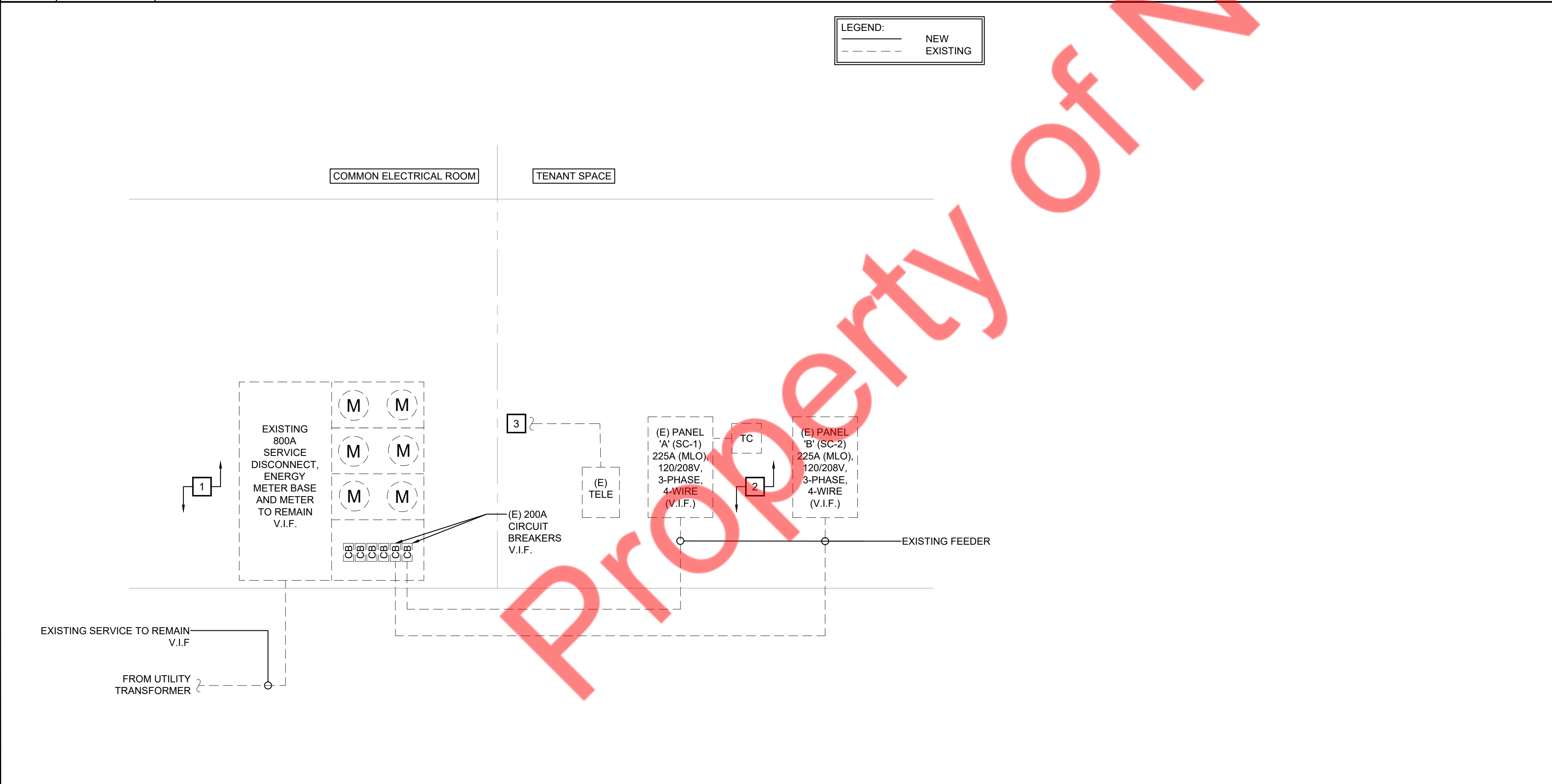
NOTES:  
\* USE GREATER VALUE OF THE TWO CATEGORIES.  
\*\* 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.  
\*\*\* N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW)  
MINUS ACTUAL SHOW WINDOW LIGHTING KVA.

N.E.C. DEMAND KVA x 1.732 = 39,876      MINIMUM FEEDER AMPERAGE  
SYSTEM VOLTAGE x 1.732 = 111 AMPS      USE (EXISTING) 200AMP SERVICE

- #### PANEL SCHEDULE GENERAL NOTES:
- ALL CIRCUITING SHOWN IS FOR REFERENCE PURPOSE ONLY. E.C. SHALL VERIFY CIRCUITING OF THE EXISTING DEVICES ON FIELD AND INFORM ENGINEER FOR DISCREPANCIES.
  - ELECTRICAL CONTRACTOR TO VERIFY THE EXACT PANEL SIZES AND INCOMING FEEDER SIZE.
  - ALL EXISTING TO REMAIN ELECTRICAL DEVICES/EQUIPMENTS SHALL BE CONNECTED TO RESPECTIVE NEW/EXISTING PANELS. E.C. TO VERIFY EXACT DETAILS & CIRCUIT NUMBER ON FIELD.
  - ELECTRICAL CONTRACTOR TO COORDINATE WITH THE MANUFACTURER OF EQUIPMENT FOR THE WIRE SIZE & RATING OF MOCBP BEFORE THE COMMENCEMENT OF WORK.
  - ELECTRICAL CONTRACTOR TO COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENT OF PLUMBING/MECHANICAL EQUIPMENTS WITH RESPECTIVE SYSTEM CONTRACTOR/OWNER/ ARCHITECT.
  - E.C. SHALL VERIFY THE EXACT CIRCUIT, CIRCUIT NUMBER IN FIELD & ADJUST / MODIFY CIRCUITING AS REQUIRED.
  - THE MAXIMUM COMBINED VOLTAGE DROP ON BOTH INSTALLED FEEDER CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS TO THE FARTHEST CONNECTED LOAD OR OUTLET SHALL NOT EXCEED 5 PERCENT.

- #### PANEL SCHEDULE KEYED NOTES: #
- NEW BREAKERS MAY BE REQUIRED FOR USE IN THE EXISTING PANELBOARD TO MATCH RATING INDICATED IN THE PANEL SCHEDULE. PRIOR TO BID/PRICING, THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL EXISTING TO-REMAIN PANELBOARD MANUFACTURER AND MODEL NUMBER TO ENSURE THAT REPLACEMENT BREAKERS ARE AVAILABLE. WHERE BREAKER AVAILABILITY ISSUES ARISE, NOTIFY THE PROJECT MANAGER PRIOR TO BID/PRICING.
  - DESIGNATED CIRCUIT NUMBER SHOWN ON THE PANEL SCHEDULE FOR A CERTAIN LOAD, MAY BE DIFFERENT THAN THE ACTUAL CIRCUIT NUMBER IN THE EXISTING PANELBOARD. ALL EXISTING-TO-REMAIN ELECTRICAL LOADS SHALL REMAIN CONNECTED TO THE SAME BREAKER AND CIRCUIT DESIGNATION. AVAILABLE SPARES AND SPACES SHALL BE UTILIZED TO FEED THE NEW LOADS.

1	SCALE	ELECTRICAL PANEL SCHEDULES
	N.T.S.	



- #### GENERAL NOTES:
- PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.
  - MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM. ALL CONNECTIONS/DISCONNECTIONS TO LANDLORDS/UTILITIES SERVICE EQUIPMENT SHALL BE AS DIRECTED BY LANDLORDS/UTILITIES SITE REPRESENTATIVE. TENANT GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TERMINATION/DETERMINATION EXPENSES.
  - SYSTEM SHALL BE GROUNDED TO THE MAIN BUILDING'S GROUNDING SYSTEM.
  - DISCONNECT SWITCHES AND PANELS SHALL BE INSTALLED ON PLYWOOD BACKBOARDS.
  - TENANT CONTRACTOR MUST VERIFY ELECTRICAL SERVICE, SUB-FEED WIRING AND PANELS PRIOR TO START OF TENANT'S ELECTRICAL WORK. TENANT GENERAL CONTRACTOR SHALL MAKE APPLICATION TO THE LOCAL UTILITY FOR CONTINUED METERED ELECTRIC SERVICE IN THE TENANT'S NAME. TENANT GENERAL CONTRACTOR SHALL CONFIRM ALL LOCAL UTILITY GUIDELINES AND REQUIREMENTS PRIOR TO BID. SHALL INCLUDE THE COSTS OF THESE REQUIREMENTS IN THE BID, AND SHALL COMPLY WITH THEM DURING CONSTRUCTION. AVAILABLE FAULT CURRENT AT SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER NATIONAL ELECTRICAL CODE (NEC) OF ARTICLE 110.24.
  - CONTRACTOR SHALL COORDINATE SHORT CIRCUIT RATING (ISC) WITH UTILITY & AHJ. PRIOR TO COMMENCING ANY WORK. TYPICAL FOR ALL ELECTRICAL EQUIPMENT.
  - CONTRACTOR SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
  - CONTRACTOR SHALL COORDINATE WITH BASE BUILDING FOR THE EXACT LOCATION OF THE EXISTING SWITCH GEAR AND EXACT POWER DISTRIBUTION.
  - CONTRACTOR SHALL VERIFY OPERABLE CONDITION INFIELD OF ALL EXISTING TO REMAIN ELECTRICAL DEVICES/EQUIPMENTS AND REPLACE WITH NEW IF FOUND INOPERABLE.
  - DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. ALL CONDUIT ROUTING AND OFFSETS, DROPS AND RISES OF RUNS ARE NOT SHOWN ON THE PLANS AND ARE SHOWN DIAGRAMMATICALLY IN THE RISERS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES, INCLUDING THOSE OF OTHER TRADES, IS REQUIRED. MAINTAIN HEADROOM AND SPACE CONDITIONS.
  - PROVIDE GFCI PROTECTION FOR ALL 120V IN SUITES AREAS. ALL GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE. FOR ALL EQUIPMENT WITHOUT READY ACCESS UTILIZE GFI BREAKER AT PANELBOARD.

- #### KEYED NOTES: #
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH BASE BUILDING/LANDLORD/OWNER FOR EXACT POWER DISTRIBUTION, LOCATION PRIOR TO COMMENCING ANY WORK. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
  - EXISTING 225A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANELS 'A'(SC-1) AND 'B'(SC-2), TIME CLOCK AND TELEBOARD SHALL REMAIN FOR THE SPACE. ELECTRICAL CONTRACTOR SHALL VERIFY THE EXACT LOCATION, RATING, AND OPERABLE CONDITION IN THE FIELD. REPLACE IF FOUND INOPERABLE. INFORM THE ENGINEER FOR ANY DISCREPANCY FOUND BEFORE COMMENCING ANY WORK. BASE BID ACCORDINGLY.
  - EXISTING CONDUIT COMPLETE WITH PULL STRING FOR TELEPHONE SERVICE FROM LANDLORD DMARC STUBBED INTO TENANT SPACE SHALL REMAIN. INTERCEPT AND ROUTE CONDUIT TO TENANT PHONE BOARD LOCATION.
- VERIFY THE FOLLOWING PRIOR TO BID/ PRICING:
- EXISTING CONDUIT AND FEEDERS SIZE BETWEEN TENANT SPACE AND LANDLORD SWITCHBOARD.
  - EXISTING MAIN SERVICE DISCONNECT RATING.
  - EXISTING METER.
- IF THE EXISTING SERVICE DISCONNECT AND FEEDERS ARE RATED FOR LESS THAN THE RATING SHOWN ON THIS RISER, NOTIFY THE PROJECT MANAGER AND ENGINEER IMMEDIATELY PRIOR TO SUBMITTING BID/ PRICING PACKAGE SO DRAWINGS CAN BE REVISED AND UPDATED ACCORDINGLY

2	SCALE	ELECTRICAL RISER DIAGRAM
	N.T.S.	

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ME Message Envy

REV#	DESCRIPTION	DATE
1	CLIENT COMMENTS	6/27/2025

ISSUE DATE: 06/06/2025  
PROJECT NUMBER: 9248-23  
DRAWN BY: NYE  
CHECKED BY: NYE

SEAL:

State License  
SHEET TITLE:  
**ELECTRICAL PANEL SCHEDULES AND RISER DIAGRAM**

SHEET NUMBER:

**E3.0**

**SKIN CARE REMODEL**

**COMcheck Software Version COMcheckWeb**  
**Interior Lighting Compliance Certificate**

**Project Information**

Energy Code: 2018 IECC  
 Project Title:  
 Project Type:

Construction Site: Owner/Agent: Designer/Contractor:

**Allowed Interior Lighting Power**

A Area Category	B Floor Area (ft <sup>2</sup> )	C Allowed Watts / ft <sup>2</sup>	D Allowed Watts
1-Health Care-Clinic	1061	0.82	870
Total Allowed Watts =			870

**Proposed Interior Lighting Power**

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Watt.	E (C X D)
<b>Health Care-Clinic (1061 sq.ft.)</b>				
LED1: LR3A: 6" Flush Remodel Fixture: Other:	1	8	14	112
LED2: L7A: Wall Sconce: Other:	1	4	19	76
LED3: L8: Surface Mounted Drum Light: Other:	1	2	26	52
LED4: L12 (E): Reception Existing Light: Other:	1	8	15	120
LED5: LR3 (E): Hallway Existing Light: Other:	1	5	14	70
LED6: L8 (E): Hallway Existing Light: Other:	1	4	26	104
Total Proposed Watts =			534	

Interior Lighting PASSES

**Interior Lighting Compliance Statement**

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

Michael Tobias 06/09/25  
 Name - Title Signature Date

Project Title: Message Envy\_Mesa, AZ Report date: 06/09/25 Page 1 of 5

Section # & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2, [EL23]†	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight-responsive control function and section C405.2.3.2 Sidelit zone.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C405.2.4 [EL26]†	Separate lighting control devices for specific uses installed per approved lighting plans.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.2.4 [EL27]†	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.3 [EL6]†	Exit signs do not exceed 5 watts per foot.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.6 [EL26]†	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C405.7 [EL27]†	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C405.8.2, C405.8.2.1 [EL28]†	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C405.9 [EL29]†	Total voltage drop across the combination of feeders and branch circuits <= 5%.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Message Envy\_Mesa, AZ Report date: 06/09/25 Page 4 of 5

**COMcheck Software Version COMcheckWeb**  
**Inspection Checklist**

Energy Code: 2018 IECC

Requirements: 100.0% were addressed directly in the COMcheck software. Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req. ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4]†	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Message Envy\_Mesa, AZ Report date: 06/09/25 Page 2 of 5

Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5, 2 [F117]†	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C405.4.1 [F118]†	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	See the Interior Lighting fixture schedule for values.
C408.1.1 [F157]†	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.2.5, 1 [F116]†	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.
C408.3 [F133]†	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Message Envy\_Mesa, AZ Report date: 06/09/25 Page 5 of 5

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

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Message Envy\_Mesa, AZ Report date: 06/09/25 Page 3 of 5

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REV#	DESCRIPTION	DATE
1	CLIENT COMMENTS	6/27/2025

ISSUE DATE: 06/06/2025  
 PROJECT NUMBER: 9248-23  
 DRAWN BY: NYE  
 CHECKED BY: NYE

SEAL:

State License  
 SHEET TITLE:

ENERGY FORMS

SHEET NUMBER:

**E4.0**

**SKIN CARE REMODEL**