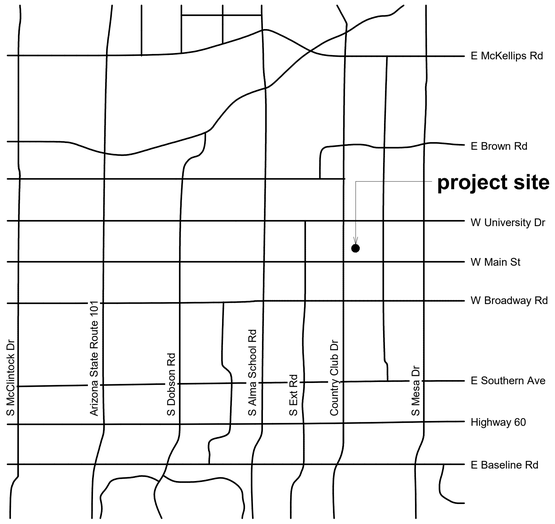
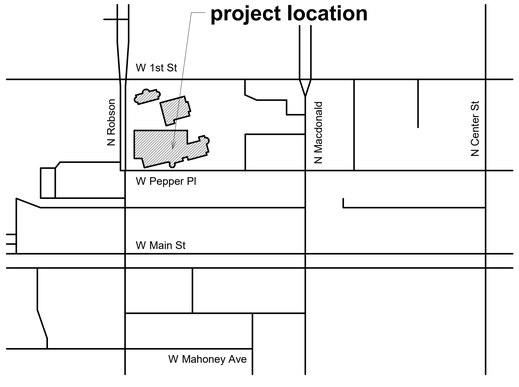
mesa·az

i.d.e.a. MUSEUM - LAB RENOVATION

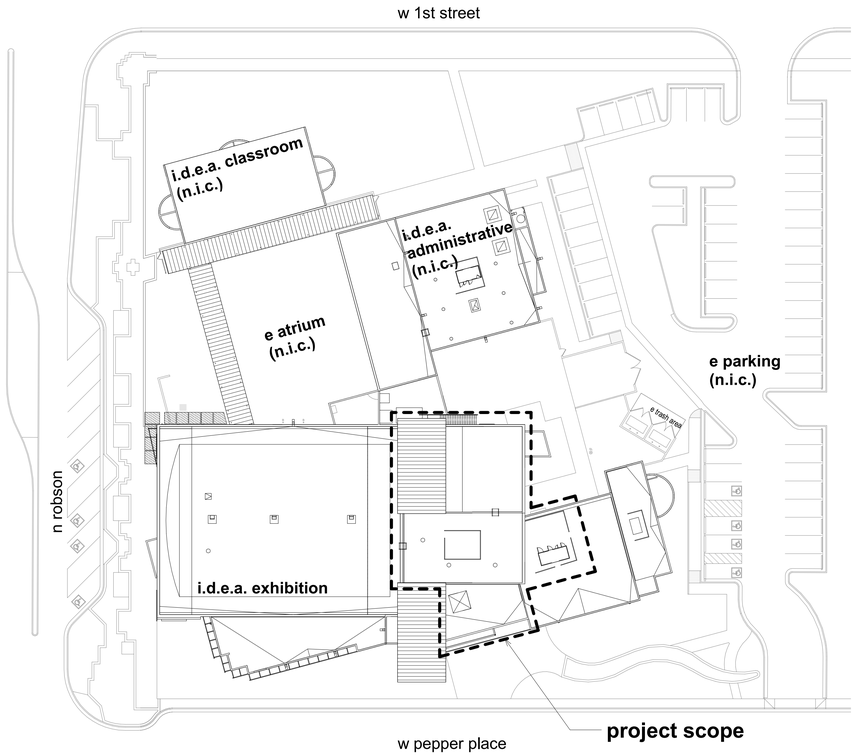
150 W PEPPER PL, MESA, AZ 85201
PROJECT NO.: CP0916NLAB



city of mesa vicinity map
SCALE: NTS



project location map
SCALE: NTS



1 SITE PLAN
1" = 30'-0"

mesa·az
DEVELOPMENT SERVICES
REVIEWED FOR CODE COMPLIANCE
By -
at 04/23/2024 12:09:20 PM

REVIEWED
By -
at 04/23/2024 12:10:03

Reviewed by: JDOM, tma, jte

REFER TO VIEWS FOR SCALE

NORTH

BENCHMARK:
ELEVATION = (C.O.M. DATUM)

project description

ADDRESS	150 W PEPPER PL, MESA, AZ 85201 (I.D.E.A. EXHIBITION BUILDING)
LEGAL DESCRIPTION	DEED NUMBER 830427695
ZONING	T4NF
LOT NUMBER	1
APN	138-35-007A

THE I.D.E.A. MUSEUM, A CHILDREN'S MUSEUM LOCATED IN 150 W PEPPER PLACE IN MESA, ARIZONA 85201, IS CONVERTING AN EXISTING ADMINISTRATIVE OFFICES INTO ADDITIONAL EXHIBIT AREAS. THE INTERIOR RENOVATION PROJECT SCOPE INCLUDES NEW NON-RATED PARTITIONS, NEW DOORS, NEW CEILING FINISHES, NEW LIGHTING, NEW WALL AND FLOOR FINISHES, AND SINGLE USE RESTROOMS. ALSO INCLUDED ARE RELATED MECHANICAL, ELECTRICAL, PLUMBING, AND STRUCTURAL WORK.

project contacts

owner:

City of Mesa
Kayleen Cordiak, P.E.
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Mesa, AZ 85211-1466
480.644.3313

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Michael Jacobs, Principal
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Phoenix, AZ 85006
602.258.8555

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Nicole Allender, SE, PEng
7740 N. 16th St., Suite 300
Phoenix, AZ 85020
623.473.5969

mech, plumbing, electrical:

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G. Monte Sturdevant, PE
Nathan Short, PE
7135 E. Camelback Road, Suite 275
Scottsdale, AZ 85251
480.481.4900

code + specifications:

RLGA Technical Services
Ron Geren, Principal
5902 E. Grandview Rd.
Scottsdale, AZ 85254
602.569.9642

index of drawings

TOTAL NUMBER OF SHEETS : 49

APPROVED COPY
CITY OF MESA: ENGINEERING DEPARTMENT
PLAN APPROVAL DOES NOT CONSTITUTE AN APPROVAL OR PERMIT FOR VIOLATION OF ANY PROVISIONS OF THE MAG UNIFORM STANDARD SPECIFICATIONS & DETAILS AS AMENDED BY THE CITY OF MESA.
BY: Kayleen Cordiak DATE: 04/23/24

Deferred Submittal:
Fire Alarm and Sprinklers

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

Call at least two full working days before you dig, it's the law!
ARIZONA811
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maritopa County (602) 263-1100

COM PROJECT NO. CP0916NLAB	issue for permit
	CITY OF MESA ENGINEERING DEPARTMENT
	PROJECT NAME i.d.e.a. Museum - Lab Renovation
DRAWN BY: _____ ENGINEER: _____ APPROVED BY: _____	COM COVER SHEET — DRAWING COM CS
F165 AC PROJ. NO. CP0916NLAB	SHEET 1 - OF - 49 — CATALOG NUMBER: A-282703

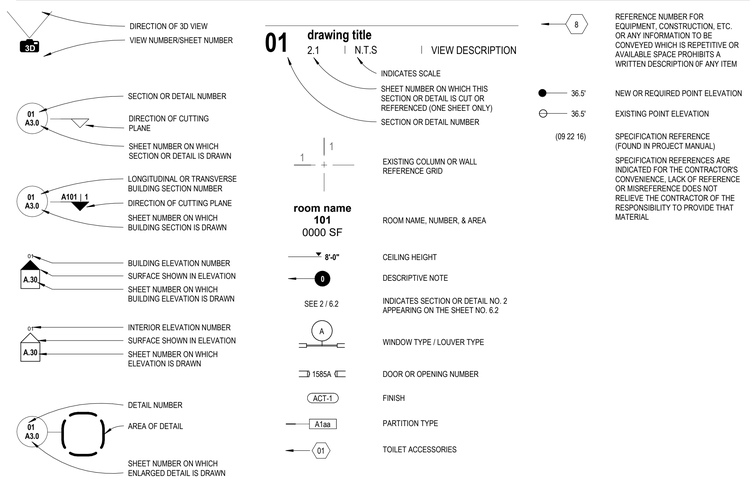
REGISTERED ARCHITECT CERTIFICATE NO. 52961 MICHAEL E. JACOBS STATE OF ARIZONA U.S.A.

PMT24-00829

abbreviations

A/C	AIR CONDITIONING
A/V	AUDIO VISUAL
AB	ANCHOR BOLT
ABS	ACRYLONITRILE-BUTADIENE-STYRENE
ABV	ABOVE
ACC	ACCESS
ACC PNL	ACCESS PANEL
ACST	ACOUSTICAL
AD	AREA DRAIN
ADD'L	ADDITIONAL
ADD.	ADDENDUM
ADJ	ADJACENT, ADHUSTABLE
AFF	ABOVE FINISH FLOOR
AGG.	AGGREGATE
AHR	ANCHOR
AHU	AIR HANDLING UNIT
AL, ALUM	ALUMINUM
ALT	ALTERNATE
AN'OD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ASI	ARCHITECT'S SUPPLEMENTAL INFORMATION
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
BAL	BALANCE
BD	BOARD
BF	BACK FACE
BFE	BOTTOM FOOTING ELEVATION
BITUM	BITUMINOUS
BJT	BED JOINT
BL	BUILDING LINE
BLDG	BUILDING
BLKG	BLOCKING
BLT	BOLT
BLW	BELOW
BM	BEAM
BM	BENCH MARK
BO	BOTTOM OF
BO	BY OTHERS/OWNER
BRG	BEARING
BRKT	BRACKET
BS	BOTH SIDES
BSMT	BASEMENT
BTWN	BETWEEN
BVL	BEVEL(ED)
BW	BOTH WAYS
C	CELSIUS
C to C	CENTER TO CENTER
CAB	CABINET
CAL	CALIPER
CANTL	CANTILEVER
CB	CATCH BASIN
CCD	CONSTRUCTION CHANGE DIRECTIVE
CD	CONSTRUCTION DOCUMENT
CEM	CEMENT(ITIOUS)
CFLG	COUNTERFLASHING
CFM	CUBIC FEET PER MINUTE
CG	CORNER GUARD
CHEM	CHEMICAL, CHEMISTRY
CHFR	CHAMFER
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CKT	CIRCUIT
CL	CENTER LINE
CLG	CEILING
CLL	CONTRACT LIMIT LINE
CLR	CLEAR
CLRM	CLASSROOM
CM	CONSTRUCTION MANAGER
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CHANGE ORDER
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCRETE
CONF	CONFERENCE
CONT	CONTINUOUS
COORD	COORDINATE
CORR	CORRIDOR
CT	COOLING TOWER
CTR	CENTER
CTSK	COUNTERSINK
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
D	DEEP/DEPTH
DBL ACT	DOUBLE ACTING
DC	DIRECT CURRENT
DEG	DEGREE
DEMO	DEMOLISH, DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DH	DOUBLE HUNG
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIR	DIRECT(ION)(OR)
DISP	DISPENSER
DIST	DISTRIBUTION
DIV	DIVISION
DL	DEAD LOAD
DMPF	DAMPPROOF(ING)
DN	DOWN
DR	DOOR
DWG	DRAWING
E	EAST
EA	EACH
EJT	EXPANSION JOINT
EL	ELEVATION
ELAST	ELASTOMERIC
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOS(URE)(ED)
ENL	ENLARGED
ENTR	ENTRANCE
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPAN(SION)(DED)
EXT	EXTERIOR
EXTRU	EXTRU(SION)(DED)
F	FARENHEIT
FBO	FURNISHED BY OTHERS
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDV	FIRE DEPARTMENT VALVE
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FF EL	FINISHED FLOOR ELEVATION
FF&E	FURNITURE, FURNISHINGS, & EQUIPMENT
FHMS	FLAT HEAD MACHINE SCREWS
FHWS	FLAT HEAD WOOD SCREWS
FIN	FINISH
FIP	FOAM IN PLACE
FIXT	FIXTURE
FL, FLR	FLOOR
FLASH	FLASHING
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FP	FIREPROOF
FSTNR	FASTENER
FT	FEET, FOOT
FTG	FOOTING
FURN	FURNI(SH)(TURE)
FURR	FURRING
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACT(OR)
GEN	GENERATOR
GLAZ	GLAZING
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
H	HIGH
HB	HOSE BIB
HC	HANDICAP
HCFC	HYDRO-CHLOROFLUOROCARBON
HD	HEAD
HDBD	HARDBOARD
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
HT	HEIGHT
HTG	HEATING
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HW	HOT WATER
HWH	HOT WATER HEATER
HWY	HIGHWAY
HYD	HYDRANT
HZ	HERTZ
IAQ	INDOOR AIR QUALITY
ID	INSIDE DIAMETER
IF	INSIDE FACE
ILLUM	ILLUMINATION
IN	INCHES
INCL	INCLUD(E)(ED)(ING)
INFO	INFORMATION
INSUL	INSULAT(ED)(ION)
INT	INTERIOR
INVT, INV	INVERT
J-BOX	JUNCTION BOX
JAN	JANITOR
JC	JANITOR CLOSET
JST	JOIST
JST BR	JOIST BEARING
JT	JOINT
K	KIPS
KD	KNOCK DOWN
KIT	KITCHEN
KO	KNOCKOUT
KPL	KICK PLATE
KVA	KILOVOLT AMPS
KW	KILOWATTS
L	LENGTH
LAB	LABORATORY
LAM	LAMINATED
LAV	LAVATORY
LDR	LEADER
LG	LARGE
LH	LEFT HAND
LIN	LINEAR
LIQ	LIQUID
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LOC	LOCATE(D)(ION)
LONG	LONGITUDINAL
LP	LOW POINT
LT	LIGHT
LTG	LIGHTING
LTL	LINTEL
LTWT	LIGHTWEIGHT
LVR	LOUVER
M	METER
MACH	MACHINE
MAINT	MAINTENANCE
MAN	MANUAL
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MBR	MEMBER
MDF	MEDIUM-DENSITY FIBERBOARD
MECH	MECHANICAL
MED	MEDIUM
MEMB	MEMBRANE
MEZZ	MEZZANINE
MFR	MANUFACTURE(ER)(ED)
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MIX	MIXTURE
MLWK	MILLWORK
MM	MILLIMETER
MO	MASONRY OPENING
MOD	MODIFIED, MODULAR
MS	MACHINE SCREW
MTD	MOUNTED
MTL	METAL
MTR	MORTAR
MULL	MULLION
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NE	NORTHEAST
NIC	NOT IN CONTRACT
NO/NUM	NUMBER
NOM	NOMINAL
NORM	NORMAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
NW	NORTHWEST
O/O	OUT TO OUT
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OFF	OFFICE
OH	OVERHEAD
OPER	OPERABLE
OPH	OPPOSITE HAND
OPNG	OPENING
OPP	OPPOSITE
ORD	OVERFLOW ROOF DRAIN
ORIG	ORIGINAL
OZ	OUNCE
LB, #	POUND
PC	POINT OF CURVE
PCF	POUNDS PER CUBIC FOOT
PERF	PERFORAT(ED)(ION)
PERIM	PERIMETER
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLVC	PLASTER VENEER COAT
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PR	PROPOSAL REQUEST
PREFAB	PREFABRICATED
PREFIN	PREFINISHED
PRELIM	PRELIMINARY
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PT	POINT, POINT OF TANGENT
PT	PRESSURE TREATED
PTD	PAINTED
PTN	PARTITION
PV	PHOTOVOLTAIC
PVG	PAVING
PVMT	PAVEMENT
PWR	POWER
QT	QUART
QT	QUARRY TILE
QTR	QUARTER
QUAL	QUALITY
R	RADIUS
RA	RETURN AIR
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RE	REFER
REBAR	REINFORCING BAR
REC	RECESSED
RECT	RECTANGLE
REF	REFERENCE
REF	REFRIGERATOR
REG	REGISTER
REG	REGULAR
REINF	REINFORC(E)(ED)(ING)
REQD	REQUIRED
RET	RETURN
REV	REVISION
RFG	ROOFING
RH	RIGHT HAND
RLF	RELIEF
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
ROW	RIGHT OF WAY
S	SOUTH
S&R	STILE & RAIL
SA	SUPPLY AIR
SALV	SALVAGE(D)
SAN	SANITARY
SC	SOLID CORE
SCD JT	SCORED JOINT
SCHED	SCHEDULE
SE	SOUTHEAST
SECT	SECTION
SF	SQUARE FOOT
SF	STOREFRONT
SHT	SHEET
SIM	SIMILAR
SM	SHEET METAL
SP	STAND PIPE
SPEC	SPECIFICATION
SPK	SPEAKER
SPL	SPECIAL
SQ	SQUARE
SST	STAINLESS STEEL
STAG	STAGGERED
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STN	STONE
STOR	STORAGE
STRUCT	STRUCTURAL
SUSP	SUSPEN(DED)(SION)
SW	SOUTHWEST
SYS	SYSTEM
T	TREAD
T&G	TONGUE & GROOVE
TC	TERRA COTTA
TEL	TELEPHONE
TEMP	TEMPERTURE
THERM	THERMAL
THK	THICK(NESS)
THOLD	THRESHOLD
TMPD	TEMPERED
TO	TOP OF
TOPAR	TOP OF PARAPET
TOS	TOP OF STEEL
TRANS	TRANSOM
TRANSL	TRANSLUCENT
TRANSP	TRANSPARENT
TRTD	TREATED
TV	TELEVISION
TYP	TYPICAL
UL	UNDERWRITER'S LABORATORIES
UNFIN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UON	UNLESS OTHERWISE NOTED
USG	UNITED STATES GAGE
UTIL	UTILITY
V	VOLT
VAL	VALUE
VAR	VARIES
VAV	VARIABLE AIR VOLUME
VB	VAPOR BARRIER
VENT	VENTILAT(ING)(ION)
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VIT	VITREOUS
VNR	VENEER
VOC	VOLATILE ORGANIC COMPOUND
VOL	VOLUME
W	WEST
W	WIDTH
W/	WITH
W/O	WITHOUT
W/W	WALL TO WALL
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WF	WIDE FLANGE
WGL	WIRED GLASS
WH	WATER HEATER
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD

drafting symbols



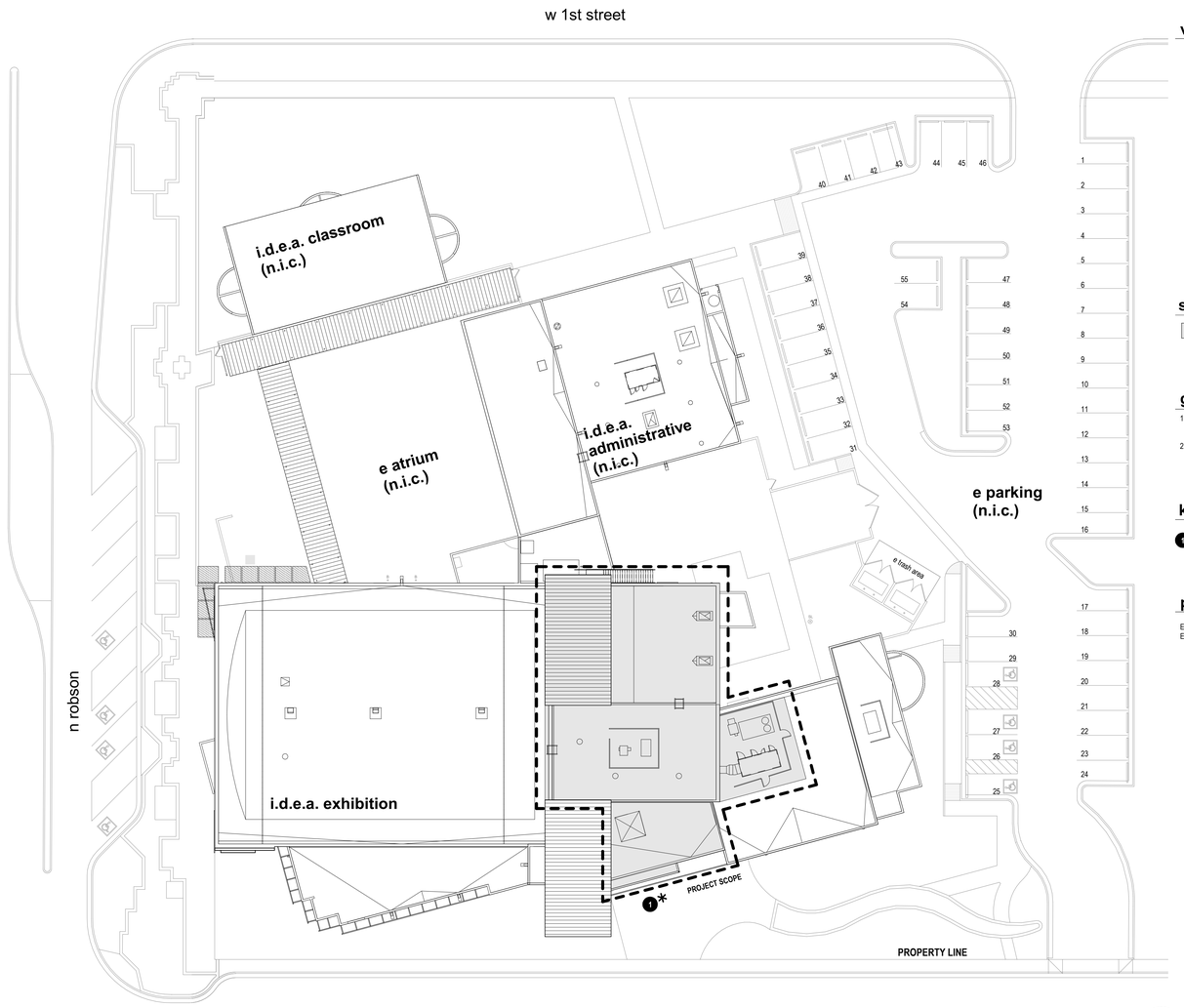
city of mesa - general notes

1. ALL WORK AND MATERIALS SHALL CONFORM TO CURRENT UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS PUBLISHED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS AND AS AMENDED BY THE CITY OF MESA. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THESE AMENDED SPECIFICATIONS AND DETAILS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
2. THE INFORMATION SHOWN ON DRAWINGS CONCERNING THE TYPE AND LOCATION OF EXISTING UNDERGROUND UTILITIES IS APPROXIMATE AND HAS NOT BEEN INDEPENDENTLY VERIFIED BY THE ENGINEER OR THE ENGINEER'S AGENT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.
   A. CALL **602-263-1100** OR **811** FOR BLUE STAKE SERVICES.
   B. CALL SALT RIVER POWER FOR POLE BRACING, ELECTRIC SERVICE OR CONSTRUCTION SCHEDULING AT **602-236-8888**.
   C. CALL CITY OF MESA ELECTRICAL FOR POLE BRACING, ELECTRICAL SERVICE OR CONSTRUCTION SCHEDULING AT **480-644-2251** WITHIN CITY OF MESA ELECTRICAL SERVICE TERRITORY (DOWNTOWN MESA).
   D. WHEN EXCAVATING IN OR ADJACENT TO A CITY PARK OR AQUATIC FACILITY THE CONTRACTOR SHALL CONTACT AQUATICS AND PARKS MAINTENANCE AT **480-644-3097** TO REQUEST ASSISTANCE IN LOCATING UNDERGROUND UTILITY FACILITIES.
   E. WHEN EXCAVATING IN OR ADJACENT TO LANDSCAPING WITHIN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL CONTACT TRANSPORTATION FIELD OPERATIONS AT **480-644-3380** TO REQUEST ASSISTANCE IN LOCATING UNDERGROUND IRRIGATION FACILITIES.
3. TRAFFIC CONTROL SHALL CONFORM TO THE CITY OF MESA TEMPORARY TRAFFIC CONTROL MANUAL. ELECTRONIC COPIES ARE AVAILABLE AT http://www.mesaaz.gov/business/barricading-temporary-traffic-control-permits. HARD COPIES CAN BE MADE AVAILABLE AT DEVELOPMENT SERVICES, 55 N. CENTER ST., MESA, ARIZONA
4. CONTRACTOR TO NOTIFY TRAFFIC OPERATIONS AT **480-644-3126** PRIOR TO SIGN REMOVAL AND WHEN READY TO PERMANENTLY RELOCATE SIGN.
5. CONTRACTOR TO OBTAIN ANY PERMITS REQUIRED UNLESS OTHERWISE INDICATED, AND COORDINATE ALL IRRIGATION DRY-UPS, RELOCATIONS, AND REMOVALS BY OTHERS.
6. CONTRACTOR SHALL POTHOLE EXISTING UTILITIES AHEAD OF CONSTRUCTION TO ALLOW FOR ANY NECESSARY ADJUSTMENTS IN GRADE LINE AND TO VERIFY PIPE MATERIALS FOR ORDERING THE APPROPRIATE TRANSITION AND TIE-IN FITTINGS THAT MAY BE REQUIRED.
7. THE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL ABANDONED UTILITIES THAT INTERFERE WITH PROPOSED IMPROVEMENTS. THE CITY OF MESA UTILITIES DEPARTMENT LOCATING SECTION WILL ASSIST THE CONTRACTOR AS NEEDED, IN DETERMINING IF THE UTILITY (GAS, WATER, AND WASTEWATER ONLY) IS ABANDONED BY CALLING **480-644-4500**.
8. PRIOR TO START OF CONSTRUCTION ON PRIVATE PROPERTY (EASEMENTS), THE CONTRACTOR SHALL GIVE THE OWNER SUFFICIENT TIME (MINIMUM 48 HOURS) TO REMOVE ANY ITEMS IN CONFLICT WITH CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE TO REMOVE AND REPLACE ALL OTHER CONFLICTS AS REQUIRED.
9. THE CONTRACTOR SHALL COORDINATE WORK SCHEDULES TO PREVENT ANY CONFLICTING WORK CONDITIONS WITH THE CITY OF MESA UTILITY AND TRANSPORTATION CREWS.
10. THE CONTRACTOR IS ADVISED THAT A DUST CONTROL PERMIT AND A DUST CONTROL PLAN MAY BE REQUIRED BY THE MARICOPA COUNTY AIR QUALITY DEPARTMENT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THIS PERMIT, IF NECESSARY, AND COMPLY WITH ITS REQUIREMENTS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A COPY OF THE DUST CONTROL PERMIT AND DUST CONTROL PLAN TO THE CITY FOR REVIEW.
11. INSPECTIONS SHALL BE PROVIDED BY THE CITY OF MESA. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTION DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION.
12. THE JOB SITE SHALL BE CLEANED OF ANY DEBRIS OR SPOIL RESULTING FROM THIS PROJECT AT THE COMPLETION OF CONSTRUCTION.
13. ALL EQUIPMENT AND MATERIALS NOT SHOWN OR SPECIFIED ON THE PLANS OR SPECIFICATIONS, BUT REQUIRED TO COMPLETE THIS PROJECT, SHALL BE SUPPLIED BY THE CONTRACTOR AS PART OF THIS CONTRACT WORK (NO ADDITIONAL COST TO THE CITY).
14. WHEREVER PAVEMENT REPLACEMENT PER MESA STD DETAIL M-19.04.1 OR MAG STD DETAIL 200 IS REFERRED TO WITHIN THESE PLANS, BACKFILLING SHALL BE PER THE CITY OF MESA STREET TRENCH BACKFILLING AND PAVEMENT REPLACEMENT POLICY STATEMENT, REVISED SEPTEMBER 29, 1999.
15. FOR PURPOSES OF PAVEMENT PER MAG STD DETAIL 200 OR MESA STD DETAIL M-19.04.1, INTERSECTIONS ARE DEFINED BY THE CURB RETURNS IN ALL DIRECTIONS.
16. ANY SURVEY MARKERS DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND BY A REGISTERED LAND SURVEYOR AT NO ADDITIONAL COST TO THE CITY.
17. ALL EXISTING PAVEMENT MARKINGS, SIGNS, AND SIGNAL EQUIPMENT THAT ARE NOT PART OF THIS PROJECT BUT NEED TO BE REMOVED, REPLACED, RELOCATED, OR REPAIRED BECAUSE OF CONTRACTOR'S WORK WILL BE DONE AT THE CONTRACTOR'S EXPENSE.
18. THE CONTRACTOR IS ADVISED THAT DAMAGE TO ANY PUBLIC SERVICES OR SYSTEMS AS A RESULT OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AND INSPECTED BY THE CITY INSPECTOR. DEPENDING ON DAMAGES, ALL REPAIRS SHALL BE DONE WITHIN 24 HOURS. THE CONTRACTOR IS ADVISED THAT ANY COSTS RELATED TO REPAIR OR REPLACEMENT OF DAMAGED PUBLIC SERVICES OR SYSTEMS AS A RESULT OF CONTRACTOR'S NEGLIGENCE SHALL BE BORNE BY THE CONTRACTOR.

general notes

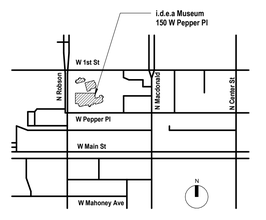
THESE NOTES ARE IN ADDITION TO ANY INFORMATION IN THE DRAWINGS, SPECIFICATIONS, OR THE NOTES PROVIDED BY THE PRIME CONSULTANT.

1. ALL WORK SHALL BE DONE IN CONFORMANCE TO APPLICABLE CODES LOCAL, BUILDING REQUIREMENTS, CURRENT ADA REGULATIONS, AND CITY OF MESA STANDARDS.
2. DO NOT SCALE DRAWINGS - USE DIMENSIONS ONLY. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE ON CONSTRUCTION DOCUMENTS.
3. VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD. IF CONDITION NOT COVERED IN THE DRAWINGS IS ENCOUNTERED, CONTRACTOR SHALL NOTIFY ARCHITECT, IN WRITING, BEFORE COMMENCING THAT PORTION OF THE WORK.
4. DIMENSIONS WHERE SHOWN ARE NORMALLY GIVEN:
   A. TO FACE OF CONCRETE OR MASONRY UNIT, OR FINISHED FACE
   B. TO CENTER LINES
5. NOTIFY ARCHITECT IF DISCREPANCIES ARE NOTED IN THESE CONTRACT DOCUMENTS IN SUFFICIENT TIME AS TO NOT CAUSE DELAY. DO NOT DEVIATE WITHOUT WRITTEN AUTHORIZATION FROM THE ARCHITECT.
6. DETAILS, NOTES AND FINISHES SHALL BE APPLICABLE TO ALL TYPICAL CONDITIONS WHETHER OR NOT REFERENCED AT ALL PLACES ON THESE PLANS.
7. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE APPLIED, INSTALLED, CONNECTED, ERECTED, USED, CLEANED, AND CONDITIONED, IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN SPECIFICATIONS OR INSTRUCTIONS UNLESS SPECIFIED TO THE CONTRARY HEREIN.
8. THE STARTING OF WORK BY ANY CONTRACTOR OR SUBCONTRACTOR SHALL BE CONSIDERED PRIMA FACIE EVIDENCE THAT HE HAS INSPECTED THE DOCUMENTS AND FINDS THEM SATISFACTORY.
9. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.
10. ALL STUDS AND ANY OTHER FRAMING ARE AT 24" O.C. MINIMUM UNLESS OTHERWISE NOTED.
11. ALL MATERIALS FOR USE SHALL BE NEW UNLESS OTHERWISE NOTED.
12. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING.
13. CAULK, SEAL, AND/OR WEATHERPROOF ALL PENETRATIONS IN WALLS, CEILINGS, AND FLOORS FOR PLUMBING, ELECTRICAL, AND OTHER OPENINGS IN THE BUILDING ENVELOPE.
14. THE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS ARE SUPPLEMENTARY TO THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE PROCEEDING WITH THE INSTALLATION OF MECHANICAL, PLUMBING AND ELECTRICAL WORK. SHOULD THERE BE A DISCREPANCY BETWEEN THE ARCHITECTURAL DRAWINGS AND THE CONSULTING ENGINEERS DRAWINGS THAT WOULD CAUSE AN AWKWARD INSTALLATION, IT SHALL BE BROUGHT TO THE ARCHITECTS ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF SAID WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE AND AT NO ADDITIONAL EXPENSE TO THE OWNER.
15. THE ARCHITECTURAL DRAWINGS SHOW PRINCIPAL AREAS WHERE WORK MUST BE ACCOMPLISHED UNDER THIS CONTRACT. INCIDENTAL WORK MAY ALSO BE NECESSARY IN AREAS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS DUE TO CHANGES AFFECTING EXISTING MECHANICAL, ELECTRICAL, PLUMBING OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS AND ASCERTAIN WORK NEEDED, AND COMPLETE THAT WORK AS PART OF THE ORIGINAL CONTRACT SUM.
16. ISOLATE CONTACT BETWEEN DISSIMILAR METALS
17. ANY ITEMS OR FEATURES IN CEILINGS, SUCH AS, BUT NOT LIMITED TO, LIGHT FIXTURES AND AIR DIFFUSERS SHALL BE PLACED OR INSTALLED WITH SPECIAL ATTENTION TO CENTERING, SPACING AND ALIGNMENT WITH OTHER FEATURES IN PROXIMITY. CONSULT WITH THE ARCHITECT CONCERNING ANY QUESTIONS OR CONFLICTS ABOUT LOCATIONS.
18. PROVIDE BLOCKING BEHIND ALL WALL MOUNTED DOOR STOPS, AND AS REQUIRED FOR MILLWORK, EXHIBIT CASEWORK, AND ALL WALL MOUNTED SHELVING OR EQUIPMENT.
19. ALL RUBBISH AND DEBRIS RESULTING FROM DEMOLITION AND/OR NEW WORK SHALL BE SORTED AND RECYCLED OR DISPOSED OF IN A SUITABLE MANOR AND SHALL NOT BE ALLOWED TO ACCUMULATE.
20. GENERAL CONTRACTOR SHALL HIRE A DETECTION SERVICE TO LOCATE ALL EXISTING ON-SITE UTILITIES WITHIN THE PROJECT BOUNDARY AND A REASONABLE DISTANCE OUTSIDE OF THE PROJECT BOUNDARY WHERE LOCATIONAL UNCERTAINTY OCCURS
21. PROVIDE BLOCKING IN WALLS FOR ALL WALL MOUNTED EQUIPMENT/DEVICES.



1 **SITE PLAN**
3/64" = 1'-0"

vicinity map



site plan legend

PROJECT SCOPE

general notes

1. SITE WORK NOT IN PROJECT SCOPE, UNLESS NOTED ON DRAWINGS.
2. SITE WORK SHALL ADHERE TO CITY OF MESA STANDARD DETAILS AND SPECIFICATIONS AND/OR MAG DETAILS AND SPECIFICATIONS.

keynotes

1 MAIN MUSEUM ENTRANCE.

parking

EXISTING STALLS: 55 ON-SITE
EXISTING ADA STALLS: 4 ON-SITE

PMT24-00829

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 27295 MICHAEL S. LYNN ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

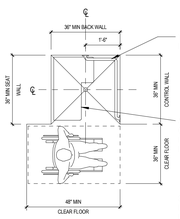
PROJECT NAME
i.d.e.a. Museum - Lab Renovation

INDEX, STANDARDS, + GENERAL NOTES

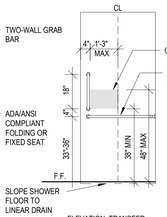
DRAWING
G0.00

SHEET	CATALOG NUMBER:
2 - OF - 49	A-282704

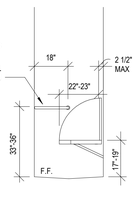
3/19/2024 1:01:58 PM



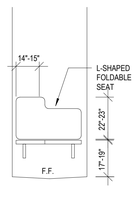
PLAN VIEW



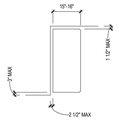
ELEVATION: TRANSFER SHOWER CONTROL WALL



ELEVATION: BACK WALL (WITH SEAT)

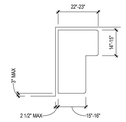


ELEVATION: SIDE WALL (WITH SEAT)



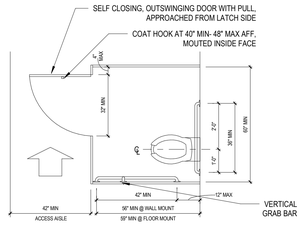
COMPARTMENT ENTRY

RECTANGULAR SHOWER SEAT

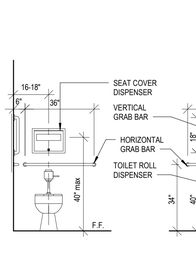


COMPARTMENT ENTRY

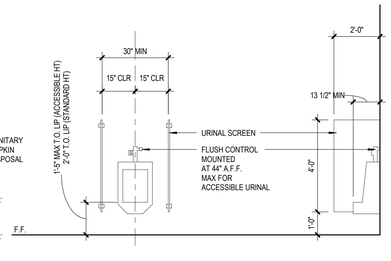
L-SHAPED SHOWER SEAT



transfer shower compartment



accessible toilet compartment



urinals

accessibility general notes

1. CLEARANCES AND NOTATIONS ARE BASED ON 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADAAG) (TITLE III REGULATIONS + THE 2004 ADAAG) AND ANSI ICC A117, 1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, TYPICAL, U.N.O.
2. DIAGRAMS ARE SHOWN FOR INFORMATIONAL PURPOSED ONLY. WITHOUT EXCEPTION, CONTRACTOR SHALL CONSULT APPLICABLE CODES FOR FULL CLEARANCE AND INSTALLATION REQUIREMENTS FOR ALL PROVISIONS.
3. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE FROM FACE-OF-FINISH TO FACE-OF-FINISH, OR CENTERLINE OF OBJECT AS NOTED. INCLUDING FROM FINISHED FLOOR SURFACES WHERE APPLICABLE.
4. UNLESS NOTED OTHERWISE, CLEAR FLOOR SPACE IS LOCATED AT THE CENTERLINE OF OBJECT.
5. ALL DOORS ARE PROVIDED WITH A CLOSER OR SELF-CLOSING HINGES U.N.O. MANEUVERING CLEARANCES ARE BASED ON THE MORE STRINGENT REQUIREMENTS, TYP. U.N.O.
6. DOORS ARE PERMITTED TO SWING INTO THE CLEAR FLOOR SPACE OF A FIXTURE PROVIDED THE BATHROOM IS FOR INDIVIDUAL USE AND A 30"x48" CLEAR FLOOR SPACES IS PROVIDED WITHIN THE ROOM BEYOND THE ARC OF THE FLOOR (ANSI 603.2.3).
7. PROVIDE FIRE TREATED BACKING AT WALL MOUNTED DEVICES + ACCESSORIES.

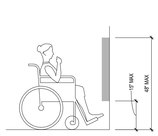
Holly Street
Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

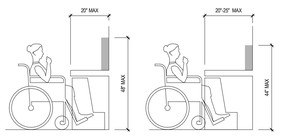
150 W Pepper Place
Mesa, AZ 85201

revisions

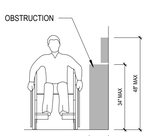
No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024



UNOBSTRUCTED FORWARD REACH



OBSTRUCTED HIGH FORWARD REACH



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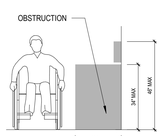
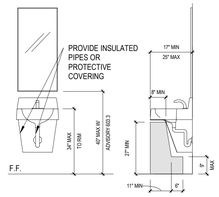
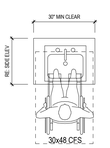


OBSTRUCTED HIGH SIDE REACH

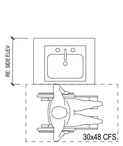


FRONT ELEV

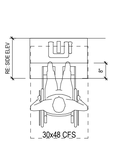
SIDE ELEV



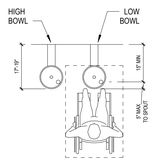
FRONT APPROACH - SINK

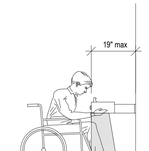


SIDE APPROACH - SINK



FRONT APPROACH - LAVATORY



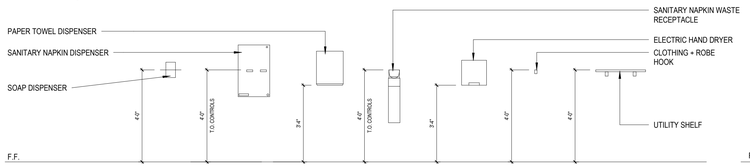


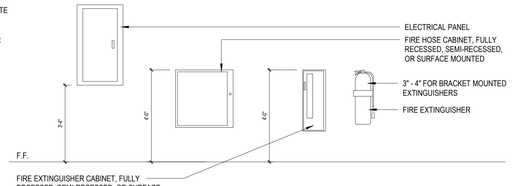
reach ranges

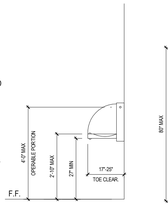
lavatories + mirrors

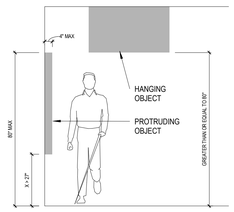
drinking fountains

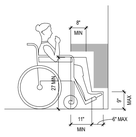
all fixtures to protrude no less than 4" from face of wall



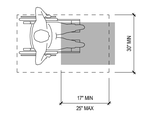








toe clear elevation



toe clear plan

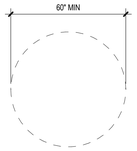
restroom accessories mounting heights

miscellaneous mounting heights

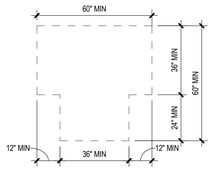
baby changing station

protruding objects

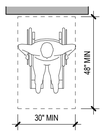
knee + toe clearance



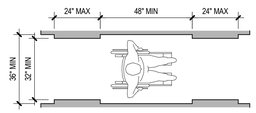
CIRCULAR TURNING SPACE



T-SHAPED TURNING SPACE



CLEAR FLOOR SPACE



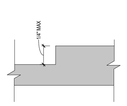
ACCESSIBLE ROUTE CLEAR WIDTH

turning space

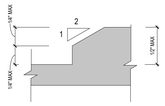
changes in level

floor openings

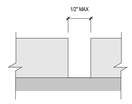
carpet pile height

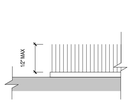


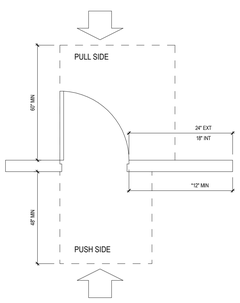
VERTICAL CHANGE



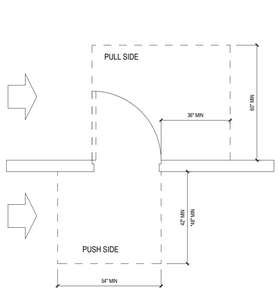
BEVELED CHANGES IN LEVEL



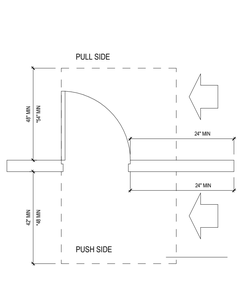




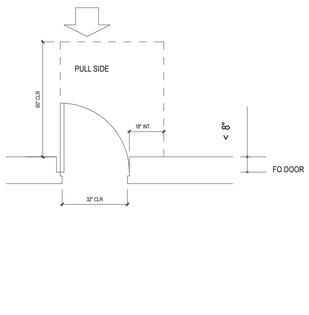
* IF DOOR HAS BOTH A LATCH AND A CLOSER



* IF DOOR HAS BOTH A LATCH AND A CLOSER

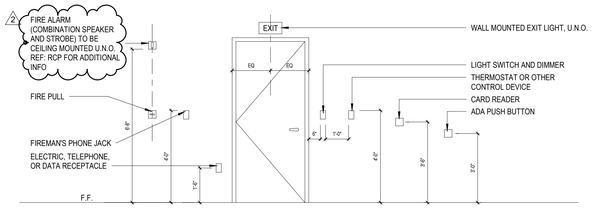


* IF DOOR HAS BOTH A LATCH AND A CLOSER



door clearance requirements for accessible routes

1. REFER TO THE DIAGRAMS ON THIS SHEET FOR ADDITIONAL ACCESSIBILITY DIAGRAMS.
2. WHERE APPLICABLE, THE CODE AND SECTION FOR EACH CORRESPONDING STANDARD HAS BEEN LISTED (ADA/ANSI/IBC).
3. NOT ALL ACCESSIBILITY STANDARDS APPLY TO THIS PROJECT.



controls mounting height

PMT24-00829

COM PROJECT NO.
CP0916NLAB

DRAWN BY: _____
ENGINEER:
APPROVED BY:_____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ADA STANDARDS

DRAWING
G0.10

SHEET	CATALOG NUMBER:
3 - OF - 49	A-282705

3/18/2024 11:01:07 PM

code plan legend

	ROUTE OF MAXIMUM COMMON PATH OR TRAVEL DISTANCE
00	EXIT / NUMBER OF OCCUPANTS
JANITOR OCC. TYPE: B OCC. LOAD: 200 AREA (SF): 124 OCC COUNT: 1	ROOM NAME OCCUPANCY TYPE OCCUPANCY LOAD FACTOR GROSS SQUARE FOOTAGE TOTAL OCCUPANT COUNT
F.E.C.	RECESSED W.ALL MOUNTED FIRE EXTINGUISHER CABINET
	KNOX BOX
	ONE HOUR FIRE RATED PARTITION
ACCESSORY STORAGE AREA	BUSINESS AREAS
ASSEMBLY - EXHIBIT + MUSEUM	EDUCATION - CLASSROOM
ASSEMBLY - UNCONCENTRATED (TABLES + CHAIRS)	INDUSTRIAL AREAS
DOOR TO REMAIN	N NEW
EXISTING EXIT SIGN	E EXISTING TO REMAIN

PLUMBING FIXTURE REQUIREMENTS - IDEA EXHIBITION (IBC 2018 TABLE 2902.1)

OCCUPANT LOADS:

A-3 (Exhibit Gallery + Museum)	849	Occupants
B (Business)	76	Occupants
F-1 Factory and Industrial	15	Occupants
S-1 Storage	19	Occupants
S-2 Storage	4	Occupants
TOTAL:	**963**	**OCCUPANTS**

FIXTURE COUNTS:

	WC - W	WC - M	LAV - W	LAV - M	DF
A-3 849	425/65 = 6.53	425/125 = 3.40	425/200 = 2.12	425/200 = 2.12	849/500 = 1.69
B 76	WC - W 38/25 = 1.52	WC - M 38/25 = 1.52	LAV - W 38/40 = .95	LAV - M 38/40 =.95	DF 76/100 = .76
F-1 15	WC - W 8/100 = .08	WC - M 8/100 = .08	LAV - W 8/100 = .08	LAV - M 8/100 = .08	DF 15/100 = .15
S-1 19	WC - W 10/100 = .10	WC - M 10/100 = .10	LAV - W 10/100 = .10	LAV - M 10/100 = .10	DF 19/100 = .19
S-2 4	WC - W 2/100 = .02	WC - M 2/100 = .02	LAV - W 2/100 = .02	LAV - M 2/100 = .02	DF 4/100 = .04

COMPLIANCE:	PROVIDED	REQUIRED	NOTES
Men - WC	8	5.12	
Men - LAV	3	3.27	
Women - WC	8	8.25	
Women - LAV	3	3.27	
Unisex RR - WC	11		SEE NOTE 1
Unisex RR- LAV	10		SEE NOTE 2
Drinking Fountains	6	2.83	
Service Sinks	5	5	

NOTES:
1- UNISEX WATERCLOSET LINE ITEM ADDED FOR CLARITY. PROVIDED WC COUNT CAN BE ADDED TOWARD MEN + WOMENS COUNT TO MEET CODE REQUIREMENTS. CHART INDICATES PROVIDED EXCEEDS MIN REQUIRED.
2- UNISEX LAVATORY LINE ITEM ADDED FOR CLARITY. PROVIDED LAV COUNT CAN BE ADDED TOWARD MEN + WOMENS COUNT TO MEET CODE REQUIREMENTS. CHART INDICATES PROVIDED EXCEEDS MIN REQUIRED.

OCCUPANT LOAD BUILDING 1- IBC 2018 TABLE 1004.5

NAME	AREA	IBC OCCUPANCY TYPE	LOAD FACTOR	OCC. #	0.2" EGRESS WIDTH
A-3 ASSEMBLY					
e ART GALLERY	9087 SF	A-3 ASSEMBLY	30 SF	303	60.6"
e CLASSROOM	936 SF	A-3 ASSEMBLY	15 SF	47	9.4"
e CLASSROOM	707 SF	A-3 ASSEMBLY	20 SF	36	7.2"
e CLASSROOM	2477 SF	A-3 ASSEMBLY	20 SF	124	24.8"
e IMG. GALLERY	3131 SF	A-3 ASSEMBLY	30 SF	105	21"
e IMG. LAB	661 SF	A-3 ASSEMBLY	20 SF	34	6.8"
e_ WORKSHOP	396 SF	A-3 ASSEMBLY	20 SF	20	4"
EXHIBIT	1768 SF	A-3 ASSEMBLY	30 SF	59	11.8"
i.d.e.a. LAB	2593 SF	A-3 ASSEMBLY	30 SF	87	17.4"
LOBBY	1009 SF	A-3 ASSEMBLY	30 SF	34	6.8"
				849	
B BUSINESS					
e DATA	119 SF	B BUSINESS	300 SF	1	0.2"
e FACP	53 SF	B BUSINESS	300 SF	1	0.2"
e JANITOR	124 SF	B BUSINESS	300 SF	1	0.2"
e NURSE	140 SF	B BUSINESS	150 SF	1	0.2"
e OFFICES	2478 SF	B BUSINESS	150 SF	17	3.4"
e SUPPORT	180 SF	B BUSINESS	300 SF	1	0.2"
RR	135 SF	B BUSINESS	150 SF	1	0.2"
e CONFERENCE	472 SF	B BUSINESS	15 SF	32	6.4"
e JAN	69 SF	B BUSINESS	150 SF	1	0.2"
e OFFICES	2499 SF	B BUSINESS	150 SF	17	3.4"
e RR	147 SF	B BUSINESS	150 SF	1	0.2"
e STORAGE	157 SF	B BUSINESS	150 SF	2	0.4"
				76	
F-1 FACTORY AND INDUSTRIAL					
e PAINT	229 SF	F-1 FACTORY AND INDUSTRIAL	100 SF	3	0.6"
e SHOP	1175 SF	F-1 FACTORY AND INDUSTRIAL	100 SF	12	2.4"
				15	
S-1 STORAGE					
e CLEAN ROOM	815 SF	S-1 STORAGE	300 SF	3	0.6"
e IT	114 SF	S-1 STORAGE	300 SF	1	0.2"
e OFFICES	142 SF	S-1 STORAGE	150 SF	1	0.2"
e STORAGE	493 SF	S-1 STORAGE	300 SF	2	0.4"
e WAREHOUSE	2117 SF	S-1 STORAGE	300 SF	8	1.6"
e WET SPACE	541 SF	S-1 STORAGE	300 SF	2	0.4"
e MEZZANINE	550 SF	S-1 STORAGE	300 SF	2	0.4"
				19	
S-2 STORAGE					
e ELEC	194 SF	S-2 STORAGE	300 SF	1	0.2"
e JAN	253 SF	S-2 STORAGE	300 SF	1	0.2"
e SUPPORT	122 SF	S-2 STORAGE	300 SF	1	0.2"
e SUPPORT	122 SF	S-2 STORAGE	300 SF	1	0.2"
				4	

building code

2018 INTERNATIONAL BUILDING CODE (IBC) W/ COM AMENDMENTS
2018 INTERNATIONAL FIRE CODE (IFC) W/ COM AMENDMENTS
2018 INTERNATIONAL MECHANICAL CODE (IMC) W/ COM AMENDMENTS
2018 INTERNATIONAL PLUMBING CODE (IPC) W/ COM AMENDMENTS
2018 INTERNATIONAL FUEL GAS CODE (IFGC) W/ COM AMENDMENTS
2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC) W/ COM AMENDMENTS
2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC) W/ COM AMENDMENTS
2017 NATIONAL ELECTRIC CODE (NEC) W/ COM AMENDMENTS
2009 ICC A117.1
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

project information

ADDRESS	150 W PEPPER PL, MESA, AZ 85201
LEGAL DESCRIPTION	DEED NUMBER 830427695
ZONING	T4NF
LOT NUMBER	1
APN	138-35-007A
BUILDING HEIGHT	VARIES, 38'-2"
SPRINKLER SYSTEM	YES

NOTE: ALL BUILDINGS ARE CONSIDERED ONE FOR CODE PURPOSES. I.D.E.A. CLASSROOM AND I.D.E.A. ADMINISTRATION ARE SHOWN FOR REFERENCE ONLY.

ch.3: use + occupancy

EXHIBITION:	ADMINISTRATION:	CLASSROOM:
B BUSINESS	B BUSINESS	A-3 ASSEMBLY
A-2 ASSEMBLY	S-1 STORAGE	S-2 STORAGE
A-3 ASSEMBLY (MOST RESTRICTIVE)	F-1 INDUSTRIAL	
S-2 STORAGE		

ch.5: building height + area

EXHIBITION

HEIGHT:
ACTUAL HEIGHT = 38'-2" FT < ALLOWABLE HEIGHT = 75'

NUMBER OF STORIES:
1 STORY < 3 STORIES

ADMINISTRATION

HEIGHT:
ACTUAL HEIGHT = 38'-2" FT < ALLOWABLE HEIGHT = 75 FT

NUMBER OF STORIES:
1 STORY < 3 STORIES

ALLOWABLE AREA TOTAL:

I.D.E.A. EXHIBITION:	22,539 SF
I.D.E.A. EXHIBITION MEZZ:	3,597 SF
I.D.E.A. ADMINISTRATIVE:	6,380 SF
I.D.E.A. ADMINISTRATIVE MEZZ:	550 SF
I.D.E.A. CLASSROOM:	2,723 SF
TOTAL:	35,789 SF < 38,000 SF

505.2 MEZZANINES AND EQUIPMENT PLATFORMS
505.2.1 AREA LIMITATIONS
AGGREGATE AREA OF A MEZZANINE OR MEZZANINES WITHIN A ROOM SHALL NOT BE GREATER ONE-THIRD OF THE FLOOR AREA OF THAT ROOM IN WHICH THEY ARE LOCATED. THE ENCLOSED PORTIONS OF A ROOM SHALL NOT BE INCLUDED.
e WAREHOUSE e2.0 SF = 1659 SF / 3 = **553 SF MAX**
e MEZZANINE 550 SF = **550 SF < 553 SF**

ch.6: types of construction

GROUP	FIRE RESISTANCE RATING REQUIREMENTS	
III-B	BEARING WALLS	
PER TABLE 602	EXTERIOR	2 HR
	INTERIOR	0 HR
	NON-BEARING WALLS	
	EXTERIOR	0 HR
	INTERIOR	0 HR
	FLOOR CONSTRUCTION	0 HR
	ROOF CONSTRUCTION	0 HR
	CORRIDORS (1018.1)	0 HR
	STAIRS	0 HR

ch.8: interior finishes

INTERIOR WALL AND CEILING FINISHES SHALL BE CLASS B OR C RATED PER TABLE 803.9.

2018 IBC 2018 803.13. INTERIOR WALL AND CEILING FINISH SHALL HAVE A FLAME SPREAD INDEX NOT GREATER THAN THAT SPECIFIED IN TABLE 803.13 FOR THE GROUP AND LOCATION DESIGNATED.

ch.9: fire protection

FULLY SPRINKLED PER NFPA 13

ch.10: means of egress

1005.3.2.1 EGRESS SIZING AT OTHER :
EXIT WIDTH: 0.15 X 37 OCC = 5.6" REQUIRED < 144" PROVIDED

1006.2.1 COMMON PATH OF EGRESS TRAVEL
A = 75'-0", B = 100'-0, F = 100'=0", S = 100'-0" WITH SPRINKLERS

1007.1.1.2 EXIT CONFIGURATION (SEE PLAN)

1017.2 EXIT ACCESS TRAVEL DISTANCE (SEE PLAN) :
A, F-1, S-1 = 250'-0"
B = 300'-0"

REFER TO CHART IN NEXT COLUMN FOR 1004 OCCUPANT LOAD CALCULATIONS.

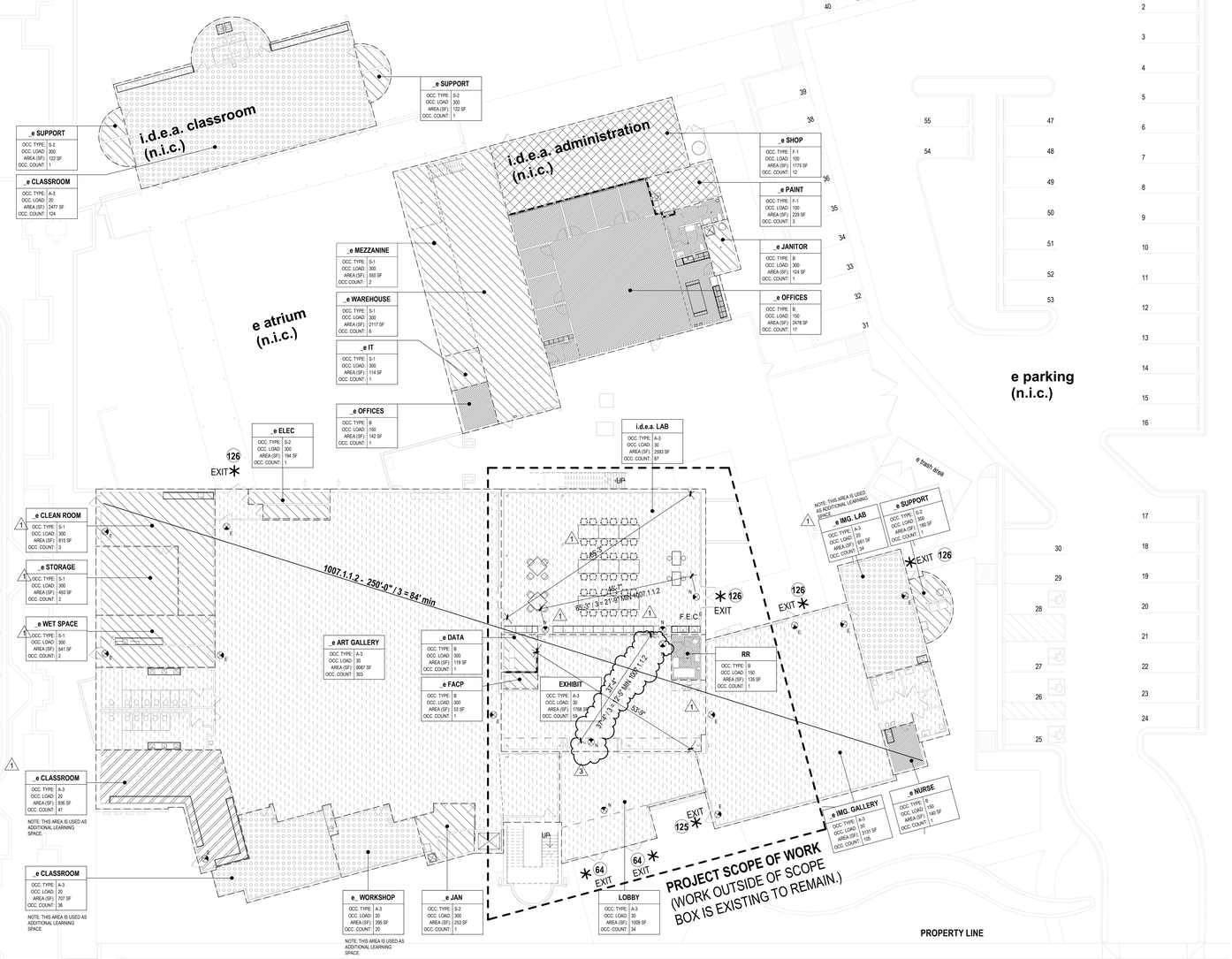
ch.11: accessibility

100% ENTRANCES ARE ACCESSIBLE > 60% MINIMUM REQUIRED BY SEC. 1105.1

ch.29: plumbing systems

REFER TO CHART IN NEXT COLUMN FOR 2902 MINIMUM PLUMBING FACILITIES CALCULATIONS.

2902.3.3 MALE AND FEMALE RESTROOMS LOCATED LESS THAN 500' FROM OFFICE AREA.

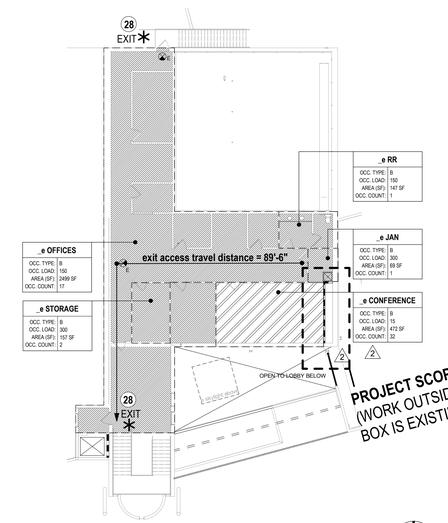


1 BUILDING 1 - FIRST FLOOR CODE PLAN

1/16" = 1'-0"

3 CODE KEY PLAN

1" = 60'-0"



2 SECOND FLOOR MEZZANINE CODE PLAN

1/16" = 1'-0"

PMT24-00829

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024
3	2ND PLAN REVIEW COMMENTS	4/3/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 12961 MICHAEL JACOBS ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

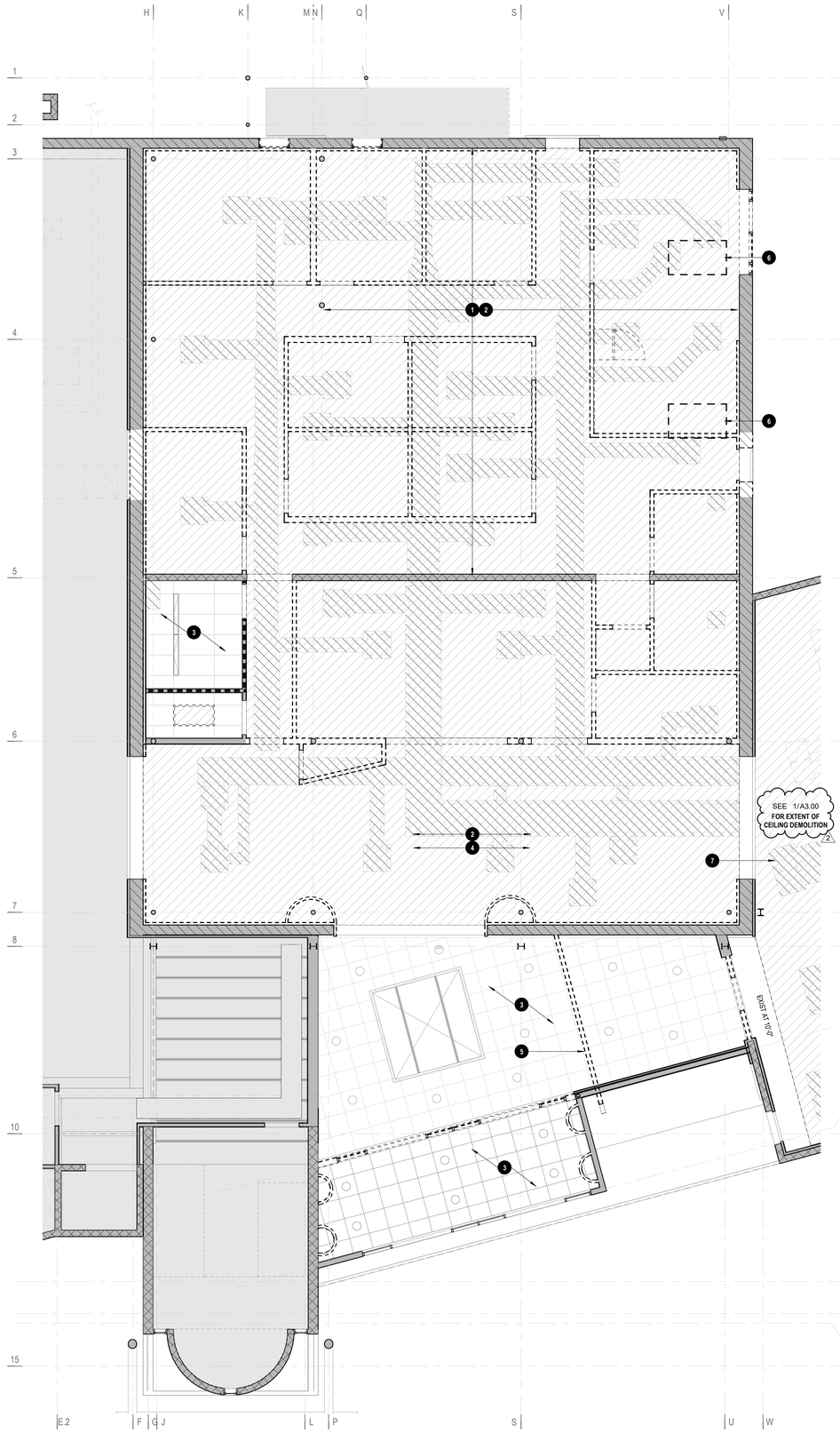
CODE PLANS

DRAWING
G0.20

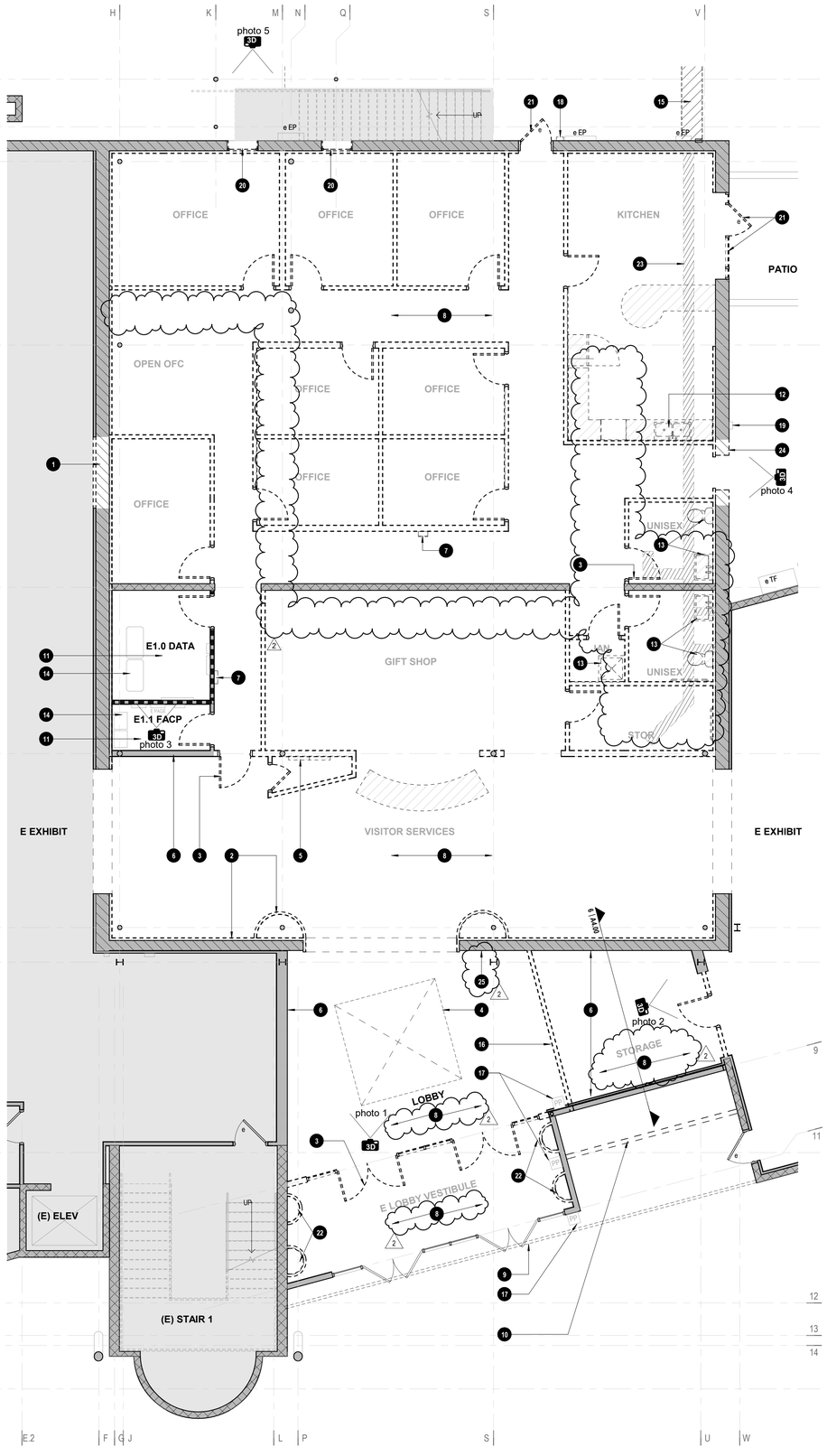
SHEET 4 - OF - 49

CATALOG NUMBER: A-282706

4/2/2024 4:45:53 PM



2 FIRST FLOOR DEMOLITION RCP
A4.00 | 3/16" = 1'-0" |



1 FIRST FLOOR DEMOLITION PLAN
A4.00 | 3/16" = 1'-0" |

PMT24-00829

general plan notes
1. MEP EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE MEP DRAWINGS FOR FURTHER INFORMATION.
2. GC TO PROMPTLY NOTIFY ARCHITECT AND OWNER OF ANY DISCREPANCIES OF EXISTING CONDITIONS AND THOSE REFLECTED IN THESE DRAWINGS FOR FURTHER DIRECTION.

demolition legend

NOT IN PROJECT SCOPE		DOOR TO REMAIN	
EXISTING PARTITION TO REMAIN		e	EXISTING TO REMAIN
EXISTING 1 HR FIRE RATED PARTITION		EP	ELECTRICAL PANEL
EXISTING TO BE DEMOLISHED		EB	ELECTRICAL BOX
EXISTING PARITION TO BE DEMOLISHED		TF	TRANSFORMER
EXISTING MASONRY WALL TO REMAIN		E PAGE	EXISTING PAGING SYSTEM TO REMAIN
EXISTING CMU WALL TO REMAIN			

demo plan keynotes
1. DEMO PORTION OF EXISTING MASONRY WALL PER NEW OPENING DIMENSIONS. MAINTAIN VERTICAL AND HORIZONTAL CMU COURSING MODULE.
2. DEMO EXISTING GYPSUM BOARD WALL, TYP.
3. DEMO EXISTING DOOR, TYP.
4. EXISTING SKYLIGHT ABOVE TO REMAIN.
5. REMOVE AND RELOCATE EXISTING ELECTRICAL PANELS.
6. EXISTING GYPSUM BOARD WALL TO REMAIN, TYP.
7. REMOVE AND RELOCATE EXISTING DEVICES, TYP.
8. DEMO EXISTING FLOOR FINISH FOR INSTALLATION OF NEW.
9. EXISTING OVERHEAD EYEBROW TO REMAIN.
10. LINE OF EXISTING ANGLED CORRUGATED METAL FACADE TO REMAIN.
11. NO SCOPE IN THIS AREA - EXISTING EQUIPMENT AND FINISHES ROOM TO REMAIN.
12. DEMO EXISTING SINK AND COUNTER.
13. DEMO EXISTING PLUMBING FIXTURE.
14. PROTECT EXISTING EQUIPMENT AND DEVICES IN PLACE.
15. SAWCUT EXISTING EXTERIOR CONCRETE FLOOR FINISH FOR NEW UNDERGROUND PLUMBING PIPE. REF PLUMBING DRAWINGS.
16. DEMO PARTITION. EXISTING NON-STRUCTURAL WIDE FLANGE TO REMAIN.
17. REMOVE AND DEACTIVATE EXISTING WALL MOUNTED DOOR ACTUATOR.
18. DEMO EXISTING CARD READER.
19. PROTECT EXISTING CARD READER IN PLACE.
20. DEMO EXISTING WINDOW - INFILL TO MATCH ADJACENT WALL.
21. DEMO EXISTING DOOR/STOREFRONT - INFILL TO MATCH ADJACENT WALL.
22. DEMO CIRCULAR WALL BUMP OUTS.
23. DEMO PORTION OF SLAB FOR UNDERGROUND PIPES. ROUGH EXTENTS SHOWN - REF TO PLUMBING DWGS.
24. DEMO MASONRY WALL, DOOR, AND LINTEL FOR NEW WIDENED DOOR.
25. PROTECT HARD WIRED OUTLETS AND DATA DROPS FOR NEW RECEPTION DESK.

demo rcp keynotes
1. DEMO EXISTING CEILING FINISH. PREP AND CLEAN EXISTING WOOD TRUSS GIRDERS AND WOOD ROOF PURLINS FOR APPLICATION OF NEW EXPOSED CEILING IN THIS AREA.
2. EXISTING MECHANICAL DUCTWORK TO BE DEMO'ED AND RECONFIGURED.
3. NO SCOPE IN THIS AREA - EXISTING CEILING AND CEILING MOUNTED FIXTURES TO REMAIN.
   DEMO LIGHT FIXTURES AND DEVICES.
4. EXISTING NON-STRUCTURAL WIDE FLANGE TO REMAIN.
5. DEMO PORTION OF ROOF FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT - REF MECHANICAL DWGS.
6. REMOVE ACOUSTICAL CEILING TILE, LIGHT FIXTURES, AND OTHER CEILING DEVICES AT AREA OF MECHANICAL UNIT MODIFICATION. RETURN CEILING TILES AND OTHER CEILING ELEMENTS TO ORIGINAL LOCATION.
7. PROTECT EXISTING MURAL / PAINTED WALL IN PLACE.

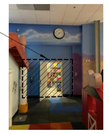
photos of existing conditions

EXISTING NON-STRUCTURAL WIDE FLANGE TO REMAIN
EXISTING WIDE FLANGE TO REMAIN

PHOTO 1 - EXISTING LOBBY NORTH VIEW

EXTENT TO DRYWALL DEMO- SEE A5.00 WINDOW TYPE

PHOTO 2 - VIEW FROM STORAGE LOOKING INTO ARTVILLE



TO REMAIN

PHOTO 3 (LEFT) - EXISTING PAGING SYSTEM IN FACP RM

PHOTO 4 (RIGHT) - EXISTING EXTERIOR SINGLE DOOR

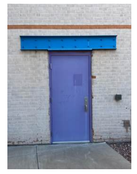


PHOTO 5 - EXISTING NORTH WALL ELEVATION

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hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 32561 MICHAEL E. MORRIS ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

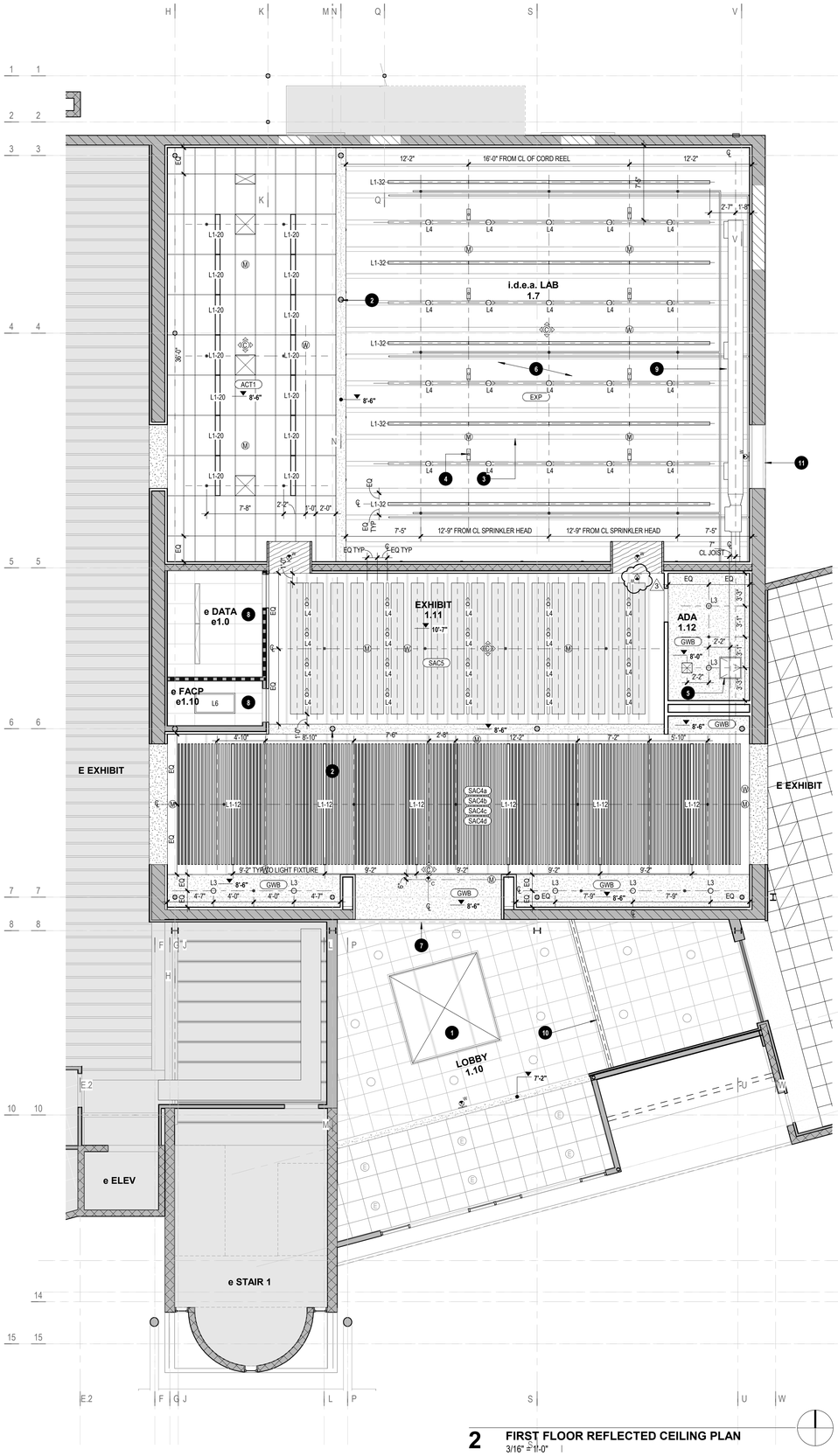
PROJECT NAME
i.d.e.a. Museum - Lab Renovation

DEMO PLAN

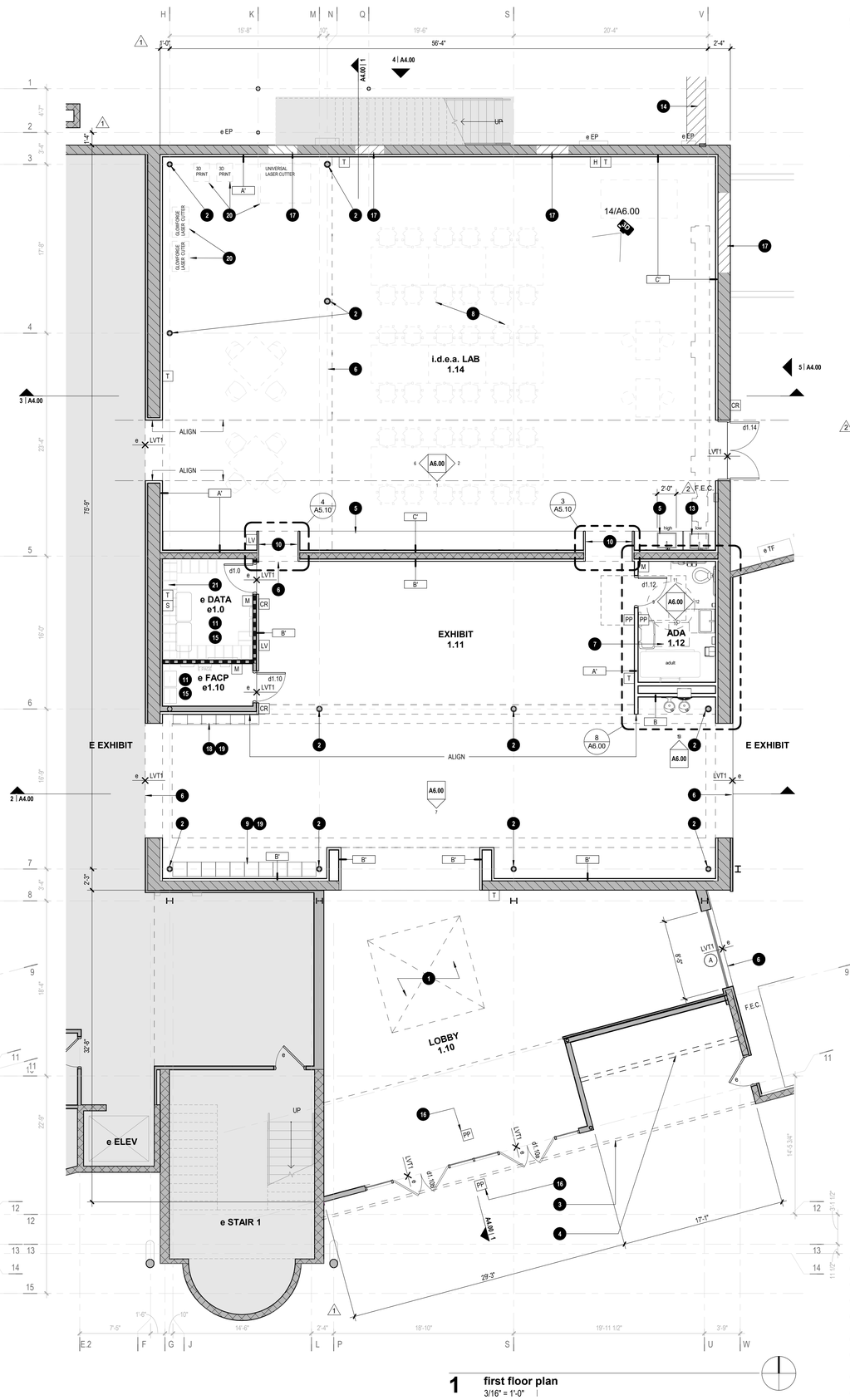
DRAWING
A1.00

SHEET	CATALOG NUMBER:
5 - OF - 49	A-282707

3/18/2024 11:38 PM



2 FIRST FLOOR REFLECTED CEILING PLAN
3/16" = 1'-0"



1 first floor plan
3/16" = 1'-0"

general plan notes

1. REFERENCE SCHEDULES & INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION.
2. REFERENCE G0.10 FOR ACCESSIBILITY REQUIREMENTS AND TYPICAL MOUNTING HEIGHTS.
3. REFERENCE A5 SERIES FOR DOOR & PARTITION SCHEDULES.
4. MEP EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE MEP DRAWINGS FOR FURTHER INFORMATION.
5. LIGHT FIXTURES, ELECTRICAL FIXTURES, BOXES, ETC., LOCATED IN RATED ASSEMBLIES SHALL BE INSTALLED WITH RATED HOUSING -OR- BE INSTALLED WITH A FIVE SIDED ENCLOSURE OF TYPE C DRYWALL AS REQUIRED TO RETAIN RATING OF ASSEMBLY.
7. WINDOW ASSEMBLIES THAT ARE NOT TAGGED MEANS EXISTING TO REMAIN.
8. FURNITURE SHOWN DASHED IN HALFTONE FOR REFERENCE ONLY.

floor plan legend

- NOT IN PROJECT SCOPE
- EXISTING PARTITION TO REMAIN
- EXISTING 1 HR FIRE RATED PARTITION
- EXISTING MASONRY WALL TO REMAIN
- EXISTING CMU WALL TO REMAIN
- NEW PARTITION
- NEW MASONRY INFILL
- A — PARTITION TYPE
- CR — CARD READER
- PP — PUSH PLATE DOOR ACTUATOR
- d1.0 — DOOR TYPE
- NEW DOOR
- e — EXISTING TO REMAIN
- DOOR TO REMAIN
- A — WINDOW TYPE
- LVT1 — FINISH FLOOR TRANSITION
- FEC — FIRE EXTINGUISHER CABINET
- T — THERMOSTAT
- H — HUMIDITY SENSOR
- S — SENSOR

floor plan keynotes

1. EXISTING SKYLIGHT ABOVE
2. EXISTING FREE STANDING COLUMNS TO RECEIVE NEW PAINT AND POLE BUMPER.
3. EXISTING OVERHEAD EYEBROW TO REMAIN.
4. LINE OF EXISTING ANGLED CORRUGATED METAL FACADE ABOVE.
5. MILLWORK - BASE CABINETRY AT 34" A.F.F. REF ELEVATIONS.
6. LINE OF CEILING ABOVE, TYP.
7. ADA COMPLIANT RESTROOM TO RECEIVE NEW WATER CLOSET, LAVATORY, ACCESSORIES, WALL+FLOOR FINISH, + ROOM SIGNAGE. REFER TO A5.00 FOR TOILET ROOM EQUIPMENT AND ACCESSORIES.
8. OPEN TO ABOVE - EXISTING WOOD TRUSSES TO BE EXPOSED IN THIS AREA
9. LOCKERS, MFR: HOLLMAN NANOLAM COLLECTION, MODEL LD1.
10. MILLWORK SHROUD, REF: ELEVATIONS.
11. EXISTING WALL MOUNTED AND FREESTANDING EQUIPMENT TO BE PROTECTED IN PLACE DURING AND AFTER CONSTRUCTION.
12. SPECIFIED RUBBER TRANSITION STRIP.
13. MILLWORK - BASE CABINETRY AT 24" A.F.F. REF ELEVATIONS.
14. AREA OF NEW EXTERIOR CONCRETE FLOOR FINISH. FINISH, TEXTURE, COLOR TO MATCH ADJACENT AREAS. REF PLUMBING DRAWINGS.
15. NEW GYPSUM WALL BOARD TO EXTENT TO BOTTOM OF ROOF ON EXISTING NORTH, SOUTH AND EAST PARTITIONS. ATTACH NEW TO TO TOP OF EXISTING WALLBOARD.
16. FREE STANDING DOOR ACTUATOR BOLLARD. SEE DETAIL 5/A5.10.
17. NEW MASONRY INFILL TO MATCH EXISTING EXTERIOR BRICK.
18. LOCKERS, MFR: HOLLMAN NANOLAM COLLECTION, MODEL LE1.
19. LOCKERS BETWEEN REACH RANGES 15"-48" ABOVE FLOOR FINISH TO BE INSTALLED WITH KEYLESS1 LOCK WITH INTEGRAL ADA LEVER MODEL SERVING AS PULL. REF: INTERIOR ELEVATIONS.
20. LASER CUTTER AND THREE-DIMENSIONAL PRINTER BY OWNER AND SHOWN FOR REFERENCE.
21. CABLE TRAY BY OTHERS. REF: COM DOIT DWGS AND ELECTICAL.

general rcp notes

1. DIMENSIONS ARE TO FACE OF FINISH OR TO CENTERLINE OR EDGE OF FIXTURE.
2. ALL CEILING HEIGHT DIMENSIONS ARE TO BOTTOM OF SUSPENSION GRID OR FACE OF GYPSUM BOARD, UNLESS NOTED OTHERWISE.
3. METAL SUSPENSION SYSTEMS OR CEILING PANELS TO BE CENTERED IN ALL ROOMS IN BOTH DIRECTIONS UNLESS NOTED OTHERWISE. PARTIAL PANELS SHALL NOT BE LESS THAN 6" IN EITHER DIRECTION.
4. LOCATE SPRINKLER HEADS, SMOKE DETECTORS, SPEAKERS AND OTHER CEILING-MOUNTED MECHANICAL, ELECTRICAL, PLUMBING AND SECURITY DEVICES CENTERED IN ACOUSTICAL CEILING PANELS UNLESS NOTED OTHERWISE. IN GYPSUM BOARD CEILINGS, ALIGN FIXTURES AND DEVICES AND CENTER IN SPACES UNLESS NOTED OTHERWISE.
5. ALL CEILINGS IN BATHROOM & WET AREAS SHALL BE MOISTURE & MILDEW RESISTANT GYPSUM BOARD.
6. REFERENCE A5.00 FINISH LEGEND FOR CEILING FINISHES.
7. CONTRACTOR TO PROVIDE FIRE PROTECTION DOCUMENTS SEALED BY A REGISTERED DESIGN PROFESSIONAL.

rcp legend

SEE DISCIPLINE SHEETS FOR DISCIPLINE SPECIFIC SYMBOLS

- 24" X 24" SQUARE RETURN REGISTER
- 24" X 24" SQUARE SUPPLY DIFFUSER
- 3D PRINTER + LASER CUTTER CEILING EXHAUST FAN
- RECESSED 6" X 48" DOWNLIGHT
- SUSPENDED LINEAR PENDANT
- RECESSED CAN DOWNLIGHT
- TRACK LIGHTING
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- FIRE SPRINKLER
- W — WAP - CEILING MOUNT
- M — MOTION SENSOR - CEILING MOUNT
- NOT IN PROJECT SCOPE
- 2X4 ACOUSTICAL CEILING TILE
- WOOD FINISH
- MODULAR FELT CEILING SYSTEM
- GYPSUM BOARD CEILING
- FELT PLANKS
- OVERHAD CORD REEL
- C — SECURITY CAMERA - LOCATION TO BE DETERMINED BY OWNER

rcp keynotes

1. EXISTING SKYLIGHT TO REMAIN.
2. EXISTING COLUMN, TYP.
3. EXISTING WOOD TRUSS AND GIRDERS AND PURLINS TO BE EXPOSED
4. RETRACTABLE STEEL CORD REEL WITH SPRING REWIND / RACHET LOCK MOUNTED TO VERTICAL WOOD STRUT, TYP.
5. METAL ACCESS DOOR TO RECEIVE DRYWALL.
6. UNDERSIDE OF EXISTING ROOF DECK TO BE LINED WITH BATT INSULATION WITH SCRIM BETWEEN ROOF JOISTS.
7. EXISTING LINTEL TO REMAIN.
8. NO SCOPE IN THIS AREA - EXISTING CEILING AND CEILING MOUNTED FIXTURES TO REMAIN.
9. NEW EXPOSED MECHANICAL DUCT. REF MECHANICAL DRAWINGS.
10. EXISTING NON-STRUCTURAL BEAM TO REMAIN. REPAINT ALL SIDES.
11. NEW LINTEL OVER OPENING. SEE STRUCTURAL.

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revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024
3	2ND PLAN REVIEW COMMENTS	4/3/2024

COM PROJECT NO.
CP0916NLAB

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

FLOOR PLAN + REFLECTED CEILING PLAN

DRAWING
A2.00

SHEET	CATALOG NUMBER:
6 - OF - 49	A-282708

PMT24-00829

4/2/2024 4:45:45 PM

photos of existing conditions

PHOTO 1 - VIEW FROM I.D.E.A. EXHIBITION ROOF LOOKING EAST

PHOTO 2 - VIEW FROM I.D.E.A. EXHIBITION ROOF LOOKING EAST

PHOTO 3 - VIEW FROM I.D.E.A. EXHIBITION ROOF LOOKING NORTH

rcp legend

SEE DISCIPLINE SHEETS FOR DISCIPLINE SPECIFIC SYMBOLS

- 24" X 24" SQUARE RETURN REGISTER
- 24" X 24" SQUARE SUPPLY DIFFUSER
- 3D PRINTER + LASER CUTTER CEILING EXHAUST FAN
- RECESSED 6" X 48" DOWNLIGHT
- SUSPENDED LINEAR PENDANT
- RECESSED CAN DOWNLIGHT
- TRACK LIGHTING
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EXIT SIGN
- FIRE SPRINKLER
- (W) WAP - CEILING MOUNT
- (M) MOTION SENSOR - CEILING MOUNT
- NOT IN PROJECT SCOPE
- 2X4 ACOUSTICAL CEILING TILE
- WOOD FINISH
- MODULAR FELT CEILING SYSTEM
- GYPSUM BOARD CEILING
- FELT PLANKS
- OVERHAD CORD REEL
- (C) SECURITY CAMERA - LOCATION TO BE DETERMINED BY OWNER

roof plan legend

- EXISTING TO REMAIN
- e EXISTING TO REMAIN
- EXISTING TO BE DEMOLISHED
- NEW CONSTRUCTION

floor plan legend

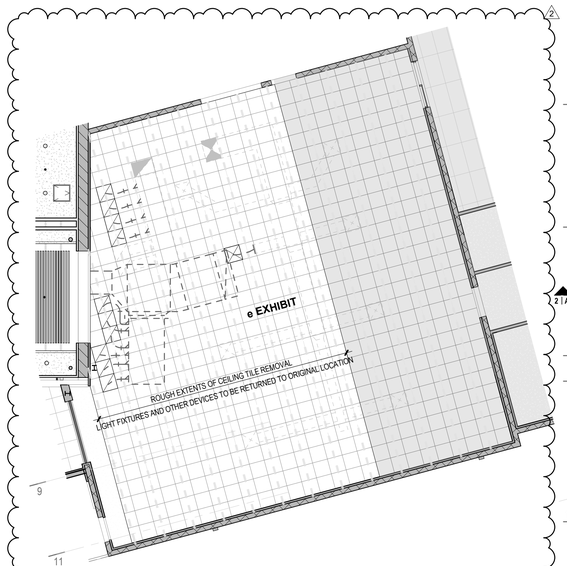
- NOT IN PROJECT SCOPE
- EXISTING PARTITION TO REMAIN
- EXISTING 1 HR FIRE RATED PARTITION
- EXISTING MASONRY WALL TO REMAIN
- EXISTING CMU WALL TO REMAIN
- NEW PARTITION

roof plan keynotes

1. EXISTING ROOF LADDER TO REMAIN.
2. RELOCATE ROOF LADDER.
3. EXISTING SKYLIGHT TO REMAIN.
4. EXISTING MECHANICAL UNIT TO REMAIN.
5. EXISTING ROOF HATCH TO REMAIN.
6. EXISTING MECHANICAL SCREEN TO REMAIN.
7. DEMO EXISTING MECHANICAL UNIT - PATCH AND REPAIR TO MATCH EXISTING ROOF CONDITIONS.
8. NEW MECHANICAL UNIT ON CURB - REF MECHANICAL + STRUCTURAL DWGS.
9. CRICKETING AS REQUIRED.
10. EXISTING SCUPPER AND DOWNSPOUT TO REMAIN, TYP.
11. NEW GATE IN EXISTING MECHANICAL SCREEN. 2X2 TUBE STEEL FRAME WITH DIAGONAL FOR BRACING. WELD (3) J-BOLT HINGES. SECURE AT TOP AND BOTTOM WITH HEAVY DUTY SURFACE BOLT. CLAD OUTSIDE OF GATE WITH SAME MATERIAL AND FINISH USED ON MECH SCREEN. PAINT GATE TUBE STEEL FRAME TO MATCH COPING. SECURE CLADDING TO GATE WITH SELF TAPPING GASKET SCREWS AT TOP AND BOTTOM ~5" O.C. (SECURE AT EACH DEPRESSION IN THE CLADDING).
12. NEW GRAVITY HOOD - REF MECHANICAL DWGS.
13. NEW LASER CUTTER EXHAUST FAN. REF: MECHANICAL DRAWINGS.
14. NEW ROOF LADDER.

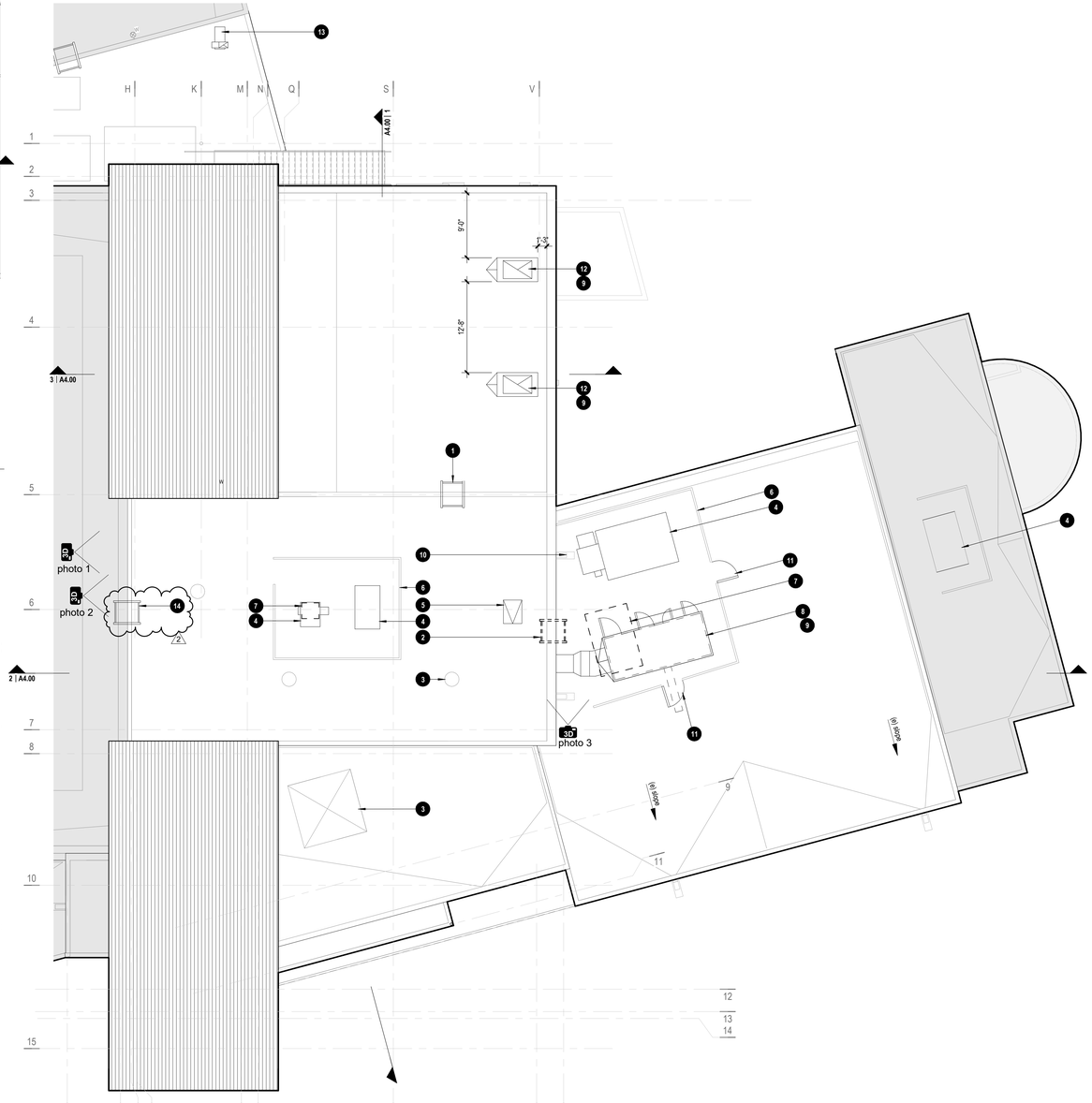
floor plan keynotes

1. EXISTING MECHANICAL UNIT TO REMAIN.
2. EXISTING MECHANICAL SCREEN TO REMAIN.
3. DEMO EXISTING PACKAGED ROOFTOP UNIT. REF: MECHANICAL DRAWINGS.
4. SELECTIVELY DEMO SHAFT PARTITION.
5. NEW AIR HANDLING MECHANICAL UNIT. REF: MECHANICAL DRAWINGS.
6. NEW RETURN DUCT. REF: MECHANICAL DRAWINGS.
7. NEW SUPPLY DUCT. REF: MECHANICAL DRAWINGS.
8. CHILLED WATER PIPE. REF. MECHANICAL
9. LEVEL 2 USABLE SQUATE FOOTAGE NOT IN PROJECT SCOPE. THE ONLY MODIFICATIONS ON THIS LEVEL ARE TO INCREASE MECHANICAL CHASE SQUARE FOOTAGE TO ACCOUNT FOR NEW MECHANICAL SUPPLY AND RETURN DUCT SIZES. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

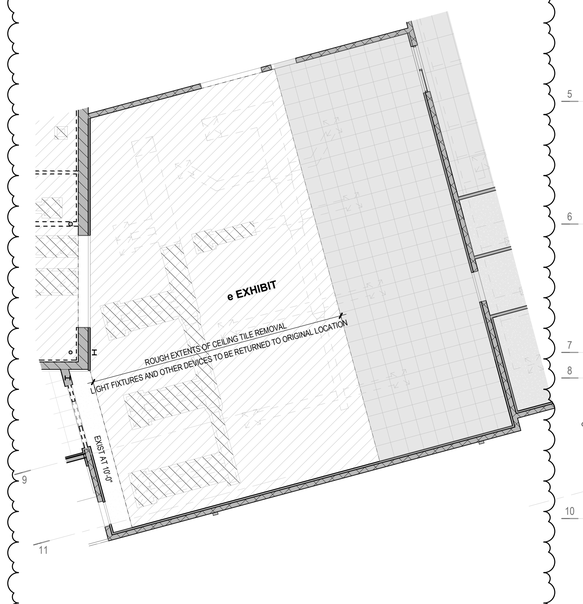


2 FIRST FLOOR RCP - EXISTING EXHIBIT
1/8" = 1'-0"

6 SECOND FLOOR FLOOR PLAN AT MECHANICAL CHASE
1/8" = 1'-0"



7 DEMO + PROPOSED ROOF PLAN
1/8" = 1'-0"



1 FIRST FLOOR DEMOLITION RCP - EXISTING EXHIBIT
1/8" = 1'-0"

5 SECOND FLOOR DEMO PLAN AT MECHANICAL CHASE
1/8" = 1'-0"

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hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 32961 MICHAEL JACOBS STATE OF ARIZONA USA

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

SECOND FLOOR + ROOF PLAN

DRAWING
A3.00

SHEET	CATALOG NUMBER:
7 - OF - 49	A-282709

3/18/2024 11:51:41 PM

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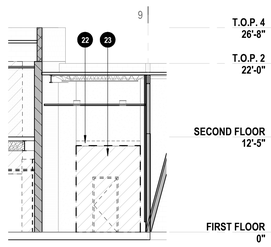
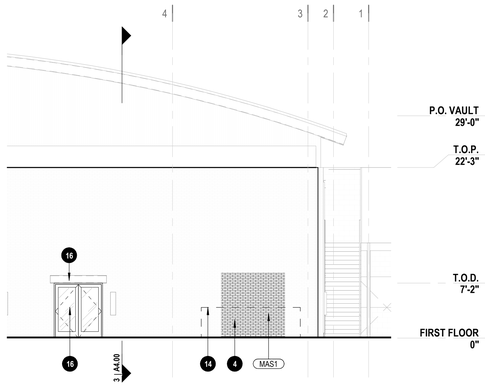
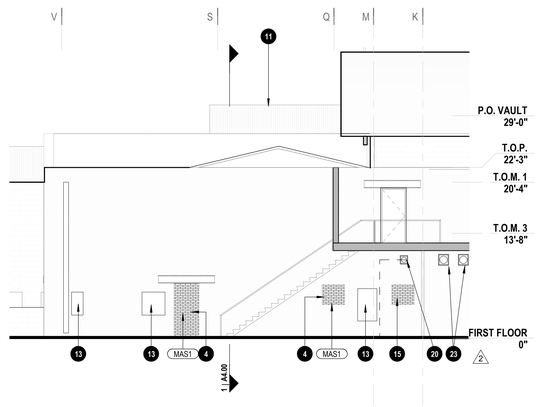


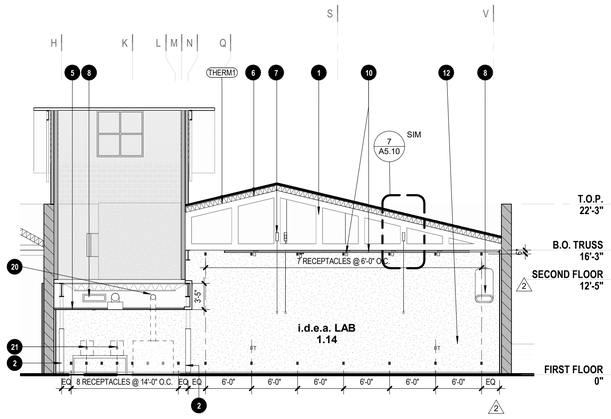
6 DEMO AT EXISTING STORAGE - LOOKING EAST
1/8" = 1'-0" | 2



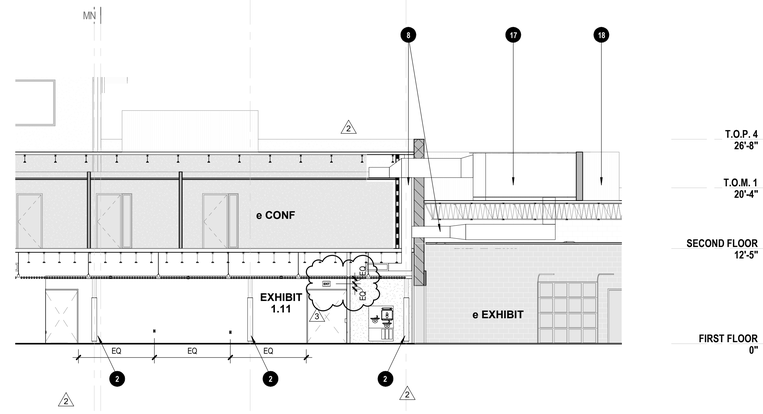
5 I.D.E.A. EXHIBITION - EAST ELEVATION
1/8" = 1'-0" |



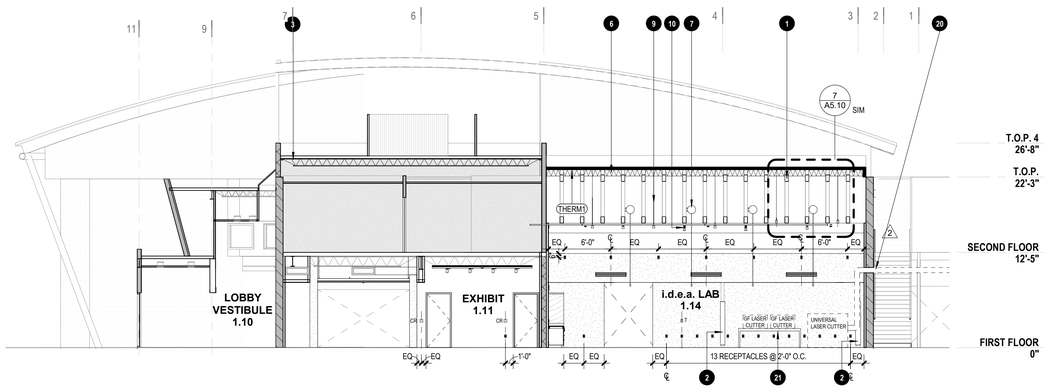
4 I.D.E.A. EXHIBITION - NORTH ELEVATION
1/8" = 1'-0" |



3 I.D.E.A. LAB - SECTION LOOKING NORTH
1/8" = 1'-0" |



2 EXISTING I.D.E.A. EXHIBIT - SECTION LOOKING NORTH
1/8" = 1'-0" |



1 I.D.E.A. EXHIBITION - SECTION LOOKING WEST
1/8" = 1'-0" |

PMT24-00829

4/2/2024 4:45:53 PM

section + elevation keynotes

2

1. OPEN TO ABOVE - EXISTING WOOD TRUSS TO BE EXPOSED IN THIS AREA
2. EXISTING FREE STANDING COLUMNS TO RECEIVE NEW PAINT AND POLE BUMPER.
3. EXISTING SKYLIGHT TO REMAIN
4. NEW MASONRY INFILL.
5. NEW FINISHED CEILING
6. UNDERSIDE OF EXISTING ROOF DECK TO BE LINED WITH BATT INSULATION WITH SCRIM BETWEEN ROOF JOISTS.
7. RETRACTABLE STEEL CORD REEL WITH SPRING REWIND / RATCHET LOCK MOUNTED TO VERTICAL WOOD STRUT, TYP.
8. MECHANICAL DUCT. RE: MECHANICAL DRAWING.
9. SCHEDULED LIGHT FIXTURE.
10. SCHEDULED TRACK LIGHTING.
11. EXISTING MECHANICAL SCREEN TO REMAIN.
12. SEMI-RECESSED FIRE EXTINGUISHER CABINET.
13. EXISTING ELECTRICAL PANEL TO REMAIN.
14. PARTIAL HEIGHT PATIO SHOWN DASHED FOR CLARITY.
15. EXISTING OPENING TO REMAIN.
16. SCHEDULED DOOR.
17. NEW MECHANICAL UNIT ON CURB - REF MECHANICAL + STRUCTURAL DWGS.
18. EXISTING MECHANICAL SCREEN TO REMAIN.
19. NEW LINTEL OVER MODIFIED DOOR OPENING. SEE STRUCTURAL.
20. THROUGHWALL LASER CUTTER EXHAUST DUCTWORK TO CONNECT LAB EXHAST FAN EQUIPMENT ON EXTERIOR MEZZANINE. REF: MECHANICAL DRAWINGS.
21. FINAL LOCATIONS FOR COUNTER HEIGHT RECEPTACLES TO BE COORDINATED WITH OWNER PROVIDED 3D PRINTERS AND LASER CUTTERS.
22. EXISTING WIDE FLANGE TO REMAIN.
23. EXTENT OF DRYWALL TO BE DEMOLISHED.

    EXHAUST FAN PENETRATIONS. REF: MECHANICAL DRAWINGS.

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2	90% CLIENT REVIEW COMMENTS	3/15/2024
3	2ND PLAN REVIEW COMMENTS	4/3/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 12961 MICHAEL E JACOBS DATE SIGNED ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

BUILDING SECTIONS

DRAWING
A4.00

SHEET	CATALOG NUMBER:
8 - OF - 49	A-282710

DOOR SCHEDULE

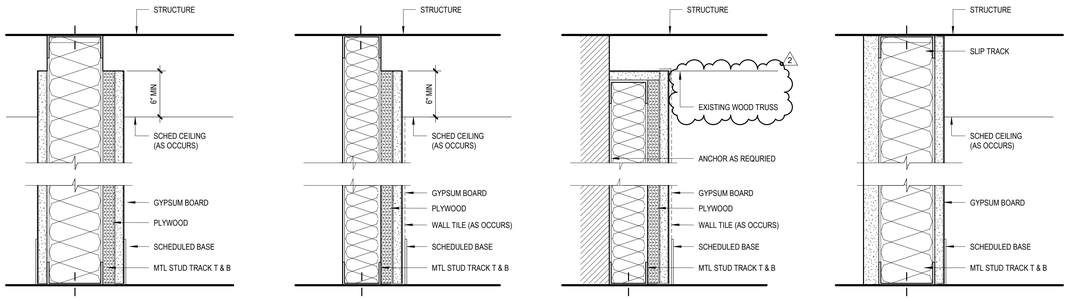
#	TYPE	DOOR PANEL WIDTH	DOOR PANEL HEIGHT	DOOR PANEL MAT.	DOOR PANEL THICK.	DOOR PANEL FIN.	FRAME MAT.	FRAME FIN.	HDWR	CARD READER	DOOR ACUATOR	REMARKS
E ELEC RM	d1.0	A	3'-0"	7'-0"	SCW	1 3/4"	CLEAR	HM	PNT1	P2-01	YES	NO	REFERENCE CITY OF MESA ACCESS. CONTROL SYSTEMS DETAILS AND, SPECIFICATIONS
E FACP RM	d1.10	A	3'-0"	7'-0"	SCW	1 3/4"	CLEAR	HM	PNT1	P2-02	YES	NO	REFERENCE CITY OF MESA ACCESS. CONTROL SYSTEMS DETAILS AND, SPECIFICATIONS
ADA RR	d1.12	A	3'-0"	7'-0"	SCW	1 3/4"	CLEAR	HM	PNT1	P2-04	NO	YES	WALL MOUNT DOOR ACTUATOR
IDEA LAB	d1.14	B	6'-0"	7'-0"	AL	1 3/4"	CLEAR ANODIZED	AL	CLEAR ANODIZED	P2-05	YES	NO	REFERENCE CITY OF MESA ACCESS. CONTROL SYSTEMS DETAILS AND, SPECIFICATIONS
ENTRY	d1.10a	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	2	P2-03	NO	YES	FLOOR MOUNT BOLLARD ACUATOR
ENTRY	d1.10b	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST		P2-03	NO	YES	FLOOR MOUNT BOLLARD ACUATOR

ROOM FINISH SCHEDULE

#	NAME	FLOOR	BASE	WALL	CEILING
1.10	LOBBY VESTIBULE	LVT1	RB1	GYP / PNT	GYP
1.10	LOBBY	LVT1	RB1	GYP / PNT1 IN SCOPED AREAS	EXISTING TO REMAIN
1.11	EXHIBIT	LVT1	RB1	GYP / PNT1	SAC5/SAC4- REF RCP
1.12	ADA	LVT1	TILE1	TILE1 / GYP	GYP
1.14	i.d.e.a. LAB	LVT1	RB1	GYP / PNT1	EXP / ACT1 / SAC4 - REF RCP

NOTE: NO NEW FINISHES IN E DATA e1.0 and e FACP e1.10

partition types:



A (A')

A= NO PLYWOOD
A' = PLYWOOD

2 LAYER PARTITION:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
3-5/8" FRAMING STUDS o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
(1) SIDE TO BE BACKED WITH 5/8" PLYWOOD AT NON-INTERIOR ROOM SIDE

RATING:
STC 45 MIN

B (B')

B = NO PLYWOOD
B' = PLYWOOD

FURRING:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
2-1/2" FURRING STUDS TO o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS TO BE BACKED WITH 5/8" PLYWOOD

RATING:
STC 45 MIN

C (C')

C = NO PLYWOOD
C' = PLYWOOD

FURRING:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
2-1/2" FURRING STUDS TO o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS TO BE BACKED WITH 5/8" PLYWOOD

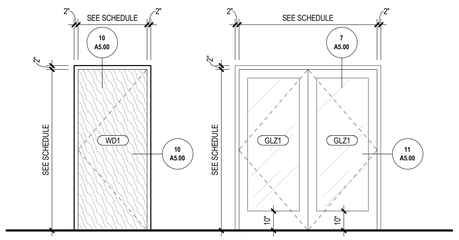
RATING:
STC 45 MIN

D

1 LAYER SHAFT WALL:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
METAL C-H STUDS TO STRUCTURE
(1) LAYER 1" SHAFT LINER AND SOUND ATTENUATION BATTS

RATING:
UL: U469 1 HR

door types:



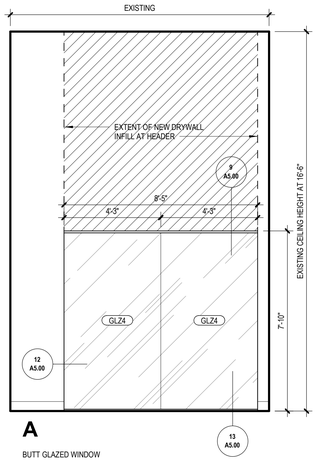
A

SINGLE DOOR, CLEAR SATIN FINISH HOLLOW METAL FRAME

B

DOUBLE DOOR GLASS HOLLOW METAL FRAME

window types:



A

BUTT GLAZED WINDOW

general notes - partitions

UNLESS OTHERWISE INDICATED IN THE FOLLOWING "CLARIFICATION OF REFERENCE DESIGNATIONS FOR INTERIOR PARTITIONS" OR OTHERWISE INDICATED ELSEWHERE ON THE "DRAWINGS", ALL INTERIOR PARTITIONS ARE GYPSUM BOARD AND METAL STUDS AND ARE TO BE CONSTRUCTED AS LISTED BELOW.

1. ALL METAL STUDS SHALL BE 3 5/8" DEEP AND MINIMUM 25 GAUGE. (FOR PARTITIONS REQUIRING HEAVIER GAUGE STUDS, SEE SPECIFICATION SECTION 09 21 16 OR DESCRIPTION BELOW).
2. ALL METAL STUDS SHALL BE SPACED 16" O.C.
3. ALL METAL STUDS SHALL EXTEND FROM FLOOR TO UNDERSIDE OF FLOOR OR ROOF ABOVE.
4. ALL METAL STUDS SHALL HAVE ONE LAYER OF GYPSUM BOARD ON EACH SIDE OF STUD.
5. ALL GYPSUM BOARD SHALL BE MOLD-RESISTANT, TYPE X AND 5/8" THICK.
6. ALL GYPSUM BOARD, ON WALLS, SHALL TERMINATE AT THE UNDERSIDE OF GYPSUM BOARD CEILINGS AND MINIMUM OF 6" ABOVE OTHER TYPE CEILINGS. WHERE CEILINGS DO NOT OCCUR, GYPSUM BOARD SHALL EXTEND TO UNDERSIDE OF FLOOR OR ROOF ABOVE.
7. ALL COMPONENTS OF FIRE RATED, SMOKE BARRIER, OR STC RATED PARTITION SYSTEMS SHALL EXTEND TO UNDERSIDE OF FLOOR OR ROOF ABOVE.
8. PARTITION SYSTEMS INDICATED TO HAVE STC-RATINGS SHALL INCORPORATE SOUND ATTENUATION BLANKETS AND ACOUSTIC SEALANT TO ACHIEVE THE REQUIRED RATING. REFERENCE SPECIFICATION SECTION 09 21 16
9. IF CONCRETE MASONRY UNITS ARE INDICATED, UNITS SHALL BE 7 5/8" THICK AND SHALL EXTEND FROM FLOOR TO UNDERSIDE OF FLOOR OR ROOF ABOVE.
   THE THICKNESS OF PARTITIONS SHOWN ARE FINISH SURFACE TO FINISH SURFACE EXCLUDING THIN-SET CERAMIC TILE.
10. REFER TO SPECIFICATION SECTION 09 21 16 FOR GLASS MAT-FACED GYPSUM BOARD REQUIREMENTS IN WET AREAS.
11. WET AREAS WILL BE DEFINED AS: WALLS SUPPORTING SINKS, TOILETS AND URINALS, AND SHOWER AND TUB SURROUNDS, INCLUDING SHOWER CEILING.
12. WHERE A REFERENCE DESIGNATION IS NOT INDICATED ON THE FLOOR PLANS, THE PARTITION TYPE SHALL BE TYPE 10.0.

general notes - millwork

1. SEE A9.001 FOR FINISH LEGEND.
2. SEE A0.030 FOR PARTITION TYPES AND DETAILS.
3. REFER TO MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR SPECIFIC INFORMATION RELATED TO DEVICES SHOWN.
4. REFER TO INTERIOR ELEVATIONS FOR EXTENT OF FINISHES.
5. REFER TO CEILING PLANS FOR CEILING HEIGHTS.
6. ALL EQUIPMENT AND APPLIANCES SUPPLIED BY OWNER AND CONTRACTOR INSTALLED. CONTRACTOR TO COORDINATE OWNERS REQUIREMENTS INTO CABINETRY SHOP DRAWINGS FOR REVIEW BY ARCHITECT.
7. MILLWORK STYLE SHALL BE FLUSH OVERLAY.
8. CONTRACTOR TO VERIFY WITH OWNER ON MILLWORK LOCK LOCATIONS AND QUANTITIES.

general notes - doors

1. GENERAL CONTRACTOR TO FIELD VERIFY ALL OPENINGS AND CORRECT ANY DEVIATIONS PRIOR TO START OF WORK.
2. ALL DOORS SHALL HAVE AN UNDERCUT OF 1/4" ABOVE FLOOR FINISH, U.N.O.
3. THERE SHALL BE A LEVEL AND CLEAR LANDING ON EACH SIDE OF A DOOR.
4. MAXIMUM PULL FORCE FOR ALL INTERIORS DOORS SHALL NOT EXCEED 5LB.
5. DOOR HANDLES SHALL BE OPERABLE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
6. REFER TO FLOOR PLANS FOR SWING OR SLIDE DIRECTION.
7. FINISHED SHALL BE APPLIED TO ALL EXPOSED SIDES OF DOORS.
8. ALL HARDWARE SHALL BE INSTALLED AT 36" A.F.F. TO CENTERLINE OF HANDLE, U.N.O.
9. ALL DOORS SHALL BE 1-3/4" THICK WITH HOLLOW METAL FRAMES UNLESS OTHERWISE NOTED.
10. FIRE RATINGS ARE INDICATED IN MINUTES.

legend

T	TEMPERED		GLASS
HM	HOLLOW METAL		
SCW	SOLID CORE WOOD		WOOD
AL	ALUMINUM		

material legend

SEE A2 SERIES FLOOR PLANS, RCP'S, A4 SERIES ELEVATIONS FOR REFERENCE TO THESE FINISHES.

DIVISION 4 MASONRY

MAS1 — MASONRY TO MATCH EXISTING
REPAINTED AND FINISHED TO MATCH ADJACENT

DIVISION 6 ARCHITECTURAL WOODWORK

WD1 — WHITE BIRCH SOLID CORE WOOD DOORS

WD3 — WHITE MAPLE PLYWOOD SHEETS, APPLEPLY OR SIMILAR
1-1/2 INCH THICK
FINISH: OUTER VENEER, CLEAR SATIN FINISH
*FINAL SELECTION PENDING CLIENT APPROVAL
LOCATION: 1 INCH THICK AT SOUTH I.D.E.A. LAB ENTRANCES

DIVISION 6 ARCHITECTURAL CASEWORK

PLAM1 — FORMICA
COLOR: WHITE (2)

DIVISION 7 THERMAL AND MOISTURE PROTECTION

THERM1 — INTERIOR CEILING INSULATION AND SCRIM. ALL EXPOSED FACES TO BE PAINTED TO MATCH ADJACENT WOOD FINISH

DIVISION 8 GLAZING

GLZ1 — 1/4" THICK, TEMPERED (INTERIOR) WITH APPLIED TRANSLUCENT VINYL FILM

GLZ4 — 1" THICK, INSULATED GLASS UNIT, CLEAR, LOW E, TEMPERED (EXTERIOR)

DIVISION 9 GYPSUM BOARD

GWB — PAINTED 5/8" THICK GYPSUM WALL BOARD, TYPE X GYPSUM BOARD, 5/8" SEE SPECIFICATIONS

DIVISION 9 ACOUSTICAL CEILING TILE

ACT1 — 2X4 ACOUSTICAL CEILING TILE
USG MARS OR SIM
NRC: 0.70 MIN
TILE: TEGULAR EDGE, COLOR WHITE
GRID: 9/16" NARROW-PROFILE, 1/8" REVEAL, COLOR WHITE
(USG DONN FINELINE DXF / DXLF OR SIM)

DIVISION 9 INTERIOR PAINTING

PNT1 — DUNN EDWARDS
COLOR : PEARL NECKLACE DEW343
LOCATION : GENERAL THROUGHOUT, HM DOORS AND FRAME

PNT2 — DUNN EDWARDS
COLOR: JET PAINT COLOR DE6378
LOCATION: EXPOSED STEEL COLUMNS

DIVISION 9 SOUND ABSORBING CEILING BAFFLES

SAC4a — SUSPENDED FELT BAFFLE,
SAC4b — HEARTFELT MODULAR FELT CEILING SYSTEM, OR APPROVED EQUAL
SAC4c — HUNTER DOUGLAS
SAC4d — STYLE: HEARTFELT PANEL 40HR64
CARRIER SPACING: 80MM
COLORS: 4a WHITE 7593
4b LIGHT GRAY 7596
4c MIDDLE GREY 7596
4d 1 DARK GREY7598
*COLORS PENDING CLIENT APPROVAL
SIZE + LOCATION: 12'-0" LENGTH AT MAIN CORRIDOR
8'-8" LENGTH AT I.D.E.A. LAB

SAC5 — SUSPENDED FELT PANEL, FILZFELT AKUSTIKA 10
SUSPENDED
COLORS: COLOR PENDING CLIENT APPROVAL
SIZE: 1'-3" WIDE X 13'-0" LENGTH
LOCATION: EXHIBIT 1.11

DIVISION 9 RESILIENT BASE + ACCESSORIES

RB1 — 4" RUBBER BASE, ROPE
COLOR: DARK GRAY, 700 SERIES (2)

DIVISION 9 RESILIENT FLOORING

LVT1 — LUXURY VINYL TILE
SHAW CONTRACT, INLET II 4372V
SIZE: 9 IN X 48 IN, 5MM THICK
COLOR: DUNE 72240
LOCATION: THROUGHOUT, REF FLOOR PLAN
PATTERN: TBD

DIVISION 9 TILING (CERAMIC + METAL EDGE STRIPS)

TILE1 — CERAMIC WALL TILE
DALTILE COLOR WHEL COLLECTION - GLAZED CERAMIC
SIZE: 3" X 6"
COLOR: ARTIC WHITE 0790 MATTE
LOCATION: RESTROOMS

MTL1 — SCHLUTER JOLLY
COLOR: SATIN ANODIZED ALUMINUM (AE)
LOCATION: RESTROOM TILE TRANSITIONS

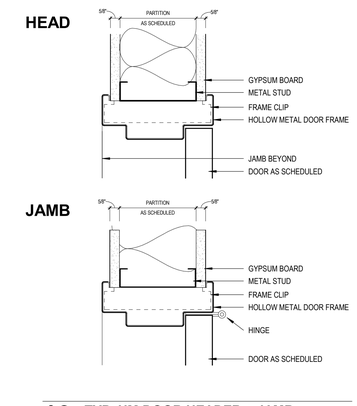
MTL2 — SCHLUTER DILEX-AHKA
COLOR: SATIN ANODIZED ALUMINUM (AE)
LOCATION: RESTROOM TILE TRANSITIONS

DIVISION 10 WALL AND DOOR PROTECTION

WP1 — CHILD SAFTEY FOAM POLE BUMPERS
SIZE: COVERS TO FIT 5" AND 6" COLUMN DIAMETERS, VERIFY IN FIELD PRIOR TO PURCHASE. 72" HIGH.
COLOR: COORDINATE COLORS WITH CLIENT.
LOCATION: ALL FREESTANDING COLUMNS IN EXHIBIT AREAS. SEE PLANS
HTTPS://FOAMANDUPHOLSTERY.COM/BASEMENT-POLE-BUMPERS/ (2)

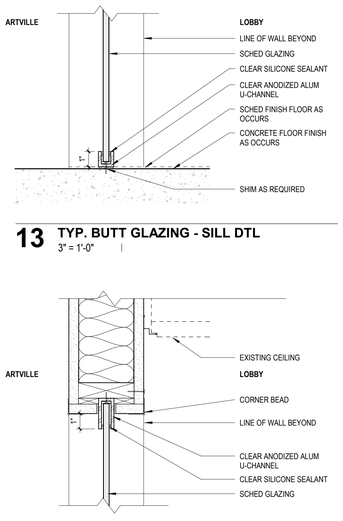
DIVISION 12 WOOD COUNTERTOPS

WDC1 — HARD WHITE MAPLE BUTCHER BLOCK COUNTERTOP
LOCATION: I.D.E.A. LAB
*FINAL SELECTION PENDING CLIENT APPROVAL



10 TYP. HM DOOR HEADER + JAMB

3" = 1'-0"

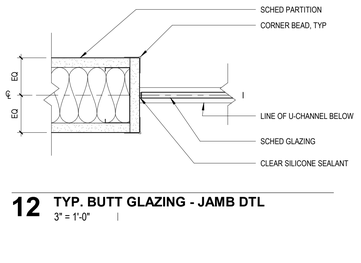


13 TYP. BUTT GLAZING - SILL DTL

3" = 1'-0"

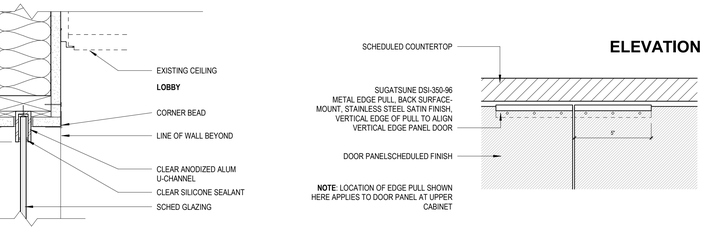
9 BUTT GLAZING - HEAD DTL AT GWB-ACT

3" = 1'-0"



12 TYP. BUTT GLAZING - JAMB DTL

3" = 1'-0"

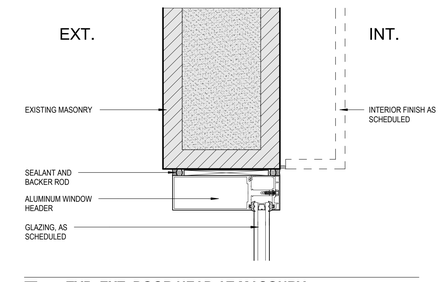


8 TYP CABINET PULL AND COUNTER EDGE DETAIL

3" = 1'-0"

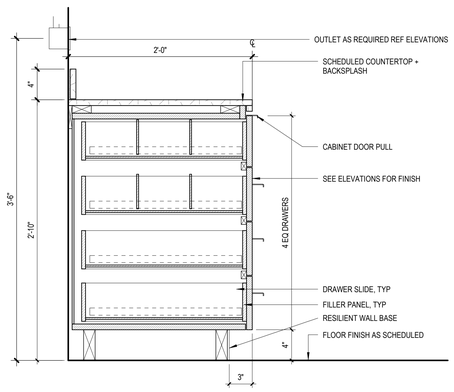
11 TYP. EXT. DOOR JAMB AT MASONRY

3" = 1'-0"



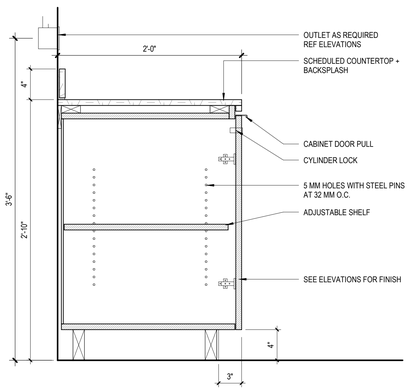
7 TYP. EXT. DOOR HEAD AT MASONRY

3" = 1'-0"



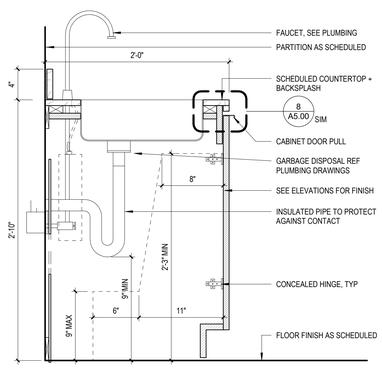
6 BASE CABINET W/ DRAWERS

1 1/2" = 1'-0"



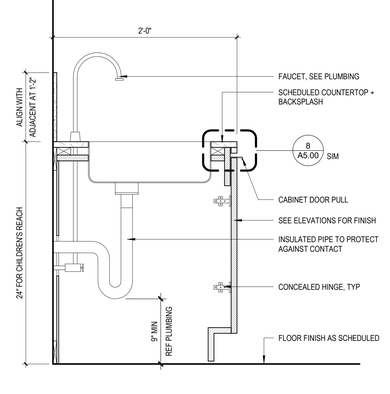
5 TYP BASE CABINET

1 1/2" = 1'-0"



4 BASE CABINET AT HIGH SINK

1 1/2" = 1'-0"



3 TYP BASE CABINET AT LOW SINK

1 1/2" = 1'-0"

PMT24-00829

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 32961 MICHAEL E. ADAMS ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916NLAB**

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

SCHEDULES

DRAWING
A5.00

SHEET	CATALOG NUMBER:
9 - OF - 49	A-282711

3/18/2024 1:51:44 PM

Holly Street
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1319 E VanBuren St.
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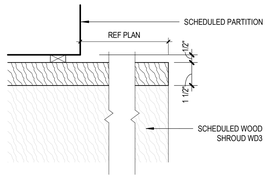
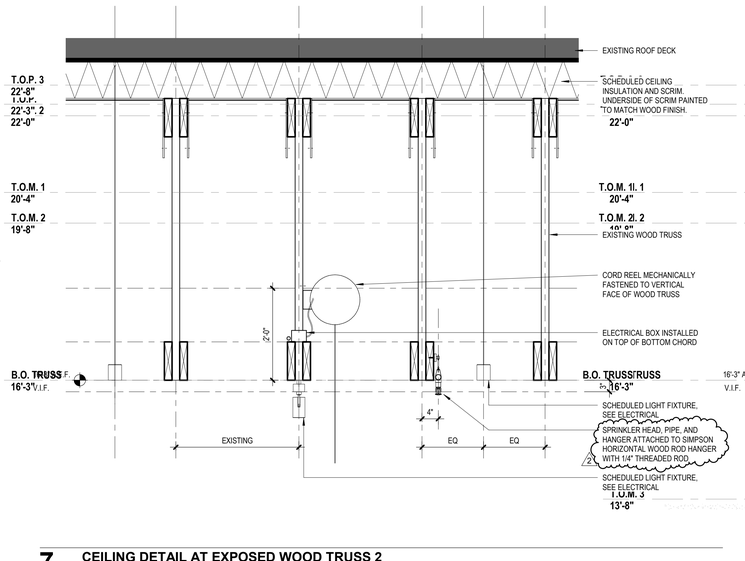
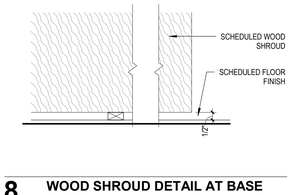
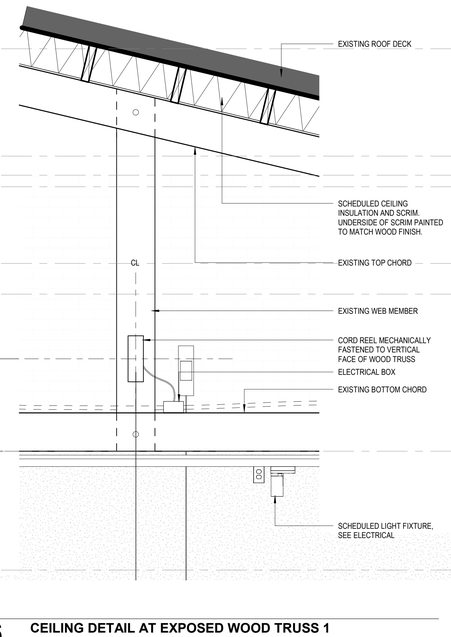
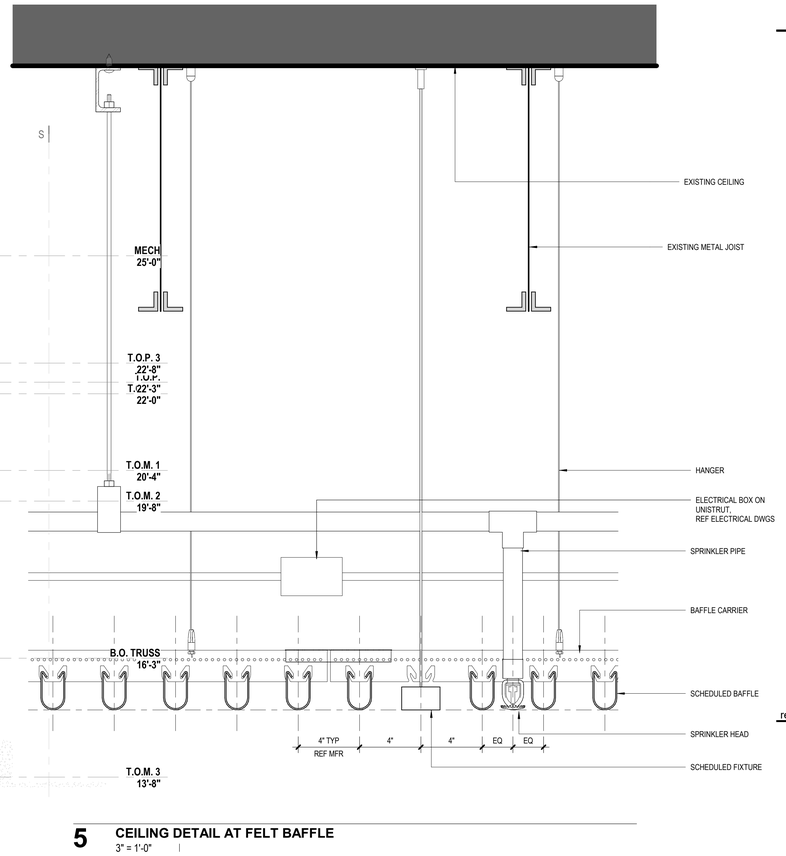


9 WOOD SHROUD DETAIL AT HEAD
3" = 1'-0"







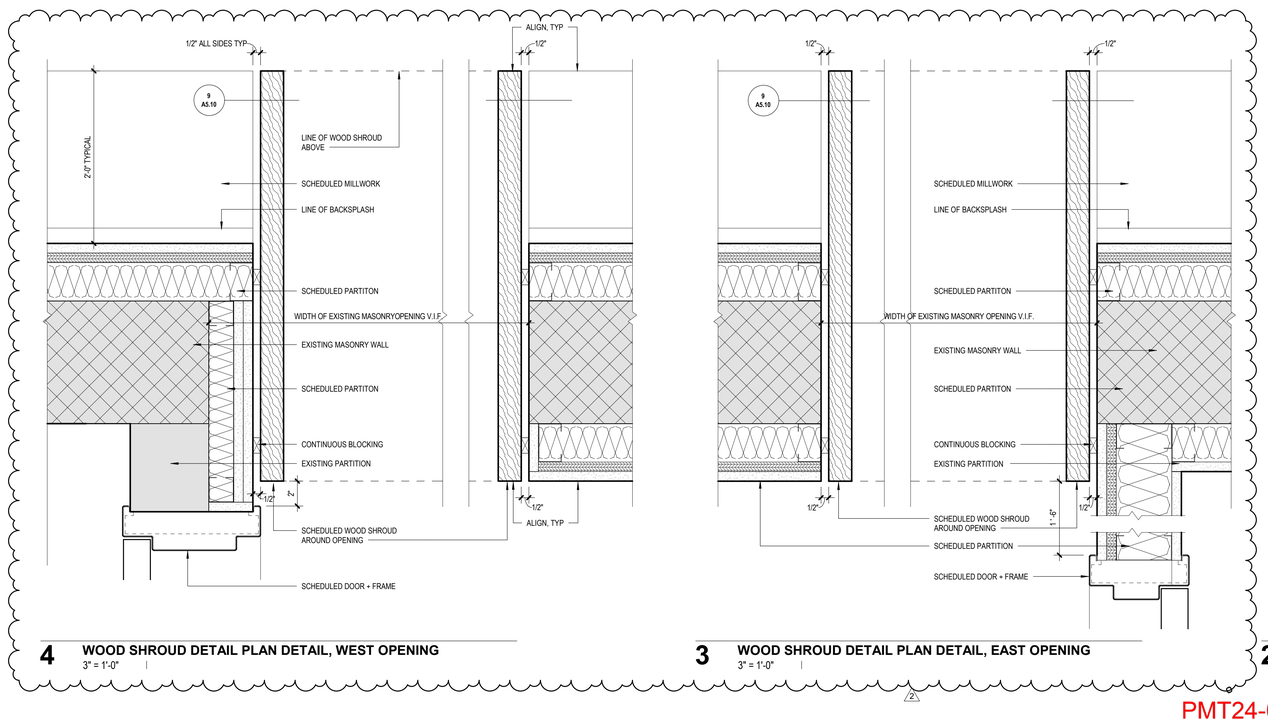


8 WOOD SHROUD DETAIL AT BASE
3" = 1'-0"

7 CEILING DETAIL AT EXPOSED WOOD TRUSS 2
3/4" = 1'-0"

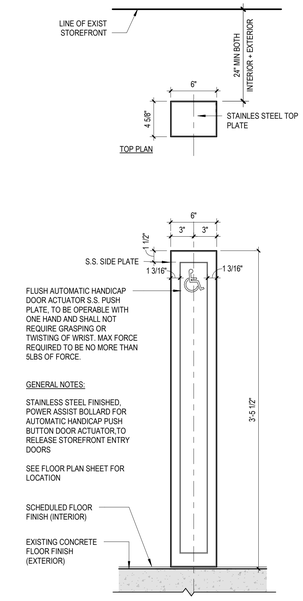
6 CEILING DETAIL AT EXPOSED WOOD TRUSS 1
3/4" = 1'-0"

5 CEILING DETAIL AT FELT BAFFLE
3" = 1'-0"

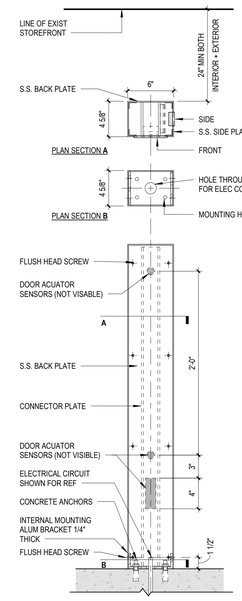


4 WOOD SHROUD DETAIL PLAN DETAIL, WEST OPENING
3" = 1'-0"

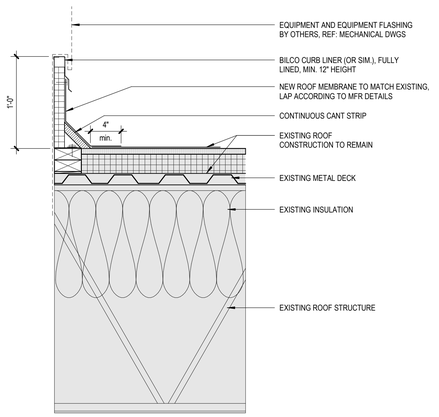
3 WOOD SHROUD DETAIL PLAN DETAIL, EAST OPENING
3" = 1'-0"



FRONT ELEVATION (AT EXTERIOR)



SECTION



2 SURFACE MOUNTED CARD READER BOLLARD DETAIL
1 1/2" = 1'-0"

1 SECTION THRU EQUIP. CURB AT ROOF
1 1/2" = 1'-0"

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916NLAB**

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

DETAILS

DRAWING
A5.10

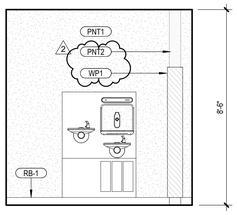
SHEET	CATALOG NUMBER:
10 - OF - 49	A-282712

PMT24-00829

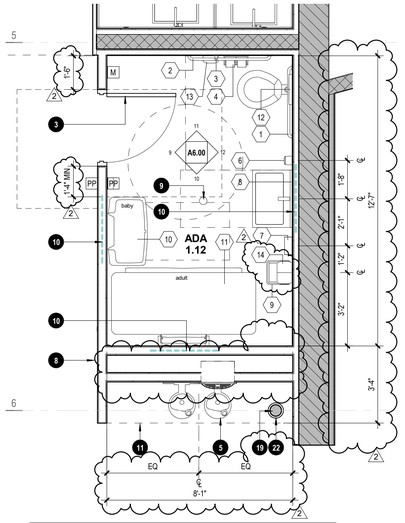
3/18/2024 1:51:44 PM

NOTE: The image included on this sheet is to convey the general design intent of the project and may not be totally accurate, therefore, should not be considered part of the contract documents.

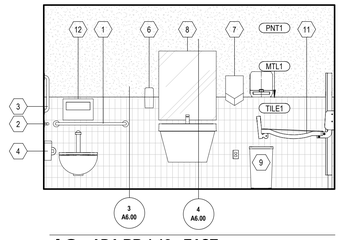
14 I.D.E.A. LAB - REFERENCE IMAGE
6" = 1'-0"



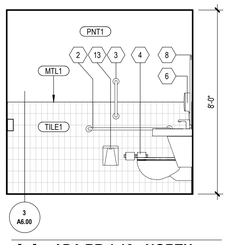
13 EXHIBIT 1.1 NOOK - NORTH
3/8" = 1'-0"



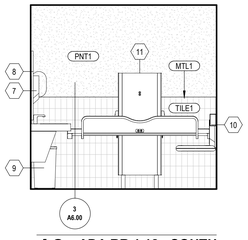
8 ENLARGED RR 1.12
3/8" = 1'-0"



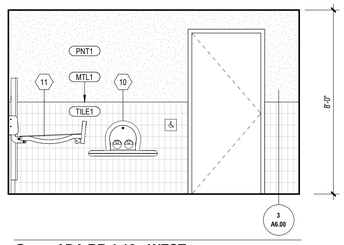
12 ADA RR 1.12 - EAST
3/8" = 1'-0"



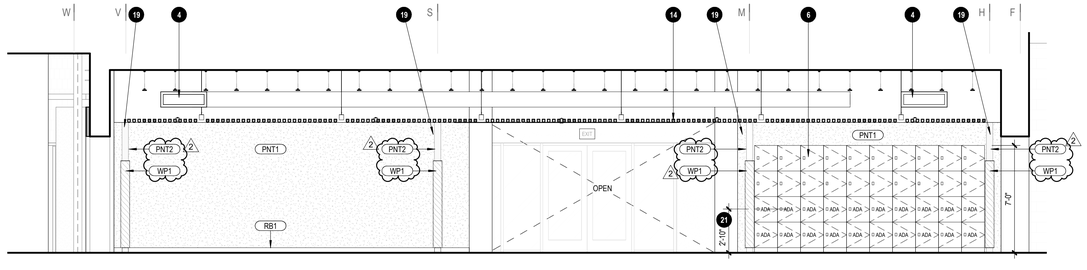
11 ADA RR 1.12 - NORTH
3/8" = 1'-0"



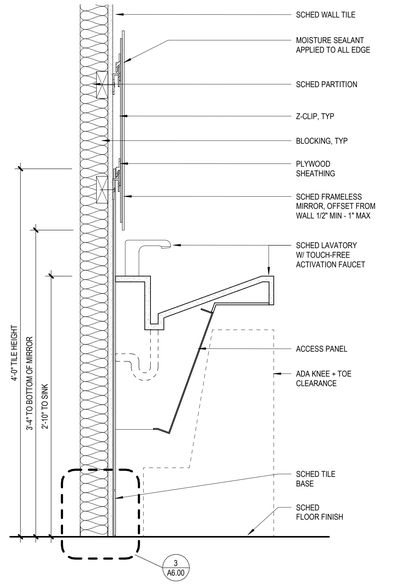
10 ADA RR 1.12 - SOUTH
3/8" = 1'-0"



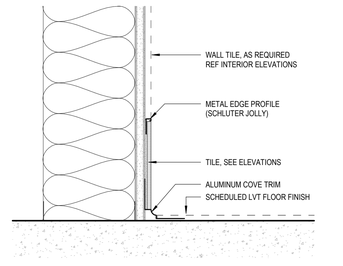
9 ADA RR 1.12 - WEST
3/8" = 1'-0"



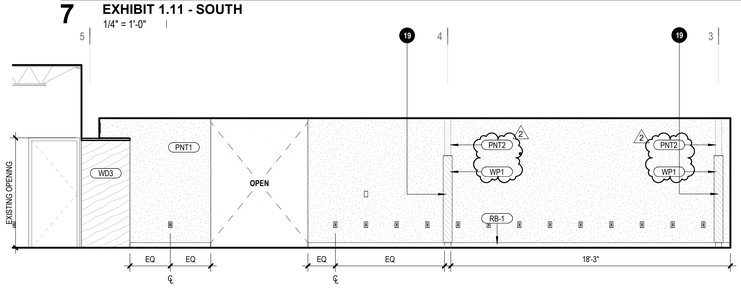
7 EXHIBIT 1.11 - SOUTH
1/4" = 1'-0"



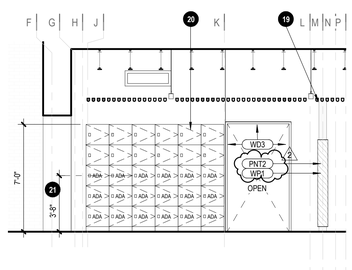
4 SECTION AT LAVATORY
1 1/2" = 1'-0"



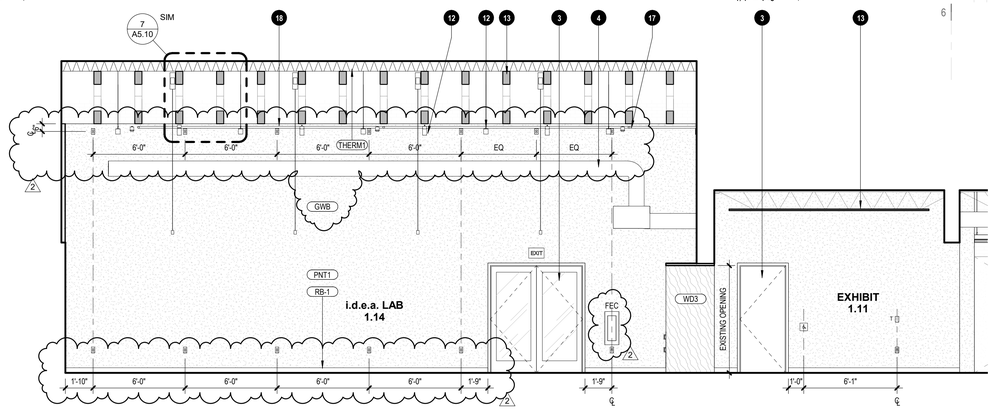
3 TILE BASE AT GYP. WALL DETAIL
3" = 1'-0"



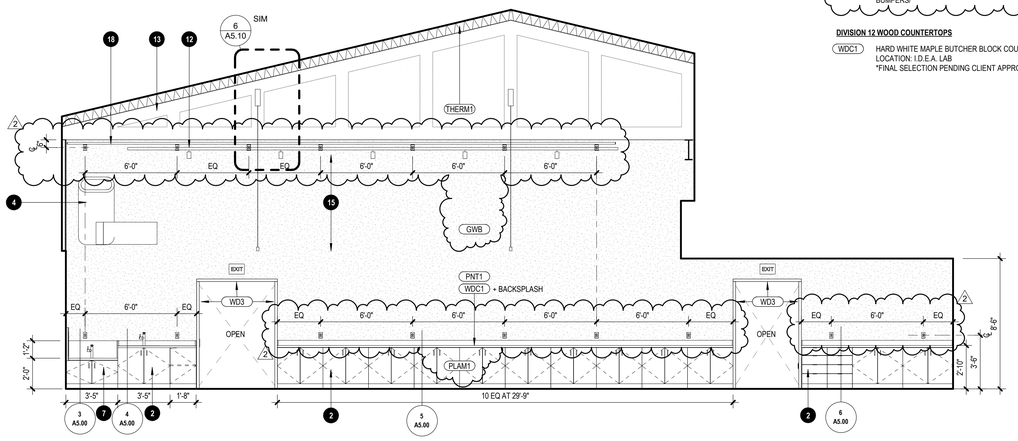
6 I.D.E.A. LAB - WEST
1/4" = 1'-0"



5 EXHIBIT 1.1 NOOK LOCKERS - NORTH
1/4" = 1'-0"



2 I.D.E.A. LAB - EAST
1/4" = 1'-0"



1 I.D.E.A. LAB - SOUTH
1/4" = 1'-0"

PMT24-00829

enlarged interior elevation + plan keynotes

1. NOT USED
2. MILLWORK.
3. SCHEDULED DOOR.
4. MECHANICAL DUCT - REF. MECHANICAL DWGS.
5. ADA COMPLIANT BI-LEVEL DRINKING FOUNTAIN WITH BOTTLE FILLING STATION.
6. LOCKERS, MFR: HOLLMAN NANOLAM COLLECTION, MODEL LD1.
7. LOWERED SINK AT CHILDREN'S REACH RANGE.
8. SEMI RECESSED FIRE EXTINGUISHER CABINET.
9. FLOOR DRAIN - REFER TO PLUMBING DWGS.
10. NEW WALL MOUNTED FIXTURES TO RECEIVE ADDITIONAL CONCEALED ARMS FOR SUPPORT.
11. SOFFIT LINE ABOVE.
12. SCHEDULED LIGHT FIXTURE.
13. EXISTING WOOD TRUSS TO REMAIN.
14. SUSPENDED ACOUSTIC BAFFLES.
15. EXPOSED MASONRY WALL FINISH.
16. EXISTING DOOR.
17. FIRE SPRINKLER HEAD.
18. FIRE SPRINKLER PIPE BEYOND.
19. COLUMN, PAINTED TO MATCH WALL PAINT.
20. LOCKERS, MFR: HOLLMAN NANOLAM COLLECTION, MODEL LE1.
21. LOCKERS BETWEEN REACH RANGES 15"-48" ABOVE FLOOR FINISH TO BE INSTALLED WITH KEYLESS1 LOCK WITH INTEGRAL ADA LEVER MODEL SERVING AS PULL.
22. OWNER TO PROVIDE BUMPER AT COLUMN.

TOILET ROOM ACCESSORY SCHEDULE (10 28 00)

NO.	DESCRIPTION	MANUFACTURER NAME	MODEL NUMBER	FINISH
1	36" GRAB BAR	BOBRICK	B-5806x36	STAINLESS STEEL
2	42" GRAB BAR	BOBRICK	B-5806x42	STAINLESS STEEL
3	18" GRAB BAR	BOBRICK	B-5806x18	STAINLESS STEEL
4	COMPACT VERTICAL DOUBLE ROLL CORELESS	WAXIE	56790	SMOKE
6	FOAM SOAP DISPENSER (1250 ML)	WAXIE	386315	BLACK
7	DYSON AIRBLADE V AB12	DYSON	V AB12	SPRAYED NICKEL
8	MIRROR - 3'-0" H x 2'-6" W			
9	SLIM JIM 23-GALLON WASTE DISPENSER	RUBBERMAID	73004	GREY
10	BABY CHANGING STATION	KOALA KARE	KB300-05SS	
11	ADULT CHANGING STATION	KOALA KARE	KB3000	
12	TOILET SEAT COVER DISPENSER	KLEENLINE	851585	
13	SANITARY NAPKIN DISPOSAL (SURFACE MOUNTED)	BOBRICK	820705	STAINLESS STEEL
14	ENMOTION PAPER TOWEL DISPENSER (JR SIZE)	GEORGIA-PACIFIC	55855120	

material legend

SEE A2 SERIES FLOOR PLANS, RCP'S, A4 SERIES ELEVATIONS FOR REFERENCE TO THESE FINISHES.

DIVISION 4 MASONRY

- MAS1 — MASONRY TO MATCH EXISTING REPAINTED AND FINISHED TO MATCH ADJACENT

DIVISION 6 ARCHITECTURAL WOODWORK

- WD1 — WHITE BIRCH SOLID CORE WOOD DOORS
- WD3 — WHITE MAPLE PLYWOOD SHEETS, APPLEPLY OR SIMILAR 1-1/2 INCH THICK FINISH: OUTER VENEER, CLEAR SATIN FINISH *FINAL SELECTION PENDING CLIENT APPROVAL LOCATION: 1 INCH THICK AT SOUTH I.D.E.A. LAB ENTRANCES

DIVISION 6 ARCHITECTURAL CASEWORK

- PLAM1 — FORMICA COLOR: WHITE

DIVISION 7 THERMAL AND MOISTURE PROTECTION

- THERM1 — INTERIOR CEILING INSULATION AND SCRIM. ALL EXPOSED FACES TO BE PAINTED TO MATCH ADJACENT WOOD FINISH.

DIVISION 8 GLAZING

- GLZ1 — 1/4" THICK, TEMPERED (INTERIOR) WITH APPLIED TRANSLUCENT VINYL FILM
- GLZ4 — 1" THICK, INSULATED GLASS UNIT, CLEAR, LOW E, TEMPERED (EXTERIOR)

DIVISION 9 GYPSUM BOARD

- GWB — PAINTED 5/8" THICK GYPSUM WALL BOARD, TYPE X GYPSUM BOARD, 5/8" SEE SPECIFICATIONS

DIVISION 9 ACOUSTICAL CEILING TILE

- ACT1 — 2X4 ACOUSTICAL CEILING TILE USG MARS OR SIM NRC: 0.70 MIN TILE: TEGULAR EDGE, COLOR WHITE GRID: 9/16" NARROW-PROFILE, 1/8" REVEAL, COLOR WHITE (USG DONN FINELINE DXF / DXLF OR SIM)

DIVISION 9 INTERIOR PAINTING

- PNT1 — DUNN EDWARDS COLOR : PEARL NECKLACE DEW343 LOCATION : GENERAL THROUGHOUT, HM DOORS AND FRAME
- PNT2 — DUNN EDWARDS COLOR: JET PAINT COLOR DE6378 LOCATION: EXPOSED STEEL COLUMNS

DIVISION 9 SOUND ABSORBING CEILING BAFFLES

- SAC4a / SAC4b / SAC4c / SAC4d — SUSPENDED FELT BAFFLE, HEARTFELT MODULAR FELT CEILING SYSTEM, OR APPROVED EQUAL HUNTER DOUGLAS STYLE: HEARTFELT PANEL 40HR64 CARRIER SPACING: 80MM COLORS: 4a WHITE 7593; 4b LIGHT GRAY 7596; 4c MIDDLE GREY 7596; 4d 1 DARK GREY7598 *COLORS PENDING CLIENT APPROVAL SIZE + LOCATION: 12'-0" LENGTH AT MAIN CORRIDOR 8'-8" LENGTH AT I.D.E.A. LAB
- SAC5 — SUSPENDED FELT PANEL, FILZFELT AKUSTIKA 10 SUSPENDED COLORS: COLOR PENDING CLIENT APPROVAL SIZE: 1'-3" WIDE X 13'-0" LENGTH LOCATION: EXHIBIT 1.11

DIVISION 9 RESILIENT BASE + ACCESSORIES

- RB1 — 4" RUBBER BASE, ROPPE COLOR: DARK GRAY, 700 SERIES

DIVISION 9 RESILIENT FLOORING

- LVT1 — LUXURY VINYL TILE SHAW CONTRACT, INLET II 4372V SIZE: 9 IN X 48 IN, 5MM THICK COLOR: DUNE 72240 LOCATION: THROUGHOUT, REF FLOOR PLAN PATTERN: TBD

DIVISION 9 TILING (CERAMIC + METAL EDGE STRIPS)

- TILE1 — CERAMIC WALL TILE DALTILE COLOR WHEL COLLECTION - GLAZED CERAMIC SIZE: 3" X 6" COLOR: ARTIC WHITE 0790 MATTE LOCATION: RESTROOMS
- MTL1 — SCHLUTER JOLLY COLOR: SATIN ANODIZED ALUMINUM (AE) LOCATION: RESTROOM TILE TRANSITIONS
- MTL2 — SCHLUTER DILEX-AHKA COLOR: SATIN ANODIZED ALUMINUM (AE) LOCATION: RESTROOM TILE TRANSITIONS

DIVISION 10 WALL AND DOOR PROTECTION

- WP1 — CHILD SAFTEY FOAM POLE BUMPERS SIZE: COVERS TO FIT 5" AND 6" COLUMN DIAMETERS, VERIFY IN FIELD PRIOR TO PURCHASE. 72" HIGH. COLOR: COORDINATE COLORS WITH CLIENT. LOCATION: ALL FREESTANDING COLUMNS IN EXHIBIT AREAS. SEE PLANS HTTPS://FOAMANDUPHOLSTERY.COM/BASEMENT-POLE-BUMPERS/

DIVISION 12 WOOD COUNTERTOPS

- WDC1 — HARD WHITE MAPLE BUTCHER BLOCK COUNTERTOP LOCATION: I.D.E.A. LAB *FINAL SELECTION PENDING CLIENT APPROVAL

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1319 E VanBuren St.
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o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

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Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

REGISTERED ARCHITECT 72961 MICHAEL J. HOLLIS ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916NLAB**

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ENLARGED INTERIOR ELEVATIONS + FLOOR PLANS

DRAWING
A6.00

SHEET 11 - OF - 49
CATALOG NUMBER: A-282713

3/18/2024 11:54 PM

GENERAL STRUCTURAL NOTES

GENERAL

1. THESE GENERAL NOTES SUPPLEMENT THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICT WITH THE SPECIFICATIONS, CONTACT THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH THE WORK.

2. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND LOCAL CONDITIONS.

3. CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL BUILDING CODES, CODES OF APPLICABLE REGULATORY AGENCIES, AND WITH PROJECT SPECIFICATIONS AND DRAWINGS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL TRADES AND FOR CHECKING ALL DIMENSIONS. REPORT DISCREPANCIES TO THE OWNER'S REPRESENTATIVE FOR CLARIFICATION PRIOR TO PROCEEDING WITH THE WORK.

5. THE CONTRACTOR SHALL COMPLY WITH LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING UPON THE PERFORMANCE OF THE WORK.

6. SUBJECT TO THE STRUCTURAL ENGINEER'S ACCEPTANCE, UTILIZE DETAILS FOR SIMILAR CONDITIONS WHEN DETAILS FOR CONSTRUCTION ARE NOT INDICATED FOR A SPECIFIC CONDITION.

7. DETAILS ON SHEETS TITLED "TYPICAL DETAILS" APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. TYPICAL DETAILS ARE NOT NOTED AT EACH LOCATION AT WHICH THEY ARE APPLICABLE.

8. WHERE NOT INDICATED ON THE STRUCTURAL DRAWINGS, SEE THE ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND ANY OTHER DRAWINGS FOR:

ELEVATIONS AND SLOPES,
SIZE AND LOCATION OF SLAB OPENINGS, AND WALL OPENINGS,
SIZE, TYPE AND LOCATION OF NON-LOAD BEARING PARTITIONS,
CONCRETE AND STEEL FINISHES,
SIZE AND LOCATION OF SLEEVES AND HANGERS,
ITEMS EMBEDDED IN THE STRUCTURE OR PENETRATING THE STRUCTURE,
CONNECTION OF ARCHITECTURAL, CIVIL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION OR ANY OTHER ITEMS TO THE STRUCTURE AND CONNECTION OF ITEMS NOT TYPICALLY DETAILED ON THE STRUCTURAL DRAWINGS,
WATERPROOFING AND DAMP PROOFING.

9. CONNECTIONS OF ALL TRADES TO THE STRUCTURE SHALL BE DESIGNED AND DETAILED BY THE CONTRACTOR. CONNECTIONS TO STRUCTURAL MEMBERS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. RESPONSIBILITY FOR THE PERFORMANCE OF THE SUPPLIED SYSTEM AND ASSOCIATED CONNECTIONS SHALL REMAIN THAT OF THE CONTRACTOR. ALL CONNECTIONS SHALL BE DESIGNED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

10. OPENINGS AND PENETRATIONS THROUGH STRUCTURAL ELEMENTS AND ITEMS EMBEDDED IN STRUCTURAL ELEMENTS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED BY STRUCTURAL ENGINEER PRIOR TO IMPLEMENTING WORK.

11. DO NOT SCALE DRAWINGS TO DETERMINE DIMENSIONAL INFORMATION.

12. DO NOT PLACE MATERIALS OR EQUIPMENT ON UNFINISHED FLOORS OR ROOFS IN EXCESS OF 20 PSF NOR ON FINISHED FLOORS OR ROOFS IN EXCESS OF THE INDICATED DESIGN LIVE LOADS. AVOID IMPACT LOADING.

13. THE STRUCTURE WAS DESIGNED FOR THE IN-SERVICE CONDITIONS ONLY. THE METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

14. DRAWINGS DO NOT INDICATE TEMPORARY REQUIREMENTS. NEED FOR TEMPORARY SHORING AND BRACING, TEMPORARY DEWATERING, TEMPORARY EARTH RETENTION, TEMPORARY WATER CUTOFF OR OTHER TEMPORARY MEASURES MAY BE INDICATED ON DRAWINGS AT SELECTED AREAS AS SUGGESTIONS FOR THE CONTRACTOR'S CONVENIENCE. THE DRAWINGS DO NOT IDENTIFY ALL AREAS OR CONDITIONS REQUIRING TEMPORARY MEASURES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM TEMPORARY MEASURES INDICATED ON THE DRAWINGS, IDENTIFY OTHER AREAS OR CONDITIONS REQUIRING TEMPORARY MEASURES, DETERMINE MOST EFFICIENT TEMPORARY SYSTEMS, AND DESIGN AND CONSTRUCT REQUIRED TEMPORARY SYSTEMS. ALL TEMPORARY SYSTEMS SHALL BE DESIGNED BY A LICENSED ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED.

15. INFORMATION RELATED TO EXISTING CONDITIONS REPRESENTS KNOWLEDGE BASED UPON INFORMATION PROVIDED BY THE OWNER BUT WITHOUT GUARANTEE OF ACCURACY. REPORT EXISTING CONDITIONS THAT VARY FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING CONSTRUCTION WHILE PERFORMING WORK. THE CONTRACTOR SHALL PROPERLY REINSTATE EXISTING FINISHES, FIREPROOFING OR ITEMS THAT ARE REMOVED OR DAMAGED WHILE PERFORMING WORK.

DESIGN CRITERIA

1. ALL CONSTRUCTION SHALL CONFORM TO THE MORE RESTRICTIVE OF THE FOLLOWING CODES, THE MOST RECENT EDITIONS OF THE STANDARDS ADOPTED BY THE AUTHORITY HAVING JURISDICTION AS REFERENCED THROUGHOUT THE STRUCTURAL GENERAL NOTES, AND THE FOLLOWING DESIGN CRITERIA:

2. BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS

3. BUILDING RISK CATEGORY (IBC TABLE 1604.5): III

4. DESIGN DEAD LOADS: SELF-WEIGHT OF MATERIALS AND SYSTEMS

5. DESIGN LIVE LOADS (REDUCIBLE WHERE ALLOWED PER BUILDING CODE):
ROOFS: 20 PSF
FLOORS: 100 PSF
STAIRS AND EXIT WAYS: 100 PSF
LIGHT STORAGE: 125 PSF
WALKWAYS AND ELEVATED PLATFORMS (OTHER THAN EXIT WAYS): 60 PSF

6. DESIGN WIND LOADS:
LATERAL LOAD RESISTANCE SYSTEM (ASCE 7):
BASIC WIND SPEED: 110 MILES PER HOUR
WIND EXPOSURE: B
INTERNAL PRESSURE COEFFICIENT: +0.18, -0.18
COMPONENTS AND CLADDING: SEE TYPICAL DETAIL

7. DESIGN SEISMIC LOADS:
SITE CLASS: D
SEISMIC IMPORTANCE FACTOR, Ie: 1.25
MAPPED SPECTRAL RESPONSE ACCELERATION, Ss: 0.19g
MAPPED SPECTRAL RESPONSE ACCELERATION, S1: 0.067g
DESIGN SPECTRAL RESPONSE ACCELERATION, Sds: 0.201g
DESIGN SPECTRAL RESPONSE ACCELERATION, Sd1: 0.107g
SEISMIC DESIGN CATEGORY: B

BASIC SEISMIC-FORCE-RESISTING SYSTEM: INTERMEDIATE REINFORCED MASONRY SHEAR WALLS
SEISMIC RESPONSE COEFFICIENT, Cs: 0.07
DESIGN BASE SHEAR: 0.07W
RESPONSE MODIFICATION FACTOR, R: 3.5
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE (ASCE 7 SECTION 12.8)

NON-STRUCTURAL COMPONENTS: PER ASCE7, THE SEISMIC DESIGN CATEGORY OF B EXEMPTS SEISMIC DESIGN REQUIREMENTS FOR MECHANICAL AND ELECTRICAL COMPONENTS, AND FOR ARCHITECTURAL COMPONENTS WITH IMPORTANCE FACTORS OF 1.0. REFER TO RESPECTIVE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DEMOLITION OF EXISTING STRUCTURE

1. ALL CONSTRUCTION SHALL CONFORM TO THE MORE RESTRICTIVE OF THE FOLLOWING CODES, THE MOST RECENT EDITIONS OF THE STANDARDS ADOPTED BY THE AUTHORITY HAVING JURISDICTION AS REFERENCED THROUGHOUT THE STRUCTURAL GENERAL NOTES, AND THE FOLLOWING DESIGN CRITERIA:
BUILDING CODE: 2018 INTERNATIONAL BUILDING CODE WITH LOCAL AMENDMENTS
2. PROJECT SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH ALL OSHA REQUIREMENTS AND REGULATIONS. THE CONTRACTOR SHALL COMPLY WITH LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY BEARING UPON THE PERFORMANCE OF THE WORK.

3. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND LOCAL CONDITIONS.

4. INFORMATION RELATED TO EXISTING CONDITIONS REPRESENTS KNOWLEDGE BASED UPON INFORMATION PROVIDED BY THE OWNER BUT WITHOUT GUARANTEE OF ACCURACY. REPORT EXISTING CONDITIONS THAT VARY FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS TO THE OWNER'S REPRESENTATIVE. DO NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE OWNER'S REPRESENTATIVE.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO EXISTING CONSTRUCTION WHILE PERFORMING WORK. THE CONTRACTOR SHALL PROPERLY REINSTATE EXISTING FINISHES, FIREPROOFING OR ITEMS THAT ARE REMOVED OR DAMAGED WHILE PERFORMING WORK.

6. ALL SHORING AND SHORING ACCESSORIES SHALL BE PROVIDED BY WACO SCAFFOLDING AND EQUIPMENT.

MODIFICATIONS TO EXISTING CONSTRUCTION

1. THE EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS IS PROVIDED FOR REFERENCE ONLY. EXISTING CONSTRUCTION SHALL BE VERIFIED IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ALL NEW CONSTRUCTION.

2. ANY EXISTING FINISHES REMOVED OR DAMAGED TO ACCOMPLISH ANY STRUCTURAL MODIFICATIONS SHALL BE REINSTATED AT THE COMPLETION OF MODIFICATION WORK, TYPICAL UNLESS NOTED OTHERWISE.

3. ANY STRUCTURAL STEEL OR REINFORCING BARS THAT HAVE BEEN CUT AND GROUND FLUSH WITH A CONCRETE SURFACE SHALL BE FINISHED WITH EPOXY PAINT.

4. THE FACE OF ALL NEW PERMANENT CONCRETE SURFACES CUT FROM EXISTING CONCRETE SHALL BE CLEANED WITH A HIGH PRESSURE WATER SPRAY. ALLOW SURFACES TO DRY THOROUGHLY. COAT THE CONCRETE SURFACES WITH A BONDING AGENT AND FINISH WITH AN ACCEPTABLE PATCHING COMPOUND. ALL EXPOSED REINFORCEMENT SHALL BE GROUND FLUSH WITH THE NEW CONCRETE SURFACE.

5. WHERE NEW CONCRETE IS TO BE CAST AGAINST EXISTING CONCRETE, THE CONTACT SURFACE SHALL BE ROUGHENED AND CLEANED WITH A HIGH PRESSURE WATER SPRAY. ALLOW TO DRY THOROUGHLY PRIOR TO APPLICATION OF EPOXY BONDING AGENT.

6. ANY EXISTING WALL OPENINGS TO BE INFILLED SHALL BE REINFORCED WITH BARS TO MATCH THOSE IN THE ADJACENT EXISTING CONCRETE. DOWELS FOR THOSE BARS SHALL BE PLACED INTO ADJACENT CONCRETE.

7. PRIOR TO CUTTING OPENINGS IN EXISTING WALLS, ANY ADJACENT IN-FILL WORK SHALL BE COMPLETED AND THE IN-FILL CONCRETE SHALL HAVE REACHED ITS REQUIRED 28-DAY COMPRESSIVE STRENGTH.

8. SAWCUTS FOR NEW WALL OPENINGS SHALL NOT EXTEND PAST THE REQUIRED DIMENSIONS FOR THE OPENING. CORE DRILL THE CORNERS AND EXTEND SAW CUTS INTO THE CORED AREAS AND NOT BEYOND IT. CHIP OUT THE REMAINDER AT THE CORNERS TO ACHIEVE A CLEAN 90 DEGREE CORNER.

9. THE LOCATION AND LENGTH OF ANY NEW STEEL FRAMING SHALL BE COORDINATED WITH THE EXISTING STEEL DECK SLABS AND ROOF DECKS SUCH THAT THE NEW STRUCTURAL STEEL BEAM CENTERLINES CORRESPOND WITH THE RIBS OF THE STEEL DECK.

10. THE CONTRACTOR SHALL SUBMIT COORDINATED SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CUTTING OR ERECTION OF ANY NEW STRUCTURAL STEEL.

11. VERIFY ACCESSIBILITY TO THE BUILDING AND MAXIMUM WORKABLE MEMBER LENGTHS BEFORE COMMENCING WITH FABRICATION. IF THE NEW STRUCTURAL ELEMENTS CANNOT BE SHIPPED AND INSTALLED AS CONTINUOUS MEMBERS, ANY SPLICES SHALL CONSIST OF COMPLETE PENETRATION WELDING OF THE FLANGES AND PARTIAL PENETRATION WELDING OF THE WEB OF THE NEW BEAM. THE CONTRACTOR SHALL SUBMIT PROPOSED SPLICE DETAILS AND LOCATIONS TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.

12. REMOVE EXISTING FIREPROOFING LOCALLY AND CLEAN AREAS OF EXISTING STEEL TO BE WELDED. INSTALL NEW U.L. APPROVED FIREPROOFING MATERIAL ON ALL NEW STEEL AND ANY AREAS WHERE FIREPROOFING WAS REMOVED OR DAMAGED DURING THE INSTALLATION OF THE WORK. NEW STEEL SHALL HAVE A FIRE RATING TO MATCH THE ADJACENT EXISTING STEEL, TYPICAL UNLESS NOTED OTHERWISE. REFER TO ARCHITECTURAL DOCUMENTS FOR REQUIRED FIRE RATINGS.

POST-INSTALLED ANCHORS

1. POST-INSTALLED ANCHORS SHALL NOT BE SUBSTITUTED FOR CAST-IN ANCHORS WITHOUT PRIOR APPROVAL OF STRUCTURAL ENGINEER.

2. CONCRETE WEDGE EXPANSION ANCHORS, MADE OF STEEL, SHALL BE HILTI KWIK-BOLT TZ2 WEDGE ANCHOR (ICC-ES ESR-4266), SIMPSON STRONG-BOLT 2 WEDGE ANCHOR (ICC-ES ESR-3037), DEWALT POWER-STUD+SD2 WEDGE EXPANSION ANCHOR (ICC-ES ESR-2502) OR APPROVED EQUAL.

3. CONCRETE ADHESIVE ANCHORS SHALL BE HILTI HIT-RE 500 V3 ADHESIVE ANCHORAGE SYSTEMS (ICC-ES ESR-3814), SIMPSON SET-3G ADHESIVE ANCHORAGE SYSTEMS (ICC-ES ESR-4057), DEWALT PURE110+ ADHESIVE ANCHORAGE SYSTEMS (ICC-ES ESR-3298) OR APPROVED EQUAL. THREADED RODS USED IN ADHESIVE ANCHORAGE SYSTEMS SHALL MEET THE REQUIREMENTS OF ASTM F 1554, GRADE 36 FOR BASE PLATE ANCHOR RODS AND ASTM A193, GRADE B7 FOR ALL OTHER THREADED RODS UNLESS NOTED OTHERWISE. REINFORCING BARS USED IN ADHESIVE ANCHORAGE SYSTEMS SHALL BE ASTM A615, GRADE 60 REINFORCING BARS. REMOVE GREASE, OIL, RUST, AND OTHER LAITANCE FROM RODS AND DOWELS PRIOR TO INSTALLATION.

4. CONCRETE SCREW ANCHORS, MADE OF STEEL, SHALL BE HILTI KH-EZ (ICC-ES ESR-3027), SIMPSON TITEN HD (ICC-ES ESR-2713), DEWALT SCREW-BOLT (ICC-ES ESR-3889) OR APPROVED EQUAL.

5. MASONRY WEDGE EXPANSION ANCHORS, MADE OF STEEL, INSTALLED IN GROUT-FILLED CONCRETE BLOCK SHALL BE HILTI KWIK BOLT 1 EXPANSION ANCHOR (IAMPO-UES ER-677), SIMPSON STRONG-BOLT 2 (IAPMO-UES ER-240), DEWALT POWER-STUD+SD1 EXPANSION ANCHOR (ICC-ES ESR-2966) OR APPROVED EQUAL.

6. MASONRY ADHESIVE ANCHORS TO BE INSTALLED IN GROUT-FILLED CONCRETE BLOCK SHALL BE HILTI HIT-HY 270 ADHESIVE ANCHORAGE SYSTEMS (ICC-ES ESR-4143), SIMPSON SET-XP ADHESIVE ANCHORAGE SYSTEMS (IAPMO-UES ER-265), DEWALT AC100+GOLD ADHESIVE ANCHORAGE SYSTEMS (ICC-ES ESR-3200) OR APPROVED EQUAL. THREADED RODS USED IN ADHESIVE ANCHORAGE SYSTEMS SHALL MEET THE REQUIREMENTS OF ASTM A193, GRADE B7. REINFORCING BARS USED IN ADHESIVE ANCHORAGE SYSTEMS SHALL BE ASTM A615, GRADE 60 REINFORCING BARS. REMOVE GREASE, OIL, RUST, AND OTHER LAITANCE FROM RODS AND DOWELS PRIOR TO INSTALLATION.

7. MASONRY SCREW ANCHORS, MADE OF STEEL, INSTALLED IN GROUT-FILLED CONCRETE BLOCK SHALL BE HILTI KH-EZ (ICC-ES ESR-3056), SIMPSON TITEN HD (ICC-ES ESR-1056), DEWALT SCREW-BOLT+ (ICC-ES ESR-4042) OR APPROVED EQUAL.

8. PROVIDE STAINLESS STEEL FASTENERS FOR EXTERIOR USE OR WHEN EXPOSED TO WEATHER. PROVIDE GALVANIZED CARBON STEEL ANCHORS AT OTHER LOCATIONS, UNLESS OTHERWISE NOTED.

9. IF REINFORCEMENT IS ENCOUNTERED DURING DRILLING, ABANDON AND SHIFT THE HOLE LOCATION TO AVOID THE REINFORCEMENT. PROVIDE A MINIMUM OF 2 ANCHOR DIAMETERS OR 1 INCH, WHICHEVER IS LARGER, OF SOUND CONCRETE BETWEEN THE DOWEL AND THE ABANDONED HOLE. FILL THE ABANDONED HOLE WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED AS NOTED, THE ENGINEER WILL DETERMINE A NEW LOCATION.

10. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS PRIOR TO FABRICATING PLATES, MEMBERS, OR OTHER STEEL ASSEMBLIES ATTACHED WITH MECHANICAL ANCHORS.

11. ALL POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THE APPLICABLE ICC EVALUATION SERVICES REPORT.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED BY A FABRICATOR WITH ONE OF THE FOLLOWING MINIMUM QUALIFICATIONS AND BE APPROVED BY AUTHORITY HAVING JURISDICTION (AHJ). QUALIFICATIONS SHALL BE IN EFFECT AT TIME OF BID.

INTERNATIONAL ACCREDITATION SERVICE, INC. (IAS) APPROVED FABRICATOR
AISC CERTIFIED BUILDING FABRICATOR (BU)
AHJ CERTIFIED FABRICATOR

2. ALL STEEL SHALL BE ERECTED BY AN AISC CERTIFIED ERECTOR (CSE).

3. FABRICATOR SHALL SUBMIT DOCUMENTATION OF THEIR CERTIFICATION WITH THE FIRST SHOP DRAWING SUBMITTAL.

4. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 360 "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" AND AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES" USING LOAD AND RESISTANCE FACTOR DESIGN (LRFD).

5. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING DESIGNATED ASTM STANDARDS:

WIDE FLANGES: ASTM A992
HOLLOW STRUCTURAL SECTIONS (HSS): ASTM A500, GRADE C
CHANNELS AND ANGLES: ASTM A36
PLATES: ASTM A36, TYPICAL U.N.O.
CONTINUITY PLATES AND CAP PLATES AT MOMENT CONNECTIONS: ASTM A572, GRADE 50
PIPE: ASTM A53, GRADE B
ANCHOR RODS: ASTM F1554, GRADE 36 (J-BOLTS AND L-BOLTS ARE NOT ACCEPTABLE)

6. BOLTED CONNECTIONS SHALL BE DESIGNED AND INSTALLED USING HIGH-STRENGTH BOLTS IN ACCORDANCE WITH THE RCSC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS". USE ASTM A325 BOLTS IN BEARING-TYPE CONNECTIONS WITH THREADS PERMITTED IN THE SHEAR PLANE (TYPE N), UNLESS OTHERWISE NOTED. WASHERS SHALL CONFORM TO ASTM F436. CONNECTIONS MAY BE SNUG-TIGHTENED, UNLESS NOTED OTHERWISE.

7. ALL CONNECTION FORCES INDICATED ON THE DRAWINGS ARE FACTORED LOADS ACCORDING TO THE LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHOD.

8. UNLESS NOTED OTHERWISE, THE STEEL FABRICATOR SHALL DETAIL ALL CONNECTIONS PER THE CONSTRUCTION DOCUMENT CONNECTION DESIGN DETAILS. SUBSTITUTION OR MODIFICATION TO THE CONSTRUCTION DOCUMENT CONNECTION DETAILS IS ACCEPTABLE AS LONG AS THEY ARE SUBMITTED WITH SEALED CALCULATIONS PROVIDED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED. CONNECTION DETAILS MAY BE SELECTED OR COMPLETED USING DETAILS INDICATED ON THE DRAWINGS AND THE SECTIONS REGARDING CONNECTIONS IN THE AISC "MANUAL OF STEEL CONSTRUCTION" AND DESIGNED USING THE LRFD METHOD TO WITHSTAND THE REACTION FORCES INDICATED. JOINTS THAT ARE NOT SHOWN IN THE CONSTRUCTION DOCUMENTS SHALL BE DETAILED BY THE FABRICATOR AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW THROUGH A REQUEST FOR INFORMATION OR CLOUDED AND DETAILED IN THE SHOP DRAWINGS.

9. BOLTED CONNECTIONS DETAILED IN THE FINAL CONDITION TO PERMIT SLIP BETWEEN CONNECTED ELEMENTS SHALL BE TIGHTENED FINGER TIGHT. NOTCH FIRST BOLT THREAD PROJECTING FROM THE NUT OR INSTALL A JAM NUT.

10. INSTALL ANCHOR RODS AT COLUMN BASE PLATES WITH ASTM A36 STEEL PLATE WASHERS AND ASTM A563 STEEL HEAVY HEX NUTS. INSTALL ANCHOR RODS AT OTHER LOCATIONS AS INDICATED WITH ASTM F436, TYPE 1, STEEL HARDENED WASHERS AND ASTM A563 STEEL HEAVY HEX NUTS.

11. WELDING SHALL CONFORM TO STANDARDS OF AWS D1.1 "STRUCTURAL WELDING CODE—STEEL: TYPICAL AND AWS D1.8 "STRUCTURAL WELDING CODE—SEISMIC SUPPLEMENT" WHERE SPECIFIED. ELECTRODES FOR FIELD AND SHOP WELDING SHALL CONFORM TO AWS RECOMMENDATIONS. WELDS NOT INDICATED ON THE DRAWINGS SHALL BE AWS MINIMUM OR AS REQUIRED TO SATISFY STRENGTH CRITERIA, WHICHEVER IS GREATER. FOLLOW PREHEAT REQUIREMENTS OF AWS.

12. ARC-WELDING ELECTRODES AND FILLER METALS TO BE LOW HYDROGEN TYPES E7XTX, E7XTXX OR E70XXX MINIMUM AS APPLICABLE.

13. WELDERS SHALL BE CERTIFIED BY AWS AND THE APPLICABLE AUTHORITY HAVING JURISDICTION.

14. GENERALLY, DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP-WELDING AND FIELD-WELDING. THE CONTRACTOR SHALL DETERMINE THE MOST ECONOMICAL, EFFICIENT AND PRACTICAL COMBINATIONS OF SHOP-WELDING AND FIELD-WELDING.

15. CAMBER BEAMS UPWARD THE DESIGNATED AMOUNT INDICATED ON THE STRUCTURAL DRAWINGS. BEAMS WITHOUT A SPECIFIED CAMBER SHALL BE ORIENTED SUCH THAT ANY NATURAL CAMBER IS UPWARD.

16. SPLICING STRUCTURAL MEMBERS WHERE NOT DETAILED ON STRUCTURAL DRAWINGS IS PROHIBITED WITHOUT PRIOR ACCEPTANCE BY THE STRUCTURAL ENGINEER.

17. OPENINGS AND SLEEVES IN STRUCTURAL STEEL MEMBERS SHALL BE SHOP CUT ONLY. FIELD BURNING, CUTTING, RE-DRILLING OR OTHER FIELD MODIFICATION IS NOT PERMITTED ON STRUCTURAL STEEL MEMBERS WITHOUT PRIOR ACCEPTANCE OF THE STRUCTURAL ENGINEER.

18. HEADED CONCRETE ANCHORS, SHEAR CONNECTORS AND DEFORMED BAR ANCHORS SHALL BE AUTOMATICALLY END WELDED.

19. SHEAR CONNECTORS SHALL BE MANUFACTURED BY NELSON STUD WELDING CO., LORAIN, OHIO, OR OTHER MANUFACTURER ACCEPTABLE TO STRUCTURAL ENGINEER. SHEAR CONNECTORS SHALL BE NELSON TYPE S3L OR EQUIVALENT AND SHALL BE MANUFACTURED FROM COLD DRAWN STEEL CONFORMING TO ASTM A 108. STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF AWS C5.4 "RECOMMENDED PRACTICES FOR STUD WELDING" AND AWS D1.1 "STRUCTURAL WELDING CODE".

20. SEE ARCHITECTURAL DRAWINGS FOR FIREPROOFING REQUIREMENTS. FOR FIREPROOFING PURPOSES, FRAMING SHALL BE CONSIDERED EITHER "UNRESTRAINED" OR "RESTRAINED" DEPENDING ON STRUCTURAL SYSTEM AS DEFINED IN ASTM E119 AND UL 263.

21. ALL STRUCTURAL STEEL EXCEPT EMBEDDED STEEL WHICH IS IN CONTACT WITH CONCRETE, STEEL TO BE FIREPROOFED, AND STEEL TO BE GALVANIZED SHALL BE CLEANED AND SHOP-PRIMED AS INDICATED IN THE PROJECT SPECIFICATIONS. SEE THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR FINISH PAINTING REQUIREMENTS.

22. UNLESS SPECIFICALLY SHOWN TO BE PAINTED, GALVANIZE ALL EXTERIOR STRUCTURAL STEEL. PROVIDE GALVANIZING AS INDICATED IN THE PROJECT SPECIFICATIONS. TOUCH-UP GALVANIZING WITH GALVANIZING REPAIR PAINT AS INDICATED IN THE PROJECT SPECIFICATIONS.

WOOD

1. PLYWOOD SHALL BE APA RATED SHEATHING, WITH AN EXTERIOR OR EXPOSURE 1 DURABILITY CLASSIFICATION AND SHALL BEAR THE STAMP OF AN APPROVED TESTING AGENCY. LAY UP FLOOR AND ROOF WITH THE FACE GRAIN PERPENDICULAR TO SUPPORTS. STAGGER JOINTS. PROVIDE PLY CLIPS AT MIDSPAN OF ALL UNSUPPORTED PLYWOOD EDGES. ALL NAILING SHALL BE COMMON NAILS. IF GUN NAILS ARE USED IN LIEU OF COMMON NAILS, REDUCE NAIL SPACING TO 4" O.C. AT EDGE NAILING AND 8" O.C. AT FIELD NAILING.

2. PLYWOOD PROPERTIES AND ATTACHMENT:

ROOF:
THICKNESS: 19/32"
SPANINDEX RATIO: 40/20
EDGE NAILING (COMMON NAILS): 10D (.148 DIA) AT 6" O.C.
FIELD NAILING (COMMON NAILS): 10D (.148 DIA) AT 12" O.C.
MINIMUM NAIL PENETRATION (IN FRAMING): 1-5/8"

3. SAWN FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN WOOD PRODUCT ASSOCIATION OR THE WEST COAST LUMBER INSPECTIONS BUREAU. MAXIMUM MOISTURE CONTENT AT TIME OF INSTALL AND IN SERVICE NOT TO EXCEED 19%. ALL MEMBERS SIZES SHOWN IN STRUCTURAL DRAWINGS ARE NOMINAL SIZES U.N.O. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED GRADING AGENCY.

4. SAWN LUMBER PROPERTIES:

JOISTS AND BEAMS WITH THICKNESS LESS THAN OR EQUAL TO 4"
FB (PSI): 900
FV (PSI): 180
E (PSI): 1,600,000
FC PARALLEL (PSI): 1350
FC PERPENDICULAR (PSI): 625
SPECIES AND GRADE: DOUGLAS FIR-LARCH #2

5. JOIST HANGERS AND OTHER MISCELLANEOUS FRAMING ANCHORS SHALL BE MANUFACTURED BY SIMPSON STRONGTIE COMPANY OR OTHER MANUFACTURER WITH I.C.C. APPROVAL. ALL NAIL HOLES IN JOIST HANGERS AND MISCELLANEOUS FRAMING ANCHORS SHALL BE FILLED WITH NAILS PER MANUFACTURER'S PUBLISHED NAIL SIZES.

6. STEEL STRAPS AND TENSION TIES SHALL BE MANUFACTURED BY SIMPSON STRONGTIE COMPANY. FOR STEEL STRAPS INSTALLED OVER SHEATHING, USE 2 1/2" LONG NAILS MINIMUM.

7. DO NOT NOTCH OR DRILL JOISTS, BEAMS OR LOAD BEARING STUDS WITHOUT PRIOR APPROVAL OF STRUCTURAL ENGINEER. DOUBLE UP FLOOR JOISTS UNDER PARTITIONS. PROVIDE 1 X 3 OR METAL CROSS BRIDGING AT MIDSPAN AT ALL FLOOR JOISTS. PROVIDE 2" SOLID BLOCKING AT SUPPORT OF ALL JOISTS. DOUBLE UP STUDS AT JAMBS AND UNDER BEAMS IN BEARING WALLS. PROVIDE 2 X SOLID BLOCKING AT MID-HEIGHT OF BEARING STUD WALLS. ALL NAILING NOT NOTED SHALL BE ACCORDING TO IBC TABLE 2304.10.1.

PMT24-00829

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation
150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer Certificate 45712 CRYSTAL ENDERS BLANTON Date Signed 1/11/24 Arizona U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

ISSUE FOR PERMIT

DATE
11 January 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

GENERAL STRUCTURAL NOTES

DRAWING
S0.1.2

SHEET	CATALOG NUMBER:
12 - OF - 49	A-282714

3/15/2024 10:59:24 AM

SHOP DRAWINGS

1. SHOP DRAWINGS ARE TO BE SUBMITTED FOR ALL STRUCTURAL ITEMS AND AS REQUIRED BY THE SPECIFICATIONS. CONTRACT DRAWINGS SHALL NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.

2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW BY THE ENGINEER OF RECORD PRIOR TO FABRICATION.

3. CONTRACTOR SHALL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMITTAL. ALL ITEMS NOT IN ACCORDANCE WITH THE CONTRACT SHALL BE SO NOTED UPON THE CONTRACTOR'S REVIEW. ANY SHOP DRAWINGS OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.

4. ANY SHOP DRAWING NOT CHECKED AND INITIALED BY THE SUPPLIER/DETAILER PRIOR TO SUBMITTING FOR ARCHITECTURAL AND ENGINEERING REVIEW WILL BE RETURNED WITHOUT REVIEW.

5. ANY CHANGE FROM THE ORIGINAL DRAWINGS SHALL BE NOTED BY THE SUBMITTING PARTY. ANY CHANGES NOT CALLED OUT SHALL BE CONSIDERED NOT APPROVED UNLESS SPECIFICALLY NOTED OTHERWISE. THE SHOP DRAWING STAMP SHALL NOT BE CONSIDERED IMPLIED APPROVAL OF ANY CHANGES.

6. SHOP DRAWINGS SHALL NOT REPLACE THE CONTRACT DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY AND NOT NOTED BY THE REVIEWER ARE NOT TO BE CONSIDERED CHANGES TO THE CONTRACT DRAWINGS. REVIEW IS INTENDED AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ITEMS ARE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DRAWINGS.

7. ANY ENGINEERING DESIGN PERFORMED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE APPROPRIATE JURISDICTION AND DISCIPLINE. COMPLETE DESIGN CALCULATIONS FOR EACH MEMBER SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW BY THE ENGINEER OF RECORD. THE ADEQUACY OF DESIGNS AND LAYOUTS PERFORMED BY OTHERS RESTS WITH THE DESIGNING OR SUBMITTING PARTY.

SPECIAL INSPECTIONS

1. THE OWNER SHALL EMPLOY SPECIAL INSPECTORS, QUALIFIED TO THE SATISFACTION OF THE BUILDING OFFICIAL, WHO SHALL PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE WORK INDICATED BY THE SPECIAL INSPECTIONS TABLES ON THE APPROVED DESIGN DRAWINGS.

2. SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY. INSPECTORS FOR EACH SYSTEM AND MATERIAL SHALL BE INTERNATIONAL CODE COUNCIL (ICC) CERTIFIED OR OTHERWISE APPROVED BY THE BUILDING OFFICIAL.

3. THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.

4. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, CONTRACTOR, OWNER, AND ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.

5. SEE PROJECT SPECIFICATIONS AND REFERENCED STANDARDS FOR FREQUENCY OF TESTING.

6. AT THE CONCLUSION OF CONSTRUCTION, A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF PREVIOUSLY NOTED DISCREPANCIES SHALL BE SUBMITTED.

7. THE FOLLOWING TYPES OF WORK SHALL BE INSPECTED BY A SPECIAL INSPECTOR IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE:

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION AND INSPECTION	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	REFERENCE STANDARD	IBC REFERENCE
- INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS, AND PLACEMENT	---	X	ACI 318: 3.5, 7.1-7.7	1910.04
- INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2b	---	---	AWS D1.4, ACI 318: 3.5.2	---
- INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.	---	X	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
- INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS	---	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
- VERIFYING USE OF REQUIRED DESIGN MIX	---	X	ACI 318: CH. 4, 5.2-5.4	1904.2, 1910.2, 1910.3
- AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	x	---	ASTM C172, ASTM C31, ACI 318: 5.6, 5.8	1910.10
- INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	x	---	ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
- INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	---	x	ACI 318: 5.11-5.13	1910.9
INSPECTION OF PRESTRESSED CONCRETE:				
- APPLICATION OF PRESTRESSING FORCES	x	---	ACI 318: 18.20	---
- GROUTING OF BONDED PRESTRESSING TENDONS IN THE SEISMIC FORCE-RESISTING SYSTEM	x	---	ACI 318: 18.18.4	---
- ERECTION OF PRECAST CONCRETE MEMBERS	---	x	ACI 318: CH. 16	---
- VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	---	x	ACI 318: 6.2	---
- INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE MEMBER BEING FORMED	---	x	ACI 318: 6.1.1	---

REQUIRED VERIFICATION AND INSPECTION OF MASONRY CONSTRUCTION - LEVEL B QUALITY ASSURANCE FOR RISK CATEGORY I, II AND III

-VERIFICATION F'm AND fAAC IN ACCORDANCE WITH ARTICLE 1.4B PRIOR TO CONSTRUCTION
-VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH ARTICLE 1.5 B1.b.3 FOR SELF CONSOLIDATING GROUT

VERIFICATION AND INSPECTION	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED	REFERENCE CRITERIA: TMS 402/ACI 530/ASCE 5	REFERENCE CRITERIA: TMS 602/ACI 530.1/ASCE 6
1. VERIFY COMPLIANCE WITH APPROVED SUBMITTALS		X		ART. 1.5
2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. PROPORTIONS OF SITE-PREPARED MORTAR		X		ART. 2.1, 2.6 A
B. CONSTRUCTION OF MORTAR JOINTS		X		ART. 3.3B
C. LOCATION OF REINFORCEMENT AND CONNECTORS		X		ART. 3.4
3. PRIOR TO GROUTING, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
A. GROUT SPACE		X		ART. 3.2 D, 3.2 F
B. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS		X	SECT. 6.1	ART. 2.4, 3.4 F
C. PLACEMENT OF REINFORCEMENT AND CONNECTORS		X	SECT. 6.1, 6.2.1, 6.2.6, 6.2.7	ART. 3.2 E, 3.4
D. PROPORTIONS OF SITE-PREPARED GROUT		X		ART. 2.6 B, 2.4 G.1.b
E. CONSTRUCTION OF MORTAR JOINTS		X		ART. 1.8 C, 1.8 D
4. VERIFY DURING CONSTRUCTION:				
A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X		ART. 3.3 F
B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION		X	SECT. 1.2.1 (E), 6.1.4.3, 6.2.1	
C. WELDING OF REINFORCEMENT	X		SECT. 8.1.6.7.2, 9.3.3.1 (C), 11.3.3.4(B)	
D. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))		X		ART. 1.8 C, 1.8 D
E. PLACEMENT OF GROUT	X			ART. 3.5
5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X		ART. 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B.4

REQUIRED VERIFICATION AND INSPECTION OF GENERAL STEEL CONSTRUCTION

INSPECTION TASKS PRIOR TO WELDING: (AISC TABLE C-N5.4-1)	2010 AWS D1.1/D1.1M REFERENCES
WELDING PROCEDURE SPECIFICATIONS (WPSs) AVAILABLE	6.3
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	6.2
MATERIAL IDENTIFICATION (TYPE/GRADE)	6.2
WELDER IDENTIFICATION SYSTEM	6.4 (WELDER QUALIFICATION) (IDENTIFICATION SYSTEM NOT REQUIRED BY AWS D1.1/D1.M)
FIT-UP OF GROOVE WELDS (INCLUDING JOIN GEOMETRY) -JOINT PREPARATION -DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) -CLEANLINESS (CONDITION OF STEEL SURFACES) -TACKING (TACK WELD QUALITY AND LOCATION) -BACKING TYPE AND FIT (IF APPLICABLE)	- 6.5.2 5.22 5.15 5.18 5.10, 5.22.1.1
CONFIGURATION AND FINISH OF ACCESS HOLES	6.5.2, 5.17, (ALSO SECTION J1.6)
FIT-UP OF FILLET WELDS -DIMENSIONS (ALIGNMENT, GAPS AT ROOT) -CLEANLINESS (CONDITION OF STEEL SURFACES) -TACKING (TACK WELD QUALITY AND LOCATION	- 5.22.1 5.15 5.18
CHECK WELDING EQUIPMENT	6.2, 5.11
INSPECTION TASKS DURING WELDING: (AISC TABLE C-N5.4-2)	
USE OF QUALIFIED WELDERS	6.4
CONTROL AND HANDLING OF WELDING CONSUMABLES - PACKAGING -EXPOSURE CONTROL	6.2 5.12.1 5.12.2
NO WELDING OVER CRACKED TACK WELDS	5.18
ENVIRONMENTAL CONDITIONS -WIND SPEED WITHIN LIMITS -PRECIPITATION AND TEMPERATURE	- 5.12.1 5.12.2
WPS FOLLOWED -SETTINGS ON WELDING EQUIPMENT -TRAVEL SPEED -SELECTED WELDING MATERIALS -SHIELDING GAS TYPE/FLOW RATE -PREHEAT APPLIED -INTERPASS TEMPERATURE MAINTAINED -PROPER POSITION (F, V, H, OH)	6.33, 6.52, 5.5, 5.21 - - - - 5.6, 5.7 - -
WELDING TECHNIQUES -INTERPASS AND FINAL CLEANING -EACH PASS WITHIN PROFILE LIMITATIONS -EACH PASS MEETS QUALITY REQUIREMENTS	6.5.2, 6.5.3, 5.24 5.30.1 - -
INSPECTION TASKS AFTER WELDING: (AISC TABLE C-N5.4-3)	
WELDS CLEANED	5.30.1
SIZE, LENGTH, AND LOCATIONS OF WELDS	6.5.1
WELDS MEET VISUAL ACCEPTANCE CRITERIA -CRACK PROHIBITION -WELD/BASE-METAL FUSION -CRATER CROSS SECTION -WELD PROFILES -WELD SIZE -UNDERCUT -POROSITY	6.5.3 TABLE 6.1 (1) TABLE 6.1 (2) TABLE 6.1 (3) TABLE 6.1 (4), 5.24 TABLE 6.1 (6) TABLE 6.1 (7) TABLE 6.1 (8)
ARC STRIKES	5.29
k-AREA	NOT ADDRESSED IN AWS
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	5.10, 5.31
REPAIR ACTIVITIES	6.5.3, 5.26
DOCUMENTATION ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	6.5.4, 6.5.5
INSPECTION TASKS PRIOR TO BOLTING: (AISC TABLE C-N5.6-1)	APPLICABLE RCSC SPECIFICATION REFERENCE
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	2.1, 9.1
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	FIGURE C-2.1, 9.1 (ALSO SEE ASTM STANDARDS)
PROPER FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH, IF THREADS TO BE EXCLUDED FROM SHEAR PLANE)	2.3.2, 2.7.2, 9.1
PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	4, 8
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITIONS AND HOLE PREPARATIONS, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	3, 9.1, 9.3
PRE-INSTALLATION OF VERIFICATION TESTING BY INSTALLATION PERSONEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	7, 9.2
PROPER STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	2.2, 8, 9.1
INSPECTION TASKS DURING BOLTING: (AISC TABLE C-N5.6-2)	APPLICABLE RCSC SPECIFICATION REFERENCE
FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND WASHERS (IF REQUIRED) ARE POSITIONED AS REQUIRED	8.1, 9.1
JOINT BROUGHT TO THE SNUG, TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	8.1, 9.1
FASTENERS COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	8.2, 9.2
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH A METHOD APPROVED BY THE RCSC AND PROGRESSING SYSTEMATICALLY FROM MOST RIGID POINT TOWARDS FREE EDGES	8.2, 9.2
INSPECTION TASKS AFTER BOLTING: (AISC TABLE C-N5.6-3)	
DOCUMENT ACCEPTANCE OR REDACTION OF BOLTED CONNECTIONS	NOT ADDRESSED BY RCSC

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PROJECT NAME
i.d.e.a. Museum - Lab Renovation

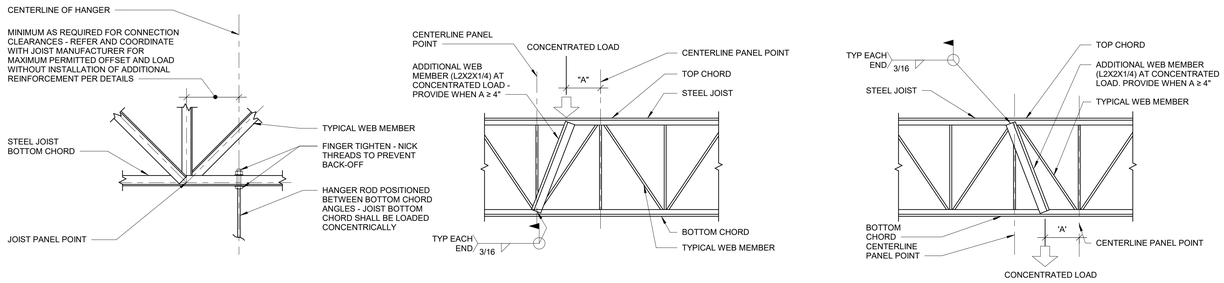
GENERAL STRUCTURAL NOTES

DRAWING
S0.2.2

SHEET	CATALOG NUMBER:
13 - OF - 49	A-282715

PMT24-00829

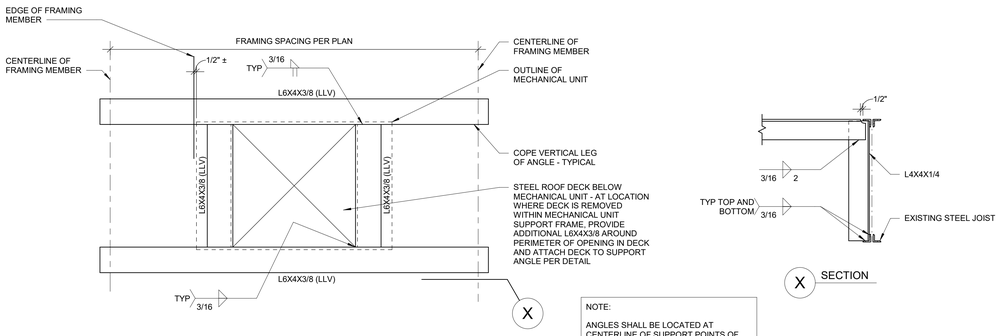
3/15/2024 10:55:24 AM



NOTES:

1. APPLY CONCENTRATED LOADS TO PANEL POINTS OF JOIST - CONCENTRATED LOADS SHALL BE APPLIED CONCENTRICALLY TO TOP OR BOTTOM CHORDS AS APPLICABLE
2. REINFORCE JOIST AS SHOWN FOR CONCENTRATED LOADS NOT APPLIED AT PANEL POINTS
3. DO NOT SUSPEND UTILITIES OR CEILING FROM ROOF DECK OR JOIST BRIDGING
4. OFFSET FOR THE HANGER RODS TO BE 0" IF CANNOT BE COORDINATED WITH THE MANURFACTURER. /2

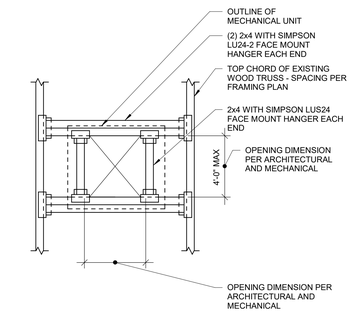
T11 / S0.3.2 — TYPICAL DETAIL - CONCENTRATED LOADS AT STEEL JOIST
SCALE: NTS



NOTE:

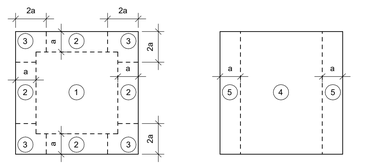
ANGLES SHALL BE LOCATED AT CENTERLINE OF SUPPORT POINTS OF MECHANICAL UNIT

T6 / S0.3.2 — TYPICAL DETAIL - ROOF OPENING FRAME
SCALE: NTS



T9 / S0.3.2 — TYPICAL DETAIL - FRAMING AROUND SMALL ROOF OPENING
SCALE: NTS

ULTIMATE WIND SURFACE PRESSURE (PSF)						
ZONE	EFFECTIVE WIND AREA (SQ. FT)					
	10	20	50	100	200	500
1	-29.0 16.0	---	-27.0 16.0	-26.4 16.0	---	-26.4 16.0
2	-48.4 16.0	---	-36.5 16.0	-31.3 16.0	---	-31.3 16.0
3	-72.9 16.0	---	-43.8 16.0	-31.3 16.0	---	-31.3 16.0
4	-29.0 26.0	---	---	-26.0 23.0	-24.0 21.0	-22.0 19.0
5	-35.0 26.0	---	---	-30.0 23.0	-25.0 21.0	-22.0 19.0
PARAPET	-58.4 95.0	-54.6 87.1	-49.4 76.7	-45.5 68.8	-41.7 67.5	-36.5 65.8



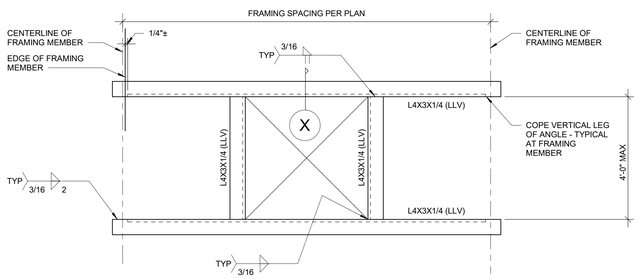
SCHEMATIC ROOF PLAN

SCHEMATIC WALL ELEVATION

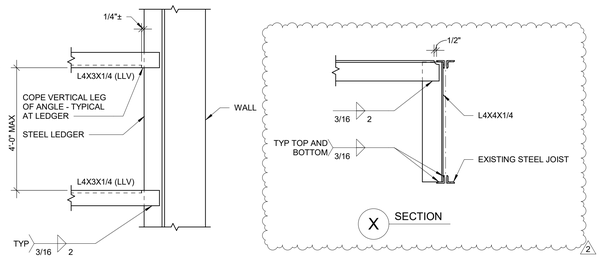
NOTES:

1. WIND DESIGN PARAMETERS PER GENERAL STRUCTURAL NOTES.
2. POSITIVE AND NEGATIVE VALUES SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.
3. a = 10% OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER BUT NOT LESS THAN 4% OF THE LEAST HORIZONTAL DIMENSION OR 3'-0".
4. WALL AND ROOF WIND FORCES ARE CALCULATED FOR MEAN ROOF HEIGHT = ##' - #".
5. WALL AND PARAPET FORCES SHALL BE APPLIED INWARD AND OUTWARD AS ALTERNATIVE LOAD CASES.
6. BUILDING SKETCHES SHOWN DO NOT REPRESENT THE ACTUAL BUILDING SHAPE, BUT ARE INTENDED TO SHOW ZONES OF PRESSURE VARIATION.

T1 / S0.3.2 — TYPICAL DETAIL - COMPONENT AND CLADDING WIND FORCES PER ASCE 7-16 (h > 60'-0" AT ROOFS WITH SLOPE ≤ 10°)
SCALE: NTS



TYPICAL ROOF OPENING FRAME AT FRAMING MEMBERS



TYPICAL ROOF OPENING FRAME AT WALL

T3 / S0.3.2 — TYPICAL DETAIL - SMALL ROOF OPENING FRAME
SCALE: NTS

PMT24-00829

3/1/2024 1:59:25 AM

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2	90% CLIENT REVIEW COMMENTS	03/15/2024

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Registered Professional Engineer — CERTIFICATE NO. 45712 — CRYSTAL ENDERS BLANTON — STATE OF ARIZONA — REGISTERED — ARIZONA U.S.A.

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TYPICAL DETAILS T1 - T20

DRAWING
S0.3.2

SHEET	CATALOG NUMBER:
14 - OF - 49	A-282716

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NOTE:

IF CELLS ARE UNGROUTED BREAK OUT MASONRY AND GROUT IN HOOKED #5 DOWELS IN LIEU OF ADHESIVE

T21 / S0.4.2 TYPICAL DETAIL - MASONRY INFILL AT EXISTING WALL OPENING
SCALE: NTS

SUGGESTED ERECTION SEQUENCE:

1. BREAK OPEN FACE SHELLS AND SOLID GROUT WALL ABOVE PROPOSED OPENING AND OPENING JAMBS
2. SAWCUT TOP OF OPENING AND INSTALL DOUBLE ANGLES
3. SAWCUT OPENING AT JAMBS AND ALONG BOTTOM OF OPENING, REMOVE MASONRY

NOTE:
ALL NEW GROUT SHALL HAVE 3 DAY MINIMUM CURE TIME PRIOR TO CUTTING EXISTING MASONRY

T22 / S0.4.2 TYPICAL DETAIL - ELEVATION AT NEW OPENING IN EXISTING MASONRY WALL
SCALE: NTS

SUGGESTED ERECTION SEQUENCE:

1. BREAK OPEN FACE SHELLS AND SOLID GROUT WALL ABOVE PROPOSED OPENING AND OPENING JAMBS

2. INSTALL DOUBLE CHANNEL LINTEL AND BOLT TOGETHER

3. DRILL HOLES IN 4 CORNERS OF EXISTING MASONRY WALL SO NOT TO OVERCUT

4. REMOVE EXISTING MASONRY WALL AT EACH END AS REQUIRED TO INSTALL COLUMN AND BASE

5. SAWCUT MASONRY ALONG BOTTOM OF OPENING AND REMOVE MASONRY

T24 / S0.4.2 TYPICAL DETAIL - ELEVATION AT NEW OPENING IN EXISTING MASONRY WALL
SCALE: NTS

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TYPICAL DETAILS T21 - T40

DRAWING
S0.4.2

SHEET	CATALOG NUMBER:
15 - OF - 49	A-282717

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ABBREVIATIONS

ACI	AMERICAN CONCRETE INSTITUTE
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ARCH	ARCHITECT OR ARCHITECTURAL DOCUMENTS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
BP	BASE PLATE
BOD	BOTTOM OF DECK
CC	CONCRETE COLUMN
CB	CONCRETE BEAM
CALCS	CALCULATIONS
CJ	CONTROL JOINT OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
C	COLUMN
DEG	DEGREE
DIA	DIAMETER
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DRILLED PIER
E	MODULUS OF ELASTICITY
EOD	EDGE OF ROOF DECK
EOS	EDGE OF SLAB
EJ	EXPANSION JOINT
EL	ELEVATION
EQ	EQUAL
EXT	EXTERIOR
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FT	FOOT (FEET)
F	FOOTING
FY	YIELD STRESS STEEL
G	GRATING
GA	GAGE OR GAUGE
GB	GRADE BEAM
GSN	GENERAL STRUCTURAL NOTES
H.P.	HIGH POINT
HS	HIGH STRENGTH
HT	HEIGHT
I (IN4)	MOMENT OF INERTIA
IBC	INTERNATIONAL BUILDING CODE
ICC	INTERNATIONAL CODE COUNCIL
ID	INSIDE DIAMETER
IN	INCH
K	KIP = 1000 LBS
KSI	KIPS PER SQUARE INCH
L	LEDGER
LBS	POUND(S)
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LT	LINTEL
LP	LOW POINT
MAX	MAXIMUM
MCJ	MASONRY CONTROL JOINT
MIN	MINIMUM
NAAMM	NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O.C.	ON CENTER
OPP	OPPOSITE
PCI	PRESTRESSED CONCRETE INSTITUTE
PC	PILE/PIER CAP
PCF	POUNDS PER CUBIC FOOT
PLF	POUNDS PER LINEAR FOOT
PSI	POUNDS PER SQUARE INCH
PT. P/T	POST-TENSIONED
PSF	POUNDS PER SQUARE FOOT
SDI	STEEL DECK INSTITUTE
SL	SNOW LOAD
SIB	STRUCTURAL ISOLATION BREAK
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SS	STAINLESS STEEL
SW	SHEARWALL
TL	TOTAL LOAD
TOC	TOP OF CONCRETE
TODP	TOP OF DRILLED PIER
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UT	ULTRASONIC TESTING
WP	WORK POINT
WWR	WELDED WIRE REINFORCEMENT
WF	WALL FOOTING
W	WALL
X-STRONG	EXTRA STRONG
XX-STRONG	DOUBLE EXTRA STRONG
#	NUMBER

PLAN LEGEND

SYMBOL	DESCRIPTION	REMARKS
	KEYNOTE REFERENCE	PER KEYED NOTES ON PLAN
	MECHANICAL EQUIPMENT	PER MECHANICAL EQUIPMENT SCHEDULE
	OPENING IN FLOOR OR ROOF	PER TYPICAL DETAILS U.N.O.
	MASONRY WALL	SIZE AND REINFORCING PER WALL (W) SCHEDULE
	CONCRETE WALL	SIZE AND REINFORCING PER WALL (W) SCHEDULE
	WALL BELOW THAT DOES NOT EXTEND TO STRUCTURE	
	WALL BELOW THAT EXTENDS TO STRUCTURE	
	WOOD STUD WALL	PER TYPICAL WOOD FRAMING WALL SCHEDULE U.N.O.
	MOMENT CONNECTION	PER PLANS AND DETAILS
	COLLECTOR BEAM	PER PLANS AND DETAILS
	BRACED FRAME	PER PLANS AND BRACED FRAME ELEVATIONS
	PLYWOOD SHEATHING	PER PLANS AND GENERAL STRUCTURAL NOTES
	GYPCRETE OVER PLYWOOD SHEATHING	PER PLANS AND GENERAL STRUCTURAL NOTES
	CONCRETE SLAB	PER PLANS
	STEEL DECK	PER PLANS AND GENERAL STRUCTURAL NOTES
	CONCRETE OVER STEEL DECK	PER PLANS AND GENERAL STRUCTURAL NOTES

LINTEL (LT) SCHEDULE

NOTE:

LINTEL TYPE PER TYPICAL DETAILS.

MARK	LINTEL TYPE	LINTEL SIZE	REMARKS
LT1	-	(2) C12X20.7	SEE DETAIL T24 / S0.4.2

MECHANICAL EQUIPMENT WEIGHTS

VERIFY ALL WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH MECHANICAL ENGINEER AND ARCHITECT

MARK	EQUIPMENT WEIGHT	REMARKS
-	-	-
B	250 LBS	-
C	9,750 LBS	-
D	6,000 LBS	-

2

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Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	03/15/2024

COM PROJECT NO.
CP0916NLAB

DRAWN BY: _____
ENGINEER: _____
APPROVED BY:_____

F165 AC _____
PROJ. NO. **CP0916NLAB**

ISSUE FOR PERMIT

DATE
11 January 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
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SCHEDULES

DRAWING
S0.10.2

SHEET	CATALOG NUMBER:
16 - OF - 49	A-282718

3/15/2024 10:29:29 AM

PMT24-00829

GENERAL NOTES

A STRUCTURAL REFERENCE ELEVATIONS = 0'-0" WHICH IS THE TOP OF FINISHED SLAB ELEVATION FOR LEVEL 1, VERIFY WITH CIVIL DRAWINGS/EXISTING DRAWINGS. ALL ELEVATIONS NOTED ON PLANS ARE WITH RESPECT TO REFERENCE DATUM ELEVATION/EXISTING INFORMATION UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND LOCAL CONDITIONS.

B THE ARCHITECT FURNISHES ALL ELEVATIONS AND DIMENSIONS. RESOLVE ANY DISCREPANCY WITH ARCHITECT. NOTIFY KIMLEY-HORN THROUGH ARCHITECT OF ANY VARIATIONS FROM DIMENSIONS AND CONDITIONS SHOWN BY THIS DRAWING.

C EXISTING CONDITIONS SHOWN ARE BASED UPON INFORMATION FURNISHED BY THE OWNER. WHERE CONDITIONS DIFFER FROM THOSE SHOWN, NOTIFY KIMLEY-HORN THROUGH ARCHITECT. DIMENSIONS AND LOCATIONS OF EXISTING ELEMENTS SHALL BE VERIFIED WHERE NECESSARY FOR CONNECTIONS TO NEW CONSTRUCTION.

D ALL OPENINGS THROUGH FLOORS, WALLS OR ROOF ARE NOT SHOWN ON PLANS. COORDINATE ALL OPENING LOCATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL. COORDINATE ADDITIONAL FRAMING REQUIREMENTS OR REINFORCING WITH TYPICAL DETAILS.

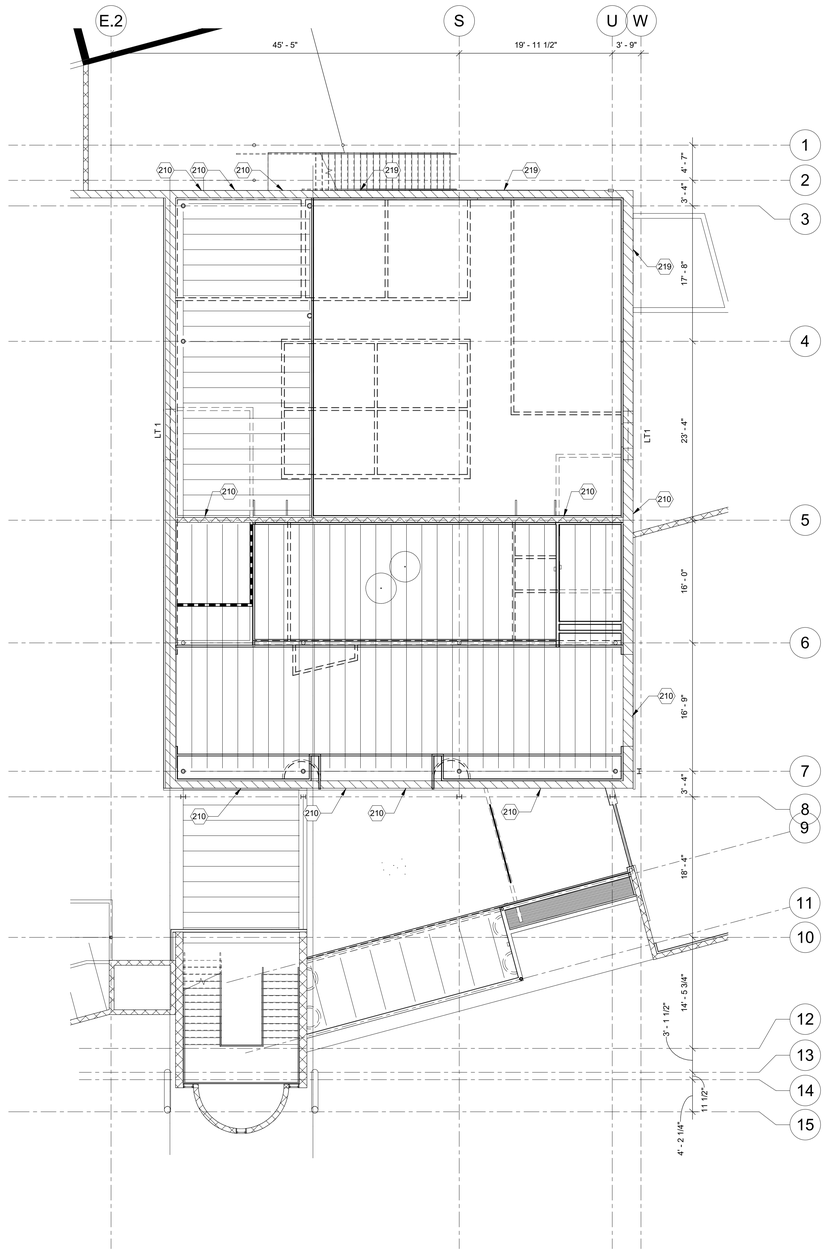
E REFER TO SHEETS S0.1.2, S0.2.2, AND S0.10.2 FOR GENERAL STRUCTURAL NOTES, ABBREVIATIONS, LEGENDS, AND SPECIAL INSPECTION REQUIREMENTS

F REFER TO SHEETS S0.3.2 THRU S0.4.2 FOR TYPICAL DETAILS. TYPICAL DETAILS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. TYPICAL DETAILS ARE NOT NOTED AT EACH LOCATION AT WHICH THEY ARE APPLICABLE.

KEYED NOTES

210 NEW OPENINGS IN EXISTING MASONRY WALL. SEE MECHANICAL FOR SIZE AND LOCATION. PROVIDE LINTEL PER DETAIL T22 / S0.4.2.

219 INFILL THE EXISTING OPENING IN THE MASONRY WALL PER DETAIL T21 / S0.4.2



1 BUILDING 1 - FIRST FLOOR FRAMING PLAN
1/8" = 1'-0"

PMT24-00829

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150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	03/15/2024

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer
CERTIFICATE NO.
45712
CRYSTAL ENDERS BLANTON
DATE SIGNED
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

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DATE
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ENGINEERING DEPARTMENT

PROJECT NAME
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2 **BUILDING 1 - FIRST FLOOR FRAMING PLAN**

DRAWING
S1.1.2

SHEET	CATALOG NUMBER:
17 - OF - 49	A-282719

3/15/2024 10:59:27 AM

GENERAL NOTES

A STRUCTURAL REFERENCE ELEVATIONS = 0'-0" WHICH IS THE TOP OF FINISHED SLAB ELEVATION FOR LEVEL 1, VERIFY WITH CIVIL DRAWINGS/EXISTING DRAWINGS. ALL ELEVATIONS NOTED ON PLANS ARE WITH RESPECT TO REFERENCE DATUM ELEVATION/EXISTING INFORMATION UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE SITE AND LOCAL CONDITIONS.

B THE ARCHITECT FURNISHES ALL ELEVATIONS AND DIMENSIONS. RESOLVE ANY DISCREPANCY WITH ARCHITECT. NOTIFY KIMLEY-HORN THROUGH ARCHITECT OF ANY VARIATIONS FROM DIMENSIONS AND CONDITIONS SHOWN BY THIS DRAWING.

C EXISTING CONDITIONS SHOWN ARE BASED UPON INFORMATION FURNISHED BY THE OWNER. WHERE CONDITIONS DIFFER FROM THOSE SHOWN, NOTIFY KIMLEY-HORN THROUGH ARCHITECT. DIMENSIONS AND LOCATIONS OF EXISTING ELEMENTS SHALL BE VERIFIED WHERE NECESSARY FOR CONNECTIONS TO NEW CONSTRUCTION.

D ALL OPENINGS THROUGH FLOORS, WALLS OR ROOF ARE NOT SHOWN ON PLANS. COORDINATE ALL OPENING LOCATIONS WITH ARCHITECTURAL, MECHANICAL, AND ELECTRICAL. COORDINATE ADDITIONAL FRAMING REQUIREMENTS OR REINFORCING WITH TYPICAL DETAILS.

E REFER TO SHEETS S0.1.2, S0.2.2, AND S0.10.2 FOR GENERAL STRUCTURAL NOTES, ABBREVIATIONS, LEGENDS, AND SPECIAL INSPECTION REQUIREMENTS

F REFER TO SHEETS S0.3.2 THRU S0.4.2 FOR TYPICAL DETAILS. TYPICAL DETAILS APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. TYPICAL DETAILS ARE NOT NOTED AT EACH LOCATION AT WHICH THEY ARE APPLICABLE.

KEYED NOTES

2 NO CHANGE TO EXISTING ROOFTOP MECHANICAL UNIT IN THIS SCOPE OF WORK.

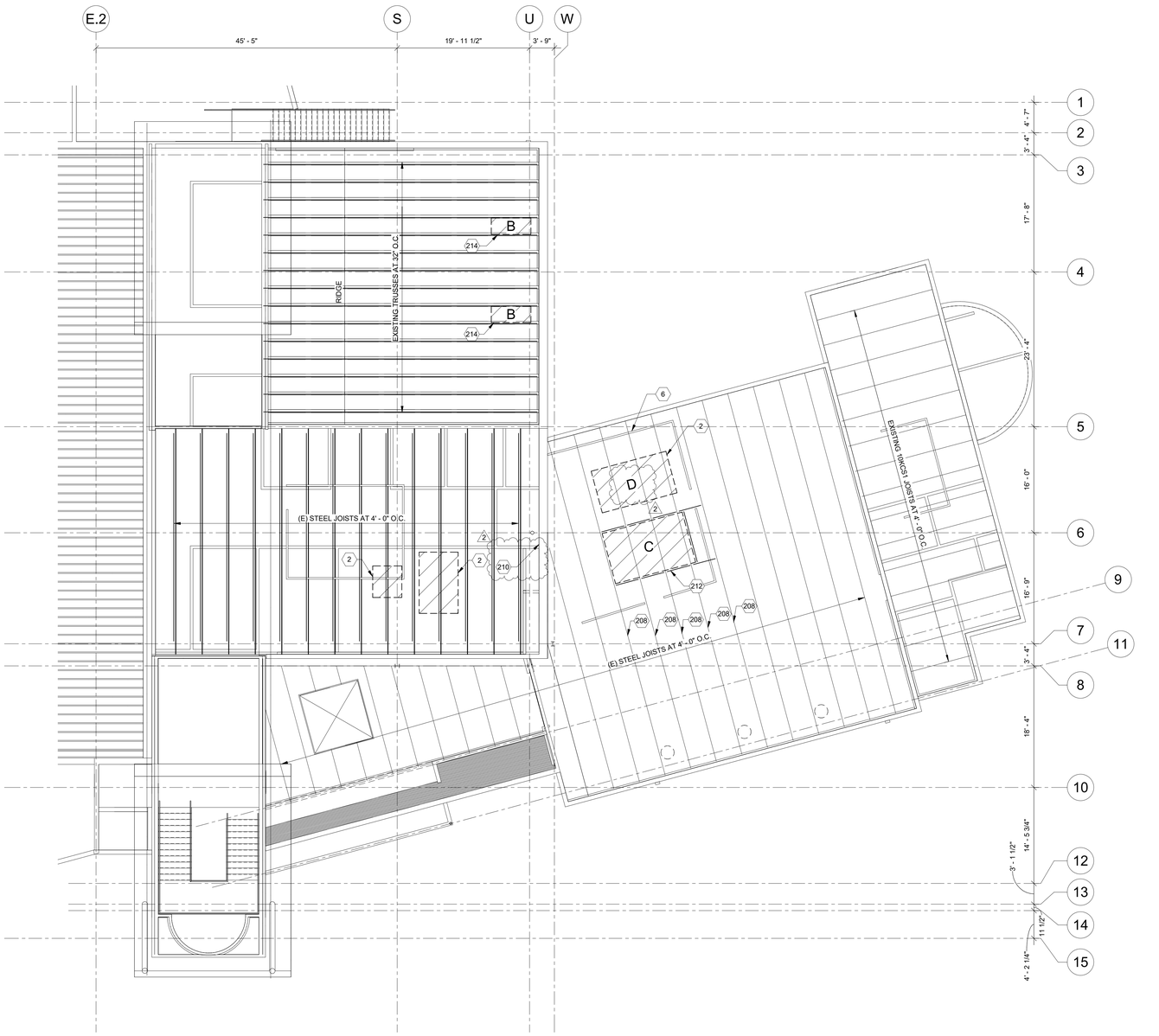
6 EXISTING SCREEN WALL AT ROOF.

208 PROVIDE 3/4" DIAMETER REINFORCING BAR AT OPEN-WEB JOIST TOP AND BOTTOM CHORD PER DETAIL 2/S2 / S3.1.2. PROVIDE JOIST SHEAR REINFORCING PER DETAIL 204 / S3.1.2 FOR THE FULL SPAN OF THE JOIST.

210 NEW OPENINGS IN EXISTING MASONRY WALL. SEE MECHANICAL FOR SIZE AND LOCATION. PROVIDE LINTEL PER DETAIL T22 / S0.4.2.

212 ROOFTOP MECHANICAL UNIT. SEE SCHEDULE FOR MAXIMUM MECHANICAL EQUIPMENT WEIGHTS ALLOWED. CONTRACTOR TO VERIFY UNIT LOCATIONS. PROVIDE UNIT SUPPORT FRAMING PER DETAIL T6 / S0.3.2. MECHANICAL UNIT CURB PER MECHANICAL.

214 ROOFTOP MECHANICAL UNIT. SEE SCHEDULE FOR MAXIMUM MECHANICAL EQUIPMENT WEIGHTS ALLOWED. CONTRACTOR TO VERIFY UNIT LOCATIONS. PROVIDE UNIT SUPPORT FRAMING PER DETAIL T9 / S0.3.2. MECHANICAL UNIT CURB PER MECHANICAL.



1 **BUILDING 1 - ROOF FRAMING PLAN**
1/8" = 1'-0"

PMT24-00829

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No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	03/15/2024

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer
CERTIFICATE NO.
45712
CRYSTAL ENDERS BLANTON
NOT BONDED
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

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PROJ. NO. CP0916NLAB

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DATE
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ENGINEERING DEPARTMENT

PROJECT NAME
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BUILDING 1 - ROOF FRAMING PLAN

DRAWING
S2.1.2

SHEET	CATALOG NUMBER:
18 - OF - 49	A-282720

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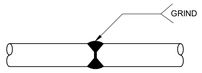
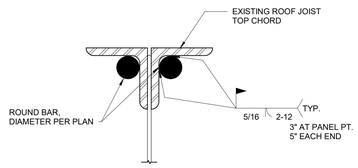
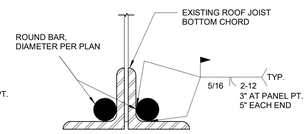
No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	03/15/2024



201 S3.1.2 TYPICAL DETAIL - ROD SPLICE
SCALE: NTS



EXISTING JOIST TOP CHORD

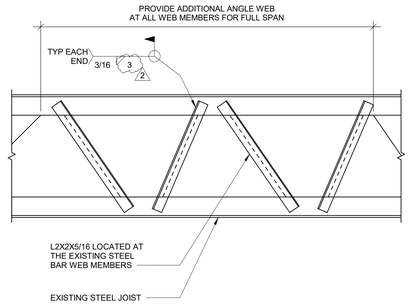


EXISTING JOIST BOTTOM CHORD

NOTE:

1. PRIOR TO INSTALLATION OF JOIST REINFORCING, CONTRACTOR SHALL SHORE THE JOIST AND SHORING SHALL REMAIN UNTIL ROD STRENGTHENING IS FULLY INSTALLED. WITHOUT SHORING, WELDING OF THE CHORDS CAN PROVIDE ENOUGH HEAT TO CAUSE TEMPORARY LOSS OF STRENGTH TO THE CHORD MEMBERS CAUSING AN UNSAFE CONDITION.
2. RODS ARE CONTINUOUS AT TOP & BOTTOM CHORD FOR FULL LENGTH OF THE JOIST

202 S3.1.2 TYPICAL DETAIL - OPEN-WEB STEEL JOIST BOTTOM CHORD REINFORCING
SCALE: NTS



204 S3.1.2 JOIST SHEAR REINFORCING
SCALE: NTS

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CP0916NLAB

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ENGINEER: _____
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FRAMING DETAILS

DRAWING
S3.1.2

SHEET	CATALOG NUMBER:
19 - OF - 49	A-282721

3/15/2024 10:55:28 AM

ABBREVIATIONS

ABBR	DESCRIPTION
AFF	ABOVE FINISHED FLOOR
BD	BALANCING DAMPER
BD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
CD	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CONT.	CONTINUATION, CONTINUOUS, CONTINUED
DB	DRY BULB
DIA	ROUND, DIAMETER
DN	RISER DOWN
EA	EXHAUST AIR
ENT	ENTERING
°F	DEGREES FAHRENHEIT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD	COMBINATION FIRE AND SMOKE DAMPER
FT.	FEET
GA	GAUGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HP	HEAT PUMP
IN.	INCHES
INV.ELEV.	INVERT ELEVATION
KVA	KILOVOLT–AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
MAX.	MAXIMUM
MIN.	MINIMUM
N/A	NON APPLICABLE
NC	NOISE CRITERIA
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OBD	OPPOSED BLADE DAMPER
OSA / O.A.	OUTSIDE AIR
P.O.C.	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
QTY.	QUANTITY
RA	RETURN AIR
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SOV	SHUT–OFF VALVE
STR.	STRAINER WITH HOSE END VALVE
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TYP.	TYPICAL
UP	RISER UP
U.N.O.	UNLESS NOTED OTHERWISE
VAV	VARIABLE AIR VOLUME
WB	WET BULB

MECHANICAL LEGEND

DUCTWORK SYMBOLS

SINGLE	DOUBLE	DESCRIPTION
		RECTANGULAR DUCT
		ROUND DUCT
		TAP FOR BRANCH (RECTANGULAR DUCT)
		TAP FOR BRANCH (ROUND DUCT)
		90 DEG. ELBOW W/ TURNING VANES
		CURVED ELBOW – MIN. RADIUS R=1.5xWIDTH
		FLEXIBLE DUCT CONNECTION
		SUPPLY DIFFUSER
		RETURN GRILLE
		EXHAUST GRILLE
		THERMOSTAT / TEMPERATURE SENSOR
		HUMIDISTAT / HUMIDITY SENSOR
		SENSOR
		RECTANGULAR DUCT RISE
		RECTANGULAR DUCT DROP
		ROUND DUCT RISE
		ROUND DUCT DROP
		COMBINATION FIRE AND SMOKE DAMPER
FD		FIRE DAMPER
		BALANCING DAMPER
M		MOTORIZED DAMPER
		RISER UP
		RISER DOWN
		BREAK
CD		CONDENSATE DRAIN LINE
		FLOW ARROW
		POINT OF CONNECTION
		ROUND, DIAMETER
XX / XX		EQUIPMENT TAG

PIPING SYMBOLS

SYMBOL	DESCRIPTION
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CWS	CONDENSER WATER SUPPLY
CWR	CONDENSER WATER RETURN
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
C	PUMP
	REDUCER, CONCENTRIC
	REDUCER, ECCENTRIC STRAIGHT INVERT
	REDUCER, ECCENTRIC STRAIGHT CROWN
	FLOW ARROW
	PIPE CAP
	VALVE
	BALL VALVE
	BUTTERFLY VALVE
	GATE VALVE
	2–WAY CONTROL VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	STRAINER WITH HOSE END VALVE
	BALANCE VALVE & FLOW METER ORIFICE (I.E. CIRCUIT SETTER)
	MANUAL AIR VENT
	FLEXIBLE PIPE CONNECTOR
	PLUG VALVE
	UNION
	THERMOMETER WITH THERMOWELL
	PRESSURE GAUGE WITH COCK
	CIRCUIT SETTER
	CALIBRATED BALANCING / SHUTOFF VALVE
AV	AIR VENT, AUTOMATIC
MV	AIR VENT, MANUAL
PS	PRESSURE SWITCH
	PRESSURE RELIEF VALVE
	THROUGH WALL / GROUND
	SUCTION DIFFUSER
	MOTORIZED BUTTERFLY VALVE

DIFFUSER TAG LEGEND

GRILLE TAG → XX–# / DIMENSION → SIZE

DIFFUSER TAG → XX–# / AIRFLOW → CFM

DIFFUSER TAG → XX–# / AIRFLOW → CFM/# → QTY

REGISTER TAG → XX–# / AIRFLOW → CFM / DIMENSION → SIZE

MECHANICAL GENERAL NOTES

1. THE CONTRACTOR SHALL DO ALL NECESSARY CUTTING OF WALLS AND CEILING.
2. NO STRUCTURAL MEMBER SHALL BE CUT WITHOUT PERMISSION FROM THE ARCHITECT/STRUCTURAL ENGINEER.
3. PATCH AROUND ALL OPENINGS TO MATCH EXISTING CONSTRUCTION.
4. DUCTWORK CONSTRUCTION AND INSTALLATION INCLUDING SHEET METAL GAUGES, REINFORCEMENT, JOINT SEALING, AIR LEAKAGE AND DETAILS NOT SPECIFICALLY SHOWN ON DRAWINGS SHALL BE IN ACCORDANCE WITH IMC DUCT CONSTRUCTION STANDARDS.
5. INSULATION CONTRACTOR SHALL TAPE ALL JOINTS AND SEAMS ON THE DUCT INSULATION WRAP (INCLUDING NEW/EXISTING INSULATION) TO MAINTAIN A CONSTANT VAPOR BARRIER.
6. ALL MATERIALS AND WIRING EXPOSED WITHIN DUCTS OR PLENUMS SHALL HAVE A FLAME–SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE–DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH THE TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS PER IMC 602.2. REMOVE ALL ABOVE CEILING COMBUSTIBLES THAT DO NOT APPLY.
7. CONTRACTOR SHALL PROVIDE DAMPERS WHERE NOT SHOWN TO PROVIDE PROPER BALANCING OF SYSTEM. PROVIDE CABLE OPERATED DAMPERS WHERE MANUAL DAMPER IN INACCESSIBLE.
8. TURNING VANES SHALL BE INSTALLED IN ALL MITERED ELBOWS (EXCEPT GREASE DUCT)
9. ALL DUCT DIMENSIONS ARE "CLEAR" INSIDE DIMENSIONS.
10. LIGHTING/SPRINKLER HEADS TAKE PRECEDENCE OVER DIFFUSER LOCATION. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS TO DIFFUSERS TO AVOID ANY CONFLICT WITH LIGHTING LAYOUT/SPRINKLER HEADS. COORDINATE ALL LOCATIONS WITH ARCHITECT.
11. ALL ROUND RUNOUTS SERVING DIFFUSERS SHALL BE SAME SIZE AS NECK DIAMETER.
12. ALL THERMOSTATS/SENSORS ARE TO BE MOUNTED AT A HEIGHT OF 48" ABOVE THE FLOOR LEVEL. COORDINATE EXACT LOCATIONS WITH OWNER & ARCHITECT.
13. THE CONTRACTOR IS TO FIELD VERIFY EXACT LOCATION OF ALL EQUIPMENT PRIOR TO SUBMITTING BID. LOCATIONS OF EQUIPMENT SHOWN ON DRAWINGS ARE APPROXIMATE. UNITS SHALL BE RELOCATED TO PROVIDE NECESSARY CLEARANCES FOR STRUCTURAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, DEMISING WALLS, HARD CEILINGS, ETC.
14. TEMPORARY FILTERS SHALL BE INSTALLED ON ALL RETURN AIR OPENINGS IN SPACE DURING CONSTRUCTION.
15. THE INSIDE OF DUCTWORK VISIBLE THROUGH A GRILLE OR DIFFUSER SHALL BE PAINTED FLAT BLACK.
16. SMOKE DETECTORS WITH SMOKE DAMPERS AND HVAC SHUTOFFS SHALL BE TESTED BY AN APPROVED TESTING AGENCY OR QUALIFIED THIRD PARTY SPECIAL INSPECTOR. THE SPECIAL INSPECTOR/TESTING AGENCY SHALL BE AN INDEPENDENT THIRD PARTY INDIVIDUAL OR FIRM AND SHALL NOT BE INSTALLING CONTRACTOR. A PROFESSIONAL ENGINEER SHALL SUBMIT A FINAL SIGNED/SEALED REPORT TO THE MECHANICAL INSPECTOR PRIOR TO CITY ISSUANCE OF FINAL INSPECTION APPROVAL OR OCCUPANCY APPROVAL, INCLUDING CONDITIONAL OCCUPANCY APPROVAL
17. CONTRACTOR TO COORDINATE ALL WORK WITH CEILING HEIGHTS AND OTHER TRADES. CONTACT ENGINEER WITH DISCREPANCIES PRIOR TO INSTALL. MOUNTING HEIGHT OF ALL MECHANICAL EQUIPMENT TO BE APPROVED BY BUILDING ENGINEER PRIOR TO HANGING.
18. WHERE WALLS ARE EXTENDED TO THE DECK. CONTRACTOR SHALL PROVIDE MIN. (1) 18"x18" OPENING WITH SOUND BOOT IN WALL ABOVE THE CEILING FOR RETURN PURPOSES. PROVIDE ADDITIONAL OPENINGS AS REQUIRED TO MAINTAIN MAX. 500 FPM VELOCITY.
19. CONTRACTOR SHALL PROVIDE CONDENSATE PUMPS WIRED FROM UNIT ONLY IF REQUIRED TO MEET SLOPE OF CONDENSATE DRAIN. COORDINATE WITH ENGINEER PRIOR.
20. PROVIDE ACCESS PANELS/DOORS IN HARD CEILINGS OR INACCESSIBLE CEILINGS/CHASES FOR ALL VALVES, TRAPS, DAMPERS, CONTROLS, EQUIPMENT ACCESS, ETC. CONTRACTOR SHALL GROUP EQUIPMENT ABOVE CEILING TOGETHER TO MINIMIZE ACCESS PANELS. ACCESS PANELS SHALL BE LARGE ENOUGH TO REMOVE EQUIPMENT FOR REPLACEMENT. COORDINATE ALL ACCESS PANELS WITH ARCHITECT PRIOR TO ANY INSTALLATION.
21. HANGERS FOR SHEET METAL DUCTWORK SHALL BE INSTALLED AS REQUIRED PER IMC SECTION 603.10. REFERENCE SMACNA HVAC DUCT STANDARDS.
22. WHERE DISCREPANCIES EXIST BETWEEN DRAWINGS AND SPECS THE MOST STRINGENT REQUIREMENT TAKES PRECEDENT. ENGINEER TO DETERMINE WHICH IS MORE STRINGENT. CONTRACTOR TO RFI PRIOR TO BID.
23. CONTRACTOR SHALL NOT REMOVE ANY COMPONENT THAT IS PART OF THE EXISTING BUILDING FIRE/LIFE/SMOKE SAFETY SYSTEM, INCLUDING SMOKE DETECTORS, FIRE/SMOKE DAMPERS, SMOKE CONTROL FANS. IF COMPONENT IS SHOWN TO BE DEMO'D, CONTRACTOR SHALL CONFIRM WITH EOR, LANDLORD AND BUILDING ENGINEER PRIOR TO REMOVAL.
24. CONTRACTOR SHALL ENSURE THAT ALL EXISTING MECHANICAL EQUIPMENT IS IN SATISFACTORY WORKING CONDITION. MAKE PROVISION IN BID TO ACCOMMODATE ANY REPLACEMENTS REQUIRED. REPLACE EXISTING FILTERS WITH NEW ON EXISTING EQUIPMENT.
25. CONTRACTOR SHALL COMB FINS/CLEAN COILS ON EXISTING A/C UNITS IN PROJECT AREA.
26. CONTRACTOR SHALL COORDINATE ALL WORK ON EXISTING PIPING AND MEDIUM PRESSURE DUCTWORK THAT MAY AFFECT OTHER AREAS OF THE BUILDNG WITH OWNER/BUILDING ENGINEER. COORDINATE SHUTDOWN REQUIREMENTS 2 WEEKS PRIOR TO START OF WORK.

2018 IECC MANDATORY REQUIREMENTS

HEATING AND COOLING EFFICIENCIES (IECC C403.3):

–ALL EQUIPMENT AND SYSTEMS HAVE BEEN SIZED TO BE NO GREATER THAN NEEDED TO MEET CALCULATED LOADS. (IECC C403.3.1)

–EQUIPMENT SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C403.3.2(1) – C403.3.2(9). (IECC C403.3.2)

~~HEATING AND COOLING SYSTEM CONTROLS (IECC C403.4):~~

REFER TO SPECIFICATIONS FOR INTERFACE WITH TRANE ENSEMBLE SYSTEM. 4

–THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, AT LEAST ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM. (IECC. C403.4.1).

–WHEN CONTROLLING BOTH HEATING AND COOLING, THERMOSTATIC CONTROLS SHALL PROVIDE A TEMPERATURE RANGE OR DEADBAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS CAPABLE OF BEING SHUT OFF OR REDUCED TO A MINIMUM, WITH EXCEPTION TO THERMOSTATS WITH MANUAL CHANGEOVER (IECC C403.4.1.2).

–ZONES WITH SEPARATE HEATING AND COOLING CONTROLS SHALL BE CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN THE A DEADBAND (IECC C403.4.1.3)

–EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM.

CONSTRUCTION OF HVAC SYSTEM ELEMENTS (IECC C403.11):

–ALL SUPPLY AND RETURN DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R–6 INSULATION AND WITH A MINIMUM OF R–8 INSULATION FOR ANY DUCTWORK OUTSIDE THE BUILDING. **USE R–8 BETWEEN DUCTS AND BUILDING EXTERIOR WHEN DUCTS ARE PART OF THE BUILDING ASSEMBLY. (IECC C403.11.1).

–DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE. (IECC C403.11.2)

–LOW PRESSURE DUCT SYSTEMS – ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS OPERATING AT A STATIC PRESSURE LESS THAN OR EQUAL TO 2 INCHES W.G. SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS (ADHESIVES), MASTIC–PLUS–EMBEDDED–FABRIC SYSTEMS, OR TAPES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. PRESSURE CLASSIFICATIONS SPECIFIC TO THE DUCT SYSTEM SHALL BE CLEARLY INDICATED ON THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE. (IECC C403.11.2.1).

–ALL PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED. (IECC C403.11.3) REFER TO PLANS/SPECS FOR INCREASED REQUIREMENTS.

HOT WATER PIPES (141–200 DEGREES):
MIN. 1.5" INSULATION FOR PIPES LESS THAN 1.5"
MIN. 2" INSULATION FOR PIPES GREATER THAN OR EQUAL TO 1.5"

CHILLED WATER PIPES (40–60 DEGREES):
MIN. .5" INSULATION FOR PIPES LESS THAN 1.5"
MIN. 1" INSULATION FOR PIPES GREATER THAN OR EQUAL TO 1.5"

REFRIGERANT VAPOR (SUCTION) PIPES (40–60 DEGREES):
MIN. .5" INSULATION FOR PIPES LESS THAN 1.5"
MIN. 1" INSULATION FOR PIPES GREATER THAN OR EQUAL TO 1.5"

MAINTENANCE INFORMATION AND SYSTEM COMMISSIONING (IECC C408):

–BUILDING OPERATIONS AND MAINTENANCE DOCUMENTS SHALL BE PROVIDED TO THE BUILDING OWNER. DOCUMENTS SHALL COVER MANUFACTURERS' INFORMATION, SPECIFICATIONS, PROGRAMMING PROCEDURES AND MEANS OF ILLUSTRATING TO OWNER HOW BUILDING, EQUIPMENT AND SYSTEMS ARE INTENDED TO BE INSTALLED, MAINTAINED, AND OPERATED (IECC C408.1.1)

–HVAC SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS. AIR AND WATER FLOW RATES SHALL BE MEASURED AND ADJUSTED TO DELIVER FINAL FLOW RATES WITHIN THE TOLERANCES PROVIDED IN THE SPECIFICATIONS. TEST AND BALANCE ACTIVITIES SHALL INCLUDE AIR SYSTEM AND HYDRONIC SYSTEM BALANCING. (IECC C408.2.2). EACH SUPPLY AIR OUTLET AND ZONE TERMINAL DEVICE SHALL BE EQUIPPED WITH MEANS FOR AIR BALANCING IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 6 OF THE INTERNATIONAL MECHANICAL CODE. (IECC C408.2.2.1).

–ALL MECHANICAL SYSTEMS ARE REQUIRED TO BE TESTED FOR PROPER FUNCTIONALITY TO ENSURE THAT INSTALLED EQUIPMENT MEET PROVISIONS OF SECTION C403. MECHANICAL SYSTEM COMMISSIONING IS TO BE BY A REGISTERED DESIGN PROFESSIONAL OR APPROVAL AGENCY. A COMMISSIONING PLAN SHALL BE DEVELOPED AND SHALL INCLUDE THE FOLLOWING: A NARRATIVE DESCRIPTION OF EACH ACTIVITY, LISTING OF EQUIPMENT TO BE TESTED, FUNCTIONS TO BE TESTED, CONDITIONS FOR TESTS TO BE PERFORMED AND MEASURABLE CRITERIA FOR PERFORMANCE. (IECC C408.2.1)

–THE FOLLOWING DOCUMENTS SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF THE DATE OF RECEIPT OF THE CERTIFICATE OF OCCUPANCY: SYSTEM BALANCING REPORT (IECC C408.2.5.1) AND FINAL COMMISSIONING REPORT (IECC C408.2.5.2).

CODE INFORMATION

A. 2018 IBC, 2018 IMC, 2018 IECC, AND APPLICABLE CITY, COUNTY, AND STATE AMENDMENTS.
B. UL LISTINGS, ANSI, ASTM STANDARDS
C. PROJECT LOCATED IN CLIMATE ZONE 2B PER 2018 IECC SECTION C301.
D. ALL MATERIALS MUST BE PROVIDED AND INSTALLED PER THE REQUIREMENTS OF THE IECC AND REQUIREMENTS OF COMCHECK MECHANICAL COMPLIANCE CERTIFICATES.
E. DESIGN HEATING AND COOLING LOADS FOR THIS SPACE ARE CALCULATED USING CARRIER BLOCK LOAD BASED ON ASHRAE METHODS.
F. OUTDOOR AIR VENTILATION PROVIDED AND BASED ON CHAPTER 4, SECTION 403.3.
G. ALL ROOFTOP EQUIPMENT SHALL BE PERMANENTLY IDENTIFIED AS TO THE AREA SERVED WITH A RUST PROOF METAL NAMEPLATE PER MECHANICAL CODE.
H. DUCT SMOKE DETECTORS REQUIRED BY SECTION 606. DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 606.3 AND NFPA 72.

DUCT STATIC PRESSURE CONSTRUCTION

DUCT SYSTEM	LOCATION	PRESSURE CLASS (INCH WG)	SEAL CLASS
SUPPLY	DOWNSTREAM OF AHU'S (MEDIUM PRESSURE)	3	A
SUPPLY	DOWNSTREAM OF FAN COILS AND VAVS	1	A
RETURN	CONNECTED TO AHU'S (MEDIUM PRESSURE)	–2	B
RETURN	CONNECTED TO FAN COILS, TERMINAL UNITS	–1	B
EXHAUST	CONNECTED TO EXHAUST FANS	–1.5	B
LASER CUTTER EXHAUST	CONNECTED TO EXHAUST FAN	–10	A

DUCTS DESIGNED TO 3" OR GREATER SHALL BE INSULATED AND SEALED PER IECC 403.11.1 DUCTS SHALL BE LEAKED TESTED TO BE (CL) LESS THAN 4.0 IN ACCORDANCE WITH EQUATION 4–8. NO LESS THAN 25% OF DUCTS SHALL BE TESTED TO ENSURE COMPLIANCE.

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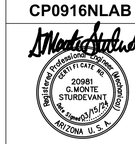
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
Suite 275
Scottsdale AZ 85251
P: 480.481.4900
www.esdengineers.com
Design Contact: RYAN EGGINK
Project # 201080.200

COM PROJECT NO.
CP0916NLAB



DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL COVER SHEET

DRAWING
M1.0

SHEET	CATALOG NUMBER:
20 - OF - 49	A-282722

PMT24-00829

PLOTTED: 03.15.2024 – 1:10pm PLOTTED BY: Ryan.Eggink FILE: C:\Users\Ryan.Eggink\AppData\Local\Temp\AcPublish_21100\M1_0.dwg

AIR HANDLING UNIT SCHEDULE

EQUIP. NO.	MANUF.	MODEL	OSA CFM	SUPPLY FAN									CHILLED WATER COOLING COIL											FILTERS	WEIGHT, LBS	REMARKS
				CFM	T.S.P. (IN WG)	E.S.P. (IN WG)	WHEEL DIA. (IN)	DRIVE	RPM	MOTOR DATA			TOTAL MBH	SENS. MBH	ENT. AIR		LVG. AIR		ENT. WATER TEMP.	LVG. WATER TEMP.	GPM	WPD (FT. W.C.)	APD (IN. W.C.)	MIN. ROWS	MAX. FPI	MAX. FACE VELOCITY (FPM)			
										QTY	HP	FLA/MCA/MOCP V-PH-HZ			DB	WB	DB	WB									
AHU-4	DAIKIN	OAH031GDCM	(13)	13,000	4.95	2.5	17.71	DIRECT	2466	3	6.6 (EACH)	21/22.8/25 (TOTAL) 480/3/60	573.6	394.1	81.3°F	67.0°F	52.4°F	52.2°F	45°F	61°F	72.0	15.4	0.89	8	12	450	PRE: 2"MERV 8 FINAL: 4"MERV 13	5,500	(1) → (15)

(1) REFER TO DETAILS ON DRAWINGS AND SPECIFICATIONS FOR AHU SECTIONS AND DETAILS AND LOCATIONS OF ALL ACCESS DOORS AND PIPING CONNECTIONS AND ADDITIONAL AHU CONSTRUCTION REQUIREMENTS. REFER TO CONTROLS DETAILS ON DRAWINGS.

(2) PROVIDE MAGNEHELIC FILTER PRESSURE DIFFERENTIAL GAUGE AT EACH FILTER BANK.

(3) PROVIDE TEST AND BALANCE PORTS IN ALL DOORS.

(4) DUCT DETECTORS INSTALLED IN R/A AND S/A PER IMC 2018 606.2.1 & 606.4. PROVIDED BY FIRE ALARM CONTRACTOR, MOUNTED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR. DETECTOR SHALL BE INTERLOCKED WITH FAN TO SHUT DOWN FAN WHEN SMOKE IS DETECTED.

(5) UNIT TO HAVE SEPARATE MINIMUM OSA AND ECONOMIZER INTAKE OPENINGS. PROVIDE DUCT MOUNTED MINIMUM OUTSIDE AIRFLOW MONITORING STATION, RUSKIN TDP05K OR EQUAL, POWER FROM UNIT POWER SUPPLY. INTERFACE WITH BMS.

(6) PROVIDE LED SERVICE LIGHTS IN ALL ACCESS SECTIONS AND SINGLE CONVENIENCE OUTLET.

(7) UNIT SHALL BE CAPABLE OF 100% ECONOMIZER.

(8) UNIT TO BE 2" DOUBLE WALL CONSTRUCTION WITH THERMAL BREAKS.

(9) ALL INTERNAL PRESSURE DROP CALCULATIONS SHALL INCLUDE 50% LOADED FILTER.

(10) FAN TO OPERATE WITH FACTORY MOUNTED ECM MOTORS (MIN 90.2% EFF) WITH SINGLE POINT POWER MODULE AND ECM FAN POWER BOX FACTORY WIRED TO EACH MOTOR AND WITH TERMINALS FOR FAN ON/OFF, 0-10V SIGNAL, AND FAN FAULT. INTERFACE WITH BAS. INCLUDE IN SUBMITTAL. MOTORS SHALL BE PROVIDED WITH FACTORY DISCONNECT AND OVERCURRENT PROTECTION. PROVIDE 10 KA SCCR.

(11) PROVIDE WITH PIEZO RING ON EACH FAN AND CONNECT TO DWYER MAGNESENSE AIRFLOW MONITORING STATION AND WIRE TO BMS. BMS TO TOTALIZE AIRFLOW.

(12) PROVIDE BACKDRAFT DAMPER ON ALL FANS.

(13) REFER TO VENTILATION SCHEDULE FOR OUTSIDE AIR REQUIREMENTS.

(14) ALL UNIT CONTROLS SHALL BE FACTORY WIRED TO A UNIT CONTROL PANEL.

(15) PROVIDE SIDE FILTER ACCESS.

DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

FAN COIL UNIT							CONDENSING UNIT												
EQUIP. NO.	MANUFACTURER	MODEL NO.	CFM	EXT. S.P. IN WG	FAN FLA	VOLTS/ PHASE	EQUIP. NO.	MANUFACTURER	MODEL NO.	MIN. AMPACITY	VOLTS/ PHASE	WEIGHT W/O CURB (LBS)	COOLING CAPACITY						SEER	REMARKS
													TOTAL MBH	SENS. MBH	ENT. AIR TEMP DB (F)	ENT. AIR TEMP WB (F)	AMB. AIR TEMP DB (F)	AMB. AIR TEMP WB (F)		
IU-2	DAIKIN	FTX36NVJU	915	0	0.37	208/1	OU-2	DAIKIN	RX36NMVJUA	19.8	208/1	135	34.4	22.2	80	67	115	–	15.9	(1)(2)(3)(4)(5)(6)

(1) CONDENSING UNIT TO BE LOCATED ON ROOF ON C-PORT "AIR-PORT" SUPPORTS AND SECURED TO ROOF. PROVIDE LOW AMBIENT KIT FOR OPERATIONS DOWN TO 0°F.

(2) SIZE AND INSTALL REFRIGERANT LINES AS RECOMMENDED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. INSULATE PIPING WITH 3/4" ARMAFLEX INSULATION. PROVIDE ALUMINUM JACKETING WHERE EXPOSED OUTDOORS.

(3) INDOOR UNIT IS POWERED FROM THE OUTDOOR UNIT. PROVIDE 14 AWG 3+GROUND WIRE BETWEEN INDOOR AND OUTDOOR UNITS. REFER TO ELECTRICAL PLANS FOR DISCONNECT.

(4) PROVIDE ELECTRONIC HARDWIRED THERMOSTAT, INTEGRAL STARTER, CONDENSATE PUMP AND 5 YEAR WARRANTY ON COMPRESSOR. DISCONNECT BY ELECTRICAL CONTRACTOR.

(5) PROVIDE PERMANENT IDENTIFICATION BY APPROPRIATE MARKING AND THE AREA SERVED BY THE UNIT. REFERENCE 2018 INTERNATIONAL MECHANICAL CODE.

(6) UNIT SHALL HAVE R-410A REFRIGERANT.

LASER EXHAUST FAN SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	CFM	E.S.P. (IN WG)	SONES	MOTOR				DRIVE	CONTROL	WEIGHT (LBS)	REMARKS
						H.P.	B.H.P.	V/PH	RPM				
LEF-1	GREENHECK	IP-7	700	7.0	60	3	–	480/3	3070	DIRECT	(2)	300	(1)(2)

(1) FAN TO BE SUITABLE FOR EXTERIOR INSTALLATION. PROVIDE DIRECT DRIVE WITH TEFC INVERTER DUTY MOTOR, SHAFT GROUNDING RINGS, CASING DRAIN, VIBRATION ISOLATION BASE WITH HEIGHT SAVING BRACKETS AND SPRING ISOLATORS, FLANGED CONNECTIONS, COUPLING GUARD, HEAT SLINGER, EXTENDED LUBRICATION LINES, AND FUSED DISCONNECT SWITCH.

(2) PROVIDE WITH ABB 580 VFD – NO BYPASS AND INTERLOCK WITH LASER CUTTER TO ENERGIZE WHEN LASER CUTTER IS IN OPERATION.

GRILLES/REGISTERS/DIFFUSERS SCHEDULE

MARK	DESCRIPTION	MODULE SIZE	TYPE	MAX. NC AT DESIGN CFM	OBD	FRAME (1)	MATERIAL	FINISH (2)	MANUF.	MODEL	REMARKS
CD-1	CEILING DIFFUSER	24"x24"	PLAQUE FACE	25	NO	LAY-IN	STEEL	WHITE	TITUS	OMNI	(4)
CD-2	CEILING DIFFUSER	12"x12"	PLAQUE FACE	25	YES	SURFACE	STEEL	WHITE	TITUS	OMNI	(4)
DL-1	SUPPLY REGISTER	18"x6"	DRUM LOUVER	25	YES	SURFACE	STEEL	WHITE	TITUS	DL	
DL-2	SUPPLY REGISTER	18"x6"	DRUM LOUVER	25	YES	DUCT MOUNTED	STEEL	WHITE	TITUS	S-DL	
SR-1	SUPPLY REGISTER	PER PLANS	LOUVERED FACE	25	YES	SURFACE	STEEL	WHITE	TITUS	272RL	
LD-1	LINEAR SUPPLY	6' LONG (2) 1" SLOT	LINEAR SLOT	25	YES	SURFACE	ALUMINUM	BLACK	TITUS	ML-39	
LS-1	LINEAR SUPPLY	3' LONG (1) 1.5" SLOT	LINEAR SLOT	25	YES	SURFACE	ALUMINUM	WHITE	TITUS	FL-15	BORDER TYPE 55 MUD-IN FRAME
LR-1	(INACTIVE) LINEAR RETURN	5' LONG (1) 1.5" SLOT	LINEAR SLOT	25	NO	SURFACE	ALUMINUM	WHITE	TITUS	FL-15	BORDER TYPE 55 MUD-IN FRAME
RG-1	RETURN GRILLE	24"x24"	LOUVERED FACE	25	NO	LAY-IN	STEEL	WHITE	TITUS	350RL	(3)
EG-1	EXHAUST GRILLE	24"x24"	LOUVERED FACE	25	NO	LAY-IN	STEEL	WHITE	TITUS	350RL	
EG-2	EXHAUST GRILLE	12"x12"	LOUVERED FACE	25	NO	SURFACE	STEEL	WHITE	TITUS	350RL	(5)

(1) PROVIDE FRAME STYLE TO SUIT CEILING TYPE. REFER TO ARCHITECTURAL DRAWINGS. HARD CEILING REQUIRE AUXILIARY MOUNTED FRAMES AND STANDARD LAY-IN DIFFUSERS. PROVIDE OBD ON GRILLES AND DIFFUSERS LOCATED IN GYP CEILINGS.

(2) CONFIRM FINISH WITH ARCHITECT PRIOR TO ORDERING.

(3) DUCTED RETURN GRILLE.

(4) PROVIDE FULL SIZE RUNOUT TO SUPPLY DIFFUSER NECK. REFER TO DIFFUSER SIZING TABLE.

(5) INSTALL ON BOTTOM OF OWNER FURNISHED CABINET ABOVE GLOWFORGE MACHINES.

CD-1,2 SUPPLY DIFFUSER SCHEDULE:
250 CFM AND BELOW 8"ø NECK
251 CFM- 400 CFM 10"ø NECK
401 CFM- 600 CFM 12"ø NECK (4)
601 CFM- 800 CFM 14"ø NECK
801 CFM- 1000 CFM 15"ø NECK

USE SCHEDULE U.N.O ON DRAWINGS

DUCT INSULATION SCHEDULE

SERVICE	EQUIPMENT SERVING	REQUIREMENT	INSULATION MATERIAL	INSULATION VALUE OR THICKNESS
EXPOSED RECTANGULAR LOW PRESSURE	FCU'S AND VAV BOXES	ALL	LINER JM LINACOUSTIC RC	1 1/2"
CONCEALED ROUND/RECTANGULAR MEDIUM AND LOW PRESSURE SUPPLY	FCU'S AND VAV BOXES	ALL	EXTERNAL WRAP JM MICROLITE XG TYPE 75	R=6 INDOORS R=8 OUTDOORS
RETURN CONNECTED TO AIR HANDLING UNITS	AHU	ALL	JM R300 RIGID BOARD LINER	R=6 INDOORS R=8 OUTDOORS
EXPOSED AND CONCEALED RECTANGULAR MEDIUM PRESSURE SUPPLY	AHU	ALL	LINER JM LINACOUSTIC RC	1 1/2"
EXHAUST AIR	EXHAUST FANS	1ST 15' FROM FAN INLET	LINER	1"
LASER PRINTER EXHAUST AIR	EXHAUST FANS	ALL	JM LINACOUSTIC RC/SPIRACOUSTIC LINER	1"
TRANSFER DUCTS	TRANSFER	ALL	JM LINACOUSTIC RC/SPIRACOUSTIC JM R300 RIGID BOARD	1"

(1) SEE SPECIFICATIONS FOR DUCT CONSTRUCTION.

VAV TERMINAL UNIT SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	INLET SIZE	FACTORY CFM RANGE		PRESSURE DROP (IN. W.G.)	DESIGN COOLING AIRFLOW		DESIGN HEATING AIRFLOW	ELECTRIC HEATER			REMARKS
				MIN.	MAX.		MIN.	MAX.		KW	STEPS	VOLTS/ PHASE	
1	TITUS	DESV	14	0	3000	0.35"	(4)	2550	1500	15	(6)	480/3	SEE NOTES BELOW
2	TITUS	DESV	10	0	1400	0.35"	(4)	1200	700	7	(6)	480/3	SEE NOTES BELOW
3	TITUS	DESV	10	0	1400	0.35"	(4)	1200	700	7	(6)	480/3	SEE NOTES BELOW
4	TITUS	DESV	10	0	1400	0.35"	(4)	1200	700	7	(6)	480/3	SEE NOTES BELOW
5	TITUS	DESV	14	0	3000	0.35"	(4)	2100	1500	15	(6)	480/3	SEE NOTES BELOW

(1) MAXIMUM PRESSURE DROP IS AT MAXIMUM UNIT AIR FLOW.

(2) TAPS AT PRIMARY AIR SHALL BE ONE SIZE LARGER THAN THE VAV BOX INLET SIZE.

(3) DDC CONTROLS SUPPLIED BY CONTROLS CONTRACTOR AND FACTORY INSTALLED BY VAV MANUFACTURER.

(4) BALANCE MINIMUM COOLING AIRFLOW TO 10% DESIGN CFM.

(5) PROVIDE CONTROLS ENCLOSURE AND 480VAC TO 24VDC TRANSFORMER.

(6) ELECTRIC HEATERS TO BE CONTROLLED BY SCR 100% PROPORTIONAL CONTROLLER. PROVIDE SUPPLY AIR TEMPERATURE SENSOR. INTERFACE WITH BMS. MODULATE HEAT TO SATISFY SUPPLY AIR TEMPERATURE SETPOINT OF 90 deg. F. (ADJUSTABLE)

(7) PROVIDE WITH FACTORY INSTALLED DOOR INTERLOCK DISCONNECT SWITCH AND POWER CIRCUIT FUSING. PROVIDE ELECTRONIC HEATING CONTROLS WITH ELECTRONIC AIRFLOW PROVING SWITCH WITH NO MAGNETIC CONTACTORS. DIFFERENTIAL PRESSURE AIRFLOW PROVING SWITCH IS NOT ACCEPTABLE.

EXHAUST FAN SCHEDULE

MARK	MANUF.	MODEL	CFM	E.S.P. (IN WG)	MOTOR			DRIVE	SONES	CONTROL	WEIGHT (LBS)	REMARKS
					HP	V/PH	RPM					
CEF-4	GREENHECK	SP-80-VG	75	0.385	6W	115/1	935	DIRECT	1.2	SWITCH	15	(1)(3)
EF-5	GREENHECK	SQ-130-VG	1700	0.5	3/4	115/1	1477	DIRECT	8.6	SWITCH	65	(2)(4)
EF-6	GREENHECK	SQ-100-VG	1000	0.5	1/4	115/1	1525	DIRECT	7.0	SWITCH	55	(2)(4)

(1) CEILING MOUNTED EXHAUST FAN WITH INTEGRAL GRILLE, BACKDRAFT DAMPER, AND FACTORY WALL CAP.

(2) INLINE EXHAUST FAN SUSPENDED FROM STRUCTURE. PROVIDE WITH BACKDRAFT DAMPER AND HOODED WALL VENT.

(3) FAN TO BE CONTROLLED FROM WALL SWITCH.

(4) PROVIDE WALL MOUNTED VARIABLE SPEED CONTROLLER TO CONTROL EXHAUST FAN.

RELIEF HOOD SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	LOCATION	CFM	MOTORIZED DAMPER	THROAT SIZE	MAX. PRESSURE DROP (IN. WG.)	WEIGHT (LB)	REMARKS
RH-2,3	GREENHECK	FGR-30x48	ROOF	4,000	YES	30x48	0.04	200	(1)

(1) PROVIDE WITH FACTORY ROOF CURB, BIRD SCREEN, AND MOTORIZED DAMPER.

REQUIRED OUTDOOR VENTILATION PER 2018 IMC 403.3

UNIT	ZONE OCCUPANCY CLASSIFICATION	ZONE AREA A_z (FT²)	OCCUPANCY DENSITY (#/1000 FT²)	ZONE POPULATION P_z	OCCUPANT OUTDOOR AIR RATE R_p (CFM/ PERSON)	AREA OUTDOOR AIR RATE R_a (CFM/FT²)	BREATHING ZONE OUTDOOR AIRFLOW V_{bz} (CFM)	ZONE AIR DISTRIBUTION EFF. E_z	ZONE OUTDOOR AIRFLOW V_{oz} (CFM)	OUTDOOR AIRFLOW PROVIDED (CFM)	EXHAUST AIRFLOW REQUIRED (CFM/FT²)	EXHAUST AIRFLOW REQUIRED (CFM)	EXHAUST AIRFLOW PROVIDED (CFM)
AHU-4	CHILDREN'S MUSEUM	1632	40	66	7.5	0.12	690.8	0.80	863.6	865.0	0.0	0.0	0.0
	ART CLASSROOM	2382	20	48	10	0.18	908.8	0.80	1136.0	1140.0	0.7	1667.4	1700.0
	MAIN ENTRY LOBBY	933	10	10	5	0.06	106.0	0.80	132.5	135.0	0.0	0.0	0.0
									System Outdoor Airflow V_{ot} (CFM):	2140.0			

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COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer CERTIFICATE NO. 20981 G. MONTE STURDEVANT 06/30/25 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

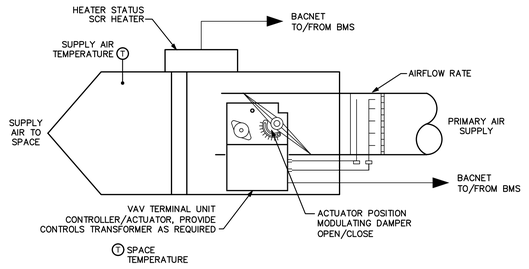
MECHANICAL SCHEDULES

DRAWING
M1.1

SHEET 21 - OF - 49
CATALOG NUMBER: A-282723

PMT24-00829

PLOTTED: 03.15.2024 – 11:10am PLOTTED BY: Ryan.Eggink FILE: C:\Users\Ryan.Eggink\AppData\Local\Temp\AcPublish_21100\M1_1.dwg



VAV TERMINAL UNIT CONTROL DIAGRAM

SCALE: NOT TO SCALE

2

TERMINAL BOX (VAV) SEQUENCE OF OPERATION

A. WHEN THE AHU FAN STATUS IS "OFF", THE TERMINAL UNIT DAMPER SHALL BE COMMANDED 100% OPEN.

B. DAMPER CONTROL: PROVIDE A PRESSURE INDEPENDENT CONTROL STRATEGY WHICH EMPLOYS CASCADED PROPORTIONAL/INTEGRAL CONTROL LOOPS. THE ZONE TEMPERATURE LOOP SAMPLES SPACE TEMPERATURE AND RESETS THE AIRFLOW SET POINT BETWEEN THE MINIMUM AND MAXIMUM FLOW SETTINGS. THIS AIRFLOW SET POINT IS USED BY THE AIRFLOW LOOP THAT SAMPLES AIRFLOW VIA A PICKUP IN THE TERMINAL UNIT INLET, AND MODULATES THE DAMPER TO CONTROL THE FLOW. WHEN THE ZONE TEMPERATURE ENTERS THE COOLING PROPORTIONAL BAND THE DAMPER WILL MODULATE BETWEEN THE COOLING MINIMUM AND MAXIMUM CFM VALUES. IF THE DIFFERENTIAL PRESSURE SENSOR BECOMES UNRELIABLE, THE DAMPER DRIVES TO 100% OPEN. AN ALARM SHALL BE SENT TO THE OPERATOR INTERFACE. IF THE ZONE SENSOR BECOMES UNRELIABLE, FOR ZONES CALLING FOR COOLING WHEN THE TEMPERATURE SENSOR BECOMES UNRELIABLE, THE PRESENT FLOW SET POINT CALCULATED FROM THE FLOW RESET SCHEDULE IS HELD, AND AN ALARM SHALL BE SENT.

C. NOTE: COORDINATE DAMPER POSITION SETPOINTS WITH THE TEST AND BALANCE CONTRACTOR, AND INPUT RELATED VALUES INTO THE BMS.

D. TERMINAL UNITS WITH ELECTRIC REHEAT: THE HEATING SETPOINT SHALL BE 3°F LESS THAN THE COOLING SETPOINT. AS THE SPACE TEMPERATURE FALLS BELOW SETPOINT, THE VAV DAMPER WILL MODULATE TO MINIMUM AIRFLOW. AS THE DAMPER REACHES MINIMUM POSITION AND THE SPACES ARE STILL BELOW SETPOINT, THE VAV DAMPER SHALL MODULATE TO HEATING AIRFLOW SETPOINT AND ELECTRIC REHEAT WILL BE ENERGIZED AND MODULATED AS REQUIRED. IF THE ZONE SENSOR BECOMES UNRELIABLE DURING HEATING MODE, THE CONTROLLER WILL SHUT OFF THE ELECTRIC HEATER.

E. A SUPPLY TEMPERATURE SENSOR IN THE VAV BOX SUPPLY DUCT SHALL MODULATE SCR HEATING COIL TO MAINTAIN SPACE TEMPERATURE. THE SUPPLY AIR TEMPERATURE SHALL BE LIMITED TO 90°F.

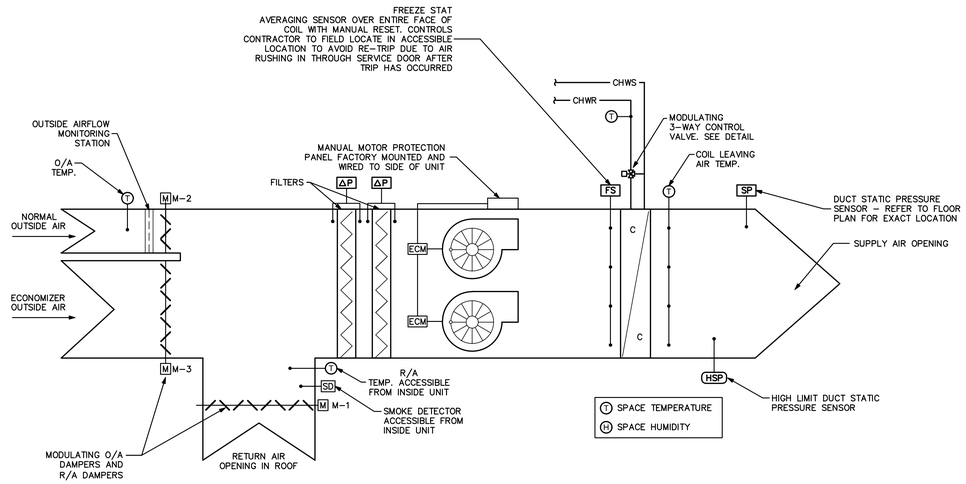
F. FOLLOWING POINTS SHALL BE VISIBLE AT BMS:

- –DAMPER POSITION/CONTROL
- –AIR FLOW RATE
- –DISCHARGE AIR TEMPERATURE
- –SPACE TEMPERATURE
- –ELECTRIC HEATING CONTROL/STATUS (AS APPLICABLE)

LASER PRINTER EXHAUST FAN

LASER PRINTER EXHAUST FAN (LEF–1)

1. OPERATION: LASER PRINTER EXHAUST FAN IS TO BE INTERLOCKED WITH THE LASER PRINTER TO OPERATE WHENEVER THE LASER PRINTER IS ENERGIZED.
2. INTERFACE CONTROLS CONDUCTORS WITH CONTACTS ON LASER PRINTER AND EXTEND TO VFD. PROVIDE RELAYS AS REQUIRED.
3. ALARM: MONITOR SIGNAL FROM LASER PRINTER AND INTERFACE VFD WITH BMS TO MONITOR STATUS AND INITIATE ALARM SHOULD FAN NOT OPERATE WHEN LASER PRINTER BE ENERGIZED.



AHU CONTROL DIAGRAM

SCALE: NOT TO SCALE

1

SEQUENCE OF OPERATION - AHU

AIR HANDLING UNIT

A. AIR HANDLING UNIT SHALL BE ENERGIZED OR DE–ENERGIZED BASED ON OPTIMAL START PROGRAM, BUILDING OCCUPANCY SCHEDULE OR BY OPERATOR'S COMMAND.

B. SHUT DOWN SEQUENCE: DURING UNOCCUPIED MODE (SHUTDOWN), SUPPLY FAN SHALL BE OFF AND OUTSIDE AIR DAMPER SHALL BE CLOSED; RETURN DAMPER SHALL BE FULLY OPEN AND COOLING COIL MODULATING CONTROL VALVES SHALL BE FULLY CLOSED.

C. THE UNITS SHALL BE STARTED AND STOPPED BY THE BMS VIA DIGITAL OUTPUT START/STOP SIGNAL THROUGH THE FAN ECM MOTOR. THE BMS SYSTEM SHALL MONITOR FAN STATUS BY A DIGITAL INPUT FROM THE ECM MOTOR. IF THE ECM MOTOR SHOULD FAIL TO START OR SHOULD SHUT DOWN, AN ALARM SHALL BE INITIATED IN THE BMS SYSTEM.

D. THE SPEED OF THE UNIT FAN ASSEMBLY WILL BE CONTROLLED BY THE BMS THROUGH THE FAN ECM MOTOR. A STATIC PRESSURE TRANSMITTER LOCATED IN THE SUPPLY AIR DUCTWORK SHALL PROVIDE AN INPUT SIGNAL TO THE BMS WHICH SHALL CONTROL THE SPEED OF THE AIR HANDLING UNIT FANS TO MAINTAIN THE STATIC PRESSURE SET POINT. THE SINGLE SPEED COMMAND SHALL BE SENT TO ALL FANS. SET POINT OF THE DUCT STATIC PRESSURE TO BE DETERMINED BY TESTING AND BALANCING CONTRACTOR. A MANUAL RESET, HIGH LIMIT STATIC PRESSURE SENSOR SHALL STOP THE AIR HANDLING UNIT WHENEVER THE PRESSURE EXCEEDS ITS SET POINT, AND TRANSMIT AN ALARM SIGNAL. PLACEMENT OF HIGH PRESSURE SWITCH SHALL BE UPSTREAM OF ANY, ALL FIRE/SMOKE DAMPERS.

E. CHILLED WATER COIL CONTROL: A 3–WAY MODULATING CONTROL VALVE SHALL MODULATE THE CHILLED WATER VALVE POSITION TO MAINTAIN THE DISCHARGE AIR TEMPERATURE SET POINT.

F. DISCHARGE AIR TEMPERATURE SET POINT RESET: THE DISCHARGE AIR TEMPERATURE OF THE COOLING COIL SHALL BE RESET BETWEEN (52°F AND 68°F). THE DISCHARGE AIR TEMPERATURE SHALL BE RESET BASED ON THE GREATEST VAV ZONE COOLING ERROR (COOLING ERROR IS THE DIFFERENCE BETWEEN ACTUAL COOLING SET POINT AND ZONE TEMPERATURE). AS THE COOLING ERROR DECREASES TO ZERO, THE ROUTINE SHALL RAISE THE SUPPLY AIR TEMPERATURE 1 DEGREE PER 30 MINUTES (ADJ.) UNTIL THE WORST CASE COOLING ERROR IS NO GREATER THAN 0.5 DEG, AT WHICH TIME THE ROUTINE SHALL LOWER THE DISCHARGE AIR TEMPERATURE 1 DEGREE PER 30 MINUTES (ADJ.) TO MAINTAIN A COOLING ERROR OF 0.5 OR LESS. AT ZERO COOLING ERROR THERE IS NO CHANGE TO DISCHARGE AIR SET POINT. ADDITIONALLY, IF SPACE HUMIDITY, RISES ABOVE A HUMIDITY SET POINT (50% RH ADJ.) THE DISCHARGE AIR SETPOINT IS TO BE RESET TO 52F UNTIL THE HUMIDITY FALLS BELOW SET POINT THEN RELEASE TO DISCHARGE AIR RESET CONTROL.

G. DUCT STATIC PRESSURE SET POINT RESET: STATIC PRESSURE SET POINT SHALL BE RESET BASED ON VAV DAMPER POSITION, SUCH THAT NO BOX SHALL BE MORE THAN 95% OPEN. THE ROUTINE SHALL MONITOR ALL VAV BOX POSITIONS ASSOCIATED WITH AHU AND RESET THE DUCT STATIC PRESSURE SET POINT UP OR DOWN TO MAINTAIN WORST CASE BOX OF 95% OR LESS. THE STATIC PRESSURE RESET SHALL BE 0.1 IN WG PER 15 MINUTES (ADJ.) UP OR DOWN. THE DUCT STATIC PRESSURE SHALL BE SET BY BALANCE CONTRACTOR AND USED AS THE MAXIMUM RESET LIMIT (ADJUSTABLE), THERE WILL ALSO BE A STATIC PRESSURE LOW LIMIT SET POINT PROVIDED (ADJUSTABLE) AND INITIALLY SET TO 0.5 IN WG.

H. AIR FILTER(S) MONITORING: THE BMS SHALL MONITOR DIFFERENTIAL PRESSURE ACROSS EACH AIR FILTER BANK, THROUGH SEPARATE ANALOG INPUT(S) FROM EACH DIFFERENTIAL PRESSURE TRANSDUCER. AN ALARM SHALL BE REPORTED IF ANY FILTER PRESSURE DROP LIMIT (ADJUSTABLE) IS EXCEEDED.

I. UNIT OUTSIDE AIR REQUIREMENT: PROVIDE AIR FLOW MONITORING STATION IN NORMAL OUTSIDE AIR INTAKE. MINIMUM OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN CODE REQUIRED OUTSIDE AIR. BMS TO DISPLAY AIRFLOW.

J. SMOKE DETECTOR: WHEN SMOKE IS DETECTED IN THE RETURN AIR DUCT, UNIT SHALL BE DE–ENERGIZED AND AN ALARM SHALL BE INITIATED IN THE BMS SYSTEM.

K. BUILDING PRESSURE CONTROL: THE BUILDING PRESSURE SHALL BE MONITORED BY THE BMS. MODULATE RELIEF AIR DAMPERS LOCATED IN THE GRAVITY HOODS. THE RELIEF AIR DAMPERS RESPOND TO BUILDING PRESSURE AND SHALL MODULATE TO MAINTAIN BUILDING PRESSURE AT +0.05"W.G. (ADJ.) WITH RESPECT TO OUTSIDE.

IN THE EVENT THE BUILDING PRESSURE IS HIGHER THAN 0.15" WG (ADJUSTABLE), AN ALARM SHALL BE SENT TO THE OPERATOR'S WORK STATION AND THE AIR HANDLING UNIT SHALL BE DE–ENERGIZED. IF AT ANY TIME THE OUTSIDE AIRFLOW FALLS BELOW THE MINIMUM OUTSIDE AIR REQUIRED, AN ALARM SHALL BE INITIATED IN THE BMS SYSTEM.

L. LOW TEMPERATURE SAFETY SWITCH: A LOW TEMPERATURE SAFETY SWITCH ('FREEZE STAT') LOCATED UPSTREAM OF THE COOLING COIL SHALL DE–ENERGIZE THE AIR HANDLING UNIT AND SEND AN ALARM TO OPERATORS WORK STATION. THE CONTROLS CONTRACTOR SHALL PROGRAM THE OUTSIDE AIR DAMPERS TO CLOSE CONDITIONALLY PRIOR TO REACHING THIS LIMIT, AN ALARM SHALL BE GENERATED TO THE BMS AS THIS ABNORMAL CONDITION EXISTS AND MUST BE CONDITIONALLY RELEASED BY A GLOBAL OUTSIDE AIR DB ABOVE A THRESHOLD VALUE TO RELEASE CONTROL BACK TO AHU.

M. FREEZE PROTECTION: WHEN THE MIXED RETURN AIR TEMPERATURE DROPS BELOW 36F, THE FREEZE PROTECTION CONTROL SEQUENCE SHALL BE INITIATED. THE CONTROL VALVE SHALL OPEN TO COOLING COIL AND THE OUTSIDE AIR DAMPER SHALL CLOSE.

N. ECONOMIZER DAMPER CONTROL: DURING THE COOLING MODE OF OPERATION, IF THE OUTSIDE AIR INTAKE TEMPERATURE IS LESS THAN THE RETURN AIR TEMPERATURE BY 3 DEG. F (ADJ.), THE AHU SHALL OPERATE IN THE ECONOMIZER MODE. DURING ECONOMIZER (CALL FOR COOLING) THE RETURN AIR DAMPERS SHALL MODULATE CLOSED, WHILE OUTSIDE AIR DAMPER COMMAND SHALL OPEN. THE CHILLED WATER CONTROL VALVE SHALL MODULATE TO MAINTAIN SUPPLY TEMPERATURE SET POINT. RELIEF DAMPERS SHALL CONTINUE TO MODULATE TO MAINTAIN BUILDING PRESSURE SETPOINT.

AS THE OUTSIDE AIR TEMPERATURE DROPS BELOW SUPPLY AIR TEMPERATURE SETPOINT, THE RETURN AIR DAMPER AND ECONOMIZER OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN SUPPLY AIR TEMPERATURE (THE 3–WAY CHILLED WATER VALVE SHALL BE CLOSED). WHEN THE OUTSIDE AIR DROPS BELOW 45 F (ADJ.) ECONOMIZER DAMPER SHALL CLOSE FULLY.

O. FOLLOWING POINTS SHALL BE VISIBLE AT BMS:

- SUPPLY AIR FAN STATUS
- SUPPLY AIR FAN SPEED
- SUPPLY AIR FAN STATIC PRESSURE (SET POINT AND ACTUAL)
- OUTSIDE AIR DAMPER STATUS (PROVIDE END SWITCH ON THE DAMPER)
- SUPPLY AIR TEMPERATURE
- CHILLED WATER CONTROL VALVE POSITION FEED BACK
- CHILLED WATER SUPPLY TEMPERATURE
- ALARMS (SMOKE DETECTOR, FAN FAILURE, FREEZE STAT, AND HIGH SUPPLY AIR STATIC.)
- OUTSIDE AIRFLOW MEASURING (CFM)
- SUPPLY AIRFLOW MEASURING (CFM) – (VIA SUM OF VAV BOX AIRFLOWS)

Q. FOLLOWING POINTS SHALL BE HARDWIRED TO BMS:

- LOW TEMPERATURE SAFETY SWITCH
- HIGH LIMIT DUCT STATIC PRESSURE
- SMOKE DETECTOR

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revisions

No.	Description	Date

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer, Mechanical
CERTIFICATE NO.
20981
G. MONTE
STURDEVANT
04/30/25
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL DIAGRAMS AND CONTROLS

DRAWING
M1.3

SHEET	CATALOG NUMBER:
22 - of - 49	A-282724

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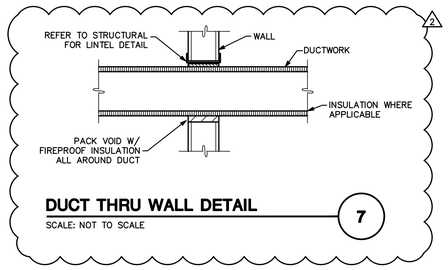
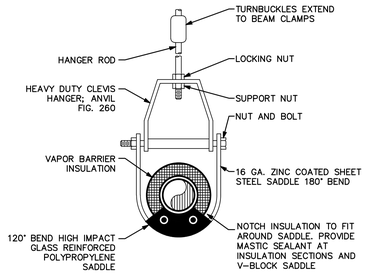
RYAN EGGINK
Project #
201080.200



DUCT THRU WALL DETAIL 7

SCALE: NOT TO SCALE



CLEVIS HANGER DETAIL 4

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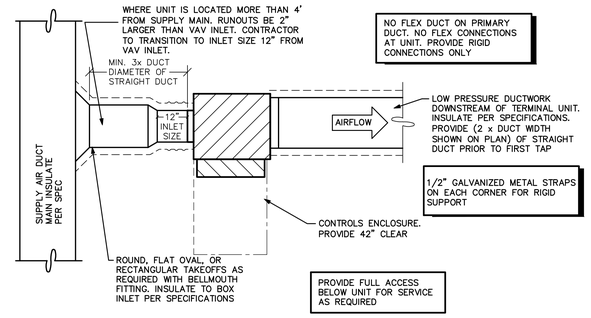
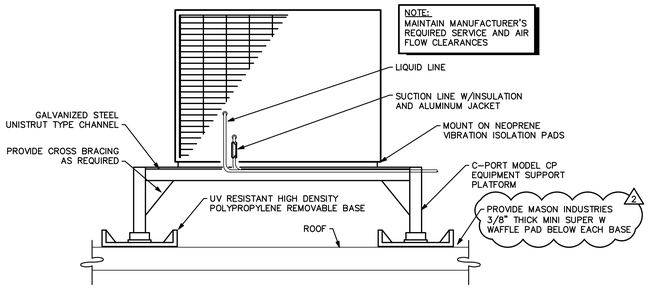


VAV UNIT INSTALLATION DETAIL 1

SCALE: NOT TO SCALE



OUTDOOR CONDENSING UNIT DETAIL 8

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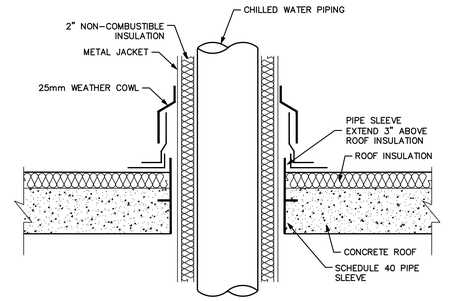
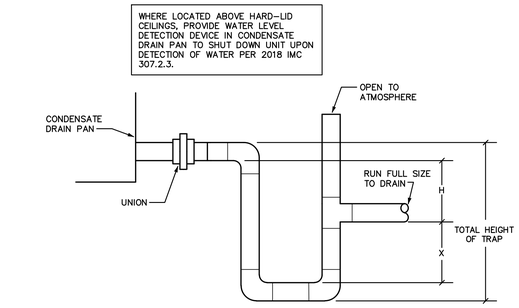


CHILLED WATER PIPE THROUGH ROOF DETAIL 5

SCALE: NOT TO SCALE



CONDENSATE DRAIN TRAPS:
DRAW-THROUGH APPLICATION (NEGATIVE STATIC PRESSURE)
X = 1/2 * "H"
H = AT LEAST 1" PLUS CASING STATIC PRESSURE
TOTAL HEIGHT OF TRAP = X + H + (1/2 * PIPE DIA.)**

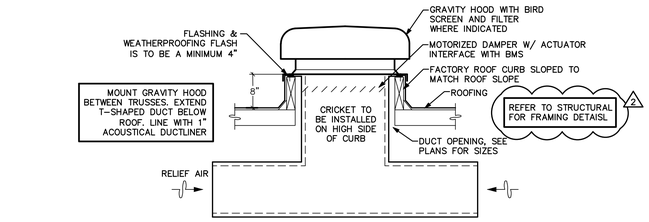
BLOW-THROUGH APPLICATION (POSITIVE STATIC PRESSURE)
X = AT LEAST 1" PLUS CASING STATIC PRESSURE
H = AT LEAST 1"
TOTAL HEIGHT OF TRAP = X + H + (1/2 * PIPE DIA.)**

DRAIN PIPING SHALL BE THE SAME SIZE AS THE DRAIN PAN CONNECTION. SEE FLOOR PLANS FOR ROUTING AND LOCATION OF ALL CONDENSATE DRAIN PIPING.

** WITHOUT INSULATION

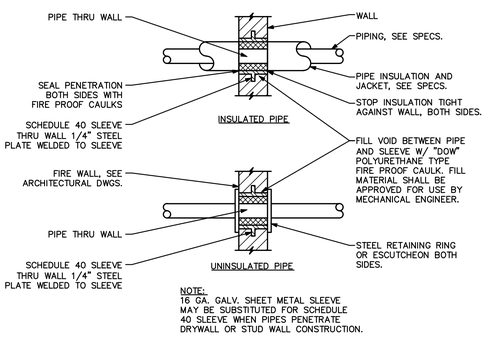
CONDENSATE DETAIL 2

SCALE: NOT TO SCALE



GRAVITY HOOD DETAIL 9

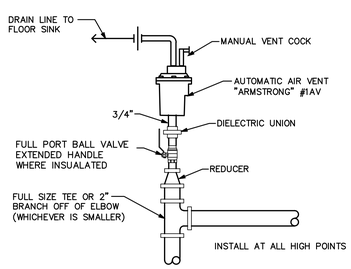
SCALE: NOT TO SCALE



NOTE:
16 GA. GALV. SHEET METAL SLEEVE MAY BE SUBSTITUTED FOR SCHEDULE 40 SLEEVE WHEN PIPES PENETRATE DRYWALL OR STUD WALL CONSTRUCTION.

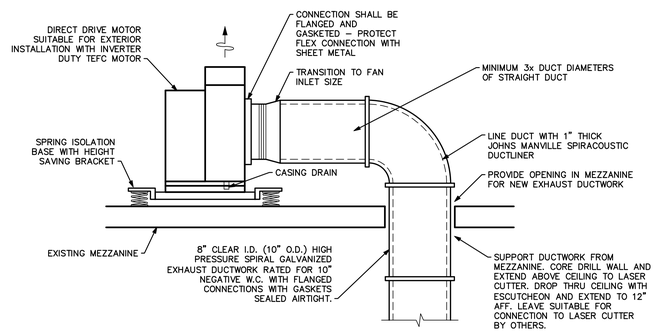
PIPE SLEEVE THRU WALL DETAIL 6

SCALE: NOT TO SCALE



AIR VENT DETAIL 3

SCALE: NOT TO SCALE



LASER CUTTER EXHAUST FAN DETAIL 10

SCALE: NOT TO SCALE

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revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

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COM PROJECT NO.
CP0916NLAB

JOSEPH G. MONTE STURDEVANT
Certified Professional Engineer
CERTIFICATE NO. 20981
REGISTERED
PROFESSIONAL ENGINEER
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL DETAILS

DRAWING
M1.4

SHEET	CATALOG NUMBER:
23 - OF - 49	A-282725

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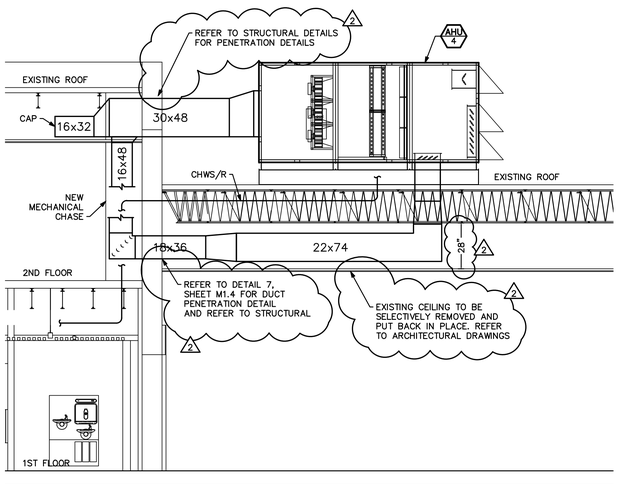
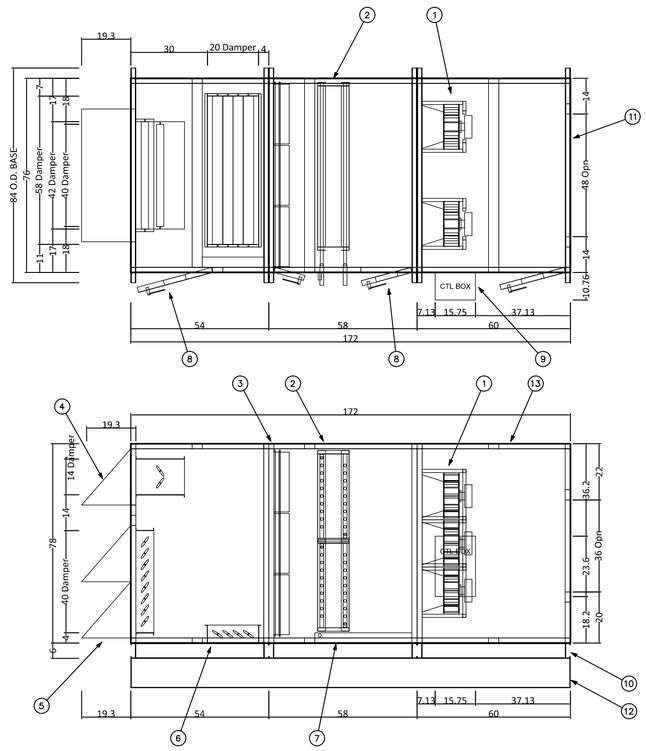
PLOTTED: 03.15.2024 – 1:10pm



SECTION AT AHU-4

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

3



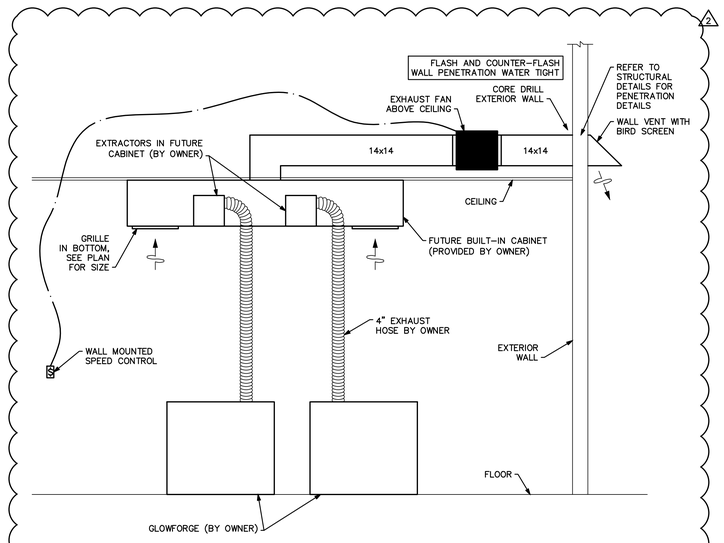
AHU DETAIL KEYNOTES

1. ECM SUPPLY FAN ARRAY. PROVIDE AIRFLOW MONITORING AT EACH FAN WITH TRANSDUCER AND CONNECT TO AIRFLOW MONITORING STATION.
2. CHILLED WATER COOLING COIL SECTION.
3. 2" MERV-8 PREFILTER AND 4" MERV-13 FILTER SECTION WITH MAGNAHELIC DIFFERENTIAL PRESSURE GAUGE ON EACH FILTER BANK.
4. NORMAL OUTSIDE AIR INTAKE WITH AIRFLOW MONITORING STATION AND MOTORIZED DAMPERS.
5. ECONOMIZER OUTSIDE AIR INTAKE WITH MOTORIZED DAMPERS.
6. BOTTOM RETURN AIR INTAKE WITH MOTORIZED DAMPERS.
7. DOUBLE SLOPED STAINLESS STEEL DRAIN PAN AND CONDENSATE DRAIN CONNECTION.
8. ACCESS DOOR WITH VIEW WINDOW (TYPICAL).
9. MOTOR OVERLOAD PANEL FACTORY WIRED TO EACH MOTOR.
10. BASE RAIL ASSEMBLY.
11. SUPPLY AIR OPENING.
12. FACTORY ROOF CURB.
13. SLOPED ROOF FOR OUTDOOR INSTALLATION.

AHU-4 DETAIL

SCALE: NOT TO SCALE

1



GLOWFORGE EXHAUST DETAIL

SCALE: NOT TO SCALE

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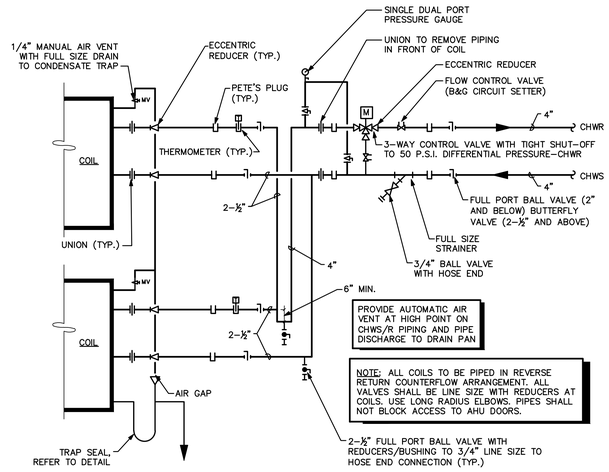

CHILLED WATER COIL PIPING DETAIL - AHU-4

SCALE: NOT TO SCALE

2

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Registered Professional Engineer Certificate No. 20981 G. MONTE STURDEVANT 11/5/24 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
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CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL DETAILS

DRAWING
M1.5

SHEET	CATALOG NUMBER:
24 - OF - 49	A-282726

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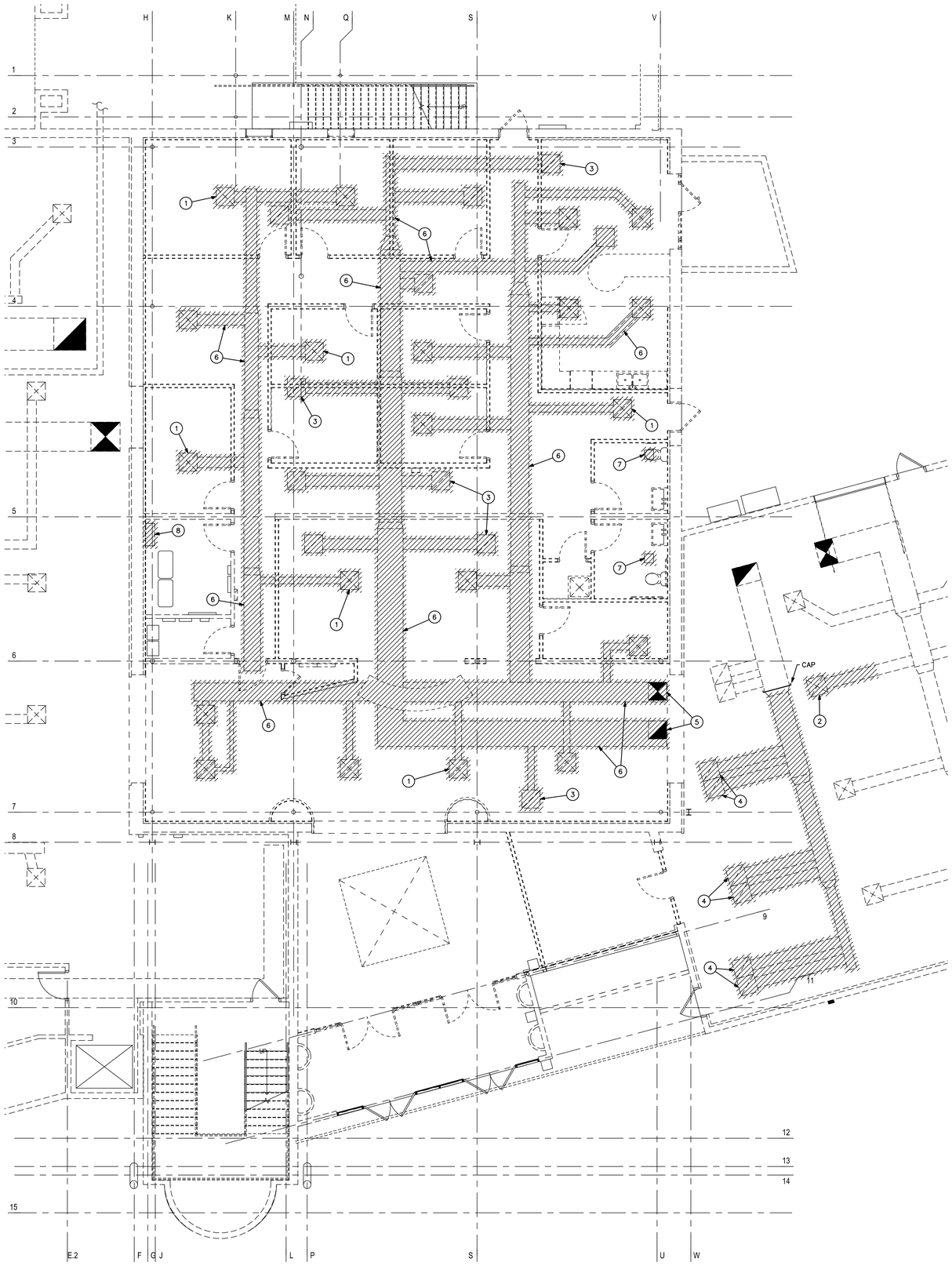

MECHANICAL DEMOLITION PLAN - 1ST FLOOR

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

KEYNOTES

1. EXISTING SUPPLY AIR DISTRIBUTION DEVICES TO BE REMOVED. (TYPICAL)
2. EXISTING SUPPLY AIR DISTRIBUTION DEVICE TO BE RELOCATED. REFER TO NEW PLAN.
3. EXISTING RETURN AIR DEVICES TO BE REMOVED. (TYPICAL)
4. EXISTING RETURN AIR DEVICES TO BE RELOCATED. REFER TO NEW PLAN. DEMO REMAINING DUCTWORK AND CAP.
5. EXISTING SUPPLY AND RETURN AIR DROPS FROM EXISTING ROOFTOP UNIT TO BE REMOVED. REFER TO DEMOLITION ROOF PLAN.
6. DEMO ALL EXISTING SUPPLY AND RETURN AIR DUCTWORK THIS AREA. REMOVE ALL HANGERS AND SUPPORTS. PATCH WALL PENETRATIONS TO MATCH EXISTING. SALVAGE AND DELIVER ALL TEMPERATURE SENSORS AND CONTROLS TO OWNER.
7. DEMO EXISTING EXHAUST FAN AND DUCT THRU ROOF AND PATCH ROOF. REMOVE CONTROLS.
8. DEMO EXISTING WALL MOUNTED MINI SPLIT UNIT AND ASSOCIATED OUTDOOR CONDENSING UNIT. DEMO ALL ASSOCIATED REFRIGERANT PIPING AND CONDENSATE PIPING.

PMT24-00829

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No.	Description	Date

ENERGY SYSTEMS DESIGN
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Project # 201080.200
Design Contact: RYAN EGGINK

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer
CERTIFICATE NO.
20981
G.MONTE STURDEVANT
03/15/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916NLAB**

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DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL DEMO PLAN 1ST FLOOR

DRAWING
M2.2

SHEET	CATALOG NUMBER:
25 - OF - 49	A-282727

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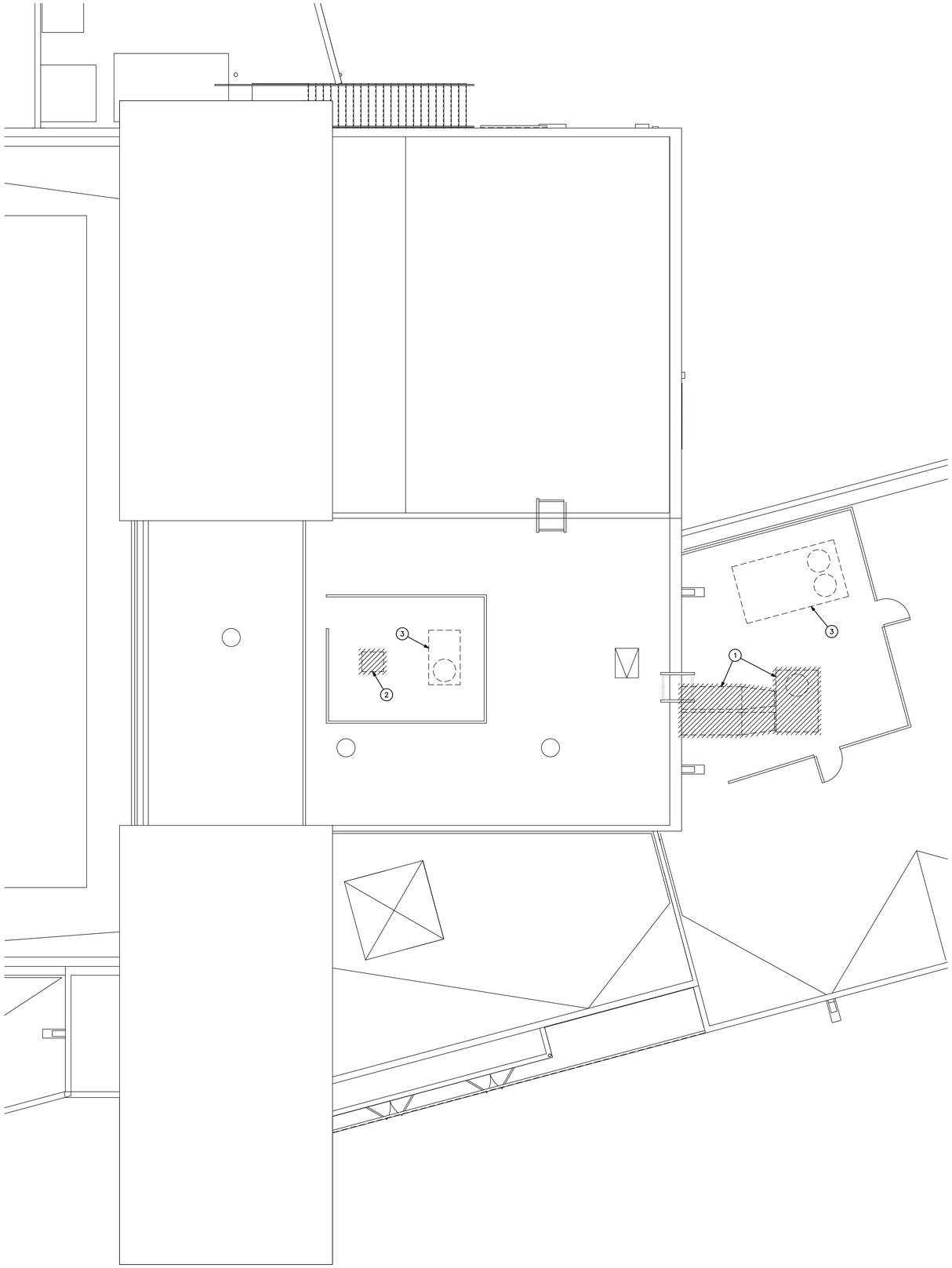

KEYNOTES

1. DEMO EXISTING PACKAGED ROOFTOP UNIT THIS LOCATION. REMOVE EXISTING ROOF CURB. PATCH ROOF AS REQUIRED. REMOVE EXISTING CONTROLS AND DELIVER TO OWNER OR DISPOSE OF AS DIRECTED BY OWNER. REMOVE EXISTING CONDENSATE DRAIN PIPING AND GAS PIPING AND SUPPORTS AS REQUIRED. DEMO EXISTING SUPPLY AND RETURN AIR DUCT PENETRATIONS THROUGH WALL. SEAL WALL TO MATCH EXISTING. REFER TO FIRST FLOOR DEMOLITION PLAN.
2. DEMO EXISTING MINI SPLIT SYSTEM OUTDOOR CONDENSING UNIT. REMOVE ROOF SUPPORTS AND PATCH ROOF AS REQUIRED.
3. EXISTING MECHANICAL UNIT TO REMAIN.

MECHANICAL DEMOLITION ROOF PLAN

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

N

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No.	Description	Date

COM PROJECT NO.
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Registered Professional Engineer Mechanical
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Expires 03/31/25
ARIZONA U.S.A.

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CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
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MECHANICAL DEMO PLAN ROOF

DRAWING
M2.4

SHEET	CATALOG NUMBER:
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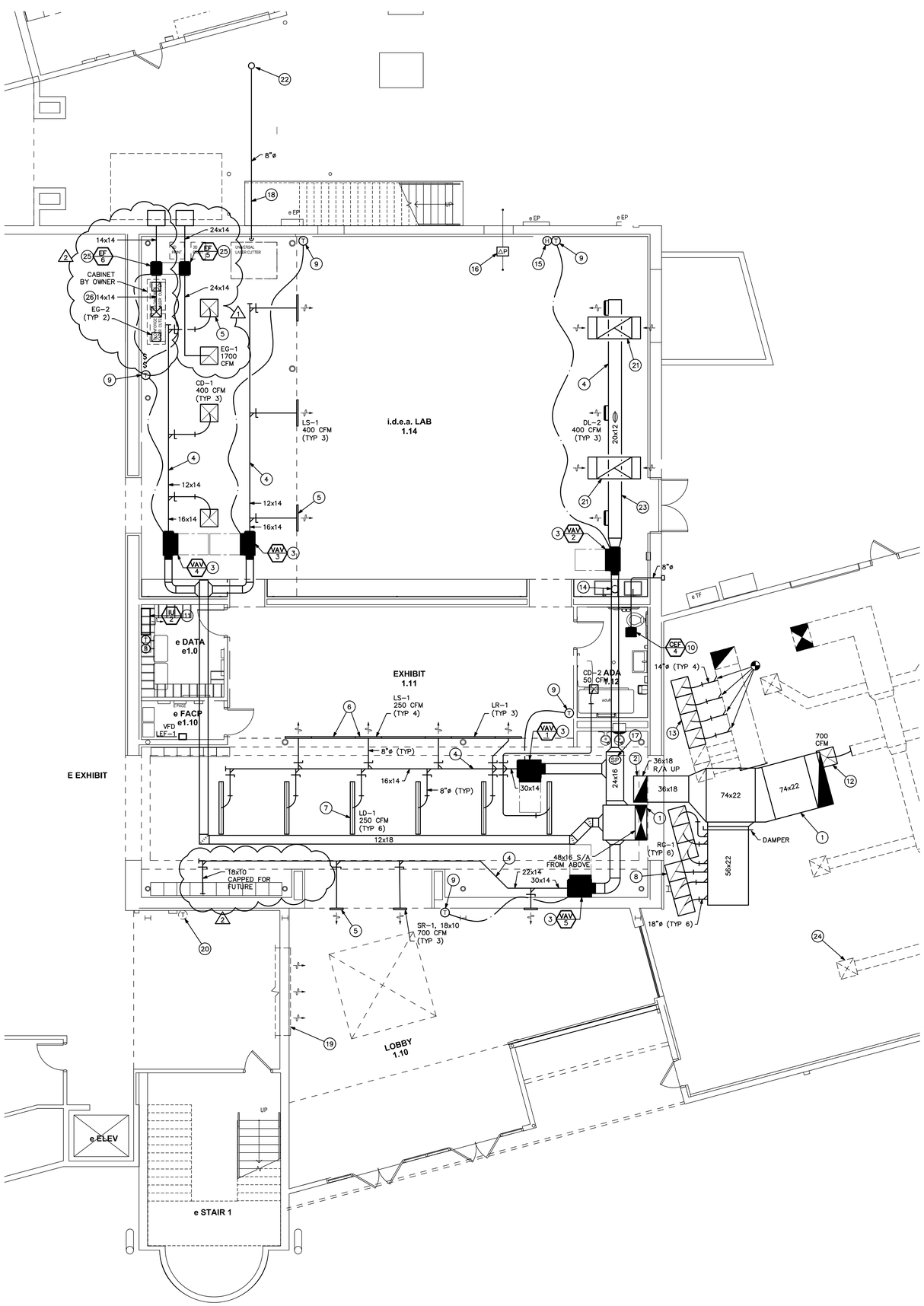

KEYNOTES

1. NEW MEDIUM PRESSURE SUPPLY AND RETURN DUCTWORK ROUTED FROM AIR HANDLING UNIT ABOVE. TRANSITION FROM UNIT OUTLET TO SIZE SHOWN AND ROUTE AS SHOWN.
2. ROUTE RETURN DUCTWORK UP IN CHASE TO 2ND LEVEL CEILING SPACE AND CAP FOR USE IN FUTURE PHASE.
3. INSTALL NEW VAV BOX WITH ELECTRIC HEAT ABOVE CEILING. MAINTAIN ALL REQUIRED CLEARANCES. EXTEND MEDIUM PRESSURE RUNOUT BACK TO NEW MEDIUM PRESSURE MAIN AND CONNECT.
4. EXTEND LOW PRESSURE SUPPLY DUCTWORK AND ROUTE AS SHOWN.
5. INSTALL SUPPLY DIFFUSER AT LOCATION SHOWN. EXTEND BRANCH RUNOUT FROM LOW PRESSURE SUPPLY MAIN AND CONNECT. BALANCE TO AIRFLOWS INDICATED. (TYPICAL)
6. INSTALL SUPPLY AND RETURN LINEAR SLOT MODULES SO AS TO PROVIDE A CONTINUOUS SLOT APPEARANCE. PROVIDE WITH CONCEALED MUD-IN FRAME. (TYPICAL)
7. INSTALL LINEAR SLOT SUPPLY DIFFUSERS BETWEEN CEILING BAFFLES. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING REQUIREMENTS. (TYPICAL)
8. INSTALL DUCTED RETURN GRILLE AT LOCATION SHOWN. (TYPICAL)
9. INSTALL NEW WALL MOUNTED TEMPERATURE SENSOR AND INTERFACE WITH BUILDING AUTOMATION SYSTEM. EXTEND PLENUM RATED CONTROL WIRING TO ASSOCIATED UNIT AND CONNECT.
10. INSTALL NEW CEILING EXHAUST FAN AND EXTEND EXHAUST DUCT TO FACTORY WALL CAP. CORE DRILL WALL AS REQUIRED. CONTROL FROM WALL SWITCH.
11. PROVIDE WALL MOUNTED DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT HIGH ON WALL THIS AREA. EXTEND REFRIGERANT PIPING UP TO CONDENSING UNIT ON ROOF. CONTROL FROM HARDWIRED WALL THERMOSTAT. PROVIDE WALL MOUNTED TEMPERATURE SENSOR AND INTERFACE WITH BUILDING AUTOMATION SYSTEM FOR MONITORING AND ALARM OF SPACE TEMPERATURE.
12. INSTALL RELOCATED SUPPLY DIFFUSER AS SHOWN. RECONNECT SUPPLY RUNOUT AND BALANCE TO AIRFLOW SHOWN.
13. INSTALL RELOCATED RETURN GRILLES AT LOCATIONS SHOWN AND CONNECT TO NEW RETURN BRANCH DUCTWORK. (TYPICAL)
14. RISE MEDIUM PRESSURE SPIRAL SUPPLY UP AS SHOWN TO ACHIEVE BOTTOM OF LOW PRESSURE SUPPLY DUCTWORK AT 12' AFF. PAINT PER ARCHITECT.
15. HUMIDITY SENSOR. INTERFACE WITH BMS.
16. PROVIDE BUILDING DIFFERENTIAL PRESSURE SENSOR AND INTERFACE WITH BAS TO MODULATE RELIEF DAMPERS.
17. DUCT STATIC PRESSURE SENSOR.
18. EXTEND 8"ø HIGH PRESSURE EXHAUST DUCTWORK FROM LASER CUTTER EXHAUST FAN ON MEZZANINE ABOVE. LINE WITH 1" SPIRACOUSTIC DUCTLINER. CORE DRILL WALL AND EXTEND INTO CEILING SPACE AND DOWN THRU CEILING WITH ESCUTCHEON TO 12" ABOVE FLOOR AT LOCATION OF LASER CUTTER. COORDINATE WITH OWNER FOR REQUIREMENTS.
19. EXISTING LINEAR SLOT SUPPLY DIFFUSER SERVING LOBBY TO REMAIN.
20. EXISTING TEMPERATURE SENSOR AT LOBBY TO REMAIN.
21. EXTEND RELIEF DUCTWORK DOWN THRU ROOF FROM GRAVITY RELIEF HOOD AS SHOWN.
22. EXHAUST DUCT UP TO LEF-1 ON MEZZANINE ABOVE. SEE SHEET M3.4.
23. EXPOSED SPIRAL FLAT OVAL DUCTWORK. PAINT DUCTWORK AND REGISTERS. COLOR BY ARCHITECT. PROVIDE BALANCING DAMPER AT EACH REGISTER.
24. REBALANCE EXISTING AIR DISTRIBUTION DEVICES TO 700 CFM EACH. (TYPICAL 8)

2 25. INSTALL NEW INLINE EXHAUST FAN ABOVE CEILING AT LOCATION SHOWN. MAINTAIN ALL REQUIRED CLEARANCES. EXTEND EXHAUST DUCTWORK FROM FAN OUTLET THRU EXTERIOR WALL AND TERMINATE WITH HOODED WALL VENT WITH BIRD SCREEN.

26. EXTEND EXHAUST DUCTWORK AND ROUTE AS SHOWN TO ABOVE OWNER FURNISHED CABINET AT GLOWFORGE MACHINES AND CONNECT. REFER TO DETAIL 4, SHEET M1.5.

MECHANICAL FLOOR PLAN - 1ST FLOOR

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

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No.	Description	Date
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2	90% CLIENT REVIEW COMMENTS	3/15/2024

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Registered Professional Engineer
DAVID G. MONTE STURDEVANT
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Expires 09/30/2025
ARIZONA U.S.A.

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DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

MECHANICAL FLOOR PLAN 1ST FLOOR

DRAWING
M3.2

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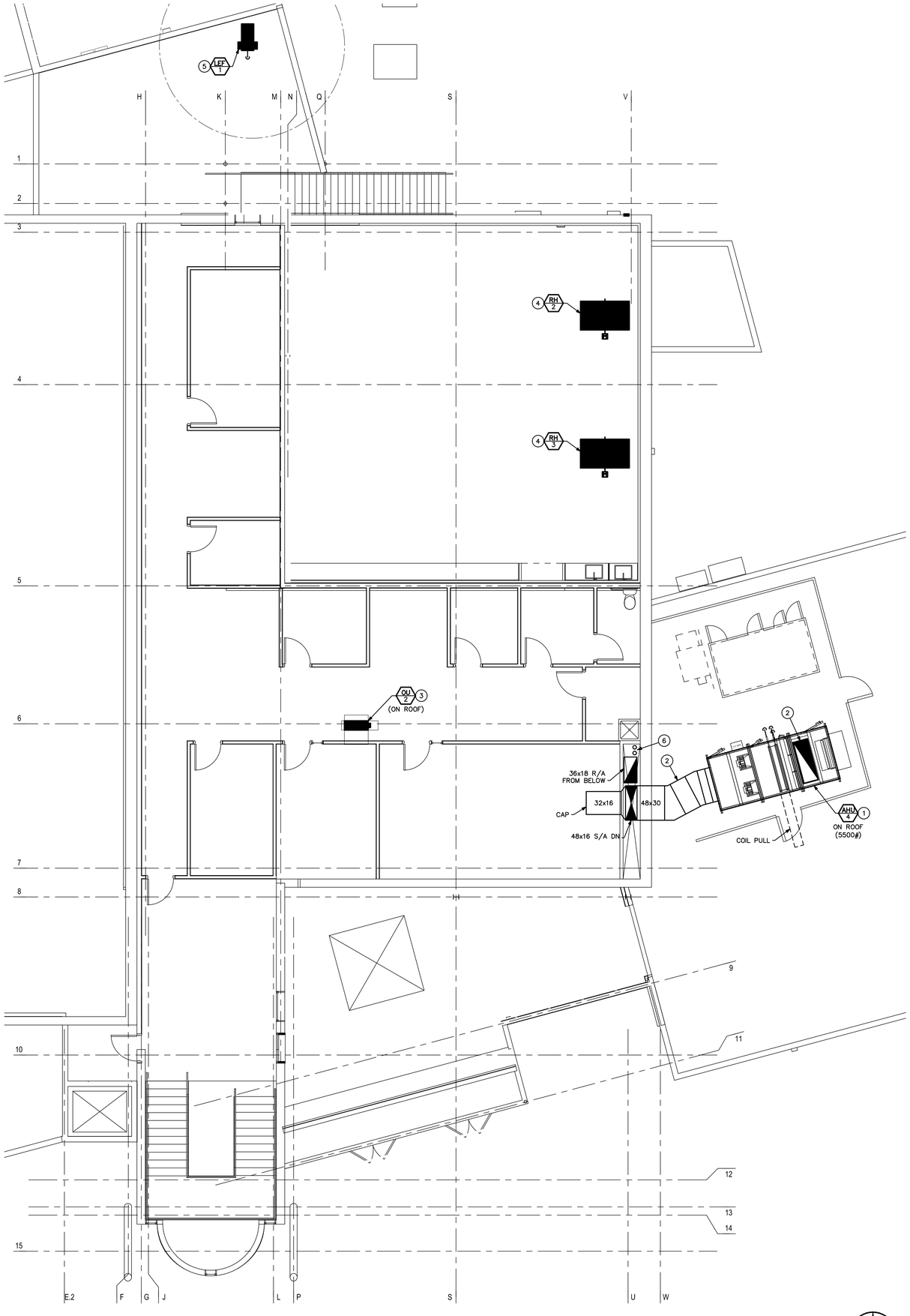

KEYNOTES

1. NEW VARIABLE AIR VOLUME CHILLED WATER AIR HANDLING UNIT MOUNTED ON ROOF CURB THIS LOCATION.
2. EXTEND SUPPLY DUCTWORK HORIZONTALLY ON ROOF AND THRU WALL INTO MECHANICAL CHASE AT ADJACENT 2ND LEVEL. EXTEND RETURN DUCTWORK DOWN INTO CEILING SPACE BELOW. REFER TO SHEET M3.2 FOR CONTINUATION.
3. PROVIDE DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT CONDENSING UNIT ON ROOF THIS AREA. MOUNT UNIT ON SUPPORT PER DETAIL. EXTEND REFRIGERANT PIPING TO INDOOR UNIT.
4. PROVIDE NEW RELIEF HOOD WITH MODULATING MOTORIZED DAMPER TO MAINTAIN BUILDING PRESSURE. INTERFACE WITH BUILDING AUTOMATION SYSTEM. PROVIDE BUILDING DIFFERENTIAL PRESSURE SENSOR. PAINT HOODS TO MATCH ROOF. LOCATE HOODS BETWEEN EXISTING TRUSSES.
5. INSTALL LASER CUTTER EXHAUST FAN ON MECHANICAL MEZZANINE AT LOCATION SHOWN. FAN TO DISCHARGE UP. MAINTAIN MINIMUM 10' FROM OUTSIDE AIR INTAKES AND BUILDING OPENINGS FROM FAN OUTLET. EXTEND EXHAUST DUCTWORK DOWN THRU MEZZANINE FLOOR. REFER TO SHEET M3.2 FOR CONTINUATION.
6. CHILLED WATER PIPING. REFER TO PIPING PLAN.

MECHANICAL ROOF PLAN

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

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Registered Professional Engineer
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G.MONTE
STURDEVANT
03/15/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916NLAB**

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DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
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MECHANICAL ROOF PLAN

DRAWING
M3.4

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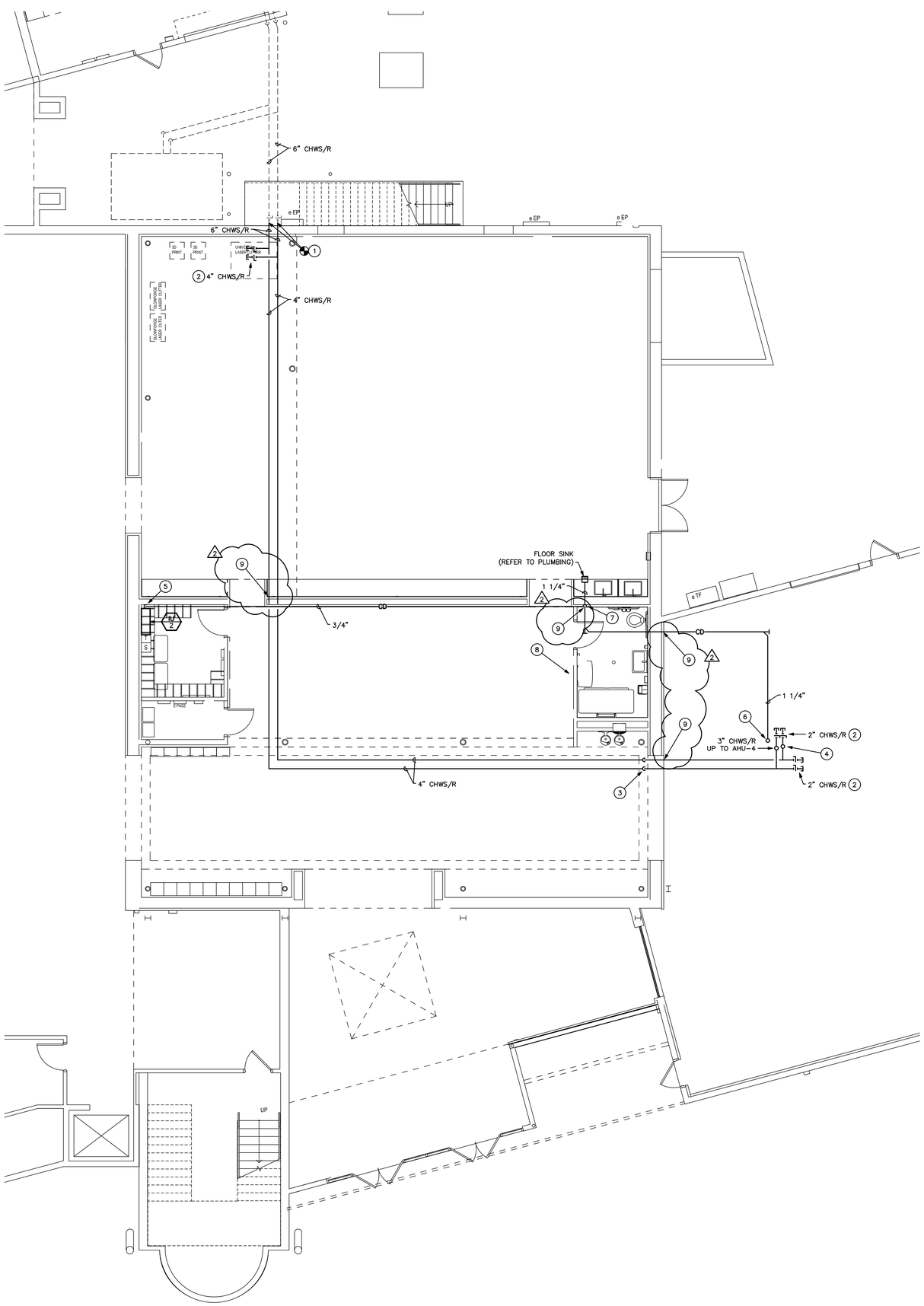

KEYNOTES

1. CONNECT TO EXISTING VALVED CHILLED WATER SUPPLY AND RETURN PIPING INSTALLED IN PREVIOUS PHASE. CORE DRILL WALL AND EXTEND INTO BUILDING. ROUTE IN CEILING SPACE AS SHOWN.
2. PROVIDE VALVED AND CAPPED CHILLED WATER STUBOUTS FOR FUTURE USE. SIZE PER PLANS.
3. RISE CHILLED WATER SUPPLY AND RETURN PIPING IN MECHANICAL CHASE TO CEILING LEVEL OF ADJACENT SPACE.
4. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING UP THRU ROOF TO NEW AIR HANDLING UNIT AND CONNECT. SEE ROOF PLAN FOR CONTINUATION.
5. PROVIDE CONDENSATE PUMP AT DUCTLESS SPLIT SYSTEM UNIT AND RISE DRAIN PIPING UP AS HIGH AS NEEDED TO ACHIEVE REQUIRED SLOPE AND ROUTE AS SHOWN.
6. 1 1/4" CONDENSATE DRAIN DOWN FROM AHU-4 ON ROOF ABOVE. ROUTE AS HIGH AS POSSIBLE AS SHOWN.
7. ROUTE 1 1/4" CONDENSATE DRAIN PIPING DOWN WALL AND TERMINATE AT FLOOR SINK.
8. EXTEND EXISTING CONDENSATE DRAIN PIPING FROM DEMOLISHED JANITOR MOP SINK TO NEW FLOOR SINK. FIELD VERIFY.
9. CORE DRILL MASONRY WALL AS REQUIRED FOR NEW PIPING PENETRATION. SEE DETAIL 6, M1.4.

MECHANICAL PIPING PLAN - 1ST FLOOR

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

PMT24-00829

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No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	3/15/2024

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DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

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DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
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MECHANICAL PIPING PLAN 1ST FLOOR

DRAWING
M4.2

SHEET	CATALOG NUMBER:
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ELECTRICAL SYMBOLS

NOTE: NOT ALL SYMBOLS ARE USED.

WALL LIGHT/OUTLET FIXTURE. UPPER CASE LETTER WITH NUMBER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE FOR TYPE. LOWER CASE LETTER INDICATES SWITCHING. NUMBER INDICATES BRANCH CIRCUIT(S).

DOWN LIGHT FIXTURE. UPPER CASE LETTER WITH NUMBER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE FOR TYPE. LOWER CASE LETTER INDICATES SWITCHING. NUMBER INDICATES BRANCH CIRCUIT(S).

WALL WASH LIGHT FIXTURE. UPPER CASE LETTER WITH NUMBER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE FOR TYPE. LOWER CASE LETTER INDICATES SWITCHING. NUMBER INDICATES BRANCH CIRCUIT(S).

LIGHT FIXTURE. UPPER CASE LETTER WITH NUMBER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE FOR TYPE. LOWER CASE LETTER INDICATES SWITCHING. NUMBER INDICATES BRANCH CIRCUIT(S).

TRACK LIGHTING SYSTEM. TRIANGLES DENOTE TRACK HEADS. UPPER CASE LETTER WITH NUMBER INDICATES TYPE. SEE LIGHT FIXTURE SCHEDULE FOR TYPE. LOWER CASE LETTER INDICATES SWITCHING. NUMBER INDICATES BRANCH CIRCUIT(S).

EMERGENCY LUMINAIRE. EMERGENCY LUMINAIRE IS EITHER CONNECTED TO A LIFE SAFETY GENERATOR SYSTEM, INVERTER, OR BATTERY PACK. UPPER CASE LETTER WITH NUMBER INDICATES TYPE, WHERE AN "E" OR "G" ALSO DENOTES AN EMERGENCY LUMINAIRE. LOWER CASE LETTER INDICATES SWITCHING CONTROL. THE "NL" ANNOTATION DENOTES THE LUMINAIRE SHALL NOT BE CONTROLLED AND SHALL ALWAYS BE ON. EMERGENCY LUMINAIRE SHALL NOT BE SWITCHED OFF, BUT MAY BE DIMMED TO A MINIMUM OF ONE FOOT CANDLE AT FINISHED FLOOR, UNO.

EXIT SIGN. SHADED PORTION INDICATES FACE OF SIGN. SEE LIGHT FIXTURE SCHEDULE.

JUNCTION BOX IN ACCESSIBLE LOCATION.

SINGLE POLE SWITCH.

MOTOR RATED, 1hp, TOGGLE SWITCH WITH RED PILOT LIGHT AND THERMAL OVERLOAD RELAY. REFER TO BRANCH CIRCUIT FOR VOLTAGE. EQUAL TO SQUARE D CLASS 2510 TYPE F MANUAL SWITCH. NEMA 3R WHERE OUTSIDE.

FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT. "WP" INDICATES LIQUID TIGHT AND WEATHERPROOF COVER.

SINGLE RECEPTACLE. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER.

DUPLEX RECEPTACLE. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER.

FOURPLEX RECEPTACLE. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER.

SWITCHED RECEPTACLE. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER.

RECESSED FLOOR OUTLET WITH DEVICE SYMBOLIZED. PROVIDE DEVICE PLATE AND CARPET FLANGE, IN CARPETED AREAS. PROVIDE TELEPHONE AND DATA OUTLETS SHALL HAVE MIN. 1"C. WITH PULL STRINGS STUBBED UP INTO ACCESSIBLE CEILING SPACE. PROVIDE CONDUIT BUSHINGS ABOVE CEILING.

SPECIAL PURPOSE RECEPTACLE WITH NEMA CONFIGURATION NOTED, i.e.; 6-50, 15-20, ETC.

NOTE: REFER TO ABBREVIATIONS FOR RECEPTACLE SUBSCRIPTS.

DATA OUTLET. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER. PROVIDE SINGLE GANG MUD RING IN WALL AND 3/4" CONDUIT WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

TELEPHONE OUTLET. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER. "P" INDICATES PAYPHONE PROVIDE #6 CU GROUND PER NEC #800. PROVIDE SINGLE GANG MUD RING IN WALL AND 3/4" CONDUIT WITH PULL STRING INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

DATA AND COMMUNICATIONS JACK. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER. PROVIDE SINGLE GANG MUD RING IN WALL AND 3/4" CONDUIT WITH PULL STRING INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

TMB — 4'x4'x3/4" THICK FIRE RATED TELEPHONE BOARD. MOUNT AT 6" BELOW CEILING. PROVIDE #6 SOLID CU GROUND PER NEC #800.

HEAVY DUTY DISCONNECT SWITCH. HORSEPOWER, VOLTAGE AND PHASE RATED, FUSED UNLESS NOTED "NF" (NON FUSED). SIZE FUSES PER EQUIPMENT MANUFACTURES NAMEPLATE RECOMMENDATIONS. PROVIDE NEMA 3R WHERE OUTSIDE.

CIRCUITS IN CONDUIT CONCEALED IN FLOOR OR BELOW GRADE.

CIRCUITS IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING.

HOMERUN TO PANELBOARD OR AS NOTED.

HACHURES INDICATE NUMBER OF PHASE AND NEUTRAL CONDUCTORS LESS EQUIPMENT AND ISOLATED GROUNDS. WHERE NO HACHURES ARE SHOWN PROVIDE 2 #12 CU, 1 #12 CU BOND. WHERE WIRE IS NOTED ON HOMERUN TO BE LARGER THAN #12, PROVIDE SIZE WIRE AND CONDUIT INDICATE FOR ENTIRE LENGTH OF CIRCUIT. MINIMUM CONDUIT SIZE IS 3/4". PROVIDE A BOND WIRE SIZED PER NEC 250 IN ALL RACEWAYS. GROUND, BOND WIRES AND ISOLATED GROUND WIRES ARE NOT NORMALLY SHOWN ON THE DRAWINGS.

CONDUIT STUB-OUT. CAP AND MARK FOR FUTURE USE.

CONDUIT STUB-UP.

PANELBOARD. SURFACE OR FLUSH AS SCHEDULED.

MOTOR. SIZE AND RATING AS SHOWN. "EF" INDICATES 150 WATT EXHAUST FAN.

TV — TELEVISION OUTLET. SLASH LINE INDICATES MOUNTING IS ABOVE COUNTER. PROVIDE 3/4"C. WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

BF — PROVIDE SYSTEM FURNITURE POWER AND VOICE/DATA BASE FEEDS. PROVIDE SINGLE GANG MUDRING WITH PULL TAPE TO ACCESSIBLE CEILNG SPACE FOR VOICE/DATA CABLING TO SYSTEM FURNITURE, UNO. MAKE FINAL CONNECTIONS AS REQUIRED.

CARD READER. PROVIDE JUNCTION BOX WITH SINGLE GANG MUD RING AND 3/4"C. WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

ADA ACTUATOR. PROVIDE JUNCTION BOX WITH SINGLE GANG MUD RING AND 3/4"C. WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

CAMERA. PROVIDE JUNCTION BOX WITH SINGLE GANG MUD RING AND 3/4"C. WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.

WAP — WIRELESS ACCESS POINT. CONTRACTOR TO PROVIDE 4" SQUARE CEILING MOUNT JUNCTION BOX WITH 1" PLASTIC BUSHING AT ACCESSIBLE CEILING WITH PULL STRING.

M — MOTORIZED DAMPER

ABBREVIATIONS

AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
BF	BASE FEED
C	CEILING MOUNTED DEVICE
CAC/CRAC	COMPUTER ROOM AIR CONDITIONING
CF	COMPACT FLUORESCENT
DW	DISHWASHER
DISP	DISPOSAL
EC	EVAPORATIVE COOLER
EDF	ELECTRIC DRINKING FOUNTAIN
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
EP	EMERGENCY PHONE
EUH	ELECTRIC UNIT HEATER
G/GRD	COPPER GROUNDING/BONDING CONDUCTOR
GF/GFP	GROUND FAULT PROTECTED
GFI/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HID	HIGH INTENSITY DISCHARGED
HPS	HIGH PRESSURE SODIUM
IG	ISOLATED GROUND CONDUCTOR/RECEPTACLE
IM	ICE MACHINE/MAKER
LC	LIGHTING CONTACTOR
LKH	LOCKING HANDLE CIRCUIT BREAKER "LOCK-DOG"
LOTO	LOCK OUT TAG OUT CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	METAL HALIDE
N	NEUTRAL CONDUCTOR
NF	NON-FUSED
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
PNL	PANEL
PVC	RIGID PVC CONDUIT, SCHEDULE 40 UNO
RA	RETURN AIR FAN
RAF	RAISED ACCESS FLOOR
RMC	RIGID METAL CONDUIT
SES	SERVICE ENTRANCE SWITCHBOARD
SF	SUPPLY FAN
ST	SHUNT TRIP
SWBD	SWITCHBOARD
TC	TIME CLOCK
TS	TIME SWITCH
UNO	UNLESS NOTED OTHERWISE
VFD	VARIABLE FREQUENCY DRIVE
WH	WATER HEATER
WP	WEATHERPROOF
XFMR	TRANSFORMER

DEVICE MOUNTING HEIGHTS

NOTE: ALL HEIGHTS ARE ABOVE FINISHED FLOOR AND TO THE CENTERLINE OF THE INSTALLED DEVICE U.N.O. THE ELECTRICAL CONTRACTOR SHALL ADJUST THE J-BOX MOUNTING HEIGHT ACCORDINGLY.

SEE POWER AND LIGHTING PLANS FOR ADDITIONAL MOUNTING HEIGHTS SPECIFIED BY THE OWNER.

RECEPTACLES	+18"
TELEPHONE OUTLETS	+18"
DATA OUTLETS	+18"
ABOVE COUNTER RECEPTACLES, TELEPHONE, AND DATA OUTLETS VERIFY WITH ARCHITECT PRIOR TO ROUGH-IN.	
SWTCHES	+46"
DIMMERS	+46"
OTHER CONTROLS	+46"
TIME SWITCHES	+60"
RECEPTACLE(S) LOCATED AT TMB	+46"
FA MANUAL PULL STATION	+46"
FA VISUAL DEVICES *TO BOTTOM OF LENS*	+80"
FA AUDIO DEVICES *TO BOTTOM OF LENS*	+80"
TELEVISION OUTLETS	+96"
INTERCOM SPEAKERS	+96"
CLOCKS	+96"

ONE-LINE DIAGRAM SYMBOLS

CURRENT TRANSFORMER.

M — UTILITY METER.

CIRCUIT BREAKER. AMPERE RATING AND # OF POLES INDICATED.

FUSED SWITCH. AMPERE RATING AND # OF POLES INDICATED.

FUSED PULL-OUT. AMPERE RATING AND # OF POLES INDICATED.

INDICATES DRAW-OUT DEVICE.

FUSE. AMPERE RATING INDICATED. (BUSSMANN DESIGNATION UNO)

TRANSFORMER, DRY TYPE, PAD PAD MOUNT, WITH kVA, PRIMARY AND SECONDARY VOLTAGE, MINIMUM IMPEDANCE, AND "K" RATING AS NOTED. PROVIDE SEPARATELY DERIVED SOURCE GROUNDING PER NEC 250 SIZE AS NOTED. 150° C RISE UNO.

— MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED. PROVIDE WITH OPTIONAL FEATURES SCHEDULED.

GROUND. SIZE GROUNDING PER THE LATEST ADOPTED NATIONAL ELECTRICAL CODE. UNO

CONDUCTOR TERMINATION POINT.

BOND TO STRUCTURAL STEEL. SIZE AS NOTED.

BOND TO GAS, WATER, FIRE SPRINKLER PIPING SYSTEMS. SIZE AS NOTED.

FIRE STOP/RESISTIVE NOTES

1. ALL PENETRATIONS OF FIRE RESISTIVE FLOORS, SHAFTS, ROOF STRUCTURES, WALLS AND PARTITIONS SHALL BE PROTECTED IN ACCORDANCE WITH UNIFORM BUILDING CODE REQUIREMENTS INCLUDING BUT NOT LIMITED TO THE FOLLOWING REQUIREMENTS.
2. THE CONTRACTORS SHALL BE RESPONSIBLE TO REVIEW EXISTING FACILITY DOCUMENTS AND DETERMINE THE LOCATIONS AS WELL AS THE FIRE RESISTIVE TIME AND TEMPERATURE RATINGS OF ALL FIRE RESISTIVE FLOORS, SHAFTS, WALLS, PARTITIONS, ETC. THE PROPER UL SYSTEM NUMBER FOR EACH TYPE OF PENETRATION FIRE STOP SHALL THEN BE DETERMINED AND PROVIDED. SHOP DRAWINGS SHALL BE PREPARED AND SUBMITTED TO INDICATE ALL NECESSARY FIRE STOP COMBINATIONS INCLUDING THE UL SYSTEM NUMBERS AND TYPICAL INSTALLATION DETAILS.
3. FIRE RESISTIVE AND FIRE STOP MATERIALS SHALL BE IN ACCORDANCE WITH UNDERWRITERS' LABORATORIES (UL) LISTINGS FOR THROUGH- PENETRATION FIRE PROTECTION SYSTEMS. THE INSTALLATION OF ALL FIRE RESISTIVE AND FIRE STOP MATERIALS SHALL BE IN ACCORDANCE WITH THE UL LISTING AND MANUFACTURERS' REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN SHOP DRAWING INSTALLATION DETAILS FROM THE MANUFACTURER WHICH INDICATE CONFORMANCE WITH THE UL REQUIREMENTS AND SPECIFY ALL INSTALLATION REQUIREMENTS WITH ALL VARIABLES DEFINED. THESE DRAWINGS SHALL BE AVAILABLE ON SITE FOR REVIEW BY THE LOCAL AUTHORITIES, THE OWNER AND ARCHITECT.
4. OUTLETS (OPENINGS) IN WALLS OR PARTITIONS REQUIRING PROTECTED OPENINGS SHALL NOT EXCEED 100 SQUARE INCHES FOR ANY 100 SQUARE FEET OF WALL OR PARTITION AREA.

FIRE ALARM SYSTEM AND PERFORMANCE NOTES

FIRE ALARM INSTALLATION SHALL INCLUDE NEW NOTIFICATION AND ANNUNCIATION DEVICES CONNECTED TO BUILDING CENTRALIZED FIRE ALARM PANEL. THIS SHALL INCLUDE HORN STROBES, DUCT SMOKE DETECTORS, AND ANY OTHER DEVICES SHOWN ON RISER OR CONCEPTUAL FLOOR PLANS. FIRE ALARM CONTRACTOR SHALL VERIFY THE DETAILS OF THE EXISTING FIRE ALARM PANEL AND SYSTEM PRIOR TO INSTALLATION TO CONFIRM FEASIBILITY TO CONNECT TO THE EXISTING SYSTEM AS PROPOSED. ANY REQUIRED UPGRADES TO THE MAIN SYSTEM BASED ON NEWLY ADOPTED CODES, CITY FIRE MARSHALL REQUIREMENTS, OR COMPATIBILITY ISSUES WITH OLDER SYSTEM SHALL BE PROVIDED TO LANDLORD FOR IMMEDIATE REVIEW AND APPROVAL.

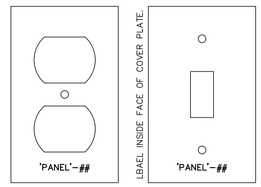
FIRE ALARM SYMBOLS

DUCT SMOKE DETECTOR

SMOKE DETECTOR AND RELAY AT SMOKE FIRE DAMPER. RELAY SHALL BE CONTROLLED BY FIRE ALARM SYSTEM TO SHUT DOWN POWER TO SMOKE FIRE DAMPER (CLOSING DAMPER) UPON ALARM CONDITION OF ASSOCIATED SMOKE DETECTOR.

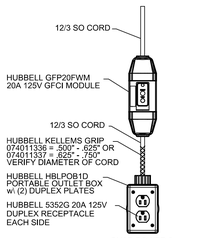
GENERAL NOTES

1. PRIOR TO ROUGH-IN AND FINAL CONNECTION, VERIFY ELECTRICAL CHARACTERISTICS AND EXACT LOCATION OF EQUIPMENT.
2. COORDINATE THE SCHEDULE OF CONSTRUCTION WITH THE OWNER AND OTHER TRADES (PRIOR TO STARTING ANY WORK).
3. GROUT AND SEAL ALL CONDUIT PENETRATIONS OF WALLS AND FLOOR SLABS TO PRESERVE FIRE RATING AND WATERTIGHT INTEGRITY.
4. DRAWINGS SHOW EXISTING CONDITIONS OF THE SITE. AN ATTEMPT HAS BEEN MADE TO SHOW EXISTING BUILDINGS, DETAILS, ETC., BUT ACCURACY CANNOT BE GUARANTEED. VERIFY EXACT LOCATIONS OF ALL CIRCUITS, CONDUIT, PIPING, EQUIPMENT, ETC. VERIFY ALL BUILDING DETAILS.
5. THE OWNER WILL OCCUPY THE EXISTING BUILDING DURING THE LIFE OF THIS CONTRACT AND ALL WORK SHALL BE SCHEDULED AT SUCH TIME AND IN SUCH A MANNER TO MINIMIZE INTERFERENCE AND INCONVENIENCE TO THE OWNER. THE ELECTRICAL CONTRACTOR MUST OBTAIN THE APPROVAL OF THE CONSTRUCTION MANAGER OR OWNER BEFORE STARTING ANY WORK WITHIN THE EXISTING BUILDING.
6. EXISTING POWER OR LIGHTING CIRCUITS WHICH POWER DEVICES IN OTHER AREAS, AS WELL AS DEVICES IN THE DEMOLITION AREA (IF ANY), SHALL SHALL BE DISCONNECTED FOR AS SHORT A TIME AS NECESSARY. VERIFY WITH SITE PERSONNEL PRIOR TO THE DISCONNECTION OF ANY CIRCUITS.
7. IF ANY EXISTING CIRCUIT CANNOT BE IDENTIFIED, THE CONTRACTOR SHALL USE A CIRCUIT TRACER TO DETERMINE ITS SOURCE. ARCING TO GROUND IS NOT AN ACCEPTABLE PRACTICE AT THIS FACILITY.
8. REFER TO DIVISION 26 SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



PROVIDE COVERPLATES WITH LABEL INDICATING PANEL SUPPLIED FROM AND CIRCUIT NUMBER. LABEL SHALL BE CLEAR BACKGROUND ON BLACK 1/4" TALL LETTERS.

LABELING DETAIL



QUAD POWER &
SELF TEST GFCI PROTECTION
w\ HUBBELL KELLEMS GRIP

ORDERING INFORMATION

inREACH™ Industrial Cord Reels

Description	Amps	Voltage	Cable Length ft (m)	Cable Type	Weight lbs. (kg)	Catalog Number
White industrial reel, black portable outlet box, GFCI module and (2) 20A duplex receptacles	20A	125V AC	45 (13.7)	12/3 SJO	26.5 (12.0)	**HBLI45123GF220M1**

CORD REEL DETAIL

SCALE: N.T.S.

1
E0.00

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer — CERTIFICATE NO. 53328 — NATHAN A. SHORT — 01/31/24 — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ELECTRICAL SYMBOLS AND NOTES

DRAWING
E0.00

SHEET	CATALOG NUMBER:
30 - OF - 49	A-282732

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
Suite 275
Scottsdale AZ 85251
P: 480.481.4900
www.esdengineers.com
Design Contact: WILLIAM REYES
Project # 201080.200

PMT24-00829

FILE: C:\Users\william.reyes\AppData\Local\Temp\AcPublish_1052\E0_0_1.dwg
PLOTTED BY: william.reyes
PLOTTED: 03.14.2024 - 6:18pm

COMcheck Software Version 4.1.5.5

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: i.d.e.a. Museum Renovations
Project Type: New Construction

Construction Site:
150 W Pepper Place
Mesa, AZ 85201

Owner/Agent:
Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006

Designer/Contractor:
ENERGY SYSTEM DESING
7135 East Camelback Road
Scottsdale, AZ 85251

Additional Efficiency Package(s)

Credits: 1.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-LOBBY AREA (Museum:General Exhibition)	1171	1.05	1230
2-EXHIBIT 1.11 (Museum:General Exhibition)	628	1.05	659
3-ADA 1.12 (Common Space Types:Restrooms)	111	0.85	94
4-LAB 1.14 (Museum:General Exhibition)	2444	1.05	2566
5-ELEC RM (Common Space Types:Electrical/Mechanical)	42	0.43	18
		Total Allowed Watts =	4568

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-LOBBY AREA (Museum:General Exhibition)				
LED 1: L1-12: LINEAR: Other:	1	8	126	1008
LED 2: L3: DOWN LIGHT: Other:	1	5	14	70
2-EXHIBIT 1.11 (Museum:General Exhibition)				
Track lighting 1: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
Track lighting 2: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
Track lighting 3: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
Track lighting 4: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
Track lighting 5: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
Track lighting 6: L4: TRACK LIGHT: Wattage based on total luminaires	0	0	112	112
3-ADA 1.12 (Common Space Types:Restrooms)				
LED 3: L3: DOWN LIGHT: Other:	1	2	14	28
4-LAB 1.14 (Museum:General Exhibition)				
Track lighting 1: L4: TRACK LIGHT: Wattage based on 17 feet of track	0	0	136	136
Track lighting 2: L4: TRACK LIGHT: Wattage based on 17 feet of track	0	0	136	136
Track lighting 3: L4: TRACK LIGHT: Wattage based on 17 feet of track	0	0	136	136
Track lighting 4: L4: TRACK LIGHT: Wattage based on 17 feet of track	0	0	136	136
LED 5: L1-32: LINEAR: Other:	1	5	336	1680
LED 6: L1-20: LINEAR: Other:	1	2	210	420
5-ELEC RM (Common Space Types:Electrical/Mechanical)				
LED 4: L1: 2X4 LAY-IN: Other:	1	1	37	37
		Total Proposed Watts =		4459

Interior Lighting PASSES: Design 2% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

LIGHTING CONTROL LEGEND

TYPE	DESCRIPTION AND CATALOG NUMBER
M ND	WALL SWITCH MOTION SENSOR WITH ON/OFF CONTROL BUTTONS AND PROGRAMMED TO VACANCY OPERATING MODE. STAND ALONE SENSOR AND/OR CONNECTION TO REMOTE POWER PACK PERMITTED. DUAL TECHNOLOGY. RATED FOR MINIMUM 800W @ 120V, 1000W @ 277V, 1/4hp. SMALL MOTION DETECTION TO MINIMUM 20 FEET.
M	WALL SWITCH MOTION SENSOR WITH ON/OFF AND RAISE/LOWER CONTROL BUTTONS AND AUTOMATIC LIGHTING CONTROL RESPONSE TO 50% POWER UNO. STAND ALONE SENSOR AND/OR CONNECTION TO REMOTE POWER PACK PERMITTED. DUAL TECHNOLOGY. RATED FOR MINIMUM 800W @ 120V, 1000W @ 277V, 1/4hp. SMALL MOTION DETECTION TO MINIMUM 20 FEET. PROVIDE DIMMING WIRING.
(M)	CEILING MOUNTED MOTION SENSOR. DUAL TECHNOLOGY, 360° COVERAGE. PROVIDE WITH COMPATIBLE POWER PACK(S) WITH SEPARATE RELAYS FOR QUANTITY OF ZONES INDICATED ON PLANS. MOTION SENSOR SHALL SWITCH ALL ZONES IN RANGE OF SENSOR OR AS NOTED ON PLANS BY LOWERCASE LETTER. SENSOR SHALL PROVIDE AUTOMATIC LIGHTING CONTROL RESPONSE TO 50% POWER (EXCEPT FOR IN RESTROOMS AND CORRIDORS WHICH SHALL COME TO FULL BRIGHTNESS, OR UNO). LOW VOLTAGE SWITCHES(S) IN SPACE SHALL BE CONNECTED TO POWER PACK(S). PROVIDE DIMMING WIRING.
LV a,b,... OR [a,b,...]	LOW VOLTAGE SWITCH FOR MANUAL ON/OFF AND RAISE/LOWER CONTROL OF ZONE(S) AS INDICATED ON PLANS BY LOWERCASE LETTER. ZONES INDICATED WITHIN BRACKETS SHALL BE CONTROLLED TOGETHER BY COMMON SCENE CONTROLLER. SWITCH SHALL BE CONNECTED TO MOTION SENSORS AND/OR LIGHTING SYSTEM AND CONTROL ZONES SHOWN ON PLANS.
LV ND a,b,... OR [a,b,...]	LOW VOLTAGE SWITCH FOR MANUAL ON/OFF CONTROL OF ZONE(S) AS INDICATED ON PLANS BY LOWERCASE LETTER. ZONES INDICATED WITHIN BRACKETS SHALL BE CONTROLLED TOGETHER BY COMMON SCENE CONTROLLER. SWITCH SHALL BE CONNECTED TO MOTION SENSORS AND/OR LIGHTING SYSTEM AND CONTROL ZONES SHOWN ON PLANS.

NOTES:

1. ACCEPTABLE MANUFACTURERS ARE TORK, HUBBELL, INTERMATIC, WATTSTOPPER, SIGNIFY ATHINA "LUTRON" AND HUBBELL.
2. CONTRACTOR SHALL INCLUDE WORK IN BID TO HAVE THE MANUFACTURER MAKE INSTALLATION DRAWINGS FOR ALL CONFIGURATIONS, SYSTEM PROGRAMMING, FINAL ADJUSTMENTS OF SENSITIVITY AND AIMING OF ALL SENSORS.
3. ADJUST OCCUPANCY SENSOR TIME DELAY OFF PER OWNERS REQUIREMENTS UP TO 20min MAXIMUM.
4. CONNECT AND PROVIDE WIRING AS REQUIRED BY MANUFACTURER. ALL WIRING (INCLUDING LOW VOLTAGE) SHALL BE IN 3/4" MIN. CONDUIT OR RUN ON APPROVED CABLE TRAY OR HANGARS.
5. IN A WIRED SYSTEM, CONTRACTOR SHALL INCLUDE ALL REQUIRED LOW VOLTAGE DIMMER WIRE (VIOLET AND GRAY, CAT 5E, OR PER MANUFACTURER) FROM ALL CONTROL DEVICES THAT INCLUDE DIMMING RAISE/LOWER CONTROL AND TO THE RESPECTIVE LUMINAIRES IN THE ROOM/ZONE. -THE SAME CONDUIT AS LINE VOLTAGE WIRE MAY BE USED IF THE LOW VOLTAGE WIRE HAS THE SAME INSULATION CLASS, ALL COMPONENTS OF THE SYSTEM ARE RATED FOR CLASS 1, AND INSTALLATION IS MADE IN ACCORDANCE WITH NEC 725.48. IN A WIRELESS SYSTEM, CONTRACTOR SHALL CONNECT AND PROGRAM ALL LUMINAIRES AND CONTROL DEVICES AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM.
6. PROVIDE SUFFICIENT RELAYS/POWER PACKS FOR INSTALLATION SHOWN.
7. RELAY/POWER PACKS SHALL BE RATED FOR PERMANENT INSTALLATION AND FOR THE CONNECTED LOAD, 1HP AT 120V OR 277V.
8. ALL RELAY/POWER PACKS SHALL INCLUDE INTERNAL FUSE PROTECTION TO PROTECT DEVICE SCCR WHERE LOCATED WITHIN 15' OF THE SOURCE POWER PANEL, OR ANY SITUATION WHERE AVAILABLE FAULT CURRENT AT RELAY/POWER PACK EXCEEDS 5,000.
9. COORDINATE ALL TRIM AND DEVICE COLORS WITH ARCHITECT.
10. REFER TO MANUFACTURER INSTALLATION CONTROL WIRING DIAGRAMS FOR ADDITIONAL REQUIREMENTS.

LUMINAIRE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	LAMPS	VOLTAGE	INPUT WATTAGE	MOUNTING	NOTES
L1-12 /EM	SIGNIFY	SIGNIFY LEDALITE 2901L94040LN	DIRECT CONTINUES LINEAR	3500 LUMENS/4FT 4000K LED	UNV	126	– SUSPENDED	1 4 5
	–	–		–			–	
	–	'B' AS REQURED FOR EM		–			–	
L1-20 /EM	SIGNIFY	SIGNIFY LEDALITE 2901L94040LN	DIRECT CONTINUES LINEAR	4000 LUMENS/4FT 3500K LED	UNV	210	– SUSPENDED	1 4 5
	–	–		–			–	
	–	'B' AS REQURED FOR EM		–			–	
L1-32 /EM	SIGNIFY	SIGNIFY LEDALITE 2901L94040LN	DIRECT CONTINUES LINEAR	4000 LUMENS/4FT 3500K LED	UNV	336	– SUSPENDED	
	–	–		–			–	
	–	'B' AS REQURED FOR EM		–			–	
L3 /EM	SIGNIFY	4RN-P4R-DL-15-835-M-CC	4" DOWN LIGHT	1500 LUMENS 3500K LED	UNV	14	– RECESSED	
	–	–		–			–	
	–	BSL6 AS REQURED FOR EM		–			–	
L4	LEVITON	CTL-844-A-35-D-X	TRACK HEAD	1500 LUMENS 3500K LED	UNV	28	TRACK MOUNT	4
	–	–		–			–	
	–	–		–			–	
L5E	EXITRONIX	TRL – ACEM– X–X	EMERGENCY LIGHT PACK 90 MINUTES RATED 120F	– LED	MVOLT	3	– RECESSED/WALL	2
	–	–		–			–	
	–	–		–			–	
L6/EM	SIGNIFY	2FPZ48L840-4-DS-UNV-DIM	2X4 LAY-IN	4800 LUMENS 4000K LED	UNV	37	– RECESSED	
	–	–		–			–	
	–	'ER100' AS REQURED FOR EM		–			–	
	SIGNIFY	LPW16-20-WW-G3-4-UNV-PCB-X	LED WALL SCONCE	2668 LUMENS 4000K LED	MVOLT	16	– WALL MOUNT ABOVE DOOR	
	–	–		–			–	
	–	–		–			–	
	EXITRONIX	S900U-WB-SR-X-X-G2	UNIVERSAL EDGE-LIT LED SINGLE FACE EXIT SIGN FURNISH WITH BATTERY PACK	– LED	277	5	CEILING MOUNT RECESSED/WALL	3
	–	–		–			–	
	–	–		–			–	

ALL FIXTURES TO BE 3500 KELVIN COLOR

LUMINAIRE SCHEDULE KEYED NOTES

1. PROVIDE LUMINAIRE 4 FOOT SECTIONS DENOTED WITH "EM" WITH EMERGENCY BATTERY PACK. BATTERY PACK SHALL BE CAPABLE OF OPERATING FOR 90min. MINIMUM AT 1400 LUMEN OR 10W.
2. PROVIDE 277V TO 24V DRIVER AND INSTALL IN AN ACCESSIBLE, INCONSPICUOUS LOCATION. COORDINATE WITH ARCHITECT IN FIELD.
3. VERIFY MOUNTING TYPE AND DIRECTIONAL CHEVRONS WITH DRAWINGS PRIOR TO ORDERING. EXIT SIGN WATTAGE SHALL NOT EXCEED 5 WATTS PER SIDE. COLOR SHALL MATCH BUILDING STANDARD.
4. CONFIRM MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.
5. LINEAR FIXTURES SHALL BE CONNECTED AT MIDDLE SEGMENTS TO FORM SEAMLESS CONTINUOUS RUN.

LUMINAIRE SCHEDULE GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL VERIFY FINISHES OF ALL LIGHTING PRODUCTS WITH ARCHITECT.
2. ELECTRICAL CONTRACTOR SHALL VERIFY MOUNTING DETAILS OF ANY ATYPICAL LIGHT FIXTURES.
3. ELECTRICAL CONTRACTOR SHALL VERIFY FINAL LUMINAIRE SELECTION WITH ARCHITECT AND GENERAL CONTRACTOR. NOTIFY ELECTRICAL ENGINEER WITH ANY LAMP WATTAGE CHANGES.
4. 'NL' DENOTES NIGHT LIGHT IS CONNECTED TO AN UNSWITCHED CONDUCTOR.
5. DIMMING DRIVERS – OVER THE ENTIRE RANGE OF AVAILABLE DRIVE CURRENTS, DRIVER SHALL PROVIDE STEP–FREE, CONTINUOUS DIMMING TO BLACK FROM 100 PERCENT TO 0.1 PERCENT AND 0% RELATIVE LIGHT OUTPUT, OR 100 –1% LIGHT OUTPUT AND STEP TO 0% WHERE INDICATED. DRIVER SHALL RESPOND SIMILARLY WHEN RAISING FROM 0% TO 100%
6. DIMMING DRIVER MUST BE CAPABLE OF 20 BIT DIMMING RESOLUTION FOR WHITE LIGHT LED DRIVERS OR 15 BIT RESOLUTION FOR RGBW LED DRIVERS.
7. DIMMING DRIVER MUST BE CAPABLE OF CONFIGURING A LINEAR OR LOGARITHMIC DIMMING CURVE, ALLOWING FINE GRAINED RESOLUTION AT LOW LIGHT LEVELS
8. DIMMING DRIVERS TO TRACK EVENLY ACROSS MULTIPLE FIXTURES AT ALL LIGHT LEVELS, AND SHALL HAVE AN INPUT SIGNAL TO OUTPUT LIGHT LEVEL THAT ALLOWS
9. SMOOTH ADJUSTMENT OVER THE ENTIRE DIMMING RANGE.

SPECIFIER: TO PROVIDE SIMILAR VISUAL PERFORMANCE AND ILLUMINATION QUALITY TO EXISTING FLUORESCENT DIMMING SOLUTION, SYSTEM SHOULD MINIMIZE FLICKER:

DRIVER AND LUMINAIRE ELECTRONICS SHALL DELIVER ILLUMINATION THAT IS FREE FROM OBJECTIONABLE FLICKER AS MEASURED BY FLICKER INDEX (ANSI/IES RP–16–10). AT ALL POINTS WITHIN THE DIMMING RANGE FROM 100–0.1 PERCENT LUMINAIRE SHALL HAVE:

1.1. LED DIMMING DRIVER SHALL PROVIDE CONTINUOUS STEP–FREE, FLICKER FREE DIMMING SIMILAR TO INCANDESCENT SOURCE.
1.2. BASE SPECIFICATION: BASED ON IEEE PAR1789, MINIMUM OUTPUT FREQUENCY SHOULD BE GREATER THAN 1250 HZ.
1.3. PREFERRED SPECIFICATION: FLICKER INDEX SHALL BE EQUAL TO INCANDESCENT, LESS THAN 1% AT ALL FREQUENCIES BELOW 1000 HZ

SPECIFIER: ALTERNATIVE TO ABOVE, CHOOSE A LUMINAIRE THAT SHALL HAVE FLICKER INDEX BELOW 800 HZ OF 5 PERCENT OR LESS, WHICH IS EQUIVALENT TO INCANDESCENT DIMMING.

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8556
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation

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Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer Certificate
53328
NATHAN A. SHORT
03/15/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

LUMINAIRE SCHEDULE AND NOTES

DRAWING
E0.01

SHEET	CATALOG NUMBER:
31 - OF - 49	A-282733

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
Suite 275
Scottsdale AZ 85251
P: 480.481.4900
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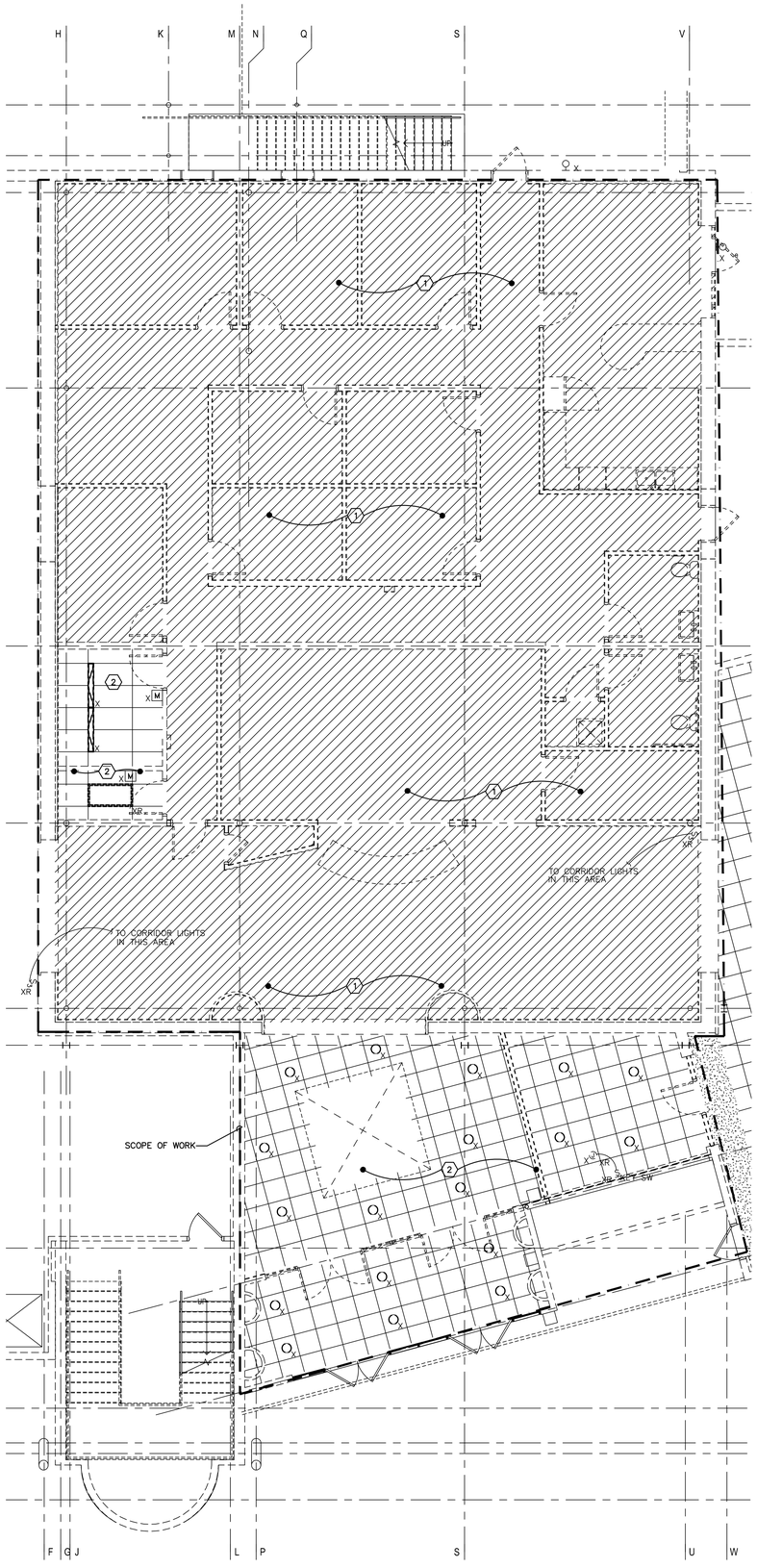
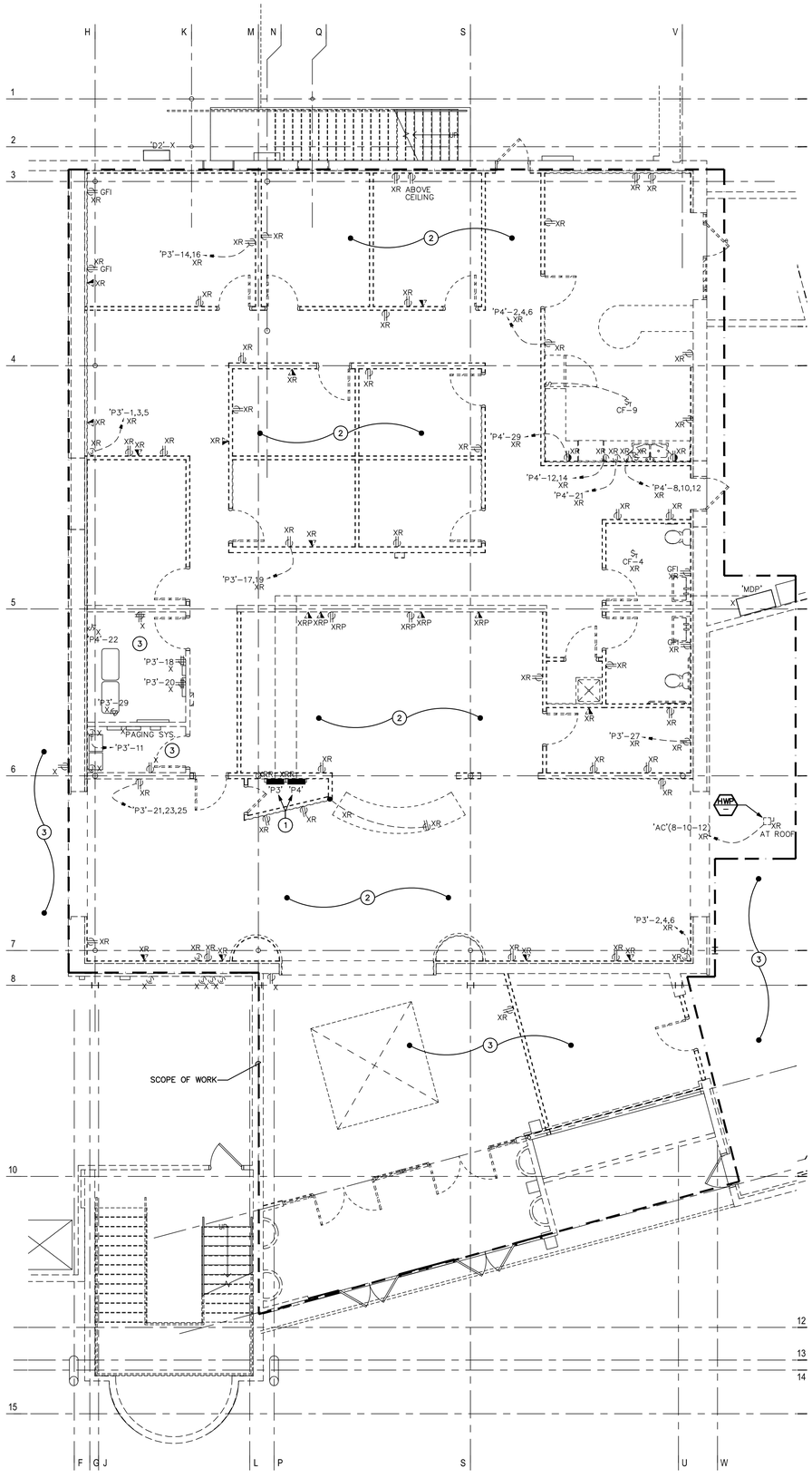
PMT24-00829



DEMO ELECTRICAL LIGHTING

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



DEMO ELECTRICAL POWER

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

KEYNOTES

1. ELECTRICAL CONTRACTOR TO REMOVE AND RELOCATE PANEL 'P3' AND 'P4'. PULL FEEDER BACK TO SOURCE. COORDINATE WITH GC FOR WIRE DISPOSAL CONTRACTOR SHALL CREATE A METHOD OF PROCEDURE (MOP) THAT INCLUDES IMPACT ON ANY EXISTING CIRCUITS WITHIN AREAS OUTSIDE OF CONSTRUCTION AREA AND COORDINATE WITH OWNER FOR ALL SHUTDOWNS. REFER TO SHEET E2.00 FOR ADDITIONAL INFORMATION.
2. DEMOLISH EXISTING POWER, LIGHTING, LOW VOLTAGE, FIRE ALARM DEVICES. CONTRACTOR SHALL REMOVE ASSOCIATED WIRING BACK TO SERVING PANEL OR LOW VOLTAGE CABINETS/BACKBOARD UNLESS NOTED OTHERWISE.
3. ELECTRICAL CONTRACTOR TO CONFIRM ANY CIRCUITING IN 'NOT IN SCOPE' AREAS THAT WILL BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, JUNCTION BOXES, ETC. AS REQUIRED AND RECONNECT REMAINING ITEMS SO THEY WILL NOT BE INTERRUPTED.

KEYNOTES DEMO

1. DEMOLISH EXISTING POWER, LIGHTING, LOW VOLTAGE, FIRE ALARM DEVICES AT EXISTING STRUCTURE. CONTRACTOR SHALL REMOVE ASSOCIATED WIRING BACK TO SERVING PANEL OR LOW VOLTAGE CABINETS/BACKBOARD UNLESS NOTED OTHERWISE.
2. ELECTRICAL CONTRACTOR TO PROTECT IN PLACE ALL EXISTING EQUIPMENT AND CONFIRM ANY CIRCUITING IN 'NOT IN SCOPE' AREAS THAT WILL BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, JUNCTION BOXES, ETC. AS REQUIRED AND RECONNECT REMAINING ITEMS SO THEY WILL NOT BE INTERRUPTED.

DEMOLITION NOTES

1. ANY ELECTRICAL DEVICE OR EQUIPMENT NOT NOTED TO BE REMOVED OR RELOCATED SHALL REMAIN UNCHANGED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT THE ARCHITECT/ENGINEER REGARDING ANY ITEM IN QUESTION.
2. WHERE ITEMS ARE NOTED TO BE REMOVED, ELECTRICAL CONTRACTOR SHALL:
   A) REMOVE INDICATED ITEM.
   B) REMOVE ANY ASSOCIATED CONDUIT AND WIRING WHERE SURFACE MOUNTED OR ABOVE AN ACCESSIBLE CEILING.
   C) PULL OUT ASSOCIATED WIRING, CUT OFF, CAP, and ABANDON CONDUIT WHERE CONCEALED IN WALLS OR PARTITIONS WHICH ARE REMAINING.
   D) RETURN ALL REMOVED EQUIPMENT TO OWNER OR DISPOSE OF AS DIRECTED BY OWNER.
3. WHERE ELECTRICAL CONTRACTOR REMOVES AN ITEM AND CIRCUITING TO OTHER ITEMS WILL BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, BOXES, ETC. AS REQUIRED AND RECONNECT REMAINING ITEMS SO THEY WILL NOT BE INTERRUPTED.
4. WHERE AN ITEM IS SHOWN TO BE RELOCATED, ELECTRICAL CONTRACTOR SHALL EXTEND WIRING AND CONDUIT TO THE APPROPRIATE NEW LOCATION AND PROVIDE ALL NECESSARY CONDUIT, WIRE, BOXES, ETC. AS REQUIRED. RECONNECT TO EXISTING CIRCUIT OR RECIRCUIT AS SHOWN. IF DEVICE IS NOT SALVAGEABLE, ELECTRICAL CONTRACTOR SHALL PROVIDE A NEW DEVICE.
5. THE FOLLOWING DEMOLITION SYMBOLS MAY BE USED AS WELL AS KEYED NOTES:
   "R" = NEW LOCATION OF RELOCATED ITEM.
   "X" = EXISTING ITEM TO REMAIN.
   "XR" = EXISTING ITEM TO BE REMOVED.
   "XRP" = EXISTING ITEM TO BE REPLACED WITH NEW IN SAME LOCATION AS SHOWN. EXTEND EXISTING CIRCUIT TO MATCH EXISTING U.N.O.
   "XRR" = RELOCATE EXISTING ITEM TO NEW LOCATION AS SHOWN. EXTEND EXISTING CIRCUIT TO MATCH EXISTING U.N.O.

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024

Holly Street Studio
1319 E VanBuren St.
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i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53328 NATHAN A. SHORT 03/15/24 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ELECTRICAL DEMO PLAN

DRAWING
E1.00

SHEET	CATALOG NUMBER:
32 - OF - 49	A-282734

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
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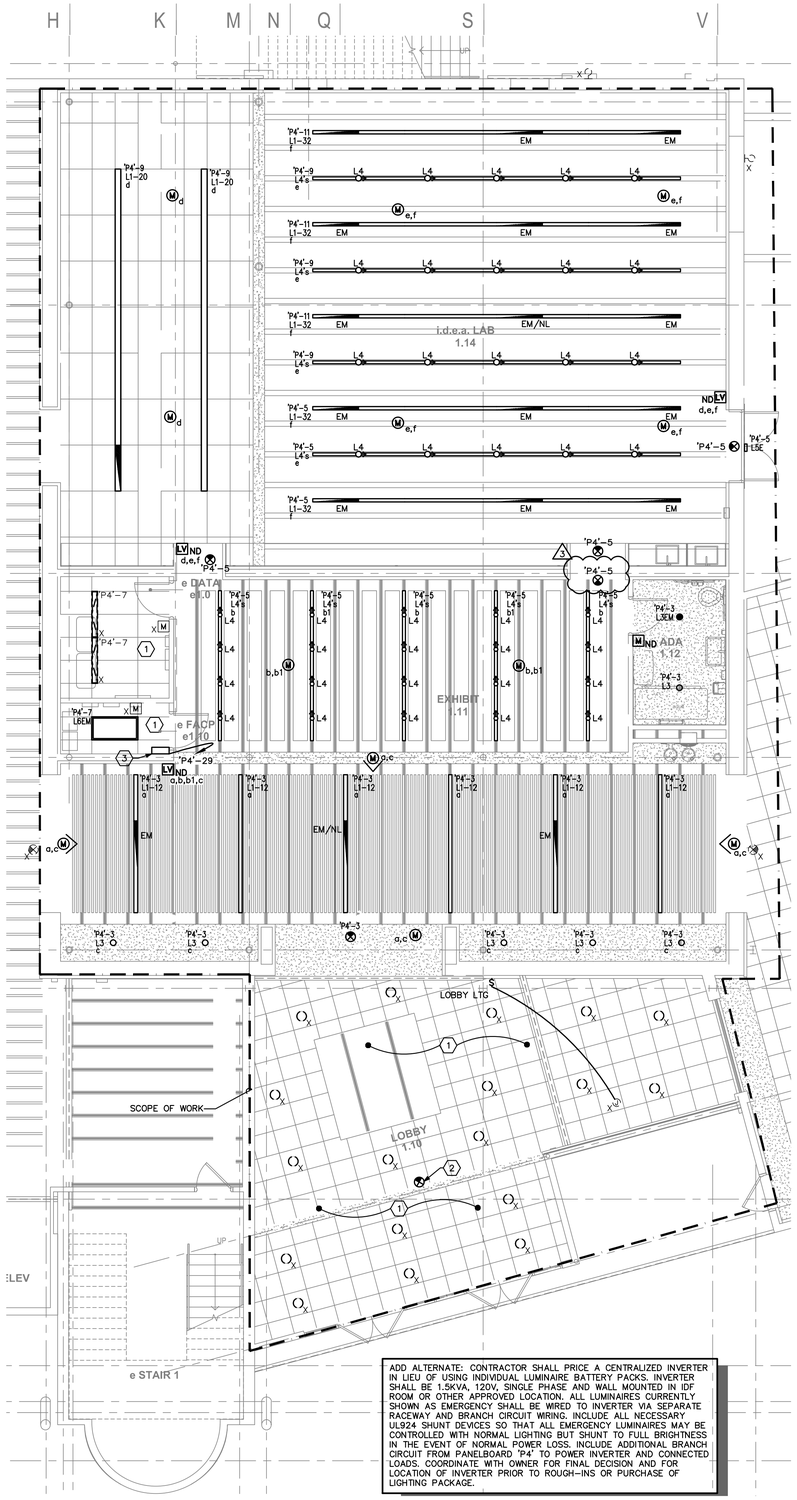
www.esdengineers.com
Project #
201080.200
Design Contact:
JACKSON GREVES

PMT24-00829

FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel_200 Design\Phase 2\E1_0.dwg
PLOTTED BY: william.reyes
PLOTTED: 03.14.2024 - 6:32pm



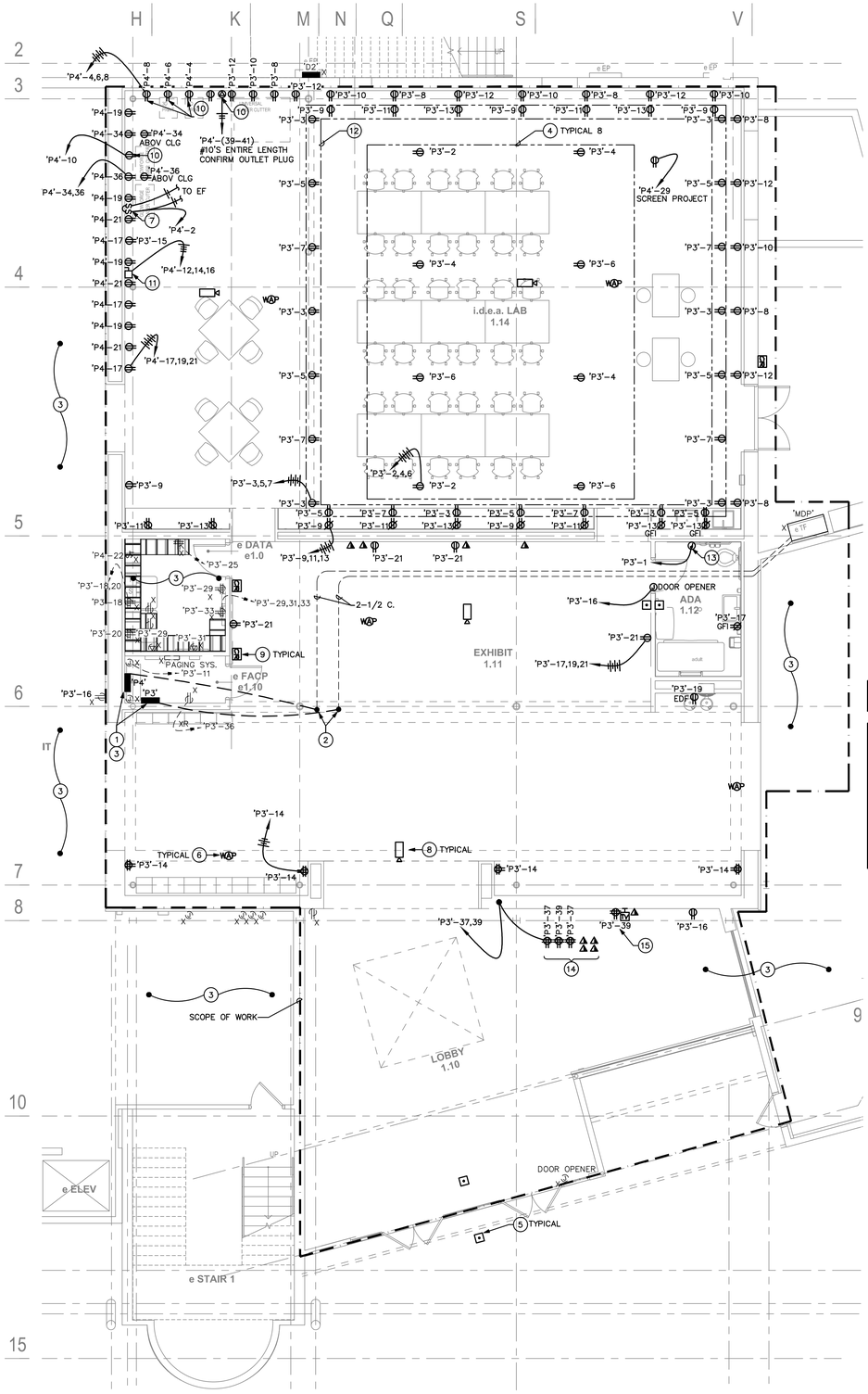
ADD ALTERNATE: CONTRACTOR SHALL PRICE A CENTRALIZED INVERTER IN LIEU OF USING INDIVIDUAL LUMINAIRE BATTERY PACKS. INVERTER SHALL BE 1.5KVA, 120V, SINGLE PHASE AND WALL MOUNTED IN IDF ROOM OR OTHER APPROVED LOCATION. ALL LUMINAIRES CURRENTLY SHOWN AS EMERGENCY SHALL BE WIRED TO INVERTER VIA SEPARATE RACEWAY AND BRANCH CIRCUIT WIRING. INCLUDE ALL NECESSARY UL924 SHUNT DEVICES SO THAT ALL EMERGENCY LUMINAIRES MAY BE CONTROLLED WITH NORMAL LIGHTING BUT SHUNT TO FULL BRIGHTNESS IN THE EVENT OF NORMAL POWER LOSS. INCLUDE ADDITIONAL BRANCH CIRCUIT FROM PANELBOARD 'P4' TO POWER INVERTER AND CONNECTED LOADS. COORDINATE WITH OWNER FOR FINAL DECISION AND FOR LOCATION OF INVERTER PRIOR TO ROUGH-INS OR PURCHASE OF LIGHTING PACKAGE.

NEW ELECTRICAL LIGHTING

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

KEYNOTES

1. ELECTRICAL CONTRACTOR TO CONFIRM ANY CIRCUITING IN 'NOT IN SCOPE' AREAS THAT WILL BE INTERRUPTED. ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, JUNCTION BOXES, ETC. AS REQUIRED AND RECONNECT REMAINING ITEMS SO THEY WILL NOT BE INTERRUPTED.
2. ELECTRICAL CONTRACTOR TO INSTALL NEW EXIT SIGN USING NEAREST EXISTING LIGHTING CIRCUIT. .
3. PROVIDE ATHENA QP5-2L-POE PROCESSOR PANEL



NEW ELECTRICAL POWER

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

KEYNOTES

1. NEW LOCATION OF RELOCATED ELECTRICAL PANELS. REFER TO ONE-LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS AND INFORMATION.
2. ELECTRICAL CONTRACTOR TO INTERCEPT EXISTING UNDERGROUND FEEDER RACEWAYS. MATCH EXISTING, ROUTE TO NEW PANEL LOCATION AND PULL NEW FEEDER WIRE. INCLUDE IN BID ALL NECESSARY SAW CUT AND TRENCHING AS REQUIRED. ELECTRICAL CONTRACTOR SHALL REVIEW IN FIELD THE FEASIBILITY OF INTERCEPTING EXISTING UNDERGROUND RACEWAYS AND EXTENDING TO NEW PANEL LOCATION AS SHOWN. AS AN ADD ALTERNATE, CONTRACTOR TO PRICE ALL NEW OVERHEAD CONDUIT BETWEEN MDP AND PANELBOARD LOCATIONS WITH ALL NEW FEEDER. CONFIRM FINAL OPTION WITH OWNER PRIOR TO ROUGH-INS. ENSURE THAT FEEDER LENGTH IS EQUAL OR GREATER THAN DISTANCES SHOWN IN FAULT CALCULATIONS TO ENSURE THAT FAULT CURRENT AT RELOCATED PANELBOARDS DOES NOT EXCEED 10KAIC. NOTIFY ENGINEER WITH ANY DISCREPANCIES.
3. ELECTRICAL CONTRACTOR TO CONFIRM ANY CIRCUITING IN 'NOT IN SCOPE' AREAS THAT WILL BE INTERRUPTED, ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUIT, WIRE, JUNCTION BOXES, ETC. AS REQUIRED AND RECONNECT REMAINING ITEMS SO THEY WILL NOT BE INTERRUPTED.
4. CONTRACTOR TO PROVIDE HUBBELL CORD REEL WITH MOUNTING BASE USING APPROVED MOUNTING METHOD TO SIDE OF TRUSS AND PER ARCHITECTURAL DETAILS. REFER TO DETAIL 1 ON SHEET E0.0 FOR ADDITIONAL INFORMATION. COORDINATE WITH OWNER FOR EXACT QUANTITY AND LOCATIONS.
5. ADA DOOR PUSH BUTTON. ELECTRICAL CONTRACTOR TO PROVIDE BACK BOX AND 3/4" RACEWAY WITH PLASTIC BUSHING UNDERGROUND AND STUBBED UP TO ACCESSIBLE CEILING. COORDINATE WITH DOOR CONTRACTOR FOR EXACT LOCATION AND REQUIREMENTS. FREE STANDING BOLLARD PROVIDE BY OTHERS. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
6. WIRELESS ACCESS POINT. CONTRACTOR TO PROVIDE 4" SQUARE CEILING MOUNT JUNCTION BOX WITH 1" PLASTIC BUSHING AT ACCESSIBLE CEILING. COORDINATE ROUGH-IN REQUIREMENTS WITH CITY IT/MEDIA CONTRACTOR.
7. EXHAUST FAN. SWITCH TO BE COORDINATE WITH ARCHITECT/OWNER FOR EXACT LOCATION PRIOR TO INSTALLATION.
8. CAMERA, PROVIDE BACK BOX WITH 3/4" C. TO ACCESSIBLE CEILING. COORDINATE WITH SECURITY CONTRACTOR FOR HEIGHT AND REQUIREMENTS.
9. CARD READER. PROVIDE 3/4"C. WITH PULL STRING UP INTO ACCESSIBLE CEILING SPACE U.N.O. PROVIDE CONDUIT BUSHING ABOVE CEILING.
10. LASER PRINTERS AND 3D PRINTERS SHALL BE COORDINATED WITH ARCH/OWNER FOR EXACT LOCATION PRIOR TO ROUGING IN. VERIFY WITH EQUIPMENT PRIOR TO INSTALLATION.
11. CONTRACTOR TO PROVIDE HEAVY DUTY, 250V, 60A, 3PH, NEMA 1, FUSED DISCONNECT FOR FUTURE WITH (4) #4, (1) #10 G, 1-1/4 C. COORDINATE WITH OWNER FOR EXACT LOCATION.
12. CONTRACTOR TO PROVIDE RECEPTACLE OUTLETS EVERY 6 FEET ABOVE TRUSSES. COORDINATE WITH OWNER FOR EXACT LOCATION.
13. HAND DRYER. PROVIDE LOTO AT BREAKER. COORDINATE WITH ARCHITECT FOR EXACT LOCATION.
14. CONTRACTOR TO COORDINATE WITH MILLWORK CONTRACTOR FOR MEANS OF PATHWAY AND TO CONCEAL ALL ELECTRICAL COMPONENTS. CONFIRM MOUNTING HEIGHTS PRIOR TO ROUGH-IN. COORDINATE WITH OWNER/ARCHITECT FOR EXACT LOCATION.
15. CONTRACTOR TO COORDINATE EXACT TV/MONITOR LOCATION WITH ARCHITECT/OWNER.

SHEET NOTES

A. THE DRAWINGS REPRESENT ELECTRICAL DESIGN INTENT. THEY ARE SCHEMATIC AND DIAGRAMMATIC AND DO NOT INDICATE CONSTRUCTION DETAILS OR ROUTING. UNLESS OTHERWISE NOTED. THE SPECIFICATIONS ESTABLISH MINIMUM PERFORMANCE AND PRODUCT INSTALLATION REQUIREMENTS. PROVIDE PRODUCTS CONSISTENT WITH THE DESIGN INTENT AND NECESSARY FOR A COMPLETE OPERATING ELECTRICAL SYSTEM.

B. ALL CONDUCTORS SHALL BE COPPER, UNLESS NOTED OTHERWISE.

C. 120/208V BRANCH CIRCUITS 100' OR GREATER IN CONDUCTOR LENGTH SHALL BE #10 AWG, UNLESS OTHERWISE NOTED.

D. 277/480V BRANCH CIRCUITS 200' OR GREATER IN CONDUCTOR LENGTH SHALL BE #10 AWG, UNLESS OTHERWISE NOTED.

E. BRANCH CIRCUITS SHALL BE CONFIGURED WITH DEDICATED NEUTRALS AND INDEPENDENTLY OPERATED BREAKERS, UNLESS NOTED OTHERWISE.

F. REFER TO ARCHITECTURAL FLOOR PLANS, ELEVATIONS, SECTIONS, MILLWORK DETAILS AND GENERAL DETAILS FOR EXACT PLACEMENT INFORMATION REGARDING ALL ELECTRICAL DEVICE MOUNTING LOCATIONS, INCLUDING CEILING AND FLOOR MOUNTED DEVICES.

G. ALL WALL MOUNTED LOW VOLTAGE DEVICES SHALL BE MOUNTED TO MATCH HEIGHT OF ADJACENT POWER DEVICE, UNLESS NOTED OTHERWISE

H. LABEL ALL RECEPTACLE DEVICE PLATES WITH SOURCE PANEL AND CIRCUIT NUMBER. PROVIDE PERMANENT MACHINE GENERATED LABEL.

I. THE FIRE ALARM SYSTEM IS A DEFERRED SUBMITTAL ITEM. THE FIRE ALARM CONTRACTOR SHALL PROVIDE PLANS AND REQUIRED CALCULATIONS STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF ARIZONA. THE DEFERRED FIRE ALARM SYSTEM SHALL NOT BE INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE AUTHORITY HAVING JURISDICTION AND ENGINEER OF RECORD.

J. ALL WALL VOICE/DATA DROPS SHOWN ON DRAWINGS SHALL HAVE A MINIMUM 4" SQUARE JUNCTION BOX AND 1" CONDUIT WITH PULL CORD STUBBED INTO CEILING SPACE.

K. PROVIDE CONDUITS FOR VOICE/DATA, SECURITY, EMS, ETC. CABLING BACK TO IDF ROOM IN ALL AREAS WITH HARD CEILINGS.

L. NO MORE THAN 360 DEGREES OF CONDUIT BENDS ARE ALLOWED IN ANY OF THE CONDUIT RUNS. ALL BENDS SHALL BE LONG SWEEP.

M. PROVIDE EXTRA SUPPORTS ON BOTH SIDES OF EACH CONNECTION POINT.

N. IDENTIFY ALL CONDUITS WITH MARKER TAPE.

O. MAKE ALL FINAL EQUIPMENT CONNECTIONS AS REQUIRED.

P. ALL FIRE ALARM CABLING SHALL BE IN RED EMT CONDUIT.

Q. ALL TELECOM CONDUIT SHALL BE EMT EXCEPT WHERE EXPOSED AND SUBJECT TO VANDALISM WHERE IT SHALL BE RGS.

R. COORDINATE ALL TRAY AND CONDUITS FOR SPECIAL SYSTEMS, POWER, AND LIGHTING WITH ALL OTHER TRADES. REFER TO MECHANICAL DRAWINGS FOR COORDINATION.

S. AS PART OF TENANT IMPROVEMENT SCOPE OF WORK FOR THIS PROJECT THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE OTHER TRADES INCLUDING BUT NOT LIMITED TO, MECHANICAL, PLUMBING, FIRE ALARM, ETC FOR THE RELOCATION OF AS NECESSARY ANY ELECTRICAL COMPONENTS THAT CONFLICT WITH THE LOCATIONS OF NEW/RELOCATED EQUIPMENT. THIS MAY INCLUDE RELOCATING ELECTRICAL J-BOXES, RACEWAYS, WIRING, HANGERS, ETC THAT ARE NOT READILY APPARENT OR NOTED ON PLANS. COORDINATE WITH OTHER TRADES FOR THE FULL EXTENT OF THIS WORK AND TO DETERMINE WHICH SYSTEMS CAN BE MODIFIED TO LEAST IMPACT THE OVERALL INSTALLATIONS AND PROJECT COSTS.

PAGING SYSTEM FOR THE ENTIRE BUILDING TO BE RESET. COORDINATE WITH OWNER FOR EXACT REQUIREMENTS.

FIRE ALARM SYSTEM AND PERFORMANCE NOTES

FIRE ALARM INSTALLATION SHALL INCLUDE NEW NOTIFICATION AND ANNUNCIATION DEVICES CONNECTED TO BUILDING CENTRALIZED FIRE ALARM PANEL. THIS SHALL INCLUDE HORN STROBES, DUCT SMOKE DETECTORS, AND ANY OTHER DEVICES SHOWN ON RISER OR CONCEPTUAL FLOOR PLANS. FIRE ALARM CONTRACTOR SHALL VERIFY THE DETAILS OF THE EXISTING FIRE ALARM PANEL AND SYSTEM PRIOR TO INSTALLATION TO CONFIRM FEASIBILITY TO CONNECT TO THE EXISTING SYSTEM AS PROPOSED. ANY REQUIRED UPGRADES TO THE MAIN SYSTEM BASED ON NEWLY ADOPTED CODES, CITY FIRE MARSHALL REQUIREMENTS, OR COMPATIBILITY ISSUES WITH OLDER SYSTEM SHALL BE PROVIDED TO LANDLORD FOR IMMEDIATE REVIEW AND APPROVAL.

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i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024
3	2ND PLAN REVIEW COMMENTS	4/3/2024

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
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www.esdengineers.com
Design Contact: [illegible]
Project # 201080.200

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer (Electrical)
53328
NATHAN A. SHORT
04/03/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

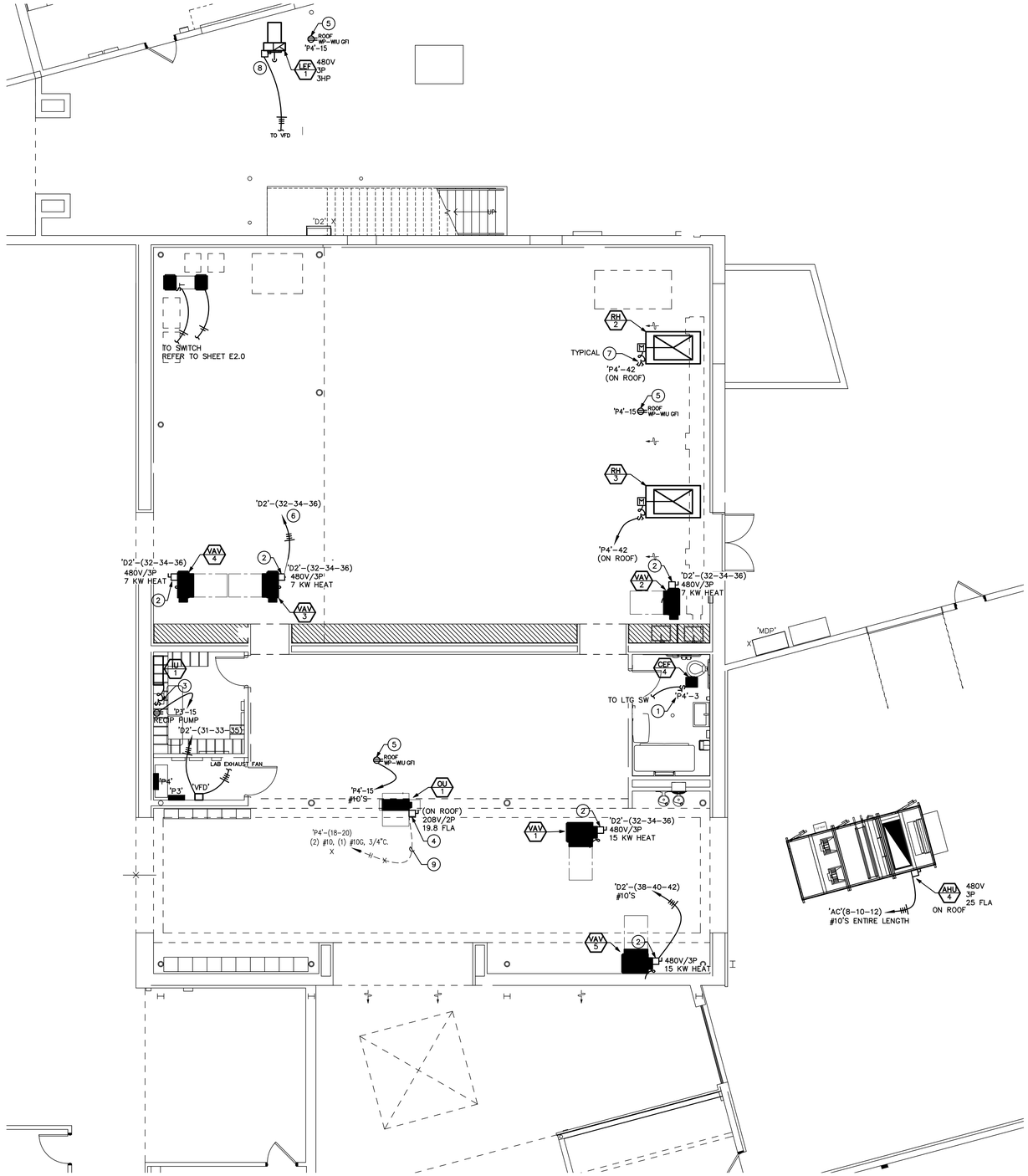
ELECTRICAL NEW POWER AND LIGHTING PLAN

DRAWING
E2.00

SHEET	CATALOG NUMBER:
33 - OF - 49	A-282735

PMT24-00829

FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel_200 Design\Phase 2\E2_0.dwg
PLOTTED BY: william.reyes
PLOTTED: 04.03.2024 - 7:59am



NEW HVAC ELECTRICAL POWER PLAN

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

SHEET NOTES

1. ALL ELECTRICAL JUNCTIONS BOXES AND SWITCHES ARE TO BE LABELED WITH THE PANEL NUMBER AND CIRCUIT NUMBER.
2. AT OPEN CEILING AREAS LOCATE LARGE, UNSIGHTLY DEVICES (I.E. AC UNIT, J-BOXES, ETC) WHERE POSSIBLE TO ABOVE GRID AND TILE CEILING ENSURE ALL DUCTWORK, PIPING, CONDUIT ETC. IS RUN IN PURPOSEFUL FASHION AT OPEN CEILING FOR CLEAN AESTHETICS AND ANY LOOSE WIRES TO INCLUDE FIRE ALARM WIRING TO BE TAUT. ALL NON-FIRE ALARM WIRING AND CONDUIT SHALL BE PAINTED WHITE.
3. REFER TO SHEET E0.00 FOR SYMBOLS, NOTES AND ADDITIONAL REQUIREMENTS
4. ALL DEVICES LOCATED ON EXTERIOR SHALL BE WEATHERPROOF / NEMA 3R.
5. COORDINATE FINAL LOCATIONS OF EQUIPMENT WITH MECHANICAL CONTRACTOR.
6. ALL DISCONNECTS TO BE PROVIDED WITH PERMANENT LABEL INDICATING CIRCUIT NUMBER.

KEYNOTES

1. EXHAUST FAN SHALL BE WIRED TO LIGHTING SWITCH FOR CONTROL AND POWER.
2. PROVIDE NEW 600V, 30A, 3 PHASE, NEMA-1, DISCONNECT AND FUSE PER MANUFACTURER RECOMMENDATION.
3. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. PROVIDE MOTOR RATED HEAVY DUTY SWITCH, 14 AWG 3+GROUND WIRE BETWEEN INDOOR AND OUTDOOR UNITS PER MANUFACTURER INSTALLATION INSTRUCTIONS. COORDINATE WITH MECHANICAL CONTRACTOR.
4. PROVIDE HEAVY DUTY, 250V, 30A, 1PH, NEMA 3R, FUSED DISCONNECT. FUSE PER MANUFACTURER RECOMMENDATION.
5. RECEPTACLE TO BE STANCHION MOUNTED WITH BOTTOM AT +12" ABOVE ROOF. PROVIDE GALVANIZED UNISTRUT SUPPORTS AS NEEDED.
6. PROVIDE (4) #4, (1) #10 G. 1-1/4" C. ENTIRE LENGTH.
7. PROVIDE 120V, 20A, SINGLE PHASE, HEAVY DUTY, MOTOR RATED, SWITCH WITH WEATHER PROOF BOX.
8. INCLUDE IN BID A DISCONNECT AT THE EXHAUST FAN LOCATION WITH A CONTACT CLOSURE WIRED TO THE VFD TO SHUT DOWN VFD IF DISCONNECT SWITCH IS OPENED. VERIFY PRIOR TO INSTALLATION WITH MECHANICAL CONTRACTOR IF VFD INCLUDES LOCKABLE DISCONNECTING MEANS. ADDITIONAL DISCONNECT AT EXHAUST FAN ONLY REQUIRED IF THIS IS NOT PROVIDED AS PART OF THE VFD
9. CONTRACTOR TO CONFIRM WIRE SIZE ARE AS INDICATED. PROVIDE NEW WIRE IF REQUIRED.

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i.d.e.a. Museum - Lab Renovation

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revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
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Design Contact:
WILLIAM REYES
Project #
201080.200

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer
CERTIFICATE NO.
53328
NATHAN A. SHORT
03/15/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ELECTRICAL HVAC POWER PLAN

DRAWING
E3.00

SHEET	CATALOG NUMBER:
34 - OF - 49	A-282736

PMT24-00829

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PLOTTED BY: william.reyes
PLOTTED: 03.14.2024 - 6:18pm

ONE LINE DIAGRAM SYMBOLS

- CURRENT TRANSFORMER.
- UTILITY METER.
- CIRCUIT BREAKER. AMPERE RATING AND # OF POLES INDICATED.
- FUSED SWITCH. AMPERE RATING AND # OF POLES INDICATED.
- FUSED PULL-OUT. AMPERE RATING AND # OF POLES INDICATED.
- INDICATES DRAW-OUT DEVICE.
- FUSE. AMPERE RATING INDICATED. (BUSSMANN DESIGNATION UNO)
- TRANSFORMER, DRY TYPE, PAD PAD MOUNT, WITH kVA, PRIMARY AND SECONDARY VOLTAGE, MINIMUM IMPEDANCE, AND "K" RATING AS NOTED. PROVIDE SEPERATELY DERIVED SOURCE GROUNDING PER NEC 250 SIZE AS NOTED. 150° C RISE UNO.
- MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED. PROVIDE WITH OPTIONAL FEATURES SCHEDULED.
- GROUND. SIZE GROUNDING PER THE LATEST ADOPTED NATIONAL ELECTRICAL CODE. UNO
- CONDUCTOR TERMINATION POINT.
- BOND TO STRUCTURAL STEEL. SIZE AS NOTED.
- BOND TO GAS, WATER, FIRE SPRINKLER PIPING SYSTEMS. SIZE AS NOTED.

ONE LINE SHEET NOTES

1. ELECTRICAL CONTRACTOR SHALL PROVIDE A THIRD PARTY ELECTRICAL TESTING CONTRACTOR TO CONDUCT ALL SPECIAL ELECTRICAL TESTS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL VERIFY DURING SHOP DRAWING PREPARATION THAT ELECTRICAL EQUIPMENT WILL FIT IN FOOT PRINTS SHOWN ON ELECTRICAL PLANS.
3. ALL PANELS SHALL HAVE DOOR-IN-DOOR COVERS.
4. ALL CONDUCTORS SHOWN ON ONE LINE SHALL BE COPPER UNLESS NOTED OTHERWISE. ALL CONDUCTORS SHALL HAVE 90° INSULATION. SEE SPECIFICATIONS FOR CONDUCTOR INSTALLATION.
5. CONTRACTOR SHALL VERIFY ALL CIRCUIT BREAKERS ARE SUPPLIED WITH LUGS THAT WILL ACCOMMODATE THE CONDUCTORS SHOWN.
6. CONTRACTOR SHALL INCLUDE IN BID AND PROVIDE FAULT CURRENT, BREAKER COORDINATION AND ARC FLASH CALCULATION STUDY BASED ON ACTUAL EQUIPMENT SUBMITTED FOR THIS PROJECT. STUDY SHALL BE MADE USING THE SKM POWER TOOLS PROGRAM. SUBMIT STUDY AND STUDIES DATA FILE TO THE ELECTRICAL ENGINEER FOR APPROVAL. ELECTRICAL GEAR SHALL NOT BE ORDERED UNTIL STUDY IS APPROVED. PROVIDE ARC FLASH LABELS ON EQUIPMENT BASED ON APPROVED STUDY.

KEYNOTES

1. INTERCEPT EXISTING UNDERGROUND CONDUIT AT UTILITY ROOM AND EXTEND NEW RACEWAY AND WIRE TO NEW PANEL LOCATION. SAW CUT AND PATCHED BY OTHERS. VERIFY EXACT SIZE AT FIELD. PROVIDE ALL NEW WIRING. NO SPLICING ALLOWED.
2. ELECTRICAL CONTRACTOR SHALL REVIEW IN FIELD THE FEASIBILITY OF INTERCEPTING EXISTING UNDERGROUND RACEWAYS AND EXTENDING TO NEW PANEL LOCATION AS SHOWN. AS AN ADD ALTERNATE, CONTRACTOR TO PRICE ALL NEW OVERHEAD CONDUIT BETWEEN MDP AND PANELBOARD LOCATIONS WITH ALL NEW FEEDER. CONFIRM FINAL OPTION WITH OWNER PRIOR TO ROUGH-INS. ENSURE THAT FEEDER LENGTH IS EQUAL OR GREATER THAN DISTANCES SHOWN IN FAULT CALCULATIONS TO ENSURE THAT FAULT CURRENT AT RELOCATED PANELBOARDS DOES NOT EXCEED 10KAIC. NOTIFY ENGINEER WITH ANY DISCREPANCIES.

FAULT CALCULATIONS

F1

$$f = \frac{\sqrt{3} * 110\,ft * 50000\,A}{1 * 26706 * 480\,V} = 0.7431$$

$$m = \frac{1}{1+f} = 0.5737$$

$$I_{scrms} = m * I_{afc} = 28.684kA\ AFC$$

F2

$$f = \frac{\sqrt{3} * 5.1\% * 28684\,A * 480\,V}{100{,}000 * 225kVA} = 5.4054$$

$$M = \frac{1}{1+f} = 0.1561$$

$$I_{sc\_sec} = M * I_{scrms} * \frac{480\,V}{208\,V} = 10.334kA\ AFC$$

F3

$$f = \frac{\sqrt{3} * 73\,ft * 10334\,A}{1 * 13923 * 480\,V} = 0.1955$$

$$m = \frac{1}{1+f} = 0.8365$$

$$I_{scrms} = m * I_{afc} = 8.644kA\ AFC$$

F4

$$f = \frac{\sqrt{3} * 75\,ft * 10334\,A}{1 * 16673 * 480\,V} = 0.1677$$

$$m = \frac{1}{1+f} = 0.8564$$

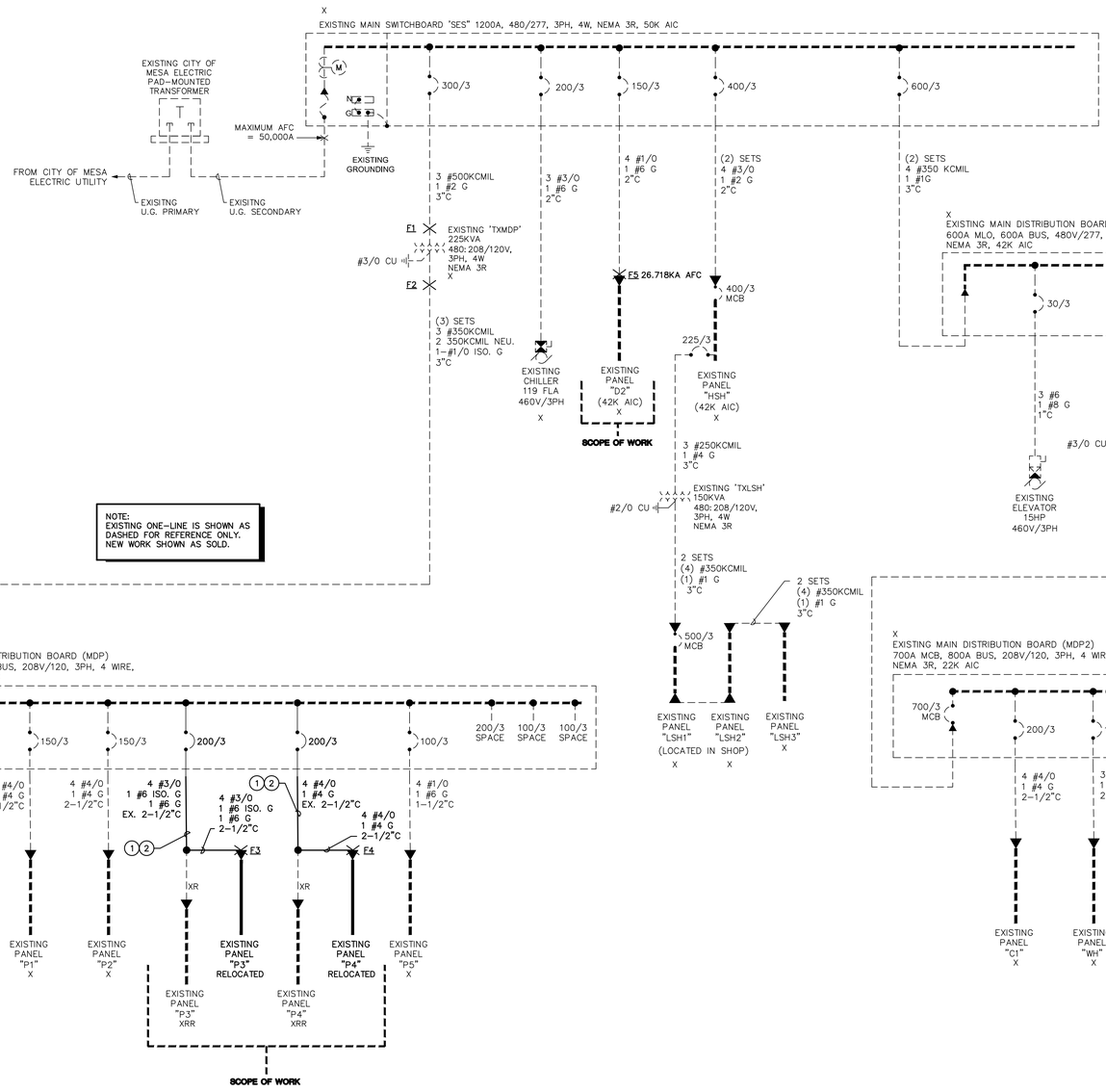
$$I_{scrms} = m * I_{afc} = 8.850kA\ AFC$$

F5

$$f = \frac{\sqrt{3} * 45\,ft * 50000\,A}{1 * 9317 * 480\,V} = 0.8714$$

$$m = \frac{1}{1+f} = 0.5344$$

$$I_{scrms} = m * I_{afc} = 26.718kA\ AFC$$



EXISTING ELECTRICAL ONE-LINE DIAGRAM

SCALE: NO TO SCALE

NOTE: EQUIPMENT AND FEEDERS SHOWN ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

LOAD CALCULATIONS

EXISTING 'SES' (1200A, 480V)	
EXISTING LOAD	850A
ADDED LOAD:	
EXISTING 'TXMDP' 150KVA XFMR (PNL 'P3' & 'P4' -55A @ 208V/3P)	-127A
PANEL 'D2'	80A
NEW SES TOTAL	803A

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Project # 201080.200
Design Contact: WILLIAM REYES

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer — Certificate No. 53328 — NATHAN A. SHORT — 03/15/24 — Date Signed — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ELECTRICAL ONE-LINE DIAGRAM

DRAWING
E4.00

SHEET	CATALOG NUMBER:
35 - OF - 49	A-282737

PMT24-00829

FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel\200 Design\Phase 2\E4_0.dwg
PLOTTED BY: william.reyes
PLOTTED: 03.14.2024 - 6:18pm

EXISTING D2

PHASE: 3 | VOLTS: 277/480Y | WIRE: 4 | MAIN: LUGS ONLY | 42000 AIC | 225A BUS SURFACE | FED FROM SES

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
M	EAHU-1			40	1	5810			2				CHWP (OU#1)	M
M					3		5810		4					M
M				3	5			5810	6	3				M
--	BUSSED SPACE			0	7	0			8				AHU - 4	M
--	BUSSED SPACE			0	9		0		10					M
--	BUSSED SPACE			0	11			0	12	3				M
C	SITE LIGHT/PARKING LOT			20	13	2700			14	20			SPARE	--
C	SITE LIGHT/PARKING LOT			25	15		3720		16	20			SPARE	--
C	SITE LIGHT/PARKING LOT			20	17			1860	18	20			SPARE	--
C	IN GRADE LTG			20	19	420			20	20			SPARE	--
C	VESTIBULE LTG			20	21		200		22	20			SPARE	--
C	SIDE LTG			20	23			1370	24	20			SPARE	--
--	SPARE			20	25	0			26	20			SPARE	--
--	SPARE			20	27		0		28	20			SPARE	--
--	SPARE			20	29			0	30	20			SPARE	--
M	LAB EXHAUST FAN			20	31	400			32	60			VAV 1,2,3,4	M
M					33		400		34					M
M				3	35			400	36	3				M
--	BUSSED SPACE			0	37	0			38	30			VAV 5	M
--	BUSSED SPACE			0	39		0		40					M
--	BUSSED SPACE			0	41			0	42	3				M

TOTAL CODE LOAD: 105.93 KVA / (1.73 * 480 V) = 127.42 AMPS
All Phases: CONTINUOUS LOAD = 10360 VA connected * 1.25 = 12.95 KVA code load
A Phase: CONTINUOUS LOAD = 3210 VA connected * 1.25 = 4.01 KVA code load
B Phase: CONTINUOUS LOAD = 3920 VA connected * 1.25 = 4.90 KVA code load
C Phase: CONTINUOUS LOAD = 3230 VA connected * 1.25 = 4.04 KVA code load
All Phases: MOTOR LOAD 82152 VA CONNECTED + (43320 * 0.25)
A Phase: MOTOR LOAD 27384 VA CONNECTED + (14440 * 0.25)
B Phase: MOTOR LOAD 27384 VA CONNECTED + (14440 * 0.25)
C Phase: MOTOR LOAD 27384 VA CONNECTED + (14440 * 0.25)

NEW LOAD 127 A
EXISTING LOAD − 47 A
ADDED LOAD 80 A

http://www.panelschedules.com

EXISTING P3

PHASE: 3 | VOLTS: 120/208Y | WIRE: 4 | MAIN: LUGS ONLY | 10000 AIC | 225A BUS | FED FROM 'MDP'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
M	HAND DRYER	LOTO		20	1	1440			2	20			REC - CORD REEL 1.14	R
R	REC - LAB 1.14 AT TRUSSES			20	3		1440		4	20			REC - CORD REEL 1.14	R
R	REC - LAB 1.14 AT TRUSSES			20	5			1260	6	20			REC - CORD REEL 1.14	R
R	REC - LAB 1.14 AT TRUSSES			20	7	1080			8	20			REC - LAB 1.14	R
R	REC - LAB 1.14 AT TRUSS & COUNTER			20	9		1080		10	20			REC - LAB 1.14	R
R	REC - LAB 1.14 AT TRUSS & COUNTER			20	11			1080	12	20			REC - LAB 1.14	R
R	REC - LAB 1.14 AT TRUSS & COUNTER			20	13	1080			14	20			REC - ABOVE COUNTER 1.11	R
R	REC - IDF RECIRCULATING PUMP			20	15	720	180		16	20		LOTO	ADA DOOR OPENER	M
R	REC - RESTROOM GFI 1.12			20	17		360	180	18	20			REC- RM 120	R
R	REC - EDF	GFI		20	19	360			20	20			REC- RM 120	R
R	REC - 1.11			20	21		150	0	22	20			REC - ELEVATOR PIT	R
--	SPARE			20	23			400	24	20			REC - SUMP PUMP	M
R	REC - IG			20	25	400	0		26	20			REC - ELEVATOR MACHINE RM	R
--	SPARE			20	27		600	0	28	20			LTG - CAB	C
R	REC - IG			20	29			1500	30	20			FACP	N
R	REC - IG			20	31	400	400		32	20			SECURITY PANEL	N
R	REC - IG			20	33		600	400	34	20			CCTV EQUIPMENT	R
M	REC - FLOOR BOX			20	35			360	36	20			REC - SS ROOM	R
R	REC - RECEPTION DESK			20	37	720	360		38	20			REC - COPIER RM 132	R
R	REC - RECEPTION DESK			20	39			720	40	20			REC - COPIER RM 132	R
R	REC - IG			20	41		400	0	42	20			SPARE	--

TOTAL CODE LOAD: 10.41 KVA / (1.73 * 208 V) = 53.88 AMPS
All Phases: CONTINUOUS LOAD = 1500 VA connected * 1.25 = 1.88 KVA code load
B Phase: CONTINUOUS LOAD = 1500 VA connected * 1.25 = 1.88 KVA code load
All Phases: MOTOR LOAD 1380 VA CONNECTED + (1020 * 0.25)
A Phase: MOTOR LOAD 120 VA CONNECTED + (120 * 0.25)
B Phase: MOTOR LOAD 300 VA CONNECTED + (300 * 0.25)
C Phase: MOTOR LOAD 960 VA CONNECTED + (600 * 0.25)
All Phases: RECEPTACLE LOAD 19080 VA CONNECTED: (10000 * 1.00) + (9800 * 0.50) = 14.90 KVA code load.
A Phase: RECEPTACLE LOAD 7340 VA CONNECTED: (7340 * 1.00) = 7.34 KVA code load.
B Phase: RECEPTACLE LOAD 6620 VA CONNECTED: (6620 * 1.00) = 6.62 KVA code load.
C Phase: RECEPTACLE LOAD 5840 VA CONNECTED: (5840 * 1.00) = 5.84 KVA code load.
All Phases: NONCONTINUOUS LOAD = 1000 VA connected * 1 = 1.00 KVA code load
A Phase: NONCONTINUOUS LOAD = 600 VA connected * 1 = 0.60 KVA code load
C Phase: NONCONTINUOUS LOAD = 400 VA connected * 1 = 0.40 KVA code load

NEW LOAD 54 A
EXISTING LOAD − 73 A
ADDED LOAD −19 A

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ELECTRICAL CONTRACTOR SHALL PROVIDE A NEW TYPED PANEL SCHEDULE FOR ALL MODIFIED/REUSED/RE-PURPOSED BREAKERS INDICATING THE CLEAR, EVIDENT AND SPECIFIC PURPOSE OR USE, PER NEC 408.4(A).

EXISTING P4

PHASE: 3 | VOLTS: 120/208Y | WIRE: 4 | MAIN: LUGS ONLY | 10000 AIC | 225A BUS | FED FROM 'MDP'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
C	LTG - 102,103,105			20	1	1230			2	20			EXHAUST FAN AT 3D PRINTER	R
C	LTG - RESTROOM, LOBBY			20	3		1111		4	20			REC - 3D PRINTER	R
C	LTG - EXHIBIT, LAB			20	5			1495	6	20			REC - 3D PRINTER	R
C	LTG - IT AND ELECTRIC ROOM			20	7	360			8	20			REC - LASER	R
C	LTG - LAB			20	9		1068		10	20			REC - LASER	R
C	LTG - LAB			20	11			1019	12	60			FUTURE EQUIPMENT	--
C	LTG - VESTIBULE			20	13	1430			14					--
N	REC - ROOF			20	15		540		16	3				--
R	REC- LAB 1.14			20	17			900	18	30			CU -1	M
R	REC- LAB 1.14			20	19	720		2300	20	2				M
R	REC- LAB 1.14			20	21		720		22	20			EV - 1	M
M	DOOR OPERATOR	LOTO		20	23			800	24	20			REC - IRRIGATION CONTROLLER	R
--	SPARE			20	25	0		600	26	20			REC - IG RM 121	R
R	REC - EXIST. MICROWAVE			20	27		1500		28	20			REC - IG RM 121	R
--	SPARE			20	29		0		30	20			REC - IG RM 121	R
C	LTG - EXHIBIT HALL			20	31	530			32	20			CF-10 RM 106	M
M	RP-1 RM 106			20	33		600		34	20			REC - GLOWFORGE AND GLO EXH	R
C	TIME CLOCK / PHOTOCELL			20	35			400	36	20			REC - GLOWFORGE AND GLO EXH	R
C	LIGHTING CONTROL			20	37	180		1150	38	20			DOOR OPERATOR	M
N	ULTRA X6000 LASER			30	39		1920		40	20			REC - SCREEN PROJECTOR	R
N				2	41			1920	42	20			ROOF TOP RELIEF HOOD	M

TOTAL CODE LOAD: 32.86 KVA / (1.73 * 208 V) = 91.22 AMPS
All Phases: CONTINUOUS LOAD = 8763 VA connected * 1.25 = 10.95 KVA code load
A Phase: CONTINUOUS LOAD = 3730 VA connected * 1.25 = 4.66 KVA code load
B Phase: CONTINUOUS LOAD = 2119 VA connected * 1.25 = 2.65 KVA code load
C Phase: CONTINUOUS LOAD = 2914 VA connected * 1.25 = 3.64 KVA code load
All Phases: MOTOR LOAD 7870 VA CONNECTED + (5200 * 0.25)
A Phase: MOTOR LOAD 3450 VA CONNECTED + (2300 * 0.25)
B Phase: MOTOR LOAD 960 VA CONNECTED + (600 * 0.25)
C Phase: MOTOR LOAD 3460 VA CONNECTED + (2300 * 0.25)
All Phases: RECEPTACLE LOAD 8360 VA CONNECTED: (8360 * 1.00) = 8.36 KVA code load.
A Phase: RECEPTACLE LOAD 1260 VA CONNECTED: (1260 * 1.00) = 1.26 KVA code load.
B Phase: RECEPTACLE LOAD 4090 VA CONNECTED: (4090 * 1.00) = 4.09 KVA code load.
C Phase: RECEPTACLE LOAD 3010 VA CONNECTED: (3010 * 1.00) = 3.01 KVA code load.
All Phases: NONCONTINUOUS LOAD = 4380 VA connected * 1 = 4.38 KVA code load
B Phase: NONCONTINUOUS LOAD = 2460 VA connected * 1 = 2.46 KVA code load
C Phase: NONCONTINUOUS LOAD = 1920 VA connected * 1 = 1.92 KVA code load

NEW LOAD 84 A
EXISTING LOAD − 120 A
ADDED LOAD −36 A

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PANELBOARD SYMBOL SCHEDULE

- ⊤ INDICATES PROVIDE NEW 'LOCK-DOG' ON CIRCUIT BREAKER, LKH OR LOTO.
- ● INDICATES NEW LOAD ADDED TO EXISTING CIRCUIT BREAKER.
- ○ INDICATES NEW LOAD AND NEW CIRCUIT BREAKER ADDED TO EXISTING BUSSED SPACE.
- □ INDICATES EXISTING LOAD REMOVED AND BREAKER TO BECOME SPARE.
- ■ INDICATES EXISTING LOAD AND BREAKER REMOVED AND REPLACED WITH NEW BREAKER AND POSSIBLY NEW LOAD.
- △ INDICATES EXISTING LOAD & CIRCUIT BREAKER TO REMAIN -- NO REVISION. EXISTING LOADS MAY HAVE BEEN ESTIMATED.
- ▲ CIRCUIT THRU LIGHTING CONTRACTOR. SEE WIRING DIAGRAM(S).
- { ⊕ } BREAKERS WITH COMMON HANDLE-TIES OR MULTI-POLE BREAKER WHERE HANDLE-TIES ARE NOT AVAILABLE OR PANELBOARD IS EXISTING. PROVIDE PER NEC 210.4(B).
- C INDICATES CONTINUOUS LOAD.
- N INDICATES NON-CONTINUOUS LOAD.
- SR INDICATES SPARE CIRCUIT BREAKER.
- BSP INDICATES BUSSED SPACE FOR FUTURE CIRCUIT BREAKER.
- M INDICATES MOTOR LOAD.
- R INDICATES GENERAL PURPOSE RECEPTACLE LOAD.

	'D2'	'P3'
		'P4'

PMT24-00829

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i.d.e.a. Museum - Lab Renovation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	3/15/2024
2	90% CLIENT REVIEW COMMENTS	3/15/2024

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer — CERTIFICATE NO. 53328 — NATHAN A. SHORT — Mechanical — 03/15/24 — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

ELECTRICAL PANEL SCHEDULE

DRAWING
E5.00

SHEET 36 - OF - 49
CATALOG NUMBER: A-282738

PLOTTED: 03.14.2024 - 6:18pm PLOTTED BY: william.reyes FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel_200 Design\Phase 2\E5_0.dwg

PLUMBING GENERAL NOTES

1. ALL MATERIALS AND SYSTEMS INSTALLED SHALL COMPLY WITH ALL CODES AND REGULATIONS OF AUTHORITIES HAVING JURISDICTION, INCLUDING THE 2018 IPC AS AMENDED BY THE CITY OF MESA, AZ.

2. CONSTRUCTION NOTES:

A. THE PLUMBING CONTRACTOR SHALL COORDINATE HIS WORK WITH ADJACENT WORK AND COOPERATE WITH THE OTHER TRADES SO AS TO FACILITATE THE GENERAL PROGRESS OF THE WORK AND TO AVOID CONFLICT OF ALLOWABLE SPACE FOR OTHER TRADES (ELECTRICAL, ETC). REFER TO ARCHITECTURAL DRAWINGS FOR ALL FIXTURE LOCATIONS.
B. DO NOT LOCATE ANY CLEANOUTS UNDER OR BEHIND ANY CABINETS, FIXTURES, OR FIXED EQUIPMENT.
C. CLEANOUTS SHALL BE PROVIDED AT LOCATIONS AS SHOWN, AND SHALL BE AS SPECIFIED. NO PLASTIC CLEANOUT COVERS WILL BE ALLOWED. CLEANOUT PLUGS SHALL BE BRONZE. ALL CLEANOUTS TO BE EQUAL TO THE SIZE OF LINE IN WHICH INSTALLED, UNLESS NOTED OTHERWISE. (4" MAXIMUM).
D. THE PLUMBING CONTRACTOR SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO PATCH AND REPAIR ALL EXISTING WALLS, FLOORS, CEILINGS OR OTHER SURFACES IDENTIFIED TO REMAIN THAT MAY BECOME DAMAGED DURING THE COURSE OF WORK.
E. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL INTENT OR ARRANGEMENT OF SYSTEM(S). FURNISH AND INSTALL ALL COMPONENTS NEEDED WHETHER INDICATED OR NOT TO PROVIDE A COMPLETE AND OPERATING SYSTEM. OVERALL CASEWORK COMPONENT DIMENSIONING ON PLUMBING DETAILS ARE SHOWN FOR REFERENCE AND COORDINATION ONLY.
F. CONTRACTOR TO VERIFY ALL DIMENSIONS, INCLUDING CLEARANCES REQUIRED BY OTHER TRADES, AND NOTIFY THE LICENSEE'S ARCHITECT OF RECORD OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.
G. THE PLUMBING CONTRACTOR SHALL COORDINATE PLUMBING WORK WITH OTHER TRADES. THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS SHALL TAKE PRECEDENCE OVER ALL OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR FIXTURES IN CASEWORK AND ADDITIONAL PLUMBING DETAILS. SEE PROJECT MANUAL FOR PLUMBING SPECIFICATION SECTIONS.
H. ALL PIPING AND/OR PLUMBING DEVICES SHALL BE SUPPORTED FROM STRUCTURE (NOT FROM HVAC DUCTS OR OTHER PIPES/CONDUITS).
I. EXACT LOCATION OF PLUMBING FIXTURES SHALL BE DETERMINED FROM THE ARCHITECTURAL DRAWINGS.
J. PROVIDE ALL REQUIRED RISERS/DROPS TO INSTALL CONCEALED PIPING WITHIN BUILDING CONSTRUCTION. REFER TO THE REFLECTED CEILING PLANS, SECTIONS AND SCHEDULES ON THE ARCHITECTURAL DRAWINGS TO DETERMINE REQUIRED PLACEMENT OF PIPING. PIPING IN EXPOSED AREAS SHALL BE SUPPORTED AS HIGH AS POSSIBLE TO THE UNDERSIDE OF THE OVERHEAD STRUCTURE.
K. PROVIDE QUARTER TURN BALL TYPE STOP VALVES AT ALL FIXTURES.
L. REFER TO THE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL AREA SEPARATION, FIRE AND SMOKE WALLS. PROVIDE UL LISTED FIRE STOPPING PER THE DETAILS ON THE ARCHITECTURAL DRAWINGS AND AS SPECIFIED IN THE ARCHITECTURAL AND MECHANICAL SPECIFICATIONS.
M. THE CONTRACTOR HAS THE RESPONSIBILITY OF REVIEWING ALL OF THE CONTRACT DOCUMENTS CONCERNING THIS PROJECT AND SHALL INCLUDE ALL REQUIRED WORK IN HIS BID.
N. PLUMBING CONTRACTOR SHALL VERIFY THE INVERT ELEVATION OF THE EXISTING DRAINS TO WHICH NEW WASTE LINES ARE TO BE CONNECTED PRIOR TO INSTALLING THE NEW WASTE SYSTEM. VERIFY THAT THE SYSTEM CAN BE INSTALLED AS SHOWN. IF AFTER INVESTIGATION THE PLUMBING CONTRACTOR DETERMINES THAT REQUIRED INVERTS AND SLOPES CANNOT BE MET, HE SHALL ADVISE THE ENGINEER IMMEDIATELY.
O. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SEWER AND WATER LINES SHOWN ON PLANS, PRIOR TO INSTALLATION OF NEW WORK.
P. CORE DRILL OR SAWCUT FLOORS AND PATCH AS REQUIRED TO INSTALL NEW DRAIN LINES AS SHOWN.
Q. PATCH ALL SURFACES DAMAGED BY THIS CONSTRUCTION TO MATCH EXISTING OR REMODELED SURFACES.

3. DOMESTIC WATER PIPING:

A. ALL COMPONENTS OF THE POTABLE DOMESTIC WATER SYSTEM MUST MEET NSF 61 AND/OR NSF 372 TEST STANDARDS AND FEDERAL ACT S.3874 KNOWN AS "REDUCTION OF LEAD IN DRINKING WATER ACT".
B. ABOVE FLOOR: TYPE "L" HARD TEMPER SEAMLESS COPPER TUBING PER ASTM B-88. WROUGHT SOLDER JOINT FITTINGS PER ANSI B16.22, OR CAST BRONZE SOLDER JOINT FITTINGS PER ANSI B16.8. USE 95-5 TIN-ANTIMONY SOLDER W/ LESS THAN .2% LEAD CONTENT.
C. BELOW GRADE, OUTSIDE BUILDING: TYPE "K" HARD TEMPER SEAMLESS COPPER TUBING PER ASTM B-88. WROUGHT SOLDER JOINT FITTINGS PER ANSI B16.22, OR CAST BRONZE SOLDER JOINT FITTINGS PER ANSI B16.8. USE 1000 DEGREE F SILVER SOLDER.
D. INSIDE BUILDING, BELOW FLOOR SLAB ON GRADE (1-1/2" AND SMALLER): TYPE "K", ASTM B-88 SOFT TEMPER WITH NO JOINTS BELOW FLOOR.
E. USE OF FERROUS NIPPLE BUSHINGS, UNIONS, ETC. IS NOT PERMITTED WITH COPPER PIPING.
F. DIELECTRIC INSULATING FITTINGS SHALL BE INSTALLED AT ALL WATER CONNECTIONS BETWEEN FERROUS AND COPPER PIPING.
G. SHUT-OFF VALVES SHALL BE EQUAL TO NIBCO NO. S-585-80-LF, 150#, 600 PSI WOG, FULL-PORT, SOLDER END, BALL VALVE, 1/2" THRU 3", NIBCO NO. S/T 595-66-LF: 2-1/2". NIBCO NO. LD 2000, LUG TYPE BUTTERFLY VALVE, DUCTILE IRON BODY, 200 CWP, EPDM SEAT, STAINLESS STEEL STEM, LEAD-FREE ALUMINUM BRONZE DISC; 3" AND LARGER.
H. BALANCING VALVES: ARMSTRONG AMRFLO L.F. SERIES, SOLDER JOINT CONNECTION.
I. ALL HOT WATER LINES TO BE INSULATED WITH 1" PRE-MOLDED FIBERGLASS INSULATION WITH ALL PURPOSE JACKET, THICKNESS PER SPECS. ENTIRE ASSEMBLY TO BE U.L. LISTED WITH FLAME SPREAD OF 25 AND SMOKE DEVELOPED 50. THERMAL CONDUCTIVITY "K" VALUE NOT TO EXCEED 0.25 AT 100T. MEAN TEMPERATURE.

4. SANITARY WASTE, VENT AND RAINWATER PIPING:

A. ABOVE AND BELOW FLOOR - ALL SIZES:
SCH 40 PVC SOLID WALL PIPE AND PVC DWV FITTINGS IN ACCORDANCE WITH ASTM D-2665 AND ASTM D-1785. INSTALLATION OF PIPING, AND ALL BEDDING AND BACKFILL SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, ASTM F-1668, AND 2018 IPC SECTION 306. SOLVENT WELDED JOINTS SHALL BE MADE PER ASTM F-656 WITH SOLVENT CEMENT IN ACCORDANCE WITH ASTM D-2564 ALL PVC PIPING AND FITTINGS SHALL BE STORED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDED HANDLING INSTRUCTIONS. NO PVC PIPING SHALL BE STORED IN A MANNER WHERE IT IS EXPOSED TO DIRECT SUNLIGHT, OR AMBIENT TEMPERATURES EXCEEDING 120 DEGREES. BELOW FLOOR PVC PIPING MATERIAL SPECIFICATION BASED ON MAXIMUM EXPECTED DRAINAGE TEMPERATURE OF 140T.
B. SANITARY DRAIN PIPING 2" AND SMALLER SHALL SLOPE AT 1/4" PER FT. MINIMUM. SANITARY DRAIN PIPING 3" AND LARGER SHALL SLOPE AT 1/8" UNLESS NOTED OTHERWISE.
C. ALL DRAIN PIPING CONNECTED TO FLOOR SINKS AND/OR MOP SINKS SERVING ICE MACHINES OR CONDENSATE LINES SHALL BE INSULATED WITH MIN. 1/2" THICK ALL-PURPOSE PIPING INSULATION TO PREVENT CONDENSATION. FULLY INSULATE TAILPIECE, P-TRAP, TRAP ARM AND MIN. OF 10"-0" OF DRAIN PIPING DOWNSTREAM OR TO POINT OF VERTICAL DROP.
D. RAINWATER PIPING SHALL SLOPE AT 1/8" PER FT. UNLESS NOTED OTHERWISE.
E. RAINWATER PIPING IS SIZED USING 2018 IPC TABLE 1106.3, 3" PER HOUR RAINFALL.
F. INSTALLATION SHALL CONFORM TO REQUIREMENTS OF THE 2018 IPC.
G. CLEANOUTS SHALL BE SAME SIZE AS PIPE INSTALLED IN, 4" MAXIMUM.

FIRE PROTECTION NOTES

1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL AREAS WHERE WORK IS REQUIRED.

2. MODIFY THE EXISTING WET PIPE FIRE SPRINKLER SYSTEM TO CONFORM TO THE NEW PARTITION LAYOUT AND REFLECTED CEILING PLAN.

3. PROVIDE SYSTEMS WITH ALL NECESSARY SUPPORTS, ANCHORS AND BRACING AND SUBMIT THE DESIGN TO THE ARCHITECT FOR REVIEW. COORDINATE NEW EQUIPMENT AND DEVICE LOCATIONS WITH THE EXISTING BUILDING CONDITIONS.

4. PREPARE COMPLETE FIRE PROTECTION SHOP DRAWINGS AND CALCULATIONS AND SUBMIT TO THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION AND RECEIVE APPROVAL PRIOR TO BEGINNING ANY WORK.

5. CONTRACTOR SHALL PROVIDE ALL PIPING, VALVES, SPRINKLERS, HANGERS AND SUPPORTS NECESSARY FOR A COMPLETE INSTALLATION.

6. COORDINATE WORK WITH ALL OTHER TRADES. COORDINATE POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR. COORDINATE LOCATIONS OF FLOW AND TAMPER SWITCHES, AND SUPERVISORY CIRCUITS WITH THE FIRE ALARM CONTRACTOR.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING.

8. ALL EQUIPMENT SHALL BE UL LISTED OR FM APPROVED.

9. THE DESIGN, EQUIPMENT, INSTALLATION, TESTING AND MAINTENANCE OF THE FIRE SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS SET FORTH IN THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:

NFPA NO. 13-FIRE SPRINKLER SYSTEMS
UL LISTINGS
LOCAL AUTHORITY HAVING JURISDICTION

PLUMBING FIXTURE SPECIFICATIONS

USE POLISHED CHROME PLATED, ADJUSTABLE BRASS P-TRAPS AND WASTE ARMS WITH WALL ESCUTCHEONS AT ALL EXPOSED LOCATIONS. USE POLISHED CHROME PLATED FAUCETS WITH REMOVABLE TRIM, BRASS BODY AND BRASS HANDLES. FIXTURES AND SUPPLY FITTING SHALL BE AS SPECIFIED. PROVIDE DIAPHRAGM TYPE POLISHED CHROME PLATED FLUSH VALVES WITH INTEGRAL VACUUM BREAKERS AND SCREWDRIVER STOPS. PROVIDE FIXTURE STOPS AND VALVES AHEAD OF ALL EQUIPMENT OR FIXTURES. AFTER FIXTURES ARE SET IN PLACE AND SECURED, CAULK ALL AROUND AND BETWEEN FIXTURES AND WALL/FLOOR WITH EITHER "DOW CORNING NO. 780" OR "G.E. CONSTRUCTION SEALANT" WHITE SILICONE CAULKING COMPOUND. ALL FIXTURES THAT ARE WHEELCHAIR ACCESSIBLE SHALL BE MOUNTED PER A.D.A. (AMERICAN DISABILITIES ACT) STANDARDS. ALL PLUMBING FIXTURES SHALL COMPLY WITH THE WATER CONSERVATION REQUIREMENTS OF ARIZONA REVISED STATUTES, TITLE 45, ARTICLE 12.

CONTRACTOR TO PROVIDE SUBMITTAL DATA FOR ALL OF THE FOLLOWING ITEMS:

WC1 WATER CLOSET:
FIXTURE: AMERICAN STANDARD # 2154A.104 "CADET" FLOOR MOUNTED, VITREOUS CHINA, ELONGATED BOWL, FLUSH TANK, TWO PIECE, 12" ROUGH-IN, 1.28 GPF, 16-1/2" RIM HEIGHT WITH TRIP LEVER ON APPROACH SIDE, 3" FLUSH VALVE. ADA COMPLIANT
SUPPLY: 3/4" ALL BRASS, 1/4 TURN ANGLE STOP WITH BRAIDED STAINLESS STEEL RISER.
SEAT: SOLID PLASTIC, WHITE, OPEN FRONT SEAT WITH SELF-SUSTAINING CHECK HINGE AND WITHOUT COVER.

LV1 LAVATORY UNDERMOUNT (ADA):
FIXTURE: BRADLEY "VERGE" #LVRD1, WALL MOUNTED, QUARTZ MATERIAL, SINGLE STATION WASH BASIN (29" x 22½") WITH SINGLE CENTER FAUCET HOLE.
FAUCET: KOHLER #K-97283-4, BRASS CONSTRUCTED, SINGLE HOLE INSTALLATION SINGLE LEVER LAVATORY FAUCET, WITH 4-3/8" SPOUT REACH. POLISHED CHROME FINISH. 0.5 GPM MAX FLOW RATE. ADA COMPLIANT.
SUPPLIES: 1/2" ALL BRASS, 1/4 TURN BALL TYPE ANGLE STOPS. PROVIDE HOT AND CW CONNECTIONS TO MIXING VALVE (WATTS #LFUSG-B, ASSE 1070 COMPLIANT) BELOW LAVATORY. EXTEND TEMPERED WATER TO LAVATORY FAUCET.
TRAP:1 1/4" X 1 1/2" ADJUSTABLE CAST BRASS P-TRAP WITH CLEANOUT PLUG, ESCUTCHEON, CHROME FINISH.
DRAIN: PERFORATED CHROME PLATED BRASS STRAINER WITH 1-1/4" OFFSET TAILPIECE.
INSULATION: ADA-CONFORMING, WHEELCHAIR ACCESSIBLE LAVATORY P-TRAP AND ANGLE VALVE ASSEMBLIES SHALL BE COVERED WITH PROTECTIVE PIPE COVERINGS THAT CONFORM TO THE REQUIREMENTS OF ASTM E-84 25/450. (COLOR SELECTED BY ARCHITECT).

SK1 SINK:
FIXTURE: ELKAY #LRAD221965 (22" X 19-1/2" X 6-1/2"), SINGLE BOWL, 18 GAUGE, TYPE 304 STAINLESS STEEL, TOP MOUNT SINK. ADA COMPLIANT. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS AND DIMENSIONS.
FAUCET: CHICAGO FAUCETS #786-GN8AFCABCP, DECK MOUNTED 8" FIXED CENTERS CONCEALED HOT AND COLD WATER SINK FAUCET, 1.5 GPM MAX FLOW RATE.
SUPPLIES: 1/2" ANGLE STOPS WITH FLEXIBLE RISERS.
STRAINER: DEEP STAINLESS STEEL BASKET STRAINER WITH LOCK SHELL AND DIE CAST NUTS AND 1 1/2" OFFSET TAILPIECE.
TRAP: 1-1/2" X 1-1/2" ADJUSTABLE CAST BRASS P-TRAP WITH CLEANOUT PLUG, ESCUTCHEON, CHROME FINISH.
INSULATION: ADA-CONFORMING, WHEELCHAIR ACCESSIBLE SINK P-TRAP AND ANGLE VALVE ASSEMBLIES SHALL BE COVERED WITH PROTECTIVE PIPE COVERINGS THAT CONFORM TO THE REQUIREMENTS OF ASTM E-84 25/450. (COLOR SELECTED BY ARCHITECT).

EWC1 ELECTRIC WATER COOLER:
FIXTURE: ELKAY #LZWS-LRPBM28K, 8 GPH, BARRIER FREE, BI-LEVEL, RECESSED IN WALL ELECTRIC WATER COOLER WITH BOTTLE FILLER, 18 GAUGE, TYPE 300 SERIES STAINLESS STEEL, STAINLESS STEEL FINISH, FLEXIGUARD BUBBLER AND FRONT PUSH BUTTONS (BOTTLE FILLER SENSOR ACTIVATED), FRONT PANEL GRILL, WALL MOUNTING FRAME AND WATER FILTER.
ELECTRICAL: 115 VOLT/60 HZ
SUPPLIES: 1/2" ALL BRASS 1/4 TURN BALL TYPE ANGLE STOP WITH BRAIDED STAINLESS STEEL RISER.
TRAP: 1-1/4" X 1-1/4" ADJUSTABLE CAST BRASS P-TRAP WITH CLEANOUT PLUG, ESCUTCHEON.

FS1 FLOOR SINK:
FIXTURE: ZURN #ZN1910-K, 8" X 8" X 6" DEEP CAST IRON RECEPTOR WITH ANCHOR FLANGE AND NICKEL BRONZE FRAME AND GRATE, ACID RESISTANT COATED INTERIOR, ALUMINUM DOME BOTTOM STRAINER; 1/2 GRATE UNLESS NOTED OTHERWISE. PROVIDE SURE SEAL MFG. CO. TRAP SEAL (TS) SIZE TO MATCH FLOOR SINK.

FD1 FLOOR DRAIN:
FIXTURE: ZURN #ZN415-5B-VP-P FLOOR DRAIN WITH NICKEL BRONZE 5" DIAMETER STRAINER HEAD. PROVIDE SURE SEAL MFG. CO. TRAP SEAL (TS) SIZE TO MATCH FLOOR DRAIN.

TS TRAP SEAL:
SURE SEAL TRAP SEALER (2": MODELSS2009V, 3" MODEL SS 3000V, OR 4" MODEL SS4009) SIZE TO MATCH FLOOR DRAIN/SINK.

FCO FLOOR CLEANOUT:
FIXTURE: ZURN #ZN-1400 CAST IRON BODY AND FRAME WITH ROUND ADJUSTABLE NICKEL BRONZE TOP, BRONZE PLUG SECURED WITH VANDAL PROOF SCREWS. SAME AS PIPE IN WHICH INSTALLED, 4" MAXIMUM

WCO WALL CLEANOUT:
FIXTURE: ZURN NO. Z1446 CAST-IRON CLEANOUT TEE WITH ABS PLUG, ROUND STAINLESS STEEL ACCESS COVER. SAME SIZE AS PIPE IN WHICH INSTALLED, 4" MAXIMUM.

SCO SURFACE CLEANOUT. FCO FLOOR CLEANOUT:
FIXTURE: ZURN #1400 CAST IRON BODY AND FRAME WITH ROUND ADJUSTABLE NICKEL BRONZE TOP, TAPER THREAD BRONZE PLUG SECURED WITH VANDAL PROOF SCREWS. SAME AS PIPE IN WHICH INSTALLED, 4" MAXIMUM.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION
	DN	PIPE DOWN		–	HOT WATER BALANCING VALVE
	UP	PIPE UP		CP	CIRCULATING PUMP
	W	SANITARY WASTE	—G—	G	NATURAL GAS
	V	SANITARY VENT	—MPG—	MPG	MEDIUM PRESSURE NATURAL GAS
—RW—	RW	RAINWATER PIPING		TMV	THERMOSTATIC MIXING VALVE
—RW(OF)—	RW(OF)	RAINWATER PIPING (OVERFLOW)	—F—	F	FIRE SERVICE (BELOW GRADE)
	RD/OD	ROOF DRAIN / OVERFLOW DRAIN	—F—	FDC	FIRE DEPARTMENT CONNECTION
	FCO / SCO	FLOOR / SURFACE CLEAN-OUT		–	BOTTOM CONNECTION
—O—	WCO	WALL CLEAN-OUT		–	TOP CONNECTION
	FD	FLOOR DRAIN		–	DROP / RISE
JIL	VTR	VENT THROUGH ROOF		U	UNION
—ESPD—	ESPD	ELEVATOR SUMP PUMP DISCHARGE		–	CHECK VALVE
	CW	COLD WATER		S.O.V.	SHUT-OFF VALVE
	HB / WH	HOSE BIBB / WALL HYDRANT		I.E. / IE:	INVERT ELEVATION
	HW	HOT WATER		IAW	IN ACCORDANCE WITH
	HWR	HOT WATER RETURN		A.F.F. / B.F.F.	ABOVE / BELOW FINISHED FLOOR
				P.O.C.	POINT OF CONNECTION

FIXTURE CONNECTION SCHEDULE

MARK	DESCRIPTION	TRAP SIZE	W	V	CW	HW	QTY	F.U. EACH WATER	F.U. EACH WASTE	TOTAL F.U. WATER	TOTAL F.U. WASTE
WC1	WATER CLOSET (FT)	–	4"	2"	3/4"	–	1	5	4	5	4
LV1	LAVATORY	1-1/4"	2"	2"	1/2"	1/2"	1	2	1	2	1
SK1	SINK	1-1/2"	2"	2"	1/2"	1/2"	1	2	2	2	2
SK2	SINK	1-1/2"	2"	2"	1/2"	1/2"	1	2	2	2	2
EWC1	ELECTRIC WATER COOLER	1-1/2"	2"	2"	1/2"	–	1	0.25	0.5	0.25	0.5
FS1	FLOOR SINK	2"	2"	2"	–	–	1	–	2	–	1
FD1	FLOOR DRAIN	2"	2"	2"	–	–	2	–	2	–	4
WH1/HB1	WALL HYDRANT/HOSE BIB	–	–	–	3/4"	–	1	(1) 3	–	3	–
									TOTAL FU	14.25	15.5

(1) ONE HOSE BIB FIXTURE INCLUDED IN BUILDING CALCULATION.
FIXTURE UNIT LOAD SHOWN FOR BRANCH PIPE SIZING PURPOSES ONLY.

WATER PIPE SIZING FIXTURE UNITS VERSUS PSI/100 FT. TYPE "L" COPPER TUBING — 2018 IPC

A. in psi/100'	Pipe size (in inches)						
2.8	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
FLUSH VALVE	–	–	–	6	13	75	283
FLUSH TANK	–	2	6	17	50	174	403
GPM	2	5	11	18	29	60	106
FPS	2.9	3.6	4.2	4.7	5.2	6.2	7.1

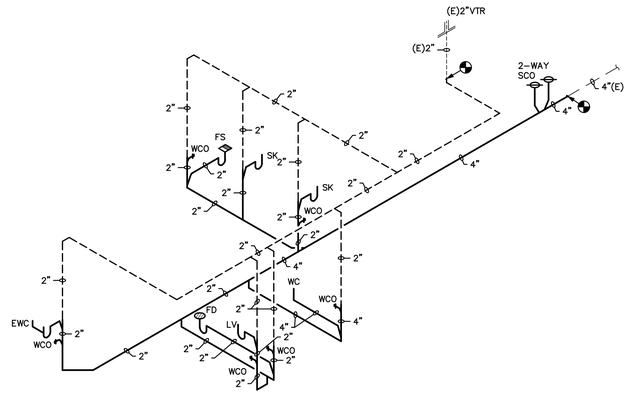
BLDG. WATER CALCULATIONS

TOTAL EXISTING FIXTURE UNITS		202 F.U.
TOTAL EXISTING FIXTURE UNITS REMOVED		-19 F.U.
TOTAL NEW FIXTURE UNITS ADDED THIS PROJECT		+14.26 F.U.
NEW TOTAL FIXTURE UNITS		=197.25 F.U.
		89 GPM
SERVICE LOSSES:		
(E) 1-1/2" METER		5 PSI
(E) BACKFLOW PREVENTER 1-1/2"		10 PSI
TOTAL SERVICE LOSSES		15 PSI
STATIC HEAD LOSS	10' x 0.43	4.3 PSI
FIXTURE		25 PSI
PRESSURE REQUIRED		44.3 PSI
ASSUMED PRESSURE (1)		60 PSI
DIFFERENCE		15.7 PSI
BUILDING LOSS		
HORIZONTAL PIPE LENGTH		426 FT
VERTICAL PIPE LENGTH		10 FT
EQUIV. LENGTH FOR FITTINGS (25%)		109 FT
TOTAL LENGTH		545 FT

15.7 P.S.I. DIFFERENCE / 545 FT. TOTAL LENGTH X 100 = 2.8 MAX. P.S.I. DROP ALLOWABLE / 100 FT. OF PIPE

(PIPING SIZED NOT TO EXCEED 2.8 PSI /100')

(1) PLUMBING CONTRACTOR TO VERIFY AND COORDINATE EXACT PRESSURE AT OUTLET AND NOTIFY ENGINEER OF ANY DISCREPANCIES. PLUMBING CONTRACTOR TO PROVIDE A PRESSURE REDUCING VALVE (PRV) ON CUSTOMER SIDE OF OUTLET IF THE PRESSURE AT OUTLET EXCEEDS 80 PSI. PRV TO BE SET TO 75 PSI.



WASTE AND VENT PIPING DIAGRAM (1)
NOT TO SCALE

PMT24-00829

Holly Street Studio
1319 E VanBuren St.
Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Lab Renovation
150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
Suite 275
Scottsdale AZ 85251
P: 480.481.4900
www.esdengineers.com
Project # 201080.200
Design Contact: JAYSON JAY

COM PROJECT NO.
CP0916NLAB

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Lab Renovation

PLUMBING LEGEND AND NOTES

DRAWING
P0.1

SHEET 37 - OF - 49
CATALOG NUMBER: A-282739

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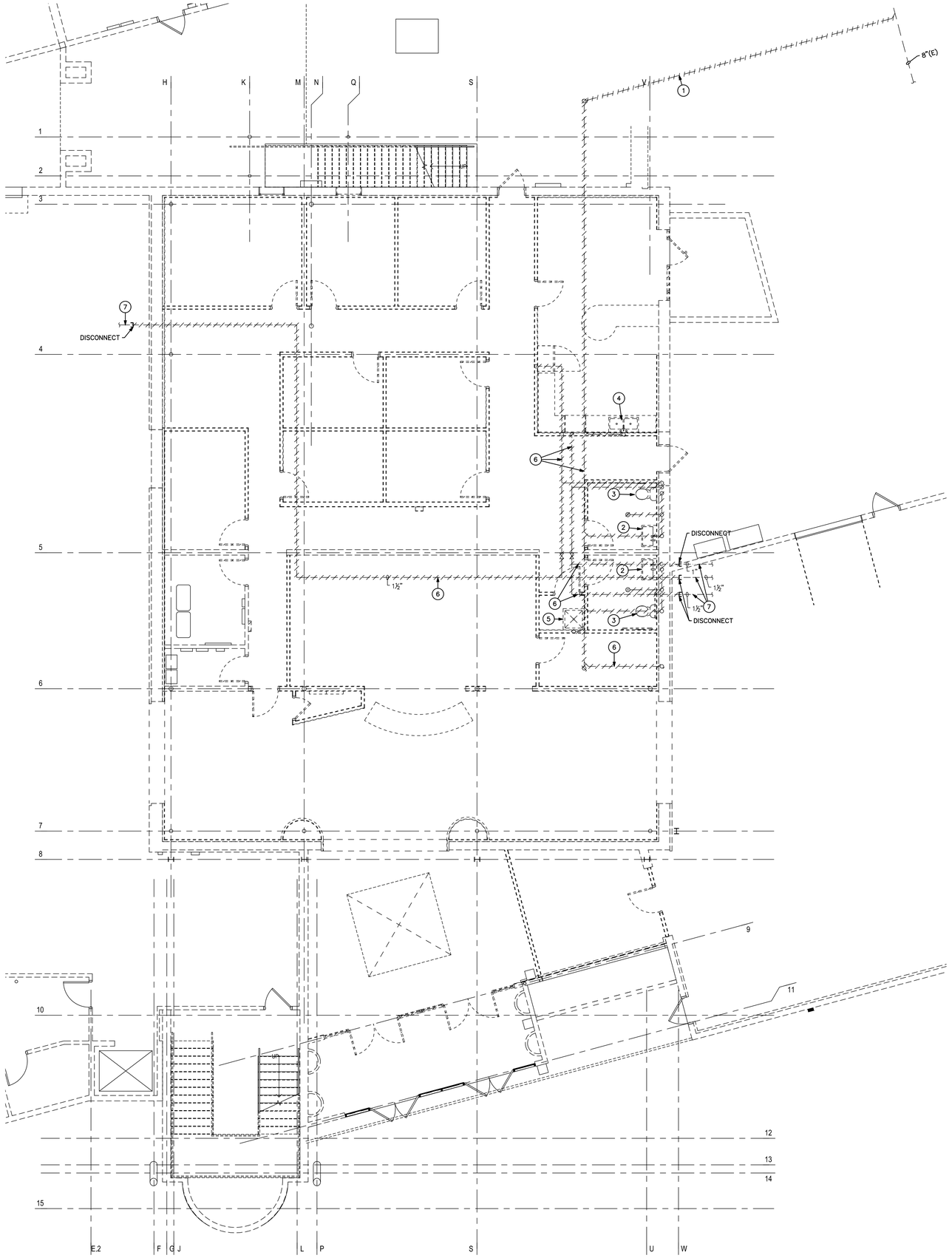

PLUMBING DEMO PLAN

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

PMT24-00829

KEYED NOTES

1. EXISTING SANITARY WASTE PIPING SHOWN HATCHED TO BE REMOVED OR ABANDONED IN PLACE. COORDINATE WORK WITH PHASE 1 PLUMBING DRAWINGS.
2. EXISTING LAVATORY AND FAUCET TO BE REMOVED. REMOVE ALL STOPS AND SUPPLIES, P-TRAP AND TRAP ARM. DISCONNECT AND REMOVE EXISTING CW, HW, VENT, AND DRAIN PIPING IN WALL. CAP CW, HW, AND VENT PIPING ABOVE CEILING AT MAIN. CAP DRAIN PIPING BELOW FLOOR GAS-TIGHT.
3. EXISTING WATER CLOSET AND FLUSH VALVE TO BE REMOVED. DISCONNECT AND REMOVE EXISTING CW, VENT, AND DRAIN PIPING IN WALL. CAP CW, AND VENT PIPING ABOVE CEILING AT MAIN. CAP DRAIN PIPING BELOW FLOOR GAS-TIGHT.
4. EXISTING SINK AND FAUCET TO BE REMOVED. REMOVE ALL STOPS AND SUPPLIES, P-TRAP AND TRAP ARM. DISCONNECT AND REMOVE EXISTING CW, HW, VENT, AND DRAIN PIPING IN WALL. CAP CW, HW, AND VENT PIPING ABOVE CEILING AT MAIN. CAP DRAIN PIPING BELOW FLOOR GAS-TIGHT.
5. EXISTING MOP SINK AND FAUCET TO BE REMOVED. REMOVE ALL STOPS AND SUPPLIES, P-TRAP AND TRAP ARM. DISCONNECT AND REMOVE EXISTING CW, HW, VENT, AND DRAIN PIPING IN WALL. CAP CW, HW, AND VENT PIPING ABOVE CEILING AT MAIN. CAP DRAIN PIPING BELOW FLOOR GAS-TIGHT.
6. EXISTING PIPING SHOWN HATCH TO BE REMOVED.
7. EXISTING PIPING TO REMAIN.

SHEET NOTES

1. MODIFY THE EXISTING WET PIPE FIRE SPRINKLER SYSTEM TO CONFORM TO THE NEW PARTITION LAYOUT AND REFLECTED CEILING PLAN.
2. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING WASTE SIZE, INVERT AND LOCATION, AND VENT SIZE AND LOCATION. CONTRACTOR SHALL INCLUDE THE USE OF UNDERGROUND LOCATING SERVICES IN HIS BID AS NECESSARY TO LOCATE EXISTING DRAIN PIPING BELOW FLOOR.
3. ALL REFERENCES ON THESE DRAWINGS TO EXISTING WASTE, WATER AND VENT PIPING IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL THESE ITEMS PRIOR TO BID AND INCLUDE IN HIS BID ANY AND ALL AMOUNTS REQUIRED TO ACCOMMODATE EXISTING CONDITIONS.
4. NO ALLOWANCE WILL BE MADE AFTER THE PROJECT HAS BEEN AWARDED FOR FAILURE TO VERIFY EXISTING CONDITIONS.
5. ANY DISCREPANCIES WHICH MAY AFFECT THE CONTRACTORS BID SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND ARCHITECT FOR DIRECTION.
6. COORDINATE ANY REQUIRED INTERRUPTIONS IN ADJACENT OCCUPIED TENANT SPACES WITH BUILDING ENGINEER.

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hollystreetstudio.com

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150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer, Mechanical
CERTIFICATE NO.
20981
C. MONTE
STURDEVANT
Date Signed 03/15/24
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum -
Lab Renovation

PLUMBING DEMO PLAN

DRAWING
P2.0

SHEET	CATALOG NUMBER:
38 - OF - 49	A-282740

ENERGY SYSTEMS DESIGN
7135 East Camelback Road
Suite 275
Scottsdale AZ 85251
P: 480.481.4900
www.esdengineers.com
Design Contact:
JAYSON JAY
Project #
201080.200

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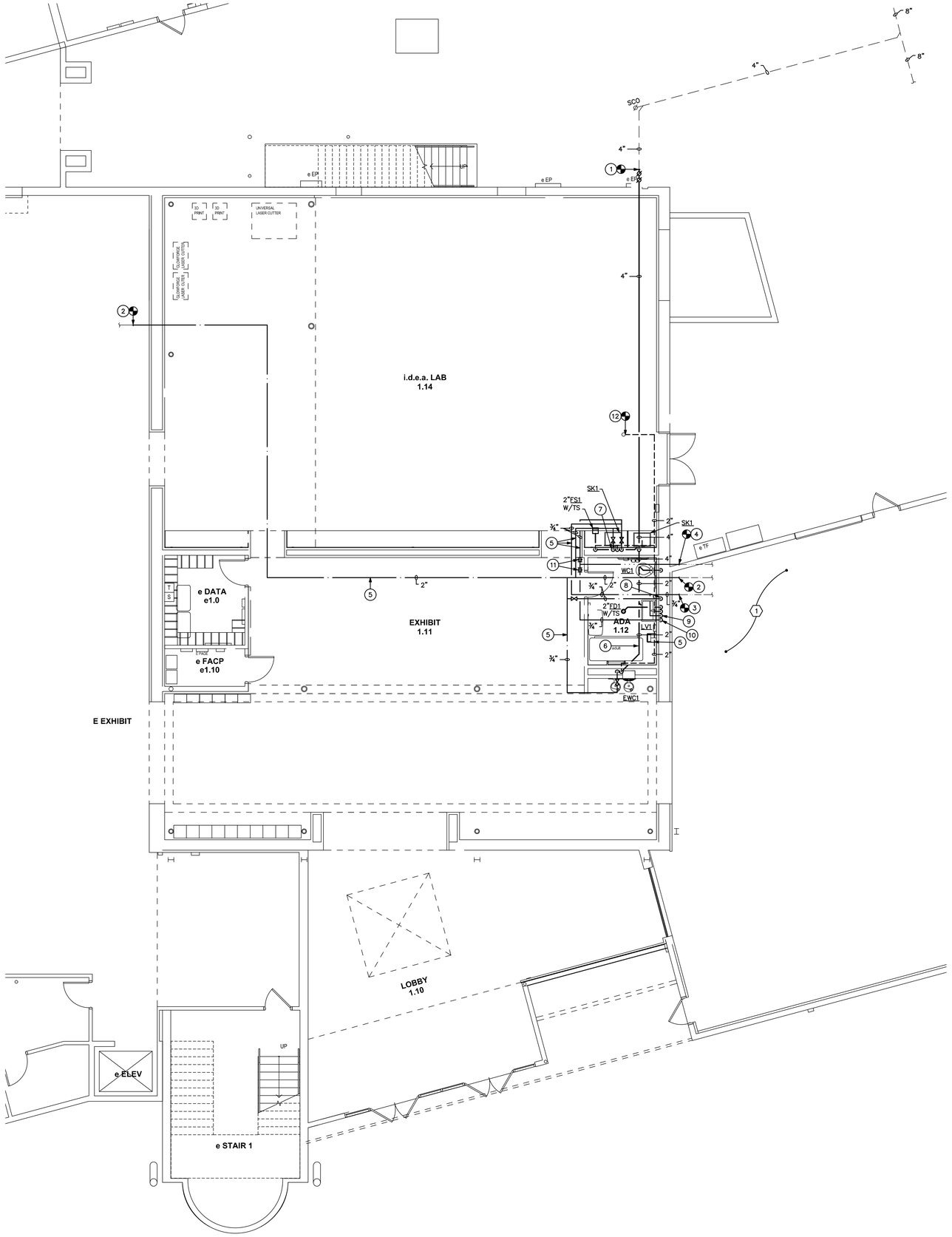
PLOTTED BY: Ryan.Eggink
PLOTTED: 03.15.2024 - 1:11pm



KEYED NOTES

1. CONNECT 4" SANITARY WASTE PIPING TO EXISTING BELOW GRADE. FIELD VERIFY EXACT LOCATION. COORDINATE WORK WITH PHASE 1 PLUMBING DRAWINGS.
2. CONNECT 2" COLD WATER PIPING TO EXISTING ABOVE CEILING. FIELD VERIFY EXACT LOCATION AND SIZE.
3. CONNECT 1" HOT WATER PIPING TO EXISTING ABOVE CEILING. FIELD VERIFY EXACT LOCATION AND SIZE.
4. CONNECT ¾" HOT WATER RETURN PIPING TO EXISTING ABOVE CEILING. FIELD VERIFY EXACT LOCATION AND SIZE.
5. PIPING ABOVE CEILING.
6. PIPING BELOW FLOOR. SAWCUT AND PATCH SLAB WHERE REQUIRED.
7. ¾" CW AND ¾" HW DOWN IN WALL TO SERVE FIXTURES THIS AREA.
8. ¾" CW DOWN IN WALL TO SERVE FIXTURES THIS AREA.
9. HW LOOP DOWN IN WALL TO SERVE FIXTURES THIS AREA.
10. HW LOOP UP TO ABOVE CEILING.
11. HWR BALANCING VALVE (SET FOR 1 GPM).
12. CONNECT 2" VENT PIPING TO EXISTING VENT THRU ROOF. FIELD VERIFY EXACT LOCATION.

FIRE SPRINKLER KEYED NOTES

1. MODIFY FIRE SPRINKLER PIPING IN THIS AREA TO CONFORM WITH THE NEW MECHANICAL DUCTWORK LAYOUT. COORDINATE WITH MECHANICAL.

SHEET NOTES

1. MODIFY THE EXISTING WET PIPE FIRE SPRINKLER SYSTEM TO CONFORM TO THE NEW PARTITION LAYOUT AND REFLECTED CEILING PLAN.
2. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING WASTE SIZE, INVERT AND LOCATION, AND VENT SIZE AND LOCATION. CONTRACTOR SHALL INCLUDE THE USE OF UNDERGROUND LOCATING SERVICES IN HIS BID AS NECESSARY TO LOCATE EXISTING DRAIN PIPING BELOW FLOOR.
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PLUMBING FLOOR PLAN

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

PMT24-00829

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150 W Pepper Place
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revisions

No.	Description	Date

COM PROJECT NO.
CP0916NLAB

Registered Professional Engineer, Arizona
EXPIRES 09/30/2024
20981
G.MONTE
STURDEVANT
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916NLAB

issue for permit

DATE
11 january 2024

CITY OF MESA
ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum -
Lab Renovation

PLUMBING FLOOR PLAN

DRAWING
P2.1

SHEET	CATALOG NUMBER:
39 - OF - 49	A-282741

ENERGY SYSTEMS DESIGN
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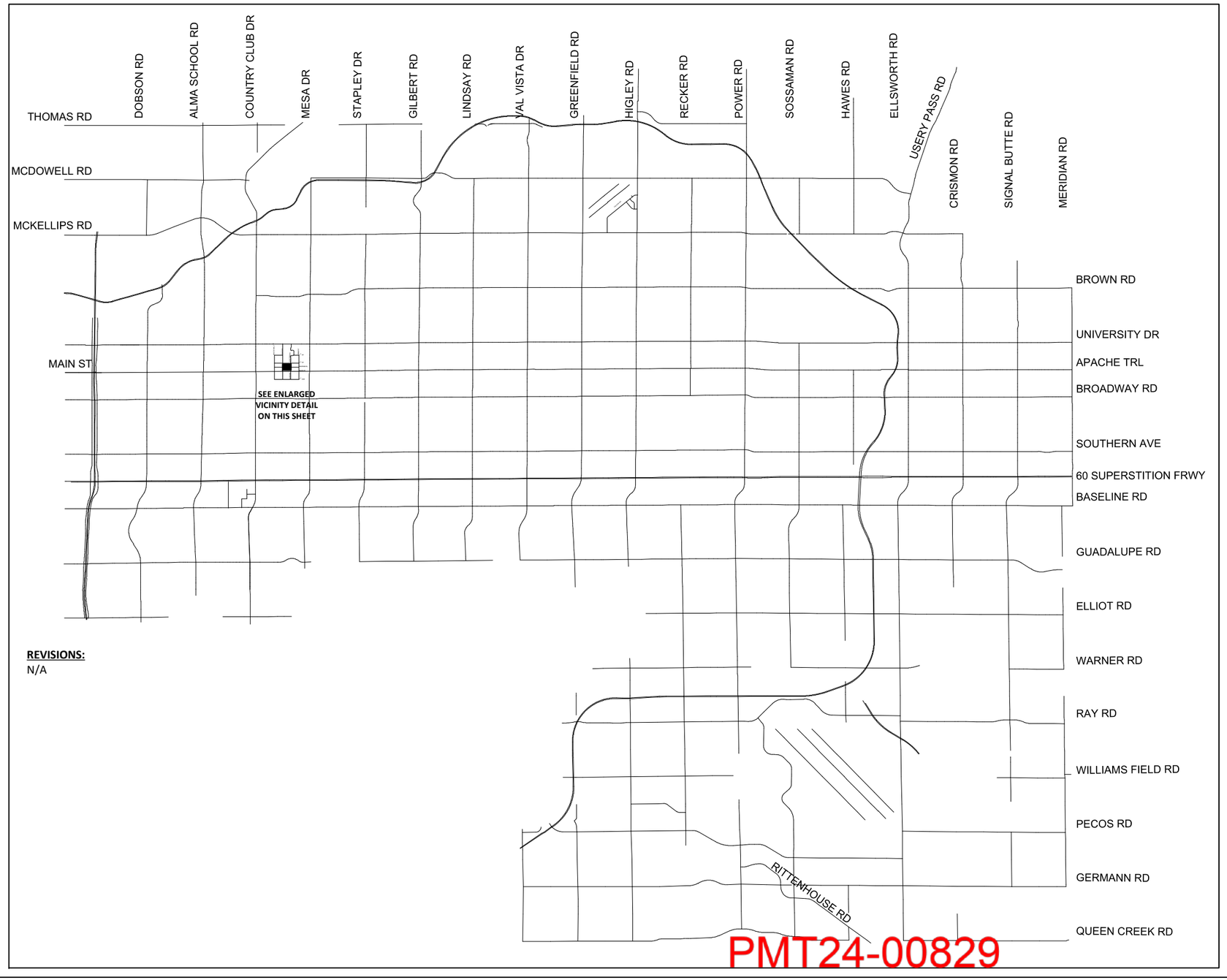
www.esdengineers.com
Project # 201080.200
Design Contact: JAYSON JAY

FILE: C:\Users\Ryon.Eggink\AppData\Local\Temp\AcPublish_21100\P2_1.dwg
PLOTTED BY: Ryon.Eggink
PLOTTED: 03.15.2024 - 1:11pm

DEPARTMENT OF INNOVATION & TECHNOLOGY
mesaaz

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201

COVER PAGE



REVISIONS:
N/A

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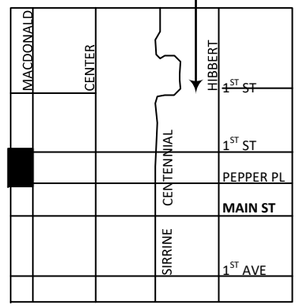

VICINITY MAP

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SHEET INDEX

SHEET #	DESCRIPTION
1.	COVER PAGE
2.	GENERAL NOTES
8.	DEMO PHASE 2
9.	INSIDE STRUCTURED CABLING PHASE 2

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201
COVER PAGE
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TITLE: COVER PAGE
COMPANY: CITY OF MESA
CREATOR: FELIX DUARTE & MAURICE GREEN
DATE: Dec. 13, 23
TIME: 8:01 AM
SHEET: OF PGS
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

Proj. No. **CP0916NLANB**
Catalog No. **A-282742**

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

VERSION DATE: 12/13/2023
BY: Felix Duarte

GENERAL NOTES (REVISED 08-15-12)

1. ALL WORK AND MATERIALS SHALL CONFORM TO CURRENT UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS PUBLISHED BY THE MARICOPA ASSOCIATION OF GOVERNMENTS AND AS AMENDED BY THE CITY OF MESA. ALL WORK AND MATERIALS NOT IN CONFORMANCE WITH THESE AMENDED SPECIFICATIONS AND DETAILS ARE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
2. THE INFORMATION SHOWN ON DRAWINGS CONCERNING THE TYPE AND LOCATION OF EXISTING UNDERGROUND UTILITIES IS APPROXIMATE AND HAS NOT BEEN INDEPENDENTLY VERIFIED BY THE ENGINEER OR THE ENGINEER'S AGENT. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND AND OVERHEAD UTILITIES.
   A. CALL **602-263-1100** OR **811** FOR BLUE STAKE SERVICES.
   B. CALL SALT RIVER POWER FOR POLE BRACING, ELECTRIC SERVICE OR CONSTRUCTION SCHEDULING AT **602-236-8888**.
   C. CALL CITY OF MESA ELECTRICAL FOR POLE BRACING, ELECTRICAL SERVICE OR CONSTRUCTION SCHEDULING AT **480-644-2251** WITHIN CITY OF MESA ELECTRICAL SERVICE TERRITORY (DOWNTOWN MESA).
   D. WHEN EXCAVATING IN OR ADJACENT TO A CITY PARK OR AQUATIC FACILITY THE CONTRACTOR SHALL CONTACT AQUATICS AND PARKS MAINTENANCE AT **480-644-3097** TO REQUEST ASSISTANCE IN LOCATING UNDERGROUND UTILITYFACILITIES.
   E. WHEN EXCAVATING IN OR ADJACENT TO LANDSCAPING WITHIN THE RIGHT-OF-WAY, THE CONTRACTOR SHALL CONTACT TRANSPORTATION FIELD OPERATIONS AT **480-644-3038** TO REQUEST ASSISTANCE IN LOCATING UNDERGROUND IRRIGATION FACILITIES.
3. THE CITY OF MESA HAS ADOPTED THE CITY OF PHOENIX 2007 TRAFFIC BARRICADE MANUAL. COPIES ARE AVAILABLE AT 1101 EAST JEFFERSON STREET, PHOENIX, ARIZONA. TELEPHONE **602-262-6235** OR http://phoenix.gov/streets/traffic/index.html. CITY OF MESA HAS ISSUED A SUPPLEMENT TO THE PHOENIX TRAFFIC BARRICADE MANUAL. COPIES ARE AVAILABLE AT DEVELOPMENT SERVICES, 55 N. CENTER ST., MESA, ARIZONA. TELEPHONE **480-644-2160** OR BOTH MANUALS ARE AVAILABLE ONLINE AT: http://www.mesaaz.gov/transportation/barricades.aspx.
4. CONTRACTOR TO NOTIFY TRAFFIC OPERATIONS AT **480-644-3126** PRIOR TO SIGN REMOVAL AND WHEN READY TO PERMANENTLY RELOCATE SIGN.
5. CONTRACTOR TO OBTAIN ANY PERMITS REQUIRED UNLESS OTHERWISE INDICATED, AND COORDINATE ALL IRRIGATION DRY-UPS, RELOCATIONS, AND REMOVALS BY OTHERS.
6. CONTRACTOR SHALL POTHOLE EXISTING UTILITIES AHEAD OF CONSTRUCTION TO ALLOW FOR ANY NECESSARY ADJUSTMENTS IN GRADE LINE AND TO VERIFY PIPE MATERIALS FOR ORDERING THE APPROPRIATE TRANSITION AND TIE-IN FITTINGS THAT MAY BE REQUIRED.
7. THE CONTRACTOR IS RESPONSIBLE TO REMOVE ALL ABANDONED UTILITIES THAT INTERFERE WITH PROPOSED IMPROVEMENTS. THE CITY OF MESA UTILITIES DEPARTMENT LOCATING SECTION WILL ASSIST THE CONTRACTOR AS NEEDED, IN DETERMINING IF THE UTILITY (GAS, WATER, AND WASTEWATER ONLY) IS ABANDONED BY CALLING **480-644-4500**.
8. PRIOR TO START OF CONSTRUCTION ON PRIVATE PROPERTY (EASEMENTS), THE CONTRACTOR SHALL GIVE THE OWNER SUFFICIENT TIME (MINIMUM 48 HOURS) TO REMOVE ANY ITEMS IN CONFLICT WITH CONSTRUCTION. THE CONTRACTOR SHALL ARRANGE TO REMOVE AND REPLACE ALL OTHER CONFLICTS AS REQUIRED.
9. THE CONTRACTOR SHALL COORDINATE WORK SCHEDULES TO PREVENT ANY CONFLICTING WORK CONDITIONS WITH THE CITY OF MESA UTILITY AND TRANSPORTATION CREWS.
10. THE CONTRACTOR IS ADVISED THAT A DUST CONTROL PERMIT AND A DUST CONTROL PLAN MAY BE REQUIRED BY THE MARICOPA COUNTY AIR QUALITY DEPARTMENT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THIS PERMIT, IF NECESSARY, AND COMPLY WITH ITS REQUIREMENTS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A COPY OF THE DUST CONTROL PERMIT AND DUST CONTROL PLAN TO THE CITY FOR REVIEW.
11. INSPECTIONS SHALL BE PROVIDED BY THE CITY OF MESA. THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTION DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION.
12. THE JOB SITE SHALL BE CLEANED OF ANY DEBRIS OR SPOIL RESULTING FROM THIS PROJECT AT THE COMPLETION OF CONSTRUCTION.
13. ALL EQUIPMENT AND MATERIALS NOT SHOWN OR SPECIFIED ON THE PLANS OR SPECIFICATIONS, BUT REQUIRED TO COMPLETE THIS PROJECT, SHALL BE SUPPLIED BY THE CONTRACTOR AS PART OF THIS CONTRACT WORK (NO ADDITIONAL COST TO THE CITY).
14. WHEREVER PAVEMENT REPLACEMENT PER MESA STD DETAIL M-19.4 OR MAG STD DETAIL 200 IS REFERRED TO WITHIN THESE PLANS, BACKFILLING SHALL BE PER THE CITY OF MESA STREET TRENCH BACKFILLING AND PAVEMENT REPLACEMENT POLICY STATEMENT, REVISED SEPTEMBER 29, 1999.
15. FOR PURPOSES OF PAVEMENT PER MAG STD DETAIL 200 OR MESA STD DETAIL M-19.4, INTERSECTIONS ARE DEFINED BY THE CURB RETURNS IN ALL DIRECTIONS.
16. ANY SURVEY MARKERS DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN KIND BY A REGISTERED LAND SURVEYOR AT NO ADDITIONAL COST TO THE CITY.
17. ALL EXISTING PAVEMENT MARKINGS, SIGNS, AND SIGNAL EQUIPMENT THAT ARE NOT PART OF THIS PROJECT BUT NEED TO BE REMOVED, REPLACED, RELOCATED, OR REPAIRED BECAUSE OF CONTRACTOR'S WORK WILL BE DONE AT THE CONTRACTOR'S EXPENSE.
18. THE CONTRACTOR IS ADVISED THAT DAMAGE TO ANY PUBLIC SERVICES OR SYSTEMS AS A RESULT OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AND INSPECTED BY THE CITY INSPECTOR. DEPENDING ON DAMAGES, ALL REPAIRS SHALL BE DONE WITHIN 24 HOURS. THE CONTRACTOR IS ADVISED THAT ANY COSTS RELATED TO REPAIR OR REPLACEMENT OF DAMAGED PUBLIC SERVICES OR SYSTEMS AS A RESULT OF CONTRACTOR'S NEGLIGENCE SHALL BE BORNE BY THE CONTRACTOR.

FIBER OPTIC GENERAL NOTES (REVISED 06-23-15)

1. FIBER OPTIC DUCT WORK MAY BE INSTALLED BY EITHER OPEN CUT OR GUIDED BORE UNLESS OTHERWISE NOTED. ANY SURFACE RESTORATION RELATED TO EITHER METHOD IS A NON-PAY ITEM AND SHALL BE INCIDENTAL TO THE CORRESPONDING BID ITEM FOR CONDUIT INSTALLATION UNLESS OTHERWISE NOTED. SURFACE RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF MESA AND MAG STANDARD SPECIFICATIONS. ASPHALT DRIVEWAY OR PARKING LOT RESTORATION SHALL COMPLY WITH MAG STD DETAIL 200, TYPE 'B'; AND MAG SPECIFICATION SECTION 336 UNLESS OTHERWISE NOTED.
2. FOR NON-CAPITAL (PRIVATE) PROJECTS, NO COMPONENT OR PART OF THE CONDUIT FIBER SYSTEM SHALL BE INSTALLED, CONSTRUCTED, LOCATED ON, OR ATTACHED TO ANY PROPERTY WITHIN THE CITY'S PUBLIC RIGHT-OF-WAY UNTIL CONTRACTOR HAS APPLIED FOR AND RECEIVED APPROVAL FOR RIGHT-OF-WAY PERMITS AND/OR RIGHT-OF-WAY ENCROACHMENT PERMITS FOR SUCH WORK ON THE CONDUIT FIBER SYSTEM.
3. ALTHOUGH THE EXACT PLACEMENT AND LOCATIONS OF CONDUIT FIBER SYSTEM MAY BE REVISED DURING THE PERMIT PROCESS, IT IS THE CITY'S EXPRESSED DESIRE TO HAVE THE CONDUIT FIBER SYSTEM INSTALLED OUTSIDE PAVED AREAS WHENEVER FEASIBLE. FURTHERMORE, WHEN NECESSARY FOR THE CONDUIT FIBER SYSTEM TO CROSS UNDER CITY STREETS OR PAVED AREAS, THE CONTRACTOR SHALL USE DIRECTIONAL BORING PER MESA STD DETAILS M-18 AND M-18.01.
4. PULL BOXES AND VAULTS ARE SHOWN ACCORDING TO AVAILABLE DATA. FIELD ADJUSTMENTS MAY BE NECESSARY TO AVOID CONFLICTS AND INTERCEPT EXISTING CONDUIT. CONFIRM FINAL LOCATION OF ALL NEW PULL BOXES AND VAULTS WITH CITY OF MESA REPRESENTATIVE.
5. WIDTH OF PLAN SYMBOLS MAY BE GREATER THAN ACTUAL DISTURBED AREAS. ITEMS DEPICTED ON THE PLANS ARE TO BE INSTALLED WITHIN THE RIGHT-OF-WAY OR PERMANENT EASEMENT WHERE NOTED ON THE PLANS.
6. THE CITY REQUIRES AT LEAST ONE CERTIFIED TECHNICIAN ON SITE DURING ALL PHASES OF ANY TELECOMMUNICATIONS WORK. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE VERIFICATION OF CERTIFICATION. IF A JOB SITE IS INSPECTED AND A CERTIFIED TECHNICIAN IS NOT ON SITE, THE JOB WILL BE SHUT DOWN.
7. THE CONTRACTOR SHALL CONTACT THE CITY TRANSPORTATION MANAGEMENT CENTER AT 480-644-5888, 48 BUSINESS HOURS PRIOR TO ANY WORK WITHIN THE VICINITY OF OR THROUGH A SIGNALIZED INTERSECTION WHICH WILL CHANGE TRAFFIC LANE PATTERNS.
8. THE CONTRACTOR SHALL IMMEDIATELY REPORT ANY TRAFFIC SIGNAL DAMAGE TO THE ENGINEERING INSPECTOR. DAMAGE TO ANY TRAFFIC SIGNAL EQUIPMENT SUCH AS CONTROLLER CABINET AND EQUIPMENT, DETECTOR LOOPS, PULL BOXES, CONDUIT, POLES, MAST ARMS, HEADS OR RELATED EQUIPMENT AS A RESULT OF THIS PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED BY THE APPROPRIATE IMSA LEVEL CERTIFIED TRAFFIC SIGNAL TECHNICIAN ACCORDING TO CITY OF MESA TRAFFIC SIGNAL SPECIFICATION. A CITY OF MESA TRAFFIC SIGNAL TECHNICIAN SHALL INSPECT THESE REPAIRS.
   A. A TRAFFIC SIGNAL CANNOT BE DARK OR IN FLASH FOR MORE THAN TWO HOURS.
   B. A LOSS OF COMMUNICATION SHALL BE REPAIRED WITHIN 24 HOURS.
   C. DETECTOR LOOPS SHALL BE REPLACED IN TWO WEEKS UNLESS THE ITS FOREMAN AGREES IN WRITING TO A DIFFERENT SCHEDULE.
   D. IF THE CONTRACTOR CANNOT RESPOND OR MAKE THE REPAIRS WITHIN ABOVE NOTED TIME FRAMES, THE CITY OF MESA WILL MAKE THE NECESSARY REPAIRS AND CHARGE THE CONTRACTOR.
   E. IF THERE IS AN OUTAGE(S) THAT IS NOT A DIRECT RESULT OF THE CONTRACTOR'S OR SUBCONTRACTOR'S WORK, CITY OF MESA SHALL BE CALLED TO RESPOND. IF IT IS DETERMINED THE CONTRACTOR'S OR SUBCONTRACTOR'S WORK CAUSED THE OUTAGE, THE CONTRACTOR SHALL PAY ALL COSTS OF REPAIRS.
9. ALL SIDEWALK REPLACEMENT SHALL BE PER MAG STD DETAIL 230.
10. THE CONTRACTOR SHALL VIDEO RECORD THE ENTIRE PROJECT AREA PRIOR TO START OF CONSTRUCTION. THE VIDEOTAPE SHALL INCLUDE THE ENTIRE PROJECT AREA WHERE THE CONTRACTOR WILL BE PERFORMING THE WORK AND SHALL BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO STARTING WORK.
11. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF MESA TO OBTAIN ANY NECESSARY PERMITS FROM ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT).
12. RIGHTS-OF-WAY FOR ALL WORK SPECIFIED IN THIS CONTRACT MAY NOT BE SHOWN ON THE PLANS, AND THE CONTRACTOR SHALL NOT ENTER OR OCCUPY WITH PERSONNEL, TOOLS, EQUIPMENT, OR MATERIALS ANY PRIVATE GROUND OUTSIDE THE RIGHT-OF-WAY WITHOUT THE CONSENT OF THE OWNER.
13. POTHOLING AND RELATED SURFACE RESTORATION SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF MESA STD DETAILS M-18 THRU M-18.03, MAG STD DETAIL 212, AND SPECIFICATION SECTION 335. IN THE CASE OF A CONFLICT BETWEEN THE TWO (2) SPECIFICATIONS THE CITY OF MESA'S REQUIREMENTS SHALL PREVAIL.

FIBER SPLICING AND INSTALLATION NOTES (REVISED 06-23-15)

1. FIBER OPTIC CABLE SHALL BE INSTALLED PER PROJECT TECHNICAL SPECIFICATIONS.
2. INSTALL ONE (1) NO.12 XHHW COPPER STRANDED IN 1" PVC ABOVE FIBER CONDUIT PER COM STD DETAILS M-66.09.1 & M-66.09.2.

FIBER OPTIC TESTING NOTES
(REVISED 06-23-15)

1. ALL FIBER OPTIC TESTING SHALL BE PERFORMED PER PROJECT TECHNICAL SPECIFICATIONS.

FIBER OPTIC MATERIALS
(REVISED 06-23-15)

1. SEE PROJECT TECHNICAL SPECIFICATIONS AND ITS/ITD APPROVED PRODUCTS LISTS FOR THE APPROVED FIBER OPTIC MATERIALS.

ENGINEERING NOTES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS AND GOVERNMENTAL AUTHORIZATION REQUIRED FOR THE CONSTRUCTION AND OPERATION OF THE FACILITIES AND COMPLY WITH ITS REQUIREMENTS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN QUANTITY TAKE-OFF AND SHALL FURNISH AND INSTALL ALL REQUIRED COMPONENTS, INCLUDING BUT NOT LIMITED TO WIRING, FIBER OPTIC CABLING, CONDUIT, JUNCTION BOXES, TESTING, LABELING, ETC AS NECESSARY TO COMPLETE THIS PROJECT FOR A FULLY FUNCTIONING FIBER OPTIC SYSTEM THAT MEETS THE CITY OF MESA STANDARDS AND SPECIFICATIONS. SEE THE NOTES ON SHEET 2 OF THIS DOCUMENT AND DOCUMENTS LISTED BELOW FOR OTHER ITEMS AND RESPONSIBILITIES REQUIRED BY THE CONTRACTOR.

MESA ITD & ITS STANDARD FIBER OPTIC SPECIFICATIONS
SEE ATTACHED
MESA STANDARD DETIALS & SPECIFICATIONS (M-66.01 TO M-66.10)
http://www.mesaaz.gov/home/showdocument?id=12674
APPROVED PRODUCT LIST – ITS & ITD COMMUNICATION SYSTEM
http://www.mesaaz.gov/home/showdocument?id=16344

LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC. THE DESIGNER SHALL ADJUST AS REQUIRED BY THE CONDITIONS OF THE PROJECT.

DEPARTMENT OF INNOVATION & TECHNOLOGY
mesaaz

PMT24-00829

CITY OF MESA
VISIT MESA BUILDING REMODEL CP1109CAP
120 N. CENTER ST, MESA AZ 85201

GENERAL NOTES

N W E S

TITLE: GENERAL NOTES
COMPANY: CITY OF MESA
DATE: Dec. 13, 23
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

CREATOR: GEORGE ARCHUETA & Felix Duarte
TIME: 8:01 AM
PGS
OF
SHEET:

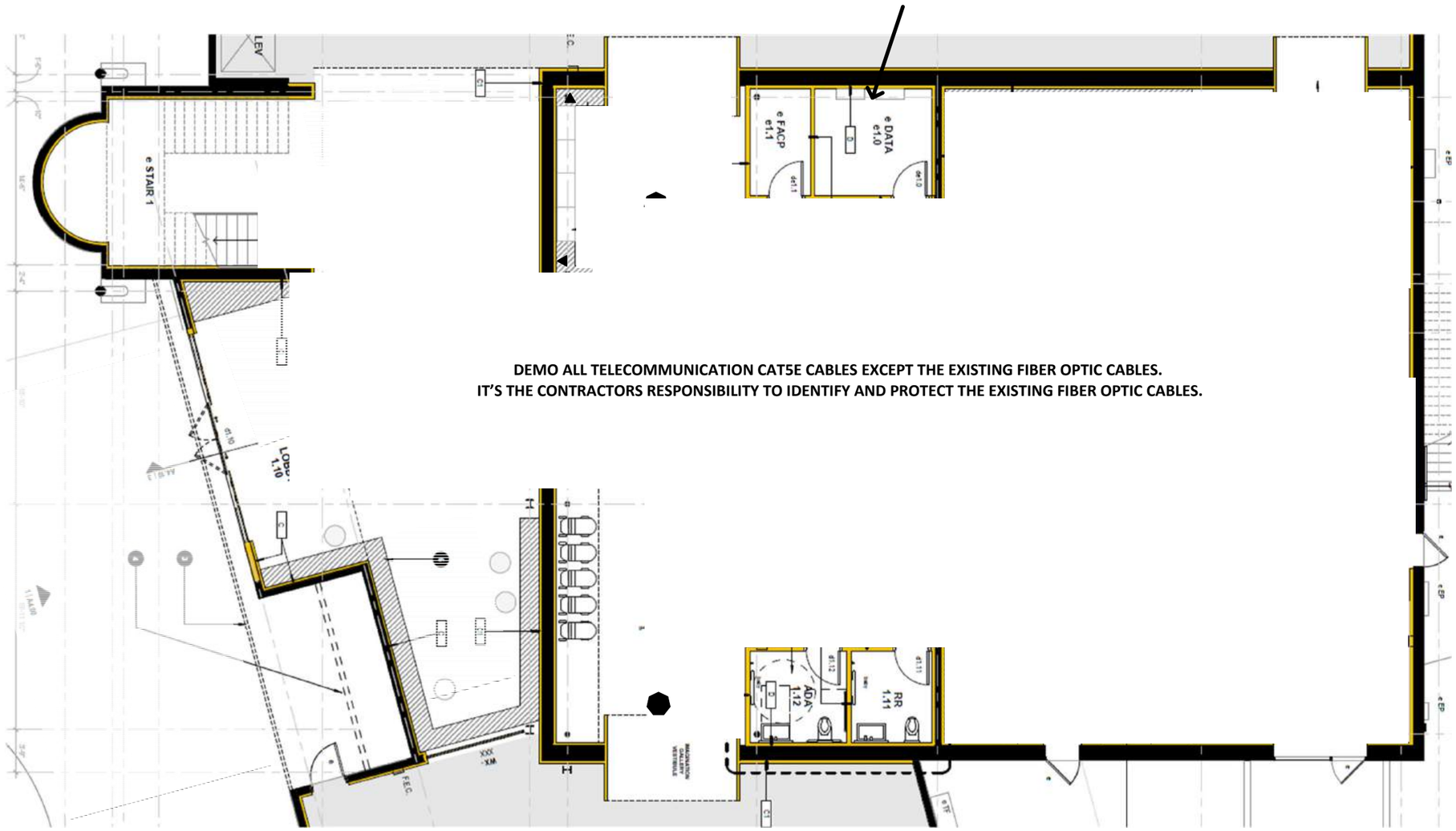
Proj. No. **CP0916NLANB**
Catalog No. **A-282743**

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201

DoIT SPECIAL SYSTEMS

DEMO PHASE 2



DEMO ALL TELECOMMUNICATION CAT5E CABLES EXCEPT THE EXISTING FIBER OPTIC CABLES.
IT'S THE CONTRACTORS RESPONSIBILITY TO IDENTIFY AND PROTECT THE EXISTING FIBER OPTIC CABLES.

LEGEND:

- J-HOOK
- CITY IT ACCTCOM DATA DROP
- T.V. — T.V. DROP 72" AFF WITH POWER OUTLET
- EXISTING FIBER OPTIC
- EXISTING FIBER OPTIC PULL BOX
- CONDUIT SLEEVE
- NEW 12 STRAND SMFO CABLE
- NEW 19 INCH RACK
- WIFI/AP

CONSTRUCTION NOTES:

INSIDE STRUCTURED CABLING:

TONE AND TAG ALL CABLES BEFORE DEMO AND REMOVE CAT5E PATCH-PANELS IN PAHSE 2. PLEASE CHECK WITH CITY IT BEFORE PROCEEDING.

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201
DEMO PHASE 2

W S N E

TITLE: DEMO PHASE 2
COMPANY: CITY OF MESA
DATE: Dec. 13, 23
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx
CREATOR: FELIX DUARTE & MAURICE GREEN
TIME: 8:01 AM
SHEET: PGS OF

Proj. No. **CP0916NLANB**
Catalog No. **A-282744**

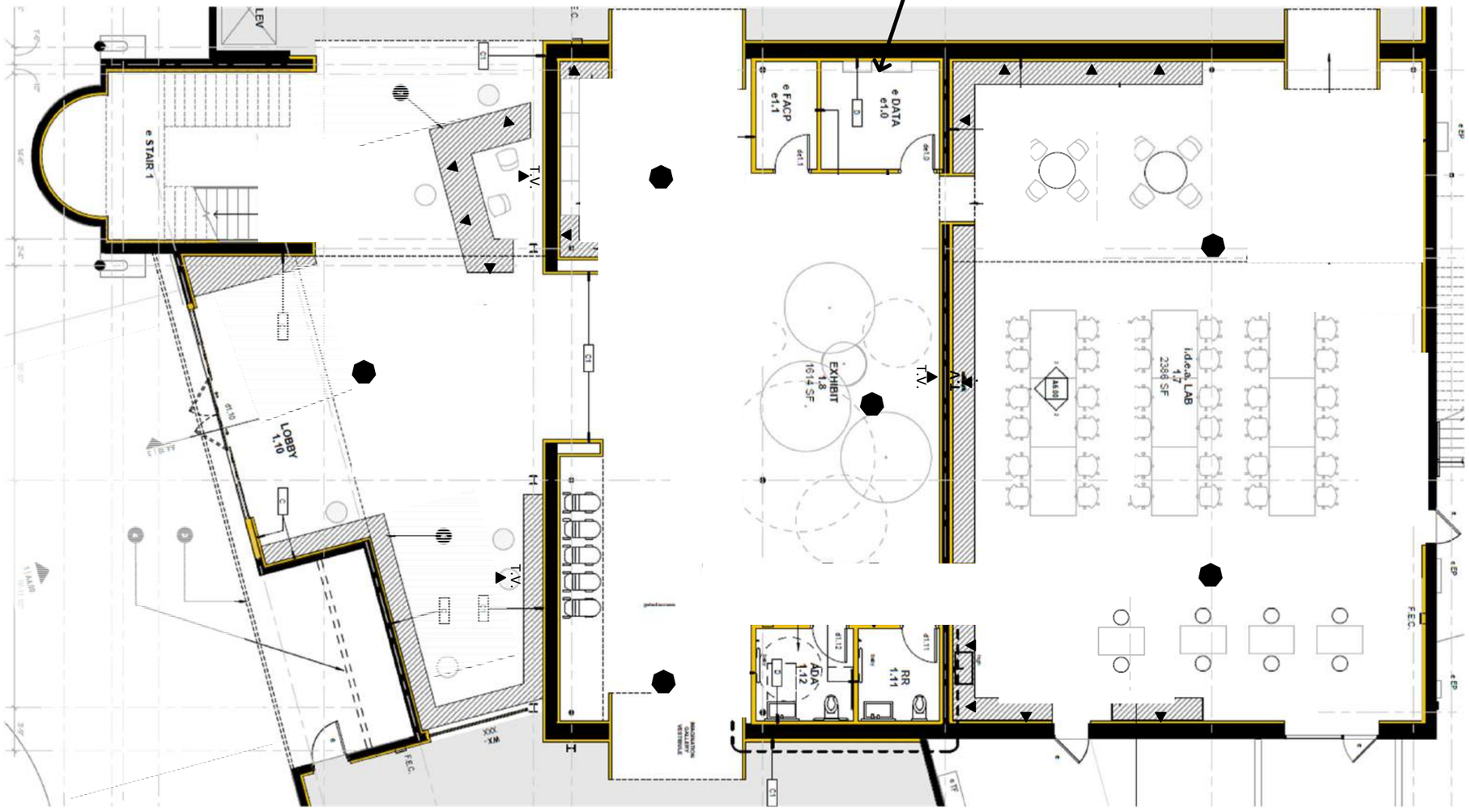
VERSION DATE: 12/13/2023
BY: Felix Duarte
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201

DoIT SPECIAL SYSTEMS

INSIDE STRUCTURED CABLING PHASE 2

REPLACE OLD WALL MOUNT A/C UNIT WITH A NEW WALL MOUNT A/C UNIT



LEGEND:

- J — J-HOOK
- ▶ — CITY IT ACCTCOM DATA DROP
- T.V. — T.V. DROP 72" AFF WITH POWER OUTLET
- EXISTING FIBER OPTIC
- EXISTING FIBER OPTIC PULL BOX
- CONDUIT SLEEVE
- NEW 12 STRAND SMFO CABLE
- NEW 19 INCH RACK
- WIFI/AP

CONSTRUCTION NOTES:

INSIDE STRUCTURED CABLING:

TONE AND TAG ALL CABLES BEFORE DEMO AND REMOVE CAT5E PATCH-PANELS IN PAHSE 2. PLEASE CHECK WITH CITY IT BEFORE PROCEEDING.

PROVIDE & INSTALL APPROXIMATELY 30 J-HOOKS. ONE ABOUT EVERY 4-5' AS NECESSARY.

PROVIDE & INSTALL THREE (3") SLEEVES AS NECESSARY TO MEET FUTURE GROWTH. PROVIDE AND INSTALL 1.5" CONDUIT IN FLOOR TO FLOOR BOXES

PROVIDE AND INSTALL APPROXIMATELY (1) CAT6 PATCH-PANEL (PART# 48-PORT CAT6 PATCH PANEL, SIEMON – Z6-PNL-U48K.)
PROVIDE & INSTALL APPROXIMATELY (17) YELLOW CAT6 CABLE DROPS
PROVIDE AND INSTALL APPROXIMATELY (17) BLUE CAT6 INSERTS FOR CITY NETWORK.
PROVIDE AND INSTALL (14) 15 FOOT PATCH CORDS FOR ALL CITY NETWORK DROPS.
PROVIDE & INSTALL APPROXIMATELY (4) RG6 CABLE T.V. DROPS FROM
PROVIDE AND INSTALL APPROXIMATELY (6) WIFI/AP DROPS FROM

1" EC WITH PULL STRING FOR ALL CABLE DROP OUTLETS EXCEPT MODULAR FURNITURE.

2" EC WITH PULL STRING FOR ALL CABLE DROP OUTLETS IN MODULAR FURNITURE.

LOCATIONS WITH MULTIPLE CABLE DROPS SHALL SHARE 1" EC OR 2" EC UP TO THEIR RESPECTIVE CONDUIT FILL CAPACITY.

CABLE DROP OUTLETS THAT ARE NOT ACCESSIBLE DUE TO HARD LID (GYPSUM BOARD CEILING), MUST BE PIPED BACK TO CABLE TRAY, OR CEILING ACCESS PANELS MUST BE PLACE ACCORDINGLY.

MOUNT ALL WALL MOUNT CABLE DROPS & POWER RECEPTACLES 18" AFF UNLESS OTHERWISE NOTED ON DRAWING.
TEST, LABEL ALL DROPS PER CITY OF MESA DIVISION 27 AND SPECS
PLEASE CONTACT PDIT FOR LABELING THEIR NETWORK.

LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC. THE DESIGNER SHALL ADJUST AS REQUIRED BY THE CONDITIONS OF THE PROJECT.

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201

INSIDE STRUCTURED CABLING PHASE 2

W S N E

TITLE: INSIDE STRUCTURED CABLING PHASE 2
COMPANY: CITY OF MESA
DATE: Dec. 13, 23
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx
CREATOR: FELIX DUARTE & MAURICE GREEN
TIME: 8:01 AM
SHEET: PGS OF

Proj. No. **CP0916NLANB**
Catalog No. **A-282745**

VERSION DATE: 12/13/2023
BY: Felix Duarte
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

CITY OF MESA
ACCESS CONTROL SYSTEM DETAILS

SHEET INDEX

DRAWING NO.	REV.	DESCRIPTION
SS-CS		COVER SHEET
SS-1.0	V4	DOOR TYPICALS 1-4
SS-1.1	V4	DOOR TYPICALS 5-8
SS-2.0	V2	1 TO 4 ACCESS HEAD END DETAILS
SS-2.1	V3	5 TO 16 ACCESS HEAD END DETAILS
SS-2.2	V3	17 TO 32 ACCESS HEAD END DETAILS

PMT24-00829

CITY OF MESA
ACCESS CONTROL SYSTEM DETAILS

REVISION HISTORY

No.	Date	Description	By
V1	9/27/21	FIRST DRAFT	DC
V2	9/30/21	HEAD END DETAILS	DC
V3	10/6/21	DETAIL UPDATES	DC
V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

Catalog No. A-282746
-

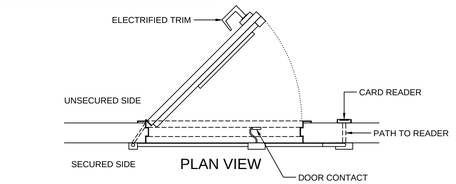
SHEET TITLE:

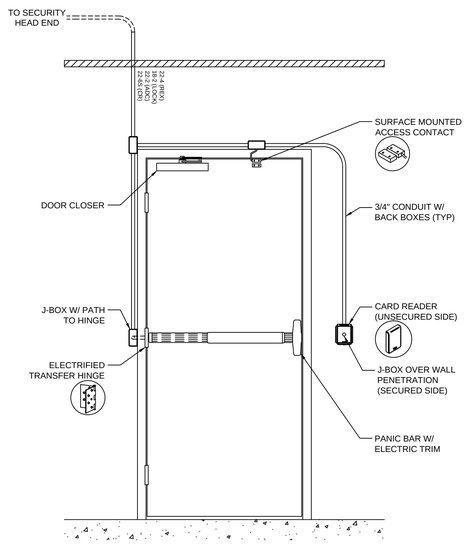
COVER SHEET

SHEET NO:

SS-CS

D2 DOOR WITH CARD ACCESS AND PANIC BAR





ELEVATION VIEW

DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HID RP40 CARD READER	1
SURFACE MOUNTED DOOR CONTACT	1
WIRE TRANSFER HINGE	1
VON DUPRIN 99 PANIC BAR W/ REX	1
VON DUPRIN E996L ELECTRIC TRIM	1
CONDUIT AND J-BOXES	AR
DOOR CLOSER	1

LEGEND
AR = AS REQUIRED E = EXISTING

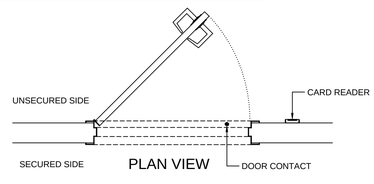
WIRE SCHEDULE

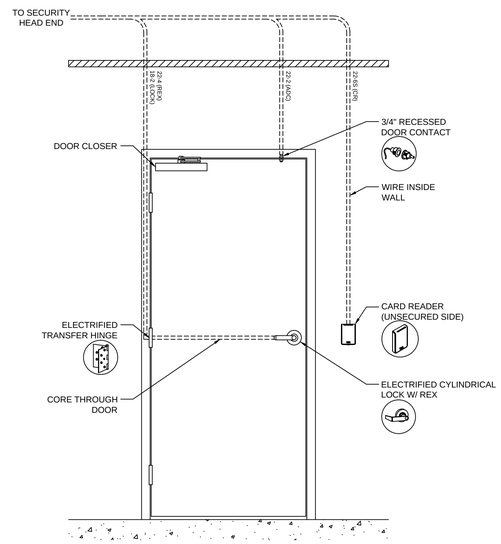
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

NOTES
FIELD VERIFY EXACT CONDUIT LAYOUT

TYP#: FV11100010.010201

D1 DOOR WITH CARD ACCESS AND ELECTRIFIED HANDSET





ELEVATION VIEW

DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HID SIGNO 40NKS CARD READER	1
ELECTRIFIED TRANSFER HINGE	1
SCHLAGE ND80 ELECTRIFIED CYLINDRICAL LOCK W/ REQUEST TO EXIT SWITCH	1
3/4" RECESSED DOOR CONTACT	1
DOOR CLOSER	1

LEGEND
AR = AS REQUIRED

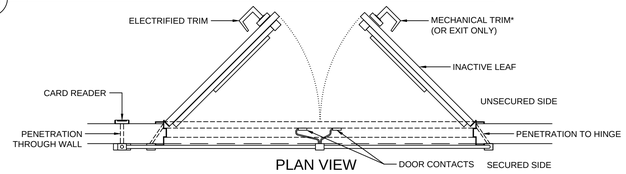
WIRING SCHEDULE

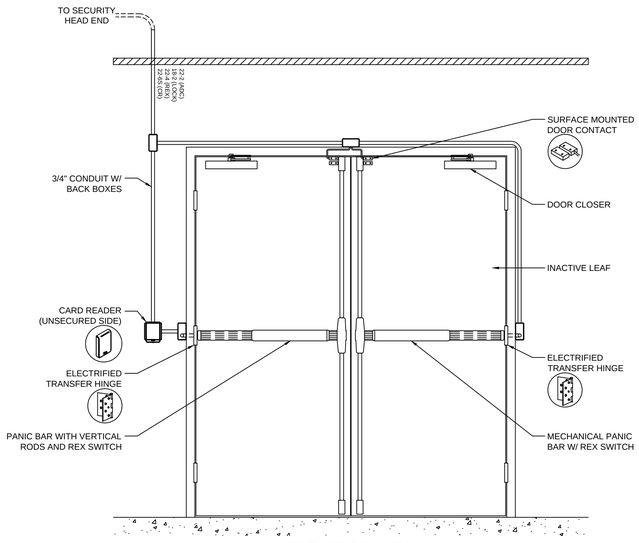
DESCRIPTION	WIRE
CARD READER	22-6S
DOOR CONTACT	22-2
LOCK POWER	18-2
REQUEST TO EXIT	22-4

NOTES
-

TYP#: AL12100010.010001

D4 DOUBLE DOOR WITH INACTIVE LEAF AND CARD ACCESS





ELEVATION VIEW

DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HIS SIGNO 40NKS CARD READER	1
VON DUPRIN 9927 PANIC BAR WITH VERTICAL RODS AND REX SWITCH	2
VON DUPRIN E996L ELECTRIC TRIM	1
VON DUPRIN 996L TRIM*	1
NASCOM SURFACE MOUNTED DOOR CONTACT	2
MARRAY WIRE TRASNFER HINGE	2
DOOR CLOSER	2
CONDUIT	AR

LEGEND
AR = AS REQUIRED E = EXISTING

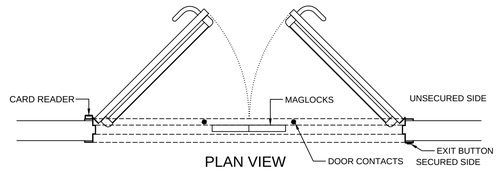
WIRE SCHEDULE

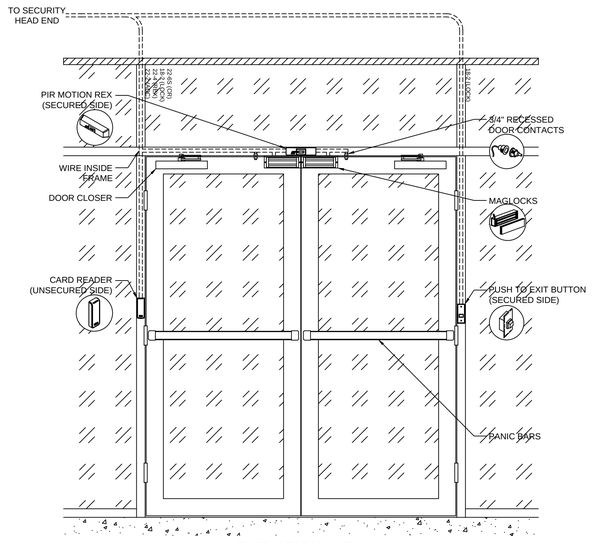
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

NOTES
* IF INACTIVE LEAF IS EXIT ONLY THEN NO MECHANICAL TRIM REQUIRED.

TYP#: GV11100010.010204

D3 DOUBLE DOOR WITH CARD ACCESS AND MAGLOCKS





ELEVATION VIEW

DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HID SIGNO 20NKS CARD READER	1
SECURITRON M62 MAGLOCK	2
PIR MOTION REQUEST TO EXIT	1
NASCOM 3/4" RECESSED DOOR CONTACT	2
EEB2N EMERGENCY EXIT BUTTON	1
MECHANICAL/STATIC PANIC BARS	2
DOOR CLOSER	2

LEGEND
AR = AS REQUIRED E = EXISTING

WIRE SCHEDULE

DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

NOTES
RUN LOCK POWER THROUGH EXIT BUTTON.

TYP#: JH52600000.010012

PMT24-00829

mesa·az

CITY OF MESA

ACCESS CONTROL SYSTEM DETAILS

REVISION HISTORY

No.	Date	Description	By
V1	9/27/21	FIRST DRAFT	DC
V2	9/30/21	HEAD END DETAILS	DC
V3	10/6/21	DETAIL UPDATES	DC
V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

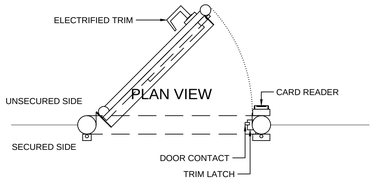
DWG BY:	-
APPROVED BY:	-

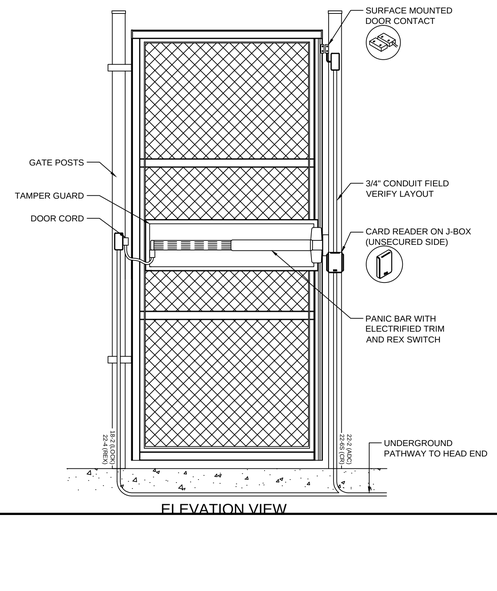
Catalog No. A-282747
-

SHEET TITLE:
TYPICALS

SHEET NO:
SS-3.0

D6 GATE WITH PANIC BAR AND ACCESS CONTROL





DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HID SIGNO 40NKS ARD READER	1
VON DUPRIN 99 PANIC BAR W/ REX SWITCH	1
DOOR CORD	1
SURFACE MOUNTED DOOR CONTACT	1
TAMPER GUARD	1
DOOR CLOSER	1
CONDUIT AND J-BOXES	AR

LEGEND
AR = AS REQUIRED E = EXISTING

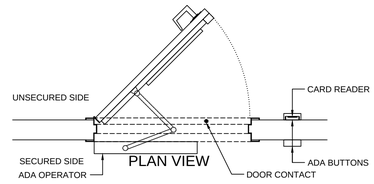
WIRE SCHEDULE

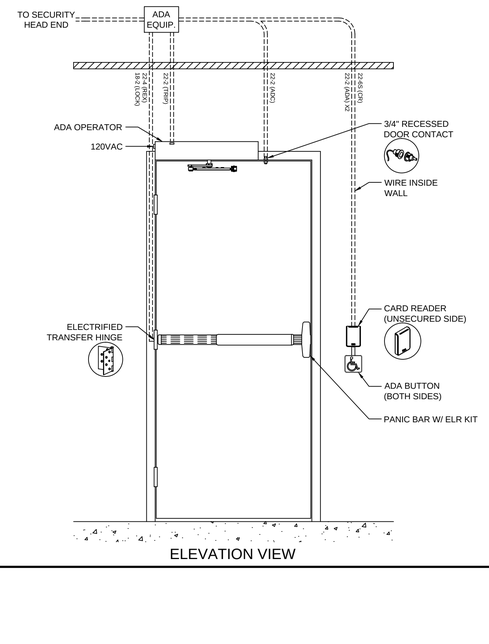
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

NOTES
-

TYP#: FL12100030.0102*1

D5 DOOR WITH CARD ACCESS AND ADA INTEGRATION





DOOR EQUIPMENT LIST

DESCRIPTION	QTY
HID SIGNO 40NKS CARD READER	1
WIRE TRASNFER HINGE	1
3/4" RECESSED CONTACT	1
VON DUPRIN RXQEL99 PANIC BAR	1
ADA BUTTON	2
ADA OPERATOR	1
ADA EQUIPMENT (RELAYS/TIMERS)	AR

LEGEND
AR = AS REQUIRED E = EXISTING

WIRE SCHEDULE

DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2
OPERATOR TRIP	22-2
ADA BUTTON X2	22-2

NOTES
120VAC REQUIRED FOR OPERATOR.

TYP#: FL12100010.040001

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CITY OF MESA

ACCESS CONTROL SYSTEM DETAILS

REVISION HISTORY

No.	Date	Description	By
V1	9/27/21	FIRST DRAFT	DC
V2	9/30/21	HEAD END DETAILS	DC
V3	10/6/21	DETAIL UPDATES	DC
V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

Catalog No. A-282748
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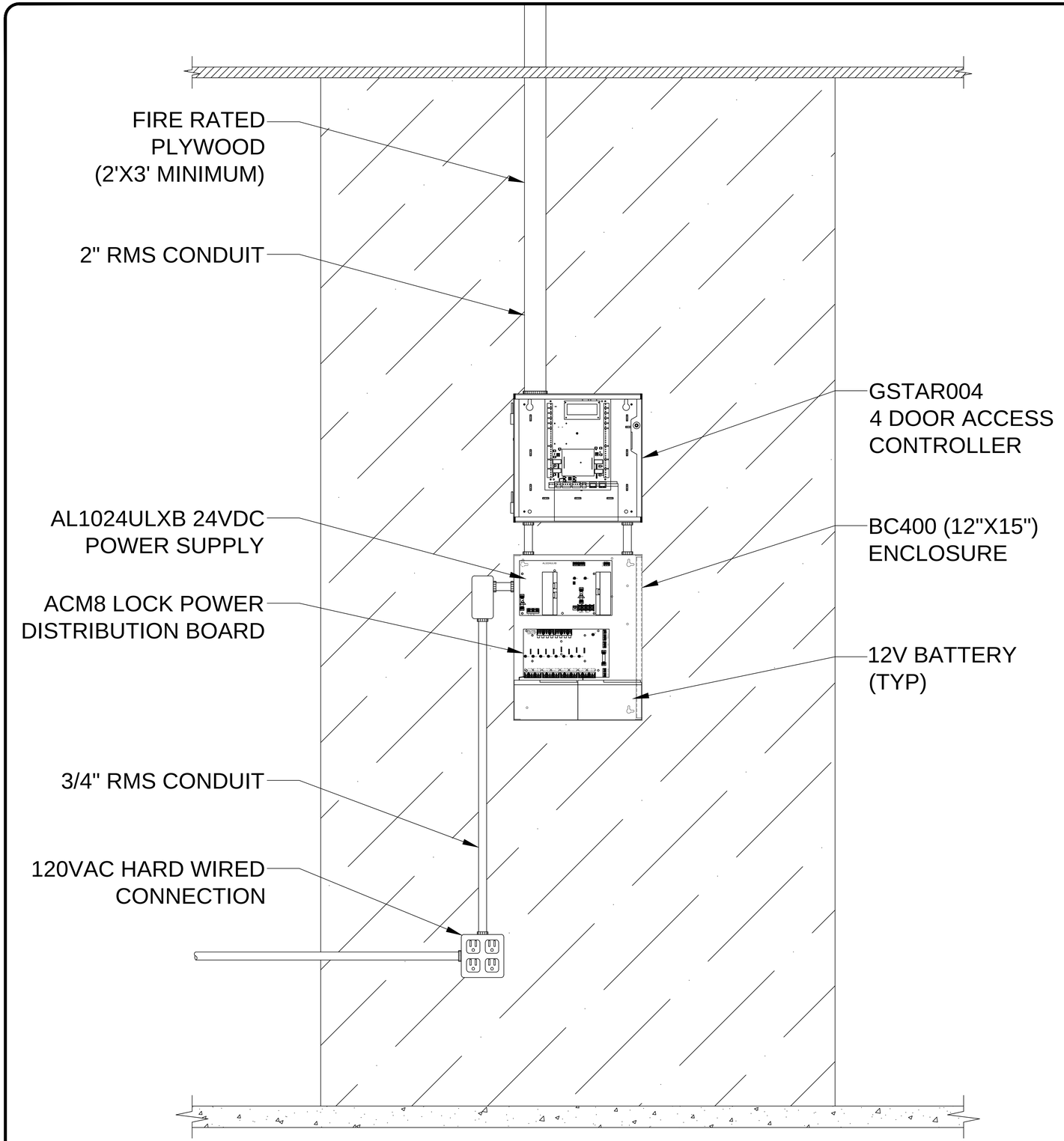
SHEET TITLE:
TYPICALS

SHEET NO:
SS-3.1

PMT24-00829



D6 1 TO 4 DOOR ACCESS CONTROL HEAD END LAYOUT

HEAD END INFORMATION		
ACCESS CONTROL EQUIPMENT TO BE INSTALLED		
QTY	PART #	DESCRIPTION
1	GSTAR004	iSTAR EDGE G2 ACCESS CONTROL UNIT
1	BC400	POWER SUPPLY ENCLOSURE 12"X15"
1	AL1024ULXB	24VDC POWER SUPPLY
1	ACM8	LOCK POWER DISTRIBUTION MODULE
3	PS-1270-F1	12V BATTERY
TO BE PROVIDED AND INSTALLED BY OTHERS		
QTY	DESCRIPTION	
AR	3/4" FIRE RATED PLYWOOD BACKBOARD	
2	120VAC POWER - HARDWIRE CONNECTION	
AR	CONDUIT AND J-BOXES FOR 120VAC POWER	
1	ADDRESSABLE FIRE ALARM RELAY TO LOCK POWER	
1	NETWORK PORT TO TALK TO THE NETWORK	
1	IP ADDRESS FOR SECURITY CONTROLLER	

WIRING REQUIREMENTS:

1. PROVIDE EXCESS CABLE LOOP MIN. 6 FT AT HEAD END FOR EACH CABLE TO BE TERMINATED TO SECURITY EQUIPMENT
2. (SEE FIGURE 1) REMOVE OVERALL OUTER CABLE JACKET AT ENCLOSURE ENTRY POINTS. [EXCLUDING LAN DROP COMMUNICATION CABLE, PHONE LINE, ETC]

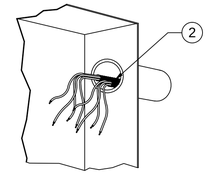


FIGURE 1

3. (SEE FIGURE 2) BUNDLE, CABLE TIE, AND DRESS CABLES TO TERMINAL POINTS IN A NEAT AND CLEAN MANNER WITH NO EXCESS AND WITHOUT EXCEEDING MANUFACTURER'S LIMITATIONS ON BENDING RADII.

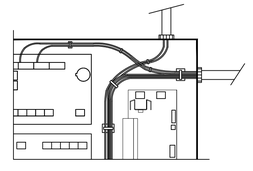


FIGURE 2

4. TERMINATE ALL CONDUCTORS, NO CABLE SHALL HAVE UNTERMINATED ELEMENTS.
5. LABEL EACH CABLE WITHIN 4 INCHES OF EACH TERMINATION POINT.
6. GROUNDING OF ALL EQUIPMENT SHOULD BE DONE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
7. ALL CABLES SHALL BE FREE OF TENSION AT BOTH ENDS AND OVER THE ENTIRE LENGTH OF RUN.
8. ENSURE BACKUP BATTERY COMPONENTS ARE INSTALLED, TESTED AND OPERATED CORRECTLY UPON POWER FAILURE.
9. ENSURE ALL COMPONENTS ARE TESTED AND OPERATE PROPERLY IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

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CITY OF MESA

ACCESS CONTROL SYSTEM DETAILS

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V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

Catalog No. A-282749

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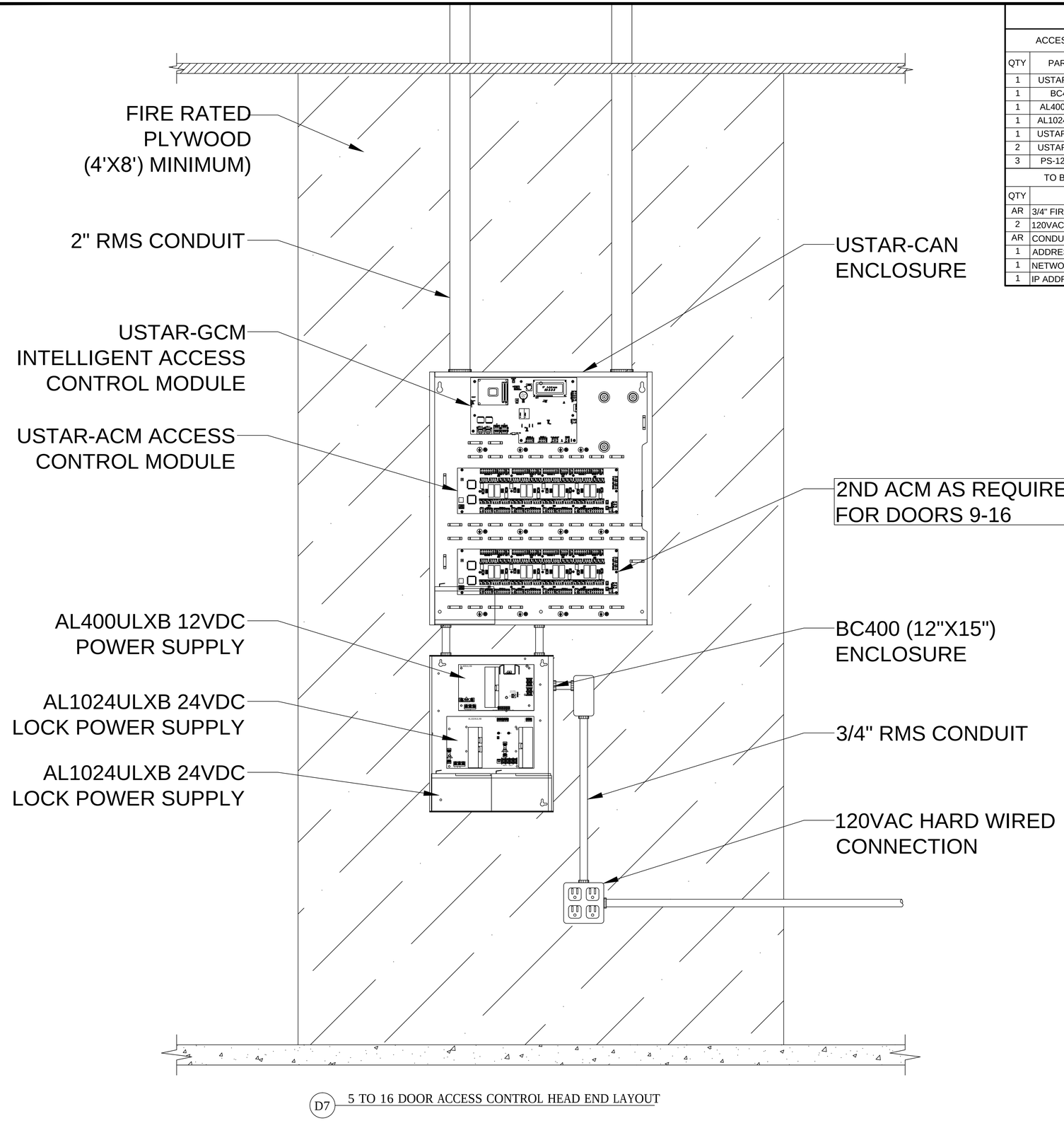
SHEET TITLE:

HEAD END DETAILS FOR 1 TO 4 DOORS

SHEET NO:

SS-2.0

PMT24-00829



D7 5 TO 16 DOOR ACCESS CONTROL HEAD END LAYOUT

HEAD END INFORMATION		
ACCESS CONTROL EQUIPMENT TO BE INSTALLED		
QTY	PART #	DESCRIPTION
1	USTAR-CAN	ACCESS CONTROL ENCLOSURE
1	BC400	POWER SUPPLY ENCLOSURE 12"X15"
1	AL400ULXB	12VDC POWER SUPPLY
1	AL1024ULXB	24VDC LOCK POWER SUPPLY
1	USTAR-GCM	iSTAR ULTRA INTELLIGENT ACCESS UNIT
2	USTAR-ACM	iSTAR ULTRA ACCESS CONTROL MODULE
3	PS-1270-F1	12V BATTERY
TO BE PROVIDED AND INSTALLED BY OTHERS		
QTY	DESCRIPTION	
AR	3/4" FIRE RATED PLYWOOD BACKBOARD	
2	120VAC POWER - HARDWIRE CONNECTION	
AR	CONDUIT AND J-BOXES FOR 120VAC POWER	
1	ADDRESSABLE FIRE ALARM RELAY TO LOCK POWER	
1	NETWORK PORT TO TALK TO THE NETWORK	
1	IP ADDRESS FOR SECURITY CONTROLLER	

WIRING REQUIREMENTS:

1. PROVIDE EXCESS CABLE LOOP MIN. 6 FT AT HEAD END FOR EACH CABLE TO BE TERMINATED TO SECURITY EQUIPMENT
2. (SEE FIGURE 1) REMOVE OVERALL OUTER CABLE JACKET AT ENCLOSURE ENTRY POINTS. [EXCLUDING LAN DROP COMMUNICATION CABLE, PHONE LINE, ETC]

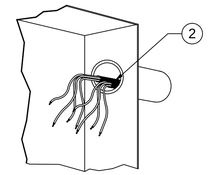


FIGURE 1

3. (SEE FIGURE 2) BUNDLE, CABLE TIE, AND DRESS CABLES TO TERMINAL POINTS IN A NEAT AND CLEAN MANNER WITH NO EXCESS AND WITHOUT EXCEEDING MANUFACTURER'S LIMITATIONS ON BENDING RADII.

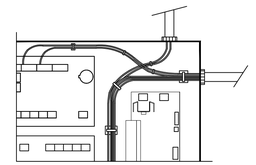


FIGURE 2

4. TERMINATE ALL CONDUCTORS, NO CABLE SHALL HAVE UNTERMINATED ELEMENTS.
5. LABEL EACH CABLE WITHIN 4 INCHES OF EACH TERMINATION POINT.
6. GROUNDING OF ALL EQUIPMENT SHOULD BE DONE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
7. ALL CABLES SHALL BE FREE OF TENSION AT BOTH ENDS AND OVER THE ENTIRE LENGTH OF RUN.
8. ENSURE BACKUP BATTERY COMPONENTS ARE INSTALLED, TESTED AND OPERATED CORRECTLY UPON POWER FAILURE.
9. ENSURE ALL COMPONENTS ARE TESTED AND OPERATE PROPERLY IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

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CITY OF MESA

ACCESS CONTROL SYSTEM DETAILS

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V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

Catalog No. A-282750

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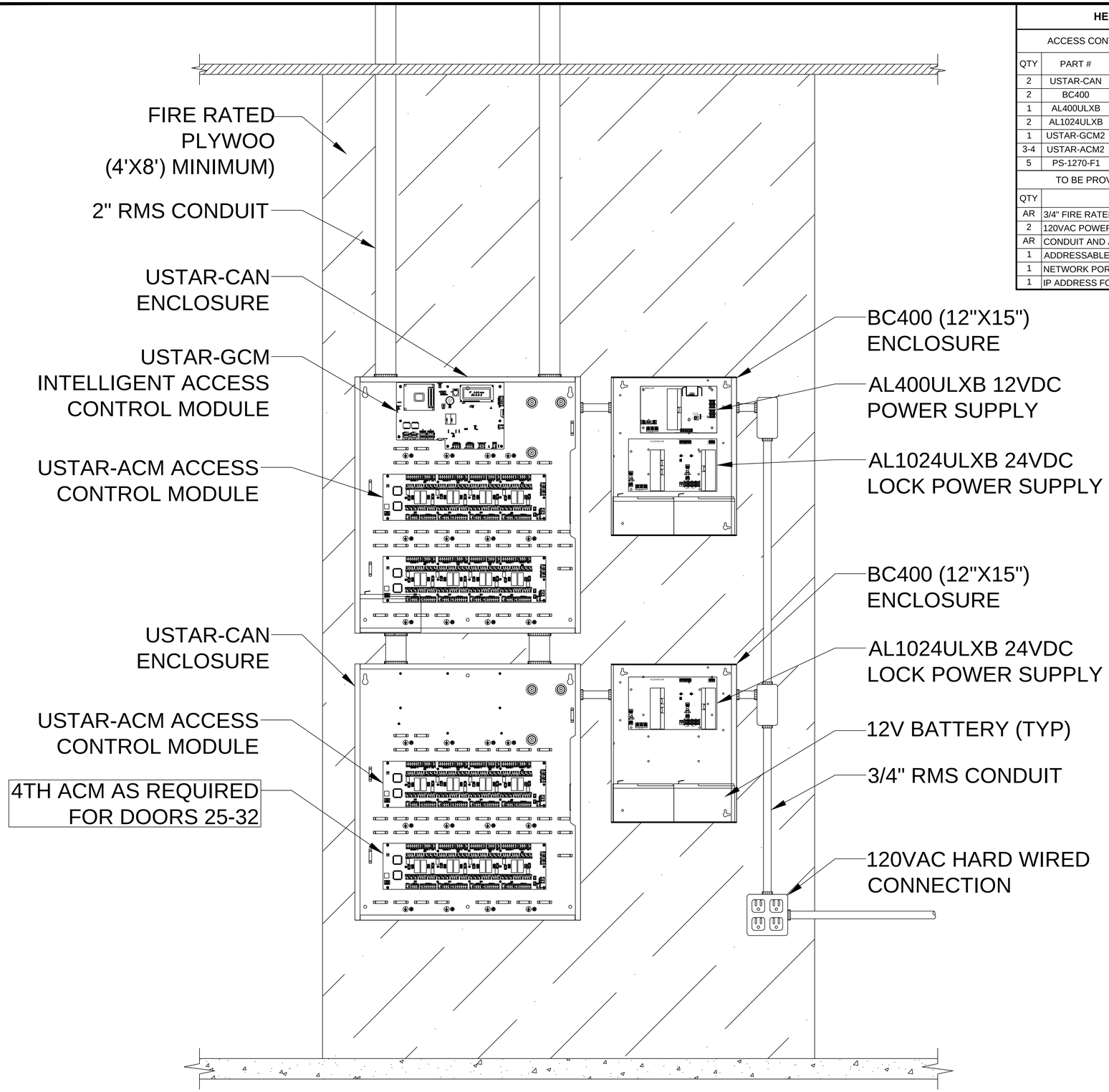
SHEET TITLE:

HEAD END DETAILS FOR 5 TO 16 DOORS

SHEET NO:

SS-2.1

PMT24-00829



D8 17 TO 32 DOOR ACCESS CONTROL HEAD END LAYOUT

HEAD END INFORMATION		
ACCESS CONTROL EQUIPMENT TO BE INSTALLED		
QTY	PART #	DESCRIPTION
2	USTAR-CAN	ACCESS CONTROL ENCLOSURE
2	BC400	POWER SUPPLY ENCLOSURE 12"X15"
1	AL400ULXB	12VDC POWER SUPPLY
2	AL1024ULXB	24VDC LOCK POWER SUPPLY
1	USTAR-GCM2	iSTAR ULTRA INTELLIGENT ACCESS UNIT
3-4	USTAR-ACM2	iSTAR ULTRA ACCESS CONTROL MODULE
5	PS-1270-F1	12V BATTERY
TO BE PROVIDED AND INSTALLED BY OTHERS		
QTY	DESCRIPTION	
AR	3/4" FIRE RATED PLYWOOD BACKBOARD	
2	120VAC POWER - HARDWIRE CONNECTION	
AR	CONDUIT AND J-BOXES FOR 120VAC POWER	
1	ADDRESSABLE FIRE ALARM RELAY TO LOCK POWER	
1	NETWORK PORT TO TALK TO THE NETWORK	
1	IP ADDRESS FOR SECURITY CONTROLLER	

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2. (SEE FIGURE 1) REMOVE OVERALL OUTER CABLE JACKET AT ENCLOSURE ENTRY POINTS. [EXCLUDING LAN DROP COMMUNICATION CABLE, PHONE LINE, ETC]

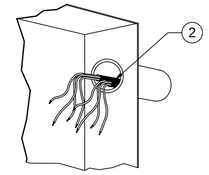
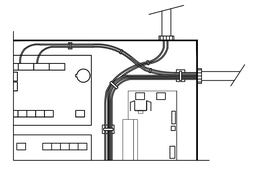


FIGURE 1

3. (SEE FIGURE 2) BUNDLE, CABLE TIE, AND DRESS CABLES TO TERMINAL POINTS IN A NEAT AND CLEAN MANNER WITH NO EXCESS AND WITHOUT EXCEEDING MANUFACTURER'S LIMITATIONS ON BENDING RADII.



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V3	10/6/21	DETAIL UPDATES	DC
V4	10/7/21	DOOR TYPICALS	DC
V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

Catalog No. A-282751

-

SHEET TITLE:

HEAD END DETAILS FOR 17 TO 32 DOORS

SHEET NO:

SS-2.2

PMT24-00829