ABBREVIATIONS

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	(NOT ALL ABBREVIATIONS MAY E	3E [] <u>SED IN T</u> L	
A.B.	ANCHOR BOLT		ANGLE
ABV.	ABOVE	LAM.	LAMINATED
A.C.	ASPHALTIC CONCRETE	LAV.	LAVATORY
ACM A.C.P.	ALUM. COMPOSITE METAL PANEL ACOUSTIC CEILING PANEL	LB(S). or #	POUND(S)
A.F.F.		LG. LFT.	LINEAR FOOT
ALUM.	ALUMINUM	LT.	LIGHT
A.Q.T.		MAT'L.	
AOR ARCH.	ARCHITECT OF RECORD ARCHITECTURAL	MAX. / MIN. M.B.	MAXIMUM / MINIMUM MACHINE BOLT
BD.	BOARD	MEZZ.	MEZZANINE
BLDG	BUILDING	MISC.	MISCELLANEOUS
BLK'G		M.O. M.P.S.	MASONRY OPENING MODULAR PANELBOARD
B.N. BM.	BOUNDARY NAIL BEAM	IVI.F.3.	SYSTEM
B.O.C.	BOTTOM OF CEILING	M.S.B.	MAIN SWITCH BOARD
B.O.J.	BOTTOM OF JOIST	MTD. MTL.	MOUNTED
	BUILT-UP ROOFING	INITE. (N)	METAL NEW
BOTT. or (B) CND.			NOT APPLICABLE
CND. C.L. or Q	CONDUIT CENTER LINE	N.E.M.A.	
CAB.	CABINET	N.I.C.	
C.B.B.	CEMENTITIOUS BACKER BOARD	NO. or # NOM.	NUMBER NOMINAL
C.D. CER.	CORE DRILL CERAMIC	N.T.S.	NOT TO SCALE
C.G.	CORNER GUARD	O.C.	ON CENTER
C.J.	CONTROL JOINT (COLD JOINT)	O.F.C.I.	OWNER FURNISHED,
CLG.	CEILING	OFD.	CONTRACTOR INSTALLED OVERFLOW DRAIN
CLKG. CLR.	CAULKING CLEAR	0.F.O.I.	OWNER FURNISHED,
C.M.U.	CONCRETE MASONRY UNIT		OWNER INSTALLED
COL.	COLUMN	O.D.	
CONC. CONN.		OPN'G. OPP.	OPENING OPPOSITE
CONST	CONSTRUCTION	O.S.H.A.	OCCUPATIONAL SAFETY &
CONST. JT.	CONSTRUCTION JOINT		HEALTH ADMINISTRATION
CONT.	CONTINUOUS	PART'N P. LAM	PARTITION PLASTIC LAMINATE OR
CONTR.			PLASTIC LAMINATE OR PARALLAM (BEAM)
COMP C.T.		PL.	PLATE
DBL.			PROPERTY LINE
	DEGREE	PLAS. PLBG.	
DET.		PLBG. PLYWD.	
		P.O.C.	POINT OF CONNECTION
DIAG. DIM.	DIAGONAL DIMENSION	PR.	PAIR
DS	DOWNSPOUT	PSF	PAIR POUNDS PER SQ. FOOT POUNDS PER SQ. INCH PRESSURE TREATED
DWG.(S)	DRAWING(S)	P.T.	PRESSURE TREATED
(E)	EXISTING	Q.T.	QUARRY TILE
EA. E.C.	EACH ELECTRICAL CONTRACTOR	RAD. OR (R)	
E.G.	EDGE GRAIN	RCP R.D.	REFLECTED CEILING PLAN ROOF DRAIN
ELEC.	EDGE GRAIN ELECTRICAL ELEVATION EDGE NAIL		REFERENCE
ELEV.	ELEVATION	REINF.	REINFORCEMENT
E.N. FOC	EDGE OF COUNTER / EQUIPMENT	REV.	REVERSE
EQ. or $=$		R.I.U. ROMTS	REMOTE TERMINAL UNIT REQUIREMENTS
ER		S.C.	SOLID CORE
EXP. EXT.		SCHED.	SCHEDULE
	FACTORY	SHT.	SHEET SHEATHING SIMILAR SHEET METAL
	FLOOR DRAIN	SIM	SIEATHING SIMILAR
	FOUNDATION	SM	SHEET METAL
F.E.	FIRE EXTINGUISHER FINISHED FLOOR	SMS	SHEET METAL SCREW
F.F. F.F.L.	FINISHED FLOOR LEVEL	SPEC.(S) SQ.	SPECIFICATION(S)
F.F. & E.		SQ. IN. / FT.	SQUARE INCH / FOOT
	EQUIPMENT	S.S. S.T.S.M.S.	STAINLESS STEEL
F.G. FLR.	FLOAT GLASS FLOOR	S.T.S.M.S.	SELF TAPPING
FIN.	FINISH	STD.	SHEET METAL SCREWS STANDARD
	FACE OF FINISH	STL.	STEEL
F.O.M. F.O.S.	FACE OF MASONRY FACE OF STUD	STOR.	STORAGE STRUCTURAL
F.O.S. F.R.	FIRE RETARDANT	STRUCT. SUSP.	SUSPENDED
F.R.P.	FIBERGLASS REINFORCED PANEL	SYM.	SYMMETRICAL
FT.	FOOT / FEET		TEMPERATURE
FTG. F.V.	FOOTING FIELD VERIFY	THK. T & G	THICKNESS TONGUE & GROOVE
GA.	GAUGE (GAGE)	T.N.	TOE NAIL
G.B.	GRAB BAR	Т.О.В.	TOP OF BEAM
G.WB. G.C.	GYPSUM WALLBOARD GENERAL CONTRACTOR	T.O.C.	
GALV.	GALVANIZED	T.O.F. T.O.P.	TOP OF FOOTING TOP OF PARAPET
G.I.	GALVANIZED IRON	T.O.PL	TOP OF PLATE
GL.B. HB	GLUE-LAMINATED BEAM HOSE BIBB	T.O.S.	TOP OF SLAB
нв H.C.	HOLLOW CORE	T.O.W. T.S.	TOP OF WALL TOP OF SHEATHING
H.D.	HUB DRAIN	T.S. TYP.	TYPICAL
HDR.		U.N.O.	UNLESS NOTED OTHERWISE
HDW. HGR.	HARDWARE HANGER	U.L.	UNDERWRITERS LABORATORY
HGT. or HT.		VERT. OR (V) V.I.F.	VERTICAL VERIFY IN FIELD
H.M.	HOLLOW METAL	v.i.f. V.T.R.	VERIFY IN FIELD VENT THROUGH ROOF
HORIZ. or H H.S.B.	HORIZONTAL HIGH STRENGTH BOLT	V.W.C.	VINYL WALL COVERING
н.з.в. I.D.	INSIDE DIAMETER	W/ or W/O	
I.E.	IN EXAMPLE	W/C WD.	WATER CLOSET WOOD
IN.		WD. WH	WOOD WATER HEATER
INSUL. INT.	INSULATION INTERIOR	W.I.B.	WALK-IN BOX
INT. INV.	INVERTED	W.R. wt	WATER RESISTANT
JT. OR JNT.	JOINT	WT. WWF.	WEIGHT WELDED WIRE FABRIC
JST.	JOIST	WWM.	WELDED WIRE MESH

GENERAL NOTES

ALL CONTRACTORS AND SUBCONTRACTORS WILL THOROUGHLY F. THEMSELVES WITH THESE CONSTRUCTION DOCUMENTS AND WILL SITE AND CONDITIONS PRIOR TO SUBMITTING A BID. ALL SUBCONT PROVIDE ALL LABOR, SUPERVISION, AND MATERIALS OF EVERY TYPE NECESSARY FOR A SUCCESSFUL COMPLETION. ALL WORK TO BE F GOOD AND WORKMANLIKE MANNER ACCORDING TO THE TRUE INTE OF THE DRAWINGS AND SPECIFICATIONS.

- HVAC, PLUMBING AND ELECTRICAL DRAWINGS ARE INCLUDED IN, A SUPPLEMENTARY TO, THE ARCHITECTURAL DRAWINGS. IT SHALL F RESPONSIBILITY OF EACH CONTRACTOR TO CHECK THE ARCHITEC BEFORE INSTALLATION OF THEIR WORK. ANY DISCREPANCY BETW ARCHITECTURAL AND OTHER DRAWINGS SHALL BE BROUGHT TO T ATTENTION BY THE CONTRACTOR FOR WRITTEN AND GRAPHIC CLA
- THE CONTRACTOR SHALL FOCUS SPECIAL ATTENTION ON A FIELD EXISTING SITE IN WRITING PRIOR TO CONSTRUCTION. ANY CONDIT FOUND TO BE INCONSISTENT WITH THESE DOCUMENTS OR WHERE DOUBT SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITE RESOLUTION PRIOR TO BID SUBMITTAL. CONTRACTOR SHALL NOT COMMUNICATIONS; ALL COMMUNICATIONS MUST BE IN WRITTEN O
- REVISIONS TO WORK OR PLANS MUST BE APPROVED BY THE CITY JURISDICTION'S INSPECTION SERVICES PRIOR TO IMPLEMENTATION OR CHANGES TO WORK MUST BE AUTHORIZED IN WRITING BY THE OWNER. NO ALTERATIONS WILL BE MADE ON THIS PROJECT EXCE ORDER BY USING PREDETERMINED ARCHITECT SUPPLEMENTAL INS CHANGE ORDER OR CONSTRUCTION CHANGE DIRECTIVES.
- CONTRACTOR IS RESPONSIBLE FOR THE MORE COSTLY AND TIME (RESOLUTION ON ALL CONFLICTING INFORMATION PRESENTED ON BETWEEN THE EXISTING CONDITIONS AND THE PLANS.
- IF A CONFLICT OCCURS BETWEEN THE DESIGN DRAWINGS AND SPE PROMPTLY NOTIFY THE ARCHITECT IN WRITING. AT THAT POINT, A INTERPRETATION WILL BE MADE BY THE ARCHITECT AND SAID WRIT SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS.
- THIS ARCHITECT WILL NOT HAVE CONTROL OF, AND WILL NOT BE R CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PROJECT OR FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK ON THIS THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCOUNT INTENT OF THE CONTRACT AND OR CONSTRUCTION DOCUMENTS.
- ALL CONTRACTORS WILL PROVIDE ADEQUATE BRACING AND / OR S STRUCTURAL STABILITY OF THE BUILDING AND ALL RELATED BUILD I.E.; STRUCTURAL WALLS, INTERIOR WALL ASSEMBLIES, ETC. DURIN CONSTRUCTION PHASE OF THIS PROJECT.
- WORK WILL BE COORDINATED WITH ALL TRADES IN ORDER TO AVOID AND AVOID OMISSIONS.
- 10. UNLESS NOTED OTHERWISE, ALL MATERIALS USED WILL BE NEW AN LABELS WHERE REQUIRED AND MEET APPROPRIATE N.E.M.A. OR OT STANDARDS.
- 1. LAYOUT ALL PARTITIONS AND CABINETS BEFORE BEGINNING CONST PREVENT ERRORS BY DISCREPANCY. ALL DRYWALL PARTITIONS AI BE INSTALLED AS NOTED ON THE DRAWINGS. IF APPLICABLE, GENER MUST OBTAIN RESOLUTION FROM ARCHITECT FOR ANY DISCREPANO CONSTRUCTION OF WALL PARTITIONS AND CABINETS.
- 2. EACH SUBCONTRACTOR WILL AMEND AND MAKE GOOD AT THEIR OV DEFECTS OR OTHER FAULTS IN THEIR WORKMANSHIP AND/OR THEI MATERIALS.
- 13. VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING, CUTTIN INSTALLING MATERIAL, PRODUCT OR EQUIPMENT. IN THE EVENT OF DISCREPANCIES, CONTACT THE ARCHITECT FOR WRITTEN AND / OR DIRECTION PRIOR TO PROCEEDING WITH THAT WORK.
- 4. CONTRACTOR SHALL NOT SCALE THESE DRAWINGS FOR CONSTRUC IN THE EVENT OF OMISSION OF NECESSARY DIMENSIONS OR INFOR CONTRACTOR SHALL NOTIFY THE ARCHITECT. FIGURED AND CALCU TAKE PRECEDENCE OVER SCALED MEASUREMENTS. DETAILED DRA LARGER SCALE DRAWINGS TYPICALLY TAKES PRECEDENCE OVER DRAWINGS VERIFY WITH ARCHITECT. ALL PLAN DETAILS AND WALI ASSUMED TO BE TYPICAL CONDITIONS UNLESS DETAILED OR NOTE
- 5. PROVIDE SUFFICIENT BLOCKING IN STUD WALLS TO SUPPORT ALL IT EQUIPMENT SHOWN OR SPECIFIED TO BE ATTACHED TO THE WALLS ADDITIONAL STRUCTURAL SUPPORT (ANGLES, CHANNELS, ETC.) WI THE WEIGHT OF ATTACHED ITEMS OR EQUIPMENT IS TOO GREAT T BY METAL STUDS. PROVIDE BLOCKING FOR OWNER FURNISHED OR
- 6. WEATHER CONDITIONS: CONTRACTOR(S) WILL PROTECT ALL PARTS FROM WEATHER DAMAGE DUE TO FROST, RAIN, HEAT, ETC. AND WIL THE SATISFACTION OF THE ARCHITECT ANY PORTION OF THE WORK BECOME DAMAGED.
- : SITE SAFETY: EACH CONTRACTOR WILL ABIDE BY LOCAL AREA STAN RELATED O.S.H.A. STANDARDS FOR THE PROTECTION AND SAFETY EMPLOYEES ON SITE. THIS ARCHITECT WILL BE HELD HARMLESS BY GENERAL CONTRACTOR AND RELATED AWARDED TRADES ON THIS I ACCIDENTS OR INJURIES CAUSED OR ACCRUED ON THIS PROPERT PRE / ACTUAL / POST CONSTRUCTION PHASES OF THIS PROJECT.
- 3. CONTRACTORS WILL BE RESPONSIBLE FOR REMOVAL AND ACCOUNT OF DEBRIS ACCUMULATED BY EACH TRADE. HOWEVER, EACH TRAD JOB SITE CLEAN AND SAFE AT ALL TIMES, ALONG w/ A BROOM / VAC END OF EACH WORKING DAY.
- 19. TRANSITION OF DIFFERENT FLOORING MATERIALS AT DOORWAYS S FLUSH AND OCCUR AT CENTERLINE OF DOORS TYPICALLY.
- 20. PAINT ALL WALL SURFACES, DOOR FRAMES, WINDOW FRAMES, BUL CEILINGS IN ROOMS WHERE INDICATED ON ROOM FINISH SCHEDULE ALL MOVEABLE ITEMS ADJACENT TO WALLS RECEIVING PAINT AND I ALL NEW PAINTING SHALL INCLUDE (1) ONE COAT PRIMER AND (2) T PAINT (UNLESS NOTED OTHERWISE).
- 21. ALL WEATHER EXPOSED SURFACES SHALL HAVE A WEATHER RES PROTECT THE INTERIOR WALL COVERING AND EXTERIOR OPENINGS FLASHED IN SUCH A MANNER AS TO MAKE THEM WATERPROOF.

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INTERIOR TENANT IMPROVEMENT 910-W NORTHWEST BLUE PARKWAY, LEE'S SUMMIT, MO 64086

	SYMBOL	LEGEND	PROJECT	INFORMATION
AMILIARIZE VERIFY EXISTING RACTORS WILL	ELEVATION IDENTIFICATION ELEVATION DESIGNATION	ENLARGED DETAIL IDENTIFICATION		PROPOSED TENANT IMPROVEMENT FO CORPORATE INDOOR EXERCISE BIKE S
PE WHICH MAY BE PERFORMED IN A ENT AND MEANING	AX.0 SHEET REFERENCE NO.	AXA SHEET REFERENCE NO.	CURRENT CODES BUILDING CODE	2018 INTERNATIONAL BUILDING CODE
ND NOT BE THE TURAL DRAWINGS	PARTIAL SECTION IDENTIFICATION SECTION DESIGNATION	SECTION DETAIL IDENTIFICATION		2018 INTERNATIONAL PLUMBING CODE 2018 INTERNATIONAL MECHANICAL COI
EEN THE HE ARCHITECT'S ARIFICATION.	SHEET REFERENCE NO.	AX O SHEET REFERENCE NO.		2017 NATIONAL ELECTRICAL CODE 2018 INTERNATIONAL FIRE CODE
REVIEW OF THE IONS THAT ARE THE INTENT IS IN CT FOR RELY UPON ORAL R GRAPHIC FORMAT. AND / OR LOCAL ANY ADDITIONS ARCHITECT AND PT UPON WRITTEN STRUCTIONS, CONSUMING THE PLANS, OR ECIFICATIONS, WRITTEN TTEN DECISION ESPONSIBLE FOR, OCEDURES, OR WORK ON THIS SUBCONTRACTOR, S SITE, NOR FOR RDANCE WITH THE SHORING TO INSURE DING COMPONENTS, NG THE	INTERIOR ELEVATION IDENTIFICATION ELEVATION DESIGNATION A D D D D D D D D	ELEVATION REFERENCE IDENTIFICATION	ACCESSIBILITY THESE PLANS ARE INTENDED TO C	COMPLY WITH ALL OF THE PROVISIONS SI A117.1 - 2017 AND THE 2010 ADA STAN A-3 ASSEMBLY II-B EXISTING FIRE SPRINKLERE (NON-SEPARATED PER TAB 51-700-03-37-00-0-000 2,262 S.F. (NO NEW S.F. ADDED)
ND BEAR U.L. THER INDUSTRY TRUCTION TO ND CABINETS WILL ERAL CONTRACTOR ICIES PRIOR TO WN COST, ANY IR SUPPLIED NG AND / OR F ANY R GRAPHIC CTION PURPOSES. RMATION, ULATED DIMENSION AWINGS AND SMALLER SCALE L SECTIONS ARE ED OTHERWISE. TEMS OR S. PROVIDE	DEFERRED S • (N) EXTERIOR WALL MOUNTED BUILDING SIG • (N) INTERIOR LED SIGNAGE • (E) MODIFY FIRE SPRINKLER • STRUCTURAL DESIGN • MOTE: ALL INTERIOR LED SIGNAGE AND EXTERIOR SI UNDER SEPARATE APPLICATION SUBMITTAL B	GNAGE WILL BE		
O BE SUPPORTED NINSTALLED ITEMS.	DESCRIPTIVE SUM	IMARY OF WORK	PROJ	ECT TEAM
S OF THEIR WORK LL MAKE GOOD TO K WHICH MAY HAVE ANDARDS AND FOR THEIR Y CYCLEBAR AND FOR THEIR Y CYCLEBAR AND FOR QUANTITY DE WILL KEEP THE CUUM FINISH AT THE SHALL SHALL BE LKHEADS AND E. PAINT BEHIND RELOCATE ITEMS. WO COATS OF SISTIVE BARRIER TO S SHALL BE	THE REMODEL WORK INCLUDES ALL LABOR, M FINISH, AND PROVIDE TENANT IMPROVEMENT EXERCISE BIKES STUDIO. THE WORK SHALL INCLUDE ALL ITEMS REQUIR ALL MECHANICAL EQUIPMENT AND SYSTEMS, A EQUIPMENT ARE TO BE INCLUDED FOR A COM COORDINATION AND INSTALLATION INCLUDED <u>INTERIOR:</u> NEW FINISHES (PAINT, FLOORING, GRAPH NEW FIXTURES NEW PARTITION WALLS (E) RESTROOM ADD (N) FINISHES	FOR A PROPOSED CORPORATE INDOOR ED AS SHOWN ON THE DRAWINGS. ALL ELECTRICAL SYSTEMS, AND PLETE OPERATING SYSTEM WITH	TENANT <u>CYCLEBAR</u> 910-W NORTHWEST BLUE PARKWAY, LEE'S SUMMIT, MO 64086 CONTACT: RACHEL HILTON PHONE: 720.378.3062 EMAIL: rachel.hilton@cyclebar.com MECHANICAL, PLUMBING & ELECTRICAL <u>DUNHAM ENGINEERING</u> 50 SOUTH STREET, SUITE 1100 MINNEAPOLIS, MN 55402 CONTACT: CULLEN MURTAUGH PROJECT MANAGER PHONE: (612) 465-7550 FAX: (612) 465-7551 EMAIL: Cullen.Murtaugh@dunhameng.	ARCHITECT <u>AMOR ARCHITECTURAL CORPO</u> 9483 HAVEN AVENUE, SUITE 100 RANCHO CUCAMONGA, CA 9173 CONTACT: JOSE REYNOSO PROJECT MANAGEF PHONE: (909) 259-9971 FAX: (909) 944-8409 EMAIL: jreynoso@amorarch.c APPROVED VENDOR <u>SPORTS PRO SURFACING</u> CONTACT: KENNY FLAKE PHONE: (713) 805-8296 EMAIL: kenny@spsurfacing.ou <u>PLATINUM SLV, LLC</u> 4416 SUNBELT DR. ADDISON, TX 75001 CONTACT: ERIC GALDIANO PHONE: (972) 380-9500 EMAIL: egaldiano@platinumsl



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CONSULTANT

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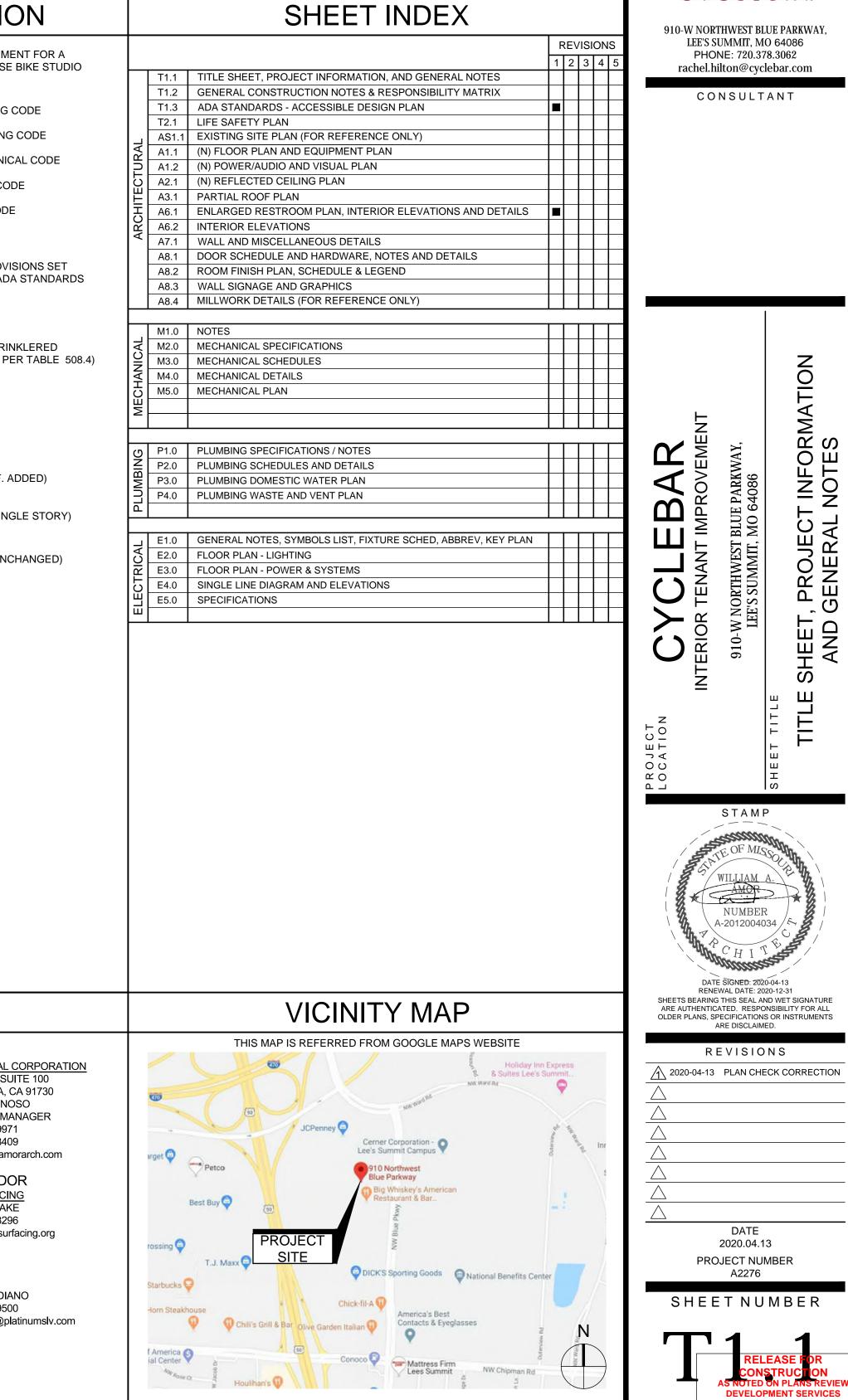
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FINISHES FIRE ALARM / BURGLAR ALARM SYSTEM (WHERE APPLIES) IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO VERIFY IF THE EXISTING FIRE ALARM / BURGLAR ALARM SYSTEM NEEDS TO BE MODIFIED IN ORDER TO ACCOMMODATE THE RENOVATION SPACE. THIS INCLUDES ALL AFFECTED AREAS TO INCLUDE MAIN LOBBY AND ADJACENT ROOMS. IF REQUIRED. THE CONTRACTOR MUST SUBMIT FIRE ALARM / BURGLAR ALARM SYSTEM SHOP DRAWINGS. ALL COSTS AND FEES SHOULD BE INCLUDED IN THE CONTRACTOR'S BID PROPOSAL TO THE OWNER. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN APPROVAL AND SIGN-OFF FOR THE MODIFIED FIRE ALARM / BURGLAR ALARM SYSTEM BY ANY JURISDICTIONAL REQUIREMENTS. ENTRANCES AND EXITS ALL ENTRANCES AND ALL EXTERIOR GROUND FLOOR EXIT DOORS TO BUILDING AND FACILITIES SHALL BE MADE ACCESSIBLE OR REMAIN ACCESSIBLE. . EXIT DOORS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS AND SURFACE BOLTS ARE PROHIBITED. WHEN EXIT DOORS ARE USED IN PAIRS AND APPROVED AUTOMATIC FLUSH BOLTS ARE PAINTING USED, THE DOOR LEAF HAVING THE AUTOMATIC FLUSH BOLTS SHALL HAVE NO DOOR KNOBS OR SURFACE MOUNTED HARDWARE. THE UNLATCHING OF ANY LEAF SHALL NOT REQUIRE MORE THAN ONE OPERATION. LATCHING AND LOCKING DOORS THAT ARE HAND ACTIVATED AND WHICH ARE IN A PATH OF TRAVEL SHALL BE OPERABLE WITH A SINGLE EFFORT BY LEVER TYPE HARDWARE, PANIC BARS, PUSH-PULL ACTIVATION BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. LOCKED EXIT DOORS SHALL OPERATE AS ABOVE IN EGRESS DIRECTION. NEW HAND ACTIVATED DOOR OPENING HARDWARE SHALL MATCH EXISTING DOORS (WHERE APPLIES,) LEVER MUST BE CENTERED BETWEEN 34" MIN. AND 44" MAX. ABOVE THE FLOOR. EVERY DOORWAY LOCATED WITHIN AN ACCESSIBLE PATH OF TRAVEL SHALL BE OF A SIZE AS TO PERMIT THE INSTALLATION OF A DOOR NOT LESS THAN 3'-0" IN WIDTH AND NOT LESS THAN 6'-8" IN HEIGHT. WHEN INSTALLED, EXIT DOORS SHALL BE CAPABLE OF OPENING SO THAT THE CLEAR WIDTH OF THE EXIT IS NOT LESS THAN 32". THERE SHALL BE A LEVEL AND CLEAR FLOOR OR LANDING ON EACH SIDE OF A DOOR. THE LEVEL AREA SHALL HAVE A LENGTH IN THE DIRECTION OF DOOR SWING OF AT LEAST 60" (5'-0") AND THE LENGTH 5. MATERIALS OPPOSITE THE DIRECTION OF DOOR SWING OF 48" (4'-0") AS MEASURED AT RIGHT ANGLE TO THE PLANE OF THE DOOR IN THE CLOSED POSITION. FLOOR OR LANDING SHALL BE NOT MORE THAN 1/2" LOWER THAN THE THRESHOLD OF THE DOORWAY. DOORS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE TO ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION. WHERE NARROW FRAME DOORS ARE USED, A 10" HIGH (KICK PLATE) SMOOTH PANEL SHALL BE INSTALLED ON THE PUSH SIDE OF THE DOOR, WHICH WILL ALLOW THE DOOR TO BE OPENED BY A WHEELCHAIR FOOTREST WITHOUT CREATING A TRAP OR HAZARDOUS CONDITION.

10. MAXIMUM EFFORT TO OPERATED DOORS SHALL NOT EXCEED 5 POUNDS FOR EXTERIOR DOORS AND 5 POUNDS FOR INTERIOR DOORS. SUCH PUSH OR PULL EFFORT BEING APPLIED AT RIGHT ANGLES TO HINGED DOORS AND AT THE CENTER PLANE OF SLIDING OR FOLDING DOORS. COMPENSATION DEVICES OR AUTOMATIC DOOR OPERATORS MAY BE UTILIZED TO MEET THE ABOVE STANDARDS. WHEN FIRE DOORS ARE REQUIRED, THE MAXIMUM EFFORT TO OPERATE THE DOOR MAY BE INCREASED TO THE MAXIMUM ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY NOT TO EXCEED 15 POUNDS 11. DOORS WITH CLOSING DEVICES TO CLOSE SLOWER THAN 5 SECONDS WHEN OPEN TO 70° OR MORE.

DEMOLITION (WHERE APPLIES)

GENERAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, HAULING AWAY, AND RECYCLING OF ALL DEMOLISHED ITEMS TO INCLUDE WALL PARTITIONS, CEILINGS, DOORS AND FRAMES, MILLWORK, CONVEYOR SYSTEM, FLOORING, SIGNAGE, ETC. ON-SITE DUMPSTERS ARE NOT ALLOWED TO BE USED FOR CONSTRUCTION DUMPING. (RECYCLE AND / OR SALVAGE FOR REUSE A MINIMUM OF 65% OF THE NON-HAZARDOUS CONSTRUCTION AND DEMOLITION WASTE.

GENERAL RESPONSIBILITIES

- GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL CONTACT INFORMATION REGARDING THE PROJECT SITE TO INCLUDE NAMES AND TELEPHONE NUMBERS. CONTACTS SHOULD INCLUDE STORE MANAGER, LANDLORD / PROPERTY MANAGER, CITY BUILDING INSPECTORS, FIRE DEPARTMENT INSPECTORS, ETC. THIS MUST BE DONE AT LEAST (2) TWO WEEKS PRIOR TO START OF CONSTRUCTION SO THAT G.C. CAN GAIN ACCESS TO ALL AREAS OF THE SITE AND COMPLETE ALL NECESSARY INSPECTIONS FOR THE PROJECT.
- THE GENERAL CONTRACTOR SHALL PROVIDE STORAGE CONTAINERS, IF NECESSARY, TO RECEIVE CONSTRUCTION ITEMS SUCH AS MILLWORK, CONVEYOR SYSTEM, CART, ETC. G.C. SHALL, UPON RECEIVING OF OWNER FURNISHED ITEMS, REPORT ALL DAMAGED OR MISSING PARTS OR COMPONENTS TO THE ARCHITECT IMMEDIATELY. G.C. MUST COORDINATE FOR THE DELIVERY OF OWNER FURNISHED ITEMS TO BE PLACED IN THE G.C.'S DESIGNATED STORAGE CONTAINER LOCATION (2) TWO DAYS PRIOR TO START OF INSTALLATION OF THESE ITEMS.
- IT IS THE INTENT OF THE TENANT TO SALVAGE AND RECYCLE AS MUCH OF THE EXISTING MATERIALS AT THE JOBSITE AS POSSIBLE. FOR THE EXISTING MILLWORK, GENERAL CONTRACTOR SHALL PHYSICALLY VERIFY IF THE FIXTURES ARE STILL IN GOOD OR REASONABLE CONDITION FOR REUSE AT OTHER TENANT FACILITIES. G.C. SHALL INFORM THE TENANT OF HIS ANALYSIS. IF IT IS VERIFIED THAT THE FIXTURES ARE SO DAMAGED THAT IT WOULD NOT BE WORTH SALVAGING, THEN THE FIXTURES WOULD BE DEMOLISHED. IF THE FIXTURES ARE SALVAGEABLE WHEN DISCONNECTED FROM ITS CURRENT LOCATION, THEN THE G.C. SHALL MOVE THEM INTO THE EXISTING WAREHOUSE AT A LOCATION DETERMINED WITH THE TENANT AND / OR STORE MANAGER. THE TENANT SHALL PICK THE FIXTURES UP AT A LATER TIME FOR STORAGE AND FUTURE REUSE. FOR OTHER MATERIALS, THE G.C. SHALL PROVIDE AN ALTERNATE PRICE IN THE PROJECT BID FORM TO THE TENANT TO RECYCLE THESE MATERIALS (I.E., CEILING TILES, DRYWALL, DOORS, FLOORING, ETC.) THE TENANT SHALL INFORM THE G.C. WHETHER TO RECYCLE THE MATERIALS OR TO HAUL AWAY TO THE LOCAL LANDFILL.
- THE G.C. IS RESPONSIBLE FOR MATERIALS AND LABOR REQUIRED FOR ANY ALTERATIONS TO FIRE SPRINKLERS, ELECTRICAL EQUIPMENT, PLUMBING, EMERGENCY & EXISTING LIGHTING, ALARM AND MECHANICAL SYSTEMS AS REQUIRED TO COMPLETE THE PROJECT AND OBTAIN FINAL INSPECTIONS. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND THE ACTUAL FIELD CONDITIONS SHALL BE
- BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH ANY WORK.
- THE GENERAL CONTRACTOR SHALL REVIEW ALL DOCUMENTS AND VERIFY ALL DIMENSIONS AND FIELD CONDITIONS AND SHALL CONFIRM THAT WORK IS CONSTRUCTIBLE AS SHOWN. ANY CONFLICTS OR OMISSIONS, ETC., SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT FOR CLARIFICATION PRIOR TO THE PERFORMANCE OF ANY WORK IN QUESTION.
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN ALL PARTITION LOCATIONS. ALL DOOR AND OPENING LOCATIONS SHALL BE SHOWN ON FLOOR PLAN. IN CASE OF CONFLICT, NOTIFY THE ARCHITECT OF RECORD. FLOOR PLAN BY ARCHITECT OF RECORD SUPERSEDES OTHER PLANS. ALL DIMENSIONS MARKED "CLEAR" SHALL BE MAINTAINED AND SHALL ALLOW FOR THICKNESS OF ALL FINISHES INCLUDING CARPET, PAD, CERAMIC TILE, VINYL COMPOSITE TILE, ETC.
- ALL INTERIOR DIMENSIONS ARE TO THE FACE OF NEW STUD, UNLESS NOTED OTHERWISE. COLUMN CENTER LINE (OR GRID LINES) ARE SHOWN FOR DIMENSIONING. VERIFY EXACT LOCATIONS IN FIELD (AS REQUIRED)
-). THE GENERAL CONTRACTOR SHALL MARK LOCATIONS OF PARTITIONS AND DOORS FOR REVIEW BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. REVIEW WILL BE FOR DESIGN INTENT. SUB-CONTRACTOR SHALL COORDINATE AND VERIFY ALL CONDITIONS TO ENSURE PROPER FIT.
- 10. THE GENERAL CONTRACTOR IS RESPONSIBLE TO FOLLOW <u>OWNER'S GROUP RULES AND REGULATIONS.</u> WHEN THE G.C. ACCEPTS DELIVERY OF ALL ITEMS NOTED ON PLANS WHETHER IN CONTRACT OR NOT IN CONTRACT, (S)HE SHALL BE RESPONSIBLE FOR LOSS AND/OR DAMAGE TO THESE ITEMS.
- 11. THE GENERAL CONTRACTOR SHALL MAINTAIN, FOR THE ENTIRE DURATION OF THE WORK, ALL EXITS, EXIT / EGRESS LIGHTING, FIRE PROTECTION DEVICES AND ALARMS IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
- 12. ALL SAW CUTTING AND CORING LOCATIONS SHALL BE REVIEWED IN FIELD BY THE GENERAL CONTRACTOR AND COORDINATED WITH THE OWNER'S REPRESENTATIVE PRIOR TO CUTTING / CORING. 13. DURING ALL PHASES OF WORK, DO NOT DISTURB THE DELIVERIES AND FUNCTIONS OF ALL ADJACENT
- AND NEIGHBORING TENANTS. 14. PROVIDE PORTABLE FIRE EXTINGUISHER(S) IN ACCORDANCE WITH NFPA 10, WITH U.L. LABEL AND A RATING OF NOT LESS THAN 2-A WITH 75 FEET OF TRAVEL DISTANCE TO ALL POSITIONS OF STORE AND /
- OR AS DIRECTED BY THE FIRE DEPARTMENT FIELD INSPECTOR. 15. ALL EXTERIOR BUILDING SIGNAGES SHALL BE SUBMITTED UNDER SEPARATE PERMIT APPLICATION FOR REVIEW AND APPROVAL AS REQUIRED BY LOCAL AUTHORITIES. EXTERIOR SIGNAGES ARE NOT WITHIN THE SCOPE OF BUILDING DEPARTMENT APPROVAL.
- 16. PRIOR TO COMMENCEMENT OF ANY WORK THE OWNER OR OWNER'S REPRESENTATIVE SHALL ENGAGE LICENSED DESIGN PROFESSIONAL(S) TO PROVIDED ALL REQUIRED DOCUMENTATION FOR REVIEW, AND RECEIVE APPROVAL BY THE LOCAL AUTHORITIES HAVING JURISDICTION. INCLUDING BUT NOT LIMITED TO STRUCTURAL VERIFICATION AND DESIGN, BUILDING, FIRE, LIFE SAFETY, HEALTH, PLUMBING, ELECTRICAL, AND MECHANICAL APPROVALS.
- 17. IF REQUIRED BY LOCAL JURISDICTION SPRINKLER, LIFE SAFETY, AND FIRE ALARM SYSTEMS ARE TO BE DESIGNED AND SUBMITTED FOR REVIEW AND APPROVAL BY LOCALLY LICENSED DESIGN PROFESSIONAL. THE DESIGN OF ALL SYSTEM(S) MUST COMPLY TO ALL FEDERAL, NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES.
- 18. EXISTING ENERGY MANAGEMENT SYSTEM (VERIFY IN FIELD) TO REMAIN IN STORE AND BE FULLY FUNCTIONAL AND OPERATIONAL AT COMPLETION OF REMODEL PROJECT.

GENERAL CONSTRUCTION NOTES

- GYPSUM WALLBOARD (WHERE APPLIES) 1. PROVIDE GYPSUM WALLBOARD, STEEL FRAMING COMPONENTS, AND ACCESSORIES ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS GYPSUM ASSOCIATION'S FIRE RESISTANCE DESIGN MANUAL. PRODUCTS SPECIFIED HEREIN ARE AS MANUFACTURED BY U.S. GYPSUM ASSOCIATION. EQUIVALENT PRODUCTS OF OTHER MANUFACTURERS WILL BE CONSIDERED PROVIDED THEY MEET THOSE ESTABLISHED STANDARDS. MAKE APPROPRIATE SUBMITTAL FOR ANY SUBSTITUTIONS.
- 2. ARCHITECT WILL NOT REIMBURSE CONTRACTOR OR SUB-CONTRACTOR FOR CITY OR STATE LICENSE FEES WHICH MAY BE REQUIRED TO PERFORM WORK.
- 3. FINISHES A. UNLESS NOTED OTHERWISE (E.G. SPECIAL WALL COVERING AREAS) ALL GYPSUM WALLBOARD SHALL BE TAPED, SMOOTH, AND PAINTED. B. VERIFY ANY SPECIAL FINISH AREA PRIOR TO COMMENCING WORK.
- 1. SEE FINISH SCHEDULE FOR ALL PAINT PRODUCTS AND SPECIFICATIONS.
 - COMPLETION OF PAINTING AND PAINTER'S FINISH ON EXPOSED SURFACES AS REQUIRED TO COMPLETE FINISHING OF THE WORK INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN. 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE OF MATERIALS AND APPLICATION WITH GOVERNING AGENCIES (LOCAL STATE AND FEDERAL) IN CONNECTION WITH THIS PROJECT.
 - 4. THE FOLLOWING EXPOSED SURFACES ARE TO BE PAINTED: A. UNLESS NOTED OTHERWISE, ALL GYPSUM WALLBOARD NOT COVERED BY OTHER MATERIALS. B. ALL EXISTING WALLBOARD TO A MIN. OF 6" ABOVE ROOM CEILING. TYPICAL, UNLESS NOTED
 - OTHERWISE ON ROOM FINISH SCHEDULE. C. ALL METAL IN IMPROVED AREAS NOT PRE-FINISHED PRIOR TO INSTALLATION.
 - D. ALL WOOD SURFACES, TRIM, OR PIECES NOT PRE-FINISHED PRIOR TO INSTALLATION. (DO NOT PAINT INTERIOR ELEMENTS NORMALLY CONCEALED SUCH AS STRUCTURAL COMPONENTS AND ELECTRICAL WIRING)
 - A. PAINTED PRODUCTS SHALL BE MANUFACTURED BY APPROVED OR SCHEDULED PRODUCT. B. ACCESSORY MATERIALS SUCH AS TURPENTINE / THINNER / UNSEED OIL SHALL BE APPROVED BY
 - THE COATING MANUFACTURER. A. ALL BIDDERS PRIOR TO SUBMITTAL OF BIDS SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE C. THE NUMBER OF COATS IS TO BE THREE (3) MINIMUM. ADDITIONAL COATS SHALL BE APPLIED AT NO ARCHITECTS' PLANS & EXISTING CONDITIONS AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCY ADDITIONAL COST IF NECESSARY TO COMPLETELY HIDE BASE MATERIALS, PRODUCE UNIFORM OR OMISSIONS OF ANY INFORMATION NECESSARY FOR COMPLETION OF THEIR SCOPE OF WORK. COLOR, AND PROVIDE SATISFACTORY FINISH RESULTS.
 - D. APPLICATION AND SURFACE PREPARATION SHALL BE DONE ACCORDING TO MANUFACTURER'S WRITTEN SPECIFICATIONS AND APPLICATION INSTRUCTIONS. ALL FINISHES SHALL BE APPLIED EVENLY AND BE FREE OF RUNS, SAGS, SKIPS, CRAWLS, AND / OR DEFECTS.
 - THE CONTRACTOR SHALL PROTECT HIS OWN WORK, AND ADJACENT EXISTING WORK AND MATERIALS, WITH SUITABLE COVERINGS OR MASKINGS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CLEANING THE AREA OF HIS WORK AS WELL AS REMOVAL OF ALL EXCESS MATERIAL (EITHER FROM ADJACENT SURFACES OR EXTRA MATERIALS). CONTRACTOR TO PAINT, REPAIR OR REPLACE ANY BUILDING OR ELECTRICAL COMPONENTS DURING CONSTRUCTION AT HIS OWN EXPENSE.
 - F. SURFACES TO BE PAINTED SHALL BE FREE OF OIL GREASE, LOOSE PAINT, OR OTHER FOREIGN
 - MATERIAL. 6. CONTRACTOR TO VERIFY FINISHES ON SIGNAGE WITH THE ARCHITECT.

CABINET WORK

- 1. MAKE ALL FINISHED WORK PER THE DETAILED DRAWINGS.
- 2. TAKE SUCH FIELD MEASUREMENTS AS MAY BE REQUIRED.
- 3. ALL FINISHED CABINET MATERIALS TO BE AS CALLED OUT PER THE CONSTRUCTION DOCUMENTS. 4. PLASTIC LAMINATE FINISHING SHALL CONFORM TO REQUIREMENTS OF ARCHITECTURAL WOODWORK
- INSTITUTE. "QUALITY STANDARDS" FOR "CUSTOM" GRADE AND NOTES CONTAINED HEREIN. INSTALLATION - INSTALL UNITS LEVEL AND PLUMB WITH TIGHT JOINTS BETWEEN ANY MULTIPLE UNITS. SCRIBE TO WALL AND OTHER SURFACES AS REQUIRED. ADJUST ALL DRAWERS, DOORS AND MOVABLE PARTS TO OPERATE EASILY AND SMOOTHLY WITHOUT BINDING.
- 6. ALL DRAWERS TO BE FULL EXTENSION SIDES WITH A 75 LBS. LOAD CAPACITY. 7. MILLWORK CONTRACTOR IS TO PROVIDE SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO
- FABRICATION.
- REQUIRED BLOCKING, ANGLE BRACES, SUPPORTS, ETC., TO SUFFICIENTLY SUPPORT ALL COUNTERS. FINISHES
- COUNTERTOP FINISHES TO BE PER FINISH SCHEDULE AND / OR SHOP DRAWINGS CABINET FACES TO BE PER FINISH SCHEDULE AND / OR SHOP DRAWINGS 10. HARDWARES TO BE AS CALLED OUT PER PLANS AND SCHEDULES. (TYPICAL)

ELECTRICAL - IN ACCORDANCE TO DETAIL 12 / T1.3 FLOOR OR WORKING PLATFORM.

- 2. THE TOP OF THE J-BOX OF CONTROLS OR SWITCHES INTENDED TO BE USED BY THE OCCUPANT OF THE ROOM OR AREA TO CONTROL LIGHTING AND RECEPTACLE OUTLETS, APPLIANCES, OR COOLING, HEATING AND VENTILATING EQUIPMENT SHALL NOT BE MORE THAN 48" ABOVE THE FINISHED FLOOR OR WORKING PLATFORM. 3. THE TOP OF FIRE ALARM INITIATING DEVICES (BOXES) SHALL BE LOCATED 48" ABOVE THE LEVEL OF THE
- FINISHED FLOOR, WORKING PLATFORM, GROUND SURFACE OR SIDEWALK.
- 4. THE INSTALLATION OF FIRE ALARM EQUIPMENT AND SYSTEMS IN ANY OCCUPANCY WITHIN THE SCOPE OF THESE REGULATIONS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE LOCAL. STATE &
- FEDERAL CODES AND REGULATIONS. 5. (WHERE APPLIES,) GENERAL CONTRACTOR TO SUPPLY (N) PANEL SCHEDULES FOR ALL ELECTRICAL

PANELS PRIOR TO COMPLETION OF THE REMODEL.

- HAZARDS AND PROTRUDING OBJECTS IN ACCORDANCE TO DETAIL 8 / T1.3 1. OBJECTS PROJECTING FROM WALLS WITH THEIR LEADING EDGES ABOVE 27" AND BELOW 80" ABOVE THE FINISHED FLOOR SHALL PROTRUDE NO MORE THAN 4" INTO WALKS, HALLS, CORRIDORS, PASSAGEWAYS, OR AISLES.
- 2. OBJECTS MOUNTED WITH THEIR LEADING EDGES AT OR BELOW 27" ABOVE THE FINISHED FLOOR MAY PROTRUDE ANY AMOUNT INTO WALKS, HALLS, CORRIDORS, PASSAGE WAYS OR AISLES. ANY OBSTRUCTION THAT OVERHANGS A PEDESTRIAN WAY SHALL BE A MINIMUM OF 80" ABOVE THE WALKING SURFACE AS MEASURED FROM THE BOTTOM OF THE OBSTRUCTION.
- 3. FREESTANDING OBJECTS MOUNTED ON POSTS OR PYLONS MAY OVERHANG 12" MAXIMUM FROM 27" TO 80" ABOVE THE GROUND OR FINISHED FLOOR.
- I. PROTRUDING OBJECTS SHALL NOT REDUCE THE CLEAR WIDTH OF AN ACCESSIBLE ROUTE OR MANEUVERING SPACE.
- 5. WALKS, HALLS, CORRIDORS, PASSAGEWAYS, AISLES OR OTHER CIRCULATION SPACES SHALL HAVE 80" (INCHES) MINIMUM CLEAR HEAD ROOM.
- 6. CONTRACTOR TO CONTACT ARCHITECT IF ROOF PENETRATIONS ARE DEEMED NECESSARY. ANY ROOF PENETRATIONS MUST BE COMPLETED BY LANDLORD APPROVED ROOFING CONTRACTOR.

SIGNAGE

- 1. THE SIGNAGE AT THE STOREFRONT WILL BE CONTRACTED DIRECTLY BY THE GENERAL CONTRACTOR. **B. SUBSTITUTION** THE G.C. MUST PROVIDE ANY AND ALL REQUIRED J-BOXES AS WELL AS ACCESS PANELS TO ALL SIGNAGE NO SUBSTITUTION SHALL BE MADE WITHOUT THE ARCHITECT'S APPROVAL. AS NECESSARY. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION WITH ITS SIGN 9. CHANGES CONTRACTOR AND MAKING SURE THE JOB IS DONE ON TIME. FULLY DETAILED SHOP DRAWINGS MUST BE THE OWNER OR ARCHITECT MAY ORDER EXTRA WORK OR MAKE CHANGES BY ALTERING, ADDING TO, OR SUBMITTED TO THE ARCHITECT FOR REVIEW. THESE ARCHITECTURAL PLANS ONLY SHOW LIMITED DEDUCTING FROM THE WORK. THE CONTRACT SUM BEING ADJUSTED ACCORDINGLY. DESIGN DETAILS AND ARE NOT ADEQUATE FOR CONSTRUCTION OF THE SIGN. SEE SIGN SHOP DRAWINGS. SIGN DRAWINGS WILL BE PREPARED BY OTHERS AND ARE UNDER SEPARATE PERMIT. 10. SCOPE
- ALL TRADES SHALL FURNISH ALL LABOR, EQUIPMENT, MATERIALS AND PERFORM ALL WORK NECESSARY. 2. BARRIER LAWS FOR THE PHYSICALLY HANDICAPPED ARE MINIMUM GUIDELINES. SHOULD THERE BE A REASONABLY INFERRED OR REQUIRED BY ANY CODE OR REGULATION ADOPTED BY LOCAL JURISDICTION. CONFLICT BETWEEN THESE MINIMUM REQUIREMENTS AND WHAT IS CALLED FOR ON THE DRAWINGS, THE TO COMPLETE THEIR SCOPE OF WORK FOR A COMPLETE AND PROPERLY FINISHED JOB. CONTRACTOR IS TO INFORM THE ARCHITECT FOR WRITTEN AND/OR GRAPHIC CLARIFICATION PRIOR TO PROCEEDING WITH WORK SO AFFECTED.

FIRE SPRINKLER SYSTEM (WHERE APPLIES) SPRINKLER SYSTEM BY THE FIRE DEPARTMENT AND BUILDING INSPECTOR.

PLUMBING (WHERE APPLIES) COMPLETE. GENERAL CONTRACTOR MUST SUPPLY CERTIFICATE OF INVOICE WITH CLOSE OUT PACKAGE.

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- 2. THE WORK INCLUDES, BUT IS NOT LIMITED TO FURNISHING OF MATERIALS AND EQUIPMENT, AND

THE GENERAL CONTRACTOR AND MILLWORK CONTRACTOR ARE TO COORDINATE AND INSTALL ALL

- 1. BOTTOM OF ELECTRICAL OUTLET J-BOXES SHALL BE INSTALLED NOT LESS THAN 15" ABOVE THE FINISHED

- IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO VERIFY IF THE EXISTING FIRE SPRINKLER SYSTEM NEEDS TO BE MODIFIED IN ORDER TO ACCOMMODATE THE RENOVATION SPACE. THIS INCLUDES ALL AFFECTED AREAS TO INCLUDE MAIN LOBBY AND ADJACENT ROOMS. IF REQUIRED, THE CONTRACTOR MUST SUBMIT FIRE SPRINKLER SHOP DRAWINGS AND OBTAIN A FIRE SPRINKLER PERMIT FROM THE LOCAL FIRE DEPARTMENT AND / OR BUILDING DEPARTMENT. ALL COSTS AND FEES SHOULD BE INCLUDED IN THE CONTRACTOR'S BID PROPOSAL TO THE OWNER. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN AN INSPECTION FOR APPROVAL AND SIGN-OFF FOR THE MODIFIED FIRE
- GENERAL CONTRACTOR TO PERFORM A LINE JETTING OF ALL PLUMBING LINES AFTER NEW WORK IS

1. CODES

ALL WORK SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. NOTHING SHOWN IN THESE DRAWINGS SHALL BE CONSTRUED AS PERMISSION TO VIOLATE ANY GOVERNING CODES.

2. PERMITS

- A. THE GENERAL CONTRACTOR (G.C.) WILL PAY FOR ALL APPLICABLE BUILDING AND SIGNAGE PERMIT AND ANY LOCAL JURISDICTION FEES OR ASSESSMENTS AS APPLICABLE. HOWEVER, THE GENERAL CONTRACTOR SHALL INCORPORATE ALL MECHANICAL, ELECTRICAL, PLUMBING (M.E.P.) AND CIVIL PERMITS AS NECESSARY IN HIS / HER BID PROPOSAL TO THE OWNER. THE M.E.P. AND CIVIL PERMITS WILL NOT BE PAID BY THE ARCHITECT. THE G.C. WILL PHYSICALLY PULL THE BUILDING PERMIT AND THE SIGNAGE PERMIT. THE G.C. MUST COORDINATE WITH HIS / HER SUBCONTRACTORS TO ENSURE THEIR APPLICABLE PERMITS ARE PULLED. THE G.C. AND ALL SUBCONTRACTORS PERFORMING WORK ON SITE MUST OBTAIN THEIR MUNICIPALITY BUSINESS LICENSES AT THEIR EXPENSE PRIOR TO START OF CONSTRUCTION. NOT HAVING ALL SUBCONTRACTOR BUSINESS LICENSES PAID FOR AT THE MUNICIPALITY MAY PREVENT THE PROJECT FROM FINAL LOCAL JURISDICTION APPROVAL AND SIGN-OFF.
- B. THERE MAY BE INSTANCES WHERE THERE ARE OUTSTANDING PLAN CHECK FEES THAT HAVE NOT BEEN PAID. THE G.C. WILL COORDINATE WITH THE APPROPRIATE MUNICIPALITY PLANNING AND / OR BUILDING DEPARTMENT AND DETERMINE ANY OUTSTANDING FEES. THE G.C. WILL NOTIFY THE ARCHITECT AND RECEIVE APPROVAL PRIOR TO PAYING THESE OUTSTANDING FEES. THIS WILL ALLOW THE G.C. TO NOT BE DELAYED IN PULLING THE BUILDING PERMIT.
- C. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE TO HIRE HIS / HER OWN SIGNAGE SUBCONTRACTOR FOR THE PROJECT.

3. CONSTRUCTION DOCUMENTS

- A. THE INTENTION OF THESE DOCUMENTS IS TO INCLUDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT AND TRANSPORTATION NECESSARY FOR THE COMPLETE AND PROPER EXECUTION OF THE WORK INDICATED ON THE DRAWINGS OR REASONABLY INFERRED THESE FROM. THE ARCHITECT WILL IN NO WAY BE RESPONSIBLE FOR HOW THE FIELD WORK IS PERFORMED, SAFETY IN, OR ABOUT, THE JOB SITE METHODS OF PERFORMANCE OR TIMELINES IN THE PERFORMANCE, OF THE WORK . IF DISCREPANCIES EXIST BETWEEN PLANS OF DIFFERENT SCALES, THE LARGER SCALE PLAN TYPICALLY WILL GOVERN. NOTIFY ARCHITECT FOR A WRITTEN OR GRAPHIC CLARIFICATION OF SUCH DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- B. ALL ARCHITECT CLARIFICATIONS WILL BE WRITTEN AND / OR GRAPHIC VIA ARCHITECTURAL SUPPLEMENTAL INSTRUCTIONS, CHANGE ORDERS OR CONSTRUCTION DIRECTIVES.

4. BIDS

- B. ALL TRADES SHALL FURNISH ALL LABOR, EQUIPMENT, MATERIALS AND SERVICES REQUIRED TO PERFORM ALL WORK NECESSARY, INDICATED OR REASONABLY INFERRED OR REQUIRED BY ANY APPLICABLE CODE TO COMPLETE THEIR SCOPE OF WORK FOR A COMPLETE AND PROPERLY FINISHED JOB.
- C. CONTRACTORS PRIOR TO BIDDING SHALL GUARANTEE THAT ALL OTHER SUB-BIDDEES OR SUB CONTRACTORS SHALL BE GIVEN COMPLETE FULL SETS OF PLANS TO INSURE THAT THEY HAVE INCLUDED ALL ITEMS NECESSARY TO COMPLETE THEIR WORK. ANY ITEM MISSED BY THESE SUBCONTRACTORS IN THEIR BIDS SHALL BE ABSORBED BY THE GENERAL CONTRACTOR AT HIS OR HER OWN EXPENSE AND IN NO WAY WILL AFFECT ANY ADDITIONAL COST OVER AND ABOVE THE FINAL BID.
- D. ALL TRADES SHALL PROVIDE BIDS ACCORDING TO THE PLANS AND SPECIFICATIONS. ANY ALTERNATE SHALL BE SUBMITTED TO THE OWNER (IN WRITING) FOR APPROVAL PRIOR TO ACCEPTANCE OF BID.

5. CONTRACTOR

- A. PRIOR TO COMMENCING, THE GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS AND VERIFY CONDITIONS AT THE SITE. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. CONTRACTOR SHALL VERIFY W/ THE PROPER UTILITY COMPANY OR OTHER AGENCY OR COMPANY THE LOCATIONS OF ALL EXISTING BELOW GRADE UTILITIES AND THEIR SERVICE CONNECTION PRIOR TO THE COMMENCEMENT OF WORK.
- B. NO CONTRACTOR OR SUB-CONTRACTOR IS TO START ANY WORK UNTIL A THOROUGH EXAMINATION OF ALL THE EXISTING CONDITIONS IS PERFORMED. IF FOR ANY REASON A SATISFACTORY JOB IS IMPOSSIBLE, IT SHALL BE IMMEDIATELY REPORTED TO THE PROJECT SUPERINTENDENT AND ARCHITECT FOR WRITTEN OR GRAPHIC CLARIFICATION BEFORE PROCEEDING WITH THE JOB.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FOR SELECTING FABRICATION PROCESSES, FOR TECHNIQUES OF ASSEMBLY, FOR COORDINATION OF HIS WORK WITH THAT OF OTHER TRADES AND FOR PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER.
- D. CONTRACTOR TO VERIFY AND ENSURE AVAILABILITY AND TIMELY DELIVERY OF SPECIFIED OR SUBSTITUTED PRODUCTS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ARCHITECT OF POSSIBLE CHANGES TO CONSTRUCTION DOCUMENTS OR ANY CONSTRUCTION DELAY DUE TO NON AVAILABILITY OR LATE DELIVERY OF MATERIALS. CONTRACTOR (& NOT THE ARCHITECT) IS RESPONSIBLE FOR NON AVAILABILITY OR LATE DELIVERY OF PRODUCTS DURING CONSTRUCTION.
- E. ANY CONTRACTOR PRIOR TO INSTALLATION OR PROCUREMENT OF MATERIALS SHALL NOTIFY ARCHITECT OF PROBLEMS IF ANY. FAILURE TO DO SO SHALL MEAN THAT ALL NECESSARY CORRECTIVE MEASURE, DOCUMENTATION, ETC. SHALL BE DONE BY THAT CONTRACTOR AT HIS OWN EXPENSE AND TIME.
- F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE BUILDING LINES AND LEVELS. THE CONTRACTOR SHALL COMPARE CAREFULLY THE LINES AND LEVELS SHOWN ON THE DRAWINGS WITH EXISTING LEVELS FOR THE CONSTRUCTION OF THE WORK AND SHALL BRING TO THE ARCHITECT'S ATTENTION OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.
- G. PROVIDE ALL NECESSARY BACKING AND FRAMING FOR ALL WALL MOUNTED ITEMS, LIGHT FIXTURES AND ALL OTHER ITEMS REQUIRED.

6. LIABILITIES

- A. THE DESIGN PROFESSIONAL (DP) SHALL CONSULT WITH THE CLIENT REGARDING THE PROBABLE SERVICES REQUIRED TO COMPLY WITH BUILDING CODES AND AMERICANS with DISABILITIES ACT (ADA). THE DP IS NOT AN ATTORNEY NOR SHOULD THE DP'S RENDERING AN OPINION OF PROBABLE SERVICES REQUIREMENTS BE CONSIDERED EQUIVALENT TO A LEGAL INTERPRETATION OF ADA. THE DP'S OPINION WILL BE BASED SOLELY ON HIS / HER OWN EXPERIENCE AND KNOWLEDGE. THIS REQUIRES THE DP TO MAKE A CERTAIN NUMBER OF ASSUMPTIONS AS TO THE TYPES OF DISABILITIES COVERED BY ADA. THE DEGREE OF ACCESS THAT IS READILY ACHIEVABLE AND WHAT CONSTITUTES 'READILY ACCESSIBLE AND USABLE'. GIVEN THE ASSUMPTIONS WHICH MUST BE MADE THE DP CANNOT AND DOES NOT GUARANTEE THE ACCURACY OF HIS / HER OPINION AS TO FULL COMPLIANCE AND IN RECOGNITION OF THAT FACT, THE CLIENT WAIVES ANY CLAIM AGAINST THE DP RELATIVE TO THE ADEQUACY OF THE OPINION TO FULLY COMPLY WITH BUILDING CODES AND ADA REQUIREMENTS.
- B. THE ARCHITECT WHO SIGN THESE PLANS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE SHALL NOT BE HELD RESPONSIBLE FOR DAMAGES RESULTING FROM CHANGES OR USES NOT AUTHORIZED OR APPROVED BY THE ARCHITECT. THE SIGNING OF THESE DOCUMENTS WILL NOT IMPOSE A LEGAL DUTY OR RESPONSIBILITY TO OBSERVE THE CONSTRUCTION AND / OR INSTALLATION OF THE FIXED WORKS SUBJECT TO THESE DOCUMENTS.
- C. ALL BRACING NECESSARY FOR CONSTRUCTION PURPOSES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- D. THE DESIGN ADEQUACY AND SAFETY OF THE ERECTION BRACING, SHORING, TEMPORARY SUPPORTS, ETC, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE PRIOR TO THE APPLICATION OF ALL SHEAR WALLS ROOF AND FLOOR DIAPHRAGMS AND FINISH MATERIALS. THE CONTRACTOR SHALL PROVIDE THE NECESSARY BRACING TO PROVIDE STABILITY PRIOR TO THE APPLICATION OF THE AFOREMENTIONED MATERIALS. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

7. INTENTION

- UNLESS NOTED OTHERWISE, THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT & TRANSPORTATION NECESSARY FOR COMPLETE AND PROPER EXECUTION OF THE WORK.

11. CUTTING AND PATCHING

- ALL TRADES SHALL DO THEIR OWN CUTTING, FITTING, PATCHING, ETC. TO MAKE THE SEVERAL PARTS COME TOGETHER PROPERLY AND FIT IT TO RECEIVE OR BE RECEIVED BY WORK OF OTHER TRADES.
- 12. CLEANING
- THE CONTRACTOR SHALL CLEANUP, REMOVE AND RECYCLE IN A LEGAL MANNER AND NOT DISPOSE IN LANDFILL ALL DEBRIS AND WASTE ATTRIBUTED TO THE JOB.

13. (AS-BUILT) DRAWINGS

GENERAL CONTRACTOR TO KEEP AN ACCURATE RECORD OF CHANGES IN FIELD AND SUBMIT A COMPLETE SET OF AS-BUILT DRAWINGS TO THE ARCHITECT FOR HIS / HER REVIEW AND TO THE OWNER. FOREMAN TO HAVE AN ACCURATE FLOOR PLAN AND PROJECT SCHEDULE ON-SITE AT ALL TIMES.

DESCRIPTION

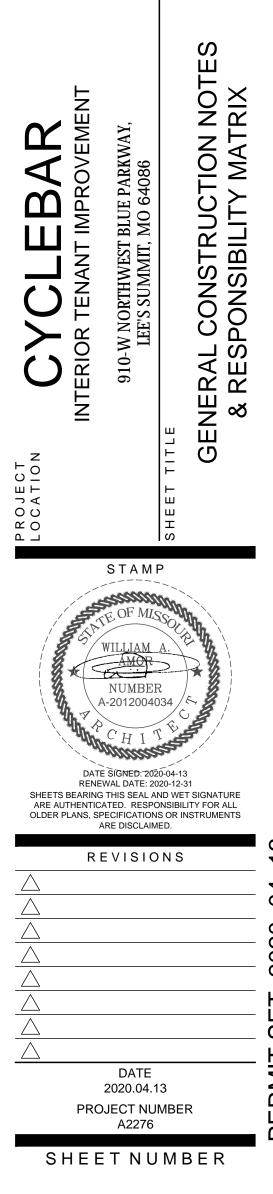
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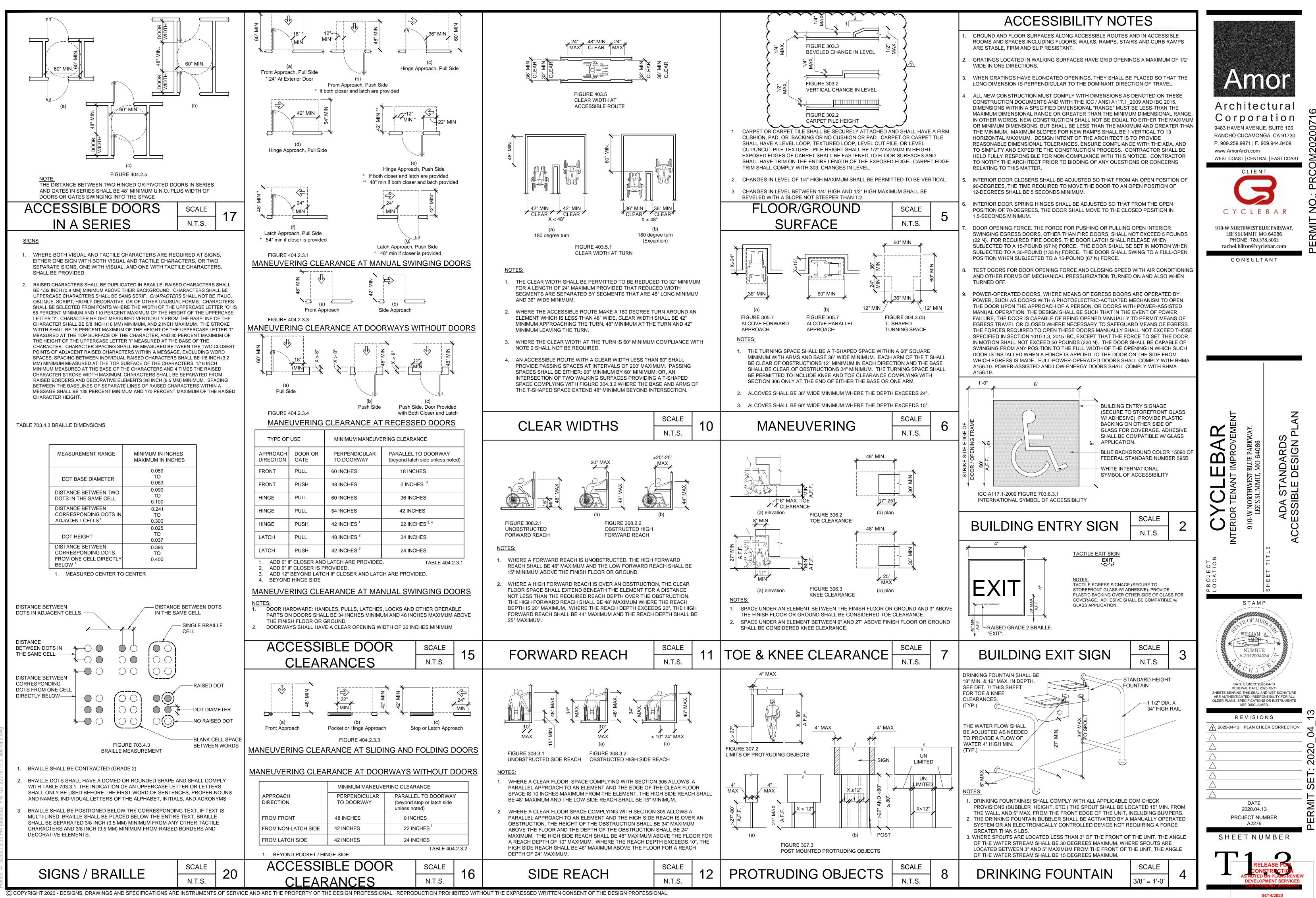
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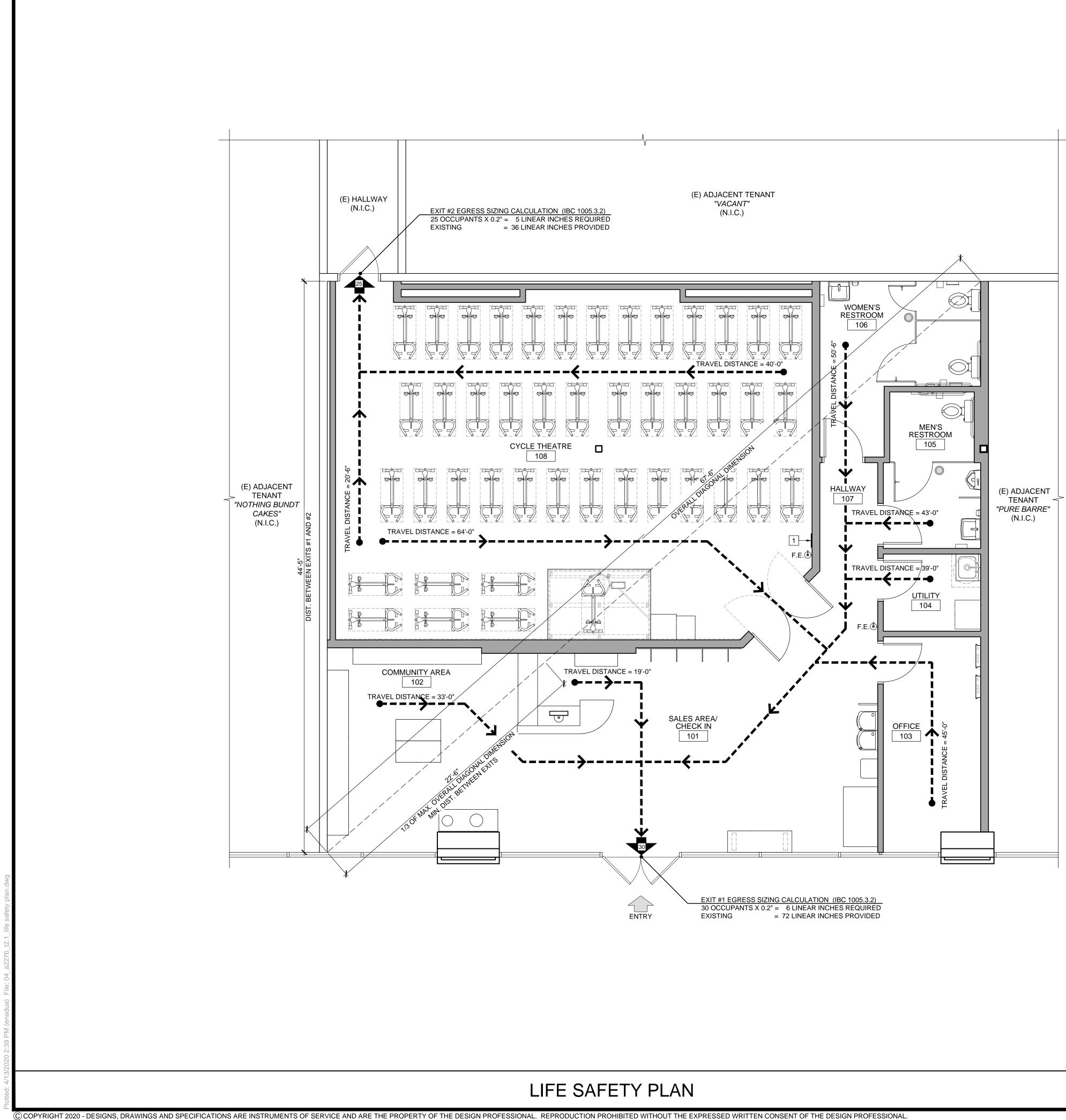
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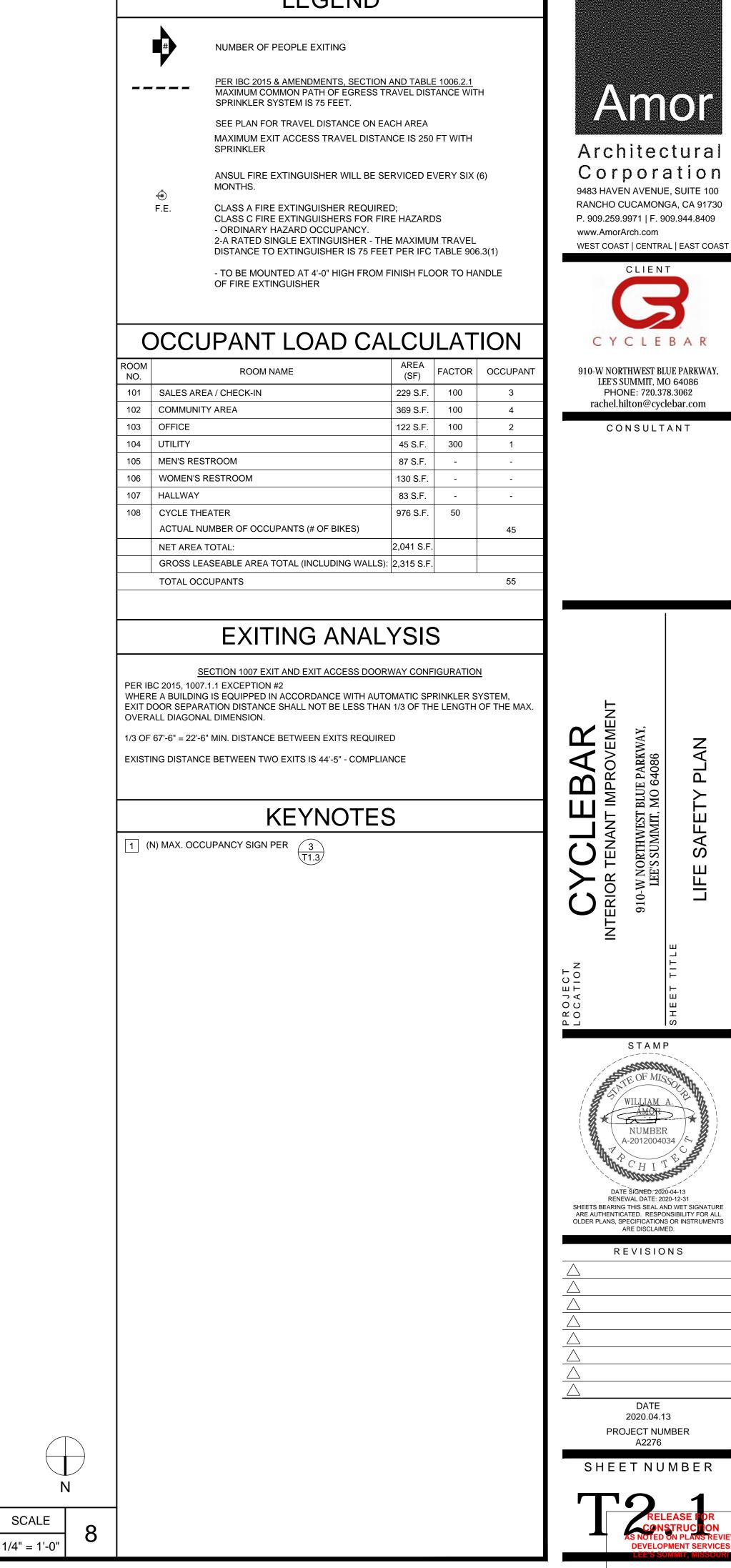


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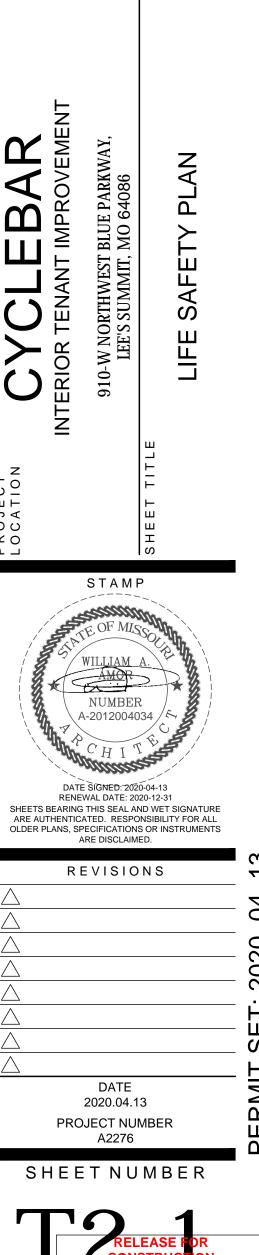




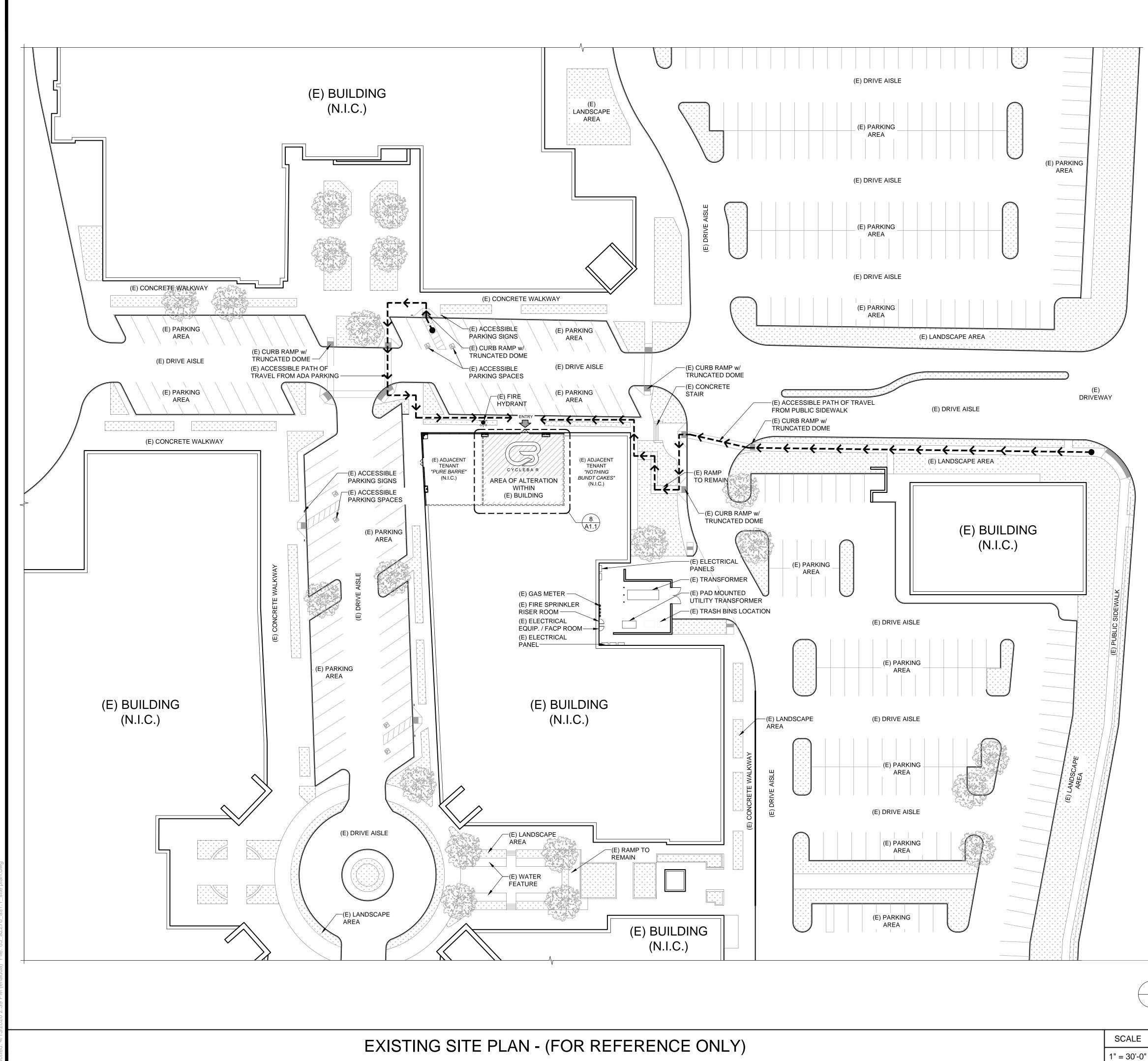




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DEVELOPMENT SERVICES



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GENERAL NOTES

- GENERAL (E) SURFACE DRAINAGE PATTERN, INCLUDING (E) ROOF DRAINAGE LOAD TRANSFERRED TO GROUND LEVEL, IS TO REMAIN AS IS.
- THIS IS A CONCEPTUAL SITE PLAN. UNLESS OTHERWISE NOTED, ALL ELEMENTS AND CONDITIONS ARE EXISTING.
- VEHICULAR ACCESS DRIVES MUST BE PROVIDED AND MAINTAINED SERVICEABLE THROUGHOUT CONSTRUCTION.
- CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS AND TRAFFIC CONES PER LOCAL REQUIREMENTS. ACCESS TO DRIVEWAYS TO BE MAINTAINED AT ALL TIMES. ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY.
- ALL MATERIALS AND WORKMANSHIP FOR PUBLIC FACILITIES TO CONFORM TO CITY STANDARD CONSTRUCTION SPECIFICATIONS. CONTRACTOR SHALL SWEEP ENTIRE SITE OR PORTIONS OF SITE TO BE USED BY THE
- PUBLIC AND SURROUNDING RIGHT-OF-WAY AREA OF THE STREET PRIOR TO USE BY THE GENERAL PUBLIC.
- THE SITE SHALL BE KEPT FREE OF FIRE HAZARDS FROM THE START OF CONSTRUCTION TO FINAL INSPECTION.
- THE G.C. SHALL IMPLEMENT A BEST MANAGEMENT PRACTICE STORMWATER FOR ALL ACTIVITIES PER LOCAL REQUIREMENTS.
- THE G.C. IS RESPONSIBLE TO VERIFY ALL UNDERGROUND UTILITIES PRIOR TO PERFORMING EXTERIOR WORK. CALL 811 BEFORE DIGGING.
- 10. G.C. TO VERIFY ANY ABRUPT CHANGE IN LEVEL EXCEEDING 1/2" EXISTING CONCRETE SLAB/ASPHALT TRANSITION FROM ENTRY TO PUBLIC WAY/ ACCESS. G.C. TO PROVIDE CLEAR PATH OF TRAVEL, OR PER LOCAL ORDINANCES.
- 11. SITE & PARKING ARE EXISTING TO REMAIN UNCHANGED. 12. NEW AND EXISTING BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY, CONTRASTING WITH THEIR BACKGROUND, PER LOCAL ORDINANCES.
- 13. THE G.C. IS RESPONSIBLE TO FIELD VERIFY AND LOCATE ALL WET AND DRY UTILITIES CONNECTION POINTS PRIOR TO ANY DEMOLITION OR CONSTRUCTION. (I.E. GAS, WATER AND SEWER, CLEAN OUTS, ETC.
- 14. GENERAL CONTRACTOR SHALL REDUCE CONSTRUCTION WASTE AS REQUIRED BY LOCAL REQUIREMENT.



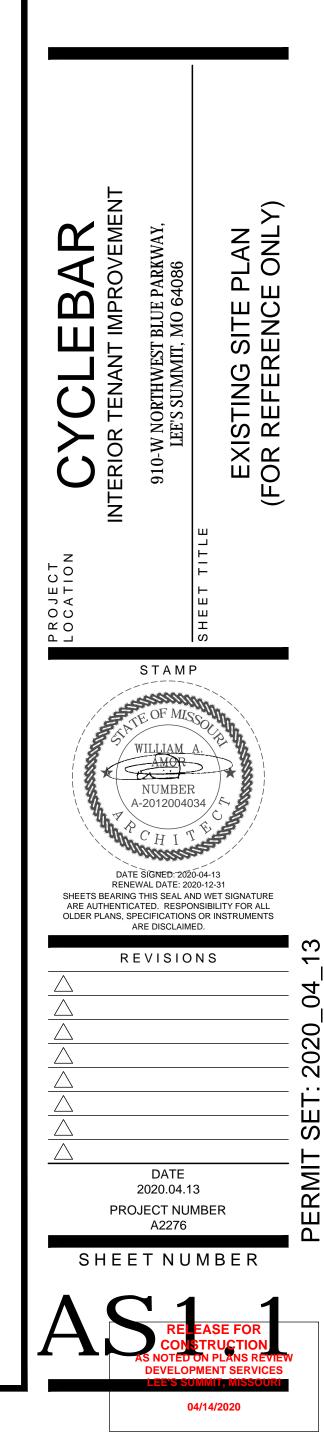
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910-W NORTHWEST BLUE PARKWAY, LEE'S SUMMIT, MO 64086 PHONE: 720.378.3062 rachel.hilton@cyclebar.com

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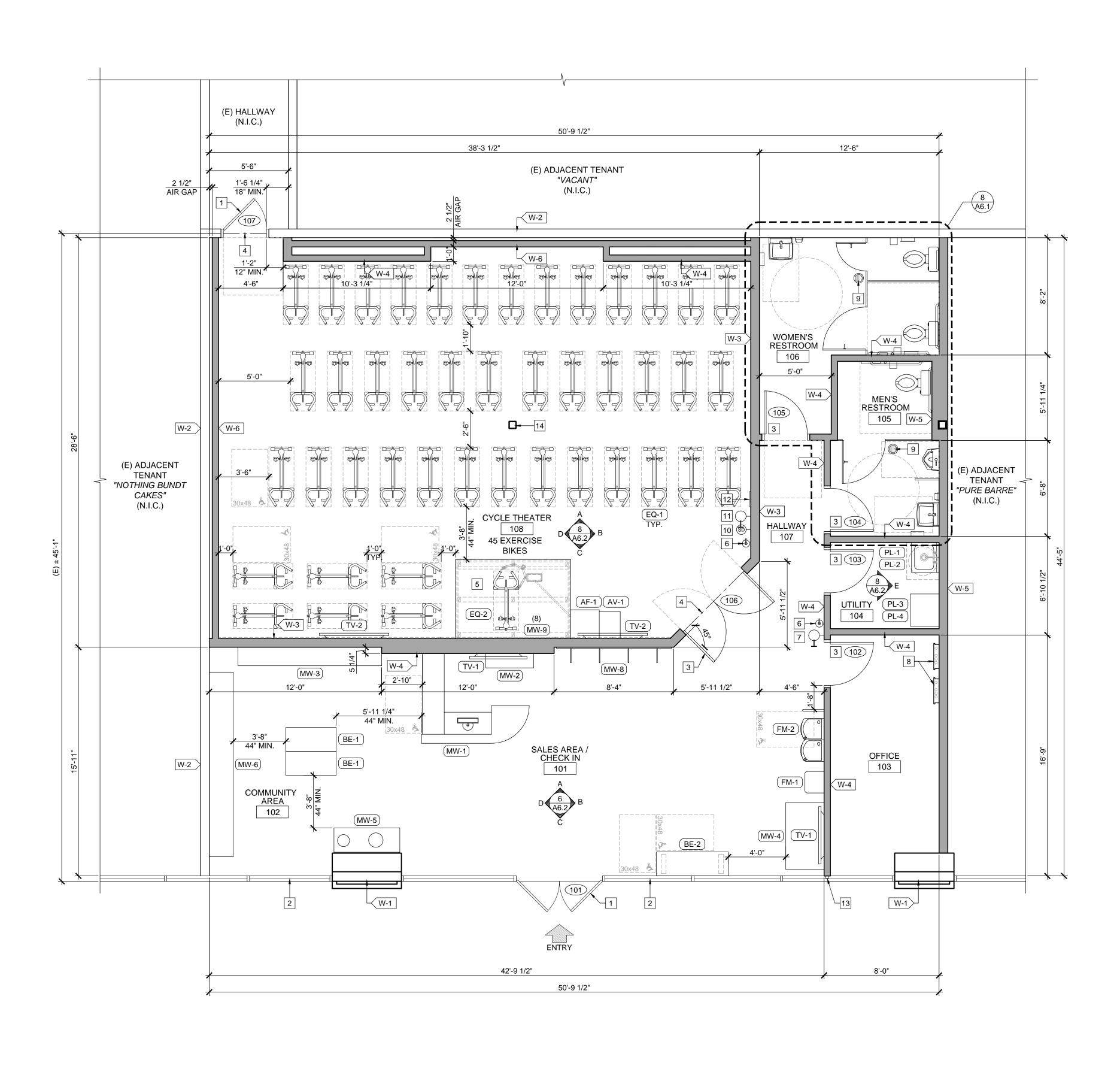
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- SEE REFLECTED CEILING PLAN FOR SOFFIT AND LIGHTING INFORMATION. NOTIFY ARCHITECT IMMEDIATELY OF ANY INCONSISTENCIES OR DISCREPANCIES WITH
- PLANS IN RELATION TO EXISTING FIELD CONDITIONS.
- WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALE ON THE CONSTRUCTION DOCUMENTS. DO NOT EVER SCALE DRAWINGS.
- DIMENSIONS ARE FROM THE FACE OF FINISHED WALL (GWB) TO FACE OF FINISHED WALL (GWB), UNLESS OTHERWISE NOTED ON PLANS.
- ALL MANUFACTURED ARTICLES, MATERIALS AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, CLEANED AND CONDITIONED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS AND/OR INSTRUCTIONS.
- 6. ALL WORK SHALL BE EXECUTED IN A MANNER ACCEPTABLE TO THE ARCHITECT, OWNER, AND LANDLORD UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR SHALL PROVIDE AND PAY ALL LABOR, MATERIALS EQUIPMENTS, TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY, TRANSPORTATION AND OTHER SERVICES AND FACILITIES NECESSARY FOR PROPER AND TIMELY EXECUTION OF WORK.
- 7. THE CONTRACTOR WARRANT TO THE OWNER AND TO THE ARCHITECT THAT ALL MATERIALS AND EQUIPMENT FURNISHED UNDER THE CONTRACT ARE NEW UNLESS OTHERWISE SPECIFIED, AND THAT ALL WORKS SHALL BE AS SPECIFIED AND FREE OF DEFECTS.
- 8. ALL OUTSIDE CORNERS AT DRYWALL PARTITION AND FURRING TO HAVE METAL CORNER BEADS SPACKLE AND SMOOTH.



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GENERAL NOTES

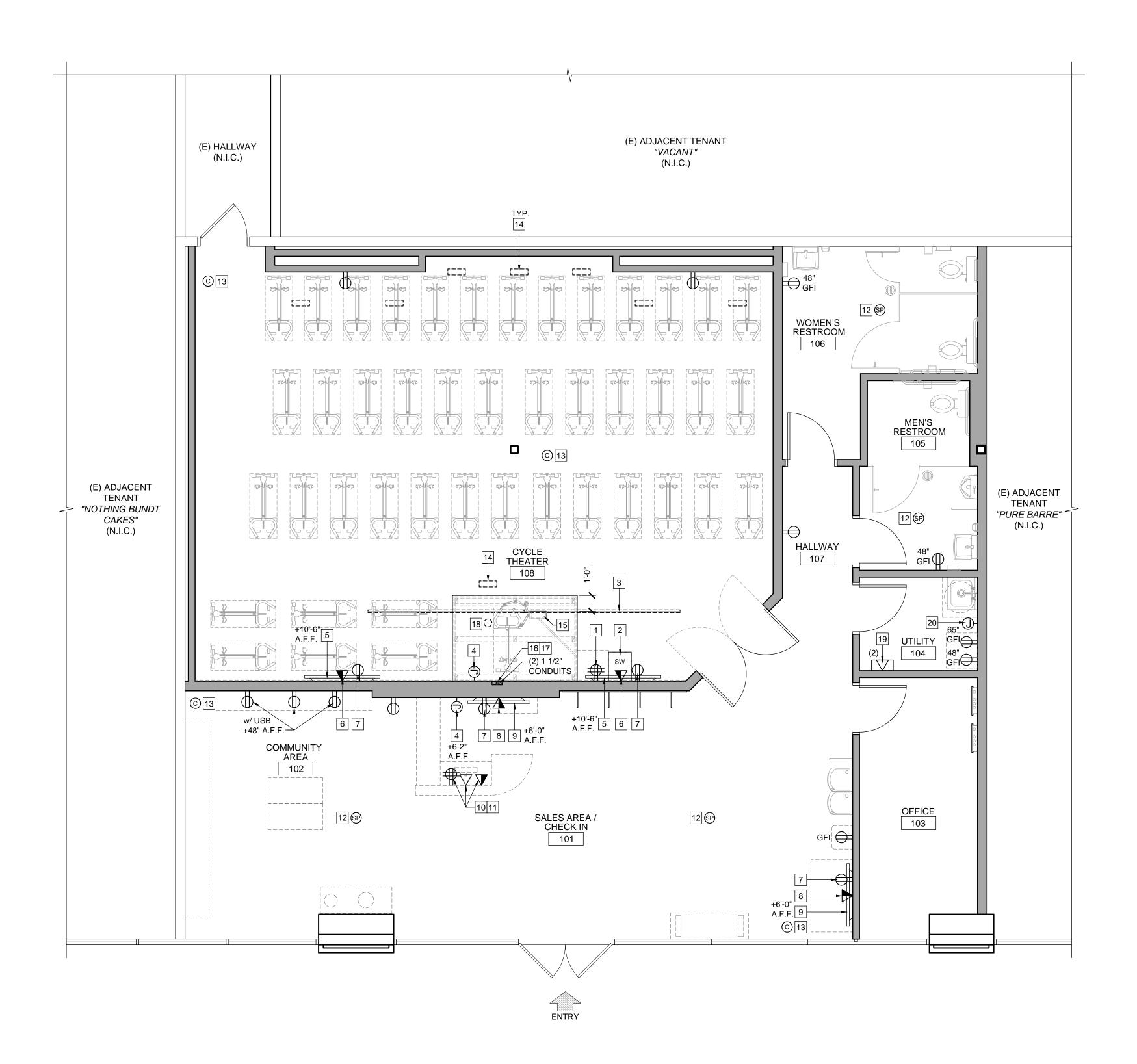
- HEADS AND JAMBS AS REQUIRED TO MAKE ASSEMBLY RIGID.
- 10. THE GENERAL CONTRACTOR (G.C.) IS RESPONSIBLE FOR THE FINAL CLEAN UP OF THE AREA OF WORK AND AREA AFFECTED BY CONSTRUCTION; TO INCLUDE BUT NOT LIMITED TO FLOORS, MILLWORK, FIXTURES, ETC. FOLLOWING THE INSTALLATION OF THE MILLWORK.
- 11. THE GENERAL CONTRACTOR SHALL COORDINATE THE LOCATIONS FOR THE WALL MOUNTED TELEVISIONS AND GRAPHIC SIGNAGE TO PROVIDE BLOCKING FOR MOUNTING.

9. PROVIDE DIAGONAL BRACING TO STRUCTURE ABOVE ALL NEW DOORS, GLAZING

- 12. ALL WET / PLUMBING WALLS ARE TO BE PROVIDED w/ MOISTURE RESISTANT GYPSUM BOARD. PROVIDE CEMENT BACKER BOARD WHEN TILE IS IN USED.
- 13. ALL PLUMBING WALLS ARE TO BE 6" METAL STUD FRAMING. PROVIDE REQUIRED BLOCKING FOR WALL MOUNTED FIXTURES, GRAB BARS, SHELVING, CABINETRY, ETC.
- 14. THERE SHALL BE NO PENETRATIONS TO A DEMISING WALL, U.O.N. IF PENETRATIONS ARE TO BE NOTED, THEN ALL PENETRATIONS INCLUDING CONDUITS, PIPES, DUCTWORK, ETC. SHALL BE UL RATED PER CURRENT CODE REQUIREMENTS.
- 15. NO PLUMBING IS ALLOWED IN DEMISING WALLS. FURRED OUT AS REQUIRED. 16. ALL (E) DEMISING WALLS FOR TENANT SEPARATION ARE NOT TO BE DISTURBED OR MODIFIED IN ANY WAY.

(N) FLOOR PLAN AND EQUIPMENT PLAN





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NOTE: SEE ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION

(N) POWER / AUDIO AND VISUAL PLAN

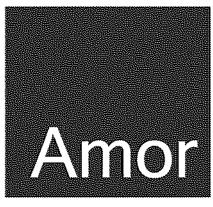
1/4" = 1'-0"

SCALE

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- NOTIFY ARCHITECT IMMEDIATELY OF ANY INCONSISTENCIES OR DISCREPANCIES WITH PLANS IN RELATION TO EXISTING FIELD CONDITIONS.
- 2. THE GENERAL CONTRACTOR SHALL COORDINATE THE LOCATIONS FOR THE WALL MOUNTED TELEVISIONS AND GRAPHIC SIGNAGE TO PROVIDE BLOCKING FOR MOUNTING.
- 3. TV HEIGHT IS MEASURED TO CENTER OF MOUNTING BRACKET. GC TO MAKE SURE RECEPTACLES FOR TV MUST BE PLACED BEHIND TV, NOT TO BE VIEWED BY PUBLIC.
- 4. GC TO COORDINATE w/ SIGNAGE VENDOR FOR LOCATION AND HEIGHT OF SIGNAGE J-BOX. (SIGNAGE UNDER SEPARATE PERMIT)
- 5. AV LIGHTS PROVIDED AND INSTALLED BY AV CONTRACTORS. EXACT LOCATION TO BE VERIFY IN FIELD DURING CONSTRUCTION.
- 6. ALL AV LINES PULLED OUT AND RAN BACK TO THE AV RACK.

LEGEND									
CEILING									
WALL									
TELEVISION LOCATION - PROVIDE (1) DUPLEX OUTLET AND DATA DROP AS NOTED. VERIFY MOUNTING HEIGHTS WITH TENANT IN FIELD									
120V, 20A DUPLEX OUTLET MOUNTED 18" A.F.F. (U.N.O.) 120V, 20A DUPLEX OUTLET (DIMENSION DENOTES MOUNTING HEIGHT) 120V, 20A QUAD OUTLET (DIMENSION DENOTES MOUNTING HEIGHT)									
- J JUNCTION BOX - DATA JACK C TELEPHONE JACK									
<u>FLOOR</u>									
SW SUBWOOFER LOCATION (ON FLOOR) SUPPLIED /INSTALLED BY A/V CONTRACTOR. VERIFY MOUNTING LOCATIONS WITH TENANT IN FIELD									
NOTE: AUDIBLE / VISUAL SIGNAL CONNECTED TO SMOKE DETECTOR, INSTALL IN LOCATION VISIBLE AT ALL TIMES OF OCCUPANCY									
KEYNOTES									
1 PROVIDE (2) 20 AMP CIRCUITS VIA (2) QUAD OUTLETS FOR A/V RACK									
 SUBWOOFER, SUPPLIED AND INSTALLED BY AV CONTRACTOR (2) 10 FEET UNISTRUT METAL CHANNEL @ 6 INCHES ABOVE CEILING LEVEL 12 INCHES OFF FROM FRONT OF STAGE TO SUSPEND SPEAKERS. PROVIDE J-BOX FOR SIGNAGE. GC TO COORDINATE W/ VENDOR FOR LOCATION AND HEIGHT ON SIGNAGE (2) 65" T.V., INCLUDING BRACKET AND 36"x36"x5/8" WOOD BACKING INSIDE THE WALL FOR SUPPORT AT EACH DISPLAYS. CENTERED ON DUPLEX/DATA WALL PLATES, SEE ELEVATIONS FOR BRACKET MOUNTING HEIGHT (2) CATE PLENUM TERMINATED W / KEYSTONE JACKS LOCATED NEXT TO THE POWER OUTLET, LABELED AND RAN BACK TO THE AV RACK WITH 15" OF SLACK AT EACH OF THE DISPLAYS (2) QUIS POWER OUTLET RATED 2.5 AMP LOCATED AT EACH OF THE DISPLAYS (2) CATE TERMINATED W / KEYSTONE JACK PLATE LOCATED NEXT TO POWER OUTLET, LABELED AND RAN BACK TO THE AV RACK MITH 15" OF SLACK AT EACH OF THE DISPLAYS (2) CATE TERMINATED W / KEYSTONE JACK PLATE LOCATED NEXT TO POWER OUTLET, LABELED AND RAN BACK TO THE AV RACK AT EACH OF THE TWO DISPLAYS (2) CATE TERMINATED W / KEYSTONE JACKS LOCATED AT COMPUTER OUTLET, LABELED AND RAN BACK TO THE AV RACK AT EACH OF THE WALL FOR SUPPORT AT EACH DISPLAYS, CENTERED ON DUPLEX/DATA WALL PLATES, SEE ELEVATIONS FOR BRACKET AND 36"x38"x5/8" WOOD BACKING INSIDE THE WALL FOR SUPPORT AT EACH DISPLAYS. CENTERED ON DUPLEX/DATA WALL PLATES, SEE ELEVATIONS FOR BRACKET AND AN BACK TO THE AV RACK WITH 15" OF SLACK. (1) (1) 15 AMP CIRCUIT AT FRONT DESK VIA 1 QUAD RECEPTACLE. (1) PER EACH SPEAKER LOCATION 16/2 SPEAKER CABLE W / 15FT OF SLACK (2) CATE PLENUM TERMINATED X/ KEYSTONE JACKS LOCATED AT CAW RACK AT EACH OF THE (4) SPEAKER LOCATIONS (3) (4) CATE PLENUM LABELED AND RAN BACK TO THE AV RACK FOR CCT V CAMERA LOCATIONS (4) (ATE PLENUM LABELED AND RAN BACK TO THE AV RACK BY AV CONTRACTOR (5) AV FLOOR BOX INSTALLED AT INSTRUCTOR STAGE (6) ROVIDED AV CABLING PROTRUDING FROM WALL, VIA DOUBLE GANG PLASTER RING, NEXT TO ELECT									



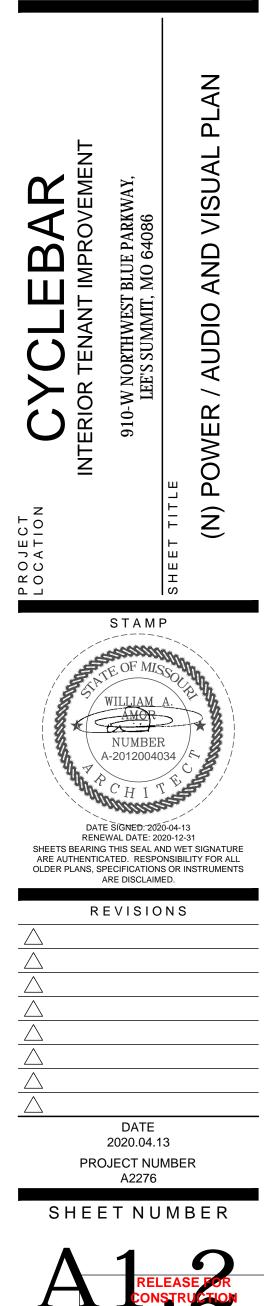
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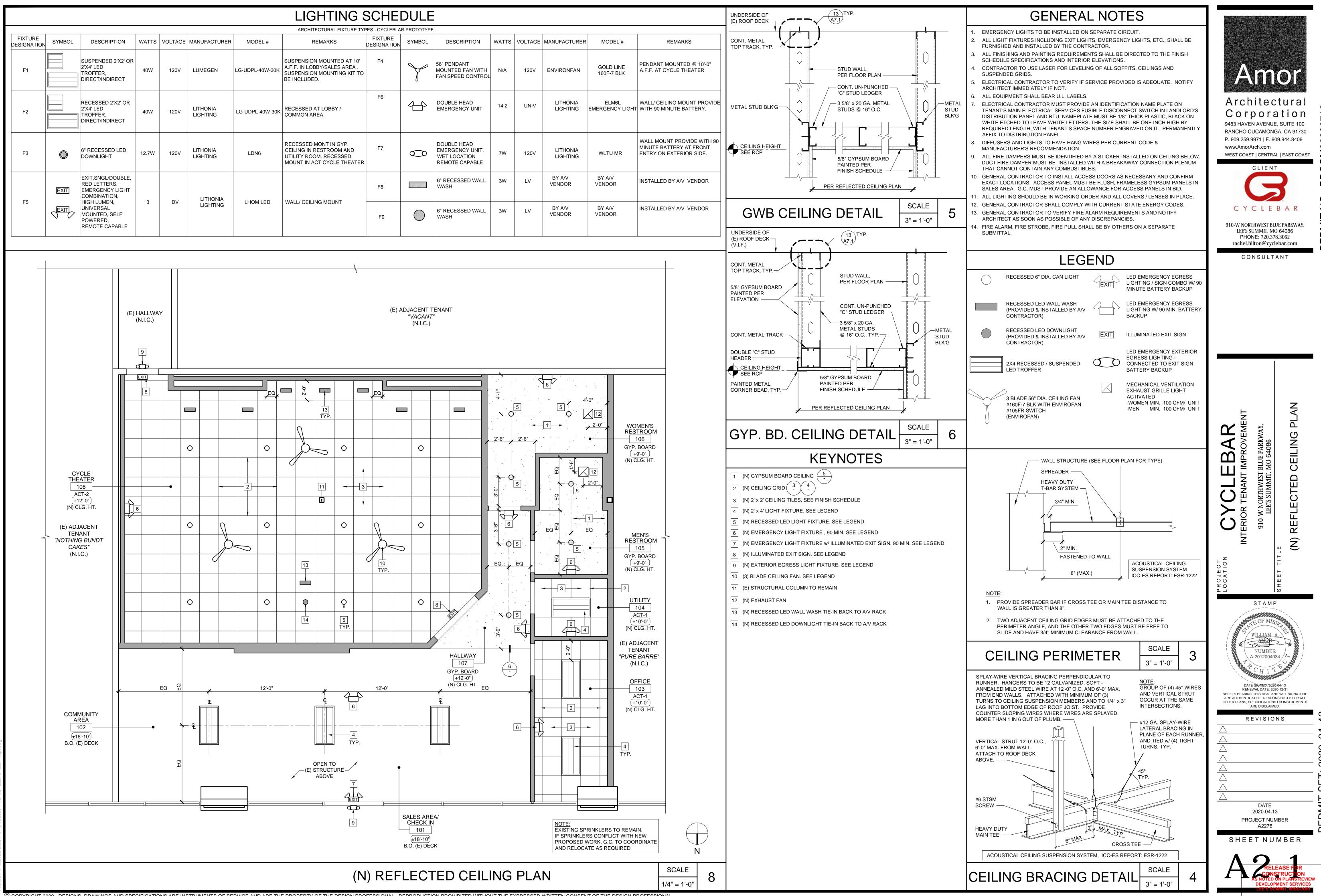
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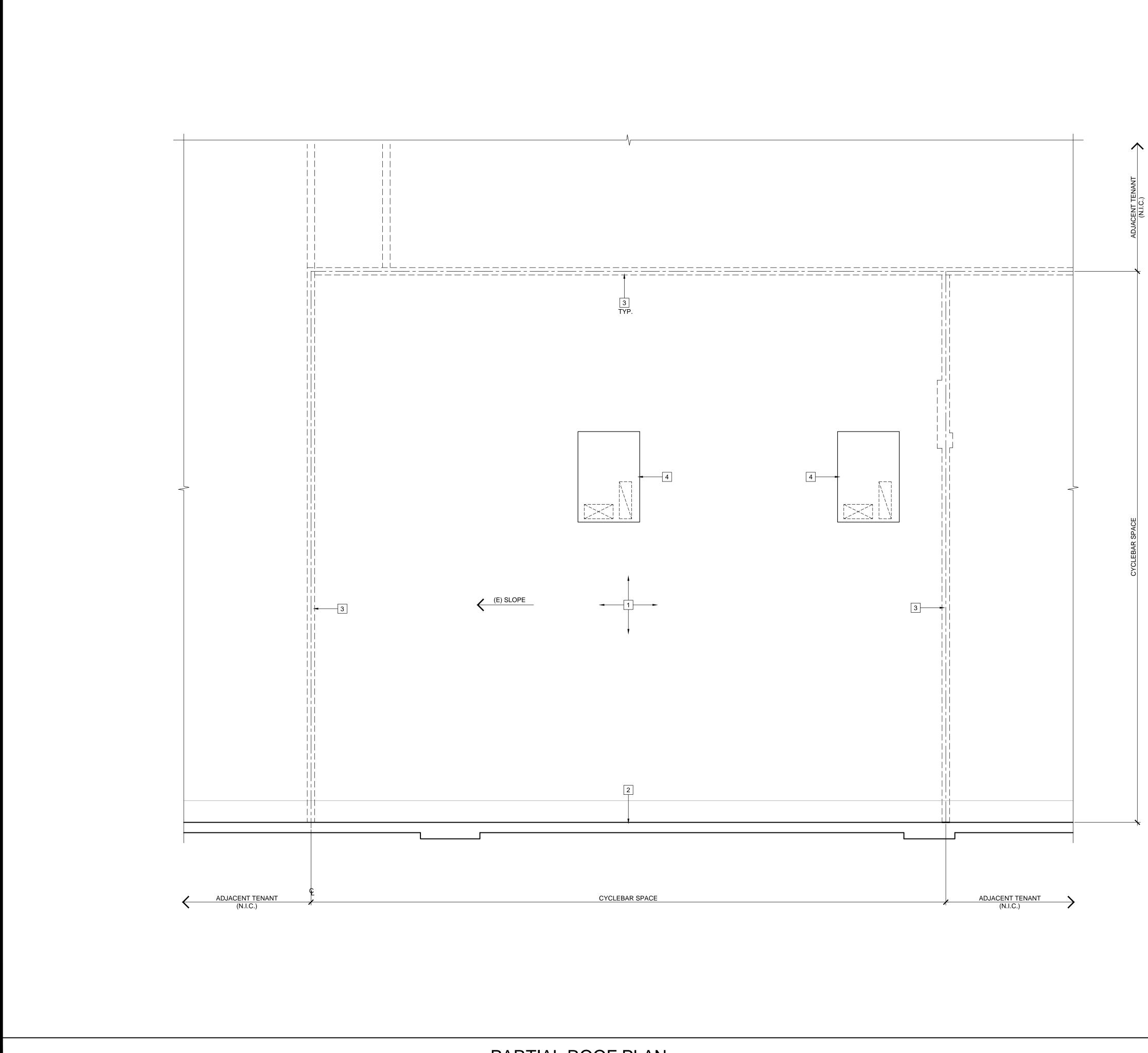
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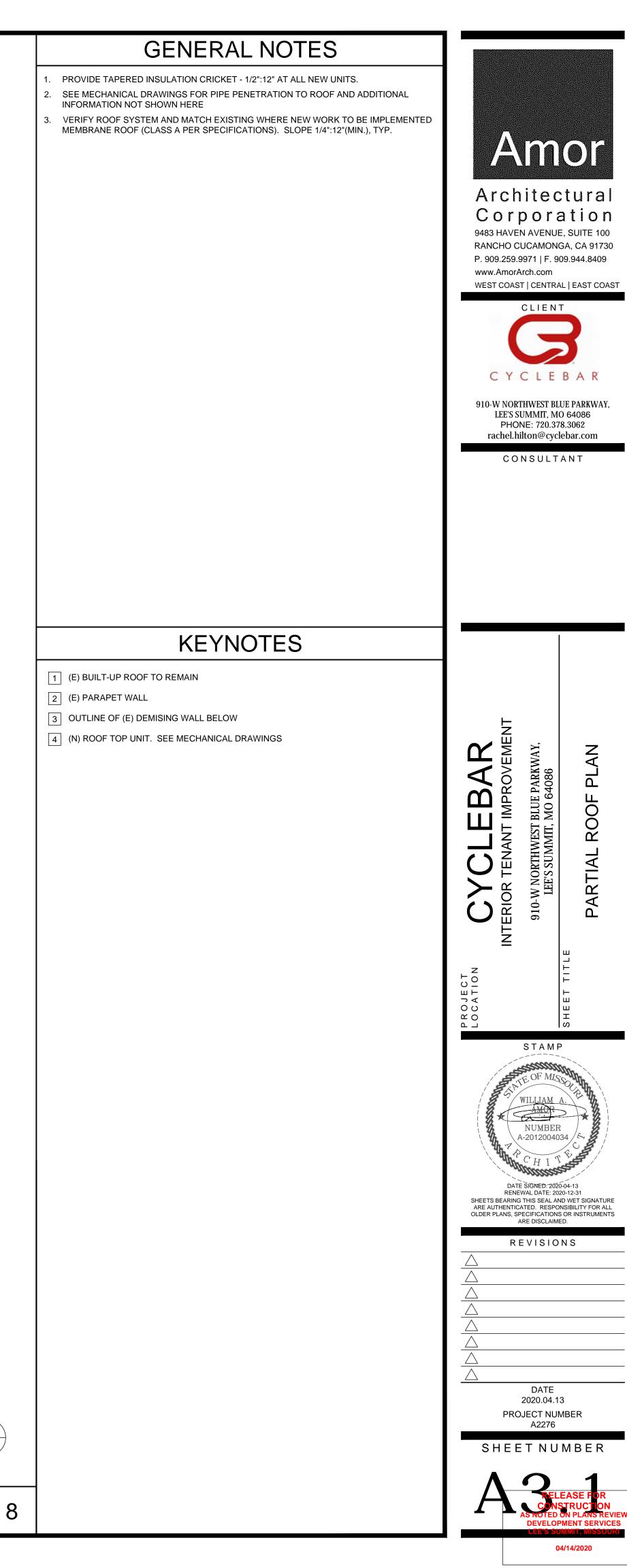


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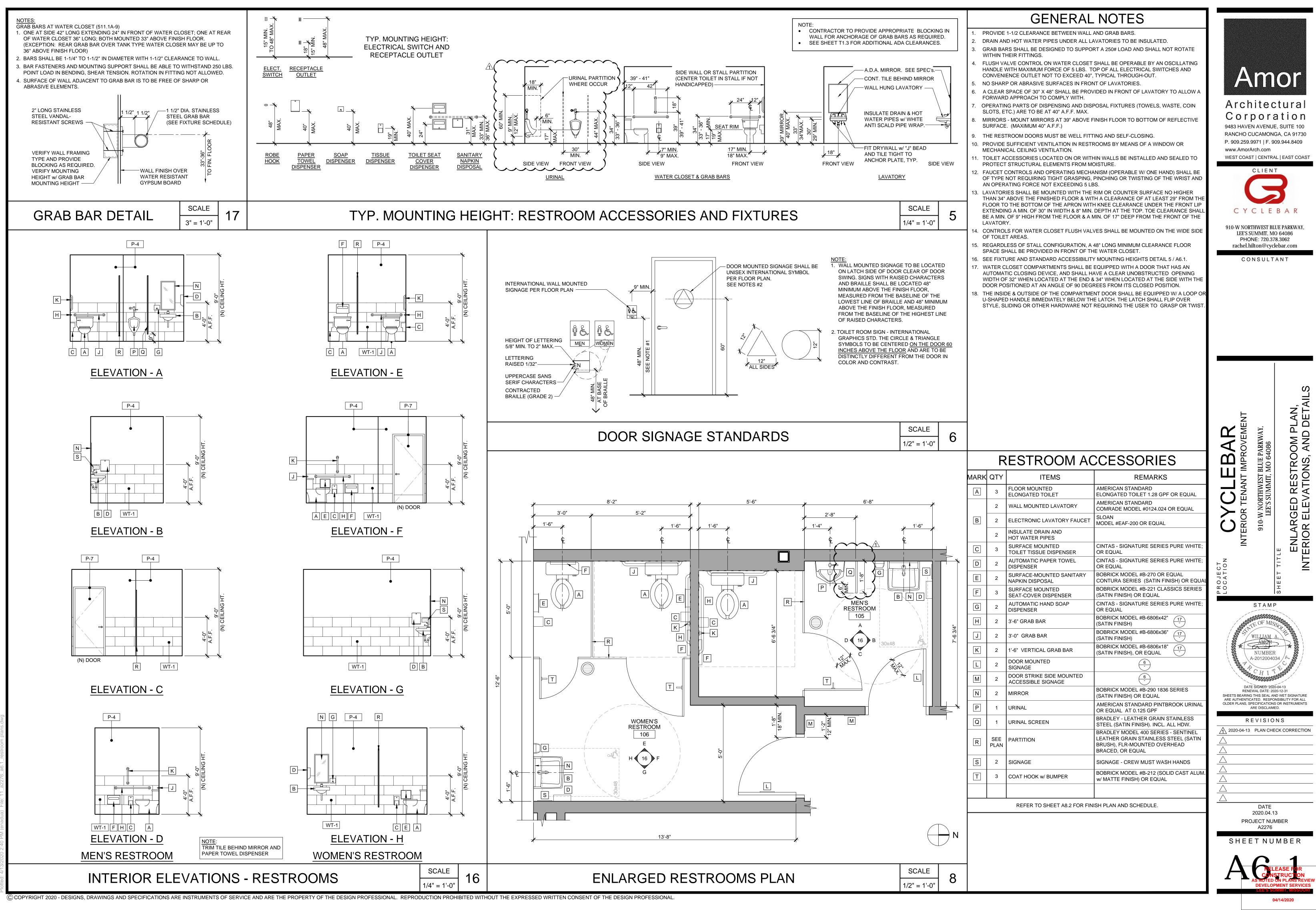
PARTIAL ROOF PLAN

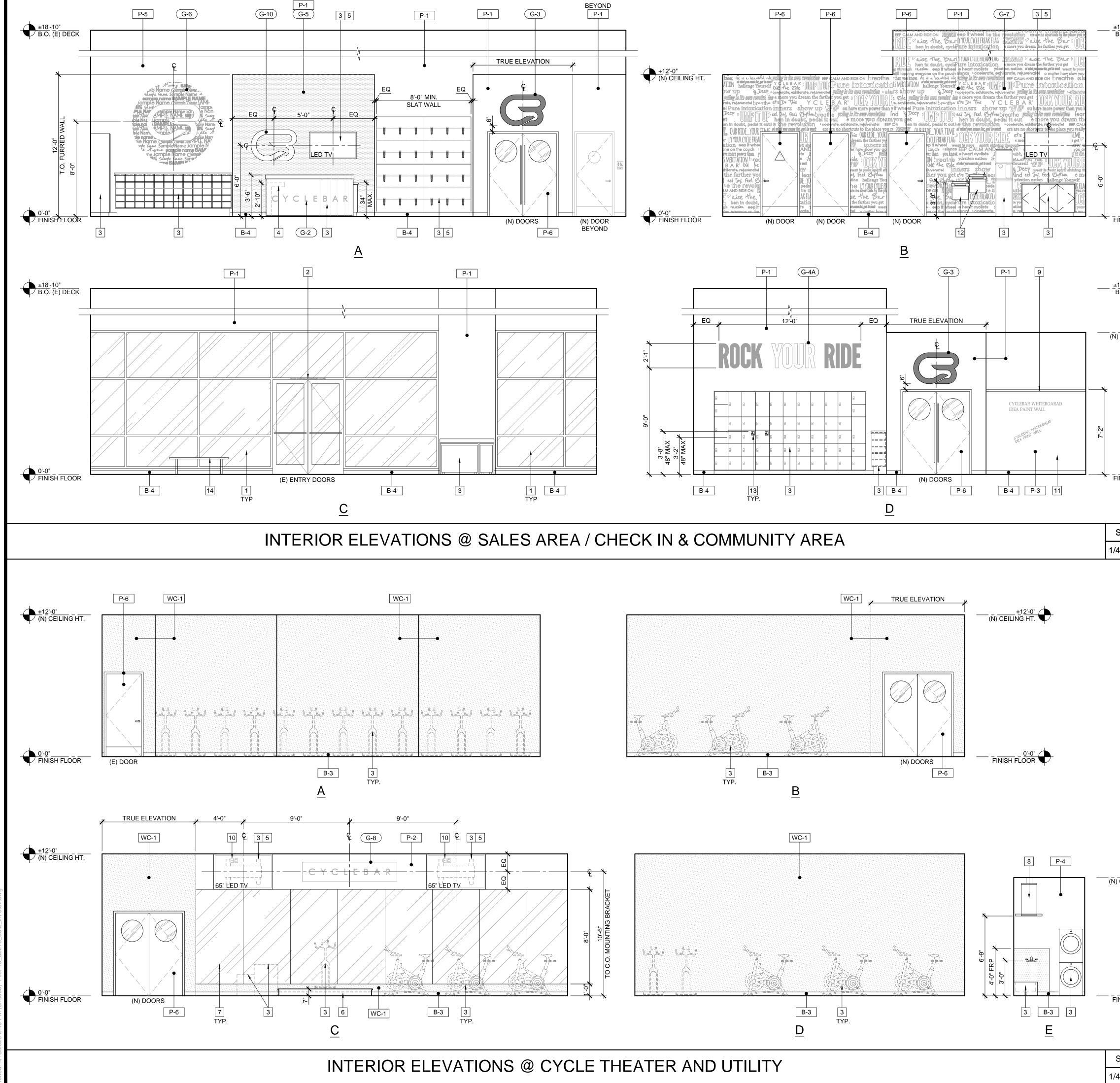


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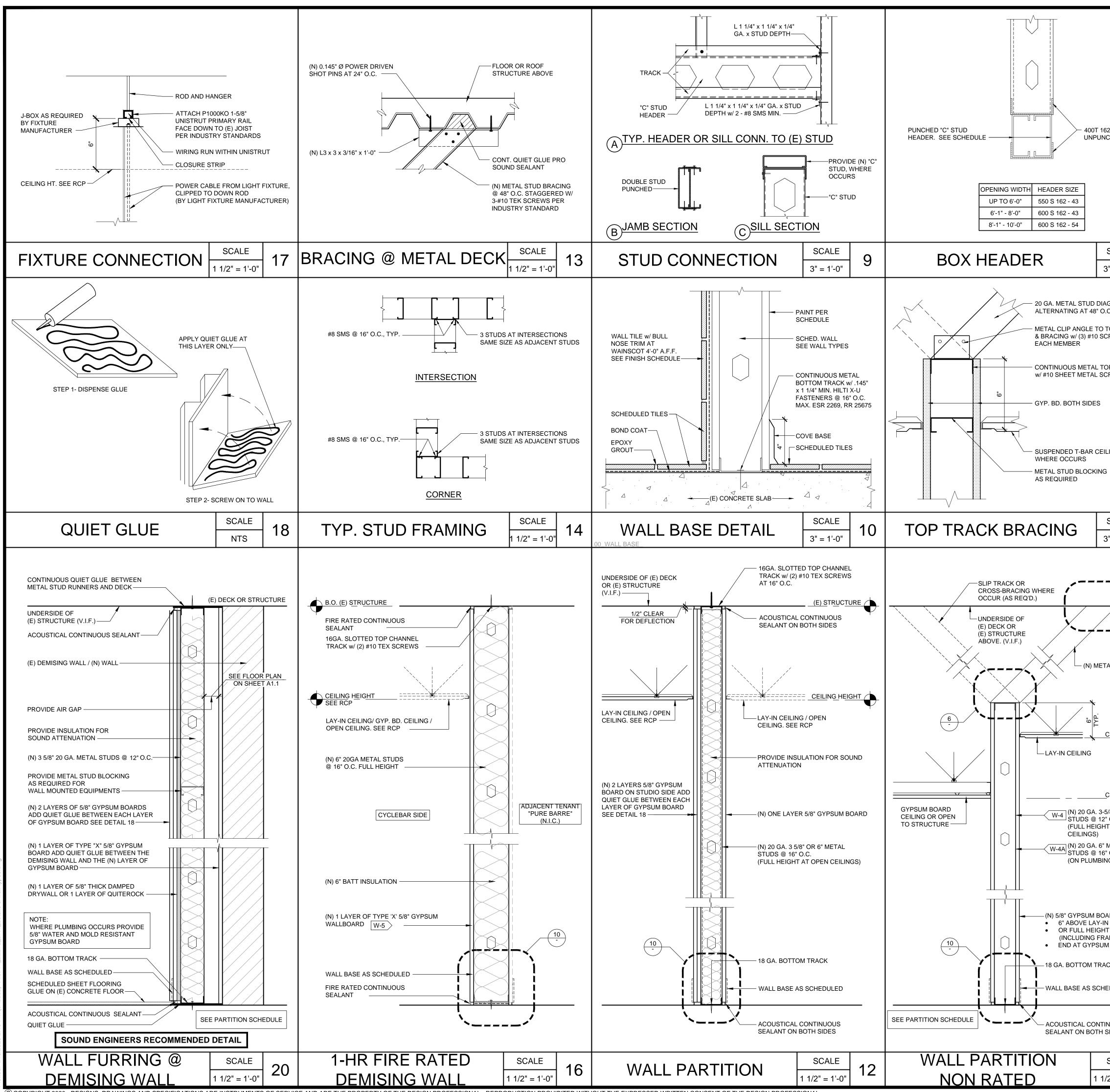
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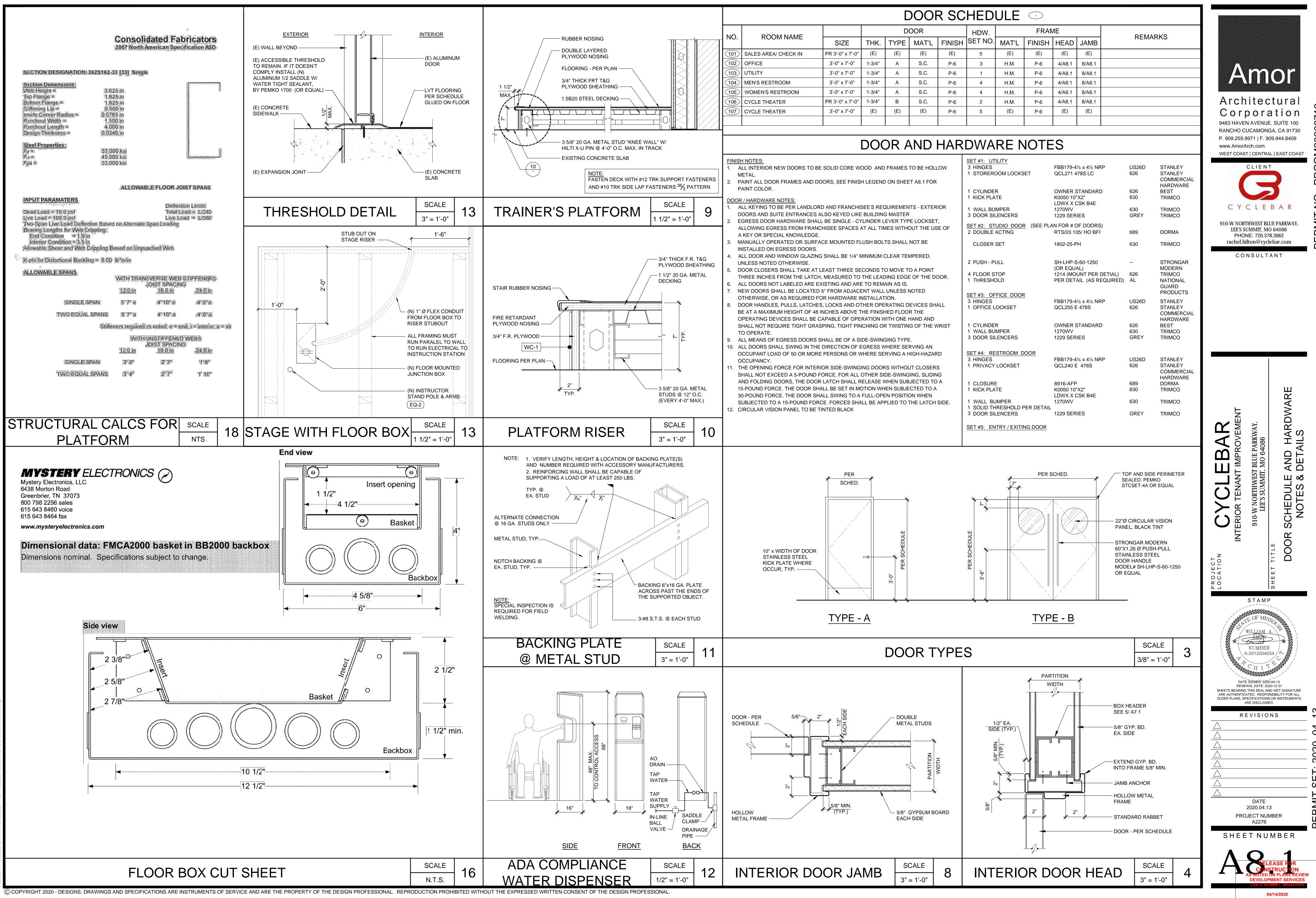
	KEYNOTES	
<u>±18'-10" (V.I.F.)</u> B.O. (E) DECK	1 (E) STOREFRONT SYSTEM TO REMAIN	
	2 (E) "THIS DOOR TO REMAIN UNLOCKED DURING BUSINESS HOURS" - ADD DECAL	
	3 (N) EQUIPMENT AND MILLWORK REFER EQUIPMENT LIST A1.1 4 (N) ACCESSIBLE COUNTER $\begin{pmatrix} 1 \\ A8 & 4 \end{pmatrix}$	
	5 G.C. TO PROVIDE SUFFICIENT BACKING FOR WALL MOUNT EQUIPMENT $\begin{pmatrix} 11\\ A8.1 \end{pmatrix}$	Amor
	$\begin{array}{c} \hline \\ \hline $	Architectural
	7 (N) MIRRORS	Corporation
	 (N) WATER HEATER AND SUSPENDED PLATFORM WITH DRAIN PAN. PROVIDE CLEARANCE AS NEEDED PER MFR'S DETAILS FOR SERVICING (9) BETWEEN CEILING AND TANK 	9483 HAVEN AVENUE, SUITE 100 RANCHO CUCAMONGA, CA 91730
	9 (N) 2" WHITE TRIM	P. 909.259.9971 F. 909.944.8409 www.AmorArch.com
	10 (N) DATA AND DUPLEX POWER INSTALLED BEHIND T.V.	WEST COAST CENTRAL EAST COAST
	11 (N) MARKER BOARD 12 (N) HIGH-LOW DRINKING FOUNTAIN $\begin{pmatrix} 4 \\ T1 & 3 \end{pmatrix}$	CLIENT
	PROVIDE ACCESSIBLE LOCKER WITH THE BOTTOM OF THE LOCKER NO LOWER THAN 15" ABOVE THE FLOOR, AND THE TOP TO BE NO GEATER THAN 48" ABOVE THE FLOOR	
	13 ABOVE THE FLOOR, AND THE TOP TO BE NO GEATER THAN 48 ABOVE THE FLOOR 14 (N) ADA SEATING BENCH 7 A8.4	
		CYCLEBAR
10' 10" (V/LE)		910-W NORTHWEST BLUE PARKWAY, LEE'S SUMMIT, MO 64086 PHONE: 720.378.3062
E <u>18'-10"</u> (V.I.F.) B.O. (E) DECK		rachel.hilton@cyclebar.com
		CONSULTANT
+12'-0" I) CEILING HT.		
0'-0"		
		L Z
		DNS MAY, WAY
SCALE 6	SIGNAGE/ GRAPHICS LEGEND	LEVATIONS ELEVATIONS
4" = 1'-0"	REFER TO GRAPHIC KEY ON SHEET A8.3	EVATIC
	G-1 GLAZING GRAPHICS - STOREFRONT LOGO, VINYL G-1A GLAZING GRAPHICS - STOREFRONT - HOURS, VINYL	
	G-2 MILLWORK GRAPHICS - ON RECEPTION DESK, VINYL	CYCLE ERIOR TENANT 910-W NORTHWEST LEE'S SUMMIT, LEE'S SUMMIT,
	G-3 WALL GRAPHICS - LOGO OVER CYCLE THEATRE DOOR, VINYL G-4A WALL GRAPHICS - GRAPHICS "ROCK YOUR RIDE", VINYL	PR TI M NOI LLEE'S ERIC
	G-5 WALL GRAPHICS - GRAY VINYL G-6 WALL GRAPHICS - CITY SYMBOL, VINYL	CCYC ERIOR TEN 910-W NORTHY LEE'S SUN LEE'S SUN
	G-7 WALL GRAPHICS - INSPIRATION WALL, VINYL	
	G-8 WALL SIGNAGE - CYCLE THEATRE LOGO ILLUMINATED SIGN G-9 WALL SIGNAGE - ILLUMINATED LOGO - 3FT VERSION	
	G-10 WALL SIGNAGE - ILLUMINATED LOGO - STANDARD SIZE	
	ALL FINAL LOCATION TO BE VERIFIED WITH SIGNAGE VENDOR	НЕ ПОСАЛ
		ΔΙΟ STAMP
	ALL GRAPHIC SIGNAGE TO BE SUBMITTED UNDER SEPARATE PERMIT	
	NOTE: CONTRACTOR TO PROVIDE AND INSTALL SOLID WOOD BLOCKING OR PLYWOOD FOR ALL	SINTE OF MISSOLU
	WALL MOUNTED ITEMS: SIGNAGE, EQUIPMENT, MILLWORK, ETC. COORDINATE EXACT LOCATIONS w/ CYCLEBAR CONSTRUCTION REPRESENTATIVE AS REQUIRED.	AMOR NUMBER
	NOTE:	A-2012004034
	1. REFER TO EQUIPMENT SCHEDULE ON SHEET A1.1	CHIT CHIT
		DATE SIGNED: 2020-04-13 RENEWAL DATE: 2020-12-31 SHEETS BEARING THIS SEAL AND WET SIGNATURE ARE AUTHENTICATED. RESPONSIBILITY FOR ALL
		OLDER PLANS, SPECIFICATIONS OR INSTRUMENTS ARE DISCLAIMED.
+1 <u>0'-0"</u>) CEILING HT.		REVISIONS
		$\frac{\Delta}{\Delta}$
		DATE
		2020.04.13 PROJECT NUMBER
'		A2276 SHEET NUMBER
SCALE		
<u> </u>		AS NOTED ON PLANS REVIEW
4" = 1'-0"		DEVELOPMENT SERVICES



13/2020 2:40 PM (enadua) File: 14_a2276_a7.1_details & wall types

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	FRAMING NOTES		
	 GALVANIZED STEEL MUST MEET THE MINIMUM REQUIREMENTS OF ASTM A446 GRADE D (Fy=50KSI) FOR 12 GAUGE ASTM A446 GRADE A (Fy=33KSI) FOR 14 & 16 GAUGE ASTM A446 GRADE A (Fy=33KSI) FOR 18 GAUGE 		
	 AND LIGHTER FOR THE ITEM AND USE INTENDED GALVANIZED COATINGS MUST MEET THE ASTM A525 SPECIFICATIONS. 2. CARBON SHEET STEEL MUST MEET THE MINIMUM REQUIREMENTS OF ASTM A570 GRADE 50 KSI FOR 12 GAUGE ASTM A570 GRADE 50 KSI OR GRADE 33 KSI FOR 14 & 16 GAUGE AND 	Amor	
2-54	GRADE 33 KSI FOR 18 GAUGE AND LIGHTER MEMBERS CARBON SHEET STEEL PRODUCTS MUST BE THOROUGHLY COATED WITH A RUST INHIBITIVE PAINT. 3. ALL STRUCTURAL MEMBERS SHALL BE DESIGNED IN ACCORDANCE WITH AMERICAN	Architectural	(0)
CHED "L" TRACK	 IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" 2010 EDITION WITH SUPPLEMENT 2. 4. METAL STUDS AND / OR JOISTS: A. FOR METAL STUD WALLS, UNLESS OTHERWISE SHOWN ON THE DRAWINGS, 	Corporation 9483 HAVEN AVENUE, SUITE 100 RANCHO CUCAMONGA, CA 91730	COM20200716
	 PROVIDE STANDARD PUNCHED STEEL MEMBERS OF THE GAUGES SHOWN ON THE DRAWINGS. B. USE ONLY ONE TYPE THROUGHOUT THE WORK, UNLESS OTHERWISE SHOWN ON THE DRAWINGS OR SPECIFICALLY APPROVED IN ADVANCE BY THE ENGINEER 	P. 909.259.9971 F. 909.944.8409 www.AmorArch.com WEST COAST CENTRAL EAST COAST	M202
	AND/OR ARCHITECT. 5. ACCESSORIES: PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT NECESSARILY LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES RESILIENT CLIPS, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AND AS RECOMMENDED BY THE MANUFACTURER FOR THE	CLIENT	PRCO
SCALE 5	 STEEL MEMBERS USED. 6. FASTENING OF COMPONENTS SHALL BE WITH SELF-DRILLING SCREWS OR WELDING SCREWS OR WELDS SHALL BE OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. ALL WELDS OF GALVANIZED STEEL SHALL BE TOUCHED UP WITH A ZINC 	CYCLEBAR	0 N
5 3 3	 RICH PAINT. ALL WELDS OF CARBON SHEET STEEL SHALL BE TOUCHED UP WITH PAINT. 7. PROVIDE A GOOD GRADE OF COMMERCIAL GROUT FOR LEVELING THE FLOOR RUNNER MEMBER OF STEEL STUD PARTITIONS AS REQUIRED. 	910-W NORTHWEST BLUE PARKWAY, LEE'S SUMMIT, MO 64086 Phone: 720.378.3062	RMIT
GONAL BRACING, C., TYP.	PARTITION SCHEDULE	rachel.hilton@cyclebar.com C O N S U L T A N T	ЫЦ
TOP TRACK REWS INTO	 ALL THE METAL STUDS USED SHALL BE "ICC-ES" TYPE OR APPROVED EQUAL. THE BRIDGING, BLOCKING OR END BEARING STIFFENERS SHALL BE AS REQUIRED BY THE MANUFACTURER UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL THE STUDS SHALL CONFORM TO "ICC-ES EVALUATION REPORT" ESR-3064P OR APPROVED EQUAL. 		
PP TRACK REW EA. FLANGE	 UNLESS OTHERWISE NOTED ON THE PLANS, USE THE FOLLOWING GUIDELINE FOR STUD SIZE & SPACING FOR INTERIOR PARTITIONS. TOP TRACK SIZE WILL BE 20 GA. MINUMUM FOR PARTITION, U.N.O. SCAFCO SLOTTED TRACK, 400SLT250-43 OR 600SLT250-33, 18 GA. "ICC-ES EVALUATION REPORT" ESR-3064P OR APPROVED EQUAL 		
	S I Z E S I Z E MAXIMUM PARTITION HEIGHT (5psf L/240) HEIGHT HEIGHT HEIGHT (COMPOSITE) (NON-COMP.) (BRACED 48"OC)		
ING	362 S 125 - 33 12" 19' - 2" 17' - 7" 17' - 8" 362 S 125 - 33 16" 17' - 5" 16' - 0" 16' - 1" 400 S 125 - 33 16" 18' - 3" 17' - 3" 17' - 4"		
	600 S 125 - 33 16" 25' - 6" 23' - 9" 23' - 11"		
SCALE	1. USE "ICC-ES EVALUATION REPORT" ESR-3064P OR APPROVED EQUAL.		
	 USE 600S125-43 @ 16" O.C. UP TO 16'-0" MAXIMUM SPAN WHERE CEILING SUPPORTED TOILET PARTITIONS OCCUR. STUD TRACKS SHALL BE UNPUNCHED STUDS OF SAME GAUGE AS STUD UNLESS NOTED OTHERWISE. 	EBAR IMPROVEMENT BLUE PARKWAY, MO 64086 MO 64086 AND AND AND DETAILS	
	4. ACOUSTIC CEILING TIES (SEE FINISH SCHEDULE) WITH 1 - #8 SCREWS AT EACH JOIST.		
	MAXIMUM SPAN MAXIMUM SPAN MAXIMUM SPAN MAXIMUM SPAN MAXIMUM SPAN MAXIMUM SPAN MAXIMUM SPAN SPACING SPACING SPACING 4' - 0" 362 S 125 - 30 3' - 6" 550 S 125 - 30 3' - 6" 600 S 125 - 30 16" 11' - 0" 24" 9' - 0" 3' - 6" 600 S 125 - 30 16" 16' - 0" 24" 13' - 0"	CCL ORTHWES SSUMMIT VALL	
	Ø B 3' - 6" 550 S 125 - 30 16" 11' - 0" 24" 9' - 0" Ø 3' - 6" 600 S 125 - 30 16" 16' - 0" 24" 13' - 0"	CYCI INTERIOR TEN 910-W NORTHV LEE'S SUN LEE'S SUN	
AL BRACING		u ⊐ ∠	
		PROJECT LOCATIO SHEET TI	
		STAMP	
		SINTE OF MISSOLUTION	
		NUMBER A-2012004034	
/8" METAL Ο.C. Γ AT OPEN		DATE SIGNED: 2020-04-13	
METAL O.C. IG WALLS)		RENEWAL DATE: 2020-12-31 SHEETS BEARING THIS SEAL AND WET SIGNATURE ARE AUTHENTICATED. RESPONSIBILITY FOR ALL OLDER PLANS, SPECIFICATIONS OR INSTRUMENTS ARE DISCLAIMED.	~
		$\frac{REVISIONS}{\triangle}$	04_13
ARD ON BOTH SIDES I CEILINGS, I AT OPEN CEILINGS			2020_(
MING) 1 BOARD CEILINGS		$\frac{\bigtriangleup}{\bigtriangleup}$	SET: 2
EDULED		DATE 2020.04.13	
		PROJECT NUMBER A2276	PERMIT
NUOUS SIDES		SHEET NUMBER	
SCALE 8		RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES	
		04/14/2020	

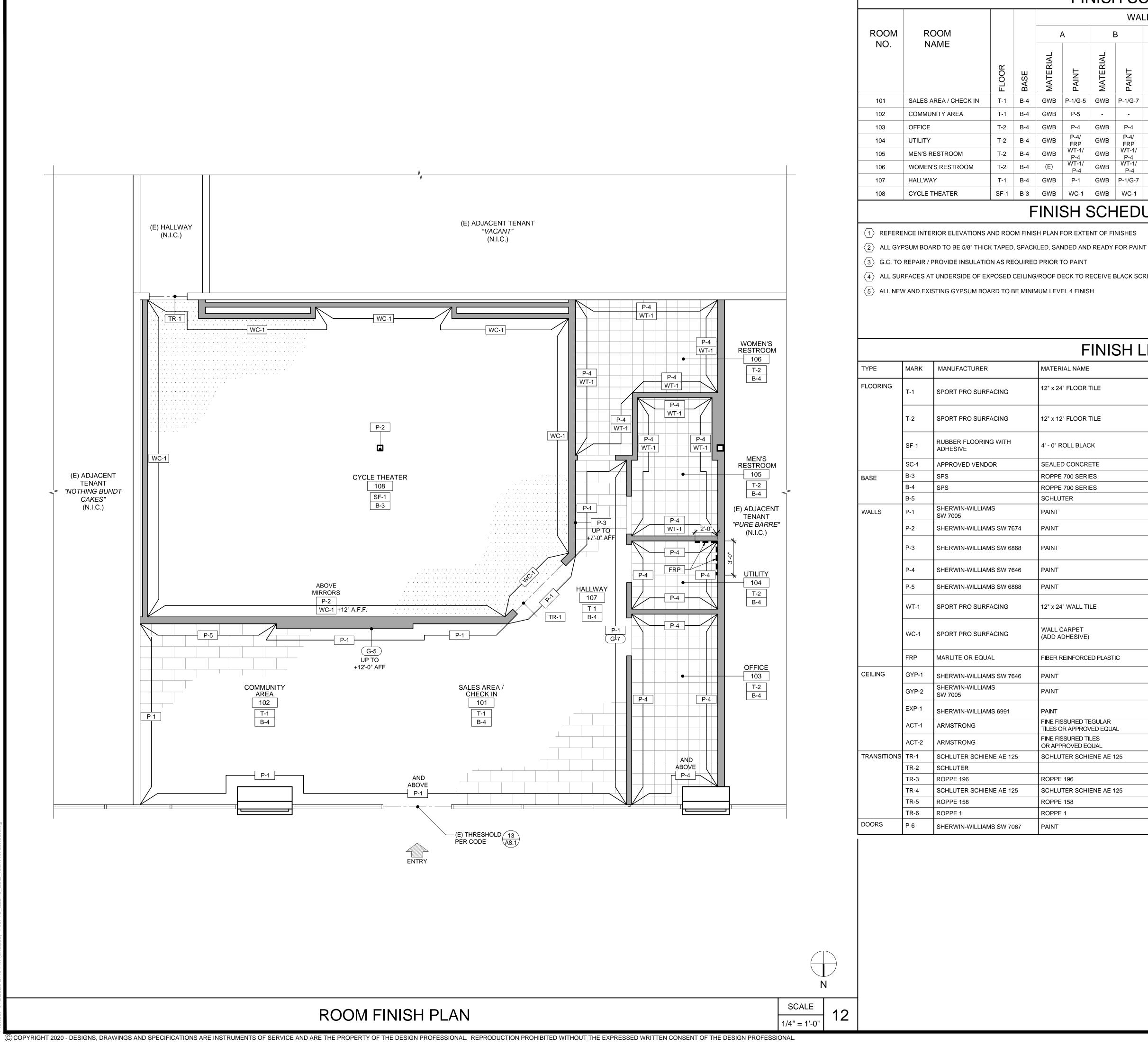


D	OOR		HDW.		FRAM	1E		
E	MAT'L	FINISH	SET NO.	MAT'L	FINISH	HEAD	JAMB	REMARKS
	(E)	(E)	5	(E)	(E)	(E)	(E)	
	S.C.	P-6	3	H.M.	P-6	4/A8.1	8/A8.1	
	S.C.	P-6	1	H.M.	P-6	4/A8.1	8/A8.1	
	S.C.	P-6	4	H.M.	P-6	4/A8.1	8/A8.1	
	S.C.	P-6	4	H.M.	P-6	4/A8.1	8/A8.1	
	S.C.	P-6	2	H.M.	P-6	4/A8.1	8/A8.1	
	(E)	P-6	5	(E)	P-6	(E)	(E)	

	SET #1: UTILITY			
S TO BE HOLLOW	3 HINGES	FBB179-4½ x 4½ NRP	US26D	STANLEY
	1 STOREROOM LOCKSET	QCL271 478S LC	626	STANLEY
EET A8.1 FOR				COMMERCIAL HARDWARE
	1 CYLINDER	OWNER STANDARD	626	BEST
	1 KICK PLATE	K0050 10"X2"	630	TRIMCO
ENTS - EXTERIOR		LDWX X CSK B4E		
	1 WALL BUMPER 3 DOOR SILENCERS	1270WV 1229 SERIES	630 GREY	TRIMCO TRIMCO
PE LOCKSET,	3 DOOR SILENCERS	1229 SERIES	GRET	TRIVICO
HOUT THE USE OF	SET #2: STUDIO DOOR (SEE PLA	-		
	2 DOUBLE ACTING	RTS/03 105/ HO BFI	689	DORMA
L NOT BE	CLOSER SET	1802-25-PH	630	TRIMCO
	OLOOLIN OLI	1002-25-111	000	TRIMOO
EMPERED,				
	2 PUSH - PULL	SH-LHP-S-60-1250		STRONGAR
TO A POINT	4 FLOOR STOP	(OR EQUAL) 1214 (MOUNT PER DETIAL)	626	MODERN TRIMCO
GE OF THE DOOR.	1 THRESHOLD	PER DETAIL (AS REQUIRED)	AL	NATIONAL
5.		(GUARD
S NOTED	SET #3: OFFICE DOOR			PRODUCTS
	3 HINGES	FBB179-4½ x 4½ NRP	US26D	STANLEY
DEVICES SHALL	1 OFFICE LOCKSET	QCL255 E 478S	626	STANLEY
				COMMERCIAL
E HAND AND ING OF THE WRIST	1 CYLINDER	OWNER STANDARD	626	HARDWARE BEST
	1 WALL BUMPER	1270WV	630	TRIMCO
PF.	3 DOOR SILENCERS	1229 SERIES	GREY	TRIMCO
ERVING AN				
HIGH-HAZARD	SET #4: RESTROOM DOOR			
	3 HINGES	FBB179-4½ x 4½ NRP	US26D	STANLEY
OUT CLOSERS	1 PRIVACY LOCKSET	QCL240 E 478S	626	STANLEY
IGING, SLIDING				COMMERCIAL HARDWARE
JBJECTED TO A	1 CLOSURE	8916-AFP	689	DORMA
JECTED TO A	1 KICK PLATE	K0050 10"X2"	630	TRIMCO
FION WHEN		LDWX X CSK B4E		
O THE LATCH SIDE.	1 WALL BUMPER	1270WV	630	TRIMCO
	1 SOLID THRESHOLD PER DETAIL 3 DOOR SILENCERS	1229 SERIES	GREY	TRIMCO
	S DOOR SILLINGERS		OIL I	
	SET #5: ENTRY / EXITING DOOR			







FINISH SCHEDULE

		WA	LLS				C	EILIN	G	REMARKS
	E	3	C	C	[0				(NUMBERS REFER TO NOTES BELOW)
PAINT	MATERIAL	PAINT	MATERIAL	PAINT	MATERIAL	PAINT	MATERIAL	PAINT	HEIGHT	D _C B
-1/G-5	GWB	P-1/G-7	(E)	P-1	-	-	(E)	EXP-1	U V U	$\langle 1 \rangle \langle 2 \rangle \langle 3 \rangle \langle 4 \rangle \langle 5 \rangle$
P-5	-	-	(E)	P-1	GWB	P-1	(E)	EXP-1	CEILING .1	$\langle 1 \rangle \langle 2 \rangle \langle 3 \rangle \langle 4 \rangle \langle 5 \rangle$
P-4	GWB	P-4	(E)	P-4	GWB	P-4	ACT-1	-		$\langle 1 \rangle \langle 2 \rangle \langle 5 \rangle$
P-4/ FRP	GWB	P-4/ FRP	GWB	P-4	GWB	P-4	ACT-1	-	:TED 8/ A:	$\langle 1 \rangle \langle 2 \rangle \langle 5 \rangle$
WT-1/ P-4	GWB	WT-1/ P-4	GWB	WT-1/ P-4	GWB	WT-1/ P-4	GWB	GYP-1	EFLEC	
WT-1/ P-4	GWB	WT-1/ P-4	GWB	WT-1/ P-4	GWB	WT-1/ P-4	GWB	GYP-1	REFLECTED PLAN 8/ A2	
P-1	GWB	P-1/G-7	-	-	(E)	P-1	GWB	EXP-1	ш	
WC-1	GWB	WC-1	GWB	P-2/ WC-1	GWB	WC-1	ACT-2	-	SE	

FINISH SCHEDULE REMARKS

 $\langle 4 \rangle$ ALL SURFACES AT UNDERSIDE OF EXPOSED CEILING/ROOF DECK TO RECEIVE BLACK SCRIM SHEET, OR PAINT WHERE NEEDED (U.N.O)

FINISH	LEGEND	
NAME	COLOR	REMARKS
LOOR TILE	GRAY	INSTALLATION: 1/2 OFFSET PATTERN LAY TILE PERPENDICULAR TO ENTRY. LATICRETE, PERMACOLOR #60 "DUSTY GRAY" 3/16" GROUT JOINT. COMMON AREA
LOOR TILE	GRAY	INSTALLATION: STACKED PATTERN. LATICRETE, PERMACOLOR #60 "DUSTY GRAY" 3/16" GROUT JOINT. AT RESTROOM/ CHANGING RM
L BLACK	BLACK	RUBBER FLOOR CYCLE THEATER
ONCRETE		
0 SERIES	BLACK	4" COVE BASE AT CYCLE THEATER
0 SERIES	150 DARK GRAY	4" COVE BASE AT LOBBY, RESTROOM & SHOWER
२		COVE-SHAPED PROFILE
	PURE WHITE FINISH: EGGSHELL	SALES AREA/ CHECK IN, COMMUNITY AREA & HALLWAY
	PEPPERCORN (GRAY) FINISH: EGGSHELL	OPTIONAL ACCENT WALL COLOR IN THE SALES AREA/ CHECK IN PAINT ABOVE MIRROR
	REAL RED FINISH: EGGSHELL	PAINT AT MARKER BOARD. BASE COAT (2) COATS SW6868. TOP COAT CLEAR PAINT PER MANUFACTURER'S RECOMMENDATIONS
	FIRST STAR FINISH: SEMI GLOSS	RESTROOMS, & UTILITY ROOM
	REAL RED FINISH: EGGSHELL	ACCENT WALL BEHIND LOCATION STAMP GRAPHIC
/ALL TILE	COLOR 60 "DUSTY GRAY"	RESTROOM. 1/2 OFFSET PATTERN 48" AFF. LATICRETE, SPECTRALOCK EPOXY GROUT COLOR #60 DUSTY GRAY, 3/16" GROUT JOINT
RPET ESIVE)		CYCLE THEATER ONLY MIRROR WALL: BETWEEN TOP OF BASE AND BOTTOM OF MIRRORS. SIDE & REAR WALLS: FULL HEIGHT TO CEILING
NFORCED PLASTIC	STANDARD FRP, SMOOTH SURFACE	S100G - WHITE. INSTALL w/ PVC TRIM
	FIRST STAR FINISH: SEMI GLOSS	RESTROOMS, & UTILITY ROOM
	PURE WHITE FINISH: EGGSHELL	HALLWAY
	BLACK MAGIC	SEMI GLOSS - OPEN CEILING AT SALES AREA/ CHECK IN
IRED TEGULAR APPROVED EQUAL	WHITE	2' x 2' ACOUSTIC SUSPENDED CEILING (MIN. CLASS C) GRID: STANDARD 15/16" STEEL (WHITE FINISH)
IRED TILES IVED EQUAL	BLACK FINISH	2' x 2' ACOUSTIC SUSPENDED CEILING (MIN. CLASS C) GRID: STANDARD 15/16" STEEL (BLACK FINISH)
R SCHIENE AE 125		TILE TO RUBBER
		T-1 TO SC-1 (SEALED CONCRETE)
6	BLACK	TILE TO CONCRETE
R SCHIENE AE 125		TERMINATION OF WT-1, BASE
8	BLACK	TERMINATION OF WC-1
	BLACK	PLATFORM NOSING
	CITY SCAPE FINISH: EGGSHELL	ALL DOORS
	-	•

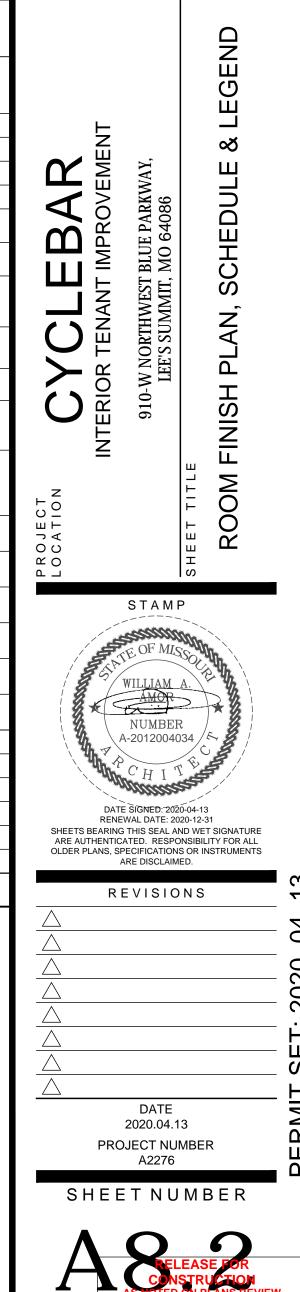
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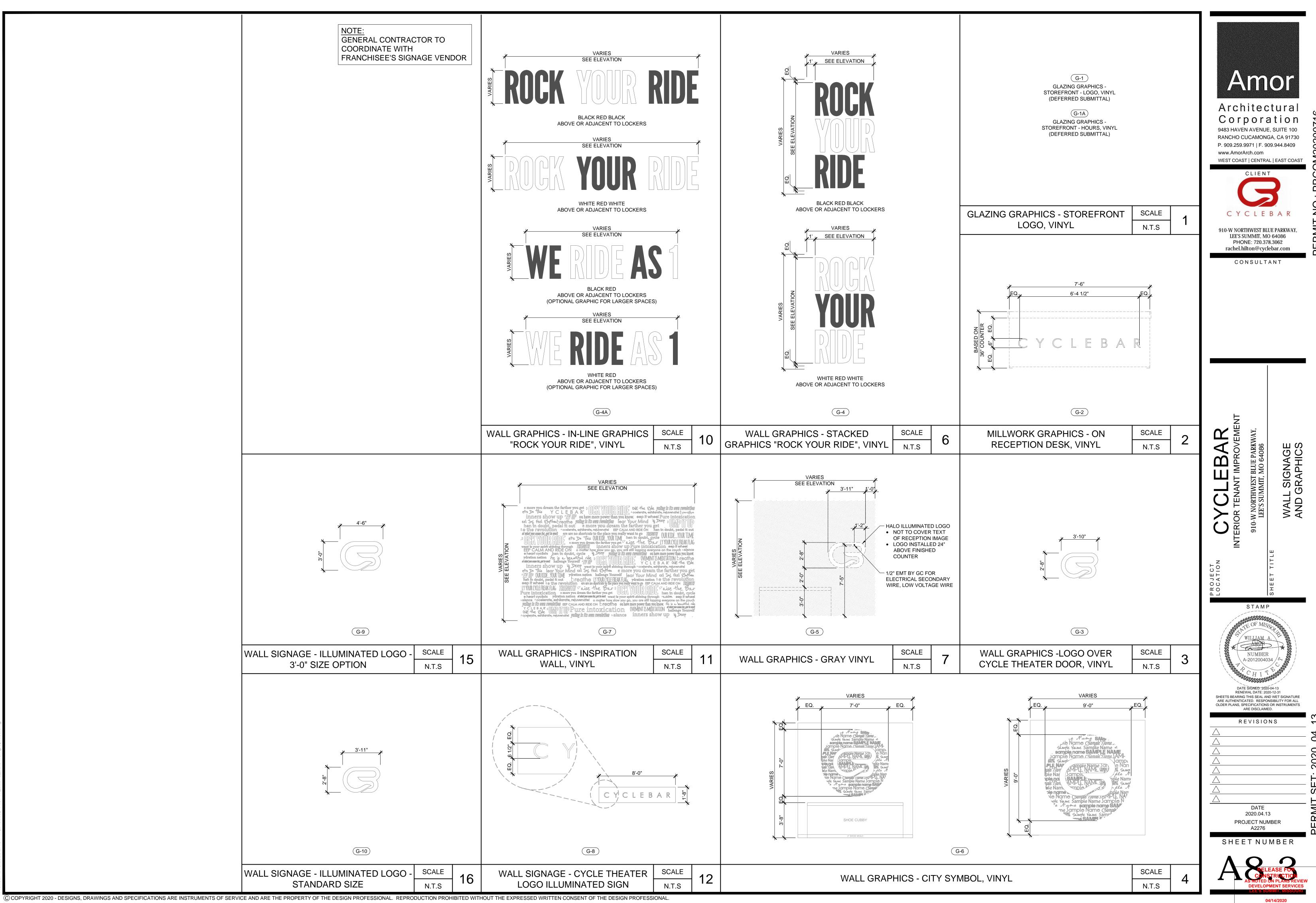


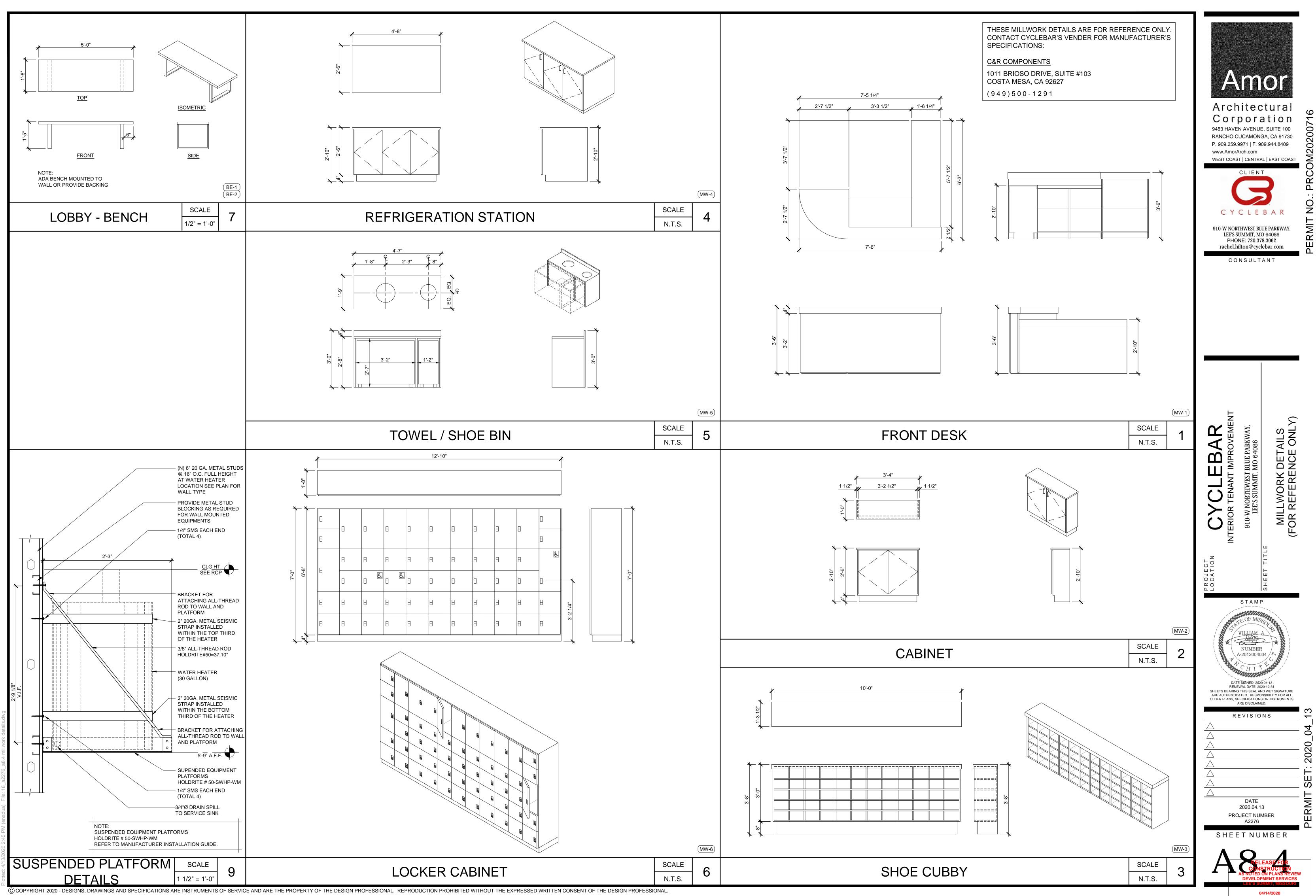
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	TESTING, ADJUSTING, AND BALANCING	
1.1	QUALITY ASSURANCE	1
Α.	TAB SPECIALISTS QUALIFICATIONS: CERTIFIED BY AABC. 1. TAB FIELD SUPERVISOR: EMPLOYEE OF THE TAB SPECIALIST AND CERTIFIED BY AABC.	
	2. TAB TECHNICIAN: EMPLOYEE OF THE TAB SPECIALIST AND CERTIFIED BY AABC AS A TAB TECHNICIAN.	
1.2	GENERAL PROCEDURES FOR TESTING AND BALANCING	2
A.	PERFORM TESTING AND BALANCING PROCEDURES ON EACH SYSTEM ACCORDING TO THE PROCEDURES CONTAINED IN AABC'S "NATIONAL STANDARDS FOR TOTAL SYSTEM BALANCE".	
В.	CUT INSULATION, DUCTS, PIPES, AND EQUIPMENT CABINETS FOR INSTALLATION OF TEST PROBES TO THE MINIMUM EXTENT NECESSARY FOR TAB PROCEDURES.	
	1. AFTER TESTING AND BALANCING, PATCH PROBE HOLES IN DUCTS WITH SAME MATERIAL AND THICKNESS AS USED	
	TO CONSTRUCT DUCTS. 3. INSTALL AND JOIN NEW INSULATION THAT MATCHES REMOVED MATERIALS. RESTORE INSULATION, COVERINGS, VAPOR	
C	BARRIER, AND FINISH.	ţ
U.	MARK EQUIPMENT AND BALANCING DEVICES, INCLUDING DAMPER-CONTROL POSITIONS, VALVE POSITION INDICATORS, FAN-SPEED-CONTROL LEVERS, AND SIMILAR CONTROLS AND DEVICES, WITH PAINT OR OTHER SUITABLE, PERMANENT IDENTIFICATION MATERIAL TO SHOW FINAL SETTINGS.	6
D.	TAKE AND REPORT TESTING AND BALANCING MEASUREMENTS IN INCH-POUND UNITS.	Ň
1.3	GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS	-
Α.	PREPARE TEST REPORTS FOR BOTH FANS AND OUTLETS. OBTAIN MANUFACTURER'S OUTLET FACTORS AND RECOMMENDED TESTING PROCEDURES. CROSS-CHECK THE SUMMATION OF REQUIRED OUTLET VOLUMES WITH	
В.	REQUIRED FAN VOLUMES. PREPARE SCHEMATIC DIAGRAMS OF SYSTEMS' "AS-BUILT" DUCT LAYOUTS.	8
	FOR VARIABLE-AIR-VOLUME SYSTEMS, DEVELOP A PLAN TO SIMULATE DIVERSITY.	
	DETERMINE THE BEST LOCATIONS IN MAIN AND BRANCH DUCTS FOR ACCURATE DUCT-AIRFLOW MEASUREMENTS. CHECK AIRFLOW PATTERNS FROM THE OUTDOOR-AIR LOUVERS AND DAMPERS AND THE RETURN- AND EXHAUST-AIR	
	DAMPERS THROUGH THE SUPPLY-FAN DISCHARGE AND MIXING DAMPERS.	Ś
	LOCATE START-STOP AND DISCONNECT SWITCHES, ELECTRICAL INTERLOCKS, AND MOTOR STARTERS. VERIFY THAT MOTOR STARTERS ARE EQUIPPED WITH PROPERLY SIZED THERMAL PROTECTION.	
Н.	CHECK DAMPERS FOR PROPER POSITION TO ACHIEVE DESIRED AIRFLOW PATH.	1
	CHECK FOR AIRFLOW BLOCKAGES. CHECK CONDENSATE DRAINS FOR PROPER CONNECTIONS AND FUNCTIONING.	
	CHECK FOR PROPER SEALING OF AIR-HANDLING-UNIT COMPONENTS.	1
L.	VERIFY THAT AIR DUCT SYSTEM IS SEALED AS SPECIFIED.	
	PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS	1
А.	ADJUST FANS TO DELIVER TOTAL INDICATED AIRFLOWS WITHIN THE MAXIMUM ALLOWABLE FAN SPEED LISTED BY FAN MANUFACTURER.	
A.	1. MEASURE TOTAL AIRFLOW. SET OUTSIDE—AIR, RETURN—AIR, AND RELIEF—AIR DAMPERS FOR PROPER POSITION THAT SIMULATES MINIMUM	1
	OUTDOOR-AIR CONDITIONS. WHERE DUCT CONDITIONS ALLOW, MEASURE AIRFLOW BY PITOT-TUBE TRAVERSE. IF NECESSARY, PERFORM MULTIPLE	
	PITOT-TUBE TRAVERSES TO OBTAIN TOTAL AIRFLOW.	1
C.	WHERE DUCT CONDITIONS ARE NOT SUITABLE FOR PITOT-TUBE TRAVERSE MEASUREMENTS, A COIL TRAVERSE MAY BE ACCEPTABLE.	
D.	IF A RELIABLE PITOT-TUBE TRAVERSE OR COIL TRAVERSE IS NOT POSSIBLE, MEASURE AIRFLOW AT TERMINALS AND CALCULATE THE TOTAL AIRFLOW.	1
	2. MEASURE FAN STATIC PRESSURES AS FOLLOWS:	
	MEASURE STATIC PRESSURE DIRECTLY AT THE FAN OUTLET OR THROUGH THE FLEXIBLE CONNECTION. MEASURE STATIC PRESSURE DIRECTLY AT THE FAN INLET OR THROUGH THE FLEXIBLE CONNECTION.	
	MEASURE STATIC PRESSURE ACROSS EACH COMPONENT THAT MAKES UP THE AIR-HANDLING SYSTEM.	1
D.	REPORT ARTIFICIAL LOADING OF FILTERS AT THE TIME STATIC PRESSURES ARE MEASURED. 3. REVIEW RECORD DOCUMENTS TO DETERMINE VARIATIONS IN DESIGN STATIC PRESSURES VERSUS ACTUAL STATIC	
	PRESSURES. CALCULATE ACTUAL SYSTEM-EFFECT FACTORS. RECOMMEND ADJUSTMENTS TO ACCOMMODATE ACTUAL CONDITIONS.	
	4. OBTAIN APPROVAL FROM ENGINEER FOR ADJUSTMENT OF FAN SPEED HIGHER OR LOWER THAN INDICATED SPEED. COMPLY WITH REQUIREMENTS IN HVAC SECTIONS FOR AIR-HANDLING UNITS FOR ADJUSTMENT OF FANS, BELTS,	1
	AND PULLEY SIZES TO ACHIEVE INDICATED AIR-HANDLING-UNIT PERFORMANCE. 5. DO NOT MAKE FAN-SPEED ADJUSTMENTS THAT RESULT IN MOTOR OVERLOAD. CONSULT EQUIPMENT	1
	MANUFACTURERS ABOUT FAN—SPEED SAFETY FACTORS. MODULATE DAMPERS AND MEASURE FAN—MOTOR AMPERAGE TO ENSURE THAT NO OVERLOAD OCCURS. MEASURE AMPERAGE IN FULL—COOLING, FULL—HEATING, ECONOMIZER, AND ANY OTHER OPERATING MODE TO DETERMINE THE MAXIMUM REQUIRED BRAKE HORSEPOWER.	
В.	ADJUST VOLUME DAMPERS FOR MAIN DUCT, SUBMAIN DUCTS, AND MAJOR BRANCH DUCTS TO INDICATED AIRFLOWS. 1. MEASURE AIRFLOW OF SUBMAIN AND BRANCH DUCTS.	1
	2. ADJUST SUBMAIN AND BRANCH DUCT VOLUME DAMPERS FOR SPECIFIED AIRFLOW.	
~	3. RE-MEASURE EACH SUBMAIN AND BRANCH DUCT AFTER ALL HAVE BEEN ADJUSTED.	2
C.	ADJUST AIR INLETS AND OUTLETS FOR EACH SPACE TO INDICATED AIRFLOWS. 1. SET AIRFLOW PATTERNS OF ADJUSTABLE OUTLETS FOR PROPER DISTRIBUTION WITHOUT DRAFTS.	
	2. MEASURE INLETS AND OUTLETS AIRFLOW.	
	 ADJUST EACH INLET AND OUTLET FOR SPECIFIED AIRFLOW. RE-MEASURE EACH INLET AND OUTLET AFTER THEY HAVE BEEN ADJUSTED. 	2
D.	VERIFY FINAL SYSTEM CONDITIONS.	
	1. RE-MEASURE AND CONFIRM THAT MINIMUM OUTDOOR, RETURN, AND RELIEF AIRFLOWS ARE WITHIN DESIGN. READJUST TO DESIGN IF NECESSARY.	2
	2. RE-MEASURE AND CONFIRM THAT TOTAL AIRFLOW IS WITHIN DESIGN.	2
	 RE-MEASURE ALL FINAL FAN OPERATING DATA, RPMS, VOLTS, AMPS, AND STATIC PROFILE. MARK ALL FINAL SETTINGS. 	
	5. TEST SYSTEM IN ECONOMIZER MODE. VERIFY PROPER OPERATION AND ADJUST IF NECESSARY.	2
	 MEASURE AND RECORD ALL OPERATING DATA. RECORD FINAL FAN-PERFORMANCE DATA. 	
1 5	TOLERANCES	2
	SET HVAC SYSTEM'S AIRFLOW RATES AND WATER FLOW RATES WITHIN THE FOLLOWING TOLERANCES:	
	1. SUPPLY, RETURN, AND EXHAUST FANS AND EQUIPMENT WITH FANS: PLUS OR MINUS 10 PERCENT.	2
	 AIR OUTLETS AND INLETS: PLUS OR MINUS 10 PERCENT. HEATING-WATER FLOW RATE: PLUS OR MINUS 10 PERCENT. 	
	4. COOLING-WATER FLOW RATE: PLUS OR MINUS 10 PERCENT.	2
В.	MAINTAINING PRESSURE RELATIONSHIPS AS DESIGNED SHALL HAVE PRIORITY OVER THE TOLERANCES SPECIFIED ABOVE.	

GENERAL NOTES

MATERIALS AND EQUIPMENT AND PERFORM LABOR TO INSTALL ETE AND OPERATIONAL MECHANICAL SYSTEMS AS INDICATED ON THE NGS, AS SPECIFIED AND AS REQUIRED PER APPLICABLE LOCAL BUILDING (IBC, IMC, IPC, ETC.), AMMENDMENTS, OTHER GOVERNING CODES AND ANCES AS APPLICABLE.

RACT DOCUMENT DRAWINGS FOR MECHANICAL WORK ARE MMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL IGEMENT ONLY.

MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH ACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND CABLE CODES AND REGULATIONS.

DE VIBRATION ISOLATION FOR MECHANICAL EQUIPMENT TO PREVENT MISSION OF VIBRATION TO BUILDING STRUCTURE AND A VIBRATION FREE LATION.

DINATE CONSTRUCTION OF MECHANICAL WORK WITH ALL OTHER TRADES ON OTHER CONTRACT DOCUMENT DRAWINGS.

GE / PRESSURE TESTS SHALL BE COMPLETED BEFORE ANY DUCTWORK ATION IS APPLIED.

DE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE RED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS AND OTHER EALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE PROVIDED ENERAL CONTRACTOR FOR INSTALLATION. CONTRACTOR SHALL DINATE LOCATION.

NG, ADJUSTING AND BALANCING AGENCY SHALL BE A MEMBER OF THE CIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL CING BUREAU (NEBB). TESTING, ADJUSTING AND BALANCING SHALL BE DRMED IN ACCORDANCE WITH THE AABC STANDARDS.

DINATE EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED NGS. COORDINATE AND PROVIDE DUCT TRANSITIONS REQUIRED FOR EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY COORDINATE DUCT DIMENSIONS BEFORE FABRICATION.

LLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS IN DETAILS FOR DUCTWORK AND EQUIPMENT (UNLESS OTHERWISE SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL RACTOR. OTHER TRADES SHALL NOT SHARE SUPPORTS.

DUCT CAN BE INSTALLED IN LIEU OF RECTANGULAR AND VICE VERSA AS AS IT HAS EQUIVALENT DUCT DIMENSIONS PER THE ASHRAE MENTALS HANDBOOK.

VORK AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE DINATED WITH GENERAL CONTRACTOR. ATTACHMENTS TO STEEL BAR TRUSSES OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.

NGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE WITH FIRE STOPPING WITH A PRODUCT SIMILAR TO 3M OR APPROVED

PRTS. SEISMIC RESTRAINTS, BRACING AND ANCHORING OF DUCTWORK. AND EQUIPMENT IS REQUIRED IN ACCORDANCE WITH THE REMENTS OF APPLICABLE CODES AND STANDARDS. (DELEGATED DESIGN).

OCATIONS OF ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE FICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND HAVE THE APPROVAL OF THE CONTRACTING OFFICER OF RECORD E BEING INSTALLED. DO NOT SCALE DRAWINGS.

TO SPECIFICATIONS FOR MATERIALS AND METHODS FOR FRUCTION. WHERE THE WORD "PROVIDE" OR NEW" IS USED SHALL BE RSTOOD TO MEAN "THE CONTRACTOR SHALL FURNISH AND INSTALL". MENT AND MATERIALS PROVIDED SHALL BE NEW AND FREE FROM TS. NO SALVAGED OR REFURBISHED OR USED EQUIPMENT OR MATERIAL BE ACCEPTED.

ONS AND SIZES OF WALL AND ROOF OPENINGS SHALL BE COORDINATED OTHER TRADES INVOLVED.

ONDITIONING CONDENSATE DRAIN LINES FROM EACH HVAC UNIT SHALL BE FULL SIZE FROM THE UNIT DRAIN OUTLET, WITH "P" TRAP AND PIPED TO ST DRAIN. INSULATE INTERIOR LINES WHERE CONDENSATE CAN OCCUR . TO PLUMBING DRAWINGS.

DE AND INSTALL LOW VOLTAGE (50V OR LESS) WIRING AND CONDUIT D FOR MECHANICAL SYSTEM OPERATION. THIS SHALL INCLUDE WIRING NY SENSOR. THERMOSTAT, VALVE, DAMPER, SPLIT SYSTEM (REMOTE OOLED CONDENSER), ETC. CONTROL WIRE AND CONDUIT SHALL COMPLY THE LATEST NATIONAL ELECTRICAL CODE.

DETAILED DUCTWORK SHOP DRAWINGS TO ENGINEER FOR REVIEW. DRAWINGS SHALL BE COMPLETE WITH TOP AND BOTTOM DIMENSIONS, DING SUPPORTS, SEISMIC ATTACHMENT DETAILS AND LOCATIONS. SHOP NGS SHALL BE APPROVED BEFORE ANY MATERIALS ARE ORDERED OR FRUCTION IS STARTED.

DULED EQUIPMENT IS THE BASIS OF DESIGN. IF THE CONTRACTOR TS ON OTHER APPROVED MANUFACTURERS OR MODEL NUMBERS, THE ACTOR WILL FULLY COORDINATE EQUIPMENT REQUIREMENTS WITH TRADES AND SHALL INCUR ANY RELATED COSTS.

AIN A SAFE WORKING ENVIRONMENT AT THE CONSTRUCTION SITE AND UNDING AREAS.

RATE "AS-BUILT" DRAWINGS SHALL BE MAINTAINED DURING FRUCTION AND SUBMITTED FOR APPROVAL UPON COMPLETION OF LATION. INDICATE DUCT AND EQUIPMENT SIZES AND LOCATIONS.

METAL DUCTWORK SHALL BE FABRICATED AND INSTALLED IN RDANCE WITH THE LATEST SMACNA DESIGN AND CONSTRUCTION ARDS.

ORM WORK IN A COMPLETE AND WORKMANLIKE MANNER IN DRMANCE WITH CODES, AND MANUFACTURER'S RECOMMENDATIONS. RACTOR SHALL COORDINATE WITH OTHER TRADES TO PROVIDE A LETE AND WORKING SYSTEM.

ERSE JOINTS FOR SUPPLY DUCTS SHALL BE SEALED WITH APPROVED

MENT DESIGNED TO BE FIXED IN POSITION SHALL BE SECURELY NED IN PLACE.

- 28. CONTRACTOR SHALL NOTE THE CRITICAL SPACE AVAILABLE ABOVE CEILINGS. PROVIDE TRANSITION PIECES AND BEAM BOXES AT CROSSOVERS, UNDER BEAMS, OVER/UNDER PIPES AS REQUIRED TO ACCOMMODATE TO ACCOMMODATE DUCTS WITHIN SPACE AVAILABLE. PROVIDE EQUIVALENT DUCT SIZE TO THE DIAMETER SHOWN COORDINATE CLOSELY WITH OTHER SECTIONS TO REDUCE NECESSITY OF TRANSITION TO A MINIMUM. NO ADDITIONAL COSTS WILL BE PAID FOR ANY REQUIRED TRANSITIONS, BEAM BOXES OR OTHER SPECIAL CHANGE SHAPE PIECES.
- 29. NO WATER PIPING IS ALLOWED ABOVE THE ELECTRICAL ROOM, TELEPHONE SWITCH ROOM AND DATA/COMMUNICATION ROOM.
- 30. UPON COMPLETION OF WORK, CONTRACTOR SHALL CLEAN AND REMOVE ALL DEBRIS ASSOCIATED WITH HIS/HER WORK AND DISPOSE OF IT. AREA SHALL BE LEFT IN A CONDITION ACCEPTABLE TO OWNER.
- 31. DUCT SMOKE DETECTORS SHALL BE INSTALLED PER MANUFACTURER'S WRITTEN RECOMMENDATIONS AND SHALL BE TIED-IN TO THE BUILDING FIRE ALARM SYSTEM. CONNECTION TO FIRE ALARM FOR SUPERVISION ONLY.
- 32. ALL REQUEST FOR ACCESS OR CONNECTIONS MUST BE MADE IN WRITING IN ADVANCE OF WORK ACTIVITY THROUGH THE BUILDING MANAGER. CONTRACTOR COORDINATE DURATION OF REQUEST REQUIRED.
- 33. ALL SYMBOLS SHOWN ON SYMBOL LIST ARE NOT NECESSARILY USED ON THIS PROJECT.

DEMOLITION NOTES

THESE DOCUMENTS WERE PREPARED PER AVAILABLE AS-BUILT DOCUMENTS. FIELD VERIFY ALL EXISTING CONDITIONS (SIZE, LOCATION, ETC.) PRIOR TO BEGINNING DEMOLITION. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN CONTRACT DOCUMENTS AND EXISTING CONDITIONS.

DEMOLITION OR INTERRUPTION TO EXISTING SERVICES SHALL BE MINIMIZED AND COORDINATED WITH THE OWNER'S REPRESENTATIVE.

PATCH AND REPAIR AREAS, PIPING, DUCTWORK, ETC., EXISTING OR NEW, DAMAGED AS A RESULT OF THE DEMOLITION WORK. REPAIR TO MATCH EXISTING CONDITIONS.

BEFORE DEMOLITION AND REMOVAL OF DUCTWORK OR PIPING, VERIFY HVAC EQUIPMENT CONNECTED ONLY SERVES THE AREA INCLUDED IN THE CURRENT PHASE OF DEMOLITION. ONCE CONFIRMED, DUCTWORK OR PIPING SHALL BE REMOVED TO THE POINTS INDICATED ON PLANS, UNLESS NOTED OTHERWISE.

REMOVE ASSOCIATED HANGERS, SUPPORTS, AND ANCHORS OF DEMOLISHED EQUIPMENT, DUCTWORK OR DEVICES.

PROVIDE TEMPORARY OR PERMANENT CAPS FOR EXISTING PIPING. NO PIPING SHALL BE LEFT OPEN ENDED.

PROVIDE TEMPORARY OR PERMANENT MECHANICALLY FASTENED SHEET METAL CAPS FOR REMAINING DUCTWORK OPENINGS. SEAL AIRTIGHT PER SMACNA GUIDELINES.

REPAIR AND OR REPLACE INSULATION REMOVED OR DAMAGED AS A RESULT OF DEMOLITION

DEMOLISHED MATERIAL SHALL BE PROMPTLY REMOVED FROM PROJECT SITE AND DISPOSED OF IN AN EPA-APPROVED MANNER. EQUIPMENT OR DEVICES IN FAIR CONDITION SHALL BE REVIEWED WITH THE OWNER FOR POSSIBLE SALVAGE PRIOR TO DISPOSAL.

CONTRACTOR BIDDING NOTES

- 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.
- 2. 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 CONTRACTORS COST.
- 3. 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.

FIRE LIFE SAFETY NOTES

- . THE ELECTRICAL CONTRACTOR SHALL INTERCONNECT ALL FANS AND AC UNITS WITH THE BUILDING LIFE SAFETY SYSTEM FOR UNIT SHUT DOWN UPON A SIGNAL FROM THE LIFE SAFETY SYSTEM.
- 2. WHERE DUCT MOUNTED SMOKE DETECTORS FOR FANS AND AC UNITS ARE REQUIRED, THE HVAC CONTRACTOR SHALL FURNISH AND INSTALL THE SMOKE DETECTORS, THE ELECTRICAL CONTRACTOR PROVIDE ALL WIRING AND CONDUIT TO SIGNAL THE LIFE SAFETY SYSTEM. THE LIFE SAFETY SYSTEM SHALL SHUT DOWN THE EXHAUST FANS OR AC UNITS AS DESCRIBED IN NOTE #1.
- 3. ALL SMOKE DETECTORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION AND SHALL BE COMPATIBLE WITH WITH THE BASE BUILDING STANDARDS.
- 4. EACH SINGLE SYSTEM PROVIDING HEATING OR COOLING AIR IN EXCESS OF 2000 CFM SHALL BE EQUIPPED WITH A SMOKE DETECTOR/AUTOMATIC SHUT-OFF.

HVAC GENERAL NOTES
1. MECHANICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC TO THE EXTENT THAT MANY OFFSETS, BENDS, ELBOWS, SPECIAL FITTINGS, AND EXACT LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, AND RELATED APPURTENANCES ARE NOT INDICATED. THE CONTRACTOR SHALL CAREFULLY STUDY THE DRAWINGS AND VERIFY ACTUAL FIELD CONDITIONS IN ORDER TO DETERMINE THE BEST METHODS, EXACT LOCATION, ROUTING, AND OBSTRUCTIONS, WORK BY OTHER TRADES, ETC. WHICH AFFECT THE INSTALLATION OF HIS (HER) WORK.
2.PRIOR TO BID, THE CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS. IT IS THE CONTRACTORS RESPONSIBILITY TO ASSURE THAT ALL DUCTWORKS, PIPING, AND EQUIPMENT WILL IT IN THE EXISTING BUILDING AREAS. ALL CUTTING, PATCHING, RELOCATION OF EXISTING WORK, AND THE TRANSPORTATION OF ALL NECESSARY MATERIALS AND EQUIPMENT TO THE INDICATED SITE LOCATION SHALL ALSO BE INCLUDED IN THE BID.
3.IF FIELD ALTERATIONS TO DUCT SYSTEMS HAVE TO BE MADE DUE TO JOB SITE CONDITIONS, THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER, SHALL PREPARE HIS (HER) OWN SHOP AND INSTALLATION DRAWINGS AND SUBMIT TO THE ARCHITECT / ENGINEER FOR APPROVAL PRIOR BEGINNING OF WORK.
4.COORDINATE ALL LOCATION OF GRILLES, REGISTERS, AND SIDEWALL REGISTERS W/ ARCHITECTURAL, STRUCTURAL, AND ELECTRICAL ELEMENTS. THE CONTRACTOR IS ALSO REQUIRED TO COORDINATE ALL MECHANICAL UNIT LOCATIONS WITH OTHER GENERAL TRADES.
5.IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO PAY FOR ALL NECESSARY PERMITS AND FEES AND OBTAIN APPROVALS PRIOR TO INSTALLATION.
6.ALL WORK SHALL COMPLY WITH ALL (APPLICABLE) FEDERAL, STATE, AND LOCAL JURISDICTION CODES. WHERE THE PLANS SHOW MORE RESTRICTIVE REQUIREMENTS, THE PLANS SHALL GOVERN AND NOTHING ON THESE PLANS SHALL BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE AND/OR REGULATIONS.
7.SCOPE OF WORK CONSISTS OF FURNISHING LABOR, MATERIALS AND EQUIPMENT FOR THE INSTALLATION. THE WORK ALSO INCLUDES PLACING INTO OPERATION COMPLETE AND OPERABLE HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEMS AS SPECIFIED AND SHOWN ON PLANS. THIS INCLUDES, BUT NOT LIMITED TO: HVAC UNITS, EXHAUST FANS, DUCTLESS SPLIT-SYSTEMS, DUCTWORK, AIR DISTRIBUTION, CONTROLS AND ACCESSORIES.
8.CONTRACTOR SHALL INSPECT ANY EXISTING DUCTWORK FOR DEFECTS AND REPORT TO THE ARCHITECT / ENGINEER AND THE OWNER ANY DEFICIENCIES FOUND PRIOR TO PERFORMING ANY WORK. CONTRACTOR SHALL CLEAN ALL EXISTING DUCTWORK, GRILLES, REGISTERS AND DIFFUSERS PRIOR TO INSTALLING THE NEW WORK.
9.HVAC UNIT FLEXIBLE DUCT CONNECTIONS SHALL BE A MINIMUM OF 6 INCHES LONG, HOLD IN-PLACE WITH HEAVY METAL BANDS, AND SECURELY ATTACHED TO PREVENT ANY LEAKAGE AT THE CONNECTION POINTS. FLEXIBLE CONNECTIONS SHALL BE FABRICATED FROM APPROVED FLAME PROOF FABRIC CONFORMING TO <u>NFPA 90A</u> . <u>ASBESTOS CLOTH IS NOT ACCEPTABLE</u> .
10. THE CONTRACTOR SHALL FURNISH AND INSTALL ACCESS DOORS AND / OR ACCESS PANELS AS NECESSARY TO SERVICE CONTROL EQUIPMENT. ALL ACCESS DOOR AND PANELS LOCATIONS SHALL BE VERIFIED WITH THE ARCHITECT PRIOR TO INSTALLATION.
11. CONTRACTOR SHALL PROVIDE ALL AIR TEMPERATURE CONTROLS INCLUDING WIRING, TUBING AND THERMOSTATS (WITH LOCKING COVERS) AND ALL MISCELLANEOUS APPURTENANCES TO MEET THE INTENT OF THESE DOCUMENTS.
12. ALL ACCESS AND WORKING SPACE MUST BE PROVIDED AND MAINTAINED ABOUT ALL AIR CONDITION UNITS, ELECTRICAL AND CONTROL EQUIPMENT TO PERMIT READY AND SAFE OPERATION, EXAMINATION, AND MAINTENANCE.
13. ALL DUCTS, PLENUMS, FLASHING, EQUIPMENT AND WORKS EXPOSED TO THE WEATHER MUST BE WATERTIGHT AND PROTECTED.
14. HANGER FOR SUSPENDED EQUIPMENT AND DUCTWORK SHALL BE SWAY BRACED IN (2) TWO DIRECTIONS PER "GUIDELINES" FOR SEISMIC RESTRAINTS OF MECHANICAL EQUIPMENT AS REQUIRED PER SMACNA.
15. ALL INSULATION MATERIALS SHALL HAVE A FLAME SPREAD RATING OF NO MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO MORE THAN 50.
 16. VERIFY EXACT LOCATION OF ALL THERMOSTATS, CONTROL PANELS, AND REMOTE SENSORS BEFORE ROUGH-IN. COORDINATE WITH ARCHITECTURAL PLANS FOR EXACT LOCATION. INSTALL ALL WALL-MOUNTED THERMOSTAT AT <u>+4'-0" MAX. ABOVE FINISH FLOOR</u> .
17. PERFORM PRE-READING AIR BALANCE REPORT AFTER AIR DIFFUSERS INSTALLATION. BALANCE ALL SUPPLY DIFFUSERS, RETURN AND EXHAUST AIR DEVICES AS REQUIRED. AIR BALANCE SHALL BALANCE WITH ALL SUPPLY DIFFUSERS, RETURN AND EXHAUST AIR DEVICES. AIR BALANCE SHALL BE PERFORMED BY AN INDEPENDENT CONTRACTOR OR A CERTIFIED MEMBER OF <u>A.A.B.C.</u> OR <u>N.E.E.B.</u> SUBMIT A COMPLETE CERTIFIED TEST AND AIR BALANCE REPORT FOR FINAL REVIEW AND APPROVAL.
18. PROVIDE EXTRACTORS AT ALL SUPPLY AIR DUCTS "T" CONNECTIONS AND MANUAL VOLUME DAMPERS IN ALL SUPPLY AIR AND RETURN AIR BRANCH DUCTS TO DIFFUSERS AND REGISTERS.
19. PRIOR INSTALLATION OF ROOFTOP UNITS, COORDINATE WITH ARCHITECTURAL

- 19. PRIOR INSTALLATION OF ROOFTOP UNITS, COORDINATE WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION, OPENING DETAILS, AND ADDITIONAL CONSTRUCTION REQUIREMENTS.
- 20. ALL OUTSIDE AIR INTAKES SHALL BE LOCATED AT A MINIMUM OF 10 FEET AWAY FROM ANY PLUMBING VENT, EXHAUST, AND FLUE OUTLETS.
- 21. INSTALLATIONS OF AESTHETICS ARE A VERY IMPORTANT COMPONENT OF THIS PROJECT. INSTALLATION OF MECHANICAL WORK SHALL BE OF THE HIGHEST QUALITY AND PROFESSIONAL CRAFTSMANSHIP POSSIBLE.
- 22.PREPARE ALL FINAL AS-BUILT DRAWINGS AT THE END OF THE PROJECT COMPLETION AND SUBMIT TO ARCHITECT AND ENGINEER (AS REQUIRED) FOR RECORD.

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DEVELOPMENT SERVICES

SECTION	N 15000 — MECHANICAL N 15001 — BASIC MECHANICAL REQUIREMENTS NERAL CONDITIONS	SECTION 15008 – DISCREPANCIES IN DOCU 1. DRAWINGS AND SPECIFICATIONS ARE EACH OTHER. WORK SPECIFIED BUT ON DRAWINGS BUT NOT SPECIFIED,
A. GEI 1.	DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15000. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND IS RESPONSIBLE FOR THE COORDINATION OF THEIR WORK AND THE WORK OF THEIR SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THIS	AS THOUGH MENTIONED IN BOTH S OTHERWISE DIRECTED, INSTALLATION
2	APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15000. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO READ THE	SHALL BE IN ACCORDANCE WITH AF WITH MANUFACTURER'S INSTALLATION
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	OF THEIR SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THIS CONTRACTORS RESPONSIBILITY TO PROVIDE THEIR SUBCONTRACTORS WITH A	QUANTITY, QUALITY AND COST VIA T FOR CLARIFICATION ON DIRECTION F
З	COMPLETE SET OF BID DOCUMENTS.	SECTION 15009 DEMOLITION
	INSPECTION OF THEIR WORK AND THE WORK OF THEIR SUBCONTRACTORS	1. THIS CONTRACTOR SHALL BE RESPO
4.	THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO	GENERAL CONTRACTOR COORDINATE
	COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL	2. EACH CONTRACTOR SHALL VERIFY S
	BE LISTED SEPARATELY AND QUALIFIED IN THE CONTRACTORS BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING	
	CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE	THIS PROJECT. UNLESS SPECIFICAL
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э.	DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF WORK. REFER TO RESPONSIBILITY SCHEDULE FOR INFORMATION IN REGARD TO RESPONSIBILITY OF WORK OR ITEMS WHICH MAY AFFECT BID.	REMOVED AND THE ROOF PATCHED. OR ON THE ROOF NOT APPLICABLE AND ROOF/WALL/FLOOR PATCHED/I
	N 15002 – GENERAL REQUIREMENTS THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY	
1.	SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM AS SHOWN ON THE	CUT OFF AND SEALED BELOW OR V THEY ARE NOT TO BE REUSED IN
	TO PROVIDE A COMPLETE MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE	LANDLORD OR CODES, ABANDONED REMOVED TO POINT OF ORIGIN. C
	LANDLORD OR TENANT SHALL BE PROVIDED BY THE MECHANICAL	THE GENERAL CONTRACTOR AND TE
~	CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD AND THE TENANT PROJECT MANAGER, AS REQUIRED.	
2.	DRAWINGS AND SPECIFICATIONS ARE TO BE CONSIDERED AS SUPPLEMENTING EACH OTHER. WORK SPECIFIED BUT NOT SHOWN ON DRAWINGS, OR SHOWN	SECTION 15010 – CUTTING AND PATCHING 1. THE CONTRACTOR SHALL PERFORM
	ON DRAWINGS BUT NOT SPECIFIED, SHALL BE PERFORMED OR FURNISHED AS THOUGH MENTIONED IN BOTH SPECIFICATIONS AND DRAWINGS. IF NOT	REQUIRED FOR THE INSTALLATION ON CUTTING OF THE STRUCTURE SI
	OTHERWISE DIRECTED, INSTALLATION OF ALL SYSTEMS AND EQUIPMENT SHALL BE IN ACCORDANCE WITH APPLICABLE CODES AND IN ACCORDANCE	APPROVAL OF THE LANDLORD AND 2. PATCHING SHALL BE OF THE SAME
	WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHERE WORK DESCRIBED IN THE SPECIFICATIONS IS IN CONFLICT WITH THE WORK SHOWN	AND SHALL MATCH ACCURATELY ALI MANNER SATISFACTORY TO THE ARC
	ON THE DRAWINGS, THE CONTRACTOR SHALL SUPPLY THE GREATER QUANTITY, QUALITY AND COST VIA THE BID AND CONTACT THE ENGINEER	MANAGER. 3. EXISTING UTILITIES, ETC. THAT ARE
3.	FOR CLARIFICATION ON DIRECTION PRIOR TO INSTALLATION. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED	PERIOD, WHETHER OR NOT DUE TO BE REPAIRED OR REPLACED BY TH
	CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE	CONDITION SUITABLE TO THE LANDL
	MORE STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.	SECTION 15011 – SLEEVES 1. THIS CONTRACTOR SHALL PROVIDE
4.	ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY	FACILITIES IN THE INSTALLATION FA
	ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING ACCESS PANELS FOR SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.	SHALL EXTEND 2" ABOVE THE ELOC
5.	ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD ENGINEERING AND CONSTRUCTION PRACTICES.	THROUGH THE LANDLORD ANY COR MASONRY FLOORS OR WALLS.
	UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW,	2. ALL SLEEVES AND OPENINGS THROUS SHALL BE FIRE SEALED WITH CALCI
	UNDERWRITERS LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF STATE AND LOCAL CODES, WHICHEVER	FIRE RATED SEALANTS OR EQUAL, S
	IS MORE STRINGENT.	BE STANDARD WEIGHT STEEL PIPE OTHER THAN MASONRY PARTITIONS,
	N 15003 – CODES ALL WORK SHALL CONFORM TO THE LANDLORDS' CRITERIA, THE STATE'S,	FOR CONCEALED VERTICAL PIPING, GALVANIZED STEEL MINIMUM.
	COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES	SECTION 15012 - HANGERS
	AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. THIS	1. HANGERS SHALL INCLUDE ALL MISC BANDS, C-CLAMPS WITH RETAINING
	CONTRACTOR SHALL INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST	NECESSARY FOR THE INSTALLATION 2. HANGERS SHALL BE FASTENED TO
	BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED	MASONRY, BUT NOT TO PIPING. H. PERMITTED. HANGERS MUST BE AT
	BY TENANT TO THE CONTRACTOR.	JOIST. WHERE INTERFERENCES OC DUCTWORK OR PIPING, THE CONTRA
SECTION	N 15004 – LICENSES, PERMITS, INSPECTIONS & FEES THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS,	HANGERS OR SUPPORTS WHICH SH
	INSPECTIONS, AND FEES REQUIRED OR RELATED TO THEIR WORK.	EQUIPMENT. HANGER TYPES AND I
۷.	FURNISH TO TENANT'S PROJECT MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.	3. HANGERS FOR ALL INSULATED PIPIN
	N 15005 - TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS	THE OUTER DIAMETER OF INSULATIO GALVANIZED SADDLE BETWEEN THE
1.	WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE PASE PID. MANUFACTURERS CONSIDERED AS AN EQUAL	 HANGERS AND PIPING OF DISSIMILA SEPARATED.
	MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY TENANT'S PROJECT MANAGER THROUGH PRIOR	DIVISION 15500 – HEATING, VENTILATING, A
	SHOP DRAWING SUBMITTAL PROCESS, FOR ACCEPTANCE. THE USE OF ANY	SECTION 15501 – SUMMARY OF WORK
~	UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.	A. THIS CONTRACTOR SHALL FURNISH ALL NECESSARY FOR, REASONABLY IMPLIED
2.	MECHANICAL CONTRACTOR SHALL SUBMIT ONLY SUBSTITUTION REQUESTS TO TENANT'S PROJECT MANAGER FOR APPROVAL, SUBMISSIONS SHALL BE MADE	INSTALLATION, COMPLETION AND TESTING SYSTEMS AS CALLED FOR IN THE SPEC
	EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR TENANT'S PROJECT MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR	AS REQUIRED BY JOB CONDITIONS, TO FOLLOWING:
	CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BEAR THE STAMP OF GENERAL CONTRACTOR AND THE SUB-CONTRACTOR SHOWING THAT THEY	1. (2) NEW GAS HEAT/ELEC. COOLING CONTROLS AND COMPONENTS AS S
	HAVE REVIEWED AND CONFIRMED THAT THE SUBMITTALS ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR	EXHAUST FANS, NEW SUPPLY, RETU CONTROLS AND ACCESSORIES SPEC
	INDICATE WHERE EXCEPTIONS HAVE BEEN TAKEN.	2. THE AIR DEVICES AS NOTED ON TH CONTRACTOR. THE CONTRACTOR S
	N 15006 – GUARANTEE THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK PROVIDED	RECEIVING, VERIFYING QUANTITIES A OF ANY CLAIM FORMS. REFER TO
	UNDER THEIR CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE AT THEIR OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT	DEVICE SCHEDULE ON PLANS. 3. ALL MATERIALS SHALL BE NEW AND
	WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE (IN WRITING) OF THE INSTALLATION BY TENANT'S	VERIFY ALL DIMENSIONS AT THE SI 4. ALL VALVES, DAMPERS, ETC. SHALL
	PROJECT MANAGER. EXTENDED WARRANTIES ARE AS SPECIFIED WITH INDIVIDUAL EQUIPMENT.	PERMIT ACCESS FOR SERVICE WITH MATERIALS.
	N 15007 – RECORD DRAWINGS	
A. THI TO	S CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS ON THE JOB SITE RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:	
1.	LOCATION OF CONCEALED PIPING VALVES AND DUCTS. REVISIONS, ADDENDUMS, AND CHANGE ORDERS.	
	SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER	
В ∧т	TRADES. COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE	
CO	NTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY E ACCURACY OF EACH PRINT BY SIGNATURE THEREON. ONE COPY OF THE	
	ST RECENT SET OF DRAWINGS WITH TEMPERATURE CONTROL DRAWINGS CLUDED SHALL BE DELIVERED TO TENANT'S PROJECT MANAGER.	
	LUDED SHALL BE DELIVERED TO TEMANTS PROJECT MANAGER	

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- S ARE TO BE CONSIDERED AS SUPPLEMENTING D BUT NOT SHOWN ON DRAWINGS, OR SHOWN IFIED, SHALL BE PERFORMED OR FURNISHED OTH SPECIFICATIONS AND DRAWINGS. IF NOT ATION OF ALL SYSTEMS AND EQUIPMENT TH APPLICABLE CODES AND IN ACCORDANCE LATION INSTRUCTIONS. WHERE WORK FIONS IS IN CONFLICT WITH THE WORK SHOWN RACTOR SHALL SUPPLY THE GREATER VIA THE BID AND CONTACT THE ENGINEER TION PRIOR TO INSTALLATION.
- RESPONSIBLE FOR THE COORDINATION OF THE RK AND THE DEMOLITION PROVIDED BY THE DINATE WITH THE GENERAL CONTRACTOR ANY D TO BE LEFT INTACT.
- RIFY SCOPE OF WORK WITH THE GENERAL VAL OF ALL EXISTING FIRE PROTECTION, HVAC UNITS, REFRIGERANT RECAPTURE, SOCIATED ROOF CURBS NOT BEING REUSED ON IFICALLY NOTED OTHERWISE. CONTRACTOR MUST ALL PRESUMED ABANDONED EQUIPMENT, PIPES, PRIOR TO REMOVAL. ROOF CURBS SHALL BE CHED. ALL EXTRANEOUS ITEMS IN THE SPACE CABLE TO THE NEW WORK MUST BE REMOVED HED/REPAIRED TO MATCH EXISTING NED PIPES, DUCTS, OR EQUIPMENT IN THE ETE, OR OTHERWISE INACCESSIBLE ARE TO BE OR WITHIN FLOOR OR WALL LEVEL WHEN D IN THIS PROJECT. IF REQUIRED BY ONED PIPING AND/OR DUCTWORK MUST BE
- I. CONFIRM THE EXTENT OF DEMOLITION WITH ND TENANT PRIOR TO BID AND INCLUDE IN BID HE GENERAL CONTRACTOR AND TENANT.
- FORM ALL CUTTING AND PATCHING AS ION OF THE WORK UNDER THIS SPECIFICATION. IRE SHALL BE PERMITTED WITHOUT WRITTEN AND ARCHITECT OR ENGINEER. SAME WORKMANSHIP, MATERIAL AND FINISH LY ALL SURROUNDING CONSTRUCTION IN A ARCHITECT AND TENANT'S PROJECT
- ARE DAMAGED DURING THE CONSTRUCTION UE TO THE CONTRACTOR'S NEGLIGENCE SHALL BY THE CONTRACTOR AND LEFT IN A LANDLORD AND TENANT'S PROJECT MANAGER.
- VIDE SLEEVES TO PROTECT EQUIPMENT OR N. EACH SLEEVE SHALL EXTEND THROUGH IT'S PARTITION AND SHALL BE CUT FLUSH WITH VES THAT PENETRATE THE FLOOR, WHICH FLOOR. CONTRACTOR MUST COORDINATE CORE DRILLING OR CUTTING OF OPENINGS IN
- THROUGH FIRE RATED WALLS AND/OR FLOORS CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" UAL, SO AS TO RETAIN THEIR FIRE RATING. SONRY WALLS, FLOORS, AND PARTITIONS SHALL PIPE FINISHED WITH SMOOTH EDGES. FOR IONS. THROUGH SUSPENDED CEILINGS. OR PING, SLEEVES SHALL BE NO. 22 U.S.G.
- MISCELLANEOUS STEEL SUCH AS ANGLE IRON, H. DUCTWORK INSULATION INING CLIPS, CHANNELS, HANGER RODS, ETC.,
-) TO BUILDING STEEL, CONCRETE, OR . HANGING FROM METAL DECK IS NOT BE ATTACHED TO UPPER CHORD OF BAR S OCCUR, AND IN ORDER TO SUPPORT ONTRACTOR MUST INSTALL TRAPEZE TYPE CH SHALL BE LOCATED WHERE THEY DO NOT FIRE DAMPERS, VALVES, AND OTHER AND INSTALLATION METHODS ARE ALSO
- PIPING SHALL BE SIZED AND INSTALLED FOR ULATION. INSTALL 6" LONG SPLIT CIRCLE THE HANGER AND THE PIPE INSULATION. SIMILAR METALS SHALL BE DI-ELECTRICALLY
- NG, AIR CONDITIONING
- I ALL LABOR, MATERIALS, EQUIPMENT, ETC. PLIED AND INCIDENTAL TO, THE FURNISHING, ESTING OF ALL THE WORK FOR THE HVAC SPECIFICATIONS, SHOWN ON DRAWINGS AND S, TO INCLUDE, BUT NOT BE LIMITED TO THE
- OLING ROOFTOP UNIT WITH ALL ASSOCIATED AS SPECIFIED ON PLANS, (3) NEW GENERAL RETURN AND EXHAUST DUCTWORK WITH ALL
- ON THE PLANS SHALL BE PURCHASED BY THE OR SHALL BE RESPONSIBLE FOR SCHEDULING, TES AND INSPECTING FOR DAMAGE AND FILING ER TO RESPONSIBILITY SCHEDULE AND AIR
- W AND SHALL FIT THE SPACE AVAILABLE.
- SHALL BE SO LOCATED AND INSTALLED TO WITHOUT DAMAGE TO BUILDING OR FINISHED

- SECTION 15502 MATERIALS A. REFER TO PLANS FOR SCHEDULES OF EQUIPMENT. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES, APPURTENANCES, AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. ALL AIR CONDITIONING EQUIPMENT MUST BE TRAPPED IN ACCORDANCE WITH MANUFACTURERS DATA.
- B. METAL DUCTWORK NO FIBERGLASS DUCT ALLOWED 1. EXCEPT AS OTHERWISE INDICATED, FABRICATE AND INSTALL RECTANGULAR AND ROUND DUCTWORK WITH GALVANIZED STEEL, IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" OF THE LATEST EDITION. 2. INSTALL TURNING VANES IN ALL RIGHT ANGLE ELBOWS IN ALL DUCTS. 3. INSTALL RIGID ROUND AND RECTANGULAR METAL DUCT WITH SUPPORT
- SYSTEMS INDICATED IN SMACNA STANDARDS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD. 4. ALL JOINTS AND SEAMS SHALL BE SEALED WITH UNITED MCGILL DUCT SEALER OR EQUAL.
- 4.A. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING WELDMENTS; MECHANICAL FASTENERS WITH SEALS, GASKETS, OR MASTICS; MESH AND MASTIC SEALING SYSTEMS; OR TAPES. TAPES AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B. ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS OPERATING AT STATIC PRESSURES LESS THAN OR EQUAL TO 2" W.G. SHALL BE SECURELY FASTENED AND SEALED WITH WELDS GASKETS, MASTICS (ADHESIVES). MASTIC-PLUS-EMBEDDED FABRIC SYSTEMS OR TAPES INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 4.B. MECHANICAL FASTENERS AND SEALS, MASTICS, OR GASKETS MUST BE USED WHEN CONNECTING DUCTS TO FANS AND OTHER AIR DISTRIBUTION EQUIPMENT
- 5. ALL DUCTWORK SHALL BE INSTALLED WITH INSIDE CLEAR DIMENSIONS AS NOTED ON DRAWINGS. WHERE DUCTWORK SIZE IN LARGER THAN CONNECTED DEVICE SMOOTH DUCT TRANSITIONS SHALL BE INSTALLED JUST PRIOR TO DEVICE CONNECTION. C. MEDIUM PRESSURE DUCT
- 1. WHERE DUCTWORK IS SPECIFICALLY NOTED AS MEDIUM PRESSURE, IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS FOR A PRESSURE RATING OF 4 INCHES WATER COLUMN MINIMUM OR LARGER AS
- REQUIRED BY LANDLORD. 2. ALL GAUGES AND REINFORCEMENT MUST MEET WITH THE LATEST EDITION OF SMACNA STANDARDS FOR MEDIUM PRESSURE DUCT AND WITH THE LANDLORD'S CRITERIA
- 3. CONNECTIONS TO THE LANDLORD'S MEDIUM PRESSURE DUCTWORK SHALL BE MADE WITH "LO-LOSS" SADDLE TEE TAPS BY UNITED MCGILL CORP., OR AS OTHERWISE REQUIRED BY THE LANDLORD
- 4. ALL OTHER ITEMS FROM METAL DUCTWORK SPECIFICATION SECTION APPLY TO THIS SECTION, WITH THE EXCEPTION THAT ALL MEDIUM PRESSURE DUCTWORK MUST BE WRAPPED INSULATION, NOT LINED. D. FLEXIBLE COLLARS AT EQUIPMENT SHALL BE PROVIDED IN ALL CONNECTIONS
- BETWEEN VIBRATING EQUIPMENT AND DUCTS OR CASINGS. FLEXIBLE CONNECTIONS SHALL CONSTRUCTED OF NEOPRENE-COATED FLAMEPROOF FABRIC. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR MOVEMENT AND PREVENT THE TRANSMISSION OF VIBRATION.
- FLEXIBLE AIR DUCT AT AIR DEVICES SHALL BE MIN. R-5 INSULATED CLASS 1 AND RATED FOR THE OPERATING PRESSURE OF THE SYSTEM. DUCT CONSTRUCTION MATERIAL MUST ADHERE TO LOCAL CODES AND LANDLORD'S REQUIREMENTS.
- F. PROVIDE MANUAL LOCKING QUADRANT VOLUME CONTROL DAMPERS WITH HANDLE OPERATORS IN EACH BRANCH DUCT AND AS SHOWN ON PLANS TO FACILITATE AIR BALANCING. ALL RECTANGULAR DAMPERS IN OUTSIDE AIR, RELIEF AIR, OR RETURN AIR DUCTS ARE TO BE OF OPPOSED BLADE TYPE
- G. PROVIDE PRIMARY FIRE DAMPERS WHERE INDICATED OR REQUIRED BY CODES. FIRE DAMPERS SHALL BE UL LABELED. FIRE DAMPERS SHALL HAVE THE BLADES OUT OF THE AIRSTREAM AND A 165 F FUSIBLE LINK, TYPE B, AS MINIMUM.
- 1. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES. INSULATION MUST COMPLY WITH NFPA 90A.
- 2. DUCT SIZES SHOWN ON DRAWINGS ARE INSIDE CLEAR DIMENSIONS 3. ALL JOINTS MUST BE TAPED SO THAT NO INSULATION FIBER IS VISIBLE EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS,
- FLOORS, AND SIMILAR PENETRATIONS. 4. ALL SUPPLY AIR DUCTWORK IN UNCONDITIONED/INDIRECTLY CONDITIONED SPACE (INCLUDING CONCEALED DIFFUSER BACKS) SHALL BE EXTERNALLY INSULATED WITH 1 1/2" THICK, 1-1/2 LB. DENSITY (R=4.8) DUCT WRAP WITH VAPOR BARRIER. VAPOR BARRIER IS TO BE MAINTAINED THROUGHOUT
- DUCT SYSTEM. 5. ALL SUPPLY AIR DUCTWORK IN DIRECTLY CONDITIONED SPACE: NONE
- REQUIRED. 6. RETURN DUCTS (WITHIN 3' OF FIRST CHANGE IN DUCT DIRECTION)
- FLEXIBLE GLASS FIBER DUCT LINER: 1/2 INCH THICK 7. ALL ROUND, MEDIUM PRESSURE AND OUTSIDE AIR DUCTWORK SHALL BE EXTERNALLY INSULATED WITH A MINIMUM OF 2" THICK, 1 LB. DENSITY (R=6.0) DUCT WRAP WITH VAPOR BARRIER. VAPOR BARRIER IS TO BE MAINTAINED THROUGHOUT DUCT SYSTEM.
- I. TESTING, ADJUSTING, AND BALANCING 1. CONTRACTOR SHALL BALANCE, ADJUST & TEST EQUIPMENT TO PROVIDE DESIGN AIR QUANTITIES AND ASSURE PROPER OPERATION OF SYSTEMS. CONTRACTOR SHALL SUBMIT COPIES OF BALANCE/TEST REPORT TO OWNER FOR REVIEW PRIOR TO COMPLETION OF PROJECT. IF A CERTIFIED TEST AND BALANCE REPORT IS REQUIRED BY LANDLORD, CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS WITH LANDLORD AND LOCAL AUTHORITY HAVING JURISDICTION, CONTRACT DIRECTLY WITH AN APPROVED TESTING AND BALANCING AGENCY, AND PROVIDE COMPLETE REPORT TO OWNER AND LANDLORD.

- 2. IF REQUIRED BY THE LANDLORD OR THE LOCAL AUTHORITY HAVING JURISDICTION THE BALANCE REPORT SHALL BE ON THE AABC NATIONAL STANDARD REPORT FORMS OR THE NEBB CERTIFIED REPORT FORMS AS PUBLISHED IN THEIR MOST CURRENT EDITIONS AND SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:
- CONTRACTOR.
- FOR THIS PROJECT. 2.C. INSTRUMENTATION LIST WITH LAST CALIBRATION DATES.
- 2.D. MAKE AND MODEL NUMBERS OF ALL HVAC EQUIPMENT TESTED. AIR CFM AND STATIC PRESSURE READINGS (DISCHARGE AND SUCTION) AS MEASURED BY PITOT TUBE DUCT TRAVERSE AT THE UNIT
- 2.E. MOTOR NAMEPLATE DATA WITH ACTUAL FIELD VOLTAGE AND AMPERAGE READINGS FOR EACH LEG. 2.F. MOTOR AND FAN RPMS, SHEAVE SIZES AND BELT SIZES. 2.G. OUTSIDE, RETURN, MIXED AND SUPPLY AIR TEMPERATURES AND
- VOLUMES SHALL BE MEASURED AT FULL COOLING WITH MINIMUM OUTSIDE AIR. RETURN/RELIEF/SMOKE EVACUATION AIRFLOW SHALL BE BALANCED AND MEASUREMENTS RECORDED BY PITOT DUCT TRAVERSE AT FULL ECONOMIZER AND POWER EXHAUST.
- 2.H. MAKE AND MODEL NUMBERS OF ALL AIR DISTRIBUTION EQUIPMENT. 2.1. FINAL BALANCED AIR VOLUMES AT ALL OUTLETS (INCLUDING RETURNS WHERE DUCTED).
- 2.J. INDEXED PLAN WITH DIFFUSER AND RETURN LOCATIONS. ALSO INDICATE IF DIFFUSER IS 3-WAY OR 2-WAY.
- WATER WHEN APPLICABLE. 2.L. CHILLED/HOT/CONDENSER ENTERING AND LEAVING WATER
- TEMPERATURES WHEN APPLICABLE. 2.M. PRESSURE DROP THROUGH COILS AND CONTROL VALVES WHEN APPLICABLE.
- 3. IF REQUIRED BY THE LANDLORD OR THE LOCAL AUTHORITY HAVING JURISDICTION THE GENERAL CONTRACTOR SHALL ARRANGE FOR THE TEST AND BALANCE A MINIMUM OF TWO WEEKS PRIOR TO THE REQUIRED DATE AFTER RETURNING TABC'S "START UP CHECK LIST". ALL WORK SHALL BE COMPLETED PRIOR TO SCHEDULING AIR BALANCE. IN ADDITION, THE BALANCE CONTRACTOR WILL INSPECT AND PREPARE A FINAL PUNCH LIST. THE HVAC CONTRACTOR SHALL REPAIR OR REPLACE ANY DEFECTIVE MATERIALS. EQUIPMENT OR WORKMANSHIP PRIOR TO TENANT'S FINAL WALK THRU AND BEFORE FINAL PAYMENT WILL BE MADE.
- 4. FOUR COPIES OF THE BALANCE REPORT SHALL BE SUBMITTED TO TENANT AND FOUR COPIES TO THE LANDLORD FOR APPROVAL 5. OPERATION AND MAINTENANCE DOCUMENTATION MUST BE PROVIDED TO THE OWNER THAT INCLUDES AT LEAST THE FOLLOWING INFORMATION:
- 5.A. EQUIPMENT CAPACITY (INPUT AND OUTPUT) AND REQUIRED MAINTENANCE ACTIONS. 5.B. EQUIPMENT OPERATION AND MAINTENANCE MANUALS. 5.C. HVAC SYSTEM CONTROL MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS; DESIRED OR FIELD-DETERMINED SET POINTS MUST BE PERMANENTLY RECORDED ON CONTROL DRAWINGS. AT CONTROL DEVICES, OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING
- COMMENTS. 5.D. COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE. ALL PIPING SHALL WITHSTAND AIR PRESSURE TESTING PER GOVERNING PLUMBING CODE.

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SEQUENCI 1.	COOLI COOLI MAINT	ING CY ING SE AIN SF	CLE - TPOIN PACE 1	- OCC F OF EMPE	UPIED THE TH RATURE
2.	HEATI HEATI SPAC	NG CY NG SE E TEMF	CLE - TPOIN ⁻ PERAT	· OCC T OF URE #	E OUTE UPIED THE TH AT THE
3.	COOLI COOLI MAINT	NG CY NG SE FAIN SI	'CLE - TPOIN PACE	- UNC T OF TEMPI	DAMP CCUPIE THE TH ERATUR TDOOR
4.	HEATI HEATI SPAC	NG CY NG SE E TEMF	CLE - TPOIN ⁻ PERAT	· UNC T OF URE #	CCUPIE THE TH AT THE IPER SI
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5.	RETUR ECONO TO IN ⁻ COOLIN SYSTE	N AIR MIZER TRODU NG EFF M SHA	ENTH THE CE UP ECT C	ALPY, ECON TO DF TH CLE	HEN, U THE I IOMIZEI IOO% C E OUT AS REC SHALL
6.	DEMAN CONTR BETWE	ND CON ROLLED EN TH	NTROL BY TI E CLO	VEN ⁻ HE D SED	TILATIO CV SYS POSITIO

2.A. AABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF BALANCING 2.B. COPY OF A CERTIFICATE OF CONFORMANCE WITH NATIONAL STANDARDS

2.K. FINAL BALANCED GPM AT ALL UNITS FOR CHILLED/HOT/CONDENSER

EAT/ELEC. COOLING

NIT, DX COOLING WITH GAS HEAT:

HOURS: UPON A RISE IN SPACE TEMPERATURE ABOVE THE OCCUPIED HERMOSTAT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO AT THE THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL OPERATE DOOR AIR DAMPER SHALL BE OPEN TO THE MINIMUM POSITION

HOURS: UPON A DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED HERMOSTAT, THE GAS BURNER SHALL CYCLE AS REQUIRED TO MAINTAIN THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY PER SHALL BE OPEN TO THE MINIMUM POSITION.

ED HOURS: UPON A RISE IN SPACE TEMPERATURE ABOVE THE UNOCCUPIED HERMOSTAT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO RE AT THE THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL CYCLE AS AIR DAMPER SHALL BE CLOSED.

ED HOURS: UPON A DROP IN SPACE TEMPERATURE BELOW THE UNOCCUPIED HERMOSTAT. THE GAS BURNER SHALL CYCLE AS REQUIRED TO MAINTAIN THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL CYCLE AS REQUIRED AND SHALL BE CLOSED.

UPON A CALL FOR COOLING, THE OUTDOOR AIR ENTHALPY IS BELOW THE REFRIGERATION SYSTEM OPERATION SHALL BE CONTROLLED BY THE ER SHALL MODULATE THE OUTDOOR AIR AND RETURN AIR DAMPERS IN ORDER OUTDOOR AIR TO SATISFY THE COOLING LOAD IN THE SPACE. IF THE TDOOR AIR IS NOT SUFFICIENT TO COOL THE SPACE, THE REFRIGERATION QUIRED TO SUPPLEMENT THE ECONOMIZER.

EAT/ELEC. COOLING/CO2 SENSOR

NIT, DX COOLING WITH GAS HEAT:

HOURS: UPON A RISE IN SPACE TEMPERATURE ABOVE THE OCCUPIED HERMOSTAT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO E AT THE THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL OPERATE DOOR AIR DAMPER SHALL BE CONTROLLED BY THE DCV SYSTEM. HOURS: UPON A DROP IN SPACE TEMPERATURE BELOW THE OCCUPIED HERMOSTAT, THE GAS BURNER SHALL CYCLE AS REQUIRED TO MAINTAIN THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL OPERATE CONTINUOUSLY PER SHALL BE CONTROLLED BY THE DCV SYSTEM. IED HOURS: UPON A RISE IN SPACE TEMPERATURE ABOVE THE UNOCCUPIED HERMOSTAT, THE REFRIGERATION SYSTEM SHALL CYCLE AS REQUIRED TO JRE AT THE THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL CYCLE AS AIR DAMPER SHALL BE CLOSED.

IED HOURS: UPON A DROP IN SPACE TEMPERATURE BELOW THE UNOCCUPIED HERMOSTAT, THE GAS BURNER SHALL CYCLE AS REQUIRED TO MAINTAIN THERMOSTAT SETPOINT. THE SUPPLY FAN SHALL CYCLE AS REQUIRED AND SHALL BE CLOSED.

JPON A CALL FOR COOLING, THE OUTDOOR AIR ENTHALPY IS BELOW THE REFRIGERATION SYSTEM OPERATION SHALL BE CONTROLLED BY THE ER SHALL MODULATE THE OUTDOOR AIR AND RETURN AIR DAMPERS IN ORDER OUTDOOR AIR TO SATISFY THE COOLING LOAD IN THE SPACE. IF THE TDOOR AIR IS NOT SUFFICIENT TO COOL THE SPACE, THE REFRIGERATION EQUIRED TO SUPPLEMENT THE ECONOMIZER. DURING ECONOMIZER CYCLE, THE MODULATE TO MAINTAIN A CONSTANT NEUTRAL PRESSURE IN THE SPACE. ON (DCV) CYCLE: DURING OCCUPIED HOURS THE OUTSIDE AIR SHALL BE YSTEM. THE DCV SYSTEM SHALL MODULATE THE OUTSIDE AIR DAMPER ION AND THE MINIMUM OCCUPIED POSITION. IN THE EVENT THE ECONOMIZER CALLS FOR OUTSIDE AIR IN EXCESS OF THAT BEING PROVIDED BY THE DCV SYSTEM THE ECONOMIZER SHALL OVERRIDE THE DCV SYSTEM.



DEVELOPMENT SERVICE

Air System Sizing S Project Name: 0420758-076 Prepared by: Dunham Associates, Inc.	ummary	/ for CycleBar - Lees Summit, MO	02/17/2020 02:29PN
Prepared by: Dunnam Associates, Inc.			02.29Ph
Air System Information			
Air System Name CycleBar - Lees Summit, MO		Number of zones 1	
Equipment Class		Floor Area	ft ^z
Air System Type SZCAV		Location Kansas City, Missouri	
Sizing Calculation Information			
Calculation Months Jan to Dec		Zone CFM Sizing Sum of space airflow rates	
Sizing Data Calculated		Space CFM Sizing Individual peak space loads	
Central Cooling Coil Sizing Data			
Total coil load	Tons	Load occurs at	
Total coil load		OA DB / WB	°F
Sensible coil load 129.8	MBH	Entering DB / WB	
Coll CFM at Aug 1400	CFM	Leaving DB / WB	°F
Max block CFM	CFM	Coil ADP 56.7	
Sum of peak zone CFM 5800	CFM	Bypass Factor 0.100	
Sensible heat ratio		Resulting RH	%
CFM/Ton		Design supply temp	
ft²/Ton		Zone T-stat Check	OK
BTU/(hr-ft²)		Max zone temperature deviation 0.0	°F
Water flow @ 10.0 °F rise N/A			
Central Heating Coil Sizing Data			
Max coil load	MBH	Load occurs at Des Htg	
Coil CFM at Des Htg		BTU/(hr·ft²)	
Max coll CFM		Ent. DB / Lvg DB	۴F
Water flow @ 20.0 °F drop N/A			
Supply Fan Sizing Data			
Actual max CFM		Fan motor BHP 1.27	
Standard CFM		Fan motor kW	
Actual max CFM/ft ²	CEW/II'	Fan static	in wg
Outdoor Ventilation Air Data			
Design airflow CFM	CFM	CFM/person 22.95	CFM/person
CFM/ft ²			

	DESIG	COOLING		DES	IGN HEATING			
					HEATING DATA AT DES HTG HEATING OA DB / WB -1.0 °F / -2.5 °F			
ZONE LOADS	Details	Sensible (BTU/hr)	Latent (BTU/hr)	Details	Sensible (BTU/hr)	Latent (BTU/hr)		
Window & Skylight Solar Loads	582 ft ²	9420		582 ft ²				
Wall Transmission	416 ft ²	543		416 ft ²	2579	-		
Roof Transmission	2140 ft ²	7797	-	2140 ft ²	7553	-		
Window Transmission	582 ft ²	4954	14	582 ft ^a	20661			
Skylight Transmission	0 ft ²	0	-	0 ft ²	0	-		
Door Loads	0 ft ²	0	-	0 ft²	0	-		
Floor Transmission	820 ft ²	0	-	820 ft ^a	1416	-		
Partitions	0 ft ²	0	-	0 ft²	0	-		
Ceiling	0 ft ²	0		0 ft ²	0	-		
Overhead Lighting	910 W	2611	-	0	0	-		
Task Lighting	0 W 0	0	1	0	0	-		
Electric Equipment	0 W 0	0		0	0	-		
People	61	22234	48655	0	0	0		
Infiltration		1914	923		6650	0		
Miscellaneous		11500	0	-	0	0		
Safety Factor	0% / 0%	0	0	0%	0	0		
>> Total Zone Loads	-	60974	49578	-	38859	0		
Zone Conditioning		66873	49578		38907	0		
Plenum Wall Load	0%	0		0	0	-		
Plenum Roof Load	0%	0	-0-	0	0	-		
Plenum Lighting Load	0%	0		0	0	-		

3440

98760

2984

98760

Positive values are clg loads

Negative values are htg loads

- 5800 0 14358 1400 CFM

63936

63936

63936

- 5800 CFM

-3440

13851

1385

Positive values are htg loads

Negative values are clg loads

138519

5800 CFM 1400 CFM

5800 CFM

Hourly Ana ysis Program 5.11

Return Fan Load

Ventilation Load

Supply Fan Load

Space Fan Coil Fans

Duct Heat Gain / Loss >> Total System Loads Central Cooling Coil

Central Heating Coll

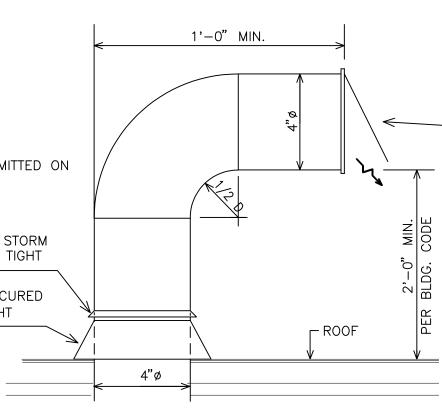
> Total Conditioning

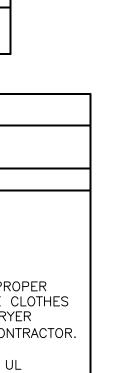
Hourly Analysis Program 5.11

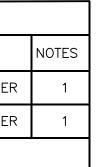
								4"ø			REFAB DRYER VEN
MECHANICAL SYMBOLS LEGEND	OUTSIDE AIR CAL	CULATION		NOTE: NO SO CLOTHES DR		MITTED ON			\ \	AÍ OUTLET — (FIELD FABI	AL BACKDRAFT DAN WITHOUT BIRDSCR RICATED DRYER VE
← SUPPLY AIR ← # RETURN AIR ← X EXHAUST AIR	O.A. CALCULATION BASED ON T <u>CYCLEBAR STUDIO: HEALTH CLUB</u> OCC.= <u>45 P</u> NET SQUARE F			GALVANIZED	SHEETMETAL				NIN I		UNACCEPTABLE)
STANDARD BRANCH, NO SPLITTER – SUPPLY FLOW TO RIGHT – RETURN/EXHAUST FLOW TO LEFT BELLMOUTH WITH BALANCING DAMPER	VENTILATION CALCULATED AT 900 (20 cfm/p) +	- 59 (.06 cfm/sqft) VENTILATION: <u>959</u>	<u>CFM</u>	COLLAR SECU SEAL TO VEN TALL CONE I TO ROOF W/	NT STACK — FLASHING SE				2, -0, 2, -0,	ЕК ВСИG.	
FLEXIBLE DUCT	OCC.= 15p/1000 sqft= <u>10 P</u> SQUARE FOOTA VENTILATION CALCULATED AT 75 (7.5 cfm/p) + <u>OFFICE/OFFICE SPACES</u> OCC.= <u>1 P</u> SQUARE FOOTA	VENTILATION: <u>117</u> AGE: 125 SF		SEAL			4"ø		– ROOF 1	L 	
TURNING VANES	VENTILATION CALCULATED AT 5 (5 cfm/p) + 8 <u>UTILITY: STORAGE</u> OCC.= N/A <u>O P</u> SQUARE FOOTA VENTILATION CALCULATED AT 5 (.12 cfm/sqft)	VENTILATION: <u>13</u>	<u>CFM</u>		SHALL NOT	RYER EXHAUST D BE CONNECTED DBSTRUCT THE F	OR INSTALLE	<u>HAVE NO SCREEN D WITH SHEET M</u>	<u>N AT DUCT TERM</u> IETAL SCREWS (MINATION. DUCTS DR OTHER FASTEN	<u>ERS</u>
BDD BACKDRAFT DAMPER	<u>CORRIDOR: HALL</u> OCC.= N/A <u>O P</u> SQUARE FOOTA VENTILATION CALCULATED AT 5 (.06 cfm/sqft)				ENTIRE INST		OTHES DRYEF		SHALL BE IN S	STRICT ACCORDA	NCE
MOTORIZED DAMPER FD FIRE DAMPER & ACCESS PANEL	TOTAL VENTILATION REQUIRED	VENTILATION:	<u>CFM</u>			RYER VEI scale	NT UP	THRU R	ROOF DE	TAIL	
SUPPLY DUCT UP, POSITIVE PRESSURE	0.8 VENTILATION EFFECTIVENESS TOTAL VENTILATION SUPPLIED	<u> 1374 </u>									
RETURN DUCT UP, NEGATIVE PRESSURE	DIFFUSER, GRIL	LE & REGISTER	SCHEDU	ILE							
EXHAUST DUCT UP, NEGATIVE PRESSURE	EQUIP. SERVICE MOUNTING TYPE	E DESCRIPTION ACCESSORI	S FINISH	MANUF.	MODEL NO.						
SUPPLY DUCT DOWN, POSITIVE PRESSURE	A SUPPLY LAY-IN	24"X24" OBD	SEE NOTE	TITUS	TMS						
▶ ► ► RETURN DUCT DOWN, NEGATIVE PRESSURE	B SUPPLY AS SHOWN	12"X12" OBD	SEE NOTE	TITUS	TMS						
EXHAUST DUCT DOWN, NEGATIVE PRESSURE	C SUPPLY DUCT MTD.	12" DIA. OBD	SEE NOTE	TITUS	TMR						
FLEXIBLE DUCTWORK CONNECTION TO UNIT	D RETURN LAY-IN	24"X24"	SEE NOTE	TITUS	50F						
X-10SUPPLY DIFFUSER/REGISTER375BLANKOFF INDICATED SHADED	E RETURN SURFACE	36" X20"	SEE NOTE	TITUS	350RL						
$ \bigcirc \frac{X-10}{375} $ SUPPLY DIFFUSER $\frac{TYPE - NECK SIZE}{DIFFUSER AIRFLOW (CFM)} $	F TRANSFER LAY-IN	24"X12"	SEE NOTE	TITUS	50F						
$\frac{X-10}{200}$ RETURN GRILLE/REGISTER $\frac{TYPE - NECK SIZE}{RETURN AIRFLOW (CFM)}$	G TRANSFER SURFACE	24"X12"	SEE NOTE	TITUS	350RL						
X <u>–8</u> EXHAUST GRILLE/REGISTER <u>TYPE – NECK SIZE</u> 150 EXHAUST GRILLE/REGISTER EXHAUST AIRFLOW (CFM)	NOTE: ALL GRILLES, REGISTERS & DIFFUSERS VERIFY EXACT COLOR WITH ARCHITECT.	MUST BE PAINTED TO MATCH (EILING TILE	COLOR.							
CONCENTRIC DUCT TRANSITION											
LANSITION	<u>CLOTHE</u>	<u>S DRYER BOOSTE</u>	r fan								
© SMOKE DETECTOR				DLTAGE ACC							
① THERMOSTAT ② CO2 SENSOR ③ TEMPERATURE SENSOR	EF-3FANTECHDBF4XLT-705ACCESSORIES:1.DB10PRESSURE SWITCH.2.DBLT4WSECONDARYLINTTRAP.	1 130 0.7" 2800 83	DIRECT 11	5/1/60 1, 2	2, 3, 4						
POINT OF CONNECTION, NEW TO EXISTING POINT OF DISCONNECTION	 3. INTEGRAL TEMPERATURE LIMIT SWITCH. 4. WALL MOUNTED INDICATOR PANEL. NOTE: CLOTHES DRYER BOOSTER FAN W/ PRESS OPERATION OF THE EXHAUST FAN. PRESSURE SW 	SURE SWITCH AND WALL MOUNTED	INDICATOR PA	NEL THAT IN	NDICATES PR						
	DRYER IS ON. AN INTEGRAL TEMPERATURE LIMIT BOOSTER FAN AND ASSOCIATED PRESSURE SWITCH	SWITCH SHALL TURN OFF THE FA	N IN CASE OF	FAFIRE. C	LOTHES DRY	ΈR					
	CLOTHES DRYER BOOSTER IS UL LISTED PER THE STANDARD 705.	E DRYER EXHAUST DUCT POWER V	NTILATOR (DE	DPV) SUPPL	EMENT TO U	L					
		EXHAUST FAN									
	TAG QTY MANUFACTURER MODEL NO.	TYPE CFM S.P.	WATTS VOI	TAGE ACCE	ESSORIES	NOTES					
	EF-1 1 GREENHECK SP-SP110	+ + +		ELEC BACK							
	EF-2 1 GREENHECK SP-SP110 NOTE: 1. TOILET EXHAUST FANS SHALL BE INTERLOCKEE			ELEC BACK							
		ROOFTOP UNIT SO	HFDU	F (GAS	S HFAT		<u> </u>]
	MARK MFG/ DISCHARGE TONS ESP (OUTSIDE AIR CFM	NTERING AIR	GROSS (COOLING CAPAC	/	HEATING CAP	ACITY (MBH) EL OUTPUT VO	ECTRICAL	ACCESSORIES	UNIT WEIGHT (LBS)
	RTU-1 48GCEMO6J1A6 VERTICAL 5.0 .75 2	78.1	F DB/ 66.2°F 96°F AMBIEN	WB c1		3.95 (16)	110/82			1,2,3,4,5,6,7,8	790
	RTU-2 CARRIER 48HCFE14J2A6 VERTICAL 12.5 .75 3	3800 200 1200 ^{82.4}	F DB/ 70.1°F 96°F AMBIEN	WB 155	5.27 9	3.97 12.2	240/192	195/156 SE	EE ELECT. 1,2,3	,4,5,7,8,9,10,11,1	2 2001
	 ACCESSORIES: 1. FACTORY SUPPLIED 14" ROOF CURB. 2. MEDIUM STATIC DRIVE. 3. WINTER START PACKAGE. 4. CONDENSATE OVERFLOW SWITCH. 5. INTEGRAL ANTI SHORT-CYCLE TIMER. 6. BAROMETRIC RELIEF. 7. FACTORY SUPPLIED DIFFERENTIAL ENTHALPY 8. RETURN AIR SMOKE DETECTOR 	,	zer with fau	LT DETECTIO	N & DIAGNC	STICS).	NOTE: A B	A. 2-STAGE GA	AS HEATING WITH EIGHTS ARE APP	I INTERMITTENT IG ROXIMATE.	NITION.
	 9. TWO-SPEED EVAPORATOR FAN (VFD) CONTROL 10. CO2 SENSOR FOR DCV CONTROL. 11. HUMIDI-MIZER DEHUMIDIFICATION SYSTEM. 12. POWERED EXHAUST. * - FRESH AIR INTAKE UPPER LIMIT - OUTDOOR 		CONTROLLED E	BY CO2 SENS	SOR AND DO	V SYSTEM.					

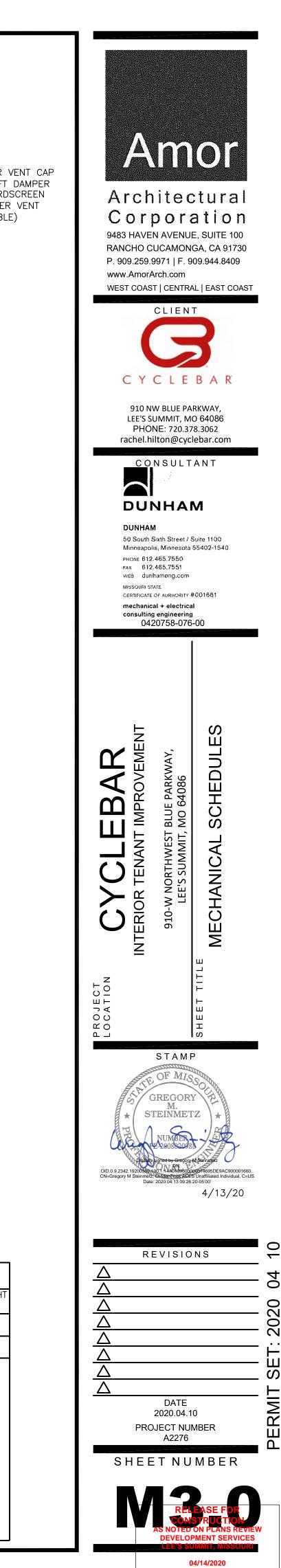


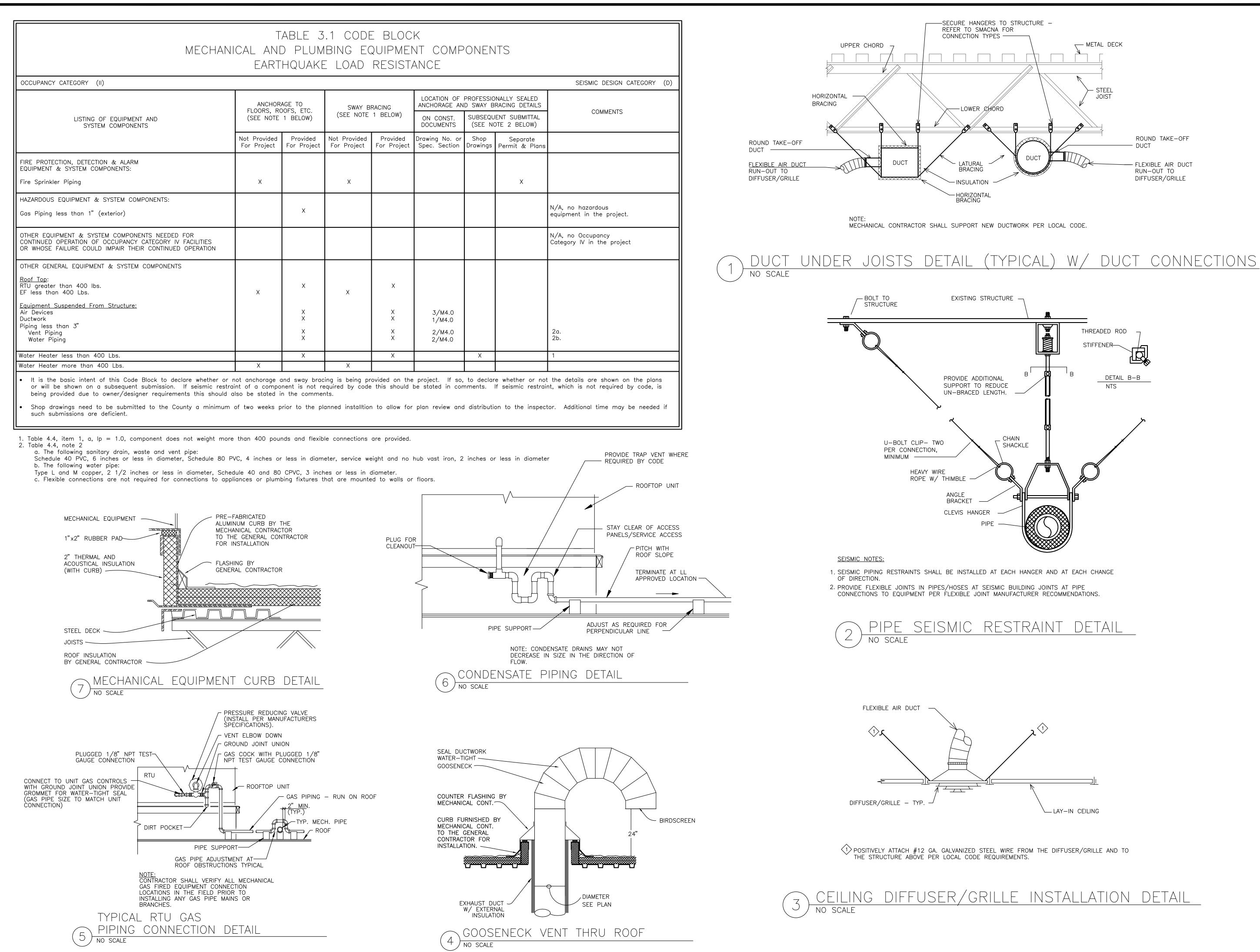
* – FRESH AIR INTAKE UPPER LIMIT – OUTDOOR AIR MOTORIZED DAMPER TO BE CONTROLLED BY CO2 SENSOR AND DCV SYSTEM. ECONOMIZER CYCLE SHALL OVERRIDE FRESH AIR INTAKE UPPER LIMIT.





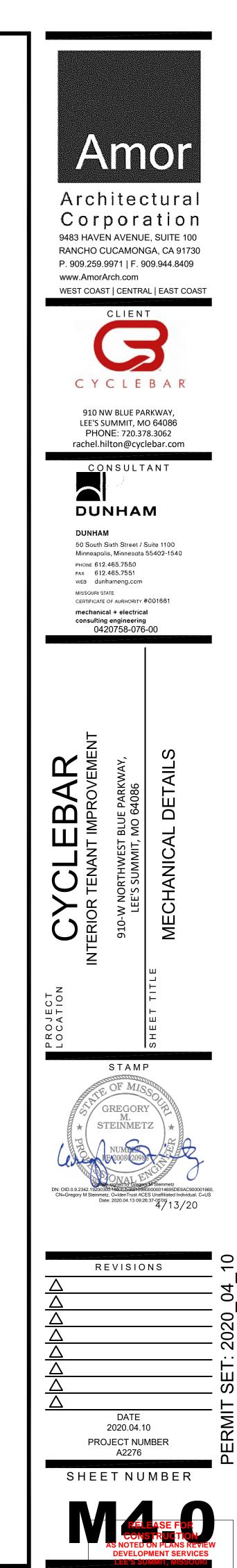


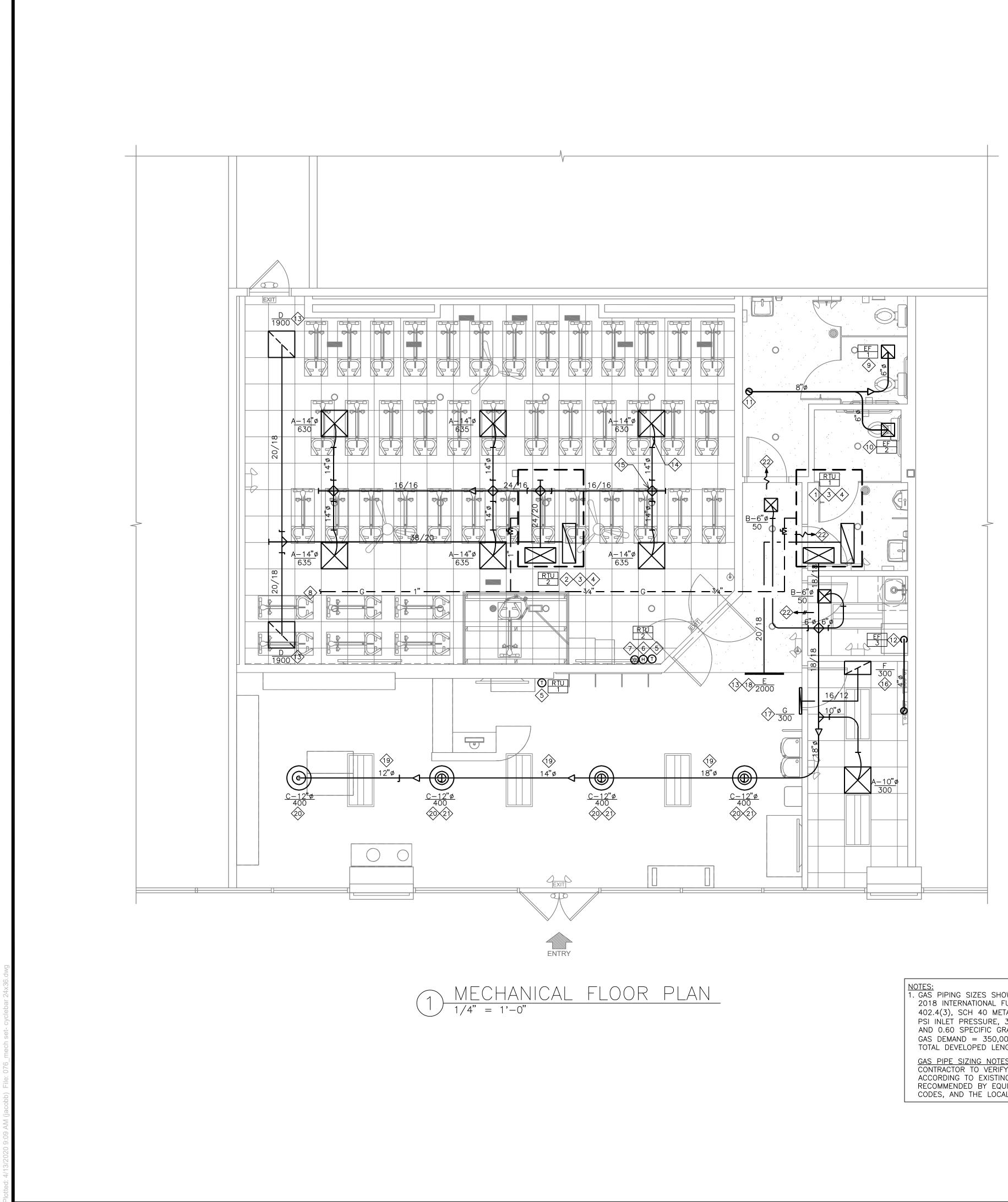




ROUND TAKE-OFF

FLEXIBLE AIR DUCT RUN-OUT TO DIFFUSER/GRILLE





1. GAS PIPING SIZES SHOWN ON PLAN ARE PER 2018 INTERNATIONAL FUEL GAS CODE, TABLE 402.4(3), SCH 40 METALLIC PIPE, LESS THAN 2.0 PSI INLET PRESSURE, 3" W.C. PRESSURE DROP AND 0.60 SPECIFIC GRAVITY NATURAL GAS. TOTAL GAS DEMAND = 350,000 BTU/H (350 MBH) &TOTAL DEVELOPED LENGTH = 200 FEET.

GAS PIPE SIZING NOTES: LANDLORD'S CONTRACTOR TO VERIFY SIZE OF GAS PIPING ACCORDING TO EXISTING PRESSURE AND AS RECOMMENDED BY EQUIPMENT MANUFACTURER, CODES, AND THE LOCAL GAS COMPANY.

1.	REFER TO SHEET M1.0 F
2.	REFER TO SHEET M2.0 F
3.	REFER TO SHEET M3.0 F
	REFER TO SHEET M4.0 F
5.	CONTRACTOR TO VERIFY
K	EY NOTES:
$\langle 1 \rangle$	NEW GAS HEAT ROOFTOP UNIT AND PLACE NEW UN CURB IF POSSIBLE, PROV EXISTING UNIT IN FIELD, SCHEDULE FOR BALANCIN
2>	NEW GAS HEAT ROOFTOP LANDLORD FIELD REPRES ONLY – SEE SCHEDULE
3	DUCT SMOKE DETECTOR I IN RETURN MAIN DUCT A ALARM. SMOKE DETECTO SMOKE. COORDINATE FIN
4	ROUTE 1" CONDENSATE F LOCATION. PROVIDE ALL REQUIREMENTS. VERIFY
\$	PROVIDE 7-DAY PROGRAM A.F.F. COVERED WITH CLE AUTOMATIC NIGHT SET-BA AND MIN. 10-HOUR BATT
6	PROVIDE A WALL MOUNTE DEHUMIDIFICATION SYSTEM 4'-0" A.F.F
\Diamond	PROVIDE A CO2 SENSOR UNIT (RTU–2) PER LOCAI
8	EXTEND 1" GAS PIPING T BALL VALVE, DIRT LEG, U EACH ROOFTOP UNIT. VE WITH LANDLORD REPRESE ON TABLE 402.4(3) OF T
\$	PROVIDE CEILING MOUNTE RIGID DUCT W/ BACKDRA
10>	PROVIDE CEILING MOUNTE RIGID DUCT W/ BACKDRA
	ROUTE 8" DIA E.A. DUCT BIRD SCREEN 24" ABOVE INTAKES. VERIFY ROUTIN
12	CONNECT 4" GALVANIZED AND ROUTE UP ALONG W 4W) MOUNTED ON WALL ALONG WALL ABOVE CEILL ROUTE 4"Ø CLOTHES DRY PREFABRICATED CLOTHES TERMINATE DRYER VENT O AIR INTAKES. SEE SCHE REQUIREMENTS.
13>	RETURN AIR GRILLE CONN NOT ACCEPTABLE (TYPICA
14	FLEX. DUCT 5'-0" MAX.
15	VOLUME DAMPER AND SF
(16)	ROUTE 16/12 TRANSFER, GRILLE TO CEILING MOUN AS REQUIRED).
\wedge	

(19) ALL EXPOSED DUCTWORK IN SALES AREA MUST BE ROUND SPIRAL. SQUARE DUCT IS NOT APPROVED. ROUND SPIRAL SHALL BE SINGLE WALL, GALVANIZED STEEL, SPIRAL LOCK SEAM CONSTRUCTION. ALL DUCTWORK AND FITTINGS SHALL BE MANUFACTURED IN ACCORDANCE WITH SMACNA'S HVAC DUCT CONSTRUCTION STANDARDS LATEST EDITION. ALL EXPOSED ROUND DUCTWORK AND FITTINGS IN THE SALES AREA SHALL BE CLEANED OF ALL OILS AND COATINGS PRIOR TO INSTALLATION AND PROVIDED WITH A MILL PHOSPHATIZED FINISH ("PAINT GRIP", "ZINC GRIP", OR SIMILAR ETCH TREATMENT) TO ALLOW THE DUCTWORK TO BE PAINTED.

- LIGHTING INSTALLATION HEIGHT. (TYPICAL)
- DIFFUSER.
- REQUIREMENTS IN FIELD.

SHEET NOTES:

FOR GENERAL NOTES.

FOR MECHANICAL SPECIFICATIONS.

FOR SCHEDULES.

- FOR MECHANICAL DETAILS.
- ALL EXISTING CONDITIONS IN FIELD PRIOR TO BID.

UNIT. CONTRACTOR TO REMOVE EXISTING ROOFTOP NIT IN EXISTING LOCATION. RE-USE EXISTING ROOF VIDE NEW IF REQUIRED. VERIFY EXACT LOCATION OF LOCATION ON DRAWINGS IS APPROXIMATE ONLY - SEE NG DETAILS.

UNIT. VERIFY EXACT LOCATION IN FIELD WITH SENTATIVE. LOCATION ON DRAWINGS IS APPROXIMATE FOR BALANCING DETAILS.

FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR AND REMOTE TEST STATION WITH VISIBLE AND AUDIBLE OR SHALL SHUT DOWN HVAC UNIT UPON DETECTION OF NAL LOCATION OF REMOTE TEST STATION WITH AHJ.

PIPE W/ MIN. 3" DEEP P-TRAP TO LANDLORD APPROVED FITTINGS PER LOCAL CODES AND LANDLORD ROUTING AND LOCATION ON SITE.

MMABLE THERMOSTAT FOR CONTROL MOUNTED 4'-0" EAR LOCKABLE BOX. THERMOSTAT SHALL HAVE BACK WITH 5°F DEADBAND, 2-HOUR OCCUPANT OVERRIDE, TTERY BACKUP.

TED HUMIDITY SENSOR FOR ROOF TOP UNIT (RTU-2) WITH EM PER MANUFACTURE'S SPECIFICATIONS AND MOUNT AT

FOR DEMAND CONTROL VENTILATION FOR ROOF TOP AL CODE REQUIREMENTS. MOUNT AT 4'-0" A.F.F.

TO EXISTING LANDLORD PROVIDERD GAS METER. PROVIDE UNION AND PRESSURE REGULATOR (AS REQUIRED) FOR /ERIFY PIPE ROUTING AND COORDINATE METER LOCATION ENTATIVE AND UTILITY COMPANY. GAS PIPE SIZING BASED THE 2018 IFGC AND 200' OF EQUIVALENT PIPE LENGTH.

ED TOILET EXHAUST FAN (EF-1) AND CONNECT WITH 6" AFT DAMPER. SUPPORT FROM STRUCTURE ABOVE.

ED TOILET EXHAUST FANS (EF-2) AND CONNECT WITH 6" AFT DAMPER. SUPPORT FROM STRUCTURE ABOVE.

UP THRU ROOF AND TERMINATE IN A GOOSENECK W/ ROOF. LOCATE A MINIMUM OF 10'-0" FROM O.A. NG AND LOCATION ON SITE.

SHEET METAL CLOTHES DRYER DUCT TO CLOTHES DRYER WALL TO SECONDARY LINT TRAP (FANTECH MODEL DBLT AT 5'-4" A.F.F. AND ROUTE CLOTHES DRYER DUCT UP LING TO BOOSTER FAN (EF-3). AFTER BOOSTER FAN, RYER DUCT UP THRU ROOF AND TERMINATE WITH S DRYER VENT CAP WITH INTEGRAL BACKDRAFT DAMPER. CAP A MIN. DISTANCE OF 10'-0" AWAY FROM ALL FRESH EDULE ON SHEET M3.0 FOR ADDITIONAL INFORMATION AND

INECTION SHALL BE GALV. SHEET DUCT. FLEX DUCT IS

LENGTH. TYPICAL FOR ALL.

SPIN-IN. TYPICAL FOR ALL.

R/MAKE-UP AIR DUCT FROM WALL MOUNTED TRANSFER INTED TRANSFER GRILLE AS SHOWN ON PLAN (TRANSITION

(1) mount transfer air grille on wall as high as possible. Coordinate LOCATION OF GRILLE IN FIELD WITH OTHER TRADES PRIOR TO INSTALLATION.

(18) MOUNT RETURN AIR GRILLE ON WALL AS HIGH AS POSSIBLE. COORDINATE LOCATION OF GRILLE IN FIELD WITH OTHER TRADES PRIOR TO INSTALLATION.

SUPPLY AIR DIFFUSER TO BE INSTALLED SO FACE OF DIFFUSER MATCHES HEIGHT A.F.F. OF SALES AREA LIGHTING. COORDINATE WITH ARCHITECTURAL PLANS FOR

 $\langle 2 \rangle$ 12" ROUND BOTTOM SUPPLY AIR DUCT RUNOUT WITH VOLUME DAMPER TO

 $\langle \!\!\!\!\!\!\!\! 2 \rangle$ undercut door by one inch to allow for transfer air. Verify all

Amor

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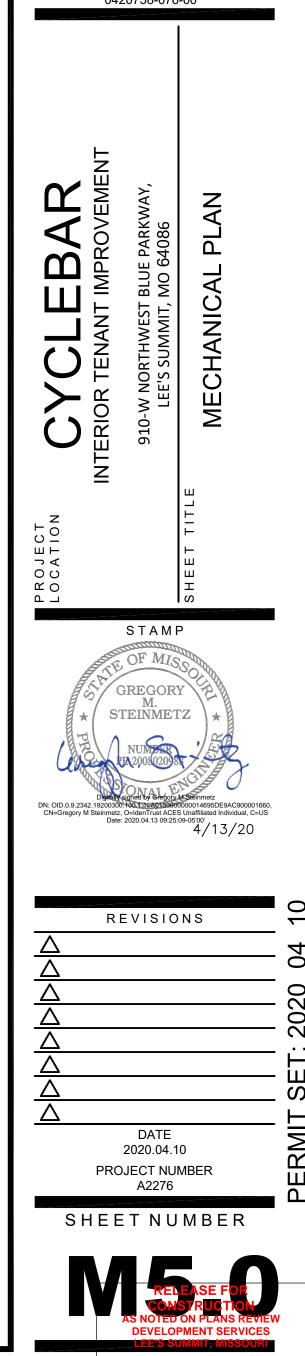


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wea dunhameng.com MISSOURESTATE CERTIFICATE OF AURISORITY #00166 mechanical + electrical consulting engineering 0420758-076-00



DIVISION 15300 - FIRE PROTECTION (IF APPLICABLE)

SECTION 15301 - SUMMARY OF WORK A. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, ETC. NECESSARY FOR, REASONABLY IMPLIED AND INCIDENTAL TO, THE FURNISHING, INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE

- SPRINKLER SYSTEMS AS CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: INSTALLATION OF NEW WET SPRINKLER SYSTEM AS REQUIRED TO PROVIDE COVERAGE IN ACCORDANCE, NFPA-13, LOCAL CODES, AND LANDLORD'S
- CRITERIA. 2. TAPS, RISERS, LATERALS, BRANCHES, VALVES, ALARMS, SPRINKLER HEADS
- AND ALL COMPONENTS REQUIRED FOR A COMPLETE SYSTEM.
- DESIGN DRAWINGS, HYDRAULIC CALCULATIONS, SUBMITTALS AND APPROVALS. PERMITS, FEES, INSPECTIONS AND CHARGES.
- 5. TESTS AND TEST CERTIFICATES. IT IS INTENDED THAT THE CONTRACTOR SHALL PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- THIS FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR SUBMITTING COORDINATED DRAWINGS, HYDRAULIC CALCULATIONS, HEAD TYPES AND COLORS TO ALL AUTHORITIES HAVING JURISDICTION FOR APPROVAL. NO WORK SHALL BEGIN UNTIL ALL APPROVALS HAVE BEEN RECEIVED.

SECTION 15302 - MATERIALS A. SPRINKLER HEADS:

- 1. ALL SPRINKLER HEADS SHALL BE NEW U.L., F.M. LISTED AND APPROVED AUTOMATIC SPRAY TYPE AS MANUFACTURED BY GRINNELL, RELIABLE, STAR, OR VIKING.
- 2. ALL SPRINKLER HEADS SHALL HAVE ORDINARY TEMPERATURE RATING UNLESS INDICATED OTHERWISE ON DRAWINGS OR REQUIRED BY LOCAL
- CODFS. 3. VERIFY HEAD TYPES AND COLORS WITH TENANT AND SUBMIT WITH
- SPRINKLER DRAWINGS FOR PERMIT.

4. LOCATIONS OF ALL HEADS SHOULD BE APPROVED BY TENANT AND THE LOCAL FIRE PROTECTION OFFICIAL BEFORE INSTALLATION. B. PIPING:

- 1. SCHEDULE 40. BLACK STEEL PIPE, ASTM A-53 FOR FERROUS PIPING. WELDED AND SEAMLESS, ANSI B-36-10-70 FOR WROUGHT STEEL PIPE
- 2. CAST IRON OR MALLEABLE IRON SCREWED FITTINGS FOR PIPES 2 INCHES AND SMALLER. SCREWED OR CAST IRON FLANGED JOINTS FOR PIPES LARGER THAN 2 INCHES.
- 3. GALVANIZED OR BLACK MALLEABLE IRON WITH BRASS SEAT SCREWED UNIONS FOR PIPES 2 INCHES AND SMALLER.
- 4. VICTAULIC TYPE COUPLINGS ARE ACCEPTABLE, WHERE APPROVED BY CODE AND THE LANDLORD.
- 5. HANGERS SHALL COMPLY WITH LANDLORD AND CODE REQUIREMENTS. C. SPRINKLER SPACING SHALL NOT EXCEED 130 SQ. FT. IN "SALES" AREAS AND 100 SQ. FT. IN "STOCK" AREAS. COMPLY WITH LANDLORD'S DESIGN CRITERIA. PIPE SIZING SHALL BE BASED ON NFPA ORDINARY HAZARD.
- D. ALL SPRINKLER LINES SHALL BE INSTALLED CONCEALED, AVOIDING
- INTERFERENCE WITH OTHER TRADES. WHERE POSSIBLE, REWORK THE EXISTING SPRINKLER SYSTEM TO MEET THE NEW Ε. REQUIREMENTS OF THIS DESIGN AND INCLUDE ALL COSTS TO RAISE OR RELOCATE EXISTING PIPING TO OBTAIN CEILING HEIGHTS SHOWN ON DRAWINGS. IN NEW CONSTRUCTION THE LANDLORD MAY PROVIDE ONLY A STUB-IN TO THE SPACE. THE CONTRACTOR SHALL CONNECT AND EXTEND NEW PIPING AS
- REQUIRED. VERIFY ALL REQUIREMENTS PRIOR TO BID. F. PROVIDE AND INSTALL A VALVED TEST CONNECTION IN AN ACCESSIBLE LOCATION FOR THE SPRINKLER SYSTEM AS REQUIRED OR REQUESTED BY THE MALL, LOCAL INSPECTOR, OR TENANT'S INSURANCE CARRIER.
- G. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE CAUSED BY LEAKS IN ANY OF THE EQUIPMENT INSTALLED BY THEM. ALL REPAIRS OR REPLACEMENT OF DAMAGES SHALL BE AT THIS CONTRACTOR'S EXPENSE.
- H. PROPERLY COMPLETED AND SIGNED "SPRINKLER CONTRACTOR'S MATERIAL AND TEST CERTIFICATES" SHALL BE FURNISHED TO THE LANDLORD, AND AUTHORITIES HAVING JURISDICTION.

DIVISION 15400 - PLUMBING

- SECTION 15401 SUMMARY OF WORK A. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, ETC. NECESSARY FOR. REASONABLY IMPLIED AND INCIDENTAL TO. THE FURNISHING
- INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE PLUMBING SYSTEMS AS CALLED FOR IN THE SPECIFICATIONS, SHOWN ON DRAWINGS AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- 1. CONTRACTOR SHALL DETERMINE THE LOCATION OF EXISTING WATER SUPPLY AND DRAIN LINES AND MAKE PROPER CONNECTIONS, THERETO, INCLUDING VENTS.
- 2. ALL MATERIALS SHALL BE NEW AND SHALL FIT THE SPACE AVAILABLE. VERIFY ALL DIMENSIONS AT THE SITE. 3. ALL VALVES, CLEANOUTS, ETC. SHALL BE SO LOCATED AND INSTALLED
- TO PERMIT ACCESS FOR SERVICE WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS.

SECTION 15402 MATERIALS

- A. REFER TO PLANS FOR SCHEDULES OF EQUIPMENT AND FIXTURES. AMERICAN STANDARD, KOHLER AND CRANE ARE CONSIDERED ACCEPTABLE AS EQUALS. ALL PLUMBING EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION. B. SANITARY PIPING
- 1. CAST IRON PIPE (BELOW GRADE): ASTM A74 SERVICE WEIGHT, FITTINGS: CAST IRON, JOINTS: HUB-AND-SPIGOT, COMPRESSION TYPE WITH NEOPRENE GASKETS OR LEAD AND OAKUM.
- 2. CAST IRON PIPE (ABOVE GRADE): CISPI 301, HUBLESS FITTINGS: CAST IRON, JOINTS: NEOPRENE GASKET AND STAINLESS STEEL CLAMP AND SHIELD ASSEMBLIES.
- 3. ABS PIPE (BELOW GRADE): ASTM D2661, FITTINGS: ABS, JOINTS: SOLVENT WELD. 4. PVC PIPE (BELOW GRADE): ASTM D2665, FITTINGS: PVC, JOINTS: SOLVENT
- WELD WITH SOLVENT CEMENT. 5. COPPER TUBE (ABOVE GRADE): ASTM B88 TYPE "L", HARD TEMPER ONLY. EXCEPT THESE MATERIALS SHALL NOT BE USED TO RECEIVE THE WASTES
- FROM URINALS NOR WASTES FROM WATER CLOSETS IN BATTERY, FITTINGS: CAST BRONZE, OR WROUGHT COPPER, JOINTS: SOLDER, GRADE 50B. 6. VENT PIPING ABOVE FLOOR 2" OR SMALLER MAY BE GALVANIZED STEEL.
- 7. INSULATE ALL HORIZONTAL RUNS OF PIPING LOCATED IN CEILING SPACES OF TENANTS IN SPACES BELOW, WHEN APPLICABLE. INSULATION TO BE AS SPECIFIED FOR WATER PIPING.
- 8. INTERIOR CONDENSATE PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBE WITH 95-5 TIN-ANTIMONY SOLDERED JOINTS AND WROUGHT COPPER FITTINGS WITH DIELECTRIC SEPARATION BETWEEN DISSIMILAR METALS. EXTERIOR CONDENSATE PIPING MAY BE SCHEDULE 40 PVC PIPING WITH SOLVENT WELDED FITTINGS IF APPROVED FOR USE BY THE LANDLORD.
- C. POTABLE WATER PIPING
- 1. COPPER TUBING (BELOW GRADE): ASTM B88, TYPE "K" SOFT COPPER, FITTINGS: CAST COPPER ALLOY OR WROUGHT COPPER AND BRONZE, JOINTS: BCUP SILVER BRAZE. 2. COPPER TUBING (ABOVE GRADE): ASTM B88, TYPE "L" HARD DRAWN WITH
- SWEAT JOINTS, FITTINGS: CAST COPPER ALLOY OR WROUGHT COPPER AND BRONZE, JOINTS: BCUP SILVER BRAZE. PIPING OF DISSIMILAR METALS MUST BE DI-ELECTRICALLY SEPARATED.
- INSULATE ALL HOT WATER, COLD WATER AND INTERIOR CONDENSATE PIPING WITH 1" THICK (K=0.23 @ 75 F) PIPE INSULATION WITH AN ALL SERVICE JACKET TO MEET LOCAL CODES AND UL FLAME SPREAD AND SMOKE DEVELOPED RATINGS. OWENS-CORNING OR EQUAL.
- F. INSULATE THE TRAP, SANITARY AND SUPPLY PIPES UNDER LAVATORY WITH 1/2" ARMSTRONG "ARMAFLEX" PIPING INSULATION OR TRUEBRO MODEL 102W WHITE "HANDI LAV GUARD" INSULATION KIT TO COMPLY WITH ADA REQUIREMENTS.
- G. INSTALL AIR CHAMBER SHOCK ABSORBERS IN BOTH HOT AND COLD LINES OF PIPING SYSTEM TO PREVENT NOISE AND DAMAGE DUE TO WATER HAMMER. SIOUX CHIEF 650 SERIES ALL STAINLESS STEEL, OR EQUAL. J.R. SMITH "HYDROTROLS", INSTALLED IN AN UPRIGHT POSITION.

- H. ALL BRANCH PIPING SYSTEM SHALL HAVE ACCESSIBLE SERVICE VALVE. PROVIDE SHUT OFF VALVES IN THE SUPPLY PIPING TO EVERY FIXTURE. PROVIDE ACCESS
- INSTALL ALL NECESSARY PIPE HANGERS, SADDLES, AND CARRIERS TO PROPERLY SUPPORT ALL PIPING AND FIXTURES. HANGERS SHALL SUIT TYPE OF PIPING INSTALLED AND BE SPACED AT A MAXIMUM SPAN OF 5 FEET. PROVIDE SWAY AND SEISMIC BRACING WHERE REQUIRED BY CODES.
- STERILIZE WATER SYSTEM IN ACCORDANCE WITH LOCAL CODES. K. CLEAN-OUTS AND FLOOR DRAINS SHALL BE INSTALLED PER LOCAL CODES. ALL FLOOR DRAINS SHALL HAVE DEEP SEAL TRAPS. PROVIDE TRAP PRIMERS FOR FLOOR DRAINS.
- L. ESCUTCHEONS SHALL BE CHROME PLATED, SIZE AS REQUIRED AND PLACED AT ALL PIPE PENETRATIONS AT WALLS, FLOORS, AND CEILINGS IN FINISHED AREAS. M. LEAKAGE TESTS SHALL BE PER LOCAL CODES.
- N. FLASHING SHALL BE SEALED WATERTIGHT AND PERFORMED IN ACCORDANCE TO THE LANDLORD'S CRITERIA. USE A LANDLORD APPROVED ROOFING CONTRACTOR WHERE APPLICABLE AND INCLUDE ALL COSTS IN BID.
- O. PROVIDE WATER METER AND REMOTE READER PER LANDLORD'S CRITERIA OR LOCAL UTILITIES REQUIREMENTS IF APPLICABLE.

FURNISH, AND INSTALL COMPLETE AND PROPERLY OPERATING PLUMBING SYSTEMS AS INDICATED OI THE DRAWINGS AND BASIS OF DESIGN INCLUDING PROVIDING SUBMITTALS, SHOP DRAWINGS,	N 18. PROVIDE PIPING ISOLATION FROM STUD WALL USING 1/4" FELT OR NEOPRENE ISOLATION, OR APPROVED ISOLATOR.
COORDINATION BETWEEN TRADES AND DISCIPLINES, "AS-BUILTS", TESTING AND TEST REPORTS. WORK SHALL COMPLY WITH ALL LOCAL CODES AND LANDLORD REQUIRENTS.	19. KEEP PIPING CLEAR FROM LOAD BEARING FOOTINGS.
	20. POTABLE WATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD SE SECTION 610.1 OF 2015 PLUMBING CODE.
PROJECT MANUALS, PLUMBING EQUIPMENT, FIXTURES AND BUILDING STANDARDS SHALL BE PART O THIS WORK.	F 21. FLAT VENTING SHALL NOT BE ALLOWED FOR PLUMBING FIXTURES THAT ARE WITHIN TRAP ARM DISTANCE OF WALLS.
SERVICE WATER HEATING EQUIPMENT SHALL BE IN COMPLIANCE WITH THE MODEL ENERGY CODE REQUIREMENTS AND LABELED.	22. EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX (6) INCHES IN HEIGHT ABC
BEFORE STARTING ANY WORK, CONTRACTOR SHALL EXAMINE THE COMPLETE SET OF DRAWINGS FOR TRADES, INCLUDING ARCHITECTURAL, HEATING-VENTILATION-AIR CONDITIONING, AND ELECTRICAL.	FLOOD LEVEL RIM ON THE FIXTURE IT SERVES BEFORE CONNECTING TO ANY OTHER VENT. 23. VENTS THRU ROOF SHALL BE MINIMUM OF THREE FEET VERTICALLY AND TEN FEET HORIZONTALLY
VERIFY DIMENSIONS, SPACE REQUIREMENTS, AND POINTS OF CONNECTION TO FIXTURES AND EQUIPMENT. MAKE ANY MINOR ADJUSTMENTS NECESSARY TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE AND THE WORK OF OTHER TRADES.	FROM AIR CONDITIONING EQUIPMENT FRESH AIR INTAKES, WINDOWS, DOORS OR OTHER OPENINGS
PLUMBING DRAWINGS AND LAYOUTS ARE DIAGRAMMATIC TO SHOW DESIGN INTENT AND FINISHED CONDITIONS. CONTRACTOR SHALL COORDINATE PIPING DESIGN CONDITION WITH OTHER TRADE. IF	24. COORDINATE WITH ELECTRICAL SECTION PRIOR TO ORDERING EQUIPMENT FOR AVAILABLE VOLTAGES AT EQUIPMENT LOCATIONS.
FIELD CONDITIONS DIFFER SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS AND AFFECT PLUMBING WORK, INFORM THE CONTRACTING OFFICER IMMEDIATELY BEFORE PROCEEDING WITH THE WORK.	25. COORDINATE CUTTING, DRILLING, PATCHING, AND REINFORCING REQUIRED FOR PLUMBING WORK WITH THE GENERAL CONTRACTOR AND REQUIREMENTS OF STRUCTURAL ENGINEER.
THESE DRAWINGS INDICATE THE FINISHED REQUIREMENTS FOR THE PLUMBING SYSTEMS. DUE TO	26. CUTTING OF EXISTING PAVING, WALKS AND/OR FLOORS SHALL BE BY MACHINE SAW CUTTING. HO FOR PIPES IN CONCRETE WALLS OR FLOORS SHALL BE DONE USING CORE DRILLING EQUIPMENT.
STRUCTURAL, MECHANICAL DUCT OR PIPING INTERFERENCE, OR FOR OTHER REASONS, THE CONTRACTOR MAY DESIRE TO INSTALL THE WORK IN A MANNER DIFFERENT FROM THAT SHOWN. SUCH CHANGES SHALL BE PRESENTED TO THE CONTRACTING OFFICER FOR APPROVAL BEFORE PROCEEDING, AND THE RECORD DRAWINGS SHALL BE ACCURATELY REVISED TO SHOW THE CHANGES	OR AS SHOWN ON PLANS PROVIDE FIRE RATED CALIFICITIES SAME RATING AS THE WALL
AS COMPLETED.	28. PROVIDE AND INSTALL WATER HAMMER ARRESTERS OF REQUIRED SIZE AT QUICK CLOSING VALVES
CONTRACTOR SHALL COORDINATE WITH TRADES TO ENSURE AN UNDERSTANDING OF THE COMPLETE SCOPE OF PROJECT.	29. CLEANOUTS SHALL BE ACCESSIBLE AND INSTALLED PER LOCAL CODE REQUIREMENTS.
NLESS INSTRUCTED OTHERWISE, THE CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, CENSES, AND FEES REQUIRED FOR INSTALLATION OF THE WORK. FURNISH FINAL CERTIFICATE OF ISPECTION TO THE OWNER OR WRITTEN EVIDENCE OF ACCEPTANCE BY INSPECTION AUTHORITIES	30. SLOPE OF BUILDING DRAINS AND SEWERS SHALL NOT BE LESS THAN 1% FOR 4" AND LARGER DIAMETER PIPES AND NOT LESS THAN 2% FOR SMALLER THAN 4" DIAMETER PIPES.
OR WORK INSTALLED.	31. SLOPE OF CONDENSATE DRAINS, SHALL NOT BE LESS THAN 1%.
F ANY EQUIPMENT SUBMITTED BY THE CONTRACTOR IS DIFFERENT FROM THAT SPECIFIED, OR EQUIRES CHANGES IN MATERIAL OR LABOR FROM THAT REQUIRED IN THE CONTRACT DOCUMENTS FFECTING THIS AND/OR OTHER TRADES, SUCH CHANGES SHALL BE SUBMITTED AS SHOP DRAWINGS. UBMITTALS SHALL INDICATE CREDIT DUE TO CONTRACTING OFFICER. CONTRACTOR SHALL ALSO BE ESPONSIBLE FOR PAYMENT OF CHARGES RESULTING FROM ADDITIONS OR CHANGES IN THE WORK OF OTHER TRADES NECESSARY TO ACCOMMODATE THE REQUESTED MODIFICATION. CHANGES SHALL SHOWN ON RECORD AND AS-BUILT DRAWINGS.	32. HANGING, SUPPORT AND SEISMIC BRACING OF PLUMBING PIPING SHALL COMPLY TO GUIDELINES I S. SEISMIC RESTRAINTS OF PLUMBING SYSTEMS PER SMACNA LATEST EDITION.
	33. SEE STRUCTURAL DRAWINGS FOR DETAILS ON ADDITIONAL STRUCTURAL ATTACHMENTS FOR PIPE SUPPORTS AS REQUIRED.
EE ARCHITECTURAL DRAWINGS FOR EXTENT OF NEW CONSTRUCTION, FOR EXACT PLUMBING XTURE LOCATIONS AND QUANTITIES, EQUIPMENT, DEVICES, ETC.	34. FLOOR DRAINS AND FLOOR SINKS AS SHOWN ON PLANS SHALL BE PROVIDED WITH CODE—APPRO ACCESSIBLE TRAP PRIMERS. CONCEALED TRAP PRIMER VALVES SHALL BE PROVIDED WITH ACCES PANELS.
CONCEALED VALVES, COCKS, WATER HAMMER ARRESTORS, PLUMBING EQUIPMENT, CONTROLS AND THER DEVICES REQUIRING PERIODIC ADJUSTMENT, INSPECTION, OR MAINTENANCE SHALL BE OCATED TO BE READILY ACCESSIBLE. WHERE VALVES ARE INSTALLED WITHIN OR BEHIND WALLS,	35. NO PIPING, LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE THE ELECTRICAL ROOM AND OVER THE ELECTRICAL EQUIPMENT PER NEC SECTION 110.26.F.1.
PARTITIONS OR CEILING, AN ACCESS PANEL SHALL BE INSTALLED. SUBMIT SHOP DRAWINGS TO ARCHITECT LOCATING ACCESS PANELS PRIOR TO INSTALLATION OF PIPING. CONTRACTOR IS ADVISED THAT ITEMS REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE THE AREAS OF GYPSUM BOARD	SPRINKLER HEADS AND PIPING SERVING THE ELECTRICAL ROOM IN ACCORDANCE WITH NFPA 13 / ACCEPTED INSIDE.
CEILINGS WITHOUT PERMISSION OF THE ARCHITECT.	36. NO PIPING, LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE THE ELEVATOR MACHINE ROOM AND ELEVATOR SHAFT PER ASME A17.1A RULE 102. ONLY SPRI HEADS AND PIPING SERVING THESE ROOMS IN ACCORDANCE WITH NFPA 13 ARE ACCEPTED INSID
HANDICAPPED PLUMBING FIXTURES SHALL BE MOUNTED AT REQUIRED HEIGHTS AND WITH RELATED ACCESSORIES AS REQUIRED BY THE AMERICANS BARRIER ACT (ABA). FIXTURE TRAPS, HOT AND CO WATER SUPPLIES AND STOPS SHALL BE INSULATED WITH A PREFORMED INSULATION CAP.	
ACKFLOW DEVICES SHALL BE TESTED BY A CERTIFIED BACKFLOW TESTER WITH THE RESULTS DCUMENTED.	 38. PLUGGED/CAPPED WASTE AND VENT OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED A LOW AS POSSIBLE IN CEILING SPACES.
QUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS' ECOMMENDATIONS AND APPLICABLE CODES. PROVIDE FITTINGS, TRANSITIONS, VALVES AND OTHER EVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.	39. OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED SO AS TO PERMIT EASY CONNECTION. COORDINATE WITH DUCTWORK, STRUCTURAL CONDITIONS AND ARCHITECTURAL LAYOUT.
DOMESTIC HOT WATER PIPING SHALL BE INSULATED AS REQUIRED PER LOCAL CODES AND LANDLORD REQUIREMENTS.	
CONDENSATE DRAIN PIPING SHALL BE INSULATED SIMILAR TO HOT WATER PIPING INSULATION	

ATER SYSTEMS SHALL BE DISINFECTED PRIOR TO USE ACCORDING TO THE METHOD SET IN 10.1 OF 2015 PLUMBING CODE. NG SHALL NOT BE ALLOWED FOR PLUMBING FIXTURES THAT ARE WITHIN TRAP ARM

SHALL RISE VERTICALLY TO A POINT NOT LESS THAN SIX (6) INCHES IN HEIGHT ABOVE THE . RIM ON THE FIXTURE IT SERVES BEFORE CONNECTING TO ANY OTHER VENT. ROOF SHALL BE MINIMUM OF THREE FEET VERTICALLY AND TEN FEET HORIZONTALLY ONDITIONING EQUIPMENT FRESH AIR INTAKES, WINDOWS, DOORS OR OTHER OPENINGS. WITH ELECTRICAL SECTION PRIOR TO ORDERING EQUIPMENT FOR AVAILABLE VOLTAGES INT LOCATIONS.

LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE ICAL ROOM AND OVER THE ELECTRICAL EQUIPMENT PER NEC SECTION 110.26.F.1. ONLY HEADS AND PIPING SERVING THE ELECTRICAL ROOM IN ACCORDANCE WITH NFPA 13 ARE ISIDE. LEAK PROTECTION APPARATUS, OR OTHER FOREIGN EQUIPMENT ARE ALLOWED INSIDE OR MACHINE ROOM AND ELEVATOR SHAFT PER ASME A17.1A RULE 102. ONLY SPRINKLER PIPING SERVING THESE ROOMS IN ACCORDANCE WITH NFPA 13 ARE ACCEPTED INSIDE. NCEALED GAS PIPING, CONNECTIONS AND FITTINGS SHALL COMPLY WITH NFPA 54: 7.3.1 -ND SHALL NOT BE LOCATED IN SOLID WALL PARTITIONS PER NFPA 54:7.3.3. APPED WASTE AND VENT OUTLETS FOR FUTURE CONNECTIONS SHALL BE INSTALLED AS SIBLE IN CEILING SPACES.



FLOWATER REFILL STATIONS

SPECIFICATIONS

GENERAL

Indoor/outdoor stand-alone, refrigerated, 7x purified water Refill Station. Refill Stations require 1" clearance (5" recommended) from walls and/or structures and must be placed under cover when outdoors. No direct sunlight.

CERTIFICATIONS/STANDARDS

ISO 9001 NSF/ANSI 42, 53 & 58

NSF/ANSI 42: ensures that chlorine, taste, odor, and

particulates are filtered out. NSF/ANSI 53: ensures health-related contaminants are filtered out. NSF/ANSI 58: ensures fluoride, chromium, nitrates, and

TDS are reduced. ADA Compliant: These Refill Stations comply with the requirements of the ADA (Americans with Disabilities Act).

FEED WATER

Refill Stations have been designed and built to purify municipal tap water most efficiently at 70 psi. Refill Stations are designed to operate on 50 psi to 100 psi supply line pressure. If inlet pressure is above 100 psi, a pressure regulator must be installed in the supply line. Any damage caused by reason of connecting this Condenser: Air-cooled condenser with steel wire tube. product to supply line pressure slower than 50 psi or Tube emits heat in natural ambient air. Cooling Unit: higher than 100 psi is not covered under FloWater's service policy. Refill Stations are designed to operate in coil of copper tubing. Tank is stainless steel. Fully insulated ambient temperatures 40°F~104°F (ambient with EPS foam which meets Underwriters Laboratories temperatures greater than 104°F can result in damage Inc. requirements for self-extinguishing material. to the carbon and advanced osmosis filters). Refill Stations should be placed indoors if ambient accurately calibrated capillary tube for trouble-free temperatures ever drop below 32°F. Any damage operation. It is an environmentally friendly refrigerant gas. caused by exposure to ambient temperatures below Temperature Control: Enclosed adjustable thermostat is 32°F is not covered under FloWater's service policy, initially set to maintain water temperature between Operate only in non condensing humidity. Refill 32.9°F and 35.6°F. Requires no adjustment other than for Stations are prepped with a 1/4" John Guest quickconnect fitting located in rear, lower left of unit and require a 1/4" waterline. A water shut-off valve located behind should be installed.

DRAIN WATER

myflowater.com

Advanced Osmosis: Refill Stations utilizing advanced osmosis require a drain. Advanced osmosis product water to bypass water is a 1:2 ratio at 70 psi. Lower water pressure results in lower advanced osmosis efficiency. Refill Stations are prepped with a 1/4"John Guest quick-connect fitting located in rear, lower left of unit and require 1/4" drain line. Depending on local plumbing codes, FloWater may install an FDA and NSF certified check valve/backflow preventer on the drain line. Drain lines can be run up to 10' vertically and 100' horizontally with system pressure.

Refill Stations use a 7x purification system, including: a sedi-carbon filter, carbon filter, advanced osmosis, coconut carbon filter, mineral filter, alkaline filter, and activated oxygen. This purification system has been designed to handle hard water, but may require more regular advanced osmosis or UF filter changes.

CHILLING SYSTEM Chilling Capacity:

PURIFICATION

33.8°F~34.7°F

32.9°F~35.6°F (factory default) 35.6°F~42.8°F

37.4°F~44.6°F

Chilling capacity of drinking water based upon 80°F inlet water and 90°F ambient. The reserve tank that feeds the chilling tank is five gallons. The chilling tank is two gallons.

Power Draw: 119.3 volts, 0.29 Amps, 30 Watts, 60 Hz (compressor off). 121 volts, 2.5 Amps, 165 Watts 60 Hz (compressor running)

Motor Compressor: Hermetically sealed, rotating type, 110~115VAC, 60Hz single phase. Sealed-in lifetime oil supply. Equipped with electric cold and three prong (grounded) molded rubber plug.

Combination tube-tank type. Tube portion is continuous

Refrigerant Control: Refrigerant HFC-134a is controlled by altitude requirements. See Chilling Capacity section for available temperature ranges.

ADA COMPLIANCE

FloWater Refill Stations comply with ADA reach requirements with a maximum reach of 48".

877.772.7775

FLOWATER REFILL STATIONS INSTALLATION Installation with Advanced Osmosis water AO In-Line Ball Valve FLOWATER 877.772.7775 nyflowater.com

FLOWATER

	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC RECIRCULATING HOT WATER
	SANITARY VENT – ABOVE GRADE
	SANITARY WASTE – BELOW GRADE
	SANITARY WASTE – ABOVE GRADE
	STORM DRAIN – BELOW GRADE
SD	STORM DRAIN – ABOVE GRADE
	FIRE PROTECTION

PLU	JMBING/PIPING
	ELBOW DOWN
;	PIPE CAP
o	ELBOW UP
o	TEE, OUTLET UP
	TEE, OUTLET DOWN
Ĭ	CONNECTION, BOTTOM
î	CONNECTION, TOP
	FLEXIBLE CONNECTION
	CHECK VALVE
X	SHUTOFF VALVE
	PLUG VALVE
· **	STRAINER W/BLOWDOWN VALVE AND CAP
¢	PRESSURE REDUCING VALVE (SETTING AS NOTED, PSI)
X	AUTOMATIC CONTROL VALVE, 2-WAY
	THERMOSTATIC MIXING VALVE
	VACUUM BREAKER
<u>م</u>	PRESSURE RELIEF/SAFETY VALVE (SETTING AS NOTED, PSI)
×	DRAIN VALVE
	BALL VALVE
ſ	BUTTERFLY VALVE
	GLOBE ANGLE VALVE
2	
	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
——×——	GLOBE VALVE
&	GAS PRESSURE REGULATOR VALVE
	FLOW DIRECTION
	PIPE UNION
I	PIPE FLANGE
	PUMP
Q	PRESSURE GAUGE W/ PIGTAIL & PETCOCH
. <u> </u>	THERMOMETER
¥	PRESSURE/TEMPERATURE TEST PORT
<u> </u>	SHOCK ABSORBER
	ELBOW
	TEE
e i i i i i i i i i i i i i i i i i i i	FLOOR DRAIN
Ð	FLOOR SINK
WH ++	WALL HYDRANT
HB +	HOSE BIBB
	FLOOR CLEANOUT
Ø	GRADE CLEANOUT
	WALL CLEANOUT
+	CLEANOUT
·	GAS COCK VALVE
•	ROOF DRAIN
-	
•	POINT OF CONNECTION, NEW TO EXISTING
\Diamond	POINT OF DISCONNECTION

PLUMBING

FIXTURE UNIT COUNT

ITEM DESCR	IPTION	QTY.	TRAP SIZE	D.F.U	TOTAL D.F.U.	W.S.F.U	TOTAL W.S.F.U.
WC-1 WATER	CLOSET (TANK TYPE)	3	3"	4.0	12.0	5.0	15.0
L-1 LAVATO	RY	2	1.50"	2.0	4.0	2.0	4.0
SS-1 MOP S	NK	1	3"	2.0	2.0	3.0	3.0
DF-1 DRINKIN	NG FOUNTAIN	1	1.50"	.5	.5	.5	.5
FD-1 FLOOR	DRAIN (EMGY)	2	3"	0.0	0.0	-	-
WB-1 WASHER	R WALL BOX	1	2"	3.0	3.0	3.0	3.0
FW-1 FLOWAT	ER REFILL STATION	1	1.50"	1.0	1.0	1.0	1.0
UR-1 URINAL		1	3"	4.0	4.0	5.0	5.0
TOTAL FIXT	URE UNITS:				D.F.U. 26.5		W.S.F.U. 31.5
W.S.F.U.	31.5 FU = 23.5 GPM (1" ME	ETER A	AND W	ATER SE	RVICE)	
D.F.U. SAN	26.5 FU = 4" PIPING H	ORIZ	ONTAL	@ 1/	4"PER	FOOT SL	OPE

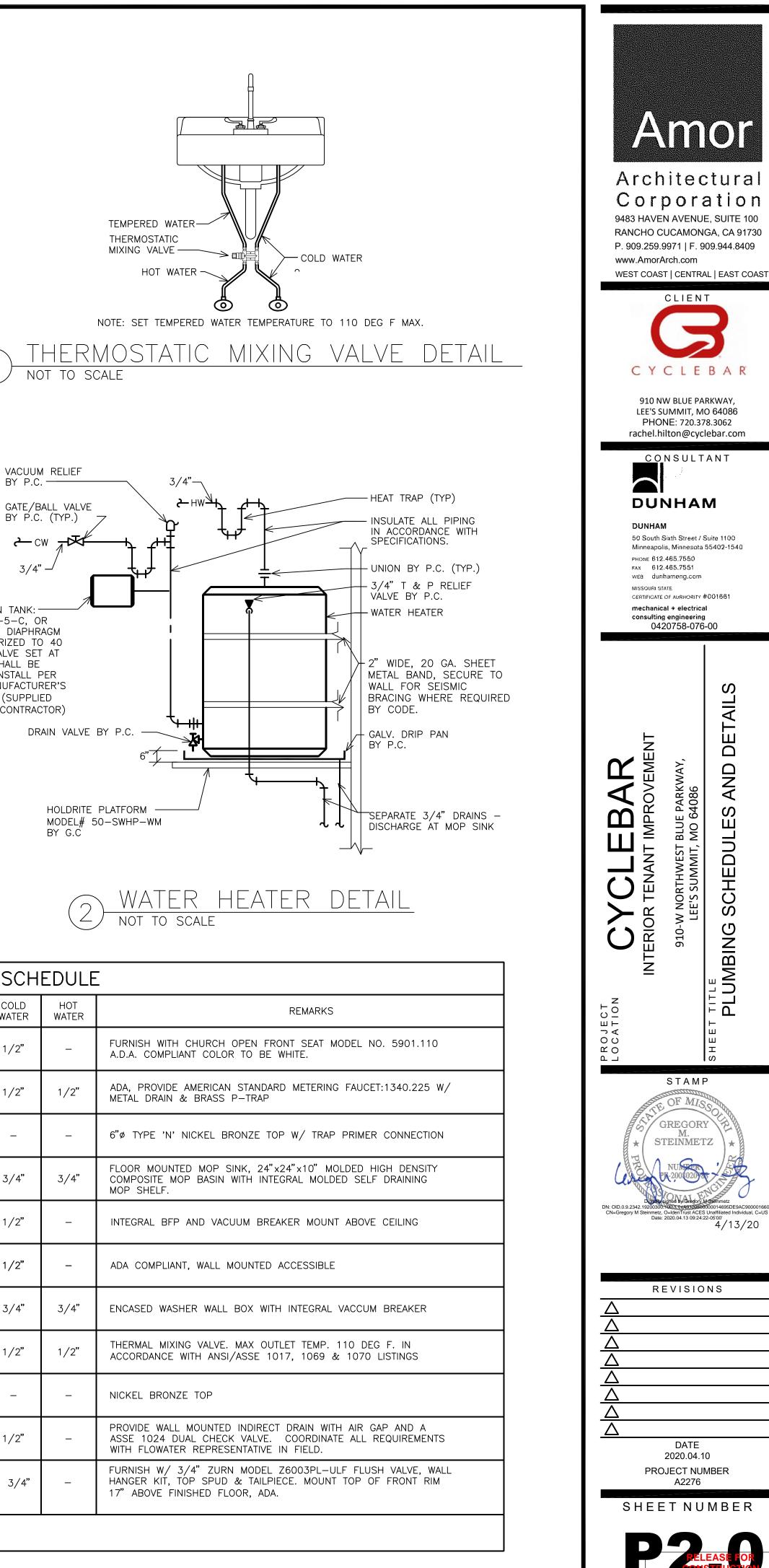
AMTROL, MODEL ST-5-C, OR EQUAL. TANK TO BE DIAPHRAGM TYPE, PRE-PRESSURIZED TO 40 PSIG AND RELIEF VALVE SET AT 150 PSIG. TANK SHALL BE ASME CERTIFIED. INSTALL PER LOCAL CODE & MANUFACTURER'S RECOMMENDATIONS. (SUPPLIED AND INSTALLED BY CONTRACTOR)

	WATER HEATER SCHEDULE													
EQUIP NO	STORAGE CAPACITY (GALLONS)	RECOVERY (GPH)	TEMP RISE (°F)	ELECTRIC INPUT (KW)	MANUFACTURER	MODEL NUMBER	REMARKS							
WH-1	30	24	100	6	A.O. SMITH	DEL-30	APPROVED EQUALS ACCEPTED – CONFIRM VOLTAGE WITH ELECTRICAL CONTRACTOR							

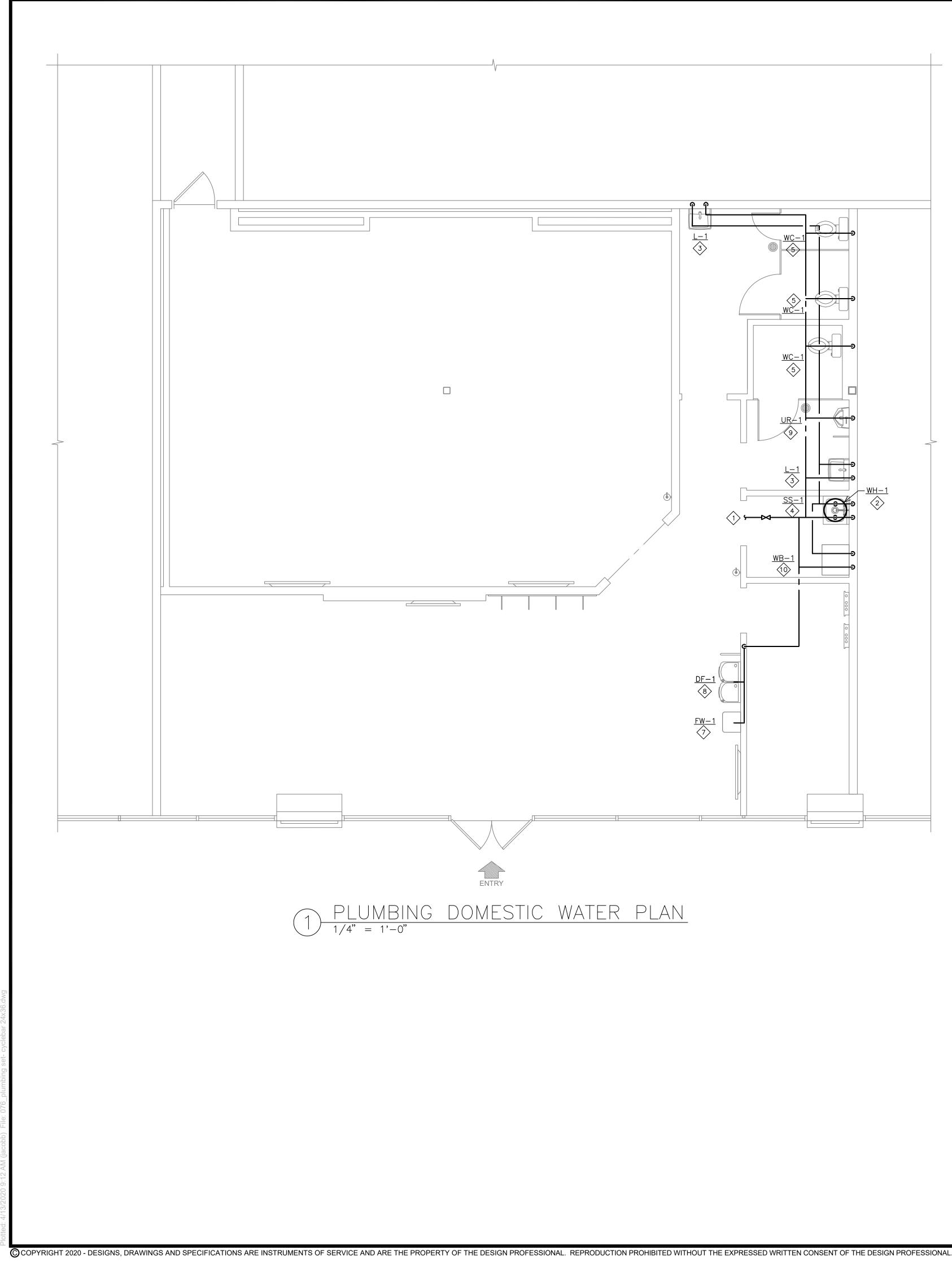
	Pl		NG FI	XTURE	SCH	EC
KEY	FIXTURE	WASTE	TRAP	VENT	COLD WATER	W
<u>WC-1</u>	AMERICAN STANDARD: CADET RIGHT HEIGHT 2467.100 ELONGATED – 1.1 GPF– PRESSURE ASSISTED ADA COMPLIANT	3"	INT	2"	1/2"	
<u>L-1</u>	AMERICAN STANDARD: LUCERNE MODEL: 0355.012 – FACTORY SET .25 GALLON PER FLOW ACTIVATION (METERING FAUCET).	2"	1 1/2"	1 1/2"	1/2"	
<u>FD-1</u>	ZURN: Z415 (ADJUSTABLE)	2"	2"	1 1/2"	_	
<u>SS-1</u>	FIAT #MSB2424 — WITH CHICAGO FAUCET 897—CP WITH INTEGRAL VACUUM BREAKER & PAIL HOOK.	3"	3"	1 1/2"	3/4"	
<u>TP-1</u>	TRAP PRIMER: JOSAM MODEL 88300	-	-	_	1/2"	
<u>DF-1</u>	HI-LO DRINKING FOUNTAIN ELKAY MODEL LVRCHDTL8SC	2"	1 1/2"	1 1/2"	1/2"	
<u>WB-1</u>	ZURN: WM2961 ENCASED WASHING MACHINE VALVE	3"	3"	1 1/2"	3/4"	
<u>TMV-1</u>	WATTS: LFMMV	_	_	-	1/2"	
<u>FCO</u>	ZURN: ZN—1400 (ADJUSTABLE)	4"	-	_	-	
<u>FW-1</u>	FLOWATER REFILL STATION	2"	2"	1 1/2"	1/2"	
<u>UR-1</u>	ZURN MODEL Z5755 – 3/4" TOP INLET SPUD, OUTLET SPUD W/ 2" TUBING TAILPIECE, .125 G.P.F.	2"	_	1 1/2"	3/4"	
						<u></u>

NOTE: ALL FIXTURES MAY BE SUBSTITUTED WITH APPROVED EQUAL. CONTACT OWNER FOR APPROVAL

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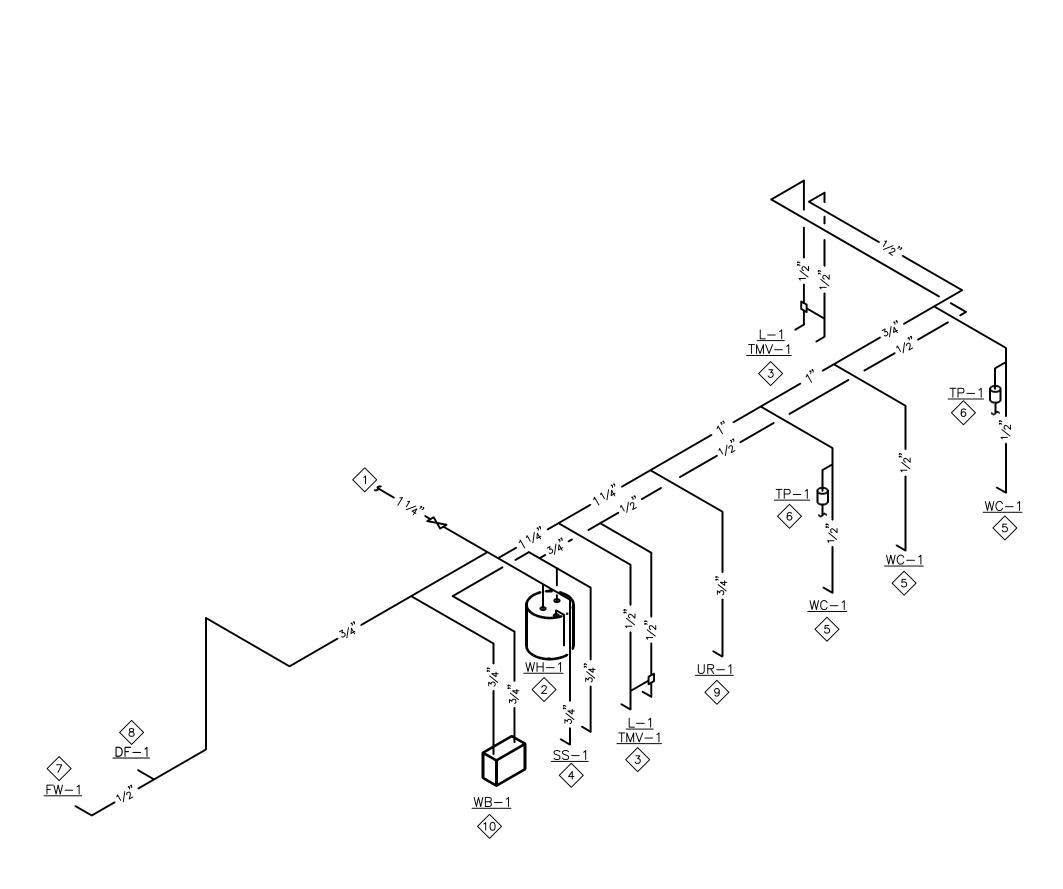


DEVELOPMENT SERVIC



<u>NOTE:</u> PRIOR TO CONSTRUCTION/ BID THE CONTRACTOR SHALL VISIT THIS SITE AND FIELD VERIFY THE EXISTING LOCATIONS AND SIZES OF PLUMBING LINES AND FLOW DIRECTION.

THE CONTRACTOR SHALL FIELD VERIFY ANY/ CONDITIONS WHICH MAY CONFLICT WITH THE DESIGN SHOWN ON THESE PLANS. NOTIFY ARCHITECT.



SHEET NOTES:

- REFER TO SHEET P1.0 FOR PLUMBING SPECIFICATIONS AND GENERAL NOTES.
- CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
- PLUMBING CONTRACTOR TO DEMO ALL PIPING, SUPPORTS, PLUMBING FIXTURES AND ALL RELATED APPURTENANCES. CAP ALL PIPING AT MAIN.
- PLUMBING CONTRACTOR TO VERIFY EXISTING BUILDING PRESSURE PRIOR TO INSTALLATION OF FLOWATER. WHEN EXISTING BUILDING WATER PRESSURE IS BELOW 50 PSI PLUMBING CONTRACTOR SHALL PROVIDE A BOOSTER PUMP. PLUMBING CONTRACTOR SHALL COORDINATE WITH OWNER AND FLOWATER REPRESENTATIVE FOR BOOSTER PUMP SPECIFIC REQUIREMENTS AND INSTALLATION PROCEDURE. PLUMBING CONTRACTOR SHALL ASSIST FLOWATER REPRESENTATIVE DURING TESTING OF BOOSTER PUMP PROPER OPERATION IN ACCORDANCE TO FLOWATER REQUIREMENTS.
- REFER TO SHEET P2.0 FOR PLUMBING SCHEDULES AND DETAILS.

KEYED NOTES:

SERVICE. EXISTING WATER METER TO REMAIN. VERIFY ALL

 $\langle 2 \rangle$ NEW ELECTRIC WATER HEATER. SEE DETAIL ON SHEET P2.0.

MAX. 110°F. SEE DETAIL ON SHEET P2.0.

HAVE INTEGRAL VACUUM BREAKER.

REQUIREMENTS IN FIELD.

 $\langle 5 \rangle$ 1/2" CW TO WATER CLOSET.

REPRESENTATIVE IN FIELD.

 $\langle 9 \rangle$ 3/4" CW DOWN TO URINAL.

VÁCUUM BREAKÉR.

 $\langle 8 \rangle$ 1/2" CW TO DRINKING FOUNTAIN.

(1) CONNECT NEW 1-1/4" CW TO EXISTING LANDLORD PROVIDED WATER

 $\langle 3 \rangle$ 1/2" CW AND 1/2" HW TO LAVATORY. PROVIDE WATTS MODEL LFMMV (OR APPROVED EQUAL) THERMOSTATIC MIXING VALVE IN ACCESSIBLE

LOCATION. VALVE SHALL HAVE ASSE 1070 LISTING AND BE SET TO

ACCESSIBLE LOCATION AND EXTEND PIPE TO TRAP PRIMER CONNECTION

ON FLOOR SINK/DRAIN AS SHOWN. VERIFY ROUTING IN FIELD. SEE

√7 1/2" CW TO FLOWATER REFILL STATION. PROVIDE ASSE 1024 DUAL

CHECK VALVE. COORDINATE ALL REQUIREMENTS WITH FLOWATER

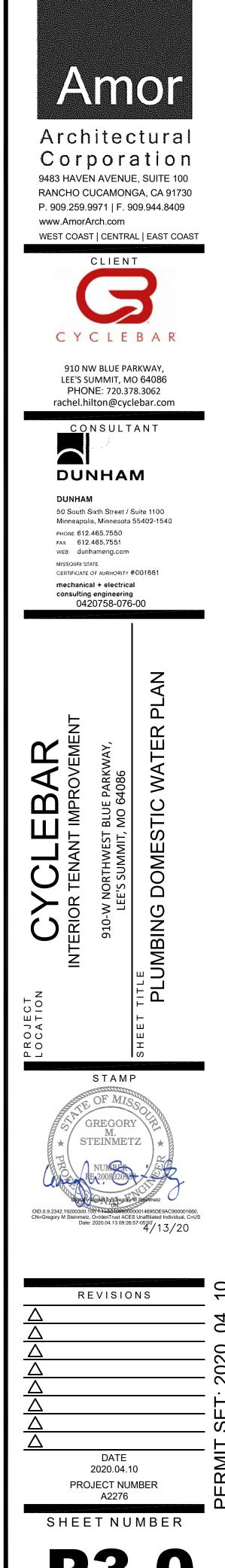
() 3/4" CW AND 3/4" HW DOWN TO WASHER WALL BOX WITH INTEGRAL

(4) 3/4" CW AND 3/4" HW. MOP SINK/LAUNDRY TUB FAUCET SHALL

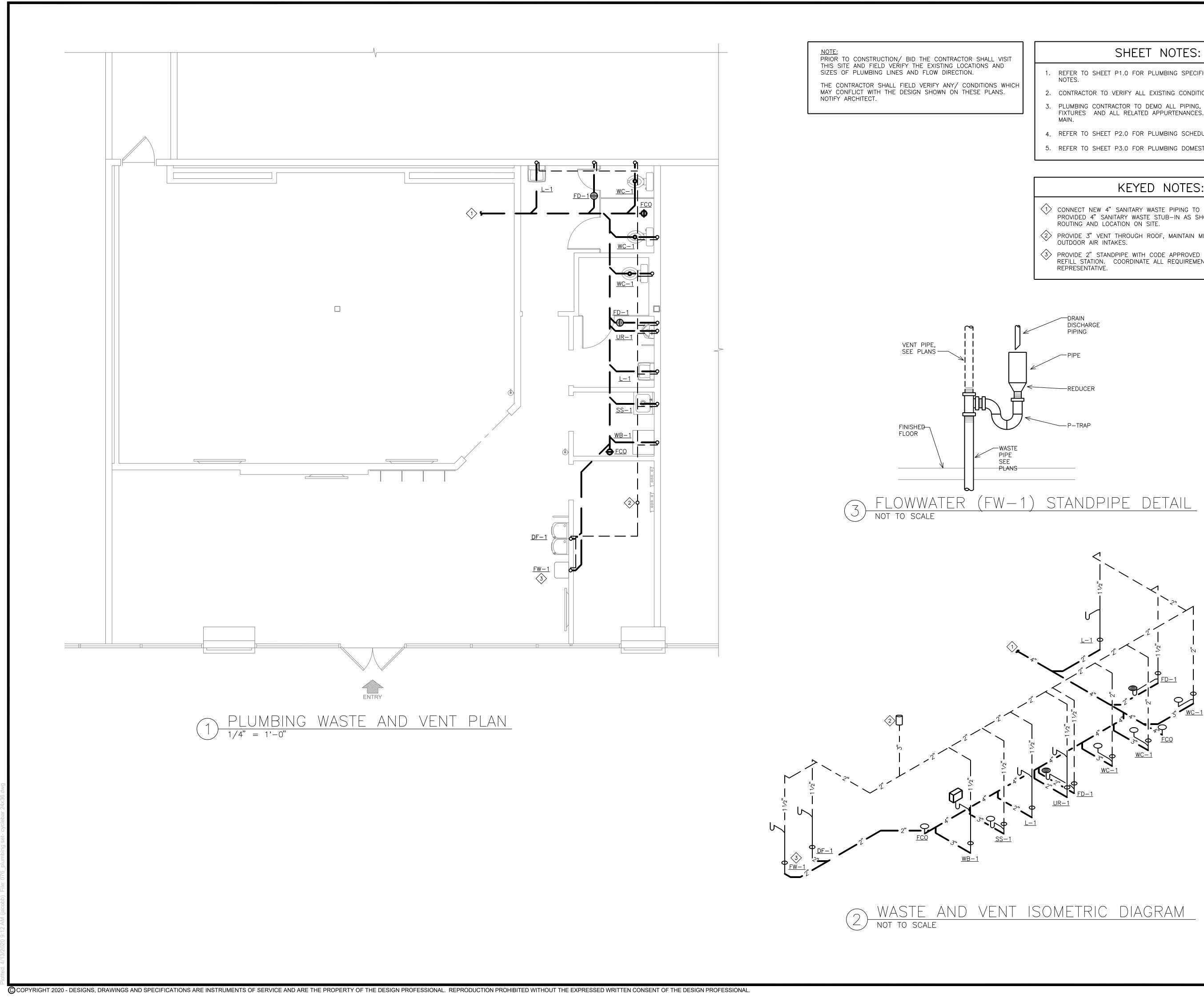
(6) PROVIDE JOSAM MODEL 88300 (OR EQUAL) TRAP PRIMER IN

ISOMETRIC DRAWING FOR ADDITIONAL INFORMATION

REFER TO SHEET P4.0 FOR PLUMBING WASTE AND VENT PLAN.



DEVELOPMENT SER 04/14/2020



	SHEET NOTES:
1.	REFER TO SHEET P1.0 FOR PLUMBING SPECIFICATIONS AND GENERAL NOTES.
2.	CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS.
3.	PLUMBING CONTRACTOR TO DEMO ALL PIPING, SUPPORTS, PLUMBING FIXTURES AND ALL RELATED APPURTENANCES. CAP ALL PIPING AT MAIN.
4.	REFER TO SHEET P2.0 FOR PLUMBING SCHEDULES AND DETAILS.
5.	REFER TO SHEET P3.0 FOR PLUMBING DOMESTIC WATER PLAN.
	KEYED NOTES:
$\langle 1 \rangle$	CONNECT NEW 4" SANITARY WASTE PIPING TO EXISTING LANDLORD PROVIDED 4" SANITARY WASTE STUB-IN AS SHOWN. VERIFY

2>	PROVIDE 3" VENT THROUGH ROOF, MAINTAIN MIN. 10'-0" FROM ANY OUTDOOR AIR INTAKES.
3	PROVIDE 2" STANDPIPE WITH CODE APPROVED AIR GAP FOR FLOWATER REFILL STATION. COORDINATE ALL REQUIREMENTS WITH FLOWATER REPRESENTATIVE.



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GENERAL NOTES:

- THE INTENT OF THESE DRAWINGS & SPECIFICATIONS IS TO ESTABLISH A STANDARD OF QUALITY. THE ENGINEER RESERVES THE RIGHT TO ALLOW OTHER METHODS & MATERIALS NOT REFLECTED HEREIN. THE CONTRACTOR SHALL REQUEST APPROVAL TO WAIVE THE STANDARDS, PRIOR TO BEGINNING THE PROJECT. CONTRACT DOCUMENT REVISIONS TO ACCOMMODATE THE INSTALLED CONDITIONS, WITHOUT PRIOR APPROVAL, WILL RESULT IN ADDITIONAL DESIGN CHARGES TO THE CONTRACTOR.
- THESE DRAWINGS INDICATE FINISHED REQUIREMENTS FOR ELECTRICAL SYSTEMS. EQUIPMENT, LIGHTING FIXTURES, OUTLETS & DEVICES. DUE TO STRUCTURAL CONDITIONS, MECHANICAL DUCTWORK, PIPING CONFLICTS, OR LEGITIMATE REASONS, THE CONTRACTOR MAY INSTALL INDICATED WORK IN A MANNER DIFFERENT FROM WHAT IS DRAWN. CHANGES SHALL BE PRESENTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW & APPROVAL PRIOR TO PROCEEDING. UPON APPROVAL, THE WORK SHALL BE PERFORMED & THE AS-BUILT DRAWINGS SHALL BE REVISED TO ACCURATELY REFLECT ANY CHANGES.
- ELECTRICAL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE N.E.C.A INSTALLATION STANDARDS TO THE SATISFACTION OF THE ARCHITECT & THE ENGINEER.
- ALL WORK, MATERIALS & EQUIPMENT SHALL CONFORM TO THE CURRENTLY ACCEPTED EDITION OF ALL APPLICABLE NATIONAL, STATE & CITY CODES & ORDINANCES.
- . ALL ELECTRICAL MATERIALS AND EQUIPMENT TO BE USED SHALL BE LISTED BY U.L. OR ANOTHER RECOGNIZED TESTING FACILITY AS PERMITTED BY THE JURISDICTION AUTHORITY.
- WHERE APPARENT DISCREPANCIES EXISTS BETWEEN THE REQUIREMENTS OF THE GENERAL NOTES & INFORMATION IN THE ELECTRICAL DRAWINGS, THE CONTRACTOR SHALL INCLUDE IN HIS BID THE COST OF THE GREATER QUALITY OR QUANTITY.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO BID & VERIFY THE EXISTING CONDITIONS. THE CONTRACTOR SHALL INCLUDE IN THE BASE BID ALL COSTS REQUIRED FOR PERMIT & INSPECTIONS.
- THE CONTRACTOR SHALL VERIFY W/OWNER'S REPRESENTATIVE PRIOR TO BID SUBMISSION, THE ALLOWABLE WORKING HOURS, EMPLOYEE PARKING AREAS, MATERIAL DELIVERY, STORAGE REQUIREMENTS, DEMOLITION, REMOVAL OF CONSTRUCTION DEBRIS & DAILY CLEAN UP REQUIREMENTS. INCLUDE ALL COSTS IN BID FOR REQUIRED MATERIALS NEEDED FOR THE DURATION OF THE PROJECT. PERFORM ALL WORK AS DIRECTED BY OWNER'S REPRESENTATIVE & ARCHITECT.
- ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR PROPER OPERATION. IF TESTS SHOW DEFECTIVE WORK, THE CONTRACTOR SHALL MAKE ALL NECESSARY CORRECTIONS AT NO ADDITIONAL COST TO THE OWNER.
- 10. THE CONTRACTOR SHALL GUARANTEE ALL WORK AGAINST DEFECTS IN MATERIALS & WORKMANSHIP WHICH MAY OCCUR UNDER NORMAL USE FOR 1 YEAR AFTER OWNER'S ACCEPTANCE. ALL DEFECTS SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR WITHOUT ADDITIONAL CHARGE TO THE OWNER.
- 1. PROVIDE AS-BUILT DRAWINGS TO THE ARCHITECT AND OWNER. DRAWINGS SHALL INCLUDE ACCURATE CONDUIT & DEVICE LOCATIONS DIMENSIONED FROM PERMANENT LANDMARKS.
- 12. DO NOT SCALE ELECTRICAL DRAWINGS. VERIFY EXACT LOCATION OF ALL DEVICES, JUNCTION BOXES, LIGHTING FIXTURES, OUTLET HEIGHTS, ETC. W/ARCHITECTURAL & INTERIOR DESIGN DRAWINGS PRIOR TO INSTALLATION. THE CONTRACTOR TO VERIFY EXACT LOCATIONS OF ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS PRIOR TO ROUGH-IN. COORDINATE WITH CABINET SHOP DRAWINGS TO ENSURE PROPER HEIGHT & LOCATION WITH RESPECT TO MILLWORK, EQUIPMENT, ETC.
- 13. ANY RACEWAY SYSTEMS THAT MAY BE SHOWN ARE FOR DIAGRAMMATICAL PURPOSES ONLY. ACTUAL LOCATION & ROUTING OF ALL SHALL BE DETERMINED BY THE CONTRACTOR TO MEET FIELD CONDITIONS.
- 14. PROVIDE A DEDICATED NEUTRAL FOR NEW CIRCUITS. HOME RUN CONDUCTORS MAY BE COMBINED INTO (1) CONDUIT. NO RACEWAY OR CABLE SHALL CONTAIN MORE THAN (9) CURRENT CARRYING CONDUCTORS. WHERE MULTIPLE CONDUCTORS IN EXCESS OF (3) ARE INDICATED ON THESE DRAWINGS, THEY MUST BE DERATED AS REQUIRED IN N.E.C. ARTICLE 310.
- 5. WHERE ALLOWED. MC CABLE MAY BE INSTALLED PER N.E.C. ARTICLE 330. WHERE MULTIPLE CABLES ARE ROUTED ADJACENT TO EACH OTHER (BUNDLED), A MINIMUM SEPARATION OF (1) CABLE DIAMETER (LARGEST) SHALL BE REQUIRED.
- 16. PLASTIC CABLE TIES ARE PROHIBITED FOR USE TO SUPPORT MC CABLE. USE ONLY CABLE SUPPORTS PER CABLE MANUFACTURER'S INSTALLATION REQUIREMENTS.
- 7. RACEWAYS SHALL BE CONCEALED (IN CMU OR OTHER WALLS) WHENEVER POSSIBLE. RACEWAYS INSTALLED EXPOSED SHALL BE ROUTED OUT OF PUBLIC VIEW. RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
- 18. PROVIDE APPROVED EXPANSION FITTINGS WHERE RACEWAYS CROSS BUILDING EXPANSION JOINTS. PROVIDE BONDING JUMPER(S) SIZED PER CODE WHERE REQUIRED. PROVIDE ALL FITTINGS REQUIRED FOR A COMPLETE INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR EXPANSION JOINT LOCATION(S).
- 19. MINIMUM RACEWAY SIZE SHALL BE 1/2". MINIMUM HOME RUN SIZE SHALL BE 3/4". MINIMUM CONDUCTOR SHALL SHALL BE #12 AWG UNLESS NOTED OTHERWISE. ALL POWER RELATED CONDUITS SHALL HAVE A CODE SIZE GROUND WIRE INSTALLED IN EACH RUN.
- 20. CONTRACTOR SHALL PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS. WHERE MORE THAN (1) CONDUIT TERMINATES AT A JUNCTION BOX, THE CONTRACTOR SHALL INDENTIFY EACH CONDUIT & JUNCTION BOX IN A MANNER THAT ALLOWS FOR IDENTIFICATION AFTER ALL WALL FINISHES HAVE BEEN APPLIED.

- 21. CONTRACTOR SHALL PROVIDE ALL RACEWAY SYSTEMS INDICATED ON THE DRAWINGS PER N.E.C. REQUIREMENTS & THE GENERAL NOTES. ANY CHANGE IN THE WIRING METHODS INDICATED SHALL REQUIRE WRITTEN APPROVAL FROM THE ARCHITECT, ENGINEER, OR OWNER. THE CONTRACTOR'S BID SHALL INCLUDE ALL COSTS FOR RACEWAY SYSTEMS AS SPECIFIED UNLESS NOTED OTHERWISE WITH WRITTEN APPROVAL FROM THE ARCHITECT, ENGINEER, OR OWNER & IS SUBMITTED AS PART OF CONTRACTOR'S FORMAL BID PROPOSAL.
- 22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECT SIZE & INSTALLATION OF ALL OUTLET, PULL & JUNCTION BOXES IN ACCORDANCE WITH N.E.C 314.16. ALL BOXES SHALL BE MINIMUM 4" SQUARE BY 1-1/2" DEEP OR AS INDICTED ON THE DRAWINGS. ALL BOXES SHALL BE RECESSED WITH COVER PLATES TO SUIT THE INTENDED APPLICATION.
- 23. REFER TO ARCHITECTURAL RCP FOR EXACT LOCATION OF ALL CEILING MOUNTED LIGHTING FIXTURES. ARCHITECTURAL DRAWINGS SHALL GOVERN CASE OF CONFLICT WITH THESE DRAWINGS.
- 24. PRIOR TO INSTALLATION, CONTRACTOR SHALL REVIEW THE COMPLETE SET OF CONSTRUCTION DOCUMENTS FOR CONFLICTS WITH OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL WORK WITH OTHER TRADES TO AVOID INSTALLATION CONFLICTS. THE CONTRACTOR SHALL MAKE NECESSARY MINOR ADJUSTMENTS IN EQUIPMENT LOCATION & ROUTING AT NO ADDITIONAL COST TO THE OWNER.
- 25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPERLY CUT & PATCHED EXISTING CONSTRUCTION AS REQUIRED TO INSTALL NEW ELECTRICAL WORK. ALL PATCHING SHALL BE EQUAL MATERIALS, WORKMANSHIP & FINISH AS THE EXISTING WORK & SHALL ACCURATELY MATCH ALL SURROUNDING WORK TO SATISFY THE ARCHITECT.
- 26. ALL ELECTRICAL EQUIPMENT SHALL HAVE SUFFICIENT GUTTER SPACE & LUGS TO ACCOMMODATE QUANTITY & SIZE OF CONDUCTORS REQUIRED. CONTRACTORS SHALL PROVIDE EQUIPMENT WITH OVERSIZED ENCLOSURES WHERE REQUIRED.
- 27. ALL NEW PANELBOARDS & SWITCHBOARDS SHALL BE OF THE SAME MANUFACTURER & HAVE LOCKING DOORS & TO BE KEYED THE SAME UNLESS NOTED OTHERWISE.
- 28. PROVIDE AN UPDATED TYPED PANEL DIRECTORY MOUNTED ON THE INSIDE OF ALL PANEL DOOR COVERS. DIRECTORY SHALL REFLECT ALL MODIFICATIONS TO EXISTING PANELS & SHALL REFLECT ACTUAL "AS-BUILT" CONDITIONS.
- 29. VERIFY DEVICE COLOR & MOUNTING ORIENTATION (VERTICAL OR HORIZONTAL) WITH ARCHITECTURAL & INTERIOR DESIGN DRAWINGS PRIOR TO ORDERING ANY EQUIPMENT & PROVIDE DEVICES AS REQUIRED UNLESS NOTED OTHERWISE. DEVICES AND DEVICE PLATES SHALL BE WHITE IN COLOR.

F

CO

- 30. WHERE MOTORS ARE INSTALLED IN SUSPENDED CEILINGS, THE CONTRACTOR SHALL PROVIDE A DISCONNECT IN THE SUSPENDED CEILING WITHIN REACH FROM THE ACCESS POINT.
- 31. SIZING OF MOTOR RELATED ELECTRICAL COMPONENTS, INCLUDING FEEDER AND/OR BRANCH CIRCUITS (WIRE & CONDUIT) & OVERCURRENT PROTECTION (BREAKER AND/OR FUSES) IS BASED ON THE RATINGS INDICATED IN THE CONTRACT DOCUMENTS & ON THE N.E.C. MOTORS FLC TABLE FOR A GIVEN HORSEPOWER, VOLTAGE & PHASE. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ACTUAL MOTOR & APPLIANCE RATING & LOADS. THE CONTRACTOR SHALL PROVIDE CORRECTLY SIZED MOTOR OVERLOAD ELECTRICAL COMPONENTS BASED ON NAMEPLATE RATING. REFLECT ALL CHANGES IN THE AS-BUILT DRAWINGS.
- 32. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW OF ELECTRICAL EQUIPMENT AND LIGHTING FIXTURES.
- 33. ALL PENETRATIONS OF FIRE RATED FLOORS OR WALLS SHALL BE PROTECTED BY MATERIALS & INSTALLATION DIAGRAMS THAT CONFORM TO U.L. LISTING FOR "THROUGH PENETRATION FIRE STOP SYSTEMS".
- 34. FIRE ALARM DEVICE WIRING SHALL BE A MINIMUM OF #14 AWG. COPPER OR PER SYSTEM MANUFACTURER REQUIREMENTS. PROVIDE MINIMUM OF 3/4" SEPARATE RACEWAY SYSTEM OR AS REQUIRED FOR LIFE SAFETY SYSTEM WIRING CONFIGURATION.
- 35. UPON COMPLETION OF THE INSTALLATION OF THE LIFE SAFETY SYSTEM WIRING & DEVICES, A PERFORMANCE TEST OF THE ENTIRE LIFE SAFETY SHALL BE PERFORMED TO THE SATISFACTION OF THE AUTHORITY HAVING JURISDICTION.
- 36. ALL ELECTRICAL TERMINATIONS OR EQUIPMENT TO UNDERGO A TORQUE TEST. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MANUFACTURER'S TORQUE DOCUMENTATION & THE TOOLS NECESSARY TO PERFORM A TORQUE TEST.
- 37. ALL UNDERGROUND SERVICE CONDUITS SHALL BE SEALED PER N.E.C. ARTICLE 230.8.
- 38. FLOOR MOUNTED ELECTRICAL EQUIPMENT SHALL BE ON A 4" HIGH CONCRETE PAD.
- 39. INSTALL TRANSFORMER FOLLOWING MANUFACTURER'S RECOMMENDATIONS FOR VENTILATION CLEARANCES.
- 40. COORDINATE ELECTRICAL REQUIREMENTS FOR ALL PLUMBING & MECHANICAL EQUIPMENT WITH FINAL CONTRACTOR SELECTION. THE CONTRACTOR SHALL SIZE DISCONNECTS BASED UPON CIRCUIT BREAKER RATINGS & PROVIDE FUSING AS REQUIRED PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS & U.L. LISTING REQUIREMENTS.
- 41. PROVIDE #10 AWG CONDUCTORS FOR 20 AMP, 120 VOLT BRANCH CIRCUITS LONGER THAN 75' & #8 AWG CONDUCTORS FOR 20 AMP, 120 VOLT BRANCH CIRCUITS LONGER THAN 120'. PROVIDE #10 AWG CONDUCTORS FOR 20 AMP, 277 VOLT BRANCH CIRCUITS LONGER THAN 200'.

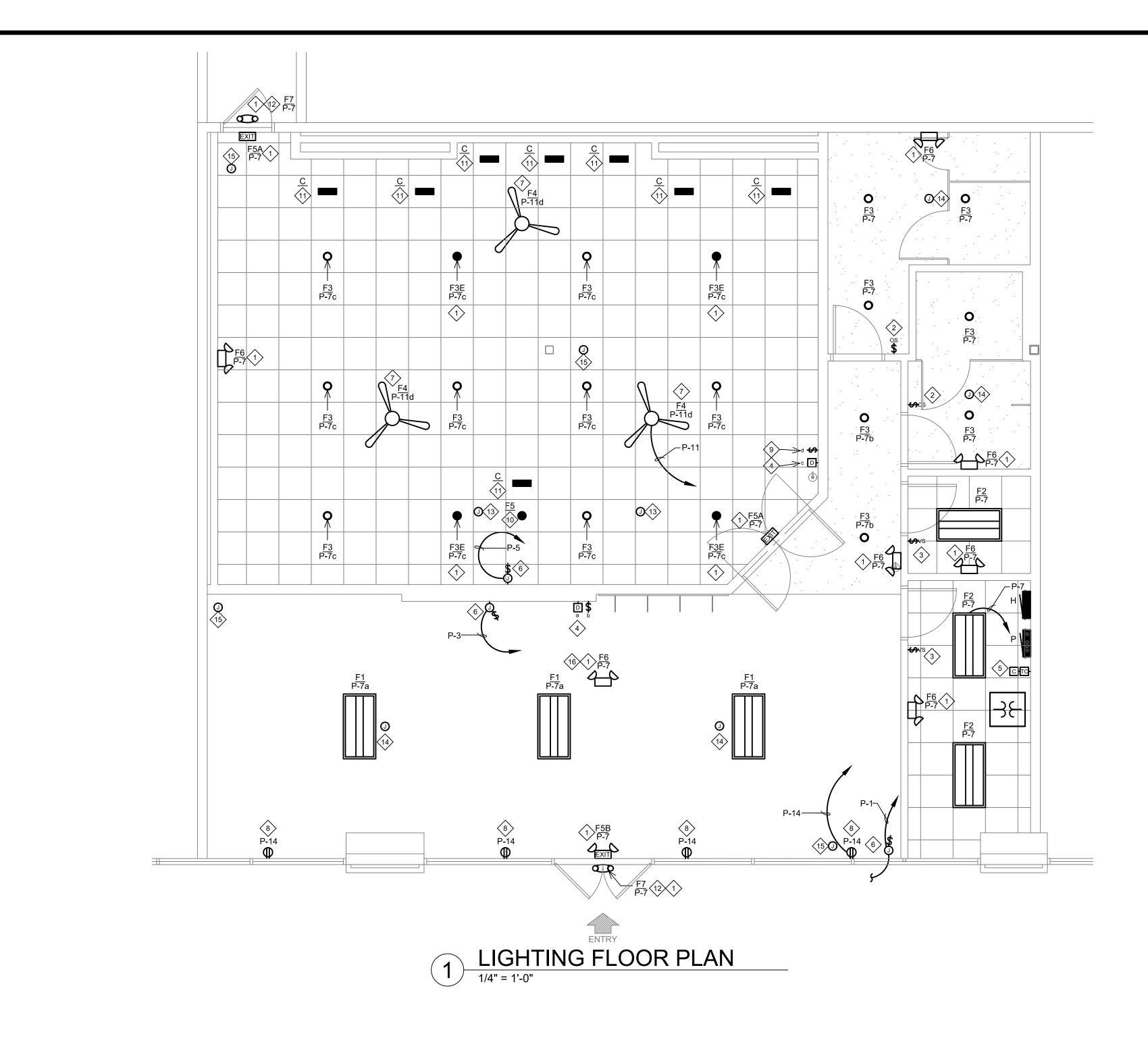


DUNHAM ASSOCIATES IS NOT THE ENGINEER OF RECORD FOR FIRE ALARM. THE ELECTRICAL CONTRACTOR SHALL INCLUDE A PRICE IN THE ELECTRICAL BID FOR A LANDLORD APPROVED FIRE ALARM SYSTEM, INCLUDING PLANS AND ALL ASSOCIATED DOCUMENTS AS REQUIRED. THESE PLANS SHALL BE SUBMITTED TO THE LOCAL AUTHORITIES BY A QUALIFIED AND LICENSED DESIGN-BUILD FIRE ALARM CONTRACTOR FOR A COMPLETE AND APPROVED FIRE ALARM SYSTEM. THE PLANS SHALL BE SIGNED AND SEALED BY THE ENGINEER OF RECORD AND SUBMITTED FOR PLAN REVIEW PRIOR TO RECEIVING SPECIFIC PERMITS FOR THIS WORK. THE FIRE ALARM CONTRACTOR SHALL ALSO SUBMIT ALL SHOP DRAWINGS, BATTERY CALCULATIONS, SPECIFICATION SHEETS, ETC. AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION TO THEIR LOCAL DESIGN ENGINEER FOR REVIEW AND APPROVAL. LOCATIONS AND NUMBER OF DEVICES ARE SUGGESTED ONLY.

	NOTES & TAGS	
E19 RTU 1	ELEC EQUIP CONNECTION TAG – SEE EQUIP SCHEDUI CO='CONVENIENCE OUTLET'	_E
\uparrow	KEYNOTE	
L-1,3	CIRCUIT HOME RUN – L INDICATES PANEL – NUMBERS INDICATE CIRCUITS	
-	CONDUCTOR COUNT – UNLESS NOTED OTHERWISE / SHORT HASH INDICATES 1#12 WIRE / LONG HASH INDICATES 1#12 NEUTRAL / HASH W/ DOT INDICATES 1#12 GROUND	
00	JUNCTION BOX – WALL/CEILING MOUNT	
	POWER	
	BRANCH CIRCUIT PANEL	
36	TRANSFORMER	
Ø	MOTOR OR MOTOR CONNECTION	
	DISCONNECT SWITCH	
Ð	SINGLE RECEPTACLE	18"
Ð	DUPLEX RECEPTACLE	18"
÷	ENTIRE DUPLEX RECEPTACLE TO BE SWITCHED	18"
ə	LOWER HALF OF DUPLEX RECEPTACLE TO BE SWITCHED	18"
 ₽	QUADPLEX RECEPTACLE DUPLEX RECEPTACLE- CEILING MOUNT	18"
∃₩	GFI RECEPTACLE, DUPLEX/QUADPLEX- WALL MOUNT	
<u></u> Ф ^с	CLOCK RECEPTACLE	
•	SPECIAL PURPOSE RECEPTACLE	18"
۲	SPECIAL PURPOSE RECEPTACLE – CEILING	
•	FLOOR BOX- DEVICES AS INDICATED	
Ρ	POWER POLE – DEVICES AS INDICATED	
	MULTIOUTLET ASSEMBLY - DEVICES AS INDICATED	
	SWITCHES & CONTROLS	
\$	SINGLE POLE TOGGLE SWITCH	48"
\$ ³	THREE WAY TOGGLE SWITCH	48"
\$ ^a	TOGGLE SWITCH — "a" INDICATES SWITCHING	48"
\$	PILOT LIGHT TOGGLE SWITCH	48"
\$ [∟]	ILLUMINATED TOGGLE - TOGGLE SWITCH	48"
\$ ^ĸ	KEYED SWITCH MOMENTARY CONTACT TOGGLE SWITCH	48" 48"
₽ \$ ^{™S}	TIMER SWITCH	48"
• •	DIMMER SWITCH	48"
 © ©	OCCUPANCY SENSOR – WALL/CLG MOUNT	
\$ ^{oc}	OCCUPANCY SENSOR WALL SWITCH	48"
\odot	VACANCY SENSOR – WALL/CLG MOUNT	
\$ ^{vs}	VACANCY SENSOR WALL SWITCH	48"
-0 	PHOTO ELECTRIC CELL	
-10 -	TIME CLOCK CONTACTOR	
-C	LOW VOLTAGE TRANSFORMER	
	ELECTRIC THERMOSTAT	
-0	PUSHBUTTON STATION - BUTTONS AS INDICATED	
	FIRE ALARM/DATA	
ſ	MANUAL PULL STATION - WALL MOUNT @48"	
E ^P E ^I	SMOKE DETECTOR (P=PHOTOELEC, I=IONIZATION)	
	DUCT MOUNTED SMOKE DETECTOR	
F FS	FLOW SWITCH	
F TS	TAMPER SWITCH	
-F	STROBE (# = CANDELA)	
F۵	HORN	
	HORN/STROBE	
4	DATA OUTLET – WALL MOUNT	
•	DOUBLE GANG DATA OUTLET - WALL MOUNT	
	PHONE OUTLET – WALL MOUNT TV SYSTEM OUTLET	
-17		
	ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR	

AUTHORITY HAVING JURISDICTION AHJ CONVENIENCE (GENERAL) OUTLET GFI/GFCI GROUND FAULT INTERRUPTER GND GROUND ISOLATED GROUND ΤYΡ TYPICAL UC UNDER COUNTER UNO UNLESS NOTED OTHERWISE WEATHERPROOF WP





											I	LIGH	ITING SC	HEDULE									
												ARCHITECTU	JRAL FIXTURE TYPES - C	YCLEBLAR PROTOTYPE		-							
FIXTURE DESIGNATION	SYMBOL	DESCRIPTION	WATTS	VOLTAGE	MANUFACTURER	MODEL #	REMARKS	FIXTURE DESIGNATION	SYMBOL	DESCRIPTION	WATTS	VOLTAGE	MANUFACTURER	MODEL #	REMARKS	FIXTURE DESIGNATION	SYMBOL	DESCRIPTION	WATTS	VOLTAGE	MANUFACTURER	MODEL #	REMARKS
F1		SUSPENDED 2'X4' L PANEL LIGHT, DIRECT/INDIRECT	ED 50W	120V	KONLITE	KK-PS-24DW-50-LFSZ	SUSPENSION MOUNTED AT 10' A.F.F. IN LOBBY / CHECK-IN AREA. G.C. TO PROVIDE SUSPENSION MOUNTING KIT.	F5A	EXIT	EXIT, SNGL/DOUBLE, RED LETTERS, HIGH LUMEN, UNIVERSAL MOUNTED, SELF POWERED, REMOTE	3	DV	LITHONIA LIGHTING	LHQM-LED-R-HO RO	WALL/ CEILING MOUNT	С	-	6" WALL WASH - POWERED OVER ETHERNET	3W	-	PROVIDED & INSTALLED BY A/V VENDOR	PROVIDED & INSTALLED BY A/V VENDOR	PROVIDED & INSTALLED BY A/V VENDOR POWERED VIA AV RACK.
F2		RECESSED 2'X4' LE TROFFER	D 31W	120V	LITHONIA LIGHTING	BEZ1-LP840	RECESSED AT CORRIDOR.	-		CAPABLE EXIT, SNGL/DOUBLE, RED LETTERS, EMERGENCY LIGHT						F5	•	6" DOWNLIGHT - POWERED OVER ETHERNET	3W	-	PROVIDED & INSTALLED BY A/V VENDOR	PROVIDED & INSTALLED BY A/V VENDOR	PROVIDED & INSTALLED BY A/V VENDOR POWERED VIA AV RACK.
F3	•	6" RECESSED LED DOWNLIGHT	12.7W	120V	LITHONIA LIGHTING	LDN6-40-20-L06- WH-LD-MVOLT-EZ1	RECESSED MOUNT IN GYP. CEILING IN RESTROOM AND UTILITY ROOM. RECESSED MOUNT IN ACT CYCLE THEATER.	F5B		COMBINATION, HIGH LUMEN, UNIVERSAL MOUNTED, SELF POWERED, REMOTE CAPABLE	3	DV	LITHONIA LIGHTING	LHQM-LED-R-HO	WALL/ CEILING MOUNT								
F3E	•	6" RECESSED LED DOWNLIGHT WITH EMERGENCY BATTERY PACK	12.7W	120V	LITHONIA LIGHTING	LDN6-40-20-L06- WH-LD-MVOLT-EZ1 E10WCP	RECESSED MOUNT IN GYP. CEILING IN RESTROOM AND UTILITY ROOM. RECESSED MOUNT IN ACT CYCLE THEATER	F6	429	DOUBLE HEAD EMERGENCY UNIT	14.2	UNIV	LITHONIA LIGHTING	ELM6L EMERGENCY LIGHT	WALL/ CEILING MOUNT PROVIDE WITH 90 MINUTE BATTERY. PROVIDE WPVS ACCESSORY FOR SHOWER UNIT.								
F4	$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$	56" PENDANT MOUNTED FAN WIT FAN SPEED CONTR		120V	ENVIRONFAN	GOLD LINE 160F-7 BL	PENDANT MOUNTED @ 10'-0" A.F.F. AT CYCLE THEATER	F7	θ	DOUBLE HEAD EMERGENCY UNIT, WET LOCATION REMOTE CAPABLE	7W	120V	LITHONIA LIGHTING	WLTU MR	WALL MOUNT PROVIDE WITH 90 MINUTE BATTERY AT FRONT ENTRY ON EXTERIOR SIDE.								

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GENERAL NOTES:

- A. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF LUMINAIRES.
- B. EACH LUMINAIRE SHALL BE STRUCTURALLY SUPPORTED; DO NOT USE CONDUIT FOR SUPPORT FOR EITHER FIXTURES OR BOXES.
- C. USE FLEXIBLE METAL CONDUIT (GREENFIELD) FOR CONNECTION OF LAY-IN FIXTURES.
- D. PROVIDE GROUND CONDUCTOR IN ALL CONDUIT RUNS.
- . THOUGH WIRING OF FIXTURES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY ILLUSTRATED.
- F. EACH LUMINAIRE SHALL HAVE ITS OWN BOX UNLESS OTHERWISE ILLUSTRATED.
- G. VERIFY LOCATION OF WALL MOUNTED EMERGENCY LUMINAIRES TO AVOID CONFLICT WITH WOOD TRIM
- H. REFER TO ARCHITECTURAL FOR EXACT LOCATION OF LUMINAIRES COORDINATE WITH ARCHITECT FOR LOCATION OF LUMINAIRES AND DEVICES BEFORE ROUGH-IN.

	EY NOTES:
$\langle 1 \rangle$	PROVIDE UNSWITCHED HOT TO ALL EXIT, EMERGENCY, AND NIGHT LIGHTS TO BYPASS SWITCH CONTROLS. THIS MUST BE IN ADDITION TO SWITCHED HOT.
2>	PROVIDE LUTRON MAESTRO WALL MOUNTED OCCUPANCY SENSOR MS-A102-O. INSTALL PER MANUFACTURER'S INSTALLATION GUIDE.
3>	PROVIDE LUTRON MAESTRO WALL MOUNTED VACANCY SENSOR MS-A102-V. INSTALL PER MANUFACTURER'S INSTALLATION GUIDE.
$\langle 4 \rangle$	PROVIDE LUTRON DIVA 0-10V DIMMER DVTV-WH WITH POWER PACK PP-DV.
5	PROVIDE 2 CHANNEL INTERMATIC ASTRONOMIC TIME CLOCK MODEL NO. ET8215C WITH 0-2 HOUR SPRING WOUND TIMER AND 4 POLE LIGHTING CONTACTOR. CONNECT SIGN, INTERIOR LIGHTING AND SHOW WINDOW RECEPTACLES.
6	PROVIDE JUNCTION BOX WITH DISCONNECT SWITCH IN CONCEALED LOCATION FOR CONNECTION TO SIGN LIGHTING. LOCATE DISCONNECT SWITCH IN CONCEALED ACCESSIBLE LOCATION PER NEC 600.6. E.C. SHALL MAKE FINAL CONNECTION TO SIGN AND CONTROL VIA TIME CLOCK. COORDINATE WITH SIGN VENDOR PRIOR TO ROUGH-IN.
	PROVIDE FAN RATED JUNCTION BOX AND SEISMIC APPROVED HARDWARE ON ROOF TRUSSES.
8	PROVIDE SHOW WINDOW RECEPTACLE WITHIN 18" OF THE TOP OF THE WINDOW PER NEC 210.62.
9	PROVIDE ENVIROFAN SPEED CONTROL MODEL NO. 105FR FOR CONTROL OF CEILING FANS.
10>	NEW RECESSED 3 WATT LED DOWNLIGHT PROVIDED AND INSTALLED BY OTHERS. CONNECTED AND CONTROLLED VIA A/V SYSTEM.
11>	NEW RECESSED 3 WATT LED WALL WASH PROVIDED AND INSTALLED BY OTHERS. CONNECTED AND CONTROLLED VIA A/V SYSTEM.
(12)	VERIFY IF THERE IS ADEQUATE GENERAL & EMERGENCY LIGHTING PRESENT. IF NOT COORDINATE WITH LANDLORD AND PROVIDE NEW.
13	PROVIDE JUNCTION BOX MOUNTED TO UNISTRUT WITH SPEAKER CABLE FROM EACH SPEAKER LOCATION BACK TO A/V RACK WITH A 15' WHIP AT THE A/V RACK. COORDINATE EXACT LOCATION O SPEAKERS WITH A/V VENDOR PRIOR TO ROUGH-IN. SEE SHEET E3.0 FOR A/V RACK LOCATION.
14	PROVIDE JUNCTION BOX FOR SURFACE/PENDANT MOUNTED SPEAKER WITH SPEAKER CABLE FROM EACH SPEAKER LOCATION BACK TO A/V RACK. PROVIDE A 15' WHIP AT THE A/V RACK. SEE SHEET E3.0 FOR A/V RACK LOCATION.
15	PROVIDE (1) CAT6 PLENUM RATED CABLE FOR EACH CAMERA LOCATION. THE CABLE SHALL RUN FROM EACH CAMERA BACK TO THE A/V RACK WITH A 15' WHIP LEFT AT EACH CAMERA LOCATION AND A 15' WHIP PROTRUDING FROM THE A/V CUT IN RING AT THE PLATFORM.

\wedge					
(16) PENDANT	MOUNT	FIXTURE	AT	11'0"	A.F.F



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WEST COAST | CENTRAL | EAST COAST

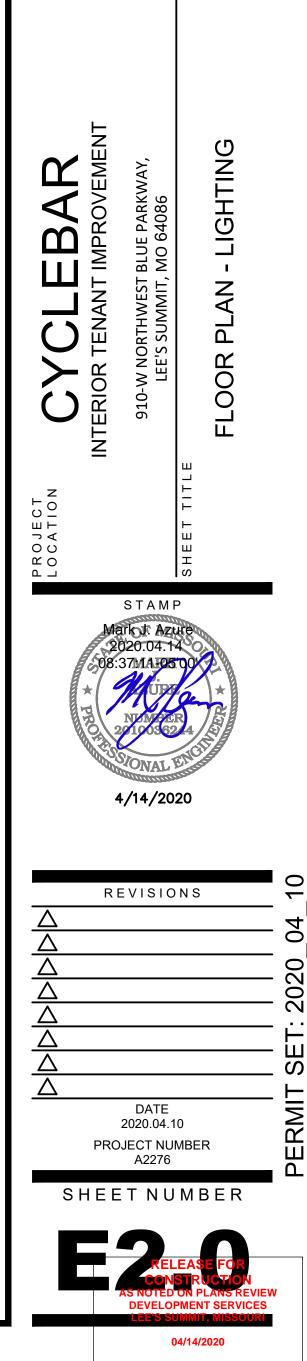


910 NW BLUE PARKWAY, LEE'S SUMMIT, MO 64086 PHONE: 720.378.3062 rachel.hilton@cyclebar.com



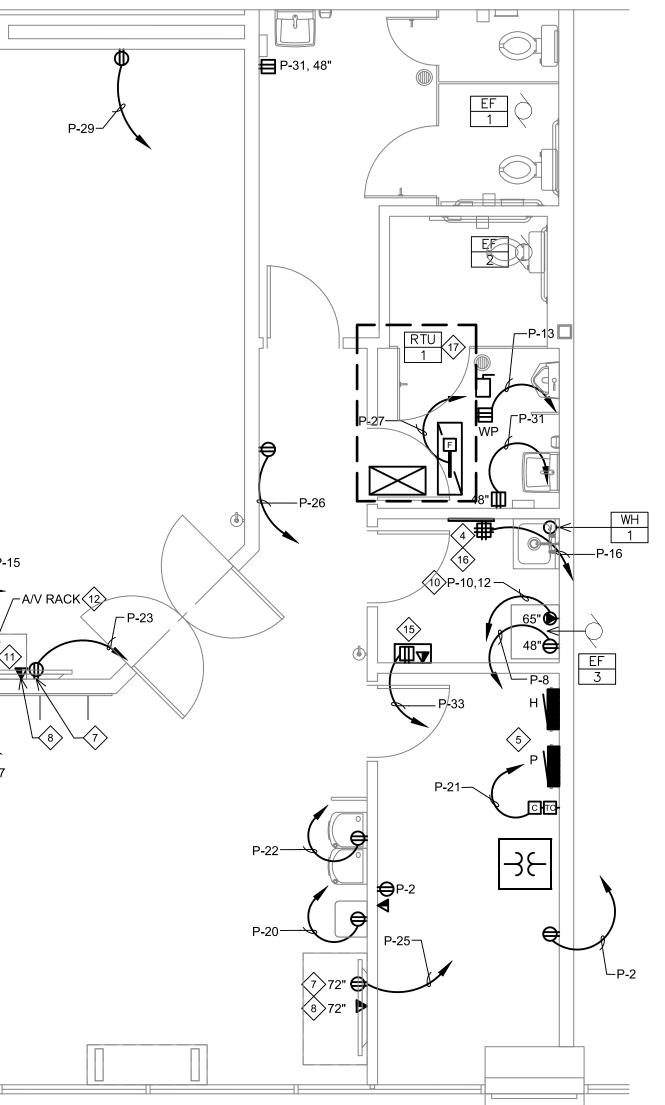
DUNHAM 50 South Sixth Street / Suite 1100 Minneapolis, Minnesota 55402-1540 PHONE 612.465.7550 FAX 612.465.7551

WES dunhameng.com MISSOUR: STATE CERTIFICATE OF AURHORITY #001661 mechanical + electrical consulting engineering 0420758-076-00



12.0 28.0 0.137	480 3 480 3 120 1	30A/3P NON-FUSED 30A/3P NON-FUSED 20A/1P MOTOR RTD. SW		PNL-CKT H-7,9,11 H-2,4,6 P-7 P-7	WIRE 3/4"C. 3 #12 3/4"C. 3#10 1/2"C. 2 #12 1/2"C. 2 #12	GROUND 1#12 1#10 1 #12 1 #12	NOTE 1,2,3,4 1,2,3,4 1,5 1,5
6.000 NOTES MAY BE USED) T. MAIN RETURN DUCT. D	480 1 UCT SMOKE DETE	LOCK OFF DEVICE	20A/2P	P-35 H-8,10 ARM CONDITIO	1/2"C. 2 #12 3/4"C. 2 #12 N.	1 #12 1 #12	
L CONTRACTOR PROVID IN ROOM. COORDINATE	DED CONTROLS AS	REQUIRED.					
D -29			P				
		P-2	29-/				
						EF	
	Ц [–]	RTU 2					-P-13
		P-27					
		2'-6" -19 -19 -A/V RACK				4 16 10 P-10,12	
√ √ 13 P-23	2 P-19		P-23				65" © 48" © -Р-8 Н \
	$\begin{array}{c} \overline{72"72"} \\ \overline{7 8} \end{array}$	1'-6"P-17	$\langle \rangle$	~		P-21	
ין <u> </u> <u> </u> _ _ _ _ _ _ 				P-22-			<u>ج</u>
				P-20-	772"		₽
	12.0 28.0 0.137 0.083 6.000 . NOTES MAY BE USED) T. IMAIN RETURN DUCT. DI S IT MAY DIFFER FROM L L CONTRACTOR PROVID IN ROOM. COORDINATE TH WEATEHRPROOF IN- 	12.0 480 3 0.137 120 1 0.083 120 1 0.008 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.003 120 1 0.000 480 1 0.000 480 1 10 CONTRACTOR PROVIDED CONTROLS AS IN ROM. COORDINATE WITH MECHANICA TH WEATEHRPROOF IN-USE COVER. CIRCL IN WE	12.0 - 480 3 30A3P NON-FUSED 28.0 - 0.137 120 1 20A1P MOTOR RTD. SW - 0.037 120 1 20A1P MOTOR RTD. SW - 0.037 120 1 20A1P MOTOR RTD. SW - 0.037 120 1 20A1P MOTOR RTD. SW - 0.030 480 1 LOCK OFF DEVICE MAIN RETURN DUCT. DUCT SMOKE DETECTOR TO SHUT DOWN UT SI MAY DIFER ROM LOADS SHOWN HERE. LOCNTRACTOR PROVIDED CONTROLS AS REQUIRED. IN ROOM.COODINATE WIT MECHANICAL CONTRACTOR. TH WEATEHRPROOF IN-USE COVER. CIRCUIT AS SHOWN. 10 ROOM.COODINATE WIT MECHANICAL CONTRACTOR. TH WEATEHRPROOF IN-USE COVER. CIRCUIT AS SHOWN.	12.0 480 3 30A3P NON-FUSED 16A3P 137 120 1 20APP MOTOR RTD. SW 20APP 137 120 1 20APP MOTOR RTD. SW 20APP 1033 120 1 20APP MOTOR RTD. SW 20APP 0.033 120 1 20APP MOTOR RTD. SW 20APP 0.033 120 1 LOCK OFF DEVICE 20A2P 0.035 10 LOCK OFF DEVICE 20A2P 0.000 480 1 LOCK OFF DEVICE 20A2P 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	12.0 - 480 3 30A3P NON-USED 143.0 H-7.8.1 1 13.0 1 120.0 Hortzake 120.0 H-7.8.1 - 0.137 130 1 120.0 Hortzake 140.0 H-7.8.1 - 0.033 130 1 120.0 Hortzake 20.0 P-7 - 0.033 130 1 20.0 Hortzake 20.0 P-7 - 0.033 130 1 20.0 Hortzake 20.0 P-7 - 0.003 480 LOCK OFF DEVICE 20.0 P-7 . NOTE SUAR SE USED) INTROTOR ITO.SK 20.0 He.10 . INOTOR TO.SK ST HAV DIFF ROW LOAS SHOWN HERE. LOOK NOTROLS AS REQUIRED. INTROM. CONSIDIATE WITH MECHANICAL CONTRACTOR NATORON L CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROL AS SHOWN INCOME CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROLS AS REQUIRED. INCOME CONTROL AS SHOWN <td>12.0 - 440 3 30AP NON-VUSED 15AP 147.6.11 347.6.2.8712 1 0.017 120 1 20APP MOTOR RTD. SW. 20APP 172.6.2712 122.6.2712 1 0.017 120 1 20APP MOTOR RTD. SW. 20APP 172.6.2712 NOTES MUSE LINE 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NOTES MUSE LINE 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NAM RETURN DUST. 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NAM RETURN DUST. 1 0.005 CONTRACTOR 3 20.005 CONTRACTOR 3 20.005 CONTRACTOR NAM RETURN DUCOD CONTRACTOR 1 0.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM ROTING DUCOD CONTRACTOR 1 20.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM ROTING DUCOD CONTRACTOR 1 20.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM CONDITION 1 1 1 1 10.005 CONTRACTOR 20.</td> <td></td>	12.0 - 440 3 30AP NON-VUSED 15AP 147.6.11 347.6.2.8712 1 0.017 120 1 20APP MOTOR RTD. SW. 20APP 172.6.2712 122.6.2712 1 0.017 120 1 20APP MOTOR RTD. SW. 20APP 172.6.2712 NOTES MUSE LINE 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NOTES MUSE LINE 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NAM RETURN DUST. 1 0.005 CONTRACTOR RTD. SW. 20APP 142.6.2712 2712 NAM RETURN DUST. 1 0.005 CONTRACTOR 3 20.005 CONTRACTOR 3 20.005 CONTRACTOR NAM RETURN DUCOD CONTRACTOR 1 0.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM ROTING DUCOD CONTRACTOR 1 20.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM ROTING DUCOD CONTRACTOR 1 20.005 CONTRACTOR 3 20.005 CONTRACTOR 20.005 CONTRACTOR NAM CONDITION 1 1 1 1 10.005 CONTRACTOR 20.	

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GENERAL NOTES:

- A. ALL WIRING SHALL BE #12 THHN MINIMUM FOR DRY LOCATIONS.
- B. ALL ELECTRICAL MATERIAL, DEVICES, AND EQUIPMENT SHALL BEAR "U.L." LABELS AND SHALL BE INSTALLED PER THE "N.E.C." AND PER THE LOCAL INSPECTION BUREAU'S REQUIREMENTS. ALL MATERIAL, DEVICES, AND EQUIPMENT SHALL BE GROUNDED PER "N.F.C."
- C. ALL CONTRACTORS SHALL VERIFY ALL REQUIREMENTS OF EQUIPMENT PRIOR TO COMMENCING WITH THE WORK.
- D. COORDINATE MOUNTING HEIGHTS AND OUTLET LOCATIONS WITH TENANT PRIOR TO ROUGH-IN.
- VERIFY METHOD OF CONNECTIONS TO ALL EQUIPMENT WITH TENANT PRIOR TO ROUGH-IN.
- PROVIDE MATCHING RECEPTACLE FOR ALL EQUIPMENT SUPPLIED WITH CORD AND PLUG. INSTALL CORD & PLUG ON EQUIPMENT WHICH WAS SHIPPED SEPARATELY. FURNISH AND INSTALL CORD & PLUG ON EQUIPMENT WHICH REQUIRES CORD & PLUG.
- G. INTERIOR BUILDING CONDUIT RUNS SHALL BE CONCEALED AT ALL TIMES (IN WALL, COUNTER, CEILING OR FLOOR). EXTERIOR BUILDING CONDUIT RUNS SHALL BE RIGID GRC. OR EQUAL. ELECTRICAL CONTRACTOR TO FIELD VERIFY EXACT REQUIREMENTS AND TO INSURE COMPLETE ELECTRICAL INSTALLATION MEETS ALL APPLICABLE CODES AND REGULATIONS
- I. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING THROUGH PENETRATION PROTECTION DEVICES AND FIRESTOPPING DEVICES AT ALL PIPES, LINE WIRING, DUCTWORK OR OTHER COMPONENTS THIS CONTRACTOR INSTALLS WHICH PENETRATE RATED WALLS OR FLOOR/CEILING ASSEMBLIES.
- COORDINATE COLOR OF RECEPTACLES AND COVER PLATE WITH ARCHITECT, ALL COVER PLATES IN THE CYCLE STUDIO SHALL BE PAINTED BLACK.
- I. THIS CONTRACTOR SHALL PROVIDE AND INSTALL EQUIPMENT REQUIRED FOR TEMPORARY ELECTRIC SERVICE SUFFICIENT FOR ALL NEW CONSTRUCTION.
- K. ALL KITCHEN, BATH AND SINK COUNTERTOP AND EXTERIOR WEATHERPROOF OUTLETS SHALL BE G.F.I. (GROUND FAULT INTERRUPT) TYPE. ALL DEVICES MOUNTED AT COUNTERTOP LEVEL OR AS MAY OTHERWISE BE REQUIRED. SHALL BE MOUNTED IN A FASHION SO THAT THE BOTTOM OF THE DEVICE TRIM, COVER PLATE, ETC... CAN BE FASTENED CLEAR OF ANY TRIM SUCH AS BACK SPLASHES, SIDEBOARDS, ETC. ANY REQUIRED RELOCATION OF DEVICES SHALL BE AT THE EXPENSE OF THIS CONTRACTOR.
- ALL EXTERIOR WIRING SHALL BE IN RIGID CONDUIT OR SCHEDULE 40 P.V.C. CONDUITS.
- M. VERIFY ALL EQUIPMENT LOADS, LOCATIONS AND PANELBOARD SCHEDULES PRIOR TO ROUTING CONDUITS, PULLING WIRE AND INSTALLING BREAKERS AND ELECTRICAL DEVICES.
- N. CODE AND REGULATIONS COMPLY WITH STATE AND LOCAL CODES. UTILITY COMPANY REGULATIONS AND THE LATEST EDITIONS OF: THE UNIFORM CODES (BUILDING, PLUMBING AND MECHANICAL) NATIONAL FIRE CODES OF THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA). FINAL INTERPRETATIONS WILL BE MADE BY THE LOCAL INSPECTION AUTHORITY.

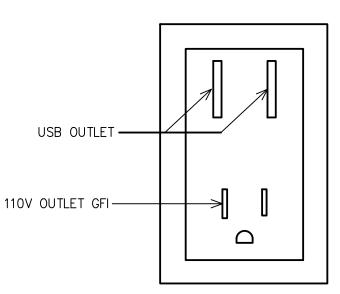
KEY NOTES:

1 PROVIDE QUAD RECEPTACLE AND DATA WITHIN RECEPTION DESK AT 24" A.F.F. FOR P.O.S. EQUIPMENT. POWER AND DATA CABLES SHALL BE RUN FROM WALL BEHIND DESK AND THEN INTO DESK MILLWORK TO LOCATIONS AS SHOWN. COORDINATE WITH MILLWORK VENDOR PRIOR TO ROUGH-IN. $\langle 2 \rangle$ PROVIDE 1-1/2" FLEX CONDUIT FOR LOW VOLTAGE CONNECTIONS, IN AS STRAIGHT OF LINE AS POSSIBLE, FROM 18" OFF OF THE BACK WALL AT THE A/V RACK LOCATION TO THE FLOOR BOX AT THE TRAINERS INSTRUCTION STATION . SEE ARCHITECTURAL DETAILS FOR EXACT LOCATION AND ADDITIONAL INFORMATION. $\langle 3 \rangle$ PREPACKAGED FLOOR BOX KIT PROVIDED BY OTHERS AT RAISED PLATFORM WITH A DEDICATED DUPLEX RECEPTACLE AND SEPARATION FOR LOW VOLTAGE CONNECTIONS. SEE ARCHITECTURAL SHEETS AND DETAIL 16/A8.1 FOR ADDITIONAL INFORMATION. 4 42"x16"x3/4" FIRE RETARDANT AC GRADE PLYWOOD TELEPHONE BOARD. EXTEND 1" CONDUIT FROM LANDLORD DEMARCATION POINT TO CYCLEBAR TELEPHONE BOARD LOCATION. (5) EXISTING ELECTRICAL PANELS AND SUSPENDED TRANSFORMER TO REMAIN. SEE RISER DIAGRAM AND PANEL SCHEDULE ON SHEET E4.0 FOR ADDITIONAL INFORMATION. 6 PROVIDE COMBO USB/RECEPTACLE AT CHECK-IN MOUNTED AT 48" A.F.F. TO BOTTOM OF UNIT. LEVITON T56631 ONE 120V PLUG, TWO USB PORTS, REFER TO DETAIL 2 ON THIS SHEET. (7) TV RECEPTACLE AND DATA. VERIFY LOCATION AND MOUNTING HEIGHT WITH TENANT REPRESENTATIVE. (8) PROVIDE (2) CAT6A PLENUM RATED ETHERNET CABLES FROM TV LOCATION TO A/V RACK. $\langle 9 \rangle$ PROVIDE (2) DEDICATED QUAD RECEPTACLES FOR A/V RACK. $\langle 10 \rangle$ 208V 10 ELECTRIC DRYER AT LOCATION SHOWN, PROVIDE 1"C. 3#10, 1#10 GRD. (11) BALANCED XLR PATCH CABLE FROM SUBWOOFER TO A/V RACK. $\langle 12 \rangle$ A/V RACK SUPPLIED AND INSTALLED BY A/V CONTRACTOR. $\langle 13 \rangle$ POS TERMINAL – PROVIDE (3) CAT6 CABLES TO A/V RACK. (14) G.C. PROVIDED AV CABLING PROTRUDING FROM WALL VIA DOUBLE GANG PLASTER RING. PROVIDE 15' OF SLACK OF AV CABLING AT EACH END. LABEL CABLES CORRECTLY. E.C. TO STUB TWO (2) 1 1/2" CONDUITS 6" ABOVE CEILING FOR CABLING PATHWAY. $\langle 15 \rangle$ CABLE MODEM LOCATION – PROVIDE (2) CAT6 CABLES TO A/V RACK. $\langle 16 \rangle$ (2) CAT-6 DATA LINES FROM TELEPHONE BOARD BACK TO AV RACK. TERMINATED AND LABELED BY G.C. $\langle 17 \rangle$ provide and install the following: duct smoke detector IN RETURN MAIN DUCT AND REMOTE TEST STATION WITH VISIBLE AND AUDIBLE ALARM. SMOKE DETECTOR SHALL SHUT DOWN HVAC UNIT UPON DETECTION OF SMOKE. COORDINATE FINAL

NOTE:

ALL COVER PLATES, OUTLETS, AND SWITCHES IN THE CYCLE THEATER SHALL BE FACTORY BLACK ALL OTHERS TO BE FACTORY BRIGHT WHITE.

LOCATION OF REMOTE TEST STATION WITH AHJ.





USB/OUTLET COMBO DETAIL NO SCALE



ELECTRICAL CONTRACTOR SHALL VISIT SITE AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO BID. EXISTING EQUIPMENT TO BE REUSED WILL BE REQUIRED TO SATISFY THE REQUIREMENTS OF THE CURRENT NEC WITH REGARDS TO RATING. IDENTIFICATION, USE, WIRE BENDING SPACE, ETC. AS IF THEY WERE NEW.

PROVIDE NEW CIRCUIT BREAKERS IN PANELS AS REQUIRED. MATCH EXISTING EQUIPMENT WITH RESPECT TO MANUFACTURER AND RATING

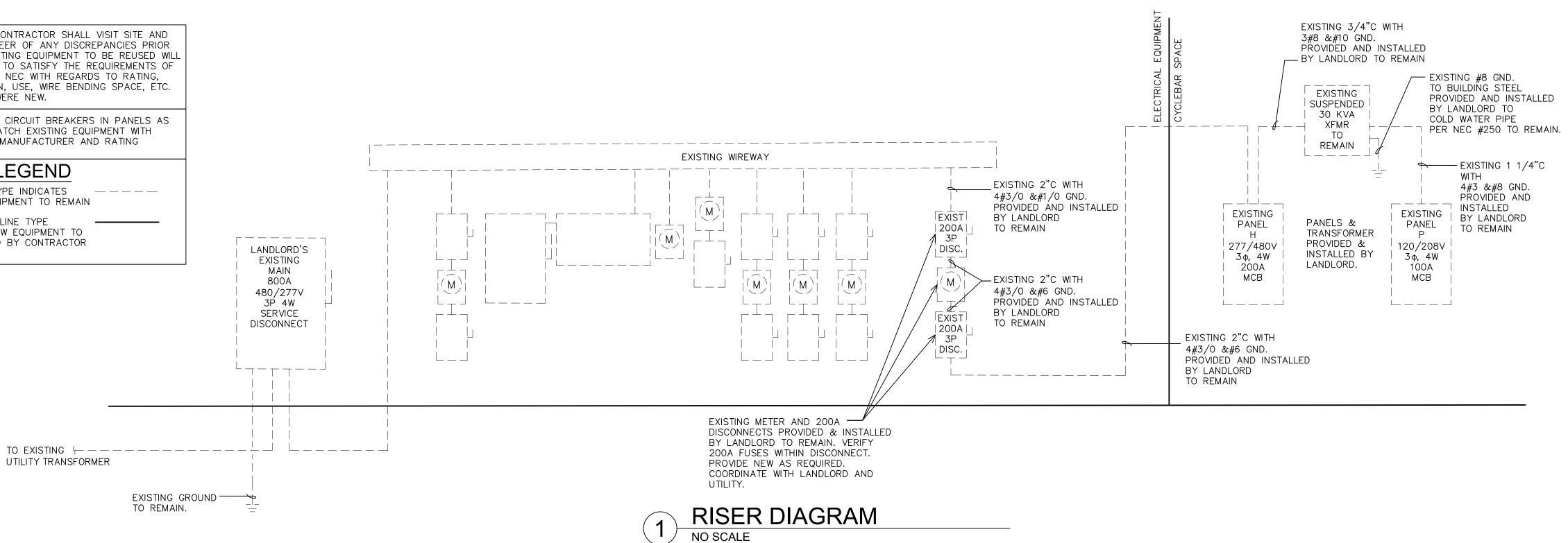
RISER LEGEND DASH LINE TYPE INDICATES -----EXISTING EQUIPMENT TO REMAIN

CONTINUOUS LINE TYPE INDICATES NEW EQUIPMENT TO BE INSTALLED BY CONTRACTOR

UTILITY TRANSFORMER

-

EXISTING GROUND TO REMAIN.



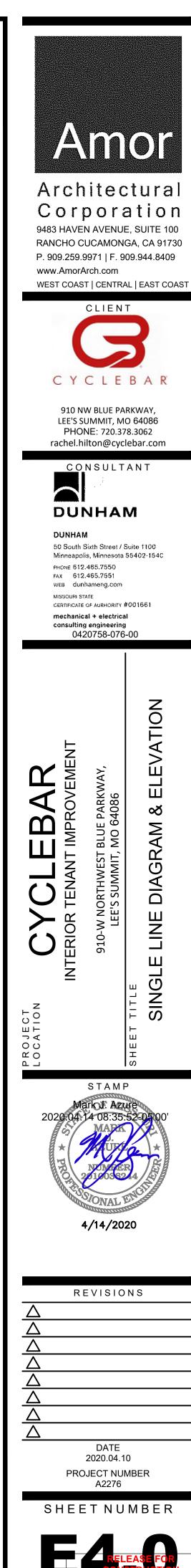
P	anel	:	H (EXISTING)		Voltag	ge:	2	277/480V, 3PH, 4W					
No.	Amp/p	Note	Description	Ph	Code L VA	Code C VA	Code R VA	Code M VA	Code E VA	Code K VA	Code D VA		
1	50		EXISTING 30KVA XFMR	- A -	1834	2160	2560	274					
3	1			- B -	1200	540	4300						
5	3		н	- C -	1200	720	4440	314					
7	15	4	RTU-1	- A -				2812					
9	1			- B -				2812					
11	3			- C -				2812					
13	-		SPACE	- A -									
15	-		SPACE	- B -									
17			SPACE	- C -									
2	30	4	RTU-2	- A -				7133					
4	1			- B -				7133					
6	3			- C -				7133					
8	20/	2	WH-1	- A -			3000						
10	2			- B -			3000						
12	-		SPACE	- C -									
14			SPACE	- A -									
16	•		SPACE	- B -									
18	-		SPACE	- C -									
Thro	ough -			- A -	1				1				
	d Lug		None	- B -									
	ection			- C -									
M	ain	_	200	- A -	1834	2160	5560	10219					
	aker		1	- B -	1200	540	7300	9945					
			3	- C -	1200	720	4440	10259					
_			Breaker Notes:	-		(VA phas		Total	- A -	- B -	- C -		
1-	PROV	DE LOC	CK-ON DEVICE		Commi	(Triphao	e loudo	55.4	19.8	19.0	16.6		
2 -			CK-OFF DEVICE		Dmd	Conn			Bus KVA		10.0		
3 -			BREAKER	_	5.3	4.2	Code L -		Busitin	Todas	-		
4 -			CR BREAKER		3.4	3.4		Convenie	nce Rece	ntacles (1	80 1/1		
5 -			TIME CLOCK		17.3	17.3		Receptad					
•	- Contin	102 10	Panelboard Notes:		32.1	30.4		Motors	1				
1-	-		Fallelboard Notes.		32.1	30.4		Electric H			0014.0		
2 -								Kitchen E		Demand	100%		
3 -								Dwelling	Units (Ho	el/motel	(coms)		
4 -					58.1	55.4	Total KV	4					
5 -						+ Spare				%Spare			
		: Mount			58		KVA (De		A + Spare	(KVA			
	TING		AIC Rating		70		Demand						
	00		Rating of Bus		75		ase Dem				pr-20		
			ug Only (MLO) or Main Circuit Breaker (MCB)			Name:		Number :		oject Nam			
4	80	: Phase	e to Phase Voltage		PAN	IEL P	042075	8-076-00	C	YCLE BA	R		



5 -

SURFACE : N

P	anel	:	P (EXISTING)	1	Voltag	ge:	1	20/20	8V, 3F	PH, 4V	V
			,		Code L	Code C	Code R	Code M	Code E	Code K	Code D
No.	Amp/p	Note	Description	Ph	VA	VA	VA	VA	VA	VA	VA
1	20/1	5	EXTERIOR SIGN	- A -	1200						
3	20/1	5	INTERIOR SIGN	- B -	1200						
5	20/1	5	INTERIOR SIGN	- 0 -	1200						
7	20/1	1,5	LIGHTING / EF-1, EF-2	- A -	634			274			
9	20/1		SPARE	- B -				004			
11	20/1		CEILING FANS	-0-		200		231			
13 15	20/1 20/1		A/V RACK	- A - - B -		360	1000				
17	20/1		A/V RACK	- C -			1000				
19	20/1		TRAINERS INSTRUCTION STATION REC.	- A -			360				
21	20/1		TIME CLOCK	- B -			200				
23	20/1		TELEVISIONS	- C -			400				
25	20/1		TELEVISIONS	- À -			400				
27	20/1		DUCT SMOKE DETECTOR	- B -			100				
29	20/1		GENERAL RECEPTACLES	- C -		360			-		
31	20/1		RESTROOM RECEPTACLES	- A -		360					
33	20/1		MODEM	- B -		180					
35	20/1		EF-3	- C -				83			
37	20/1		SPARE	- A -							
39	20/1		SPARE	- B -							
41	20/1		SPARE	- C -							
2	20/1		OFFICE RECEPTACLES	- A -		360					
4	20/1		SPARE	- B -							
6	3		SPARE	- C -							
8	20/1	3	WASHER	- A -			1000				
10	30/	3	DRYER	- B -			2500				
12	2		"	- C -			2500				
14	20/1		SHOW WINDOW RECEPTACLES	- A -		720					
16	20/1		TELEPHONE BOARD	- B -		360					
18	20/1		RECEPTION DESK	- C -		360					
20	20/1	3	FLOWATER REFILL STATION	- A -			800				
22	20/1	3	HI-LOW DRINKING FOUNTAIN	- B -			500				
24	20/1		CHECK-IN REEPTACLES	- C -			540				
26	20/1		GENERAL RECEPTACLES	- A -		360					
28	20/1		SPARE	- B -							
30	20/1		SPARE	- C -							
32	20/1		SPARE	- A -							
34	20/1		SPARE	- B -							
36	20/1		SPARE	-0-							
38	20/1		SPARE	- A -							
40	20/1		SPARE	- B -							
42	20/1		SPARE	-0-							
Throu				- A -							
Feed	-		None	- B -							
_	ection			- 0 -	4004	0400	0500	074			
Ma			100	- A -	1834	2160	2560	274			
Brea	aker		1	- B -	1200	540	4300	044			
			3	- C -	1200	720	4440	314		-	-
			Breaker Notes:		Conn K	VA phas	e loads	Total	- A -	- B -	- C -
			CK-ON DEVICE					19.5	6.8	6.0	6.7
_			CK-OFF DEVICE		Dmd	Conn			Bus KV/	loads	
			BREAKER		5.3	4.2	Code L -		-		
			CR BREAKER		3.4	3.4		Convenie			
5 -	CONTR	ROL VI	A TIME CLOCK		11.3	11.3		Receptac			
	-		Panelboard Notes:		0.6	0.6		Motors		notor VA	137.0
1-		-						Electric H			
2 -								Kitchen E		Demand	100%
3 -							Code D -	Dwelling	Units (Ho	el/Motel	Rooms)
4 -					20.6	19.5	Total KV	A			
5 -						+ Spare	KVA			%Spare	
_	ACE	: Moun	iting		21	<u> </u>		mand KV	A + Spare		
			s AIC Rating		57		Demand		sport		
	TING I	. Aller						and the second sec			
EXIS'			-		61	-			s	14-A	pr-20
EXIS	0	: Amp	Rating of Bus ug Only (MLO) or Main Circuit Breaker (MCB)	61	-	ase Dem	and Amp Number :		14-A oject Nam	pr-20 ne :



11

DEVELOPMENT SERVICES EE'S SUMMIT: M

PART 1 - General

- 1.1 General conditions
- A. The general, special, and other conditions of the architectural, mechanical and vendor documents shall be considered an integral part of these electrical specifications. B. Reference to "contractor" in this specification shall mean "electrical
- contractor (EC)", unless otherwise noted. Work specified herein is the responsibility of the electrical contractor unless specifically noted otherwise. .2 Scope of work
- A. Furnish labor, materials, equipment, tools, and other items necessary for, or incidental to, installation of a complete electrical system as required for this project
- B. Also include other work and miscellaneous equipment not specifically mentioned, but reasonably inferred, that are required for a fully functional and tested system.
- .3 Drawings and documents
- A. The drawings and specifications form a complete set of plans for the electrica work for this project. What is required by either shall be as binding as if required by both. In the event the drawings and specifications are in conflict, the greater requirement or cost shall be included in bid, or if time, a clarification will be
- B. Bidders shall examine other trade and equipment vendor drawings and specifications to avoid omissions, duplications, and to insure complete installation of electrical work.
- C. The electrical drawings are diagrammatic and are intended to show approximate location only. Placement of electrical equipment and devices shall not interfere with locations or clearances of other trades' materials or equipment. Coordinate the placement of electrical devices with architectural plans, elevations and
- D. The direct routing of conduits and wiring is not assured. Exact requirements shall be governed by the conditions of the project site. Extra lengths of wiring or the addition of pull or junction boxes, etc., necessitated by such conditions, shall
- Drawing representations: conduits, circuiting, devices, speakers, etc., shown on the drawings as existing are based on existing plans and may not be installed as originally shown. Verify the accuracy of the "existing conditions" as shown on the drawings as the demolition work progresses. Perform modifications and additions as necessary to correct for these hidden conditions and allow for the completion of the work
- .4 Codes, inspections, and fees
- A. The completed electrical installation shall comply with the latest edition of the national electrical code as well as applicable federal, state, and local codes, regulations, and standards including interpretations by appropriate authorities having jurisdiction. Where the drawings and specifications call for workmanship or materials in excess of code or regulatory requirements, the drawings and specifications shall govern.
- B. The work specified herein shall be subject to inspection and approval by state and local authorities having jurisdiction and the engineer. The contractor shall make the necessary arrangements to have the electrical work inspected by appropriate inspector(s) and shall provide two (2) copies of final signed "certificate of inspection" to the owner
- C. Obtain and pay for licenses, permits, fees and charges for work installed by the contractor. Contractor is responsible to pay fees and charges levied by the electric utility company for connection to electric services.
- Job site safety
- A. The electrical contractor is responsible for electrical job site safety, including safety of people and property during performance of work. This requirement will apply continuously and not be limited to normal working hours.
- B. No act, drawing review or construction review by the owner, the engineers or their consultants, is intended to include review of the adequacy of the contractor's safety measures in, on, or near the construction site.
- .6 Conditions at the site
- A. Examine the site and be familiar with existing building conditions and limitations prior to submitting bid. No extra payment will be allowed for work required because of these conditions, or if information is visible or readily attainable, for imitations or misunderstanding of existing conditions.
- B. Discrepancies from these documents should be reported to the architect/engineer prior to bid. Workmanship and contractor qualifications
- A. Install electrical equipment and materials in a neat and competent manner by persons experienced and skilled in the trade. Haphazard or poor installation will be cause for rejection of work. Exposed components of the electrical systems shall be square and true with building lines and surfaces.
- B. Contractor shall be licensed in the state in which the project is located.
- 1.8 Coordination of work
- A Give careful consideration to the work of the general, mechanical and other contractors/subcontractors on the project. Organize and phase the electrical work so that it will not interfere with the work of other trades.
- B. Drawings and specifications for other trades and general construction drawings shall be consulted for coordination information, details, dimensions, etc. Coordinate shafts, chases, furred spaces, suspended ceiling, locations of equipment, etc. The contractor shall review the mechanical-electrical drawings and equipment drawings of other disciplines, including data, security audio-video, closed circuit television, paging, fire alarm, and kitchen. The contractor shall be responsible to report discrepancies between these drawings to the engineer prior to bidding for clarification. Solutions to unreported discrepancies will be determined by the engineer, with no additional compensation due to the contractor.
- C. The location of equipment outlets and wiring shall be verified with the actual equipment or approved shop drawings prior to rough in work. Notify engineer of discrepancies.
- D. Dimensions given on the drawings shall take precedence over scaled dimensions. Dimensions, whether calculated or scaled, shall be verified in the
- E. Check actual job conditions before fabricating work. Coordinate with other trades to avoid rework due to field conditions. Changes or additions, subject to additional compensation, which are made without written authorization and an agreed price, shall be at the contractor's risk and expense.
- F. Coordinate routing of conduit and wire concealed in walls, soffits or ceilings installed by the general contractor. Coordinate work to conceal conduit and wire.
- G.Verify items such as door swings, window locations, casework, etc., before installing electrical equipment or devices.
- H. Make minor adjustments to work where requested by the owner or the owner's representative when adjustments are necessary for proper operation and within the intent of the contract. Materials and equipment
- A.Unless otherwise specified, material and equipment shall be new and manufactured by approved or listed manufacturers. Materials and equipment shall meet the requirements of governing codes.
- B. All material and equipment shall be listed and labeled by Underwriters Laboratories, Inc. (UL), as conforming to its standards in every case where such a standard has been established for that type of material or equipment. C. Obtain written approval seven days prior to bid, to use proposed substitute
- material or equipment before contracting to purchase such substitutes. The owner reserves the right to require the removal of material or equipment which does not have this written approval and which does not comply with the specifications, regardless of the state of installation of such equipment.
- D. Where equipment supplied by the contractor has characteristics other than as specified herein, the contractor shall, at no additional cost to the owner, remove and replace the electrical work necessitated by the substituted product. 10 Temporary installations
- A. Comply with the owner and general contractor requirements. Electrical work must conform with NEC Article 590, temporary installations.
- B. Continuation of service: maintain continuity of existing equipment to remain. Maintain existing circuits of equipment energized. Restore circuits wiring which are to remain but were disturbed during demolition back to original condition.
- C. Electric power system: provide an electrical distribution system of sufficient size, capacity, and power characteristics required for construction operations. D. Provide temporary electrical service as required for the project.
- I. Utilize existing building electrical distribution if available, and supplement as required for the project conditions.
- 2. For service construction or service revisions, coordinate with the utility to provide temporary service for the duration of construction so as not to interfere with service construction. Pay for utility charges associated with the temporary service including energy bills. E. Lighting: provide temporary lighting with local switching throughout the construction area. Provides adequate illumination for construction operations,
- observations, inspections, and traffic conditions. F. Where light fixtures exist in the area of construction, utilize existing lights and outlets as much as practical to meet these requirements. Clean and re-lamp each fixture used for temporary at end of construction.
- G.Remove the temporary installation of electrical equipment, raceway and wire at the end of the project. Patch and seal sleeve openings.
- 11 Demolitio A. Where electrical work to remain is damaged or disturbed in the course of the work, remove damaged portions and provide products of equal capacity, quality,
- and functionality. B. Accessible work indicated as demolished: remove exposed electrical installation in its entirety. Removal of existing electrical distribution system equipment
- includes equipment's associated wiring, including conductors, cables, exposed

conduit, surface metal raceways, boxes, and fittings, back to equipment's source or as indicated

- C. Abandoned raceway and conduits: where raceway and conduits are shown as abandoned on the drawings; disconnect existing concealed wiring from its source. Remove wiring, cap and label conduit ends. Cut abandoned underground conduits below grade and seal openings. Patch surface to match existing finish.
- D. Temporary disconnection: remove, store, clean, reinstall, reconnect, and make operational components indicated for relocation. 1.12 Cutting and patching
- A. Workmanship: lay out work in advance. Exercise care where cutting channeling, chasing, or drilling of floors, walls, partitions, ceilings, or other surfaces is necessary for proper installation, support, or anchorage of conduit, raceways, or other electrical work. Repair damage to buildings, piping, and equipment using skilled craftsmen of trades involved
- B. Perform core drilling, cutting and patching necessary for the completion of the electrical work for this project. No structural members shall be disturbed without obtaining written permission of the engineer. Fill abandoned and unused core
- C. Surfaces which are disturbed by the contractor shall be repaired and refinished to provide a surface equal in strength, durability, and appearance to the original surface
- D Where it is necessary to drill or cut concrete surfaces the edges shall be sharply defined. Core holes shall be made with a rotary drill. Rectangular concrete cuts shall be made with a concrete saw. Do not penetrate post tension slabs prior to x-raying floor.
- E. Penetrations through smoke, fire, hazardous area, or other rated separations shall be fire sealed to preserve the ratings of the separations.
- F. All cutting, drilling, patching, repairing, and refinishing shall be done by persons skilled in appropriate trades. G.Clean away rubbish and litter generated during electrical installation.
- 1.13 Maintenance manual and record drawings
- A. Furnish the owner with a minimum of two (2) printed copies and two (2) digital data DVD's of a manual covering the operation and maintenance of equipment provided under this contract. Submit additional copies as required by the eneral contract. The manuals shall be in a 3-ring, loose leaf, heavy duty binder and submitted to the architect/engineer for approval. Each manual shall contain the following:
- 1. Complete manufacturer catalog data, manufacturer's literature, wiring diagrams. detailed operating instructions, and a complete listing of suppliers and distributors where replacement parts and maintenance services are available for installed equipment Include electrical shop drawings
- 2. Physical description and installation instructions, user's manual and operating
- 3. Replaceable parts list. Include the light fixture schedule with replacement lamps per fixture type.
- Inspection certificates, signed by the appropriate inspector.
 Full listing of product warranties and extended warranties with registration and contact informatior 6. Data dvd with indexed pdf documents of items in the manual.
- B. Markup a set of construction documents as work progresses. Show actual circuit routing with dimensioned information, sizes, types, etc., equipment location changes, and other changes or deviations between project work, as built, and the contract documents. Markings shall be neat, legible, and permanent. Transfer applicable markings to a second set of documents and provide both sets of record documents to the owner for acceptance prior to final payment.
- 1.14 Clean-up
- A. Upon completion of the work and at other times directed, remove materials and scrap generated by the electrical installation and leave the premises in a clean and orderly condition.
- B. Clean electrical equipment interiors prior to energizing and before final acceptance. Clean light fixtures lenses, reflectors and trims. Repair, clean and touch up minor scratches or blemishes on factory painted equipment. C.Damaged, dented or refurbished equipment shall be rejected and replaced at
- the contractor's expense.
- 1.15 Acceptance demonstration and training
- A.Perform system start-up, testing and programming prior to owner's training. Do not schedule demonstrations until systems are fully operational and ready to turn over to the owner B. Demonstrate to the owner the operation of the electrical installations. The timing
- of the demonstration will be determined by the owner upon completion of the C.Properly set automatic time switches to perform switching operations in
- accordance with schedules provided by the owner's representative, and demonstrate (using the manufacturer's operating instructions) how to override, test and program lighting/systems. 1 16 Rebate programs
- A. Provide the owner with rebate forms, filled out with applicable project information, for utility or product rebate programs to which the owner is eligible. 1.17 Guarantees and warranties
- A.Furnish the owner with a written guarantee for the period of one (1) year against the failure of part of the electrical systems installed due to faulty material or workmanship, without charges, to the owner. Guarantee period to start upon substantial completion or as specified under general and special conditions. ncandescent and halogen lamps are excluded.
- B. Pass one extended warranties or product warranties exceeding one (1) year to PART 2 - Products
- 2.1 General
- A. All materials must be new and bear underwriter's laboratories (UL) labe Materials that are not covered by UL testing standards shall be tested and approved by an independent testing laboratory or a governmental agency. Vaterial not in accordance with these specifications may be rejected either before or after installation.
- B. All equipment and device terminals and lugs rated for 60/75 or 75 degrees c. 2.2 Low voltage conductors and cables
- A. Copper conductors complying with NEMA WC 70/ICEA S-95-658.
- B. Aluminum conductors are prohibited. C. Insulation type: XHHW, XHHW-2, THHW, THHN, or THWN-2, color coded, color impregnated wire
- D. Conductor sizes are american wire gauge (AWG) or circular mils (kcmil) as follows:
- #12 AWG solid copper . #10 AWG and larger shall be stranded copper.
- 3. Branch circuits must be color coded, color impregnated wire. E. Ac, core clad or romex cables are not allowed.
- F. Metal-clad cable type mc with green ground conductor allowed only where noted
- in part 3 execution G.Cord drops and portable appliance connections: type SO, oil proof, hard service cord with stainless steel, wire-mesh, strain relief device at terminations to suit
- 2.3 Control voltage conductors and cables

application.

- A. Where indicated on the drawings, provide cables along with associated termination hardware.
- 1. UTP cable: plenum rated, type CMP category 6, 100-ohm, four-pair. Listed and labeled complying with UL 444 and NFPA 70. UTP cable connecting hardware: IDC type, using modules designed for punch-down caps or tools. 2. Coaxial cable for CATV, MATV and DBS (less than 50' total length): rg-59 20
- /G, solid, copper-covered steel conductor; gas-injected, foam-pe insulatior Double shielded with 100 percent aluminum-foil shield and 40 percent aluminum braid. Plenum rated, type CMP.
 3. Coaxial cable for CATV, MATV and DBS (50'or greater total length): rg-6: 16 AWG, solid, copper-covered steel conductor; gas-injected, foam-PE insulation. Double shielded with 100 percent aluminum-foil shield and 60 percent aluminum braid. Plenum rated, type CMP.
- B. Control circuits: conductors not installed in conduit or armor jacketed cable must be plenum rated.
- 1. Class 1 control circuits: stranded copper, type THWN or XHHN, in raceway or cable with armor jacket 2. Class 2 control circuits: stranded copper, type THWN or XHHN, in raceway or
- power-limited cable concealed in building finishes; in cable tray or on hangers above accessible ceilings. 3. Class 3 remote-control and signal circuits: stranded copper, type TW or type TF,
- complying with UL 83. In raceway or power-limited cable concealed in building finishes; in cable tray or on hangers above accessible ceilings. 2.4 Grounding and bonding
- A. Circuits, metal raceway systems, and other permanently installed electrical equipment shall be solidly grounded in accordance with the national electrical code to form a continuous, permanent and effective grounding system.
- B. Grounding electrode conductor connections shall be made with solderless pressure type fittings. Where welded connections are practical, connections may be made by the use of suitable welding process. Make connections in strict conformance with the manufacturer's recommendations
- C. Bond flexible raceway sections with a bare ground conductor separate from the equipment grounding conductor installed with the branch or feeder conductors. Install an external ground conductor with grounding bushings where required.
- D. Isolated ground conductors: green colored insulation with continuous yellow stripe. E. Ground rods: 10'x3/4" copper clad steel. Ground rods at exterior area

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lights: 8'x5/8" copper clad steel. 2.5 Hangers and supports

A.For individual conduit runs not directly fastened to the structure, use threaded rod and hangers manufactured by Caddy®, Unistrut® Or Powerstrut®. B. Galvanized steel slotted channel support systems with fittings and supports by the same manufacturer.

2.6 Raceways and outlet boxes

A.Provide raceways, fittings, connectors and accessories for a complete raceway system. Raceways include

. Rigid metal conduit (RMC): hot-dipped galvanized. 2. Intermediate metal conduit (IMC): hot-dipped galvanized. Electrical metallic tubing (EMT): electro-galvanized.

lyvinyl chloride conduit (PVĆ) schedule 40 for below grade installations. Wireways: enamel finish, hinged type. Flexible metallic conduit: for final connection in dry locations less than 6'lengths Liquid tight flexible metal conduit: for final connection in damp or wet locations less than 6' lengths.

B. Minimum electrical conduit size: 1/2". Minimum branch circuit or feeder home run: ¾"c. Minimum control voltage and miscellaneous systems conduit: ¾"c. C.Provide fittings and accessories approved for the purpose, listed for use, with the type conduit or raceway. EMT connectors and couplings shall be steel setscrew type indoors and steel compression type in damp or wet locations and

D. Special colors: fire alarm conduits factory applied red coating.

E. Outlet boxes: 4" square x 1-1/2" deep (or larger) galvanized sheet steel KO-type with plaster ring and cover for general interior use. Cast metal type fs or fd with matching screw covers for exterior and exposed interior locations (gasketed in damp or wet locations). Larger boxes as required; sized for NEC fill

F. Junction boxes shall be same as outlet boxes up to 42 cu. In. Use code-gauge steel in larger sizes with surface or flush-type screw-mounted trim covers. Boxes and covers painted with inhibitor-primed paint inside and out.

G.Pull boxes shall be same as junction boxes unless indicated otherwise on the drawings, with covers. H. Voice, data and miscellaneous low voltage system outlet boxes shall be the

type and size required by the system vendor but not smaller than 4-11/16" square x 2-1/8" deep with single-gang ring. Other configurations as shown on the plan

I. Light fixtures shall not be used as a raceway unless listed and marked as a raceway in accordance with NEC article 410.64 and as noted in Part 3 -

J. Electrical conduit installations must be supported per NEC and not exceed 10 eet between supports.

K. Floor boxes (in concrete): See plans for specification and devices. Each system to have independent compartments and flip up covers. L. Poke through assemblies: factory fabricated multi-channeled through floor

raceway/firestop with complying with UL 514 scrub water exclusion. See plans for service devices and plate construction M.Service poles: factory assembled two compartment channels extending from

floor to 6" above ceiling. Steel with baked white enamel or anodized satin aluminum construction as specific on plans.

N. Surface metal raceways: two compartment steel, devices and finish color as indicated on plans, Wiremold AL5200 or equal. other types of surface metal raceways are as specified on plans. 2.7 Underground raceways and boxes

A. Schedule 40 PVC electrical conduit for below grade installations with fittings and accessories by the same manufacturer

1. Schedule 80 PVC electrical conduit, fiberglass electrical conduit, concrete encased electrical conduit, concrete capped electrical conduit or concrete duct banks as shown on the drawings. B. Exterior branch circuit or feeder handholes must be cast fiberglass resin with

open bottom and heavy duty bolted cover for non-vehicle or non-pedestrian traffic surfaces. C. Exterior branch circuit or feeder handholes installed in sidewalks, roadways or parking lot subject to pedestrian or vehicle traffic: precast handhole/manhole, manhole cover and accessories as shown on the drawings.

2.8 Identification and labeling A.Label control devices and device enclosures with individual name plates or legend plates.

B. Individual name or legend plates: black laminated plastic plates with white cut etters. Paper, foil or tape markers attached with adhesives shall not be used. C.Engraved, laminated acrylic or melamine label, punched or drilled for screw nounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch. Label the following equipment:

. Panelboards, electrical cabinets, and enclosures Access doors and panels for concealed electrical items.

Electrical breakers in existing distribution panels. ransformers. Emergency system boxes and enclosures

)isconnect switches Enclosed circuit breakers Motor starters.

Push-button stations Contactors. Remote-controlled switches, dimmer modules, and control devices.

Panels, terminal cabinets, and racks. D. Fire alarm system: boxes and covers painted red; factory applied red coating for fire alarm conduits.

E. Accessible raceways and cables of auxiliary systems: identify the following systems at panel and junction box locations within each room as follows: . Fire alarm system: red boxes and covers. Red conduit.

120/208 volt mark covers with panel and circuit numbers.
 277/480 volt mark covers with panel and circuit numbers.

F. Receptacles: identify panelboard and circuit number from which served. Use pre manufactured hot stamped or engraved machine printing with black filled lettering on face of plate, and durable wire markers or tags inside outlet boxes. 2.9 Lighting control devices

A. Electronic time switches: solid state, programmable unit, alphanumeric display and multiple channels for exterior lighting control. Allow connection of a photoelectric relay for on/off control of selected channels.

B. Outdoor photoelectric switches: solid state with dry contacts and metal oxide surge suppressor. Light-level monitoring range from 1.5 to 10fc with adjustable levels for on/off controls.

C. Automatic lighting control devices: operation shall either turn lights on manually or automatically controlled to turn on less than 50% lighting power with the remaining lighting power turned on manually; lighting shall turn off when unoccupied, with a time delay for turning lights off adjustable over a range of 1 to 15 minutes. The following spaces are exceptions and allow full on automatic control: public corridors and stairwells, restrooms, primary building entrances and lobbies, and areas where manual on operation would endanger the safety and/or security of the building or occupants. Full on automatic control shall turn ights on when coverage area is occubied, and turn them off when unoccupied with a time delay for turning lights off, adjustable over a minimum range of 1 to

1. Indoor photoelectric switches: ceiling mounted solid state light level sensor connected to day lighting relays. 2. Indoor occupancy sensor: wall or ceiling mount as indicated on plans. Dual

technology solid state occupancy sensor with separate power pack. D. Wall box occupancy sensors: adaptive technology with time delay, quantity of integral switches as shown on the drawings (minimum of one (1) switch).

E. Lighting contactors: electrically operated and mechanically held, non-fused switch with 2 wire solid state control modules.

F. Emergency shunt relay: normally closed electrically held with automatic switching contacts to bypass local room controls.

G.LED line voltage dimmers rated for quantity and type of fixtures shown on drawings. Divide lighting load into multiple switch legs and add additional dimmers to meet manufacturer's recommendation.

2.10Dry type transformers A. Dry-type general purpose transformers: 480v delta primary to 120/208v, 3 phase, 4 wire secondary with 2-5% taps above and below normal voltage. 220deg c insulation, 150deg c rise, TP-1 energy code rated. Transformer grounding shall be per NEC. Additional K ratings, electrostatic shields, weather the second sec

noods, specialty transformers, etc. As shown on the drawings. 1. Wet or outdoor locations: totally enclosed, non-ventilated, resin encapsulated core and coil. 2.11Panelboards

A.Panelboards: Schneider electric style #NQ (120/208v) and #NF 277/480v) for 100-400 ampere, I-line style for 400 ampere - 800 ampere or equal by Eaton, GE, or Siemens.

B. Dead front safety type with enclosures of code grade steel. Oversize gutters shall be provided for feed through where indicated or required. Where double ugs are not permitted by local code, a suitable pull box or gutter adjacent to panels shall be provided for connections.

C. Trim and flat locking doors with both hinges and trim clamps completely concealed, door in door construction, flush cover door locks common keyed. Provide two (2) keys for each panelboard. Mount a clear plastic-covered typewritten circuit directory in a card holder attached to the inner side of the door. Provide engraved laminate nameplates stating panelboard name and voltage. Where panelboards are in public areas, mount identification plates

D.98 percent electrolytic copper or 55 percent conductivity aluminum busses independently supported (without dependence upon the circuit breakers). Where breakers and/or switches are listed in the schedules

as "space only", include extended bus and mounting provisions. E. Bolt-on circuit breakers with bolted line and load terminals, quick-make,

- quick-break, thermal magnetic, common trip on multi-pole breakers and minimum ul short circuit rating as shown on the drawings. Each breaker shall have its current rating engraved, in easy to read numbers, on the toggle handle. UL listed "swd" switching duty for lighting switching control. UL listed HACR rated for motor or high inductance loads
- F. Fusible factory assembled panelboards shall be Schneider electric GMB for 225 ampere to 1600 ampere or equal by Eaton, GE, or Siemens with requirements noted above.
- I. Trims: 4 piece without door for NEMA 1; with door where noted on the drawings or for NEMA 3R/5/12 2. Fused switches: NEMA KS 1, type HD. Twin, side by side mount for 30a-200a.
- Single mount for 400a and above. 3. Furnish rejection fuses as noted in 2.14 below.
- 2.12 Wiring devices
- A. Wiring devices shall be installed in metal device boxes.
- B. Switches and receptacles shall be Hubbell, Bryant, Leviton, Pass & Seymour, or approved equal subject to approval by the engineer/architect, color shall be vory for normal power. Special color device outlets and matching cover plate as noted on the plans.
- C. Switches shall be general duty grade, federal specification fs, ac quiet type, 20-amp, 120/277-volt, with silver alloy contacts, equal to Hubbell #5362.
- D. General purpose duplex receptacles shall be general duty grade, federal specification fs, NEMA 5-20r, 20-amp, 125-volt, 3-wire grounding type devices with steel one piece ground strap; third pole grounding to the outlet box. Fed spec grade.
- E. Ground fault circuit interrupter (GFI) duplex receptacles: heavy duty grade, federal specification fs, 20-amp devices. GFI receptacles unit self-contained and not be connected to feed through unless specifically noted on the drawings.
- F. NEC weather resistant rating in damp or wet locations, suitable for "while-in-use" applications.
- G. Tamper resistant rating in areas required by the NEC. H. AFCI outlets where required by the NEC.
- I. Isolated ground receptacles: orange in color or orange triangle on face.
- J. Surge protective device (SPD): type 3 duplex receptacle with indication light and audible alarm.
- K. Cover plates: shall be ivory as manufactured by Eagle, Bryant, General Electric,
- Hubbell or Leviton. 1. Special color plastic cover plates to match to style line type receptacles as noted
- on the plans. L. GFCI protected with "while-in-use" weatherproof cover plates for outdoor weatherproof duplex receptacles.
- 2.13Fuses A. One-time cartridge fuses manufactured by Busman, Gould Shawmut, or Little
- B. Furnish and install fuses of the types and ratings designated in the drawings and specifications in each fusible device installed by the contractor. . Feeder and branch circuits class RK1 time delay.
- Motor circuits class RK5 time delay. Control circuit fuses must be time delay
- 2.14 Enclosed switches, circuit breakers and controllers
- A.Disconnect switches: heavy duty, ac, single throw safety switches, built in accordance with NEMA requirements with a voidable full cover interlock and quick-make, quick-break mechanism. Each switch shall be fusible unless hon-fusible (NF) is specifically indicated. NEMA 1 enclosures in dry locations and NEMA 3R where exposed to the weather. Furnish neutral lug kit when circuit has a neutral.

B. Provide auxiliary contacts to shut down VFD prior to disconnecting power. Provide rejection fuses where noted. C. Full voltage non reversing starters size 0 minimum.

- D. Starters must be combination starters with molded case circuit breaker or fused disconnect, as noted on the drawings, with fused control transformer, auxiliary contacts, cover mounted HOA and pilot lights.
- E. Fractional HP starters quick make quick break single pole switches for integrally protected motors.
- F. Multi-pole horse power rated switches or enclosed circuit breakers in flush NEMÅ 1 enclosures where a means of disconnect is required in finished spaces. G. All devices NEMA rated for the environment they are located.
- 2.15 Lighting fixtures
- A. Fluorescent fixtures: high efficiency lamps and multi-volt electronic ballasts Provide programmed start ballasts with end of life circuitry on occupancy sensor controlled fixtures. Verify that the lighting supplier has provided ballast disconnect switch per NEC. 410.130(g)(1) for fluorescent fixtures.
- B. Dimming ballasts must be 0-10v compatible with the dimming controller
- C.Emergency fluorescent power unit: self-contained, modular nickel-cadmium inverter unit to operate fluorescent lamps continuously at 1100 lumens for 90 minutes. lamps in emergency fixtures must be connected to the inverter unit. D. LED fixtures: light engine drivers as specified on the drawings.
- 2.17 Voice/data systems

A.Install an empty conduit, back box and junction box system for installation of voice and data system. See sheet LOW1 for cabling plan and provide all cables and connections for a fully operational system.

- PART 3 Execution
- 3.1 General
- A. Electric system layouts indicated on the drawings are generally diagrammatic and shall be followed as closely as actual construction and work of other trades will permit. Govern exact routing of cable and wiring and the locations of outlets by the structure and equipment served. Use dimensions from architectural
- B. Consult other drawings, verify scales and report dimensional discrepancies or other conflicts with architect before submitting bid. C. All home runs to panelboards are indicated as starting from the outlet neares
- the panel and continuing in the general direction of that panel. Continue such circuits to the panel as through the routes were completely indicated. Terminate homeruns of signal, alarm and communication systems in a similar manner.
- D. Avoid cutting and boring holes through structure or structural members wherever possible. Obtain prior approval of structural engineer and conform to structural requirements when cutting or boring the structure is necessary and permitted
- E. Furnish and install necessary hardware, hangers, blocking, brackets, bracing, runners, etc., required for equipment specified under this section. F. Provide necessary backing required to insure rigid mounting of outlet boxes.
- 3.2 Low voltage power conductors and cables
- A.Provide #12 branch circuit conductors for 120v, 20 amp circuits less than 75' (100' for 277v circuits). Provide a minimum #10 branch circuit conductors for 120v, 20 amp circuits over 75' (100' for 277v circuits) and increase conductor and conduit size to limit voltage drop to 3% maximum.
- B. Where more than three current carrying conductors are installed in a single raceway (e.g. combining multi-circuit homeruns), conductor ampacity shall be de-rated as required by the NEC.
- C.Provide dedicated neutral conductors for each120v and 277v branch circuit unless specifically noted otherwise on the plans. D.Feeder and branch circuit conductors must be stranded copper, single conductors in raceway.
- E. Megger and record insulation resistance of 600 volt insulated conductors size #3/0 and larger using 500 volt megger for one minute. Make tests with circuits solated from source and load.
- F. Metal clad cable with green ground conductor allowed only for the following
- 1. Above accessible ceilings for final connections from junction boxes to light fixtures not exceeding 6' in length.
- Final connection not exceeding 6' in length to rotating or vibrating equipment.
 Allowed for branch circuits fished into existing wall construction. 4. Allowed in casework or built up structures where flexibility is required.
- 3.3 Control voltage conductors and cables
- A. All control voltage cables installed in a metal box and raceway system to an accessible ceiling or cable tray. B. UTP cables shall be terminated with connecting hardware of the same category
- or higher. C. Minimum conduit size is 3/4" with larger sizes noted on plan. Install plastic
- bushing on conduit ends. D.RG-59: use for single device with cable length less than 50' or from a tap or splitter less than 50'.
- E. RG-6: use for connecting or splitting to more than one device and after a tap or splitter 50' or greater in length.
- F. Group and bundle low voltage cables and provide support independent of ceiling supports. Utilize D rings, J hooks or approved nylon straps to hold cables

and provide supports independent of the ceiling supports. 3.4 Grounding and bonding

continuity

3.5 Hangers and supports

mounted electrical equipment.

1. Damp or wet locations: IMC or RMC

3.6 Raceways and outlet boxes

. Recessed lighting fixtures

cast fitting are not allowed.

isolated structures

air diffusers, etc.

I. Conduit supports:

mechanical ducts or pipes

M.Conduit penetration:

penetration.

N. Outlet boxes:

ing sized as required.

3.7 Underground raceways and boxes

3.8 Identification and labeling

cover, with plastic protector.

D. Color code wires as follows:

3.9 Lighting control devices

3.10Dry type transformers

3.11Panelboards

3.12 Wiring devices

3.13Fuses

each individual control.

K. General conduit installation:

mechanical work or avoid conflict.

total bends between pull boxes.

. Motor connections.

At building joints

A. The building and electrical systems shall be grounded and bonded in accordance with the NEC, IEEE and best practices.

B. Electrical service and separately derived alternating current systems shall be grounded in accordance with NEC article 250. C. All feeder and branch circuits shall have a green copper ground conductor run

with the phase and neutral conductors. D. Bonding interior metal ducts: bond metal air ducts to equipment grounding conductors of associated fans. blowers, electric heaters, and air cleaners. Instal inned bonding jumper to bond across flexible duct connections to achieve

E. Provide a minimum #6 copper ground conductor, or larger as indicated on the drawings, and a 12" ground bus at telecommunication demarcation location.

A. Conduit and cable support devices must be steel with hangers and supports suitable for raceway or cable must be supported. B. Fabricated metal equipment support assemblies must be bolted structural steel

or steel slotted support systems calculated by a registered structural engineer. C Concrete bases installed by the electrical contractor. Base must be nominally 3000 psi concrete with dimensions noted on the drawings. Install for floor

A Enclose electrical power wiring in conduit B. Permitted uses for EMT, IMC or RMC as follows:

 Above ground: use EMT, IMC or RMC only.
 Locations subject to mechanical injury. IMC or RMC only. . Dry locations and not subject to mechanical injury: EMT, IMC or RMC.

C. Use flexible conduits in the following applications:

4. In damp or wet locations flexible connections must be liquid tight type. Conduit cast in concrete floors are not allowed

E. Conduit below grade must be PVC, IMC or RMC. F. Fittings for EMT shall be steel compression type or steel set-screw type. Die

G.Install nylon pull cords in empty conduits. H. Conduit installation for low voltage systems to have a maximum of 180 degrees I. Provide expansion fittings crossing expansion joints or spanning between J. Install surface raceways with required fittings, accessories and device outlets noted on plans. Conceal conduit connections.

 Run conduit concealed unless otherwise noted or shown Run conduit parallel to or at right angles to center lines of columns and beams.
 Conduits above ceiling shall not obstruct removal of ceiling tiles, lighting fixtures,

4. Conduits shall not cross duct shaft or area designated as future duct shaft horizontally. Conduit riser, when allowed in duct shaft must be coordinated with

1. Support conduits with underwriter's laboratories listed steel conduit supports at intervals required by the national electric code. Wires or sheet metal strips are not acceptable for conduit support. Use conduit hangers for conduits not directly fastened to structure and for multiple conduit runs. Do not attach conduit to 2. Avoid attaching conduit to fan plenums. When it is necessary to support conduit from fan plenum, provide a length of flexible conduit between portions attached to fan plenum and portion attached to the building to minimize transmission of vibration to the building structure.

1. Fire rated floor or wall: install conduit in conduit sleeve or framed opening. Seal penetration with fire retardant sealant specified herein. 2. Roof or exterior wall: avoid penetrating roof or exterior wall where possible. Where penetrations are necessary, building weatherproof integrity must be preserved. 3. Sound insulated or air plenum wall: install conduit in conduit sleeve and seal 4. Non-fire rated dry wall: conduit sleeves are not required. Penetrations must be sealed with plaster prior to painting. Penetrations made after wall finish is applied must be as small as possible and provided with escutcheons, one on each side of Suspended ceiling: cut hole as small as possible to permit conduit penetration. Provide escutcheon for each conduit below ceiling.

1. Provide outlet boxes and pull boxes as required to accommodate lighting and receptacle branch circuit wiring. Outlet boxes must not be installed back-to-back. 3. Outlet boxes used for line voltage incandescent and halogen wall box dimmers may not be ganged unless noted on the drawings. Where wall box dimmers are shown ganged or grouped under one cover with other switches, de-rate the limmers per manufacturer's installation instructions. 4. Provide cast steel floor boxes to accommodate power and data connections to free standing equipment and furniture partitions. 5. All outlet boxes shall be two-gang or 4" square x 2" deep minimum with plaster 6. Exterior boxes for branch circuits must be cast aluminum with threaded hubs.

O.Floor boxes, poke-through, service poles and multi-outlet assemblies 1. Adjust floor service outlets and service poles to suit arrangement of partitions and

A Underground conduits shall be schedule 40 PVC, IMC or RMC buried in earth. Transitions through concrete slabs, pre manufactured bends or elbows must be IMC or RMC conduit with corrosion protection.

B. Install underground traceable, plastic warning tape 12" above each feeder conduit or groups of branch circuit conduits. C.Install exterior branch circuit or feeder handholes in landscape areas. Do not install in sidewalks, roadways or parking lot subject to pedestrian or vehicle

A. Provide nameplates for switchgears, panelboards, and similar devices Nameplates shall be screwed (no adhesive) engraved plastic or photo-etched metallic nameplate identification showing panel designation, voltage and phase. B. Provide machine labels on lighting switches and convenience and special purpose receptacles to show panel and circuit number to which the device is

C.Panelboard schedules: after completion of work, provide typewritten updated panelboard schedules in a metal framed circuit directory inside each panelboard

. Voltage phase A phase, B phase, C phase, neutral, ground. 2. 120/208v black, red, blue, white, green.

3. 277/480v brown, orange, yellow, gray, green. E. Provide Brady wire markers where number of conductors in a box exceeds four.

A.Controllers: furnish 120 volt power to each control panel and time switch requiring a source of power to operate. B. Pull the circuit neutral conductor to light switches. Provide dedicated neutral to C. Testing Agency: Engage a qualified testing agency to evaluate lighting control devices and perform tests and inspections. Testing agency shall be independent of design, construction, and manufacture of equipment. Provide functional testing and certification in accordance with the latest edition of ASHRAE 90.1.

A. Transformers mounted on neoprene pads to prevent vibration transmission. Transformers must be mounted on 4" concrete housekeeping pads or trapeze hung as noted on the drawings.

A. Where panelboards are flush mounted in walls, provide a minimum of 4-1" conduits stubbed to an accessible ceiling above the panel for future use. B. Circuit numbers appearing on drawings shall be used for reference only. Actual connections shall be in accordance with phasing of the cabinet and load palance requirements. Room numbers or names used for circuit identification shall corresponded to name plates installed on room doors by the general contractor or as selected by the owner and shall be verified as these may not be ne same as room titles on the drawing C. Top of panelboard tubs shall be 6'-6" above finished floor.

A. Install with the ground pin or neutral blade at the top.

B. Furnish and install wall plates for flush mounted wiring devices and flush mounted special system outlets. Sectional wall plates shall not be used. Blank plates shall be installed over outlets provided for future use. Wall plates shall be secured with matching screws. Engraved wall plates shall have back fill. C. Furnish and install outlets for and make final electrical connections to electrically powered equipment indicated on the plans or equipment schedules.

A.Furnish and store, at a location directed by the owner, three (3) spare fuses of each size and type installed during this project. The contractor shall provide a spare fuse list in the maintenance manuals.

3.14 Enclosed switches, circuit breakers and controllers

- A. Obtain exact information pertaining to location, electrical characteristics, and wiring for equipment furnished by others from the contractor furnishing the equipment. This information shall be verified by examining nameplates and manufacturer's wiring diagrams. Discrepancies between the equipmen requirements and the provisions made by these specifications shall be reported. Equipment damaged as a result of the contractor's failure to observe nanufacturer's requirements shall be replaced or repaired by the contractor. The thermal protection elements in manual starters shall be rechecked with name plate data at the site before operation of the equipment. Where necessary, the thermal protection elements shall be changed to properly protect the equipment
- B. Furnish and install manual thermal protection for motors not integrally equipped with thermal protection.
- C. Furnish and install final electrical connections to motors and electrically powered equipment indicated on the plans or equipment schedule.
- D. Furnish and install a disconnect switch immediately ahead of and adjacent to each magnetic motor starter or appliance unless the motor appliance is located adiacent and within sight of the serving panelboard, circuit breaker or switch. /erify equipment nameplate current ratings prior to installation.
- E. Provide a fused disconnect switch on transformer secondary where secondary conductors exceed 25' from terminal to secondary overcurrent device.
- F. Furnish and install disconnect switches having the number of poles and ampere ratings as shown on the drawings and as specified in equipment schedules. 3.15Lighting fixtures
- A. Lighting fixtures: set level, plumb, and square with ceilings and walls complying with NFPA 70 for fixture supports. Provide lamps in each fixture. B. Suspended lighting fixture support:
- 1. Pendants and rods: where longer than 48 inches, brace to limit swinging. 2. Stem-mounted, single-unit fixtures: suspend with twin-stem hangers.
- C. Adjust and aim lighting fixtures to provide required light intensities on vertical surfaces or at directions noted on drawings. Provide additional adjustments for owner prior to final turnover or at substantial completion.

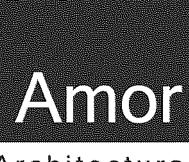
D. Lighting fixtures must have individual feeds to each fixture except for tandem fixtures. "daisy-chaining" of fixtures not allowed. The lighting fixture whips must be 6-feet long or less. 3.16 Fire alarm system

A.By contractor. Contractor to provide signed and sealed fire alarm drawings, calculations, and documentation as required by local Authority Having Jurisdiction.

3.17 Voice/data systems

- A. For each telephone, data or telephone/data outlet indicated on the drawing provide a 4-11/16" square by 2-1/8" deep box with single gang ring, and 1-1/4" conduit concealed from device to the nearest accessible ceiling, floor space or accessible access panel in hard ceilings, unless noted otherwise B. Install conduit bushings on conduit ends. Install pull cord in conduits
- C. The owner shall furnish and install the wire, cable, connecting devices, and provide testing for wiring systems must be used as signal pathways for low voltage systems specified in this section, where called for in the drawings.
- D. The contractor shall coordinate the installation and schedule for low voltage systems of this section with the owner and adjacent affected tenants. The contractor shall run necessary conduits with pull wires, pull and junction boxes.
- E. Where low voltage systems pass through another tenant space or area not controlled by the owner, the contractor shall install complete conduit system in those spaces for the owner's wiring.
- F. Provide 120v connections to equipment as required. Install 120v receptacle adjacent to each voice and data system outlets.

End of section



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