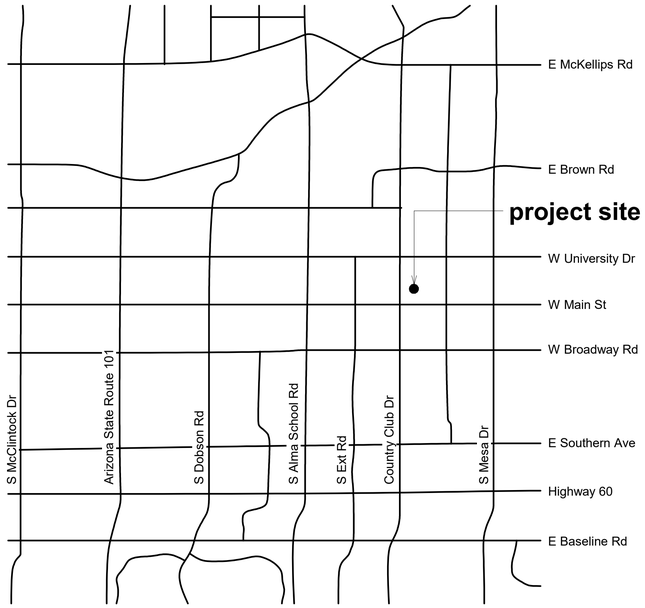
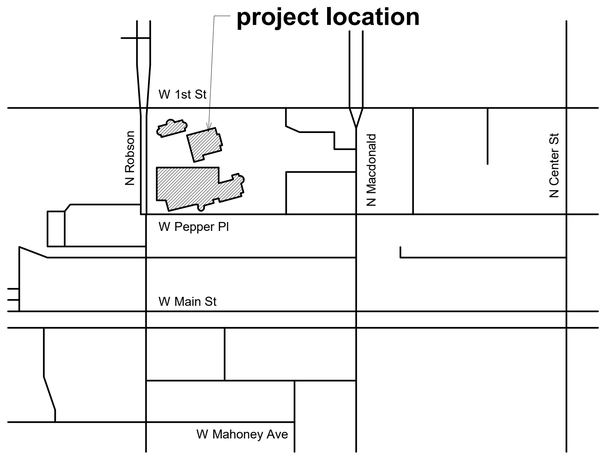
mesa·az

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

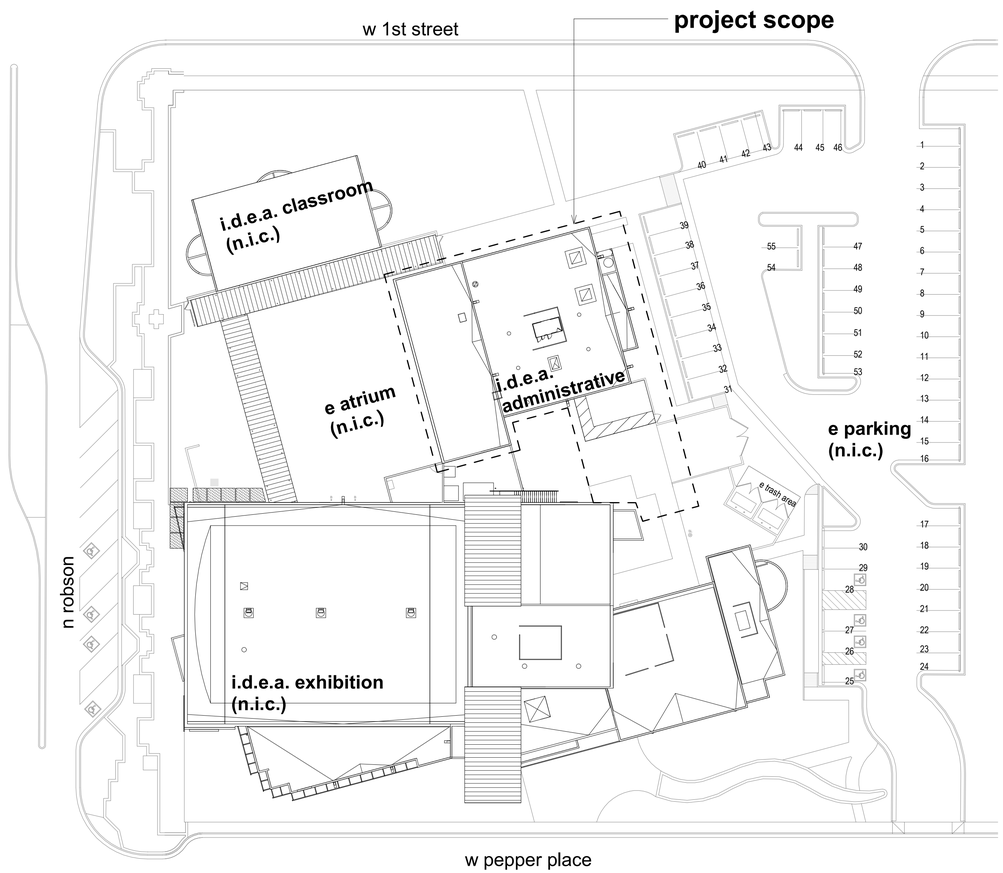
150 W PEPPER PL, MESA, AZ 85201
PROJECT NO.: CP0916



city of mesa vicinity map
SCALE: NTS



project location map
SCALE: NTS



1 site plan - COM
1" = 30'-0"

REFER TO VIEWS FOR SCALE

NORTH

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

project description

ADDRESS	150 W PEPPER PL, MESA, AZ 85201 (ADMINISTRATION 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 FABRICATION / STORAGE AREA INTO ADMINISTRATIVE OFFICES. 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. MINOR SITE FLATWORK IS INCLUDED. THE PROJECT SCOPE SQUARE FOOTAGE IS APPROXIMATELY 6,425 SF, TYPE II-B CONSTRUCTION WITH A 22'-0" BUILDING HEIGHT (SINGLE FLOOR).

project contacts

owner:

City of Mesa
Kayleen Cordiak, P.E.
20 E. Main St. 5th Floor
Mesa, AZ 85211-1466
480.644.3313

architect:

Holly Street Studio Architects, LLC
Michael Jacobs, Principal
1319 E. Van Buren
Phoenix, AZ 85006
602.258.8555

structural:

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

mech, plumbing, electrical:

Energy Systems Design
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

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: 2/05/24

Deferred Submittal:
Fire Alarm and Sprinklers

mesa·az
DEVELOPMENT SERVICES REVIEWED FOR CODE COMPLIANCE
REVIEWED
By SCA/CCL/TMA at 2:33 pm, Jan 23, 2024

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 begin excavation. ARIZONA 811 Dial 8-1-1 or 1-800-STAKE-IT (782-5348) in Maricopa County: (602) 263-1100

COM PROJECT NO. **CP0916OFRL**

issue for permit

REGISTERED ARCHITECT CERTIFICATE NO. 32961 MICHAEL JACOBS 11/19/23 ARIZONA U.S.A.

CITY OF MESA ENGINEERING DEPARTMENT

PROJECT NAME
i.d.e.a. Museum - Office Relocation

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

CITY OF MESA COVER

DRAWING CS

F165 AC _____
PROJ. NO. **CP0916OFRL**

SHEET 1 - OF - 55

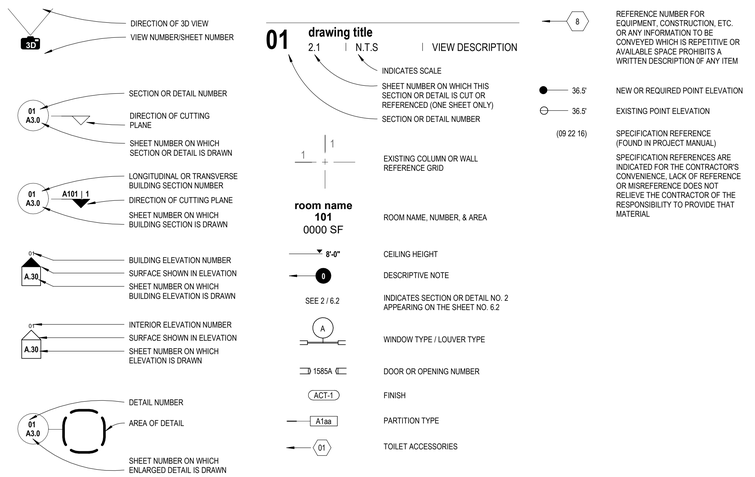
CATALOG NUMBER: A-281075

PMT23-19464

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
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT(URAL)
ASI	ARCHITECT'S SUPPLEMENTAL INFORMATION
AUTO	AUTOMATIC
AUX	AUXILARY
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	FURNISH(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	LOCAT(E)(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	MANUFACTURER(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



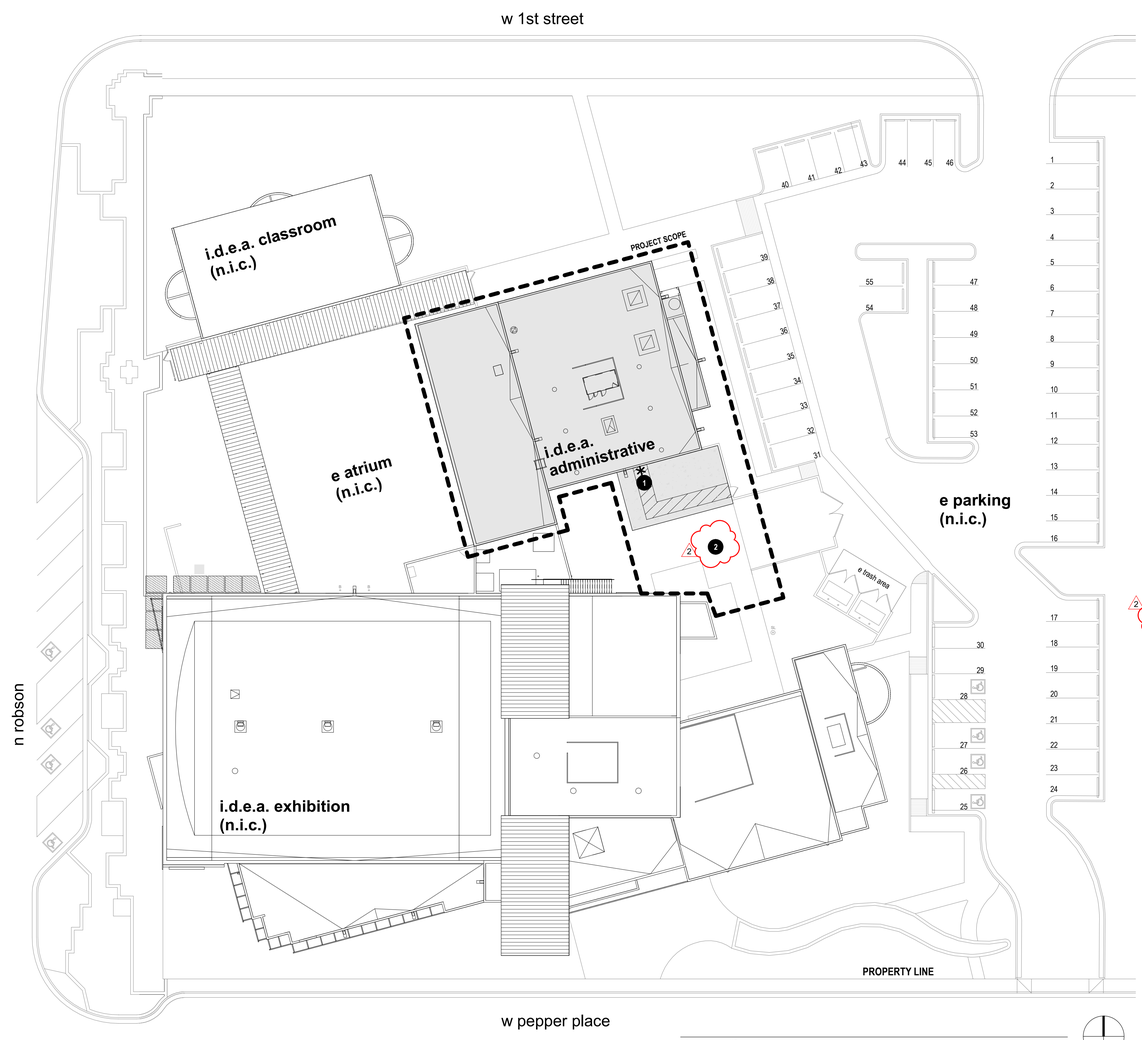
city of mesa - general notes

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

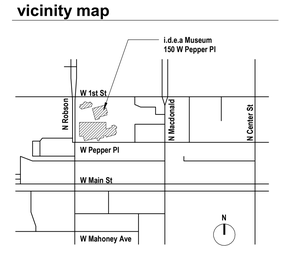
THESE NOTES ARE IN ADDITION TO ANY INFORMATION IN THE DRAWINGS, SPECIFICATIONS, OR THE NOTES PROVIDED BY THE PRIME CONSULTANT.

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 ARCHITECT'S 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



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. OFFICE ENTRANCE. PROVIDE ADA COMPLIANT PATH OF TRAVEL FROM OFFICE ENTRANCE TO SITE GATE.
2. CONCRETE SLAB TO BE SAWCUT, PATCHED AND REPAIRED AT AREA OF 4" SANITARY WASTE PIPE TO EXISTING BELOW GRADE. REF PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.

parking

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

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

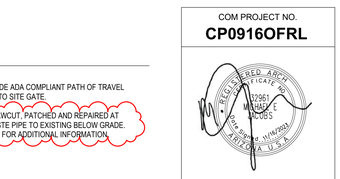
i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL



DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

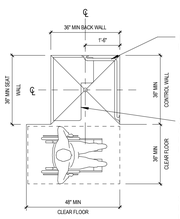
INDEX + STANDARDS

DRAWING
G0.00

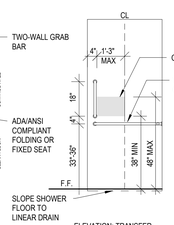
SHEET	CATALOG NUMBER:
2 - OF - 55	A-281076

12/22/2023 2:56:08 PM

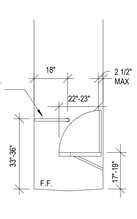
PMT23-19464



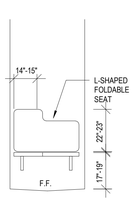
PLAN VIEW



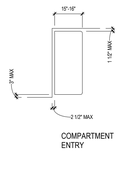
ELEVATION: TRANSFER SHOWER CONTROL WALL



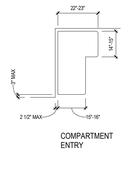
ELEVATION: BACK WALL (WITH SEAT)



ELEVATION: SIDE WALL (WITH SEAT)

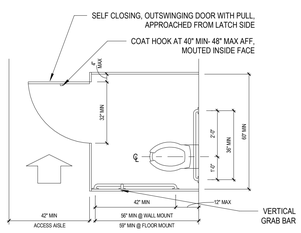


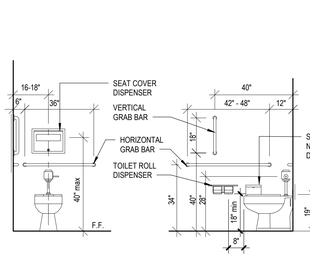
RECTANGULAR SHOWER SEAT



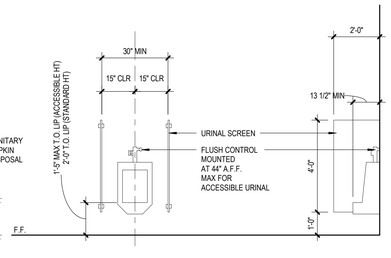
L-SHAPED SHOWER SEAT

transfer shower compartment





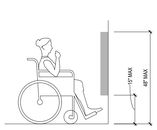
accessible toilet compartment



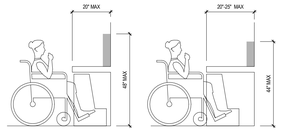
urinals

accessibility general notes

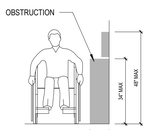
1. CLEARANCES AND NOTATIONS ARE BASED ON 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADAAG) (TITLE III REGULATIONS + THE 2004 ADAAG) AND ANSI ICC A117.1-2009 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES, TYPICAL, U.N.O.
2. DIAGRAMS ARE SHOWN FOR INFORMATIONAL PURPOSED ONLY. WITHOUT EXCEPTION, CONTRACTOR 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.



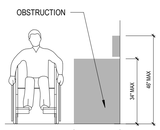
UNOBSTRUCTED FORWARD REACH



OBSTRUCTED HIGH FORWARD REACH

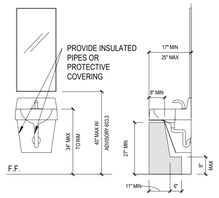


UNOBSTRUCTED SIDE REACH



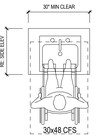
OBSTRUCTED HIGH SIDE REACH

reach ranges

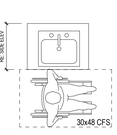


FRONT ELEV

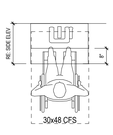
SIDE ELEV



FRONT APPROACH - SINK

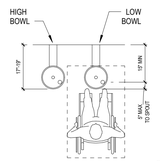


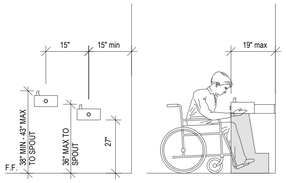
SIDE APPROACH - SINK



FRONT APPROACH - LAVATORY

lavatories + mirrors





drinking fountains

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

restroom accessories mounting heights

miscellaneous mounting heights

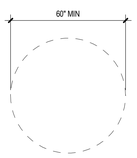
baby changing station

protruding objects

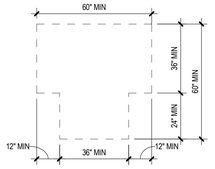
knee + toe clearance

toe clear elevation

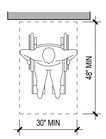
toe clear plan



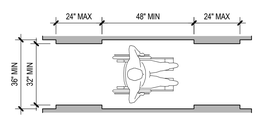
CIRCULAR TURNING SPACE



T-SHAPED TURNING SPACE

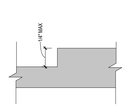


CLEAR FLOOR SPACE

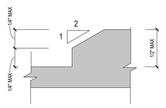


ACCESSIBLE ROUTE CLEAR WIDTH

turning space

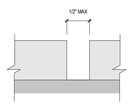


VERTICAL CHANGE

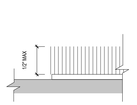


BEVELED CHANGES IN LEVEL

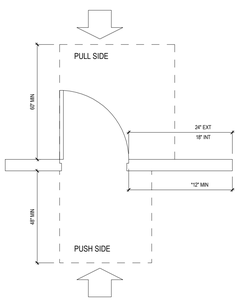
changes in level



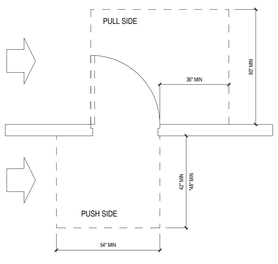
floor openings



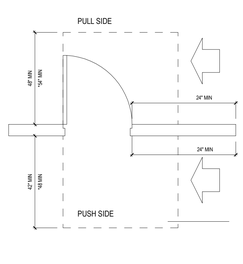
carpet pile height



* IF DOOR HAS BOTH A LATCH AND A CLOSER



* IF DOOR HAS BOTH A LATCH AND A CLOSER



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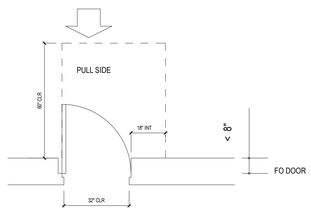
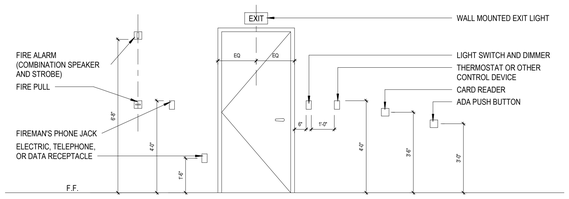


door clearance requirements for accessible routes



controls mounting height

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.

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

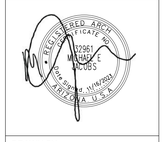
i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL



DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

ADA STANDARDS

DRAWING
G0.10

SHEET	CATALOG NUMBER:
3 - OF - 55	A-281077

12/22/2023 2:58:28 PM

PMT23-19464

code plan legend

→	ROUTE OF MAXIMUM COMMON PATH OR TRAVEL DISTANCE
✱ 00	EXIT / NUMBER OF OCCUPANTS
JANITOR OCC. TYPE: B OCC. LOAD: 300 AREA (SF): 124 OCC COUNT: 1	ROOM NAME OCCUPANCY TYPE OCCUPANCY LOAD FACTOR GROSS SQUARE FOOTAGE TOTAL OCCUPANT COUNT
F.E.C.	RECESSED WALL MOUNTED FIRE EXTINGUISHER CABINET
	KNOX BOX
B BUSINESS OCCUPANCY	A-2 ASSEMBLY OCCUPANCY
F-1 FACTORY OCCUPANCY	A-3 ASSEMBLY OCCUPANCY
S-1 STORAGE OCCUPANCY	

PLUMBING FIXTURE REQUIREMENTS - BUILDING 2 (IBC 2018 TABLE 2902.1)

OCCUPANT LOADS:

A-2 (Unconcentrated Tables + Chairs)	63	Occupants
A-3 (Exhibit Gallery + Museum)	611	Occupants
B (Business)	127	Occupants
F-1 Factory and Industrial	15	Occupants
S-1 Storage	12	Occupants
TOTAL:	**828**	**OCCUPANTS**

FIXTURE COUNTS:

	WC - W	WC - M	LAV - W	LAV - M	DF
A-2 63	32/75= 0.43	32/25 = 0.43	32/200 = 0.16	32/200 = 0.16	63/500 = 0.13
A-3 611	WC - W 306/65= 4.71	WC - M 306/125 = 2.45	LAV - W 306/200 = 1.53	LAV - M 306/200 = 1.53	DF 63/500 = 0.13
B 127	WC - W 64/25= 2.56	WC - M 64/25 = 2.56	LAV - W 64/40 = 1.6	LAV - M 64/40 = 1.6	DF 127/100 = 1.27
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 = 0.15
S-1 12	WC - W 6/100 = .06	WC - M 6/100 = .06	LAV - W 6/100 = .06	LAV - M 6/100 = .06	DF 12/1,000= .01

COMPLIANCE:	PROVIDED	REQUIRED	NOTES
Men - WC	8	5.6	
Men - LAV	3	3.5	
Women - WC	8	7.9	
Women - LAV	3	3.5	
Unisex RR - WC	8		SEE NOTE 1
Unisex RR - LAV	10		SEE NOTE 2
Drinking Fountains	2	1.59	
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 ADMIN - IBC 2018 TABLE 1004.5

NAME	AREA	IBC OCCUPANCY TYPE	LOAD FACTOR	OCC. #	0.15" EGRESS WIDTH
A-2 ASSEMBLY					
e SNACKERY	936 SF	A-2 ASSEMBLY	15 SF	63	9.5"
				63	
A-3 ASSEMBLY					
e ART GALLERY	8233 SF	A-3 ASSEMBLY	30 SF	275	41.3"
e CLASSROOM	661 SF	A-3 ASSEMBLY	20 SF	34	5.1"
e CLASSROOM	707 SF	A-3 ASSEMBLY	20 SF	36	5.4"
e CLASSROOM	2222 SF	A-3 ASSEMBLY	20 SF	112	16.8"
e IMG. GALLERY	2706 SF	A-3 ASSEMBLY	30 SF	91	13.7"
e LOBBY	1868 SF	A-3 ASSEMBLY	30 SF	63	9.5"
				611	
B BUSINESS					
e CLEAN ROOM	815 SF	B BUSINESS	300 SF	3	0.5"
e CORRIDOR	131 SF	B BUSINESS	150 SF	1	0.2"
e DATA	117 SF	B BUSINESS	300 SF	1	0.2"
e ELEC	194 SF	B BUSINESS	300 SF	1	0.2"
e EQUIP	255 SF	B BUSINESS	300 SF	1	0.2"
e FACP	53 SF	B BUSINESS	300 SF	1	0.2"
e MEN	411 SF	B BUSINESS	150 SF	3	0.5"
e MEN	128 SF	B BUSINESS	150 SF	1	0.2"
e NURSE	140 SF	B BUSINESS	150 SF	1	0.2"
e OFFICES	2628 SF	B BUSINESS	150 SF	18	2.7"
e RR	77 SF	B BUSINESS	150 SF	1	0.2"
e RR	83 SF	B BUSINESS	150 SF	1	0.2"
e RR	77 SF	B BUSINESS	150 SF	1	0.2"
e RR	92 SF	B BUSINESS	150 SF	1	0.2"
e RR	82 SF	B BUSINESS	150 SF	1	0.2"
e STORAGE	493 SF	B BUSINESS	300 SF	2	0.3"
e STORAGE	508 SF	B BUSINESS	300 SF	2	0.3"
e STORAGE	104 SF	B BUSINESS	300 SF	1	0.2"
e STORAGE	228 SF	B BUSINESS	300 SF	1	0.2"
e SUPPORT	180 SF	B BUSINESS	300 SF	1	0.2"
e SUPPORT	122 SF	B BUSINESS	300 SF	1	0.2"
e SUPPORT	122 SF	B BUSINESS	300 SF	1	0.2"
e WET SPACE	509 SF	B BUSINESS	300 SF	2	0.3"
e WOMEN	475 SF	B BUSINESS	150 SF	4	0.6"
e WOMEN	128 SF	B BUSINESS	150 SF	1	0.2"
e WORKSHOP	395 SF	B BUSINESS	150 SF	3	0.5"
JANITOR	124 SF	B BUSINESS	150 SF	1	0.2"
OFFICES	2478 SF	B BUSINESS	150 SF	17	2.6"
OFFICES	142 SF	B BUSINESS	150 SF	1	0.2"
e CONFERENCE	508 SF	B BUSINESS	15 SF	34	5.1"
e JAN	69 SF	B BUSINESS	300 SF	1	0.2"
e OFFICES	2499 SF	B BUSINESS	150 SF	17	2.6"
e RR	147 SF	B BUSINESS	150 SF	1	0.2"
e STORAGE	157 SF	B BUSINESS	300 SF	1	0.2"
				3	
F-1 FACTORY AND INDUSTRIAL					
e PAINT	229 SF	F-1 FACTORY AND INDUSTRIAL	100 SF	3	0.5"
e SHOP	1175 SF	F-1 FACTORY AND INDUSTRIAL	100 SF	12	1.8"
				15	
S-1 STORAGE					
e WAREHOUSE	2117 SF	S-1 STORAGE	300 SF	8	1.2"
IT	114 SF	S-1 STORAGE	300 SF	1	0.2"
e MEZZANINE	550 SF	S-1 STORAGE	300 SF	2	0.3"
				11	

2 **building 2 - first floor code plan**
1/16" = 1'-0"

1 **code key plan**
1" = 50'-0"

3 **second floor mezzanine code plan**
1/16" = 1'-0"

i.d.e.a. classroom (n.i.c.)
HEIGHT: 22'-4"
SQUARE FOOTAGE: 2,723 SF
CONSTRUCTION TYPE: III-B

i.d.e.a. exhibition (n.i.c.)
HEIGHT: 38'-2"
SQUARE FOOTAGE: 26,136 SF
CONSTRUCTION TYPE: III-B

PROJECT SCOPE
i.d.e.a. administrative
HEIGHT: 22'-0"
SQUARE FOOTAGE: 6,930 SF
CONSTRUCTION TYPE: III-B

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

1 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	TANF
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. EXHIBITION AND I.D.E.A. CLASSROOM ARE SHOWN FOR REFERENCE ONLY. 1

ch.3: use + occupancy

EXHIBITION:	ADMINISTRATION:	CLASSROOM:
B BUSINESS	B BUSINESS	B BUSINESS
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 < 36,000 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** 1

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

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023
3	2ND PLAN REVIEW COMMENTS	1/19/2024

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — 72361 — MICHAEL J. PEARCE — ARIZONA U.S.A. — 11/16/2023

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

CODE PLANS

DRAWING
G0.20

SHEET 4 - OF - 55
CATALOG NUMBER: A-281078

1/19/2024 10:58:24 AM

PMT23-19464

photos of existing conditions

photo 1

NOTES: PROTECT ELEC PANELS + ADJACENT WALL EQUIPMENT IN PLACE FOR INSTALLATION OF FURR WALL.

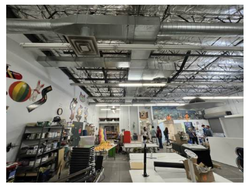


photo 2

NOTES: EXISTING ROOF INSULATION TO BE REMOVED AND SALVAGED. PREP FOR NEW PAINT AND FOR RE-INSTALLATION. EXISTING METAL JOISTS TO REMAIN.

COORDINATE WITH OWNER FOR REMOVAL AND/OR RELOCATION OF EXISTING STORAGE IN AREAS OF NEW WORK.

photo 3

NOTES: PROTECT EQUIPMENT IN PLACE DURING RENOVATION.

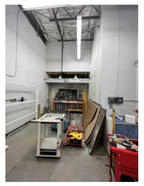


photo 4

NOTES: EXISTING FUNCTION, EQUIPMENT, FLOOR FINISH AND CEILING CONDITION AT PAINT BOOTH TO REMAIN.

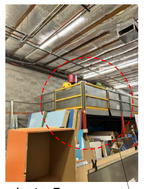


photo 5

PORTION OF EXISTING MEZZANINE TO BE REMOVED.

photo 6

EXISTING FIRE PROTECTION TANK FOR PAINT BOOTH TO REMAIN

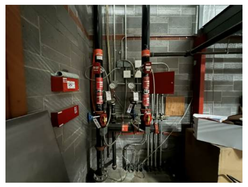


photo 7

NOTES: PROTECT EQUIPMENT IN PLACE.

photo 8

NOTES: PROTECT ELEC PANELS + ADJACENT WALL EQUIPMENT IN PLACE. DEMO ROLL UP DOOR. EXISTING MANDOOR TO REMAIN.

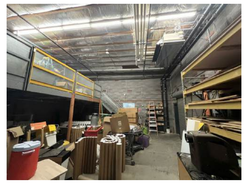


photo 9

NOTES: COORDINATE WITH OWNER FOR REMOVAL AND/OR RELOCATION OF EXISTING STORAGE IN AREAS OF NEW WORK.

photo 10

NOTES: LOCATION OF NEW DOOR (DE2.2) - ENSURE NEW OPENING DOES NOT CONFLICT WITH ADJACENT CMU WALL.

photo 11

NOTES: AREA OF SELECTIVE CMU DEMOLITION FOR INSTALLATION OF NEW DOOR. COORDINATE OPENING WITH EXISTING JOINT LINE - RELOCATE MINOR CONDUIT LINES, EQUIPMENT AS NEEDED FOR OPENING.

REFER TO MEP + STRUCTURAL - NOTIFY ARCHITECT OF ANY DISCREPANCIES ON SITE FOR FURTHER DIRECTION.

demo rcp keynotes

1. DEMO PORTION OF ROOF FOR INSTALLATION OF NEW SKYLIGHTS, TYP.
2. EXISTING ROOF HATCH TO BE RELOCATED - PATCH AND REPAIR TO MATCH EXISTING.
3. NOT USED.
4. DEMO EXISTING MECHANICAL EQUIPMENT - REFERENCE MECHANICAL DWGS.
5. MODIFY EXISTING REFLECTIVE INSULATION AT UNDERSIDE OF ROOF AT AREAS WHERE NEW SKYLIGHTS WILL BE INSTALLED, TYP 6.
6. REMOVE AND SALVAGE EXISTING INSULATION FOR RE-INSTALLATION. PREPARE EXISTING INSULATION FOR APPLICATION OF NEW PAINT. REFER TO RCP FOR EXTENTS. **REFER TO PHOTO 2.**
7. EXISTING METAL JOISTS - PROTECT IN PLACE.
8. REMOVE LIGHT FIXTURES AND DEVICES- COORDINATE WITH OWNER FOR POSSIBLE REUSE AND STORAGE.
9. DEMO PORTION OF ROOF FOR INSTALLATION OF NEW MECHANICAL EQUIPMENT - REFERENCE MECHANICAL DWGS.
10. EXISTING PLYWOOD WEB JOISTS - PROTECT IN PLACE.

demo plan keynotes

1. DEMO PORTION OF EXISTING CMU WALL PER NEW OPENING DIMENSIONS. MAINTAIN VERTICAL AND HORIZONTAL CMU COURSING MODULE. **SEE PHOTO 11.**
2. DEMO EXISTING GYPSUM BOARD WALL, TYP. - ENSURE NEW OPENING DOES NOT CONFLICT WITH ADJACENT CMU WALL. **SEE PHOTO 10.**
3. DEMO EXISTING DOOR, TYP
4. DEMO EXISTING ROLL-UP DOOR
5. LOW SITE WALL AND GATE SHOWN FOR REFERENCE.
6. EXISTING PAINT AREA TO REMAIN. **REFERENCE PHOTO 4.** SEE FLOOR PLANS FOR NEW PARTITION AND DOOR ACCESS ALONG NORTH, WEST, AND SOUTH ELEVATIONS.
7. DEMO PORTION OF SLAB FOR 4" UNDERGROUND PIPE . ROUGH EXTENTS SHOWN - REF TO PLUMBING DRAWINGS.
8. EXISTING ELECTRICAL PANELS TO REMAIN. **REFERENCE PHOTO 1** AT STAGING/FABRICATION, **REFERENCE PHOTO 8** AT FAB LAB STORAGE.
9. NOT USED.
10. LINE OF EQUIPMENT MEZZANINE ABOVE TO REMAIN .EXISTING MEZZANINE POSTS TO REMAIN, TYP 6
11. SAWCUT INTO EXISTING CONCRETE AT BASE AT EXISTING ROLL UP DOOR LOCATION AND PREP FOR NEW CURB. SEE FLOOR PLAN + ELEVATIONS.
12. DEMO EXISTING SCRUB SINK.
13. DEMO SAFETY SHOWER.
14. EXTENT OF AREA OF DEMO FOR NEW CONCRETE WALKING SURFACE.
15. REMOVE EXISTING WATER HEATER.
16. PROTECT EXISTING DEVICES IN PLACE. **REFERENCE PHOTO 3.**
17. EXISTING WINDOW TO BE REMOVED AND REPLACED.
18. EXISTING MEZZANINE STAIR TO REMAIN.
19. PROTECT EXISTING FIRE PROTECTION TANK IN PLACE. **REFERENCE PHOTO 6.**
20. EXTENT OF AREA OF DEMO FOR NEW CONCRETE WALKING SURFACE.
21. EXISTING 1 HR FIRE RATED GYPSUM BOARD PARTITION TO REMAIN.
22. EXISTING ROLL-UP DOOR TO REMAIN - PROTECT IN PLACE.
23. EXISTING COLUMN TO REMAIN - PROTECT IN PLACE.
24. EXISTING FIRE EQUIPMENT TO BE PROTECTED IN PLACE. **REFERENCE PHOTO 7.**
25. DEMO EXISTING SURFACE MOUNTED FIRE EXTINGUISHER CABINET.

general notes

1. DIMENSIONS ARE FROM FACE OF PARTITION FINISH OR STRUCTURAL GRIDLINE UNLESS OTHERWISE NOTED
2. MEP EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE MEP DRAWINGS FOR FURTHER INFORMATION.
3. GC TO COORDINATE WITH OWNER FOR REMOVAL AND/OR RELOCATION OF EXISTING STORAGE IN AREAS OF NEW WORK.
4. GC TO PROMPTLY NOTIFY ARCHITECT AND OWNER OF ANY DISCREPANCIES OF EXISTING CONDITIONS AND THOSE REFLECTED IN THESE DRAWINGS FOR FURTHER DIRECTION.
5. ITEMS INDICATED WITH A SOLID LINE, IN HALFTONE REPRESENTS ITEMS TO REMAIN.

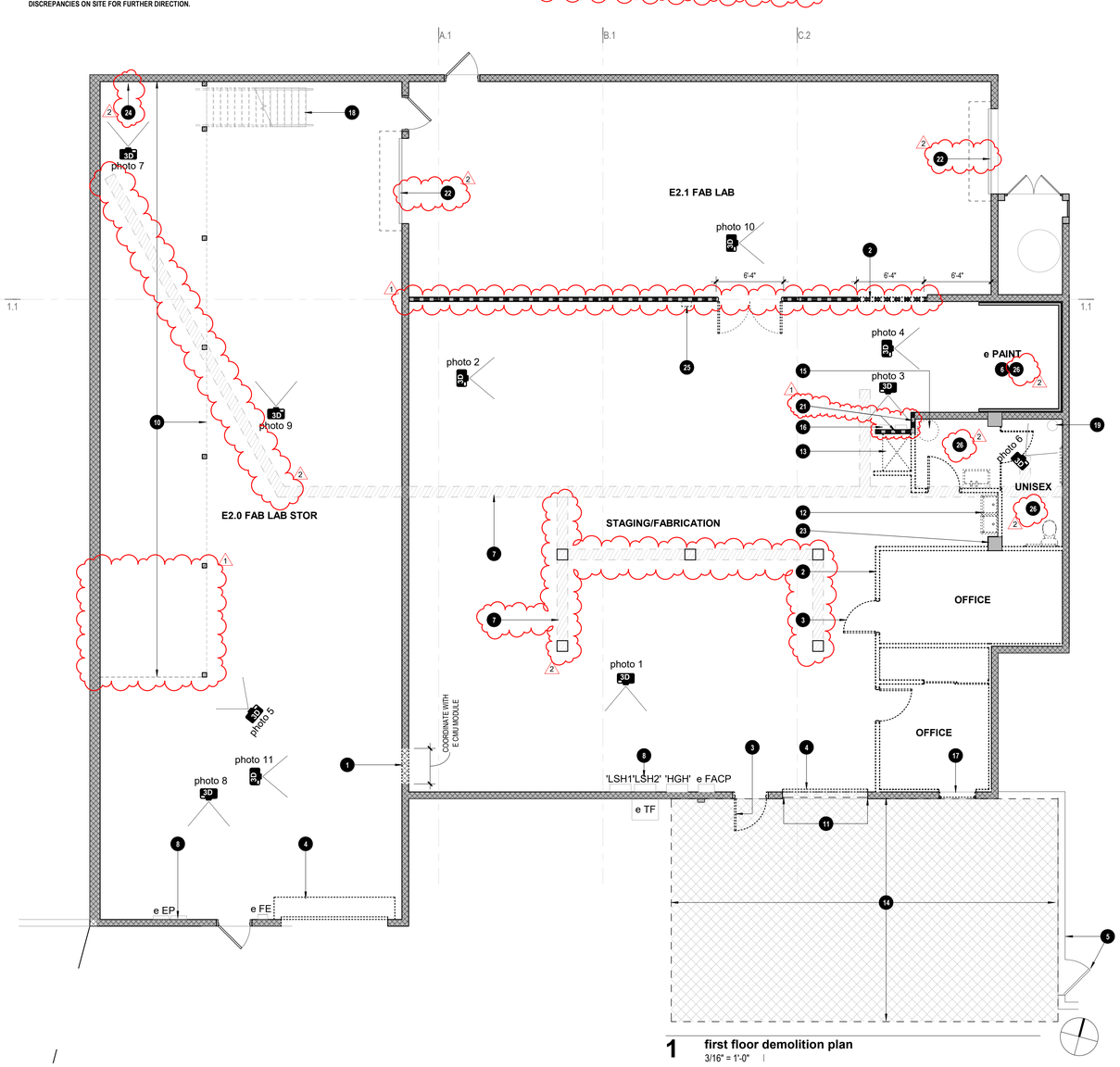
demolition legend

	EXISTING PARTITION TO REMAIN	FE	FIRE EXTINGUISHER
	EXISTING CMU WALL TO REMAIN		DOOR TO REMAIN
	NOT IN SCOPE	e	EXISTING TO REMAIN
	EXISTING TO BE DEMOLISHED	EP	ELECTRICAL PANEL
	EXISTING 1 HR FIRE RATED PARTITION	EB	ELECTRICAL BOX
TF	TRANSFORMER	EB	ELECTRICAL BOX
SES	SERVICE ENTRANCE SECTION	FACP	FIRE ACCESS CONTROL PANEL
WH	WATER HEATER	W⊳H	WALL MOUNTED EXIT SIGN

demo plan keynotes continued

26. SALVAGE AND REUSE ANY TOILET ACCESSORIES THAT ARE IN FAIR CONDITION. GC TO VERIFY WITH OWNER OR CITY FOR REUSE PRIOR TO INSTALLATION OF TOILET ACCESSORIES IN NEW LOCATION.
27. DEMO PORTION OF SLAB FOR FLOOR BOXES. ROUGH EXTENTS SHOWN - REF TO ELECTRICAL DRAWINGS.

2 first floor demolition rcp
3/16" = 1'-0"



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

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT 32961 MICHAEL E JACOBS 11/16/2023 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

DEMO PLAN + DEMO REFLECTED CEILING PLAN

DRAWING
A1.00

SHEET	CATALOG NUMBER:
5 - OF - 55	A-281079

12/22/2023 2:57:43 PM

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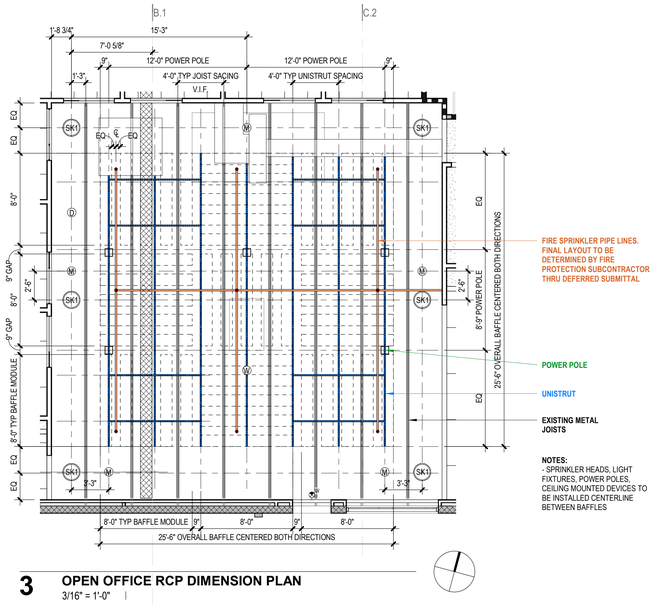


3 OPEN OFFICE RCP DIMENSION PLAN
3/16" = 1'-0"

reflected ceiling plan keynotes

1. SCHEDULED SKYLIGHT. LOCATION SHALL NOT CONFLICT WITH EXISTING METAL JOISTS AS DRAWN. GC TO NOTIFY ARCHITECT IF FIELD CONDITIONS VARY FROM THOSE INDICATED ON DRAWINGS.
2. 24"X24" METAL ACCESS DOOR - MAKE FLUSH MOUNT AND PAINT TO MATCH ADJACENT GYP.
3. EXISTING LIGHT FIXTURES TO BE REPLACED WITH IN-KIND LED LIGHT FIXTURES. EXISTING CEILING FINISH TO REMAIN.
4. SOLID TRAY FOR CABLING IN EXPOSED CEILING AREAS. REF ELECTRICAL DRAWINGS.
5. EXISTING ROOF INSULATION AT EXPOSED AREAS TO BE SALVAGED, REINSTALLED AND PAINTED.
6. EXISTING METAL ROOF JOISTS TO BE PAINTED.
7. CEILING MOUNTED POWER AND DATA DEVICES.
8. SEE MECHANICAL DRAWINGS FOR NEW MECHANICAL EQUIPMENT + ROUTING.
9. SLOTTED UNISTRUT CHANNEL, PAINTED TO MATCH CEILING FINISH, TYP 7.
10. OVERHEAD POWER + DATA, TYP 5. REF ELECTRICAL DRAWINGS.
11. EXISTING FIBER OPTIC PULL BOX
12. EXISTING LIGHT FIXTURES TO BE REPLACED WITH IN-KIND LED FIXTURE. REF ELECTRICAL DRAWINGS.
13. CABLE TRAY BY OTHERS DASHED IN FOR REFERENCE. REF TO COM DOIT PLANS AND/OR SPECIAL SYSTEMS DRAWINGS.
14. CHILLED WATER SUPPLY AND RETURN - REF MECHANICAL DWGS.
15. NEW 12 STRAND CABLE TO GO THROUGH EXISTING PENETRATION AT CMU WALL. SEE PHOTO 11 ON SHEET A1.00 PHOTOS OF EXISTING CONDITIONS
16. NEW CONDENSATE PUMP AT DUCTLESS SPLIT SYSTEM UNIT. REF MECHANICAL PIPEING DRAWNGS.

floor plan keynotes (continued)

29. EXISTING 1 HR FIRE RATED GYPSUM BOARD PARTITION.
29. NEW WATER HEATER. REF PLUMBING DRAWINGS.
29. GC TO VERIFY EXACT LOCATIONS OF EXISTING WALL MOUNTED ELECTRICAL PANELS IN FIELD AND COORDINATE NEW GYPSUM BOARD FURRED WALL TO ENSURE ADEQUATE SPACING.
30. ADD ALTERNATE: FLOOR BOXES, TYP. OF 5 - REF ELECTRICAL DWGS.
31. ACCESS CONTROL PANEL LOCATION. REF ELECTRICAL DWGS.

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 LIGHT FIXTURES, 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. PROVIDE ACCESS PANELS IN GYPSUM BOARD CEILINGS AS REQUIRED TO ALLOW ACCESS TO ABOVE CEILING EQUIPMENT AND DEVICES.
5. ROOM OPEN TO STRUCTURE UNLESS OTHERWISE NOTED
7. ALL CEILINGS IN BATHROOM & WET AREAS SHALL BE MOISTURE & MILDEW RESISTANT GYPSUM BOARD.
8. REFERENCE AS.10 FINISH LEGEND FOR CEILING FINISHES.
9. 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
- RECESSED CAN DOWNLIGHT
- RECESSED 2X4 DOWNLIGHT
- WALL MOUNTED EXIT SIGN
- RECESSED LINEAR DOWNLIGHT
- LINEAR PENDANT
- GYPSUM BOARD CEILING (GWB)
- 2X4 ACOUSTICAL CEILING TILE (ACT1)
- SURFACE MOUNTED EXIT SIGN
- FIRE SPRINKLER
- J HOOK (EXPOSED). REF SPECIAL SYSTEMS DWGS
- CONDUIT SLEEVE . REF SPECIAL SYSTEMS DWGS
- EXISTING FIBER OPTIC (E FIBER)
- NEW 12 STRAND SMFO CABLE (SMFO)
- CHILLED WATER SUPPLY/RETURN
- WAP - CEILING MOUNTED
- MOTION CENTER - CEILING MOUNTED
- SMOKE DETECTOR DUCT
- SECURITY CAMERA - LOCATION TO BE DETERMINED BY OWNER
- SOLID CABLE TRAY

floor plan keynotes

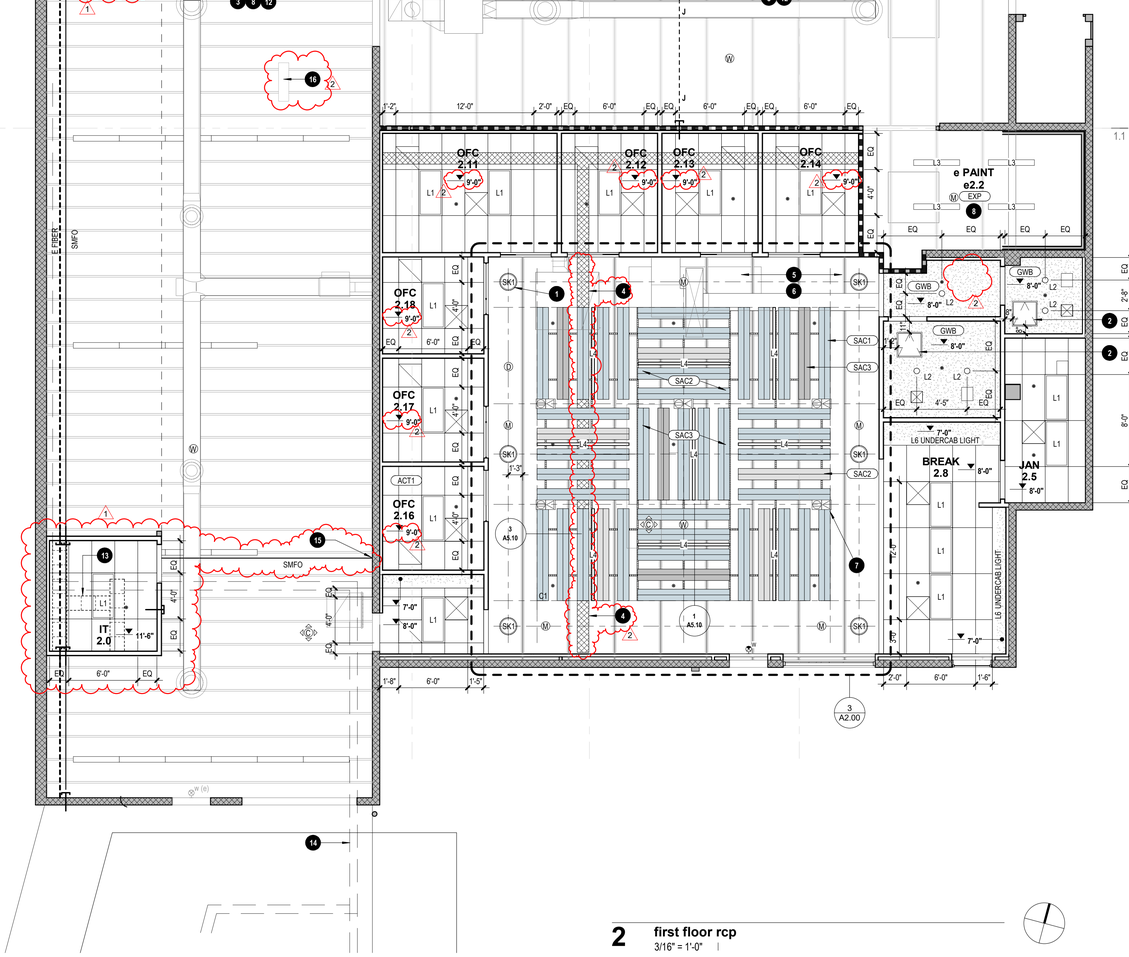
1. NO SCOPE IN THIS AREA- EXISTING ROOM TO REMAIN
2. NOT USED.
3. MILLWORK - COUNTER.
4. ADA COMPLIANT RESTROOM TO RECEIVE NEW WATER CLOSETS, LAVATORIES, ACCESSORIES, WALL+FLOOR FINISH, + ROOM SIGNAGE. REFER TO A5.00 FOR TOILET ROOM EQUIPMENT AND ACCESSORIES.
5. LINE OF NEW MECHANICAL DUCT ABOVE. REF MECHANICAL DRAWINGS.
6. SOLATUBE AT EXISTING ROOF, TYP 6 AT OPEN OFFICE.
7. 3'-0" X 3'-0" MOP SINK. REF TO PLUMBING.
8. NEW SAFETY SHOWER. REF TO PLUMBING.
9. NEW DUAL SCRUB SINK. REF TO PLUMBING.
10. FURNITURE SHOWN IN HALFTONE FOR REFERENCE ONLY.
11. NOT USED.
12. MILLWORK - UPPER CABINETS.
13. FLOOR DRAIN. REF TO PLUMBING.
14. NOT USED.
15. POWER POLE, TYP. OF 5 - REF ELECTRICAL DWGS.
16. LINE OF SOFFIT ABOVE.
17. **PNT1** PAINT ALONG EXISTING WALL.
18. CABLE TRAY BY OTHERS DASHED IN FOR REFERENCE. REF COM DOIT DWGS AND ELECTRICAL.
19. 6"X6" CONCRETE CURB. REF STRUCTURAL DRAWINGS FOR DETAILS.
20. EXISTING MEZZANINE POSTS, TYP 6.
21. 4" UNDERGROUND PIPE SHOWN FOR REFERENCE. REF TO PLUMBING DRAWINGS.
22. 1-1/2" PIPE ABOVE CEILING SHOWN FOR REFERENCE. REF TO PLUMBING DRAWINGS.
23. NEW CONCRETE SILL. SEE DETAILS ON A5.10
24. EXTENT OF NEW REGRADED CONCRETE. CROSS SLOPE OF WALKING SURFACES NO STEEPER THAN 1:48 (2%) AND A RUNNING SLOPE OF WALKING SURFACES NO STEEP THAN 1:20 (5%) SHALL BE MAINTAINED.
25. LOW SITE WALL AND GATE SHOWN FOR REFERENCE.
26. NEW 6'-0" HIGH CHAIN LINK FENCE.

general plan notes

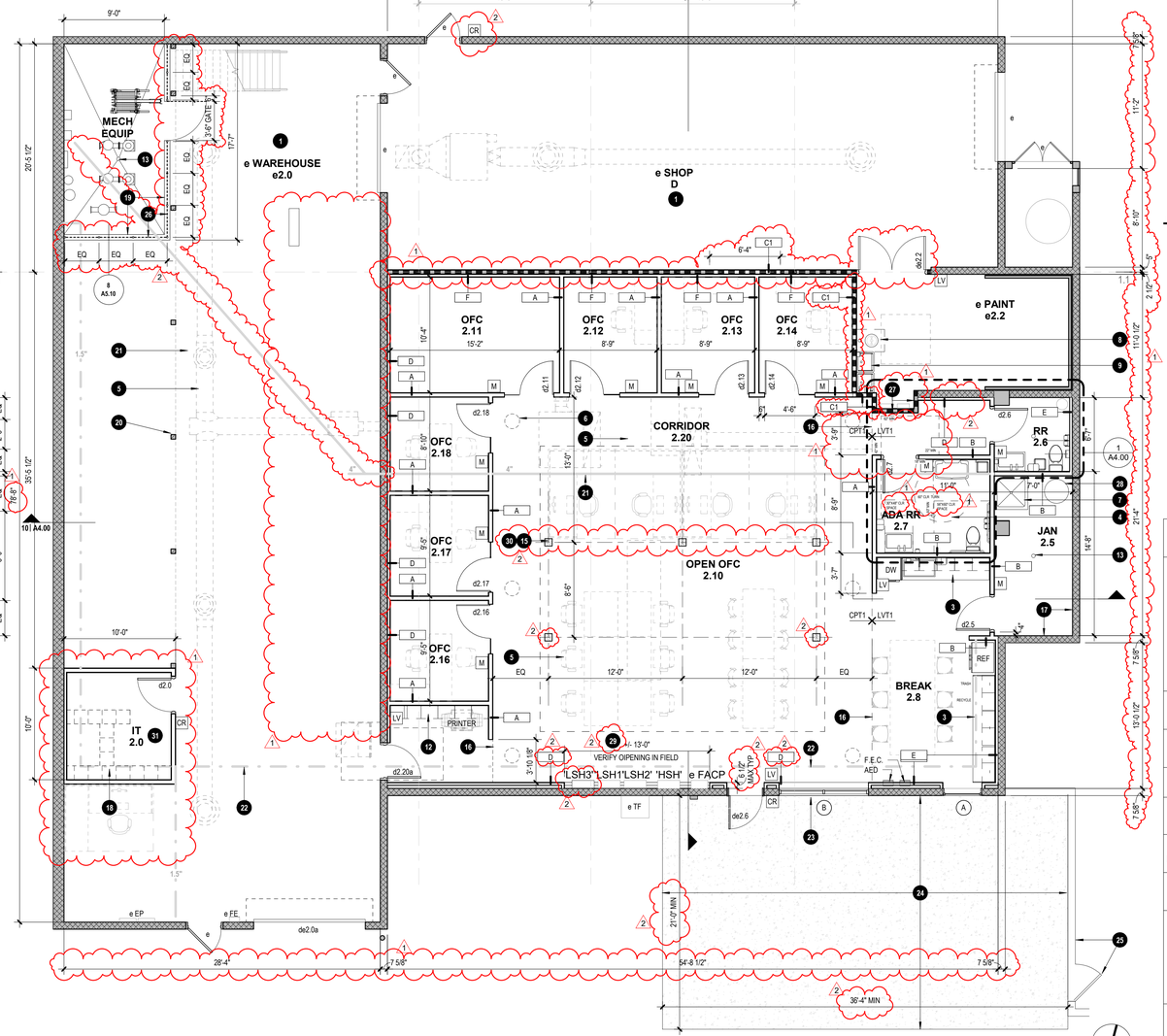
1. PARTITIONS ILLUSTRATED ON COLUMN CENTERLINES ARE CENTERED ON CENTERLINE.
2. REFERENCE SCHEDULES & INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION
3. REFERENCE G0.10 FOR ACCESSIBILITY REQUIREMENTS AND TYPICAL MOUNTING HEIGHTS.
4. REFERENCE AS SERIES FOR DOOR & PARTITION SCHEDULES.
5. MEP EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE MEP DRAWINGS FOR FURTHER INFORMATION.
6. 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. ALL WET AREAS SHALL HAVE 5/8 INCH DRYWALL BLUE BOARD.

floor plan legend

- EXISTING PARTITION TO REMAIN
- EXISTING CMU WALL TO REMAIN
- EXISTING 1 HR FIRE RATED PARTITION
- NEW PARTITION
- NRE RATED PARTITION
- A — PARTITION TYPE
- FEC — FIRE EXTINGUISHER CABINET
- e TF — EXISTING WALL MOUNTED TRANSFORMER
- FACP — FIRE ACCESS CONTROL PANEL
- e EP — EXISTING ELECTRICAL PANEL
- 45 — DOOR TYPE
- e — NEW DOOR
- e — DOOR TO REMAIN
- A — WINDOW TYPE
- M — MOTION CENTER - WALL MOUNTED
- CR — CARD READER
- T — THERMOSTAT
- CPT1 × CNC1 — FINISH FLOOR TRANSITION
- UNDERGROUND PLUMBING LINE
- 1-1/2" PIPE ABOVE CEILING
- F.E.C. — SEMI RECESSED FIRE EXTINGUISHER CABINET
- AED — SEMI RECESSED AED DEFIBRILLATOR



2 first floor rcp
3/16" = 1'-0"



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

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — 12361 — MICHAEL E. HOLLY — ARIZONA U.S.A. — 12/16/2023

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

FLOOR PLAN + REFLECTED CEILING PLAN

DRAWING
A2.00

SHEET	CATALOG NUMBER:
6 - OF - 55	A-281080

PMT23-19464

12/22/2023 2:57:15 PM

photos of existing conditions - roof

photo 1

NOTES: VIEW OF SUPPORT BUILDING ROOF FROM EXHIBIT BUILDING ROOF.

photo 2

NOTES: EXISTING MECHANICAL SCREEN - NEW MECHANICAL SCREEN TO MATCH EXISTING.

photo 3

NOTES: EXISTING CONDITIONS ON WAREHOUSE ROOF.
EXISTING BUILTUP ROOF SYSTEM OVER METAL DECK. 2

photos of existing conditions - elevations

photo 1

NOTES: PROTECT IN PLACE EXISTING WALL MOUNTED DEVICES WHEN REMOVING AND REPLACING DOORS AND WINDOWS.

photo 2

NOTES: NEW OPENINGS IN EAST FACADE TO COURSE WITH EXISTING CMU MODULE.

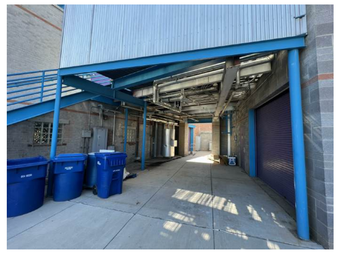


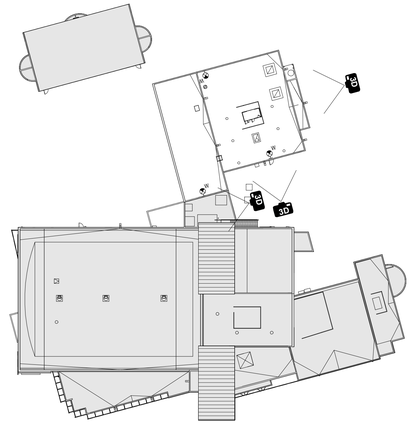
photo 3

NOTES: PROTECT IN PLACE EXISTING WALL MOUNTED DEVICES WHEN REMOVING AND REPLACING DOORS AND WINDOWS.

2 roof plan
1/8" = 1'-0"

elevation keynotes

1. EXISTING SCUPPER AND DOWNSPOUT, TYP.
2. SCHEDULED DOOR AT EXISTING OPENING.
3. SCHEDULED WINDOW AT EXISTING OPENING.
4. EXISTING WALL PACK LIGHT FIXTURES TO REMAIN.
5. SCHEDULED INSULATED ROLL-UP DOOR AT EXISTING OPENING.
6. NEW MECHANICAL SCREEN.
7. EXISTING MECHANICAL SCREEN TO REMAIN.
8. EXISTING WALL MOUNTED TRANSFORMER TO REMAIN.
9. NEW HOODED WALL CAP - REF MECHANICAL DWGS. OPENINGS TO MAINTAIN VERTICAL AND HORIZONTAL CMU COURSING MODULE - **REF PHOTO 2.**
10. 4" HIGH CONCRETE CURB - PAINT TO MATCH EXISTING ADJACENT CMU WALL.
11. EXISTING SECURITY CAMERA TO REMAIN.



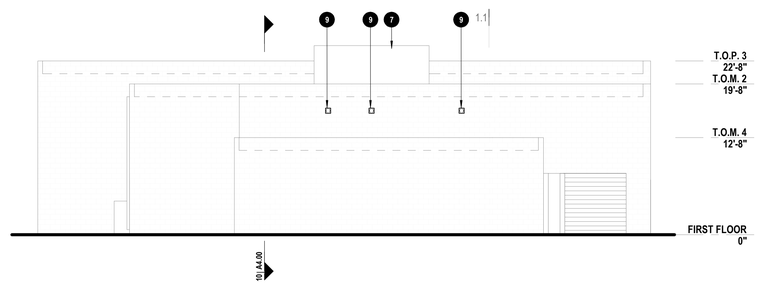
4 key plan - elevation photos
1" = 40'-0"

roof plan keynotes

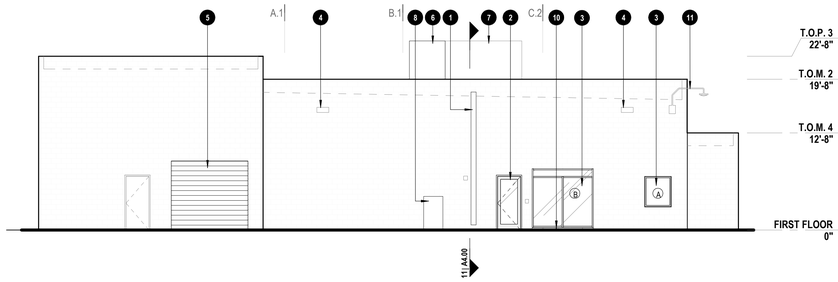
1. EXISTING SCUPPER AND DOWNSPOUT TO REMAIN, TYP.
2. EXISTING MECHANICAL UNIT TO REMAIN.
3. EXISTING MECHANICAL SCREEN TO REMAIN.
4. EXISTING ROOF ACCESS LADDER TO REMAIN.
5. DEMO EXISTING MECHANICAL UNIT - PATCH AND REPAIR TO MATCH EXISTING ROOF CONDITIONS.
6. DEMO EXISTING ROOF HATCH AND LADDER. PATCH AND REPAIR AREA TO MATCH EXISTING ROOF CONDITIONS.
7. NEW PARAPET WALL MOUNTED ROOF LADDER. SEE DETAILS A5.10.
8. NEW SKYLIGHT - REF WINDOW SCHEDULE
9. NEW MECHANICAL UNIT ON NEW CURB - REF MECHANICAL + STRUCTURAL DWGS
10. NEW PORTION OF MECHANICAL SCREEN TO MATCH EXISTING SCREEN - REF PHOTO 1
11. CRICKETING AS REQUIRED AT AREAS WORK OVER EXISTING BUILTUP ROOF SYSTEM OVER METAL DECK.
12. NEW GRAVITY HOOD - REF MECHANICAL DWGS
13. NEW RELIEF HOOD - REF MECHANICAL DWGS
14. NEW DUCTLESS SPLIT SYSTEM AC UNIT - REF MECHANICAL DWGS
15. EXTENT OF DEMO FOR NEW SKYLIGHT - REF STRUCTURAL DWGS
16. NEW CHILLED WATER RETURN AND SUPPLY PIPING - REF MECHANICAL DWGS
17. DEMO EXISTING 4" CHILLED WATER SUPPLY AND RETURN PIPING. PATCH AND REPAIR BUILT UP ROOF AS REQUIRED AT AREA OF DEMOLITION.
18. EXISTING PAINT BOOTH EXHAUST OUTLET TO REMAIN.
19. NEW ROOF MOUNTED EXHAUST FAN. REF MECHANICAL DWGS.

roof plan legend

- EXISTING TO BE DEMOLISHED
- EXISTING TO REMAIN
- NOT IN ROJECT SCOPE
- e EXISTING TO REMAIN



3 building 2 - east elevation - proposed
1/8" = 1'-0"



1 building 2 - south elevation - proposed
1/8" = 1'-0"

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Phoenix, AZ 85006
o: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Office Relocation

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Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — CERTIFICATE NO. 32961 — MICHAEL E. COOLS — 16 NOVEMBER 2023 — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

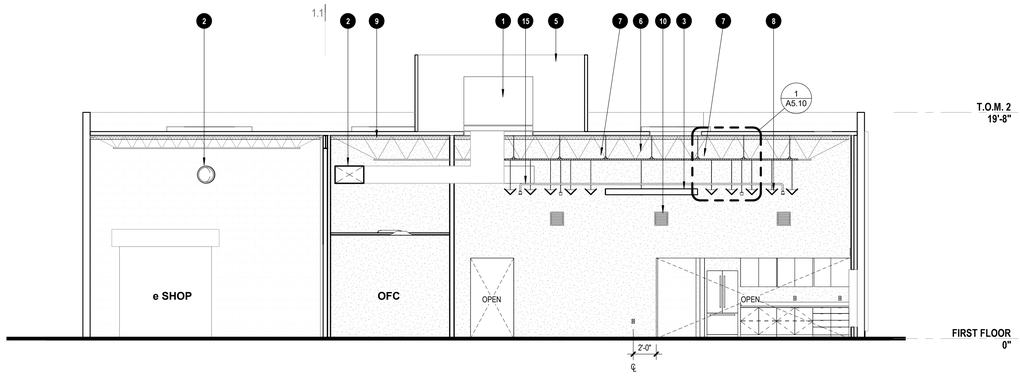
BUILDING ELEVATIONS + ROOF PLAN

DRAWING
A3.00

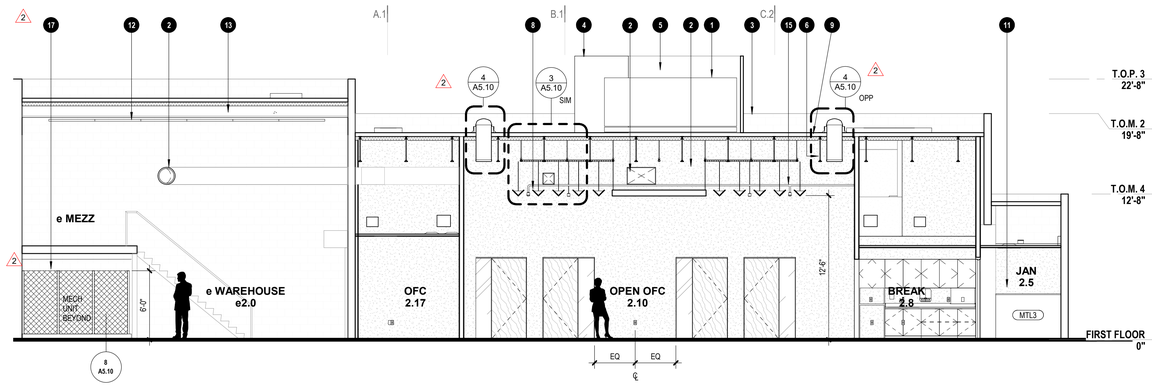
SHEET	CATALOG NUMBER:
7 - OF - 55	A-281081

12/20/2023 2:21:37 PM

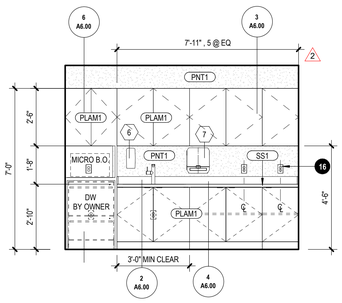
PMT23-19464



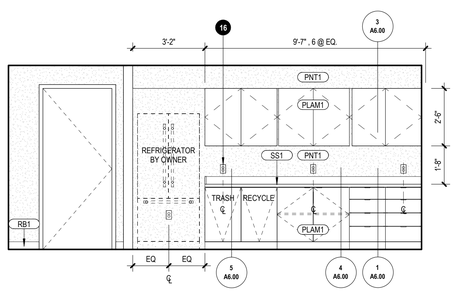
11 building 2 - section looking east
3/16" = 1'-0"



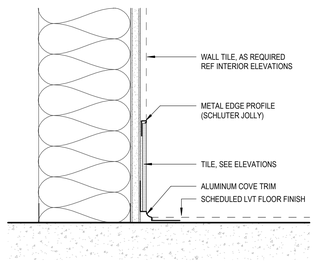
10 building 2 - section looking north
3/16" = 1'-0"



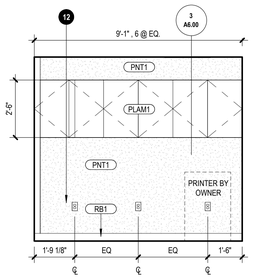
9 breakroom - north elevation
3/8" = 1'-0"



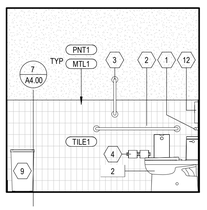
8 breakroom - west elevation
3/8" = 1'-0"



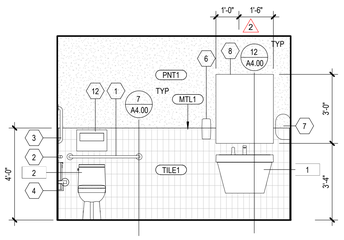
7 tile base at gyp. wall detail
3" = 1'-0"



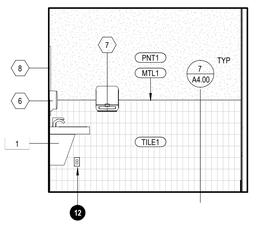
6 printing area at corridor - north elev
3/8" = 1'-0"



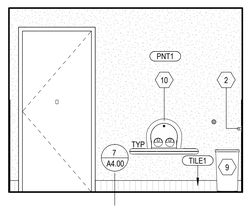
5 enlarged ada rr 2.7 - east
3/8" = 1'-0"



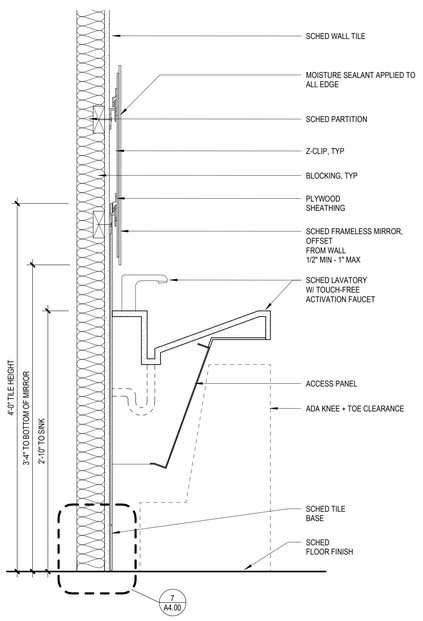
4 enlarged ada rr 2.7 - south
3/8" = 1'-0"



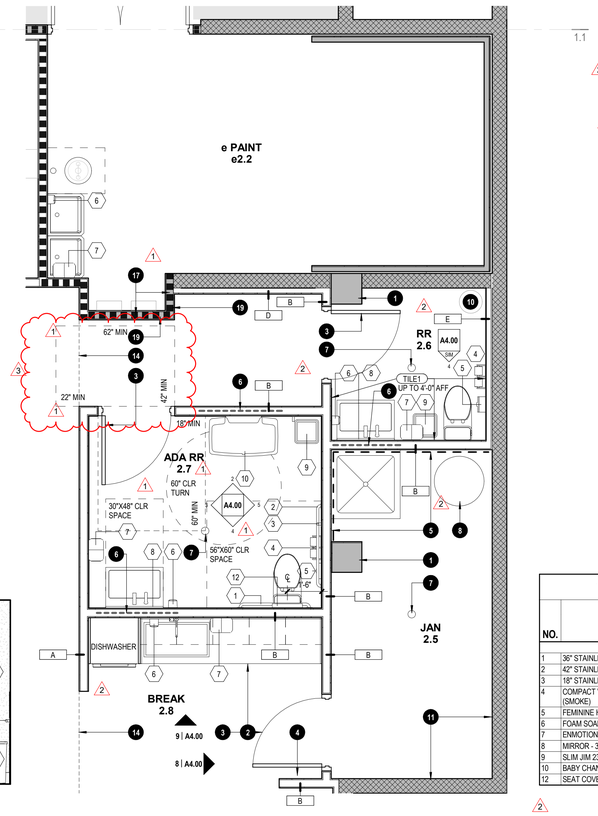
3 enlarged ada rr 2.7 - west
3/8" = 1'-0"



2 enlarged ada rr 2.7 - north
3/8" = 1'-0"



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



1 enlarged rr 2.6 + ada rr 2.7
3/8" = 1'-0"

building section keynotes

1. NEW MECHANICAL UNIT. RE: MECHANICAL DWGS
2. MECHANICAL DUCT. RE: MECHANICAL DRAWING.
3. SCHEDULED LIGHT FIXTURE.
4. NEW MECHANICAL SCREEN.
5. EXISTING MECHANICAL SCREEN TO REMAIN.
6. EXISTING METAL JOIST TO REMAIN.
7. POWER POLE - REF. ELECTRICAL DWGS.
8. SUSPENDED ACOUSTIC BAFFLES.
9. EXISTING INSULATION TO BE REUSED AND REFINISHED AT EXPOSED CEILING CONDITIONS.
10. SUPPLY GRILLE. REF MECHANICAL DRAWINGS.
11. 4'-0" HIGH SEAMLESS STAINLESS STEEL WALL GUARD AT 2 WALLS ADJACENT TO JANITOR'S SINK.
12. RETROFITTED LIGHT FIXTURE. REF ELECTRICAL.
13. EXISTING PLYWOOD WEB JOIST.
14. PARTIAL HEIGHT ROOM WITH LIDDED CEILING. REF PARTITION SCHEDULE.
15. FIRE SPRINKLER HEAD + PIPE, TYP.
16. SCHEDULED SKYLIGHT.
17. SCHEDULED CHAIN LINK FENCE WITH GATE INSTALLED ON TOP OF CONCRETE CURB. DEE DETAILS.

enlarged interior elevation + plan keynotes

1. EXISTING COLUMN.
2. MILLWORK.
3. SCHEDULED DOOR.
4. SEMI RECESSED FIRE EXTINGUISHER CABINET.
5. EXTENTS OF STAINLESS STEEL UP TO 4'-0" AFF.
6. PROVIDE ADDITIONAL CONCEALED ARMS AND SUPPORT.
7. FLOOR DRAIN - REFER TO PLUMBING DWGS.
8. ELECTRIC WATER HEATER - REFER TO PLUMBING DWGS.
9. NEW WALL MOUNTED LAVATORY TO RECEIVE ADDITIONAL CONCEALED ARMS FOR SUPPORT.
10. EXISTING FIRE PROTECTION TANK TO REMAIN.
11. APPLY PNT 1 SEMI-GLOSS WITH EPOXY FINISH ON EXISTING PARTITIONS.
12. INSTALL RECEPTACLE WITHIN TILE MODULE.
13. NEW ROOF HATCH + WALL MOUNTED LADDER.
14. SOFFIT LINE ABOVE.
15. UNISTRUT OR EQUAL, SHELVING ON THREE WALLS, SOUTH, EAST + WEST FOR A MINIMUM OF 15 LINEAR FEET WITH A MINIMUM 14-INCH. CLEARANCE MEASURED VERTICALLY BETWEEN SHELVES. ACCESSORIES TO INCLUDE: MOP HANGERS AND RACKS FOR MOPS, HOSES, OR BROOMS PROVIDED.
16. RECEPTACLE, REF ELECTRICAL DRAWINGS, TYP.
17. EXISTING 1 HR FIRE RATED GYPSUM BOARD PARTITION.
18. NEW CHAIN LINK FENCE.
19. EXISTING FIRE RATED PARTITION TO RECEIVE FRESH COAT OF PAINT.

general notes

1. REFER TO PLUMBING DRAWINGS FOR RESTROOM AND PAINT BOOTH LAVATORIES AND SINKS.

material legend

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

DIVISION 3 CAST-N-PLACE CONCRETE / POLISHED CONCRETE

- CNC1 — SEALED CONCRETE W/ SLIP RESISTANT COATING

DIVISION 5 METALS

- MTL3 — STAINLESS STEEL WALL PANEL, SEAMLESS

DIVISION 6 ARCHITECTURAL CASEWORK

- PLAM1 — NEVAMAR
  COLOR: WROUGHT IRON

DIVISION 8 GLAZING

- GLZ1 — 1" THICK, INSULATED GLASS UNIT, CLEAR, LOW E, TEMPERED (EXTERIOR)
- GLZ2 — 1" THICK, CLEAR, INSULATED, LOW E, (EXTERIOR)
- GLZ3 — 1/4" THICK, CLEAR, TEMPERED (INTERIOR)

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, SEMI-GLOSS EPOXY AT JANITOR'S CLOSET
- PNT2 — DUNN EDWARDS
  COLOR: JET PAINT COLOR DE6378
  LOCATION: EXPOSED STEEL, EXISTING EXPOSED ROOF INSULATION

DIVISION 9 SOUND ABSORBING CEILING BAFFLES

- SAC1 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE
  COLORS: COLOR 1 (GREEN) PENDING CLIENT APPROVAL
  SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH
  LOCATION: OPEN OFFICE
- SAC2 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE
  COLORS: COLOR 2 (BLUE) PENDING CLIENT APPROVAL
  SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH
  LOCATION: OPEN OFFICE
- SAC3 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE
  COLORS: COLOR 3 DARK GRAY PENDING CLIENT APPROVAL
  SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH
  LOCATION: OPEN OFFICE

DIVISION 9 RESILIENT BASE + ACCESSORIES

- RB1 — 4" RUBBER BASE, JOHNSONITE
  COLOR: BLACK

DIVISION 9 STATIC CONTROL RESILIENT FLOORING

- SDT1 — STATIC DISSIPATIVE TILE

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 TILE CARPETING

- CPT1 — 24" X 24" CARPET TILE
  MOHAWK FIRST ONE UP II TILE
  COLOR: 988
  LOCATION: OFFICES, OPEN OFFICE

DIVISION 9 TILING (CERAMIC + METAL EDGE STRIPS)

- TILE1 — CERAMIC WALL TILE
  DALTILE COLOR WHEL COLLECTION - GLAZED CERAMIC
  SIZE" 3" X 6"
  COLOR: WHITE 0100
  LOCATION: RESTROOMS
- MTL1 — SCHLUTER JOLLY
  COLOR: SATIN ANODIZED ALUMINUM (AE)
  LOCATION: RESTROOM TILE TRANSITIONS
- MTL2 — SCHLUTER DILEX-AHK
  COLOR: SATIN ANODIZED ALUMINUM (AE)
  LOCATION: RESTROOM TILE TRANSITIONS

DIVISION 12 SIMULATED STONE COUNTERTOPS

- SS1 — CORIAN
  COLOR: CARBON AGGREGATE

DIVISION 12 ROLLER SHADES

- RS1 — MECHOSHADE OR SIM (AT ADMIN OFFICES)
  COLOR: PENDING CLIENT APPROVAL

TOILET ROOM ACCESSORY SCHEDULE (10 28 00)

NO.	DESCRIPTION	MANUFACTURER NAME	MODEL NUMBER
1	36" STAINLESS STEEL GRAB BAR	BOBRICK	B-5806x36
2	42" STAINLESS STEEL GRAB BAR	BOBRICK	B-5806x42
3	18" STAINLESS STEEL GRAB BAR	BOBRICK	B-5806x18
4	COMPACT VERTICAL DOUBLE ROLL CORELESS (SMOKE)	WAXIE	#56700
5	FEMININE HYGIENE DUAL VENDOR (WHITE)	HOSPECO	#820050
6	FOAM SOAP DISPENSER (BLACK - 1250 ML)	WAXIE	#336315
7	ENMOTION PAPER TOWEL DISPENSER (JR SIZE)	GEORGIA-PACIFIC	#855120
8	MIRROR - 3'-0" H x 2'-6" W		
9	SLIM JIM 23-GALLON WASTE DISPENSER (GREY)	RUBBERMAID	#73004
10	BABY CHANGING STATION	KOALA KARE	KB300-01SS
12	SEAT COVER DISPENSER	KLEENLINE	#851585

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023
3	2ND PLAN REVIEW COMMENTS	1/19/2024

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — 32361 — MICHAEL E. PFEIFER — ARIZONA U.S.A. — 11/16/2023

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

BUILDING SECTIONS + ENLARGED INTERIOR ELEVATIONS

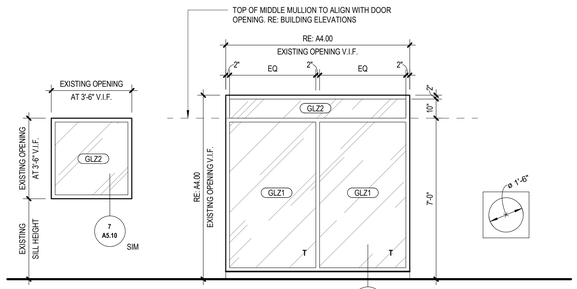
DRAWING
A4.00

SHEET 8 - OF - 55
CATALOG NUMBER: A-281082

1/19/2024 10:55:13 AM

PMT23-19464

window + skylight types:



A
STOREFRONT ALUMINUM WINDOW AT EXISTING OPENING. CLEAR FINISH TO MATCH EXISTING EXTERIOR.

B
STOREFRONT ALUMINUM WINDOW AT EXISTING OPENING. CLEAR FINISH TO MATCH EXISTING EXTERIOR.

SK1
TUBULAR SKYLIGHT

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	FIRE RATING	KEY/LOCK	REMARKS
d2.0	B	3'-0"	9'-0"	HM	1'-0 3/4"	PNT1	HM	PNT1	01	YES			REFERENCE CITY OF MESA ACCESS CONTROL SYSTEMS DETAILS AND SPECIFICATIONS
d2.5	A1	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	04				
d2.6	A	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	05				
d2.7	A	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	06				
d2.11	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.12	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.13	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.14	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.16	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.17	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07				
d2.18	E	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	07	YES			REFERENCE CITY OF MESA ACCESS CONTROL SYSTEMS DETAILS AND SPECIFICATIONS
d2.20a	A	3'-0"	7'-0"	SCW	1'-0 3/4"	CLEAR	HM	PNT1	08	YES	1 HR	1	REFERENCE CITY OF MESA ACCESS CONTROL SYSTEMS DETAILS AND SPECIFICATIONS
de2.0a	G	10'-0"	9'-0"	STEEL			STEEL		11				INSULATED OVERHEAD ROLLING DOOR
de2.2	C	6'-0"	8'-0"	HM	1'-0 3/4"	PNT1	HM	PNT1	09	YES	1 HR	1	REFERENCE CITY OF MESA ACCESS CONTROL SYSTEMS DETAILS AND SPECIFICATIONS
de2.6	F	3'-0"	7'-0"	AL		CLEAR ANODIZED	AL	CLEAR ANODIZED	10				

Grand total: 15

ROOM FINISH SCHEDULE

#	NAME	FLOOR	BASE	WALL	CEILING
2.0	IT	SDT1	RB1	GYP / PNT	ACT1
2.5	JAN	CNC1	RB1	GYP / PNT / SS	ACT1
2.6	RR	CNC1	TILE1	TILE1 / GYP	GYP
2.7	ADA RR	CNC1	TILE1	TILE1 / GYP	GYP
2.8	BREAK	CNC1	RB1	GYP / PNT	ACT1
2.10	OPEN OFC	CPT1	RB1	GYP / PNT	SAC1 / SAC2
2.11	OFC	CPT1	RB1	GYP / PNT	ACT1
2.12	OFC	CPT1	RB1	GYP / PNT	ACT1
2.13	OFC	CPT1	RB1	GYP / PNT	ACT1
2.14	OFC	CPT1	RB1	GYP / PNT	ACT1
2.16	OFC	CPT1	RB1	GYP / PNT	ACT1
2.17	OFC	CPT1	RB1	GYP / PNT	ACT1
2.18	OFC	CPT1	RB1	GYP / PNT	ACT1
2.20	CORRIDOR	CPT1	RB1	GYP / PNT	EXP
e2.2	e PAINT	EXISTING	RB1	EXISTING	e EXP

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 - 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 3 CAST-N-PLACE CONCRETE / POLISHED CONCRETE
- CNC1 — SEALED CONCRETE W/ SLIP RESISTANT COATING

DIVISION 5 METALS
- MTL3 — STAINLESS STEEL WALL PANEL, SEAMLESS

DIVISION 6 ARCHITECTURAL CASEWORK
- PLAM1 — NEVAMAR COLOR: WROUGHT IRON

DIVISION 8 GLAZING
- GLZ1 — 1" THICK, INSULATED GLASS UNIT, CLEAR, LOW E, TEMPERED (EXTERIOR)
- GLZ2 — 1" THICK, CLEAR, INSULATED, LOW E, (EXTERIOR)
- GLZ3 — 1/4" THICK, CLEAR, TEMPERED (INTERIOR)

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, SEMI-GLOSS EPOXY AT JANITOR'S CLOSET
- PNT2 — DUNN EDWARDS COLOR: JET PAINT COLOR DE6378 LOCATION: EXPOSED STEEL, EXISTING EXPOSED ROOF INSULATION

DIVISION 9 SOUND ABSORBING CEILING BAFFLES
- SAC1 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE COLORS: COLOR 1 (GREEN) PENDING CLIENT APPROVAL SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH LOCATION: OPEN OFFICE
- SAC2 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE COLORS: COLOR 2 (BLUE) PENDING CLIENT APPROVAL SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH LOCATION: OPEN OFFICE
- SAC3 — SUSPENDED FELT BAFFLES, FILZFELT ARO BAFFLE COLORS: COLOR 3 DARK GRAY PENDING CLIENT APPROVAL SIZE: 1'-0" HIGH X 6-3/8" WIDE X 8'-0" LENGTH LOCATION: OPEN OFFICE

DIVISION 9 RESILIENT BASE + ACCESSORIES
- RB1 — 4" RUBBER BASE, JOHNSONITE COLOR: BLACK

DIVISION 9 STATIC CONTROL RESILIENT FLOORING
- SDT1 — STATIC DISSIPATIVE TILE

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

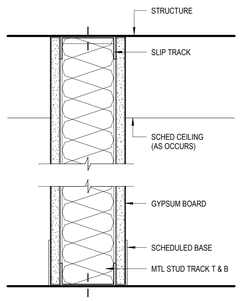
DIVISION 9 TILE CARPETING
- CPT1 — 24" X 24" CARPET TILE MOHAWK FIRST ONE UP II TILE COLOR: 986 LOCATION: OFFICES, OPEN OFFICE

DIVISION 9 TILING (CERAMIC + METAL EDGE STRIPS)
- TILE1 — CERAMIC WALL TILE DALTILE COLOR WHEL COLLECTION - GLAZED CERAMIC SIZE" 3" X 6" COLOR: WHITE 0100 LOCATION: RESTROOMS
- MTL1 — SCHLUTER JOLLY COLOR: SATIN ANODIZED ALUMINUM (AE) LOCATION: RESTROOM TILE TRANSITIONS
- MTL2 — SCHLUTER DILEX-AHK COLOR: SATIN ANODIZED ALUMINUM (AE) LOCATION: RESTROOM TILE TRANSITIONS

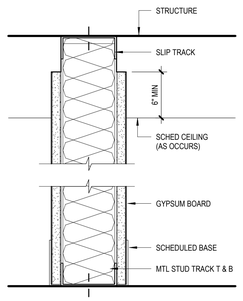
DIVISION 12 SIMULATED STONE COUNTERTOPS
- SS1 — CORIAN COLOR: CARBON AGGREGATE

DIVISION 12 ROLLER SHADES
- RS1 — MECHOSHADE OR SIM (AT ADMIN OFFICES) COLOR: PENDING CLIENT APPROVAL

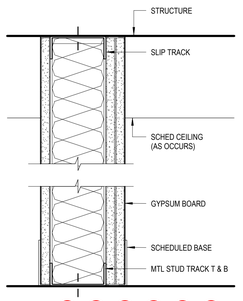
partition types: refer to structural drawings S4.1 for additional framing details



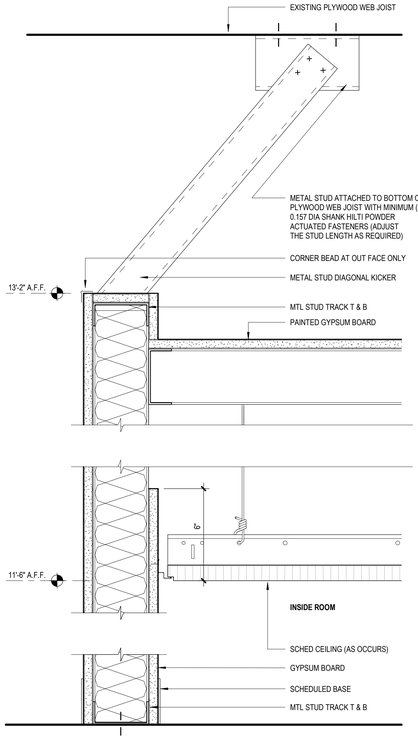
A
2 LAYER PARTITION:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
3-5/8" FRAMING STUDS o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
RATING:
STC 50 MIN



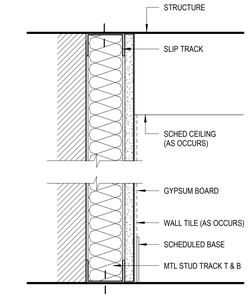
B
2 LAYER PARTITION:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
3-5/8" FRAMING STUDS o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
RATING:
STC 45 MIN



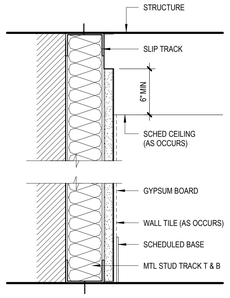
C (C1)
C = NON RATED
C1 = 1 HR FIRE RATED 1
2 LAYER PARTITION:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
3-5/8" FRAMING STUDS o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
RATING:
STC 60 MIN
RATING FOR C1:
UL: U465 1 HR 1



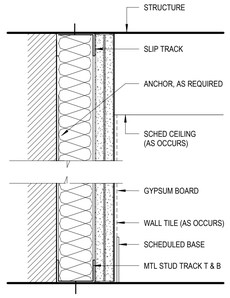
G
2 LAYER PARTITION:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
3-5/8" FRAMING STUDS o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
RATING:
STC 50 MIN



D
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
RATING:
STC 50 MIN



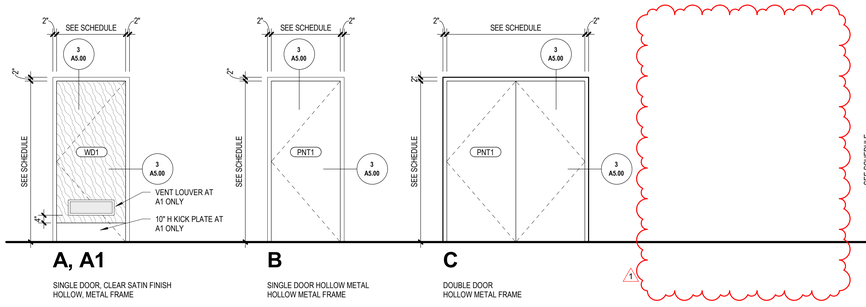
E
FURRING:
(1) LAYER 5/8" GWB TO BOTTOM OF STRUCTURE o/
2-1/2" FURRING STUDS TO o/ (1) LAYER 'TYPE X' 5/8" GWB TO BOTTOM OF STRUCTURE WITH SOUND ATTENUATION BATTS
RATING:
STC 60 MIN



F
FURRING:
(2) 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
RATING:
STC 60 MIN

G
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
RATING:
STC 50 MIN

door types:



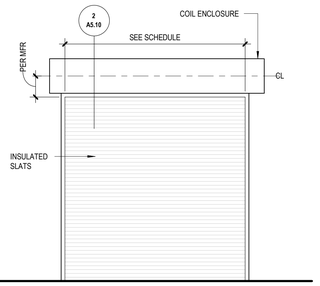
A, A1
SINGLE DOOR, CLEAR SATIN FINISH HOLLOW, METAL FRAME

B
SINGLE DOOR HOLLOW METAL HOLLOW METAL FRAME

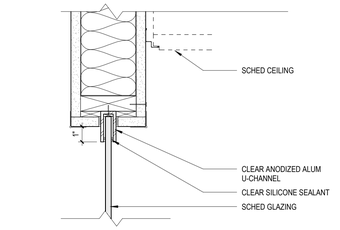
C
DOUBLE DOOR HOLLOW METAL FRAME

E
SINGLE DOOR + GLASS, SIDELITE HOLLOW METAL FRAME, AT OFFICES

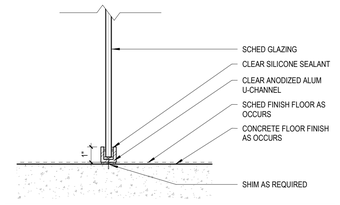
F
SINGLE DOOR, ALUM + GLASS STOREFRONT FRAME



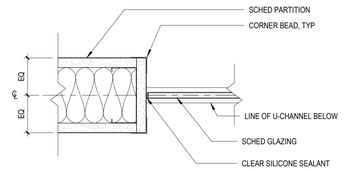
G
INSULATED ROLL UP DOOR - INTERIOR VIEW



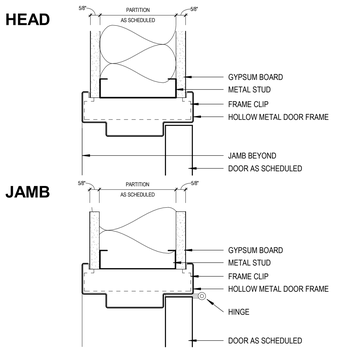
6 typ. butt glazing - head dtl at gwb-act
3" = 1'-0"



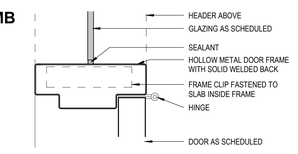
5 typ. butt glazing - sill dtl
3" = 1'-0"



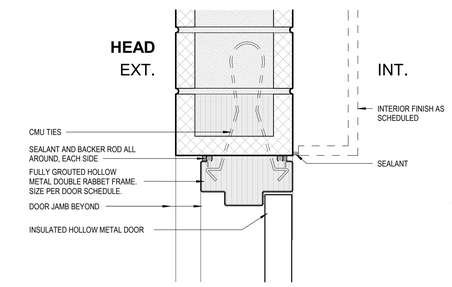
4 typ. butt glazing - jab dtl
3" = 1'-0"



3 typ. hm door header + jamb
3" = 1'-0"



2 typ. hm jamb detail at sidelight
3" = 1'-0"



12 typ ext hm door at cmu - jamb
3" = 1'-0"

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — 72961 — MICHAEL J. HOLLY — ARIZONA, USA

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC ____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

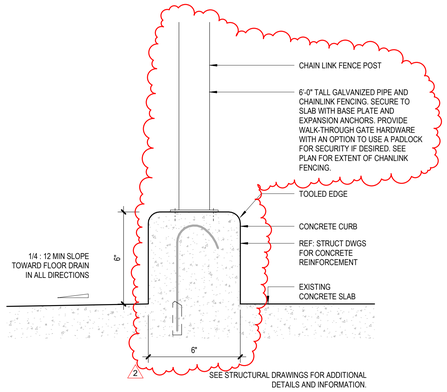
CITY OF MESA
ENGINEERING DEPARTMENT

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

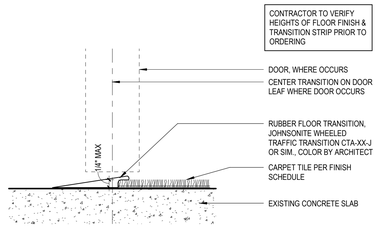
SCHEDULES

DRAWING
A5.00

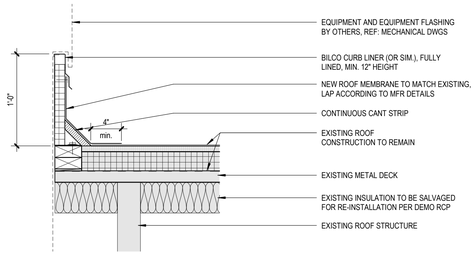
SHEET 9 - OF - 55
CATALOG NUMBER: A-281083



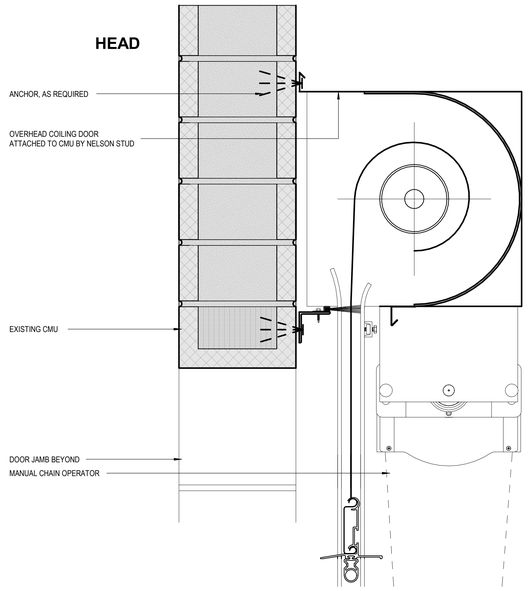
8 curb detail at mechnical unit
A2.00 | 3" = 1'-0"

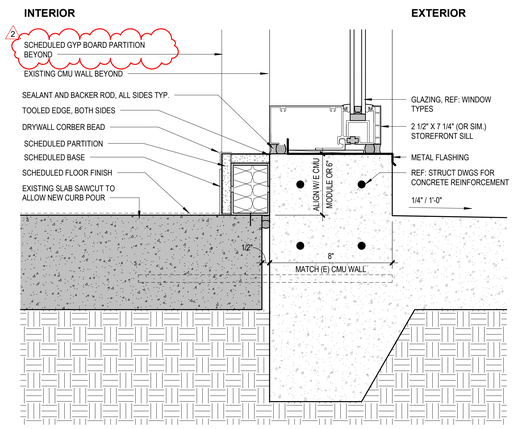


6 typ. cpt to cnc transition
6" = 1'-0"

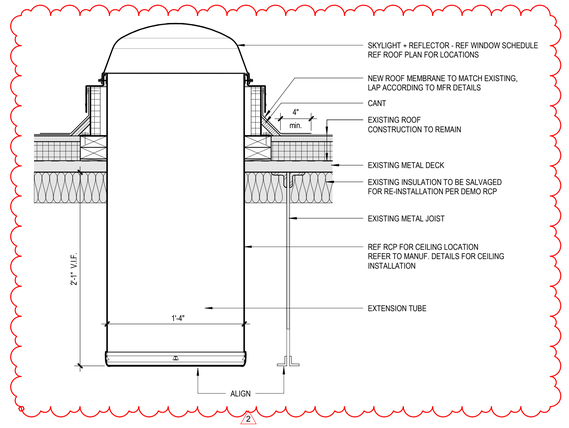


5 section thru equip. curb at roof
1 1/2" = 1'-0"

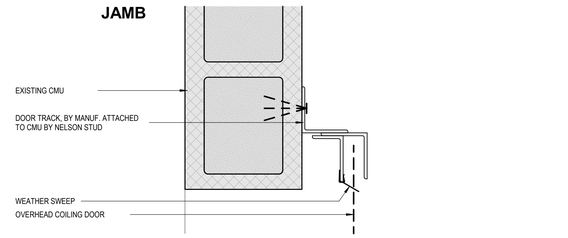




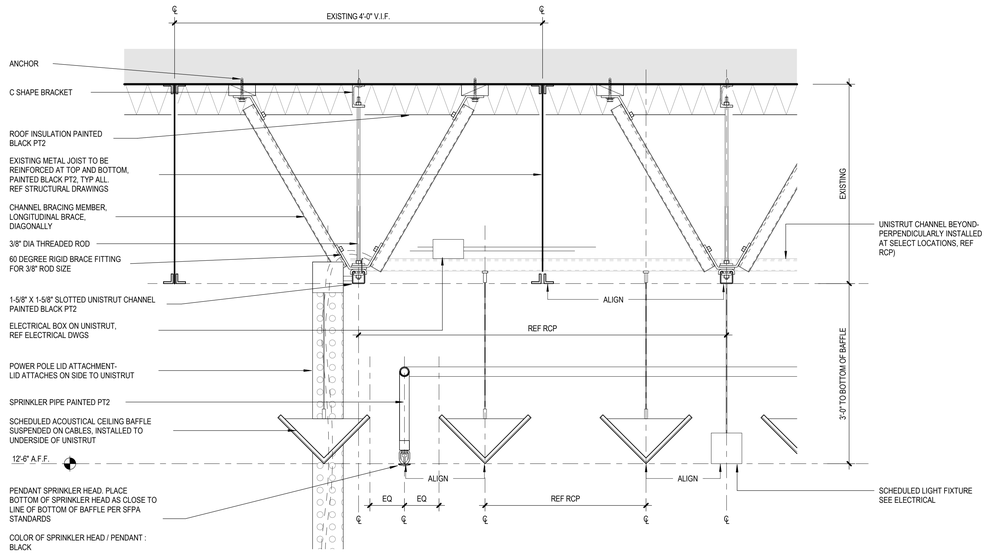
7 sill detail at exterior storefront window
A5.00 | 3" = 1'-0"



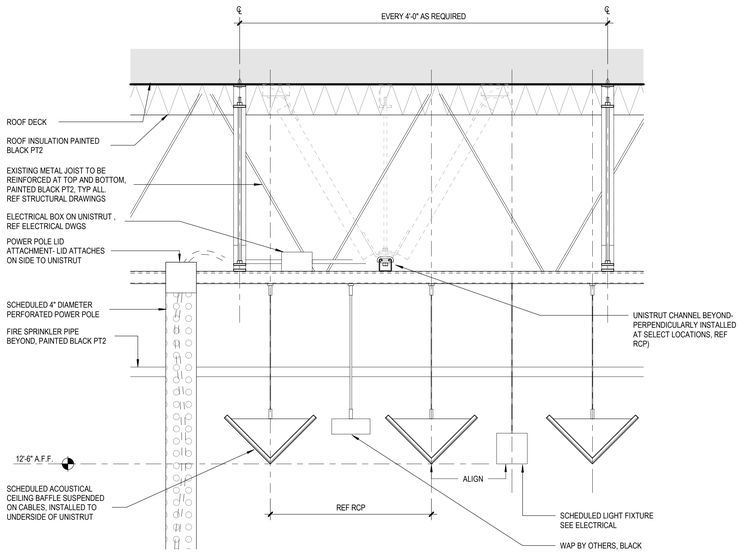
4 section thru skylight at roof
A4.00 | 1 1/2" = 1'-0"



2 typ. overhead coiling door at cmu
3" = 1'-0"



3 ceiling detail - unistrut to acoustical ceiling baffle east / west
A2.00 | 1 1/2" = 1'-0"



1 ceiling detail - unistrut to acoustical ceiling baffle north / south
A2.00 | 1 1/2" = 1'-0"

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

REGISTERED ARCHITECT — 32561 — MICHAEL E. HOLMES — ARIZONA U.S.A. — 11/16/2023

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

DETAILS

DRAWING
A5.10

SHEET	CATALOG NUMBER:
10 - OF - 55	A-281084

12/22/2023 3:11:06 PM

PMT23-19464

general notes

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. VERIFY WITH OWNER ON MILLWORK LOCK LOCATIONS AND QUANTITIES.

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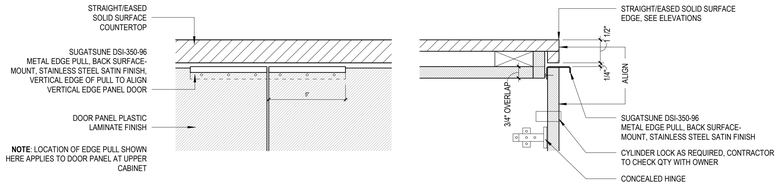
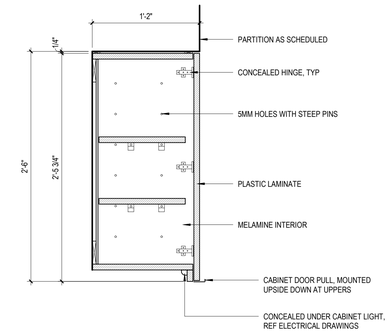
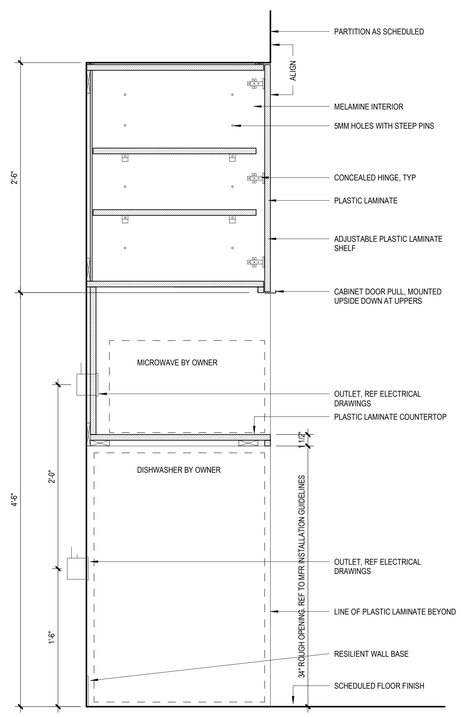
ELEVATION **SECTION**



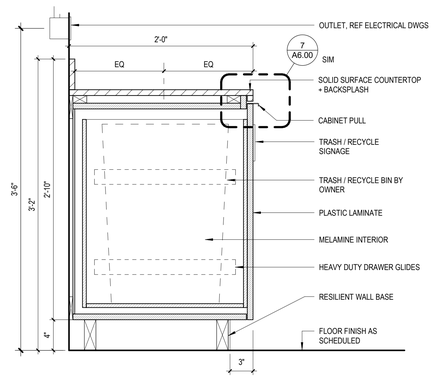
7 **TYP CABINET PULL AND COUNTER EDGE DETAIL**
3" = 1'-0"



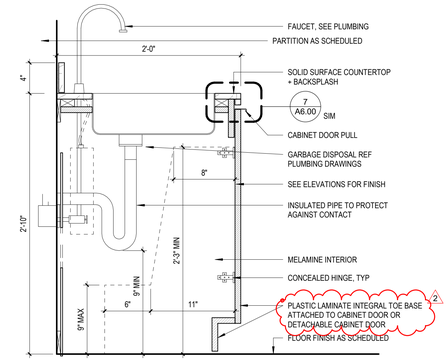
3 **TYP UPPER CABINET SECTION**
1 1/2" = 1'-0"



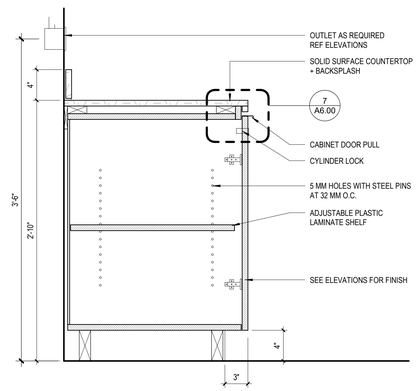
6 **MILLWORK TOWER AT BREAKROOM**
1 1/2" = 1'-0"



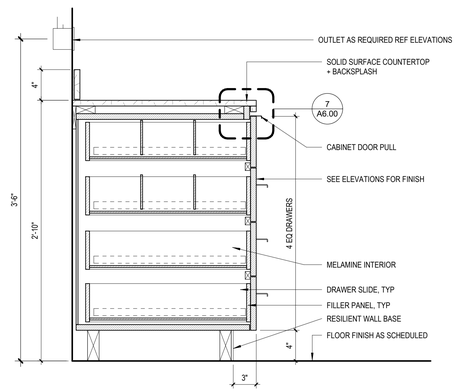
5 **BASE CABINET AT TRASH/RECYCLE PULL OUT**
1 1/2" = 1'-0"



2 **BASE CABINET W/SINK AT BREAK ROOM**
1 1/2" = 1'-0"



4 **BASE CABINET AT BREAK ROOM**
1 1/2" = 1'-0"



1 **BASE CABINET W/DRAWERS AT BREAK ROOM**
1 1/2" = 1'-0"

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

MILLWORK DETAILS

DRAWING
A6.00

SHEET	CATALOG NUMBER:
11 - OF - 55	A-281085

12/22/2023 2:08:05 PM

PMT23-19464

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

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.

STEEL DECK

1. ALL STEEL DECK SHALL BE DETAILED, FABRICATED, AND INSTALLED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE SPECIFICATIONS, LATEST EDITION.

2. MINIMUM SECTION PROPERTIES OF STEEL ROOF DECK SHALL BE AS FOLLOWS:

1 1/2" X 22GA (TYPE B): Ip = 0.155 IN4/FT, In = 0.178 IN4/FT, Sp = 0.169 IN3/FT, Sn = 0.179 IN3/FT

3. STEEL ROOF DECK SHALL CONFORM TO ASTM A653, STRUCTURAL STEEL GRADE WITH A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL FLOOR DECK SHALL CONFORM TO ASTM A653, STRUCTURAL STEEL GRADE WITH A MINIMUM YIELD STRENGTH OF 50 KSI.

4. GALVANIZE STEEL ROOF DECK IN ACCORDANCE WITH ASTM A653, G60. GALVANIZE COMPOSITE STEEL FLOOR DECK IN ACCORDANCE WITH ASTM A653, G60.

5. MINIMUM ROOF DECK ATTACHMENT TO SUPPORTS:

36/4 WELD PATTERN AT SUPPORTS, WITH 1 1/4" X 3/8" ARC SEAM WELD AT SUPPORTS ADJACENT TO SIDELAP AND 5/8" VISIBLE DIAMETER ARC SPOT WELDS AT INTERIOR FLUTES, PNEUMATIC PUNCH SIDELAPS AT 24" O.C

6. CONNECT ROOF DECK TO SUPPORTS AROUND PERIMETER OF EDGES, OPENINGS, AND PENETRATIONS WITH 5/8" VISIBLE DIAMETER ARC SPOT WELDS AT 12" O.C.

7. STEEL DECK MANUFACTURER SHALL FURNISH COMPLETE SHOP DRAWINGS DEPICTING DECK PLACEMENT, SHEET METAL CLOSURES, SHEET METAL ACCESSORIES, AND DECK CONNECTION REQUIREMENTS.

8. THE ROOF DECK AREAS REQUIRE VARYING SLOPES, INCLUDING POSSIBLE WARPING OF THE DECK. THE STEEL DECK FABRICATOR SHALL PROVIDE PROPER FIT AND WELDING OF ALL DECK.

9. ALL STEEL DECK AND MECHANICAL FASTENERS SHALL HAVE CURRENT ICC OR IAPMO EVALUATION REPORT. ALL WELDING SHALL BE IN ACCORDANCE WITH AWS D1.3.

10. DO NOT SUSPEND ANY ITEM FROM ANY STEEL DECK. ALL HANGERS FOR CONDUIT, PIPING, FIXTURES OR ANY OTHER ITEMS, SHALL BE HUNG DIRECTLY FROM STRUCTURAL STEEL WORK OR SUPPLEMENTARY MEMBERS ACCEPTABLE TO THE ARCHITECT AND STRUCTURAL ENGINEER. ALL HANGING LOAD LOCATIONS AND DETAILS SHALL BE SUBMITTED FOR REVIEW.

11. DECK WELDS SHALL BE IN ACCORDANCE WITH AWS D1.3.

12. FIELD CUT ALL OPENINGS SHOWN ON THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS. REINFORCE ALL OPENINGS NOT INDICATED ON THE STRUCTURAL DRAWINGS AS REQUIRED.

13. SEE THE ARCHITECTURAL DRAWINGS AND SPECIFICATION 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.

14. SEE THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR STEEL DECK PAINTING REQUIREMENTS.

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 ACCESSILITY 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.

CONCRETE

1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" AND WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".

2. CONCRETE DETAILING SHALL BE IN ACCORDANCE WITH THE ACI DETAILING MANUAL SP-66 AND ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT". SUBMIT SHOP DRAWINGS FOR REVIEW.

3. CONCRETE PLACEMENT AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".

4. PROVIDE ASTM C150 TYPE I OR TYPE II CEMENT UNLESS NOTED OTHERWISE. THE CEMENTITIOUS MATERIAL CONTENT SHALL BE ADEQUATE FOR THE SPECIFIED REQUIREMENTS FOR STRENGTH, WATER-CEMENTITIOUS MATERIAL RATIO, DURABILITY, WORKABILITY, AND FINISHABILITY.

5. PROVIDE NORMAL-WEIGHT CONCRETE WITH 28-DAY COMPRESSIVE STRENGTHS AS INDICATED:

FOOTINGS: 3000 PSI
SLABS ON GRADE: 4500 PSI
BUILDING WALLS: 4000 PSI
EQUIPMENT PADS: 4000 PSI

6. ALL CONCRETE REQUIRING LOW PERMEABILITY SHALL HAVE A MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO OF 0.50 AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.

7. ALL CONCRETE SLABS ON GRADE SHALL HAVE A MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO OF 0.45.

8. GYPSUM CONCRETE (GYPCRETE) SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2200 PSI AND A MAXIMUM DRY DENSITY OF 110 PCF.

9. CONCRETE SHALL HAVE, AT THE POINT OF DELIVERY, A SLUMP OF 4 INCHES AS DETERMINED BY ASTM C143. SLUMP TOLERANCES SHALL MEET THE REQUIREMENTS OF ACI 117. WHEN A PLASTICIZING ADMIXTURE OR HIGH-RANGE WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494 IS PERMITTED TO INCREASE THE SLUMP OF CONCRETE, CONCRETE SHALL HAVE BEEN PROPORTIONED TO A SLUMP OF 2 TO 4 IN. BEFORE THE ADMIXTURE IS ADDED AND A MAXIMUM SLUMP OF 8 IN. AT THE POINT OF DELIVERY AFTER THE ADMIXTURE IS ADDED.

10. ADDITION OF WATER TO A CONCRETE BATCH WITH INSUFFICIENT SLUMP WILL NOT BE PERMITTED, UNLESS THE SUPPLIER HAS SPECIFICALLY WITHHELD WATER FROM THE BATCH AT THE PLANT. IN SUCH CASE, THE MIX DESIGN AND TRUCK TICKET MUST CLEARLY STATE THE MAXIMUM AMOUNT OF WATER THAT CAN BE ADDED TO THE CONCRETE BATCH ON SITE. IN NO CASE SHALL THE MAXIMUM WATER-CEMENTITIOUS MATERIAL RATIO BE EXCEEDED.

11. NO CHLORIDES AND/OR ADMIXTURES CONTAINING CHLORIDES SHALL BE USED IN ANY CONCRETE.

12. UNLESS A GREATER CONCRETE COVER IS REQUIRED FOR FIRE RESISTANCE, THE MINIMUM CONCRETE COVER FOR CAST-IN-PLACE CONCRETE REINFORCING STEEL SHALL CONFORM TO THE COVERS AS INDICATED:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH: 3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER:
NO. 6 BAR AND LARGER: 2 INCHES
NO. 5 BAR AND SMALLER: 1-1/2 INCHES
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
SLABS, WALLS, JOISTS:
NO. 11 BAR AND SMALLER: 3/4 INCHES

13. CHAMFER ALL EXPOSED CORNERS WITH 3/4 INCH, 45 DEGREE CHAMFERS.

14. PROVIDE FINISHES AS INDICATED IN THE PROJECT SPECIFICATIONS AND IN THE ARCHITECTURAL DRAWINGS.

15. AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING CONCRETE, ROUGHEN CONTACT SURFACES TO 1/4 INCH AMPLITUDE AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES.

16. AT LOCATIONS WHERE CONCRETE IS CAST AGAINST EXISTING MASONRY, THOROUGHLY ROUGHEN CONTACT SURFACES BY LIGHT SANDBLASTING OR OTHER SUITABLE MEANS AND CLEAN OF LAITANCE, FOREIGN MATTER, AND LOOSE PARTICLES.

17. CONTROL JOINTS FOR SLABS ON GRADE SHALL BE AS NOTED IN PLAN, OR, IF NOT NOTED, IN A SQUARE PATTERN AND BE NOT MORE THAN 15 FEET ON CENTER, UNLESS OTHERWISE NOTED. IF CONTROL JOINTS ARE CUT, THEY SHALL BE CUT WITHIN 12 HOURS AFTER THE CONCRETE IS PLACED.

18. THE CONCRETE CONTRACTOR SHALL REVIEW ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND CONSULT WITH OTHER CONTRACTORS FOR OPENINGS, SLEEVES, ANCHORS, HANGERS, INSERTS, SLAB DEPRESSIONS AND OTHER ITEMS RELATED TO THE CONCRETE WORK AND SHALL ASSUME RESPONSIBILITY FOR THEIR PROPER LOCATION. NO CORING OF CAST-IN-PLACE CONCRETE IS ALLOWED WITHOUT PRIOR APPROVAL BY THE STRUCTURAL ENGINEER.

19. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, PROCESS AND PLUMBING DRAWINGS FOR MISCELLANEOUS PADS. FURNISH AND INSTALL AS REQUIRED.

20. NO STRUCTURAL CONCRETE SHALL BE PLACED UNTIL THE CONCRETE DESIGN MIXES, THE CONCRETE PLACEMENT PROCEDURE, THE LOCATION OF CONSTRUCTION JOINTS AND THE SETTING OF REINFORCING STEEL IS REVIEWED BY THE STRUCTURAL ENGINEER AND ARCHITECT AS APPLICABLE.

21. CHECKED SHOP DRAWINGS SHOWING REINFORCING DETAILS, INCLUDING STEEL SIZES, LAPS, SPACING AND PLACEMENT, LOCATIONS AND DETAILS OF ALL CONSTRUCTION JOINTS, SLAB DEPRESSIONS, OPENINGS, CURBS, AND ANY OTHER DETAILING REQUIRED TO DETAIL THE WORK SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

22. NO ALUMINUM OF ANY TYPE SHALL BE ALLOWED IN THE CONCRETE, UNLESS COATED TO PREVENT ALUMINUM-CONCRETE REACTION. THIS INCLUDES PUMPING THROUGH ALUMINUM PIPE.

23. FORMWORK, SHORING, AND RESHORING SHALL BE IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK". DESIGN AND DETAILING OF FORMWORK, SHORING, AND RESHORING SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL FORMWORK, SHORING, AND RESHORING SYSTEMS SHALL BE DESIGNED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

24. HEADED CONCRETE ANCHORS SHALL BE MANUFACTURED BY NELSON STUD WELDING CO., LORAIN, OHIO, OR OTHER MANUFACTURER ACCEPTABLE TO STRUCTURAL ENGINEER. SEE DRAWINGS FOR DIAMETER AND NOMINAL LENGTH. INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. MATERIAL SHALL CONFORM TO ASTM A108.

25. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED. ENSURE FULL CONSOLIDATION OF CONCRETE AROUND REINFORCING STEEL, POST-TENSIONING STEEL, DOWELS, ANCHOR BOLTS, DEFORMED BAR ANCHORS, HEADED CONCRETE ANCHORS AND OTHER SIMILAR ITEMS DURING CONCRETE PLACEMENT.

26. CONCRETE SLABS ON GRADE AND CONCRETE TOPPING SLABS SHALL BE CONSTRUCTED PER ACI 302.1R "GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION" AND ACI 302.2R "GUIDE FOR CONCRETE SLABS THAT RECEIVE MOISTURE-SENSITIVE FLOORING MATERIALS". THE SLABS SHALL BE PLACED IN STRIP POURS. CONCRETE AGGREGATE MATERIALS SHALL BE SUFFICIENTLY GRADED AND CONCRETE SLABS-ON-GRADE SHALL BE CURED AS REQUIRED TO MINIMIZE POSSIBILITY OF SLAB CURLING.

27. CONTINUOUSLY MOIST CURE CONCRETE SLABS ON GRADE FOR 7 DAYS MINIMUM. WATER FOG SPRAYS, PONDING, SATURATED ABSORPTIVE COVERS, OR MOISTURE RETAINING COVERS MAY BE USED. CURING COMPOUNDS ARE NOT ACCEPTABLE.

28. TEST CYLINDERS SHALL BE MADE AND TESTED IN ACCORDANCE WITH ACI 318 SECTION 5.6.

CONCRETE REINFORCING STEEL

1. FABRICATE AND PLACE REINFORCING STEEL IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE".

2. UNLESS NOTED OTHERWISE, REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. REINFORCING STEEL THAT IS TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60.

3. WELDED WIRE REINFORCEMENT SHALL CONFORM TO ASTM A1064 AND SHALL BE PLAIN WIRE. SUPPLY IN FLAT SHEETS. ROLLS SHALL NOT BE PERMITTED. UNLESS NOTED OTHERWISE, LAPS OF WELDED WIRE REINFORCEMENT SHALL BE A MINIMUM OF TWO WIRE MESHES.

4. SMOOTH STEEL DOWELS IN SLABS ON GRADE SHALL CONFORM TO ASTM A36.

5. ALL FIELD BENDING OF REINFORCING SHALL BE PERFORMED COLD. HEATING OF BARS SHALL NOT BE PERMITTED.

6. DO NOT CUT OR WELD REINFORCING STEEL WITHOUT PRIOR ACCEPTANCE OF STRUCTURAL ENGINEER. WHEN WELDING IS INDICATED ON THE DRAWINGS, PROCEDURES SHALL BE IN ACCORDANCE WITH AWS D1.4.

7. PROVIDE REBAR CHAIRS FOR REINFORCING STEEL. PROVIDE ADDITIONAL LONGITUDINAL SUPPORT BARS AS REQUIRED TO ASSURE PROPER SUPPORT FOR REINFORCING STEEL AND WELDED WIRE REINFORCEMENT.

8. PROVIDE ALL ACCESSORIES NECESSARY TO SUPPORT REINFORCEMENT AT POSITIONS SHOWN ON THE PLANS AND DETAILS. PLASTIC COATED ACCESSORIES SHALL BE USED IN ALL EXPOSED CONCRETE WORK.

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 P

GENERAL STRUCTURAL NOTES

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.

COLD FORMED METAL FRAMING

1. ALL COLD-FORMED STEEL FRAMING SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH THE LATEST EDITION OF AISI S100 "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS".

2. STEEL FOR 14 AND 16 GAGE STUDS AND JOISTS AND FOR ALL DIAGONAL TENSION STRAPS SHALL HAVE A MINIMUM YIELD STRENGTH OF 50 KSI. STEEL FOR ALL 18 AND 20 GAGE STUDS AND JOISTS AND FOR ALL GAGES OF TRACK, ACCESSORIES, AND BRIDGING SHALL HAVE A MINIMUM YIELD STRENGTH OF 33 KSI.

3. ALL STUDS SHALL BE SECURELY SEATED FOR FULL END BEARING ON TOP AND BOTTOM TRACK. UNLESS NOTED OTHERWISE, PROVIDE DOUBLE STUDS AT ALL JAMBS, CORNERS, INTERSECTIONS, BEAM BEARINGS, AND JOIST BEARINGS. DO NOT NOTCH FLANGES OF JOISTS OR STUDS.

4. ALL COLD-FORMED METAL FRAMING SHALL BE G60 GALVANIZED, TYPICAL. COLD-FORMED METAL FRAMING SUPPORTING ANCHORED VENEER AT EXTERIOR WALLS SHALL BE G60 GALVANIZED. ALL CONNECTION SCREWS SHALL BE ZINC COATED.

5. ALL COLD-FORMED METAL FRAMING AND POWDER-DRIVEN FASTENERS SHALL BE ICC-ES APPROVED. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWS D1.3, "STRUCTURAL WELDING CODE-SHEET STEEL" BY WELDERS EXPERIENCED IN LIGHT GAGE STRUCTURAL STEEL FRAMING WORK.

6. ALL SELF-DRILLING SCREWS SHALL HAVE THE FIRST THREE THREADS (MINIMUM) PROTRUDE BEYOND THE BACK-SIDE OF THE BASE MATERIAL.

7. STUDS SHALL BE FASTENED TO TRACK WITH A MINIMUM OF (2) #10-16 SELF-DRILLING SCREWS WITH STUD SECURELY INTO TRACK.

8. TRACK SHALL BE FASTENED TO STRUCTURAL STEEL WITH A MINIMUM OF 1/8" WELD EACH SIDE, 2" LONG SPACED AT 32" OC OR (2) 0.157" DIA POWDER ACTUATED FASTENERS (HILTI X-U ICC-ES ESR-2269 OR EQUIVALENT) AT 16" O.C.

9. PROVIDE #10-16 SELF-DRILLING SCREWS FOR ALL COLD-FORMED STEEL TO COLD-FORMED STEEL CONNECTIONS U.N.O.

10. TRACK SHALL BE FASTENED TO CONCRETE WITH A MINIMUM OF (2) 0.157" DIA POWDER ACTUATED FASTENERS (HILTI X-U ICC-ES ESR-2269 OR EQUIVALENT) THROUGH TRACK AT EACH STUD. PROVIDE 1 1/2" MINIMUM EMBEDMENT, 4" MINIMUM SPACING, AND 3" MINIMUM CONCRETE EDGE DISTANCE.

11. MAINTAIN 3/4" MINIMUM DISTANCE BETWEEN CENTERS OF CONNECTION SCREWS AND 3/4" MINIMUM DISTANCE FROM THE CENTER OF SCREW TO EDGE OF CONNECTED PART. INSTALL FASTENERS FROM THINNER THROUGH THICKER MATERIAL.

12. PROVIDE MECHANICAL BRIDGING AT INTERVALS NOT EXCEEDING 4'-0" ON CENTER AT ALL COLD-FORMED STEEL WALLS. BRIDGING SHALL BE IN PLACE PRIOR TO PLACING ANY LOADS ON THE WALL.

13. FIELD MODIFICATIONS OF COLD-FORMED STEEL SYSTEMS SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER OF RECORD.

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:

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"
   SPAN/INDEX 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.

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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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i.d.e.a. Museum - Office Relocation
150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Professional Engineer — CERTIFICATE NO. 57855 — NICOLE ALLENDER — 12/04/2023 — REGISTERED — ARIZONA, U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

GENERAL STRUCTURAL NOTES

DRAWING
S0.2

SHEET 13 - OF - 55

CATALOG NUMBER: A-281087

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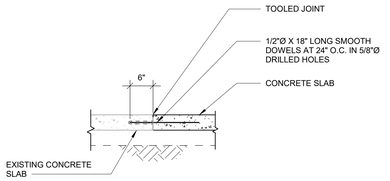
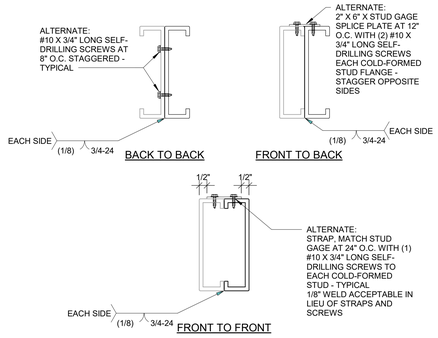
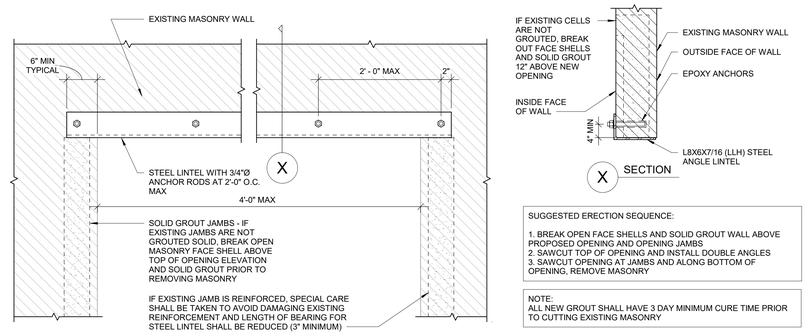


T11 / S0.3 — CONCRETE SLAB AT EXISTING SLAB
SCALE: NTS



T12 / S0.3 — TYPICAL DETAIL - STUD TO STUD CONNECTIONS
SCALE: NTS



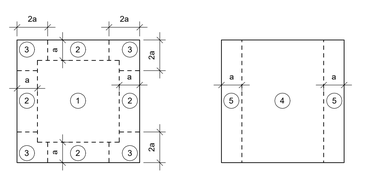
SUGGESTED ERECTION SEQUENCE:

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

T13 / S0.3 — TYPICAL DETAIL - ELEVATION AT NEW OPENING IN EXISTING MASONRY WALL
SCALE: NTS

ULTIMATE WIND SURFACE PRESSURE (PSF)						
ZONE	EFFECTIVE WIND AREA (SQ. FT)					
	10	20	50	100	200	500
1	-34.7 16.0	---	-29.4 16.0	-27.1 16.0	---	-21.8 16.0
2	-45.7 16.0	---	-38.9 16.0	-36.0 16.0	---	-29.1 16.0
3	-62.3 16.0	---	-48.7 16.0	-31.3 16.0	---	-29.1 16.0
4	-23.6 21.8	---	---	-22.6 18.5	-19.4 17.5	-18.1 19.0
5	-29.1 21.8	---	---	-22.6 18.5	-20.7 17.5	-18.1 19.0
PARAPET	-44.3 77.5	-41.3 70.6	-37.4 61.5	-34.5 54.7	-31.6 47.8	-27.7 38.7



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.

T6 / S0.3 — TYPICAL DETAIL - COMPONENT AND CLADDING WIND FORCES PER ASCE 7-16 (h > 60'-0" AT ROOFS WITH SLOPE ≤ 10°)
SCALE: NTS

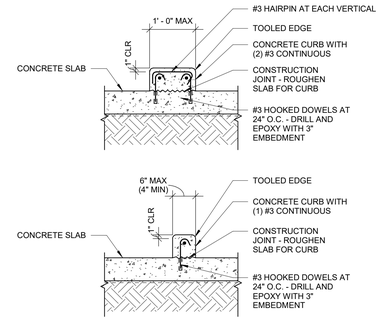
HOOKED BAR DEVELOPMENT LENGTH TABLE										
CASE		DEVELOPMENT LENGTH (INCHES)								
	BAR DIAMETER	0.375"Ø	0.500"Ø	0.625"Ø	0.750"Ø	0.875"Ø	1.000"Ø	1.128"Ø	1.270"Ø	1.410"Ø
	BAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10	#11
1	3000 PSI	6	6	8	11	14	16	20	23	27
	4000 PSI	6	6	8	10	13	15	18	22	26
	5000 PSI	6	6	8	10	12	15	18	21	25
	6000 PSI	6	6	7	10	12	15	17	21	24
2	3000 PSI	6	8	10	13	17	20	24	29	34
	4000 PSI	6	7	10	13	16	19	23	27	32
	5000 PSI	6	7	9	12	15	18	22	26	31
	6000 PSI	6	7	9	12	15	18	22	26	30

CASE 1:
THE SIDE COVER (NORMAL TO THE PLANE OF HOOK) OF BARS BEING DEVELOPED IS NOT LESS THAN 6 BAR DIAMETERS, 2 1/2" MINIMUM
AND
THE END COVER ON BAR EXTENSION BEYOND HOOK FOR HOOKED BARS BEING DEVELOPED IS NOT LESS THAN 2"
AND
BARS TERMINATING INSIDE COLUMN CORE WITH SIDE COVER (NORMAL TO PLANE OF HOOK) IS NOT LESS THAN 2 1/2"

CASE 2:
ALL OTHER CASES

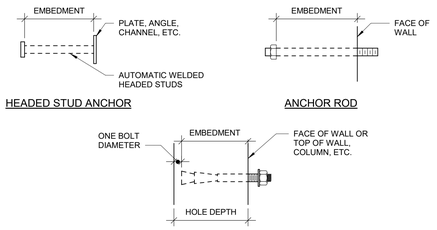
NOTE:
HOOKED BAR DEVELOPMENT LENGTH SHALL NOT BE USED AS LAP SPLICE LENGTH. SEE CLASS "B" TENSION LAP SPLICE TYPICAL DETAIL FOR LAP SPLICE LENGTHS.

T8 / S0.3 — TYPICAL DETAIL - HOOKED BAR DEVELOPMENT LENGTHS FOR UNCOATED GRADE 60 REINFORCING STEEL IN NORMAL WEIGHT CONCRETE
SCALE: NTS



T10 / S0.3 — TYPICAL DETAIL - CONCRETE CURB
SCALE: NTS

ANCHOR AND EXPANSION ANCHOR SCHEDULE - FOR COLUMN ANCHOR RODS, SEE BASE PLATE SCHEDULE			
ANCHOR TYPE	DIAMETER	VERTICAL EMBEDMENT LENGTH	HORIZONTAL EMBEDMENT LENGTH
ALL	1/2"	6"	5"
ALL	5/8"	6"	5"
ALL	3/4"	7"	5"
ANCHOR RODS / HEADED STUDS	7/8"	8"	6"
ANCHOR ROD	1"	9"	7"
ANCHOR ROD	1 1/4"	11"	9"
ANCHOR ROD	1 1/2"	12"	10"

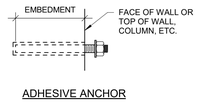


HEADED STUD ANCHOR, ANCHOR ROD, AND EXPANSION ANCHOR NOTES:

1. PROVIDE ANCHORS AND EXPANSION ANCHORS PER THIS SCHEDULE UNLESS NOTED OTHERWISE IN PLANS OR DETAILS (J-BOLTS ARE NOT ACCEPTABLE).
2. ANCHORS USED IN MASONRY SHALL BE IN GROUTED CELLS - IF GROUTED CELLS ARE NOT ENCOUNTERED, BREAK INTO CELLS AND GROUT SOLID FOR 8" MINIMUM ALL-AROUND EACH ANCHOR LOCATION.
3. APPROVED MANUFACTURERS OF EXPANSION ANCHORS IN CONCRETE AND MASONRY PER GENERAL STRUCTURAL NOTES.

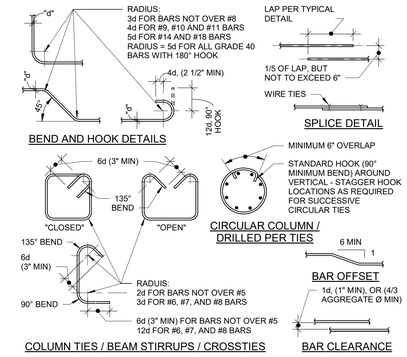
T1 / S0.3 — TYPICAL DETAIL - ANCHOR, ANCHOR ROD, EXPANSION ANCHOR AND ADHESIVE ANCHOR SCHEDULE
SCALE: NTS

ADHESIVE ANCHOR SCHEDULE		
THREADED ANCHOR DIAMETER	VERTICAL AND HORIZONTAL ANCHOR EMBEDMENT LENGTH	
	CONCRETE	MASONRY
1/2"	6"	5"
5/8"	6"	6"
3/4"	7"	7"
7/8"	8"	N/A
1"	9"	N/A
1 1/4"	11"	N/A

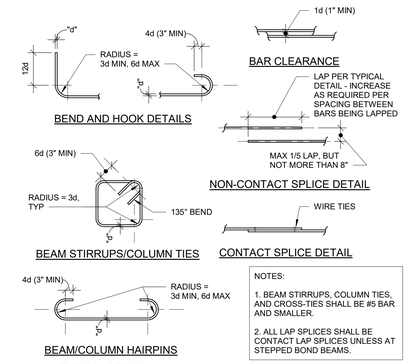


ADHESIVE ANCHOR NOTES:

1. PROVIDE ADHESIVE ANCHORS PER THIS SCHEDULE UNLESS NOTED OTHERWISE ON PLANS OR DETAILS.
2. ADHESIVE ANCHORS USED IN MASONRY SHALL BE INSTALLED IN GROUTED CELLS - IF GROUTED CELLS ARE NOT ENCOUNTERED, BREAK OUT CELL AND GROUT SOLID FOR 8" ALL-AROUND EACH ANCHOR LOCATION.
3. THREADED ANCHOR AND ADHESIVE SHALL BE SUPPLIED BY THE MANUFACTURER.
4. THREADED ANCHORS SHALL BE INSTALLED WITH STEEL WASHERS.
5. APPROVED MANUFACTURERS OF ADHESIVE ANCHORS IN CONCRETE AND MASONRY PER GENERAL STRUCTURAL NOTES.



T4 / S0.3 — TYPICAL DETAIL - CONCRETE REINFORCING BARS
SCALE: NTS



NOTES:

1. BEAM STIRRUPS, COLUMN TIES, AND CROSS-TIES SHALL BE #5 BAR AND SMALLER.
2. ALL LAP SPLICES SHALL BE CONTACT LAP SPLICES UNLESS AT STEPPED BOND BEAMS.

T5 / S0.3 — TYPICAL DETAIL - MASONRY REINFORCING BARS
SCALE: NTS

revisions

No.	Description	Date

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Structural) CERTIFICATE NO. 57855 NICOLE ALLENDER Date Signed 9/27/2023 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

TYPICAL DETAILS T1 - T20

DRAWING
S0.3

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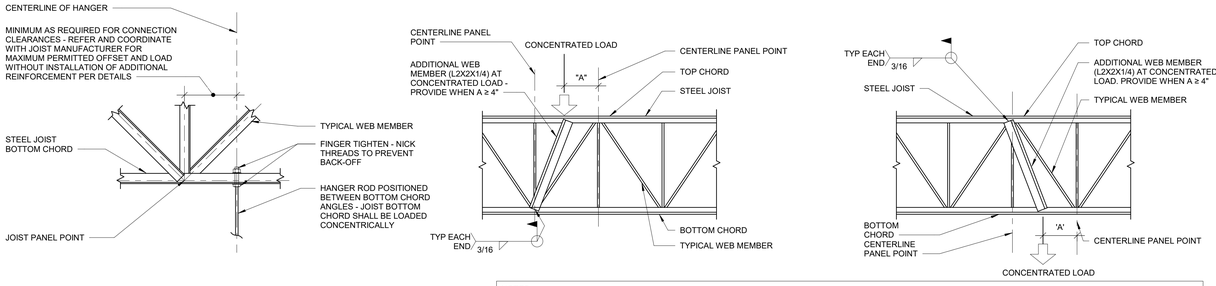
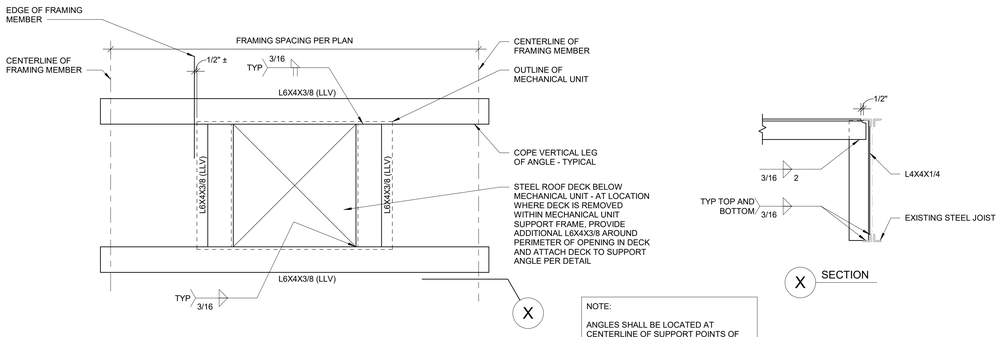


NOTES:

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

T36 / S0.4 TYPICAL DETAIL - CONCENTRATED LOADS AT STEEL JOIST

SCALE: NTS

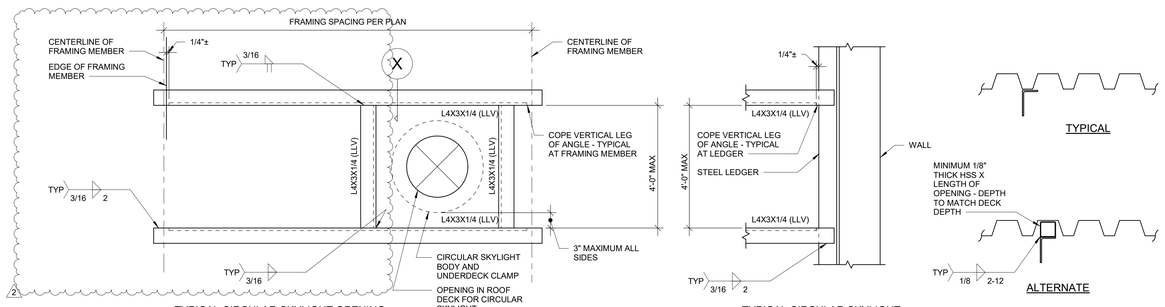


NOTE:

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

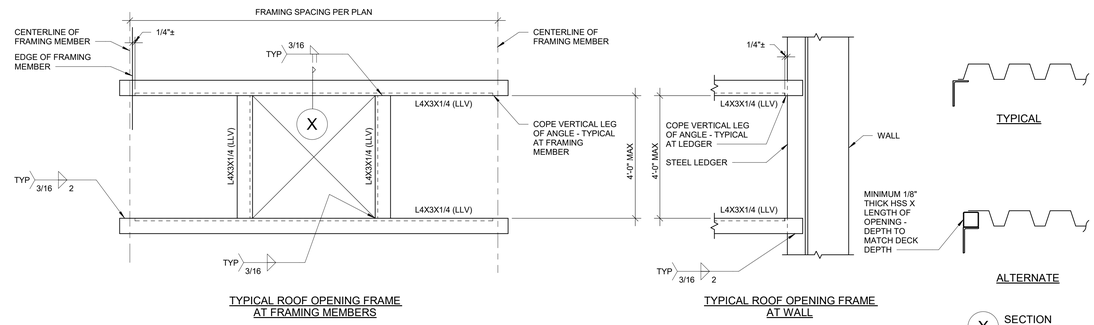
T31 / S0.4 TYPICAL DETAIL - MECHANICAL UNIT SUPPORT FRAMING AND OPENING

SCALE: NTS



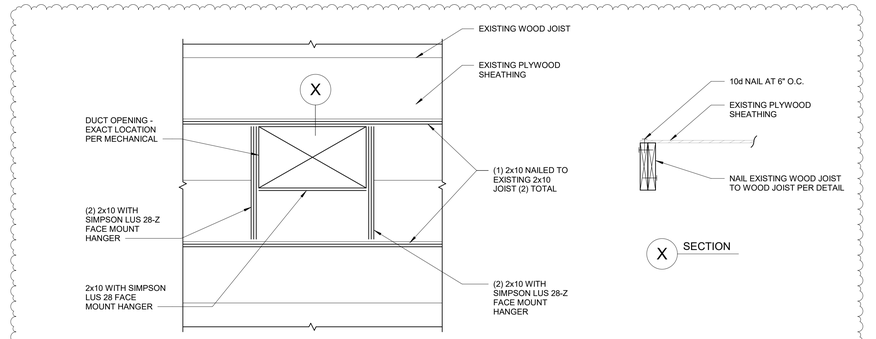
T26 / S0.4 TYPICAL DETAIL - CIRCULAR SKYLIGHT OPENING FRAME

SCALE: NTS



T21 / S0.4 TYPICAL DETAIL - ROOF OPENING FRAME

SCALE: NTS



T29 / S0.4 PLAN VIEW - DUCT PENETRATION IN EXISTING ROOF FRAMING

SCALE: NTS

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i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Structural) CERTIFICATE NO. 57855 NICOLE ALLENDER Registered 12/31/2024 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER:
APPROVED BY:_____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

TYPICAL DETAILS T21 - T40

DRAWING
S0.4

SHEET	CATALOG NUMBER:
15 - OF - 55	A-281089

12/21/2023 1:28:03 PM

PMT23-19464

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	-	L8X6X7/16	SEE DETAIL T13/S0.3

MECHANICAL EQUIPMENT WEIGHTS

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

MARK	EQUIPMENT WEIGHT	REMARKS
A	5,000 LBS	-
B	200 LBS	-
C	560 LBS	-
D	250 LBS	-

1

2

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revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Civil) CERTIFICATE NO. 57855 NICOLE ALLENDER Date Signed 10/27/2023 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

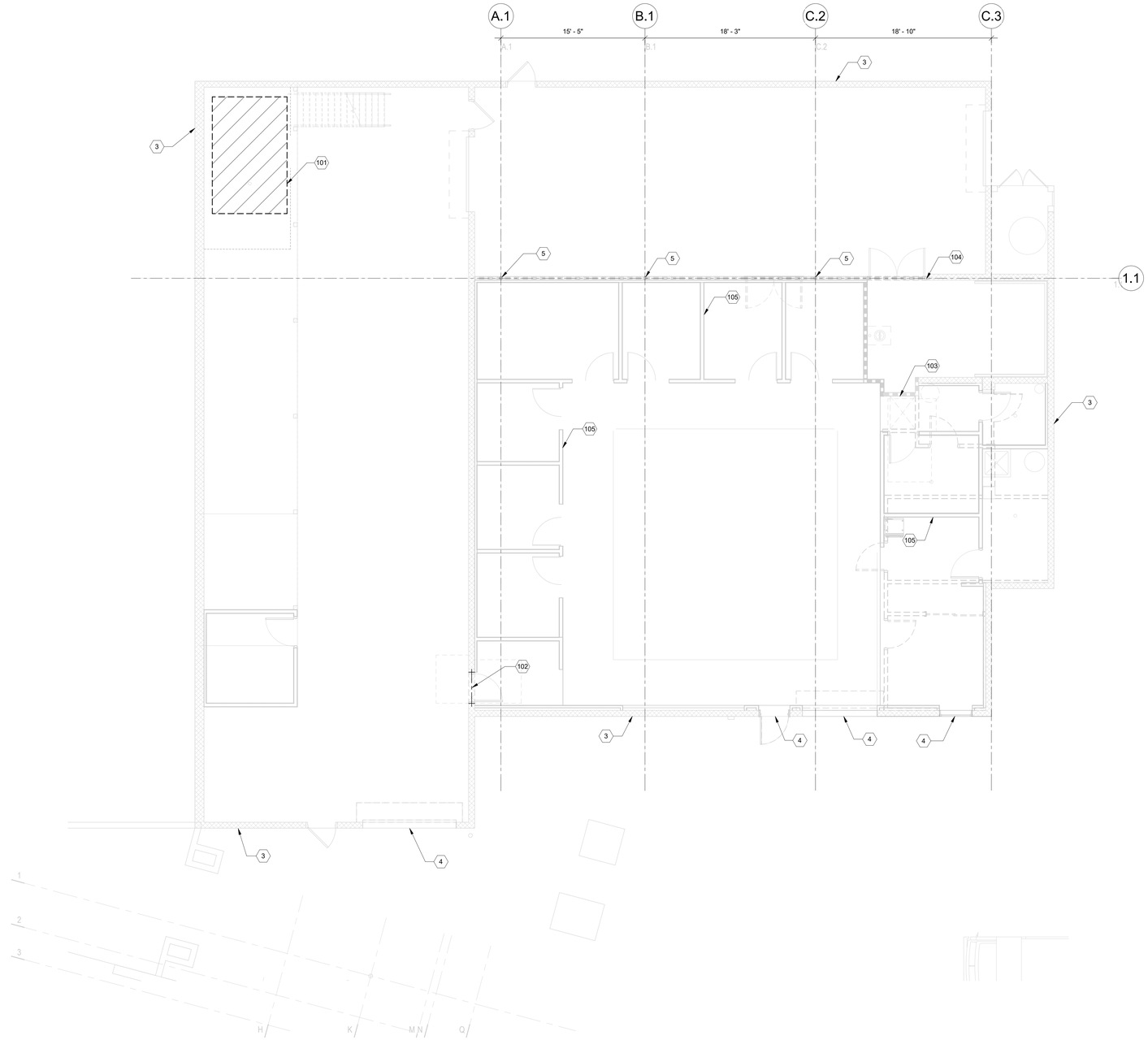
SCHEDULES

DRAWING
S0.16

SHEET	CATALOG NUMBER:
16 - OF - 55	A-281090

12/21/2023 1:28:03 PM

PMT23-19464



1 **BUILDING 2 - STRUCTURAL FLOOR PLAN**
3/16" = 1'-0"

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 COORDINATE SLAB DEPRESSIONS FOR FLOOR FINISHES AND SLOPES WITH ARCHITECTURAL.

D 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.

E 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.

F REFER TO SHEETS S0.1 THRU S0.2 FOR GENERAL STRUCTURAL NOTES AND SPECIAL INSPECTION REQUIREMENTS

G REFER TO SHEETS S0.3 THRU S0.4 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.

2

KEYED NOTES

3	EXISTING MASONRY WALL.
4	EXISTING OPENING IN MASONRY WALL TO REMAIN. EXISTING LINTEL TO REMAIN.
5	EXISTING STEEL COLUMN.
101	MECHANICAL EQUIPMENT, SIZE AND LOCATION PER MECHANICAL. PROVIDE CONCRETE CURB PER DETAIL T10 / S0.3.
102	NEW OPENING AT EXISTING MASONRY WALL. PROVIDE STEEL LINTEL PER DETAIL T13 / S0.3.
103	ROOF ACCESS LADDER AND ATTACHMENT BY OTHERS. LADDER TO CONFORM TO OSHA REQUIREMENTS SECTION 1926.1053. PROVIDE (2) STUDS AT LADDER ATTACHMENT PER DETAIL 205 / S4.1. ADDITIONAL STUDS TO MATCH THE SIZE AND GAGE OF THE EXISTING STUDS. INSTALL BLOCKING TO EACH ADJACENT STUD PER DETAIL T12 / S0.3 AT EACH WALL CONNECTION LOCATION.
104	CONTRACTOR TO VERIFY THE NEW OPENING DOES NOT CONFLICT WITH THE EXISTING MASONRY WALL.
105	TYPICAL INTERIOR PARTITION, LOCATION, CONFIGURATION, AND HEIGHT PER ARCHITECTURAL. PROVIDE 362S162-33 AT 16" O.C. TYPICAL AND REFER TO DETAILS ON SHEET S4.1.

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No.	Description	Date
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Civil)
CERTIFICATE NO.
57855
NICOLE ALLENDER
Date Signed 12/21/2023
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

BUILDING 2 - STRUCTURAL FLOOR PLAN

DRAWING
S1.1

SHEET	CATALOG NUMBER:
17 - OF - 55	A-281091

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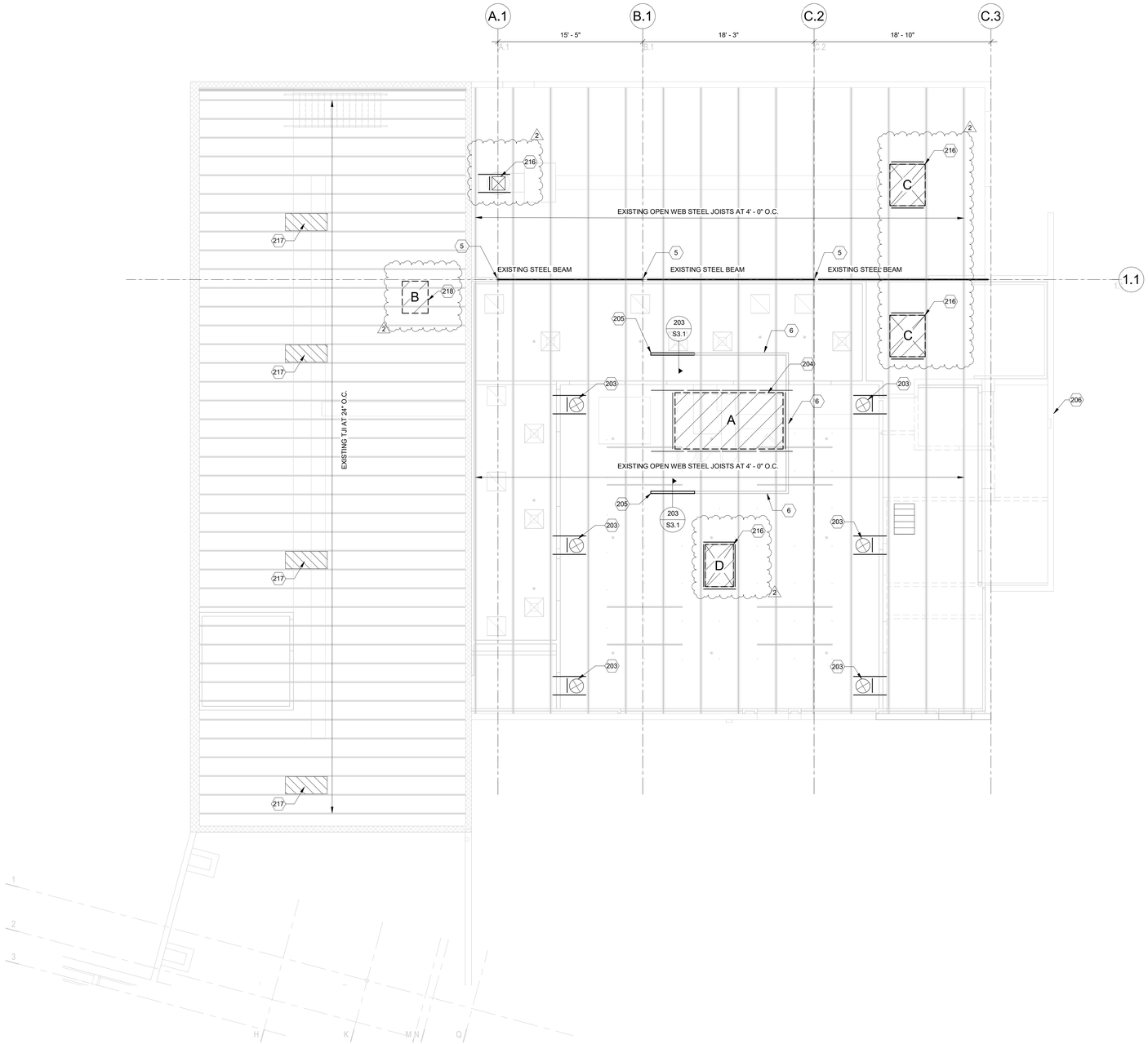
PMT23-19464



1 **BUILDING 2 - ROOF FRAMING PLAN**
3/16" = 1'-0"

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, S0.2, AND S0.16 FOR GENERAL STRUCTURAL NOTES, ABBREVIATIONS, LEGENDS, AND SPECIAL INSPECTION REQUIREMENTS

F REFER TO SHEETS S0.3 THRU S0.6 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

5	EXISTING STEEL COLUMN.
6	EXISTING SCREEN WALL AT ROOF.
202	INFILL WITH 1 1/2" X 22 GAGE STEEL DECK. WELD ALL AROUND TO EXISTING OPENING SUPPORTS ACCORDING TO GSN.
203	FOR FRAMING AROUND PROPOSED SKYLIGHT REFER TO TYPICAL DETAIL T26 / S0.4.
204	ROOFTOP MECHANICAL UNIT. SEE SCHEDULE FOR MAXIMUM MECHANICAL EQUIPMENT WEIGHTS ALLOWED. CONTRACTOR TO VERIFY UNIT LOCATIONS. PROVIDE UNIT SUPPORT FRAMING PER DETAIL T30 / S0.4.2. MECHANICAL UNIT CURB PER MECHANICAL.
205	NEW SCREEN WALL PER ARCHITECTURAL.
206	NEW OPENINGS IN EXISTING MASONRY WALL. SEE MECHANICAL FOR SIZE AND LOCATION. PROVIDE LINTEL PER DETAIL T13 / S0.3.
216	ROOF OPENING PER MECHANICAL. PROVIDE FRAMING AROUND THE PROPOSED PENETRATION PER TYPICAL DETAIL T21 / S0.4.
217	INFILL WITH PLYWOOD SHEATHING TO MATCH THICKNESS OF EXISTING PLYWOOD PER DETAIL 216 / S4.1. FIELD VERIFY LOCATION.
218	ROOFTOP MECHANICAL UNIT. SEE SCHEDULE FOR MAXIMUM MECHANICAL EQUIPMENT WEIGHTS ALLOWED. CONTRACTOR TO VERIFY UNIT LOCATIONS. PROVIDE UNIT SUPPORT FRAMING PER DETAIL T29/S0.4. MECHANICAL UNIT CURB PER MECHANICAL.

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COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Structural)
CERTIFICATE NO.
57855
NICOLE ALLENDER
Date Signed 10/24/2023
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. **CP0916OFRL**

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

BUILDING 2 - ROOF FRAMING PLAN

DRAWING
S2.1

SHEET	CATALOG NUMBER:
18 - OF - 55	A-281092

12/21/2023 1:28:04 PM

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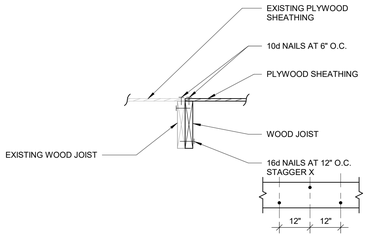
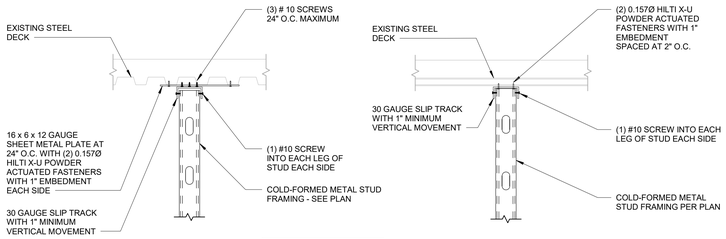


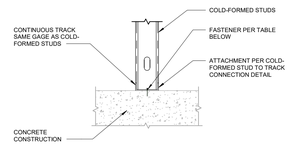
216 S3.1 EXISTING PLYWOOD SHEATHING AT NEW SHEATHING

SCALE: NTS



211 S3.1 TOP OF STUD WALL - INTERIOR

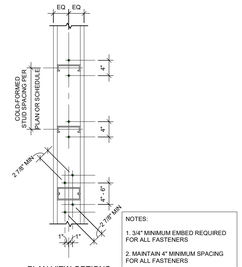
SCALE: NTS



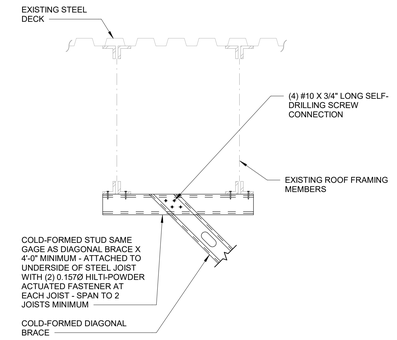
FASTENER TABLE	
LOCATION	# OF FASTENERS REQUIRED
TYPICAL FRAMING	(2) 0.157Ø HILTI POWDER-ACTUATED FASTENER AT EACH STUD

213 S3.1 TYPICAL DETAIL - BOTTOM TRACK CONNECTION AT CONCRETE

SCALE: NTS

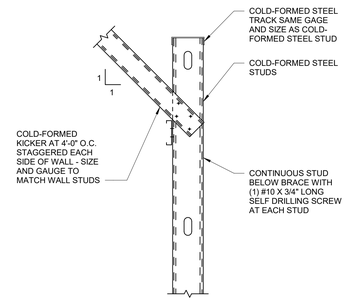


PLAN VIEW OPTIONS



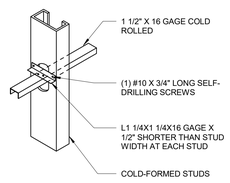
215 S3.1 KICKER TO STEEL DECK CONNECTION

SCALE: NTS



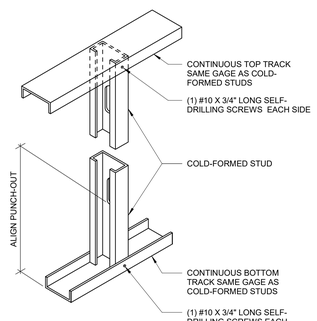
206 S3.1 TYPICAL DETAIL - INTERIOR COLD-FORMED KICKER TO INTERIOR-FORMED STUD CONNECTION

SCALE: NTS



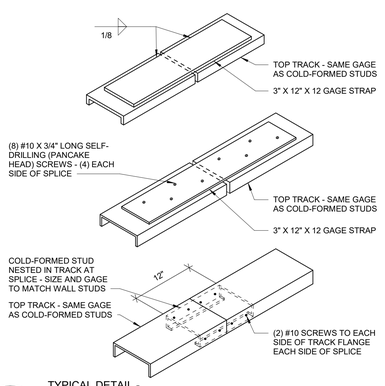
207 S3.1 TYPICAL DETAIL - BRIDGING ATTACHMENT

SCALE: NTS



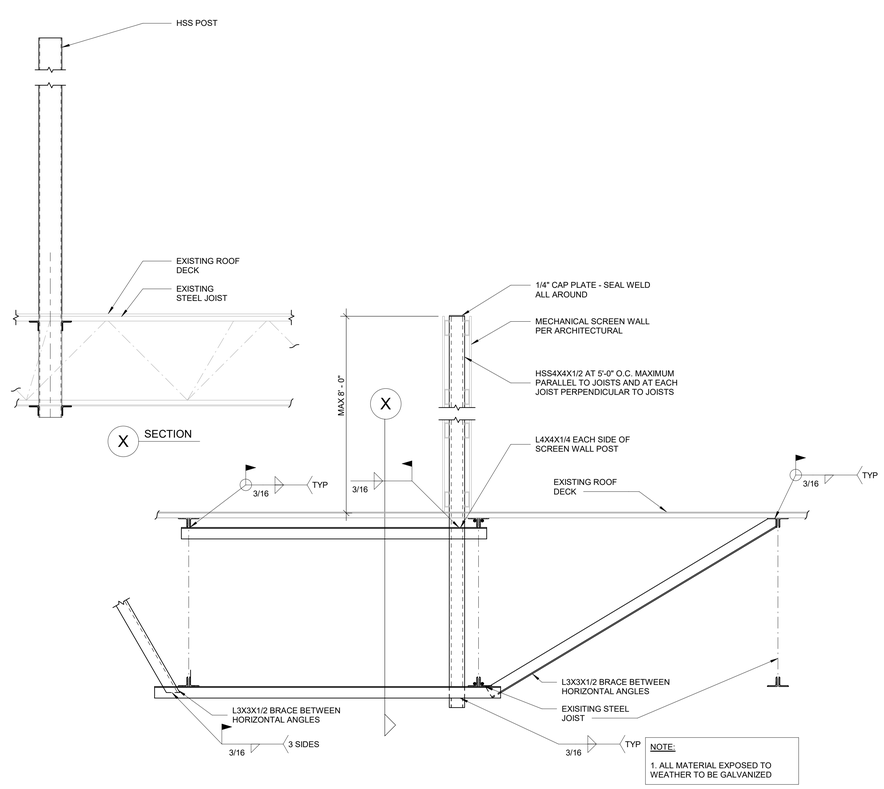
201 S3.1 TYPICAL DETAIL - COLD-FORMED STUD TO TRACK CONNECTION

SCALE: NTS



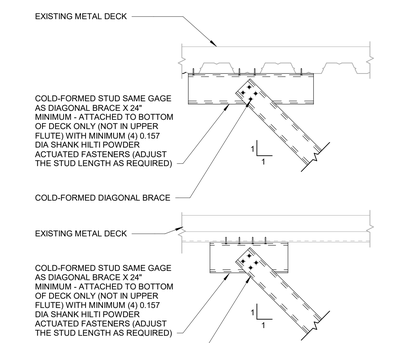
202 S3.1 TYPICAL DETAIL - SPLICE IN TOP TRACK

SCALE: NTS



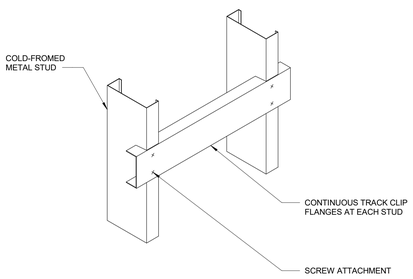
203 S3.1 SCREEN WALL POST AT EXISTING JOIST

SCALE: NTS



210 S3.1 KICKER TO STEEL DECK CONNECTION

SCALE: NTS



205 S3.1 TYPICAL DETAIL - FLAT STRAP BLOCKING

SCALE: NTS

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No.	Description	Date

COM PROJECT NO.
CP0916OFRL

Professional Engineer Commonwealth of Virginia CERTIFICATE NO. 57855 NICOLE ALLENDER Registered 12/31/2024 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
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issue for permit

DATE
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CITY OF MESA
ENGINEERING DEPARTMENT

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

FRAMING DETAILS

DRAWING
S3.1

SHEET	CATALOG NUMBER:
19 - OF - 55	A-281093

PMT23-19464

12/7/2023 1:26:47 PM

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
Ø		ROUND, DIAMETER
XX/YY		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
M	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

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.

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

i.d.e.a. Museum - Office Relocation
150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

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

COM PROJECT NO.
CP0916OFRL

REGISTERED PROFESSIONAL ENGINEER – CERTIFICATE NO. 20981 – G. MONTE STURDEVANT – 12/31/23 – ARIZONA, U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL COVER SHEET

DRAWING
M1.0

SHEET 20- OF - 55
CATALOG NUMBER: A-281094

FILE: C:\Users\Ryan.Eggink\AppData\Local\Temp\AcPublish_2200\M1_0.dwg
PLOTTED BY: Ryan.Eggink
PLOTTED: 12.21.2023 – 3:51pm

PMT23-19464

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			DB	WB	DB	WB									
AHU-2	DAIKIN	OAH017GDCM	(13)	6,000	3.43	1.5	17.71	DIRECT	2140	2	4.0 (EACH)	8.2/9.2/15 (TOTAL)	480/3/60	201.8	179.4	80°F	63°F	51.5	51.0	45°F	61°F	24.9	7.0	0.55	8	10	381	PRE: 2"MERV 8 FINAL: 4"MERV 13	4,000	(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.

FAN COIL UNIT SCHEDULE

MARK	SERVES	MANUF.	MODEL	BLOWER				COOLING COIL										HEATING				O.A. CFM	WEIGHT LBS	REMARKS
				CFM	E.S.P.	HP	V/PH	SENS. MBH	TOT. MBH	ENT AIR DB	ENT AIR WB	LVG AIR DB	LVG AIR WB	ENT H_2O	LVG H_2O	GPM / ΔP (FT)	ROWS	AIR ΔP (IN. WG)	CFM	KW	STEPS	V/PH			
FC-1	SHOP	TRANE (2)	BCHD-060	2000	1.0	1 1/2	480/3	68.9	79.4	85.0	65.0	51.3	50.7	45.0	61.0	9.9 / 7.18	6	–	1000	10	SCR	480/3	(5)	375	(1)(2)(3)(4)(5)

(1) DIRECT DRIVE UNIT WITH ECM MOTOR, SPRING ISOLATORS, AND 2" R/A FILTER RACK.

(2) DISCONNECTS BY ELECTRICAL CONTRACTOR.

(3) COORDINATE UNIT CONFIGURATION WITH FIELD CONDITIONS.

(4) PROVIDE MOTOR WITH 0-10VDC CONTROL SIGNAL TO VARY FAN SPEED.

(5) BALANCE OUTSIDE AIR TO AIRFLOWS INDICATED ON OUTDOOR VENTILATION SCHEDULE.

PLATE AND FRAME HEAT EXCHANGER SCHEDULE

EQUIP. NO.	MANUF.	MODEL NO.	NO. OF PLATES	MBH	HOT SIDE (BUILDING CHILLED WATER)					COLD SIDE (DISTRICT CHILLED WATER)					OPER. WEIGHT (LBS)	REMARKS
					FLUID	GPM	ENT. DEG. F	LVG. DEG. F	MAX WPD (FT. W.C.)	FLUID	GPM	ENT. DEG. F	LVG. DEG. F	MAX WPD (FT. W.C.)		
HEX-1	ALFA LAVAL	AQ6T-BFG	181	2,173	WATER	270	61.0	45.0	22.1	WATER	270	43.0	59.0	17.3	3,500	(1)

(1) PROVIDE STAINLESS STEEL JACKET AND INSULATION

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)	2950	1500	15	(6)	480/3	SEE NOTES BELOW
(2) 2	TITUS	DESV	10	0	1400	0.35"	(4)	900	550	5.5	(6)	480/3	SEE NOTES BELOW
3	TITUS	DESV	7	0	650	0.35"	(4)	475	250	2.5	(6)	480/3	SEE NOTES BELOW
4	TITUS	DESV	10	0	1400	0.35"	(4)	900	550	5.5	(6)	480/3	SEE NOTES BELOW
5	TITUS	DESV	8	0	900	0.35"	(4)	600	350	3.5	(6)	480/3	SEE NOTES BELOW
(2) 6	TITUS	DESV	7	0	650	0.35"	(4)	550	300	3	(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.

VFD SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	MOTOR HP	VFD HP	VOLTS/ PHASE	BYPASS	DISCONNECT
P-1	ABB	ACH 580	10	10	480/3	NO	YES
P-2	ABB	ACH 580	10	10	480/3	NO	YES

PUMP SCHEDULE

EQUIP. NO.	SERVICE	MANUF.	MODEL	FLUID	GPM	HEAD (FT.)	EFF.	MOTOR DATA			REMARKS
								H.P.	RPM	VOLTS/ PHASE	
P-1	CHILLED WATER	ARMSTRONG	SERIES 4380 3x3x10-4P	WATER	270	80	68%	10	1,711	480/3	(1)
P-2	CHILLED WATER	ARMSTRONG	SERIES 4380 3x3x10-4P	WATER	270	80	68%	10	1,711	480/3	(1)

(1) VERTICAL IN LINE WITH VFDS AND SHAFT GROUNDING RINGS

EXHAUST FAN SCHEDULE

MARK	MANUF.	MODEL	CFM	E.S.P. (IN. WG)	MOTOR			DRIVE	SONES	CONTROL	WEIGHT (LBS)	REMARKS
					HP	V/PH	RPM					
EF-1	GREENHECK	G-090-VG	550	0.5	1/10	115/1	1672	DIRECT	8.4	BMS	40	(1)(2)(3)

(1) ROOF MOUNTED EXHAUST FAN. PROVIDE WITH FACTORY ROOF CURB.

(2) PROVIDE WITH BACKDRAFT DAMPER AND VARI-GREEN EC MOTOR WITH DIAL MOUNTED ON MOTOR FOR BALANCING.

(3) INTEGRATE INTO BMS. FAN TO OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.

DUCTLESS SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE

FAN COIL UNIT							CONDENSING UNIT									
EQUIP. NO.	MANUF.	MODEL NO.	CFM	EXT. S.P. IN WG	FAN FLA	VOLTS/ PHASE	EQUIP. NO.	MANUF.	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-1	DAIKIN	FTX36NVJU	915	0	0.37	208/1	OU-1	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.

SUPPLY FAN SCHEDULE

MARK	MANUF.	MODEL	CFM	E.S.P. (IN. WG)	MOTOR			DRIVE	SONES	CONTROL	WEIGHT (LBS)	REMARKS
					W	V/PH	RPM					
SF-1	GREENHECK	CSP-A390-VG	200	0.35	30	115/1	1084	DIRECT	1.0	BMS	30	(1)(2)(3)

(1) INLINE CABINET SUPPLY FAN. SUSPEND FROM STRUCTURE.

(2) PROVIDE WITH VARI-GREEN EC MOTOR WITH DIAL MOUNTED ON MOTOR FOR BALANCING.

(3) INTEGRATE INTO BMS. FAN TO OPERATE CONTINUOUSLY DURING OCCUPIED HOURS.

GRAVITY HOOD SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	LOCATION	CFM	MOTORIZED DAMPER	THROAT SIZE	MAX. PRESSURE DROP (IN. WG.)	WEIGHT (LB)	REMARKS
GH-1	GREENHECK	GRSI-16	ROOF	525	NO	16"ø	0.02	25	(1)
GH-2	GREENHECK	FGI-50x50	ROOF	6,000	YES	50x50	0.05	450	(2)
GH-3	GREENHECK	FGI-50x50	ROOF	6,000	YES	50x50	0.05	450	(3)

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

(2) PROVIDE WITH FACTORY ROOF CURB, FILTER INTAKE, BIRD SCREEN, AND MOTORIZED DAMPER. INTERLOCK WITH DUST COLLECTOR.

(3) PROVIDE WITH FACTORY ROOF CURB, FILTER INTAKE, BIRD SCREEN, AND MOTORIZED DAMPER. INTERLOCK WITH PAINT SPRAY BOOTH.

RELIEF HOOD SCHEDULE

EQUIP. NO.	MANUFACTURER	MODEL NO.	LOCATION	CFM	MOTORIZED DAMPER	THROAT SIZE	MAX. PRESSURE DROP (IN. WG.)	WEIGHT (LB)	REMARKS
RH-1	GREENHECK	FGR-36x54	ROOF	6,000	YES	36x54	0.05	200	(1)

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

CEILING EXHAUST FAN SCHEDULE

MARK	MANUF.	MODEL	CFM	E.S.P. (IN. WG)	MOTOR			DRIVE	SONES	CONTROL	WEIGHT (LBS)	REMARKS
					W	V/PH	RPM					
CEF-1,2,3	GREENHECK	SP-80-VG	75	0.385	6	115/1	935	DIRECT	1.2	SWITCH	15	(1)(2)(3)

(1) CEILING MOUNTED EXHAUST FAN WITH INTEGRAL GRILLE.

(2) PROVIDE WITH BACKDRAFT DAMPER AND FACTORY WALL CAP.

(3) FAN TO BE CONTROLLED FROM LIGHT SWITCH.

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Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

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

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer — Mechanical — CERTIFICATE NO. 20981 — G.MONTE STURDEVANT — Date Signed 12/21/23 — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL SCHEDULES

DRAWING
M1.1

SHEET 21 - OF - 55
CATALOG NUMBER: A-281095

PLOTTED: 12.21.2023 - 3:51pm
PLOTTED BY: Ryan.Eggink
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PMT23-19464

CHILLED WATER SYSTEM SEQUENCE OF OPERATION

CHILLED WATER SYSTEM OVERVIEW

A. COOLING FOR PHASE 1 AND PHASE 2 AS WELL AS THE EXISTING AIR HANDLING UNIT SERVING THE EXHIBITION SPACE IS TO BE PROVIDED BY CITY OF MESA DISTRICT COOLING SYSTEM. ADDITIONAL AREAS WILL BE ADDED IN FUTURE RENOVATION PHASES. THE PLATE AND FRAME HEAT EXCHANGER DECOUPLES THE BUILDING CHILLED WATER FROM THE DISTRICT COOLING LOOP.

B. THE BUILDING CHILLED WATER CENTRAL SYSTEM CONSISTS OF TWO CHILLED WATER PUMPS (N+1) WHICH PROVIDE CHILLED WATER TO ALL AIR HANDLING AND FAN COIL UNITS IN THE BUILDING. INITIALLY THE CHILLED WATER SYSTEM IS TO BE A CONSTANT FLOW WITH 3-WAY CONTROL VALVES IN PHASE 1 AND 2. DURING FUTURE PHASES, THE SYSTEM WILL BE CONVERTED TO VARIABLE FLOW, WITH 2-WAY CONTROL VALVES FOR ALL FUTURE AIR HANDLING UNITS

C. THE BUILDING MANAGEMENT SYSTEM (BMS) SHALL CONTROL ALL EQUIPMENT TO PROVIDE AUTOMATIC SYSTEM OPERATION FOR ALL OPERATING MODES (WITHOUT OPERATOR INTERVENTION - IF SO DESIRED). IN ADDITION, THE BMS SHALL HAVE THE CAPACITY, AND BE PROGRAMMED SO AS TO "OPTIMIZE" EQUIPMENT AND SYSTEM OPERATION. AND THEREBY MINIMIZE OPERATING COSTS, WITHIN THE CAPABILITIES OF THE SYSTEM AS DEFINED IN THESE DESIGN DOCUMENTS

CHILLED WATER HEAT EXCHANGER AND PUMP CONTROLS:

D. MODES OF OPERATION: THE CENTRAL PLANT SHALL BE COMMANDED ON MANUALLY OR PUT ON "AUTO" MODE. WHEN SYSTEM IS IN "AUTO" MODE, AND THERE IS NO COOLING DEMAND FROM THE BUILDING, THE SYSTEM SHALL BE IN "MECHANICAL COOLING OFF" MODE. COOLING DEMAND IS BASED ON A CALL FOR COOLING FROM ANY MECHANICAL AHU, OR FAN COIL UNIT. IF THERE IS A CALL FOR COOLING FROM ANY MECHANICAL EQUIPMENT, THE COOLING SYSTEM SHALL BE IN "MECHANICAL COOLING ON MODE".

E. "MECHANICAL COOLING OFF": WHENEVER THERE ARE NO COOLING DEMANDS BY MECHANICAL UNITS THE COOLING SYSTEM SHALL BE OFF AND CONTROL VALVES SHALL BE CLOSED.

F. "MECHANICAL COOLING ON": WHENEVER THE BMS CALLS FOR THE CENTRAL PLANT OPERATION TO FUNCTION IN "MECHANICAL COOLING ON" MODE, THE BMS WILL INITIATE THE FOLLOWING:

1. THE LEAD PUMP SHALL START.
2. THE CONTROL VALVE (LOCATED AT DISTRICT COOLING SIDE OF THE SYSTEM) SHALL MODULATE TO MAINTAIN DISCHARGE TEMPERATURE AT THE BUILDING SIDE.

G. CHILLED WATER TEMPERATURE CONTROL: BAS SHALL MODULATE CONTROL VALVE V-1 TO MAINTAIN BUILDING CHILLED WATER SUPPLY TEMPERATURE SETPOINT AS MEASURED AT T-1.

H. CHILLED WATER TEMPERATURE RESET: THE CHILLED WATER SUPPLY TEMPERATURE SHALL BE RESET BETWEEN 44° F AND 55° F (ADJ.). THE BMS SHALL REVIEW THE POSITION OF ALL CONTROL VALVES AND SHALL RESET CHILLED WATER SUPPLY TEMPERATURE ONE DEGREE/ 30 MINUTES SO AT LEAST ONE OF THE CONTROL VALVES IS ABOVE 85% OPEN.

THE BUILDING OPERATOR SHALL BE ABLE TO OVERRIDE CHILLED WATER TEMPERATURE RESET PROGRAMMING.

I. CONSTANT SPEED CHILLED WATER PUMPS (PHASE 1 AND 2): PUMP SHALL OPERATE AT CONSTANT SPEED. SPEED TO BE SET AT THE VFD BY TEST AND BALANCE BASED ON INITIAL FLOW BALANCE. PROVIDE PLANT DIFFERENTIAL PRESSURE SENSOR AT PIPING MAINS WHERE SHOWN ON DRAWINGS FOR INITIAL MONITORING BY BAS AND FUTURE CONTROL.

J. VARIABLE SPEED CHILLED WATER PUMPS (FUTURE PHASES): PROVIDE A FIELD DIFFERENTIAL PRESSURE CONTROLLER APPROXIMATELY 2/3 OF THE WAY DOWN THE PIPING SYSTEM FROM THE PUMPS. THE PLANT DP CONTROLLER HAS A HIGHER PRESSURE SETPOINT AND SHALL CONTROL THE PUMPS IN CASE OF FIELD DP FAILURE AND SHALL NOT ALLOW DP TO EXCEED ITS SET POINT (TO BE SET DURING COMMISSIONING). 2-WAY CONTROL VALVES WILL BE PROVIDED AT UNITS AT THAT TIME.

THE DIFFERENTIAL PRESSURE CONTROLLERS SHALL MODULATE THE CHILLED WATER PUMP VFD'S TO MAINTAIN THE CHW SYSTEM DIFFERENTIAL PRESSURE (DP) SET POINT OF 12.0 PSI (ADJ.). WHEN THE SPEED OF LEAD PUMP IS AT 90% (ADJ.) FOR MORE THAN 10 MINUTES (ADJ.), THE LAG PUMP SHALL START TO MAINTAIN THE DIFFERENTIAL PRESSURE. WHEN, TWO PUMPS ARE RUNNING, AND THE SPEED OF BOTH PUMPS DROPS BELOW 40% (ADJ.) FOR MORE THAN 15 MINUTES, THE LAG PUMP SHALL STOP.

K. DISTRICT CHILLED WATER PUMP (FUTURE PHASES): PROVISIONS ARE INCLUDED FOR THE ADDITION OF A CHILLED WATER PUMP ON THE DISTRICT SIDE OF THE HEAT EXCHANGER IN THE EVENT THAT THE PRESSURE FROM THE DISTRICT SYSTEM IS NOT ADEQUATE TO SERVE THE FUTURE BUILDING DEMAND. A CHILLED WATER PUMP WITH VFD WILL BE INSTALLED AT THE CHILLED WATER SUPPLY PIPING FROM THE DISTRICT. DIFFERENTIAL PRESSURE SENSORS DP-1 AND DP-2 SHALL CONTROL THIS PUMP. WHEN DP-2 DROPS BELOW 10 PSI (ADJUSTABLE) AND THE CONTROL VALVE V-1 IS FULLY OPEN, PUMP SHALL START. WHEN DP2 RISES TO ABOVE 12 PSI (ADJ) PUMP SHALL STOP. THE PUMP VFD SHALL MODULATE TO MAINTAIN DP-1 AT 10 PSI.

L. ALL UNIT INFORMATION SHALL BE VISIBLE AT BMS INCLUDING:

- BUILDING CHILLED WATER SUPPLY TEMPERATURE
- BUILDING CHILLED WATER RETURN TEMPERATURE
- DISTRICT CHILLED WATER SUPPLY TEMPERATURE
- DISTRICT CHILLED WATER RETURN TEMPERATURE
- DISTRICT CHILLED WATER FLOW
- DISTRICT BTU
- PLANT DIFFERENTIAL PRESSURE
- DISTRICT DIFFERENTIAL PRESSURE
- EACH PUMP STATUS
- EACH CHILLED WATER PUMP SPEED
- EACH VFD START/STOP
- EACH VFD SPEED
- EACH VFD FAULT

M. ALL ADJDUSTIBE SET POINTS SHALL BE AVAILABLE AT BMS INCLUDING:

- BUILDING CHILLED WATER SUPPLY TEMPERATURE SET POINT
- CHILLED WATER PUMP DP SETPOINT

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)
SD-1	SUPPLY DIFFUSER	VARIES	ROUND CONE	25	YES	DUCT MOUNTED	STEEL	SILVER	TITUS	TMR	
DL-1	SUPPLY REGISTER	18"x4"	DRUM LOUVER	25	YES	SURFACE	STEEL	WHITE	TITUS	DL	
SR-1	SUPPLY REGISTER	10"x6"	LOUVERED FACE	25	NO	SURFACE	STEEL	WHITE	TITUS	272RL	
RG-1	RETURN GRILLE	24"x24"	LOUVERED FACE	25	NO	LAY-IN	STEEL	WHITE	TITUS	350RL	(3)
TG-1	TRANSFER GRILLE	PER PLANS	LOUVERED FACE	25	NO	SURFACE	STEEL	WHITE	TITUS	350RL	

1

(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) PROVIDE WITH SOUND BOOT BY MECHANICAL CONTRACTOR.

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

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
601 CFM- 800 CFM 14"ø NECK
801 CFM- 1000 CFM 15"ø NECK
(4)

USE SCHEDULE U.N.O ON DRAWINGS

DUCT INSULATION SCHEDULE

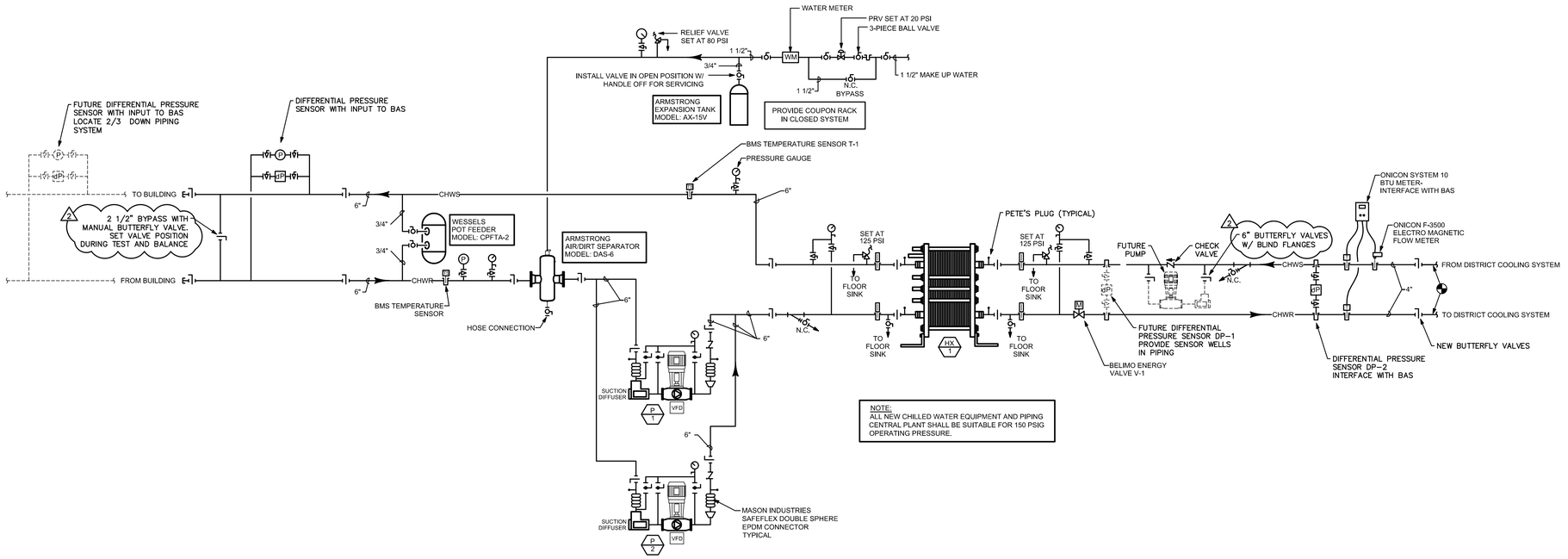
SERVICE	EQUIPMENT SERVING	REQUIREMENT	INSULATION MATERIAL	INSULATION VALUE OR THICKNESS
EXPOSED RECTANGULAR LOW PRESSURE	FCU'S AND VAV BOXES	ALL	LINER JM LINACOUSTIC RC	1 1/2"
CONCEALED ROUND/RECTANGULAR MEDIUM AND LOW PRESSURE SUPPLY	FCU'S AND VAV BOXES	ALL	EXTERNAL WRAP JM MICROLITE XG TYPE 75	R=6 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 JM LINACOUSTIC RC/SPIRACOUSTIC	1"
TRANSFER DUCTS	TRANSFER	ALL	JM R300 RIGID BOARD	1"

(1) SEE SPECIFICATIONS FOR DUCT CONSTRUCTION.

REQUIRED OUTDOOR VENTILATION PER 2021 IMC 403.3 - SINGLE ZONE SYSTEMS

1

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)
FC-1	WOOD SHOP	1094	20	22	10	0.18	416.9	0.80	521.2	600.0
								System Outdoor Airflow V_{ot} (CFM):		600.0
AHU-2	OFFICE	2159	5	11	5	0.06	184.5	0.80	230.7	235.0
	WAREHOUSE	2099	2	5	10	0.06	175.9	0.80	219.9	220.0
								System Outdoor Airflow V_{ot} (CFM):		455.0



CHILLED WATER PIPING DIAGRAM

Holly Street Studio
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i.d.e.a. Museum - Office Relocation
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Design Contact: MONTE STURDEVANT
Project # 201080.200

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer CERTIFICATE NO. 20981 G.MONTE STURDEVANT Date Signed 12/21/23 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL SCHEDULES AND DIAGRAMS

DRAWING
M1.2

SHEET	CATALOG NUMBER:
22 - OF - 55	A-281096

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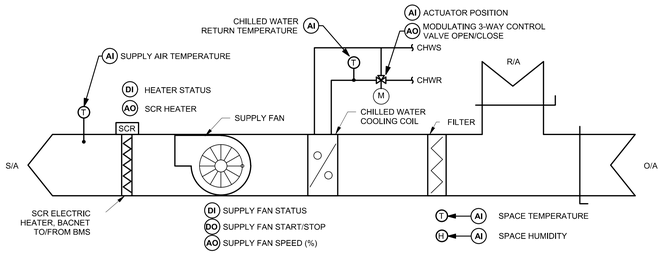
PMT23-19464



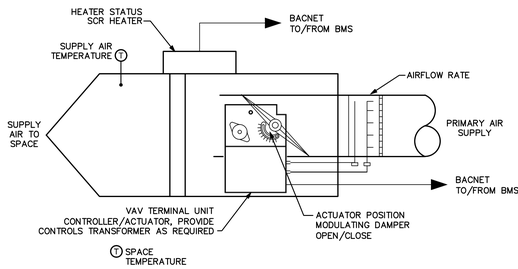
FAN COIL UNIT CONTROL DIAGRAM

SCALE: NOT TO SCALE

2

SEQUENCE OF OPERATIONS - FAN COIL

1. THE FAN STARTS AT MINIMUM SPEED AND MODULATES THE COOLING COIL CONTROL VALVE AND FAN SPEED TO MAINTAIN SPACE TEMPERATURE.
2. ON A CALL FOR COOLING, THE CHILLED WATER CONTROL VALVE WILL BEGIN TO MODULATE OPEN. AS THE COOLING DEMAND INCREASES, THE VALVE WILL CONTINUE TO OPEN UNTIL THE DISCHARGE AIR TEMPERATURE REACHES 52° F (ADJ). ON A CONTINUED CALL FOR COOLING, THE FAN WILL BEGIN TO MODULATE TOWARDS MAXIMUM COOLING FAN AIRFLOW AS THE CHILLED WATER CONTROL VALVE CONTINUES MODULATING OPEN TO MAINTAIN 52° F (ADJ) DISCHARGE AIR TEMPERATURE. THIS PROCESS WILL CONTINUE UNTIL THE FAN REACHES THE COOLING MAXIMUM AIRFLOW.
3. IF THE RELATIVE HUMIDITY IN THE SPACE INCREASES ABOVE 50% RH, AS DETERMINED BY THE SPACE RELATIVE HUMIDITY SENSOR, THE SUPPLY AIR TEMPERATURE SETPOINT SHALL BE SET TO 52°F INORDER TO MAINTAIN SPACE HUMIDITY SETPOINT (ADJ).
4. MINIMUM AIRFLOW WILL BE 60% OF DESIGN AIRFLOW.
5. HEATING OPERATION: ON A CALL FOR HEATING, THE FAN WILL RAMP UP TO HEATING CFM AND HEATER WILL BE ENERGIZED AND MODULATE THRU SCR CONTROL TO MAINTAIN SPACE TEMPERATURE SETPOINT. HEATING CFM WILL BE 70% OF DESIGN CFM.
6. DEADBAND: WITH NO DEMAND IN THE SPACE, THERE WILL BE NO CALL FOR HEATING OR COOLING. THE FAN WILL BE AT MINIMUM AIRFLOW.
7. POINTS LIST:
   - A. FAN START/STOP/STATUS/SPEED
   - B. SUPPLY AIR TEMPERATURE
   - C. CHILLED WATER VALVE POSITION AND FEEDBACK
   - D. CHILLED WATER RETURN TEMPERATURE
   - E. ELECTRIC HEATING CONTROL
   - F. SPACE TEMPERATURE
   - G. SPACE HUMIDITY
   - H. THERMOSTAT SETPOINT



VAV TERMINAL UNIT CONTROL DIAGRAM

SCALE: NOT TO SCALE

3

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° 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)

SPLIT SYSTEM AIR CONDITIONER SEQUENCE OF OPERATION

SPLIT SYSTEM AIR CONDITIONER

1. OPERATION: OPERATE SPLIT SYSTEM AIR CONDITIONER TO MAINTAIN A SPACE TEMPERATURE SETPOINT OF 75°F (ADJUSTABLE).
2. PROVIDE SPACE TEMPERATURE SENSOR TO MONITOR TEMPERATURE IN ROOM SERVED AND PROVIDE HIGH TEMPERATURE ALARM THROUGH BMS.
3. ALARM: AN ALARM SHALL BE INITIATED IN THE BMS ANYTIME THE SPACE TEMPERATURE IS ABOVE 80°F (ADJUSTABLE).

INTERFACE WITH BMS. SEE SCHEDULE.

PAINT SPRAY BOOTH ROOM:

PROVIDE VOC SENSOR IN PAINT BOOTH ROOM. PROVIDE HORN/STROBE OUTSIDE ROOM TO ALARM ON HIGH VOC LEVEL. INTERFACE WITH BAS FOR ALARM.

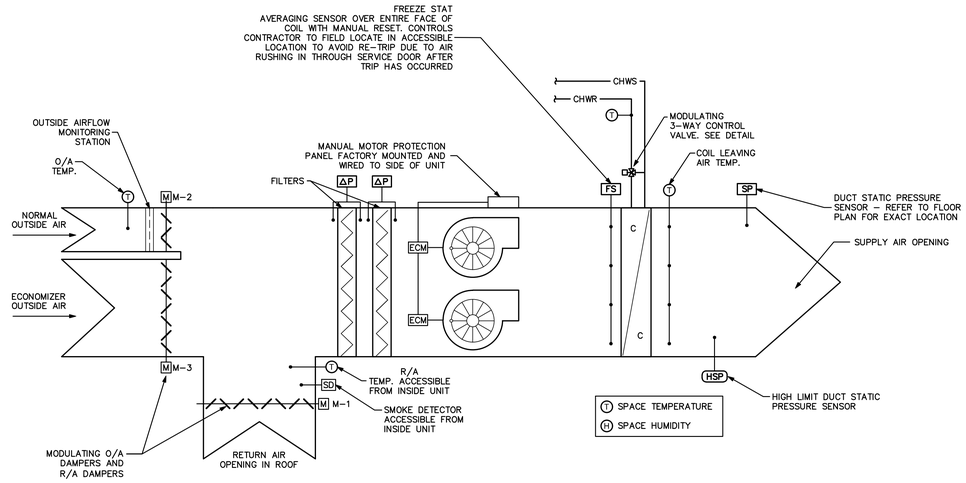
EXISTING PAINT SPRAY BOOTH CONTROLS: PROVIDE RELAY AND CONTROLS TRANSFORMER TO INTERLOCK MOTORIZED DAMPER AT GRAVITY HOOD WITH PAINT BOOTH.

DUST COLLECTOR:

EXISTING DUST COLLECTOR CONTROLS: PROVIDE RELAY AND CONTROLS TRANSFORMER TO INTERLOCK MOTORIZED DAMPER AT GRAVITY HOOD WITH DUST COLLECTOR.

WOODSHOP EXHAUST FAN EF-1: 1

SHOP EXHAUST FAN SHALL BE ENERGIZED OR DE-ENERGIZED BASED ON OPTIMAL START PROGRAM, BUILDING OCCUPANCY SCHEDULE OR BY OPERATOR'S COMMAND.



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 ECM SPEED OF THE AIR HANDLING UNIT 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 HOOD. 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. FOLLOWNG 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. FOLLOWNG POINTS SHALL BE HARDWIRED TO BMS:

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

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revisions

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2	90% CLIENT REVIEW COMMENTS	12/21/2023

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Design Contact: MONTE STURDEVANT
Project # 201080.200

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer
CERTIFICATE NO.
20981
G.MONTE
STURDEVANT
Date Signed 12/21/23
(Revised)
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

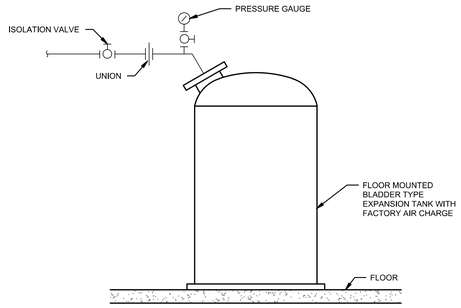
CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL DIAGRAMS AND CONTROLS

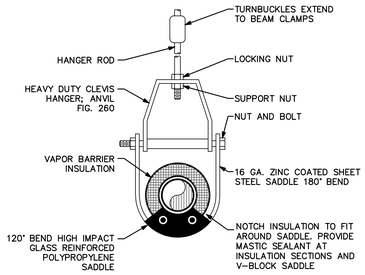
DRAWING
M1.3

SHEET	CATALOG NUMBER:
23- OF - 55	A-281097



EXPANSION TANK DETAIL 10

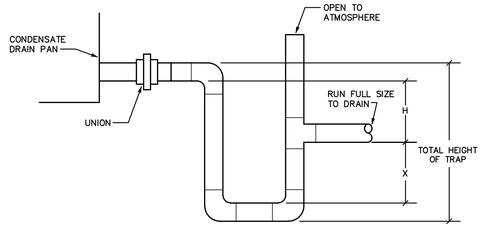
SCALE: NOT TO SCALE



CLEVIS HANGER DETAIL 7

SCALE: NOT TO SCALE

WHERE LOCATED ABOVE HARD-LID CEILINGS, PROVIDE WATER LEVEL DETECTION DEWCE IN CONDENSATE DRAIN PAN TO SHUT DOWN UNIT UPON DETECTION OF WATER PER 2018 IMC 307.2.3.



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.)**

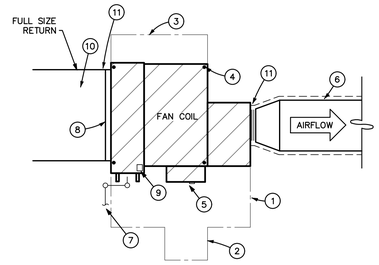
BLOW-THROUGH APPLICATION (POSITIVE STATIC PRESSURE)
X = AT LEAST 1" PLUS CASING STATIC PRESSURE
H = AT LEAST 1"
TOTAL HEIGHT OF TRAP = X + H + (1/2 * PIPE DIA.)**

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 4

SCALE: NOT TO SCALE

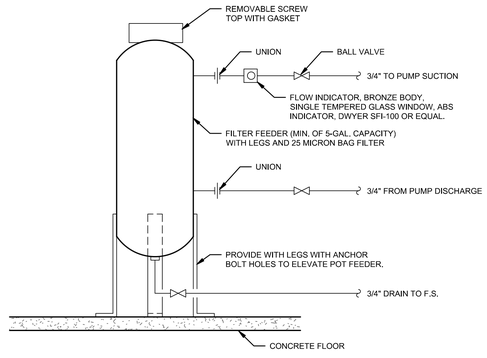


KEYED NOTES

1. COIL CONNECTION SIDE. PROVIDE 32" CLEARANCE FOR ALL PIPING COMPONENTS ALONG ENTIRE SIDE OF UNIT. NO CEILING WIRES, SPRINKLER PIPING, ETC. IN CLEARANCE ZONES.
2. CONTROL PANEL. PROVIDE MINIMUM 42" CLEARANCE IN FRONT.
3. PROVIDE 18" CLEARANCE MINIMUM ON SIDE OPPOSITE COIL. PROVIDE MORE IF MANUFACTURER REQUIRES.
4. SUPPORT UNIT FROM STRUCTURE ABOVE W/ THREADED ROD. PROVIDE NEOPRENE GROMMETS AT EACH CORNER.
5. CONTROL/LINE VOLTAGE PANEL.
6. SUPPLY AIR DUCT. INSULATE PER SPECIFICATIONS.
7. COIL CONDENSATE DRAIN. REFER TO DETAIL. LOCATE OUT OF CLEARANCE AREA.
8. PROVIDE ADEQUATE FILTER ACCESS TO EASILY CHANGE FILTER WITHOUT BENDING.
9. PROVIDE CONDENSATE OVERFLOW SWITCH TO ALARM AT BMS AND SHUT DOWN UNIT.
10. RETURN AIR DUCT –SEE PLAN. INSULATE PER SPECIFICATIONS.
11. COVER FLEXIBLE DUCT WITH WRAP INSULATION.

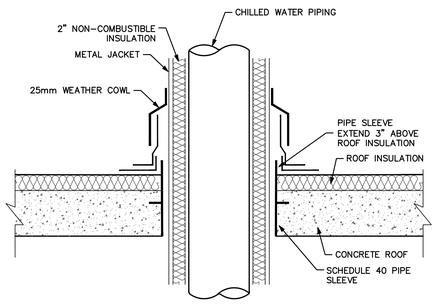
CHILLED WATER FAN COIL DETAIL 1

SCALE: NOT TO SCALE



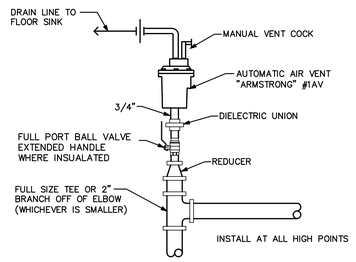
POT FEEDER DETAIL 11

SCALE: NOT TO SCALE



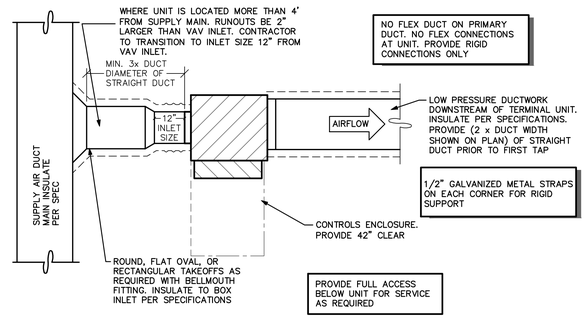
CHILLED WATER PIPE THROUGH ROOF DETAIL 8

SCALE: NOT TO SCALE



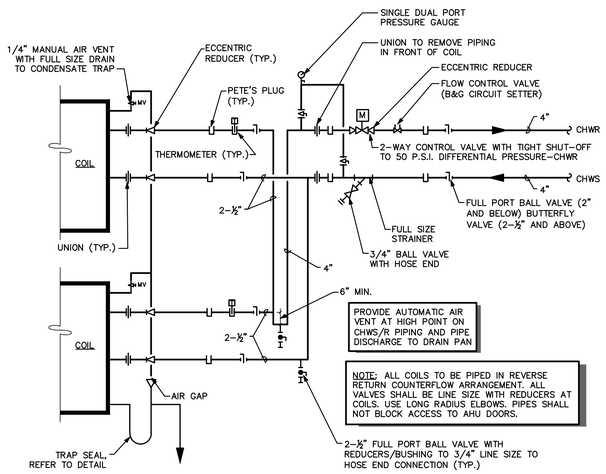
AIR VENT DETAIL 5

SCALE: NOT TO SCALE



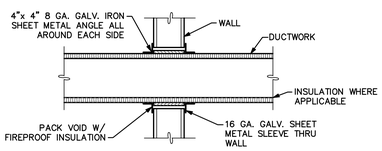
VAV UNIT INSTALLATION DETAIL 2

SCALE: NOT TO SCALE



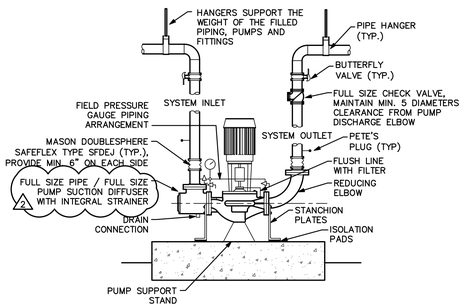
CHILLED WATER COIL PIPING DETAIL AT EXISTING AHU SIMILAR AT AHU-2 EXCEPT SINGLE COIL 12

SCALE: NOT TO SCALE



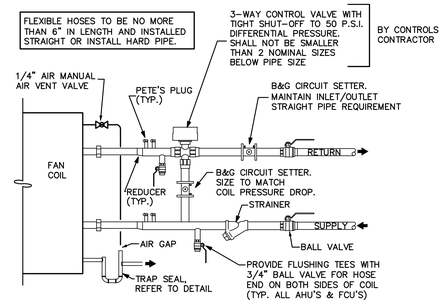
DUCT THRU WALL DETAIL 9

SCALE: NOT TO SCALE



CHILLED WATER VERTICAL INLINE PUMP DETAIL 6

SCALE: NOT TO SCALE



CHILLED WATER FAN COIL PIPING DETAIL - 3 WAY VALVE 3

SCALE: NOT TO SCALE

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revisions

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COM PROJECT NO.
CP0916OFRL

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

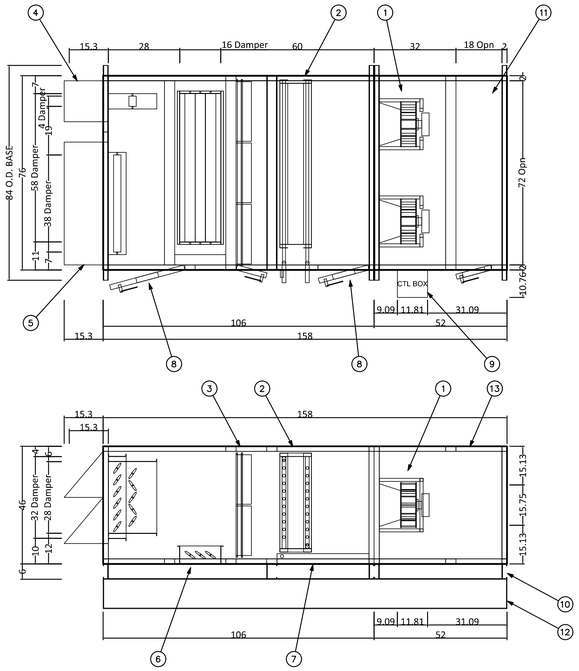
CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL DETAILS

DRAWING
M1.4

SHEET 24 - OF - 55
CATALOG NUMBER: A-281098



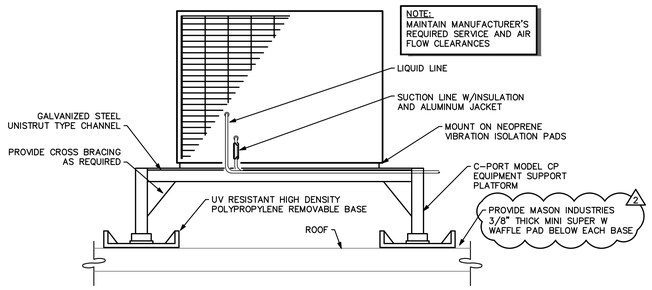
AHU-2 DETAIL

SCALE: NOT TO SCALE

6

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, REFER TO ARCHITECTURAL DETAIL 6, SHEET A5.10. (2)
13. SLOPED ROOF FOR OUTDOOR INSTALLATION.



OUTDOOR CONDENSING UNIT DETAIL

SCALE: NOT TO SCALE

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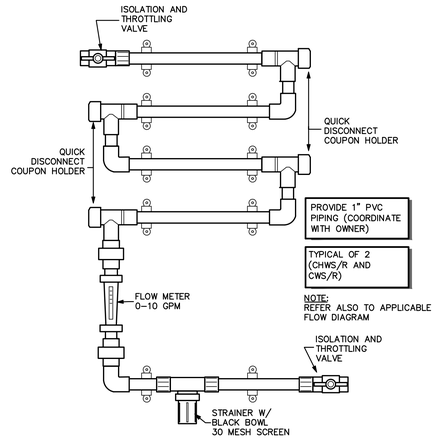
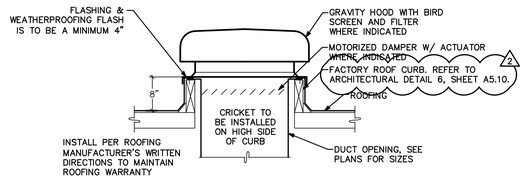


COUPON ASSEMBLY DETAIL

SCALE: NOT TO SCALE

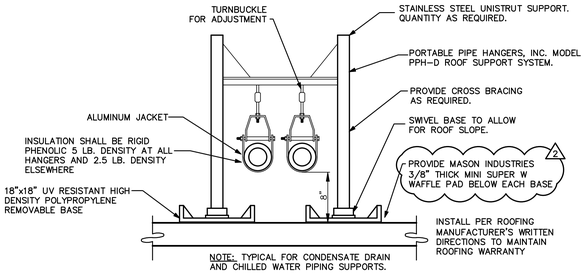
1



GRAVITY HOOD DETAIL

SCALE: NOT TO SCALE

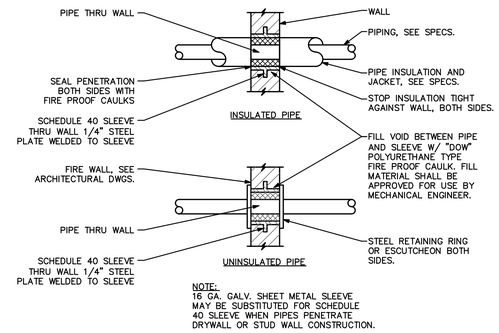
5



PIPE ON ROOF SUPPORT DETAIL

SCALE: NOT TO SCALE

2



PIPE SLEEVE THRU WALL DETAIL

SCALE: NOT TO SCALE

3

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COM PROJECT NO.
CP0916OFRL

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G.MONTE
STURDEVANT
Registered Professional Engineer
CERTIFICATE NO.
Mechanical
Expires 12/31/25
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

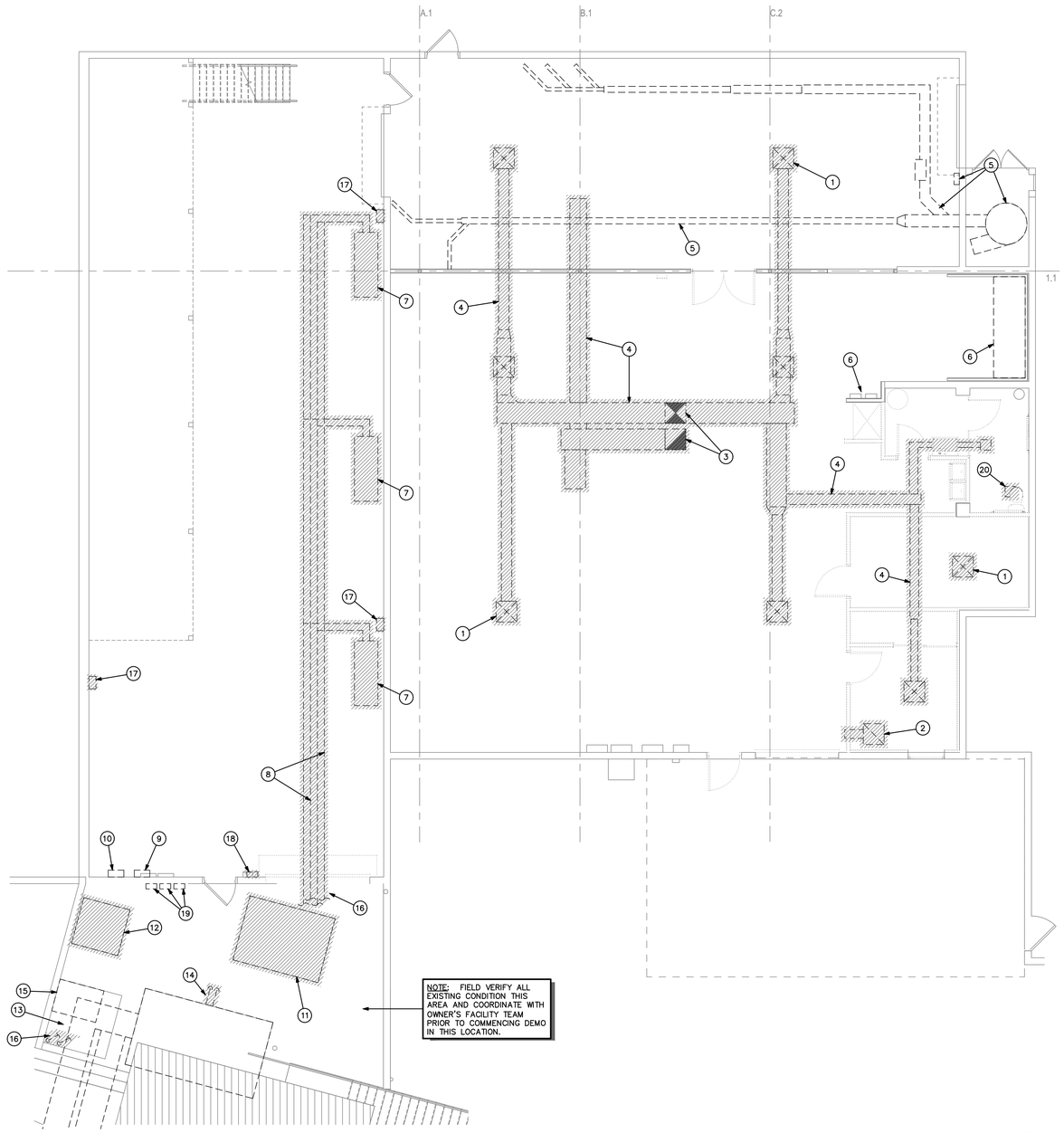
CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL DETAILS

DRAWING
M1.5

SHEET	CATALOG NUMBER:
25- OF - 55	A-281099



MECHANICAL DEMOLITION PLAN - 1ST FLOOR

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

DEMOLITION KEYNOTES

1. EXISTING SUPPLY AIR DISTRIBUTION DEVICES TO BE REMOVED. (TYPICAL)
2. EXISTING RETURN AIR DEVICES TO BE REMOVED. (TYPICAL)
3. EXISTING SUPPLY AND RETURN AIR DROPS FROM EXISTING ROOFTOP UNIT EACU-1 TO BE REMOVED. REFER TO DEMOLITION ROOF PLAN.
4. DEMO ALL EXISTING EXPOSED AND CONCEALED 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.
5. EXISTING DUST COLLECTOR AND ASSOCIATED DUCTWORK, ELECTRICAL AND CONTROLS TO REMAIN.
6. EXISTING PAINT SPRAY BOOTH AND ASSOCIATED DUCTWORK, FIRE PROTECTION, FIRE ALARM, ELECTRICAL AND CONTROLS TO REMAIN.
7. DEMO EXISTING FAN COIL UNIT EXPOSED THIS AREA INCLUDING HANGERS AND SUPPORTS. DEMO EXISTING CONDENSATE DRAIN PIPING. SALVAGE AND DELIVER TEMPERATURE SENSOR AND CONTROLS TO OWNER.
8. DEMO EXISTING CHILLED WATER AND HEATING HOT WATER PIPING, HANGERS AND SUPPORTS FROM WALL PENETRATION TO FAN COIL UNITS. REFER TO ROOF DEMOLITION PLAN FOR CONTINUATION.
9. EXISTING WALL MOUNTED VFD AND ASSOCIATED CONTROLS, CONDUITS, SUPPORTS, ETC. SERVING AIR HANDLING UNIT ARE TO REMAIN.
10. EXISTING BUILDING CONTROL PANEL THIS LOCATION TO BE REPLACED/MODIFIED TO ACCOMMODATE NEW MECHANICAL SYSTEMS. COORDINATE WITH PHASING PLAN TO KEEP BUILDING CONTROLS SYSTEM OPERATIONAL DURING ALL PHASES.
11. DEMO EXISTING AIR COOLED CHILLER AND ASSOCIATED CONTROLS, PIPING, SUPPORTS, VALVES, CONDUITS, INSULATION, ETC. DEMO DOMESTIC COLD WATER MAKEUP PIPING BACK TO MAIN AND CAP.
12. DEMO EXISTING BOILER AND ALL ASSOCIATED PIPING, PUMP, FLUES, INSULATION, EXPANSION TANKS, CONTROLS, CONDUITS, SUPPORTS, ETC. DEMO DOMESTIC COLD WATER MAKEUP PIPING BACK TO MAIN AND CAP. DEMO GAS PIPING BACK TO MAIN.
13. DEMO EXISTING CHILLED WATER STORAGE TANK BELOW MEZZANINE THIS AREA. DEMO ALL SUPPORTS AND PIPING.
14. DEMO EXISTING CHILLED WATER PIPING UP THRU MEZZANINE SERVING EXISTING AIR HANDLING UNIT. DEMO EXISTING 3-WAY CONTROL VALVE AND ISOLATION VALVES. LEAVE PIPING SUITABLE FOR INSTALLATION OF NEW ISOLATION VALVES AND CONTROL VALVE AND CONNECT TO NEW PIPING.
15. EXISTING HEATING HOT WATER BOILER EXPANSION TANK, VALVES AND CONTROLS TO REMAIN. BOILER SERVES EXISTING VAV BOXES WHICH ARE TO REMAIN. RE-INSULATE EXISTING PIPING TO REMAIN, PROVIDE ALUMINUM JACKET AND LABEL ALL PIPING.
16. REMOVE EXISTING HEATING HOT WATER PIPING SERVING FAN COIL UNITS BACK TO MAIN AT BOILER AND CAP. REMOVE ASSOCIATED SUPPORTS, VALVES, ETC.
17. REMOVE EXISTING FAN COIL UNIT CONTROLS, CONDUITS AND CONDUCTORS AND DISPOSE OF AS DIRECTED BY OWNER.
18. REMOVE EXISTING EVAPORATIVE COOLER CONTROLS, CONDUITS AND CONDUCTORS.
19. EXISTING AHU STARTER AND HOT WATER PUMP STARTER TO REMAIN. DEMO CHILLED WATER PUMP STARTER AND CONDUITS AND CONDUCTORS.
20. DEMO EXISTING EXHAUST FAN AND DUCT THRU ROOF AND PATCH ROOF TO MATCH EXISTING. REMOVE CONTROLS.

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revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Mechanical) 20981 G.MONTE STURDEVANT Date Signed 12/21/23 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
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DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

MECHANICAL DEMO PLAN 1ST FLOOR

DRAWING
M2.1

SHEET 26- OF - 55
CATALOG NUMBER: A-281100

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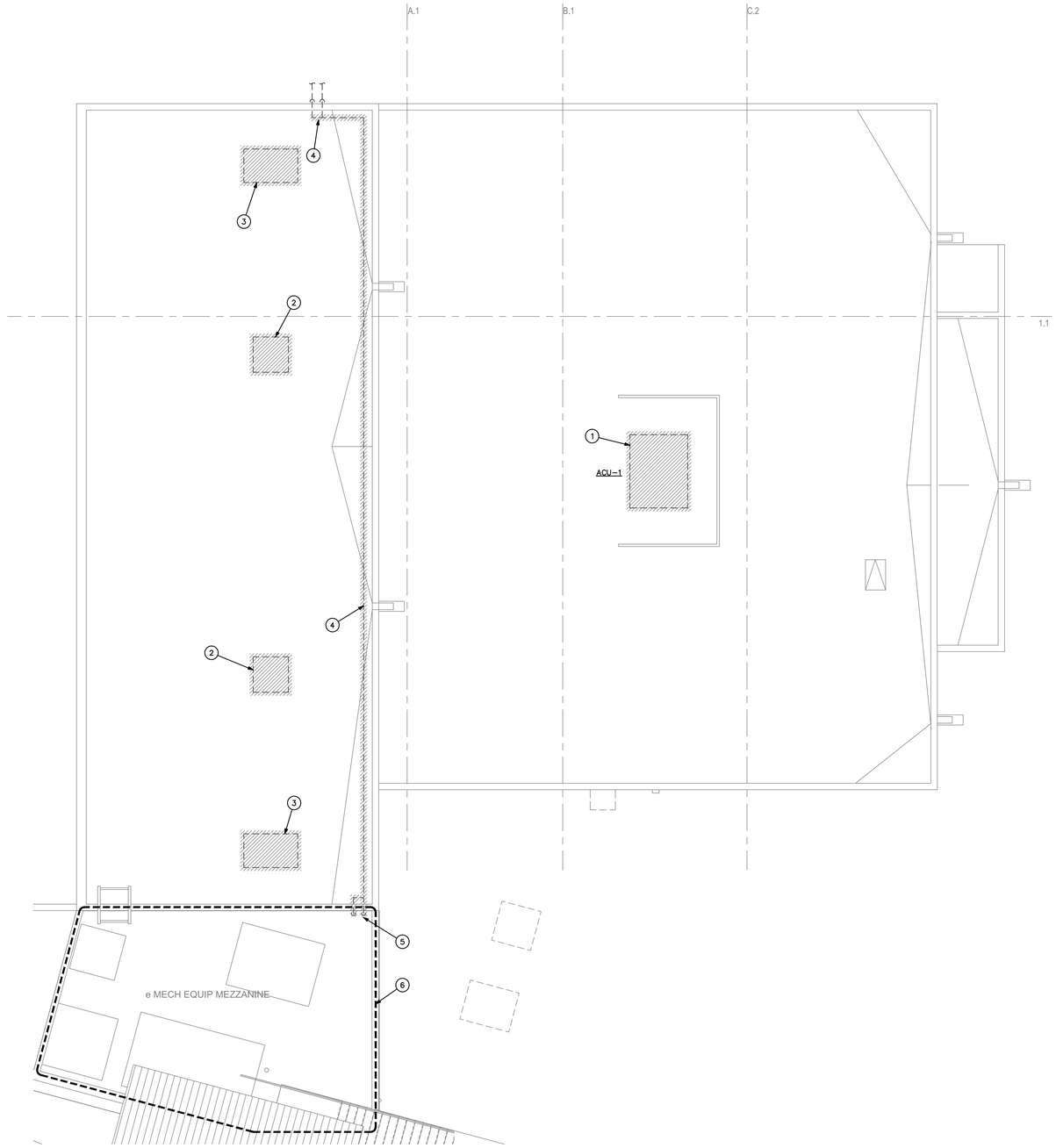
PLOTTED BY: Ryan.Eggink
PLOTTED: 12.21.2023 - 3:51pm



MECHANICAL DEMOLITION ROOF PLAN

SCALE: 3/16" = 1'–0"

DEMOLITION 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 ROOF. SEAL ROOF TO MATCH EXISTING. REFER TO FIRST FLOOR DEMOLITION PLAN.
2. DEMO EXISTING EVAP COOLER. DEMO EXISTING ROOF CURB AND SUPPORTS, DUCTWORK THROUGH ROOF, MAKEUP WATER PIPING BACK TO MAIN AND DRAIN PIPING. DEMO EXISTING CONTROLS. PATCH ROOF TO MATCH EXISTING.
3. DEMO EXISTING GRAVITY RELIEF HOOD FOR EVAP COOLERS. DEMO ROOF CURB AND SUPPORTS. PATCH ROOF TO MATCH EXISTING.
4. DEMO EXISTING 4" CHILLED WATER SUPPLY AND RETURN PIPING ATTACHED TO PARAPET WALL BACK TO LOCATION SHOWN AND PREPARE FOR NEW CONNECTION. REFER TO NEW PLANS.
5. DEMO EXISTING FLOW METER AND BTU METER AND DISPOSE OF AS DIRECTED BY OWNER. DEMO CHILLED WATER SUPPLY AND RETURN PIPING AS INDICATED. PATCH WALL TO MATCH EXISTING.
6. REFER TO SHEET M2.1 FOR ADDITIONAL DEMOLITION NOTES THIS AREA.

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Date Signed 12/21/23
ARIZONA U.S.A.

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MECHANICAL DEMO PLAN ROOF

DRAWING
M2.3

SHEET	CATALOG NUMBER:
27 - OF - 55	A-281101

PMT23-19464

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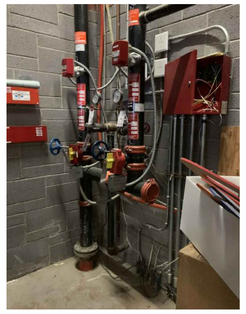
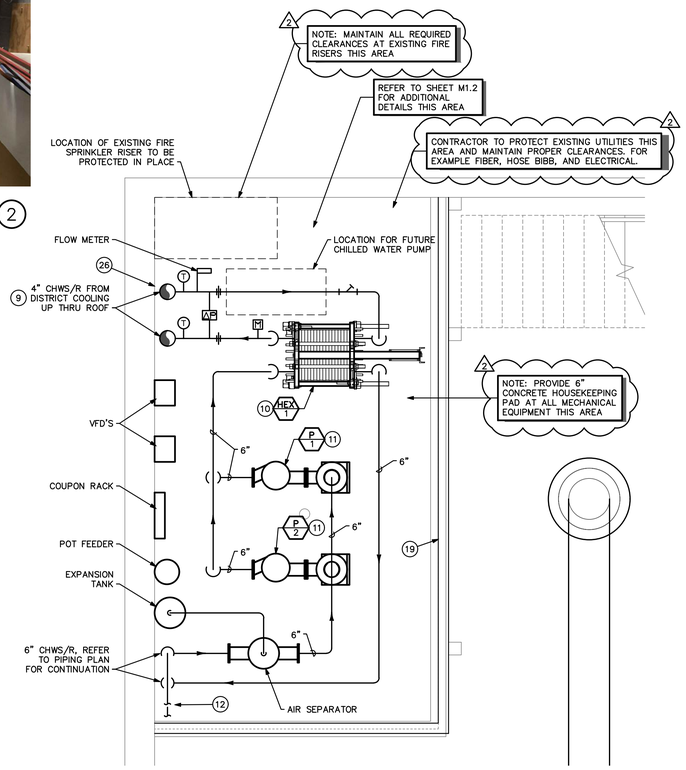


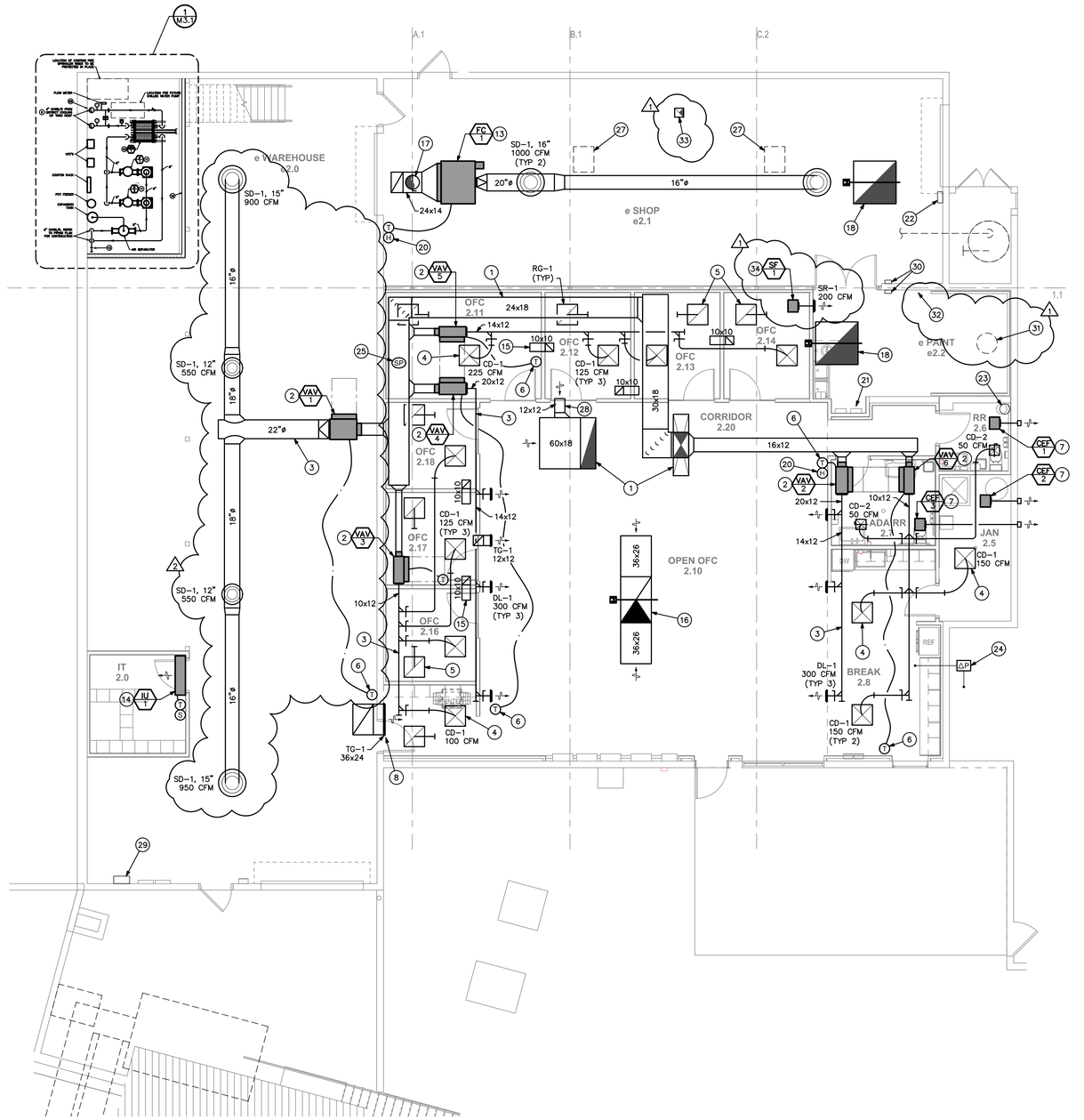
EXISTING FIRE RISER (2)

SCALE: NOT TO SCALE



ENLARGED MECHANICAL PLAN (1)

SCALE: 1/2" = 1'-0"



MECHANICAL FLOOR PLAN - 1ST FLOOR

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

KEYNOTES

1. NEW MEDIUM PRESSURE SUPPLY AND RETURN DUCTWORK ROUTED DOWN THRU ROOF FROM AIR HANDLING UNIT ABOVE. TRANSITION FROM UNIT OUTLET IN DROP TO SIZE SHOWN AND ROUTE AS SHOWN.
2. 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.
3. EXTEND LOW PRESSURE SUPPLY DUCTWORK AND ROUTE AS SHOWN.
4. INSTALL SUPPLY DIFFUSER AT LOCATION SHOWN. EXTEND BRANCH RUNOUT FROM LOW PRESSURE SUPPLY MAIN AND CONNECT. BALANCE TO AIRFLOWS INDICATED. (TYPICAL)
5. INSTALL RETURN GRILLE AT LOCATION SHOWN. PROVIDE WITH SOUND BOOT WHERE INDICATED. (TYPICAL)
6. INSTALL NEW WALL MOUNTED TEMPERATURE SENSOR AND INTERFACE WITH BUILDING AUTOMATION SYSTEM. EXTEND PLENUM RATED CONTROL WIRING TO ASSOCIATED UNIT AND CONNECT.
7. INSTALL NEW CEILING EXHAUST FAN AND EXTEND EXHAUST DUCT TO FACTORY WALL CAP. CONTROL FROM WALL SWITCH.
8. INSTALL RETURN AIR TRANSFER GRILLE MOUNTED HIGH ON WALL. FURNISH WITH SOUND BOOT. COORDINATE EXACT LOCATION WITH CONDUITS AND STRUCTURE.
9. NEW 6" CHILLED WATER PIPING DOWN FROM MAINS ON ROOF. EXTEND TO NEW HEAT EXCHANGER THIS AREA. SEE MECHANICAL ROOF PLAN FOR CONTINUATION.
10. MOUNT NEW PLATE AND FRAME HEAT EXCHANGER THIS LOCATION. CONNECT DISTRICT COOLING PIPING AND BUILDING DISTRIBUTION PIPING AND CONTROLS PER CITY OF MESA STANDARDS. INTERFACE CONTROLS WITH BUILDING AUTOMATION SYSTEM.
11. INSTALL NEW VARIABLE SPEED CHILLED WATER PUMPS WITH VFDS THIS LOCATION. MOUNT VFDS ON WALL. CONNECT CHILLED WATER PIPING AND EXTEND BELOW MEZZANINE AND ROUTE AS SHOWN.
12. ROUTE NEW CHILLED WATER SUPPLY AND RETURN PIPING THIS AREA AND EXTEND BELOW MEZZANINE. REFER TO PIPING PLAN FOR CONTINUATION.
13. INSTALL NEW FAN COIL UNIT EXPOSED IN THE SPACE THIS AREA. EXTEND NEW SPIRAL LOW PRESSURE DUCTWORK TO NEW AIR DISTRIBUTION. PROVIDE WALL MOUNTED TEMPERATURE SENSOR AND INTERFACE WITH BUILDING AUTOMATION SYSTEM.
14. 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.
15. PROVIDE OPENING IN FULL HEIGHT WALL ABOVE CEILING FOR RETURN AIR. FURNISH WITH SOUND BOOT. SIZE PER PLANS. (TYPICAL)
16. EXTEND RELIEF DUCTWORK DOWN THRU ROOF FROM GRAVITY RELIEF HOOD AS SHOWN.
17. EXTEND OUTSIDE AIR DUCTWORK DOWN THRU ROOF FROM GRAVITY HOOD AND CONNECT TO RETURN DUCT FOR FC-1.
18. PROVIDE INTAKE OPENING DOWN THRU ROOF FROM GRAVITY HOOD FOR MAKE-UP AIR FOR DUST COLLECTOR AND PAINT SPRAY BOOTH.
19. PROVIDE 6" X 6" CONCRETE CURB SURROUNDING MECHANICAL EQUIPMENT BELOW MEZZANINE FOR WATER CONTAINMENT. REFER TO ARCHITECTURAL FOR DETAILS.
20. HUMIDITY SENSOR. INTERFACE WITH BMS.
21. EXISTING PAINT SPRAY BOOTH CONTROLS. PROVIDE RELAY AND CONTROLS TRANSFORMER TO INTERLOCK MOTORIZED DAMPER AT GRAVITY HOOD WITH PAINT BOOTH.
22. EXISTING DUST COLLECTOR CONTROLS. PROVIDE RELAY AND CONTROLS TRANSFORMER TO INTERLOCK MOTORIZED DAMPER AT GRAVITY HOOD WITH DUST COLLECTOR.
23. EXISTING PAINT SPRAY BOOTH FIRE SUPPRESSION SYSTEM TO REMAIN.
24. PROVIDE BUILDING DIFFERENTIAL PRESSURE SENSOR AND INTERFACE WITH BAS TO MODULATE RELIEF DAMPERS.
25. DUCT STATIC PRESSURE SENSOR.
26. RELOCATE EXISTING FIRE SPRINKLER CABINETS AS REQUIRED TO PROVIDE SPACE FOR PIPING.
27. RELOCATE EXISTING DUST FILTRATION UNITS AS REQUIRED TO INSTALL NEW FAN COIL UNIT AND DUCTWORK. FIELD VERIFY LOCATION.
28. EXTEND RETURN AIR DUCT INTO CEILING PLENUM AS SHOWN.
29. MODIFY EXISTING CONTROL PANELS AND CONTROLS THIS AREA TO ACCOMMODATE NEW CONTROLS REQUIREMENTS. TAKE PRECAUTIONS TO KEEP EXISTING CONTROLS SYSTEMS ACTIVE. DEMO ANY UNUSED CONTROLLERS, CONDUITS AND CONDUCTORS. TRANE TO VERIFY EXISTING CONDITIONS.
30. PROVIDE VOC SENSOR IN PAINT BOOTH ROOM. PROVIDE HORN/STROBE OUTSIDE ROOM TO ALARM ON HIGH VOC LEVEL. INTERFACE WITH BAS FOR ALARM.
31. TEST AND BALANCE CONTRACTOR SHALL BALANCE EXISTING PAINT BOOTH EXHAUST FAN TO 100 FPM MINIMUM VELOCITY ACROSS PAINT BOOTH.
32. VERIFY EXISTING COMPRESSED AIR SOLENOID CLOSES WHEN PAINT BOOTH EXHAUST FAN IS DE-ENERGIZED.
33. DROP FULL SIZE EXHAUST DUCT DOWN THRU ROOF FROM EF-1. PROVIDE BIRD SCREEN AT OPEN END.
34. PROVIDE INLINE SUPPLY FAN MOUNTED IN CEILING SPACE SUSPENDED FROM STRUCTURE ABOVE. EXTEND SUPPLY DUCTWORK TO SR-1 AND BALANCE TO AIRFLOW INDICATED.

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12/21/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

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CITY OF MESA
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MECHANICAL FLOOR PLAN 1ST FLOOR

DRAWING
M3.1

SHEET 28 OF 55
CATALOG NUMBER: A-281102

PMT23-19464

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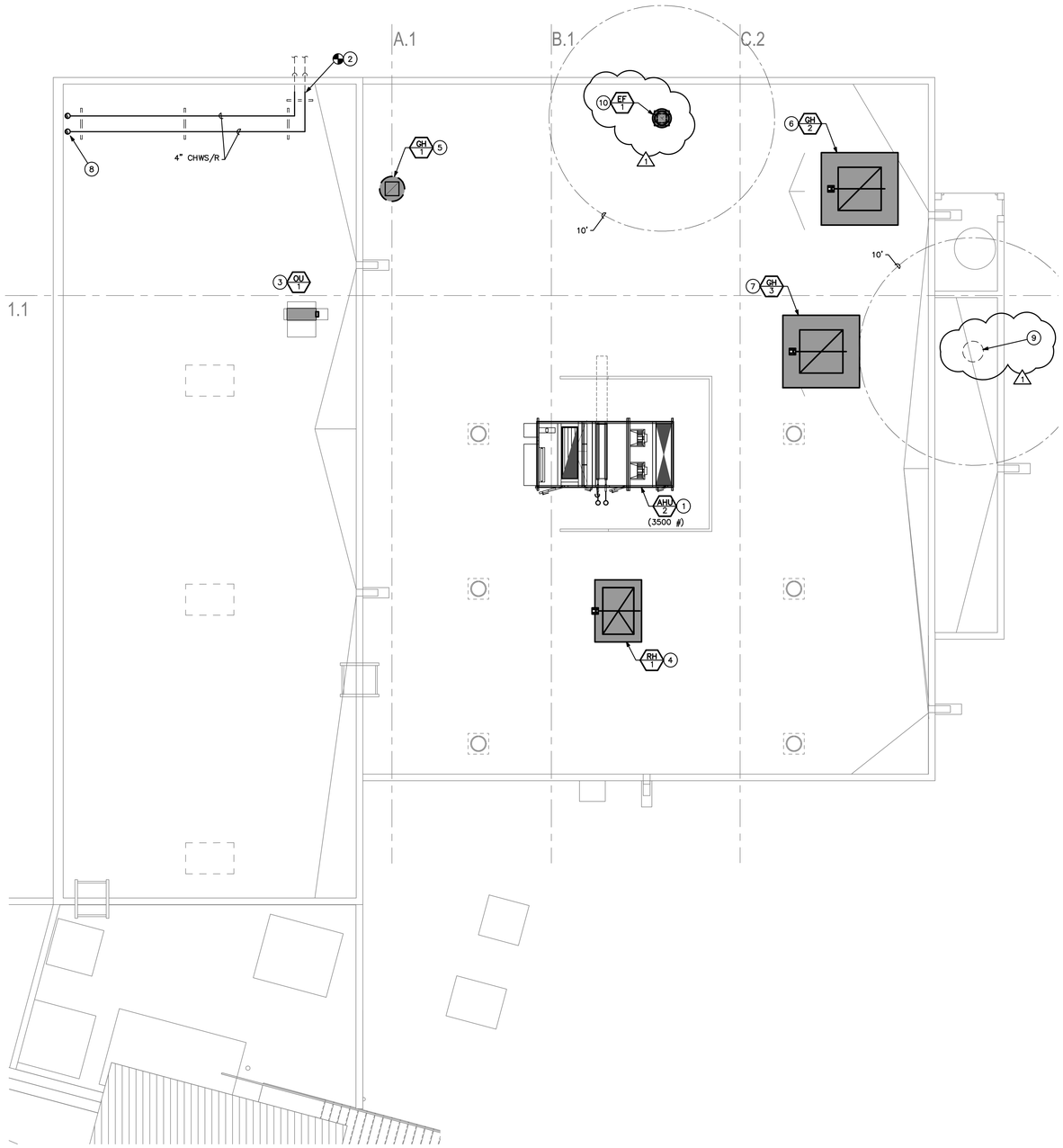

MECHANICAL ROOF PLAN

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

KEYNOTES

1. NEW VARIABLE AIR VOLUME CHILLED WATER AIR HANDLING UNIT MOUNTED ON ROOF CURB THIS LOCATION TO SERVE BELOW THIS AREA. SEE FIRST FLOOR MECHANICAL PLAN.
2. CONNECT NEW 4" CHILLED WATER SUPPLY AND RETURN PIPING TO EXISTING MAINS ON ROOF AND EXTEND ACROSS ROOF ON NEW SUPPORTS AND DROP THROUGH ROOF. DEMO REMAINDER OF EXISTING PIPING AND SUPPORTS ON ROOF. SEE DEMO ROOF PLAN. SEE MECHANICAL FLOOR PLAN FOR CONTINUATION OF NEW PIPING.
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.
5. PROVIDE NEW GRAVITY HOOD FOR OUTSIDE AIR INTAKE TO FC-1 AS SHOWN. EXTEND OUTSIDE AIR DUCT DOWN THRU ROOF. SEE MECHANICAL FLOOR PLAN FOR CONTINUATION OF DUCTWORK.
6. PROVIDE NEW GRAVITY HOOD WITH MOTORIZED DAMPER AND INTERLOCK WITH DUST COLLECTOR SERVING THIS AREA BELOW. MOTORIZED DAMPER SHALL OPEN WHEN DUST COLLECTOR IS ENERGIZED.
7. PROVIDE NEW GRAVITY HOOD WITH MOTORIZED DAMPER AND INTERLOCK WITH PAINT SPRAY BOOTH SERVING THIS AREA BELOW. MOTORIZED DAMPER SHALL OPEN WHEN PAINT SPRAY BOOTH IS ENERGIZED.
8. EXTEND NEW 4" CHILLED WATER SUPPLY AND RETURN PIPING DOWN THRU ROOF. SEE SHEET M3.1 FOR CONTINUATION. FLASH AND COUNTERFLASH PIPING AND PATCH ROOF AS REQUIRED.
9. EXISTING PAINT BOOTH EXHAUST OUTLET TO REMAIN.
10. PROVIDE NEW ROOF MOUNTED EXHAUST FAN TO SERVE WOODSHOP. MOUNT ON FACTORY ROOF CURB. EXTEND EXHAUST DUCT DOWN THRU ROOF. SEE MECHANICAL FLOOR PLAN FOR CONTINUATION OF DUCTWORK.

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Registered Professional Engineer CERTIFICATE NO. 20981 G.MONTE STURDEVANT Date Signed 12/21/23 ARIZONA U.S.A.

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MECHANICAL ROOF PLAN

DRAWING
M3.3

SHEET	CATALOG NUMBER:
29- OF - 55	A-281103

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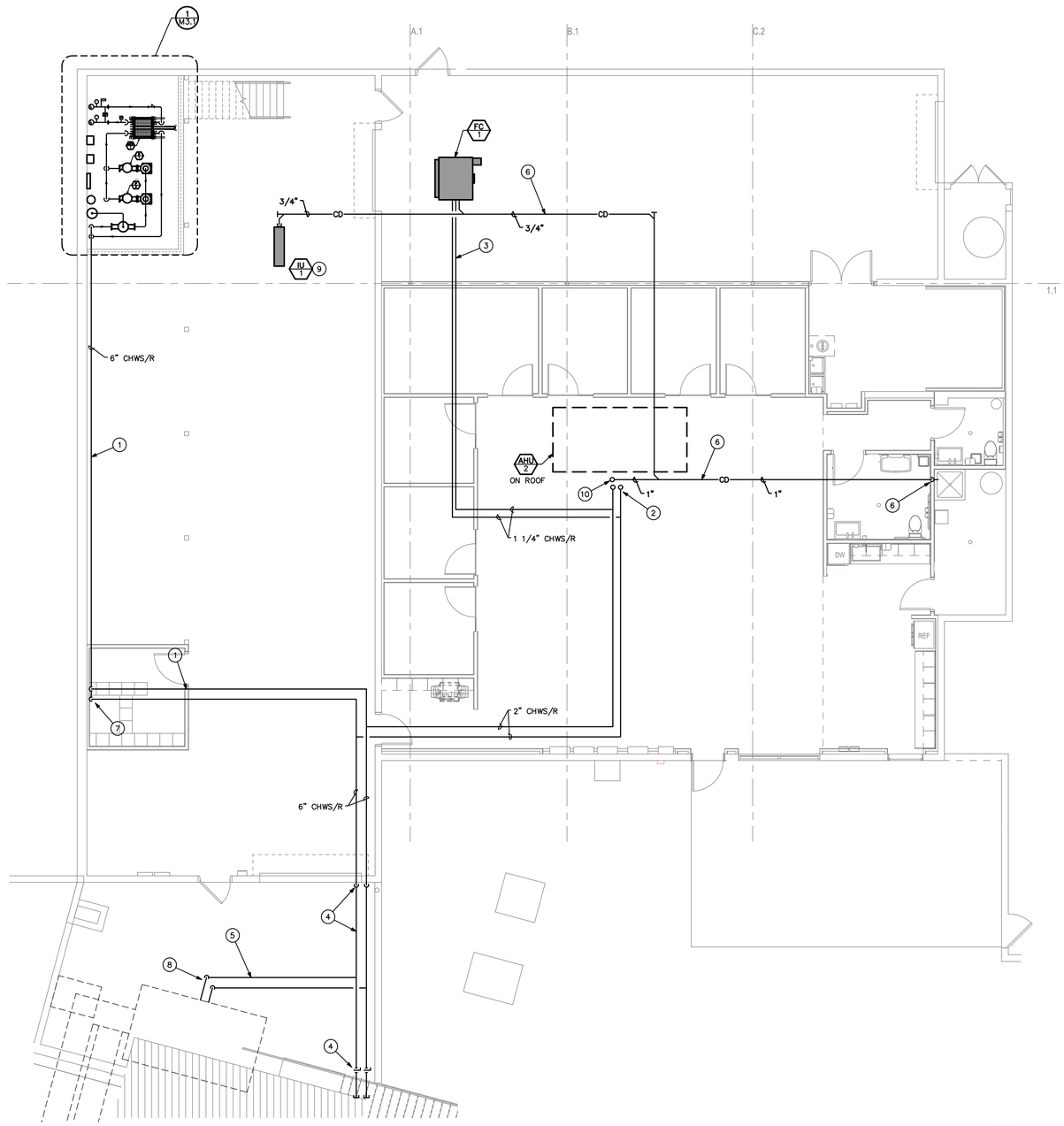

MECHANICAL PIPING PLAN - 1ST FLOOR

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

KEYNOTES

1. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING BELOW STORAGE MEZZANINE TIGHT TO WALL. PROVIDE UNISTRUT SUPPORTS AS REQUIRED. RISE UP TO STRUCTURE AND ROUTE AS SHOWN.
2. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING UP THRU ROOF TO NEW AIR HANDLING UNIT AND CONNECT. SEE ROOF PLAN FOR CONTINUATION.
3. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING TO NEW FAN COIL UNIT AND CONNECT.
4. ROUTE CHILLED WATER SUPPLY AND RETURN PIPING DOWN EXTERIOR WALL TO ABOVE EXISTING ROLL UP DOOR AND BELOW UNDERSIDE OF OUTDOOR MEZZANINE. CORE DRILL EXTERIOR WALL AND EXTEND PIPING BELOW MEZZANINE WITH NEW BUTTERFLY VALVES AND CAP AND LEAVE SUITABLE FOR EXTENSION INTO ADJACENT BUILDING IN PHASE 2 FOR FUTURE CONNECTION. PROVIDE ISOLATION VALVES IN ACCESSIBLE LOCATION.
5. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING BELOW MEZZANINE TO EXISTING AIR HANDLING UNIT LOCATED ON MEZZANINE.
6. EXTEND CONDENSATE DRAIN PIPING AND ROUTE AS SHOWN. MAINTAIN ALL SLOPE REQUIREMENTS. ROUTE DOWN WALL AND TERMINATE AT JANITOR MOP SINK.
7. EXTEND CHILLED WATER SUPPLY AND RETURN PIPING BEYOND MEZZANINE AND RISE UP TIGHT TO WALL TO STRUCTURE AND ROUTE AS SHOWN. PROVIDE AIR VENT AT HIGH POINT. SEE DETAIL.
8. RISE 4" CHILLED WATER SUPPLY AND RETURN PIPING UP THRU MEZZANINE AT EXISTING AIR HANDLING UNIT. PROVIDE NEW ISOLATION VALVES AND NEW 3-WAY CONTROL VALVE AT EXISTING AIR HANDLING UNIT. REFER TO DETAIL 12 ON SHEET M1.4.
9. PROVIDE CONDENSATE PUMP AT DUCTLESS SPLIT SYSTEM UNIT AND RISE DRAIN PIPING UP TO ROOF STRUCTURE AND ROUTE AS SHOWN.
10. 1" CONDENSATE DRAIN DOWN FROM AHU-2 ON ROOF ABOVE. ROUTE AS HIGH AS POSSIBLE AS SHOWN.

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MECHANICAL PIPING PLAN 1ST FLOOR

DRAWING
M4.1

SHEET	CATALOG NUMBER:
30- OF - 55	A-281104

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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.

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.

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.

MOTORIZED DAMPER

1. CR — 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.
2. S — SPEAKER. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

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.	
SWITCHES	+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"

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.

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 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. FIRE ALARM DRAWINGS SHALL BE COMPLETED AS A DEFERRED SUBMITTAL BY FIRE ALARM CONTRACTOR. CONTRACTOR MUST BE FROM CITY APPROVED VENDOR LIST AND BE FAMILIAR WITH THE EXISTING BUILDING SYSTEM.

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.

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.

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

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

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer, Electrical
CERTIFICATE NO. 53328
NATHAN A. SHORT
Date Signed 11/21/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

ELECTRICAL SYMBOLS AND BUILDING 2

DRAWING
E0.00

SHEET	CATALOG NUMBER:
31 - OF - 55	A-281105

FILE: C:\Users\william.reyes\AppData\Local\Temp\AcPublish_22024\E0_0_1.dwg
PLOTTED BY: william.reyes
PLOTTED: 12.21.2023 - 3:52pm

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 SYSTEMS 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)
1-2.11-2.14,2.16-2.18 (Common Space Types:Office - Enclosed)	674	0.93	627
2-2.10 (Common Space Types:Office - Open Plan)	1375	0.81	1033
3-2.1, 2.2 (Common Space Types:Storage >=50 - <=1000 sq.ft.)	337	0.46	155
4-2.6, 2.7 (Common Space Types:Restrooms)	132	0.85	112
5-2.3 Paint Booth (Common Space Types:Workshop)	196	1.14	223
6-2.5 (Common Space Types:Electrical/Mechanical)	101	0.43	43
7-2.8 (Common Space Types:Lounge/Breakroom)	205	0.62	127
8-Common Space Types:Copy/Print Room	70	0.56	39
9-Common Space Types:Corridor/Transition <8 ft wide	44	0.66	29
		Total Allowed Watts =	2389

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)
1-2.11-2.14,2.16-2.18 (Common Space Types:Office - Enclosed)				
LED 1: L1: 2X4: Other:	1	8	37	296
2-2.10 (Common Space Types:Office - Open Plan)				
LED 2: L4: LINEAR: Other:	1	9	84	756
3-2.1, 2.2 (Common Space Types:Storage >=50 - <=1000 sq.ft.)				
LED 1: L1: 2X4: Other:	1	4	37	148
4-2.6, 2.7 (Common Space Types:Restrooms)				
LED 4: L2: DOWN LIGHT: Other:	1	4	14	56
5-2.3 Paint Booth (Common Space Types:Workshop)				
LED 7: 4' STRIP: Other:	1	4	31	124
6-2.5 (Common Space Types:Electrical/Mechanical)				
LED 1: L1: 2X4: Other:	1	2	37	74
7-2.8 (Common Space Types:Lounge/Breakroom)				

Project Title: i.d.e.a. Museum Renovations — Report date: 11/15/23
Data filename: I:\n\NetProj\2020\201080_000 City of Mesa E on\Lighting\ComCheck.cck — Page 1 of 7

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
LED 1: L1: 2X4: Other:	1	3	37	111
8-Common Space Types:Copy/Print Room				
LED 1: L1: 2X4: Other:	1	1	37	37
9-Common Space Types:Corridor/Transition <8 ft wide				
LED 4: L2: DOWN LIGHT: Other:	1	1	14	14
			Total Proposed Watts =	1616

Interior Lighting PASSES: Design 32% 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.

NOTES:

1. ACCEPTABLE MANUFACTURERS ARE TORK, HUBBLE, INTERMATIC, WATTSTOPPER AND SIGNIFY.
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 LUMINARES 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	SIGNIFY	2FPZ48L840-4-DS-UNV-DIM	–	4800 LUMENS			–	
	–	–	2X4 LAY-IN	4000K LED	UNV	37	RECESSED	1
	–	'ER100' AS REQURED FOR EM	–	–			–	
L2	SIGNIFY	4RN-P4R-DL-15-940-M-CC	–	1500 LUMENS			–	
	–	–	4" DOWN LIGHT	4000K LED	UNV	14	RECESSED	1
	–	'BSL6' AS REQURED FOR EM	–	–			–	
L3	SIGNIFY	FSS440L840-UNV-DIM	–	1500 LUMENS			–	
	–	–	4' STRIP LIGHT	4000K LED	UNV	31	SUSPENDED	4
	–	–	–	–			–	
L4	SIGNIFY	2901L94040LN08D	–	4000 LUMENS			–	
	–	–	8' LINEAR LIGHT	4000K LED	UNV	84	SUSPENDED	1 4
	–	'B' AS REQURED FOR EM	–	–			–	
L5E	LITHONIA	AFO DB MVOLT N SD	EMERGENCY LIGHT PACK	–			–	
	–	–	90 MINUTES	LED	MVOLT	3	RECESSED/WALL	
	–	–	–	–			–	
L6	WAC LIGHTING	–	TAPE LIGHT	–			–	
	–	LED-T24-40-X-WT	–	LED	277	14	SURFACE	2
	–	–	–	4000K			–	
L7/E	ENVOY	E192114-4-G-3-A-S-R-ND-5Y	–	1500 LUMENS			–	
	–	–	4' STRIP VAPOR PROOF LIGHT	4000K LED	UNV	31	SUSPENDED	
	–	'EM' AS REQURED FOR EM	–	–			–	
L11	ESL VISION	ESL-CSS-860-4-2240W-4000K	–	–			–	
	–	–	4' STRIP RETROFIT	4000K LED	UNV	40	RETROFIT	
	–	–	–	–			–	
	SIGNIFY	LFW16-20-WW-G3-4-DNV-PCB-X	LED WALL SCONCE	2668 LUMENS			–	
	–	–	–	4000K LED	MVOLT	16	WALL MOUNT	3
	–	–	–	–			ABOVE DOOR	
	EXITRONIX	S900U-WB-SR-X-X-G2	–	–			–	
	–	–	UNIVERSAL EDGE-LIT LED	LED	277	5	RECESSED/WALL	
	–	–	SINGLE FACE EXIT SIGN	–			–	
	–	–	FURNISH WITH BATTERY PACK	–			–	
	–	–	–	–			–	
	–	–	–	–	–	–	–	
	–	–	–	–			–	

LUMINAIRE SCHEDULE KEYED NOTES

1 PROVIDE LUMINAIRE DENOTED WITH AS "L#E" 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 PRIOR TO ORDERING. EXIT SIGN WATTAGE SHALL NOT EXCEED 5 WATTS PER SIDE. COLOR SHALL BE GREEN.

4 CONFIRM MOUNTING HEIGHT WITH ARCHITECT PRIOR TO INSTALLATION.

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: 602.258.8555
hollystreetstudio.com

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

Vertical Power Solutions
Phone: 734.330.6101
website: http://verticalpowersolutions.com email: info@verticalpowersolutions.com

Features:
- A modern/contemporary appearance.
- Easily wired through a drop ceiling; eliminating the need for expensive under-floor wiring installations and poke-through device routing.
- Application versatility for running power/data throughout open office landscapes, retail stores, and other commercial facilities.
- Extends power, data, and A/V connections to feed stand alone office furniture and equipment.
- Height flexibility. Easily modified to accommodate ceiling height.
- Allows flexibility and easy access to update wiring.
- Relocatable.
- Power/Data distribution capabilities are limited only by cover plate configuration, as all wiring and receptacles are field installed.
- Meets minimum ADA requirements.
- Country of Origin: U.S.A.

Riser Designs:

Ordering Code
Example: PP-EXP-01-01-AL

Termination	Riser Designs	Length	Power (Power Pole Only)	Data (Power Pole Only)	Finish
PP= Power Pole	EXP= Expanded Metal w/ vertical seam	20= 2 ft	00= No	00= No	AL= Standard Silver Speedbeat Aluminum
XT= Extension	RSP= Round Perf. w/ spiral seam	04= 4 ft	01= 1 Power Housing	01= Yes 1D	BK= Black (Gloss or Matte)
SL= Sleeve	TRI= Triangle Perf. w/ vertical seam	06= 6 ft	02= 2 Power Housings	02= Yes 2D	WH= White
		08= 8 ft			*RAL Matching available. Please indicate RAL # & finish. https://www.ifrconstep.com/
		10= 10 ft PP only			

CONFORMS TO UL STD. 1286 SYSTEM TYPE II
Certified to CSA STD C22.2#203
Control # 5016637

Accessories:
- Longer Collar- available in 8 or12 inch lengths. Dimensions: 3.85 ID, 4.0 OD, Length available in 8 inches or 12 inches.
- Hard Lid Attachment-8 inch or 12 inch. Dimensions: 3.85 ID, 4.0 OD, Length available in 8 inches or 12 inches. Used in applications with open ceiling; attaches the pole to ceiling structure. Also used on top of walls to feed power/data from above. Allows wiring to enter the pole from the deck attachment point.
- Furniture Feed Cover Plates. Powder coated to match power pole.
- Quad Raised Cover Plates. Powder coated to match power pole.
- SRM Raised Cover Plates. Powder coated to match power pole.
- 4 Square Box Extension. Powder coated to match power pole.

Product Descriptions:

Power Pole 1 Power/ 2 Data

Manufacturer: Vertical Power Solutions, LLC. Part #: PP-EXP-10-01-02-XX / PP-RSP-10-01-02-XX/ PP-TRI-10-01-02-XX

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: PP-EXP-10-01-02-XX / PP-RSP-10-01-02-XX/ PP-TRI-10-01-02-XX
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 10 ft. Extensions available in 2 ft. increments- up to 18 ft. total.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase. Housing provided for (1) 4inch square power box and 2 data cover plates (up to 12 data ports).
Cover Plates: Depending on use of the pole; stand alone using a quad. receptacle or feeding a workstation a furniture feed.
Country of Origin: US- USA

Power Pole 1 Power/ 1 Data Same Side

Manufacturer: Vertical Power Solutions, LLC. Part #: PP-EXP-10-01-01-XX SS/ PP-RSP-10-01-01-XX SS/ PP-TRI-10-01-01-XX SS

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: PP-EXP-10-01-01-XX / PP-RSP-10-01-01-XX / PP-TRI 10-01-01-XX Same Side
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 10 ft. Extensions available in 2 ft. increments- up to 18 ft. total.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase. Housing provided for (1) 4inch square power box and 1 data cover plate (up to 6 data ports).
Cover Plates: Depending on use of the pole; stand alone using a quad. receptacle or feeding a workstation a furniture feed.

Power Pole 1 Power/ 1 Data Opposite Side

Manufacturer: Vertical Power Solutions, LLC. Part #: PP-EXP-10-01-01-XX/ PP-RSP-10-01-01-XX/ PP-TRI-10-01-01-XX

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: PP-EXP-10-01-01-XX / PP-RSP-10-01-01-XX / PP-TRI-10-01-01-XX Opposite Side
Riser Type: Round Spiral Perf. (RSP) , Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 10 ft. Extensions available in 2 ft. increments- up to 18 ft. total.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase. Housing provided for (1) 4inch square power box and 1 data cover plate (up to 6 data ports).
Cover Plates: Depending on use of the pole; stand alone using a quad. receptacle or feeding a workstation a furniture feed.
Country of Origin: US- USA

Sleeve w/ Flange (Interior or Exterior)

Manufacturer: Vertical Power Solutions, LLC. Part #: SL-EXP-08-00-00-XX/ SL-RSP-08-00-00-XX/ SL-TRI-08-00-00-XX Interior or Exterior.

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: SL-EXP-08-00-00-XX/ SL-RSP-08-00-00-XX/ SL-TRI-08-00-00-XX Interior or Exterior
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 8 ft./ 6 ft./ 4 ft.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase.
Used for countertop or tabletop chase.
Country of Origin: US- USA

Power Pole Horseshoe Base 24 Inch

Manufacturer: Vertical Power Solutions, LLC. Part #: PP-EXP-10-00-00-XX Horseshoe Base/ PP-RSP-10-00-00-XX/ PP-TRI-10-00-00-XX Horseshoe Base

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: PP-EXP-10-00-00-XX / PP-RSP-10-00-00-XX/ PP-TRI-10-00-00-XX Horseshoe Base 24"
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 10 ft. Extensions available in 2 ft. increments- up to 18 ft. total.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase. No housings. Horseshoe cut out at bottom of base.
Cover plates: N/A
Country of Origin: US- USA

Power Pole 2 Power/ 2 Data

Manufacturer: Vertical Power Solutions, LLC. Part #: PP-EXP-10-02-02-XX / PP-RSP-10-02-02-XX/ PP-TRI-10-02-02-XX

Product Detail:

Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: PP-EXP-10-02-02-XX / PP-RSP-10-02-02-XX/ PP-TRI-10-02-02-XX
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 10 ft. Extensions available in 2 ft. increments- up to 18 ft. total.
Dimensions: 3.85 ID, 4.0 OD
Outlet type: No outlets are included. The poles are only a chase. Housing provided for (1) 4inch square power box and 2 data cover plates (up to 12 data ports).
Cover Plates: Depending on use of the pole; stand alone using a quad. receptacle or feeding a workstation a furniture feed.
Country of Origin: US- USA

Power Pole Extensions

Manufacturer: Vertical Power Solutions, LLC.
Part #: XT-EXP-08-00-00-XX / XT-RSP-08-00-00-XX / XT-TRI-08-00-00-XX 8 FT Extension
XT-EXP-06-00-00-XX / XT-RSP-06-00-00-XX / XT-TRI-06-00-00-XX 6 FT Extension
XT-EXP-04-00-00-XX / XT-RSP-04-00-00-XX / XT-TRI-04-00-00-XX 4 FT Extension
XT-EXP-02-00-00-XX / XT-RSP-02-00-00-XX / XT-TRI-02-00-00-XX 2 FT Extension

Product Detail:
Manufacturer: Vertical Power Solutions, LLC.
Part Number: Part #: XT-EXP-08-00-00-XX / XT-RSP-08-00-00-XX / XT-TRI-08-00-00-XX 8 FT Extension
XT-EXP-06-00-00-XX / XT-RSP-06-00-00-XX / XT-TRI-06-00-00-XX 6 FT Extension
XT-EXP-04-00-00-XX / XT-RSP-04-00-00-XX / XT-TRI-04-00-00-XX 4 FT Extension
XT-EXP-02-00-00-XX / XT-RSP-02-00-00-XX / XT-TRI-02-00-00-XX 2 FT Extension
Riser Type: Round Spiral Perf. (RSP), Expanded Metal (EXP), or Triangle Perf. (TRI)
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Pole Height: 8ft, 6ft, 4ft, 2 ft.
Dimensions: 3.85 ID, 4.0 OD
Country of Origin: US- USA

Hard Lid Attachment

Manufacturer: Vertical Power Solutions, LLC.
Part #: Hard Lid Attachment. 8" or 12"

Product Detail:
Manufacturer: Vertical Power Solutions, LLC.
Part Number: Hard Lid Attachment 8 inch or 12 inch
Color: Popular colors include Standard Silver, Matte Black, and Gloss White. Please see Color Page and RAL website link for possible Pantone and/or logo matching.
Dimensions: 3.85 ID, 4.0 OD, Length available in 8 inches or 12 inches
Used in applications with open ceiling; attaches the pole to ceiling structure. Also used on top of walls to feed power/data from above.
Country of Origin: US- USA

VERTICAL POWERSOLUTIONS,LLC.

SCALE: N.T.S.
NOTE: CONFIRM EXACT RECEPTACLE AND DATA OUTLET CONFIGURATION WITH OWNER PRIOR TO ORDERING. COORDINATE ALL TRIM AND DEVICE WITH ARCHITECT

POLE FINISH SHALL BE BLACK

2
E0.01

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

COM PROJECT NO.
CP0916OFRL

Digital Signature of Nathan A. Short, Certificate No. 53328, Date & Time: 11/27/23 7:00 AM, Arizona U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

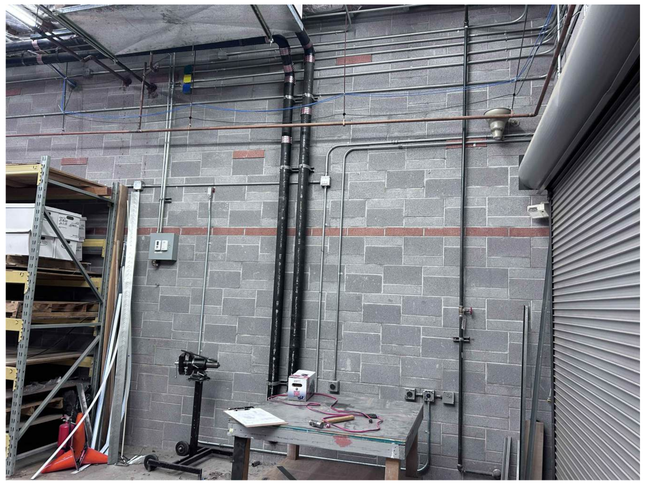
CITY OF MESA
ENGINEERING DEPARTMENT

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

LUMINARY SCHEDULE, NOTES AND ENLARGED DETAIL

DRAWING
E0.01

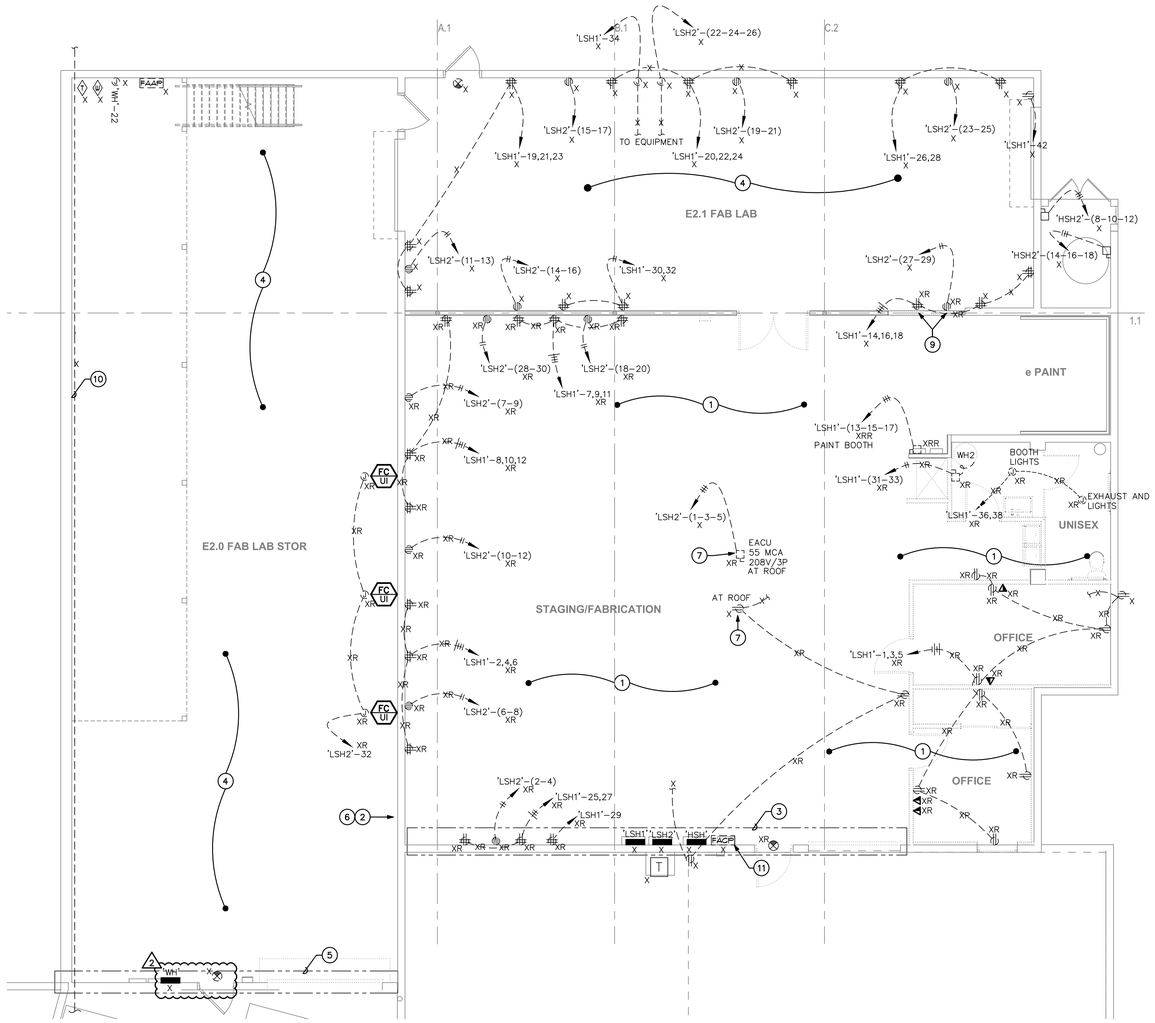
SHEET	CATALOG NUMBER:
32 - OF - 55	A-281106



1ST LEVEL OFFICE DOOR AREA

SCALE: N.T.S.

1
E1.01



1ST FLOOR DEMO ELECTRICAL PLAN

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

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.

SHEET NOTES:

1. EXISTING DEVICES AND CIRCUITING SHOWN ON THIS DRAWING ARE BASED ON AVAILABLE AS-BUILT DRAWINGS AND ESD VISUAL SITE VERIFICATIONS. CONTRACTOR SHALL FIELD VERIFY THE EXACT SOURCE OF ALL DEVICES WITHIN BUILDING AND MARK AS-BUILTS AND UPDATED PANEL SCHEDULES WITH THE ACTUAL CIRCUITS USED.
2. CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION OF DEVICES IN THE FIELD AND ENSURE THAT ALL DEVICES WITHIN DEMOLISHED AREAS ARE REMOVED COMPLETE AND THAT ALL DEVICES WITHIN EXISTING TO REMAIN AREAS REMAIN ENERGIZED AND ARE OPERATIONAL PRIOR TO PROJECT CLOSE-OUT.

KEYNOTES

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. NEW DOOR LOCATION. CONTRACTOR TO RELOCATE ANY ASSOCIATED ELECTRICAL RACEWAY, JUNCTION BOXES, ETC.. COORDINATE WITH ARCHITECT FOR EXACT LOCATION. SEE DETAIL 1 FOR ADDITIONAL INFORMATION.
3. ANY ASSOCIATED ELECTRICAL RACEWAY, JUNCTION BOXES, ETC. AT WALL SHALL REMAIN AND BE EXTENDED AS REQUIRED. SEE DETAIL 1 ON SHEET E2.01 FOR ADDITIONAL INFORMATION.
4. ALL EXISTING DEVICES THIS AREA TO REMAIN, UNO. CONTRACTOR SHALL ENSURE THAT ANY WIRING AND/OR CONDUIT SERVING THIS AREA IS NOT REMOVED OR AFFECTED BY THE RENOVATION AND DEMO WORK OCCURING WITHIN OTHER AREAS OF THE BUILDING.
5. ANY ASSOCIATED ELECTRICAL RACEWAY, JUNCTION BOXES, ETC. AT WALL SHALL REMAIN AND BE EXTENDED AS REQUIRED. SEE DETAIL 2 ON SHEET E2.01 FOR ADDITIONAL INFORMATION.
6. ALL EXISTING CONDUITS, BOXES AND EQUIPMENT IN THE AREA OF THE NEW DOOR SHALL BE RELOCATED AND WIRING EXTENDED AS REQUIRED.
7. EXISTING ROOF CIRCUIT TO REMAIN. REMOVE ANY CONDUIT AND WIRE NOT ASSOCIATED TO ROOF CIRCUIT. SHEET E4.01 FOR ADDITIONAL INFORMATION.
8. DEMOLISH DISCONNECT. CONDUIT AND WIRE TO REMAIN. REFER TO SHEET E2.01 FOR ADDITIONAL INFORMATION.
9. EXISTING CIRCUIT TO BE RELOCATED. REFER TO SHEET E2.01 FOR ADDITIONAL INFORMATION.
10. EXISTING LOW VOLTAGE AND FIBER CABLING SHALL BE PROTECTED IN PLACE. CONTRACTOR TO VERIFY IN FIELD AND COORDINATE WITH OTHER TRADES TO ENSURE THEIR WORK DOES NOT IMPACT OR DAMAGE EXISTING CABLING.
11. EXISTING FIRE ALARM CONTROL PANEL (HONEYWELL GAMEWELL) TO REMAIN. CONTRACTOR TO ENSURE THAT ALL NEW FIRE ALARM DEVICES FOR ENTIRE PROJECT AREA WILL COMMUNICATE BETWEEN THE OLDER EQUIPMENT AND NEW EQUIPMENT.

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

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
53328
NATHAN A. SHORT
Date Signed 11/27/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

1ST FLOOR DEMO ELECTRICAL PLAN

DRAWING
E1.01

SHEET	CATALOG NUMBER:
33- OF - 55	A-281107

PMT23-19464

PLOTTED: 12.21.2023 – 4:12pm PLOTTED BY: william.reyes
FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel_200 Design\Phase 1\E1_1.dwg

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. FIRE ALARM DRAWINGS SHALL BE COMPLETED AS A DEFERRED SUBMITTAL BY FIRE ALARM CONTRACTOR. CONTRACTOR MUST BE FROM CITY APPROVED VENDOR LIST AND BE FAMILIAR WITH THE EXISTING BUILDING SYSTEM.

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.

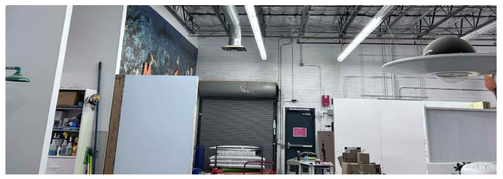
O. MAKE ALL FINAL EQUIPMENT CONNECTIONS AS REQUIRED.

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.

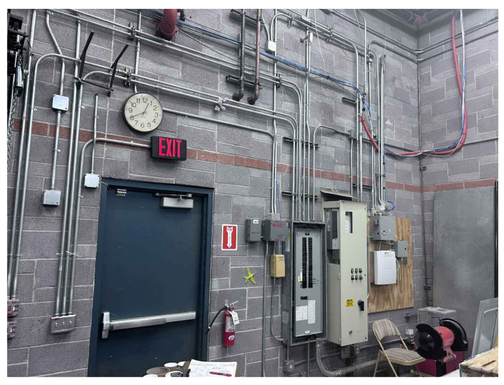


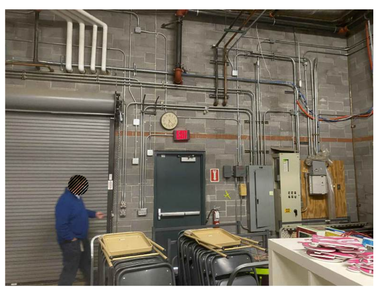
NOTE: ALL EXISTING JUNCTION BOXES SHALL RELOCATED OR MADE DEEPER AS REQUIRED SO THAT ACCESS IS MAINTAINED FOLLOWING THE INSTALLATION OF WALL FURRING. PANELBOARDS SHALL REMAIN. CONDUITS SHALL BE CONCEALED BEHIND NEW FURRING. ENSURE THAT ANY SPLICES ARE WITHIN AN ACCESSIBLE JUNCTION BOX.

SOUTH WALL OFFICE FURRED AREA

SCALE: N.T.S.

1 / E2.01

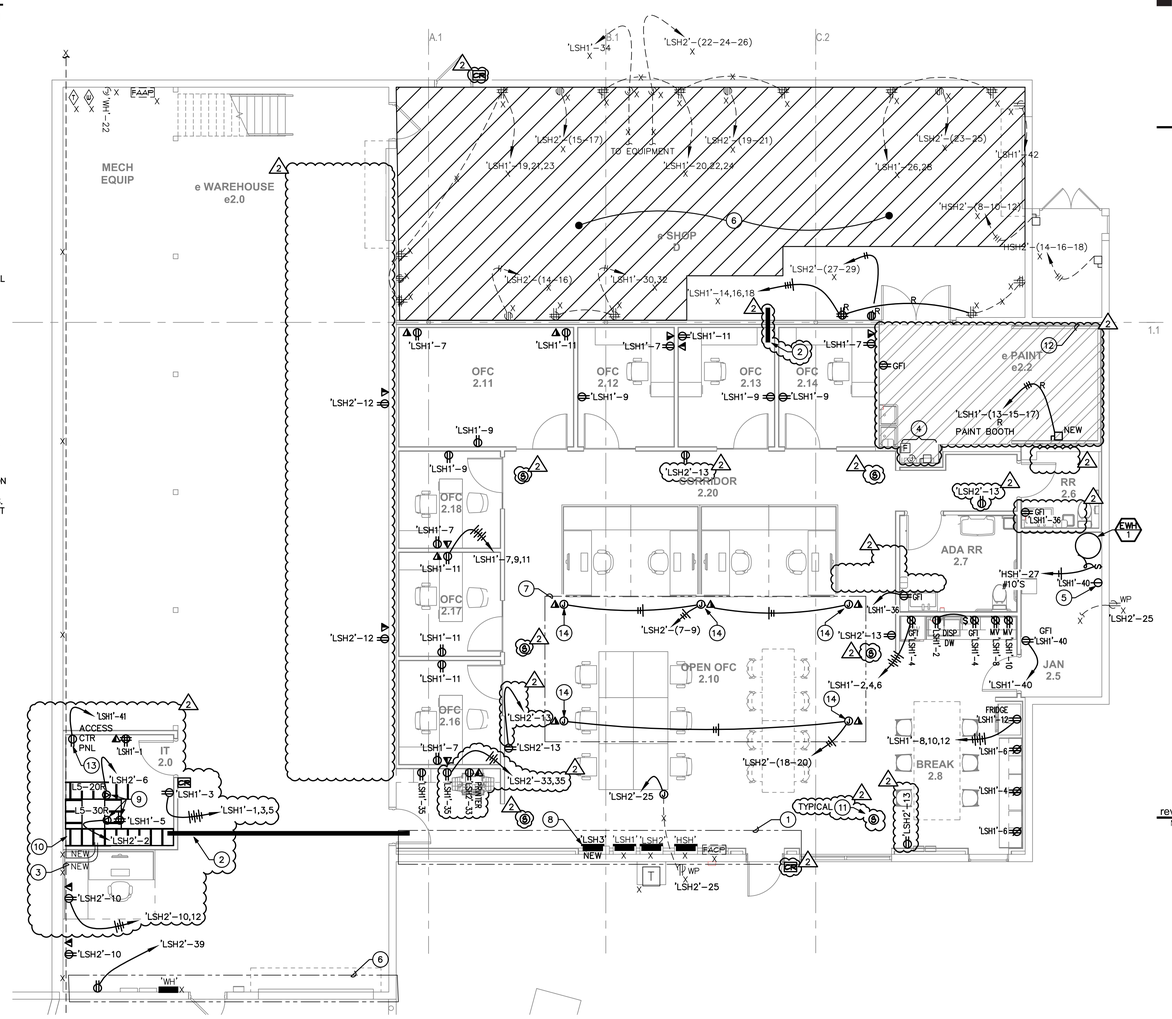




SOUTH WALL OFFICE/WAREHOUSE AREA

SCALE: N.T.S.

2 / E2.01



1ST FLOOR OFFICE RELOCATION ELECTRICAL PLAN

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

KEYNOTES

1. WALL TO BE FURRED OUT BY GENERAL CONTRACTOR PER ARCHITECTURAL PLANS/DETAILS. ANY ELECTRICAL RACEWAY, PANELS, JUNCTION BOXES, FIRE ALARM ETC. AT WALL SHALL REMAIN AND EXTENDED AS REQUIRED. SEE DETAIL 1 FOR ADDITIONAL INFORMATION.
2. CONTRACTOR TO INCLUDE IN BID A NEW 3" EMT RACEWAY SLEEVE WITH PLASTIC END BUSHING LOCATED AT ACCESSIBLE CEILING. CONFIRM WITH I.T. DEPARTMENT FOR SLEEVE REQUIREMENTS AND LOCATION. EXISTING SLEEVE TO BE EVALUATED FOR POSSIBLE USE IN LIEU OF NEW SLEEVE.
3. CONTRACTOR TO INTERCEPT FIBER OPTIC CABLE RACEWAY AND ROUTE TO NEW LOCATION INDICATED. COORDINATE WITH IT VENDOR FOR EXACT LOCATION AND REQUIREMENTS.
4. FIRE ALARM SYSTEM TO BE PROTECTED IN PLACE AND REMAIN AS EXISTING. FIRE ALARM SYSTEM DESIGN IS A DEFERRED SUBMITTAL. COORDINATE WITH OTHER TRADES TO ENSURE THAT EQUIPMENT IN THIS AREA IS SUFFICIENTLY PROTECTED AND NOT IMPACTED BY NEW WORK.
5. CIRCULATING PUMP. COORDINATE WITH PLUMBING CONTRACTOR FOR EXACT LOCATION.
6. CONTRACTOR SHALL ENSURE THAT ANY WIRING AND/OR CONDUIT SERVING THIS AREA IS NOT REMOVED OR AFFECTED BY THE RENOVATION AND DEMO WORK OCCURING WITHIN OTHER AREAS OF THE BUILDING. SEE DETAIL 2.
7. VERTICAL POWER POLE ARE BASE BID. VERTICAL POWER POLE BY VERTICAL POWER SOLUTIONS, LLC PART# PP-EXP-10-01-02-XX/PP-RSP-10-01-02-XX/PP-TRI-10-01-02-XX. REFER TO SHEET E0.02 DETAIL 2 FOR ADDITIONAL INFORMATION. CONFIRM EXACT RECEPTACLE AND DATA OUTLET CONFIGURATION WITH OWNER PRIOR TO ORDERING. COORDINATE WITH ARCHITECT FOR EXACT LOCATION.
8. EXISTING CIRCUITS ARE BASED ON AVAILABLE AS BUILT DRAWINGS. CONTRACTOR SHALL PULL OUT ALL CIRCUITS AND SPARE OFF BREAKERS WITHIN 'LSH1' AND 'LSH2' AS PART OF DEMOLITION WORK. BASED ON THESE DRAWINGS, ESD DETERMINED THAT THE SUFFICIENT QUANTITY OF CIRCUITS WILL BE SPARED OUT AS PART OF DEMOLITION. IN THE EVENT OF A DISCREPANCY IN THE QUANTITY OF SPARED CIRCUITS CONTRACTOR SHALL INSTALL NEW FEED THRU PANEL 'LSH3' PER ONE LINE DIAGRAM. THIS PANELBOARD AND INSTALLATION SHALL BE INCLUDED IN BASE BID. NOTIFY EOR AND OWNER OF THE RESULTS OF THE DEMOLITION WORK AND AVAILABILITY OF SPARE BREAKERS IN 'LSH1' AND 'LSH2' AND CONTACT ESD FOR ANY CLARIFICATIONS.
9. ELECTRICAL CONTRACTOR CONTRACTOR TO INSTALL OUTLETS AS INDICATED. MOUNT ABOVE RACK ON UNISTRUT. COORDINATE WITH I.T. CONTRACTOR FOR EXACT LOCATIONS ON REQUIREMENTS.
10. OUTLINE OF LADDER RACK SHOWN FOR REFERENCE. CONFIRM INSTALLATION REQUIREMENTS AND SCOPE WITHIN IT ROOM AND FOR ASSOCIATED CABLING WITH IT CONTRACTOR.
11. NEW SPEAKER. SPEAKERS SHOWN AS REFERENCE ONLY. ELECTRICAL CONTRACTOR TO COORDINATE WITH TECHNOLOGY CONTRACTOR FOR ANY ADDITIONAL REQUIREMENS.
12. CLASS 1 DIVISION 1 ZONE. CONTRACTOR IS TO REFER TO NEC ARTICLE 500 – 504 FOR ALL ELECTRICAL EQUIPMENT AND WIRING REQUIREMENTS. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING ELECTRICAL EQUIPMENT AND MAKE ALL EXISTING ELECTRICAL COMPONENTS TO MEET ALL NEC CLASS 1 DIV. 1 REQUIREMENTS.
13. ACCESS CONTROL PANEL. CONTRACTOR TO COORDINATE WITH SECURITY CONTRACTOR FOR EXACT LOCATION AND REQUIREMENTS.
14. PROVIDE NEW FLOOR BOX AS BID ALTERNATE IN LIEU OF POWER POLES AS SHOWN WITH KEYED NOTE #7. INCLUDE ALL NECESSARY SAWCUTTING AND FLOOR PATCHING. FLOOR BOX TO BE EQUAL TO WIREMOLD RFB4 WITH FLUSH COVER WITH CARPET INSERTS AND SUITABLE FOR USE ON GRADE. CONFIRM FINAL SELECTION WITH OWNER AND DECISION TO INCORPORATE BASE OR BID ALTERNATE INSTALLATIONS.

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Design Contact: WILLIAM REYES
Project # 201080.200

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i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53328 NATHAN A. SHORT Date Signed 11/21/2023 ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

1ST FLOOR ELECTRICAL PLAN

DRAWING
E2.01

SHEET	CATALOG NUMBER:
34 - OF - 55	A-281108

PMT23-19464

FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel\200 Design\Phase 1\E2_1.dwg
PLOTTED: 12.21.2023 - 4:10pm PLOTTED BY: william.reyes

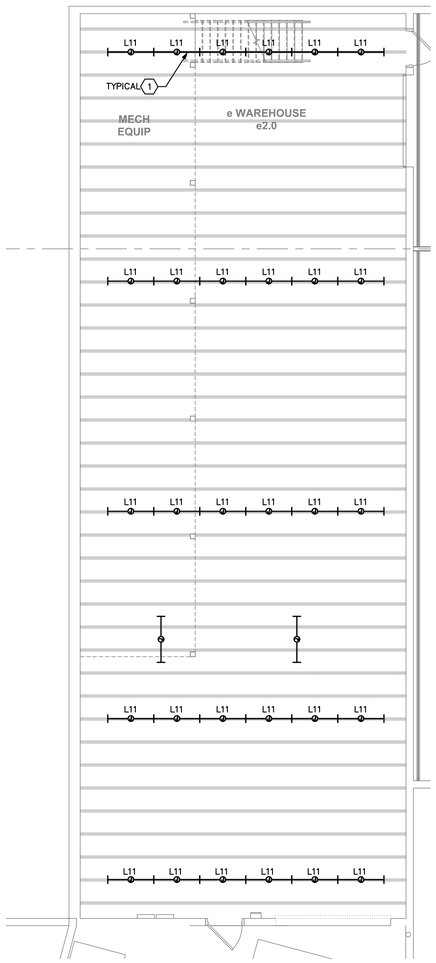
SHEET NOTES

1. REFER TO SHEET E0.00–E0.01 FOR SYMBOLS, NOTES AND ADDITIONAL REQUIREMENTS.
2. ALL ELECTRICAL JUNCTIONS BOXES AND SWITCHES ARE TO BE LABELED WITH THE PANEL NUMBER AND CIRCUIT NUMBER.
3. ALL REMOVED LIGHT FIXTURES TO BE RETURNED TO BUILDING OWNER.
4. AT OPEN CEILING AREAS LOCATE UNSIGHTLY DEVICES WHERE POSSIBLE TO ABOVE GRID AND TILE CEILING. ENSURE ALL CONDUIT IS RUN IN A PURPOSEFUL FASHION AT OPEN CEILING FOR CLEAN AESTHETICS AND ANY LOOSE WIRES THAT INCLUDES FIRE ALARM WIRING TO BE TAUT. ALL NON–FIRE ALARM WIRING AND CONDUIT SHALL BE PAINTED WHITE.
5. REFER TO FIXTURE SCHEDULE ON SHEET E0.01 FOR NEW FIXTURE INFORMATION.
6. EXISTING LIGHTING CIRCUITS SHALL BE REUSED. SEE NEW LIGHTING PLAN FOR NEW/RELOCATED FIXTURES. EXTEND CONDUIT/WIRING AS REQUIRED.
7. 'NL' DENOTES NIGHT LIGHT IS CONNECTED TO AN UN–SWITCHED CONDUCTOR.
8. ALL DEVICE COVER PLATES SHALL BE COORDINATED WITH OWNER/ARCHITECT. ELECTRICAL CONTRACTOR SHALL REPLACE ANY EXISTING TRIM AND COVER PLATES TO NEW OWNER/ARCHITECTS PREFERENCE.

ELECTRICAL CONTRACTOR SHALL PROVIDE SHOP DRAWING SUBMITTAL FOR THE LIGHTING CONTROL SYSTEM. SUBMITTAL SHALL INCLUDE DEVICE LAYOUT AND DATA SHEETS.

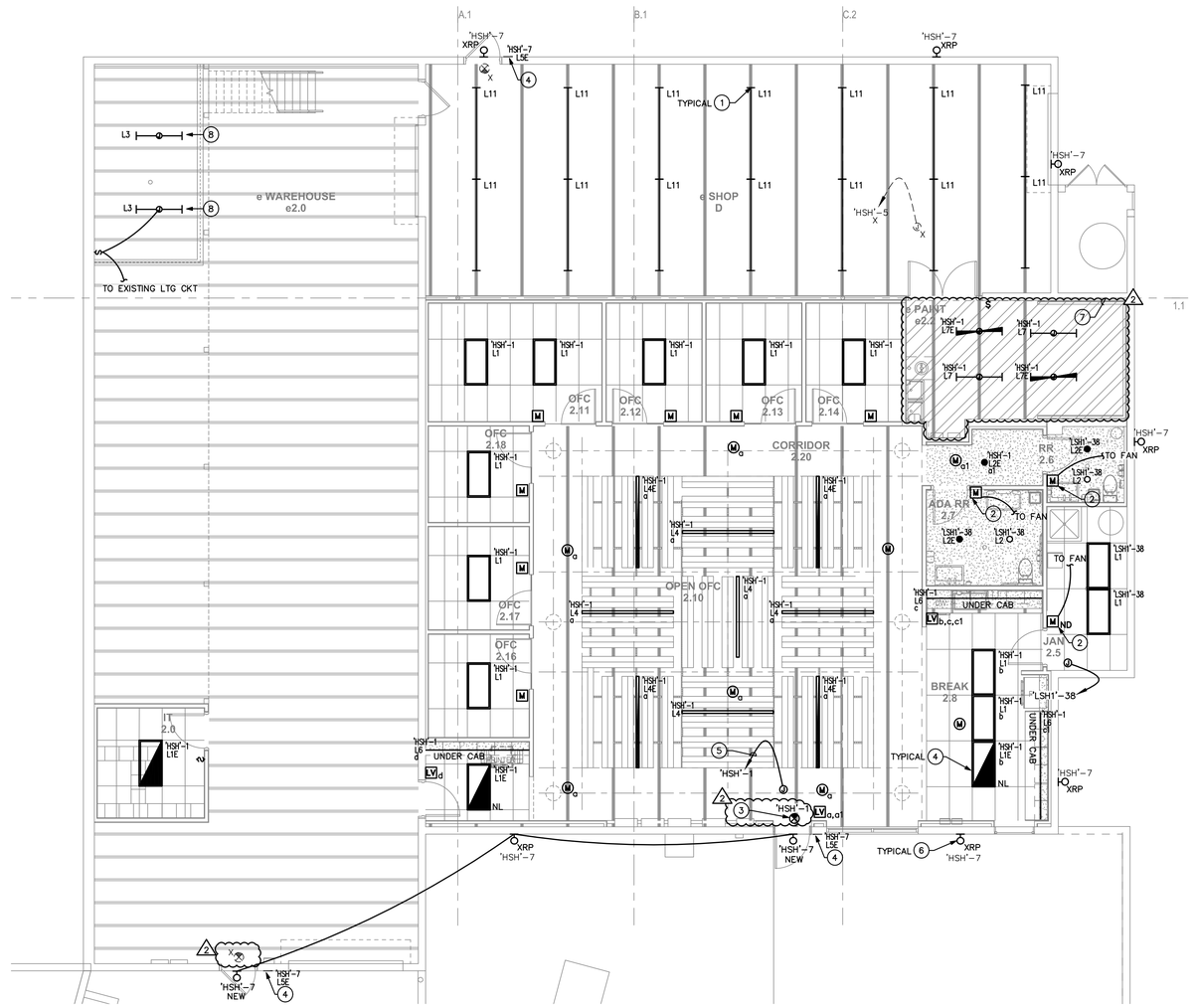
ALL EXACT EXIT SIGN LOCATIONS/PLACEMENT SHALL BE FIELD COORDINATED WITH THE CITY OF MESA BUILDING INSPECTOR PRIOR TO FINAL ROUGH–IN

MOTION DETECTORS AT EXPOSED CEILING AREA TO BE BLACK



1ST FLOOR LIGHTING UPPER CEILING

SCALE: 3/16" = 1'–0"



1ST FLOOR ELECTRICAL LIGHTING PLAN

SCALE: 3/16" = 1'–0"

KEYNOTES

2 (1) CONTRACTOR TO FILED VERIFY EXISTING LIGHTING. EXISTING LIGHTING TO REMAIN AND BE RETROFITED. FIXTURE AND FIXTURE QUANTITY ARE BASED ON SITE VERIFICATION. CONTRACTOR TO EVALUATE QUANTITY AND FIXTURE REQUIREMENTS PRIOR TO BID. PROVIDE LIGHT KIT EQUAL TO ESL–CSS–860–4–2240W–4000K. CONFIRM COMPATIBILITY WITH EXISTING FIXTURES PRIOR TO PURCHASE.

KEYNOTES

1. EXISTING LIGHTING TO REMAIN AND BE RETROFITED. CONTRACTOR TO CONFIRM QUANTITY AND FIXTURE REQUIREMENTS PRIOR TO BID. PROVIDE LIGHT KIT EQUAL TO ESL–CSS–860–4–2240W–4000K
2. EXHAUST FAN TO BE SWITCHED WITH BATHROOM LIGHTS. REFER TO E4.01 SHEET FOR ADDITIONAL INFORMATION. COORDINATE WITH MECHANICAL CONTRACTOR FOR ADDITIONAL INFORMATION.
3. PROVIDE UNSWITCHED HOT TO EXIT SIGNS.
4. PROVIDE AN UNSWITCHED HOT TO EMERGENCY LIGHTS LABELED AS "LHE" AND/OR HALF HATCHED. ELECTRICAL CONTRACTOR SHALL ENSURE THAT FIXTURES SHALL HAVE A BATTERY PACK CAPABLE OF FULL ILLUMINATION FOR 90MIN.
5. EXTEND EXISTING AREA LIGHTING CONTROLS AND CIRCUIT INDICATED TO NEW FIXTURES. PROVIDE ALL NECESSARY POWER PACKS, CONDUIT AND FLEX CABLE TO MAKE A COMPLETE SYSTEM.
6. REPLACE EXISTING WALL SCONCES AND PROVIDE NEW AT LOCATIONS AS INDICATED. FIELD VERIFY EXISTING SOURCE OF POWER. PROVIDE NEW CIRCUIT AS SHOWN OR REUSE EXISTING IF MORE ECONOMICAL. ROUTE CIRCUIT THROUGH EXISTING TIMECLOCK FOR AUTOMATIC, AND SCHEDULED CONTROL BASED ON TIME–OF–DAY.
7. CLASS 1 DIVISION 1 ZONE. CONTRACTOR IS TO REFER TO NEC ARTICLE 500 – 504 FOR ELECTRICAL EQUIPMENT AND WIRING REQUIREMENTS. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING ELECTRICAL EQUIPMENT AND MAKE ALL EXISTING ELECTRICAL COMPONENTS TO MEET ALL NEC CLASS 1 DIV. 1 REQUIREMENTS.
8. ELECTRICAL CONTRACTOR TO TIE TO NEAREST LIGHTING CIRCUIT. COORDINATE FIXTURE LOCATION WITH MECHANICAL EQUIPMENT PRIOR TO INSTALLATION.

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Design Contact: WILLIAM REYES
Project # 201080.200

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer, Certificate No. 53328, NATHAN A. SHORT, Date Signed 11/27/23, ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO.: CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

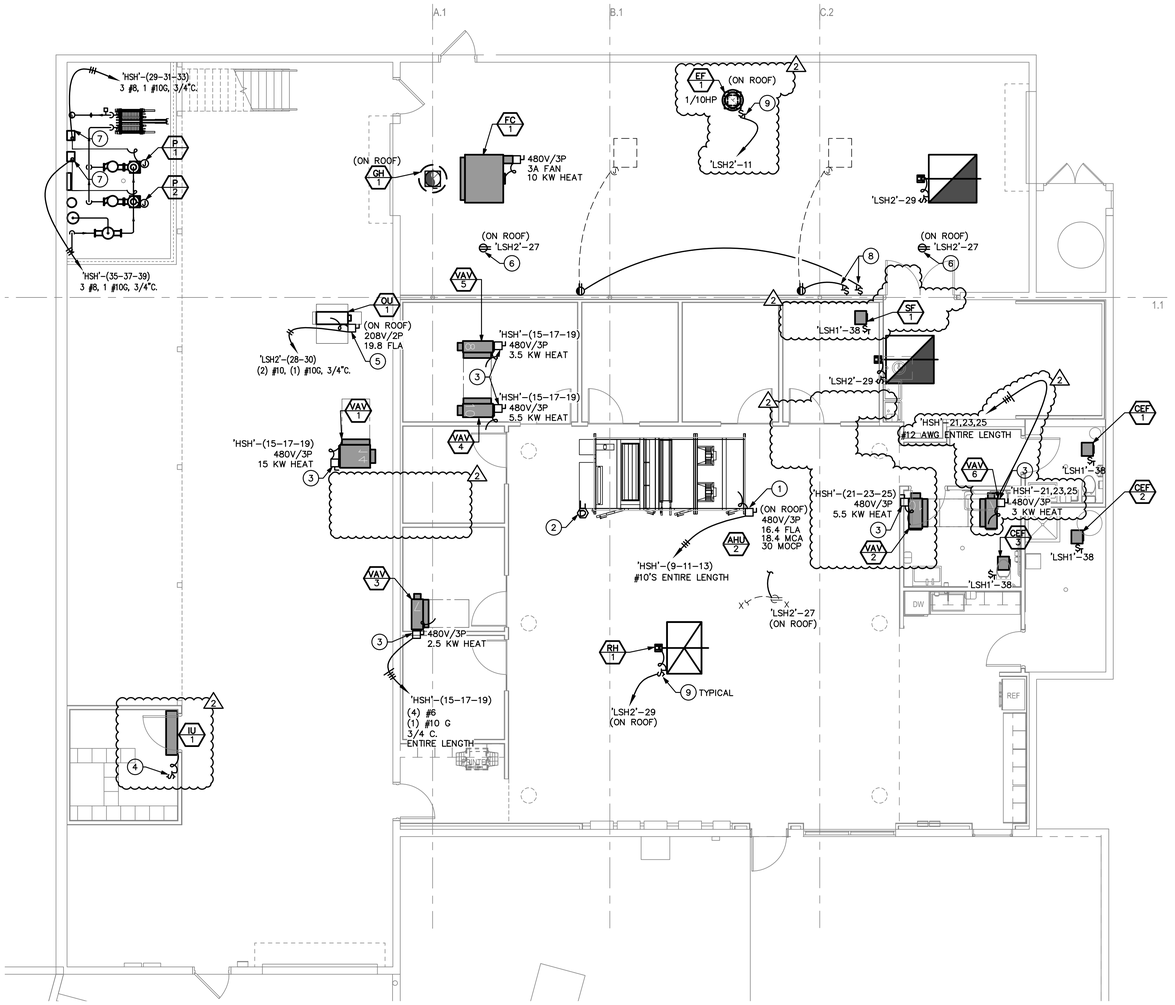
1ST FLOOR ELECTRICAL LIGHTING PLAN

DRAWING
E3.01

SHEET	CATALOG NUMBER:
35- OF - 55	A-281109

PMT23-19464

PLOTTED: 12.21.2023 – 3:53pm PLOTTED BY: william.reyes FILE: J:\2020\201080 City of Mesa - i.d.e.a. Museum Study + Remodel_200 Design\Phase 1\E3_1.dwg



1ST FLOOR OFFICE RELOCATION ELECTRICAL MECHANICAL 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 E0.01 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. PROVIDE 600V, 30A, 3 PHASE, NEMA 3R, HEAVY DUTY SAFETY SWITCH DISCONNECT. FUSE PER MANUFACTURER RECOMMENDATION.
2. SMOKE DUCT DETECTOR PROVIDED BY FIRE ALARM CONTRACTOR, INSTALLED BY MECHANICAL CONTRACTOR AND WIRED BY ELECTRICAL CONTRACTOR.
3. PROVIDE NEW 600V, 30A, 3 PHASE, NEMA-1, DISCONNECT AND FUSE PER MANUFACTURER RECOMMENDATION.
4. 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.
5. PROVIDE HEAVY DUTY, 250V, 30A, 1PH, NEMA 3R, FUSED DISCONNECT. FUSE PER MANUFACTURER RECOMMENDATION.
6. WR, GFCI RECEPTACLE WITH WP-WU, HD COVER RECEPTACLE TO BE STANCHION MOUNTED WITH BOTTOM AT +12" ABOVE ROOF. PROVIDE GALVANIZED UNISTRUT SUPPORTS AS NEEDED.
7. VFD FOR 10 HP PUMP. ELECTRICAL CONTRACTOR TO MAKE ALL FINAL CONNECTIONS. MECHANICAL CONTRACTOR TO PROVIDE VFD.
8. CONTRACTOR TO INTERCEPT EXISTING RECEPTACLE ENERGIZING DUST FILTRATION FAN AND PROVIDE A MOTOR RATED TOGGLE SWITCH. COORDINATE WITH OWNER/ARCHITECT FOR EXACT LOCATION.
9. PROVIDE 120V, 20A, SINGLE PHASE, HEAVY DUTY, MOTOR RATE, SWITCH WITH WEATHER PROOF BOX.

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CERTIFICATE NO.
53328
NATHAN A. SHORT
Date Signed 11/27/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

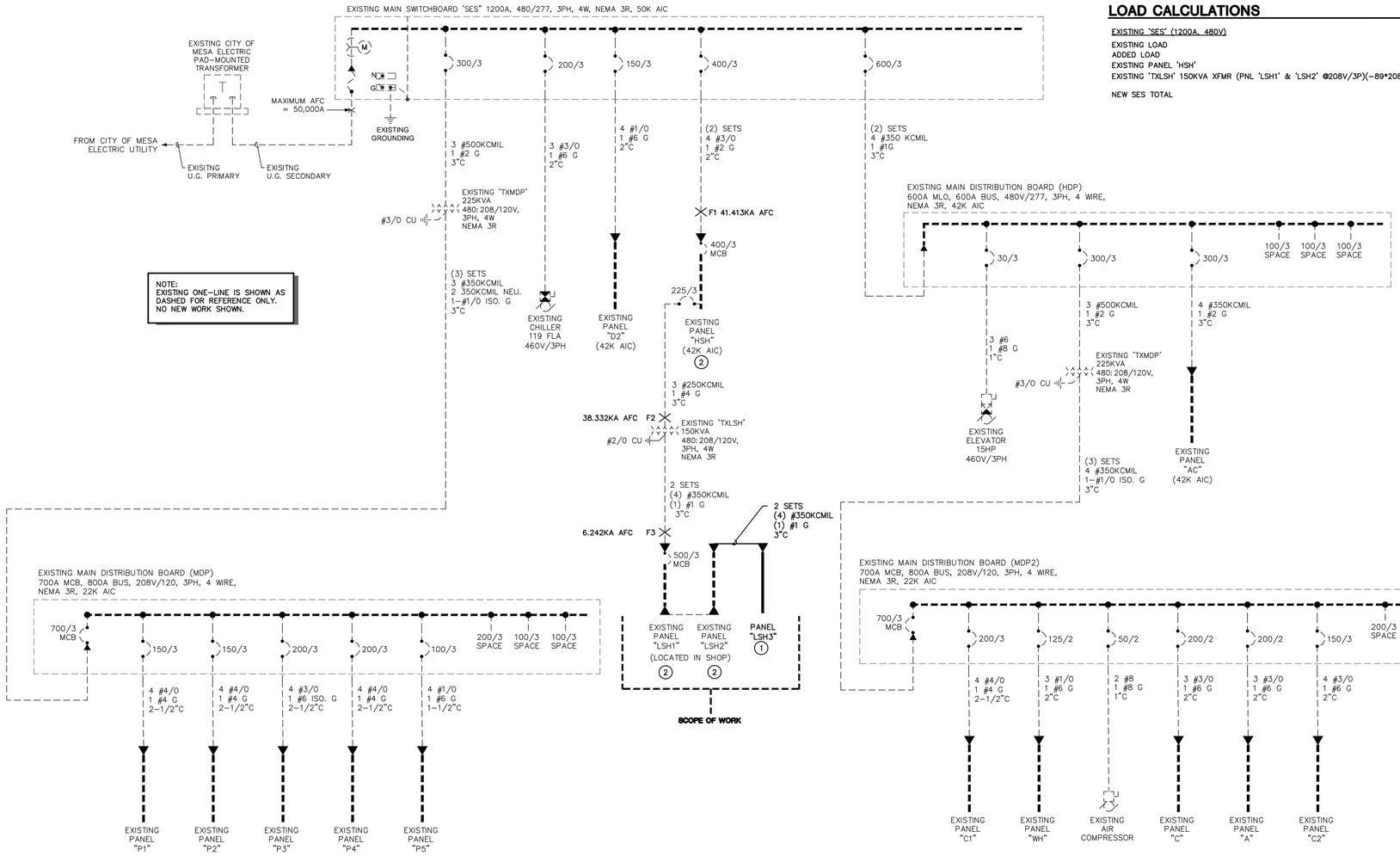
CITY OF MESA
ENGINEERING DEPARTMENT

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

1ST FLOOR ELECTRICAL MECHANICAL PLAN

DRAWING
E4.01

SHEET	CATALOG NUMBER:
36- OF - 55	A-281110



NOTE:
EXISTING ONE-LINE IS SHOWN AS DASHED FOR REFERENCE ONLY. NO NEW WORK SHOWN.

LOAD CALCULATIONS

EXISTING 'SES' (1200A, 480V)	
EXISTING LOAD	850A
ADDED LOAD	
EXISTING PANEL 'HSH'	29A
EXISTING 'TXLSH' 150KVA XFMR (PNL 'LSH1' & 'LSH2' @208V/3P)(-89*208)	-39A
NEW SES TOTAL	840A

EXISTING ELECTRICAL ONE-LINE DIAGRAM

SCALE: NO TO SCALE

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

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) IN THE EVENT OF A DISCREPANCY IN THE QUANTITY OF SPARED CIRCUITS WITH PANELS 'LSH1' AND 'LSH2' CONTRACTOR SHALL INSTALL NEW FEED THRU PANEL 'LSH3'. UPSTREAM CALCULATIONS NOT AFFECTED BY NEW FEED THRU PANEL. NOTIFY EOR AND OWNER OF THE RESULTS OF THE DEMOLITION WORK AND AVAILABILITY OF SPARE BREAKERS IN 'LSH1' AND 'LSH2' AND CONTACT ESD FOR ANY CLARIFICATIONS. REFER TO SHEET 6.00 FOR PANEL SCHEDULE CIRCUIT LAYOUT.

(2) CONTRACTOR TO PROVIDE UPDATED (TYPED WRITTEN) PANEL SCHEDULE DIRECTORIES AT EACH OF THE EXISTING PANEL-BOARDS SHOWN ON ONE-LINE DIAGRAM. CONTRACTOR TO REMOVE ALL ABANDONED BRANCH CIRCUITS AND LABEL CIRCUIT BREAKER 'SPARE' AT EACH OF THE EXISTING PANEL-BOARDS SHOWN ON ONE-LINE DIAGRAM. VERIFY CONDUCTOR TERMINATIONS ON OPEN CIRCUIT BREAKERS.

FAULT CALCULATIONS

F1

$$f = \frac{\sqrt{3} * 32\,ft * 50000\,A}{2 * 13923 * 480\,V} = 0.2073$$

$$m = \frac{1}{1+f} = 0.8283$$

$$I_{scrms} = m * I_{afc} = 41.413kA\ AFC$$

F2

$$f = \frac{\sqrt{3} * 10\,ft * 41413\,A}{1 * 18594 * 480\,V} = 0.0804$$

$$m = \frac{1}{1+f} = 0.9256$$

$$I_{scrms} = m * I_{afc} = 38.332kA\ AFC$$

F3

$$f = \frac{\sqrt{3} * 6.2\% * 38332\,A * 480\,V}{100{,}000 * 150kVA} = 13.1724$$

$$M = \frac{1}{1+f} = 0.0706$$

$$I_{sc\_sec} = M * I_{scrms} * \frac{480\,V}{208\,V} = 6.242kA\ AFC$$

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CITY OF MESA
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PROJECT NAME
i.d.e.a. Museum - Office Renovation

ELECTRICAL ONE LINE

DRAWING
E5.00

SHEET 37 - OF - 55
CATALOG NUMBER: A-281111

EXISTING HSH

PHASE: 3 | VOLTS: 277/480Y | WIRE: 4 | MAIN: 400A MAIN CB | 400A BUS FLUSH | 42000 AIC | FED FROM 'SES'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
C	LTG - WORKSHOP			20 / 1	1	1695			2	50			DUST COLLECTOR	M
C	LTG - WORKSHOP			20 / 1	3		800		4					M
C	LTG - WORKSHOP			20 / 1	5			2200	6					M
C	LTG - EXTERIOR			20 / 1	7	1500			8	0 / 1			SHUNT ABOVE	M
M	AHU 2			30 / 3	9	0		0	10	30 / 3			MOTOR	M
M					11			0	12					M
M					13	0			14					M
N	VAV # 1,3,4,5			50 / 3	15			9176	16	0 / 1			BUSSED SPACE	--
N					17			9176	18	0 / 1			BUSSED SPACE	--
N					19	9176		0	20	0 / 1			SPARE	--
N	VAV # 2,6			20 / 3	21		2943		22	20 / 1			SPARE	--
N					23			2943	24	20 / 1			SPARE	--
N					25	2943		0	26	20 / 1			SPARE	--
C	WATER HEATER #1			30 / 3	27		4500	0	28	20 / 1			SPARE	--
M	PUMP #1			40 / 3	29			2303	30	20 / 1			SPARE	--
M					31	2303		0	32	20 / 1			SPARE	--
M					33		2303	0	34	20 / 1			SPARE	--
M	PUMP #2			40 / 3	35			2303	36	20 / 1			SPARE	--
M					37	2303		0	38	20 / 1			SPARE	--
M					39		2303	0	40	20 / 1			SPARE	--
--	SPARE			20 / 1	41			0	42	20 / 1			SPARE	--
--	NOT USED			0 / 1	43	0		26200	44	225			LSH1	PNL
--	NOT USED			0 / 1	45		0	26396	46				LSH1	PNL
--	NOT USED			0 / 1	47			0	48	0 / 3			LSH1	PNL

TOTAL CODE LOAD: 173.25 KVA / (1.73 * 480 V) = 208.39 AMPS
All Phases: CONTINUOUS LOAD = 23095 VA connected * 1.25 = 28.87 KVA code load
A Phase: CONTINUOUS LOAD = 7295 VA connected * 1.25 = 9.12 KVA code load
B Phase: CONTINUOUS LOAD = 9400 VA connected * 1.25 = 11.75 KVA code load
C Phase: CONTINUOUS LOAD = 6400 VA connected * 1.25 = 8.00 KVA code load
All Phases: MOTOR LOAD 64730 VA CONNECTED = (32500 * 0.25)
A Phase: MOTOR LOAD 20386 VA CONNECTED = (7500 * 0.25)
B Phase: MOTOR LOAD 22162 VA CONNECTED = (7500 * 0.25)
C Phase: MOTOR LOAD 22182 VA CONNECTED = (7500 * 0.25)
All Phases: RECEPTACLE LOAD 34660 VA CONNECTED: (10000 * 1.00) + (24660 * 0.50) = 22.33 KVA code load.
A Phase: RECEPTACLE LOAD 13060 VA CONNECTED: (10000 * 1.00) + (3060 * 0.50) = 11.53 KVA code load.
B Phase: RECEPTACLE LOAD 10120 VA CONNECTED: (10000 * 1.00) + (120 * 0.50) = 10.06 KVA code load.
C Phase: RECEPTACLE LOAD 11480 VA CONNECTED: (10000 * 1.00) + (1480 * 0.50) = 10.74 KVA code load.
All Phases: NONCONTINUOUS LOAD = 51697 VA connected * 1 = 51.70 KVA code load
A Phase: NONCONTINUOUS LOAD = 16759 VA connected * 1 = 16.76 KVA code load
B Phase: NONCONTINUOUS LOAD = 18119 VA connected * 1 = 18.12 KVA code load
C Phase: NONCONTINUOUS LOAD = 16819 VA connected * 1 = 16.82 KVA code load

NEW LOAD 211 A
EXISTING LOAD − 182 A
ADDED LOAD 29 A

http://www.panelschedules.com

EXISTING LSH1

PHASE: 3 | VOLTS: 120/208Y | WIRE: 4 | MAIN: 500A MAIN CB | 600A BUS FLUSH | 10000 AIC | FED FROM VIA XFRM 'TXLSH'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
R	REC - IT EQP.			20 / 1	1	360			2	20 / 1	GFI		REC - DISHWASHER/DISPOSAL	R
R	REC - IT EQP.			20 / 1	3		180		4	20 / 1			REC - ABOVE COUNTER	R
R	REC - IT EQP.			20 / 1	5			360	6	20 / 1			REC - ABOVE COUNTER	R
R	REC - RM 2.11, 12, 14, 18			20 / 1	7	900			8	20 / 1			REC - MICROWAVE	R
R	REC - RM 2.1, 11, 12, 13, 14			20 / 1	9		900		10	20 / 1			REC - MICROWAVE	R
R	REC - RM 2.1, 11, 13, 16, 17			20 / 1	11			900	12	20 / 1	GFI		REC - FRIDGE	R
M	PAINT BOOTH 2HP			20 / 3	13	900			14	20 / 1			REC - WORKSHOP	R
M					15		900		16	20 / 1			REC - WORKSHOP	R
M					17			900	18	20 / 1			REC - WORKSHOP	R
R	REC - WORKSHOP			20 / 1	19	1100			20	20 / 1			REC - WORKSHOP	R
R	REC - WORKSHOP			20 / 1	21		1100		22	20 / 1			REC - WORKSHOP	R
R	REC - WORKSHOP			20 / 1	23			1100	24	20 / 1			REC - WORKSHOP	R
R	REC - EXTERIOR GFI			20 / 1	25	360			26	20 / 1			REC - WORKSHOP	R
R	REC - ROOF			20 / 1	27		360		28	20 / 1			REC - WORKSHOP	R
R	ROOF RELIEF HOOD			20 / 1	29			360	30	20 / 1			REC - WORKSHOP	R
--	SPARE			20 / 1	31	0		1100	32	20 / 1			REC - RESTROOM GFI	R
--	SPARE			0 / 2	33		0	1100	34	20 / 1			REC - WORKSHOP	R
R	REC - 208V OUTLET			20 / 1	35			900	36	20 / 1			REC - RESTROOM GFI	R
R				0 / 2	37	900		600	38	20 / 1			LTG - EXHAUST	M
R	REC - HVAC CONTROLS			20 / 1	39		180		40	20 / 1			REC - JAN. GFI AND RECIRC PUMP	R
R	ACCESS CONTROL PANEL			20 / 1	41			180	42	20 / 1			CCTV OUTLET	N
--	NOT USED			0 / 1	43	0		200	44	0			LSH2	PNL
--	NOT USED			0 / 1	45		0		46				LSH2	PNL
--	NOT USED			0 / 3	47			0	48	0 / 3			LSH2	PNL

TOTAL CODE LOAD: 71.51 KVA / (1.73 * 208 V) = 198.48 AMPS
All Phases: CONTINUOUS LOAD = 12400 VA connected * 1.25 = 15.50 KVA code load
A Phase: CONTINUOUS LOAD = 4100 VA connected * 1.25 = 5.13 KVA code load
B Phase: CONTINUOUS LOAD = 4100 VA connected * 1.25 = 5.13 KVA code load
C Phase: CONTINUOUS LOAD = 4200 VA connected * 1.25 = 5.25 KVA code load
All Phases: MOTOR LOAD 16772 VA CONNECTED = (6252 * 0.25)
A Phase: MOTOR LOAD 4400 VA CONNECTED = (1500 * 0.25)
B Phase: MOTOR LOAD 6176 VA CONNECTED = (2376 * 0.25)
C Phase: MOTOR LOAD 6196 VA CONNECTED = (2376 * 0.25)
All Phases: RECEPTACLE LOAD 34660 VA CONNECTED: (10000 * 1.00) + (24660 * 0.50) = 22.33 KVA code load.
A Phase: RECEPTACLE LOAD 13060 VA CONNECTED: (10000 * 1.00) + (3060 * 0.50) = 11.53 KVA code load.
B Phase: RECEPTACLE LOAD 10120 VA CONNECTED: (10000 * 1.00) + (120 * 0.50) = 10.06 KVA code load.
C Phase: RECEPTACLE LOAD 11480 VA CONNECTED: (10000 * 1.00) + (1480 * 0.50) = 10.74 KVA code load.
All Phases: NONCONTINUOUS LOAD = 15340 VA connected * 1 = 15.34 KVA code load
A Phase: NONCONTINUOUS LOAD = 4640 VA connected * 1 = 4.64 KVA code load
B Phase: NONCONTINUOUS LOAD = 6000 VA connected * 1 = 6.00 KVA code load
C Phase: NONCONTINUOUS LOAD = 4700 VA connected * 1 = 4.70 KVA code load

NEW LOAD 205 A
EXISTING LOAD − 293 A
ADDED LOAD −88 A

http://www.panelschedules.com

EXISTING LSH2

PHASE: 3 | VOLTS: 120/208Y | WIRE: 4 | MAIN: LUGS ONLY | 600A BUS FLUSH | 10000 AIC | FED FROM 'LSH1'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
--	SPARE			70 / 3	1	0			2	30 / 1			REC - IT EQUIPMENT-I.5-30R	R
--					3		0		4	20 / 1			SPARE	--
--					5			0	6	20 / 1			REC - IT EQUIPMENT-I.5-20R	R
--	SPARE			20 / 1	7	0			8	20 / 1			SPARE	--
--	SPARE			20 / 2	9		0		10	20 / 1			REC - WAREHOUSE	R
M	EF-1			20 / 1	11			20	12	20 / 1			REC - WAREHOUSE	R
R	REC - RM 2.10, 8, CORRIDOR			20 / 1	13	1080		360	14	20			220V 1PH OUTLET	N
N	220V 1PH OUTLET			20 / 2	15		1500		16	20 / 2			WORKSTATION RM 2.10	R
N					17			1500	18	20				R
N	220V 1PH OUTLET			20 / 2	19	1500		720	20	20 / 2			TABLE SAW	M
N					21		1500		22	30				M
N	220V 1PH OUTLET			20 / 2	23			1400	24	1500				M
N					25	1500			26	30 / 3				M
N	220V 1PH OUTLET			20 / 2	27		1500		28	30			UI/OI #1	M
N					29			1500	30	2				M
N	FIRE ALARM			20 / 1	31	140		2376	32	20 / 1			SPARE	--
R	REC - PRINTER			20 / 1	33		180	0	34	20 / 1			SPARE	--
R	REC - ABOVE COUNTER			20 / 1	35			360	36	20 / 1			PHOTOCELL	C
C	FORKLIFT CHARGER			60 / 3	37	4100		1500	38	30			SANDER	M
C					39		4100		40					M
C					41			4100	42	3				M
--	NOT USED			0 / 3	43	0		0	44	0			NOT USED	--
--	NOT USED				45		0		46				NOT USED	--
--	NOT USED				47			0	48	0 / 3			NOT USED	--

TOTAL CODE LOAD: 52.64 KVA / (1.73 * 208 V) = 146.10 AMPS
All Phases: CONTINUOUS LOAD = 12400 VA connected * 1.25 = 15.50 KVA code load
A Phase: CONTINUOUS LOAD = 4100 VA connected * 1.25 = 5.13 KVA code load
B Phase: CONTINUOUS LOAD = 4100 VA connected * 1.25 = 5.13 KVA code load
C Phase: CONTINUOUS LOAD = 4200 VA connected * 1.25 = 5.25 KVA code load
All Phases: MOTOR LOAD 13472 VA CONNECTED = (6252 * 0.25)
A Phase: MOTOR LOAD 2900 VA CONNECTED = (1500 * 0.25)
B Phase: MOTOR LOAD 5276 VA CONNECTED = (2376 * 0.25)
C Phase: MOTOR LOAD 5296 VA CONNECTED = (2376 * 0.25)
All Phases: RECEPTACLE LOAD 6960 VA CONNECTED: (6960 * 1.00) = 6.96 KVA code load.
A Phase: RECEPTACLE LOAD 3300 VA CONNECTED: (3300 * 1.00) = 3.30 KVA code load.
B Phase: RECEPTACLE LOAD 720 VA CONNECTED: (720 * 1.00) = 0.72 KVA code load.
C Phase: RECEPTACLE LOAD 2940 VA CONNECTED: (2940 * 1.00) = 2.94 KVA code load.
All Phases: NONCONTINUOUS LOAD = 15140 VA connected * 1 = 15.14 KVA code load
A Phase: NONCONTINUOUS LOAD = 4640 VA connected * 1 = 4.64 KVA code load
B Phase: NONCONTINUOUS LOAD = 6000 VA connected * 1 = 6.00 KVA code load
C Phase: NONCONTINUOUS LOAD = 4500 VA connected * 1 = 4.50 KVA code load

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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).

PANELBOARD AND CIRCUITING SHOWN HERE SHALL ONLY BE USED IF SUFFICIENT SPARES CANNOT BE OBTAINED FOLLOWING THE DEMOLITION WORK.

NEW LSH3

PHASE: 3 | VOLTS: 120/208Y | WIRE: 4 | MAIN: LUGS ONLY | 600A BUS | 10000 AIC | FED FROM VIA XFRM 'TXLSH'

TYPE	DESCRIPTION	QTY	Q TYP	BKR	CKT	A PH	B PH	C PH	CKT	BKR	Q TYP	QTY	DESCRIPTION	TYPE
R	REC - IT EQP.			20 / 1	1	360			2	20 / 1	GFI		REC - DISHWASHER/DISPOSAL	R
R	REC - IT EQP.			20 / 1	3		180		4	20 / 1			REC - ABOVE COUNTER	R
R	REC - IT EQP.			20 / 1	5			360	6	20 / 1			REC - ABOVE COUNTER	R
R	REC - RM 2.11, 12, 14, 18			20 / 1	7	1080			8	20 / 1			REC - MICROWAVE	R
R	REC - RM 2.1, 11, 12, 13, 14			20 / 1	9		1080		10	20 / 1			REC - MICROWAVE	R
R	REC - RM 2.1, 11, 13, 16, 17			20 / 1	11			900	12	20 / 1			REC - RESTROOM GFI	R
R	REC - EXTERIOR GFI			20 / 1	13	360			14	20 / 1			LTG - EXHAUST	M
R	REC - ROOF			20 / 1	15		360		16	20 / 1			REC - JAN. GFI AND RECIRC PUMP	R
R	ROOF RELIEF HOOD			20 / 1	17			360	18	20 / 1			SPARE	--
R	REC - RM 2.2, ,8 16, 20			20 / 1	19	720			20	20 / 1			SPARE	--
R	REC - RM 2.10, 17			20 / 1	21		0		22	20 / 1			SPARE	--
R	REC - PRINTER			20 / 1	23			180	24	20			REC - IT EQUIPMENT	R
R	REC - ABOVE COUNTER			20 / 1	25	360			26	2				R
--	SPARE			20 / 1	27		0		28	20			REC - IT EQUIPMENT	R
--	SPARE			20 / 1	29			0	30	2				R
--	SPARE			20 / 1	31	0			32	30			UI/OI #1	M
--	SPARE			20 / 1	33		0		34	2				M
--	SPARE			20 / 1	35			0	36	20			WORKSTATION	R
--	SPARE			20 / 1	37	0			38	2				R
R	WORKSTATION RM 2.10			20 / 2	39		720		40	20			WORKSTATION RM 2.10	R
R					41			720	42	2				R

TOTAL CODE LOAD: 22.04 KVA / (1.73 * 208 V) = 61.18 AMPS
All Phases: MOTOR LOAD 5352 VA CONNECTED = (4752 * 0.25)
A Phase: MOTOR LOAD 2976 VA CONNECTED = (2376 * 0.25)
B Phase: MOTOR LOAD 2376 VA CONNECTED = (2376 * 0.25)
All Phases: RECEPTACLE LOAD 21000 VA CONNECTED: (10000 * 1.00) + (11000 * 0.50) = 15.50 KVA code load.
A Phase: RECEPTACLE LOAD 6660 VA CONNECTED: (6660 * 1.00) = 6.66 KVA code load.
B Phase: RECEPTACLE LOAD 6840 VA CONNECTED: (6840 * 1.00) = 6.84 KVA code load.
C Phase: RECEPTACLE LOAD 7500 VA CONNECTED: (7500 * 1.00) = 7.50 KVA code load.

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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.

HSH	LSH1	LSH2
X	X	LSH3
X	X	X

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i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer — CERTIFICATE NO. 53328 — NATHAN A. SHORT — 11/21/23 — ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

ELECTRICAL PANEL SCHEDULES

DRAWING
E6.00

SHEET 38 - OF - 55
CATALOG NUMBER: A-281112

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 100°F. 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 140°F.
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 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 #LRAD312265PD (31" X 22" X 6-1/2"), SINGLE BOWL, 18 GAUGE, TYPE 304 STAINLESS STEEL, TOP MOUNT SINK. ADA COMPLIANT
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).
DISPOSER: IN-SINK-ERATOR "BADGER 5" ½HP 115V SINGLE PHASE, PROVIDE WITH WALL SWITCH-COORDINATE WITH ELECTRICAL. PROVIDE WITH DISHWASHER DRAIN CONNECTION.

SS1 SERVICE SINK:
FIXTURE: ELKAY #14-2C16X20-0X (39" X 25-13/16" X 43-3/4") TWO COMPARTMENT SINK, TYPE 300 STAINLESS STEEL, 16 GAUGE, CENTER DRAIN PLACEMENT, 9" BACKSPLASH AND STAINLESS STEEL LEGS.
FAUCET: CHICAGO FAUCETS #540-LDL12E1WXFABCP, WALL MOUNTED FAUCET WITH 8" CENTERS, 12" SWING SPOUT, LEVER HANDLES.
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: ZURN #1180 SOLIDS INTERCEPTOR, ACID RESISTANT COMPOSITE INTERCEPTOR WITH REMOVABLE PVC SEDIMENT BUCKET WITH 3/32" DIAMETER PERFORATED PVC SCREEN TO BE INSTALLED BELOW SINK. INSTALL IN ACCORDANCE WITH MFR'S INSTALLATION INSTRUCTIONS.

MS1 MOP SINK:
FIXTURE: FIAT #SB2424, 24"x24" PRECAST TERRAZO BASIN WITH STAINLESS STEEL DRAIN BODY, STAINLESS STEEL DOME STRAINER. PROVIDE WITH 832-AA HOSE AND HOSE BRACKET, 883-CC MOP HANGER, E-88-AA STAINLESS STEEL BUMPER GUARD AND STAINLESS STEEL WALL GUARD.
SUPPLY FITTING: CHICAGO FAUCETS #897-RCF, WALL MOUNTED SERVICE SINK FAUCET WITH ATMOSPHERIC VACUUM BREAKER SPOUT, 3/4" HOSE THREAD, PAIL HOOK, WALL BRACE AND ROUGH CHROME FINISH.

ESEW1 EMERGENCY SHOWER/EYEWASH:
FIXTURE: GUARDIAN #G1996, STAINLESS STEEL CONSTRUCTION WITH STAINLESS STEEL SHOWER HEAD, STAY OPEN SHOWER VALVE, STAINLESS STEEL EYE/FACE WASH BOWL, AND INTEGRAL 20 GPM SHOWER REGULATOR. PROVIDE WITH GUARDIAN #G6040 THERMOSTATIC MIXING VALVE.

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.

WHA WATER HAMMER ARRESTER:
FIXTURE: ZURN SHOCKTROL" WATER HAMMER ARRESTER SIZED IN ACCORDANCE WITH PDI STANDARD WH-201. PROVIDE STAINLESS STEEL ACCESS PANEL IN MEN'S ROOM. PROPOSED WATER HAMMER ARRESTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND SHALL CONFORM TO ASSE 1010, 2018 IPC 604.9.

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	NATURAL GAS
	V	SANITARY VENT		MPG	MEDIUM PRESSURE NATURAL GAS
	RW	RAINWATER PIPING		TMV	THERMOSTATIC MIXING VALVE
	RW(OF)	RAINWATER PIPING (OVERFLOW)		F	FIRE SERVICE (BELOW GRADE)
	RD/OD	ROOF DRAIN / OVERFLOW DRAIN		FDC	FIRE DEPARTMENT CONNECTION
	FCO / SCO	FLOOR / SURFACE CLEAN-OUT		–	BOTTOM CONNECTION
	WCO	WALL CLEAN-OUT		–	TOP CONNECTION
	FD	FLOOR DRAIN		–	DROP / RISE
JIL	VTR	VENT THROUGH ROOF		U	UNION
	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	CALCULATION F.U. EACH WATER	F.U. EACH WASTE	TOTAL F.U. WATER	TOTAL F.U. WASTE
WC1	WATER CLOSET (FT)	–	4"	2"	3/4"	–	2	5	4	10	4
LV1	LAVATORY	1-1/4"	2"	2"	1/2"	1/2"	2	2	1	4	2
SK1	SINK	1-1/2"	2"	2"	1/2"	1/2"	1	2	2	2	2
SS1	SERVICE SINK	1-1/2"	2"	2"	1/2"	1/2"	1	2	2	2	2
MS1	MOP SINK	3"	3"	2"	3/4"	3/4"	1	3	3	3	3
ESEW1	EMERGENCY SHOWER/EYEWASH STATION	–	–	–	1-1/4"	3/4"	1	–	–	–	–
FD1	FLOOR DRAIN	2"	2"	2"	–	–	2	–	2	–	4
FS1	FLOOR SINK	4"	4"	2"	–	–	2	–	6	–	12
WH1/HB1	WALL HYDRANT/HOSE BIB	–	–	–	3/4"	–	1	(1) 3	–	3	–
									TOTAL FU	24	33

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

ELECTRIC WATER HEATER SCHEDULE

MARK	MAKE	MODEL	STORAGE CAPACITY IN GALS.	ELEC. DATA kW	ELEC. DATA V/Ø/Hz	GALLON PER HR. REC. @ 80°F T.R.	REMARKS
EWH-1	RHEEM	ELD40	40	4.5	277/1/60	23	DUAL ELEMENT/ NON-SIMULTANEOUS (1)

(1) MEETS THE STANDBY LOSS REQUIREMENTS OF U.S. DEPARTMENT OF ENERGY (DOE 10 CFR PART 430) AND ASHRE/IESNA 90.1

PUMP SCHEDULE

MARK	SERVICE	MAKE	MODEL	GPM	HEAD (FEET)	RPM	ELECTRICAL DATA HP	VOLTS	PH	HZ	AMPS	REMARKS
CP-1	DOMESTIC HOT WATER	GRUNDFOS	UPS 15-35 (3-SPEED)	6	5	2800	41WATT	120	1	60	.40	FURNISH WITH AQUASTAT #AQS-3/4 SET PUMP FOR SPEED 2.

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

A, in psi/100'	Pipe size (in inches) 1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"
2.8							
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		189 F.U.
TOTAL EXISTING FIXTURE UNITS REMOVED		-11 F.U.
TOTAL NEW FIXTURE UNITS ADDED THIS PROJECT		+24 F.U.
NEW TOTAL FIXTURE UNITS		=202 F.U.
		91 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.

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Scottsdale AZ 85251
P: 480.481.4900
www.esdengineers.com
Project # 201080.200
Design Contact: JAYSON JAY

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i.d.e.a. Museum - Office Relocation
150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

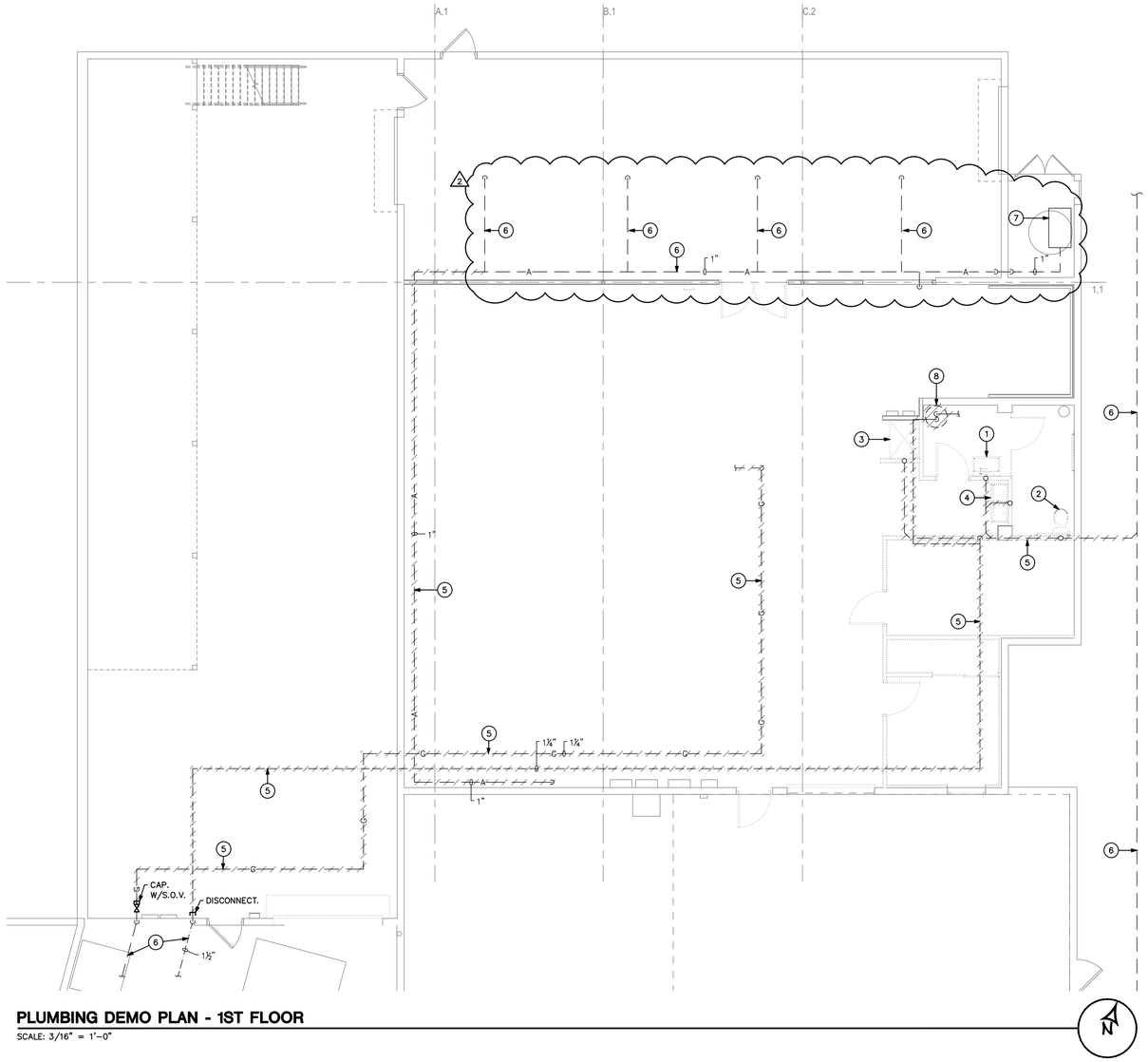
CITY OF MESA
ENGINEERING DEPARTMENT

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

PLUMBING LEGEND AND NOTES

DRAWING
P1.0

SHEET 39 - OF - 55
CATALOG NUMBER: A-281113



PLUMBING DEMO PLAN - 1ST FLOOR

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

DEMO WORK KEYED NOTES

1. 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.
2. 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.
3. EXISTING SHOWER 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.
4. EXISTING DRINKING FOUNTAIN 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.
5. EXISTING PIPING SHOWN HATCHED TO BE REMOVED.
6. EXISTING PIPING TO REMAIN.
7. EXISTING AIR COMPRESSOR TO REMAIN.
8. EXISTING WATER HEATER TO BE REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED HW PIPING.

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.

Holly Street Studio
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o: 602.258.8556
hollystreetstudio.com

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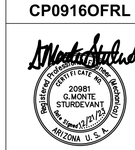


DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

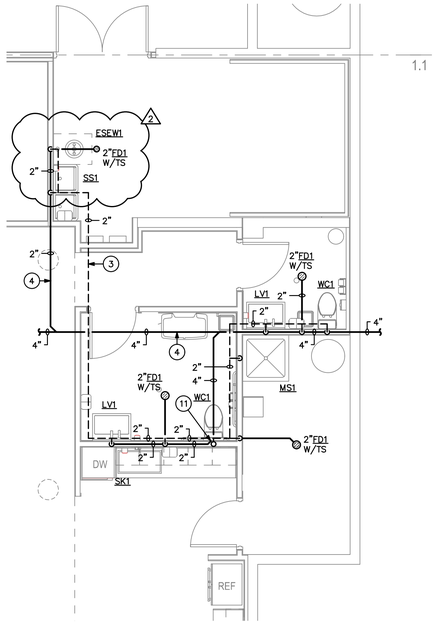
CITY OF MESA
ENGINEERING DEPARTMENT

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

PLUMBING DEMO PLAN 1ST + 2ND FLOOR

DRAWING
P2.0

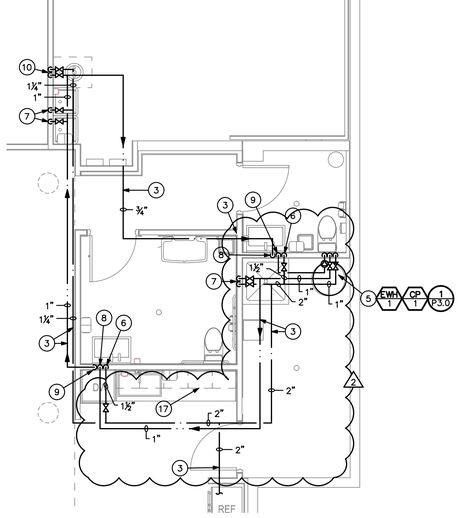
SHEET	CATALOG NUMBER:
40- OF - 55	A-281114



PLUMBING ENLARGED PLAN

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

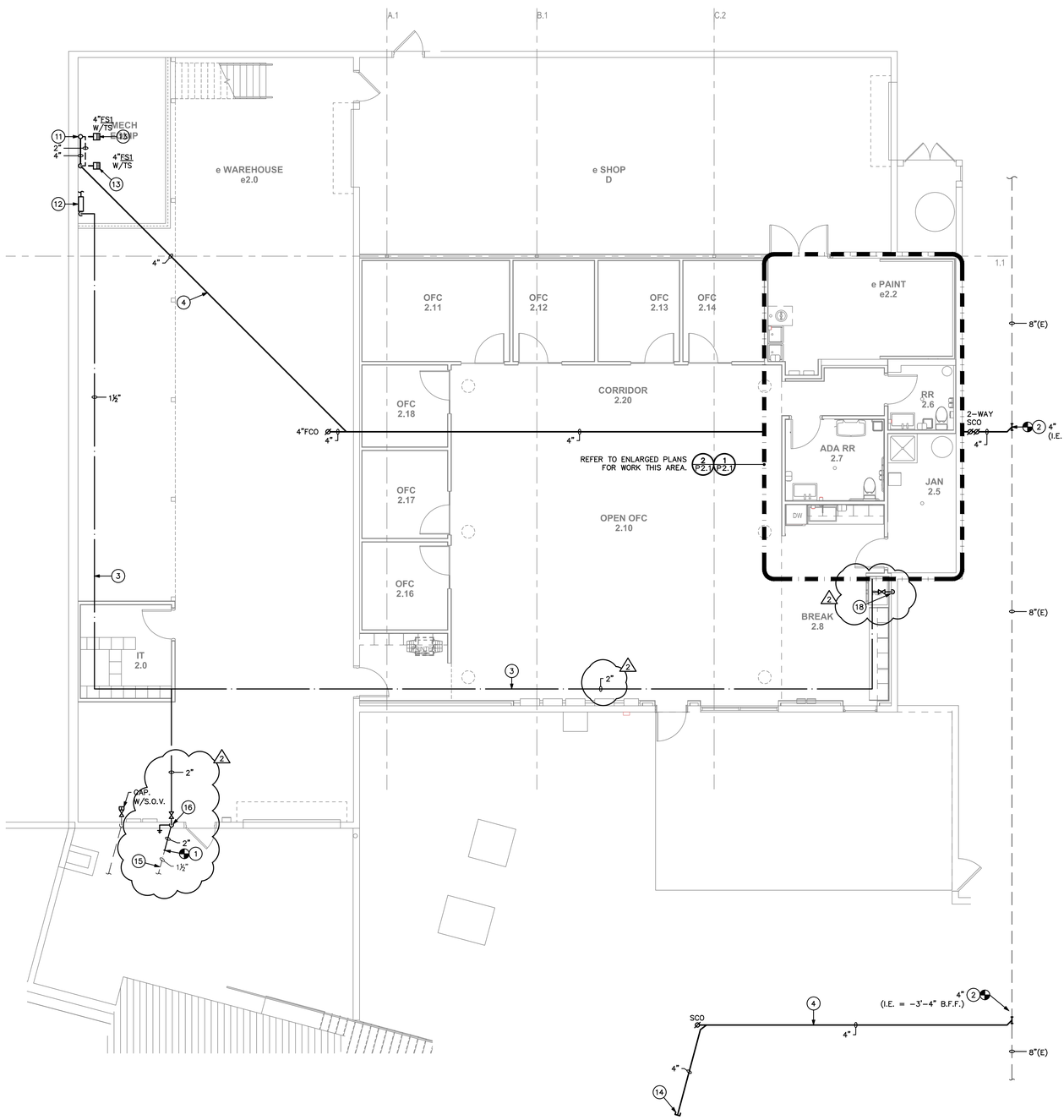
1



PLUMBING ENLARGED PLAN

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

1



PLUMBING FLOOR PLAN - 1ST FLOOR

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

KEYED NOTES

1. CONNECT 2" CW PIPING TO EXISTING 1½" CW BELOW GRADE. FIELD VERIFY EXACT LOCATION AND SIZE PRIOR TO START OF WORK.
2. CONNECT 4" SANITARY WASTE PIPING TO EXISTING BELOW GRADE. FIELD VERIFY EXACT LOCATION, SIZE, AND INVERT PRIOR TO START OF WORK. SAWCUT AND PATCH SLAB WHERE REQUIRED.
3. PIPING ABOVE CEILING.
4. PIPING BELOW FLOOR/GRADE. SAWCUT AND PATCH SLAB AS REQUIRED.
5. ELECTRIC WATER HEATER WITH CIRC PUMP. REFER TO DETAIL.
6. 1½" CW DOWN IN WALL TO SERVE FIXTURES THIS AREA.
7. ¾" CW AND ¾" HW DOWN IN WALL TO SERVE FIXTURES THIS AREA.
8. HW LOOP DOWN IN WALL TO SERVE FIXTURES THIS AREA.
9. HW LOOP UP TO ABOVE CEILING.
10. 1¼" CW AND ¾" HW DOWN IN WALL TO SERVE FIXTURE THIS AREA.
11. 3" VENT THRU ROOF. MAINTAIN 10'-0" CLEARANCE FROM FRESH AIR INTAKES.
12. 1½" CW DOWN TO REDUCED PRESSURE BACKFLOW PREVENTER (WATTS #LF009). EXTEND 1½" NPW TO SERVE MECHANICAL EQUIPMENT THIS AREA. FINAL CONNECTIONS TO BE MADE BY MECHANICAL CONTRACTOR. EXTEND R.P.B.P. DRAIN TO SPILL AT FLOOR SINK.
13. COORDINATE FLOOR SINK LOCATION WITH MECHANICAL.
14. CAP SANITARY DRAIN AT ADJACENT BUILDING'S EDGE BELOW GRADE GAS-TIGHT.
15. EXISTING 1½" CW PIPING BELOW GRADE TO BE UPSIZED TO 2" IN FUTURE PHASE.
16. 2" CW BELOW GRADE UP TO ABOVE CEILING. EXTEND ¾" CW IN WALL TO WALL HYDRANT (WH1).
17. EXTEND ½" HW TO DISHWASHER.
18. ½" CW DOWN IN WALL TO RECESSED WALL BOX WITH SHUT-OFF VALVE FOR CONNECTION TO REFRIGERATOR.

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.

NOTE: WHERE RETURN AIR PLENUMS OCCUR, CONTRACTOR TO PERFORM ONE OF THE FOLLOWING:

1. ALL EXPOSED PVC PIPING LOCATED IN PLENUM SPACES SHALL TRANSITION TO CAST IRON. (CAST IRON SOIL PIPE AND FITTINGS, BEARING THE SEAL OF THE CAST IRON SOIL PIPE INSTITUTE, IN CONFORMANCE WITH CISPI 301-00 AND ASTM 888 STANDARDS FOR HUBLESS PIPE AND FITTINGS. COUPLINGS: STAINLESS STEEL COUPLINGS CONFORMING TO CISPI 310-97 WITH NEOPRENE SEALING GASKETS CONFORMING TO ASTM STANDARD C564.)
2. ALL EXPOSED PVC PIPING LOCATED IN PLENUM SPACES SHALL BE PROVIDED WITH A LISTED ASTM E 84 COMPLIANT FIRE BARRIER PLENUM WRAP. PRODUCT SHALL BE COMPATIBLE WITH PVC. PIPING SHALL BE COMPLETELY WRAPPED AROUND ALL PIPE AND FITTINGS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

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COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer
CERTIFICATE NO.
20981
G. MONTE STURDEVANT
Date Signed 12/21/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
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PROJECT NAME
i.d.e.a. Museum - Office Renovation

PLUMBING FLOOR PLAN 1ST FLOOR

DRAWING
P2.1

SHEET	CATALOG NUMBER:
41 - OF - 55	A-281115

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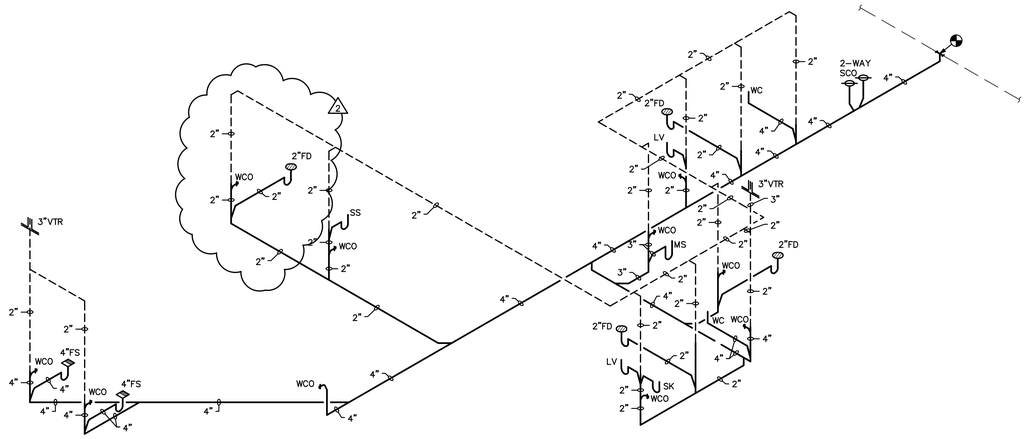
PLOTTED BY: jayson.jay
PLOTTED: 12.21.2023 - 3:36pm

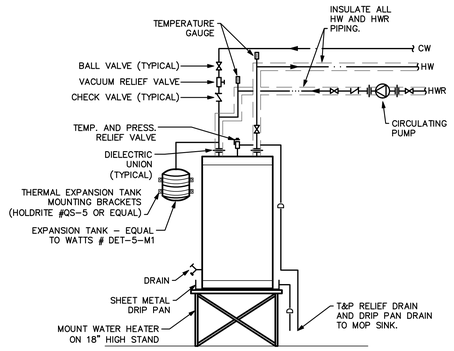
PMT23-19464



WASTE AND VENT PIPING DIAGRAM

NOT TO SCALE

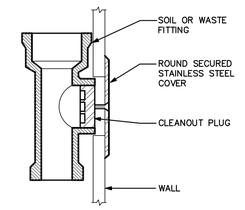
5



ELECTRIC WATER HEATER WITH CIRCULATING PUMP

NOT TO SCALE

1



WALL CLEANOUT DETAIL

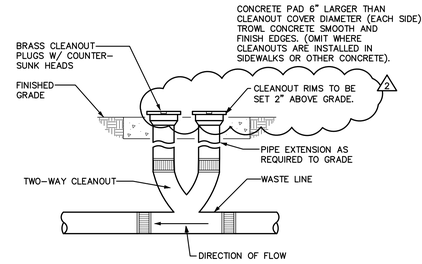
NOT TO SCALE

2

VENT THRU ROOF DETAIL

NOT TO SCALE

3



NOTE!
COORDINATE ALL CLEANOUT COVER LOCATIONS WITH ARCHITECT PRIOR TO FINAL INSTALLATION.

2-WAY SURFACE CLEANOUT DETAIL

NOT TO SCALE

4

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

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

i.d.e.a. Museum - Office Relocation

150 W Pepper Place
Mesa, AZ 85201

revisions

No.	Description	Date
1	1ST PLAN REVIEW COMMENTS	12/21/2023
2	90% CLIENT REVIEW COMMENTS	12/21/2023

COM PROJECT NO.
CP0916OFRL

Registered Professional Engineer
CERTIFICATE NO.
20981
G.MONTE STURDEVANT
12/31/23
ARIZONA U.S.A.

DRAWN BY: _____
ENGINEER: _____
APPROVED BY: _____

F165 AC _____
PROJ. NO. CP0916OFRL

issue for permit

DATE
16 november 2023

CITY OF MESA
ENGINEERING DEPARTMENT

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

PLUMBING DETAILS AND DIAGRAMS

DRAWING
P3.0

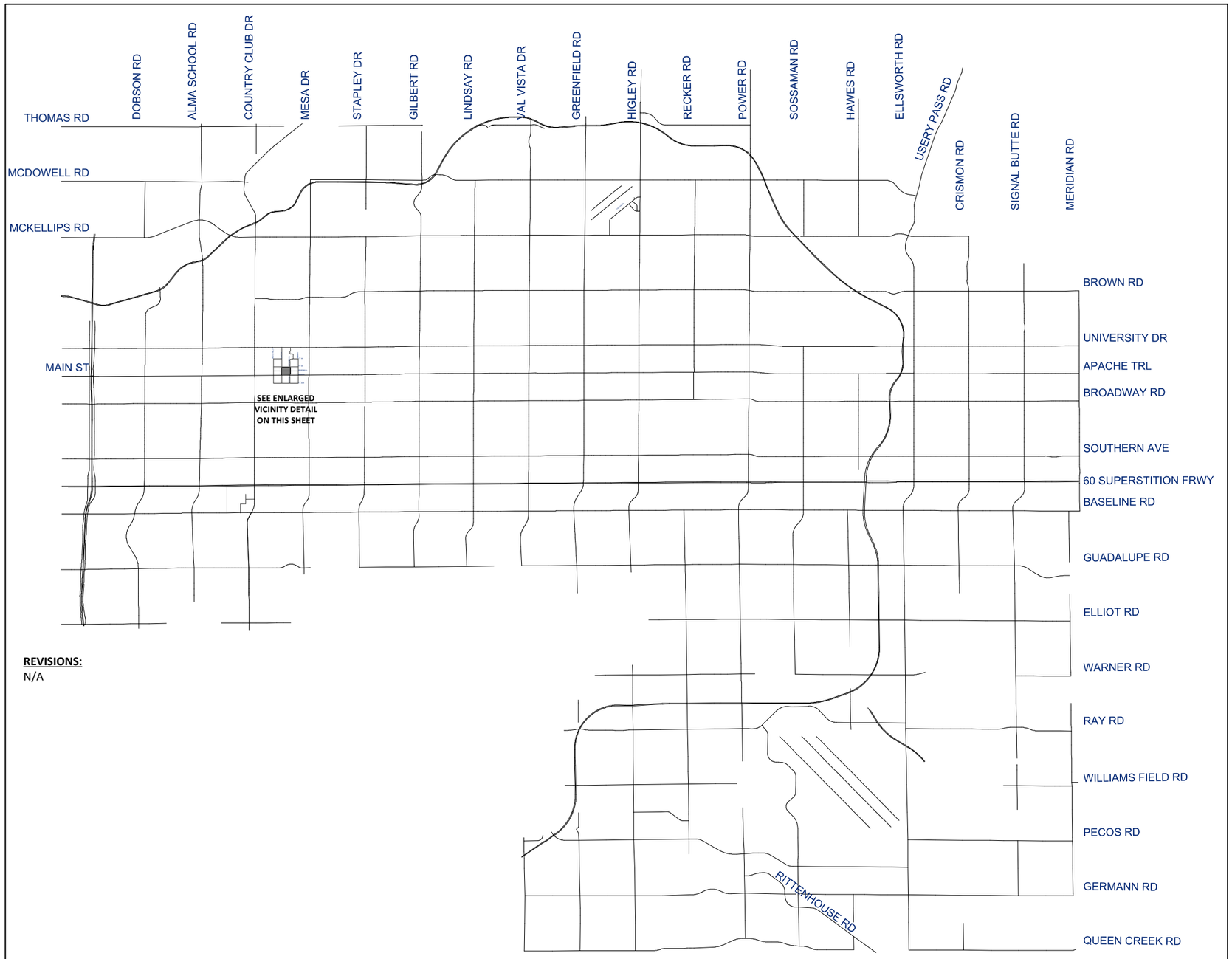
SHEET	CATALOG NUMBER:
42- OF - 55	A-281116

VERSION DATE: 12/13/2023

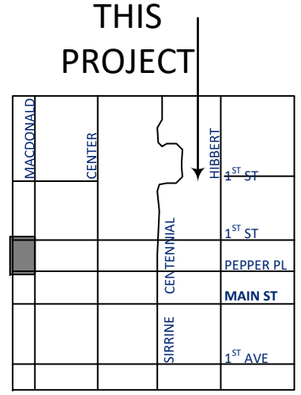
BY: Felix Duarte

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

COVER PAGE



REVISIONS:
N/A



VICINITY MAP

NTS

SHEET INDEX

SHEET #	DESCRIPTION
1.	COVER PAGE
2.	GENERAL NOTES
3.	DEMO PHASE 1
4.	INSIDE STRUCTURED CABLING PHASE 1
5.	NEW IT EQUIPMENT ROOM LAYOUT PHASE 1
6.	NEW IT EQUIPMENT ROOM RACK ELEVATION PHASE 1
7.	CAMPUS FIBER OPTIC STRUCTURED CABLING PHASE 1
8.	DEMO PHASE 2
9.	INSIDE STRUCTURED CABLING PHASE 2

A-281117

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

N W E S

TITLE: COVER PAGE
COMPANY: CITY OF MESA
DATE: Dec. 13, 23
CREATOR: FELIX DUARTE & MAURICE GREEN
TIME: 8:01 AM
PGS 9
OF
SHEET: 1
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

PMT23-19464

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

A-281118

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 9
SHEET: 2

mesaaz Smart City

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

PMT23-19464

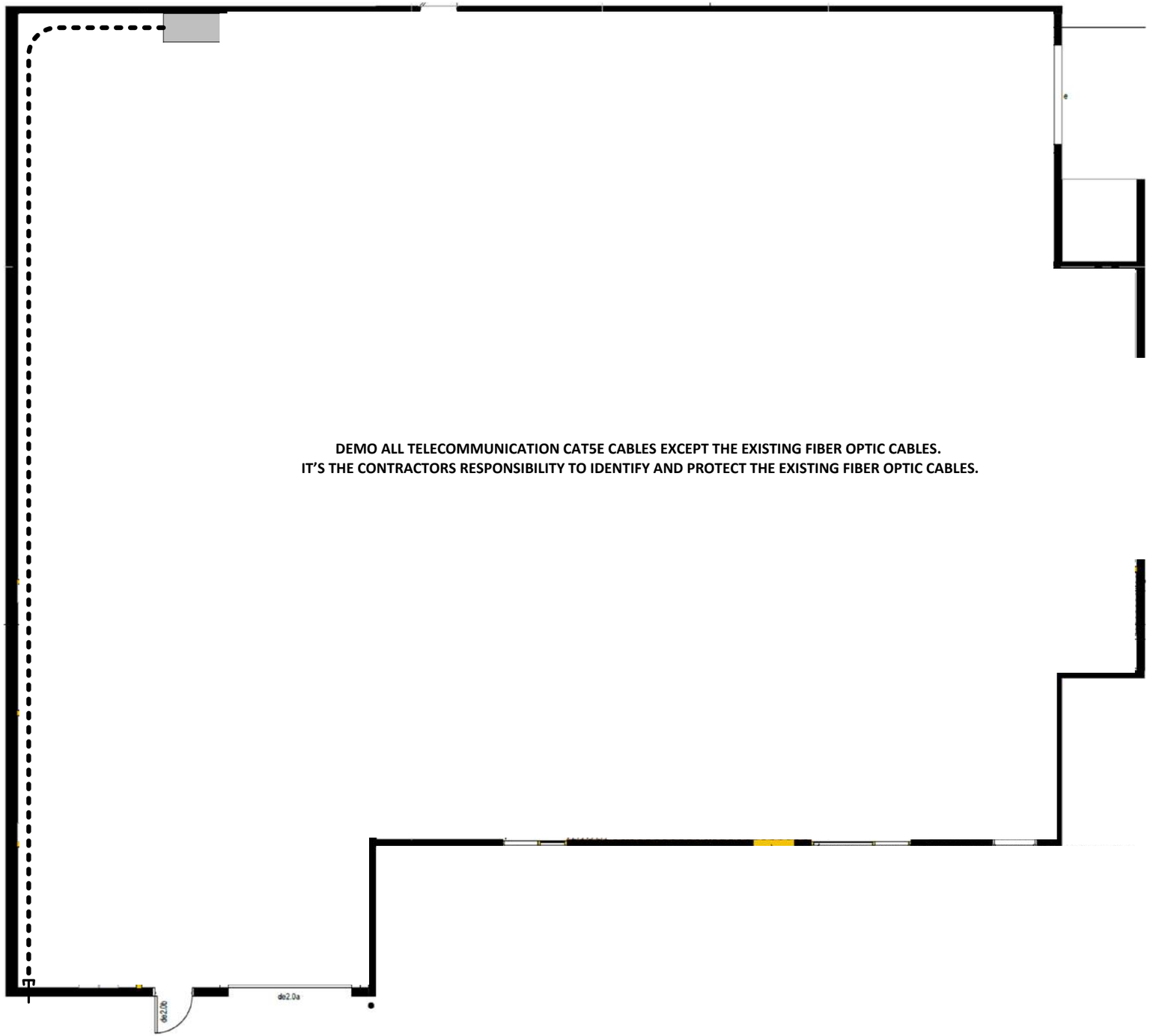
VERSION DATE: 12/13/2023

BY: Felix Duarte

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

DoIT SPECIAL SYSTEMS

DEMO PHASE 1



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:

- FIBER OPTIC PULL BOX
- FIBER OPTIC CABLES
- CONDUIT SLEEVE

CONSTRUCTION NOTES:

CITY OF MESA ENGINEERING PROVIDED A DRAWING OF THE AREA TO BE DEMOED AND REMODELED. THE CONTRACTOR MUST IDENTIFY THE EXISITNG FIBER OPTIC CABLE COMING FROM THE EXISITNG IT ROOM BEFORE DEMOING ANY CABLES

CONTRACTOR TO DEMO ALL CAT 5E CABLES FROM THE WORK STATION TO THE IT ROOM AND REMOVE ALL OLD CAT 5E PATCH PANELS.

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

DEMO

N W E S

TITLE: DEMO PHASE 1
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: 3
OF 9 PGS

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

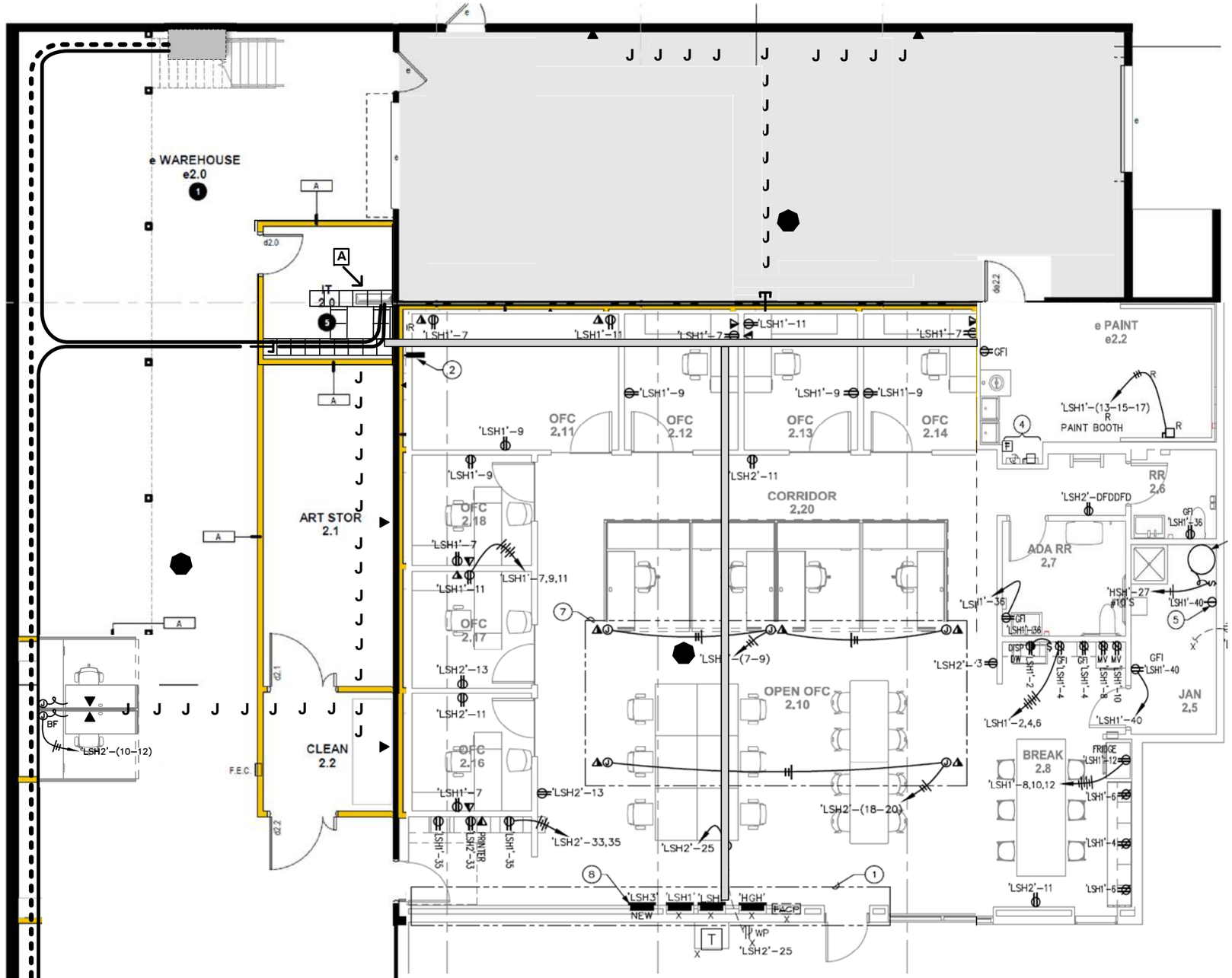
PMT23-19464

A-281119

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

DoIT SPECIAL SYSTEMS

INSIDE STRUCTURED CABLING PHASE 1



floor plans are diagrammatic and shown for reference only

PMT23-19464

LEGEND:

J	J-HOOK
T.V.	T.V. DROP 72" AFF WITH POWER OUTLET
	EXISTING FIBER OPTIC
	EXISTING FIBER OPTIC NEMA PULL BOX
	CONDUIT SLEEVE
	NEW 12 STRAND SMFO CABLE
	NEW 19 INCH RACK
	WIFI/AP
	SOLID CABLE RACEWAY, BARE METAL COLOR
	CITY IT ACCTCOM DUAL NETWORK DROP
	CITY IT ACCTCOM DATA NETWORK DROP

CONSTRUCTION NOTES:

INSIDE STRUCTURED CABLING:

PROVIDE & INSTALL APPROXIMATELY 30 J-HOOKS. ONE ABOUT EVERY 4-5' AS NECESSARY.
PROVIDE & INSTALL WIREMOLD/LEGRAND S4000B SOLID STAINLESS CABLE RACEWAY
PROVIDE & INSTALL THREE (3") SLEEVES AS NECESSARY TO MEET DIVISION 27 STANDARDS.
PROVIDE AND INSTALL APPROXIMATELY (1) ONE 19 INCH RACK IN NEW IT ROOM (PLEASE SEE SHEET 4 FOR EQUIPMENT ROOM LAYOUT)
PROVIDE AND INSTALL LADDERTRAY AS PER DRAWING
PROVIDE AND INSTALL 12 STRAND SMFO CABLE FROM MAIN IT ROOM TO NEW IT ROOM.
PROVIDE AND INSTALL 12 STRAND SMFO CABLE FROM NEW IT ROOM TO CLASSROOM CABINET AND USE EXISITING FIBER ENCLOSURE AND NEW APC/LC INSERTS
SPLICE/TERMINATE FIBER STRANDS WITH 12P APC/LC CONNECTORS. INSTALL CORNING CCH-01U FIBER PANEL AND INSTALL CORNING (SM) 12P APC/LC CASSETE FOR ALL NEW INSTALLS.
PROVIDE & INSTALL APPROXIMATELY (24) YELLOW CAT6 CABLE DROPS FOR CITY NETWORK FROM NEW IT ROOM.
PROVIDE AND INSTALL APPROXIMATELY (24) BLUE CAT6 INSERTS FOR CITY NETWORK.
PROVIDE AND INSTALL (24) 15 FOOT PATCH CORDS FOR ALL CITY NETWORK DROPS.
PROVIDE & INSTALL APPROXIMATELY TWO (2) RG6 CABLE T.V. DROPS FROM NEW IT ROOM.
PROVIDE AND INSTALL APPROXIMATELY THREE (3) WIFI/AP DROPS FROM NEW IT ROOM.

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.
THE CITY OF MESA DEPARTMENT OF INNOVATION & TECHNOLOGY MAKES NO CLAIMS CONCERNING THE ACCURACY OF THE DATA ON THIS PRODUCT NOR ASSUMES ANY LIABILITY FROM THE USE OF THE INFORMATION HEREIN.
LAYOUTS AND LOCATIONS SHOWN ARE DIAGRAMMATIC. THE DESIGNER SHALL ADJUST AS REQUIRED BY THE CONDITIONS OF THE PROJECT.

A SEE SHEET 5 FOR EQUIPMENT ROOM LAYOUT AND ADDITIONAL CONSTRUCTION NOTES.

A-281120

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

INSIDE STRUCTURED CABLING SYSTEM

TITLE: INSIDE STRUCTURED CABLING PHASE 1
COMPANY: CITY OF MESA
CREATOR: FELIX DUARTE & MAURICE GREEN, EDITED BY MAURICE GREEN
DATE: Dec. 13, 23
TIME: 8:01 AM
SHEET: 4 OF 8 PGS
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

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

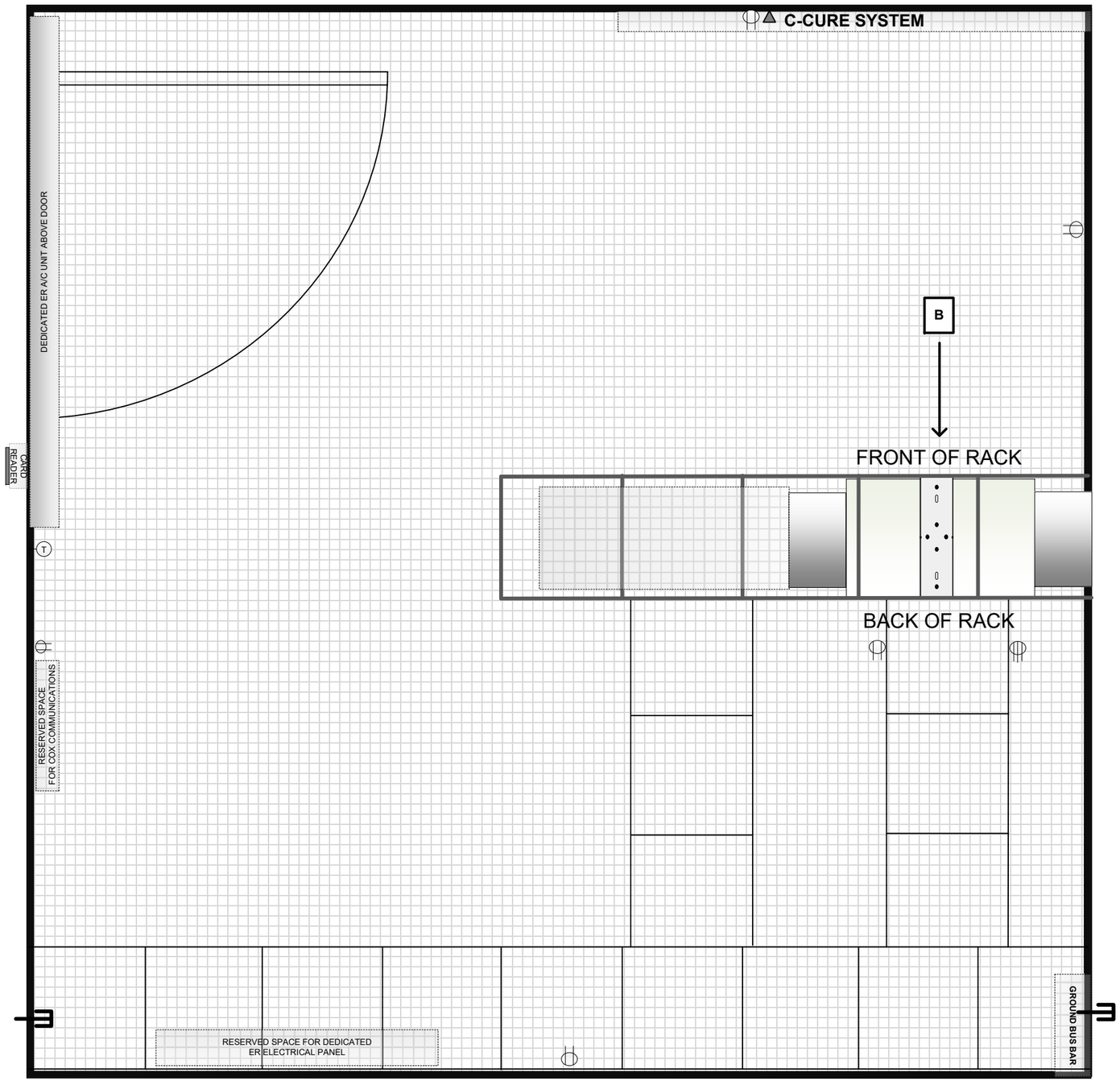
VERSION DATE: 12/13/2023

BY: Felix Duarte

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

DoIT SPECIAL SYSTEMS

NEW IT EQUIPMENT ROOM LAYOUT PHASE 1



floor plans are diagrammatic and shown for reference only

LEGEND:

- 4" SLEEVE
- ONE (SINGLE) CAT6 CABLE DROP – WALL MOUNT
- VINYL COMPOSITION TILE (ELECTICAL RESISTANCE SURFACE)
- ¾' FIRE TREATED B/C PLYWOOD (MOUNTED VERTICALLY@24"AFF/PAINTED WHITE)
- 12" W ALTERNATE SPACING CABLE LADDER
- 12" W CABLE LADDER
- 7' X 19" TWO LEGGED RACK
- 7' VERTICAL WIRE MANAGEMENT
- 30 AMP TWIST LOCK (L5 30)
- 20 AMP TWIST LOCK (L5 20)
- 4 X 18" AFF
- THERMOSTAT
- 4" CONDUIT RISER
- 2" CONDUIT RISER
- 1" CONDUIT RISER
- MULE TAPE
- TRACER WIRE
- FIBER CABLE
- 3" CONDUIT TO OSP WALLMOUNT ENCLOSURE

RESERVED SPACE FOR THE FOLLOWING:

CABLE SERVICE LOOP, GROUND BUS BAR, LADDER, FIRE ALARM, WALL MOUNT TELEPHONE, C-CURE CARD READER, DEDICATED (ER) A/C UNIT, DEDICATED (ER) ELECTRICAL PANEL, FLASHLIGHT, C-CURE SYSTEM, COX COMMUNICATIONS, CENTURYLINK, TELCO HRDWR, AND FUSED PROTECTION.

CONSTRUCTION NOTES:

EQUIPMENT ROOM
COVER FLOOR WITH VINYL COMPOSITION TILE & BOND TO GROUND.
SURROUND ROOM WITH ¾" FIRE TREATED B/C PLYWOOD, ATTACH TO WALLS VERTICALLY AT 24" AFF & PAINTED WHITE.
PROVIDE & INSTALL 12" W CABLE LADDER (84" AFF), SURROUNDING ROOM BY ATTACHING TO WALLS & EXTEND SEGMENTS TO BACK OF THE 7'X19" RACK.
PROVIDE & INSTALL TWO (2) 3" SLEEVE
PROVIDE & INSTALL ONE *(1)* WALL MOUNT CAT6 CABLE DROPS AT 48" FOR C-CURE AND WALL PHONE.
PROVIDE & INSTALL ONE (1) 7'X19" TWO LEGGED RACK
PROVIDE & INSTALL TWO (2) 7' VERTICAL WIRE MANAGAMENT
PROVIDE & INSTALL ONE (1) 30AMP TWIST LOCK (L5-30), ATTACH TO ONE SIDE OF EACH CABLE LADDER EXTENDED FROM BACK OF EACH 7'X19" RACK TO WALL.
PROVIDE & INSTALL ONE (1) 20AMP TWIST LOCK (L5-20), ATTACH TO ONE SIDE OF EACH CABLE LADDER EXTENDED FROM BACK OF EACH 7'X19" RACK TO WALL.
PROVIDE & INSTALL FOUR (4) 20A GFCI 120V 4X WALL MOUNT RECEPTACLE.
PROVIDE & INSTALL DEDICATED EQUIPMENT ROOM (ER) ELECTRICAL PANEL.
PROVIDE & INSTALL DEDICATED (ER) A/C UNIT. MUST BE INSTALLED ABOVE DOOR.
PROVIDE & INSTALL C-CURE SYSTEM.
PROVIDE & INSTALL FIRE ALARM.
PROVIDE & INSTALL A/C UNIT THERMOSTAT.
TEST, LABEL, AND DOCUMENT PER ITD & ITS SPEC DOCUMENT AND DIVISION 27 DOCUMENTATION.

MOUNT ALL WALL MOUNT CABLE DROPS & POWER RECEPTACLES 18" AFF UNLESS OTHERWISE NOTED ON DRAWING.

B SEE SHEET 6 FOR EQUIPMENT ROOM RACK ELEVATION DRAWING AND ADDITIONAL CONSTRUCTION NOTES.

A-281121

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201
NEW IT EQUIPMENT ROOM LAYOUT
1"=1FT

N W E S

TITLE: NEW IT EQUIPMENT ROOM LAYOUT PHASE 1
COMPANY: CITY OF MESA
CREATOR: FELIX DUARTE & MAURICE GREEN, EDITED BY MAURICE GREEN
DATE: Dec 13, 23
TIME: 8:01 AM
SHEET: 5 OF 9
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

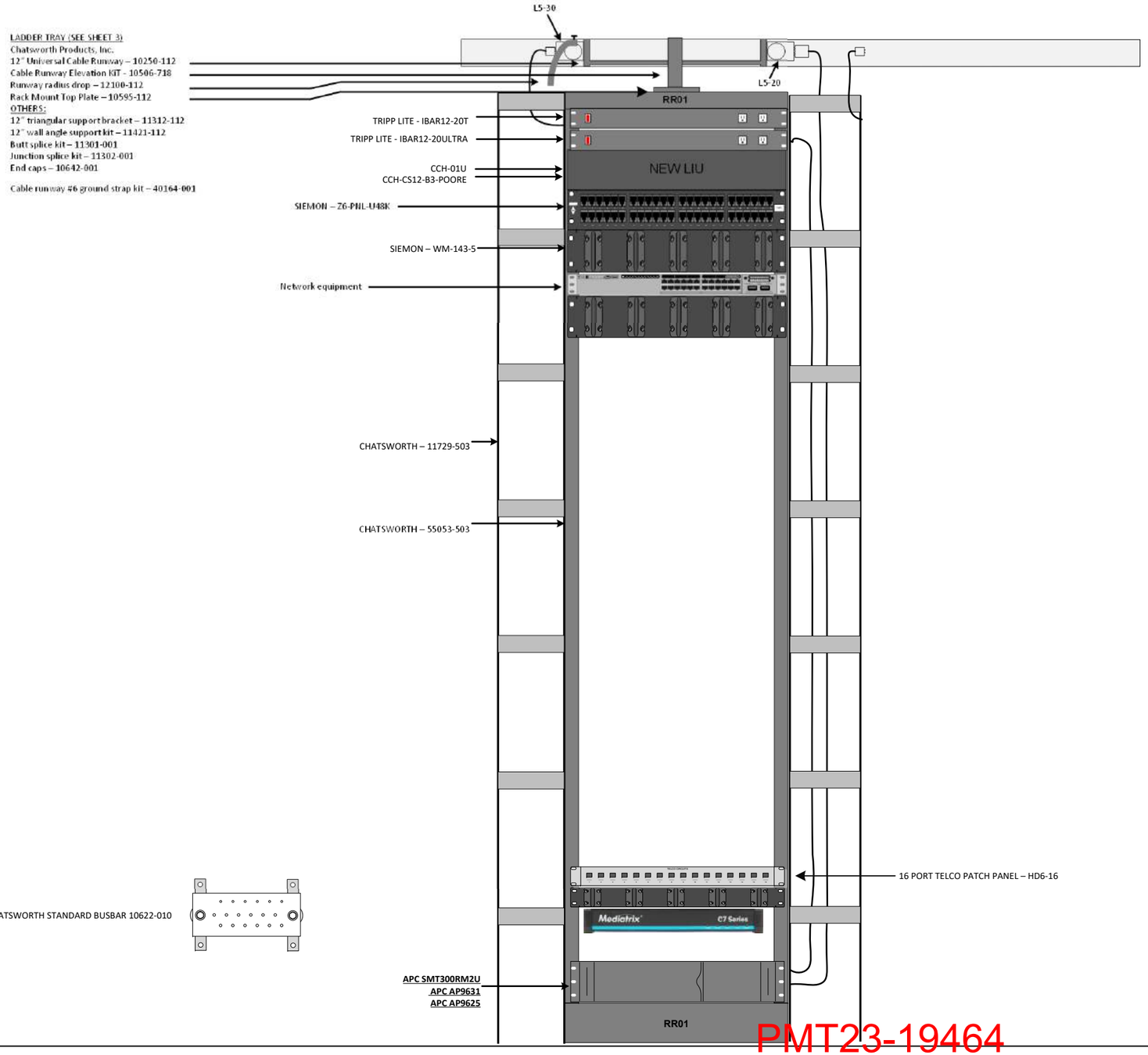
PMT23-19464

VERSION DATE: 12/13/2023

BY: Felix Duarte

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

NEW EQUIPMENT ROOM RACK ELEVATION



PMT23-19464

CONSTRUCTION NOTES:

EQUIPMENT ROOM RACK

PROVIDE & INSTALL THE FOLLOWING WALL MOUNT ITEMS:
SEE DoIT EQUIPMENT ROOM (ER) LAYOUT, SHEET 4 FOR THE APPROXIMATE LOCATIONS OF WALL MOUNTED ITEMS.
ONE (1) CHATSWORTH STANDARD BUSBAR - 10622-010.
USING A GREEN JACKETED #6 GROUND WIRE, BOND BUS BAR TO BUILDING GROUND SYSTEM; AND WITHIN DoIT ER, BOND INDIVIDUALLY ALL RACKS, CABINETS, CABLE RUNWAY PROTECTION PANELS, AND COMPOSITE VCT TILE.

PROVIDE AND INSTALL THE FOLLOWING INTERCONNECT CABLE:
ONE (1) 12 STRAND SINGLEMODE FIBER CABLE, APPROXIMATELY 100 FEET TO CLASSROOM BUILDING INTO A NEW FIBER ENCLOSURE AND AN EXISTNG WALL CABINET/FIBER ENCLOSURE.
PROVIDE (1) 12 STRAND SINGLEMODE FIBER CABLE APPROXIMATELY 360 FEET FROM MAIN IT ROOM TO NEW IT ROOM.

PROVIDE & INSTALL THE FOLLOWING HORIZONTAL RACK MOUNT ITEMS:
ONE (1) POWER STRIPS, TRIPP LITE - IBAR12-20T.
ONE (1) POWER STRIPS, TRIPP LITE - IBAR12-20ULTRA.
FIVE (3) CABLE MANAGERS, SIEMON – WM-143-5.
ONE (1) 48-PORT CAT6 PATCH PANEL, SIEMON – Z6-PNL-U48K.
ONE (1) CORNING CCH-01U
ONE (1) CORNING CCH-CS12-B3-P00RE
ONNECOTRS
LABEL FIBER OPTIC PANEL AND FIBER OPTIC CABLE IN ACCORDANCE WITH MESA ITD/ITS SPECIFICATIONS & DIVISION 27 DOCUMENTATION

PROVIDE & INSTALL THE FOLLOWING VERTICAL FLOOR MOUNT ITEMS:
ONE (1) 7'X19' STANDARD RACK, CHATSWORTH – 55053-503
TWO (2) 7'X6" DOUBLE-SIDED VERTICAL CABLE MANAGERS, CHATSWORTH – 11729-503SPLICE/TERMINATE 6 OF 12 CT. SMFO USING LC/APC C

PROVIDE & INSTALL THE FOLLOWING OVER HEAD RUNWAY ITEMS:
LADDER TRAY (SEE SHEET 3)
Chatsworth Products, Inc.
12" Universal Cable Runway – 10250-112
Cable Runway Elevation KIT - 10506-718
Runway radius drop – 12100-112
Rack Mount Top Plate – 10595-112
12" triangular support bracket – 11312-112
12" wall angle support kit – 11421-112
Butt splice kit – 11301-001
Junction splice kit – 11302-001
End caps – 10642-001
Cable runway #6 ground strap kit – 40164-001

A CITY OF MESA IT REPRESENTATIVE WILL PROCESS THE ACQUISTION FOR ITEMS IN **BOLDED TEXT**. INSTALLATION FOR ITEMS IN **BOLDED UNDELINED TEXT** IS NOT REQUIRED.

- **CISCO** — **- C9300-24P PoE+ NTWRK ADV**
- **CISCO** — **- C9300-NM-8 10G**
- **CISCO** — **- PWR-C1-715WAC**
- **CISCO** — **- C9300 DNA ADV. 24-PORT 5YR**
- **CISCO** — **- 8 X 5 SUPPORT**
- **OPTICS/SM-SFP** — **- 4 X 10G-LR SFP**
- **MEDIATRIX** — **- C711 8 FXS GATEWAY**
- **APC** — **- SMT300RM2U**
- **APC** — **- AP9631**
- **APC** — **- AP9625**
- **STEP LADDER** — **- (1) 4FT GENERIC**
- **LADDER RACK** — **- (1) GENERIC**
- **FLASHLIGHT** — **- (1) GENERIC**
- **MISC CABLES & SUPPLIES**

OPTIONAL MISCELLANOUS ITEMS TO BE INSTALLED BY OTHERS:
ONE (1) CENTURYLINK DMARC AND CABLE.
ONE (1) COX DMARC AND CABLE.

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201
NEW EQUIPMENT ROOM RACK ELEVATION
NTS

TITLE: NEW IT EQUIPMENT ROOM RACK ELEVATION PHASE 1
COMPANY: CITY OF MESA
CREATOR: FELIX DUARTE & MAURICE GREEN
DATE: Dec. 13, 23
TIME: 8:01 AM
SHEET: 6 OF 8 PGS
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

A-281122

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

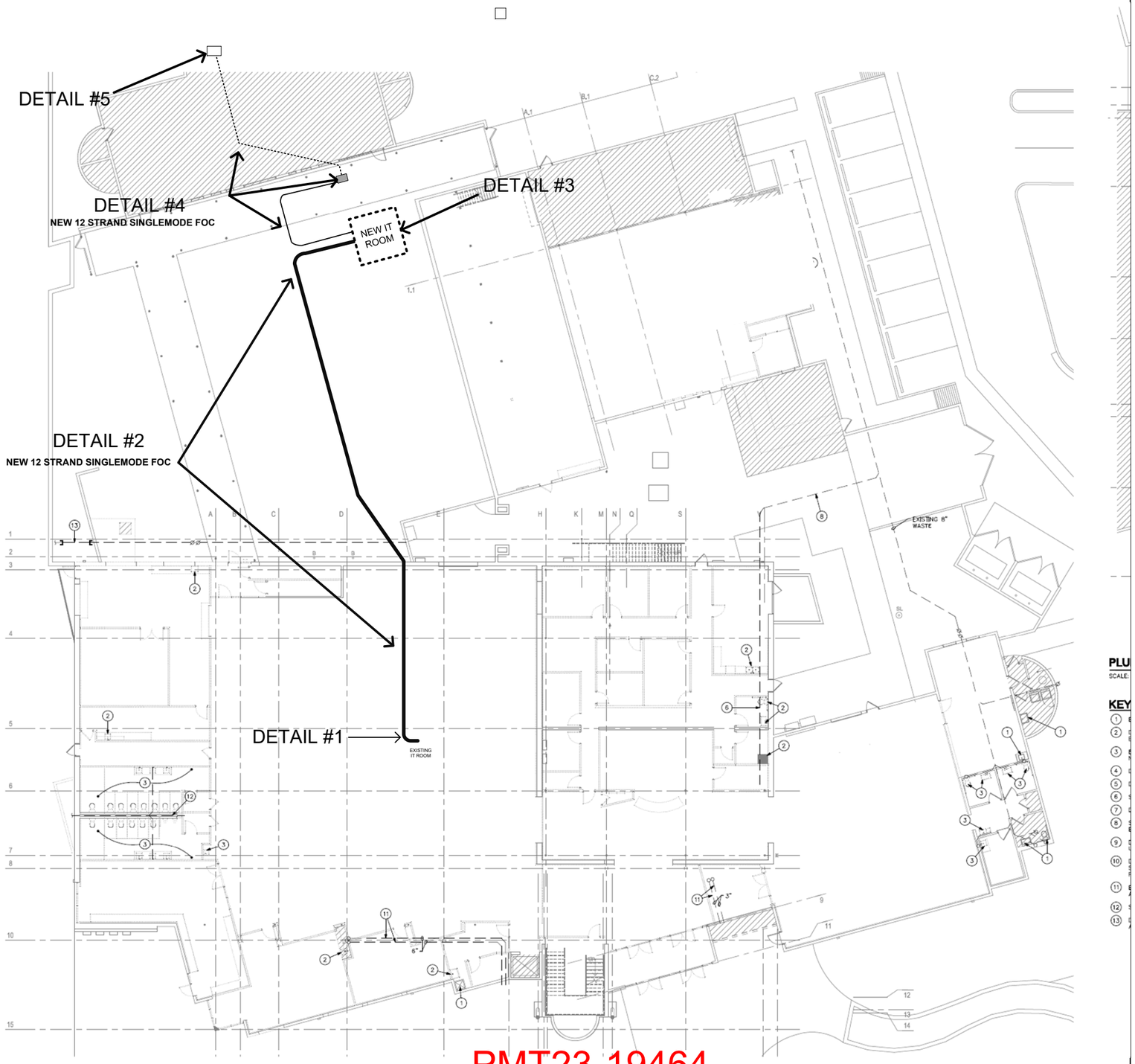
VERSION DATE: 12/13/2023

BY: Felix Duarte

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

DoIT SPECIAL SYSTEMS

CAMPUS FIBER OPTIC STRUCTURED CABLING PHASE 1



CONSTRUCTION NOTES:

PROVIDE AND INSTALL THE FOLLOWING INTERCONNECT CABLE:
ONE (1) 12 STRAND SMFO PLENUM RATED CABLE AND 1.5" INNERDUCT FROM DETAIL #1 (EXISTING IT ROOM) THROUGH EXISTING PATHWAYS DETAIL #2 TO DETAIL #3 (NEW IT ROOM).

USE EXISTING FIBER ENCLOSURE IN DETAIL #1 (EXISTING IT ROOM). CONTRACTOR MUST VERFITY EXISTING MANUFACTURER AND PART NUMBERS TO MATCH FIBER INSERTS.

PLEASE FOLLOW SHEET 5 FOR DETAIL# 3 NEW IT ROOM LAYOUT.

DETAIL #3
ONE (1) 12 STRAND SMFO CABLE, APPROXIMATELY 100 FEET THROUGH EXISTING PATHWAYS DETAIL# 4 TO DETAIL #5 CLASSROOM BUILDING INTO THE EXISTING WALL CABINET.

USE EXISTING FIBER ENCLOSURE IN DETAIL #5 (EXISTING IT WALL CABINET). CONTRACTOR MUST VERFITY EXISTING MANUFACTURER AND PART NUMBERS TO MATCH FIBER INSERTS.

DO NOTREMOVE EXISITNG MULTIMODE FIBER FROM DETAIL 5 (CLASSROOM IT WALL CABINET AND DETAIL #4 EXISTING PATHWAYS)

SPLICE/TERMINATE FIBER STRANDS WITH 12P APC/LC CONNECTORS. INSTALL CORNING CCH-01U FIBER PANEL AND INSTALL CORNING (SM) 12P APC/LC CASSETE FOR ALL NEW INSTALLS.

WHERE THERE IS EXISTING FIBER CLOSURE, PLEASE PROVIDE APC/LC CONNECTORS WITH A CASSETTE.

LABEL FIBER OPTIC CABLE IN ACCORDANCE WITH MESA ITD/ITS SPECIFICATIONS & DIVISION 27 DOCUMENTATION

TEST FIBER OPTIC CABLE IN ACCORDANCE WITH MESA ITD/ITS SPECIFICATIONS

INSTALL 12 CT SMFO CABLE AS PER MESA ITD/ITS SPECIFICATIONSLABEL FIBER OPTIC PANEL IN ACCORDANCE WITH MESA ITD/ITS SPECIFICATIONS & DIVISION 27 DOCUMENTATION

CITY OF MESA
IDEA MUSEUM REMODEL CP0916CAP
150 W. PEPPER PLACE, MESA AZ 85201
CAMPUS FIBER OPTIC STRUCTURED CABLING PHASE 1
NTS

TITLE: CAMPUS FIBER OPTIC STRUCTURED CABLING PHASE 1
COMPANY: CITY OF MESA
CREATOR: FELIX DUARTE & MAURICE GREEN
DATE: Dec. 13, 23
TIME: 8:01 AM
SHEET: 7 OF 8 PGS
FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

A-281123

FILENAME: DoIT CONCEPTUAL PLAN -idea Museum REV2.vsdx

FILE: J:\2022\2201080 City of Mesa -I.d.e.a. Museum Study + Remodel\200 Design\P2_0.dwg

PLOTTED BY: Jayson Jay

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

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:	-

-

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SHEET TITLE:

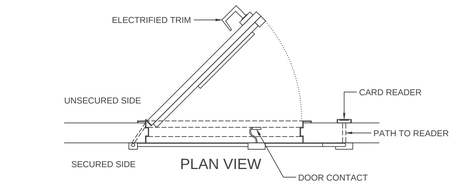
COVER SHEET

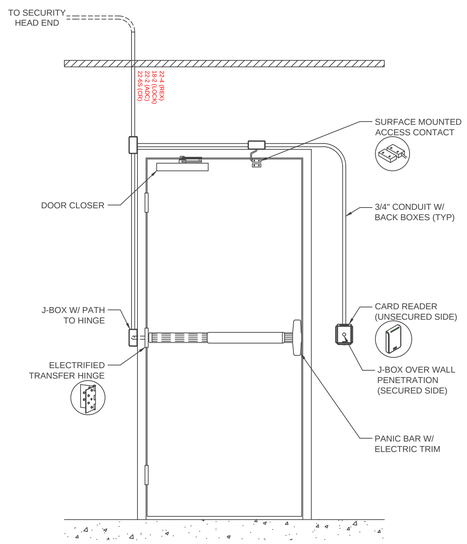
SHEET NO: A-281124

SS-CS

PMT23-19464

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

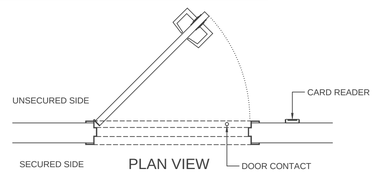
WIRE SCHEDULE

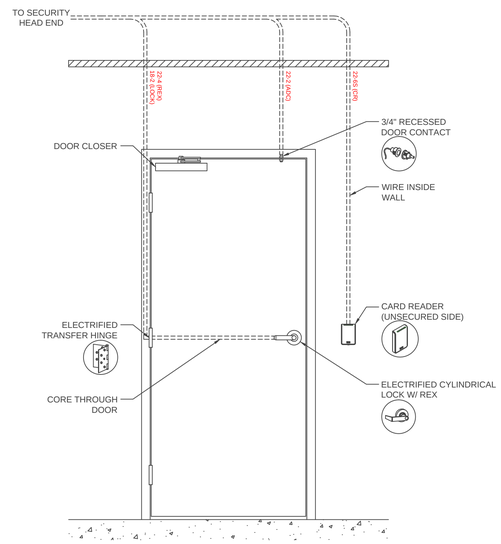
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

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

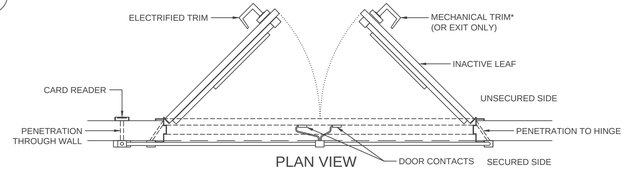
WIRING SCHEDULE

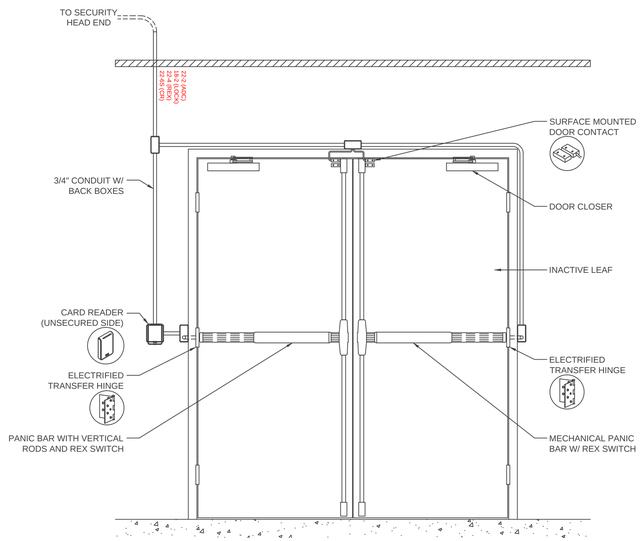
DESCRIPTION	WIRE
CARD READER	22-6S
DOOR CONTACT	22-2
LOCK POWER	18-2
REQUEST TO EXIT	22-4

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

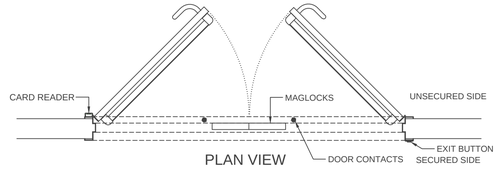
WIRE SCHEDULE

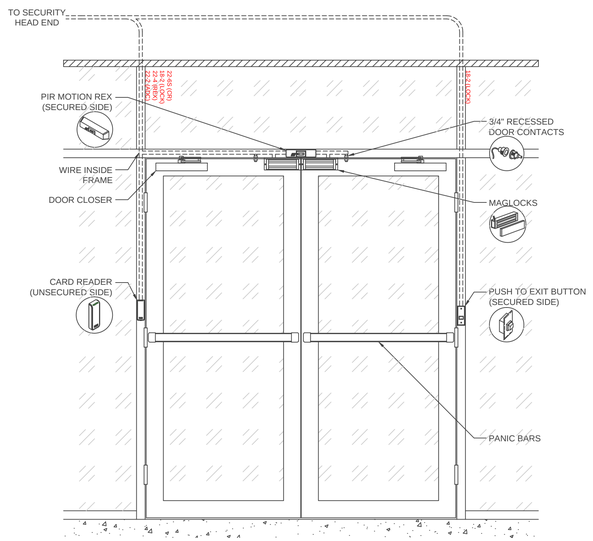
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

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

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:	-

-

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SHEET TITLE:

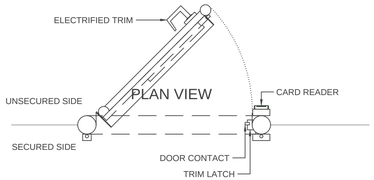
TYPICALS

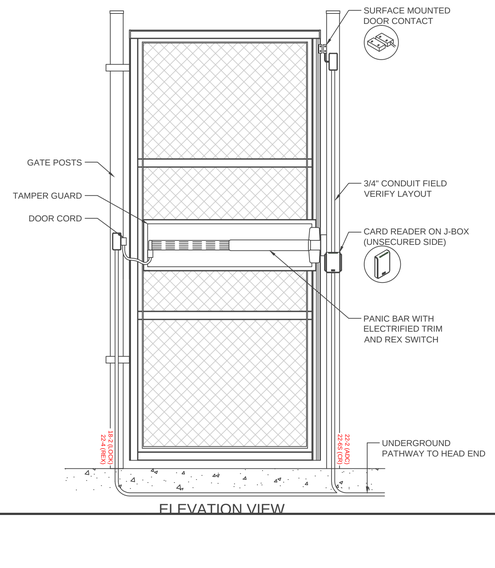
SHEET NO: A-281125

SS-3.0

PMT23-19464

D6 GATE WITH PANIC BAR AND ACCESS CONTROL





ELEVATION VIEW

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

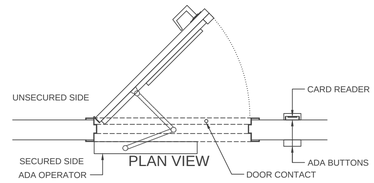
WIRE SCHEDULE

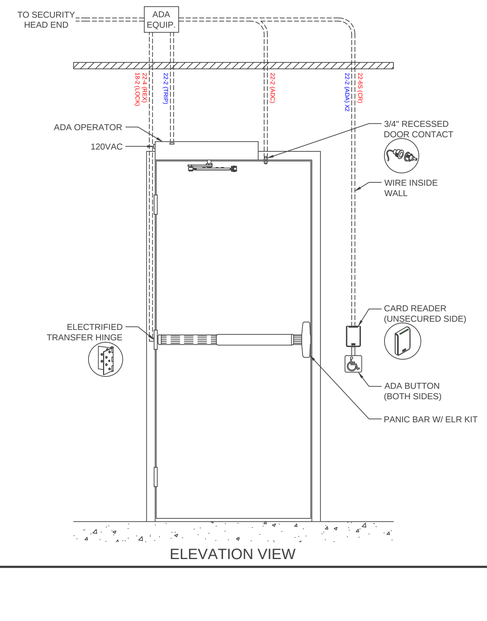
DESCRIPTION	WIRE
CARD READER	22-6S
LOCK POWER	18-2
REQUEST TO EXIT	22-4
ACCESS DOOR CONTACT	22-2

NOTES
-

TYP#: FL12100030.0102*1

D5 DOOR WITH CARD ACCESS AND ADA INTEGRATION





ELEVATION VIEW

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:	-

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-

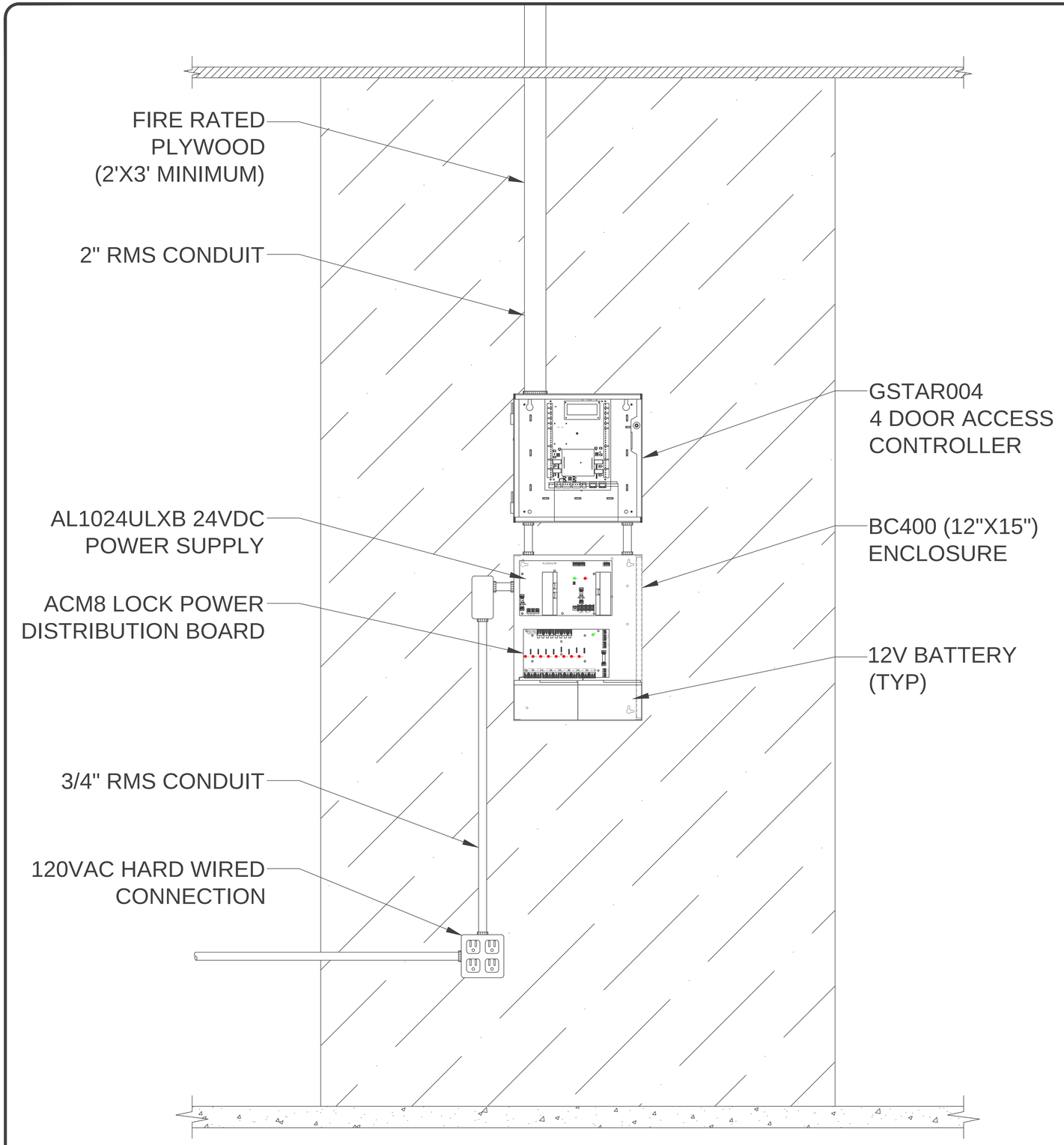
SHEET TITLE:

TYPICALS

SHEET NO: A-281126

SS-3.1

PMT23-19464



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]

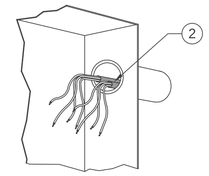


FIGURE 1

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.

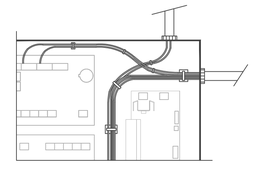


FIGURE 2

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

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:	-

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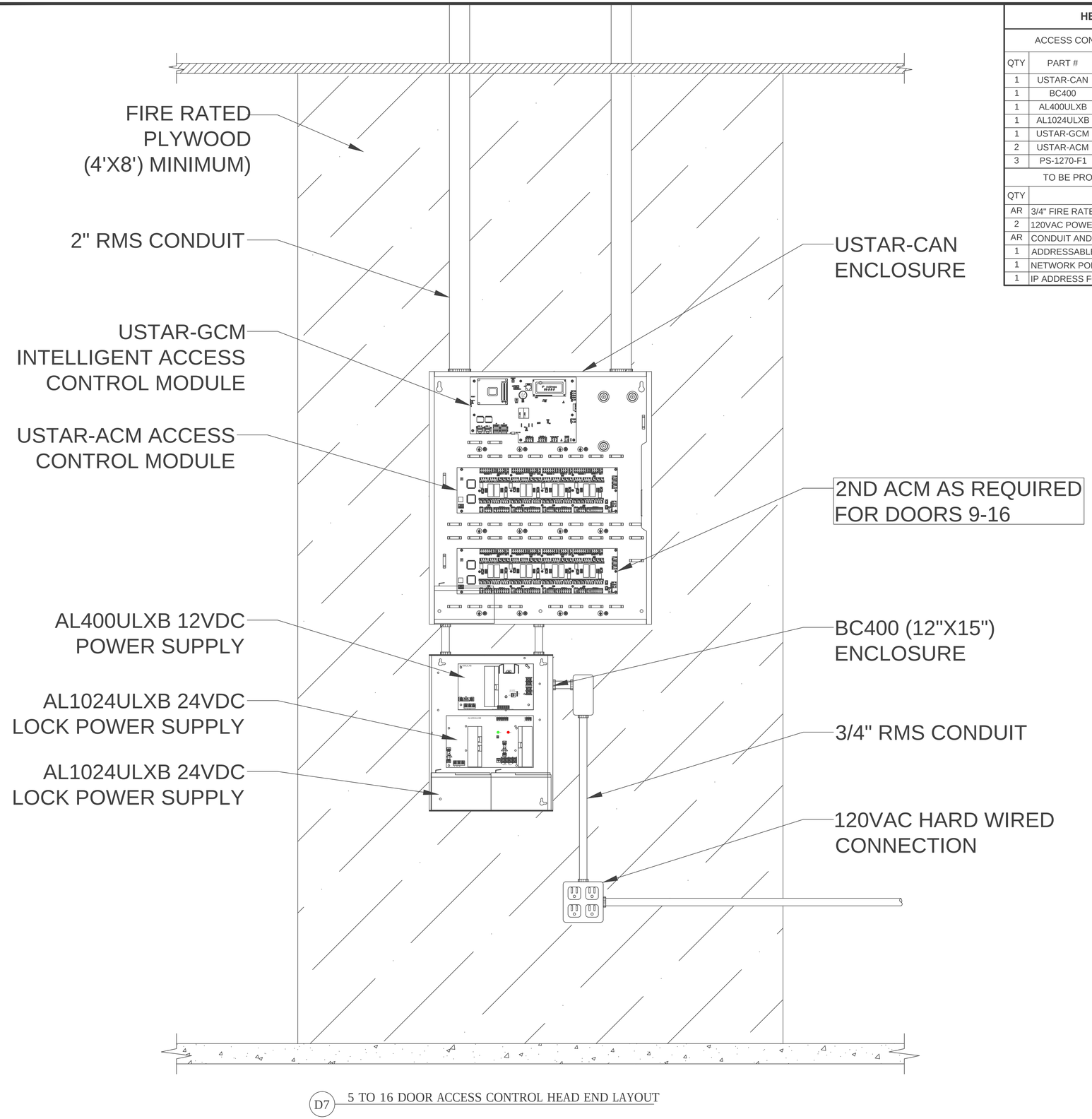
SHEET TITLE:

HEAD END DETAILS FOR 1 TO 4 DOORS

SHEET NO: A-281127

SS-2.0

PMT23-19464



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]

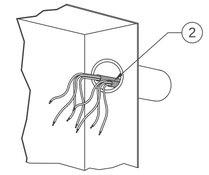
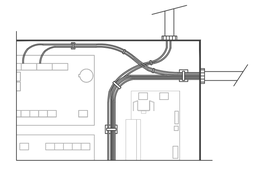


FIGURE 1

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.



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7. ALL CABLES SHALL BE FREE OF TENSION AT BOTH ENDS AND OVER THE ENTIRE LENGTH OF RUN.
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CITY OF MESA

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V5	10/13/21	DOOR TYPICALS	DC

DWG BY:	-
APPROVED BY:	-

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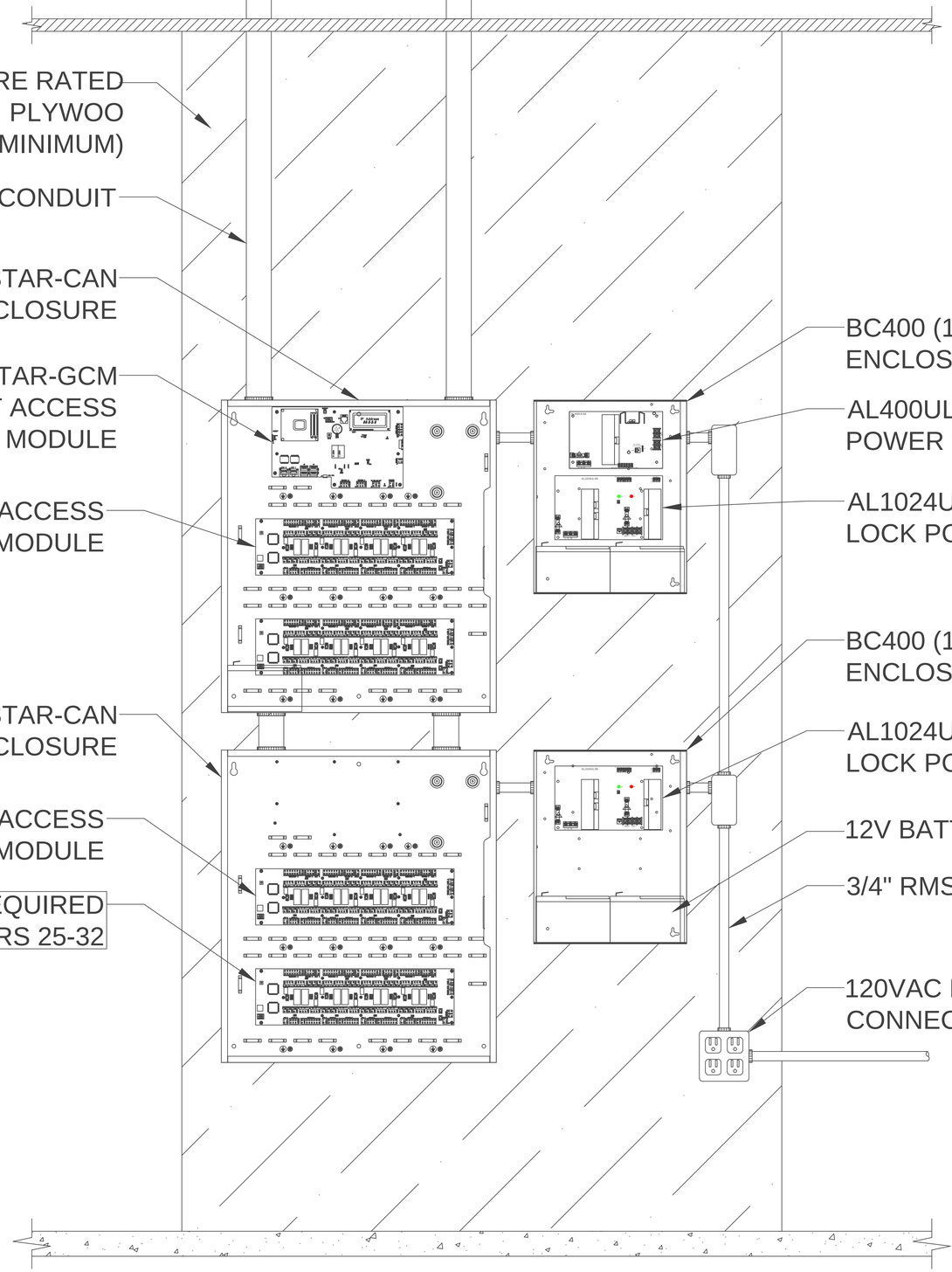
SHEET TITLE:

HEAD END DETAILS FOR 5 TO 16 DOORS

SHEET NO: A-281128

SS-2.1

PMT23-19464



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
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TO BE PROVIDED AND INSTALLED BY OTHERS		
QTY	DESCRIPTION	
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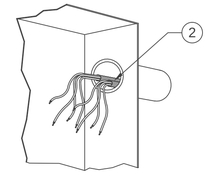

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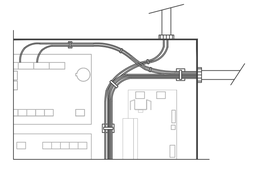

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DWG BY:	-
APPROVED BY:	-

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SHEET TITLE:

HEAD END DETAILS FOR 17 TO 32 DOORS

SHEET NO: A-281129

SS-2.2

PMT23-19464