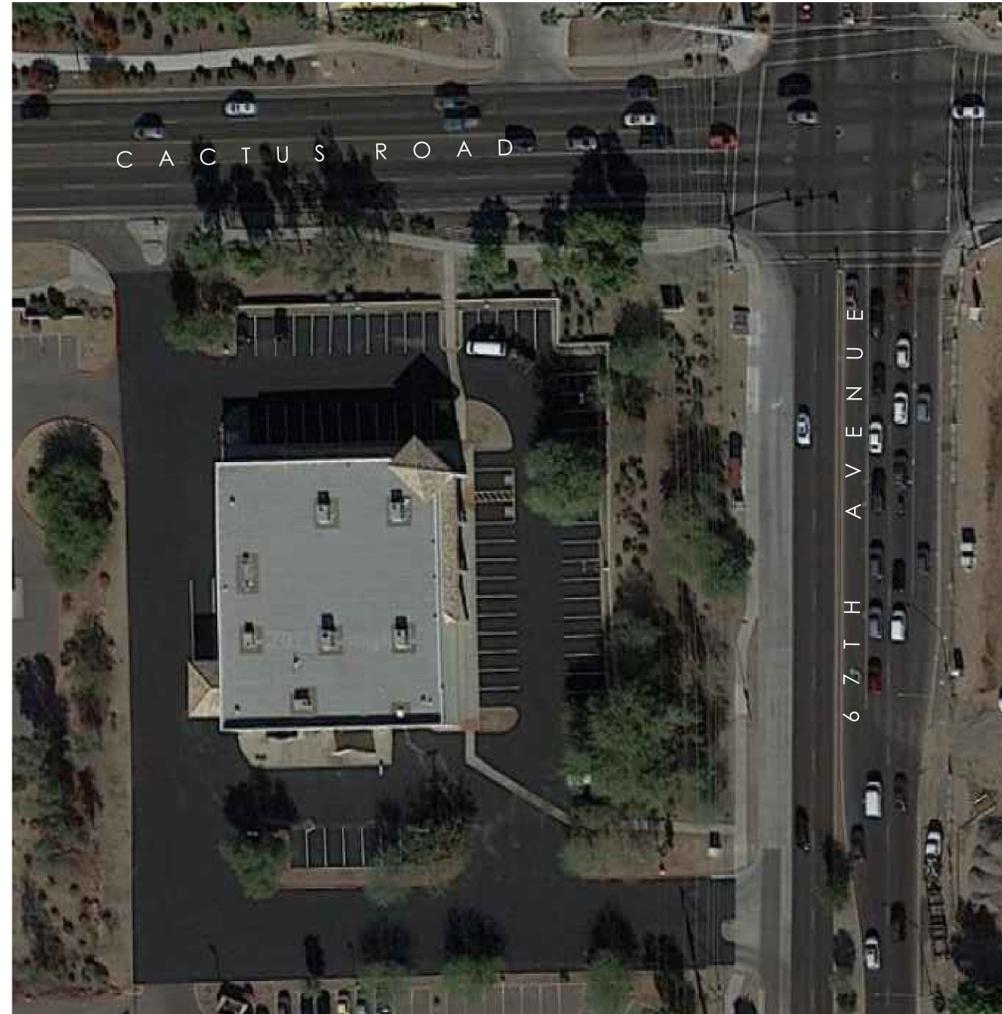


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6 7 3 9 W . C A C T U S R D . P E O R I A , A Z 8 5 3 4 5



① SITE PLAN
SCALE: N.T.S.

Code Data:

BUILDING CODES:	2018 IBC, 2018 IMC, 2017 NEC, 2018 IFC, 2018 IECC, ADAAG	OCCUPANT LOAD:	TOTAL AREA: 9,472 S.F.
CONSTRUCTION TYPE:	V-B (FULLY SPRINKLERED)	OFFICE:	9472 S.F. / 150 = 63.1 = 64 PERSONS
TYPE OF WORK:	TENANT IMPROVEMENT	REQUIRED EXIT WIDTH:	64 PERSONS X (.2) = 12.8 = 13" TOTAL
TOTAL EXISTING AREA:	9,472 S.F.	PROVIDED EXIT WIDTH:	72"
OCCUPANCY:	B	PLUMBING FIXTURE REQ/MT:	WC: 2 EA, LAV: 1 EA, SERV. SINK: 1
		REQUIRED:	2 (1 ADA) EA, 2 IN WOMEN, 1 IN MEN
		PROVIDED:	2 (1 ADA) EA, 2 IN WOMEN, 1 IN MEN

Project Scope:

THIS PROJECT SCOPE CONSISTS OF INTERIOR REMODEL WORK FOR A NEW TELEHEALTH CLINIC IN AN EXISTING WALGREENS BUILDING. WE ARE PROVIDING NEW OFFICES, CONFERENCE ROOM AND EXTENDING AN EXISTING BREAK ROOM.

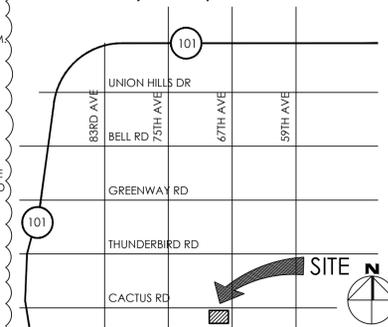
THIS IS A TELEHEALTH CLINIC WHERE A LICENSED CLINICIANS ARE PROVIDING NECESSARY PRESCRIPTIONS TO HOME-BOUND PATIENTS WHO ARE NOT ABLE TO VISIT DOCTORS. WE WILL HAVE TYPICAL OFFICE EQUIPMENT SUCH AS DESKTOPS, LAPTOPS, INTERNET AND PHONES. WE ALSO HAVE ADMINISTRATIVE STAFF FOR SCHEDULING TO DEPLOY PRIMARY CARE & SPECIALTY DOCTORS OR CERTIFIED CLINICAL STAFF TO THE PATIENTS' HOME TO TAKE CARE OF THEIR CONDITIONS.

DME STANDS FOR DURABLE MEDICAL EQUIPMENT. OUR DME AREA IS A STORAGE PLACE FOR MEDICAL SUPPLIES FOR THE ABOVE MENTIONED STAFF AND LICENSED CLINICIANS, WHO WILL NEED MEDICAL SUPPLIES (GAUGES, BACITRACIN, DRESSING MATERIALS FOR WOUND CARE, SYRINGES, GEL FOR PORTABLE ULTRASOUNDS, KNEE/BACK BRACES, GLOVES/GOWN/FACE-MASKS, ETC) TO CARRY WITH THEM WHEN THEY GO TO PATIENTS' HOME.

Inspector Note:

THE BUILDING INSPECTOR SHALL VERIFY THE EXISTING ACCESSIBLE PARKING AND PATH OF TRAVEL COMPLIES WITH THE CURRENT CODES.

Vicinity Map:



General Notes:

ADMINISTRATIVE REQUIREMENTS

- COORDINATE WITH THE OWNER REGARDING PROJECT SCHEDULE AND SEQUENCING.
- COMPLY WITH ANY INSTRUCTIONS FROM THE LANDLORD DURING THE CONSTRUCTION.
- AT THE CLOSEOUT OF THE PROJECT, SUBMIT PROJECT RECORD DOCUMENTS, IF ANY, OPERATION AND MAINTENANCE DATA & WARRANTIES TO THE OWNER.
- NOTIFY AFFECTED UTILITY COMPANIES AND COMPLY WITH THEIR REQUIREMENTS.

QUALITY REQUIREMENTS

- MONITOR QUALITY CONTROL OVER SUPPLIERS, MANUFACTURERS, PRODUCTS, SERVICES, SITE CONDITIONS, AND WORKMANSHIP TO PRODUCE WORK OF FINEST QUALITY.
- COMPLY WITH MANUFACTURERS' INSTRUCTIONS, INCLUDING EACH STEP IN SEQUENCE.
- GEN. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF THE CONTRACT DOCUMENTS PRIOR TO THE START OF CONSTRUCTION. NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO PROCEEDING WITH WORK.
- ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES, REGULATIONS, ORDINANCES AND STANDARDS INCLUDING ADA AND OR OTHER HANDICAP ACCESSIBILITY CODES.
- ALL BUILDING ELEMENTS INCLUDED AS PART OF THIS PROJECT SHALL COMPLY WITH THE MOST CURRENT EDITION OF BUILDING CODE, AND LOCAL CODE SET FORTH BY THE LOCAL AUTHORIZING AGENCY.
- THE CONSTRUCTION NOTES AND DRAWINGS ARE SUPPLIED TO ILLUSTRATE THE DESIGN AND GENERAL TYPE OF CONSTRUCTION DESIRED AND ARE INTENDED TO IMPLY THE FINEST QUALITY OF CONSTRUCTION, MATERIAL AND WORKMANSHIP THROUGHOUT.
- THE DRAWINGS ARE NOT TO BE SCALED FOR INFORMATION CONCERNING EXISTING CONDITIONS & ETC., VERIFICATION MUST BE DONE IN THE FIELD.

EXECUTION REQUIREMENTS

- SUBSTITUTION OF THE MATERIAL SHALL BE CONSIDERED ONLY WITH THE OWNER'S APPROVAL. THE OWNER HAS THE RIGHT TO REJECT AND CHANGE ANY OF THE MATERIAL.
- DELIVER, STORE AND PROTECT PRODUCTS IN SEQUENCE NOT TO DELAY THE CONSTRUCTION SCHEDULE AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ANY DAMAGED PRODUCTS SHALL BE REPLACED WITHOUT ANY EXPENSE TO THE OWNER.
- VENTILATE PROPERLY ENCLOSED AREA TO PREVENT ACCUMULATION OF HUMIDITY, DUST, FUMES AND GASES.
- GEN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE BUILDING'S STRUCTURAL SYSTEM. EXISTING STRUCTURE SHALL NOT BE CUT OR BE MODIFIED WITHOUT A WRITTEN AUTHORIZATION FROM THE ARCHITECT. WHEN EXISTING STRUCTURE HAS BEEN MODIFIED TO RECEIVE NEW WORK, IT IS GENERAL CONTRACTOR'S RESPONSIBILITY TO REPAIR AND RESTORE THE AREA TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER. STRUCTURAL INTEGRITY OF THE ITEMS RESTORED SHALL BE MAINTAINED AT ALL TIMES.
- IT IS GENERAL CONTRACTOR'S RESPONSIBILITY TO REPAIR, PATCH AND FINISH ANY DAMAGED AREA TO MATCH EXISTING SURROUNDING SURFACES AT NO COST TO THE OWNER.
- GEN. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL BUILDING DIMENSIONS AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT OF ANY VARIANCE OR DISCREPANCY AFFECTING NEW CONSTRUCTION.
- ANY WORK PERFORMED ON THIS PROJECT WHETHER IT IS WITHIN THE SCOPE OF WORK AS INDICATED ON THE DRAWINGS OR ADDITIONAL WORK REQUIRED TO RESOLVE THE SITUATION WHICH MAY HAVE AROSE IN FIELD SHALL NOT BE PERFORMED WITHOUT AN APPROVAL FROM THE OWNER IN WRITING. SUCH WORK PERFORMED WITHOUT AN APPROVAL FROM THE OWNER SHALL BE CONSIDERED AS "WORK NOT AUTHORIZED" AND SHALL NOT CAUSE ADDITIONAL COST TO THE OWNER.

Deferred submittal:

- FIRE SPRINKLER WORK WILL BE LESS THAN 10 HEADS AND NO WORK IS REQUIRED ON THE EXISTING FIRE ALARM.

Existing Condition Notes:

- THIS DOCUMENT IS PREPARED FOR THE PURPOSE OF OBTAINING BUILDING PERMIT. ITEMS INDICATED ON THE DRAWINGS REFLECT ONLY WHAT WAS VISIBLE DURING THE SITE VISIT.
- EXISTING CONDITION FOR THIS PROJECT IS PRESUMED TO BE IN GOOD, OPERATIONAL CONDITION.
- EXISTING CONDITIONS INDICATED HERE IN THE DRAWINGS SHALL BE VERIFIED BY THE GC PRIOR TO STARTING ANY WORK AND HE SHALL NOTIFY THE OWNER AND/OR HIS REPRESENTATIVE IMMEDIATELY OF ANY DISCREPANCIES ENCOUNTERED.
- GC SHALL BE RESPONSIBLE FOR INFORMING THE OWNER AND/OR HIS REPRESENTATIVE OF THE ADDITIONAL ITEMS WHICH HE ENCOUNTERS DURING THE CONSTRUCTION OR THE ITEMS BROUGHT ON BY THE CITY INSPECTOR PRIOR TO STARTING THE WORK.
- ANY WORK UNDER CHANGE ORDER SHALL BE SUBMITTED IN WRITING TO THE OWNER AND/OR HIS REPRESENTATIVE PRIOR TO STARTING WORK. ANY WORK PERFORMED WITHOUT THE OWNER'S APPROVAL SHALL BE CONSIDERED "WORK NOT AUTHORIZED" AND SHALL BE PERFORMED AT NO COST TO THE OWNER.
- ANY EXISTING AREA N.I.C. AFFECTED BY THE NEW WORK SHALL BE REPAIRED, PATCHED AND FINISHED TO MATCH EXISTING AREA OR "LIKE-NEW" CONDITION AT NO COST TO THE OWNER.
- EXISTING DIMENSIONS SHALL BE VERIFIED IN FIELD.

Project Notes:

- GENERAL CONTRACTOR(GC) REFERS TO HIMSELF AND/OR ALL HIS SUBCONTRACTORS.
- VISIT THE SITE, REVIEW THE DRAWINGS AND DETAILS AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT AND OWNER.
- GC AND/OR HIS SUBCONTRACTORS TO VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS IN FIELD PRIOR TO STARTING ANY WORK. NOTIFY THE ARCHITECT AND THE OWNER IMMEDIATELY OF ANY DISCREPANCIES OR CONFLICTS FOUND.
- GC IS RESPONSIBLE FOR COORDINATING THE WORK TO ASSURE THAT THE REQUIREMENTS FOR CONSTRUCTION FOR VARIOUS TRADES AS SHOWN OR NOTED ON THE DRAWINGS ARE FAMILIAR TO ALL TRADES.
- ALL WORK TO COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND ORDINANCES.
- GC TO FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AND PROTECT ANY DAMAGED MATERIALS TO BE REPLACED WITH LIKE KIND AT NO COST TO THE OWNER.
- DETAILS, NOTES AND FINISHES TO BE APPLICABLE TO ALL TYPICAL LIKE CONDITIONS WHETHER THEY REFERENCED OR NOT AT ALL PLACES.
- GC IS RESPONSIBLE FOR TAKING ALL NECESSARY PRECAUTIONS AND MEASURES TO PROTECT THE PUBLIC AND OWNER'S EMPLOYEES FROM DAMAGE OR INJURY THROUGHOUT THE COURSE OF THE CONSTRUCTION AND TO PROVIDE ALL NECESSARY MEANS TO PROTECT ENVIRONMENT FROM DAMAGE. ANY DAMAGED MATERIALS TO BE REPLACED WITH LIKE KIND AT NO ADDITIONAL COST TO THE OWNER.
- GC TO COORDINATE ANY DEMOLITION WITH THE NEW FLOOR PLAN LAYOUT REQUIREMENTS AND DIMENSIONS.
- THE ARCHITECT AND ARCHITECTS CONSULTANTS SHALL NOT HAVE ANY RESPONSIBILITY FOR THE DISCOVERY, PRESENCE, HANDLING, REMOVAL, OR DISPOSAL OF OR EXPOSURE OF PERSONS TO HAZARDOUS MATERIALS IN ANY FORM AT THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO, ASBESTOS PRODUCTS, POLYCHLORINATED BIPHENYL (PCB) OR OTHER TOXIC SUBSTANCES.
- DO NOT SCALE THE DRAWINGS. USE THE DIMENSIONS NOTED ON THE THE DRAWINGS. CONTRACTOR TO NOTIFY THE ARCHITECT OF ANY DIMENSIONAL DISCREPANCIES. CONTRACTOR TO VERIFY WITH ARCHITECT ANY REQUIRED DIMENSION NOT NOTED ON THE DRAWINGS
- GC TO PROVIDE AND MAINTAIN CLEAR AND FREE MEANS OF EGRESS AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION FROM WORKING AND OCCUPIED AREAS.
- ALL ARCHITECTURAL, STRUCTURAL DEMOLITION AND CONSTRUCTION TO BE COORDINATED WITH APPLICABLE MECHANICAL, PLUMBING, PROCESS PIPING, ELECTRICAL, AND FIRE PROTECTION.
- GC TO PROVIDE FIRE RESISTANT "VISQUEEN" BARRIER BETWEEN AREA OF WORK AND EXISTING OCCUPIED AREA. AREAS TO BE KEEP CLEAN AND FREE OF DEBRIS ON A DAILY BASIS.
- IT IS RESPONSIBILITY OF GC TO EXAMINE, COORDINATE AND TAKE NECESSARY STEPS TO PROVIDE WORKMANSHIP ACCEPTABLE TO ARCHITECTURAL CONSTRUCTION INDUSTRY STANDARDS AND/OR TO "COMMON SENSE" LEVEL IN ORDER NOT TO JEOPARDIZE PROPER OPERATION OF THE PROJECT OR ITS INTENDED PURPOSE AND USE
- CONSTRUCTION DOCUMENTS PROVIDED BY EAP SHALL INCLUDE MATERIAL AND METHODS, WHICH ARE STANDARD IN THE INDUSTRY AND ARE NECESSARY TO OBTAIN BUILDING PERMIT FROM THE LOCAL AUTHORIZING AGENCY.
- EAP SHALL NOT BE RESPONSIBLE FOR THE CHANGES MADE TO THE SCOPE OF WORK AND/OR CONTENTS OF THE DRAWINGS AFTER THE PERMIT ISSUANCE. GC SHALL COORDINATE AND SUBMIT ANY CHANGE ORDERS TO THE OWNER FOR HIS APPROVAL PRIOR TO PROCEEDING WITH THE CHANGE ORDERS. ANY CHANGE ORDER WORKS PERFORMED W/O THE OWNER'S APPROVAL SHALL BE CONSIDERED AS "WORK NOT AUTHORIZED".

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- A-0 DEMOLITION PLAN, DOOR SCHEDULE, DOOR HARDWARE SCHEDULE, DOOR TYPE, DOOR DETAILS, FINISH SCHEDULE, NOTES
- A-1 FLOOR PLAN, NOTES
- A-2 REFLECTED CEILING PLAN, NOTES
- A-3 DETAILS, STRUCTURAL DETAILS
- M-1 MECHANICAL SPECIFICATIONS, MECHANICAL PLAN, OUTSIDE AIR CALC., DETAIL SCHEDULES, DUCT SYMBOLS, KEY PLAN, NOTES
- P-1 PLUMBING PLAN, IECC NOTES, PLUMBING LEGEND, GENERAL NOTES, WATER CALCULATIONS
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- E4 ELECTRICAL SYSTEM SPECIFICATIONS

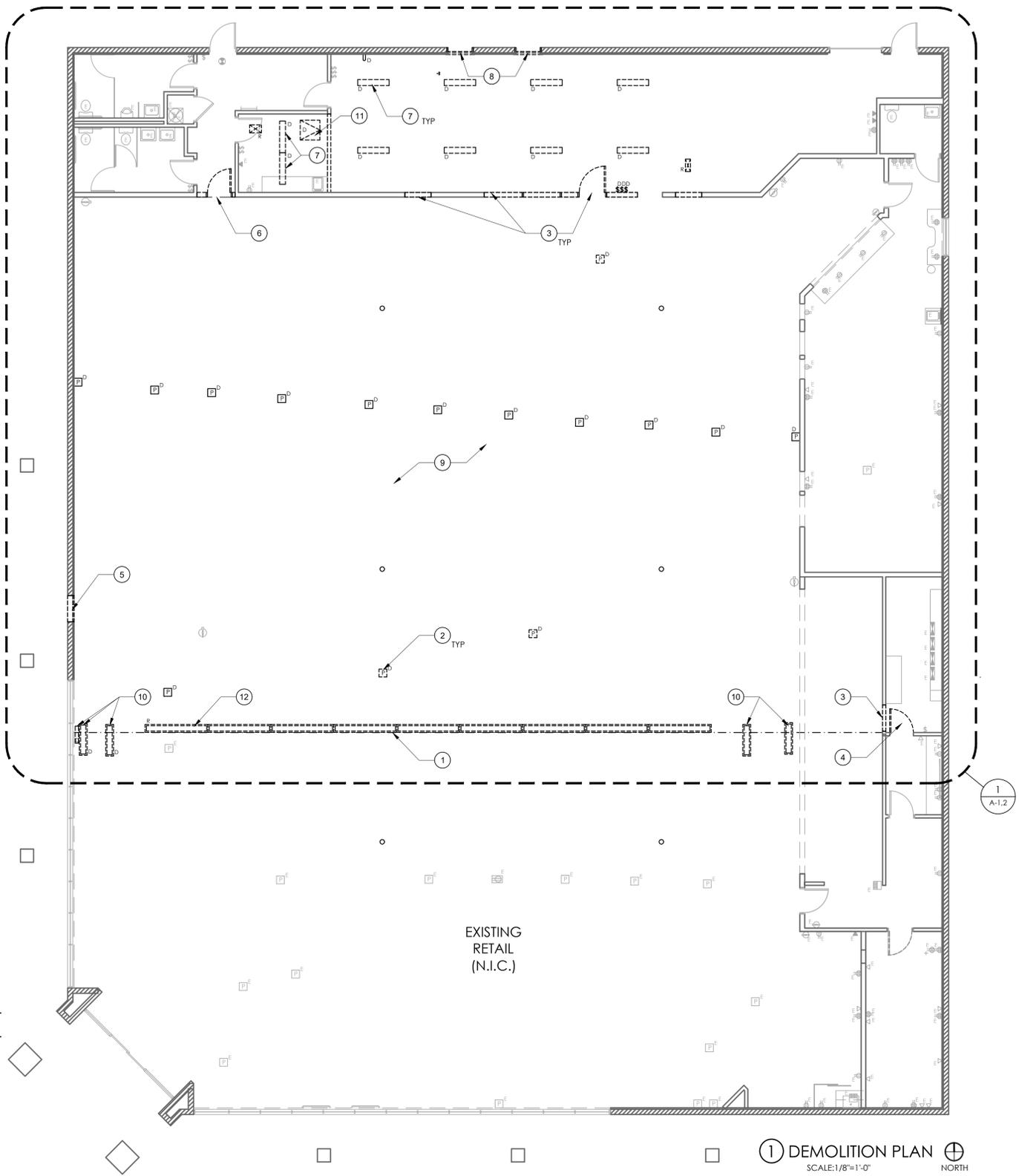


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DO NOT SCALE DRAWINGS

T-1



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

FINISH SCHEDULE

FLOOR FINISH	WALL BASE	WALL FINISH	CEILING FINISH
CF1 CARPET TILE	WB1 VINYL BASE.	WF1 SEMI-GLOSS PAINT.	CF1 EXISTING LAY-IN CEILING.
CF2 PORCELAIN TILE	WB2 PORCELAIN BASE.		CF2 NEW 2X4 LAY-IN CEILING.
			CF3 EXISTING OPEN CEILING.
			CF4 NO CEILING.

NOTES:
 1. ALL FLOOR TILES TO BE NON-SLIP.
 2. ALL GYP. BD. SURFACES TO BE PAINTED TO LEVEL 4 FINISH AS SELECTED BY THE OWNER.
 3. ALL MATERIAL SELECTION BY THE OWNER.

DOOR SCHEDULE

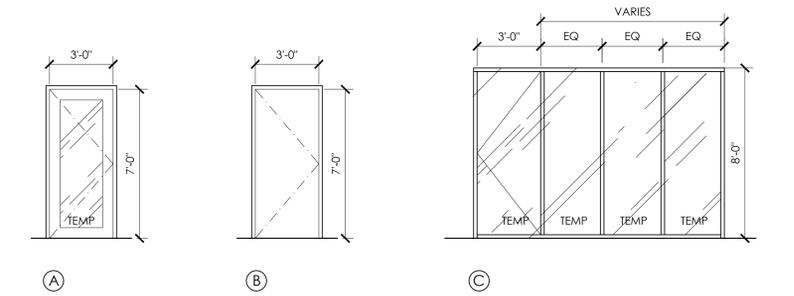
DR NO.	DR TYPE	DOOR				FRAME	HRWR SET
		W	H	T	MTRL		
01	A	3'-0"	7'-0"	1 3/4"	ALUM	ALUM	1
02-06, 12	C	3'-0"	8'-0"	-	ALUM	ALUM	3
07	B	3'-0"	7'-0"	1 3/4"	HC	H.M.	3
08, 09, 10	EXISTING DOOR						2
11	B	3'-0"	7'-0"	1 3/4"	HC	H.M.	3
13	B	3'-0"	7'-0"	1 3/4"	HC	H.M.	4
14-18	EXISTING DOOR						2
19	EXISTING DOOR						2
20	EXISTING OVERHEAD ROLL UP DOOR						2
21	B	3'-0"	7'-0"	1 3/4"	HC	H.M.	3, 5

DOOR HARDWARE SCHEDULE

1 - IF NONE PROVIDED, PROVIDE 3-POINT LOCK SYSTEM, DOUBLE KEYED DEAD BOLT, (NO THUMBTURN) WITH INTEGRAL INDICATOR-LOCK/UNLOCKED
 2 - EXISTING HARDWARE.
 3 - 1 1/2" PR HINGES, PRIVACY LOCKSET, WALL/FLOOR STOP.
 4 - 1 1/2" PR HINGES, PASSAGE SET, WALL/FLOOR STOP.
 5 - DOOR TO REMAIN IN LOCKED POSITION AT ALL TIMES. SUBMIT DOOR KEY TO OWNER.

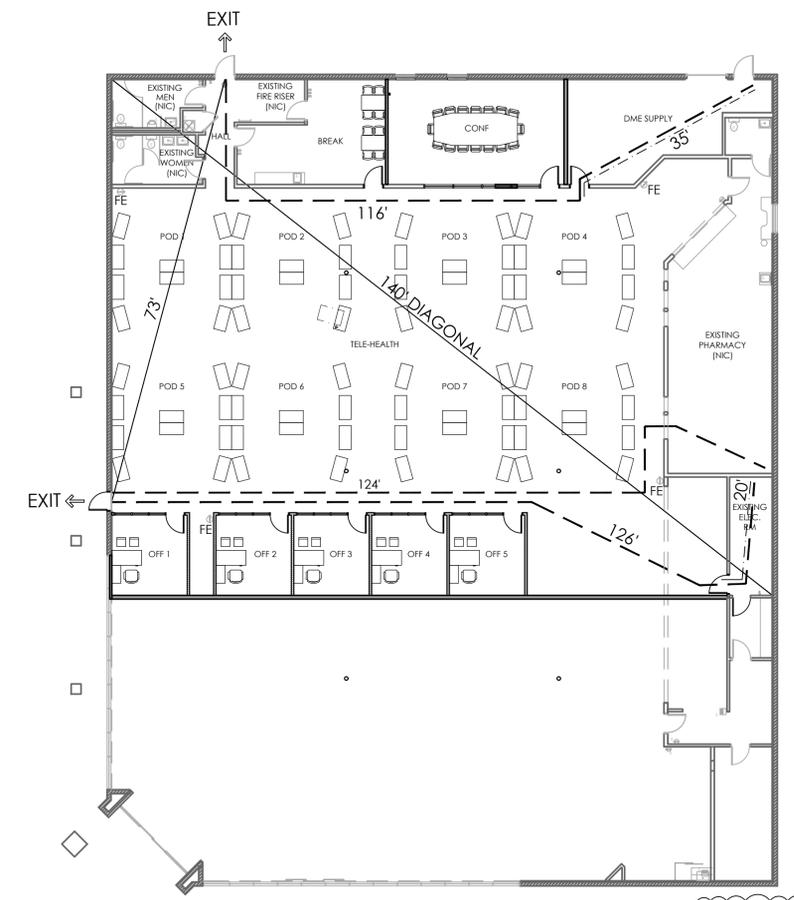
NOTE:
 1. REFER TO DOOR HEAD AND DOOR JAMB DETAILS.
 2. DOOR HARDWARE SHALL BE CAPABLE OF OPERATION WITH THE USE OF ONE (1) HAND AND SHALL NOT REQUIRE TIGHT PINCHING, TIGHT GRASPING OR TWISTING OF THE WRIST TO OPERATE. THUMBTURN DEADBOLTS ARE PROHIBITED; LEVER OR PADDLE DEADBOLT RELEASES ARE ACCEPTABLE. DOOR THRESHOLD SHALL NOT EXCEED ONE-HALF INCH (1/2") IN HEIGHT; THRESHOLDS EXCEEDING ONE-QUARTER INCH (1/4") IN HEIGHT SHALL HAVE A 1:2 BEVEL. DOOR CLOSERS SHALL MEET OPENING FORCE AND SWEEP PERIOD REQUIREMENTS.
 3. ALL DOOR HARDWARE FINISH TO BE STAINLESS STEEL OR AS SELECTED BY THE OWNER.
 4. VERIFY KEYING INFO. W/ OWNER PRIOR TO ORDERING HARDWARE.

DOOR TYPE



② DOOR HEAD DETAIL
SCALE: N.T.S.

③ DOOR JAMB DETAIL
SCALE: N.T.S.



EXITING LEGEND
 → EXIT EXIT WIDTH: 36"
 FE FIRE EXTINGUISHER
 --- COMMON PATH OF TRAVEL DISTANCE
 - - - - EXIT DISTANCE
 - - - - MAX TRAVEL DISTANCE

④ EXIT PLAN
SCALE: N.T.S. NORTH

DEMO PLAN NOTES

- LINE OF NEW DEMISING WALL. COORDINATE EXACT LOCATION WITH FLOOR PLAN.
- REMOVE POWER CONDUIT STUBS, J-BOXES, OUTLETS PER NEW WORK.
- REMOVE A PORTION OF EXISTING WALL FOR A NEW DOOR AND STOREFRONT WINDOW.
- CHANGE DOOR SWING OF EXISTING DOOR, OR REPLACE WITH NEW DOOR PER NEW WORK.
- REMOVE A PORTION OF EXISTING MASONRY WALL FOR A NEW DOOR. COORDINATE WITH FLOOR PLAN.
- REMOVE EXISTING DOORWAY FOR NEW OPENING HEAD AT 7'-0". RETURN REMOVED DOOR TO THE OWNER OR DISPOSE OF PER OWNER'S DIRECTION.
- REMOVE EXISTING LIGHT. RETURN TO THE OWNER OR DISPOSE OF PER OWNER'S DIRECTION.
- REMOVE EXISTING COMPACTOR DOOR.
- REPAIR, PATCH AND FINISH EXISTING CONC. SLAB TO RECEIVE NEW FLOORING.
- REMOVE EXISTING LIGHT AND MECH GRILL WHICH ARE IN CONFLICT WITH NEW WALL.
- GC TO INVESTIGATE ROOF ACCESS AND COORDINATE WITH OWNER. RELOCATE THE EXISTING ACCESS AS NEEDED OR REMOVE.
- RELOCATE ENTIRE ROW OF EXISTING LIGHT PER NEW WORK.



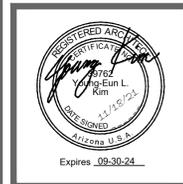
Esquire Architecture & Planning
 Scottsdale, Arizona
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 esquireap@cox.net



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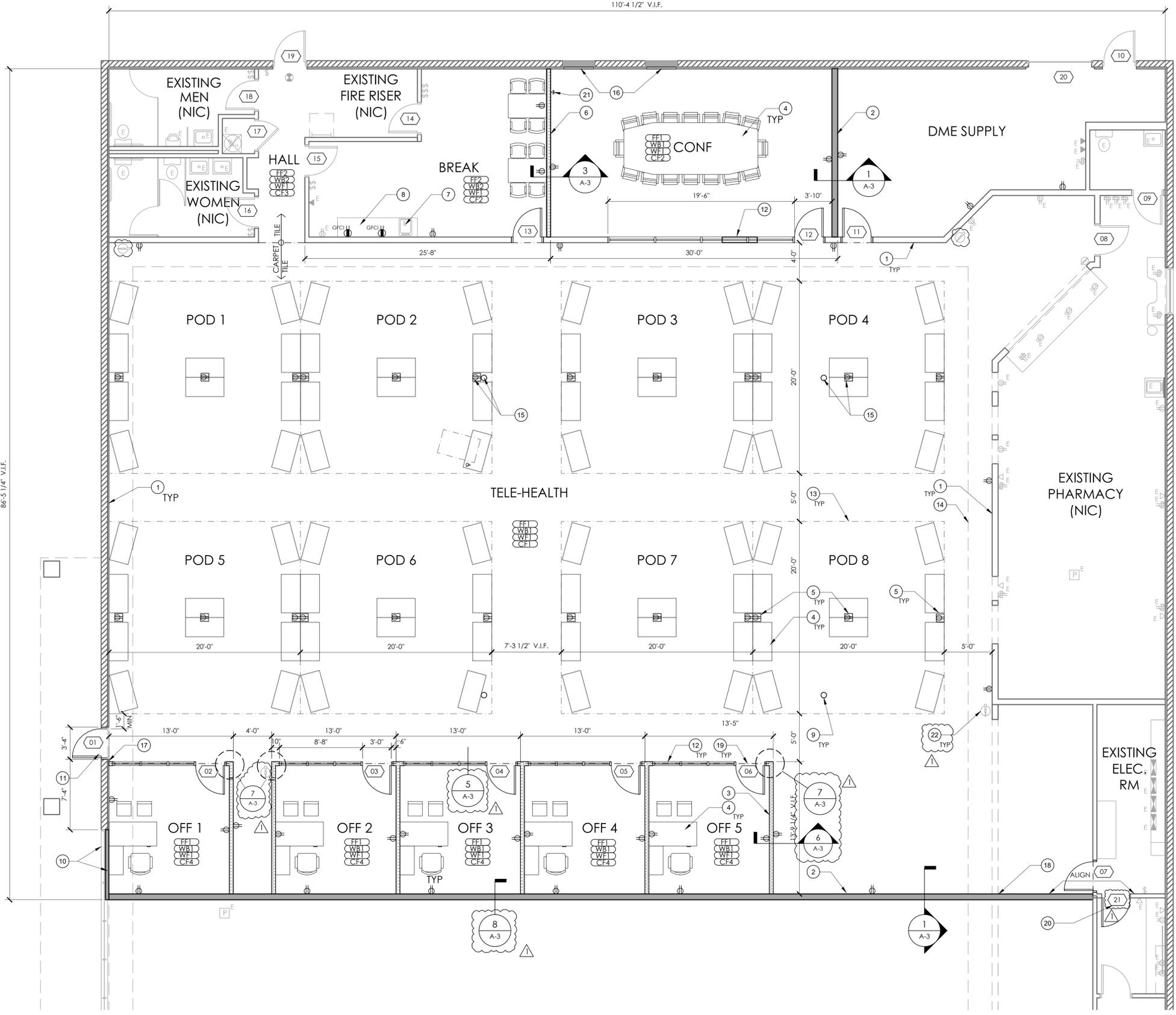
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A-1

FLOOR PLAN NOTES

- EXISTING WALL.
- NEW 6" MTL. STUD, 20 GA. @ 16" O.C. WITH 1/2" GYP. BD. BOTH SIDES UP TO ROOF DECK ABOVE. R-19 BATT INSULATION.
- NEW 3" GYP. BD. 20 GA. @ 16" O.C. WITH 1/2" GYP. BD. BOTH SIDES UP TO 9'-6" HIGH. R-13 BATT INSULATION.
- NEW FURNITURE PROVIDED BY THE OWNER.
- NEW POWER POLE. SEE ELEC. DWGS. (3) POLES PER POD.
- NEW WALL UP TO 6" ABOVE ADJACENT CEILING. NOTE #3 SIM.
- EXISTING SINK. PROVIDE CABINET END AT EXPOSED CABINET SIDE.
- IF NEW CABINETS ARE REQUIRED, PROVIDE NEW ADA COMPLIANT COUNTERTOP HEIGHT @ 34" A.F.F. AND KNEE CLEARANCE PER 9/A-3. GC TO SUBMIT SHOP DWG. TO OWNER PRIOR TO FABRICATION.
- EXISTING STRUCTURAL COLUMN.
- BLOCK OFF EXISTING HIGH WINDOW FROM INSIDE WITH MTL. STUD WITH 1/2" GYP. BD. PAINTED BOTH SIDES.
- NEW ENTRANCE DOOR WITH NEW STL. UNTEL. SEE 01, 02, 03 / A-3. PROVIDE 1" HIGH LETTER SIGN ABOVE DOOR OVER CONTRASTING BACK GROUND. THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED.
- NEW 8'-0" HIGH STOREFRONT GLASS WALL WITH 1/2" TEMPERED GLASS.
- LINE OF EACH NEW POD AREA ALLOCATION.
- LINE OF EXISTING SOFFIT ABOVE.
- COORDINATE NEW OUTLET LOCATION IN FIELD TO PREVENT CONFLICT WITH EXISTING COLUMN.
- INFILL EXPOSED OPENING IN EXISTING MASONRY WALL ON THE OUTSIDE WITH MASONRY BLOCK TO MATCH EXISTING. FUR IN EXPOSED OPENING ON THE INSIDE TO MATCH ADJACENT SURFACES.
- COORDINATE AVAILABLE SPACE IN FIELD TO PREVENT ANY CONFLICT.
- REPAIR, PATCH AND FINISH EXISTING SURFACES AFFECTED BY NEW WALL TO MATCH ADJACENT SURFACES.
- GC TO COORDINATE WITH STOREFRONT VENDOR. AS DEEMED NECESSARY, PROVIDE 6" MTL. CHANNEL BOX BEAM AT HEADER OR PER STOREFRONT MFR'S INSTRUCTION.
- AS DEEMED APPROPRIATE, RE-HUNG EXISTING DOOR OR REPLACE WITH NEW DOOR. THIS DOOR TO REMAIN LOCKED AT ALL TIMES. SUBMIT KEY TO OWNER.
- STUB IN FOR FUTURE PLUMBING WORK NEEDED FOR A SINK. FIELD VERIFY LOCATION WITH THE OWNER.
- FIRE EXTINGUISHER. TYPE 2A:10B:C. INSTALL 5' MAX. A.F.F. TO TOP

GENERAL NOTES

- GC TO FIELD VERIFY EXISTING CONDITION PRIOR TO STARTING WORK. NOTIFY THE ARCHITECT AND OWNER IMMEDIATELY OF ANY DISCREPANCIES, WHICH MAY RESULT IN MODIFICATION OF THIS CONSTRUCTION DOCUMENTS PRIOR TO BEGINNING ANY WORK.
- COORDINATE ALL WORK WITH MPE DRAWINGS.
- DAMAGED EXISTING SURFACES/AREAS SHALL BE REPAIRED, PATCHED AND FINISHED TO MATCH EXISTING ADJACENT SURFACES.
- IT IS GC'S RESPONSIBILITY TO VERIFY ALL WORK IN FIELD WHETHER NOTED ON THE DRAWINGS OR NOT.
- COORDINATE DEMOLITION WORK WITH NEW FLOOR PLAN AND REFLECTED CEILING PLAN.
- DEMOLITION OF EXISTING UTILITY ITEMS TO BE CAPPED OFF AT THE SURFACE AND/OR ROUTED BACK TO ABOVE CEILING AS ACCEPTED BY THE OWNER. GC TO COORDINATE WITH THE OWNER PRIOR TO STARTING WORK.
- ALL REMOVED EXISTING ITEMS TO BE DISPOSED OF, REUSED OR RETURNED TO THE OWNER AS DIRECTED BY THE OWNER. GC TO COORDINATE WITH THE OWNER PRIOR TO STARTING WORK.
- ALL EXISTING SURFACES EXPOSED FROM DEMOLITION WORK SHALL BE REPAIRED, PATCHED AND FINISHED TO RECEIVE NEW MATERIAL.
- EXISTING STRUCTURAL ELEMENTS SHALL REMAIN INTACT. GC SHALL REPAIRS, REPLACE AND RESTORE ANY DAMAGED STRUCTURAL ELEMENTS TO ITS ORIGINAL CONDITION TO MAINTAIN ORIGINAL STRUCTURAL INTEGRITY.



LEGEND:

- NEW 6" MTL. STUD WALL UP TO ROOF DECK
- NEW 3" MTL. STUD WALL HEIGHT AS NOTED
- EXISTING WALL
- EXISTING REMOVED
- EXISTING REMOVED
- EXISTING
- NEW
- EXISTING RELOCATED/REPLACED
- DUPLEX RECEPTACLE
- QUADPLEX RECEPTACLE
- TEL/DATA
- RECEPTACLE @ +42"
- COORDINATE RECEPTACLE HEIGHT
- DUPLEX RECEPTACLE 220V
- POWER POLE
- J-BOX AT CEILING
- GROUND FAULT CIRCUIT INTERRUPTER (WET LOCATIONS)
- FLOOR SINK
- FIRE EXTINGUISHER
- ELEC. PANEL
- DOOR SCHEDULE A-0

1 FLOOR PLAN
SCALE: 3/16"=1'-0"
NORTH

MECHANICAL SPECIFICATIONS

SCOPE OF WORK
 1. THE WORK INCLUDED UNDER THIS SECTION CONSISTS OF FURNISHING ALL MATERIALS, EQUIPMENT AND LABOR, AND THE PERFORMING OF ALL FUNCTIONS, EXCEPT AS OTHERWISE SPECIFIED HEREIN OR SHOWN ON THE DRAWINGS, TO BE PERFORMED BY OTHERS FOR THE INSTALLATION OF ALL HEATING AND COOLING EQUIPMENT, PIPING AND ALL DUCTWORK, GRILLES, REGISTERS, ETC., INCLUDING ALL CONNECTIONS TO EACH SYSTEM AS SPECIFIED HEREIN AND SHOWN ON THE DRAWINGS. IT SHALL FURTHER INCLUDE FURNISHING AND INSTALLING ALL MISCELLANEOUS ITEMS REQUIRED FOR THE OPERATION OF THE SYSTEM, WHETHER SPECIFICALLY CALLED OUT OR NOT.

COORDINATION
 1. ALL CONTRACTS SHALL BE RESPONSIBLE FOR COORDINATING WORK WITH OTHER TRADES AFFECTED BY EACH OTHERS WORK.

CODES AND PERMITS
 1. ALL MATERIALS, EQUIPMENT AND INSTALLATION MUST COMPLY WITH ALL APPLICABLE LAWS, CODES, RULES AND REGULATIONS, REQUIRED BY CITY, COUNTY AND STATE, AS WELL AS FEDERAL REQUIREMENTS.
 2. PERMITS OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND FEES.
 3. INSPECTIONS FURNISH ARCHITECT WITH CERTIFICATE OF INSPECTION AND APPROVAL BY LOCAL AUTHORITIES PRIOR TO FINAL ACCEPTANCE OF THE PROJECT BY THE ARCHITECT. ALL WORK MUST BE INSPECTED.

PRODUCTS
 1. ALL PRODUCTS SHALL BE NEW AND UNUSED OF ESTABLISHED AND REPUTABLE AMERICAN MANUFACTURERS. ITEMS OF EQUIPMENT USED FOR THE SAME PURPOSE SHALL BE OF THE SAME MANUFACTURER.
 2. SYSTEMS SHALL BE COMPLETE AND OPERABLE. ANY ACCESSORIES REQUIRED FOR THE OPERATION OF THE SYSTEM SHALL BE INCLUDED AS THROUGH SPECIFICALLY INDICATED TO BE PROVIDED. SUCH ACCESSORIES WOULD INCLUDE FILTERS, CONDENSATE DRAINS, RELIEF VALVES, SERVICE VALVES, THERMOSTATS, VIBRATION INSULATORS, ETC. MOTOR STARTERS FOR PREWIRED EQUIPMENT (AND OTHER PROTECTION AND CONTROL DEVICES) ARE ALSO INCLUDED IN THIS SPECIFICATION.
 3. SPECIFIC REFERENCE TO A MANUFACTURER'S PRODUCT IS ONLY TO ESTABLISH TYPE, QUALITY, AND PERFORMANCE REQUIRED. THESE QUALIFICATIONS ARE IN ADDITION TO THE REQUIREMENTS SHOWN ON THE DRAWINGS AND HEREIN THESE SPECIFICATIONS. LISTING OF ALTERNATE EQUIPMENT MANUFACTURERS SHALL NOT BE CONSIDERED AS AN UNCONDITIONAL APPROVAL OF THE PRODUCTS OF THOSE MANUFACTURERS.

SUBSTITUTIONS
 1. SUBSTITUTIONS OF MATERIALS OR PRODUCTS SHOWN HEREIN SHALL BE AT THE OWNER'S, ARCHITECT'S, OR ENGINEER'S WRITTEN APPROVAL ONLY WITH COPIES OF APPROVAL SENT TO THE PROJECT FILE. ANY DEVIATION FROM THESE DRAWINGS WILL NOT BE ALLOWED.
 2. ANY FIELD CHANGES BY THE CONTRACTOR FOR WHICH THE LOCAL AUTHORITY REQUIRES A SEALED LETTER AND/OR DRAWING BY THE ENGINEER SHALL RESULT IN A COST TO THE CONTRACTOR. THE FEE FOR THESE CHANGES SHALL BE PAYABLE UPON DELIVERY OF THE LETTER/DRAWING AND UNLESS THE CHANGE WAS INSTITUTED BY THE OWNER, THE CONTRACTOR SHALL NOT CHARGE THE OWNER THIS FEE.
 3. ANY DEVIATIONS FROM THESE PLANS FOR ANY REASON INCLUDING ACTUAL FIELD CONDITIONS WITH OUT PRIOR WRITTEN APPROVAL SHALL BE THE COMPLETE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

TEMPERATURE CONTROLS AND WIRING
 1. WIRING IS INCLUDED UNDER THE ELECTRICAL DIVISION OF THE SPECIFICATIONS. BUT ALL INTEGRAL STARTERS, CONTROLS, RELAYS AND OTHER DEVICES ARE INCLUDED UNDER THE MECHANICAL DIVISION. ALL EQUIPMENT, DEVICES AND WIRING SHALL CONFORM TO THE NATIONAL ELECTRIC CODE. ALL CONTROLS SHALL BE FURNISHED AND PROPERLY IDENTIFIED WITH INSTRUCTIONS FOR PROPER CONNECTIONS. RESPONSIBILITY FOR PROPER CONNECTIONS AND OPERATION IS INCLUDED UNDER THE MECHANICAL CONTRACTORS RESPONSIBILITY. VERIFY ALL VOLTAGES, PHASES AND ELECTRICAL CONNECTIONS WITH THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT, AND IF DISCREPANCIES OCCUR, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR HIS DECISION.

DUCTWORK
 1. ALL DUCTWORK AND PLENUMS SHALL BE GALVANIZED SHEET METAL, FABRICATE AND INSTALL ALL DUCTWORK IN STRICT CONFORMANCE WITH THE LATEST SMACNA MANUAL, AND IMC FOR LOW VELOCITY DUCT CONSTRUCTION STANDARDS.
 2. EACH DUCT SYSTEM SHALL BE COMPLETE WITH ALL REQUIRED DUCTWORK FITTINGS, TURNING VANES, SPLITTER DAMPERS AND SUPPORTS, AND EXTRACTORS AT ALL RIGHT ANGLE TAKEOFFS AND TEES.
 3. DUCTWORK SHALL BE GALVANIZED, PRIME-GRADE, LOCK-FORMING QUALITY STEEL (LFO) HAVING A GALVANIZED COATING OF 1-3/4 OUNCES TO TOTAL FOR BOTH SIDES OF ONE SQUARE FOOT OF A SHEET.
 4. CROSSBREAK ALL SIDES OF ALL DUCTS. DUCTWORK SHALL BE INSTALLED WITH NO OBJECTIONABLE NOISE, AND CONTRACTOR SHALL PROVIDE ANY ADDITIONAL STIFFENERS REQUIRED.
 5. ALL LONGITUDINAL SEAMS SHALL BE PITTSBURGH LOCK SEAM, HAMMERED FLAT, WITH ALL TRANSVERSE JOINTS TAPED WITH 8 OZ. CANVASS AND SEALED WITH ARABOL AIR TIGHT.
 6. PROVIDE DOUBLE THICKNESS, FACTORY FABRICATED GALVANIZED SHEET STEEL TURNING VANES WITH AIRFOIL CONTOUR IN ALL RIGHT ANGLE ELBOWS, TEES, AND ELBOWS WITH RADIUS LESS THE 1-1/2 TIMES THE WIDTH OF THE DUCT.
 7. ALL ROUND DUCT BRANCH TAKEOFFS SHALL BE PROVIDED WITH SPIN-IN WITH AIRSCOOP AND BALANCING DAMPER.
 8. DUCT SIZES SHOWN ON THE DRAWINGS ARE TO THE INSIDE OF ACOUSTICAL LININGS. INCREASE SIZES OF DUCTS AS REQUIRED TO ACCOMMODATE ACOUSTICAL INSULATION.
 9. DUCTWORK SHALL CONFORM TO DIMENSIONS ON THE DRAWINGS, UNLESS LOCATION OF STRUCTURAL MEMBERS PROHIBITED. IN CASE OF CHANGE IN DIMENSIONS, CROSS SECTIONAL AREAS SHALL BE MAINTAINED.
 10. ALL DUCTS SHALL BE SUBSTANTIALLY SUPPORTED WITH HANGERS TO THE STRUCTURE OR OTHERWISE DEPENDING ON LOCATION CONDITIONS, PLACING SUPPORTS NOT OVER 8 FEET APART ALONG THE LENGTH OF THE DUCT. HANGERS SHALL CONFORM TO ALL SMACNA REQUIREMENTS.
 11. FLEXIBLE ROUND DUCTS TO OUTLETS SHALL BE THERMAFLEX TYPE MKE, A MAXIMUM LENGTH OF 8'-0" LONG (ONLY WHERE INDICATED ON THE DRAWINGS).
 12. ALL FACTORY-MADE DUCTS MUST BE CLASS 0 OR I AS APPROVED BY THE INTERNATIONAL MECHANICAL CODE.

ACOUSTICAL INSULATION
 1. ALL SHEET METAL DUCT AS FOLLOWS:
 A. SUPPLY AND RETURN DUCTS 18"-0" FROM UNITS MINIMUM.
 2. SCORE AND THICKNESS:
 A. ALL SHEET METAL SUPPLY, RETURN AND PLENUMS, RETURN DUCTWORK - 1/2" ACOUSTICAL LINER.
 B. ALL DUCTWORK EXPOSED TO WEATHER (OTHER THAN EXHAUST) 1-1/2"
 C. MATERIAL: MINIMUM 1-1/2 LB. NEOPRENE OR HEAVY DENSITY COATED FIBERGLASS DUCT LINER SUITABLE FOR VELOCITIES UP TO 4000 FPM COMPLYING WITH NFPA 90A.
 D. APPLICATION: COATED DUCT LINER SHALL BE CUT TO ASSURE OVERLAPPED AND COMPRESSED LONGITUDINAL JOINTS. APPLY LINER WITH COATED SURFACE FACING THE AIR STREAM AND ADHERED WITH 100% COVERAGE FIRE RETARDANT ADHESIVE. COAT ALL EXPOSED LEADING EDGES AND ALL TRANSVERSE JOINTS WITH FIRE RETARDANT ADHESIVE. THE LINER SHALL BE ADDITIONALLY SECURED WITH MECHANICAL FASTENERS WHICH SHALL COMPRESS THE DUCT LINER SUFFICIENTLY TO HOLD IT FIRMLY IN PLACE AS FOLLOWS:
 E. INSTALLATION FOR VELOCITIES TO 2000 FPM FASTENERS SHALL START WITHIN 3' OF THE UPSTREAM TRANSVERSE EDGES OF THE LINER AND 3' FROM THE LONGITUDINAL JOINTS AND SHALL BE SPACED AT A MAXIMUM OF 12" O.C. AROUND THE PERIMETER OF THE DUCT, EXCEPT THAT THEY MAY BE A MAXIMUM OF 18" FROM A CORNER BREAK. ELSEWHERE THEY SHALL BE MAXIMUM OF 18" O.C. EXCEPT THAT THEY SHALL BE PLACED NOT MORE THAN 6" FROM A LONGITUDINAL JOINT OF THE LINER NOR 12" FROM A CORNER BREAK. COAT ALL EXPOSED JOINTS AND EDGES OF TRANSVERSE JOINTS WITH A FIRE RETARDANT ADHESIVE.

THERMAL INSULATION
 1. GENERAL: ALL INSULATION MATERIAL, COVERINGS, ADHESIVE, VAPOR BARRIERS AND TAPES SHALL CONFORM TO NFPA 90A, FLAME SPREAD CLASSIFICATION NOT TO EXCEED 25 AND SMOKE DEVELOPMENT, NOT TO EXCEED 50.
 2. ALL RECTANGULAR DUCTS AND ROUND DUCTS SHALL BE INSULATED WITH 1 1/2" THICK 75 LB. DENSITY FIBERGLASS BLANKET WITH FRK FOIL REINFORCED KRAFT VAPOR BARRIER FACING INSULATION SHALL HAVE A CONDUCTIVITY NOT TO EXCEED 0.27 BTU PER INCH PER SQUARE FOOT PER DEGREE FAHRENHEIT PER HOUR AT 75 DEGREE FAHRENHEIT MEAN TEMPERATURE.
 3. INSULATION SHALL BE WRAPPED TIGHTLY ON THE DUCTWORK WITH ALL CIRCUMFERENTIAL JOINTS BUTTED AND LONGITUDINAL JOINTS OVERLAPPED A MINIMUM OF 2". ADHERE INSULATION TO METAL ON THE BOTTOM OF RECTANGULAR DUCTWORK OVER 24" WIDE WITH 4 STRIP OF INSULATION BONDING ADHESIVE, BENJAMIN FOSTER 85-15, OR EQUAL, AND ADDITIONALLY SECURE INSULATION WITH MECHANICAL FASTENERS A NOT MORE THAN 18" O.C. ON ALL JOINTS, THE 2" FLANGE OF THE FACING OR THE 2" OVERLAP SHALL BE SECURED USING 9/16" FLARE-DOOR STAPLES APPLIED 6" O/C AND TAPED WITH MINIMUM 3" WIDE FOIL REINFORCED KRAFT TAPE. ALL PIN PENETRATIONS OR PUNCTURES IN FACING SHALL ALSO BE TAPED. VERTICAL DUCTS SHALL HAVE INSULATION ADEQUATELY SECURED TO PREVENT SLIPPING.
 4. EXHAUST DUCTS SHALL NOT BE INSULATED.
 5. OUTDOOR DUCTWORK SHALL BE INSULATED INTERNALLY WITH 2" DUCTLINER. INSTALL PER MANUFACTURERS INSTRUCTIONS. ALL OUTDOOR DUCTWORK JOINTS SHALL BE SEALED WITH SILICONE SEALANT AND MADE COMPLETELY WEATHERTIGHT AND LEAK PROOF.

GRILLES, REGISTERS AND DIFFUSERS
 1. FURNISH AND INSTALL ALL GRILLES, REGISTERS, CEILING DIFFUSERS AND DOOR GRILLES WHERE INDICATED. THEY SHALL BE OF SIZE AND MODEL CALLED FOR ON THE DRAWINGS.
 2. ALL GRILLES, REGISTERS, AND CEILING DIFFUSERS MUST BE SET FLUSH AND TRUE TO WALL OR CEILING TO PREVENT AIR LEAKAGE AROUND EDGES. ALL UNITS SHALL BE PROVIDED WITH NEOPRENE GASKETING AROUND THE INSIDE OF THE FRAME.
 3. ALL UNITS SHALL BE FACTORY FINISHED, OF COLOR SELECTED BY THE ARCHITECT, OR AS OTHERWISE INDICATED.
 4. PAINT ALL DUCTWORK, TURNING VANES, INSULATION ETC. THAT IS VISIBLE THROUGH GRILLES, REGISTERS, OR CEILING DIFFUSERS FLAT BLACK.

EQUIPMENT
 1. ALL EQUIPMENT SHALL BE LABELED WITH STEEL TAGS EMBOSSED WITH 1/4" HIGH LETTERS, PERMANENTLY ATTACHED TAGS SHALL CLEARLY INDICATE THE AREA SERVED BY THE EQUIPMENT.

FINAL TESTS
 1. BEFORE ACCEPTANCE AND FINAL PAYMENT, A COMPLETE AND CERTIFIED TEST AND BALANCE SHALL BE PERFORMED. THE TEST AND BALANCE SHALL BE IN ACCORDANCE WITH AABC OR NEBB AND SHALL BE PERFORMED BY AN AABC OR NEBB CERTIFIED CONTRACTOR. THE TEST AND BALANCE SHALL INCLUDE ALL COMPONENTS OF THE MECHANICAL SYSTEM INCLUDING AIR DISTRIBUTION, HYDRONIC SYSTEMS, ALL EQUIPMENT, ETC. THREE COPIES OF THE FINAL REPORT (IN THE FORMAT OF AABC OR NEBB) SHALL BE SUBMITTED TO THE ARCHITECT FOR FINAL APPROVAL BY THE RESPONSIBLE ENGINEER. THE COSTS FOR THE TESTING OUTLINED IN THIS SECTION OF THE SPECIFICATION SHALL BE THE SOLE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. ANY DECISION TO EXCLUDE THIS FROM THE BID SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT PRIOR TO BID.
 2. PROVIDE A COPY OF THE FINAL TEST AND BALANCE REPORT TO INSPECTOR PRIOR TO FINAL INSPECTION.
GUARANTEE
 1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS, EQUIPMENT AND WORKMANSHIP FROM DEFECT OF WORKMANSHIP, AND SHALL REPLACE OR REPAIR WITHOUT ADDITIONAL COST TO THE OWNER ALL DEFECTIVE MATERIAL AND WORKMANSHIP, FOR A PERIOD OF 11 YEAR AFTER COMPLETION AND ACCEPTANCE.

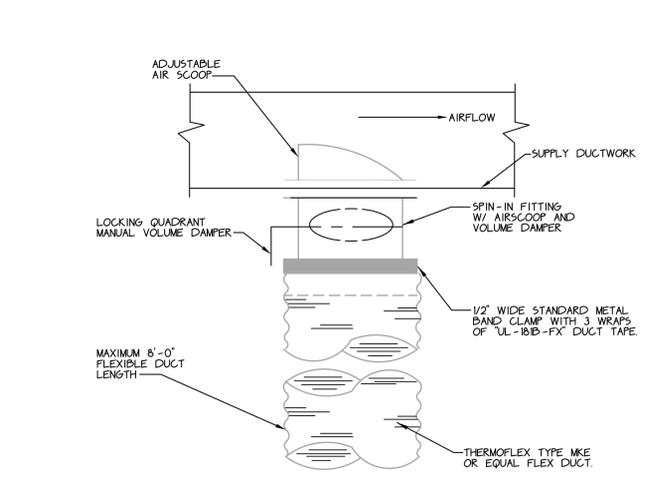
OUTSIDE AIR CALCULATION

UNIT SERVING	OCCUPANCY CATEGORY	RP	PZ	RA	AZ	MINIMUM EXHAUST RATE, CFM/50/FT.	VDZ, CFM	PROVIDED OUTDOOR AIR
E1 RTU-6	OFFICE	5	2	0.06	346	-	3071/8 = 384	E1 RTU-6 BALANCE TO 300 CFM
	OFFICE	5	25	0.06	514	-	155.8/8 = 19.48	
	STORAGE	-	-	0.12	438	-	525/8 = 65.7	
TOTAL							296.9	300 CFM PROVIDED

NOTES:
 1. CALCULATION BASED ON 2018 INTERNATIONAL MECHANICAL CODE.
 2. ABBREVIATIONS: RP - PEOPLE OUTDOOR AIR RATE, PZ - DEFAULT OCCUPANT DENSITY, RA - AREA OUTDOOR AIR RATE, AZ - ZONE FLOOR AREA, VDZ=RP*PZ*RA*AZ - BREATHING ZONE OUTDOOR AIRFLOW
 3. OUTDOOR AIR REQUIRED TO MAKE UP RESTROOM EXHAUST IS BEING PROVIDED BY OUTDOOR AIR REQUIRED FOR THE AREA BEING SERVED BY THE SAME UNIT

DIFFUSER NECK SIZING CHART

CFM	NECK SIZE
0 - 75	6"
75 - 200	8"
201 - 349	10"
350 - 550	12"
551 - 750	14"



① FLEX DUCT TAKE-OFF NTS

GRILLE, REGISTER, & DIFFUSER SCHEDULE

MARK	MANUF./MODEL #	DESCRIPTION	FRAME	FINISH	MATERIAL	DAMPER	MAX. NC	REMARKS
A	PRICE SCD	SUPPLY DIFFUSER	LAY-IN	WHITE	STEEL	ODD	30	24X24 FACE
B	PRICE RCD4	ROUND DIFFUSER	DUCT-MNT	WHITE	STEEL	ODD	30	22" FACE
C	PRICE SDD	RETURN GRILLE	LAY-IN	WHITE	STEEL	ODD	30	24X24 FACE, SINGLE DEFL, 3/4" SPACINGS, 45° FIXED BLADE
D	PRICE SDD	TRANSFER GRILLE	LAY-IN	WHITE	STEEL	ODD	30	24X24 FACE, SINGLE DEFL, 3/4" SPACINGS, 45° FIXED BLADE

IECC NOTES:

- WITH REGARD TO THE INFORMATION PRESENTED IN THIS NOTE LIST AND ELSEWHERE ON THESE PLANS, IN THE EVENT OF ANY CONFLICTS, THE MORE STRINGENT CASE SHALL APPLY.
- ALL SUPPLY AND RETURN AIR DUCTS SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES AND WITH A MINIMUM OF R-18 INSULATION WHEN LOCATED OUTSIDE THE BUILDING.
- ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTIONS IN DUCTWORK SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS, MASTIC PLUS EMBEDDED FABRIC SYSTEMS, OR TAPES. TAPES AND MASTICS USED TO SEAL DUCTWORK SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL181A FOR METALLIC DUCTWORK AND UL181B FOR FLEXIBLE DUCTWORK. DUCT CONNECTIONS TO FLANGES OF AIR DISTRIBUTION SYSTEM EQUIPMENT SHALL BE SEALED AND MECHANICALLY FASTENED. UNLISTED DUCT TAPE IS NOT PERMITTED AS A SEALANT ON ANY METAL DUCTS. PROVIDE PROOF OF THE UL LISTING FOR ALL TAPES AND MASTICS USED TO THE INSPECTOR PRIOR TO FINAL INSPECTION (IECC 503.2.7)
- THERMOSTATIC CONTROLS SHALL BE PROGRAMMABLE WITH SETBACK CONTROLS. THE THERMOSTATS SHALL BE CAPABLE OF SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND SHALL HAVE A BATTERY BACKUP TO LAST AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR AT LEAST 2 HOURS.

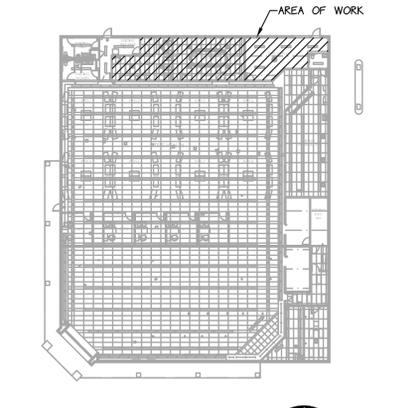
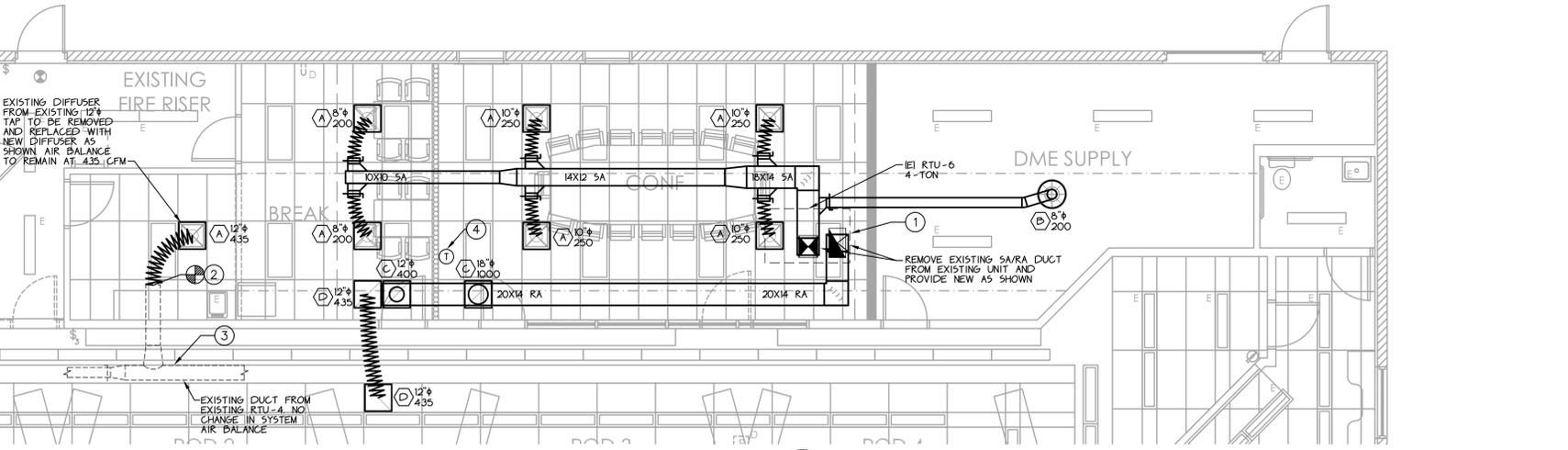
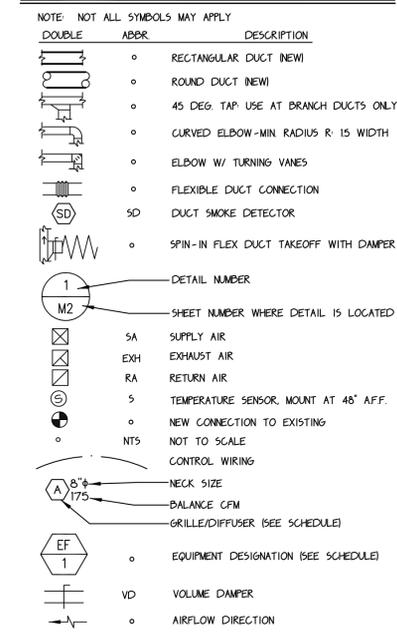
GENERAL NOTES:

- CONTRACTOR SHALL VISIT PROJECT SITE PRIOR TO BID. ANY UNFAMILIARITIES DUE TO LACK OF EXISTING PROJECT CONDITIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NO EXTRAS SHALL BE AWARDED DUE TO UNFAMILIARITY.
- NEW FLEX DUCT SHALL BE NO LONGER THAN 5'-0" IN TOTAL LENGTH.
- INSTALL DUCTWORK BETWEEN JOISTS AND AS TIGHT THE THE STRUCTURE AS POSSIBLE. MODIFY DUCTWORK AS REQUIRED.
- ANY DISCREPANCIES ON THIS PROJECT SHALL BE IN WRITTEN FORM AS AN RFI TO THE ARCHITECT PRIOR TO ANY WORK. IF CONTRACTOR PROCEEDS PRIOR TO WRITTEN AUTHORIZATION THE CONTRACTOR WILL TAKE FULL RESPONSIBILITY FOR THE CHANGES.
- EXISTING HVAC UNITS HAVE CONDENSATE DRAINS TO REMAIN.
- CONTRACTOR TO FIELD COORDINATE DUCT ROUTING PRIOR TO INSTALLATION OR FABRICATION OF DUCTWORK. CONTRACTOR RESPONSIBLE FOR DETERMINING WHICH DUCTWORK AND TO WHAT EXTENT IN ORDER TO MAINTAIN MAX CEILING HEIGHTS. CONTRACTOR RESPONSIBLE FOR COORDINATION OF ALL WORK WITH OTHER TRADES.
- CONTRACTOR TO PROVIDE A COPY OF THE TEST AND BALANCE REPORT TO THE INSPECTOR AND OWNER PRIOR TO FINAL APPROVAL.
- DUCT SMOKE DETECTOR'S NOT REQUIRED. SYSTEMS DO NOT EXCEED 2000 CFM.
- ALL WORK TO COMPLY WITH THE 2018 INTERNATIONAL MECHANICAL CODE.
- MECHANICAL DESIGN IS INTENDED SO THAT THE AIR CONDITIONING SYSTEM WILL OPERATE CONTINUOUSLY TO MAINTAIN CURRENT VENTILATION REQUIREMENTS, IMC.
- CALL FOR INSPECTION OF ALL MECHANICAL SYSTEMS PRIOR TO BACKFILL AND CONCEALMENT. 2018 IMC.
- SUBMIT FINAL AIR BALANCE REPORT TO BUILDING INSPECTOR FOR FINAL REVIEW AND APPROVAL. 2018 IMC.

KEYED NOTES:

- OUTSIDE AIR BALANCE TO 300 CFM.
- NEW SUPPLY, TIE INTO EXISTING SUPPLY MAIN.
- EXISTING ZONE TO REMAIN AS-IS UNLESS NOTED OTHERWISE.
- NEW 7-DAY PROGRAMMABLE T-STAT. INSTALL 52" AFF.

DUCTWORK SYMBOLS



KEY PLAN N.T.S.

MECHANICAL PLAN

SCALE: 3/16"=1'-0"

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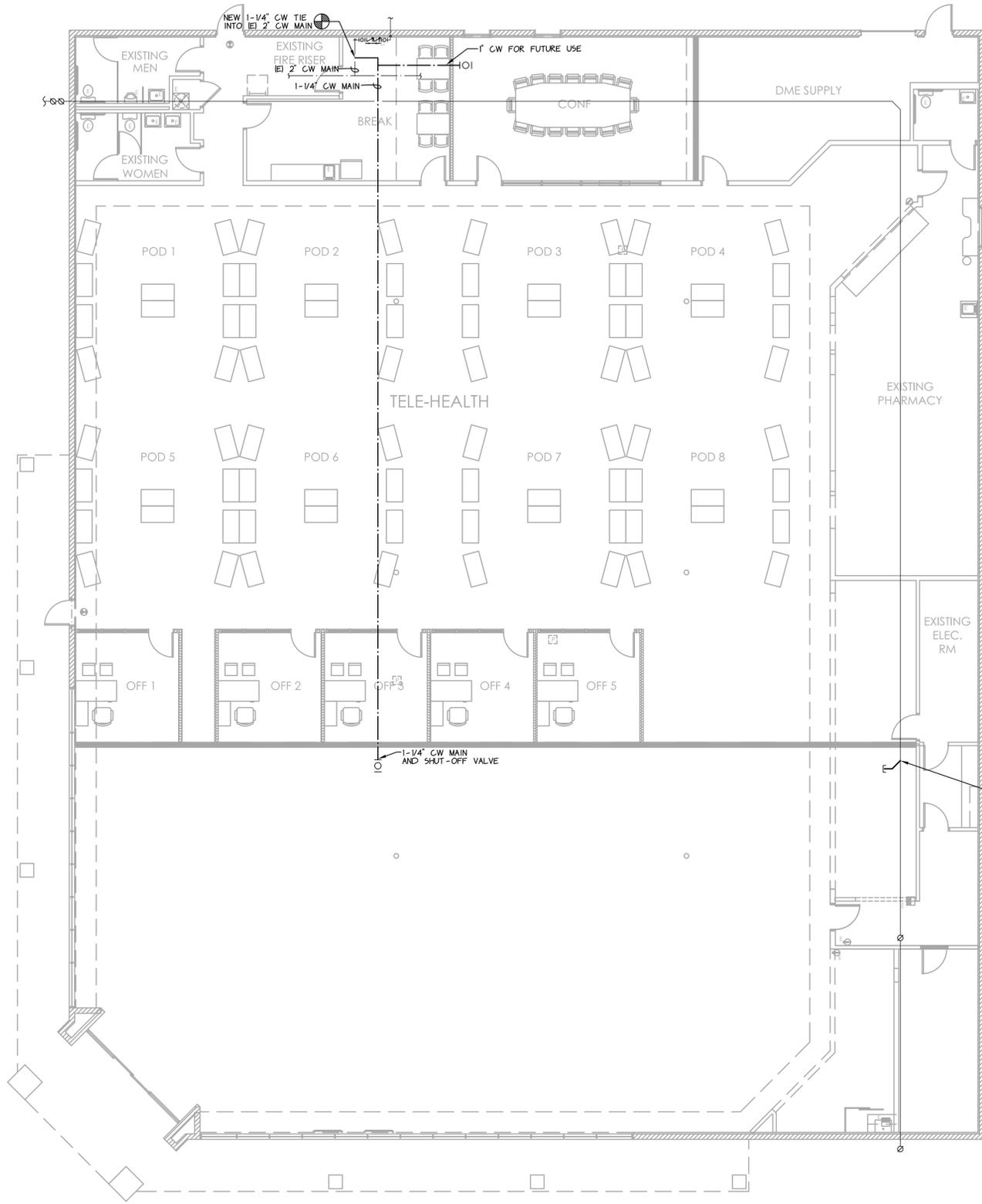
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 revision 1: CITY COMMENTS 11/5/2021
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DO NOT SCALE DRAWINGS

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IECC NOTES

1. THE FIRST 8 FEET OF HOT + COLD WATER PIPING FROM EACH WATER HEATER SHALL BE INSULATED WITH 0.5 INCH OF MATERIAL HAVING A CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER INCH-H X FT² X F.

PLUMBING LEGEND

NOTE: NOT ALL SYMBOLS ARE USED

SYMBOL	ABBR.	DESCRIPTION
---	W.	DRAIN OR WASTE PIPING
---	V.	VENT PIPING
---	C.W.	COLD WATER PIPING
---	H.W.	HOT WATER PIPING
---	H.W.R.	HOT WATER RETURN PIPING
---	GAS	NATURAL GAS PIPING
⊗	S.V.	SOLENOID VALVE
⊗	S.O.V.	MANUAL SHUT-OFF VALVE
⊗	B.V.	BALL VALVE
⊗	S.O.V.	MANUAL SHUT-OFF VALVE
⊗	C.V.	CHECK VALVE
⊗	P.V.	PLUG VALVE-PROPANE SHUT-OFF
⊗	U.	UNION
⊗	H.B.	HOSE BIBB
⊗	F.	FIRE SPRINKLER PIPING
⊗	F.S.	FLOOR SINK
⊗	F.D.	FLOOR DRAIN
⊗	F.C.O.	FLOOR CLEANOUT
⊗	S.C.O.	SURFACE CLEANOUT
⊗	W.C.O.	WALL CLEANOUT
⊗	V.T.R.	VENT THRU ROOF
⊗	D.	INDIRECT DRAIN
⊗	P.O.C.	POINT OF CONNECTION BETWEEN NEW AND EXISTING

GENERAL NOTES:

- 607.11 TEMPERATURE LIMITING MEANS A THERMOSTAT CONTROL. FOR A WATER HEATER SHALL NOT SERVE AS THE TEMPERATURE LIMITING MEANS FOR THE PURPOSES OF COMPLYING WITH THE REQUIREMENTS OF THIS CODE FOR MAXIMUM ALLOWABLE HOT OR TEMPERED WATER DELIVERY TEMPERATURE AT FIXTURES. THIS WILL INCLUDE ALL LAVS AND HAND SINKS. CONTRACTOR SHALL ALERT ARCHITECT IN WRITING IF ANY CONFLICTS ARISE IN THE FIELD. ANY DEVIATIONS FROM THE DESIGN WITHOUT PRIOR APPROVAL SHALL BE THE COMPLETE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR TO MEASURE DEPTH OF EXISTING WASTE TO CONFIRM THAT ADEQUATE DEPTH EXISTS TO INSTALL PLUMBING FIXTURES AS DESIGNED. IF EXISTING DEPTH IS INADEQUATE ALERT ARCHITECT PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL LOCATE EXISTING WASTE PIPING PRIOR TO DOING ANY SAW CUTTING OF EXISTING SLAB.
- CONTRACTOR TO CONFIRM EXISTING WASTE SIZE, SLOPE, AND DIRECTION OF FLOW.
- ALL WORK TO COMPLY WITH THE 2018 INTERNATIONAL PLUMBING CODE AND 2018 INTERNATIONAL FUEL GAS CODE.

WATER CALCULATIONS

WATER CALC - FUTURE FIXTURES

3 HWC (FLUSH TANK)	5 FU	15
3 HLAV	2 FU	6
1 URINAL	5 FU	5
NEW FIXTURE UNITS		26
EXISTING FIXTURE UNITS OTHER SUITES		555
TOTAL		615 FU

USE EXISTING 1-1/2" WATER METER • MAXIMUM 40 GPM
 DISTANCE FROM MAIN TO FURTHEST FIXTURE = 256'
 EQUIVALENT LENGTH = 256 X 1.25 = 320'-0"

MAIN PRESSURE = 60 PSI

FIXTURE MIN	15	PSI
ELEV. 20 X 434	8.7	PSI
METER DROP	4	PSI
RFBP	13	PSI
SYSTEM DROP	40.7	PSI

MAIN PRESSURE 55 PSII - SYSTEM DROP 40.7 PSII = 14.3 PSII
 14.3 PSII / 320 FT X 100 = 60 PSI/100' FOR FRICTION LOSS

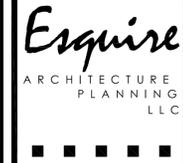
PIPE SIZING CHART TANK

1/2"	2	GPM	1	FU
3/4"	5	GPM	6	FU
1"	12	GPM	16	FU
1-1/4"	20	GPM	30	FU
1-1/2"	32	GPM	158	FU
2"	65	GPM	200	FU

NOTE: PIPE SIZING CHART SIZED WITH IPC FIGURE 613.3(3) • 0 PSI/100' FOR FRICTION LOSS

PLUMBING CONTRACTOR TO VERIFY AND COORDINATE EXACT STREET PRESSURE AND NOTIFY ENGINEER + ARCHITECT OF ANY DISCREPANCIES.

NOTE: WATER CALC BASED ON PREVIOUSLY APPROVED PLANS.



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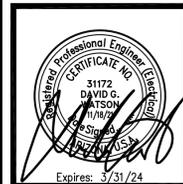


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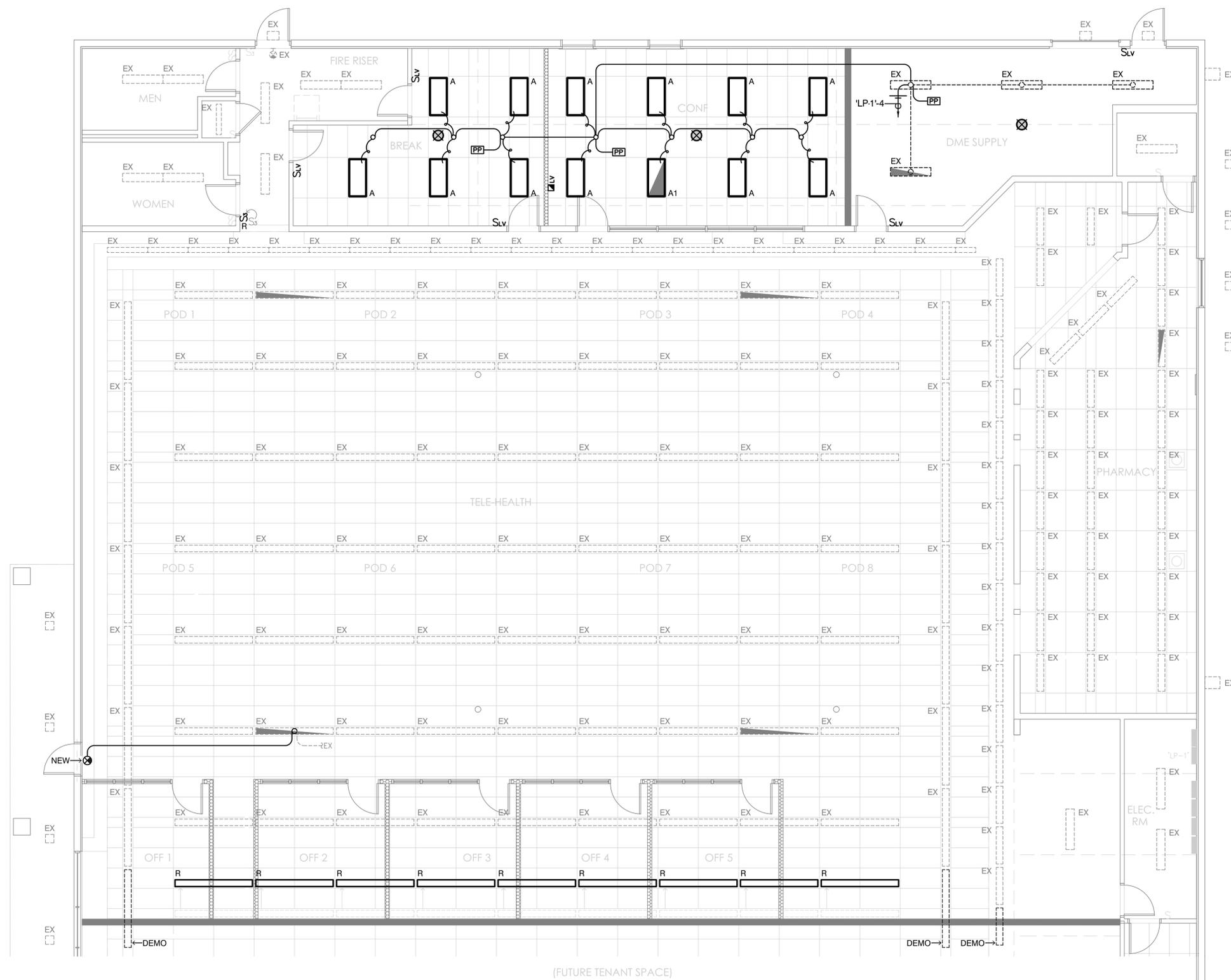
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LUMINAIRE SCHEDULE

MARK	DESCRIPTION	MFR.	CATALOG #	VOLT.	LAMPS		REMARKS
					#	TYPE	
A	2x4 RECESSED LED PANEL	LITHONIA OR EQUAL	CPX 2x4 4000LM 80CRI 35K SWL M1N10 ZT MVOLT	120	4,000-LUMEN 39-WATT/3500K LEDs W/FIXTURE		
A1	2x4 RECESSED LED PANEL WITH EMERGENCY BATTERY PACK		CPX 2x4 4000LM 80CRI 35K SWL M1N10 ZT MVOLT E10WLCP				
⊗	LED EXIT SIGN WITH BATTERY BACK-UP		LOM S W 3 R 120/277 EL N		LEDs W/FIXTURE		

NOTES
 TOTAL LIGHTING LOAD REDUCED BY 73-WATTS WITH REMOVAL OF (10) FLUORESCENT LUMINAIRES (VALUE ABOVE ACCOUNTS FOR NEW LED 2x4s)
 EXISTING LIGHTING CONTROLLED VIA (EXISTING) LIGHTING CONTROL SYSTEM. VERIFY NEW TIME SCHEDULE(S) WITH TENANT AND RE-PROGRAM AS REQUIRED

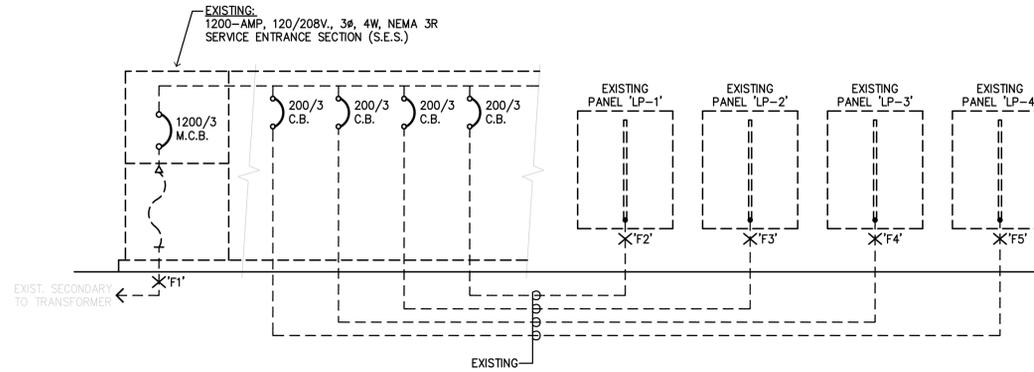
LIGHTING PLAN
 3/16" = 1'-0"
 NORTH

ELECTRICAL SYMBOLS

- RECESSED DOWNLIGHT
 - WALL-MOUNTED LUMINAIRE
 - LINEAR LUMINAIRE - HALF-SHADED LUMINAIRE INDICATES EMERGENCY AND/OR NIGHT LIGHT (NL) (REFER TO LIGHTING PLAN & LUMINAIRE SCHEDULE)
 - ⊗ EXIT SIGN - SEE LUMINAIRE SCHEDULE
 - ⌋ JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING W/ FLEXIBLE CONDUIT CONNECTION TO LUMINAIRE
 - ⌋ FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT
 - ⊙ JUNCTION BOX IN ACCESSIBLE LOCATION
 - ⊕ DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
 - ⊕ FOUR-PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
 - ⊕ RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
 - ⊕ FLUSH FLOOR DUPLEX OUTLET AND DATA/TELEPHONE OUTLET COMBO WITH BRASS DEVICE PLATE
 - ⊕ DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4" C. INTO ACCESSIBLE CEILING SPACE
 - S S3 S4 TOGGLE SWITCH - SINGLE POLE, 3-WAY, 4-WAY AT +42" OR AS NOTED ON PLANS.
 - SLV LOW-VOLTAGE WALL SWITCH AT +42": ACUITY CONTROLS # nPDMA WH
 - LV LOW-VOLTAGE (DIMMING) SWITCH AT +42": ACUITY CONTROLS # nPDMA DX WH
 - ⊗ CEILING-MOUNTED, DUAL-TECHNOLOGY LOW-VOLTAGE OCCUPANCY SENSOR SWITCH: ACUITY CONTROLS # nCM PDT 10 RJB
 - PP LIGHTING CONTROL POWER PACK: ACUITY CONTROLS # nPP16 D EFP
- CIRCUIT IN CONDUIT, CONCEALED. HASH MARKS INDICATE QUANTITY OF CONDUCTORS NO HASH MARKS INDICATE TWO CONDUCTORS, PLUS GROUND(S). (NOTE: WIRE AND OR CONDUIT SIZE SHOWN AT HOMERUN IS THE MINIMUM SIZE FOR THE ENTIRE CIRCUIT; #12 CU., 1/2" CONDUIT MINIMUM). LONG STROKE(S) INDICATE NEUTRAL CONDUCTOR(S). SHORT STROKES INDICATE PHASE OR SWITCHED CONDUCTORS AND LONG STROKES WITH DOT INDICATE GREEN INSULATED GROUNDING CONDUCTOR(S) TYPICAL. EACH ISOLATED GROUND CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GROUND WIRE. BOND WIRES ARE NOT SHOWN ON DRAWINGS. BOND WIRES SHALL BE INSULATED CU. SIZED IN ACCORDANCE WITH N.E.C. #250.
- CIRCUIT IN CONDUIT CONCEALED IN FLOOR
 - CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
 - ⌋ HOMERUN TO PANELBOARD OR AS NOTED
 - PANELBOARD
 - C.B. CIRCUIT BREAKER
 - EDF ELECTRIC DRINKING FOUNTAIN
 - EX INDICATES EXISTING EQUIPMENT (SEE PLANS FOR REQUIREMENTS)
 - GFCI GROUND-FAULT CIRCUIT INTERRUPTER
 - R INDICATES RELOCATED EQUIPMENT (SEE PLANS FOR REQUIREMENTS)
 - S.E.S. SERVICE ENTRANCE SECTION

GENERAL NOTES

- ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2017 NATIONAL ELECTRICAL CODE AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO THE N.E.C.
- ALL WIRING SHALL BE COPPER IN EMT CONDUIT UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THHN/THWN (REFER TO SYMBOLS LIST FOR ADDITIONAL INFORMATION).
- ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAILS THAT CONFORM TO UNDERWRITERS LABORATORY LISTINGS FOR THROUGH PENETRATIONS FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE TO THE U.L. LISTING TO THE INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.
- CONTRACTOR IS TO VERIFY CONDITION OF EXISTING INSTALLATIONS BY FIELD INSPECTION. CONTRACTOR IS TO PROVIDE NEW WIRE, CONDUIT, AND BOXES AS REQUIRED.
- COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN.
- ALL GENERAL USE RECEPTACLES MOUNTED WITHIN 6' OF A BASIN OR SINK SHALL BE A GFCI-TYPE.
- PROVIDE BOND WIRE IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.
- CONTRACTOR IS TO VERIFY EXACT LOCATIONS, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN. CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES, TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.
- PROVIDE AND INSTALL ADDITIONAL EXIT SIGNS, EMERGENCY LIGHTS AND NIGHT LIGHTS IF REQUIRED BY GOVERNING INSPECTOR.
- WHEN ELECTRICAL CONTRACTOR REMOVES AN ITEM CAUSING CIRCUITRY TO OTHER ITEMS TO BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, BOXES, ETC. AND SHALL RECONNECT ALL ITEMS SO THEY WILL NOT BE INTERRUPTED.
- WHEN AN ITEM IS SHOWN TO BE RELOCATED, ELECTRICAL CONTRACTOR SHALL EXTEND WIRING AND CONDUIT TO THE APPROPRIATE NEW LOCATION AND PROVIDE ALL NECESSARY JUNCTION BOXES, SPLICES, COVER PLATES, ETC.
- CONTRACTOR SHALL RELOCATE ALL ELECTRICAL EQUIPMENT IN AREAS BEING REMOVED, REMODELED, REPLACED OR CONSTRUCTED IF EQUIPMENT INTERFERES WITH OPERATION OF CONSTRUCTION, OCCUPANCY OR INTENDED USE OF SPACE.
- CONTRACTOR SHALL COORDINATE ALL EQUIPMENT RELOCATION WITH OWNER'S REPRESENTATIVE. ALL ELECTRICAL CONNECTIONS REQUIRING AN OUTAGE SHALL BE COORDINATED WITH THE OWNER. CONTRACTOR SHALL PROVIDE NECESSARY TEMPORARY FEEDERS AND ANY ADDITIONAL ELECTRICAL EQUIPMENT REQUIRED TO MAINTAIN CONTINUOUS OPERATION OF EMERGENCY AND/OR FIRE ALARM SYSTEMS.
- CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING ELECTRICAL EQUIPMENT ON WALLS BEING REMOVED. WHEN ALL LOADS ARE REMOVED FROM A CIRCUIT CONTRACTOR SHALL LABEL EXISTING CIRCUIT BREAKER IN PANELBOARD AS 'SPARE' AND TURN TO THE 'OFF' POSITION.



ONE-LINE DIAGRAM

- NOTES:
- ALL EQUIPMENT & INSTALLATIONS ARE EXISTING UNLESS NOTED AS 'NEW'.
 - ELECTRICAL CONTRACTOR SHALL FIELD-VERIFY ALL EXISTING CONDITIONS PRIOR TO ANY WORK. (CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES)
 - ALL CONDUCTOR SIZES BASED ON TYPE 'XHHW' & 'THHN/THWN' COPPER.

FAULT CURRENT CALCULATIONS

THE FOLLOWING CALCULATIONS ARE BASED ON THE "POINT-BY-POINT" METHOD WHERE:

$$I_{sc} = I_{sc} \times M \quad M = 1/(1+f) \quad f = \frac{1.732 \times L \times I}{C \times E} \quad IS(sca) = \frac{V_p \times M \times IS(sca)}{V_s}$$

(ALL CALCULATIONS UTILIZE COPPER CONDUCTORS)

FAULT POINT	EQUIPMENT	SOURCE (FAULT POINT)	SOURCE 1 (AMPS)	CONDUIT TYPE	WIRE/BUS SIZE	'C' VALUE	E (VOLTS)	L (LENGTH)	f	M	I _{sc}
1	S.E.S.	1	59,924								59,924
2	PANEL 'LP-1'	1	59,924	NM	1 SET(S) OF 3/0	13923	208	37	1.326	0.43	25,762
3	PANEL 'LP-2'	1	59,924	NM	1 SET(S) OF 3/0	13923	208	33	1.183	0.46	27,454
4	PANEL 'LP-3'	1	59,924	NM	1 SET(S) OF 3/0	13923	208	31	1.111	0.47	28,387
5	PANEL 'LP-4'	1	59,924	NM	1 SET(S) OF 3/0	13923	208	29	1.039	0.49	29,384

LOAD SUMMARY

CONNECTED LOADS:

EXIST. HVAC UNITS	=	226.0 AMPS
EXIST. PANEL 'LP-1'	=	117.0 AMPS
EXIST. PANEL 'LP-2'	=	88.0 AMPS
EXIST. PANEL 'LP-3'	=	148.0 AMPS
EXIST. PANEL 'LP-4'	=	167.0 AMPS
EXIST. PANEL 'LP-CR'	=	67.0 AMPS
EXIST. PANEL 'LP-SP'	=	98.0 AMPS
TOTAL LOAD ON S.E.S.	=	911.0 AMPS

PANEL LEGEND:

- - INDICATES EXISTING CIRCUIT BREAKER & LOAD
- - INDICATES EXISTING CIRCUIT BREAKER W/CHANGED LOAD
- ▲ - INDICATES CIRCUIT BREAKERS WITH APPROVED HANDLE TIE PER N.E.C. ARTICLE 210.4(B)
- * - INDICATES LOAD TAKEN @ 125% PER N.E.C.

EXISTING PANEL (NO NEW C.B.s)

PANEL	LP-4'	225 AMP	120/208V., 3Ø, 4W	MAIN	L.O.	NEMA 1	SURF	MTG
LOCATION	SEE PLAN	TYPE	(EXISTING)	BREAKER RATING	10,000 A.I.C.			
USE/AREA SERVED	CB #	A	B	C	#	CB	USE/AREA SERVED	
EXIST. RECEPT.	20/1	1	1250		20/1	20	EXIST. RECEPTS.	
REC - POD 6	3	1	1250		4			
- POD 7	7	1	1250	1250	6			
- PODS 7,8	11	1	1250	1250	8			
EXIST. SPARE	15	1	1250	1250	10		EXIST. EFs	
EXIST. WATER HEATER	17	1	1500		12		REC - POD 8	
EXIST. RECEPTS.	19	1	350		14		EXIST. SPARES	
EXIST. SPARE	21	1	350		16			
EXIST. WATER HEATER	23	1	2250	2250	18		EXIST. WATER HEATER	
EXIST. WATER HEATER	25	1	2250	2250	20			
EXIST. WATER HEATER	27	1	2250	2250	22		EXIST. COMPACTOR	
EXIST. WATER HEATER	29	1	2250	2250	24			
EXIST. WATER HEATER	31	1	2250	2250	26		EXIST. COMPACTOR	
EXIST. WATER HEATER	33	1	2250	2250	28			
EXIST. WATER HEATER	35	1	3000	3000	30		EXIST. COMPACTOR	
EXIST. RECEPTS.	37	1	3000	3000	32			
EXIST. SPARE	39	1	180		34		EXIST. SPARE	
	41	1			36			
TOTAL (CONNECTED)			19498	12768	14718			
25% CONTINUOUS			501	501	501			
TOTAL (CODE)			19999	13269	15219		19999 VA / 120 V. = 167.0 A.	

EXISTING PANEL (NO NEW C.B.s)

PANEL	LP-1'	225 AMP	120/208V., 3Ø, 4W	MAIN	L.O.	NEMA 1	SURF	MTG
LOCATION	SEE PLAN	TYPE	(EXISTING)	BREAKER RATING	10,000 A.I.C.			
USE/AREA SERVED	CB #	A	B	C	#	CB	USE/AREA SERVED	
EXIST. LIGHTING	20/1	1	720		20/1	20	EXIST. LIGHTING	
	3	1	600		4		EXIST. LIGHTING	
	5	1	650	650	6		LTG - DME,CONF,BREAK	
	7	1	150		8		EXIST. LIGHTING	
EXIST. SPARE	9	1	840		10			
EXIST. LIGHTING	11	1	770	770	12			
	13	1	990	990	14			
	15	1	1815		16			
	17	1	800	800	18		EXIST. SPARE	
	19	1	1300	1300	20		EXIST. LIGHTING	
	21	1	990	990	22			
	23	1	830	830	24			
	25	1	990	990	26			
	27	1	660	660	28			
	29	1	1440	1440	30			
	31	1	1500	1500	32			
	33	1	1400	1400	34			
	35	1	1430	1430	36			
EXIST. SPARES	37	1			38		EXIST. SPARES	
	39	1			40			
	41	1			42		EXIST. CONTROLS	
TOTAL (CONNECTED)			11015	11214	11060			
25% CONTINUOUS			2754	2804	2715			
TOTAL (CODE)			13769	14018	13775		14018 VA / 120 V. = 117.0 A.	

EXISTING PANEL (NO NEW C.B.s)

PANEL	LP-2'	225 AMP	120/208V., 3Ø, 4W	MAIN	L.O.	NEMA 1	SURF	MTG
LOCATION	SEE PLAN	TYPE	(EXISTING)	BREAKER RATING	10,000 A.I.C.			
USE/AREA SERVED	CB #	A	B	C	#	CB	USE/AREA SERVED	
EXIST. RECEPTS.	20/1	1	1000		20/1	20	EXIST. RECEPTS.	
	3	1	900		4			
	5	1	600	600	6			
	7	1	1000		8		EXIST. SPARE	
REC - OFFICE 1,OPEN OFFICE	9	1	900	900	10		EXIST. RECEPTS.	
- OFFICES 3,4	11	1	1080	1080	12			
- OFFICES 1,2	13	1	1280	1280	14			
EXIST. RECEPTS.	15	1	1000	1000	16			
	17	1	830	830	18			
	19	1	1000	1000	20			
	21	1	1000	1000	22			
	23	1	200	200	24			
	25	1	200	200	26			
	27	1	800	800	28			
EXIST. SPARE	29	1	600	600	30			
EXIST. RECEPTS.	31	1	1200	1200	32			
	33	1	600	600	34		EXIST. SPARES	
	35	1	700	700	36			
	37	1	500	500	38		EXIST. RECEPTS.	
	39	1	500	500	40			
	41	1	800	800	42			
TOTAL (CONNECTED)			10560	9970	8840			
25% CONTINUOUS			-	-	-			
TOTAL (CODE)			10560	9970	8840		10560 VA / 120 V. = 88.0 A.	

EXISTING PANEL (NO NEW C.B.s)

PANEL	LP-3'	225 AMP	120/208V., 3Ø, 4W	MAIN	L.O.	NEMA 1	SURF	MTG
LOCATION	SEE PLAN	TYPE	(EXISTING)	BREAKER RATING	10,000 A.I.C.			
USE/AREA SERVED	CB #	A	B	C	#	CB	USE/AREA SERVED	
SPACE	1	1	-		2		SPACE	
REC - BREAK COUNTER E	20/3	1	180		4			
EXIST. RECEPTS.	5	1	360	360	6		REC - PODS 1,2	
	7	1	360	360	8			
REC - BREAK COUNTER W	9	1	180	180	10		- POD 1	
EXIST. RECEPTS.	11	1	1280	1280	12			
	13	1	720	720	14		EXIST. RECEPTS.	
REC - BREAK REFRIG.	15	1	900	900	16			
EXIST. RECEPTS.	17	1	200	200	18		REC - POD 5	
	19	1	1280	1280	20			
	21	1	720	720	22		- PODS 5,6	
	23	1	1280	1280	24			
REC - POD 4	25	1	1280	1280	26			
- PODS 3,4	27	1	1280	1280	28		REC - CONF,OPEN OFFICE S	
	29	1	1280	1280	30		EXIST. HVAC UNIT	
	31	1	1280	1280	32			
	33	1	3636	3636	34		EXIST. HVAC UNIT	
	35	1	1280	1280	36			
	37	1	1280	1280	38			
	39	1	2250	2250	40			
REC - OPEN OFC,BRK,CONF E	41	1	1480	1480	42		REC - DME,OPEN OFFICE W	
TOTAL (CONNECTED)			15246	16206	16886			
25% CONTINUOUS			909	909	909			
TOTAL (CODE)			16155	17115	17795		17795 VA / 120 V. = 148.0 A.	

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 State of Arizona
 Expires: 3/31/24

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ELECTRICAL SYSTEM SPECIFICATIONS - DIVISION 16000

(SOME SECTIONS MAY NOT APPLY)

1. GENERAL CONDITIONS

The General Provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions) and Division 1 - General Requirements as appropriate, apply to the work specified in this Section.

2. SCOPE OF WORK

The work included under this section consists of furnishing all materials, equipment, and labor and the performing of all functions, except as otherwise specified herein or shown on the drawings to be performed by others, for the installation and placing into operation of a complete electrical system as specified and shown on the drawings.

3. GENERAL DESCRIPTION

3.1 The work in general shall consist of, but is not necessarily limited to the following:

3.1.1 Furnishing and installing all fixtures with lamps as indicated on the drawings and as specified herein unless noted.

3.1.2 Furnishing and installing all electrical work, panels, service, conduit, wiring, etc., for all outlets and equipment

3.1.3 Furnishing and installing all telephone outlets, conduits with pull strings and telephone mounting boards including conduit from telephone mounting board to the building entrance as indicated on the plan.

3.1.4 Furnishing and installing a complete Fire Alarm system (where) indicated on plans.

3.1.5 Furnishing and installing all motor starters and control components, not specifically specified to be furnished in accordance with other sections of the specifications.

3.1.6 Furnishing and installing all power and wiring except that which is pre-wired in factory assembled equipment.

3.1.7 Installing all LINE VOLTAGE mechanical control wiring and associated controls which are furnished by the Mechanical Contractor (low voltage control wiring and controls shall be furnished and installed by the Mechanical Contractor).

3.1.8 Painting work as described under other sections of these specifications. Clean and prepare all surfaces ready for painting.

3.1.9 Certain items of work by other trades will be necessary for the completion of work under this division. Cooperate with other trades and arrange for these items to be performed in orderly course.

3.1.10 This Contractor shall review the mechanical control requirements as specified and shown on the drawings and shall furnish and install all necessary conduit, wiring, boxes, protective devices, switches, etc., for the completion and proper operation of the system.

3.1.11 Review all drawings and all specifications for each section of work. Unless specifically noted otherwise, herein or elsewhere, furnish and install items of any electrical nature required for completion of work for other trades, whether or not same is shown or noted in this or other sections.

4. REGULATIONS AND CODES

The Contractor must comply with all state, municipal and federal safety laws, construction codes, ordinances and regulations relating to building and public health and safety. In addition, comply with rules and regulations of the State Fire Protection Code. Fire protection material must bear the Fire Underwriters Laboratories label.

5. GENERAL REQUIREMENTS

5.1 The Contractor shall examine the premises and satisfy him/herself of existing conditions under which they will be obligated to operate in performing his/her part of the work or that will in any manner affect the work under the contract. Contractor shall cooperate with other trades so that the installations of all equipment may be properly coordinated.

5.2 All equipment furnished shall fit the space available, with connection, etc., in the required locations and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation, while the specifications and fixture list denote the type and quality of material and workmanship to be used. Where a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect/Engineer whose decision shall be final. No allowance will be made subsequently in this connection in behalf of the Contractor after award of the contract.

6. EQUIPMENT AND MATERIAL

6.1 All materials furnished under this contract shall be new (except as noted), free from defects of any character, shall conform with the standards of the Underwriters Laboratories, Inc. (U.L.) (or other nationally recognized Laboratory), in every case where such a standard has been established and shall be so labeled. It is the intention of these specifications to indicate a standard of quality for all materials incorporated in this work, and where materials are not specified herein and are required to complete the electrical installation, these materials shall be of first quality for use intended. Manufacturers of similar quality products will be considered unless the specifications or drawings indicate otherwise.

6.2 Materials shall be suitable for intended use and location. Unless otherwise shown use NEMA-1 for interior areas and NEMA-3R for exterior areas.

6.3 The Architect/Engineer decision as to equal in grade and quality shall rule and be final for all electrical materials incorporated in this work. Where two or more similar type items are furnished, all shall be of the same manufacturer (e.g., all disconnect switches shall be of the same manufacturer) unless otherwise noted herein or shown on the drawings. All material and installation methods used shall be in accordance with the latest and approved electrical and mechanical engineering practices.

7. SERVICE ENTRANCE EQUIPMENT

7.1 Service entrance equipment shall be in accordance with the requirements of the municipal governing body and serving utility. Shop drawings shall be submitted to the serving utility for written approval before ordering equipment.

7.2 Label equipment and each individual overcurrent device per Section 16000.22.

7.3 Approved manufacturers are: Sun Valley, Square D, Cutler-Hammer, Siemens/ITE, General Electric

8. PANELBOARDS

8.1 Each panel shall be provided with door lock and two keys, all keyed alike. Each panel shall be provided with typewritten sheet installed on door identifying the use of each branch circuit. Panels shall have bussing as indicated on the drawings.

8.2 Label equipment per Section 16000.22

8.3 Approved manufacturers are: Square D, Cutler-Hammer, Siemens/ITE, General Electric

9. STARTERS

9.1 All motor starters shall be furnished under this section of the specifications unless an integral part of equipment or noted as furnished with equipment specified under other sections of these specifications.

9.2 Separately mounted motor starters shall be across-the-line combination magnetic with 120V coils, fused disconnect contactors, additional auxiliary contact for interlocking of controls. Provide pushbutton or selector switch in cover. Switchboard mounted starters shall be magnetic with 120V coils and additional auxiliary contacts as required for interlocking of controls. Starters shall have an integral control circuit transformer or separate 120V control with control circuit disconnect switch in cover.

9.3 Manual starters shall be horsepower, voltage and phase rated with overload protection and green "on" pilot light. Surface mounted unless noted otherwise.

9.4 All starters shall have overload protection in all phase lines. Furnish and install the proper size overload heater elements determined from full load nameplate readings on motors and compensation for ambient temperature in all starters whether they be furnished under this Section or other Sections.

9.5 Label per Section 16000.22

9.6 Approved manufacturers are: Square D

10. TRANSFORMERS

10.1 Transformers shall be dry type, with voltage ratings as indicated on plans. Transformers shall be rated for full load operation at a maximum 150 degree centigrade rise above a 40 degree centigrade ambient or as otherwise noted on drawings. Provide at least (4) 2 1/2 percent taps, two above normal and two below normal and have a sound rating not to exceed NEMA standards. Special "K" factor ratings as noted.

10.2 Submit complete transformer data with shop drawings for approval. The data shall include efficiencies, core and copper losses, impedance, regulation and sound level.

10.3 Installation of transformers shall be on vibration isolators and all wiring connections with flexible conduit.

10.4 Label per Section 16000.22

10.5 Approved manufacturers are: ACME, Square D, Jefferson, Cutler-Hammer, Westinghouse, General Electric, or same manufacturer as distribution equipment.

11. CONDUIT

11.1 Metallic conduits shall be hot dipped galvanized equal to LTV Steel.

11.2 Electric metallic tubing (EMT) is permitted for exposed work above 6'-0" A.F.F. or concealed work only. EMT is NOT permitted in the following: (1) in or under concrete, (2) in earth, (3) in grouted walls, (4) exterior of building, (5) with dissimilar metals, (6) where it will be subject to severe physical damage (either during or after installation), (7) in any hazardous (classified location) except as permitted by 502.10, 503.10 and 504.20, (8) without an equipment grounding conductor. Size and provide equipment grounding conductor per Table 250.122 and increase conduit size if required.

11.3 Rigid PVC conduit is permitted only underground or as noted on drawings. Provide rigid steel elbows and risers (NO MINIMUM SIZE). Size and provide equipment grounding conductor per Table 250.122 and increase conduit size if required. Any substitutions shall be prior-approved in writing by engineer.

11.4 Rigid galvanized or sheradized steel shall be used for all exposed conduit below 6'-0" A.F.F. or as noted on drawings. Where used in or under concrete or in earth, shall be code approved PVC coated or half lap wrapped with Polyken #900 tape or equal.

11.5 Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical.

11.6 Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways.

12. WIRE

12.1 Soft drawn annealed copper (unless otherwise noted on plans) having conductivity of not less than 98% of that of pure copper, uniform in cross section, free from flaws, scales, and other imperfections. All wire larger than #10 shall be stranded.

12.2 Insulation: Type THHN/THWN, or XHHW for all branch circuit and feeder wiring.

12.3 Sizes: No wire smaller than #12 unless otherwise noted on drawings.

12.4 Feeder conductors #2 awg and larger shall be copper Conduit fill shall not exceed 40% factor as described in 2005 N.E.C., Annex C, tables C.1 (EMT), C.9 (Rigid PVC-Schedule 80), and C.10 (Rigid PVC-Schedule 40).

13. MISCELLANEOUS MATERIALS:

13.1 Safety switches: Heavy duty, fused rejection type, minimum 200,000 A.I.C. rated. "NF" indicates not fused.

13.1.1 Label per Section 16000.22

13.1.2 Approved manufacturers are: Square D, Cutler-Hammer, Westinghouse, General Electric or same manufacturers as distribution equipment.

13.2 Fuses: "Bussmann" or "Gould Shawmut" mfg. No substitutions unless by prior written approval from Engineer, or as noted on drawings.

13.3 Conduit strap: Heavy gauge steel snap-on type.

13.4 Electrical metallic tubing fittings: Equal to T&B compression type. Connectors shall have insulated bushings.

13.5 Rigid conduit locknuts and bushings: Equal to T&B.

13.6 Flexible conduit and fittings: Equal to California Conduit and Cable Company, Inc.

13.7 Liquid tight conduit and fittings for all exterior and equipment connections.

13.8 Outlet boxes, plaster rings, pull, and junction boxes, etc: Equal to RACO. Zinc coated or Cadmium plated sheet steel for indoor locations, cast aluminum for outdoor locations.

13.8.1 For all light fixtures: Octagon or 4" square boxes.

13.8.2 For switches and receptacles: 4" or 4-11/16" square boxes.

13.8.3 Junction and pull boxes: 4" square minimum size. Provide with screwfastened covers located in accessible locations.

13.9 Condulets: Equal to Crouse-Hinds.

13.10 Wire and Cable: Equal to General Cable and/or Simplex.

13.11 Devices: "Hubbell", "Leviton", or approved equal.

Receptacles:
20-amp, Duplex #BR20
20-amp, Isolated Ground #CRS3521
20-amp, GFCI #GF20

Switches
(see symbols list)

All colors to be specified by Architect/Owner/Tenant.

13.12 Device plates: "Hubbell", "Leviton", or equal. Ivory nylon in interior areas or as noted on drawings. Zinc die cast flip lid mounted horizontally for exterior or weatherproof locations.

13.13 Lighting fixtures: As shown on light fixture schedule or described on drawings, complete with lamps in original cartons and all canopies, stems, hangers and accessories including all structural members required for proper mounting. All fluorescent fixture ballasts shall be of the energy-saving type. Submit shop drawings to Architect/Engineer for approval by the same. Must be C.E.C.-approved in California.

13.14 Lamps: G.E. or as recommended by light fixture manufacturer. Shall be for the maximum rated wattage of fixture unless otherwise shown on drawings.

14. SLEEVES, INSERTS, OPENINGS

14.1 Contractor shall layout and install his/her work in advance of pouring concrete floors or walls. Provide all sleeves and/or openings through floors or walls required for electrical conduits or ducts.

14.2 Sleeves shall be of rigid conduit or galvanized sheet steel rigidly supported and suitably packed to prevent entrance of wet concrete.

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING

15.1 The Contractor shall include in his/her bid all excavation, compaction, fill, backfill, cutting, fitting, repairing and finishing of all work necessary for the installation of all equipment under this specification but no cutting of the work of other Contractors shall be done without the consent of the General Contractor.

15.2 Earthwork shall be done in accordance with latest industry standards.

16. CLEANUP OF PREMISES

Contractor shall at all times keep the premises clear of waste materials and debris caused by his/her employees and operation. Equipment not required in the work shall be removed prior to the termination of the contract.

17. TESTS AND INSPECTIONS

17.1 Contractor shall test wiring and devices as sections are completed and shall correct all defects immediately at his/her own expense, including any damage to walls, ceilings, floor or other portions of the building which may result from replacing defective equipment.

17.2 Furnish all meters, cable, connections and apparatus necessary for making tests.

17.3 Test system for shorts and grounds. Faulty wiring shall be removed and replaced. Any device, apparatus or fixture installed showing substandard performance shall be removed and replaced as directed by the Architect/Engineer.

17.4 Megger all systems neutrals to insure the neutral is not grounded within the system.

17.5 All equipment rated at 1,000 amps or more, or 480 volts shall be tested for insulation breakdown prior to its being energized. Such equipment shall withstand for a period of one minute without breakdown, the application of a 60HZ alternating potential of 1,000V plus twice the rated voltage of the device.

17.6 After the electrical wiring system installation is completed and at such time as the Architect/Engineer or his/her authorized representative may direct, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of specifications. Test shall be performed in presence of Architect/Engineer or his/her representative.

18. SHOP DRAWINGS

18.1 All data shall be submitted at one time, bound and indexed in an orderly manner. Prior to starting the work, submit to the Architect/Engineer for approval, six (6) sets of shop drawings of service (S.E.S.), panels, distribution sections, light fixtures, motor control centers, fire alarm system, dimmers, sound system, emergency generator, devices, transformers, labels as required by 16000.22, and all other equipment to be fabricated.

18.2 Procure shop drawings, wiring diagrams, etc., from other trades involved where such drawings may facilitate and expedite the work. Air conditioning and mechanical equipment shall be wired complete as per manufacturer's wiring diagrams furnished by the air conditioning and mechanical contractors.

19. DRAWINGS OF RECORD (AS-BUILT)

As-built drawings shall be submitted in accordance with and if required by Division 1 - General Requirements.

20. GUARANTEE

The Contractor shall guarantee all material and equipment to be free from defect of material and workmanship and shall replace or repair without cost to the owner all defective material and workmanship for a period of one year after final acceptance.

21. INSTRUCTIONS

21.1 Contractor shall instruct the Owner in the proper operating and maintenance of the equipment.

21.2 Contractor shall provide two (2) sets of operating and maintenance manuals for each piece of equipment provided by this discipline, only when such manuals are available from the manufacturer.

21.2.1 All manuals to be bound in a 3-ring binder and tabulated in an orderly manner.

22. LABELING

22.1 Labels shall be engraved, black on white melamine plastic laminate, 1/16" minimum thickness for signs up to 20 square inches or 8 inches long; 1/8" thick for larger sizes. Engraved legend shall be in white letters on black face with minimum 3/16" high letters. Labels shall be punched and fastened to equipment with aluminum rivets or self tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts, flat and lock washers.

22.2 Label equipment with name, amperage, voltage, phase, and wires (i.e. Panel 'A', 400-AMP, 120/208V, 3ø, 4W). Submit list of all labels with wording for review as per 16000.18.

22.3 Equipment to be labeled shall include service (S.E.S.) and all overcurrent devices, distribution sections and all overcurrent devices, motor control centers (M.C.C.) and all overcurrent devices, fusible panelboards and all overcurrent devices, panels, starters and transformers. Label other equipment as noted on plans.

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date: 11/18/21
revision 1:
revision 2:
revision 3:
revision 4:
revision 5:
checked: DW
drawn: BM

DO NOT SCALE DRAWINGS

E-4

4 OF 4

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