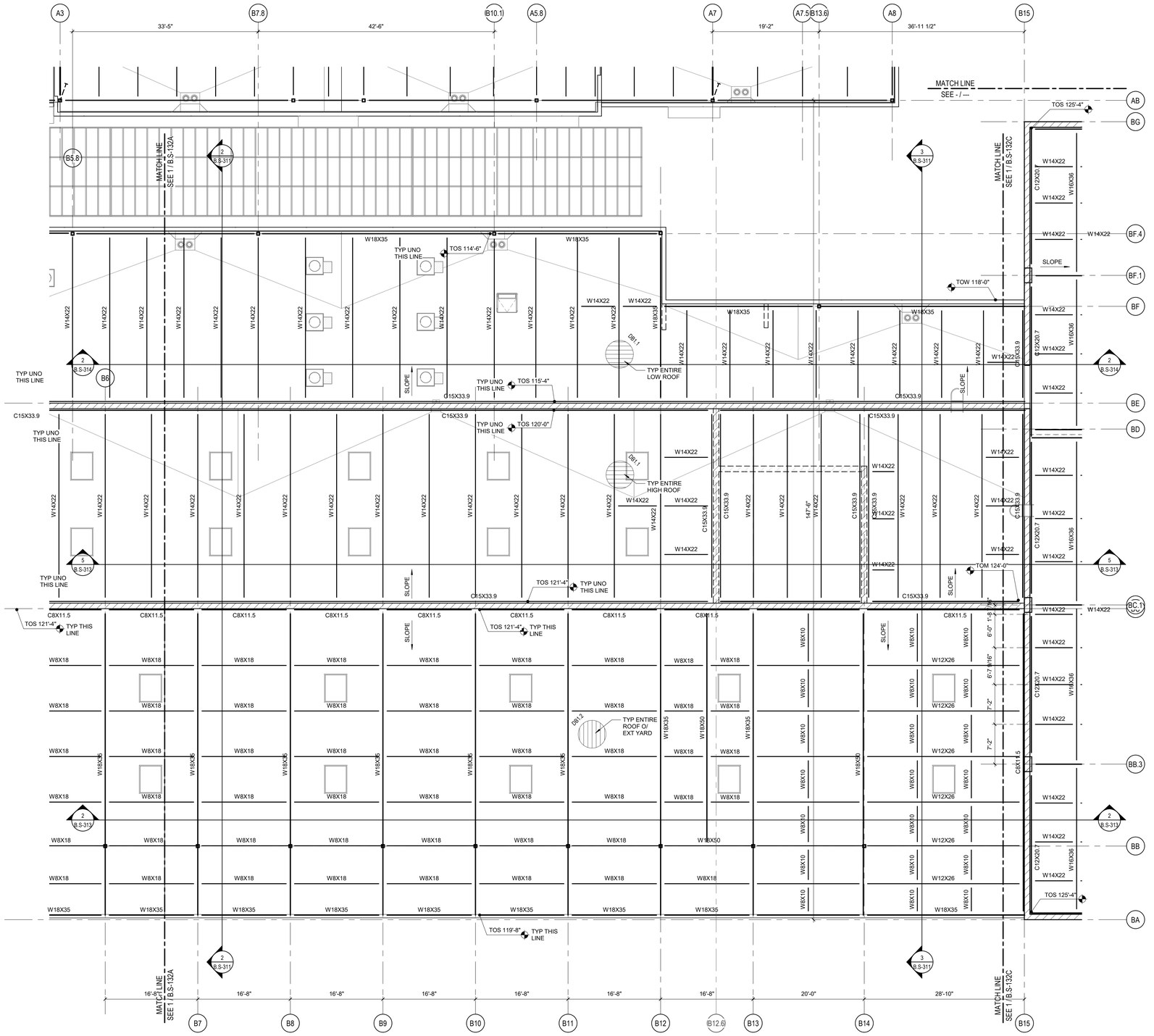


1 BLDG B - PLAN - ROOF FRAMING - AREA B
SCALE 1/8" = 1'-0"

NORTH

NOTES

S- 010000_N001A
170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
4. SEE ARCH & OTHER CONSULTANT DWGS FOR DIMENSIONS & LOCATIONS OF WALL OPENINGS. SEE TYPICAL DETAILS FOR FRAMING AT OPENINGS.
5. SEE ARCH & OTHER CONSULTANT DWGS FOR ROOF PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. CONFORM WITH TYPICAL DETAILS.
6. SEE ARCH DWGS FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
7. EXTERIOR WALLS ARE 600S162-54 STEEL STUDS @ 16" OC OR 12" CMU GROUTED SOLID W/ STD REINF, TYP UNO.
8. BEAMS ARE EQUALLY SPACED BETWEEN COLUMNS, UNO.
9. ROOF DECK IS 1 1/2" x 16 GA TYPE "B" STEEL DECK AND SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM.

SCHEDULES

DECK SCHEDULE

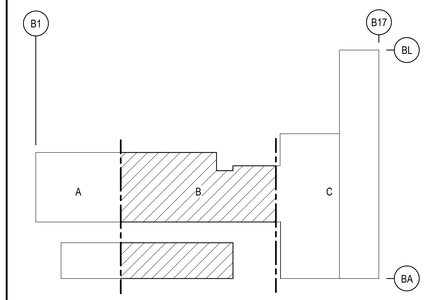
TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
DB1.2	1 1/2" X 16 GA TYPE "B" STEEL DECK W/ G90 COATING
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC
SG6	6" CONC SLAB O/ SUB-BASE W/ #5 @ 16" OC
SG12	12" CONC SLAB O/ SUB-BASE W/ (2) LAYERS OF #5 @ 16" OC

LEGEND

180621
Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
- STRUCTURAL STUD WALL
- STRUCTURAL MASONRY WALL
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- -2" — SLAB STEP SYMBOL; ELEVATION RELATIVE TO TOC
- SF, CF, DF — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- W12x40 (48) SFRS — BEAM SIZE; NUMBER OF WELDED HEADED STUDS, UNO; SEISMIC FORCE RESISTING SYSTEM MEMBER
- C=1/2" [-2"] — BEAM ELEVATION RELATIVE TO TOS; BEAM CAMBER
- S — BEAM SPLICE
- NON-FRAME MOMENT CONNECTION
- MOMENT FRAME CONNECTION
- BENT BEAM SPLICE
- SFRS — BOLTED SINGLE ROW SFRS CONNECTION PER
- SFRS — BOLTED DOUBLE ROW SFRS CONNECTION PER
- SFRS — WELDED SFRS CONNECTION PER
- FLANGE BRACE CONNECTION PER
- SPECIAL CONNECTION TYPE 2
- DIAGONAL STRUT; UPPER END

KEY PLAN



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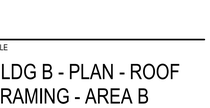

PROJECT
PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BLDG B - PLAN - ROOF FRAMING - AREA B

SHEET
B.S-132B

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1/14/2020 2:10:56 PM

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT

LAS POSITAS COLLEGE

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

100% SCHEMATIC DESIGN PACKAGE SUBMITTAL

SHEET INDEX

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ELECTRICAL ENGINEER
INTEGRAL GROUP
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CONTACT: JOHN ANDARY
PHONE: 510.663.2070

PLUMBING ENGINEER
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PETERS ENGINEERING
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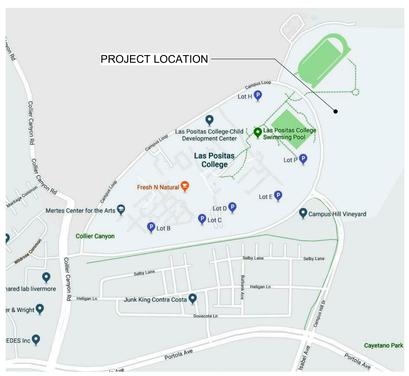
SACRAMENTO CA 95817
CONTACT: SEAN TICHENOR
PHONE: (916)447-2841

LOCATION MAP



VICINITY MAP

SCOPE OF PROJECT

THIS PROJECT REPRESENTS A NEW PERMANENT CONSTRUCTION FACILITY TO PROVIDE MODERN CAREER TECHNOLOGY FACILITIES AND SUPPORT SPACES FOR THE FIRE TECHNOLOGY, ADMINISTRATION OF JUSTICE, EMERGENCY MEDICAL SERVICE, AUTO TECHNOLOGY AND WELDING PROGRAMS AT THE COLLEGE.

PROJECT DATA

1. CONTRACTOR SHALL VERIFY DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL NOTIFY THE ARCHITECT WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DRAWINGS OR DOCUMENTS. CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE BUILDING THAT IS KNOWN TO BE IN CONFLICT UNTIL THE CONFLICT IS RESOLVED WITH THE AFFECTED PARTIES.
3. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND REGULATIONS AND CURRENT GOVERNING CODES: SEE SHEETS GL111 & GL112

DEFERRED SUBMITTALS

1. ....

ARCHITECT'S STATEMENT

THE PROVIDED, BUT NOT LIMITED TO, CIVIL, PLUMBING, MECHANICAL, FIRE PROTECTION, ELECTRICAL, SECURITY, ELEVATOR MODULAR DRAWINGS, AND SPECIFICATIONS, AND CALCULATIONS HAVE BEEN PREPARED BY OTHER DESIGN PROFESSIONALS OR CONSULTANTS WHO ARE LICENSED AND/OR AUTHORIZED TO PREPARE SUCH DRAWINGS IN THIS STATE. THESE DOCUMENTS HAVE BEEN EXAMINED BY ME FOR THE DESIGN INTENT AND HAVE BEEN FOUND TO MEET THE APPROPRIATE REQUIREMENTS OF TITLE 24, CALIFORNIA CODE OF REGULATIONS AND THE PROJECT SPECIFICATIONS PREPARED BY ME. THE SECTIONS LISTED ABOVE ARE ACCEPTABLE FOR THE INCORPORATION IN TO THIS PROJECT FOR WHICH I AM THE INDIVIDUAL DESIGNATED TO BE IN GENERAL RESPONSIBLE CHARGE (OR FOR WHICH I HAVE BEEN DELEGATED RESPONSIBILITY FOR THE PORTION OF WORK).

SIGNATURE OF ARCHITECT _____ DATE _____

LICENSE NUMBER _____ EXPIRATION DATE _____

SHEET IDENTIFICATION LEGEND

DISCIPLINE DESIGNATORS - LEVEL 1

G GENERAL
H HAZARDOUS MATERIALS
V SURVEY/MAPPING
B GEOTECHNICAL
C CIVIL
L LANDSCAPE
S STRUCTURAL
A ARCHITECTURAL
I INTERIORS
Q EQUIPMENT
F FIRE PROTECTION
P PLUMBING
D PROCESS
M MECHANICAL
E ELECTRICAL
W DISTRIBUTED ENERGY
T TELECOMMUNICATIONS
R RESOURCE
X OTHER DISCIPLINES
Z CONTRACTOR/SHOP DRAWINGS
O OPERATIONS

SHEET TYPE DESIGNATORS

0 - GENERAL
1 - PLANS
2 - ELEVATIONS
3 - SECTIONS
4 - LARGE SCALE VIEWS
5 - DETAILS
6 - SCHEDULES & DIAGRAMS
7 - USER DEFINED
8 - USER DEFINED
9 - 3D REPRESENTATIONS

BUILDING IDENTIFIER - WHERE OCCURS
DISCIPLINE DESIGNATOR - LEVEL 1
DISCIPLINE DESIGNATOR - LEVEL 2 REPLACE DASH WHERE OCCURS
SHEET TYPE DESIGNATOR
SHEET TYPE SUBSET DESIGNATOR
LEVEL/SEQUENCE DESIGNATOR
AREA IDENTIFIER - WHERE OCCURS
UNIQUE PORTION IDENTIFIER - WHERE OCCURS

C.A-123AB

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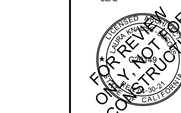

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LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

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MARK	DATE	DESCRIPTION
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MANAGEMENT

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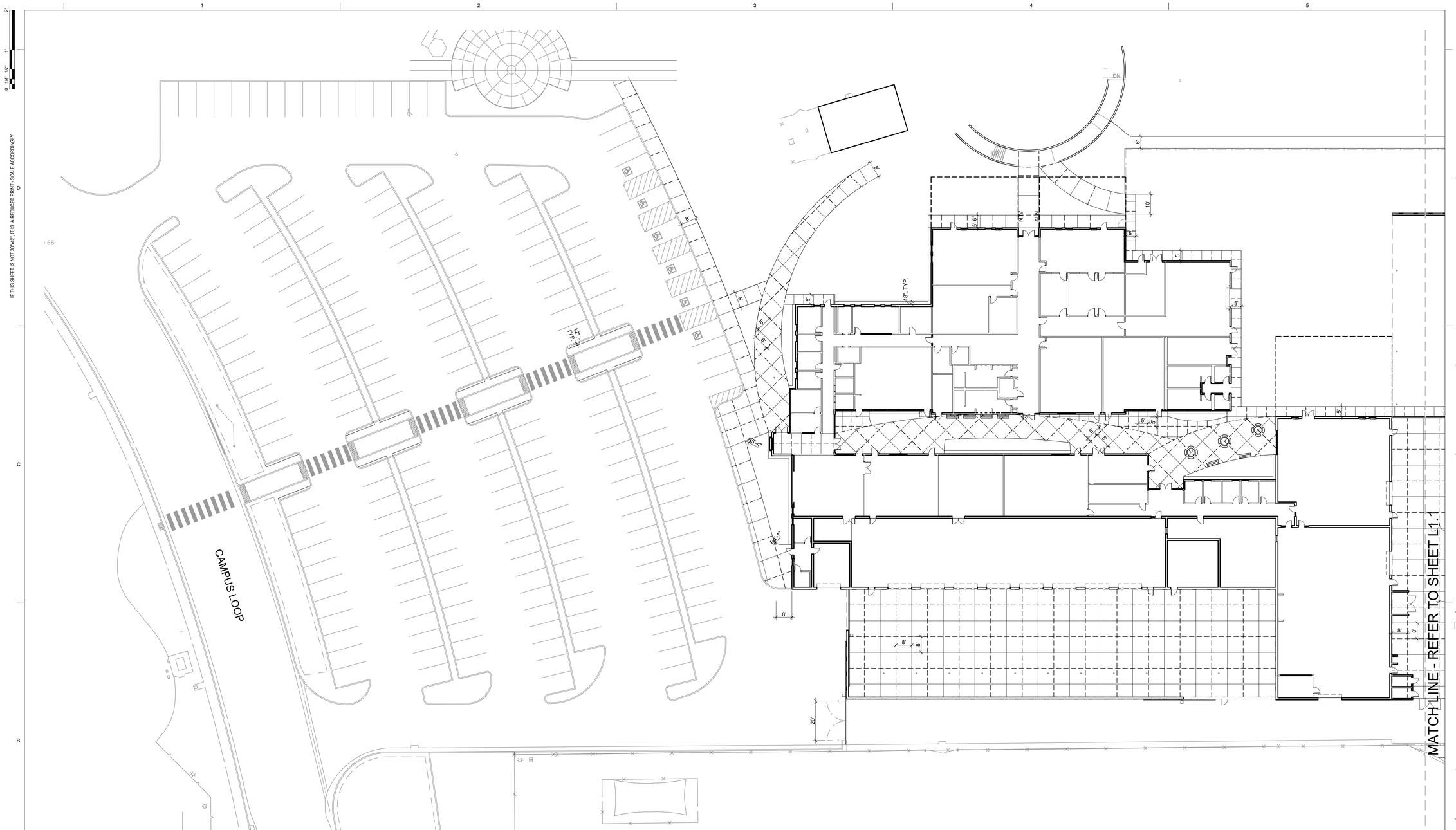
TITLE
COVER SHEET

SHEET
G-001



LAYOUT NOTES

1. THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, DETAILS, ADDENDA AND CHANGE ORDERS ASSOCIATED WITH THE CONTRACT DOCUMENTS.
2. DRAWINGS SHALL NOT BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. IF CONTRACTOR FINDS A DISCREPANCY WITH WRITTEN DIMENSIONS, NOTIFY OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE OF AND LOCATIONS OF EXISTING AND PROPOSED UNDERGROUND SERVICES AND IMPROVEMENTS WHICH MAY CONFLICT WITH THE WORK. CONTACT THE OWNER'S REPRESENTATIVE AND UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 PRIOR TO INITIATING CONSTRUCTION FOR ASSISTANCE.
4. COORDINATE CONSTRUCTION ELEMENTS PRIOR TO INSTALLATION. VERIFY WALLS, CURBS, FENCES, ETC. AND CRITICAL DIMENSIONS, REFERENCE AND COORDINATE POINT LOCATIONS, AND CONSTRUCTION CONDITIONS PRIOR TO INITIATING CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD DISCREPANCIES ARISE.
5. CONTRACTOR SHALL LAYOUT PROJECT ELEMENTS IN FIELD AS SHOWN ON THESE PLANS AND HAVE THEM APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
6. MINOR ADJUSTMENTS MADE TO ACCOMMODATE EXISTING SITE CONDITIONS SHALL MAINTAIN THE OVERALL DESIGN LAYOUT. ADJUSTMENTS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
7. NEW PAVED SURFACES SHALL CONFORM TO EXISTING PAVED SURFACES, FLUSH AND SMOOTH. CONTRACTOR SHALL CONSTRUCT SMOOTH TRANSITIONS OF PAVING AND WALKS WHILE MAINTAINING POSITIVE DRAINAGE.
8. COORDINATE SLEEVING AND UTILITY LOCATIONS AS SHOWN ON THE PLANS AND DETAILS CONTAINED WITHIN THESE CONTRACT DOCUMENTS AND THE REQUIREMENTS OF NFPA 24, SECTION 8.1, "MINIMUM DEPTH OF COVER" (36 INCHES) FOR PIPE BENEATH FIRE LANE ACCESS ROUTES.
9. CONDITIONS NOT SPECIFICALLY NOTED OR DETAILED ON THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO IMPLEMENTATION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE UNDER THIS CONTRACT FOR REPAIRING OR REPLACING, AT THEIR OWN EXPENSE, ANY STRUCTURES, FENCES, WALLS, PLANT MATERIAL OR TREES DAMAGED OR DESTROYED, BOTH ON THIS PROPERTY OR THOSE PROPERTIES ADJACENT TO THIS SITE. THE DAMAGED ITEM(S) WILL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
11. ANGLES FOR LAYOUT TO BE 90 DEGREES UNLESS OTHERWISE NOTED.

LAYOUT LEGEND

SYMBOL	DESCRIPTION OF SYMBOL
ALN	ALIGN
BCR	BEGINNING OF CURVE RETURN
BOC	BACK OF CURB
BS	BOTTOM OF STAIRS / STEPS
BOW	BACK OF WALL
℄	CENTERLINE
CLR	CLEAR
DIA	DIAMETER
ECR	END OF CURVE RETURN
℞	END OF RADIUS
EJ	EXPANSION JOINT, TYPICAL
EQ	EQUAL
EW	EACH WAY
FOB	FACE OF BUILDING
FOC	FACE OF CURB
FOW	FACE OF WALL
MAX	MAXIMUM
MIN	MINIMUM
OC	ON CENTER
PA	PLANTING AREA
POB	POINT OF BEGINNING
PT	POINT OF TANGENCY
R	RADIUS
SL	SCORE JOINT, TYPICAL
TS	TOP OF STAIRS / STEPS
TYP	TYPICAL

NORTH

SCALE: 1" = 20'-0"

0' 10' 20' 40'

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SEAL

LICENSED LANDSCAPE ARCHITECT
ALISSA J. NOGUEZ
NO. 3676
Signature
05/31/2021
Renewal Date
Date
STATE OF CALIFORNIA

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

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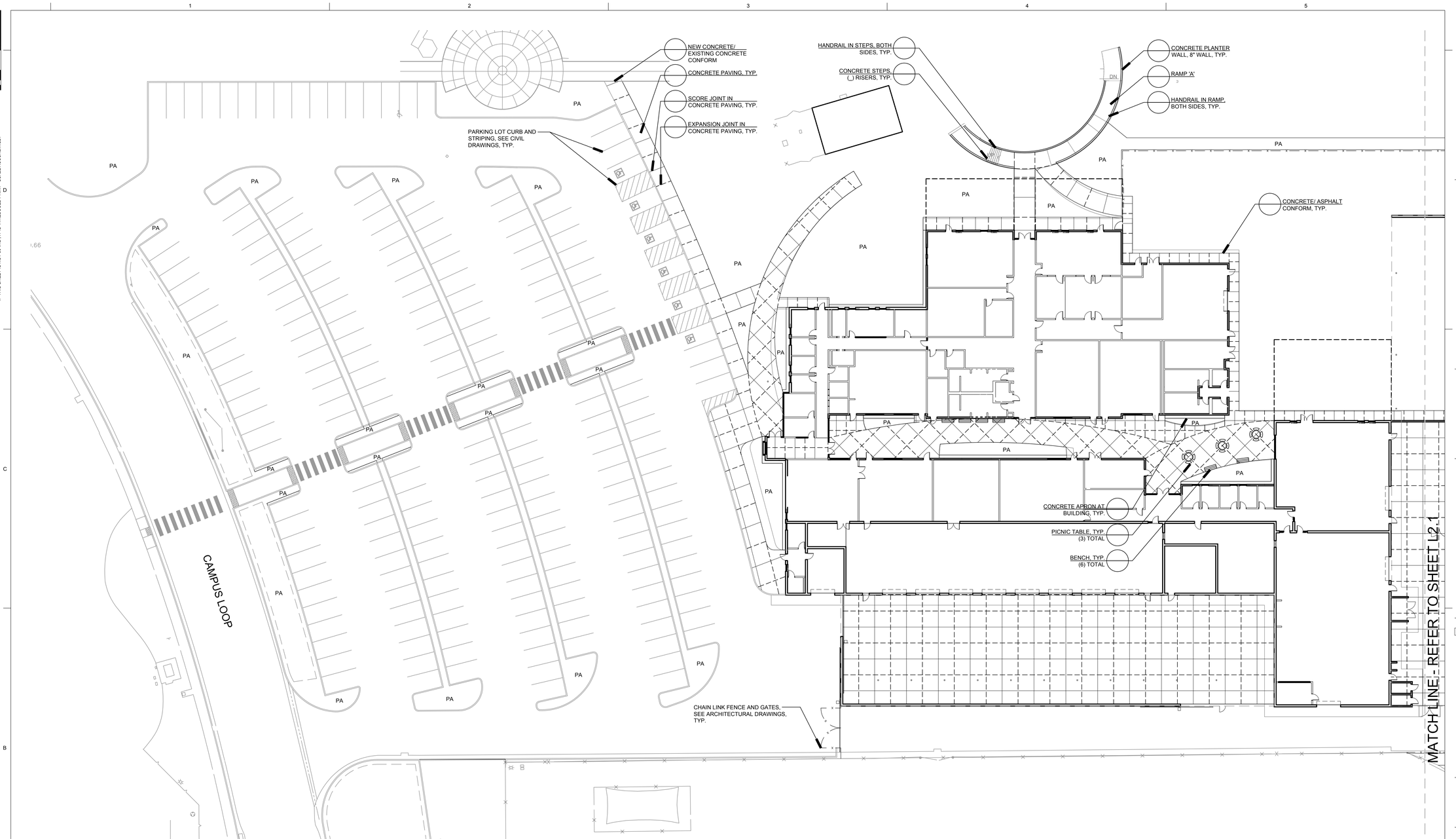
LAYOUT PLAN

SHEET

L1.0



MATERIAL AND DETAIL REFERENCE NOTES

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2. CONTRACTOR SHALL BECOME FAMILIAR WITH THE LOCATION OF EXISTING AND PROPOSED UNDERGROUND SERVICES. CONTACT UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 PRIOR TO BEGINNING WORK. CONTACT OWNER'S REPRESENTATIVE SHOULD ANY CONFLICTS ARISE.
3. SCORE AND EXPANSION JOINTS SHALL BE LOCATED AS INDICATED ON THIS PLAN. CONTRACTOR SHALL MAKE MINOR ADJUSTMENTS WHEN NECESSARY TO ALIGN SCORE AND EXPANSION JOINTS WITH RELATIVE ELEMENTS AS SHOWN ON THE PLAN.
4. DETAIL CALLOUTS ON PLAN ARE PROVIDED FOR CONVENIENCE AND GENERAL REFERENCE ONLY. CONTRACTOR SHALL PROVIDE QUANTITY OF PRODUCTS, ELEMENTS AND MATERIALS AS SYMBOLIZED ON PLANS, ASSOCIATED DETAILS, AND SPECIFICATIONS.
5. FOR EACH CONCRETE COLOR AND FINISH SPECIFIED, CONTRACTOR SHALL POUR A 2'x2' SAMPLE FOR APPROVAL BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLING CONCRETE PAVING.
6. LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION. IF WORK WITHIN THIS SCOPE REQUIRES REMOVAL, RELOCATION, OR DEMOLITION OF EXISTING TO REMAIN IMPROVEMENTS, BOTH SURFACE AND KNOWN SUBSURFACE CONDITIONS, CONTRACTOR SHALL INCLUDE IN THE BID SUFFICIENT LABOR AND MATERIALS TO RESTORE EXISTING TO REMAIN IMPROVEMENTS IN KIND AND AS ACCEPTABLE TO OWNER'S REPRESENTATIVE.
7. CONTRACTOR SHALL COORDINATE ROUGH GRADING AND FINE GRADING TO ENSURE EXISTING SUITABLE TOPSOIL IS REMOVED, STOCKPILED AND REINSTALLED INTO ALL PROPOSED LANDSCAPE AREAS PER LANDSCAPE SPECIFICATION SECTION 32 90 00. IN THE EVENT THERE IS NOT ENOUGH EXISTING TOPSOIL, OR NO PLACE TO STOCKPILE TOPSOIL, CONTRACTOR SHALL IMPORT AND INSTALL TOPSOIL PER LANDSCAPE SPECIFICATION SECTION 32 90 00.
8. THE CONTRACTOR SHALL BE RESPONSIBLE UNDER THIS CONTRACT FOR REPAIRING OR REPLACING, AT THEIR OWN EXPENSE, ANY STRUCTURES, FENCES, WALLS, PLANT MATERIAL OR TREES DAMAGED OR DESTROYED, BOTH ON THIS PROPERTY OR THOSE PROPERTIES ADJACENT TO THIS SITE. THE DAMAGED ITEM(S) WILL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. LANDSCAPE ARCHITECT IS NOT RESPONSIBLE FOR ROOFTOP GARDEN LINER, BUILDING WATERPROOFING, DRAINAGE FROM ROOF, WEIGHT LOAD BEARING ISSUES, MAINTENANCE, SAFETY, AND MEANS AND/OR METHODS OF INSTALLATION.
10. CONTRACTOR SHALL ADJUST EXISTING UTILITY BOXES TO BE FLUSH WITH PROPOSED GRADES.
11. REFER TO THE FOLLOWING SPECIFICATION SECTIONS:
    - 01 56 39 TEMPORARY TREE AND PLANT PROTECTION
    - 05 52 00 METAL RAILINGS
    - 07 13 26 SELF-ADHERING SHEET WATERPROOFING
    - 12 93 00 SITE FURNISHINGS
    - 32 13 13.1 CONCRETE WORK (LANDSCAPE)
10. REFER TO CONSTRUCTION DETAILS ON SHEETS _____

MATERIALS & DETAIL REFERENCE LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVING, PEDESTRIAN FINISH TO BE BROOM; COLOR TO BE NATURAL
	EXPANSION JOINT IN CONCRETE PAVING
	SCORE JOINT IN CONCRETE PAVING
	CONCRETE PLANTER WALL, 8" WIDE
	HANDRAIL AT RAMP HANDRAIL AT STEPS
	CHAIN LINK FENCE, SEE ARCHITECTURAL DRAWINGS
	BENCH
	TABLE

NORTH

SCALE: 1" = 20'-0"

0' 10' 20' 40'

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MANAGEMENT

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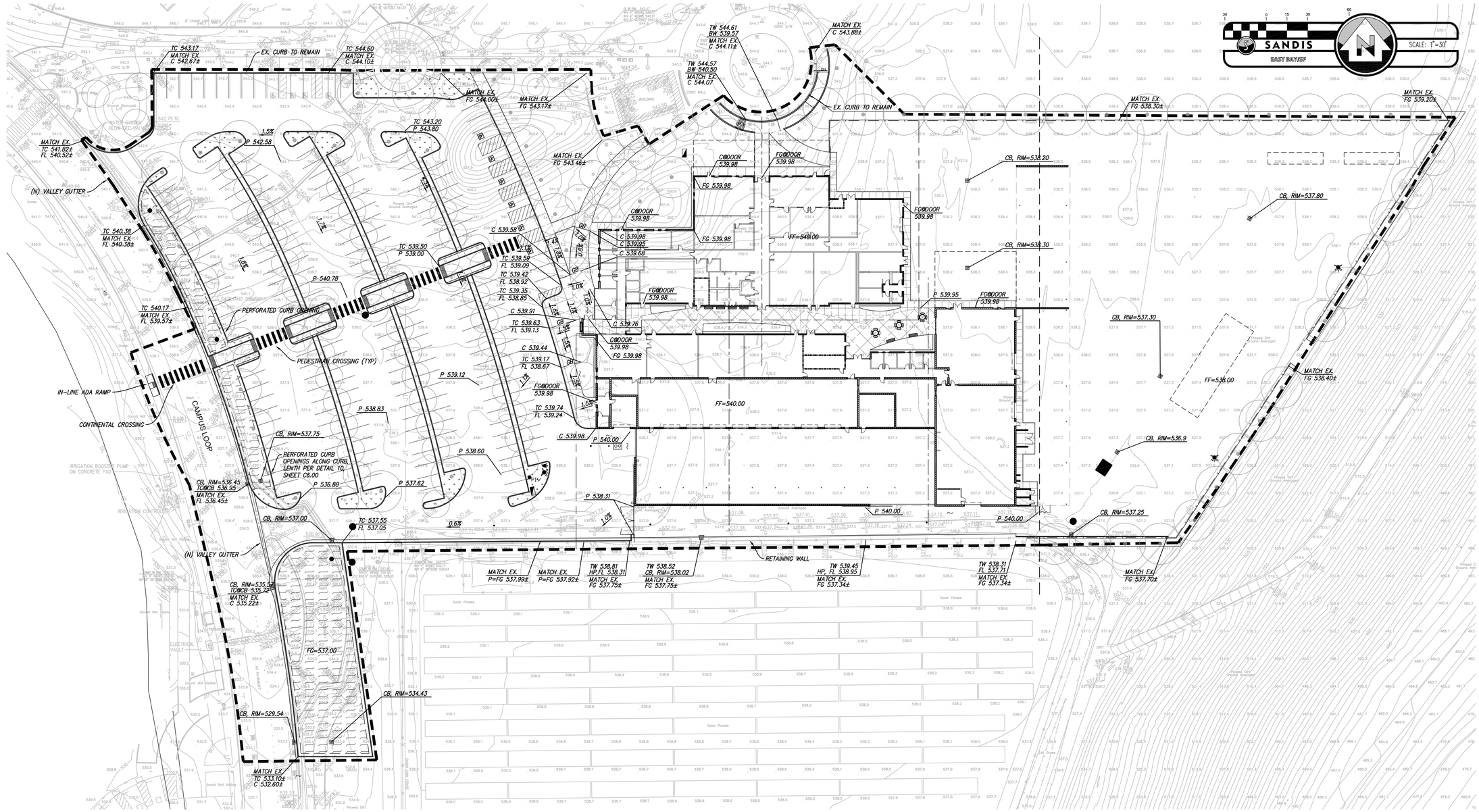
TITLE

MATERIALS AND DETAIL REFERENCE PLAN

SHEET

L2.0



LEGEND

- APPROXIMATE LIMIT OF WORK
- PROPERTY LINE
- SAWCUT LINE
- DIRECTION OF STEEP SLOPE
- FLOW LINE
- GRADE BREAK
- AC PAVEMENT (XX / XXXX)
- DEEP LIFT (XX / XXXX)
- CONCRETE SIDEWALK (XX / XXXX)
- PLANTING, PLANTING PER LANDSCAPE
- BIO-TREATMENT AREA (XX / XXXX)

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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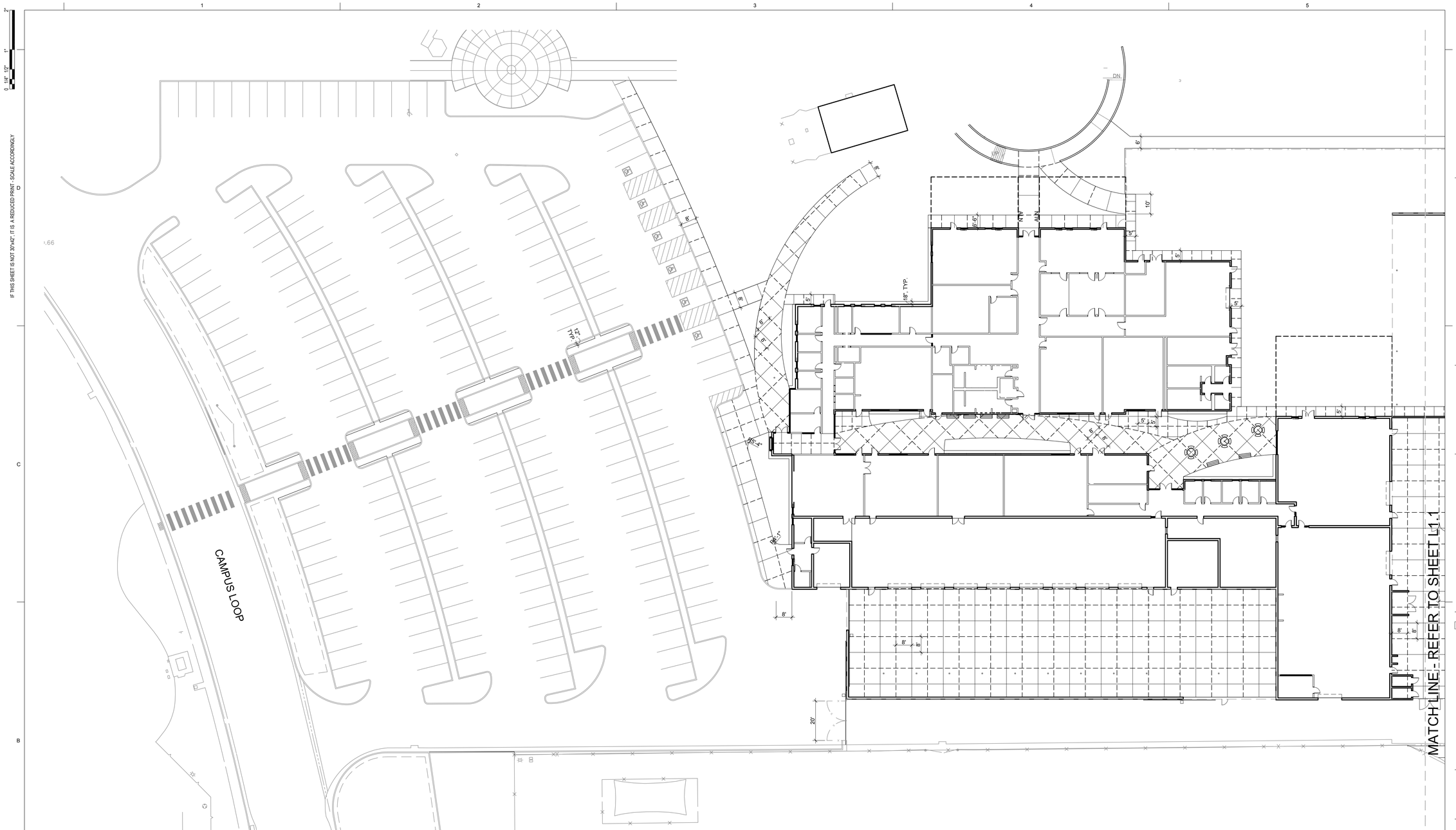
TITLE

GRADING PLAN

SHEET

C3.00



LAYOUT NOTES

1. THESE NOTES ARE FOR GENERAL REFERENCE IN CONJUNCTION WITH AND AS A SUPPLEMENT TO THE WRITTEN SPECIFICATIONS, DETAILS, ADDENDA AND CHANGE ORDERS ASSOCIATED WITH THE CONTRACT DOCUMENTS.
2. DRAWINGS SHALL NOT BE SCALED. WRITTEN DIMENSIONS TAKE PRECEDENCE. IF CONTRACTOR FINDS A DISCREPANCY WITH WRITTEN DIMENSIONS, NOTIFY OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE OF AND LOCATIONS OF EXISTING AND PROPOSED UNDERGROUND SERVICES AND IMPROVEMENTS WHICH MAY CONFLICT WITH THE WORK. CONTACT THE OWNER'S REPRESENTATIVE AND UNDERGROUND SERVICE ALERT (USA) AT (800) 642-2444 PRIOR TO INITIATING CONSTRUCTION FOR ASSISTANCE.
4. COORDINATE CONSTRUCTION ELEMENTS PRIOR TO INSTALLATION. VERIFY WALLS, CURBS, FENCES, ETC. AND CRITICAL DIMENSIONS, REFERENCE AND COORDINATE POINT LOCATIONS, AND CONSTRUCTION CONDITIONS PRIOR TO INITIATING CONSTRUCTION. NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY SHOULD DISCREPANCIES ARISE.
5. CONTRACTOR SHALL LAYOUT PROJECT ELEMENTS IN FIELD AS SHOWN ON THESE PLANS AND HAVE THEM APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
6. MINOR ADJUSTMENTS MADE TO ACCOMMODATE EXISTING SITE CONDITIONS SHALL MAINTAIN THE OVERALL DESIGN LAYOUT. ADJUSTMENTS SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
7. NEW PAVED SURFACES SHALL CONFORM TO EXISTING PAVED SURFACES, FLUSH AND SMOOTH. CONTRACTOR SHALL CONSTRUCT SMOOTH TRANSITIONS OF PAVING AND WALKS WHILE MAINTAINING POSITIVE DRAINAGE.
8. COORDINATE SLEEVING AND UTILITY LOCATIONS AS SHOWN ON THE PLANS AND DETAILS CONTAINED WITHIN THESE CONTRACT DOCUMENTS AND THE REQUIREMENTS OF NFPA 24, SECTION 8.1, "MINIMUM DEPTH OF COVER" (36 INCHES) FOR PIPE BENEATH FIRE LANE ACCESS ROUTES.
9. CONDITIONS NOT SPECIFICALLY NOTED OR DETAILED ON THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO IMPLEMENTATION.
10. THE CONTRACTOR SHALL BE RESPONSIBLE UNDER THIS CONTRACT FOR REPAIRING OR REPLACING, AT THEIR OWN EXPENSE, ANY STRUCTURES, FENCES, WALLS, PLANT MATERIAL OR TREES DAMAGED OR DESTROYED, BOTH ON THIS PROPERTY OR THOSE PROPERTIES ADJACENT TO THIS SITE. THE DAMAGED ITEM(S) WILL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
11. ANGLES FOR LAYOUT TO BE 90 DEGREES UNLESS OTHERWISE NOTED.

LAYOUT LEGEND

SYMBOL	DESCRIPTION OF SYMBOL
ALN	ALIGN
BCR	BEGINNING OF CURVE RETURN
BOC	BACK OF CURB
BS	BOTTOM OF STAIRS / STEPS
BOW	BACK OF WALL
℄	CENTERLINE
CLR	CLEAR
DIA	DIAMETER
ECR	END OF CURVE RETURN
℞	END OF RADIUS
EJ	EXPANSION JOINT, TYPICAL
EQ	EQUAL
EW	EACH WAY
FOB	FACE OF BUILDING
FOC	FACE OF CURB
FOW	FACE OF WALL
MAX	MAXIMUM
MIN	MINIMUM
OC	ON CENTER
PA	PLANTING AREA
POB	POINT OF BEGINNING
PT	POINT OF TANGENCY
R	RADIUS
SL	SCORE JOINT, TYPICAL
TS	TOP OF STAIRS / STEPS
TYP	TYPICAL

NORTH

SCALE: 1" = 20'-0"

0' 10' 20' 40'

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

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FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
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?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

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SEAL

LICENSED LANDSCAPE ARCHITECT
ALISSA J. NOGUEZ
NO. 3676
Signature
05/31/2021
Renewal Date
Date
STATE OF CALIFORNIA

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

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MANAGEMENT

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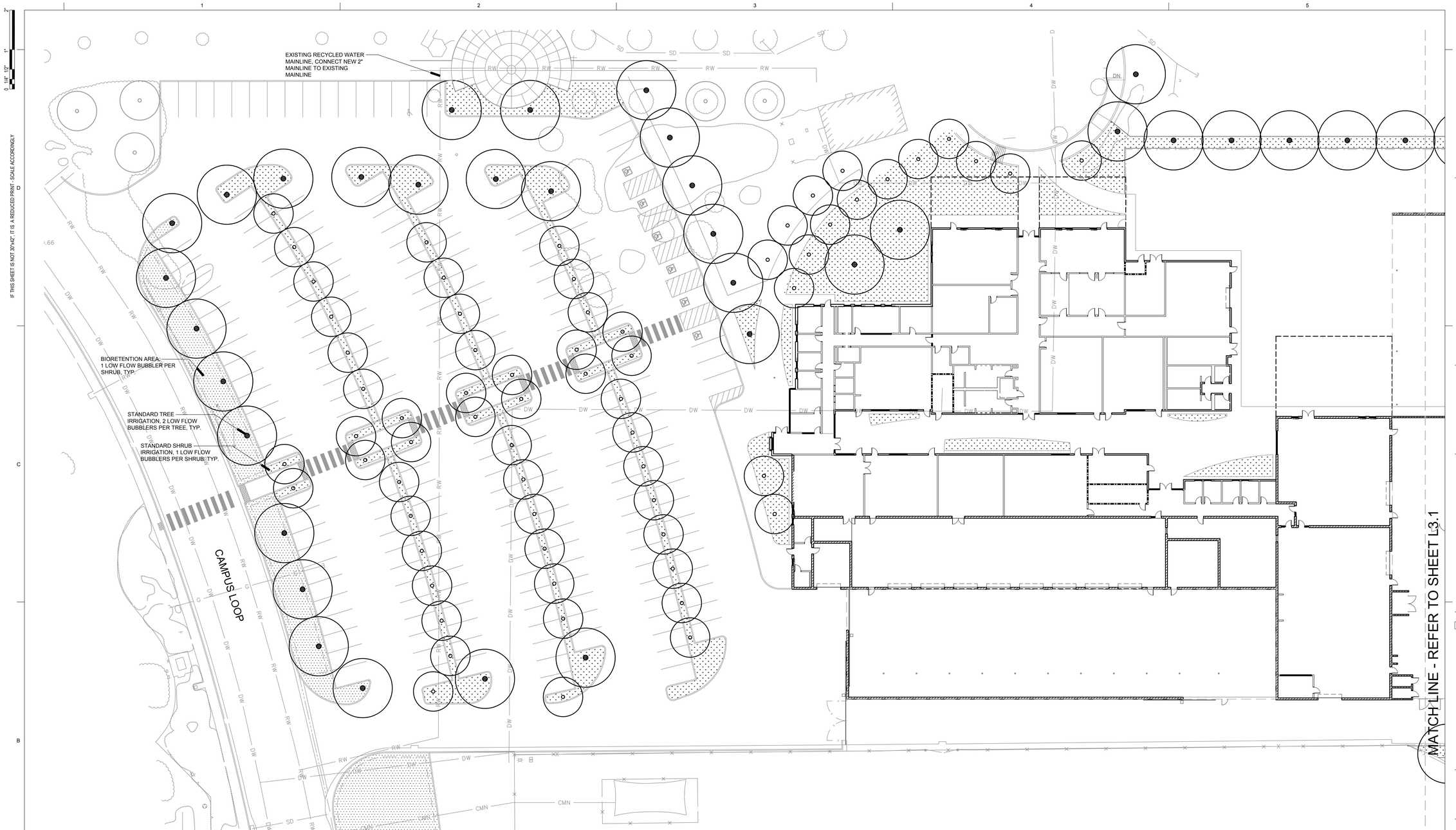
ANLA PROJECT NO:	1921

TITLE

LAYOUT PLAN

SHEET

L1.0



IRRIGATION LEGEND

SEE SHEET L3.1 FOR IRRIGATION NOTES

HYDROZONES:

- LOW
- MODERATE
- HIGH
- SPECIAL LANDSCAPE ZONE

NOTES:

1. HYDROZONES BASED ON PLANT SPECIES WATER USE FOR ZONE 1 PER WUCOLS IV, 2014.
2. HYDROZONE NUMBERS CORRESPOND TO VALVE NUMBERS.
3. TREE HYDROZONE AREAS ESTIMATED FROM MATURE CANOPY SIZE BY SPECIES.
4. ESTIMATED TOTAL WATER USE FOR THIS SITE IS APPROXIMATELY _____ GAL/YEAR.
5. THE WATER SUPPLY TYPE FOR THIS SITE IS _____.
6. THE LOCAL WATER PURVEYOR FOR THIS SITE IS _____.
7. PROPERTY OWNER CONTACT INFORMATION: _____.

C = GALLONS PER MINUTE
A = VALVE NUMBER
B = VALVE SIZE
D = DESCRIPTION

A C
B D

LATERAL PIPE SIZE CHART, SCH 40 PVC

GALLONS PER MINUTE	PIPE SIZE
0 - 7 GPM	3/4"
8 - 12 GPM	1"
13 - 22 GPM	1-1/4"
23 - 30 GPM	1-1/2"
31 - 50 GPM	2"
51 - 70 GPM	2-1/2"
71 - 110 GPM	3"

NORTH

SCALE: 1" = 20'-0"

0' 10' 20' 40'

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0 1/4" 1/2" 1" 2"

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TITLE

IRRIGATION PLAN

SHEET

L3.0

STRUCTURAL ABBREVIATIONS LEGEND

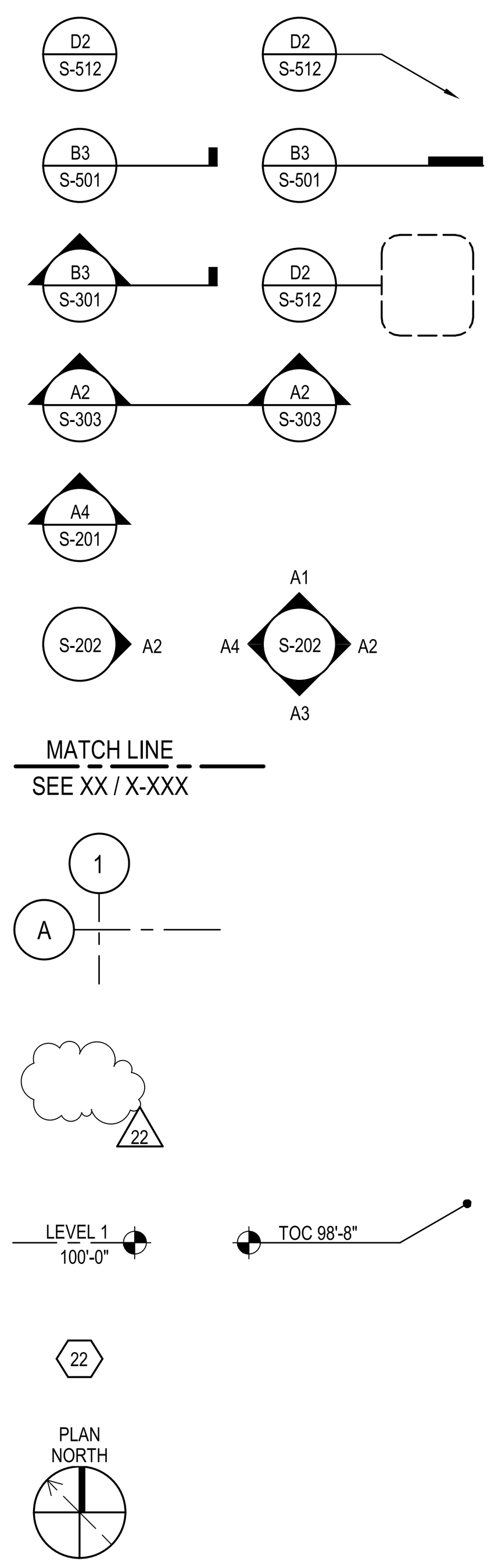
S- 014213_N001A

SEE UNITED STATES NATIONAL CAD STANDARD FOR ANY ABBREVIATIONS NOT LISTED BELOW. SEE BUILDING CODE FOR REFERENCED DESIGN AND MATERIALS SYMBOLS, ACRONYMS & NOTATIONS.

&	AND	JH	JOIST HANGER
@	AT	JT	JOINT
(E)	EXISTING	L	ANGLE, LONG, LENGTH
'	FOOT, FEET	LL	LIVE LOAD
"	INCH, INCHES	LLH	LONG LEG HORIZONTAL
#	NUMBER, POUND	LLV	LONG LEG VERTICAL
A/E	ARCHITECT / ENGINEER	LONG	LONGITUDINAL
AB	ANCHOR BOLT	LS	LAG SCREW
ABV	ABOVE	LWC	LIGHT WEIGHT CONCRETE
ADDL	ADDITIONAL	MAX	MAXIMUM
AFF	ABOVE FINISHED FLOOR	MB	MACHINE BOLT
AFG	ABOVE FINISHED GRADE	MC	MISCELLANEOUS CHANNEL
AFS	ABOVE FINISHED SLAB	MCJ	MASONRY CONTROL JOINT
ALT	ALTERNATE	MDJ	MASONRY DOWEL JOINT
ALUM	ALUMINUM	MECH	MECHANICAL
APPROX	APPROXIMATE	MEJ	MASONRY EXPANSION JOINT
ARCH	ARCHITECT	MFR	MANUFACTURER
ATR	ALL THREAD ROD	MIN	MINIMUM
BFF	BELOW FINISH FLOOR	MISC	MISCELLANEOUS
BKG	BACKING	MKJ	MASONRY KEY JOINT
BLDG	BUILDING	MRJ	MASONRY RAKE JOINT
BLKG	BLOCKING	NA	NOT APPLICABLE
BLW	BELOW	NF	NEAR FACE
BM	BEAM	NIC	NOT IN CONTRACT
BMU	BRICK MASONRY UNIT	NTS	NOT TO SCALE
BN	BOUNDARY NAIL	NWC	NORMAL WEIGHT CONCRETE
BOS	BOTTOM OF STEEL	O/	OVER
BOT	BOTTOM	OC	ON CENTER
BTWN	BETWEEN	OD	OUTSIDE DIAMETER
C	CAMBER, CHANNEL	OPH	OPPOSITE HAND
CB	CARRIAGE BOLT	OPNG	OPENING
CBC	CALIFORNIA BUILDING CODE	OPP	OPPOSITE
CFSF	COLD-FORMED STEEL FRAMING	OR	OUTSIDE RADIUS
CG	CENTER OF GRAVITY	PAF	POWER ACTUATED FASTENER
CJ	CONSTRUCTION JOINT	PCC	PRECAST CONCRETE
CJP	COMPLETE JOINT PENETRATION	PCF	POUNDS PER CUBIC FOOT
CL	CENTER LINE	PJP	PARTIAL JOINT PENETRATION
CLR	CLEAR	PL	PLATE, PROPERTY LINE
CMU	CONCRETE MASONRY UNIT	PLF	POUNDS PER LINEAR FOOT
COL	COLUMN	PREFAB	PREFABRICATE
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONN	CONNECT, CONNECTION	PSI	POUNDS PER SQUARE INCH
CONT	CONTINUE, CONTINUOUS	PTW	PRESERVATIVE TREATED WOOD
CRS	COLD ROLLED STEEL	QTY	QUANTITY
CSK	COUNTER SUNK	R	RADIUS, RISER
CTR	CENTER	REBAR	REINFORCING STEEL BAR
D	PENNY (NAIL), DEEP, DEPTH	REINF	REINFORCE, REINFORCING
DBL	DOUBLE	REQ	REQUIRE, REQUIRED
DCW	DEMAND CRITICAL WELD	RND	ROUND
DEG	DEGREE	RO	ROUGH OPENING
DEMO	DEMOLITION	RS	ROUGH SAWN
DET	DETAIL	RWD	REDWOOD
DIA	DIAMETER	S	SPACED, SPACING, SPLICE, STEP
DIAG	DIAGONAL	SAD	SEE ARCHITECTURAL DRAWINGS
DIM	DIMENSION	SCHED	SCHEDULE
DJ	DOWEL JOINT	SDST	SELF-DRILLING SELF-TAPPING
DL	DEAD LOAD	SE	STRUCTURAL ENGINEER
DO	DITTO, DO OVER	SECT	SECTION
DOUG FIR	DOUGLAS FIR	SFRS	SEISMIC FORCE RESISTING SYSTEM
DWG	DRAWING	SHTHG	SHEATHING
DWL	DOWEL	SIM	SIMILAR
EA	EACH	SJ	SHRINKAGE JOINT
EE	EACH END	SL	SNOW LOAD
EF	EACH FACE	SP	STRUCTURAL PANEL
EJ	EXPANSION JOINT	SPEC	SPECIFICATION
EL	ELEVATION	SQ	SQUARE
ELEC	ELECTRIC, ELECTRICAL	SST	STAINLESS STEEL
ELEV	ELEVATOR	STAG	STAGGERED
EMBED	EMBEDMENT	STD	STANDARD
EN	EDGE NAIL	STIF	STIFFENER
EOS	EDGE OF SLAB	STIR	STIRRUP
EQ	EQUAL, EQUALLY	STL	STEEL
ES	EACH SIDE	STRUCT	STRUCTURAL
EW	EACH WAY	SYMM	SYMMETRICAL
EXT	EXTERIOR	T	TREAD, THICKNESS
F/F	FACE TO FACE	T&B	TOP & BOTTOM
FA	FRAMING ANGLE	T&G	TONGUE & GROOVE
FB	FLAT BAR	THK	THICKNESS
FDTN	FOUNDATION	THRU	THROUGH
FIN	FINISH	TJ	TOOL JOINT
FLG	FLANGE	TN	TOE NAIL
FLR	FLOOR	TOB	TOP OF BEAM
FN	FIELD NAIL	TOC	TOP OF CURB/CONCRETE
FOC	FACE OF CONCRETE/CURB	TOF	TOP OF FRAMING/FOOTING/FLOOR
FOF	FACE OF FINISH	TOJ	TOP OF JOIST
FOM	FACE OF MASONRY	TOM	TOP OF MASONRY
FOS	FACE OF STUD	TOP	TOP OF PARAPET
FOW	FACE OF WALL	TOS	TOP OF STEEL
FRMG	FRAMING	TOSP	TOP OF STRUCTURAL PANEL
FRTW	FIRE RETARDANT TREATED WOOD	TOT	TOP OF TRUSS
FS	FAR SIDE	TOW	TOP OF WALL
FT	FEET, FOOT	TS	TUBE STEEL
FTG	FOOTING	TYP	TYPICAL
FURG	FURRING	UC	UNDERCUT
GA	GAGE	UNO	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GLB	GLUED LAMINATED BEAM	VERT	VERTICAL
GR	GRADE	VIF	VERIFY IN FIELD
H	HIGH, HEIGHT	VR	VAPOR RETARDER
HDR	HEADER	W	WIDE, WIDTH, WELD, W-SHAPE
HGR	HANGER	W/	WITH
HLDN	HOLDDOWN	W/O	WITHOUT
HORIZ	HORIZONTAL	WF	WIDE FLANGE
HS	HIGH STRENGTH	WHS	WELDED HEADED STUD
HSB	HIGH STRENGTH BOLT	WL	WIND LOAD
HSS	HOLLOW STRUCTURAL SECTION	WO	WHERE OCCURS
HT	HEIGHT	WP	WORKING POINT
ICC	INTERNATIONAL CODE COUNCIL	WT	WEIGHT, W TEE-SHAPE
ID	INSIDE DIAMETER	WTS	WELDED THREADED STUD
IJ	ISOLATION JOINT	WWR	WELDED WIRE REINFORCEMENT
INFO	INFORMATION	XS	EXTRA STRONG
INT	INTERIOR	XXS	DOUBLE EXTRA STRONG
IR	INSIDE RADIUS		

STRUCTURAL SYMBOLS LEGEND

SN011000-004



DETAIL INDICATOR - REFERENCE & DETAIL INDICATOR - ITEM

DETAIL INDICATOR - SECTION & DETAIL INDICATOR - SECTION ITEM

SECTION INDICATOR - PARTIAL BUILDING/WALL DETAIL INDICATOR - AREA

SECTION INDICATOR - BUILDING

ELEVATION INDICATOR - EXTERIOR

ELEVATION INDICATOR - INTERIOR, SINGLE & MULTIPLE VIEW

MATCH LINE INDICATOR

REFERENCE GRID WITH REFERENCE GRID LINES

REVISION INDICATOR & REVISION CLOUD

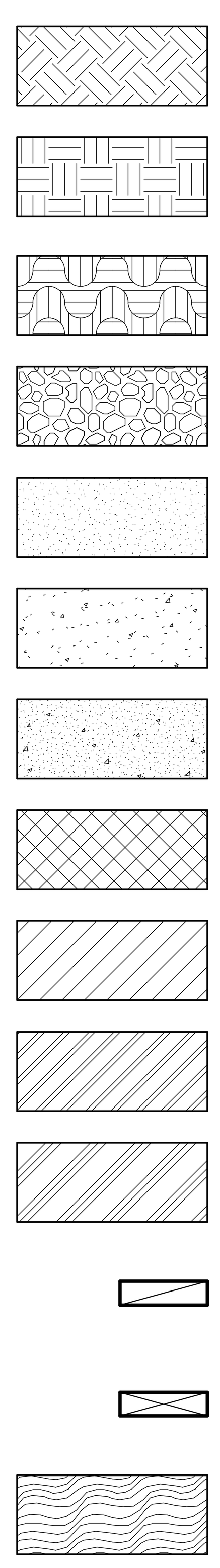
ELEVATION INDICATOR - LEVEL & SPOT

KEYNOTE INDICATOR

PLAN NORTH & TRUE NORTH INDICATOR

MATERIAL SYMBOL LEGEND

S- 011000_N006A
170125. Q2



EARTH

EARTH, COMPACT FILL

EARTH, ROCK

GRAVEL, ROCK FILL

SAND, MORTAR, GROUT

CONCRETE, CAST IN PLACE

CONCRETE, PRE-CAST OR TILT UP

MASONRY, CLAY BRICK

MASONRY, CONCRETE

STEEL

ALUMINUM

WOOD BLOCKING OR SHIM

WOOD FRAMING CONTINUOUS

WOOD

STRUCTURAL GENERAL NOTES

S- 014100_N004A
190526. Q2

1. THE STRUCTURAL NOTES AND TYPICAL DETAILS, WHETHER SPECIFICALLY REFERENCED OR NOT, ARE GENERAL AND APPLY TO ALL CONSTRUCTION DOCUMENTS. PROVIDE ALL STRUCTURAL ELEMENTS INDICATED IN THE STRUCTURAL NOTES AND TYPICAL DETAILS AS REQUIRED TO CONFORM TO THE FINISHED PROJECT AS INDICATED IN OTHER CONSTRUCTION DOCUMENTS. PROVIDE ALL STRUCTURAL ELEMENTS INDICATED IN OTHER CONSTRUCTION DOCUMENTS. STRUCTURAL CONSTRUCTION DOCUMENTS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONSTRUCTION DOCUMENTS. SEE OTHER CONSTRUCTION DOCUMENTS FOR COMPLETE PROJECT REQUIREMENTS.
2. REFERENCES TO CONSTRUCTION DOCUMENTS ARE TO THE ENFORCEMENT AGENCY APPROVED DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT. SUPPLEMENTAL DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ADDENDA, REVISED DRAWINGS, FIELD INSTRUCTIONS AND MODIFICATIONS PRODUCED FOR THIS PROJECT, SHALL ALSO BE CONSIDERED A CONSTRUCTION DOCUMENT. ALL REQUIREMENTS OF THE INITIALLY APPROVED CONSTRUCTION DOCUMENTS SHALL APPLY TO ANY SUPPLEMENTAL DOCUMENTS.
3. WHERE THE CONSTRUCTION DOCUMENTS INDICATE TO NOTIFY THE STRUCTURAL ENGINEER, SUCH NOTIFICATION SHALL BE SUBMITTED IN WRITING WITH SUFFICIENT ALLOWANCE FOR A REASONABLE TIME PERIOD FOR REVIEW, DESIGN, ENFORCEMENT AGENCY APPROVAL AS REQUIRED AND WRITTEN RESPONSE SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. OBTAIN WRITTEN RESPONSE BEFORE PROCEEDING WITH THE AFFECTED WORK.
4. CAREFULLY EXAMINE THE CONSTRUCTION DOCUMENTS AND NOTIFY THE STRUCTURAL ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITHIN THE STRUCTURAL CONSTRUCTION DOCUMENTS AND BETWEEN ALL OTHER CONSTRUCTION DOCUMENTS. DEVIATIONS SHALL NOT BE MADE TO THE REQUIREMENTS INDICATED IN THE STRUCTURAL CONSTRUCTION DOCUMENTS.
5. PORTIONS OF THESE CONSTRUCTION DOCUMENTS ARE DIAGRAMMATIC ONLY. ITEMS INCLUDING, BUT NOT LIMITED TO, LOCATIONS, SIZES, QUANTITIES, ACCESSORIES AND CONNECTIONS ARE INDICATED IN A REPRESENTATIONAL MANNER AND MAY NOT BE COMPLETELY SHOWN. PROVIDE ALL WORK AND MATERIALS NECESSARY TO COMPLETE THE PROJECT AS REPRESENTED IN THE CONSTRUCTION DOCUMENTS.
6. DIMENSIONS AND ELEVATIONS INDICATED ARE FOR STRUCTURAL ELEMENTS ONLY. ELEVATIONS SHOWN ARE BASED ON A REFERENCE ELEVATION. COORDINATE REFERENCE ELEVATIONS WITH ACTUAL ELEVATIONS. COORDINATE WITH ALL OTHER CONSTRUCTION DOCUMENTS FOR DIMENSIONS AND ELEVATIONS NOT INDICATED ON THE STRUCTURAL CONSTRUCTION DOCUMENTS. DO NOT SCALE DRAWINGS.
7. CONSTRUCTION SHALL COMPLY WITH ALL BUILDING, HEALTH AND SAFETY STANDARDS, CODES AND REGULATIONS APPLICABLE TO THIS PROJECT. NOTHING IN THE CONSTRUCTION DOCUMENTS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE STANDARDS, CODES AND REGULATIONS.
8. REFERENCES TO STANDARDS, CODES AND REGULATIONS INCLUDING, BUT NOT LIMITED TO, ICC, IBC, CBC, ACI, ASTM, ASCE, ANSI, AWS, AISI, AITC AND AISC SHALL BE TO THE LATEST EDITION AS ADOPTED BY THE ENFORCEMENT AGENCY.
9. FEATURES OF CONSTRUCTION INDICATED ARE TYPICAL. WHERE FEATURES ARE NOT FULLY OR SPECIFICALLY INDICATED BY THE CONSTRUCTION DOCUMENTS, THEIR CONSTRUCTION SHALL BE AS INDICATED FOR IDENTICAL OR SIMILAR FEATURES ELSEWHERE IN THE CONSTRUCTION DOCUMENTS. IF ANY CONDITIONS REQUIRE CONSTRUCTION DIFFERENT THAN THAT INDICATED ON THE CONSTRUCTION DOCUMENTS, NOTIFY THE STRUCTURAL ENGINEER.
10. STRUCTURAL ELEMENTS SHALL NOT BE REMOVED OR MODIFIED UNLESS INDICATED IN THE STRUCTURAL CONSTRUCTION DOCUMENTS. IF STRUCTURAL ELEMENTS INTERFERE WITH THE WORK INDICATED IN ANY OTHER CONSTRUCTION DOCUMENTS, NOTIFY THE STRUCTURAL ENGINEER.
11. THE CONSTRUCTION DOCUMENTS AND THE DESIGNS INCORPORATED THEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, ARE NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT.
12. STRUCTURAL ELEMENTS REPRESENTED IN THE CONSTRUCTION DOCUMENTS ARE INDICATED IN THEIR COMPLETED CONFIGURATION. THE CONSTRUCTION DOCUMENTS DO NOT INDICATE MEANS, METHODS OR SEQUENCES OF CONSTRUCTION UNLESS SPECIFICALLY NOTED OTHERWISE. PROVIDE ALL MEASURES NECESSARY AS REQUIRED FOR THE PROTECTION OF LIFE AND PROPERTY AND TO ASSURE THE CORRECT AND ACCURATE STRUCTURE GEOMETRY AND STABILITY DURING CONSTRUCTION. MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, PROVIDING ADEQUATE FORMING, SHORING AND BRACING. MEASURES SHALL REMAIN IN PLACE UNTIL THE STRUCTURAL ELEMENTS AND ALL OTHER STRUCTURAL ELEMENTS USED TO SUPPORT THEM HAVE BEEN COMPLETED AND HAVE ATTAINED THEIR REQUIRED DESIGN STRENGTHS.
13. PROTECT ALL ELEMENTS, WHETHER CONCEALED OR NOT, INCLUDING, BUT NOT LIMITED TO, PROPERTIES, STRUCTURES, FINISHES, STREETS, LANDSCAPING AND UTILITIES ADJACENT TO OR ON THIS SITE DURING THE CONSTRUCTION OF THIS PROJECT. SHOULD DAMAGE OCCUR TO ANY ELEMENTS, THEY SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER. CONTROL ITEMS SUCH AS, BUT NOT LIMITED TO, DUST, DIRT, WATER, FUMES, SMOKE, TRASH, NOISE AND VIBRATION CREATED AS A RESULT OF ANY OPERATIONS DURING CONSTRUCTION IN CONFORMANCE WITH APPLICABLE STANDARDS, CODES AND REGULATIONS.
14. STRUCTURAL DESIGN LOADS, STRENGTHS, CAPACITIES AND CRITERIA INDICATED ON THE CONSTRUCTION DOCUMENTS ARE FOR THE COMPLETED STRUCTURE ONLY. THE USE OF ANY PART OR PARTS OF THE INCOMPLETE OR COMPLETED STRUCTURE FOR THE SUPPORT OF CONSTRUCTION ITEMS INCLUDING, BUT NOT LIMITED TO, OTHER PORTIONS OF THE STRUCTURE, PERSONNEL, MATERIALS AND EQUIPMENT IS LIMITED TO THE SAFE CAPACITY OF THE STRUCTURE AT THE TIME IT IS TO BE USED FOR SUCH SUPPORT. PROVIDE ALL MEASURES NECESSARY AS REQUIRED TO PREVENT OVERLOADING, EXCESSIVE MOVEMENT AND DAMAGE TO ANY PART OR PARTS OF THE STRUCTURE.
15. IF SUBSTITUTIONS ARE REQUESTED FOR STRUCTURAL ELEMENTS INDICATED IN THE CONSTRUCTION DOCUMENTS, NOTIFY THE STRUCTURAL ENGINEER. SUBMIT DATA AND DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, COMPARATIVE QUALITY, SUITABILITY, PERFORMANCE, STRUCTURAL CAPACITY, ICC APPROVAL AND ENFORCEMENT AGENCY ACCEPTABILITY SUBSTANTIATING THE COMPLETE COMPLIANCE OF EACH PROPOSED SUBSTITUTION WITH THE CONSTRUCTION DOCUMENTS. ONLY ONE REQUEST FOR SUBSTITUTION WILL BE ALLOWED FOR EACH STRUCTURAL ELEMENT. SUBSTITUTIONS WILL NOT BE CONSIDERED WHEN SUBMITTALS ARE INCOMPLETE OR ACCEPTANCE WOULD REQUIRE REVISIONS TO THE CONSTRUCTION DOCUMENTS. PROVIDE OWNER REIMBURSEMENT FOR SERVICES REQUIRED TO OBTAIN ENFORCEMENT AGENCY APPROVAL OF SUBSTITUTIONS. IF A PROPOSED SUBSTITUTION SUBMITTAL IS NOT COMPLETE, NOT ACCEPTABLE TO THE STRUCTURAL ENGINEER, OR NOT APPROVED BY THE ENFORCEMENT AGENCY PROVIDE THE SPECIFIED ITEM AS INDICATED IN THE CONSTRUCTION DOCUMENTS. THE STRUCTURAL ENGINEER WILL BE THE SOLE JUDGE OF THE ACCEPTABILITY OF THE PROPOSED SUBSTITUTION VERSUS THE SPECIFIED ITEM. ACCEPTANCE OF A SUBSTITUTION SHALL NOT BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
16. SCHEDULES, LEGENDS, ABBREVIATIONS, TYPICAL NOTES AND TYPICAL DETAILS ON THE STRUCTURAL CONSTRUCTION DOCUMENTS MAY REFERENCE STRUCTURAL ELEMENTS OR REQUIREMENTS NOT SPECIFICALLY INDICATED OR REQUIRED ELSEWHERE IN THE CONSTRUCTION DOCUMENTS.
17. THE STRUCTURAL CONSTRUCTION DOCUMENTS ARE NOT COMPLETE AND READY FOR CONSTRUCTION UNTIL THEY ARE APPROVED BY THE ENFORCEMENT AGENCY AND SIGNED BY THE STRUCTURAL ENGINEER.

FIRE / SMOKE PROTECTION OF STRUCTURE

S- 078000_N001A
190605. Q2

1. THE FIRE RESISTANCE RATING OF STRUCTURAL MEMBERS AND ASSEMBLIES SHALL BE IN ACCORDANCE WITH THE BUILDING CODE AND THE REQUIREMENTS INDICATED IN THE CONSTRUCTION DOCUMENTS.
2. SEE THE NONSTRUCTURAL CONSTRUCTION DOCUMENTS FOR THE BUILDING CONSTRUCTION TYPE AND THE FIRE AND SMOKE PROTECTION MATERIALS, SYSTEMS OR ASSEMBLIES REQUIRED TO PROVIDE THE NECESSARY FIRE RESISTANCE RATING FOR STRUCTURAL BUILDING ELEMENTS.
3. FIRE RESISTANCE RATINGS SHALL BE MAINTAINED FOR OPENINGS OR PENETRATIONS THROUGH STRUCTURAL BUILDING ELEMENTS THAT ARE PART OF THE FIRE AND SMOKE PROTECTION SYSTEMS OR ASSEMBLIES.
4. FIREBLOCKING AND DRAFTSTOPPING SHALL BE PROVIDED AT STRUCTURAL FRAMING IN COMBUSTABLE CONCEALED LOCATIONS IN ACCORDANCE WITH THE BUILDING CODE.
5. WHEN FIRE PROTECTION IS REQUIRED, THE FIRE PROTECTED PRIMARY STRUCTURAL FRAME SHALL INCLUDE ALL OF THE FOLLOWING STRUCTURAL MEMBERS:
   · THE COLUMNS
   · STRUCTURAL MEMBERS HAVING DIRECT CONNECTIONS TO THE COLUMNS, INCLUDING GIRDERS, BEAMS, TRUSSES AND SPANDRELS
   · MEMBERS OF THE FLOOR CONSTRUCTION AND ROOF CONSTRUCTION HAVING DIRECT CONNECTIONS TO THE COLUMNS
   · BRACING MEMBERS THAT ARE ESSENTIAL TO THE VERTICAL STABILITY OF THE PRIMARY STRUCTURAL FRAME UNDER GRAVITY LOADING WHETHER OR NOT THE BRACING MEMBER CARRIES GRAVITY LOADS
6. WHEN FIRE PROTECTION IS REQUIRED, THE FOLLOWING STRUCTURAL MEMBERS SHALL BE CONSIDERED SECONDARY MEMBERS AND NOT PART OF THE FIRE PROTECTED PRIMARY STRUCTURAL FRAME:
   · STRUCTURAL MEMBERS NOT HAVING DIRECT CONNECTIONS TO THE COLUMNS
   · MEMBERS OF THE FLOOR CONSTRUCTION AND ROOF CONSTRUCTION NOT HAVING DIRECT CONNECTIONS TO THE COLUMNS
   · BRACING MEMBERS OTHER THAN THOSE THAT ARE PART OF THE PRIMARY STRUCTURAL FRAME
7. FIRE PROTECTION CONSTRUCTION CLASSIFICATIONS USED FOR DETERMINING CONDITIONS OF RESTRAINT FOR FLOOR AND ROOF STRUCTURAL ASSEMBLIES AND FOR INDIVIDUAL BEAMS SHALL CONFORM TO ASTM E119. USE THE FOLLOWING FIRE PROTECTION CONSTRUCTION CLASSIFICATIONS, UNO:
   · UNRESTRAINED
     - WOOD FRAMING
     - COLD FORMED STEEL FRAMING
     - STEEL FRAMING SUPPORTED BY BEARING WALLS
     - CONCRETE FRAMING SUPPORTED BY BEARING WALLS
   · RESTRAINED
     - STEEL FRAMING
     - CONCRETE FRAMING

STRUCTURAL DESIGN CRITERIA

S- 014100_N003A
170125. Q2

BUILDING CODE: 2016 CBC

ENFORCEMENT AGENCY: DIVISION OF THE STATE ARCHITECT (DSA)

A. VERTICAL DESIGN CRITERIA (UNLESS OTHERWISE SHOWN OR NOTED)

ROOF LIVE LOADS:

- TYP ROOF AREA	20 PSF (REDUCIBLE)
- MECHANICAL & ELECTRICAL AREA	50 PSF (NON-REDUCIBLE)
- LANDSCAPED ROOF (UNOCCUPIED)	20 PSF (REDUCIBLE)

FLOOR LIVE LOADS:

- OFFICE/CLASSROOMS (W/ 15 PSF PARTITION LL)	50 PSF (REDUCIBLE)
- CORRIDORS ABOVE FIRST FLOOR	80 PSF (REDUCIBLE)
- FIRST FLOOR CORRIDORS	100 PSF (REDUCIBLE)
- STAIRS & EXITS	100 PSF (REDUCIBLE)
- ASSEMBLY AREAS	100 PSF (NON-REDUCIBLE)
- MECHANICAL & ELECTRICAL EQUIPMENT AREA	50 PSF (NON-REDUCIBLE)
- LIGHT STORAGE	125 PSF (NON-REDUCIBLE)
- HEAVY STORAGE	250 PSF (NON-REDUCIBLE)

GROUND SNOW LOAD: 0 PSF

B. LATERAL DESIGN CRITERIA

SEISMIC SITE CRITERIA: SS=?.??, S1 =0.??, SDS=0.??, SD1 =0.??, SITE CLASS: ?

BUILDING CRITERIA:
SEISMIC:
- RISK CATEGORY= ?
- IMPORTANCE FACTOR, I=1.00
- SEISMIC DESIGN CATEGORY = ?
- SEISMIC FORCE RESISTING SYSTEM: ?
- RESPONSE MODIFICATION FACTOR, R = ?
- DESIGN BASE SHEAR: V =
- SEISMIC RESPONSE COEFFICIENT, Cs=0.09
- ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
- HORIZONTAL IRREGULARITIES: TYPE 1A (TORSIONAL), TYPE 1B (EXTREME TORSIONAL),TYPE 2 (REENTRANT CORNER), TYPE 3 (DIAPHRAGM DISCONTINUITY), TYPE 4 (OUT-OF-PLANE OFFSET), TYPE 5 (NONPARALLEL)
- VERTICAL IRREGULARITIES: TYPE 1A (SOFT STORY), TYPE 1B (EXTREME SOFT STORY), TYPE 2 (MASS), TYPE 3 (GEOMETRIC), TYPE 4 (IN-PLANE DISCONTINUITY), TYPE 5A (WEAK STORY), TYPE 5B (EXTREME WEAK STORY)

BUILDING DISPLACEMENT (AMPLIFIED):

LEVEL	INTERSTORY DISPLACEMENT	TOTAL DISPLACEMENT
GROUND	0.00 IN	0.00 IN
SECOND FLOOR	?.?? IN	?.?? IN
ROOF	?.?? IN	?.?? IN

WIND:
ULTIMATE DESIGN WIND SPEED, V(ULT) = 110 MPH
NOMINAL DESIGN WIND SPEED, V(ASD) = 85 MPH
RISK CATEGORY = ?
WIND EXPOSURE = C
GCPI = +/- 0.18
COMPONENTS AND CLADDING WIND PRESSURES TO BE DETERMINED PER ASCE 7-10

C. SOIL DESIGN CRITERIA

SOIL INFO IS BASED ON GEOTECHNICAL REPORT BY:
NAME OF GEOTECHNICAL ENGINEER / REPORT NUMBER
DATED: REPORT DATE

SPREAD FOUNDATIONS:
- ALLOWABLE BEARING PRESSURE:
  DL + LL = ???? PSF
  DL + LL + LATERAL = ???? PSF
- COEFFICIENT OF FRICTION = ????
- ALLOWABLE PASSIVE PRESSURE = ??? PCF
- IF FRICTIONAL RESISTANCE AND PASSIVE PRESSURE ARE COMBINED, FRICTION IS REDUCED BY 50%

RETAINING WALLS:
- AT-REST EARTH PRESSURE = ?? PCF
- ACTIVE EARTH PRESSURE = ?? PCF
- SLOPED BACKFILL (<2H:1V) ADD ?? PSF TO VALUES ABOVE
- INCREMENTAL SEISMIC ACTIVE EARTH PRESSURE = ?? PCF ACTING AT ?.?? TIMES THE RETAINING WALL HEIGHT

STRUCTURAL DEFERRED SUBMITTALS

S- 013300_N001A
171002. Q2

1. THE FOLLOWING ITEMS SHALL BE SUBMITTED FOR DEFERRED APPROVAL BY THE ENFORCEMENT AGENCY PRIOR TO FABRICATION OR INSTALLATION.
2. SEE THE SPECIFICATIONS AND STRUCTURAL DESIGN CRITERIA FOR REQUIRED PERFORMANCE AND LOADING CRITERIA.
3. DEFERRED SUBMITTALS ARE SUBJECT TO ALL THE REQUIREMENTS OF OTHER SUBMITTALS.
4. SUBMITTAL DOCUMENTS AND SUPPORTING DESIGN CALCULATIONS SHALL BE STAMPED AND SIGNED BY A CALIFORNIA REGISTERED PROFESSIONAL ENGINEER.
5. DOCUMENTS AND CALCULATIONS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW FOR GENERAL CONFORMANCE WITH THE DESIGN OF THE PROJECT PRIOR TO SUBMITTAL TO THE ENFORCEMENT AGENCY.
6. DEFERRED SUBMITTAL ITEMS SHALL NOT BE FABRICATED OR INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE ENFORCEMENT AGENCY.

LIST OF DEFERRED SUBMITTALS:
1. STEEL JOISTS/JOIST GIRDERS
2. WOOD TRUSSES
3. ELEVATOR GUIDE RAILS AND SUPPORTS
4. WINDOW WALL SYSTEMS / STOREFRONTS
5. EXTERIOR WALL SYSTEMS
6. SKYLIGHTS
7. BLEACHERS
8. FIRE PUMPS & WATER TANKS
9. ACCESS FLOORS
10. STAGE RIGGING

PROJECT DIRECTORY

S- 011000_N005A
170125. Q2

OWNER
CHABOT-LAS POSITAS CCD
7600 DUBLIN BLVD
DUBLIN, CA 94568
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EMAIL: AKROLL@CLPCCD.ORG
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CIVIL ENGINEER
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ELECTRICAL ENGINEER
INTEGRAL GROUP
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OAKLAND, CA 94612
CONTACT: JOHN ANDARY
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MECHANICAL ENGINEER
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PLUMBING ENGINEER
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SACRAMENTO, CA 95811
CONTACT: DENNIS GUERRA
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351 8TH STREET
SAN FRANCISCO, CA 94103
CONTACT: Ray Enriquez
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STRUCTURAL ENGINEER
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1919 19TH STREET
SACRAMENTO, CA 95811
CONTACT: LUCAS JOLLY
PHONE: 916.558.1900

SECURITY
CATALYST
2789 NAPA VALLEY CORPORATE DRIVE
NAPA, CA 94558
CONTACT: Todd Anderson
PHONE: (707) 224-3020
EMAIL: todda@ccgnapa.com

STRUCTURAL SHEET INDEX

SN011000-001

SHEET NUMBER	SHEET NAME
A.S-111	BLDG A - PLAN - FOUNDATION - OVERALL
A.S-111A	BLDG A - PLAN - FOUNDATION - AREA A
A.S-111B	BLDG A - PLAN - FOUNDATION - AREA B
A.S-132	BLDG A - PLAN - ROOF FRAMING - OVERALL
A.S-132A	BLDG A - PLAN - ROOF FRAMING - AREA A
A.S-132B	BLDG A - PLAN - ROOF FRAMING - AREA B
A.S-201	BLDG A - 3D VIEWS
B.S-111	BLDG B - PLAN - FOUNDATION - OVERALL
B.S-111A	BLDG B - PLAN - FOUNDATION - AREA A
B.S-111B	BLDG B - PLAN - FOUNDATION - AREA B
B.S-111C	BLDG B - PLAN - FOUNDATION - AREA C
B.S-132	BLDG B - PLAN - ROOF FRAMING - OVERALL
B.S-132A	BLDG B - PLAN - ROOF FRAMING - AREA A
B.S-132B	BLDG B - PLAN - ROOF FRAMING - AREA B
B.S-132C	BLDG B - PLAN - ROOF FRAMING - AREA C
B.S-201	BLDG B - 3D VIEWS
B.S-311	BLDG B - SECTIONS - BUILDING
B.S-312	BLDG B - SECTIONS - BUILDING
B.S-313	BLDG B - SECTIONS - BUILDING
B.S-314	BLDG B - SECTIONS - BUILDING
S-001	GENERAL NOTES
S-011	TYPICAL NOTES
S-012	TYPICAL NOTES
S-013	TYPICAL NOTES
S-531	DETAILS - TYPICAL CONCRETE
S-532	DETAILS - TYPICAL CONCRETE
S-533	DETAILS - CONCRETE FOUNDATIONS AT MASONRY
S-541	DETAILS - TYPICAL MASONRY
S-542	DETAILS - TYPICAL MASONRY
S-543	DETAILS - TYPICAL MASONRY
S-551	DETAILS - TYPICAL STRUCTURAL STEEL BEAMS
S-552	DETAILS - TYPICAL STRUCTURAL STEEL
S-553	DETAILS - TYPICAL SFRS STRUCTURAL STEEL
S-554	DETAILS - TYPICAL STRUCTURAL STEEL LEDGERS AT MASONRY
S-555	DETAILS - TYPICAL STRUCTURAL STEEL
S-571	DETAILS - TYPICAL STEEL DECKING
S-591	DETAILS - TYPICAL COLD FORMED STEEL FRAMING
S-592	DETAILS - TYPICAL COLD FORMED STEEL FRAMING
SHEET COUNT: 38	

NORTH

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

LIONAKIS

1919 Nineteenth Street
Sacramento CA 95811
P 916.558.1900 F 916.558.1919
www.lionakis.com

CONSULTANT

FOR REVIEW ONLY / NOT FOR CONSTRUCTION
THE CONSTRUCTION DOCUMENTS HAVE NOT BEEN APPROVED BY THE ENFORCEMENT AGENCY AND ARE NOT COMPLETE OR READY FOR CONSTRUCTION. ELEMENTS, MEMBERS, SYSTEMS AND ASSOCIATED DETAILS AND SPECIFICATIONS MAY NOT BE SHOWN OR FULLY DEVELOPED. FOR BIDDING/ESTIMATING PURPOSES, UTILIZE ADDITIONAL MATERIALS AND QUANTITIES TO ACCOUNT FOR THOSE ITEMS NOT SHOWN OR FULLY DEVELOPED.

SEAL

FOR REVIEW ONLY, NOT FOR CONSTRUCTION

PROJECT
PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
COPYRIGHT:	LIONAKIS 2017

TITLE
GENERAL NOTES

SHEET
S-001

0 1/4" 1/2" 1" 2"

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

STRUCTURAL SUBMITTALS

S- 013300_N002A
170125. Q2

1. SUBMITTALS INCLUDE, BUT ARE NOT LIMITED TO, SHOP DRAWINGS, FABRICATION DRAWINGS, PLACEMENT DRAWINGS, CALCULATIONS, DESIGNS, TEST DATA, PRODUCT DATA, SAMPLES, CERTIFICATIONS AND REPORTS AS REQUIRED BY THE CONSTRUCTION DOCUMENTS.
2. SUBMITTALS, AS A MINIMUM, SHALL CONSIST OF TWO (2) COPIES OF EACH SHEET.
3. SUBMITTALS SHALL NOT CONTAIN NOR CONSIST OF REPRODUCTIONS OF THE CONSTRUCTION DOCUMENTS. SUBMITTALS CONTAINING REPRODUCTIONS OF ANY PORTION OF THE CONSTRUCTION DOCUMENTS ARE SUBJECT TO REJECTION.
4. EACH SUBMITTAL SHALL HAVE A COVER SHEET IDENTIFYING THE CONTENTS BY SPECIFICATION SECTION AND LISTING EACH ITEM AND SHEET NUMBER. EACH SUBMITTAL SHALL HAVE A UNIQUE IDENTIFICATION NUMBER.
5. PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER, STAMP SUBMITTALS INDICATING THEY HAVE BEEN REVIEWED AND APPROVED FOR COMPLETENESS AND CONFORMANCE WITH THE INTENT OF THE CONSTRUCTION DOCUMENTS. SUBMITTALS THAT ARE DETERMINED TO BE INCOMPLETE, IN THE JUDGMENT OF THE STRUCTURAL ENGINEER, WILL BE RETURNED WITHOUT REVIEW SO THEY CAN BE COMPLETED. THE STRUCTURAL ENGINEER SHALL NOT BE REQUIRED TO REVIEW PARTIAL SUBMISSIONS OR THOSE FOR WHICH SUBMISSIONS OF CORRELATED ITEMS HAVE NOT BEEN RECEIVED.
6. PRIOR TO SUBMISSION TO THE STRUCTURAL ENGINEER, THE OWNER'S TESTING LABORATORY SHALL STAMP THE FOLLOWING MARKED SUBMITTALS INDICATING THEY HAVE BEEN REVIEWED AND APPROVED FOR COMPLETENESS AND CONFORMANCE WITH THE INTENT OF THE CONSTRUCTION DOCUMENTS:
   - ■ CONCRETE MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - □ MASONRY GROUT MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - ■ WELDING PROCEDURE SPECIFICATIONS
7. SUBMITTALS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER PRIOR TO UTILIZATION, INSTALLATION, FABRICATION OR CONSTRUCTION OF ITEMS CONTAINED WITHIN THE SUBMITTALS.
8. SUBMITTALS SHALL BE DELIVERED TO THE STRUCTURAL ENGINEER TO ALLOW SUFFICIENT TIME, IN THE STRUCTURAL ENGINEER'S JUDGMENT, FOR A REASONABLE PERIOD FOR ADEQUATE REVIEW, ENFORCEMENT AGENCY APPROVAL AS REQUIRED AND RESPONSE SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. ALLOW THE STRUCTURAL ENGINEER THE GREATER SUBMITTAL REVIEW PERIOD OF: TEN (10) WORK DAYS; OR FIVE (5) WORK DAYS FOR EACH 100 SHEETS, OR PORTION THEREOF, FOR EACH SUBMITTAL. SUBMITTAL REVIEW PERIOD COMMENCES THE NEXT WORK DAY AFTER SUBMITTAL RECEIPT BY THE STRUCTURAL ENGINEER. CONCURRENT SUBMITTALS OF MULTIPLE PORTIONS OF THE SAME SUBMITTAL ITEM WILL BE REVIEWED IN THEIR ENTIRETY AS ONE SUBMITTAL SUBJECT TO THE REVIEW PERIOD LIMITATION ABOVE. SCHEDULE SUBMITTAL REVIEWS AND CONSTRUCTION ACCORDINGLY.
9. REVIEW OF SUBMITTALS BY THE STRUCTURAL ENGINEER WILL INCLUDE CHECKING FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS. IT WILL NOT INCLUDE REVIEW OF THE ACCURACY OR COMPLETENESS OF ITEMS SUCH AS QUANTITIES, DIMENSIONS, WEIGHTS OR GAUGES, FABRICATION PROCESSES, CONSTRUCTION MEANS OR METHODS, COORDINATION WITH THE WORK OF OTHER TRADES, OR CONSTRUCTION SAFETY PRECAUTIONS. REVIEW OF A SPECIFIC ITEM SHALL NOT INDICATE THAT THE STRUCTURAL ENGINEER HAS REVIEWED THE ENTIRE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOT BROUGHT TO THE STRUCTURAL ENGINEER'S ATTENTION IN WRITING.
10. SUBMITTALS PROCESSED BY THE STRUCTURAL ENGINEER ARE NOT CHANGE ORDERS.
11. SUBMITTALS THAT WILL REQUIRE ADDITIONAL REVIEW, IN THE STRUCTURAL ENGINEER'S JUDGMENT, WILL BE MARKED "RESUBMIT". THE SUBMITTAL SHALL BE REVISED AND RESUBMITTED FOR RE-REVIEW AND IS SUBJECT TO ALL THE REQUIREMENTS OF THE INITIAL SUBMITTAL. PROVIDE OWNER REIMBURSEMENT FOR STRUCTURAL ENGINEER COSTS INCURRED TO RE-REVIEW SUBMITTALS.
12. SUBMITTALS THAT HAVE BEEN REVIEWED AND RETURNED BY THE STRUCTURAL ENGINEER, REGARDLESS OF MARKINGS ON THE SUBMITTALS, SHALL NOT BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
13. THE MINIMUM REQUIRED STRUCTURAL SUBMITTALS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING MARKED ITEMS:
   - □ PILE FABRICATION DRAWINGS AND CALCULATIONS
   - ■ CONCRETE MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - ■ CONCRETE REINFORCING PLACEMENT DRAWINGS
   - ■ CONCRETE PRODUCT CERTIFICATION AND DATA SHEETS
   - ■ CONCRETE SLAB JOINT LAYOUT
   - ■ MASONRY REINFORCING PLACEMENT DRAWINGS
   - ■ MASONRY GROUT MIX DESIGNS AND SUBSTANTIATING TEST DATA
   - ■ MASONRY MORTAR MIX DESIGNS
   - ■ MASONRY PRODUCT CERTIFICATION AND DATA SHEETS
   - ■ STRUCTURAL STEEL SHOP DRAWINGS
   - ■ STEEL DECK PLACEMENT DRAWINGS AND DATA SHEETS
   - ■ WELDING PROCEDURE SPECIFICATIONS
   - □ METAL-PLATE-CONNECTED WOOD TRUSS PLACEMENT DRAWINGS AND CALCULATIONS
   - □ WOOD I-JOIST PLACEMENT DRAWINGS AND CALCULATIONS
   - □ METAL WEB WOOD JOIST PLACEMENT DRAWINGS AND CALCULATIONS
   - □ GLUED-LAMINATED TIMBER FABRICATION AND PLACEMENT DRAWINGS AND CERTIFICATIONS
   - □ PRE-ENGINEERED LUMBER CERTIFICATIONS AND DATASHEETS
   - □ OPEN WEB STEEL JOIST PLACEMENT DRAWINGS AND CALCULATIONS
   - □ PRE-ENGINEERED STEEL STAIR SHOP DRAWINGS AND CALCULATIONS
   - □ COLD-FORMED STEEL FRAMING PRODUCTS, ACCESSORIES, DATA SHEETS

STRUCTURAL TESTING & INSPECTION

S- 014500_N002A
181002. Q2

1. SPECIAL INSPECTION IS DEFINED AS THE INSPECTION OF THE MATERIALS, INSTALLATION, FABRICATION, ERECTION OR PLACEMENT OF COMPONENTS AND CONNECTIONS REQUIRING SPECIAL EXPERTISE TO ENSURE COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
   A. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PERFORM INSPECTIONS DURING CONSTRUCTION FOR ITEMS NOTED IN DSA FORM 103.
3. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE ENFORCEMENT AGENCY AND THE ARCHITECT/STRUCTURAL ENGINEER, FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
4. SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE ENFORCEMENT AGENCY, OWNER, CONTRACTOR AND ARCHITECT/STRUCTURAL ENGINEER. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS.
5. DISCREPANCIES IN THE INSPECTED WORK SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENFORCEMENT AGENCY, OWNER, CONTRACTOR AND ARCHITECT/STRUCTURAL ENGINEER PRIOR TO THE COMPLETION OF THAT PHASE OF THE WORK.
6. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY, OWNER, CONTRACTOR AND ARCHITECT/STRUCTURAL ENGINEER AT THE COMPLETION OF THE WORK INCLUDED IN THE CONSTRUCTION DOCUMENTS.
7. SCHEDULE AND COORDINATE ALL STRUCTURAL TESTS AND SPECIAL INSPECTIONS. NOTIFY THE SPECIAL INSPECTOR 48 HOURS MINIMUM PRIOR TO PERFORMING ANY WORK REQUIRING THE SPECIAL INSPECTOR'S PRESENCE. COORDINATE WITH THE SPECIAL INSPECTOR SO THAT THE WORK REQUIRING THE TESTS AND INSPECTIONS NOTED ABOVE IS ACCESSIBLE AND EXPOSED FOR TESTING AND INSPECTION PURPOSES. REMOVE AND/OR REPLACE MATERIALS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER TO ALLOW TESTS AND INSPECTIONS.

STRUCTURAL OBSERVATION

S- 014500_N001A
170125. Q2

1. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY THE STRUCTURAL OBSERVER (THE STRUCTURAL ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE) FOR GENERAL CONFORMANCE TO THE ENFORCEMENT AGENCY APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM.
2. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR THE INSPECTIONS REQUIRED BY THE ENFORCEMENT AGENCY OR BY OTHER SECTIONS OF THE BUILDING CODE. REQUIRED INSPECTIONS DO NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR STRUCTURAL OBSERVATION.
3. STRUCTURAL OBSERVATION DOES NOT INCLUDE THE SUPERVISION OF CONSTRUCTION FOR PROPER EXECUTION OF THE WORK SHOWN IN THE CONSTRUCTION DOCUMENTS.
4. THE FOLLOWING COMPLETED CONSTRUCTION STAGES MARKED ARE SUBJECT TO STRUCTURAL OBSERVATION IF DEEMED NECESSARY DURING CONSTRUCTION BY THE STRUCTURAL OBSERVER:
   - ■ FOUNDATION EXCAVATIONS AND REINFORCEMENT PRIOR TO CONCRETE PLACEMENT
   - □ FORMWORK CONSTRUCTION AND REINFORCEMENT PRIOR TO CONCRETE PLACEMENT
   - □ CONCRETE TILT-UP PANEL INSTALLATION
   - □ CONCRETE PRE-CAST ELEMENT PANEL INSTALLATION
   - ■ MASONRY INSTALLATION AND REINFORCEMENT PRIOR TO GROUT PLACEMENT
   - ■ STEEL FRAMING ERECTION
   - □ STEEL DECK INSTALLATION AND REINFORCEMENT PRIOR TO CONCRETE FILL PLACEMENT
   - ■ STEEL DECK INSTALLATION ON FRAMING
   - □ WOOD FRAMING ERECTION
   - □ WOOD STRUCTURAL PANEL INSTALLATION ON FRAMING
   - □ WOOD HARDWARE AND CONNECTOR INSTALLATION ON STRUCTURAL FRAMING
   - ■ COLD-FORMED STEEL FRAMING ERECTION
   - ■ PRE-FABRICATED STRUCTURAL ELEMENT INSTALLATION
   - ■ PRIOR TO THE CLOSING OF ANY PHASE
   - ■ STRUCTURAL SYSTEM COMPLETION
5. NOTIFY THE STRUCTURAL OBSERVER 48 HOURS MINIMUM IN ADVANCE OF THE COMPLETION OF THE ABOVE CONSTRUCTION STAGES TO FACILITATE STRUCTURAL OBSERVATIONS BY THE STRUCTURAL OBSERVER. COORDINATE WITH THE STRUCTURAL OBSERVER SO THAT THE WORK FOR THE CONSTRUCTION STAGES NOTED ABOVE IS ACCESSIBLE AND EXPOSED FOR STRUCTURAL OBSERVATION PURPOSES. REMOVE AND/OR REPLACE MATERIALS AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER TO ALLOW STRUCTURAL OBSERVATION.
6. DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS NOTED DURING STRUCTURAL OBSERVATIONS SHALL BE CORRECTED AT NO ADDITIONAL COST TO THE OWNER.
7. PROVIDE OWNER REIMBURSEMENT FOR DESIGN PROFESSIONAL COSTS INCURRED TO CORRECT DEVIATIONS AND TO MAKE REVISIONS TO THE CONSTRUCTION DOCUMENTS, INCLUDING OBTAINMENT OF ENFORCEMENT AGENCY APPROVAL AS REQUIRED.
8. CORRECTIVE WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE ENFORCEMENT AGENCY APPROVED CONSTRUCTION DOCUMENTS AND THE BUILDING CODE.
9. AT THE COMPLETION OF THE WORK INCLUDED IN THE CONSTRUCTION DOCUMENTS, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE ENFORCEMENT AGENCY A WRITTEN STATEMENT THAT THE STRUCTURAL OBSERVATIONS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES THAT, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.

FIRE SPRINKLER COORDINATION

S- 210000_N001A
180620. Q2

1. AUTOMATIC FIRE SPRINKLER SYSTEM (AFSS) DESIGN AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE, ASCE 7, AND NFPA 13.
2. THE ABOVE GROUND PORTION OF THE AFSS SHALL BE DESIGNED BY A CALIFORNIA LICENSED MECHANICAL ENGINEER, FIRE PROTECTION ENGINEER, OR A DESIGN/BUILD C-16 FIRE PROTECTION CONTRACTOR.
3. INSTALLATION SHALL NOT BEGIN PRIOR TO OBTAINING APPROVAL FROM THE ENFORCEMENT AGENCY AND REVIEW BY ARCHITECT AND STRUCTURAL ENGINEER.
4. INSTALL AFSS PIPING WITH 2” MINIMUM CLEARANCE FROM STRUCTURAL MEMBERS NOT PENETRATED OR USED TO SUPPORT THE PIPING.
5. INSTALL APPROVED SEISMIC SEPARATION ASSEMBLIES WHERE AFSS PIPING, REGARDLESS OF SIZE, CROSSES BUILDING SEISMIC SEPARATION JOINTS AT GROUND LEVEL AND ABOVE. PROVIDE A FOUR-WAY BRACE TO PIPING AT EACH SIDE OF ASSEMBLIES. ATTACH BRACE TO PIPING, NOT THE ASSEMBLIES, WITHIN 6’ OF THE ASSEMBLIES.
6. AFSS PIPING SHALL PASS THROUGH HOLES/SLEEVES IN WALLS, FLOORS, ROOFS OR FOUNDATIONS. COMPLY WITH ALL STRUCTURAL DETAILS AND THE FOLLOWING: PROVIDE 2” NOMINAL CLEAR AT HOLES/SLEEVES FOR PIPES 3 1/2” AND SMALLER. PROVIDE 4” NOMINAL CLEAR AT HOLES/SLEEVES FOR PIPES 4” AND LARGER.
7. AFSS PIPING SHALL NOT PENETRATE OR INTERRUPT FRAMING MEMBERS INCLUDING BUT NOT LIMITED TO STUDS, POSTS, COLUMNS, JOISTS, RAFTERS, BEAMS AND GIRDERS. DO NOT CUT OR DRILL FRAMING MEMBERS UNLESS SPECIFICALLY NOTED.
8. AFSS PIPING HANGERS, COMPONENTS AND FASTENERS SHALL BE LISTED, FERROUS, AND DESIGNED TO SUPPORT FIVE TIMES THE TRIBUTARY WEIGHT OF WATER-FILLED PIPE PLUS 250 POUNDS.
9. PIPING HANGERS SHALL NOT BE SUBJECTED TO BENDING. INSTALL WITH SWIVELS, EYE NUTS, ARTICULATING ATTACHMENTS OR OTHER DEVICES TO PREVENT BENDING.
10. PIPING HANGERS SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. C-TYPE CLAMPS USED TO ATTACH HANGERS TO THE BUILDING STRUCTURE SHALL BE EQUIPPED WITH A RESTRAINING STRAP. POWER ACTUATED FASTENERS SHALL NOT BE USED TO ATTACH HANGERS TO THE BUILDING STRUCTURE.
11. STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE TRIBUTARY WEIGHT OF WATER-FILLED PIPE PLUS 250 POUNDS AT EACH SPRINKLER SUPPORT POINT, WITHIN FRAMING LIMITATIONS NOTED BELOW. INSTALL TRAPEZE HANGERS WHERE NECESSARY TO SUPPORT PIPING FROM APPROPRIATE STRUCTURAL FRAMING MEMBERS.
12. THE MAXIMUM DISTANCE BETWEEN AFSS PIPING HANGERS SHALL NOT EXCEED: 12’ FOR STEEL PIPE 1 1/4” AND SMALLER; 15’ FOR STEEL PIPE 1 1/2” AND LARGER; 12’ FOR THREADED LIGHTWALL STEEL PIPE 1” TO 3”.
13. PROVIDE ONE HANGER MINIMUM ON EACH SECTION OF PIPE, BETWEEN EACH BRANCH LINE AT MAINS, AND AT THE ENDS OF MAINS. HANGER CLEARANCE TO UPRIGHT SPRINKLER SHALL BE 3” MINIMUM.
14. WOOD FRAMING SUPPORTING AFSS PIPING HANGERS SHALL COMPLY WITH THE FOLLOWING: DO NOT SUPPORT PIPING FROM STRUCTURAL PANELS OR 2X AND SMALLER FRAMING/DECKING UNO. SUPPORT PIPING 2” AND SMALLER FROM 3X MINIMUM FRAMING/DECKING OR WITH THROUGH BOLTS TO THE SIDES OF 2X FRAMING. SUPPORT PIPING 2 1/2” TO 6” FROM 4X MINIMUM FRAMING. SUPPORT PIPING 8” FROM 6X MINIMUM FRAMING. DO NOT SUPPORT PIPING FROM FRAMING LESS THAN 8” DEEP. DO NOT SUPPORT MORE THAN ONE PIPING HANGER AT ANY MEMBER LESS THAN 6X MINIMUM. SCREWS OR BOLTS IN THE SIDES OF FRAMING SHALL NOT BE INSTALLED LESS THAN 3” OR 1/3 THE FRAMING DEPTH FROM THE BOTTOM.
15. STEEL FRAMING SUPPORTING AFSS PIPING HANGERS SHALL COMPLY WITH THE FOLLOWING: DO NOT SUPPORT PIPING FROM BARE STEEL DECK. DO NOT SUPPORT PIPING 2 1/2” AND GREATER FROM CONCRETE FILLED STEEL DECK OR CONCRETE SLABS. DO NOT SUPPORT PIPING FROM FRAMING LESS THAN 8” DEEP. DO NOT SUPPORT MORE THAN ONE PIPING HANGER AT ANY MEMBER LESS THAN 12” DEEP.
16. LATERAL BRACING SHALL BE PROVIDED ON ALL FEED AND CROSS MAINS REGARDLESS OF PIPING SIZE, ON ALL OTHER PIPING 2 1/2” AND LARGER, AND SHALL BE SPACED AT A MAXIMUM OF 40’ ON CENTER. THE LAST LENGTH OF PIPE AT THE END OF PIPE RUNS BEING BRACED SHALL BE PROVIDED WITH A BRACE WITHIN 6’ OF THE END OF THE PIPE.
17. LONGITUDINAL BRACING SHALL BE PROVIDED ON ALL FEED AND CROSS MAIN PIPING, AND SHALL BE SPACED AT A MAXIMUM OF 80’ ON CENTER. PROVIDE A BRACE WITHIN 40’ OF EACH END OF EACH RUN OF PIPE.
18. LONGITUDINAL BRACES SHALL BE ALLOWED TO ACT AS LATERAL BRACES IF THEY ARE WITHIN 24” OF THE CENTER LINE OF THE PIPING BRACED LATERALLY. LATERAL BRACES SHALL BE ALLOWED TO ACT AS LONGITUDINAL BRACES IF THEY ARE WITHIN 24" OF THE CENTERLINE OF THE PIPING BRACED LONGITUDINALLY AND THE LATERAL BRACE IS ON A PIPE OF EQUAL OR GREATER SIZE THAN THE PIPE BEING BRACED LONGITUDINALLY.
19. EACH RUN OF PIPE BETWEEN CHANGES IN DIRECTION SHALL BE PROVIDED WITH BOTH LATERAL AND LONGITUDINAL BRACING OTHER THAN PIPE RUNS LESS THAN 12’ LONG.
20. BRACE ATTACHMENT TO PIPING SHALL BE LOCATED WITHIN 6” OF A HANGER OF A TYPE THAT PREVENTS UPWARD MOVEMENT OF THE PIPE. HANGER L/R AT BRACE SHALL NOT EXCEED 200.
21. BRACES SHALL BE ATTACHED DIRECTLY TO FEED AND CROSS MAINS. INSTALL SO THAT CONNECTIONS ARE TIGHT AND IN STRAIGHT LINES TO AVOID ECCENTRIC LOADINGS ON BRACES, COMPONENTS, AND FASTENERS. POWER ACTUATED FASTENERS, LAG SCREWS, OR C-TYPE CLAMPS SHALL NOT BE USED TO ATTACH BRACES TO THE BUILDING STRUCTURE.
22. THREADED PIPE USED AS PART OF A BRACE ASSEMBLY SHALL BE SCHEDULE 40 MINIMUM.
23. TOPS OF RISERS EXCEEDING 3’ IN LENGTH SHALL BE PROVIDED WITH A FOUR-WAY BRACE.
24. BRANCH LINE PIPING SHALL BE VERTICALLY AND LATERALLY RESTRAINED AT INTERVALS NOT EXCEEDING 40’ AND AT EACH END SPRINKLER ON A LINE. SPRIGS 4’ OR LONGER SHALL BE LATERALLY RESTRAINED.
25. AFSS SUBMITTAL DRAWINGS FOR STRUCTURAL REVIEW SHALL SHOW LOCATIONS AND SIZES OF ALL PIPING, HANGERS, BRACING AND THEIR ATTACHMENTS TO THE BUILDING STRUCTURE. PROVIDE CALCULATIONS FOR MAXIMUM VERTICAL AND LATERAL LOADS FOR EACH HANGER TYPE, AND DETAILS FOR HANGERS, BRACES AND ANCHORS SHOWING MATERIALS FOR ANCHORAGE, ETC. INCLUDE IN SUBMITTAL ICC REPORTS FOR ALL ANCHORS INDICATING ALLOWABLE LOADS FOR THE SPECIFIC CONFIGURATION OF STRUCTURE CONNECTED TO.

FOUNDATION AND EARTHWORK

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1. ALL FOUNDATION AND EARTHWORK INCLUDING, BUT NOT LIMITED TO, EXCAVATION, GRADING, FILLING, SUB-GRADE PREPARATION, SOIL TREATMENT, ASSOCIATED SITE WORK, TRENCHING AND BACKFILLING SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
2. THE GEOTECHNICAL INFORMATION PROVIDED IS BASED UPON A GEOTECHNICAL REPORT PROVIDED BY THE OWNER FOR THIS PROJECT. THE GEOTECHNICAL REPORT WAS USED FOR THE DESIGN INDICATED IN THESE CONSTRUCTION DOCUMENTS. THE GEOTECHNICAL REPORT AND THE RECOMMENDATIONS CONTAINED THEREIN SHALL BE USED IN CONJUNCTION WITH THE CONSTRUCTION DOCUMENTS. COMPLY WITH THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT.
3. THE GEOTECHNICAL INFORMATION PROVIDED IS NOT A WARRANTY OF THE SITE OR SUBSURFACE CONDITIONS. PRIOR TO BIDDING AND AT NO COST TO THE OWNER, SITE VISITS TO INVESTIGATE OR TO PERFORM ADDITIONAL SUBSURFACE INVESTIGATIONS MAY BE MADE TO DETERMINE THE EXISTING CONDITIONS. SUCH INVESTIGATIONS MAY BE PERFORMED ONLY UNDER TIME SCHEDULES AND ARRANGEMENTS APPROVED BY THE OWNER IN ADVANCE.
4. AN OWNER-RETAINED SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER SHALL PROVIDE TESTING AND INSPECTION SERVICES DURING ALL FOUNDATION AND EARTHWORK. PRIOR TO REQUESTING AN ENFORCEMENT AGENCY FOUNDATION INSPECTION, OBTAIN WRITTEN DOCUMENTATION FROM THE SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER THAT THE FOUNDATION AND EARTHWORK IS IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS.
5. NOTIFY THE SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER 48 HOURS IN ADVANCE OF THE TIME WHEN THE FOUNDATION EXCAVATIONS AND EARTHWORK WILL BE COMPLETE AND READY FOR FORMS OR REINFORCING PLACEMENT. NO FORMS OR REINFORCING SHALL BE PLACED IN ANY FOUNDATION UNTIL THE EXCAVATION HAS BEEN INSPECTED AND APPROVED BY THE SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER.
6. FOUNDATIONS SHALL EXTEND INTO FIRM BEARING IN UNDISTURBED SOIL, OR WHERE REQUIRED, IN COMPACTED FILL MATERIAL OR CONTROLLED LOW-STRENGTH MATERIAL PER THE CONSTRUCTION DOCUMENTS. FOUNDATION DEPTHS SHOWN ON THE CONSTRUCTION DOCUMENTS ARE MINIMUM DEPTHS ONLY. FOUNDATION EXCAVATIONS MAY BE REQUIRED TO BE OVER-EXCAVATED TO REACH SUITABLE BEARING MATERIAL. WHERE THE SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER HAS DETERMINED OVER-EXCAVATION IS REQUIRED, THE REMOVED MATERIAL MAY BE REPLACED WITH COMPACTED FILL MATERIAL OR CONTROLLED LOW-STRENGTH MATERIAL PER THE CONSTRUCTION DOCUMENTS.
7. FOUNDATIONS BELOW GRADE SHALL BE FORMED UNLESS WRITTEN DOCUMENTATION PERMITTING UNFORMED FOOTINGS IS OBTAINED FROM THE SPECIAL INSPECTOR/GEOTECHNICAL ENGINEER. FORWARD WRITTEN DOCUMENTATION TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO THE START OF FOUNDATION EXCAVATIONS. THE SIDES OF UNFORMED FOUNDATION EXCAVATIONS MUST BE ABLE TO STAND WITHOUT CAVING OR SLOUGHING. PROVIDE FORMS OR PROTECTION AS REQUIRED TO PREVENT SLOUGHING OF SOIL INTO EXCAVATIONS. WHERE UNFORMED FOUNDATIONS ARE USED, COORDINATE AND COMPLY WITH THE CONCRETE PROTECTION REQUIREMENTS FOR REINFORCEMENT PLACED ADJACENT TO EARTH. FOUNDATIONS ABOVE GRADE SHALL BE FORMED. ALL FORMS SHALL BE REMOVED ABOVE OR BELOW GRADE, UNLESS OTHERWISE NOTED.
8. THE TOP SURFACE OF FOUNDATIONS SHALL BE LEVEL. THE BOTTOM SURFACE OF FOUNDATIONS IS PERMITTED TO HAVE A SLOPE NOT EXCEEDING ONE UNIT VERTICAL IN TEN UNITS HORIZONTAL. FOOTINGS SHALL BE STEPPED WHERE IT IS NECESSARY TO CHANGE THE ELEVATION OF THE TOP SURFACE OF THE FOOTING OR WHERE THE SURFACE OF THE GROUND AND/OR BOTTOM SURFACE OF THE FOOTINGS SLOPES MORE THAN ONE UNIT VERTICAL IN TEN UNITS HORIZONTAL. STEP FOOTINGS AS REQUIRED PER TYPICAL DETAILS.
9. THE TOP OF EXTERIOR FOOTINGS SHALL BE LOCATED 4 INCHES MINIMUM BELOW LOWEST ADJACENT EXTERIOR FINISHED GRADE OR SURFACE, UNLESS OTHERWISE NOTED. WHERE ADJACENT EXTERIOR FINISHED GRADE OR SURFACE SLOPES DOWN AND AWAY FROM THE FOUNDATION, THE TOP OF EXTERIOR FOOTINGS SHALL BE NO HIGHER THAN THE ELEVATION OF THE FINISHED GRADE OR SURFACE LOCATED 18 INCHES FROM THE FACE OF SUCH FOOTING, UNLESS OTHERWISE NOTED. STEP FOOTINGS AS REQUIRED PER TYPICAL DETAILS TO OBTAIN THE MINIMUM DIMENSIONS REQUIRED.
10. FOUNDATION DEPTHS SHOWN ON THE CONSTRUCTION DOCUMENTS ARE MINIMUM DEPTHS ONLY AND DO NOT NECESSARILY ACCOUNT FOR ALL PIPES, CONDUITS, UTILITIES AND TRENCHES ADJACENT TO OR CROSSING FOOTINGS AS REQUIRED BY ALL OTHER CONSTRUCTION DOCUMENTS. STEP FOOTINGS TO COMPLY WITH THE REQUIREMENTS OF TYPICAL DETAILS FOR PIPES AND CONDUITS AT FOOTINGS.
11. FOR DAMP-PROOFING, WATER-PROOFING AND DRAINAGE SYSTEMS ADJACENT TO FOUNDATIONS, SEE ALL OTHER CONSTRUCTION DOCUMENTS.
12. FOUNDATION ELEMENTS SHOWN ARE INDICATED IN THEIR COMPLETED LOCATION AND CONDITION. FILL AROUND FOUNDATION ELEMENTS SHALL BE PLACED IN LIFTS AND COMPACTED IN A MANNER THAT DOES NOT DAMAGE OR MOVE THE FOUNDATION, WATER-PROOFING OR DAMP-PROOFING. SHORE AND ADEQUATELY SUPPORT FOUNDATION ELEMENTS WHILE PLACING FILL UNTIL THE FOUNDATION ELEMENTS AND THEIR SUPPORTING STRUCTURAL ELEMENTS HAVE BEEN COMPLETED AND ATTAINED THEIR REQUIRED DESIGN STRENGTHS.
13. FOUNDATION EXCAVATIONS SHALL BE CLEANED OF DEBRIS, LOOSE SOIL AND STANDING WATER DURING CONSTRUCTION AND IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. PROVIDE FOR DE-WATERING IF WATER IS PRESENT IN THE EXCAVATIONS DUE TO ANY SOURCE.
14. FOUNDATION EXCAVATIONS SHALL BE MADE TO THE SIZES AND SHAPES REQUIRED BY THE CONSTRUCTION DOCUMENTS. NO MATERIAL IS TO BE EXCAVATED UNNECESSARILY.
15. EXTERIOR FINISHED GRADES OR SURFACES SHALL HAVE POSITIVE DRAINAGE AWAY FROM FOUNDATIONS. GROUND SURFACES WITHIN TEN FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 5%. PAVED SURFACES WITHIN TEN FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM OF 2%. PLANTERS SHALL HAVE ADEQUATE SURFACE DRAINAGE TO PREVENT STANDING WATER ADJACENT TO THE FOUNDATIONS.
16. WHERE EXCAVATIONS OCCUR ADJACENT TO EXISTING STRUCTURES, PROVIDE ADEQUATE UNDERPINNING, SHORING OR SUPPORT TO PREVENT SETTLEMENT AND LATERAL MOVEMENT OF THE EXISTING FOUNDATIONS. FOUNDATIONS ADJACENT TO EXISTING FOUNDATIONS SHALL PENETRATE A MINIMUM OF THE SAME DEPTH AS EXISTING, UNLESS OTHERWISE NOTED.
17. FOUNDATION SIZES SHALL BE AS REQUIRED ON THE CONSTRUCTION DOCUMENTS. THE MINIMUM DEPTH NOTED SHALL BE BELOW THE ADJACENT UNDISTURBED GROUND SURFACE. THE MINIMUM DEPTH SHALL ALSO EXTEND BELOW THE FROST LINE OF THE LOCALITY. FOOTINGS SHALL NOT BEAR ON FROZEN SOIL.

REINFORCED MASONRY

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1. MASONRY WORK, MATERIALS, CONSTRUCTION, AND QUALITY SHALL COMPLY WITH THE REQUIREMENTS OF THE BUILDING CODE, TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6.
2. COMPLETED MASONRY ASSEMBLIES SHALL ATTAIN A 28 DAY COMPRESSIVE STRENGTH (F’M) OF 2,000 PSI MINIMUM. COMPRESSIVE STRENGTH SHALL BE VERIFIED BY THE UNIT STRENGTH METHOD.
3. HOLLOW AND SOLID CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90 WITH A MAXIMUM OVEN DRY DENSITY OF 135 PCF. UNITS SHALL HAVE A NET AREA COMPRESSIVE STRENGTH OF 2,000 PSI MINIMUM.
4. MORTAR SHALL CONFORM TO ASTM C270-TYPE S.
5. MASONRY UNITS AND MORTAR SHALL CONFORM TO THE COLOR AND STYLE SPECIFIED BY THE ARCHITECT.
6. GROUT SHALL CONFORM TO ASTM C476 OR BE PROPORTIONED TO ATTAIN A 28 DAY COMPRESSIVE STRENGTH OF 2,000 PSI MINIMUM AS TESTED PER ASTM C1019. THOROUGHLY MIX GROUT MATERIALS AND WATER TO PROVIDE ADEQUATE FLUIDITY FOR PLACEMENT WITHOUT SEGREGATION OR SEPARATION. MIX GROUT TO A CONSISTENCY THAT HAS A SLUMP BETWEEN 8 AND 11 INCHES. GROUT PROVIDED FOR POURS OVER 4’-0” IN HEIGHT SHALL CONTAIN AN ADMIXTURE OF THE TYPE THAT REDUCES EARLY WATER LOSS TO THE MASONRY UNITS AND PRODUCES AN EXPANSIVE ACTION IN THE PLASTIC GROUT SUFFICIENT TO OFFSET INITIAL SHRINKAGE AND PROMOTE BONDING OF THE GROUT TO ALL INTERIOR SURFACES OF THE MASONRY UNITS.
7. ADDITIVES AND ADMIXTURES SHALL NOT BE USED FOR MORTAR OR GROUT UNLESS ACCEPTABLE TO THE ENFORCEMENT AGENCY. ADDITIVES AND ADMIXTURES SHALL BE USED IN ACCORDANCE WITH MANUFACTURER’S INSTRUCTIONS AND EVALUATION REPORTS. EVALUATION REPORTS SHALL HAVE A CURRENT AND VALID LISTING ISSUED BY AN ACCEPTABLE EVALUATION AGENCY. ANTI-FREEZE OR AIR ENTRAINMENT SUBSTANCES SHALL NOT BE USED.
8. REINFORCING BARS SHALL CONFORM TO ASTM A615-GRADE 60 OR ASTM A706-GRADE 60. THE ACTUAL YIELD STRENGTH BASED ON MILL TESTS SHALL NOT EXCEED 1.3 TIMES THE SPECIFIED YIELD STRENGTH.
9. JOINT REINFORCEMENT SHALL CONFORM TO ASTM A951.
10. WIRE TIES/ANCHORS SHALL CONFORM TO ASTM A82.
11. SHEET METAL ANCHORS/TIES SHALL CONFORM TO ASTM A1008.
12. JOINT REINFORCEMENT, WIRE TIES/ANCHORS, AND SHEET METAL ANCHORS/TIES SHALL BE HOT-DIP GALVANIZED TO CONFORM TO ASTM A153.
13. ANCHOR BOLTS SHALL HAVE HEX HEADS AND CONFORM TO ASTM A307-GRADE A OR ASTM F1554-GRADE 36. ANCHOR RODS SHALL CONFORM TO ASTM F1554-GRADE 36 OR ASTM A36 WITH THREADED ENDS AND DOUBLE NUTS AT THE ANCHORED END. NUTS FOR BOLTS OR RODS SHALL CONFORM TO ASTM A563-GRADE A-HEX.
14. ROUGHEN CONCRETE BEARING SURFACES BY EXPOSING CLEAN AGGREGATE SOLIDLY EMBEDDED IN THE CEMENT MATRIX. BEFORE PLACING MASONRY UNITS CLEAN BEARING SURFACES AND HORIZONTAL CONSTRUCTION JOINTS OF ALL LOOSE MATERIAL, DEBRIS AND MORTAR DROPPINGS.
15. HOLLOW-UNIT MASONRY SHALL BE BUILT TO MAINTAIN THE CLEAR AND UNOBSTRUCTED CONTINUITY OF THE VERTICAL AND HORIZONTAL CELLS TO BE GROUTED. USE TWO-CORE SINGLE OPEN END UNITS ARRANGED SO THAT CLOSED ENDS OF ADJACENT UNITS DO NOT ABUT UNO. WHERE STACK BOND PATTERN IS NOTED, USE TWO-CORE DOUBLE OPEN END UNITS.
16. MULTI-WYTHE MASONRY SHALL BE BUILT WITH SOLID UNITS IN THE OUTER WYTHES TO MAINTAIN THE CLEAR AND UNOBSTRUCTED CONTINUITY OF THE SPACE TO BE GROUTED. THE TWO WYTHES SHALL BE BONDED TOGETHER WITH NO 9 WIRE RECTANGULAR WALL TIES 4" WIDE BY LENGTH EQUAL TO 2" LESS THAN OVERALL WALL THICKNESS. KINKS, WATER DRIPS, OR DEFORMATIONS ARE NOT PERMITTED IN THE WALL TIES. WALL TIES SHALL BE SPACED AT 36" OC MAX HORIZONTALLY AND 24" OC MAX VERTICALLY.
17. CONSTRUCT MASONRY IN RUNNING BOND PATTERN UNO. MAINTAIN BOND PATTERNS AT CORNERS, INTERSECTIONS AND SURFACES USING FULL UNITS. PROVIDE SPECIALTY OR CUT MASONRY UNITS WHEN REQUIRED. GROUTED SPACES SHALL NOT BE VISIBLE AT EXPOSED MASONRY SURFACES. TOOTHING OF MASONRY WALLS IS PROHIBITED. RAKING IS TO BE HELD TO A MINIMUM.
18. PLACE UNITS AND MORTAR TO PROVIDE CONSISTENT THICKNESS BED AND HEAD JOINTS UNO. TOOL MORTAR JOINTS CONCAVE UNO. REMOVE MORTAR PROTRUSIONS EXTENDING MORE THAN 1/4" INTO GROUTED SPACES. DURING PLACEMENT, REMOVE MORTAR DROPPINGS FROM HORIZONTAL CONSTRUCTION JOINTS, INTERIOR MASONRY SURFACES AND REINFORCING STEEL.
19. PLACE MORTAR AND MASONRY UNITS TO SOLIDLY FILL JOINTS AS FOLLOWS: BED JOINTS AT HOLLOW-UNIT FACE SHELLS, END WEBS, AND FULL HEIGHT CROSS WEBS; HEAD AND END JOINTS AT OPEN ENDS OF HOLLOW-UNITS FOR A MINIMUM DISTANCE FROM EACH FACE EQUAL TO THE FACE SHELL THICKNESS OF THE UNIT; HEAD AND END JOINTS AT CLOSED ENDS OF HOLLOW-UNITS; JOINT LOCATIONS NECESSARY TO CONFINE GROUT; BED, HEAD AND 3/4" OR LESS COLLAR JOINTS AT SOLID UNITS.
20. PLACE JOINT REINFORCEMENT SO THAT LONGITUDINAL WIRES ARE EMBEDDED IN MORTAR JOINTS WITH MINIMUM 6” LAP SPLICES. STAGGER ADJACENT LAP SPLICES WITH NO OVERLAP.PROVIDE MINIMUM MORTAR COVER OF 1/2” FROM INTERIOR SURFACES AND 5/8” FROM EXTERNAL SURFACES.
22. MINIMUM REBAR COVER FROM EXTERNAL MASONRY SURFACES EXPOSED TO EARTH OR WEATHER SHALL BE 2" FOR #6 REBAR AND LARGER, AND 1 1/2" FOR #5 REBAR AND SMALLER, UNO. MINIMUM REBAR COVER FROM EXTERNAL MASONRY SURFACES NOT EXPOSED TO EARTH OR WEATHER SHALL BE 1 1/2", UNO.
23. MINIMUM REBAR CLEARANCE TO INTERNAL MASONRY SURFACES SHALL BE THE GREATER OF ONE REBAR DIAMETER OR 1/2”. HORIZONTAL REBAR CAN BEAR ON THE CROSS WEBS OF BOND BEAM UNITS. REBAR WITH HOOKS OR BENDS SHALL BE SKEWED WITHIN CELLS TO MAINTAIN REQUIRED CLEARANCE. CONSTRUCT MASONRY AND CUT UNITS TO MAINTAIN REQUIRED CLEARANCE.
24. THE MINIMUM CLEAR DISTANCE BETWEEN PARALLEL REBAR SHALL BE THE GREATER OF ONE REBAR DIAMETER OR 1”. IN COLUMNS AND PILASTERS THE MINIMUM CLEAR DISTANCE BETWEEN VERTICAL REBAR SHALL BE THE GREATER OF ONE AND ONE-HALF REBAR DIAMETERS OR 1 1/2”. THE SAME LIMITATIONS SHALL APPLY TO THE CLEAR DISTANCE BETWEEN A REBAR SPLICE AND ADJACENT SPLICES OR REBAR.
25. HOLD REINFORCING IN PLACE USING WIRE TIES OR SPACING/POSITIONER DEVICES. VERTICAL REINFORCING SHALL BE HELD IN POSITION AT TOP AND BOTTOM OF EACH GROUT POUR AND AT INTERVALS NOT TO EXCEED 192 REBAR DIAMETERS. HORIZONTAL REINFORCING SHALL BE HELD IN POSITION AT EACH END AND AT INTERVALS NOT TO EXCEED 192 REBAR DIAMETERS.
26. SPLICE VERTICAL REBAR WITH FOUNDATION DOWELS THAT MATCH GRADE, QUANTITY, SIZE AND SPACING. EXTEND DOWELS INTO FOOTINGS AND TERMINATE WITH A STANDARD HOOK 3” ABOVE BOTTOM OF FOOTING UNO. DOWELS SHALL BE STRAIGHT AND PLUMB.
27. PLACE VERTICAL REBAR IN CONTINUOUS VERTICAL CELLS. PLACE HORIZONTAL REBAR IN CONTINUOUS HORIZONTAL BOND BEAM UNITS. CONSTRUCT MASONRY AND CUT UNITS TO MAINTAIN THE CLEAR AND UNOBSTRUCTED CONTINUITY OF THE REINFORCED VERTICAL AND HORIZONTAL CELLS.
28. REBAR BENDS AND HOOKS SHALL COMPLY WITH TYPICAL DETAILS UNO. HAIR PINS AND 180 DEGREE HOOKS SHALL COMPLY WITH TYPICAL DETAIL FOR STIRRUPS, HOOPS AND TIES. DO NOT BEND REBAR AFTER IT IS EMBEDDED IN GROUT OR MORTAR.
29. REBAR SPLICES SHALL BE MADE BY FULL CONTACT LAP SPLICES. SPLICES FOR DIFFERENT REBAR SIZES SHALL BE THE LENGTH REQUIRED FOR THE LARGER REBAR. AT LOCATIONS OTHER THAN FOUNDATION DOWELS, STAGGER ADJACENT LAP SPLICES WITH NO OVERLAP. REBAR SHALL BE LAP SPLICED AS FOLLOWS UNO:
   #3 REBAR - 40 DIA = 15”
   #4 REBAR - 48 DIA = 24”
   #5 REBAR - 56 DIA = 35”
   #6 REBAR - 72 DIA = 54”
   #7 REBAR - 72 DIA = 63”
   #8 REBAR - 72 DIA = 72”
30. REINFORCEMENT AND EMBEDDED ITEMS SHALL BE PLACED AND ANCHORED TO PREVENT MOVEMENT PRIOR TO GROUTING. BOLTS SHALL BE SET WITH TEMPLATES OR EQUIVALENT MEANS. WHERE EMBEDDED ITEMS PASS THROUGH MASONRY SURFACES CUT A CLEAN HOLE TO PROVIDE A MINIMUM OF 1/2” GROUT ALL AROUND EMBEDDED ITEM.
31. LOW-LIFT AND HIGH-LIFT GROUTED CONSTRUCTION SHALL CONFORM TO BUILDING CODE REQUIREMENTS AND THE METHODS USED SHALL BE ACCEPTABLE TO THE ENFORCEMENT AGENCY. HIGH-LIFT GROUTING FOR GROUT POURS OVER 4’-0” IN HEIGHT MAY BE USED WHERE GROUT SPACE DIMENSIONS, OPENINGS, UNIT PATTERN ARRANGEMENTS, REINFORCING, AND EMBEDDED ITEMS DO NOT PREVENT THE FREE FLOW OF GROUT OR INHIBIT THE MECHANICAL CONSOLIDATION OF THE GROUT.
32. BEFORE GROUTING CLEAN SPACES TO BE GROUTED. REMOVE OVERHANGING MORTAR, MORTAR DROPPINGS, OBSTRUCTIONS AND DEBRIS FROM INSIDE OF SPACES TO BE GROUTED.
33. PROVIDE CLEANOUT OPENINGS IN THE BOTTOM COURSE OF MASONRY FOR EACH GROUT POUR OVER 5’-4” IN HEIGHT. CONSTRUCT OPENINGS OF SUFFICIENT SIZE AND SPACING TO PERMIT CLEANING OF GROUT SPACES, REMOVAL OF DEBRIS AND INSPECTION. AFTER CLEANING AND INSPECTION, CLOSE CLEANOUTS WITH MORTARED MASONRY BRACED TO RESIST GROUTING PRESSURES.
34. GROUT SHALL BE PLACED SUCH THAT SPACES TO BE GROUTED DO NOT CONTAIN VOIDS. SPACES TO BE GROUTED INCLUDE ALL CELLS, BOND BEAMS, VOIDS AND SPACES CREATED BY THE MASONRY CONSTRUCTION. SPACES TO BE GROUTED SHALL BE FILLED SOLIDLY WITH GROUT UNO. PARTIAL GROUTING IS NOT PERMITTED UNLESS SPECIFICALLY NOTED. GROUTING SHALL BE PERFORMED UNDER THE CONTINUOUS OBSERVATION OF A QUALIFIED INSPECTOR.
35. THE GROUTING OF ANY SECTION OF WALL SHALL BE COMPLETED IN ONE DAY WITH NO INTERRUPTIONS GREATER THAN ONE HOUR. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER PROVIDE HORIZONTAL GROUT CONSTRUCTION JOINTS. DO NOT FORM HORIZONTAL GROUT CONSTRUCTION JOINTS IN BEAMS OR LINTELS.
36. THE SECTION OF WALL TO BE GROUTED IN ANY ONE POUR IS LIMITED TO A LENGTH IN WHICH SUCCESSIVE LIFTS CAN BE PLACED WITHIN ONE HOUR OF THE PRECEDING LIFTS. CONSTRUCT FULL-HEIGHT VERTICAL GROUT BARRIERS BETWEEN POUR SECTIONS TO CONTROL THE HORIZONTAL FLOW OF GROUT.
37. GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION DURING PLACEMENT BEFORE LOSS OF PLASTICITY IN A MANNER TO FILL THE GROUT SPACE. GROUT POURS GREATER THAN 12” IN HEIGHT SHALL BE RECONSOLIDATED BY MECHANICAL VIBRATION TO MINIMIZE VOIDS DUE TO WATER LOSS. GROUT RECONSOLIDATION SHALL OCCUR AFTER EXCESS MOISTURE HAS BEEN ABSORBED BUT BEFORE WORKABILITY HAS BEEN LOST.
38. PREPARE, CONSTRUCT AND PROTECT MASONRY WORK FROM THE WEATHER UNTIL GROUTED AND CURED. IMPLEMENT COLD WEATHER CONSTRUCTION PROCEDURES WHEN THE AIR TEMPERATURE FALLS BELOW 40 DEG F. IMPLEMENT HOT WEATHER CONSTRUCTION PROCEDURES WHEN THE AIR TEMPERATURE EXCEEDS 90 DEG F.
39. CLEAN EXPOSED MASONRY SURFACES TO REMOVE STAINS, EFFLORESCENCE, MORTAR OR GROUT DROPPINGS, AND DEBRIS.

REINFORCED CONCRETE

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1. CONCRETE MATERIALS, QUALITY CONTROL AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318.
   - SEE CONCRETE MIX DESIGN TABLE FOR REQUIRED CONCRETE PROPERTIES.
2. PORTLAND CEMENT SHALL CONFORM TO ASTM C150, TYPE II.
3. AGGREGATES SHALL CONFORM TO ASTM C33 FOR NORMAL-WEIGHT AND ASTM C330 FOR LIGHTWEIGHT CONCRETE. MAXIMUM AGGREGATE SIZE USED IN MIXES SHALL BE APPROPRIATE FOR FORM AND REBAR CLEARANCES TO BE ENCOUNTERED.
4. REINFORCING STEEL SHALL CONFORM TO ASTM A706, GRADE 60, OR ASTM A615, GRADE 60.
5. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706, GRADE 60. WELD FILLER METAL FOR REINFORCING STEEL SHALL COMPLY WITH AWS D1.4, Fu=80 KSI. WELDING SHALL CONFORM WITH AWS D1.4.
6. WELDED WIRE REINFORCEMENT SHALL BE COMPOSED OF FLAT SHEETS AND CONFORM TO ASTM A1064.
7. DIMENSIONS LOCATING REINFORCING STEEL ARE TO THE FACE OF REINFORCING STEEL AND DENOTE CLEAR COVERAGE. MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS, UNO:
   A. CONCRETE CAST AGAINST EARTH (EXCEPT SLAB ON GRADE) - 3"
      - SLAB ON GRADE - CENTER REINF IN SLAB, UNO
   B. CONCRETE FORMED & EXPOSED TO EARTH OR WEATHER:
      - #6 THRU #18 BARS - 2"
      - #5 BAR, W31 OR D31 WIRE, & SMALLER - 1 1/2"
   C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND:
      - BEAMS & COLUMNS - 1 1/2"
      - SLABS & WALLS: #14 & #18 BARS - 1 1/2", #11 BAR & SMALLER - 3/4"
8. SPLICES IN CONTINUOUS REINFORCING SHALL BE LAPPED AS NOTED IN THE TYPICAL DETAIL, UNO. SPLICES IN ADJACENT BARS SHALL BE STAGGERED SO THERE IS NO OVERLAP. LAP SPLICES OF #14 & #18 REBAR IS NOT PERMITTED AND BARS SHALL BE CONTINUOUS ONE PIECE FOR THE FULL LENGTH SHOWN. LAP SPLICES OF REBAR IN A BUNDLE SHALL BE EQUAL TO THE LAP SPLICE LENGTH REQUIRED FOR THE INDIVIDUAL BARS WITHIN THE BUNDLE MULTIPLIED BY 1.33. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
9. UNLESS DETAILED OTHERWISE: REINFORCING IN CONTINUOUS BEAMS AND SPANDRELS SHALL HAVE THE TOP BARS SPLICED AT MID-SPAN AND THE BOTTOM BARS SPLICED AT THE CENTERLINE OF SUPPORTS. REINFORCING IN CONTINUOUS SOIL-BEARING GRADE BEAMS OR FOOTINGS SHALL HAVE THE TOP BARS SPLICED AT CENTERLINE OF COLUMN SUPPORTS AND THE BOTTOM BARS SPLICED AT MID-SPAN. AT DISCONTINUOUS ENDS, THE BARS SHALL BE TERMINATED WITH A STANDARD HOOK EXTENDED TO THE FAR FACE OF THE SUPPORT OR BEAM.
10. PROVIDE FOUNDATION DOWELS TO MATCH GRADE, QUANTITY, SIZE & SPACING OF WALL/COLUMN REINFORCEMENT. EXTEND DOWELS INTO FOOTINGS AND TERMINATE WITH A STANDARD HOOK 3" ABOVE BOTTOM OF FOOTING, UNO. PROVIDE STANDARD LAP AT DOWELS TO EACH WALL/COLUMN REBAR.
11. HOOKS SHALL BE STANDARD HOOKS, UNO.
12. ITEMS TO BE EMBEDDED IN CONCRETE, SUCH AS REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC SHALL BE SECURELY TIED AND SUPPORTED PRIOR TO PLACING CONCRETE.
13. THE LOCATION OF SLAB ON GRADE JOINTS SHALL BE AS INDICATED ON THE DRAWINGS. SLAB ON GRADE JOINT SPACINGS ARE NOT TO EXCEED 12'-0" IN EITHER DIRECTION, UNO. SUBMIT LOCATION PLAN FOR ALL PROPOSED JOINTS FOR REVIEW.
14. SURFACE OF CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. CONSTRUCTION JOINT SURFACES SHALL BE ROUGHENED TO A 1/4" MINIMUM AMPLITUDE, UNO.
15. FORM 3/4" CHAMFER AT ALL EXPOSED WALL AND COLUMN EDGES AND CORNERS, UNO.
16. EXTERIOR SLABS INCLUDING SIDEWALKS SHALL BE 4" MIN THICKNESS AND HAVE 6x6-W1.4xW1.4 WWR IN CENTER OF SLAB, UNO.
17. NO CONDUIT, PIPE, OR SLEEVES LARGER THAN 1" OD SHALL BE PLACED IN OR THROUGH CONCRETE BEAMS OR SLABS UNLESS SPECIFICALLY DETAILED AND APPROVED BY THE STRUCTURAL ENGINEER. CONDUIT OR PIPES 1" OD AND SMALLER SHALL BE SPACED & POSITIONED SUCH THAT THE EFFECTIVENESS OF THE REBAR IS NOT REDUCED.

CONCRETE MIX DESIGN

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MIX DESIGN TABLE

LOCATION	REQ SCM (% BY WEIGHT OF TOTAL CEMENTITIOUS MATERIALS)	REQ EARLY COMPRESSIVE STRENGH (PSI)	REQ 28 DAY COMPRESSIVE STRENGH (PSI)	AIR CONTENT	MAX W/C RATIO	MAX AIR-DRY WEIGHT (LBS/FT³)	ACI EXPOSURE CLASS
BELOW GRADE CONCRETE (FTGS, PIERS, GRADE BEAMS)	15	2500 PRIOR TO LOADING	3000	NONE	0.50	145	F0, S0, W0, C1
SLAB ON GRADE AND BUILDING CURBS	15	-	3000 (4000 MIN AT DYED AND POLISHED FINISH	NONE*	0.45	145	F0, S0, W0, C1

* 3 PERCENT MAX AIR AT STEEL TROWELED CONCRETE UNLESS CONTRACTOR CAN ASSURE THAT DELAMINATION WILL NOT OCCUR. PROTECT SLABS FROM FREEZE-THAW UNTIL SPACE IS CONDITIONED IF AIR CONTENT IS LESS THAN 4.5 PERCENT.

NORTH

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THE CONSTRUCTION DOCUMENTS HAVE NOT BEEN APPROVED BY THE ENFORCEMENT AGENCY AND ARE NOT COMPLETE OR READY FOR CONSTRUCTION. ELEMENTS, MEMBERS, SYSTEMS AND ASSOCIATED DETAILS AND SPECIFICATIONS MAY NOT BE SHOWN OR FULLY DEVELOPED. FOR BIDDING/ESTIMATING PURPOSES, UTILIZE ADDITIONAL MATERIALS AND QUANTITIES TO ACCOUNT FOR THOSE ITEMS NOT SHOWN OR FULLY DEVELOPED.

SEAL

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PROJECT
PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
TYPICAL NOTES

SHEET
S-011

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COLD-FORMED STEEL FRAMING

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1. THE DESIGN, INSTALLATION AND CONSTRUCTION OF COLD-FORMED STEEL FRAMING SHALL BE IN ACCORDANCE WITH THE FOLLOWING AISI NORTH AMERICAN STANDARDS:
   S100 - SPECIFICATION FOR THE DESIGN OF STRUCTURAL MEMBERS
   S200 - GENERAL PROVISIONS
   S210 - FLOOR AND ROOF SYSTEM DESIGN
   S211 - WALL STUD DESIGN
   S212 - HEADER DESIGN
   S213 - LATERAL DESIGN
   S214 - TRUSS DESIGN
2. ALL PRODUCTS SHALL POSSESS DIMENSIONS, SECTION PROPERTIES AND MATERIALS IN COMPLIANCE WITH THE AISI D100 MANUAL OF COLD-FORMED STEEL DESIGN AND BE MANUFACTURED BY A CURRENT MEMBER OF THE "STEEL STUD MANUFACTURERS ASSOCIATION" (SSMA) OR "STEEL FRAMING INDUSTRY ASSOCIATION" (SFIA).
3. PROVIDE ALL ACCESSORIES INCLUDING, BUT NOT LIMITED TO, TRACKS, CLIPS, WEB STIFFENERS, ANCHORS, FASTENING DEVICES, RESILIENT CLIPS, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AND AS RECOMMENDED BY THE MANUFACTURER FOR THE STEEL MEMBERS USED.
4. STEEL MEMBERS AND COMPONENTS SHALL BE GALVANIZED ZINC-COATED PER ASTM A653 WITH COATING WEIGHTS AS FOLLOWS UNO: NON-STRUCTURAL MEMBERS G40, STRUCTURAL MEMBERS G60, ALL MEMBERS PERMANENTLY EXPOSED TO UN-CONDITIONED AIR G90, ALL MEMBERS USED IN MARINE ENVIRONMENTS G185.
5. STEEL MEMBERS 18 GA OR LIGHTER SHALL BE MANUFACTURED PER A1003 STRUCTURAL GRADE 33 TYPE H (ST33H), AND 16 GA OR HEAVIER PER A1003 STRUCTURAL GRADE 50, TYPE H (ST50H).
6. THE MINIMUM UNCOATED STEEL THICKNESS AS DELIVERED TO THE JOBSITE SHALL BE: 25 GA = 0.018", 22 GA = 0.027", 20 GA = 0.033", 18 GA = 0.043", 16 GA = 0.054". 14 GA = 0.068", 12 GA = 0.097".
7. STUDS/JOISTS SHALL HAVE 1 5/8" WIDE FLANGES, TYP UNO.
8. STUDS/JOISTS SHALL HAVE WEB PUNCH-OUTS AT 24" OC AT MID-DEPTH. PUNCH-OUTS SHALL NOT EXCEED 1 1/2" IN WIDTH, AND 4" IN LENGTH. NO OTHER OPENINGS IN STUDS/JOISTS ARE PERMITTED UNLESS SPECIFICALLY DETAILED.
9. TRACK SHALL MATCH STUD/JOIST DEPTH & GAGE, AND FLANGE WIDTH SHALL BE 1 1/4", TYP, UNO. ALL TRACKS TO BE UNPUNCHED WITH SOLID WEBS.
10. FASTENING OF FRAMING COMPONENTS SHALL BE WITH SELF-DRILLING SELF-TAPPING SCREWS OR WELDING. WHERE DETAILS CALL FOR SCREWS, THE MINIMUM SIZES SHALL BE AS FOLLOWS: #6 FOR 22 GA OR LIGHTER MATERIAL, #8 FOR 20 GA MATERIAL, #10 FOR 18 & 16 GA MATERIAL, & # 12 FOR 14 GA OR HEAVIER MATERIAL, TYP UNO. SCREW SIZE IS DETERMINED BY THE GA OF THE THICKEST PART BEING JOINED UNO. INSTALL SCREWS WITH THE HEAD IN CONTACT WITH THE THINNEST PART BEING JOINED UNO. AS AN ALTERNATE, STEEL MEMBERS 18 GA OR HEAVIER MAY BE WELDED WITH A 1/2" LONG WELD (FILLET OR FLARE GROOVE) INSTEAD OF EACH SCREW, TYP UNO.
11. SCREW SPACING SHALL NOT BE LESS THAN 3 TIMES THE NOMINAL SCREW DIAMETER. SCREW EDGE DISTANCE SHALL NOT BE LESS THAN 1.5 TIMES THE NOMINAL SCREW DIAMETER. PENETRATION OF SCREWS THROUGH JOINED MATERIALS SHALL NOT BE LESS THAN 3 EXPOSED THREADS. SCREW HEADS SHALL BE LOW-PROFILE TYPE.
12. SCREWS SHALL CONFORM WITH ASTM C1513 AND HAVE A CORROSION-RESISTANT COATING.
13. BOLTS SHALL BE INSTALLED IN STANDARD SIZE HOLES, UNO. STANDARD SIZE HOLES SHALL BE BOLT DIA + 1/32" FOR BOLTS SMALLER THAN 1/2" DIA, AND BOLT DIA + 1/16" AT 1/2" DIA AND LARGER BOLTS.
14. WELDING SHALL CONFORM WITH AWS D1.3. WELDING TO STRUCTURAL STEEL SHALL ALSO CONFORM WITH AWS D1.1. THE ELECTRODES USED FOR WELDING SHALL HAVE A MINIMUM YIELD STRENGTH OF 60 KSI. WELDS OF GALVANIZED STEEL SHALL BE COATED WITH A ZINC-RICH PAINT.
15. FASTENING OF SHEATHING SHALL BE WITH SELF-DRILLING SELF-TAPPING SCREWS. #6 MIN FOR GYPSUM BOARD & #8 MIN FOR STRUCTURAL PANELS. SCREW HEADS SHALL BE COUNTER SUNK FLAT-PROFILE TYPE.
16. NON-STRUCTURAL INTERIOR WALLS SUPPORTED AT THE BASE AND EXTENDING TO THE BOTTOM OF STRUCTURE ABOVE SHALL HAVE SLIP TRACKS AT THE TOP, UNO.
17. FRAME INDIVIDUAL MEMBERS AND EACH ELEMENT OF BUILT-UP MEMBERS, CONTINUOUS ONE PIECE BETWEEN SUPPORTS. SPLICE ONLY WHERE SPECIFICALLY NOTED.

STEEL DECKING

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1. STEEL DECKING WORK, MATERIALS, CONSTRUCTION AND QUALITY SHALL BE IN ACCORDANCE WITH THE BUILDING CODE.
2. PRODUCTS SHALL POSSESS CURRENT EVALUATION AGENCY APPROVALS WITH SECTION DIMENSIONS, PROPERTIES AND MATERIALS IN COMPLIANCE WITH THE THE TYPICAL DETAILS. SEE CONSTRUCTION DOCUMENTS FOR STEEL DECK TYPE AND GAGE.
3. WELDING MATERIALS AND PROCEDURES SHALL CONFORM TO AWS D1.3. WELDING TO STRUCTURAL STEEL SHALL ALSO CONFORM TO AWS D1.1. ELECTRODES USED FOR WELDING SHALL HAVE A MINIMUM 60KSI FILLER METAL YIELD STRENGTH.
4. BARE STEEL DECK SHALL BE MANUFACTURED BY:
   - "ASC STEEL DECK" PER IAPMO ER 0161
   - "EPIC METALS CORPORATION" PER ICC ESR 2047
5. SHEET STEEL ACCESSORIES SHALL BE FABRICATED FROM THE SAME GAUGE AND MATERIALS AS ADJACENT STEEL DECK, UNO.
6. STEEL DECK SHALL BE FABRICATED FROM GALVANIZED SHEET STEEL CONFORMING TO ASTM A653, STRUCTURAL STEEL (SS) DESIGNATION, MINIMUM GRADE AS INDICATED IN EVALUATION AGENCY REPORT.
7. STEEL DECK AND ACCESSORIES SHALL BE GALVANIZED ZINC-COATED IN CONFORMANCE WITH ASTM A653 WITH COATING WEIGHTS AS FOLLOWS UNO:
   STANDARD DECK COATING SHALL BE G60, DECK COATING AT EXTERIOR PERMANENTLY EXPOSED LOCATIONS SHALL BE G90, DECK COATING IN MARINE ENVIRONMENTS SHALL BE G185.
8. STEEL DECK SHALL BE CONTINUOUS OVER MULTIPLE SPANS WHERE FRAMING PERMITS. LAYOUT STEEL DECK TO PROVIDE TWO SPANS MINIMUM AND THREE SPANS OR GREATER WHERE POSSIBLE. SINGLE SPANS SHALL OCCUR ONLY WHERE CONTINUITY CANNOT BE MADE ONTO ADJACENT SPANS.
9. STEEL DECK SHALL BE INSTALLED WITH A MINIMUM INTERMEDIATE AND END BEARING OF 2" OVER STRUCTURAL SUPPORTS. STEEL DECK SPLICES SHALL BE BUTTED WITH RIBS ALIGNED, UNO. BARE STEEL DECK MAY BE LAP SPLICED WITH A MINIMUM LAP OF 2" PROVIDED THE DECK ENDS ARE DIE SET, UNO.
10. STEEL DECK SPLICES SHALL BE CENTERED OVER A COMMON MEMBER.
11. ARC SPOT WELDS SHALL HAVE A MINIMUM 1/2" DIAMETER EFFECTIVE SIZE. ARC SPOT WELD MINIMUM DECK EDGE DISTANCE SHALL BE 1.5 TIMES THE VISIBLE WELD DIAMETER MEASURED FROM THE CENTER OF THE WELD.
12. ARC SEAM WELDS MAY BE SUBSTITUTED FOR ARC SPOT WELDS. ARC SEAM WELDS SHALL HAVE A MINIMUM 3/8" WIDE BY 1" LONG EFFECTIVE SIZE. ARC SEAM WELD MINIMUM DECK EDGE DISTANCE SHALL BE 1.5 TIMES THE VISIBLE WELD DIAMETER MEASURED FROM THE LONGITUDINAL AXIS OR FROM THE CENTER OF THE END RADIUS OF THE WELD.
13. THE MINIMUM CLEAR DISTANCE BETWEEN ADJACENT WELDS AND BETWEEN A WELD AND THE DECK EDGE SHALL BE NO LESS THAN THE VISIBLE WELD DIAMETER.
14. FILLET WELDS SHALL HAVE A MINIMUM LEG SIZE EQUAL TO THE THICKNESS OF THE THINNEST SHEET STEEL BEING ATTACHED. FILLET WELDS SHALL HAVE A MINIMUM LENGTH OF 3/4".
15. FLARE GROOVE WELDS SHALL HAVE A MINIMUM WELD THROAT SIZE EQUAL TO THE THICKNESS OF THE THINNEST SHEET STEEL BEING ATTACHED. FLARE GROOVE WELDS SHALL HAVE A MINIMUM LENGTH OF 3/4".
16. STEEL DECK PANELS AT CANTILEVERED CONDITIONS AND AT PARTIAL WIDTH PANELS SHALL HAVE CONNECTIONS FOR THE ENTIRE LENGTH OF THE DECK PANEL AS FOLLOWS:
    CONNECTIONS TO EACH STRUCTURAL SUPPORT AT EACH LOW FLUTE AND SIDE SEAM CONNECTIONS AT ENDS AND 12" ON CENTER MAXIMUM.
17. ACCESSORIES SHALL BE FASTENED TO SUPPORTING STEEL DECK AND STRUCTURAL MEMBERS BY CONNECTIONS SPACED AT 12" MAXIMUM ON CENTER AND AT EACH END.
18. PROVIDE EDGE FORMS, FLASHING, CLOSURE PLATES, AND SUPPLEMENTARY SUPPORTS FOR DECK EDGES AT BUILDING PERIMETER, AT OPENINGS AND AT PENETRATIONS THROUGH DECK.
19. DO NOT SUSPEND OR ATTACH SUPPORTS FOR NONSTRUCTURAL COMPONENTS FROM BARE STEEL DECK, EXCEPT FOR COMPONENTS WEIGHING LESS THAN 100 LBS OR HANGER WIRE SUSPENDED ACOUSTIC OR SINGLE-LAYER GYPSUM BOARD CEILINGS (MAXIMUM CEILING SYSTEM WEIGHT OF 4 PSF) INCLUDING THEIR INTEGRALLY SUPPORTED LIGHT FIXTURES, TERMINALS AND DEVICES. COORDINATE HANGER WIRE SUPPORT DETAILS WITH STEEL DECK INSTALLATION.
20. SUPPORTS OR ANCHORS FOR ITEMS NOT PERMITTED TO BE ATTACHED TO STEEL DECK SHALL BE SUPPORTED BY STRUCTURAL FRAMING. PROVIDE ADDITIONAL TRAPEZE HANGERS OR SUPPLEMENTARY FRAMING AS NECESSARY.

STRUCTURAL STEEL

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1. THE DESIGN, FABRICATION AND ERECTION OF STEEL SHALL BE IN ACCORDANCE WITH AISC 360 AND AISC 341 INCLUDING ANY ENFORCEMENT AGENCY AMENDMENTS.
2. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING, UNO:

STEEL PRODUCT	ASTM SPECIFICATION, UNO	COMMENTS
W & WT SHAPES	A992, GRADE 50	Fy = 50ksi
HP SHAPES	A572, GRADE 50	Fy = 50ksi
M, MT, S & ST SHAPES	A36	Fy = 36ksi
CHANNELS (C & MC)	A36	Fy = 36ksi
ANGLES	A36	Fy = 36ksi
PLATES & BARS	A36,TYP, UNO	Fy = 36ksi
	A572, GRADE 50	Fy = 50ksi
RODS, PLAIN & ALL-THREADED	A36	Fy = 36ksi
RAISED-PATTERN FLOOR PLATE	A786, MEETING ASTM A36	Fy = 36ksi
PIPES	A53, GRADE B	Fy = 35ksi
ROUND HSS	A500, GRADE C	Fy = 46ksi
RECTANGULAR & SQUARE HSS	A500, GRADE C	Fy = 50ksi
HIGH-STRENGTH BOLTS	F3125, GRADE A325, TYPE 1	Fy = 92ksi
TWIST-OFF-TYPE TENSION-CONTROL BOLTS	F3125, GRADE F1852, TYPE I	
BOLTS	A307, GRADE A, HEX	Fy = 60ksi
WASHERS	F844	
PLATE WASHERS	A36	Fy = 36ksi
HARDENED WASHERS	F436, TYPE I	
DIRECT-TENSION INDICATOR WASHERS	F959, TYPE 325	
NUTS FOR HS & TENSION CONTROL BOLTS	A563, GRADE C, HEAVY HEX GRADE DH IF GALVANIZED	
NUTS FOR BOLTS & RODS	A563, HEAVY HEX, GRADE A TYP, UNO GRADE DH IF GALVANIZED GRADE DH W/ F1554 GRADE 105 BOLTS	
ANCHOR BOLTS & RODS (HEADED OR THREADED & NUTTED)	F1554, CLASS 2A, S3 GRADE 36 TYP, UNO	Fy = 36ksi
	GRADE 55, S1 & S4	Fy = 55ksi
	GRADE 105, S4 & S5	Fy = 105ksi
WELDED HEADED STUDS, SHEAR STUDS, & WELDED THREADED STUDS	A108, GRADES 1010 - 1020	
DEFORMED BAR ANCHORS	A496	Fy = 75ksi
WELD FILLER METAL	AWS D1.1	Fy = 70ksi
TURNBUCKLES	F1145 & AISI C-1035	
CLEVISES, CLEVIS PINS, COTTER PINS	AISI C-1035	
EYENUTS & EYEBOLTS	AISI C-1030	
SLEEVE NUTS	AISI C-1018, GRADE 2	
RECESSED NUTS & PINS	A36	
COUPLING NUTS	AISI 12L14 CARBON STEEL	

3. EXPOSED INTERIOR STEEL SHALL RECEIVE ONE COAT OF PRIMER PAINT, UNO. DO NOT PAINT SURFACES IN DIRECT CONTACT WITH CONCRETE OR MASONRY, WHERE FIELD WELDING IS REQUIRED, WHERE FIRE-PROOFING IS REQUIRED OR CONTACT SURFACES OF STEEL-TO-STEEL, AND DECK-TO-STEEL CONNECTIONS. CONCEALED STEEL DOES NOT REQUIRE PAINT, UNO.
4. EXPOSED EXTERIOR STEEL & FASTENERS SHALL BE HOT DIP GALVANIZED, UNO. PROVIDE FILL AND VENT HOLES AT ENCLOSED SPACES OF HOLLOW PIECES. SEAL HOLES WATER-TIGHT AFTER GALVANIZING. PROVIDE DRAIN HOLES AS REQUIRED AT SOLID PIECES. HOLE SIZES AND LOCATIONS SHALL NOT DETRIMENTALLY AFFECT THE PIECES STRUCTURAL CAPACITY AND ARE SUBJECT TO THE STRUCTURAL ENGINEERS REVIEW.
5. EXPOSED STRUCTURAL STEEL MEMBERS AND CONNECTIONS VISIBLE TO THE PUBLIC AND BUILDING OCCUPANTS (OTHER THAN MAINTENANCE AREAS) SHALL MEET THE FOLLOWING CRITERIA:
   A. FABRICATION, HANDLING, AND SHIPPING SHALL EMPLOY SPECIAL CARE TO ENSURE ACCEPTABLE FINISHED APPEARANCE.
   B. WELDS SHALL BE GROUND SMOOTH. GROOVE WELDS SHALL BE MADE FLUSH (+ 1/16", -0"). OVERSIZE WELDS AS REQUIRED.
   C. FIELD WELDING AIDS AND ERECTION AIDS SHALL BE REMOVED AND STEEL SHALL BE REPAIRED AND GROUND SMOOTH.
   D. SHOP PIECE MARKS AND MILL MARKS SHALL BE LOCATED SUCH THAT THEY ARE FULLY HIDDEN IN THE FINAL STRUCTURE OR ARE MADE WITH SUCH MEDIA TO PERMIT FULL REMOVAL AFTER ERECTION.
   E. GRIND EDGES OF SHEARED, PUNCHED OR FLAME CUT STEEL IN AREAS WITHIN REACH TO TOUCH BY THE PUBLIC AND BUILDING OCCUPANTS.
   F. ALIGN AND ORIENT BOLTED CONNECTIONS TO BE UNIFORM AND CONSISTENT.
6. PROVIDE CONCRETE / MASONRY COVER AT STEEL BELOW GRADE. STEEL EMBEDDED IN CONCRETE CAST AGAINST EARTH SHALL HAVE 3" MIN COVER. STEEL EMBEDDED IN FORMED CONCRETE OR MASONRY SHALL HAVE 2" MIN COVER.
7. WELDING MATERIALS & PROCEDURES SHALL CONFORM WITH AWS D1.1. AND AWS D1.8 WHERE APPLICABLE.
8. MINIMUM SIZE OF FILLET WELDS: 1/8" FOR MATERIAL 1/8" TO 1/4" THICK, 3/16" FOR MATERIAL OVER 1/4" TO 1/2" THICK, 1/4" FOR MATERIAL OVER 1/2" TO 3/4" THICK, AND 5/16" FOR MATERIAL OVER 3/4" THICK. MATERIAL THICKNESS IS FOR THINNER PART JOINED. SINGLE PASS WELDS MUST BE USED FOR SIZES SHOWN. SIZE OF WELD IS LEG DIMENSION OF FILLET. MINIMUM EFFECTIVE LENGTH OF FILLET WELDS SHALL BE NOT LESS THAN FOUR TIMES THE FILLET SIZE. MINIMUM EFFECTIVE LENGTH OF INTERMITTENT FILLET WELDS SHALL BE 1 1/2".
9. GROOVE WELDS SHALL BE COMPLETE JOINT PENETRATION WELDS, UNO. GROOVE WELDS SHALL BE TERMINATED AT THE END OF JOINTS IN A MANNER THAT WILL ENSURE SOUND WELDS. USE WELD TABS AND BACKING BARS ALIGNED TO PROVIDE AN EXTENSION OF THE JOINT PREPARATION. REMOVE EXTENSIONS UPON COMPLETION & COOLING OF THE WELD. GRIND ENDS OF THE WELD SMOOTH AND FLUSH WITH THE EDGES OF THE ABUTTING PARTS.
10. WHERE "ALL AROUND" FILLET WELDS ARE INDICATED AT CONCEALED/NON-EXPOSED SQUARE OR RECTANGULAR HSS CONNECTIONS TO PLATES, FILLET WELDS ARE NOT REQUIRED AT RADIUSED CORNERS , UNO.
11. BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL BE PLACED IN STANDARD SIZE HOLES, TYP UNO. BOLTS FOR STEEL-TO-CONCRETE/MASONRY CONNECTIONS SHALL BE PLACED IN ANCHOR ROD HOLES, TYP UNO. USE STANDARD AISC PITCH & GAGE FOR BOLTED CONNECTIONS, UNO.
12. BOLTS AND RODS SHALL BE CUT-THREAD TYPE WITH FULL DIAMETER BODY STYLE MEETING REQUIREMENTS OF ASME B18.2.1. THE BODY DIAMETER SHALL NOT BE LESS THAN THE MINIMUM MAJOR DIAMETER WHEN THREADS ARE CUT. REDUCED DIAMETER BODY STYLE ROLLED THREAD BOLTS OR RODS ARE NOT PERMITTED.
13. STEEL-TO-STEEL BOLTED CONNECTIONS SHALL BE ASSEMBLED UTILIZING HIGH-STRENGTH OR TWIST-OFF-TYPE TENSION CONTROL BOLT ASSEMBLIES, UNO. A BOLT ASSEMBLY CONSISTS OF A MINIMUM OF A BOLT, A HARDENED WASHER AND A NUT. THE HARDENED WASHER SHALL BE PLACED UNDER THE TURNED ELEMENT OF THE BOLT ASSEMBLY. ALSO PROVIDE A HARDENED WASHER AT BOLT HEADS OR NUTS BEARING ON SHORT SLOTTED HOLES. ALSO PROVIDE A 5/16" MINIMUM THICKNESS PLATE WASHER OR CONTINUOUS BAR WITH STD HOLES AT BOLT HEADS OR NUTS BEARING ON LONG SLOTTED HOLES.
14. IF DIRECT-TENSION-INDICATOR (DTI) WASHERS ARE USED, A "DTI" BOLT ASSEMBLY CONSISTS OF A MINIMUM OF A HIGH STRENGTH BOLT, A HARDENED WASHER, A "DTI" WASHER AND A NUT. INSTALL THE "DTI" WITH THE BUMPS FACING THE UNDERSIDE OF THE BOLT HEAD OR NUT. THE HARDENED WASHER SHALL BE PLACED UNDER THE TURNED ELEMENT OF THE "DTI" BOLT ASSEMBLY. IF THE "DTI" IS PLACED UNDER THE TURNED ELEMENT OF THE BOLT ASSEMBLY, PLACE THE HARDENED WASHER BETWEEN THE "DTI" AND THE TURNED ELEMENT. ALSO PROVIDE A HARDENED WASHER AT "DTI"s, BOLT HEADS OR NUTS BEARING ON OVERSIZE OR SHORT SLOTTED HOLES. ALSO PROVIDE A 5/16" MINIMUM THICKNESS PLATE WASHER OR CONTINUOUS BAR W/ STD HOLES AT "DTI"s, BOLT HEADS OR NUTS BEARING ON LONG SLOTTED HOLES.
15. BOLT HEADS, NUTS OR "DTI"S OF BOLTED STEEL-TO-STEEL AND STEEL-TO-CONCRETE/ MASONRY CONNECTIONS BEARING ON SLOPING SURFACES SHALL USE A BEVELED HARDENED WASHER IN THE BOLT ASSEMBLY AT THAT SURFACE.
16. HIGH-STRENGTH BOLT ASSEMBLIES SHALL BE PRE-TENSIONED. FAYING SURFACES OF HIGH-STRENGTH BOLT ASSEMBLIES SHALL BE PREPARED AS REQUIRED FOR CLASS A OR BETTER SLIP-CRITICAL JOINTS.

NORTH

FILE NO. ?XX-XXXX?

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SEAL

PROJECT
PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE
TYPICAL NOTES

SHEET
S-012

INTERNALLY THREADED SCREW ANCHOR

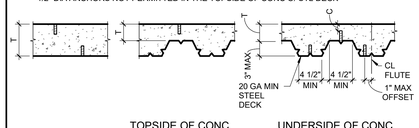
S- 056000_N010A
190805. Q2

1. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO. ALL EMBEDMENTS SPECIFIED ARE NOMINAL EMBEDMENT DEPTHS REQUIRED.

"DEWALT" SNAKE+ INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 2272)

	GENERAL CONCRETE & TOPSIDE OF CONC O/ STL DECK				UNDERSIDE OF CONC OVER STEEL DECK					
					LOWER FLUTE			UPPER FLUTE		
ANCHOR DIA	3/8"	1/2"**			3/8"	1/2"			3/8"	1/2"
STD EMBED, Hnom TYP UNO	1 5/8"	2 3/16"			1 5/8"	2 3/16"			1 5/8"	2 3/16"
MIN CONC THICKNESS, T	4"*	4"	SEE DIAGRAM BELOW T = 3" MIN IN LOWER FLUTE C = 1" MIN							
MAX INSTALLATION TORQUE (LB-FT)	8	36			8	36			8	36
TORQUE TEST LOAD (LB-FT)	4	18			4	18			4	18

* T= 3 1/4" AT TOPSIDE OF CONC O/ STEEL DECK
** 1/2" DIA ANCHORS NOT PERMITTED IN THE TOPSIDE OF CONC O/ STL DECK



GENERAL CONC | TOPSIDE OF CONC O/ STEEL DECK | UNDERSIDE OF CONC O/ STEEL DECK

ADHESIVE ANCHORS IN CONCRETE

S- 056000_N004A
190805. Q2

1. REFERENCES TO "EPOXY" OR "CHEMICAL" ANCHORS EMBEDDED IN CONCRETE SHALL REFER TO THESE NOTES.
2. ACCEPTABLE ADHESIVE PRODUCTS ARE:
   - "HILTI" HIT-RE 500 V3 (ICC ESR-3814)
   - "HILTI" HIT-HY-200 (ICC ESR-3187)
   - "SIMPSON" SET-XP (ICC ESR-2508)
   - "SIMPSON" SET-3G (ICC ESR-4057)
   - "SIMPSON" AT-XP (IAPMO ER-263)
   - "DEWALT" PURE 110+ (ICC ESR-3298)
   - "DEWALT" AC200+ GOLD (ICC ER-4027)
3. THREADED ROD AND REBAR USED W/ ADHESIVE ANCHORS SHALL MEET THE REQUIREMENTS OF THE EVALUATION AGENCY REPORT.
4. EMBEDMENT DEPTHS SHALL BE 8 TIMES THE NOMINAL DIAMETER OF ANCHOR, UNO.
5. CONCRETE SHALL MEET THE SPECIFIED DESIGN STRENGTH PRIOR TO INSTALLATION, AND SHALL HAVE A MINIMUM AGE OF 21 DAYS, UNO.
6. TEST LOADS SHALL BE AS INDICATED IN DRAWINGS. IF NO TEST LOAD IS SPECIFIED, TEST LOAD SHALL BE 1000 LBS.

SCREW ANCHORS IN CONCRETE

S- 056000_N004A
181128. Q2

1. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO. ALL EMBEDMENTS SPECIFIED ARE NOMINAL EMBEDMENT DEPTHS REQUIRED.

"HILTI" KWIK HUS-EZ (KH-EZ) / KWIK HUS-EZ1 (KH-EZ1) INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 3027)

	GENERAL CONCRETE & TOPSIDE OF CONC O/ STL DECK					UNDERSIDE OF CONC OVER STEEL DECK					
						LOWER FLUTE			UPPER FLUTE		
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
STD EMBED, Hnom TYP UNO	1 5/8"	1 5/8"	3"	5"	6 1/4"	1 5/8"	2 1/2"	3"	1 5/8"	1 5/8"	2 1/4"
MIN CONC THICKNESS, T	* 3 1/4"	3 1/4"	4 3/4"	7"	8 1/4"	SEE DIAGRAM BELOW T = 3 1/4" MIN, C = 1 1/4" MIN					
MAX INSTALLATION TORQUE (LB-FT)	18	40	45	85	115	18	40	45	18	40	45
TORQUE TEST LOAD (LB-FT)	9	20	23	43	58	9	20	23	9	20	23

* T= 2 1/2" AT TOPSIDE OF CONC O/ STEEL DECK

"SIMPSON" TITEN HD INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 2713)

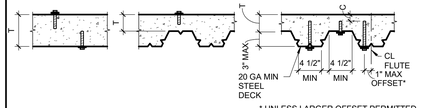
	GENERAL CONCRETE & TOPSIDE OF CONC O/ STL DECK					UNDERSIDE OF CONC OVER STEEL DECK					
						LOWER FLUTE			UPPER FLUTE		
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/4"	3/8"	1/2"	1/4"	3/8"	1/2"
STD EMBED, Hnom TYP UNO	1 5/8"	2 1/2"	3 1/4"	4"	5 1/2"	1 5/8"	2 1/2"	3 1/2"	1 5/8"	1 7/8"	2"
MIN CONC THICKNESS, T	3 1/4"	* 4"	5"	6"	8 3/4"	SEE DIAGRAM BELOW T = 1 1/2" MIN IN LOWER FLUTE T = 3 1/4" MIN IN UPPER FLUTE C = 3/4" MIN					
MAX INSTALLATION TORQUE (LB-FT)	24	50	65	100	150	24	50	65	24	50	65
TORQUE TEST LOAD (LB-FT)	12	25	33	50	75	12	25	33	12	25	33

* T= 3 1/4" AT TOPSIDE OF CONC O/ STEEL DECK

"DEWALT" SCREWBOLT+ INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 3889)

	GENERAL CONCRETE & TOPSIDE OF CONC O/ STL DECK					UNDERSIDE OF CONC OVER STEEL DECK					
						LOWER FLUTE			UPPER FLUTE		
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	3/8"	1/2"	5/8"		3/8"	1/2"
STD EMBED, Hnom TYP UNO	1 5/8"	2"	3"	4"	4 1/4"	2"	3"	4"		2"	2 1/2"
MIN CONC THICKNESS, T	3 1/4"*	3 1/2"*	5 1/4"	6"	6"	SEE DIAGRAM BELOW T = 2 1/2" MIN IN LOWER FLUTE T = 3 1/4" MIN IN UPPER FLUTE C = 3/4" MIN					
MAX INSTALLATION TORQUE (LB-FT)	19	25	45	60	70	25	45	60		25	45
TORQUE TEST LOAD (LB-FT)	9	12	25	30	35	12	25	30		12	25

* T= 2 1/2" AT TOPSIDE OF CONC O/ STEEL DECK



* UNLESS LARGER OFFSET PERMITTED BY EVALUATION AGENCY REPORT

GENERAL CONC | TOPSIDE OF CONC O/ STEEL DECK | UNDERSIDE OF CONC O/ STEEL DECK

EXPANSION ANCHORS IN CONCRETE

S- 056000_N003A
190805. Q2

1. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO. ALL EMBEDMENTS SPECIFIED ARE NOMINAL EMBEDMENT DEPTHS. REFER TO EVALUATION AGENCY REPORT FOR EFFECTIVE EMBEDMENTS.

"HILTI" KWIK BOLT-TZ INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 1917)

	GENERAL CONCRETE & TOPSIDE OF CONC O/ STEEL DECK					UNDERSIDE OF CONC O/ STEEL DECK				
ANCHOR DIA		3/8"	1/2"	5/8"	3/4"	3/8"	1/2"	5/8"		
STD EMBED, Hnom TYP UNO		2 5/16"	** 3 5/8"	4 1/2"	5 5/8"	2 3/8"	2 3/8"	3 5/8"		
MIN CONC THICKNESS, T		* 4"	* 6"	6"	8"	SEE DIAGRAM BELOW T = 1 1/2" MIN, C = 5/8" MIN				
TORQUE TEST LOAD (LB-FT)		25	40	60	110	25	40	60		

* T = 3 1/4" MIN AT TOPSIDE OF CONC O/ STEEL DECK
** STD EMBED = 2 3/8" AT TOPSIDE OF CONC O/ STEEL DECK

"SIMPSON" STRONG-BOLT 2 INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 3037)

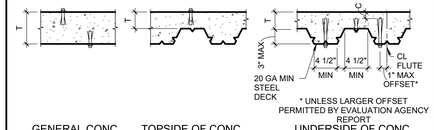
	GENERAL CONCRETE & TOPSIDE OF CONC O/ STEEL DECK					UNDERSIDE OF CONC O/ STEEL DECK				
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	3/8"	1/2"	5/8"		
STD EMBED, Hnom TYP UNO	1 3/4"	1 7/8"	**3 7/8"	3 3/8"	4 1/8"	2"	2 3/4"	3 3/8"		
MIN CONC THICKNESS, T	3 1/4"	3 1/4"	* 6"	5 1/2"	6 3/4"	SEE DIAGRAM BELOW T = 1 1/2" MIN, C = 1/2" MIN				
TORQUE TEST LOAD (LB-FT)	4	30	60	90	150	30	60	90		

* T = 3 1/4" MIN AT TOPSIDE OF CONC O/ STEEL DECK
** STD EMBED = 2 3/4" AT TOPSIDE OF CONC O/ STEEL DECK

"DEWALT" POWER-STUD+ SD2 INSTALLED IN
NORMAL WEIGHT OR LIGHT WEIGHT CONCRETE (f'c = 3000 PSI MIN)
(ICC REPORT ESR 2502)

	GENERAL CONCRETE & TOPSIDE OF CONC O/ STEEL DECK					UNDERSIDE OF CONC O/ STEEL DECK				
ANCHOR DIA		3/8"	1/2"	5/8"	3/4"	3/8"	1/2"	5/8"	3/4"	
STD EMBED, Hnom TYP UNO		**2 3/8"	**3 3/4"	4 7/8"	5 3/4"	2 3/8"	2 1/2"	3 5/8"	4 1/2"	
MIN CONC THICKNESS, T		* 4"	*5 3/4"	6 1/2"	10"	SEE DIAGRAM BELOW T = 3 1/4" MIN, C = 3/4" MIN				
TORQUE TEST LOAD (LB-FT)		20	40	60	110	25	40	60	110	

* T = 2 1/2" MIN AT TOPSIDE OF CONC O/ STEEL DECK
** STD EMBED = 2 1/2" AT TOPSIDE OF CONC O/ STEEL DECK



* UNLESS LARGER OFFSET PERMITTED BY EVALUATION AGENCY REPORT

GENERAL CONC | TOPSIDE OF CONC O/ STEEL DECK | UNDERSIDE OF CONC O/ STEEL DECK

POST INSTALLED ANCHORS

S- 056000_N002A
170127. Q2

THESE NOTES SHALL APPLY TO THE INSTALLATION, INSPECTION, AND TESTING OF EXPANSION, ADHESIVE, AND SCREW ANCHORS. USE SPECIFIC PRODUCTS WHERE INDICATED. IF A SPECIFIC PRODUCT / MANUFACTURER IS NOT NOTED, SELECT ANCHOR FROM THE PROVIDED TABLES BASED ON ANCHOR TYPE, DIAMETER AND BASE MATERIAL. POST-INSTALLED ANCHORS / REINFORCING ARE NOT PERMITTED TO REPLACE CAST-IN ANCHORS/REINFORCING UNLESS SPECIFICALLY NOTED.

INSTALLATION

1. INSTALL PER REQUIREMENTS OF THE EVALUATION AGENCY REPORT & MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS FOR THE SPECIFIC ANCHOR.
2. INSTALLATION OF ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS RESISTING SUSTAINED TENSION LOADS (AS SPECIFICALLY NOTED ON DETAILS) SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPLICABLE CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE A WRITTEN TEST AND PERFORMANCE TEST IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM, OR EQUIVALENT. CERTIFICATION PROGRAM SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. ANCHOR INSTALLATION SHALL MEET THE MINIMUM EMBEDMENT, EDGE DISTANCE, SPACING, AND BASE MATERIAL THICKNESS CRITERIA ESTABLISHED BY THE RELEVANT EVALUATION AGENCY REPORT & MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
4. ANCHOR INSTALLATION & CURE TEMPERATURES SHALL FOLLOW EVALUATION AGENCY REPORT & MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS.
5. WHEN INSTALLING ANCHORS IN CONCRETE OR MASONRY, DO NOT DAMAGE REINFORCING (REBAR AND/OR PRE/POST TENSIONED STRANDS). LOCATE ALL REINFORCING AT AFFECTED AREAS USING NON-DESTRUCTIVE MEANS PRIOR TO INSTALLING ANCHORS. MAINTAIN A MINIMUM CLEARANCE OF TWO INCHES BETWEEN THE REINFORCEMENT AND THE ANCHOR.

INSPECTION

1. PROVIDE SPECIAL INSPECTION AS REQUIRED BY THE EVALUATION AGENCY REPORT AND ENFORCEMENT AGENCY. WHERE EVALUATION AGENCY REPORT PERMITS EITHER PERIODIC OR CONTINUOUS INSPECTION, USE CONTINUOUS.
2. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS RESISTING SUSTAINED TENSION LOADS (AS SPECIFICALLY NOTED ON DETAILS) SHALL BE CONTINUOUSLY INSPECTED BY AN INSPECTOR SPECIALLY APPROVED FOR THAT PURPOSE BY THE ENFORCEMENT AGENCY.

TESTING

1. TEST ANCHORS IN ACCORDANCE WITH THE EVALUATION AGENCY REPORT AND ENFORCEMENT AGENCY REQUIREMENTS FOR THE SPECIFIC ANCHOR AND IN ACCORDANCE WITH THE FREQUENCIES AND TEST METHODS LISTED BELOW.
2. TESTS SHALL BE PERFORMED IN THE PRESENCE OF THE PROJECT INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY AND STRUCTURAL ENGINEER.
3. REACTION LOADS FROM TEST FIXTURE(S) MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED BY THE FIXTURE(S) FROM WITHDRAWING.
4. TEST METHOD SHALL BE AS NOTED FOR SPECIFIC ANCHOR TYPES AND THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
   - HYDRAULIC RAM METHOD (TENSION TESTING):
     - THE ANCHOR SHALL MAINTAIN THE TEST LOAD FOR 15 SECONDS AND SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD. A PRACTICAL WAY TO DETERMINE OBSERVABLE MOVEMENT IS THAT THE WASHER UNDER THE NUT BECOMES LOOSE.
   - TORQUE WRENCH METHOD (TORQUE TESTING):
     - THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS:
     - ONE-HALF (1/2) TURN OF THE NUT, TYP UNO.
     - ONE-QUARTER (1/4) TURN OF THE NUT FOR THE 3/8" SLEEVE ANCHOR ONLY.
     - ONE-QUARTER (1/4) TURN OF THE SCREW AFTER INITIAL SEATING OF THE SCREW HEAD FOR SCREW ANCHORS.
5. TESTING FREQUENCIES SHALL BE AS INDICATED IN THE TABLE BELOW. WHEN MULTIPLE ANCHORS ARE USED IN A SINGLE GROUP OR CONNECTION, THE PERCENT OF ANCHORS TESTED AT EACH LOCATION SHALL BE AS INDICATED BELOW.
6. IF ANY ANCHOR FAILS TESTING, ALL ANCHORS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED SHALL BE TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS, THEN THE INITIAL TESTING FREQUENCY SHALL BE RESUMED.

TESTING FREQUENCY

APPLICATION	PERCENT OF ALL ANCHORS
SILL PLATE BOLTING AND REBAR AT SLAB ON GRADE, UNO	10 PERCENT
STRUCTURAL EXCLUDING SILL PLATE BOLTING	100 PERCENT
NON-STRUCTURAL INCLUDING EQUIPMENT ANCHORAGE	50 PERCENT

ADHESIVE ANCHORS IN MASONRY

S- 056000_N008A
181001. Q2

1. REFERENCES TO "EPOXY" OR "CHEMICAL" ANCHORS EMBEDDED IN MASONRY SHALL REFER TO THESE NOTES.
2. THREADED ROD AND REBAR USED W/ ADHESIVE ANCHORS SHALL MEET THE REQUIREMENTS OF THE EVALUATION AGENCY REPORT.
3. WHEN REBAR IS EMBEDDED USING AN ADHESIVE, ANCHOR DIA SHALL BE THE NOMINAL BAR DIAMETER.
4. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO.

ATR & REBAR WITH "HILTI" HIT HY-270 INSTALLED IN
GROUT FILLED CONCRETE MASONRY (f'm = 1500 PSI MIN)
(ICC REPORT ESR 4143)

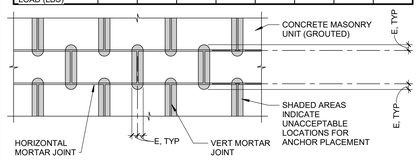
	IN FACE OF WALL (E= 0" ANCHORS MAY BE INSTALLED IN VERTICAL MORTAR JOINTS)				IN TOP OF WALL (INSTALL IN GROUT ONLY)		
ANCHOR DIA	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	
STD EMBED, Hnom (Hef = Hnom)	3 3/8"	4 1/2"	5 5/8"	6 3/4"	4 1/2"	5 5/8"	
TENSION TEST LOAD (LBS)	2480	4070	5680	7620	3250	3180	

ATR & REBAR WITH "SIMPSON" SET-XP INSTALLED IN
GROUT FILLED CONCRETE MASONRY (f'm = 1500 PSI MIN)
(IAPMO REPORT ER 265)

	IN FACE OF WALL (E = 1 1/2")				IN TOP OF WALL (INSTALL IN GROUT ONLY)		
ANCHOR DIA	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	7/8"
STD EMBED, Hnom (Hef = Hnom)	3 3/8"	4 1/2"	5 5/8"	6 3/4"	4 1/2"	5 5/8"	7 7/8"
TENSION TEST LOAD (LBS)	2980	3650	3790	3790	2970	3400	3220

ATR & REBAR WITH "DEWALT" AC100+ GOLD INSTALLED IN
GROUT FILLED CONCRETE MASONRY (f'm = 1500 PSI MIN)
(ICC REPORT ESR 3200)

	IN FACE OF WALL (E= 1 1/2")				IN TOP OF WALL (INSTALL IN GROUT ONLY)		
ANCHOR DIA	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
STD EMBED, Hnom (Hef = Hnom)	3"	4"	5"	6"	4"	5"	6"
TENSION TEST LOAD (LBS)	1230	1920	2190	2320	1040	1490	2520



ANCHOR PLACEMENT NOTES:
1. ANCHORS MUST BE INSTALLED A MINIMUM DISTANCE, E, FROM ANY VERTICAL MORTAR JOINT AS SHOWN.
2. ANCHOR LOCATIONS ARE LIMITED TO ONE PER MASONRY CELL WITH A MINIMUM SPACING OF 8" ON CENTER.

SCREW ANCHORS IN MASONRY

Q1

1. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO.

"HILTI" HUS-EZ (KH-EZ) INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(ICC REPORT ESR 3056)

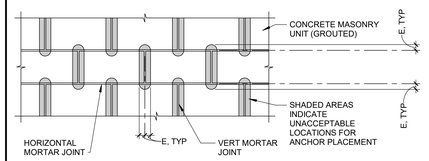
	IN FACE OF WALL (E = 1 1/4")					IN TOP OF WALL	
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"
STD EMBED TYP UNO	1 5/8"	1 5/8"	2 1/4"	3 1/4"	4"	4 1/4"	5"

"SIMPSON" TITEN HD INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(ICC REPORT ESR 1056)

	IN FACE OF WALL (E = 1 1/4")					IN TOP OF WALL	
ANCHOR DIA		3/8"	1/2"	5/8"	3/4"	1/2"	5/8"
STD EMBED TYP UNO		2 3/4"	3 1/2"	4 1/2"	5 1/2"	4 1/2"	4 1/2"

"DEWALT" SCREWBOLT+ INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(ICC REPORT ESR 4042)

	IN FACE OF WALL (E = 1 1/4")					IN TOP OF WALL		
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
STD EMBED TYP UNO	1 5/8"	2"	2 1/2"	3 1/4"	4"	4 1/4"	5"	6 1/4"



ANCHOR PLACEMENT NOTES:
1. ANCHORS MUST BE INSTALLED A MINIMUM DISTANCE, E, FROM ANY VERTICAL MORTAR JOINT AS SHOWN.

EXPANSION ANCHORS IN MASONRY

S- 056000_N006A
170127. Q2

1. EMBEDMENT SHALL BE AS INDICATED IN THE TABLE BELOW, TYP UNO.

"HILTI" KWIK BOLT-3 INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(ICC REPORT ESR 1385)

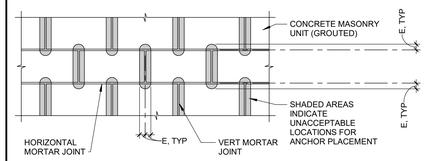
	IN FACE OF WALL (E = 1 3/8")					IN TOP OF WALL	
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"
STD EMBED TYP UNO	2"	2 1/2"	3 1/2"	4"	4 3/8"	3"	3 1/2"
TORQUE TEST LOAD (LB-FT)	4	15	25	65	120	25	65

"SIMPSON" STRONG-BOLT 2 INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(IAPMO REPORT ER 240)

	IN FACE OF WALL (E = 1 1/4")					IN TOP OF WALL	
ANCHOR DIA	1/4"	3/8"	1/2"	5/8"	3/4"	1/2"	5/8"
STD EMBED TYP UNO	1 3/4"	2 5/8"	3 1/2"	4 3/8"	5 1/4"	3 1/2"	4 3/8"
TORQUE TEST LOAD (LB-FT)	4	20	35	55	100	35	55

"DEWALT" POWER-STUD+ SD1 INSTALLED IN
GROUT-FILLED MASONRY WALLS (f'm = 1500 PSI MIN)
(ICC REPORT ESR 2966)

	IN FACE OF WALL (E = 1 3/8")				IN TOP OF WALL		
ANCHOR DIA	3/8"	1/2"	5/8"		3/8"	1/2"	5/8"
STD EMBED TYP UNO	2 3/8"	2 1/2"	3 3/8"		2 3/8"	2 1/2"	3 3/8"
TORQUE TEST LOAD (LB-FT)	20	40	50		20	40	50



ANCHOR PLACEMENT NOTES:
1. ANCHORS MUST BE INSTALLED A MINIMUM DISTANCE, E, FROM ANY VERTICAL MORTAR JOINT AS SHOWN.
2. ANCHOR LOCATIONS ARE LIMITED TO ONE PER MASONRY CELL WITH A MINIMUM SPACING OF 8" ON CENTER.

POWER ACTUATED FASTENERS

S- 056000_N001A
190225. Q2

1. POWER ACTUATED FASTENERS SHALL BE "HILTI" X-U (ICC ESR 2269), "SIMPSON" PDPA (ICC ESR 2138), OR "DEWALT" POWER DRIVEN FASTENERS (ICC ESR 2024), TYP UNO.
2. INSTALLATION OF FASTENERS SHALL BE IN ACCORDANCE WITH THE EVALUATION AGENCY REPORT. INSTALL FASTENERS WITH SUFFICIENT EDGE DISTANCE AND SPACING TO ACHIEVE FULL CAPACITY, UNO.
3. FASTENERS TO CONCRETE OR MASONRY SHALL HAVE 1" MIN EMBEDMENT (1 1/4" MIN FOR "SIMPSON" PDPA IN MASONRY), TYP UNO.
4. FASTENERS TO STRUCTURAL STEEL SHALL HAVE MIN EMBEDMENT TO STEEL PER MANUFACTURER, TYP UNO.
5. FASTENERS MAY NOT BE USED FOR TENSION LOADS EXCEPT FOR THE FOLLOW CONDITIONS:
   - VERTICAL SUSPENSION WIRES FOR ACOUSTICAL TILE OR LAY-IN CEILINGS
   - VERTICAL SUPPORTS OF MECH DUCTS, CONDUITS, ETC WHERE THE SERVICE LOAD ON EACH ANCHOR DOES NOT EXCEED 90 LBS FOR FASTENERS IN CONCRETE OR 250 LBS FOR FASTENERS IN STRUCTURAL STEEL.
   - FASTENERS ARE NOT PERMITTED AT SEISMIC BRACING ATTACHMENTS.
6. WHEN INSTALLING FASTENERS IN PRE/POST-TENSIONED CONCRETE DO NOT DAMAGE STRANDS. LOCATE STRANDS AT AFFECTED AREAS USING NON-DESTRUCTIVE MEANS PRIOR TO INSTALLING FASTENERS. MAINTAIN A MINIMUM CLEARANCE OF 2" BETWEEN THE STRANDS AND THE FASTENERS.
7. THE OPERATOR, TOOL, & FASTENER SHALL BE PRE-QUALIFIED BY THE PROJECT INSPECTOR WHO SHALL OBSERVE THE TESTING OF THE FIRST 10 FASTENER INSTALLATIONS. THEREAFTER, RANDOM TESTS UNDER THE PROJECT INSPECTOR'S SUPERVISION SHALL BE MADE TO APPROXIMATELY 1 IN 10 PINS. IF ANY PIN FAILS, TEST ALL PINS OF THE SAME CATEGORY NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE PASS, THEN RESUME THE INITIAL TESTING FREQUENCY.
8. TENSION TEST LOAD SHALL BE 1 1/4 TIMES THE NOMINAL TENSION CAPACITY OR 2 TIMES THE ALLOWABLE TENSION CAPACITY LISTED IN THE EVALUATION AGENCY REPORT.
9. TEST LOAD SHALL BE APPLIED TO THE PIN IN SUCH A MANNER AS NOT TO RESIST THE SPALLING TENDENCY OF THE CONCRETE SURROUNDING THE PIN.
10. TESTING IS NOT REQUIRED FOR STEEL-TO-STEEL CONNECTIONS OR FASTENERS USED AT SILLS OF INTERIOR NON-STRUCTURAL WALLS PROVIDED THERE ARE A MINIMUM OF (3) FASTENERS PER SEGMENT OF SILL.
11. A REPORT OF TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY AND STRUCTURAL ENGINEER.

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
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?XX-XXX?
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LIONAKIS
1919 Nineteenth Street
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SEAL

PROJECT
PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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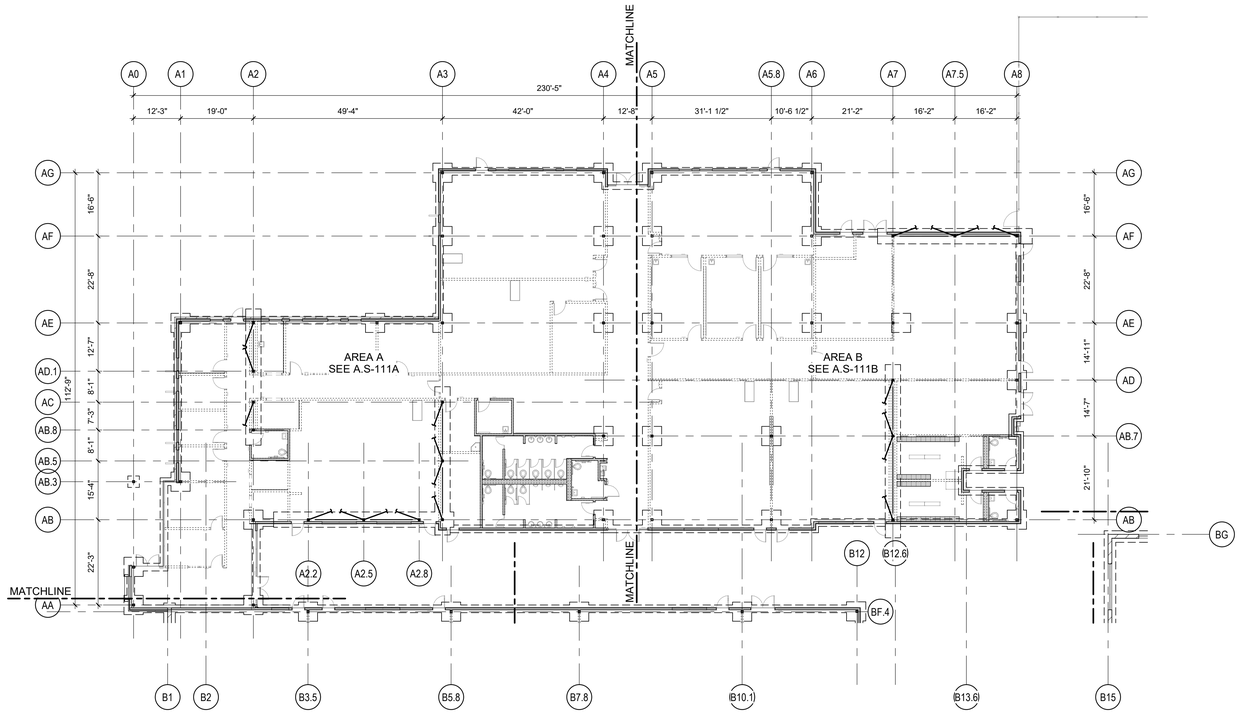
TITLE
TYPICAL NOTES

SHEET
S-013

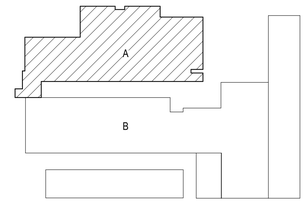
NORTH



1 BLDG A - PLAN - FOUNDATION - OVERALL
SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



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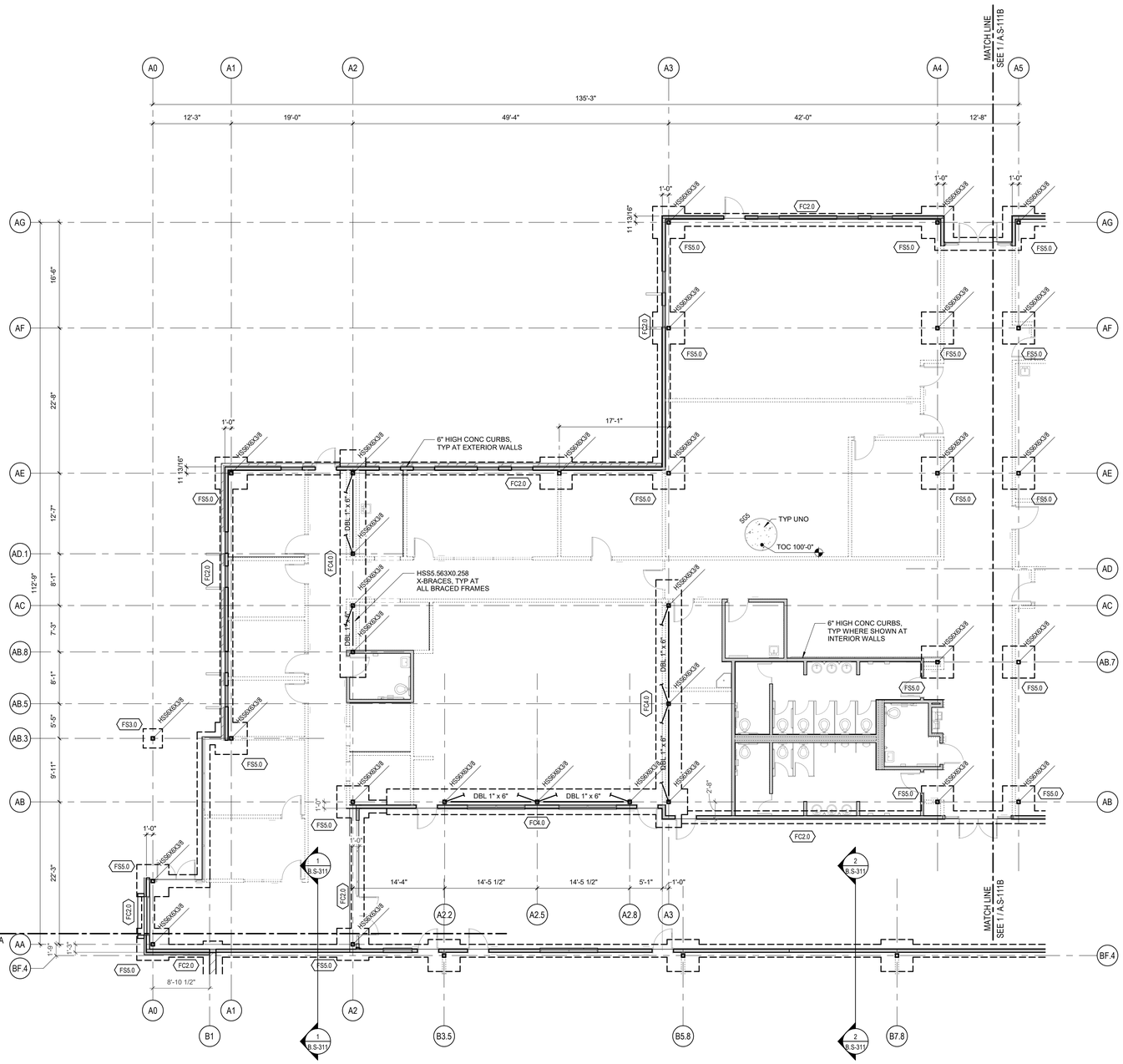
TITLE
BLDG A - PLAN - FOUNDATION - OVERALL

SHEET
A.S-111



1 BLDG A - PLAN - FOUNDATION - AREA A
SCALE 1/8" = 1'-0"

NORTH

NOTES

170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
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5. SEE ARCH DWGS FOR DIMENSIONS OF SLAB DEPRESSIONS & SLOPED SLABS.
6. SEE ARCH & OTHER CONSULTANT DWGS FOR FLOOR PENETRATIONS NOT SHOWN. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. COMPLY WITH TYPICAL DETAILS.
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11. SEE SCHEDULE FOR CONTINUOUS FOOTING SIZE & REINF, TYP UNO.
12. EXTERIOR WALLS ARE 600S162-54 STEEL STUDS @ 16" OC, TYP UNO.

SCHEDULES

DECK SCHEDULE

TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC

CONTINUOUS FOOTING SCHEDULE

TYPE	WIDTH	DEPTH	REINFORCEMENT	REMARKS
FC2.0	2'-0"	2'-0"		
FC4.0	4'-0"	3'-0"		

SPREAD FOOTING SCHEDULE

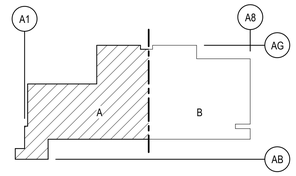
TYPE	SIZE	DEPTH	REINFORCEMENT	REMARKS
FS3.0		2'-0"	(4) #5 EW AT BOT	
FS5.0		2'-0"	(6) #5 EW AT BOT	
FS6.0		2'-0"	(7) #5 EW AT BOT	

LEGEND

170828. Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
- STRUCTURAL STUD WALL
- STRUCTURAL MASONRY WALL
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- SLAB STEP SYMBOL
- ELEVATION RELATIVE TO TOC
- CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COLUMN WITH CALLOUT
- FCX.X CONTINUOUS FOOTING TAG
- FSX.X SPREAD FOOTING TAG
- FOOTING
- STEPPED FOOTING

KEY PLAN



NORTH

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MANAGEMENT

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TITLE

BLDG A - PLAN - FOUNDATION - AREA A

SHEET

A.S-111A

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT. SCALE ACCORDINGLY

0 1/4" 1/2" 1"

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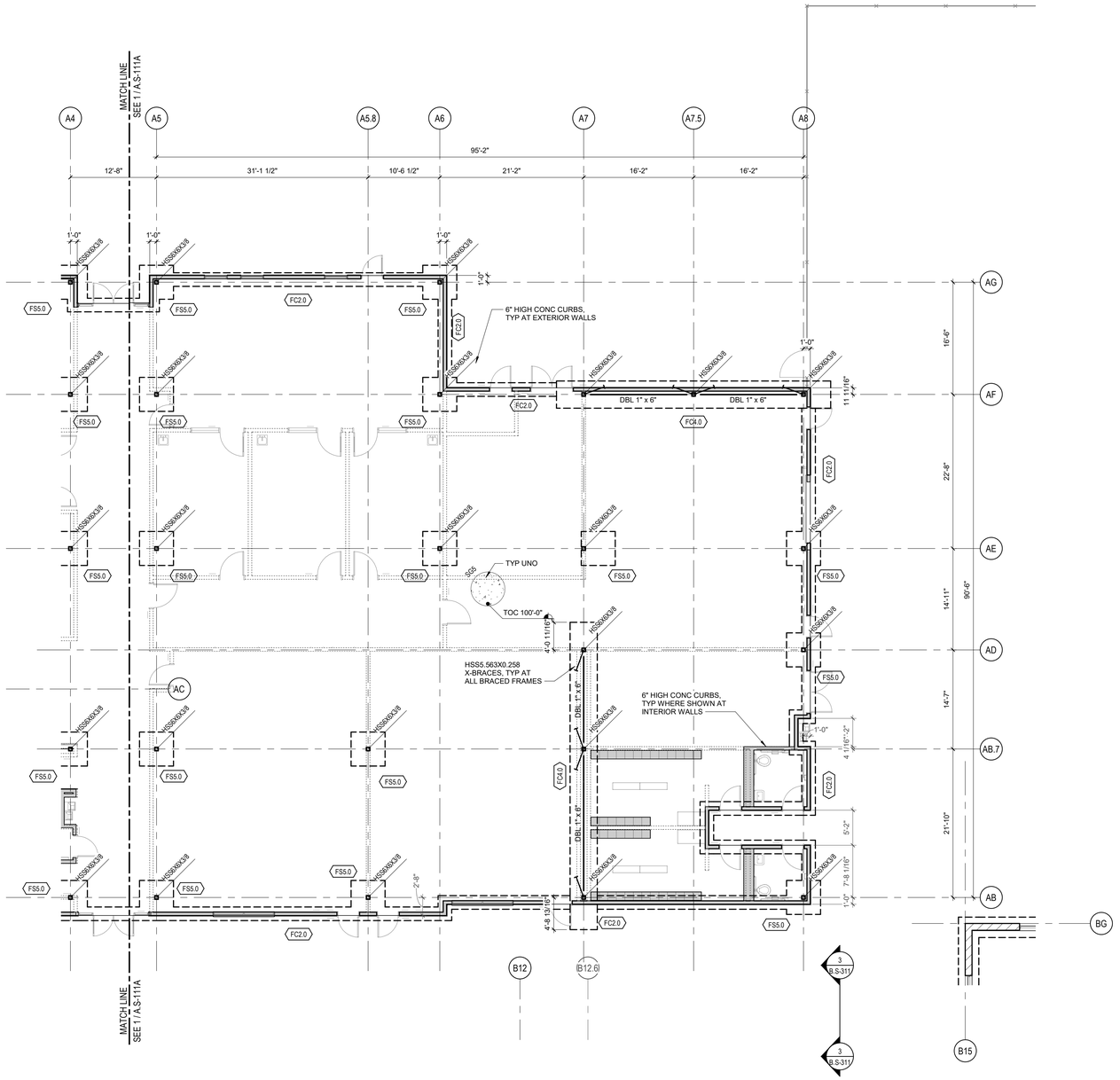

1 BLDG A - PLAN - FOUNDATION - AREA B

SCALE 1/8" = 1'-0"

NORTH

NOTES

170828. Q2

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LEGEND

170828. Q1

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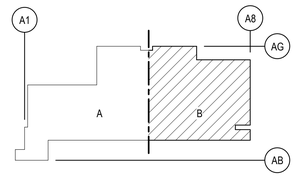
- SA CA DA — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- FCX.X — CONTINUOUS FOOTING TAG
- FSX.X — SPREAD FOOTING TAG
- FOOTING
- S — S — STEPPED FOOTING

KEY PLAN



NORTH

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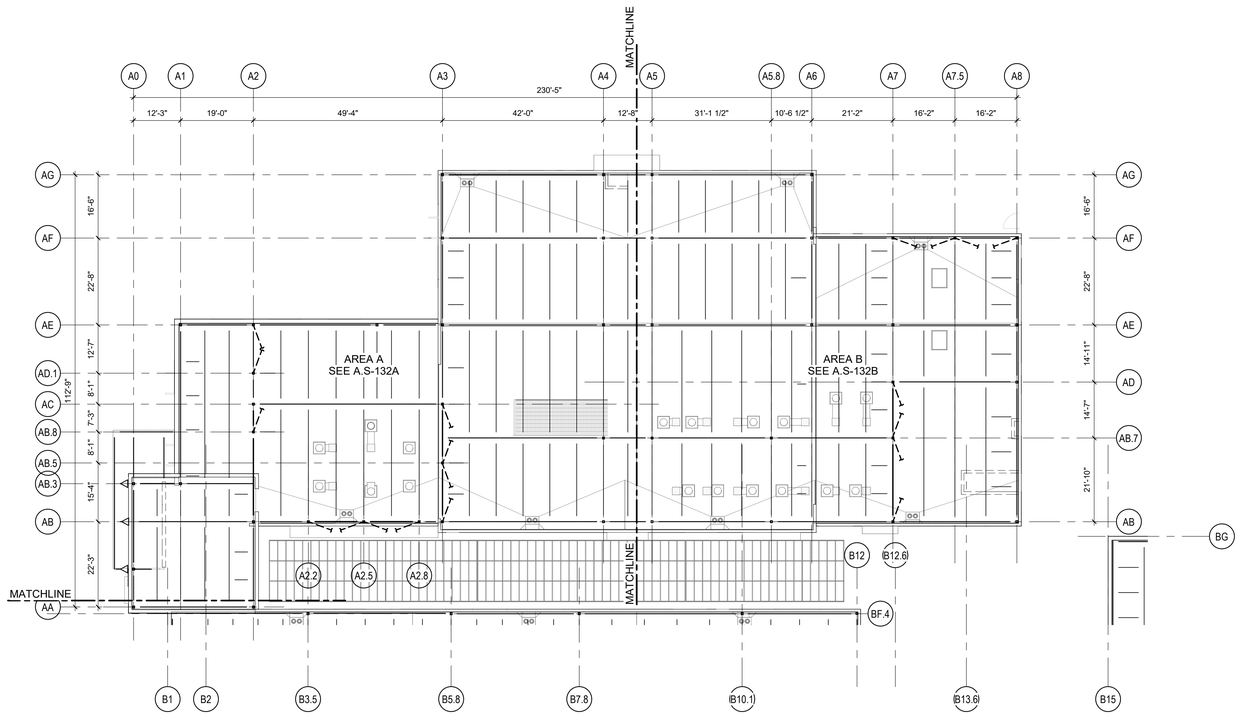
CLIENT PROJECT NO:

TITLE

BLDG A - PLAN - FOUNDATION - AREA B

SHEET

A.S-111B

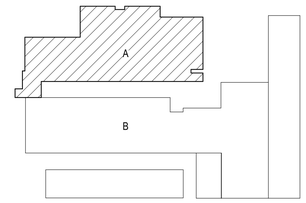


1 BLDG A - PLAN - ROOF FRAMING - OVERALL

SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



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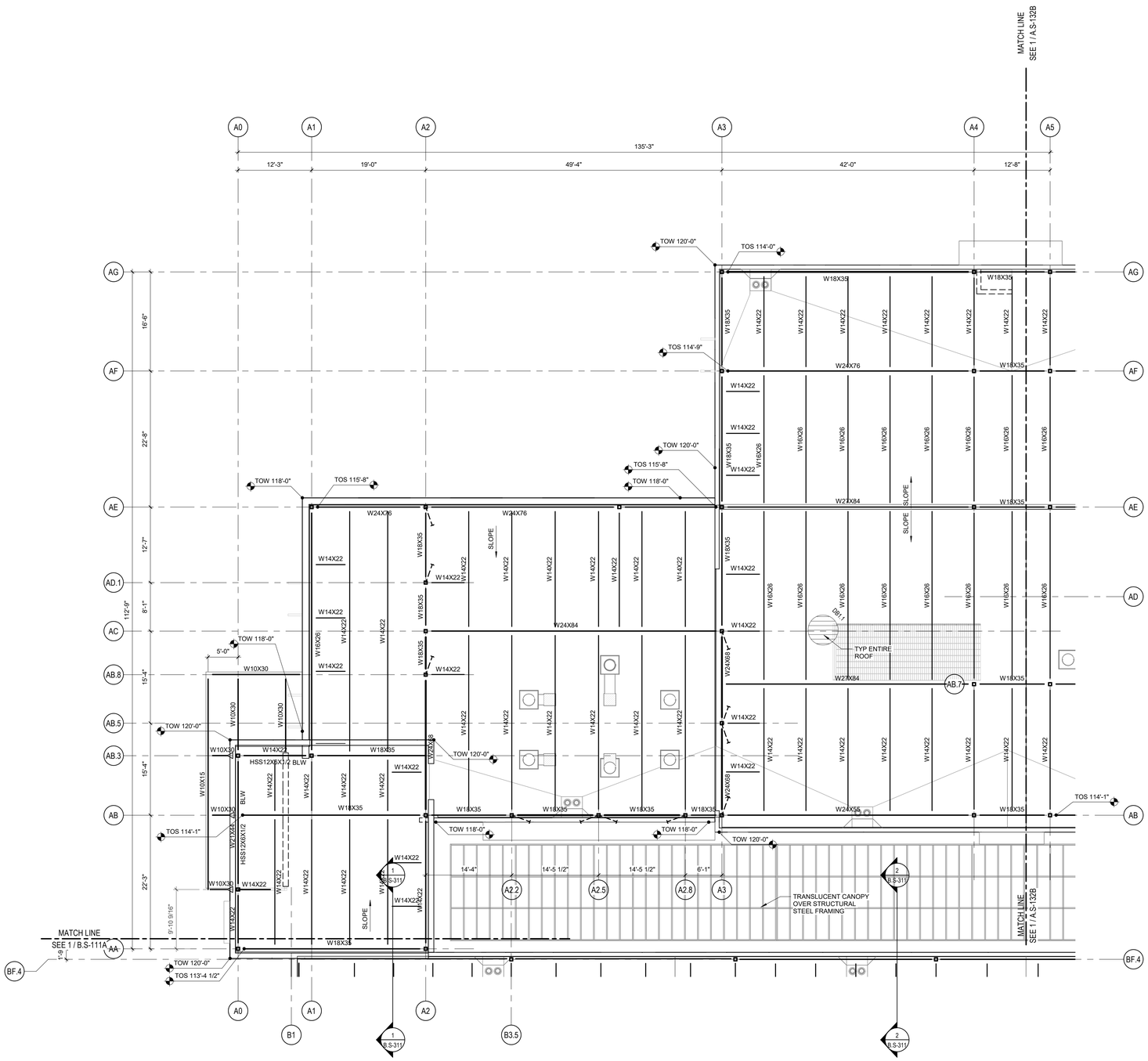
BLDG A - PLAN - ROOF FRAMING - OVERALL

SHEET

A.S-132



1 BLDG A - PLAN - ROOF FRAMING - AREA A
SCALE 1/8" = 1'-0"

NORTH

NOTES

S- 010000_N001A
170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
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5. SEE ARCH & OTHER CONSULTANT DWGS FOR ROOF PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. CONFORM WITH TYPICAL DETAILS.
6. SEE ARCH DWGS FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
7. EXTERIOR WALLS ARE 600S162-54 STEEL STUDS @ 16" OC, TYP UNO.
8. BEAMS ARE EQUALLY SPACED BETWEEN COLUMNS, UNO.
9. ROOF DECK IS 1 1/2" x 16 GA TYPE "B" STEEL DECK AND SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM.

SCHEDULES

DECK SCHEDULE

TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC

LEGEND

180621
Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
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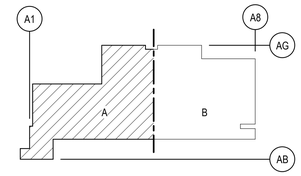
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- -2" — SLAB STEP SYMBOL
- ELEVATION RELATIVE TO TOC
- SPAN / CANT / DIR — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- BEAM SIZE
- NUMBER OF WELDED HEADED STUDS, UNO
- W12x40 (48) SFRS — SEISMIC FORCE RESISTING SYSTEM MEMBER
- C=1/2" [-2"] — BEAM ELEVATION RELATIVE TO TOS
- BEAM CAMBER
- S — BEAM SPLICE
- NON-FRAME MOMENT CONNECTION
- MOMENT FRAME CONNECTION
- BENT BEAM SPLICE
- SFRS — BOLTED SINGLE ROW SFRS CONNECTION PER
- SFRS — BOLTED DOUBLE ROW SFRS CONNECTION PER
- SFRS — WELDED SFRS CONNECTION PER
- FLANGE BRACE CONNECTION PER
- SPECIAL CONNECTION TYPE 2
- DIAGONAL STRUT
- UPPER END

KEY PLAN



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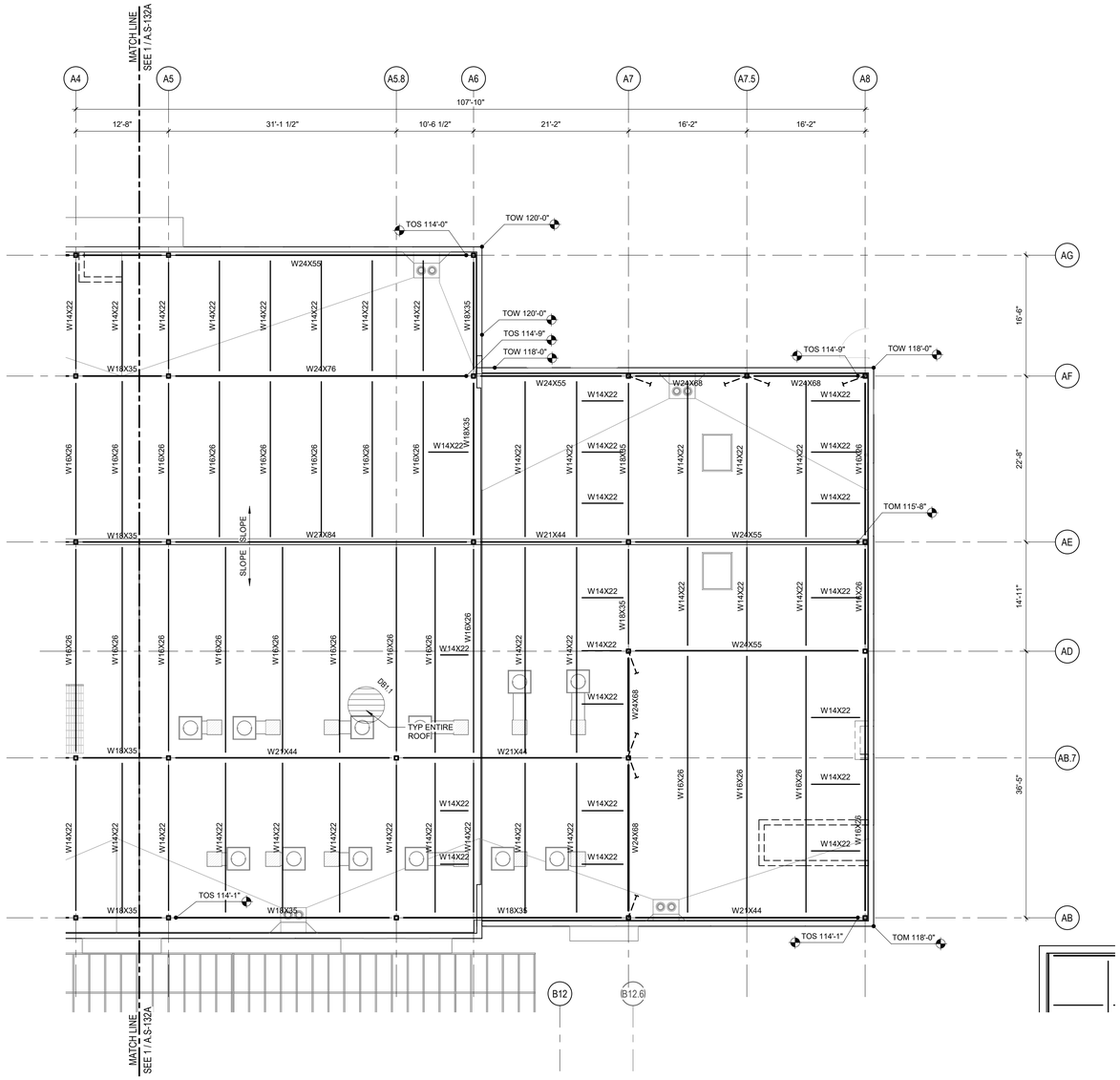
SHEET
A.S-132A



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SCALE 1/8" = 1'-0"

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170828. Q2

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3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
4. SEE ARCH & OTHER CONSULTANT DWGS FOR DIMENSIONS & LOCATIONS OF WALL OPENINGS. SEE TYPICAL DETAILS FOR FRAMING AT OPENINGS.
5. SEE ARCH & OTHER CONSULTANT DWGS FOR ROOF PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. CONFORM WITH TYPICAL DETAILS.
6. SEE ARCH DWGS FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
7. EXTERIOR WALLS ARE 600S162-54 STEEL STUDS @ 16" OC, TYP UNO.
8. BEAMS ARE EQUALLY SPACED BETWEEN COLUMNS, UNO.
9. ROOF DECK IS 1 1/2" x 16 GA TYPE "B" STEEL DECK AND SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM.

SCHEDULES

DECK SCHEDULE

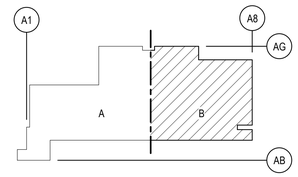
TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC

LEGEND

180621
Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
- STRUCTURAL STUD WALL
- STRUCTURAL MASONRY WALL
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- -2" — SLAB STEP SYMBOL; ELEVATION RELATIVE TO TOC
- SF CR DT — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- W12x40 (48) SFRS — BEAM SIZE; NUMBER OF WELDED HEADED STUDS, UNO; SEISMIC FORCE RESISTING SYSTEM MEMBER
- C=1/2" [-2"] — BEAM ELEVATION RELATIVE TO TOS; BEAM CAMBER
- S — BEAM SPLICE
- NON-FRAME MOMENT CONNECTION
- MOMENT FRAME CONNECTION
- BENT BEAM SPLICE
- SFRS — BOLTED SINGLE ROW SFRS CONNECTION PER
- SFRS — BOLTED DOUBLE ROW SFRS CONNECTION PER
- SFRS — WELDED SFRS CONNECTION PER
- FLANGE BRACE CONNECTION PER
- SPECIAL CONNECTION TYPE 2
- DIAGONAL STRUT; UPPER END

KEY PLAN



NORTH

FILE NO. ?XX-XXXX?

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LIONAKIS
1919 Nineteenth Street
Sacramento CA 95811
P 916.558.1900 F 916.558.1919
www.lionakis.com

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SEAL

PROJECT

PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE

BLDG A - PLAN - ROOF FRAMING - AREA B

SHEET

A.S-132B

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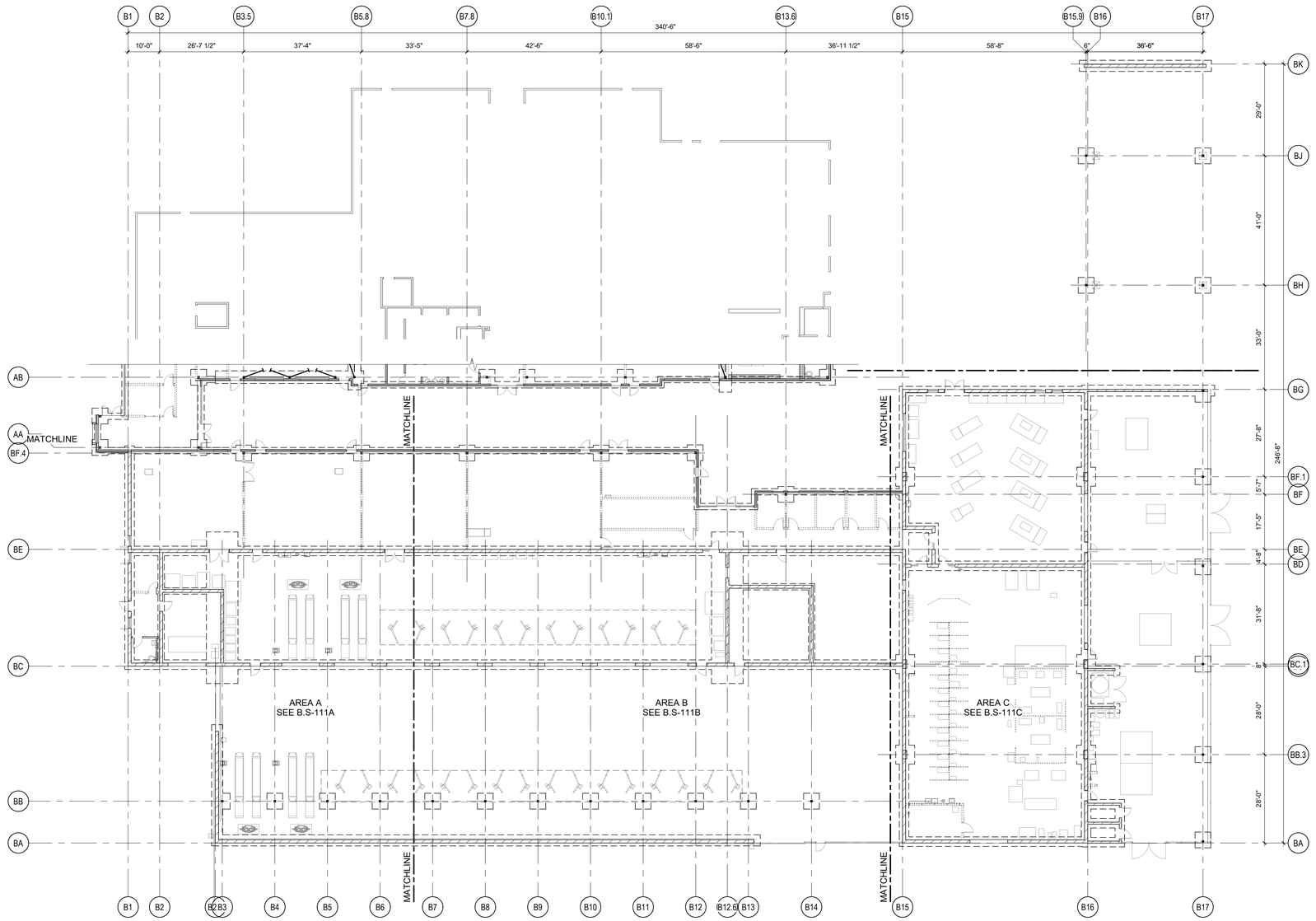
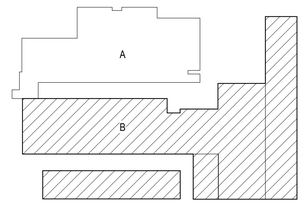


1 BLDG B - PLAN - FOUNDATION - OVERALL

SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



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MANAGEMENT

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TITLE

BLDG B - PLAN - FOUNDATION - OVERALL

SHEET

B.S-111

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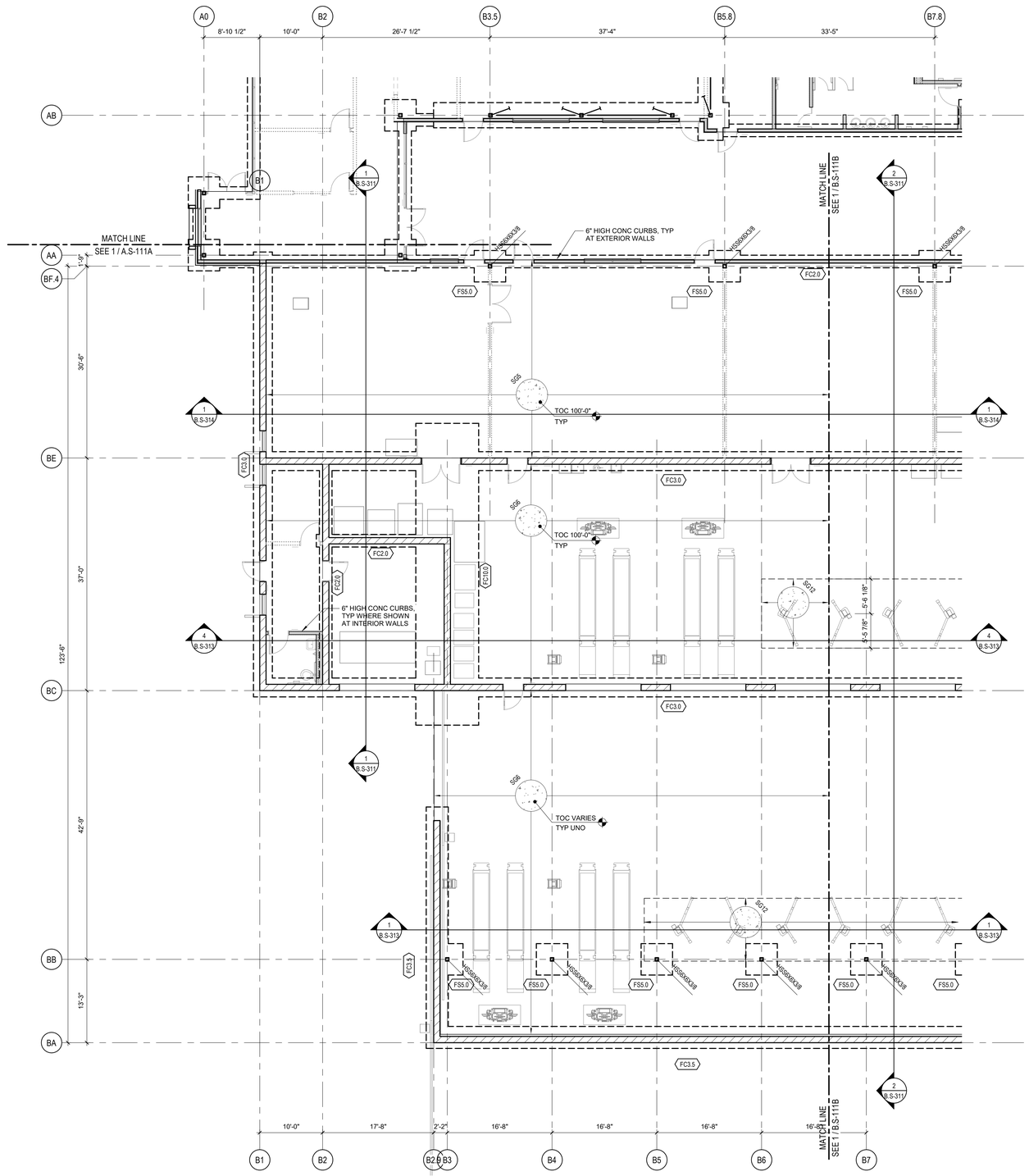


1 BLDG B - PLAN - FOUNDATION - AREA A
SCALE 1/8" = 1'-0"

NORTH

NOTES

170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
4. SEE ARCH & OTHER CONSULTANT DWGS FOR DIMENSIONS & LOCATIONS OF WALL OPENINGS.
5. SEE ARCH DWGS FOR DIMENSIONS OF SLAB DEPRESSIONS & SLOPED SLABS.
6. SEE ARCH & OTHER CONSULTANT DWGS FOR FLOOR PENETRATIONS NOT SHOWN. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. COMPLY WITH TYPICAL DETAILS.
7. SEE CIVIL DRAWINGS AND SPECIFICATIONS FOR ENGINEERED FILL.
8. EXTERIOR CONCRETE FLATWORK IS NOT SHOWN; SEE CIVIL & ARCH DWGS.
9. CONTINUOUS WALL FOOTINGS TO BE CENTERED UNDER WALLS AND PAD FOOTINGS TO BE CENTERED UNDER COLUMNS, TYP UNO.
10. TOP OF FOOTINGS SHALL BE 1'-4" BELOW FINISHED FLOOR (TOF 98'-8"), TYP UNO. SEE ARCH & OTHER CONSULTANT DRAWINGS FOR UTILITIES THAT WILL AFFECT FOOTINGS AND COMPLY WITH TYPICAL DETAILS.
11. SEE SCHEDULE FOR CONTINUOUS FOOTING SIZE & REINF, TYP UNO.
12. EXTERIOR WALLS ARE 12" CMU GROUTED SOLID W/ STD REINF, TYP UNO.

SCHEDULES

DECK SCHEDULE

TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
DB1.2	1 1/2" X 16 GA TYPE "B" STEEL DECK W/ G90 COATING
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC
SG6	6" CONC SLAB O/ SUB-BASE W/ #5 @ 16" OC
SG12	12" CONC SLAB O/ SUB-BASE W/ (2) LAYERS OF #5 @ 16" OC

CONTINUOUS FOOTING SCHEDULE

TYPE	WIDTH	DEPTH	REINFORCEMENT	REMARKS
FC2.0	2'-0"	2'-0"		
FC3.0	3'-0"	2'-0"		
FC3.5	3'-6"	2'-0"		
FC10.0	10'-0"	2'-0"		

SPREAD FOOTING SCHEDULE

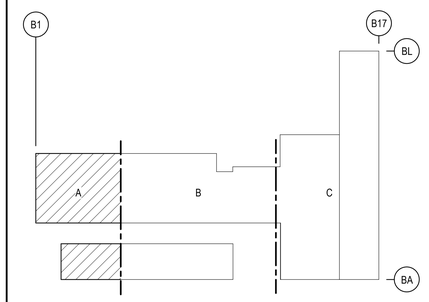
TYPE	SIZE	DEPTH	REINFORCEMENT	REMARKS
FS3.0		2'-0"	(4) #5 EW AT BOT	
FS5.0		2'-0"	(6) #5 EW AT BOT	
FS6.0		2'-0"	(7) #5 EW AT BOT	

LEGEND

170828. Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
- STRUCTURAL STUD WALL
- STRUCTURAL MASONRY WALL
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- SLAB STEP SYMBOL
- -2" ELEVATION RELATIVE TO TOC
- SF, CF, DF — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- FCX.X — CONTINUOUS FOOTING TAG
- FSX.X — SPREAD FOOTING TAG
- FOOTING
- S — S — STEPPED FOOTING

KEY PLAN



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SEAL

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PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

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LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
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TITLE
BLDG B - PLAN - FOUNDATION - AREA A

SHEET
B.S-111A

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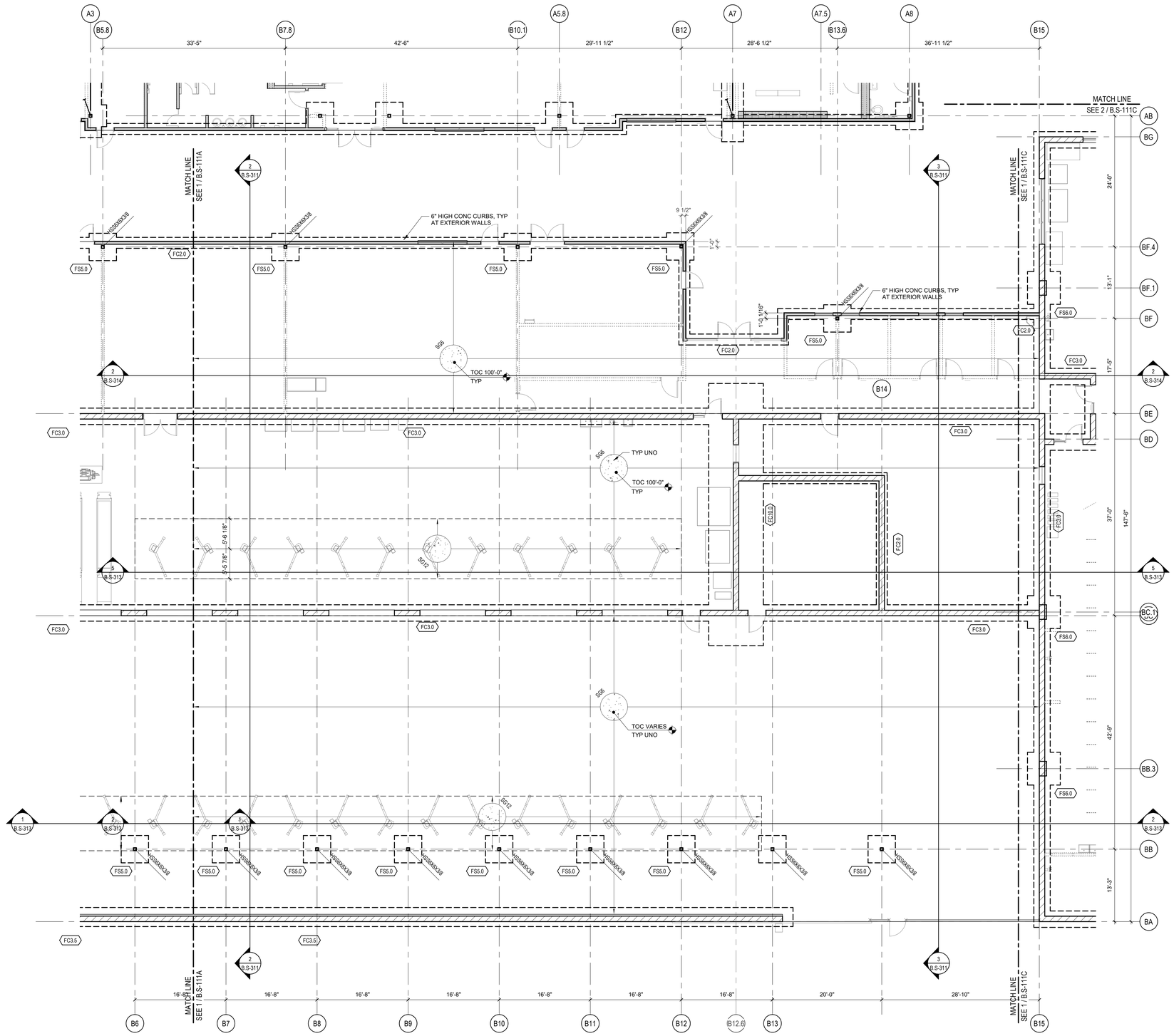

1 BLDG B - PLAN - FOUNDATION - AREA B

SCALE 1/8" = 1'-0"

NORTH

NOTES

170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
4. SEE ARCH & OTHER CONSULTANT DWGS FOR DIMENSIONS & LOCATIONS OF WALL OPENINGS.
5. SEE ARCH DWGS FOR DIMENSIONS OF SLAB DEPRESSIONS & SLOPED SLABS.
6. SEE ARCH & OTHER CONSULTANT DWGS FOR FLOOR PENETRATIONS NOT SHOWN. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. COMPLY WITH TYPICAL DETAILS.
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8. EXTERIOR CONCRETE FLATWORK IS NOT SHOWN, SEE CIVIL & ARCH DWGS.
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10. TOP OF FOOTINGS SHALL BE 1'-4" BELOW FINISHED FLOOR (TOF 98'-8"), TYP UNO. SEE ARCH & OTHER CONSULTANT DRAWINGS FOR UTILITIES THAT WILL AFFECT FOOTINGS AND COMPLY WITH TYPICAL DETAILS.
11. SEE SCHEDULE FOR CONTINUOUS FOOTING SIZE & REINF, TYP UNO.
12. EXTERIOR WALLS ARE 12" CMU GROUTED SOLID W/ STD REINF, TYP UNO.

SCHEDULES

DECK SCHEDULE

TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
DB1.2	1 1/2" X 16 GA TYPE "B" STEEL DECK W/ G90 COATING
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC
SG6	6" CONC SLAB O/ SUB-BASE W/ #5 @ 16" OC
SG12	12" CONC SLAB O/ SUB-BASE W/ (2) LAYERS OF #5 @ 16" OC

CONTINUOUS FOOTING SCHEDULE

TYPE	WIDTH	DEPTH	REINFORCEMENT	REMARKS
FC2.0	2'-0"	2'-0"		
FC3.0	3'-0"	2'-0"		
FC3.5	3'-6"	2'-0"		
FC10.0	10'-0"	2'-0"		

SPREAD FOOTING SCHEDULE

TYPE	SIZE	DEPTH	REINFORCEMENT	REMARKS
FS3.0		2'-0"	(4) #5 EW AT BOT	
FS5.0		2'-0"	(6) #5 EW AT BOT	
FS6.0		2'-0"	(7) #5 EW AT BOT	

LEGEND

170828. Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
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- SLAB STEP SYMBOL
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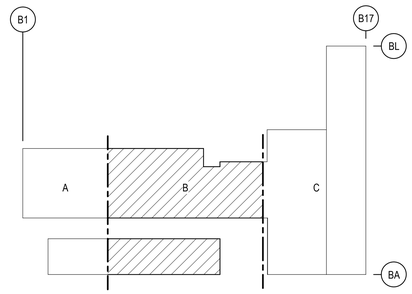
- DIAGONAL BRACE BELOW
- COL SIZE COLUMN WITH CALLOUT
- FCX.X CONTINUOUS FOOTING TAG
- FSX.X SPREAD FOOTING TAG
- FOOTING
- S — S STEPPED FOOTING

KEY PLAN



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SEAL

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3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

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7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE

BLDG B - PLAN - FOUNDATION - AREA B

SHEET

B.S-111B

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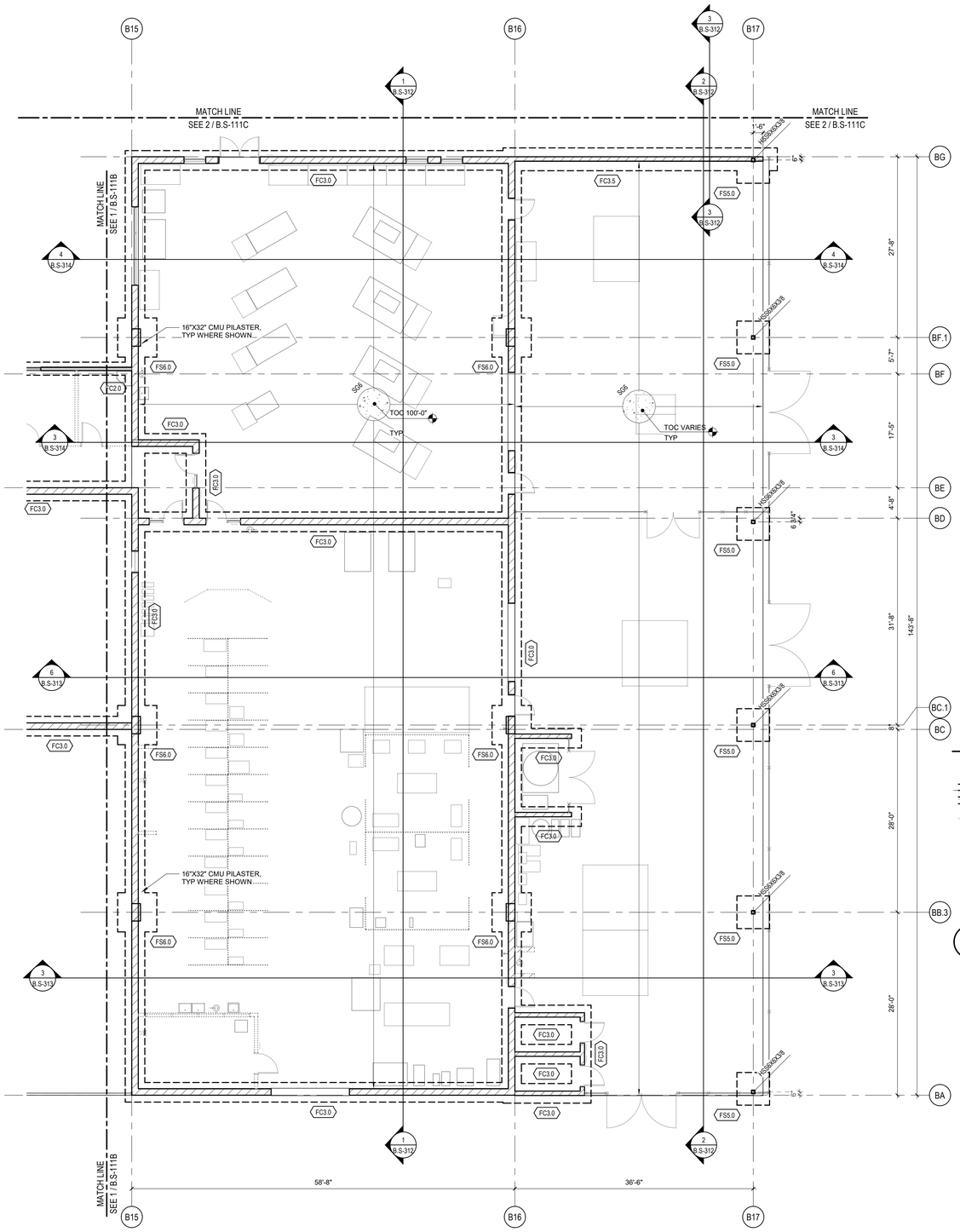
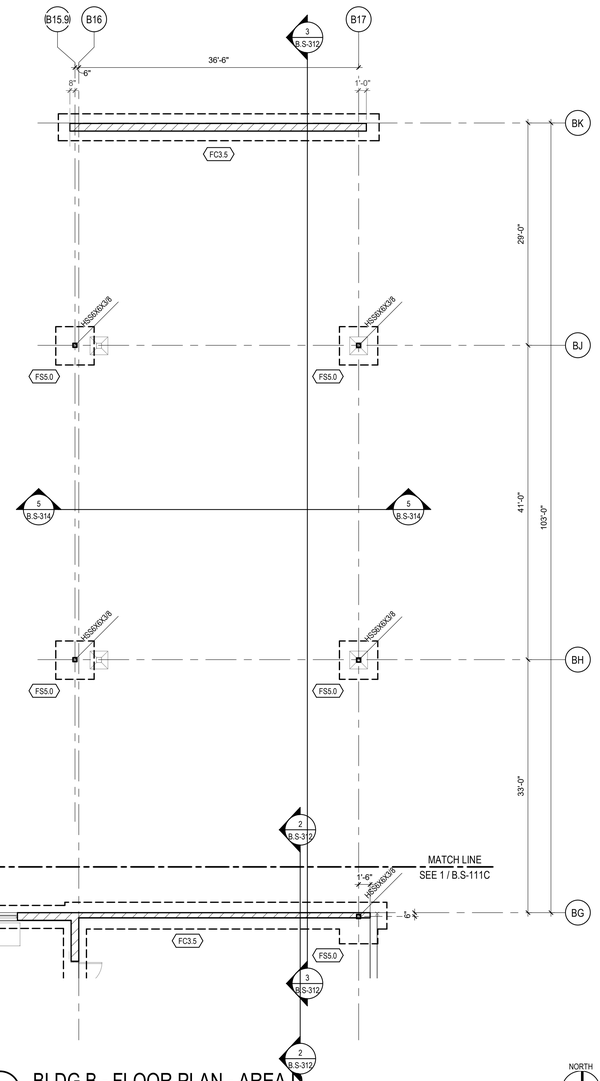


1 BLDG B - PLAN - FOUNDATION - AREA C

SCALE 1/8" = 1'-0"



2 BLDG B - FLOOR PLAN - AREA B

SCALE 1/8" = 1'-0"

NORTH

NOTES

170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
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11. SEE SCHEDULE FOR CONTINUOUS FOOTING SIZE & REINF, TYP UNO.
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SCHEDULES

DECK SCHEDULE

TYPE	DESCRIPTION
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CONTINUOUS FOOTING SCHEDULE

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FC3.0	3'-0"	2'-0"		
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SPREAD FOOTING SCHEDULE

TYPE	SIZE	DEPTH	REINFORCEMENT	REMARKS
FS3.0		2'-0"	(4) #5 EW AT BOT	
FS5.0		2'-0"	(6) #5 EW AT BOT	
FS6.0		2'-0"	(7) #5 EW AT BOT	

LEGEND

170828. Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
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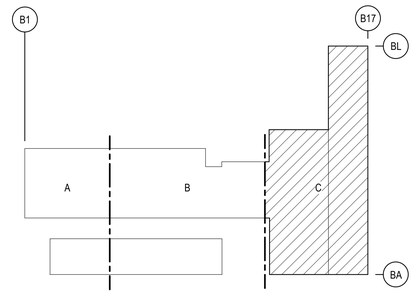
KEY PLAN



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BLDG B - PLAN - FOUNDATION - AREA C

SHEET

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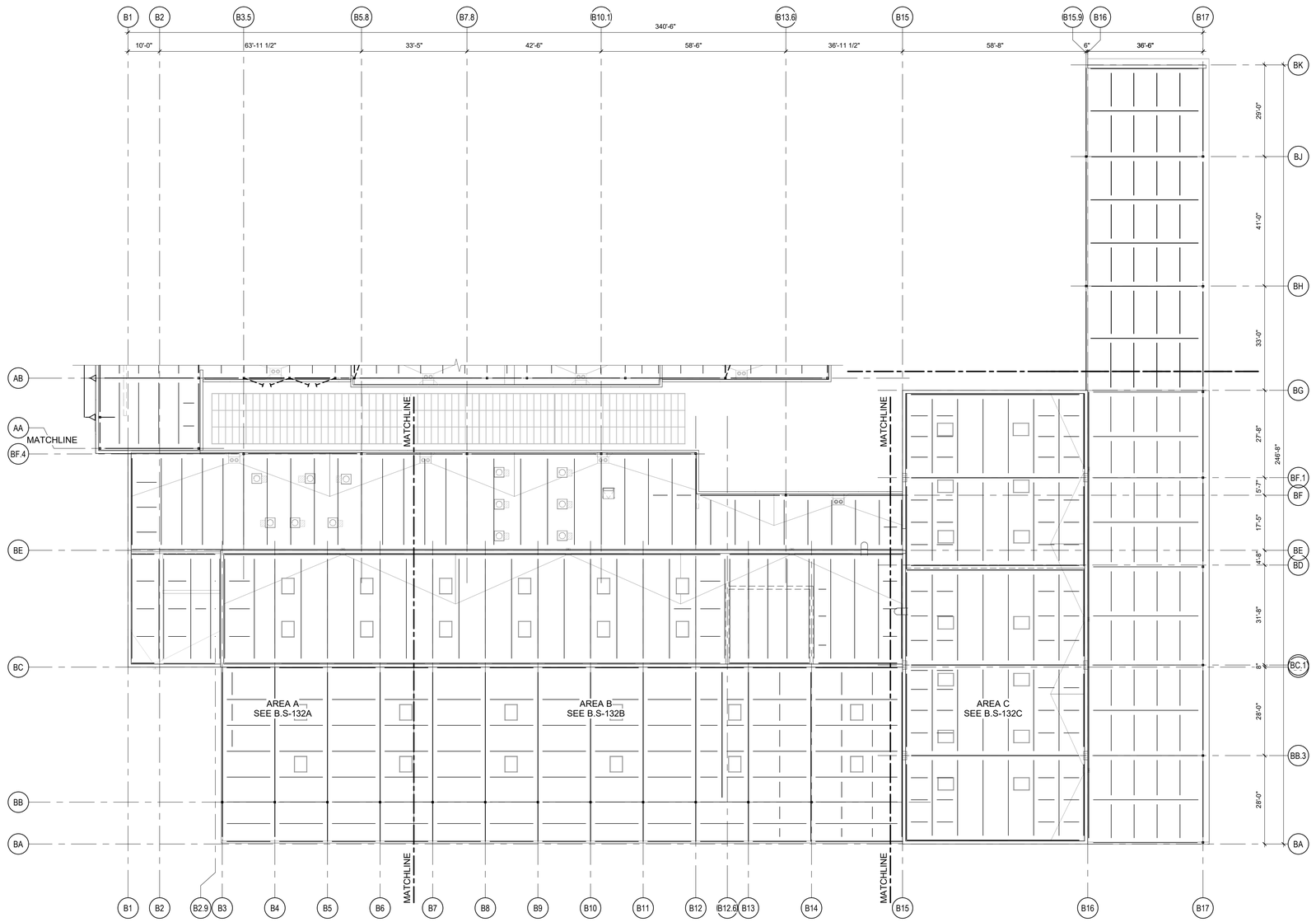
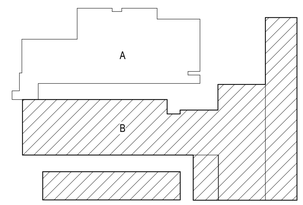


1 BLDG B - PLAN - ROOF FRAMING - OVERALL

SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



NORTH

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SEAL

PROJECT

PUBLIC SAFETY CENTER / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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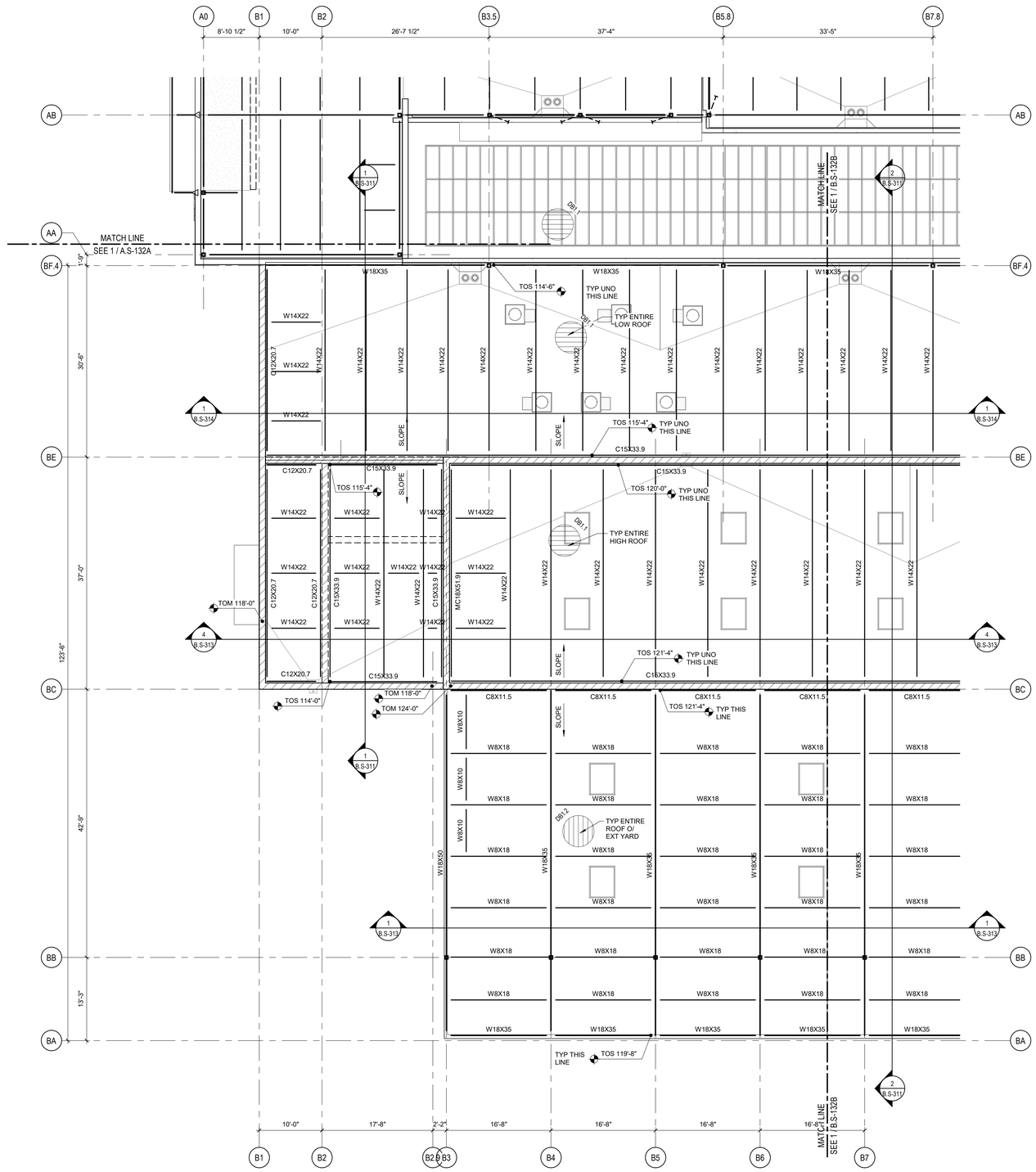
TITLE

BLDG B - PLAN - ROOF FRAMING - OVERALL

SHEET

B.S-132



1 BLDG B - PLAN - ROOF FRAMING - AREA A

SCALE 1/8" = 1'-0"

NORTH

NOTES

S- 010000_N001A
170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
2. SEE S-200 SERIES SHEETS FOR WALL & FRAMING ELEVATIONS.
3. DIMENSIONS ARE TO FOS OR CENTERLINE OF COLUMNS/POSTS, UNO. SEE SECTIONS & DETAILS FOR FOC LOCATIONS RELATIVE TO FOS.
4. SEE ARCH & OTHER CONSULTANT DWGS FOR DIMENSIONS & LOCATIONS OF WALL OPENINGS. SEE TYPICAL DETAILS FOR FRAMING AT OPENINGS.
5. SEE ARCH & OTHER CONSULTANT DWGS FOR ROOF PENETRATIONS NOT SHOWN. PROVIDE FRAMING AROUND OPENINGS PER TYPICAL DETAILS. SAWCUT OR CORE DRILL CLEAN HOLES WITH NO OVERCUTTING. CONFORM WITH TYPICAL DETAILS.
6. SEE ARCH DWGS FOR DIMENSIONS OF ROOF OVERHANGS, UNO.
7. EXTERIOR WALLS ARE 600S162-54 STEEL STUDS @ 16" OC OR 12" CMU GROUTED SOLID W/ STD REINF, TYP UNO.
8. BEAMS ARE EQUALLY SPACED BETWEEN COLUMNS, UNO.
9. ROOF DECK IS 1 1/2" x 16 GA TYPE "B" STEEL DECK AND SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM.

SCHEDULES

DECK SCHEDULE

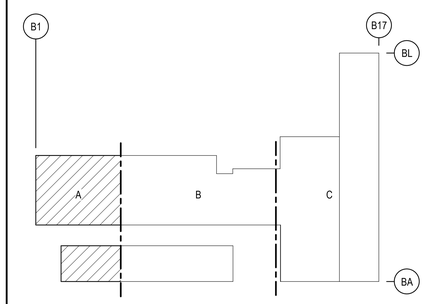
TYPE	DESCRIPTION
DB1.1	1 1/2" X 18 GA TYPE "B" STEEL DECK
DB1.2	1 1/2" X 16 GA TYPE "B" STEEL DECK W/ G90 COATING
SG5	5" CONC SLAB O/ SUB-BASE W/ #4 @ 16" OC
SG6	6" CONC SLAB O/ SUB-BASE W/ #5 @ 16" OC
SG12	12" CONC SLAB O/ SUB-BASE W/ (2) LAYERS OF #5 @ 16" OC

LEGEND

180621
Q1

- (E) ELEMENTS SHOWN FADED - LINETYPE AND PATTERN/HATCHING AS NOTED FOR NEW CONSTRUCTION
- STRUCTURAL STUD WALL
- STRUCTURAL MASONRY WALL
- NON-STRUCTURAL WALL, SAD
- CONCRETE CURB OR PAD
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- -2" — SLAB STEP SYMBOL; ELEVATION RELATIVE TO TOC
- SF / CF / DF — CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COL SIZE — COLUMN WITH CALLOUT
- W12x40 (48) SFRS — BEAM SIZE; NUMBER OF WELDED HEADED STUDS, UNO; SEISMIC FORCE RESISTING SYSTEM MEMBER
- C=1/2" [-2"] — BEAM ELEVATION RELATIVE TO TOS; BEAM CAMBER
- S — BEAM SPLICE
- NON-FRAME MOMENT CONNECTION
- MOMENT FRAME CONNECTION
- BENT BEAM SPLICE
- SFRS — BOLTED SINGLE ROW SFRS CONNECTION PER
- SFRS — BOLTED DOUBLE ROW SFRS CONNECTION PER
- SFRS — WELDED SFRS CONNECTION PER
- FLANGE BRACE CONNECTION PER
- SPECIAL CONNECTION TYPE 2
- DIAGONAL STRUT; UPPER END

KEY PLAN



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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BLDG B - PLAN - ROOF FRAMING - AREA A

SHEET
B.S-132A

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0 1/4" 1/2" 1"

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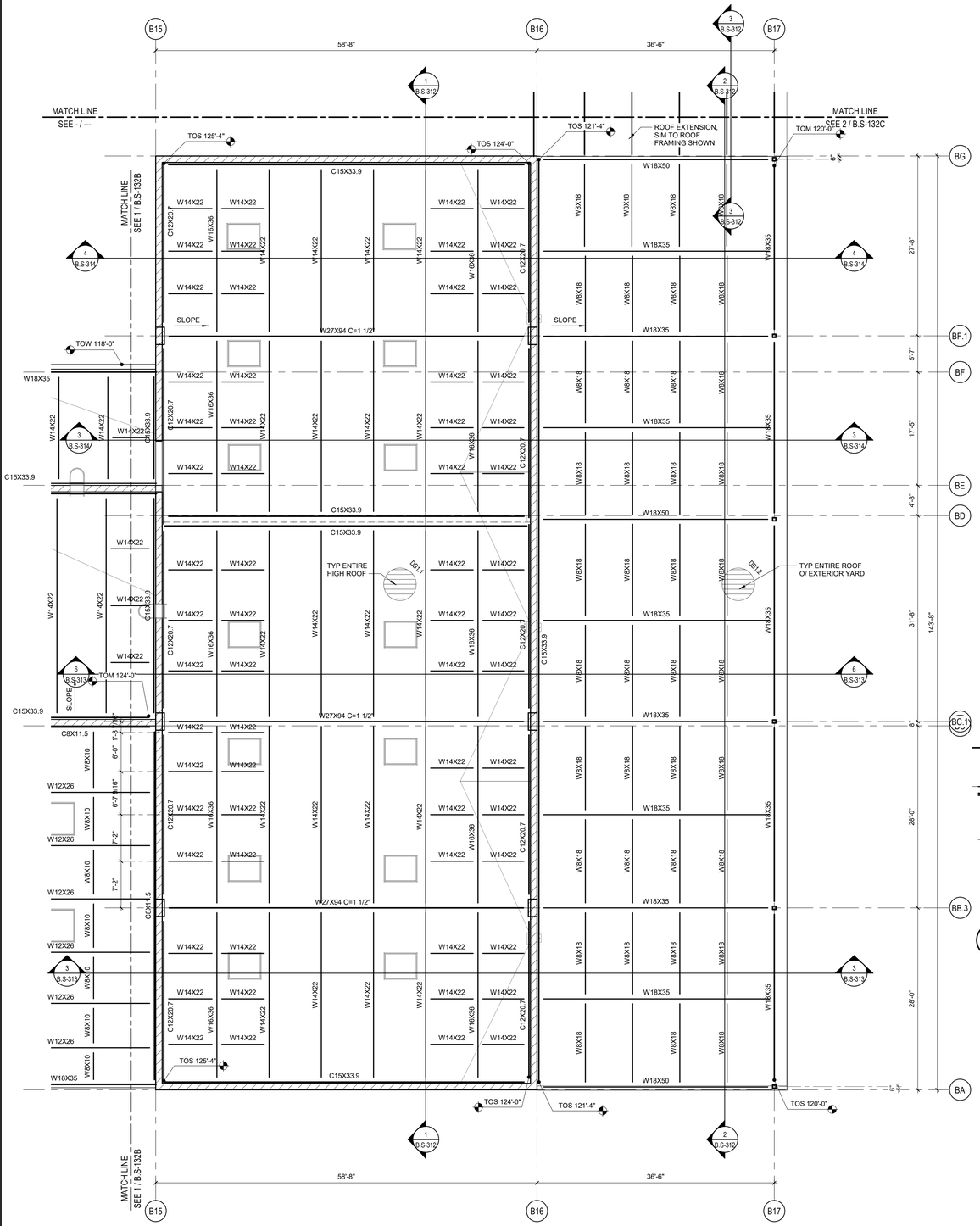
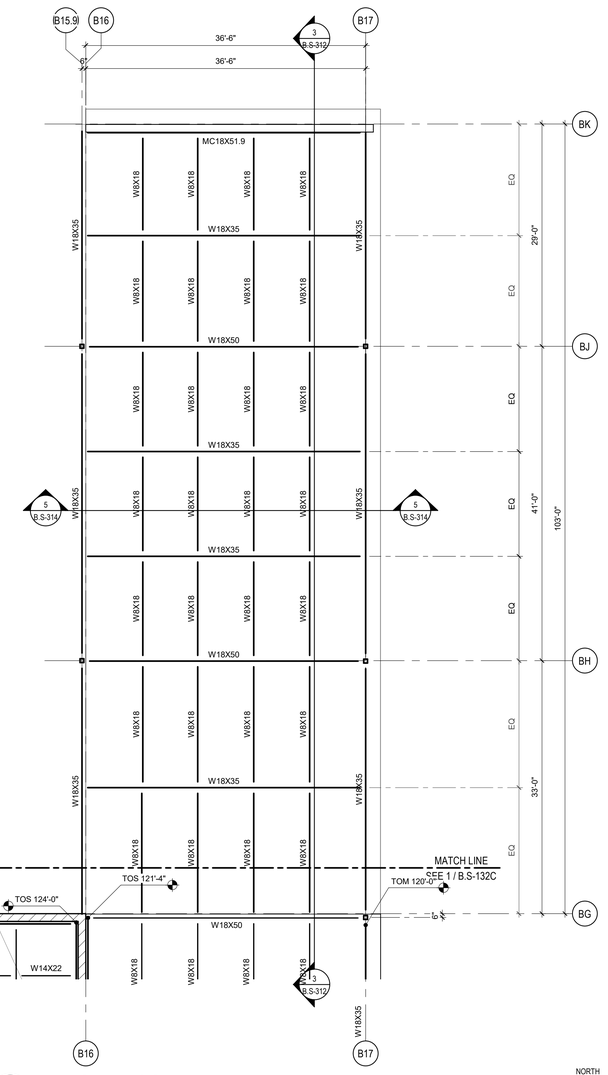


1 BLDG B - PLAN - ROOF FRAMING - AREA C
SCALE 1/8" = 1'-0"



2 BLDG B - ROOF PLAN - AREA D
SCALE 1/8" = 1'-0"

NOTES

S- 010000_N001A
170828. Q2

1. SEE S-000 SERIES SHEETS FOR GENERAL NOTES & S-500 SERIES SHEETS FOR TYPICAL DETAILS.
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DECK SCHEDULE

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LEGEND

180621
Q1

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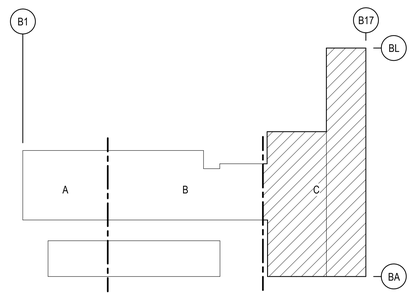
- DEPRESSED SLAB AREA
- SAD FOR EXTENTS
- SLAB STEP SYMBOL
- ELEVATION RELATIVE TO TOC
- CONC SLAB / STEEL DECK TYPE AND SPAN DIRECTION
- DIAGONAL BRACE ABOVE
- DIAGONAL BRACE BELOW
- COLUMN WITH CALLOUT
- BEAM SIZE
- NUMBER OF WELDED HEADED STUDS, UNO
- SEISMIC FORCE RESISTING SYSTEM MEMBER
- BEAM ELEVATION RELATIVE TO TOS
- BEAM CAMBER
- BEAM SPLICE
- NON-FRAME MOMENT CONNECTION
- MOMENT FRAME CONNECTION
- BENT BEAM SPLICE
- BOLTED SINGLE ROW SFRS CONNECTION PER
- BOLTED DOUBLE ROW SFRS CONNECTION PER
- WELDED SFRS CONNECTION PER
- FLANGE BRACE CONNECTION PER
- SPECIAL CONNECTION TYPE 2
- DIAGONAL STRUT UPPER END

KEY PLAN



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CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

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MARK	DATE	DESCRIPTION
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MANAGEMENT

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TITLE
BLDG B - PLAN - ROOF FRAMING - AREA C

SHEET
B.S-132C

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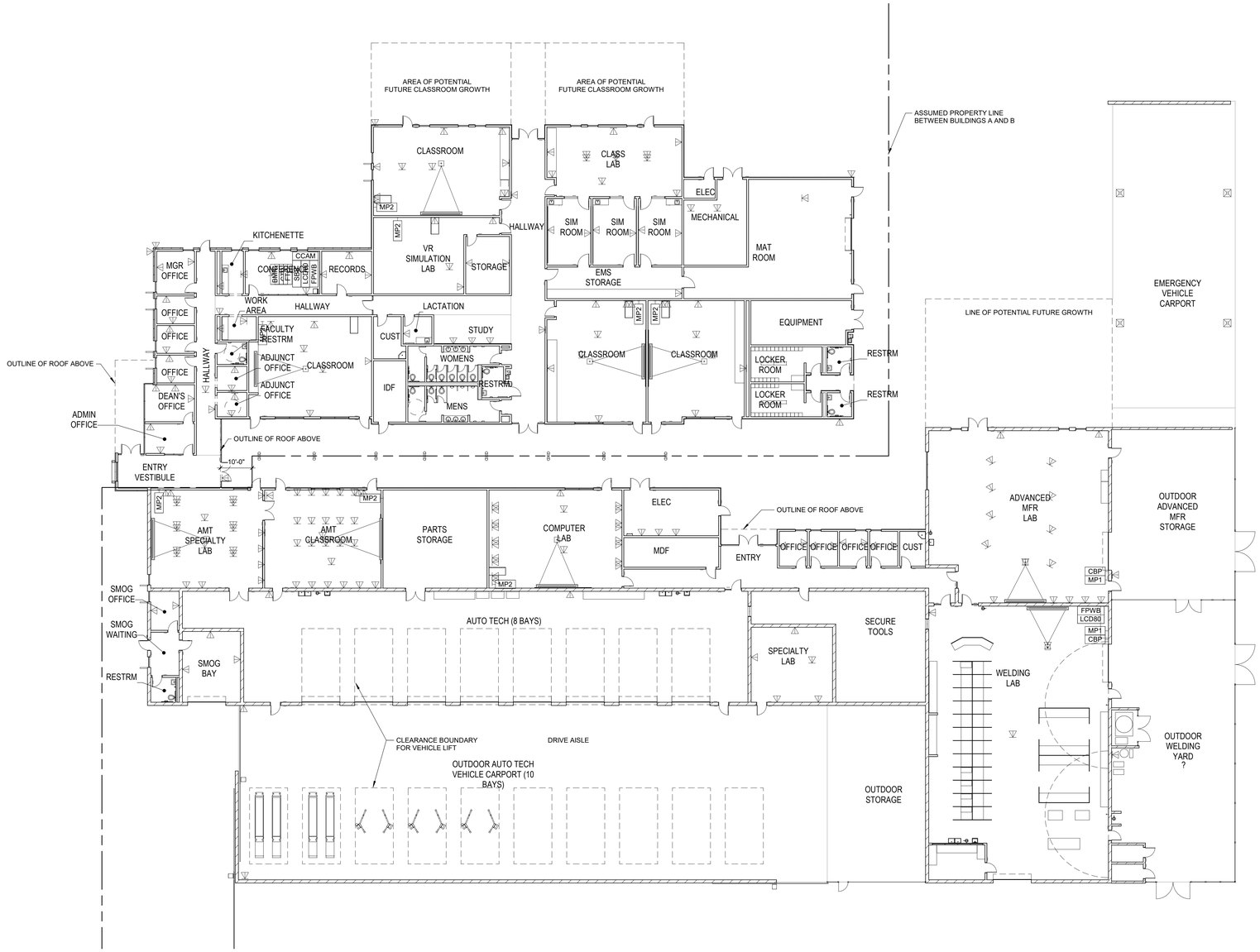

1 BUILDING A AND B OVERALL FLOOR PLAN

SCALE 1/16" = 1'-0"

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LIVERMORE, CA 94551

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MANAGEMENT

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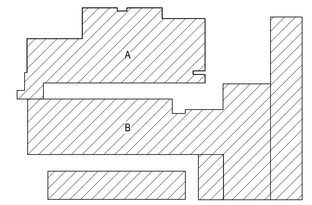
KEY PLAN



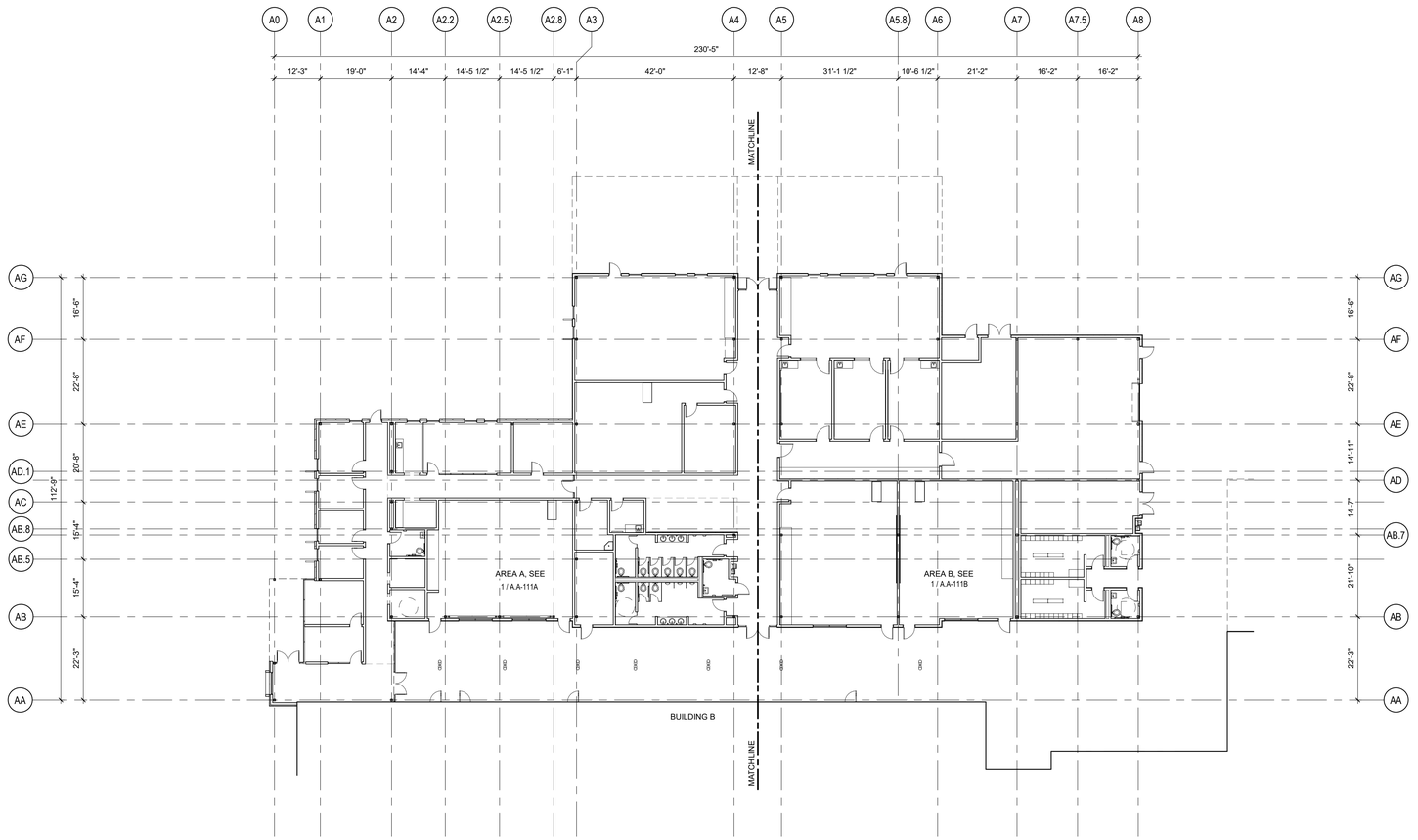
NORTH

TITLE

BUILDING A & B OVERALL PLAN

SHEET

A-100

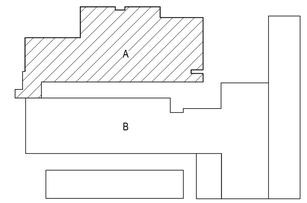


1 BUILDING A - OVERALL FLOOR PLAN

SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



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MANAGEMENT

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TITLE

BUILDING A - OVERALL FLOOR PLAN

SHEET

A.A-111

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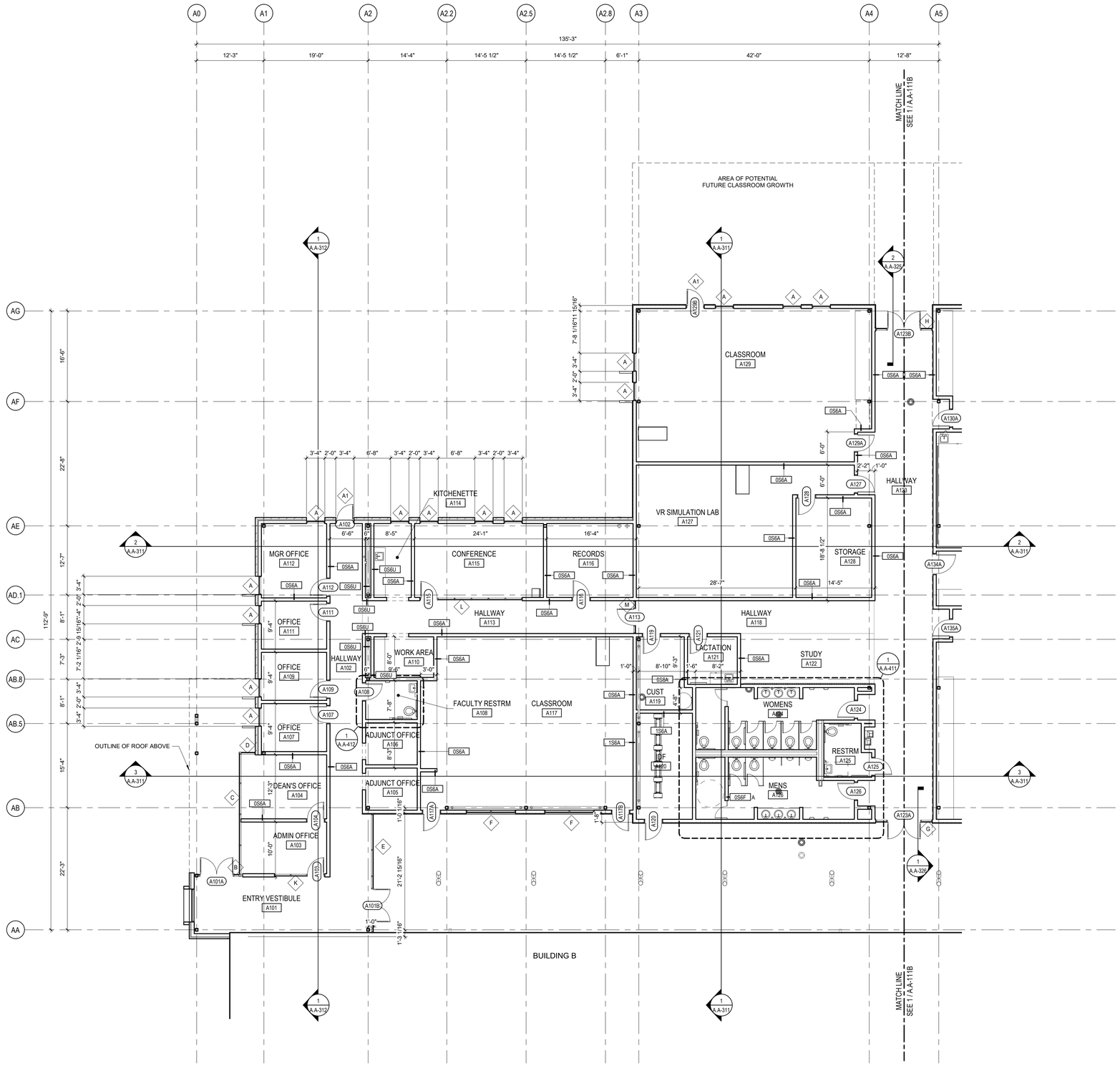


1 BUILDING A - PARTIAL FLOOR PLAN - AREA A
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. ARCHITECTURAL DIMENSIONS ARE TO FACE OF STUDS OR CENTERLINE OF COLUMN GRIDS UNLESS OTEHRWISE NOTED. EXCEPTION: CLEAR DIMENSIONS AT DOORS AND 5'-0" DIA CLEARANCE CIRCLES ARE TO FACE OF FINISH, TYP
2. LOCATE DOOR JAMBS 4" AWAY FROM ADJACENT WALL UNLESS OTHERWISE DIMENSIONED.
3. KEY NOTED WALL TYPES SHALL EXTEND FROM CORNER TO CORNER, FULL LENGTH OF WALL UNLESS INDICATED OTHERWISE.
4. FOR SYMBOL LEGEND SEE SHEET G-001.
5. IF SLOPE IS PROVIDED IN ROOMS WITH FLOOR DRAINS (FD), SLOPE FLOOR MAX 2% TO DRAIN.
6. SEE SHEETS A-545 AND A-546 FOR ALL INTERIOR NON-STRUCTURAL STUD FRAMING AND FOR TYP BACKING/BLOCKING AT VARIOUS FIXTURES, ACCESSORIES, AND EQUIPMENT.
7. STUDS AT ELECTRICAL ROOMS SHALL BE 16GA.
8. INSTALL THERMAL BATT INSULATION IN ALL EXTERIOR WALLS. ALL INTERIOR WALLS TO RECIEVE FULL DEPTH ACOUSTICAL BATT INSULATION, UON.
9. SITE PLAN INFORMATION SHOWN ON FLOOR PLANS IS FOR REFERENCE PURPOSE ONLY. REFER TO CIVIL AND OR LANDSCAPE DRAWINGS FOR SITE WORK.
10. FOR SEMI RECESSED FIRE EXTINGUISHER CABINET AT RATED WALL AND FOR NON RATED WALL SEE DETAIL

FLOOR PLAN LEGEND

NOTE: SEE SHEET G-002 FOR ADDITIONAL SYMBOLS LEGEND AND ABBREVIATIONS

ROOM NAME
101
ROOM IDENTIFIER WITH ROOM NAME & NUMBER

101A
DOOR , SEE SCHEDULE
DOOR OPENING IDENTIFIER

A
WINDOW OR LOUVER , SEE SCHEDULE
WINDOW OR LOUVER IDENTIFIER

FEC
FIRE EXTINGUISHER CABINET, SEE DETAIL

AED
AUTOMATIC EXTERNAL DEFIBRILLATOR

DA
WALL MOUNTED DOOR ACTUATOR

DA
BOL
DOOR ACTUATOR MOUNTED TO PEDESTAL
6" SQUARE BOLLARD POST FOR DOOR ACTUATOR AND CARD READER WHERE OCCURS

4'-0" MIN CLR
INSTRUCTOR'S DESK , SEE SPECS
30"X48" CLR ACCESSABLE SPACE AT ALL INSTRUCTOR'S DESK
NEAREST OBSTRUCTION
60" CLEAR ACCESSIBLE TURNING SPACE

1S4A J
PARTITION TYPE INDICATOR, SEE SHEET A-541 FOR ADDITIONAL INFORMATION

WALL LEGEND

NOTE: SEE SHEET A-531 FOR WALL TYPE DESCRIPTIONS, UL LISTINGS, AND ADDITIONAL WALL TYPES NOT LISTED ON LEGEND

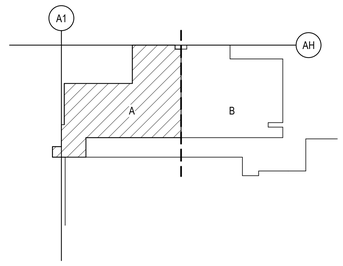
FULL HEIGHT MTL STUD PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE

FULL HEIGHT 1-HOUR RATED MTL STUD PARTITION WITH ACOUSTICAL INSULATION AND RATED OPENINGS PER DOOR SCHEDULE, SEE WALL TYPE SCHEDULE

FULL HEIGHT SMOKE RESISTANT MTL STUD PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE

FULL HEIGHT MTL STUD CHASE PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE

KEY PLAN



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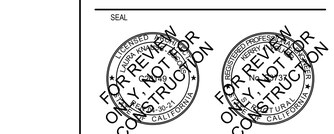

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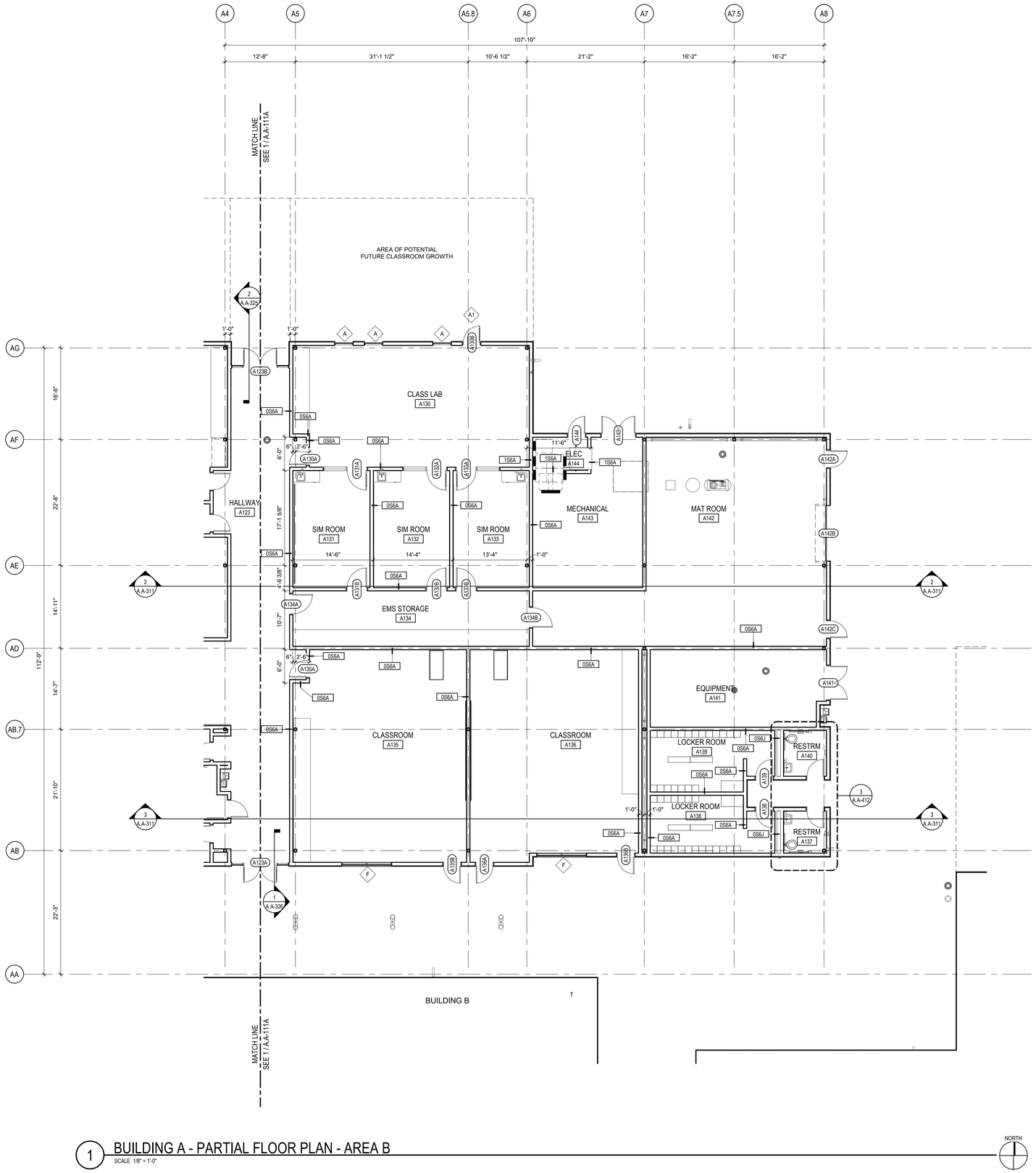
TITLE
BUILDING A - PARTIAL FLOOR PLAN - AREA A

SHEET
A.A-111A



1 BUILDING A - PARTIAL FLOOR PLAN - AREA B
SCALE 1/8" = 1'-0"

GENERAL NOTES

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FLOOR PLAN LEGEND

NOTE: SEE SHEET G-002 FOR ADDITIONAL SYMBOLS LEGEND AND ABBREVIATIONS

ROOM NAME 101 — ROOM IDENTIFIER WITH ROOM NAME & NUMBER

101A — DOOR , SEE SCHEDULE; DOOR OPENING IDENTIFIER

A — WINDOW OR LOUVER , SEE SCHEDULE; WINDOW OR LOUVER IDENTIFIER

FEC — FIRE EXTINGUISHER CABINET, SEE DETAIL

AED — AUTOMATIC EXTERNAL DEFIBRILLATOR

DA — WALL MOUNTED DOOR ACTUATOR

DA / BOL — DOOR ACTUATOR MOUNTED TO PEDESTAL; 6" SQUARE BOLLARD POST FOR DOOR ACTUATOR AND CARD READER WHERE OCCURS

4'-0" MIN CLR — INSTRUCTOR'S DESK , SEE SPECS; 30"X48" CLR ACCESSABLE SPACE AT ALL INSTRUCTOR'S DESK

NEAREST OBSTRUCTION

60" CLEAR ACCESSIBLE TURNING SPACE

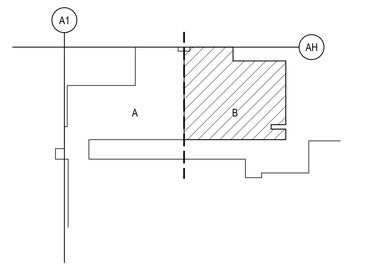
1S4A J — PARTITION TYPE INDICATOR, SEE SHEET A-541 FOR ADDITIONAL INFORMATION

WALL LEGEND

NOTE: SEE SHEET A-531 FOR WALL TYPE DESCRIPTIONS, UL LISTINGS, AND ADDITIONAL WALL TYPES NOT LISTED ON LEGEND

- FULL HEIGHT MTL STUD PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE
- FULL HEIGHT 1-HOUR RATED MTL STUD PARTITION WITH ACOUSTICAL INSULATION AND RATED OPENINGS PER DOOR SCHEDULE, SEE WALL TYPE SCHEDULE
- FULL HEIGHT SMOKE RESISTANT MTL STUD PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE
- FULL HEIGHT MTL STUD CHASE PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE

KEY PLAN



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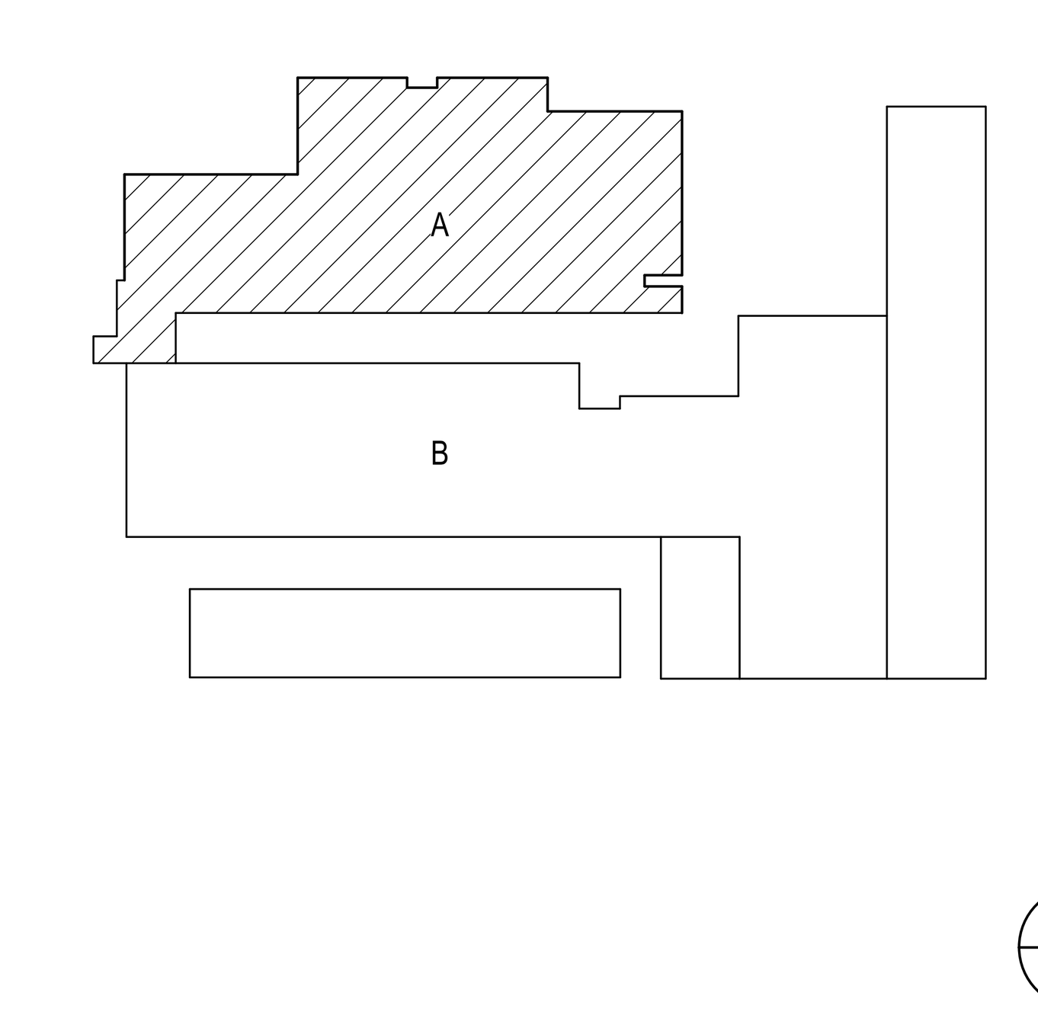
TITLE
BUILDING A - PARTIAL FLOOR PLAN - AREA B

SHEET
A.A-111B

1 BUILDING A - OVERALL CEILING PLAN

SCALE 1/16" = 1'-0"

KEY PLAN



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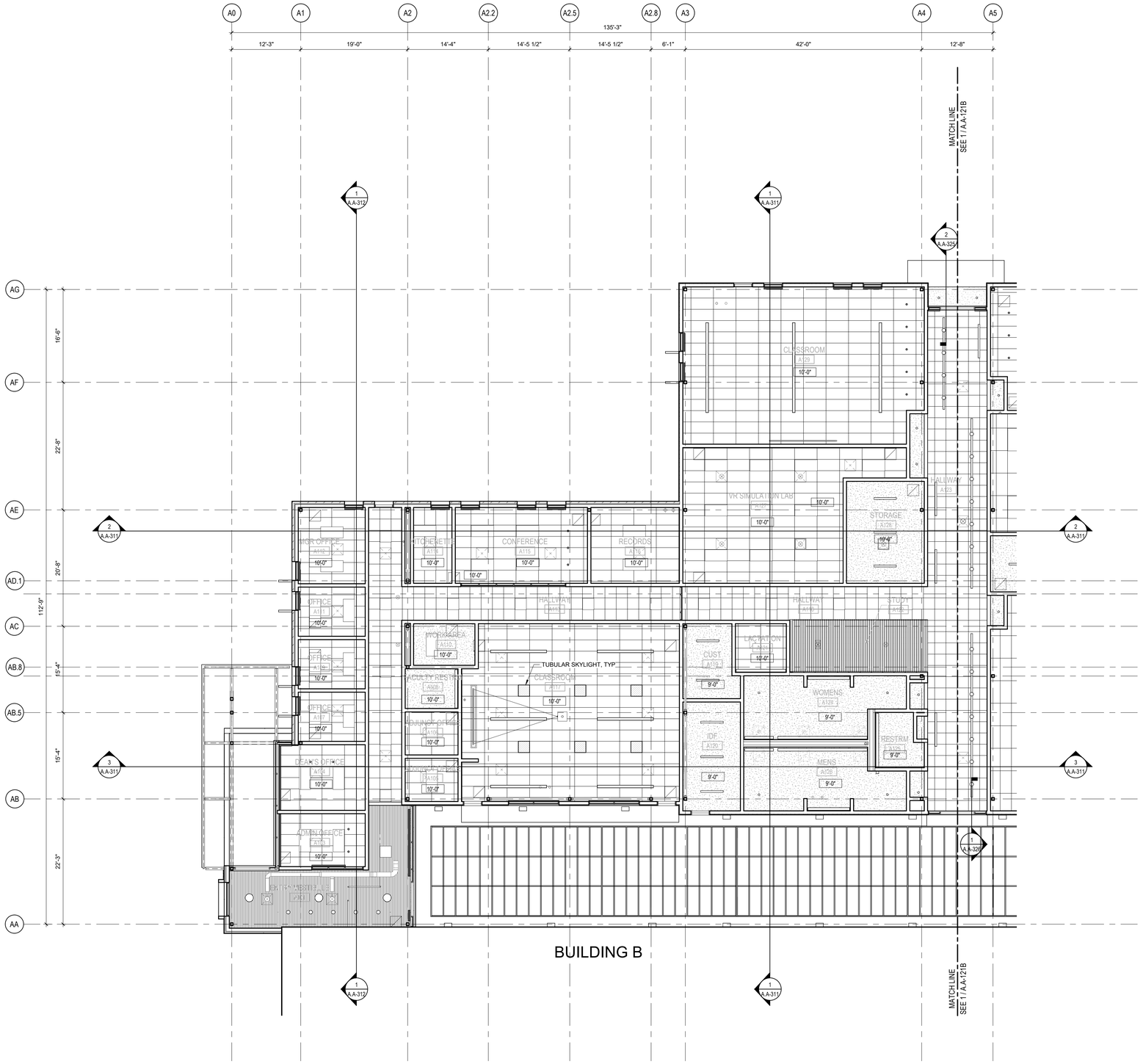
TITLE

BUILDING A - OVERALL CEILING PLAN

SHEET

A.A-121



1 BUILDING A - PARTIAL CEILING PLAN - AREA A

SCALE 1/8" = 1'-0"

NORTH

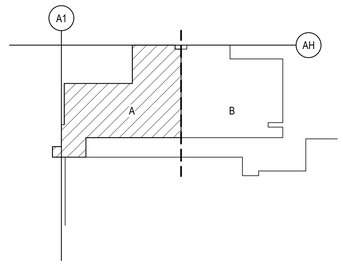
GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
3. ALL DIMENSIONS TO CENTERLINE OF LIGHT FIXTURES
4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

CEILING PLAN LEGEND

- 10'-0" — CEILING HEIGHT, AFF
- GYPSUM BOARD CEILING SYSTEM, FOR TYPICAL FRAMING DETAILS SEE SHEETS A-535 AND A-536 SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR MOISTURE RESISTANT GYPSUM BOARD TO BE USED AT WET LOCATIONS, TYP
- OPEN — OPEN TO ABOVE, WHERE OCCURS. PAINT UNDERSIDE OF STRUCTURE
- CL1 : 2' x 4' SUSPENDED CEILING GRID SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- CL2: 2' x 2' SUSPENDED CEILING GRID SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- CL4: 1" x 8" W/ BACKER, 8 BLADES WITH 6" ACOUSTICAL BATT INSULATION ABOVE GYP CEILING B.O.D. MFR: ARMSTRONG, WOODWORKS CHANNELED PLANK SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- LC-1: LINEAR METAL CEILING SYSTEM BASIS OF DESIGN MFR: ENDURE WOODGRAIN 3 BOARD 900 WITH INTEGRATED SPACERS COLOR: TBD
- 2x2 SQUARE SOLAR TUBE SYSTEM
- CEILING ACCESS HATCH, SEE 19 OR 20/A-563
- 2x4 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- 2x2 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 1, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 2, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 3, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 4, SEE ELECTRICAL DWGS
- CEILING MOUNTED PROJECTOR, SEE ELECTRICAL AND TELECOM DWGS
- WINDOW COVERING, SEE SHEET AG112
- S — CEILING MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- S — WALL MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- ELECTRICAL POWER REEL
- MECHANICAL SUPPLY DIFFUSER, SEE MECHANICAL DWGS
- MECHANICAL EXHAUST REGISTER, SEE MECHANICAL DWGS
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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BUILDING A - PARTIAL CEILING PLAN - AREA A

SHEET

A.A-121A

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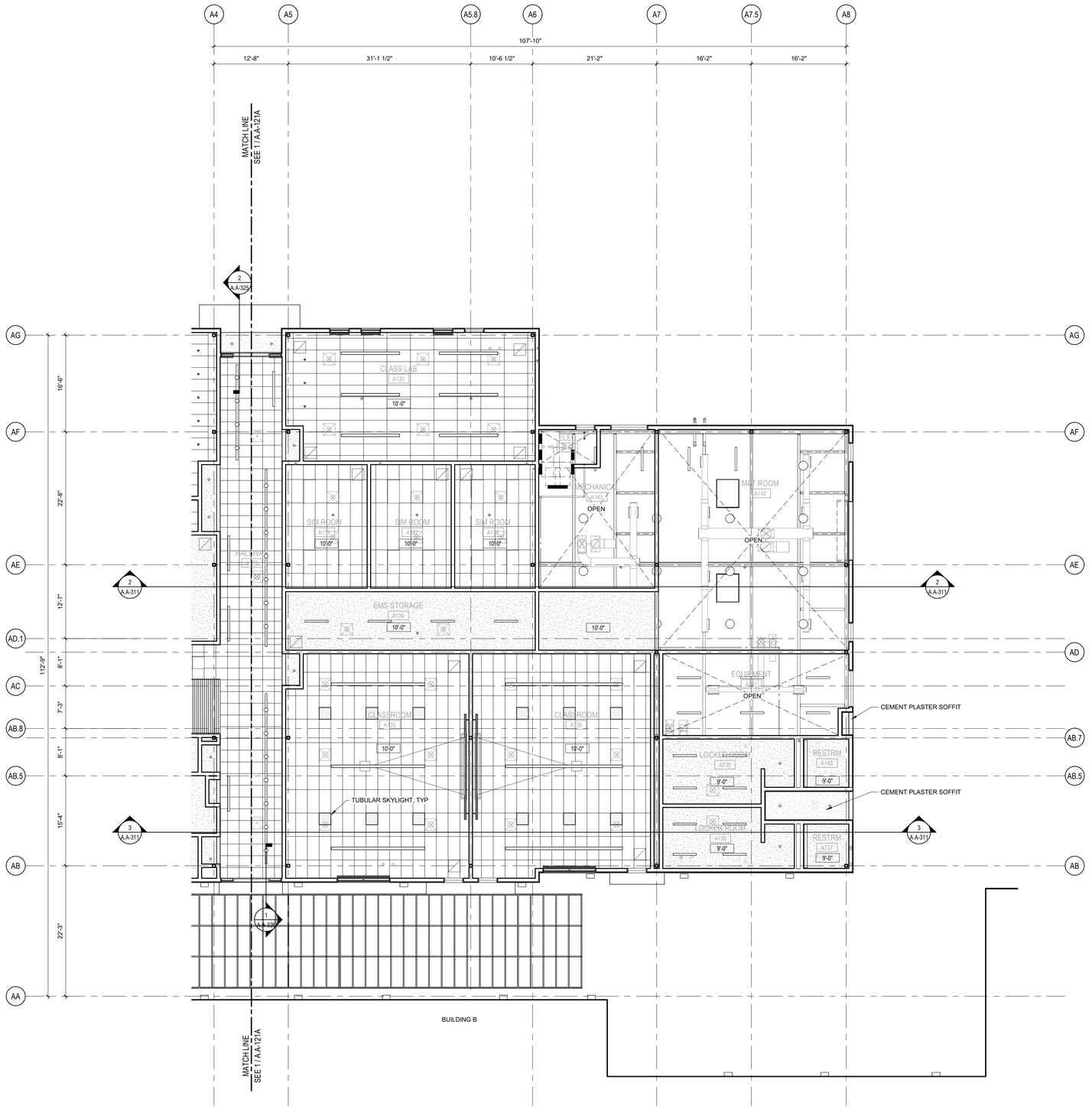

1 BUILDING A - PARTIAL CEILING PLAN - AREA B

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
3. ALL DIMENSIONS TO CENTERLINE OF LIGHT FIXTURES
4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

CEILING PLAN LEGEND

- 10'-0" — CEILING HEIGHT, AFF
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- LC-1: LINEAR METAL CEILING SYSTEM BASIS OF DESIGN MFR: ENDURE WOODGRAIN 3 BOARD 900 WITH INTEGRATED SPACERS COLOR: TBD
- 2x2 SQUARE SOLAR TUBE SYSTEM
- CEILING ACCESS HATCH, SEE 19 OR 20/A-563
- 2x4 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- 2x2 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 1, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 2, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 3, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 4, SEE ELECTRICAL DWGS
- CEILING MOUNTED PROJECTOR, SEE ELECTRICAL AND TELECOM DWGS
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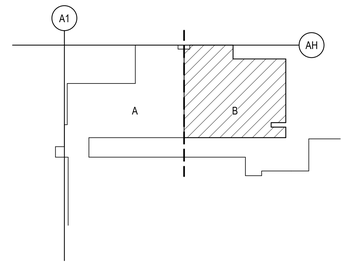
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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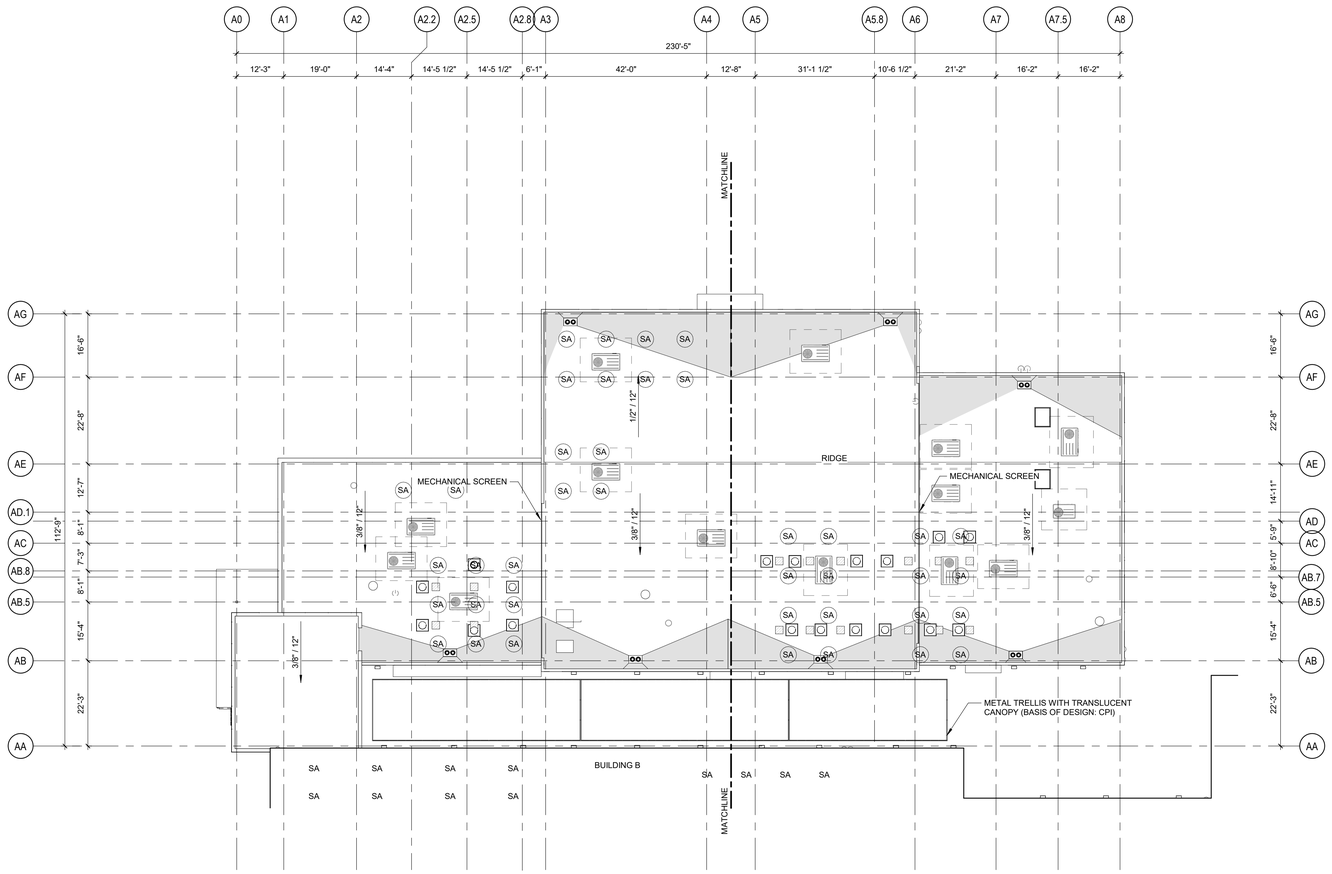
BUILDING A - PARTIAL CEILING PLAN - AREA B

SHEET

A.A-121B

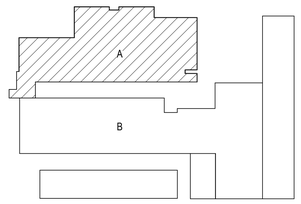


1 BUILDING A - OVERALL ROOF PLAN

SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



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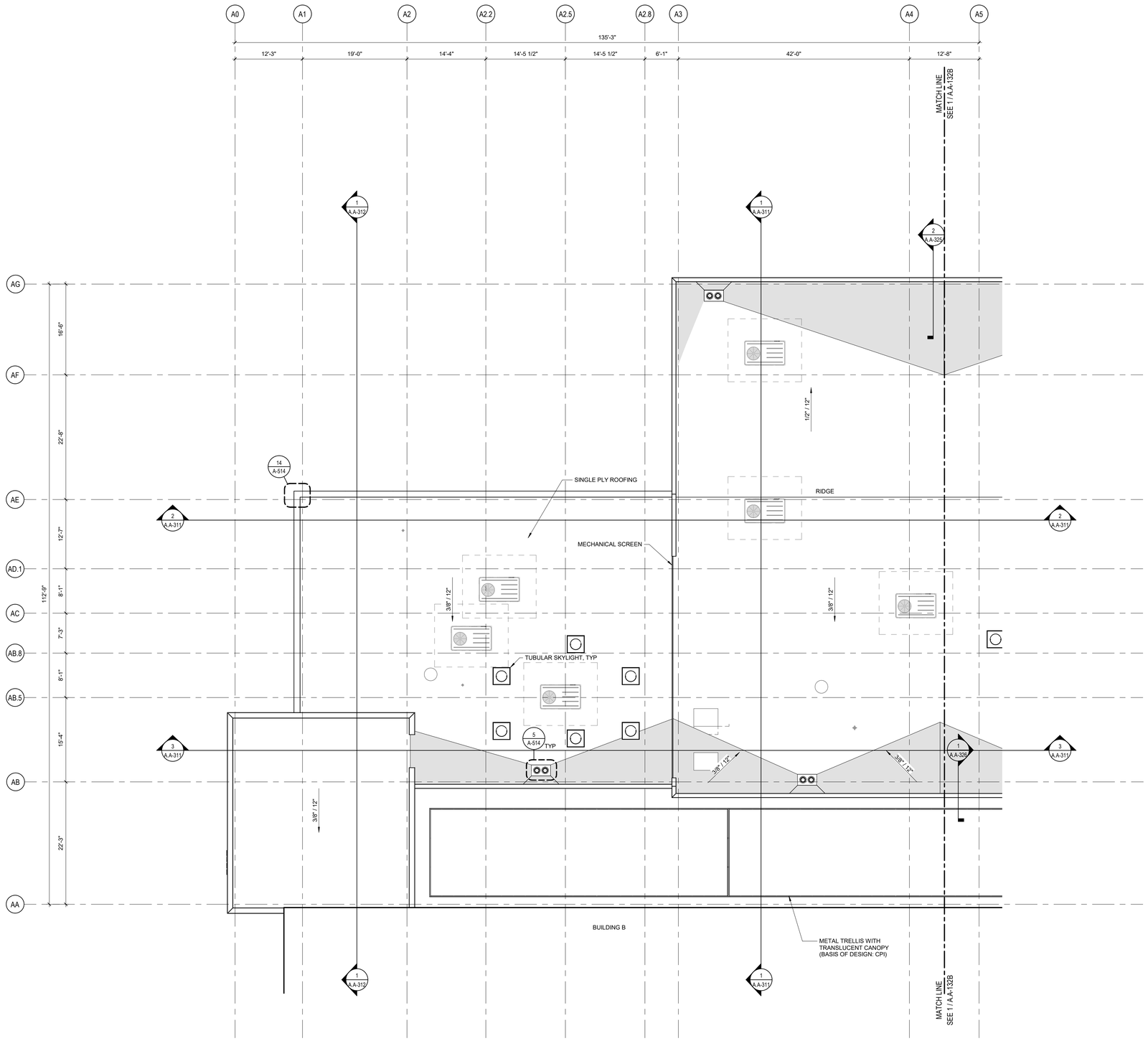
BUILDING A - OVERALL ROOF PLAN

SHEET

A.A-132



1 BUILDING A - PARTIAL ROOF PLAN - AREA A

SCALE 1/8" = 1'-0"

NORTH

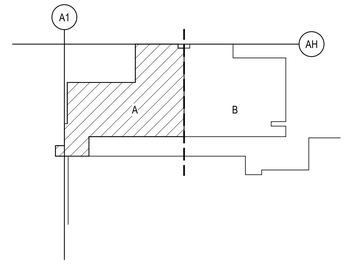
GENERAL NOTES

1. MAJOR PENETRATIONS TO BE 24" MIN. FROM EACH OTHER AND FROM PARAPET WALLS
2. FOR TYP BOOT FLASHING AT SINGLE PLY ROOFING ASSEMBLY - SEE

ROOF PLAN LEGEND

- ROOF DRAIN AND OVERFLOW
  CONNECT TO CIVIL BELOW GRADE. OVERFLOW DRAIN PIPE TO DAYLIGHT PER EXTERIOR ELEVATIONS SEE DET
- SLOPE TO DRAIN - 3/8":12"
- TAPERED CRICKET ASSEMBLY - SLOPE 3/8":12"
- SINGLE-PLY WALKWAY PADS
- PHOTOVOLTAIC PANELS, SEE ELECTRICAL DWGS
- SKYLIGHT
- FALL PROTECTION TIE-OFF ASSEMBLY AT 30'-0" OC MAX LOCATED WITHIN 6'-0" MAX FROM INSIDE FACE OF PARAPET SEE DETAIL
- RF-1: TPO ROOF ASSEMBLY SEE:
- MS-1: CORRUGATED METAL PANEL MECHANICAL SCREEN

KEY PLAN



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BUILDING A - PARTIAL ROOF PLAN - AREA A

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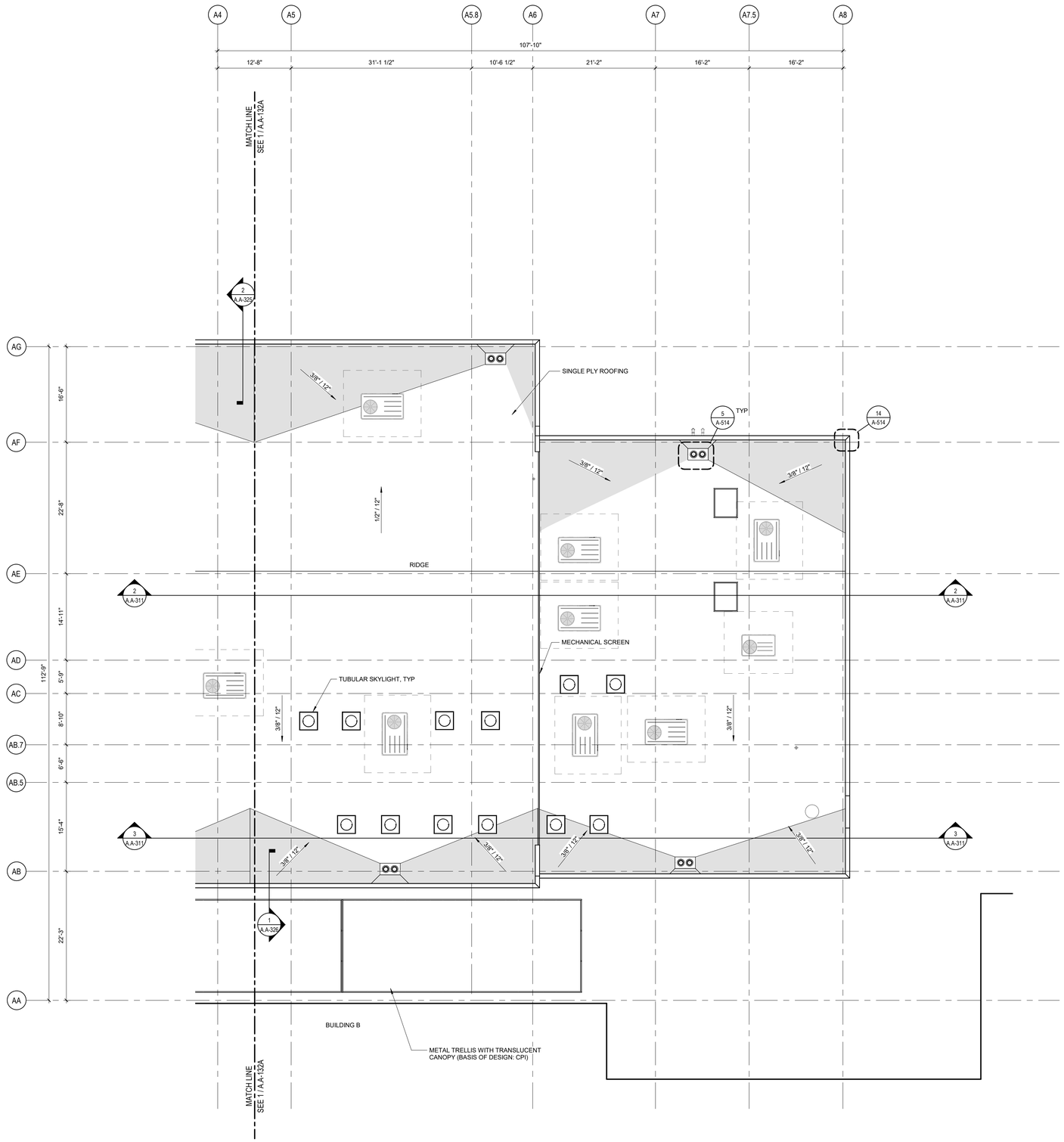

1 BUILDING A - PARTIAL ROOF PLAN - AREA B

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. MAJOR PENETRATIONS TO BE 24" MIN. FROM EACH OTHER AND FROM PARAPET WALLS
2. FOR TYP BOOT FLASHING AT SINGLE PLY ROOFING ASSEMBLY - SEE

ROOF PLAN LEGEND

- ROOF DRAIN AND OVERFLOW
  CONNECT TO CIVIL BELOW GRADE. OVERFLOW DRAIN PIPE TO DAYLIGHT PER EXTERIOR ELEVATIONS SEE DET
- SLOPE TO DRAIN - 3/8":12"
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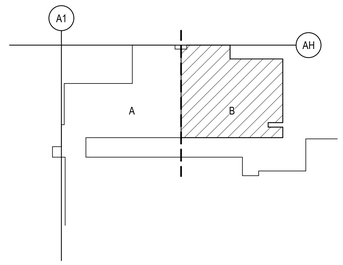
- RF-1: TPO ROOF ASSEMBLY SEE:
- MS-1: CORRUGATED METAL PANEL MECHANICAL SCREEN

KEY PLAN



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BUILDING A - PARTIAL ROOF PLAN - AREA B

SHEET

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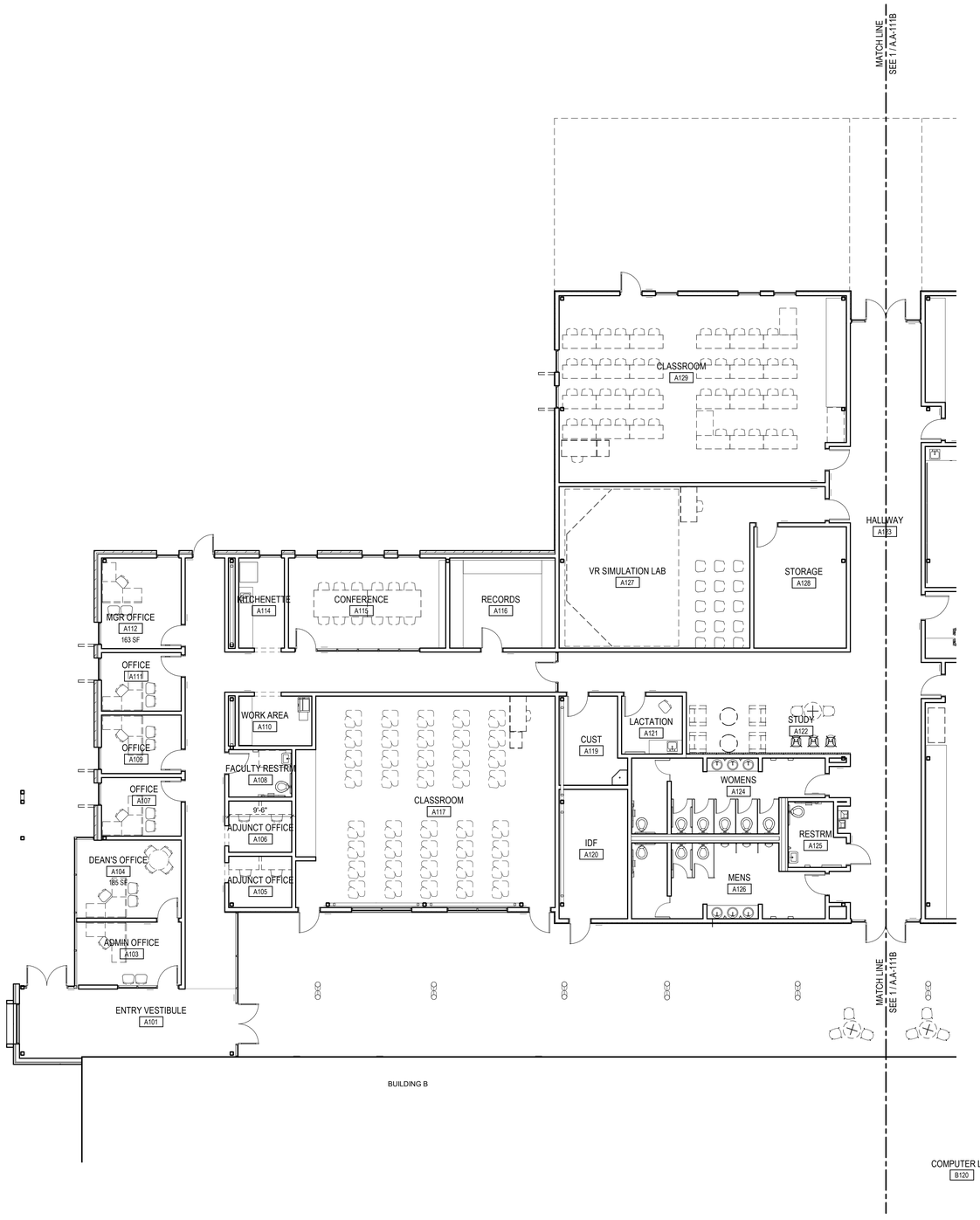


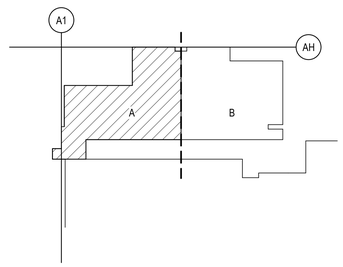
1 BUILDING A - PARTIAL FURN AND EQUIP PLAN - AREA A
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. ALL FURNISHINGS SHOWN AS HALFTONE AND/OR DASHED ARE N.I.C. AND ARE SHOWN FOR REFERENCE ONLY. SEE FLOOR PLANS FOR EQUIPMENT/FURNISHINGS INCLUDED IN SCOPE OF WORK

KEY PLAN



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BUILDING A - PARTIAL FURN AND EQUIP PLAN - AREA A

SHEET

A.A-151A

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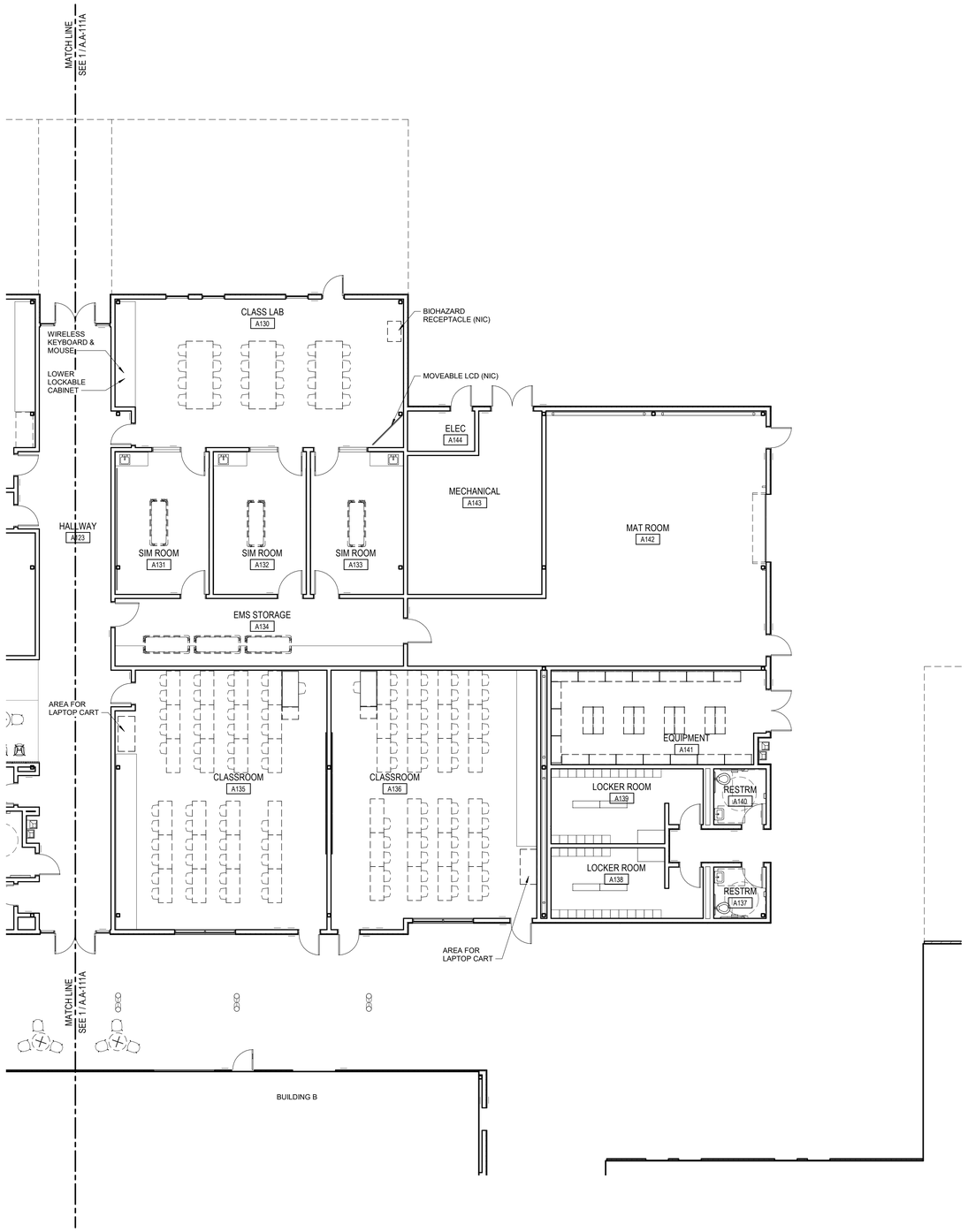

1 BUILDING A - PARTIAL FURN AND EQUIP PLAN - AREA B

SCALE 1/8" = 1'-0"

NORTH

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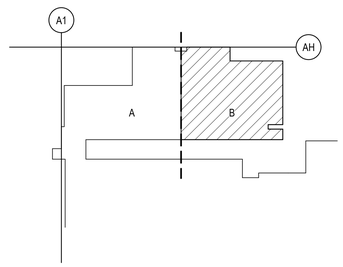
KEY PLAN



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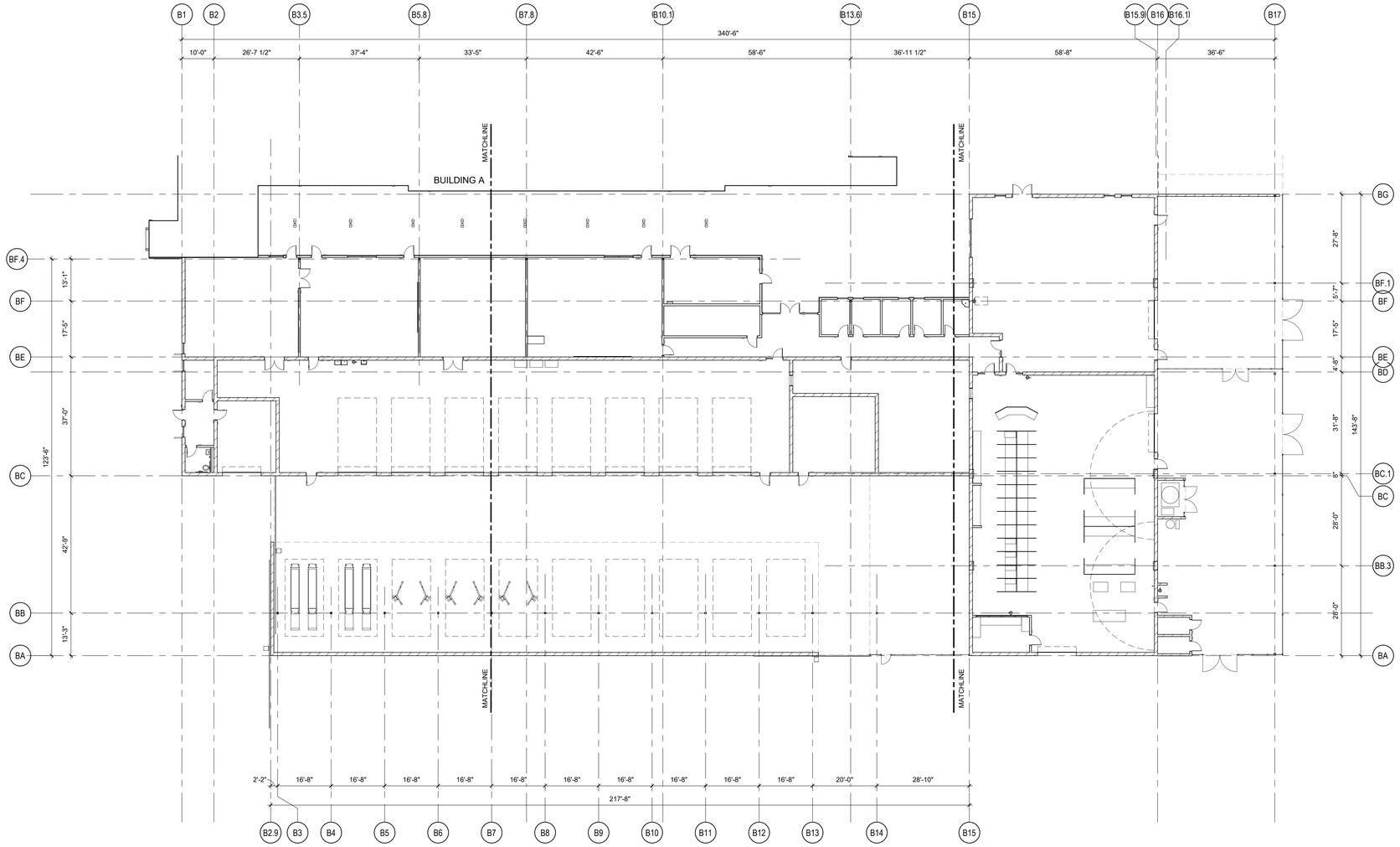
SHEET

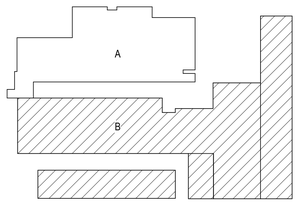
A.A-151B



1 BUILDING B - OVERALL FLOOR PLAN
SCALE 1/16" = 1'-0"

NORTH

KEY PLAN



NORTH

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1919 Nineteenth Street
Sacramento CA 95811
P 916.558.1900 F 916.558.1919
www.lionakis.com

CONSULTANT

SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
BUILDING B - OVERALL FLOOR PLAN

SHEET
B.A-111

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT. SCALE ACCORDINGLY

0 1/4" 1/2" 1"

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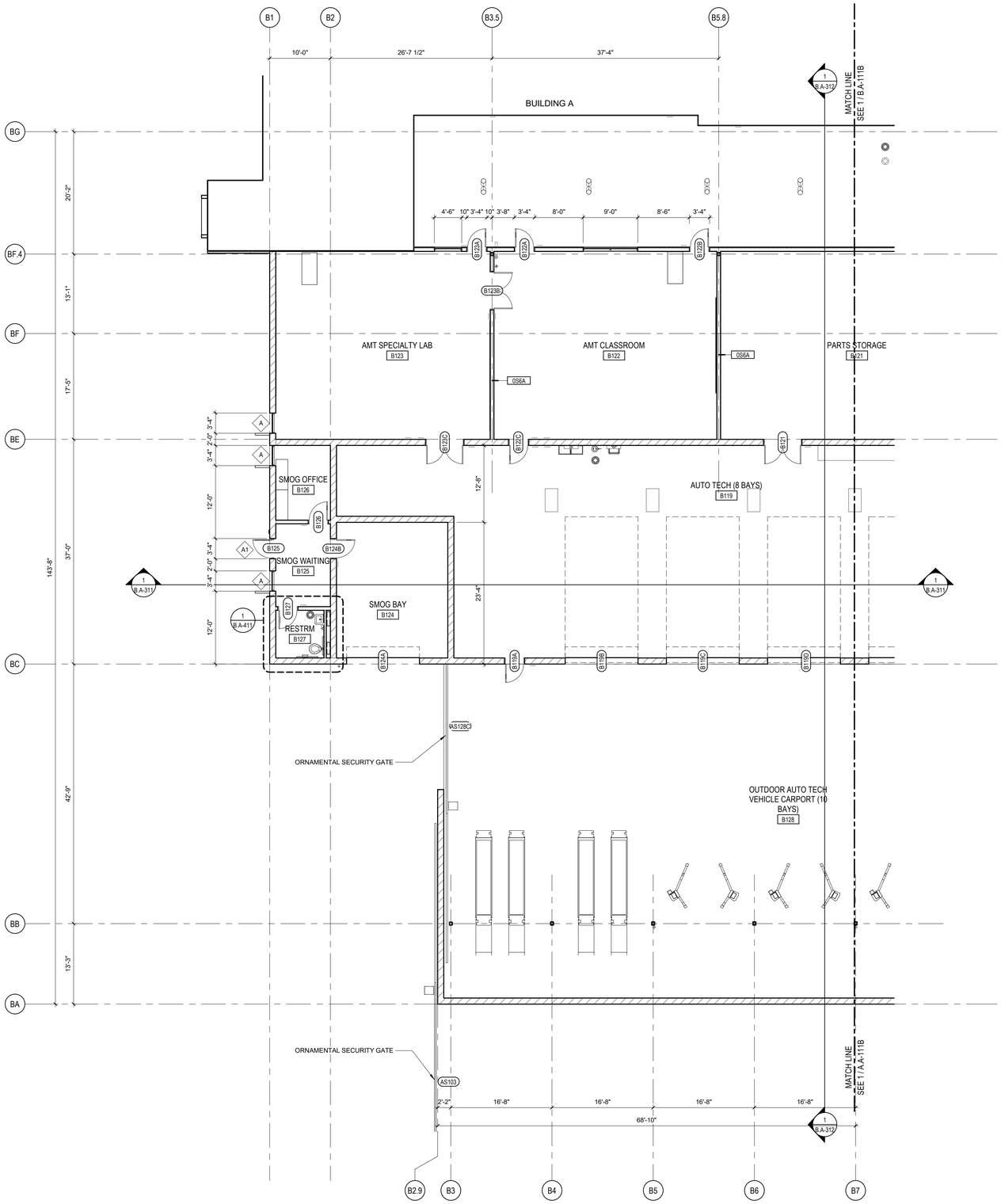

1 BUILDING B - PARTIAL FLOOR PLAN - AREA A

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. ARCHITECTURAL DIMENSIONS ARE TO FACE OF STUDS OR CENTERLINE OF COLUMN GRIDS UNLESS OTEHRWISE NOTED. EXCEPTION: CLEAR DIMENSIONS AT DOORS AND 5'-0" DIA CLEARANCE CIRCLES ARE TO FACE OF FINISH, TYP
2. LOCATE DOOR JAMBS 4" AWAY FROM ADJACENT WALL UNLESS OTHERWISE DIMENSIONED.
3. KEY NOTED WALL TYPES SHALL EXTEND FROM CORNER TO CORNER, FULL LENGTH OF WALL UNLESS INDICATED OTHERWISE.
4. FOR SYMBOL LEGEND SEE SHEET G-001.
5. IF SLOPE IS PROVIDED IN ROOMS WITH FLOOR DRAINS (FD), SLOPE FLOOR MAX 2% TO DRAIN.
6. SEE SHEETS A-545 AND A-546 FOR ALL INTERIOR NON-STRUCTURAL STUD FRAMING AND FOR TYP BACKING/BLOCKING AT VARIOUS FIXTURES, ACCESSORIES, AND EQUIPMENT.
7. STUDS AT ELECTRICAL ROOMS SHALL BE 16GA.
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9. SITE PLAN INFORMATION SHOWN ON FLOOR PLANS IS FOR REFERENCE PURPOSE ONLY. REFER TO CIVIL AND OR LANDSCAPE DRAWINGS FOR SITE WORK.
10. FOR SEMI RECESSED FIRE EXTINGUISHER CABINET AT RATED WALL AND FOR NON RATED WALL SEE DETAIL

FLOOR PLAN LEGEND

NOTE: SEE SHEET G-002 FOR ADDITIONAL SYMBOLS LEGEND AND ABBREVIATIONS

ROOM NAME
101 — ROOM IDENTIFIER WITH ROOM NAME & NUMBER

101A — DOOR , SEE SCHEDULE; DOOR OPENING IDENTIFIER

A — WINDOW OR LOUVER , SEE SCHEDULE; WINDOW OR LOUVER IDENTIFIER

FEC — FIRE EXTINGUISHER CABINET, SEE DETAIL

AED — AUTOMATIC EXTERNAL DEFIBRILLATOR

DA — WALL MOUNTED DOOR ACTUATOR

DA / BOL — DOOR ACTUATOR MOUNTED TO PEDESTAL; 6" SQUARE BOLLARD POST FOR DOOR ACTUATOR AND CARD READER WHERE OCCURS

4'-0" MIN CLR — INSTRUCTOR'S DESK , SEE SPECS; 30"X48" CLR ACCESSABLE SPACE AT ALL INSTRUCTOR'S DESK

NEAREST OBSTRUCTION

60" CLEAR ACCESSIBLE TURNING SPACE

1S4A J — PARTITION TYPE INDICATOR, SEE SHEET A-541 FOR ADDITIONAL INFORMATION

WALL LEGEND

NOTE: SEE SHEET A-531 FOR WALL TYPE DESCRIPTIONS, UL LISTINGS, AND ADDITIONAL WALL TYPES NOT LISTED ON LEGEND

- FULL HEIGHT MTL STUD PARTITION WITH ACOUSTICAL INSULATION, SEE WALL TYPE SCHEDULE
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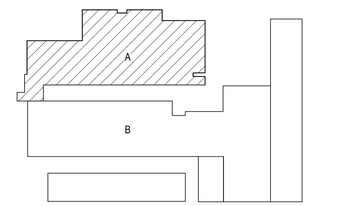
KEY PLAN



NORTH

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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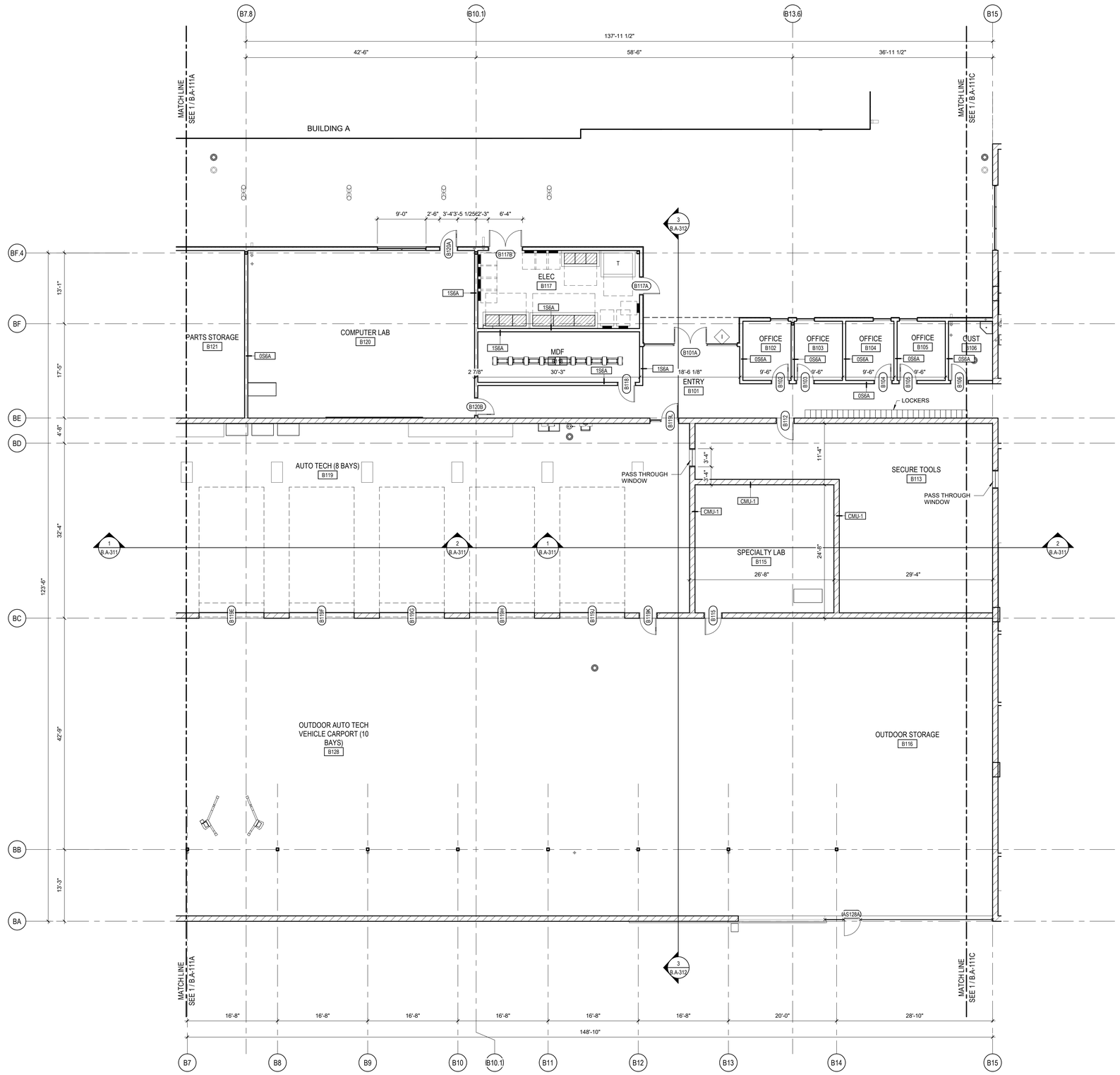
TITLE

BUILDING B - PARTIAL FLOOR PLAN - AREA A

SHEET

B.A-111A



1 BUILDING B - PARTIAL FLOOR PLAN - AREA B
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

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- NEAREST OBSTRUCTION
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- 1S4A J — PARTITION TYPE INDICATOR, SEE SHEET A-541 FOR ADDITIONAL INFORMATION

WALL LEGEND

NOTE: SEE SHEET A-531 FOR WALL TYPE DESCRIPTIONS, UL LISTINGS, AND ADDITIONAL WALL TYPES NOT LISTED ON LEGEND

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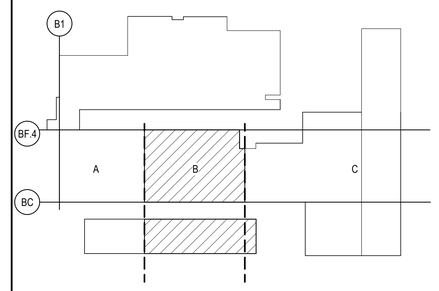
KEY PLAN



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CONSULTANT

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MARK	DATE	DESCRIPTION
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MANAGEMENT

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CLIENT PROJECT NO:	-
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TITLE
BUILDING B - PARTIAL FLOOR PLAN - AREA B

SHEET
B.A-111B

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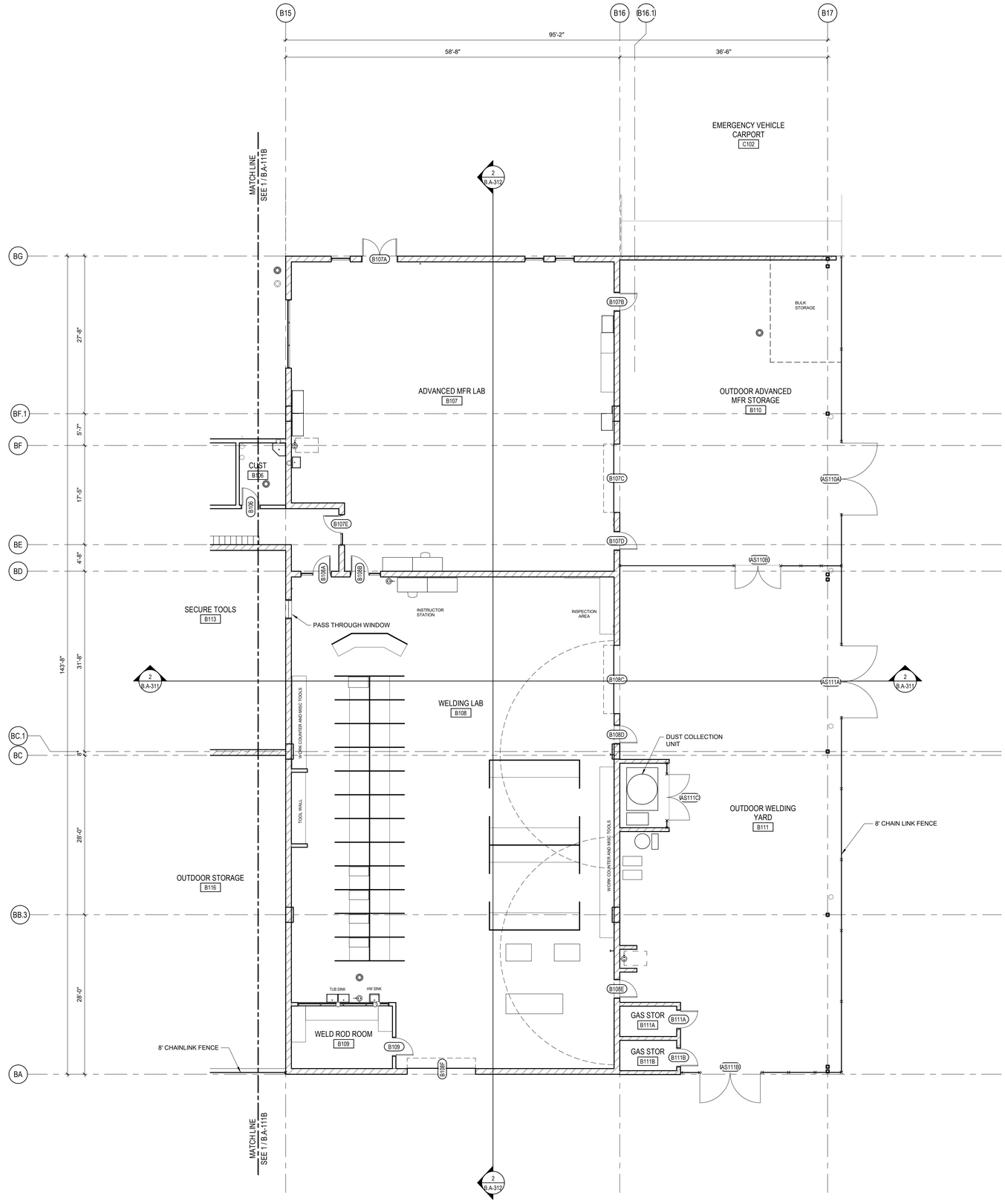

1 BUILDING B - PARTIAL FLOOR PLAN - AREA C

SCALE 1/8" = 1'-0"

NORTH

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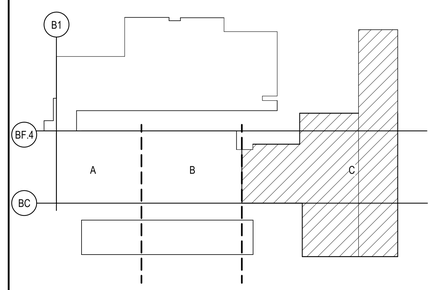
KEY PLAN



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CONSULTANT

SEAL

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7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

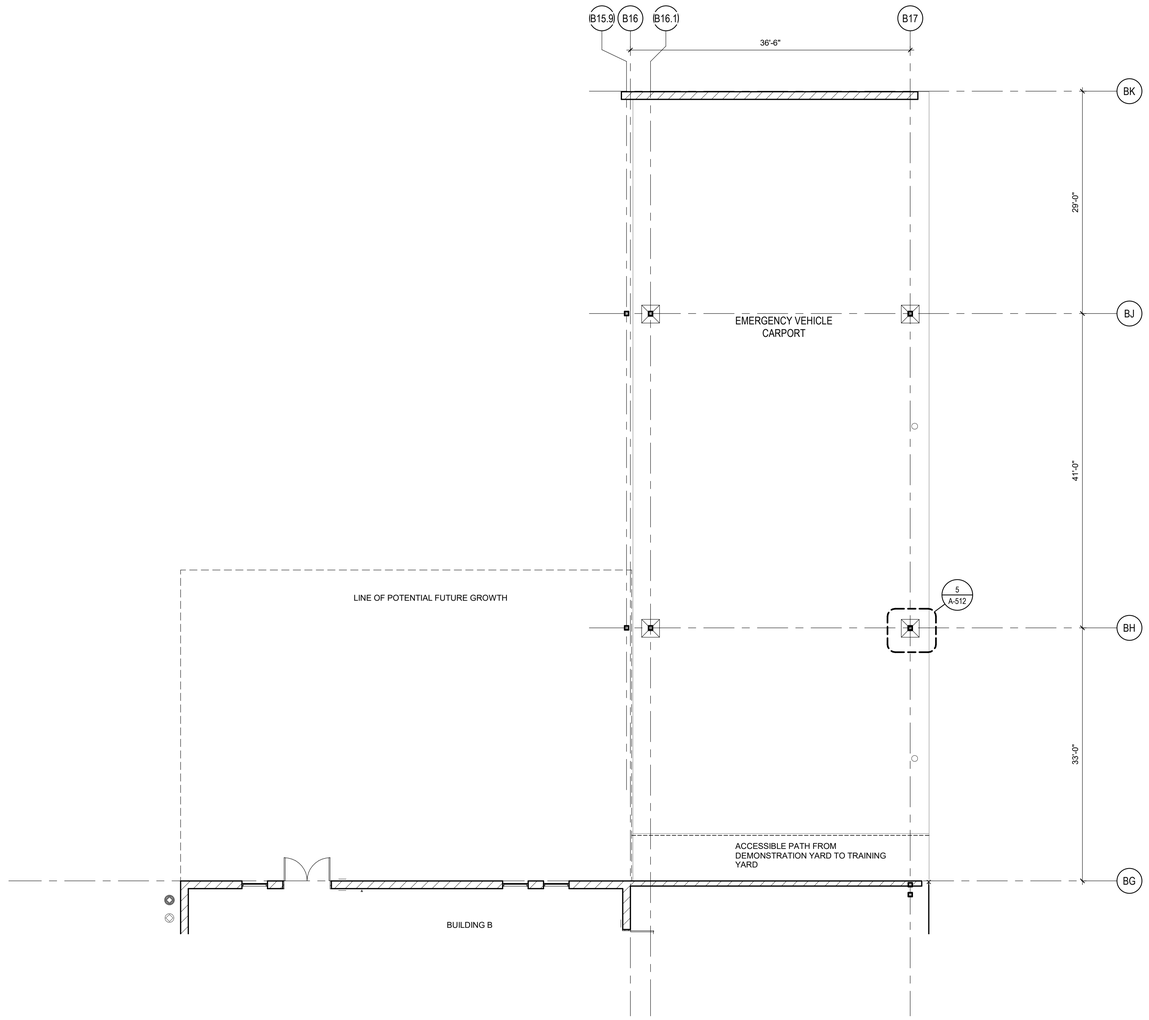
LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE

BUILDING B - PARTIAL FLOOR PLAN - AREA C

SHEET

B.A-111C



1 BUILDING B - PARTIAL FLOOR PLAN - CARPORT
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

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1S4A J
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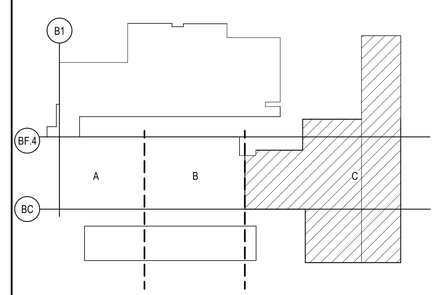
KEY PLAN



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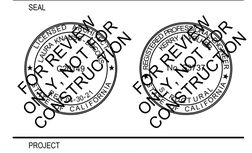
SEAL



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MARK	DATE	DESCRIPTION
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MANAGEMENT

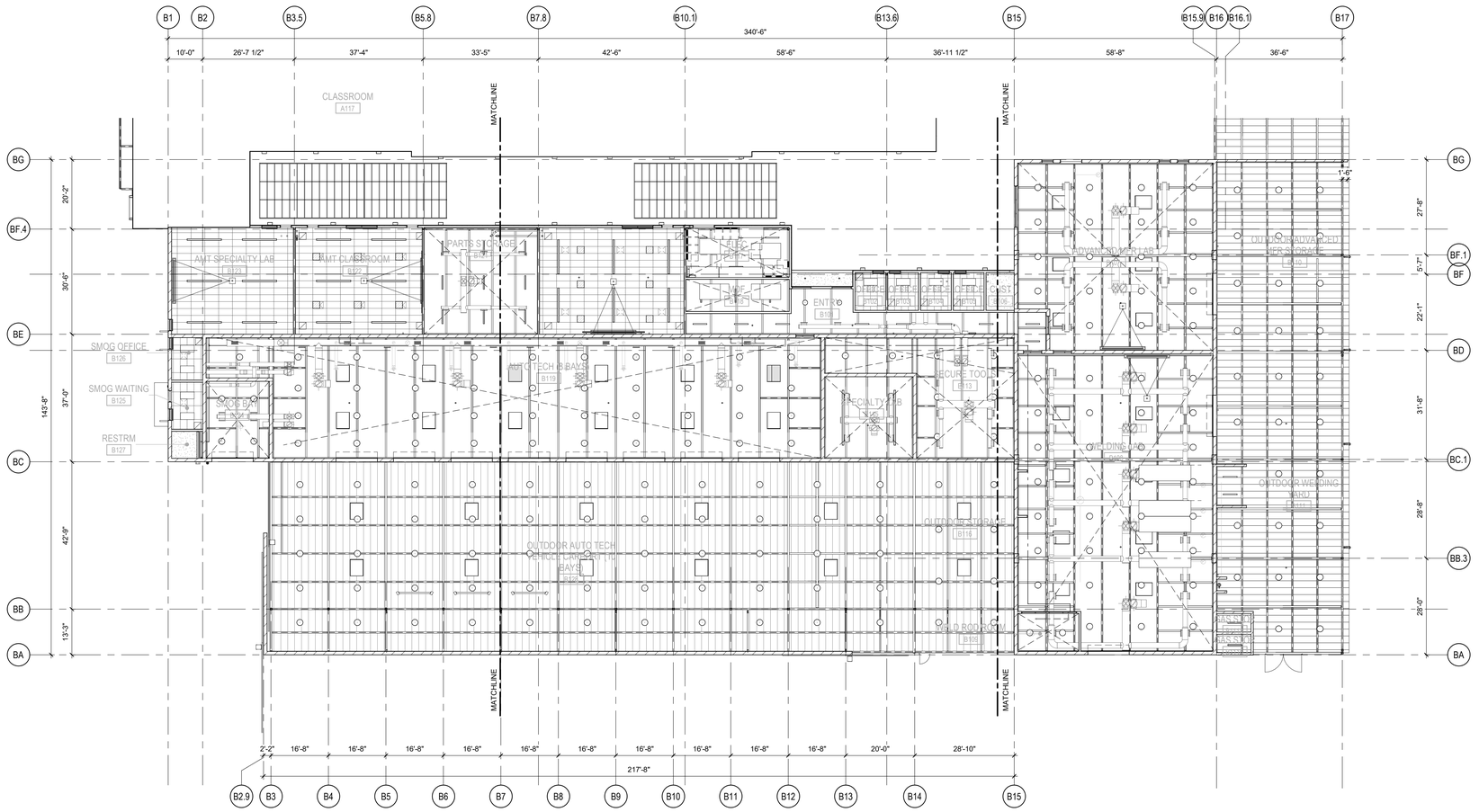
LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO:

TITLE

BUILDING B - PARTIAL FLOOR PLAN - CARPORT

SHEET

B.A-111D



1 BUILDING B - OVERALL CEILING PLAN

SCALE 1/16" = 1'-0"

NORTH

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT. SCALE ACCORDINGLY

0 1/4" 1/2" 1"

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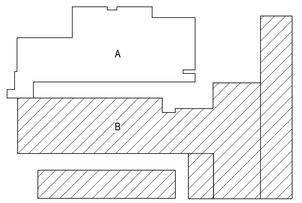


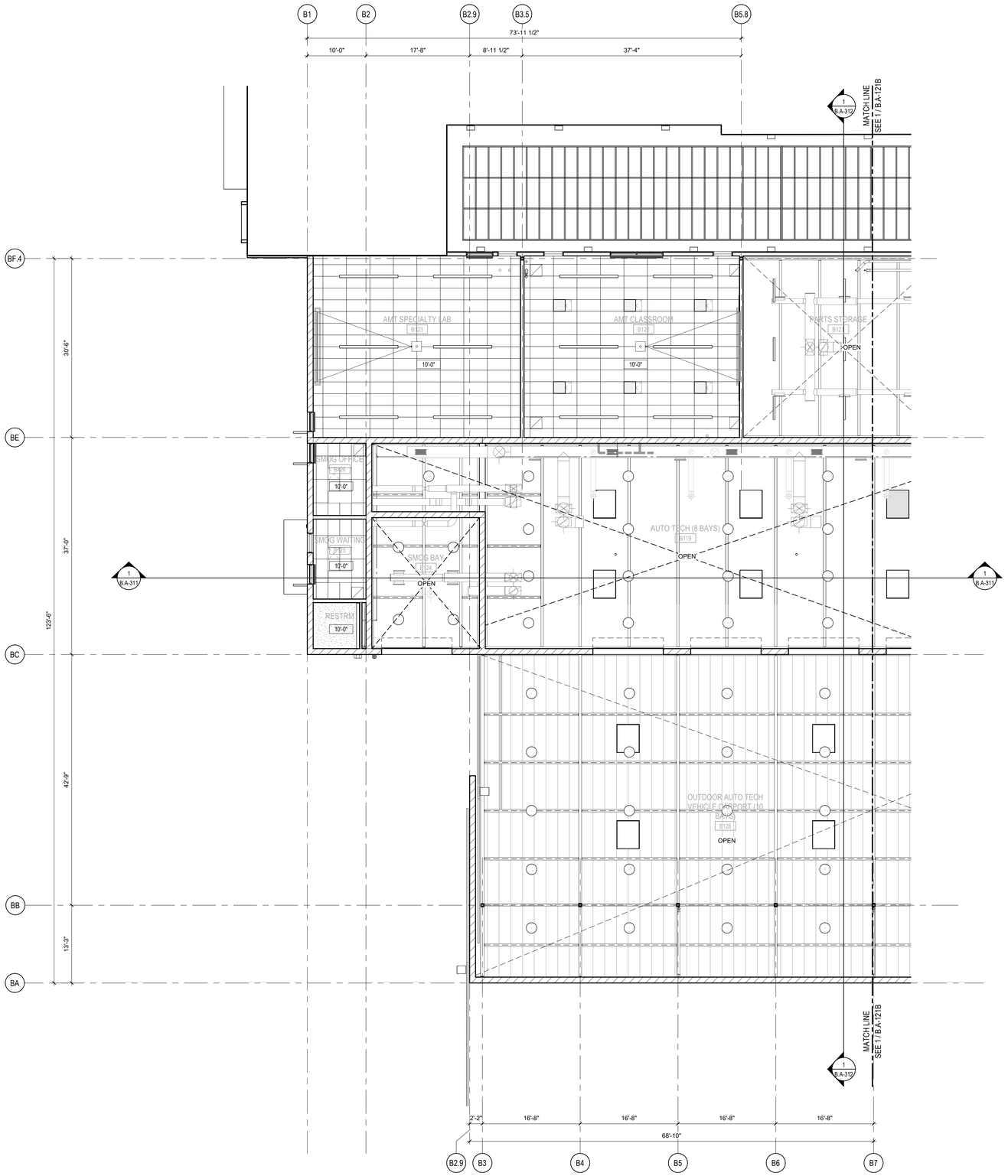
NORTH

TITLE

BUILDING B - OVERALL CEILING PLAN

SHEET

B.A-121



1 BUILDING B - PARTIAL CEILING PLAN - AREA A
SCALE 1/8" = 1'-0"

NORTH

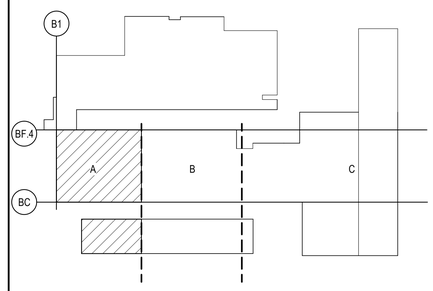
GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
3. ALL DIMENSIONS TO CENTERLINE OF LIGHT FIXTURES
4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

CEILING PLAN LEGEND

- 10'-0" — CEILING HEIGHT, AFF
- GYPSUM BOARD CEILING SYSTEM, FOR TYPICAL FRAMING DETAILS SEE SHEETS A-535 AND A-536 SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR MOISTURE RESISTANT GYPSUM BOARD TO BE USED AT WET LOCATIONS, TYP
- OPEN — OPEN TO ABOVE, WHERE OCCURS. PAINT UNDERSIDE OF STRUCTURE
- CL1 : 2' x 4' SUSPENDED CEILING GRID SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- CL2: 2' x 2' SUSPENDED CEILING GRID SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- CL4: 1" x 8" W/ BACKER, 8 BLADES WITH 6" ACOUSTICAL BATT INSULATION ABOVE GYP CEILING B.O.D. MFR: ARMSTRONG, WOODWORKS CHANNELED PLANK SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- LC-1: LINEAR METAL CEILING SYSTEM BASIS OF DESIGN MFR: ENDURE WOODGRAIN 3 BOARD 900 WITH INTEGRATED SPACERS COLOR: TBD
- 2x2 SQUARE SOLAR TUBE SYSTEM
- CEILING ACCESS HATCH, SEE 19 OR 20/A-563
- 2x4 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- 2x2 LIGHT FIXTURE, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 1, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 2, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 3, SEE ELECTRICAL DWGS
- LINEAR LIGHT FIXTURE TYPE 4, SEE ELECTRICAL DWGS
- CEILING MOUNTED PROJECTOR, SEE ELECTRICAL AND TELECOM DWGS
- WINDOW COVERING, SEE SHEET AG112
- S — CEILING MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- S — WALL MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- ELECTRICAL POWER REEL
- MECHANICAL SUPPLY DIFFUSER, SEE MECHANICAL DWGS
- MECHANICAL EXHAUST REGISTER, SEE MECHANICAL DWGS
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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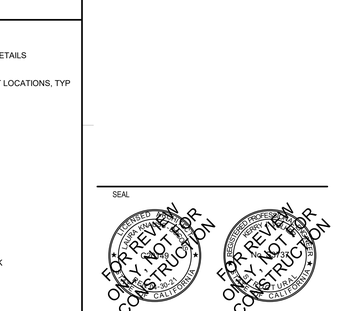

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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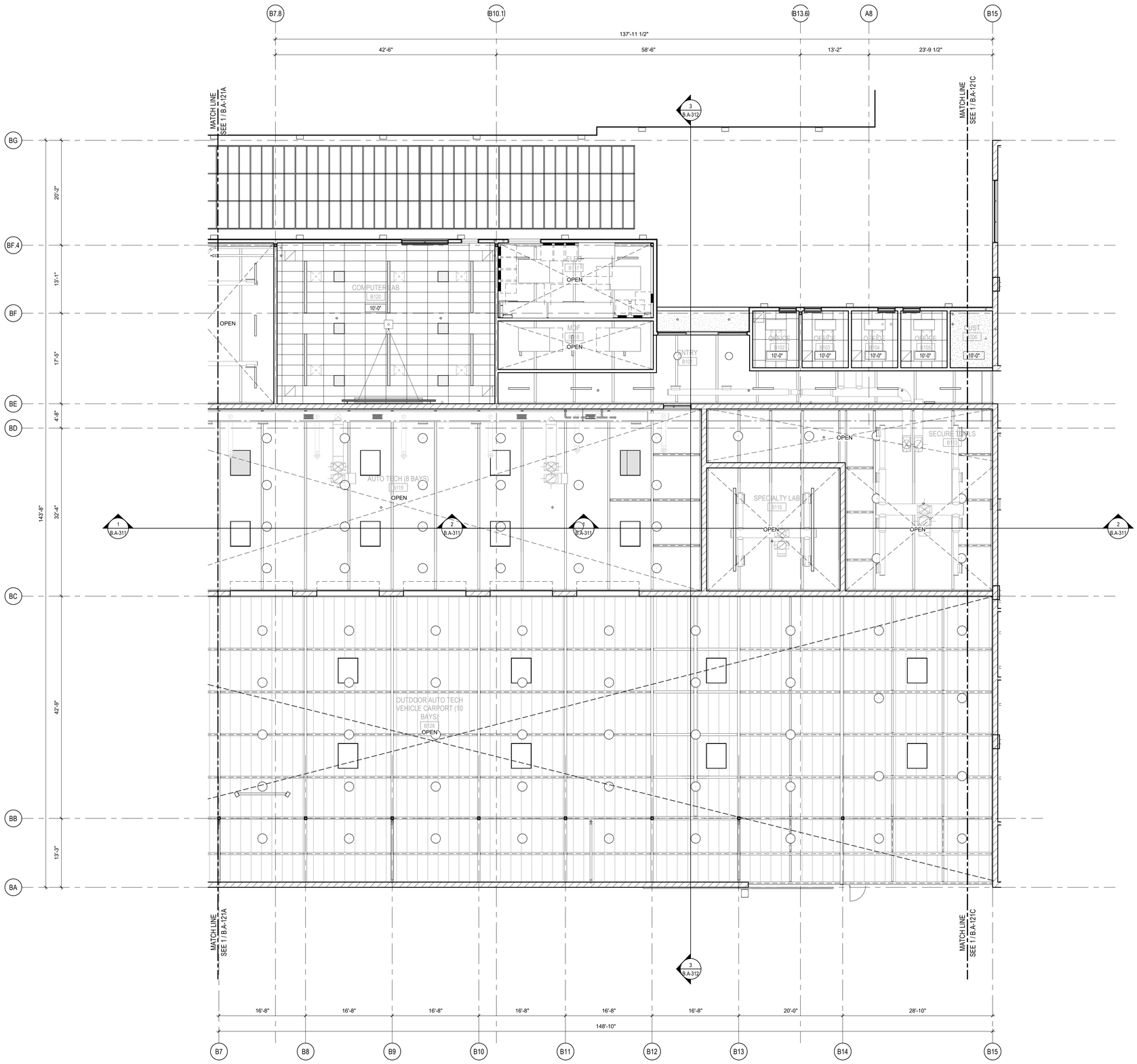
TITLE

BUILDING B - PARTIAL CEILING PLAN - AREA A

SHEET

B.A-121A



1 BUILDING B - PARTIAL CEILING PLAN - AREA B

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
3. ALL DIMENSIONS TO CENTERLINE OF LIGHT FIXTURES
4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

CEILING PLAN LEGEND

- 10'-0" — CEILING HEIGHT, AFF
- GYPSUM BOARD CEILING SYSTEM, FOR TYPICAL FRAMING DETAILS SEE SHEETS A-535 AND A-536 SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR MOISTURE RESISTANT GYPSUM BOARD TO BE USED AT WET LOCATIONS, TYP
- OPEN — OPEN TO ABOVE, WHERE OCCURS. PAINT UNDERSIDE OF STRUCTURE
- CL1 : 2' x 4' SUSPENDED CEILING GRID SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
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- CL4: 1" x 8" W/ BACKER, 8 BLADES WITH 6" ACOUSTICAL BATT INSULATION ABOVE GYP CEILING B.O.D. MFR: ARMSTRONG, WOODWORKS CHANNELED PLANK SEE INTERIOR FINISH SCHEDULE FOR FINISH AND COLOR
- LC-1: LINEAR METAL CEILING SYSTEM BASIS OF DESIGN MFR: ENDURE WOODGRAIN 3 BOARD 900 WITH INTEGRATED SPACERS COLOR: TBD
- 2x2 SQUARE SOLAR TUBE SYSTEM
- CEILING ACCESS HATCH, SEE 19 OR 20/A-563
- 2x4 LIGHT FIXTURE, SEE ELECTRICAL DWGS
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- LINEAR LIGHT FIXTURE TYPE 1, SEE ELECTRICAL DWGS
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- LINEAR LIGHT FIXTURE TYPE 4, SEE ELECTRICAL DWGS
- CEILING MOUNTED PROJECTOR, SEE ELECTRICAL AND TELECOM DWGS
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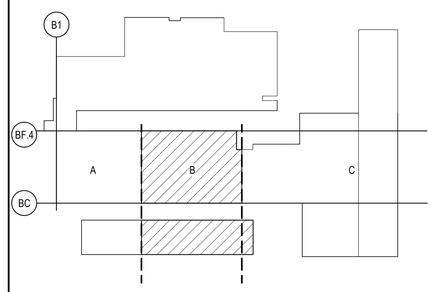
- S — CEILING MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- S — WALL MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
- ELECTRICAL POWER REEL
- MECHANICAL SUPPLY DIFFUSER, SEE MECHANICAL DWGS
- MECHANICAL EXHAUST REGISTER, SEE MECHANICAL DWGS
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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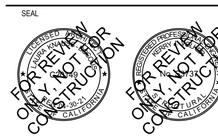

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
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CLIENT
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ISSUED

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MANAGEMENT

LIONAKIS PROJECT NO:	019051
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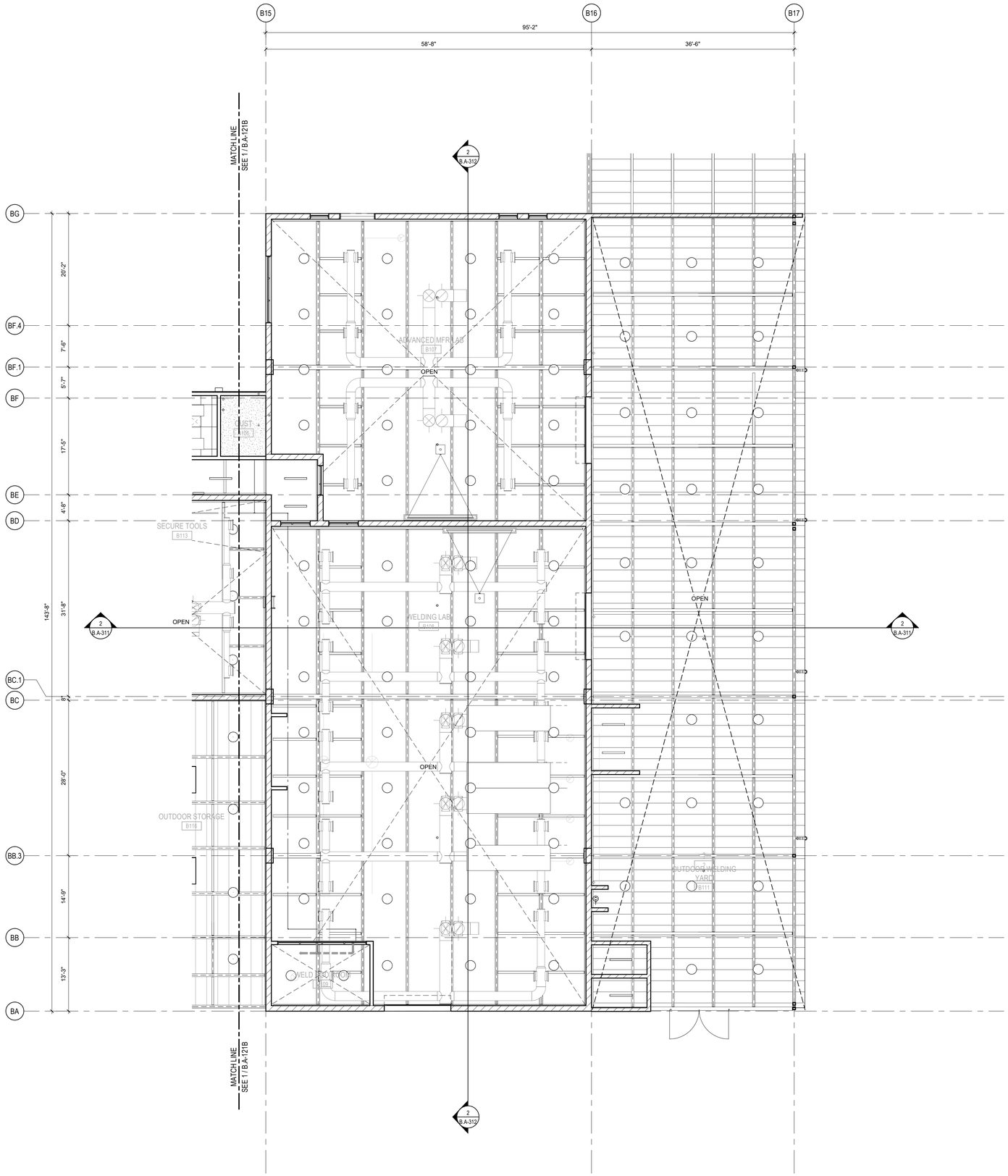
TITLE

BUILDING B - PARTIAL CEILING PLAN - AREA B

SHEET

B.A-121B



1 BUILDING B - PARTIAL CEILING PLAN - AREA C

SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
3. ALL DIMENSIONS TO CENTERLINE OF LIGHT FIXTURES
4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

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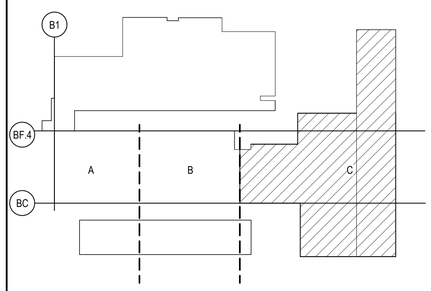
- MECHANICAL SUPPLY DIFFUSER, SEE MECHANICAL DWGS
- MECHANICAL EXHAUST REGISTER, SEE MECHANICAL DWGS
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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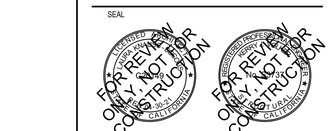

PROJECT

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LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

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7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE

BUILDING B - PARTIAL CEILING PLAN - AREA C

SHEET

B.A-121C

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0 1/4" 1/2" 1"

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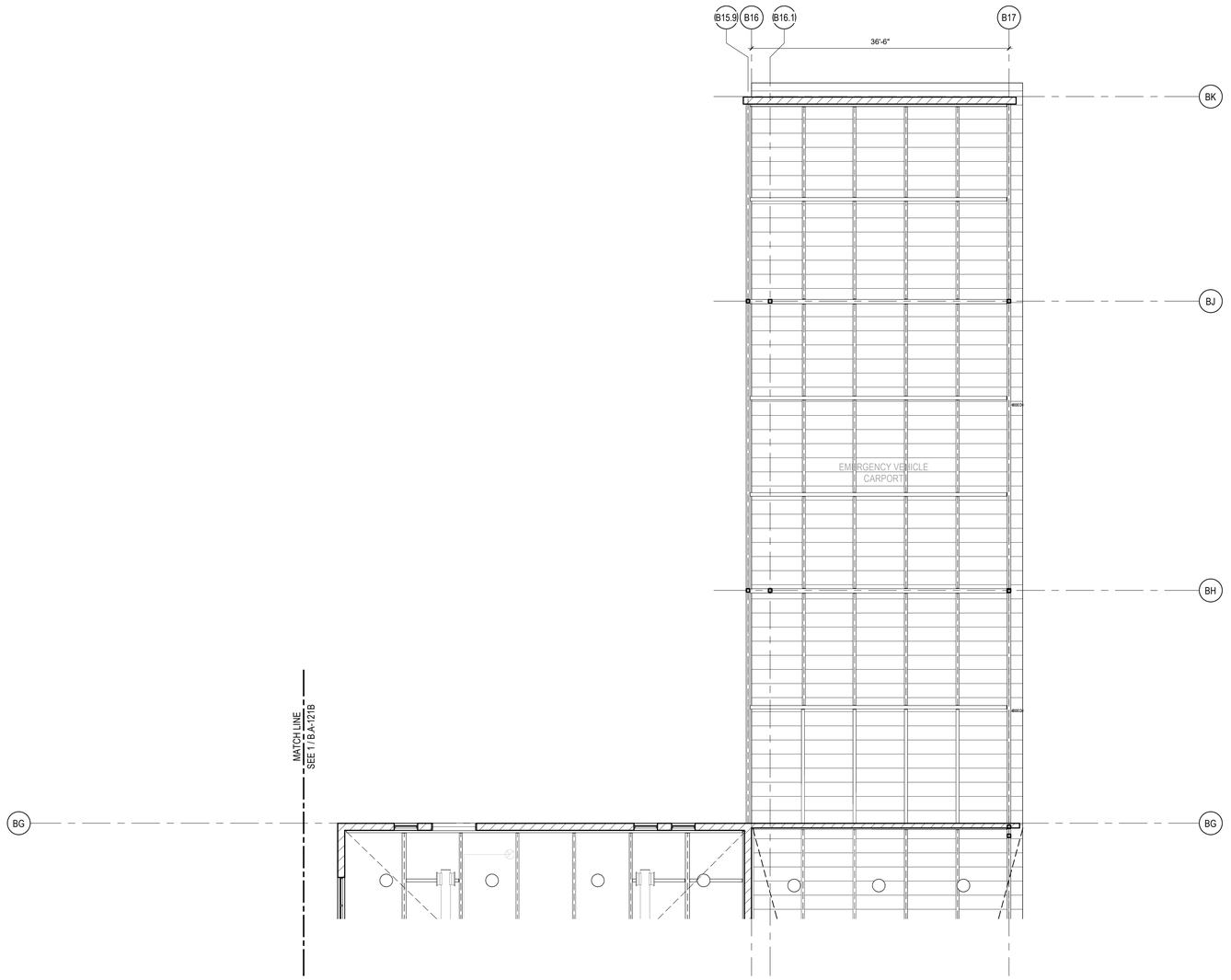

1 BUILDING B - PARTIAL CEILING PLAN - CARPORT
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. SEE FINISH SCHEDULE FOR CEILING FINISHES
2. SEE ELECTRICAL DWGS FOR LIGHT FIXTURES
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4. CENTER FIXTURES BOTH WAYS IN DRYWALL SOFFITS UON

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- CEILING MOUNTED PROJECTOR, SEE ELECTRICAL AND TELECOM DWGS
- WINDOW COVERING, SEE SHEET AG112
- S — CEILING MOUNTED SPEAKER, SEE DATA.SHEETS FOR MORE INFORMATION
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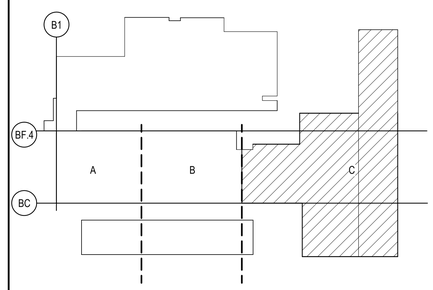
- ELECTRICAL POWER REEL
- MECHANICAL SUPPLY DIFFUSER, SEE MECHANICAL DWGS
- MECHANICAL EXHAUST REGISTER, SEE MECHANICAL DWGS
- MECHANICAL RETURN REGISTER, SEE MECHANICAL DWGS
- EXIT SIGNAGE

KEY PLAN



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PROJECT

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LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE

BUILDING B - PARTIAL CEILING PLAN - CARPORT

SHEET

B.A-121D

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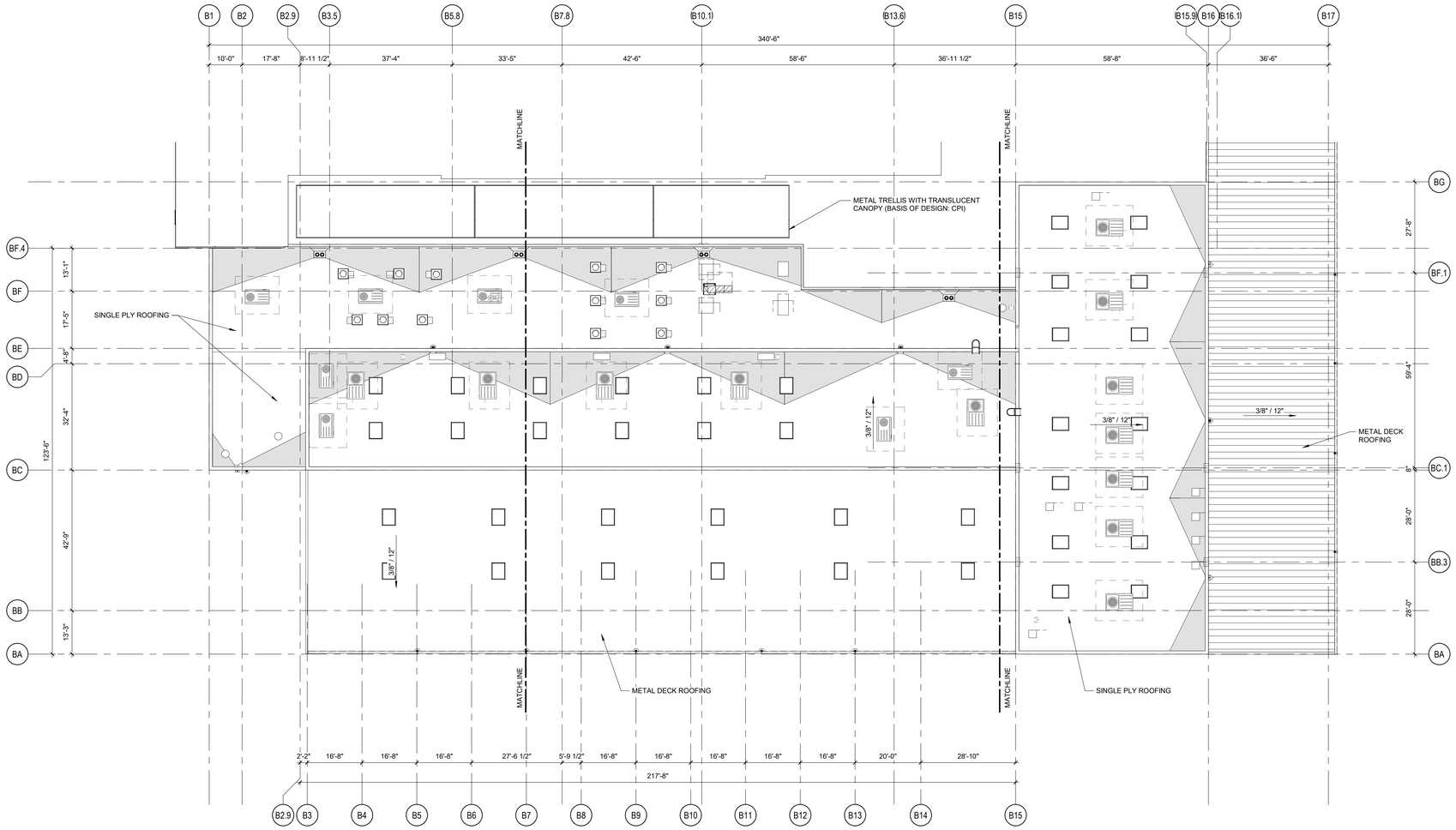

1 BUILDING B - OVERALL ROOF PLAN

SCALE 1/16" = 1'-0"

NORTH

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MANAGEMENT

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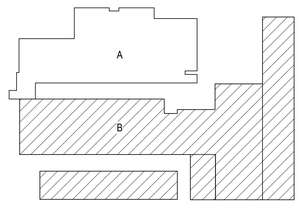
KEY PLAN



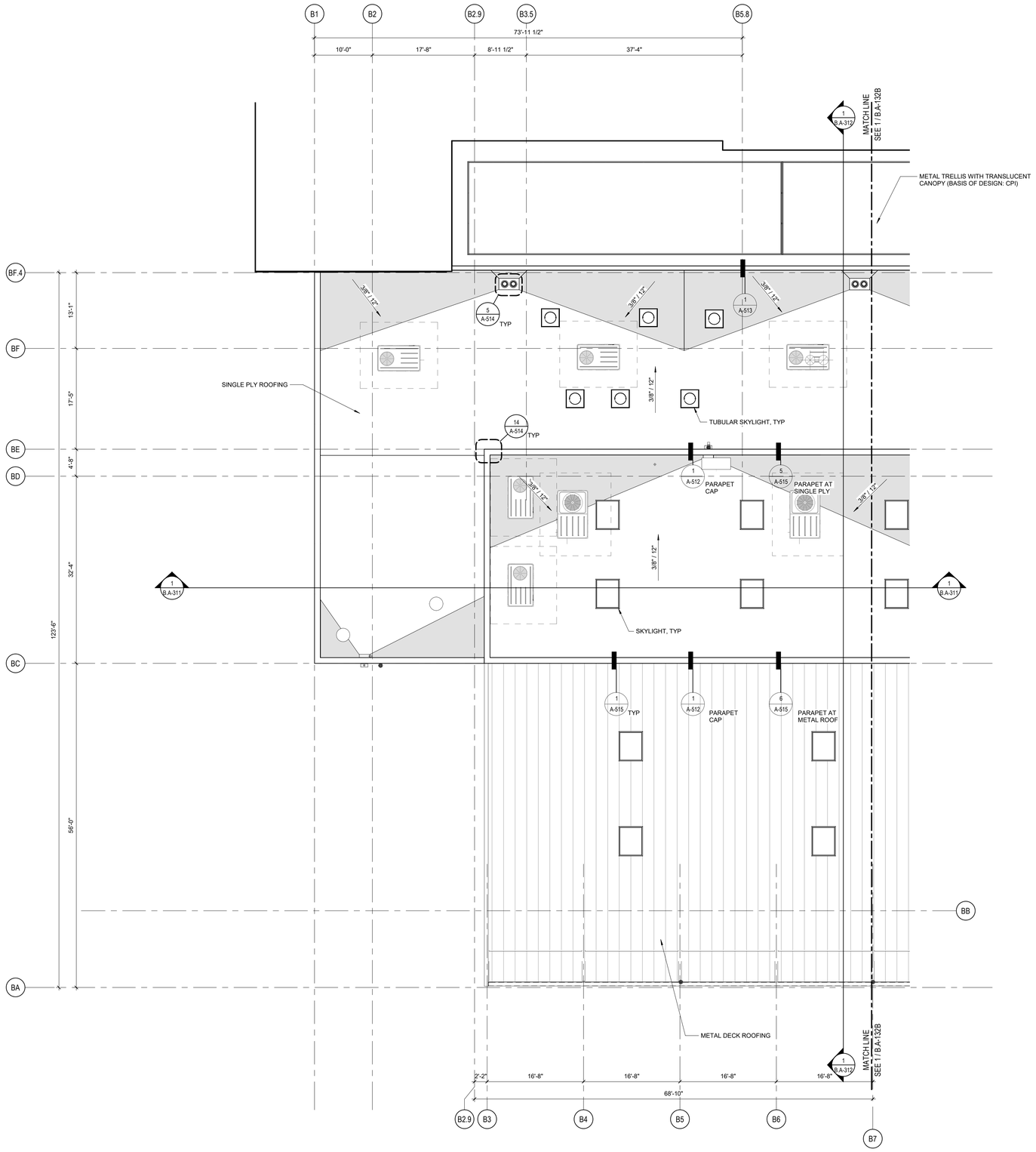
NORTH

TITLE

BUILDING B - OVERALL ROOF PLAN

SHEET

B.A-132



1 BUILDING B - PARTIAL ROOF PLAN - AREA A

SCALE 1/8" = 1'-0"

NORTH

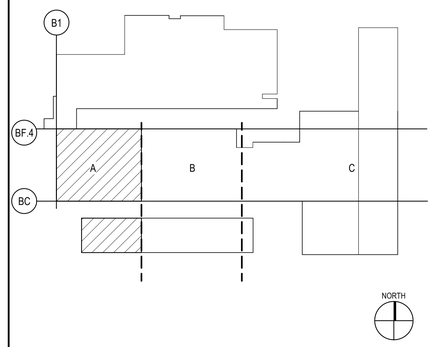
GENERAL NOTES

1. MAJOR PENETRATIONS TO BE 24" MIN. FROM EACH OTHER AND FROM PARAPET WALLS
2. FOR TYP BOOT FLASHING AT SINGLE PLY ROOFING ASSEMBLY - SEE

ROOF PLAN LEGEND

- ROOF DRAIN AND OVERFLOW
  CONNECT TO CIVIL BELOW GRADE. OVERFLOW DRAIN PIPE TO DAYLIGHT PER EXTERIOR ELEVATIONS SEE DET
- SLOPE TO DRAIN - 3/8":12"
- TAPERED CRICKET ASSEMBLY - SLOPE 3/8":12"
- SINGLE-PLY WALKWAY PADS
- PHOTOVOLTAIC PANELS, SEE ELECTRICAL DWGS
- SKYLIGHT
- FALL PROTECTION TIE-OFF ASSEMBLY AT 30'-0" OC MAX LOCATED WITHIN 6'-0" MAX FROM INSIDE FACE OF PARAPET SEE DETAIL
- RF-1: TPO ROOF ASSEMBLY SEE:
- MS-1: CORRUGATED METAL PANEL MECHANICAL SCREEN

KEY PLAN



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PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

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MANAGEMENT

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TITLE

BUILDING B - PARTIAL ROOF PLAN - AREA A

SHEET

B.A-132A

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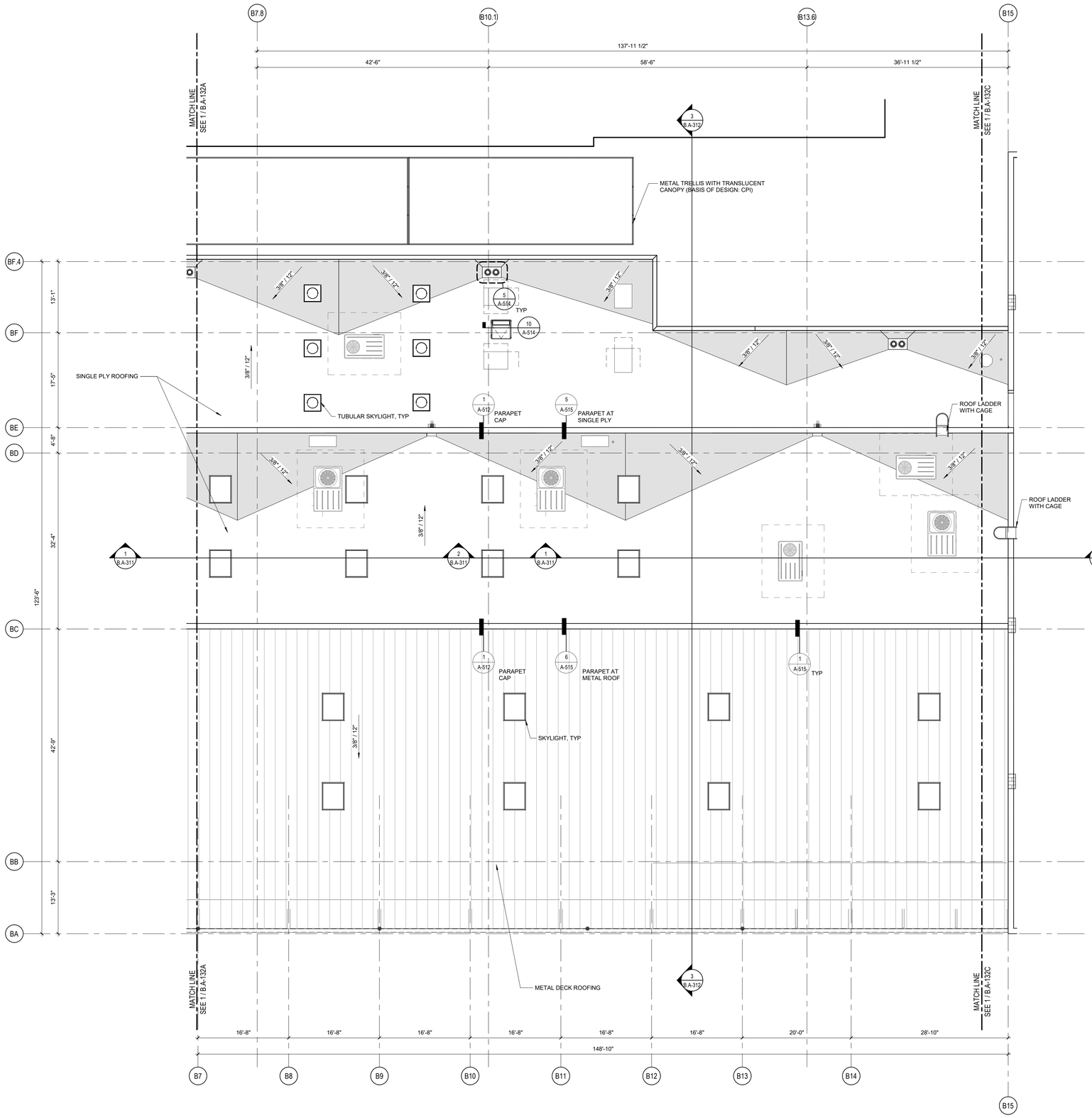

1 BUILDING B - PARTIAL ROOF PLAN - AREA B
SCALE 1/8" = 1'-0"

GENERAL NOTES

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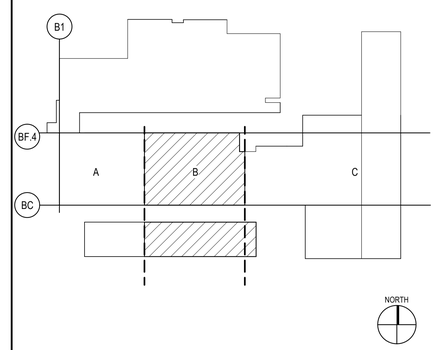
KEY PLAN



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TITLE
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SHEET
B.A-132B

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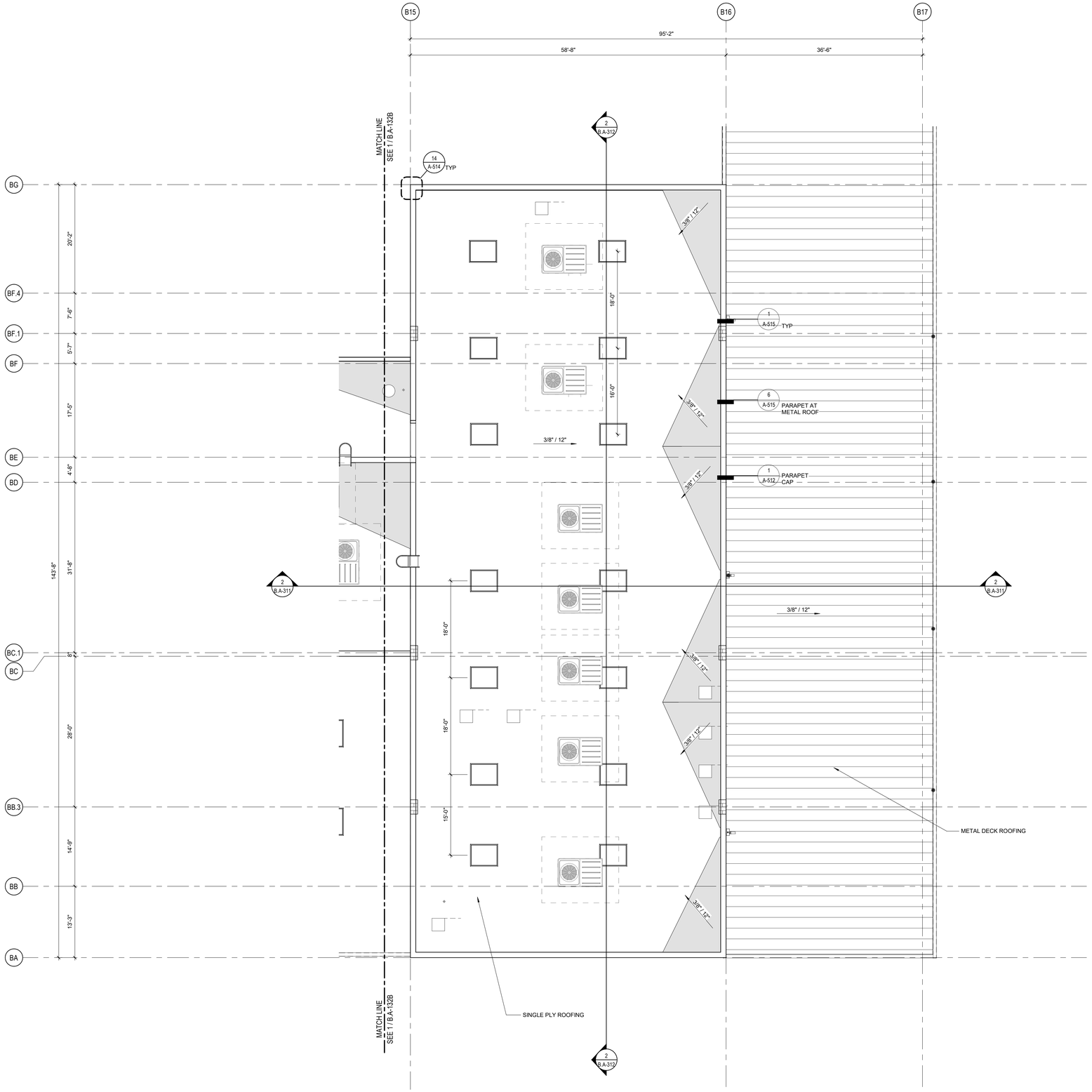


1 BUILDING B - PARTIAL ROOF PLAN - AREA C
SCALE 1/8" = 1'-0"

NORTH

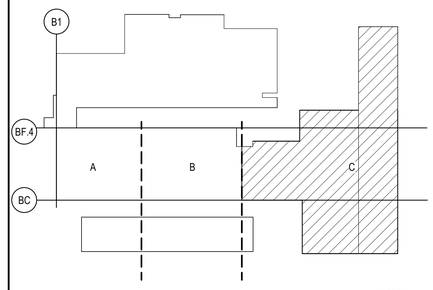
GENERAL NOTES

1. MAJOR PENETRATIONS TO BE 24" MIN. FROM EACH OTHER AND FROM PARAPET WALLS
2. FOR TYP BOOT FLASHING AT SINGLE PLY ROOFING ASSEMBLY - SEE

ROOF PLAN LEGEND

- ROOF DRAIN AND OVERFLOW
  CONNECT TO CIVIL BELOW GRADE. OVERFLOW DRAIN PIPE TO DAYLIGHT PER EXTERIOR ELEVATIONS SEE DET
- SLOPE TO DRAIN - 3/8":12"
- TAPERED CRICKET ASSEMBLY - SLOPE 3/8":12"
- SINGLE-PLY WALKWAY PADS
- PHOTOVOLTAIC PANELS, SEE ELECTRICAL DWGS
- SKYLIGHT
- FALL PROTECTION TIE-OFF ASSEMBLY AT 30'-0" OC MAX LOCATED WITHIN 6'-0" MAX FROM INSIDE FACE OF PARAPET SEE DETAIL
- RF-1: TPO ROOF ASSEMBLY SEE:
- MS-1: CORRUGATED METAL PANEL MECHANICAL SCREEN

KEY PLAN



FILE NO. ?XX-XXXX?

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LIONAKIS
1919 Nineteenth Street
Sacramento CA 95811
P 916.558.1900 F 916.558.1919
www.lionakis.com
CONSULTANT

SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT
LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BUILDING B - PARTIAL ROOF PLAN - AREA C

SHEET
B.A-132C

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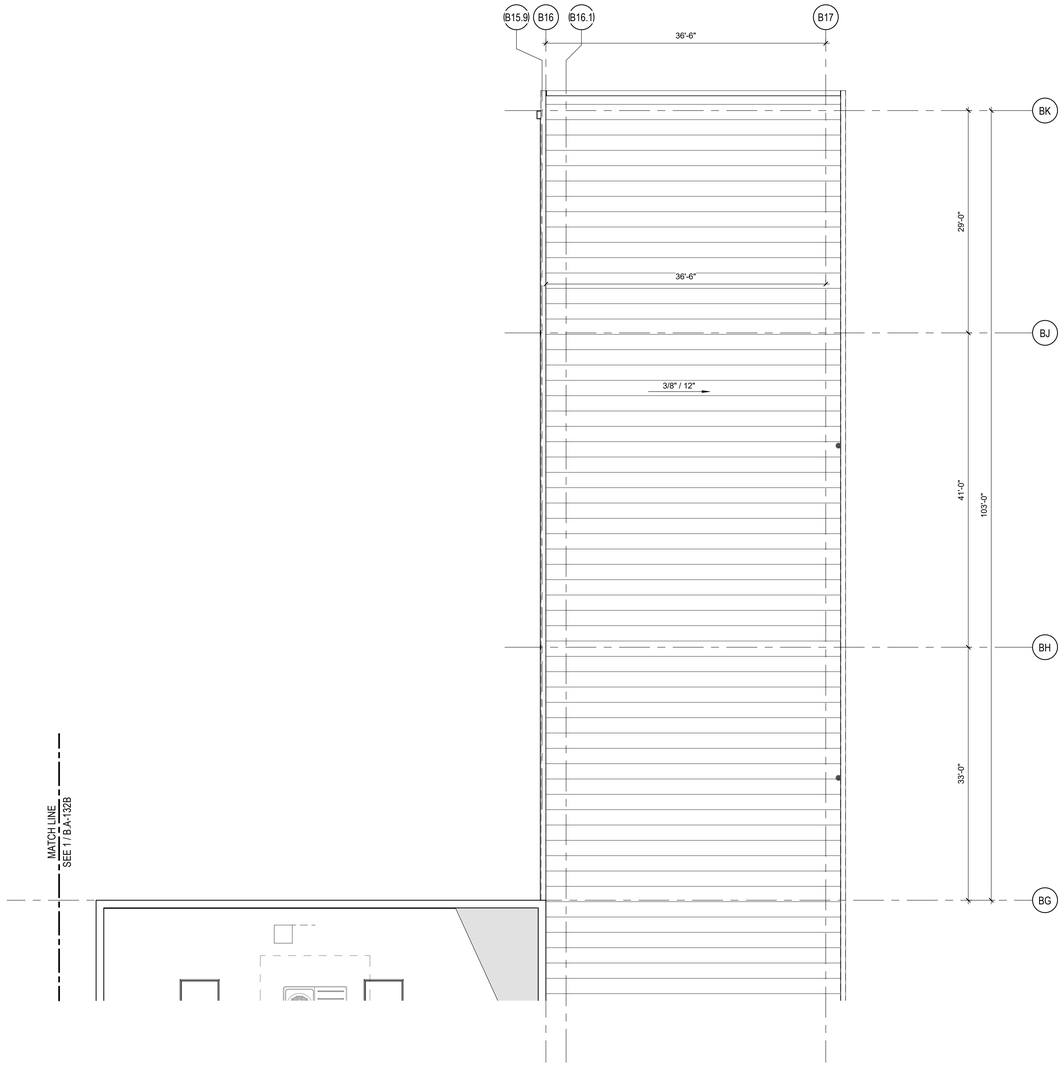

1 BUILDING B - PARTIAL ROOF PLAN - CARPORT
SCALE 1/8" = 1'-0"

NORTH

GENERAL NOTES

1. MAJOR PENETRATIONS TO BE 24" MIN. FROM EACH OTHER AND FROM PARAPET WALLS
2. FOR TYP BOOT FLASHING AT SINGLE PLY ROOFING ASSEMBLY - SEE

ROOF PLAN LEGEND

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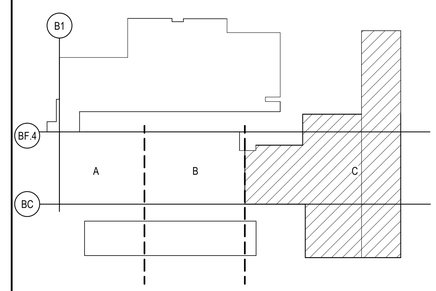
  CONNECT TO CIVIL BELOW GRADE. OVERFLOW DRAIN PIPE TO DAYLIGHT PER EXTERIOR ELEVATIONS SEE DET
- SLOPE TO DRAIN - 3/8":12"
- TAPERED CRICKET ASSEMBLY - SLOPE 3/8":12"
- SINGLE-PLY WALKWAY PADS
- PHOTOVOLTAIC PANELS, SEE ELECTRICAL DWGS
- SKYLIGHT
- FALL PROTECTION TIE-OFF ASSEMBLY AT 30'-0" OC MAX LOCATED WITHIN 6'-0" MAX FROM INSIDE FACE OF PARAPET SEE DETAIL
- RF-1: TPO ROOF ASSEMBLY SEE:
- MS-1: CORRUGATED METAL PANEL MECHANICAL SCREEN

KEY PLAN



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LIVERMORE, CA 94551

CLIENT
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7600 DUBLIN BLVD
DUBLIN, CA 94568

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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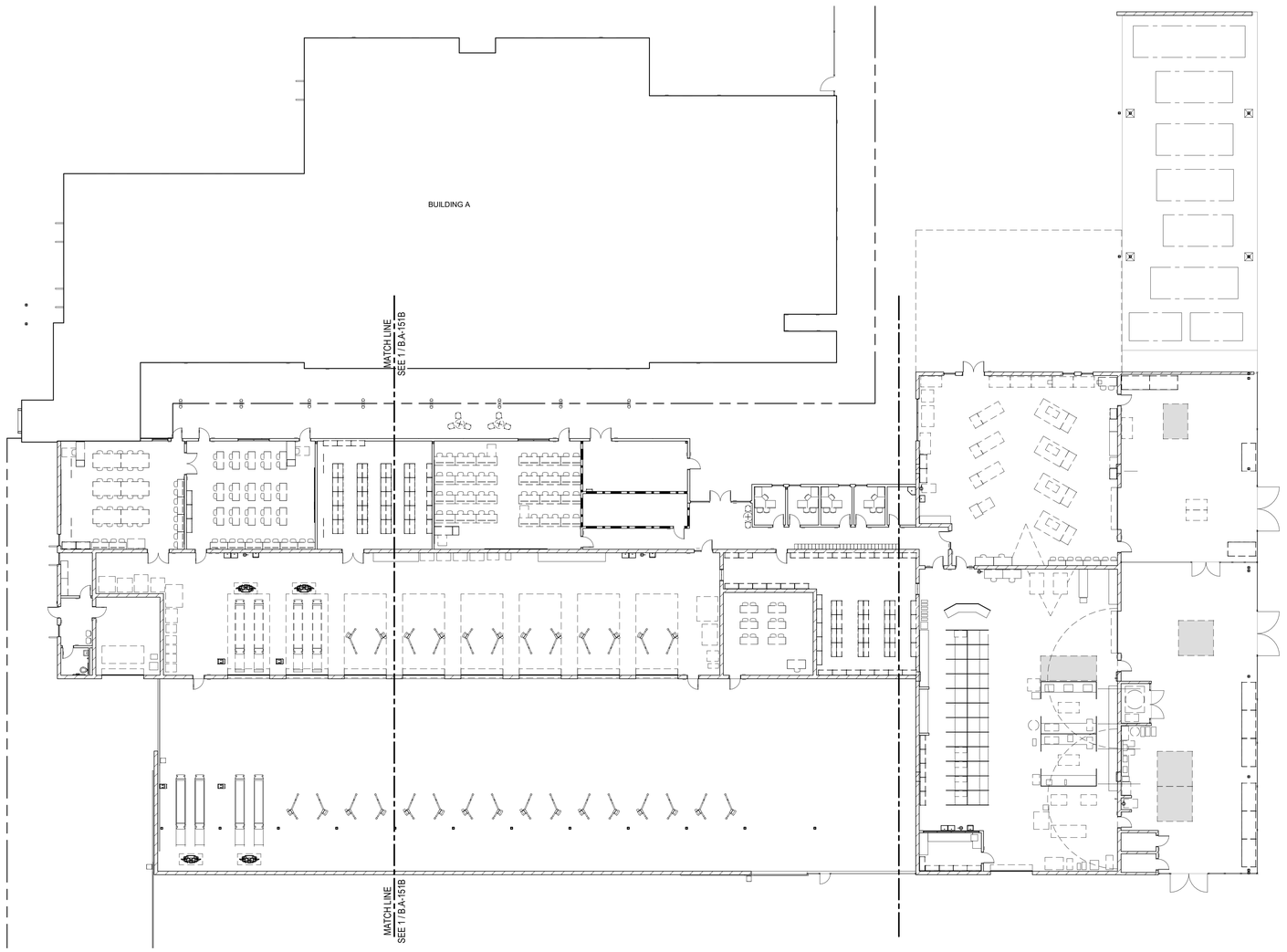
TITLE
BUILDING B - PARTIAL ROOF PLAN - CARPORT

SHEET
B.A-132D



1 BUILDING B - PARTIAL FURN AND EQUIP PLAN
SCALE 1/16" = 1'-0"

KEY PLAN

NORTH

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	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE

BUILDING B - FURN AND EQUIP PLAN

SHEET

B.A-151

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PLUMBING LEGEND

PIPE & ACCESSORIES (PLANS)

- POINT OF CONNECTION
- POINT OF DISCONNECTION
- DEMOLITION OF PIPING, DEVICES, ETC.
- END OF DEMOLITION WORK
- FLOOR DRAIN
- FLOOR DRAIN OR FLOOR SINK
- FLOOR SINK
- COMBINATION ROOF / OVERFLOW DRAIN
- ROOF DRAIN
- ROOF RECEPTOR
- FLOOR CLEANOUT
- WALL CLEANOUT
- HOSE BIBB
- LINE BREAK
- PIPE CAP
- END OF PIPE
- TEMPERATURE SENSOR
- FLEX CONNECTION
- UNION
- FLANGE
- FLOW DIRECTION
- DWV FITTING, 45° ELBOW
- DWV FITTING, 90° ELBOW
- DWV FITTING, 45° TEE
- DWV FITTING, 90° TEE
- PIPE DROP
- PIPE BRANCH, TEE UP
- PIPE BRANCH, TEE DOWN
- REVISION CLOUD AND DELTA
- XX / XX: EQUIPMENT TYPE; NUMBER TYPE
- X / PX.XX: DETAIL DESIGNATION; SHEET NUMBER

VALVES & ACCESSORIES (DIAGRAMS)

- PRESSURE REDUCING VALVE
- PRESSURE REDUCING VALVE GAS
- PRESSURE REDUCING VALVE - LINE FEED
- 2-WAY CONTROL VALVE, 2-POS
- 3-WAY CONTROL VALVE, 2-POS
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- CIRCUIT SETTER/BALANCING VALVE
- FLOAT VALVE
- T&P RELIEF VALVE
- THERMOSTATIC MIXING VALVE
- SHUTOFF VALVE
- GLOBE VALVE
- WYE STRAINER
- WYE STRAINER WITH BLOW OFF
- GATE VALVE
- MANUAL AIR VENT
- PLUG VALVE
- SOLENOID CONTROL VALVE, 2-POS
- TEMP GUAGE
- PRESSURE GUAGE
- LIQUID FILLED THERMOMETER
- VACUUM BREAKER
- VFD: VFD
- REDUCER

EQUIPMENT & ACCESSORIES (DIAGRAMS)

- EXPANSION TANK
- HEAT EXCHANGER
- PUMP
- FD-X
- OD-X
- RD-X
- PD-1 / GD-1
- PLUMBING WATER CLOSETS
- LAVATORY
- END OF PIPE - CLEANOUT
- END OF PIPE - FLOOR CLEANOUT
- END OF PIPE - WALL CLEANOUT
- 2 WAY CLEANOUT CLEANOUT
- VTR (VENT)
- WHA: WATER HAMMER ARRESTOR
- TP: TRAP PRIMER
- WM-XX: WATER METER
- BFP-XX: BACKFLOW PREVENTER

PIPE LINE DESIGNATIONS

CW	DOMESTIC COLD WATER
HW	DOMESTIC HOT WATER SUPPLY
HWR	DOMESTIC HOT WATER RETURN
SAN	SANITARY SEWER
SAN	SANITARY SEWER (UNDERFLOOR)
V	SANITARY VENT
G	NATURAL GAS
TP	TRAP PRIMER WATER
CD	CONDENSATE DRAIN
FW	FIRE PROTECTION WATER
RW	RECLAIMED WATER
SD	STORM DRAIN
OD	OVERFLOW DRAIN
OW	OIL WASTE

PIPE LINE DESIGNATIONS (LAB)

ICW	INDUSTRIAL COLD WATER
IHW	INDUSTRIAL HOT WATER
IHWR	INDUSTRIAL HOT WATER RETURN
LW	LAB WASTE
LV	LAB VENT
DIS	DEIONIZED WATER SUPPLY
DIR	DEIONIZED WATER RETURN
N2	NITROGEN
CO2	CARBON DIOXIDE
CA	COMPRESSED AIR (100 PSIG)
LA	LAB AIR (15 PSIG)
CONT	CONTAINMENT PIPING
RO	REVERSE OSMOSIS WATER SUPPLY
PW	PURIFIED WATER SUPPLY

FIRE PROTECTION LEGEND

FW	FIRE WATER SUPPLY
SP	WET SPRINKLER PIPING
DSP	DRY STANDPIPE
DR	SPRINKLER DRAIN PIPING
PRE	PRE-ACTION PIPING
FDC	FIRE DEPARTMENT CONNECTION
DSPR	DRY SPRINKLER PIPING
CSP	COMBINATION STANDPIPE

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26, AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (E.G. HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS, OR WATER.
3. MOVEABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORTS THE COMPONENT.
B. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM A ROOF OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH THE ABOVE REQUIREMENTS.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING
PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2013 CBC SECTIONS 1616A.1.23, 1616A.1.25, AND 1616A.1.26.

THE METHOD OF SHOWING BRACING AND ATTACHMENTS TO THE STRUCTURE FOR IDENTIFIED DISTRIBUTION SYSTEM ARE AS NOTED BELOW. WHEN BRACING AND ATTACHMENTS ARE BASED ON A PREAPPROVED INSTALLATION GUIDE (E.G. SMACNA OR OSHPD OPM), COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL BE AVAILABLE ON THE JOBSITE PRIOR TO THE START OF AND DURING THE HANGING AND BRACING OF THE DISTRIBUTION SYSTEMS. THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

MECHANICAL PIPING (MP), MECHANICAL DUCTS(MD), AND PLUMBING PIPING (PP), ELECTRICAL DISTRIBUTION SYSTEMS (E):

MP ☐ MD ☐ PP ● E ☐ — OPTION 1: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP ☐ MD ☐ PP ● E ☐ — OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVAL (OPM#) #____________.

MP ☐ MD ☐ PP ● E ☐ — OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION, ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL _____ AND CONNECTION LEVEL _____ FOR THE PROJECT AND CONDITIONS.

PLUMBING ABBREVIATIONS

ABV	ABOVE
AC	ALTERNATING CURRENT
ACU	AIR-CONDITIONING UNIT(S)
ADA	AMERICANS WITH DISABILITIES ACT
ADAAG	AMERICANS WITH DISABILITIES ACT
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
AF	ABOVE THE FLOOR
AFF	ABOVE FINISHED FLOOR
AGA	AMERICAN GAS ASSOCIATION
AHP	AIR HORSEPOWER
AHU	AIR-HANDLING UNIT
AIR COND	AIR CONDITION(-ING, -ED)
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
AMB	AMBIENT
AMP	AMPERE (AMP, AMPS)
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
AP	ACCESS PANEL
ARCH	ARCHITECT, ARCHITECTURAL
ARF	ABOVE RAISED FLOOR
ASC	ABOVE SUSPENDED CEILING
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASSE	AMERICAN SOCIETY OF SANITARY ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND
ATC	ACOUSTICAL TILE CEILING
ATM	ATMOSPHERE
AV	ACID VENT
AW	ACID WASTE
AWG	AMERICAN WIRE GAUGE
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL AND SPIGOT
BDY	BOUNDARY
BEL	BELOW
BFP	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLR	BOILER
BM	BEAM
BOD	BOTTOM OF DUCT
BOM	BILL OF MATERIAL
BOP	BOTTOM OF PIPE
BOT	BOTTOM
BRF	BELOW RAISED FLOOR
BSMT	BASEMENT
BT	BATHTUB
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNITS PER HOUR
BV	BUTTERFLY VALVE
BWV	BACK WATER VALVE
C	DEGREES CELSIUS
CA	COMPRESSED AIR
CAB	CABINET
CAP	CAPACITY
CB	CATCH BASIN
CCT	CIRCUIT
CD	CONDENSATE DRAIN
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CISP	CAST IRON SOIL/SEWER PIPE
CISPI	CAST IRON SOIL PIPE INSTITUTE
CL	CENTERLINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CNTR	CENTER
CO	CLEANOUT
COEF	COEFFICIENT
COL	COLUMN
COM	COMMON
CONC	CONCRETE
CONN	CONNECTION
COND	CONDENS(-ER, -ING, -ATION)
CONST	CONSTRUCTION
CONTR	CONTRACTOR
CS	CAST STEEL
CTR	CENTER
CU	COPPER (CHEMICAL ABBREVIATION)
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CV	CHECK VALVE
CW	COLD WATER
CWP	CIRCULATING WATER PUMP
D	DEEP
DB	DECIBEL
DBL	DOUBLE
DC	DIRECT CURRENT
DCV	DETECTOR CHECK VALVE
DEG	DEGREE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DFU	DRAINAGE FIXTURE UNIT
DI	DEIONIZED WATER
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DP	DEPTH OR DEEP
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DW	DISTILLED WATER
DWG	DRAWING
DWV	DRAIN, WASTE AND VENT
E	EXISTING
EA	EACH
EFF	EFFICIENCY
ELEC	ELECTRICAL
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINEER
ENT	ENTRANCE
EQ	EQUAL
ESS	EMERGENCY SAFETY SHOWER
EEW	EMERGENCY EYEWASH
ESEW	EMERGENCY SHOWER / EYEWASH
EST	ESTIMATE
EVAP	EVAPORAT(-E, -ING, -ED, -OR)
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXP	EXPOSED
EXT	EXTINGUISH
F	FAHRENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISH GRADE
FH	FIRE HOSE
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FHS	FIRE HOSE STATION
FHY	FIRE HYDRANT
FIXT	FIXTURE
FL	FLOOR
FND	FOUNDATION
FP	FIRE PROTECTION MAIN
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FR	FIRE RISER
FS	FLOOR SINK
FT	FEET
FU	FIXTURE UNIT
FURN	FURNISH
FUT	FUTURE
FVC	FIRE VALVE CABINET
FW	FIRE WATER

G	GAS
GA	GAGE OR GAUGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GND	GROUND
GOVT	GOVERNMENT
GP	GALVANIZED PIPE
GPD	GALLONS PER DAY
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
GPS	GALLONS PER SECOND
GV	GALVANIZED
GVA	GATE VALVE
GW	GREASE WATER
GWW	GRAY WATER WASTE
H	HIGH
HB	HOSE BIB
HD	HUB DRAIN
HDR	HEADER
HOR	HORIZONTAL
HP	HORSE POWER
HR	HOUR
HRS	HOURS
HT	HEIGHT
HTG	HEATING
HTR	HEATER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HW	HOT WATER
HWR	HOT WATER RETURN
HZ	HERTZ (CYCLES PER SECOND)
I	IRON
IBV	INDICATING BUTTERFLY VALVE
ICW	INDUSTRIAL COLD WATER
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IHW	INDUSTRIAL HOT WATER
IHWR	INDUSTRIAL HOT WATER RETURN
INC	INCREASER, INCREASING
IN	INCH
INCL	INCLUDE
INCR	INCREASE
INFO	INFORMATION
INS	INSULATION
INSP	INSPECT
INSUL	INSULATION
INT	INTERIOR, INTERNAL
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
IW	INDIRECT WASTE
IWH	INSTANTANEOUS WATER HETER
J-BOX	JUNCTION BOX
JC	JANITOR'S CLOSET
KF	KITCHEN FIXTURE
KW	KILOWATT
KWH	KILOWATT HOUR
KVA	KILOVOLT-AMPERE
KW	KILOWATT
L	LENGTH
LAB	LABORATORY
LAT	LATERAL
LAV	LAVATORY
LBS	POUNDS
LD	LEAK DETECTION
LF	LINEAR FEET
LG	LENGTH
LH	LEFT HAND
LPD	LOW POINT DRAIN
LV	LAB VENT
LW	LAB WASTE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
ME	MECHANICAL ENGINEER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MOP SINK
MTR	MOTOR
MWP	MAXIMUM WORKING PRESSURE
N	NITROGEN
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFWH	NON-FREEZE WALL HYDRANT
NOM	NOMINAL
NRS	NON RISING STEAM VALVE
N/A	NOT APPLICABLE
NBS	NATIONAL BUREAU OF STANDARDS
NC	NOISE CRITERIA
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NO, #	NUMBER
NPS	NOMINAL PIPE SIZE (ALSO CALLED IPS)
NPSHR	NET POSITIVE SUCTION HEAD REQUIRED
NTS	NOT TO SCALE
O	OXYGEN
OC	ON CENTER
ODIA	OUTSIDE DIAMETER
OD/OFD	OVERFLOW DRAIN
OSD	OPEN SIGHT DRAIN
OS&Y	OUTSIDE SCREW & YOKE (VALVE)
OUT	OUTLET
OZ	OUNCE
P	PITCH
PB	LEAD (CHEMICAL ABBREVIATION)
PD	PLAZA DRAIN, PRESSURE DROP, OR DIFFERENCE
PDI	PLUMBING DRAINAGE INSTITUTE
PE	PROFESSIONAL ENGINEER
PERIM	PERIMETER
PG	PRESSURE GAUGE
PH	PHASE (ELECTRICAL)
PIV	POST INDICATOR VALVE
PL	PROPERTY LINE
PLBG	PLUMBING
POC	POINT OF CONNECTION
PPM	PARTS PER MILLION
PRESS	PRESSURE
PRIM	PRIMARY
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PV	PUMP VACUUM
PVC	POLYVINYL CHLORIDE
PW	PURE WATER
PWR	PURE WATER RETURN
PWR	POWER
QT	QUART
QTY	QUANTITY
R	HYDRAULIC RADIUS
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RCVR	RECEIVER
RD	ROOF DRAIN
RECIRC	RECIRCULATE
REF	REFERENCE
REQD	REQUIRED
RET	RETURN
REV	REVISION
RF	ROOF
RH	RIGHT HAND
RL	ROOF LEADER
RM	ROOM
RO	REVERSE OSMOSIS
RPBFP	REDUCED PRESSURE BACKFLOW PREVENTER
RPM	REVOLUTIONS PER MINUTE
RW	RAW WATER
RWC	RAIN WATER CONDUCTOR
RWL	RAIN WATER LEADER

SAD	SEE ARCHITECTURAL DRAWING(S)
SCD	SEE CIVIL DRAWING(S)
SMD	SEE MECHANICAL DRAWING(S)
SSD	SEE STRUCTURAL DRAWING(S)
SLD	SEE LANDSCAPE ARCHITECT DRAWING(S)
SD	STORM WATER
SK	SINK
S&W	SOIL & WASTE
SAN	SANITARY
SB	SPLASH BLOCK
SCFM	CUBIC FT PER MINUTE, STANDARD CONDITIONS
SCFS	CUBIC FT PER SEC, STANDARD CONDITIONS
SCH	SCHEDULE
SCUP	SCUPPER
SD	STORM DRAIN
SEC	SECOND
SECT	SECTION
SERV	SERVICE
SEV	SEWAGE EJECTOR VENT
SF	SQUARE FOOT
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SLV	SLEEVE
SOV	SHUTOFF VALVE
SP	STANDPIPE
SP	PRESSURE, STATIC
SPEC	SPECIFICATION
SPD	SUMP PUMP DISCHARGE
SPM	SPRINKLER MAIN
SS	SERVICE SINK
STD	STANDARD
STL	STEEL
SUCT	SUCTION
SV	SAFETY RELIEF VALVE
SQ	SQUARE
SQ FT	SQUARE FEET
SS	SERVICE SINK
ST	SANITARY TAP
STD	STANDARD
T	TEE
T&P	TEMPERATURE & PRESSURE RELIEF VALVE
TD	TRENCH DRAIN
TEMP	TEMPERATURE
TLT	TOILET
TW	TEMPERED WATER
TWR	TEMPERED WATER RETURN
TYP	TYPICAL
TAP	TAP, TAPPED
TOT	TAP ON TOP
TP	TRAP SEAL PRIMER
TY	TEE WYE, (SAN TEE)
TYP	TYPICAL
UR	URINAL
UON	UNLESS OTHERWISE NOTED
V	VENT
VT	VOLT
VOL	VOLUME
VAC	VACUUM
VAR	VARIABLE
VB	VALVE BOX
VEL	VELOCITY
VERT	VERTICAL
VLV	VALVE
VOL	VOLUME
VP	VENT PIPE
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WATT
W	WASTE
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WCO	WALL CLEANOUT
WFS	WATER FLOW SWITCH
WH	WATER HEATER
WM	WATER METER
WS	WATER STOP
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTOR
WL	WATER LEVEL
WP	WEATHERPROOF
WSFU	WATER SUPPLY FIXTURE UNIT
WT	WEIGHT
%	PERCENT
(E)	EXISTING
(N)	NEW
@	AT (THE RATE OF)
&	AND
#	NUMBER

PLUMBING GENERAL NOTES

1. PROVIDE COMPLETE AND FULLY FUNCTIONAL PLUMBING SYSTEMS AS INDICATED IN THE CONTRACT DOCUMENTS. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CALIFORNIA PLUMBING CODE, CALIFORNIA MECHANICAL CODE, CALIFORNIA BUILDING CODE AND LOCAL RULES AND REGULATIONS, STATE AND LOCAL FIRE MARSHAL REGULATIONS, THE SAFETY ORDERS OF THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL ELECTRIC CODE, THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, AMERICAN GAS ASSOCIATION, OCCUPATION AND SAFETY ACT, AMERICAN NATIONAL STANDARDS INSTITUTE, AMERICAN SOCIETY OF MECHANICAL ENGINEERS, AMERICAN SOCIETY FOR TESTING AND MATERIALS, INSTALLATION STANDARDS PUBLISHED BY THE INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS (IAPMO) AND OTHER APPLICABLE LAWS, CODES, OR REGULATIONS. NOTHING IN THESE CONTRACT DOCUMENTS SHALL BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
2. VERIFY LOCATION OF UTILITIES PRIOR TO PERFORMING WORK. COORDINATE ALL WORK WITH OTHER TRADES.
3. PLUMBING FIXTURES SHALL HAVE MAXIMUM FLOW RATES AS INDICATED ON SCHEDULES.
4. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS, MOUNTING HEIGHTS AND COLOR OF PLUMBING FIXTURES.
5. COORDINATE ALL CORING OF FLOORS AND WALLS WITH ARCHITECT PRIOR TO START OF WORK.
6. BEFORE FABRICATION OR INSTALLATION, THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT. EXACT ROUGH-IN LOCATIONS AND REQUIREMENTS SHALL BE COORDINATED IN FIELD.
7. PIPING SHALL HAVE SUFFICIENT CLEARANCE FROM STRUCTURE TO ALLOW FOR EXPANSION AND CONTRACTION OF THE PIPING. NO PIPING SHALL TOUCH WOOD, CONCRETE, OTHER PIPING, ETC.
8. ALL EQUIPMENT, FIXTURES, ETC. SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
9. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY AND PERFORM ALL REQUIRED TESTING OF ALL PIPING AND ACCESSORIES INSTALLED. ALL SUCH PLUMBING INSTALLATIONS SHALL BE TESTED, REPAIRED, AND ADJUSTED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AND ALL GOVERNING AUTHORITIES.
10. ALL VALVES, UNIONS, ETC. SHALL BE ETC. TO BE SAME SIZE AS LINE SIZE UNLESS OTHERWISE NOTED ON DRAWINGS.
11. PROVIDE UNIONS AFTER EACH THREADED VALVE AND PRIOR TO EQUIPMENT CONNECTIONS.
12. FOLLOW THE GENERAL ARRANGEMENT INDICATED ON THE DRAWINGS AS CLOSELY AS POSSIBLE, THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL AND ALL OTHER TRADES PRIOR TO INSTALLATION OF THE MATERIALS AND EQUIPMENT TO VERIFY ADEQUATE SPACE AVAILABLE FOR INSTALLATION OF THE WORK SHOWN. THE ARCHITECT AND ENGINEER SHALL BE IMMEDIATELY NOTIFIED IF AN AREA OF CONFLICT OCCURS BETWEEN TRADES.
13. SPECIFICATIONS ARE AN INTEGRAL PART OF THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH SPECIFICATION REQUIREMENTS.
14. ALL FIXTURES, FLOOR DRAINS, FLOOR SINKS, ETC. SHALL BE TRAPPED AND VENTED. PROVIDE TRAP PRIMER TO ALL FLOOR DRAINS, FLOOR SINKS, HUB DRAINS AND AS INDICATED ON THE DRAWINGS. ALL TRAP PRIMERS SHALL BE ACCESSIBLE AND PROVIDED WITH A 12"X12" ACCESS PANEL (MINIMUM).
15. PRIMARY AND SECONDARY STORM DRAINAGE PIPING SHALL BE INSULATED. INSULATE DRAIN BODY AND HORIZONTAL UP TO 5 FEET OF VERTICAL FROM THE HORIZONTAL.
16. PROVIDE ALL PIPING, VALVES, FITTINGS AND OTHER APPURTENANCES FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM.
17. PIPING TO BE SLOPED AS FOLLOWS UNLESS OTHERWISE NOTED:
    A. SANITARY SEWER / OIL WASTE = 2%
    B. SANITARY VENT (BELOW FLOOD RIM) = 1%
    C. SANITARY VENT (ABOVE FLOOD RIM) = 0.25%
    D. TRAP PRIMER = 1%
    E. CONDENSATE = 1%
    F. STORM DRAIN = 1%
18. VERIFY IN FIELD EXISTING CONDITIONS, SIZE AND EXACT LOCATION OF SERVICES PRIOR TO START OF WORK.
19. THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT WERE PREPARED BY THE DESIGN TEAM USING 3-D MODELING SOFTWARE. USING THIS SOFTWARE BY THE DESIGN TEAM DOES NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE NECESSARY COORDINATION TO PROVIDE COMPLETE, CODE COMPLIANT AND OPERATIONAL BUILDING SYSTEMS. THE PLANS AND SECTIONS PROVIDED ARE NOT COMPLETE AND ARE TO BE CONSIDERED DIAGRAMMATIC ONLY. THE EXACT LOCATION OF THE PIPING, DUCTWORK, ELECTRICAL AND SUPPORT COMPONENTS ARE TO BE DETERMINED IN THE FIELD. ALL BUILDING SECTIONS AND DETAILS PROVIDED ARE FOR INFORMATION ONLY AND DO NOT RELIEVE THE CONTRACTOR FROM PERFORMING FINAL COORDINATION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES.
20. SUBMIT FOR APPROVAL MANUFACTURER'S SUBMITTAL DATA ON ALL MATERIALS, EQUIPMENT, AND DEVICES PER SPECIFICATIONS

OWNERSHIP OF INSTRUMENTS OF SERVICE

1. ALL REPORTS, DRAWINGS, SPECIFICATIONS, COMPUTER FILES, FIELD DATA, NOTES AND OTHER DOCUMENTS AND INSTRUMENTS PREPARED BY THE CONSULTANT AS INSTRUMENTS OF SERVICE SHALL REMAIN THE PROPERTY OF THE CONSULTANT. THE CONSULTANT SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT THERETO.
2. THE CLIENT ACKNOWLEDGES THE CONSULTANT'S CONSTRUCTION DOCUMENTS, INCLUDING ELECTRONIC FILES, AS INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE FINAL CONSTRUCTION DOCUMENTS PREPARED UNDER THIS AGREEMENT SHALL BECOME THE PROPERTY OF THE CLIENT UPON COMPLETION OF THE SERVICES AND PAYMENT IN FULL OF ALL MONIES DUE TO THE CONSULTANT. THE CLIENT SHALL NOT REUSE OR MAKE ANY MODIFICATION TO THE CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF THE CONSULTANT. THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES AND SUBCONSULTANTS (COLLECTIVELY, CONSULTANT) AGAINST ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND DEFENSE COSTS, ARISING FROM OR ALLEGEDLY ARISING FROM OR IN ANY WAY CONNECTED WITH THE UNAUTHORIZED REUSE OR MODIFICATION OF THE CONSTRUCTION DOCUMENTS BY THE CLIENT OR ANY PERSON OR ENTITY THAT ACQUIRES OR OBTAINS THE CONSTRUCTION DOCUMENTS FROM OR THROUGH THE CLIENT WITHOUT THE WRITTEN AUTHORIZATION OF THE CONSULTANT.

CALIFORNIA CODES AND STANDARDS

1. 2016 CALIFORNIA BUILDING CODE
2. 2016 CALIFORNIA ELECTRICAL CODE
3. 2016 CALIFORNIA MECHANICAL CODE
4. 2016 CALIFORNIA PLUMBING CODE
5. 2016 CALIFORNIA ENERGY CODE
6. 2016 CALIFORNIA FIRE CODE
7. NATIONAL FIRE PROTECTION ASSOSIATION (NFPA), LATEST ADOPTED EDITION OF APPLICABLE STANDARDS

SHEET LIST - PLUMBING

NUMBER	NAME
P-001	PLUMBING LEGEND, ABBREVIATIONS, AND GENERAL NOTES
P-101	SITE PLUMBING PLAN
PA-210	BUILDING A - PLUMBING OVERALL UNDERGROUND PLAN
PA-210A	BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A
PA-210B	BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA B
PA-211	BUILDING A - PLUMBING OVERALL FLOOR PLAN
PA-211A	BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA A
PA-211B	BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA B
PA-221	BUILDING A - PLUMBING OVERALL ROOF PLAN
PA-221A	BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA A
PA-221B	BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA B
PB-210	BUILDING B - PLUMBING OVERALL UNDERGROUND PLAN
PB-210A	BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A
PB-210B	BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA B
PB-210C	BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA C
PB-210D	BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - CARPORT
PB-211	BUILDING B - PLUMBING OVERALL FLOOR PLAN
PB-211A	BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA A
PB-211B	BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA B
PB-211C	BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA C
PB-211D	BUILDING B - PLUMBING PARTIAL FLOOR PLAN - CARPORT
PB-221	BUILDING B - PLUMBING OVERALL ROOF PLAN
PB-221A	BUILDING B - PLUMBING PARTIAL ROOF PLAN - AREA A
PB-221B	BUILDING B - PLUMBING PARTIAL ROOF PLAN - AREA B
PB-221C	BUILDING B - PLUMBING PARTIAL ROOF PLAN - AREA C
PB-221D	BUILDING B - PLUMBING PARTIAL ROOF PLAN - CARPORT
P-601	PLUMBING SCHEDULES

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ________

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LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT
LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
PLUMBING LEGEND, ABBREVIATIONS, AND GENERAL NOTES

SHEET
P-001

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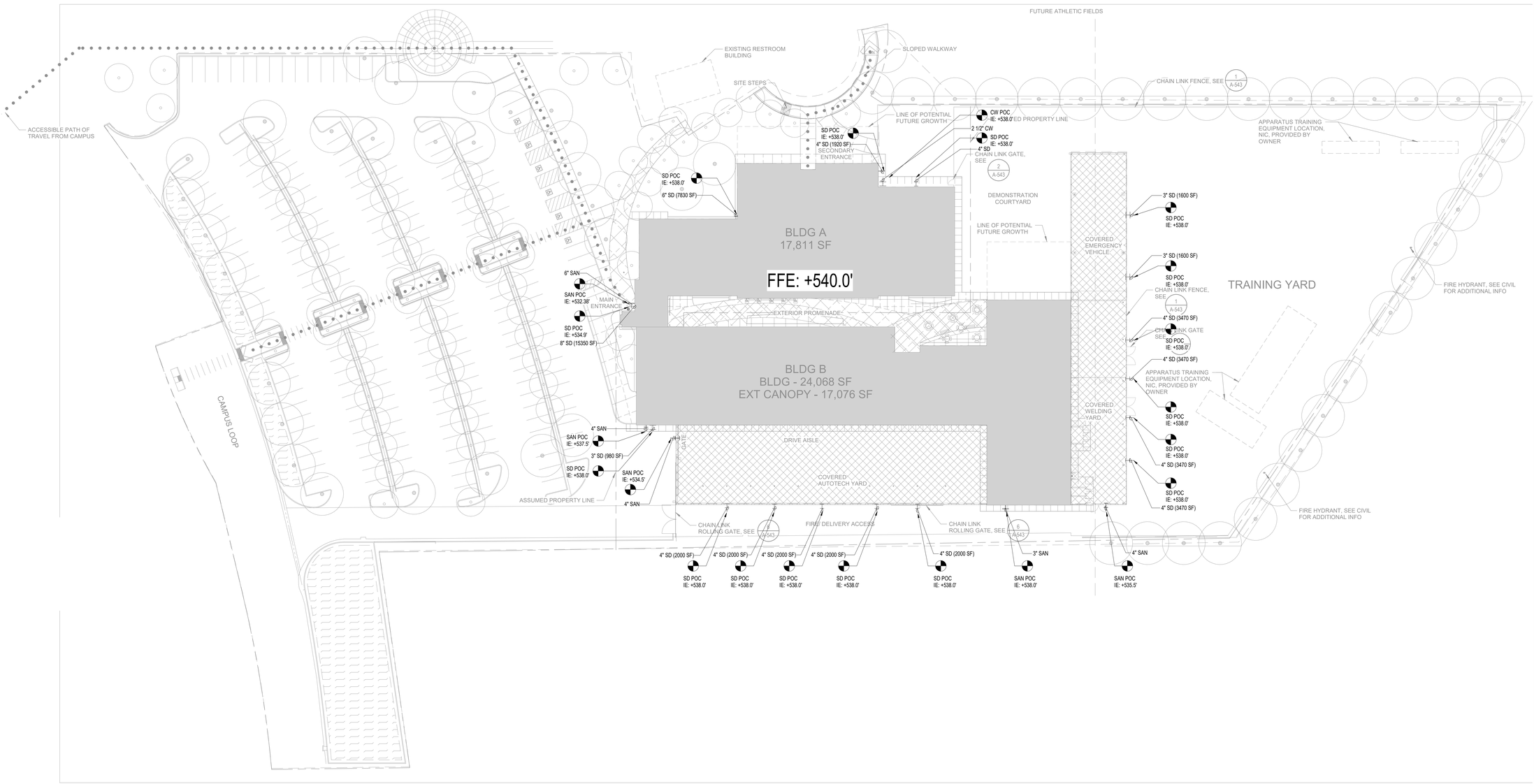

1 SITE PLUMBING PLAN
1" = 30'-0"

FILE NO. ?XX-XXXX?

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE
SITE PLUMBING PLAN

SHEET
P-101

0 1/4" 1/2" 1" 2"

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

PLUMBING FIXTURE AND CONNECTION SCHEDULE

TAG	FIXTURE	MINIMUM BRANCH CONNECTION					REMARKS
		SAN	TRAP	V	CW	HW	
WC-1	FLUSHOMETER WATER CLOSET	4"	-	2"	1-1/2"	-	BASIN: "MADERA FLOWISE 3461.001" BY AMERICAN STANDARD, FLOOR MOUNT, VITREOUS CHINA WITH EVERCLEAN; FLUSH VALVE: "ROYAL 111-1.28-SG" BY SLOAN, MANUAL, HARDWIRED, 1.28 GPF, ELEC REQ: 120V, 60HZ
WC-1H	FLUSHOMETER WATER CLOSET (ADA)	4"	-	2"	1-1/2"	-	SAME AS WC-1 EXCEPT INSTALL PER ADA REQUIREMENTS
UR-1	FLUSHOMETER URINAL	2"	-	2"	-	-	BASIN: "HYB-1000" BY SLOAN, WALL MOUNT, HYBRID, WATERLESS, VITREOUS CHINA
UR-1H	FLUSHOMETER URINAL (ADA)	2"	-	2"	-	-	SAME AS UR-1 EXCEPT INSTALL PER ADA REQUIREMENTS
SK-1	KITCHENETTE SINK	2"	1-1/2"	2"	1/2"	1/2"	
SK-2	SIM ROOM SINK	2"	1-1/2"	2"	1/2"	1/2"	
SK-3	TUB SINK	2"	1-1/2"	2"	1/2"	1/2"	
SK-4	HANDWASHING SINK	2"	1-1/2"	2"	1/2"	1/2"	
LAV-1	LAVATORY	2"	1-1/4"	2"	1/2"	1/2"	BASIN:"LUCERNE 0356.137" BY AMERICAN STANDARD, WALL HUNG, SINGLE CENTER HOLE WITH EXTRA RIGHT HAND HOLE FOR SOAP DISPENSER; FAUCET: OPTIMA ETF880 BY SLOAN, HARDWIRED SENSOR FAUCET, 0.35GPM, ELEC REQ: 120V, 60HZ
DF-1	DRINKING FOUNTAIN	2"	1-1/2"	2"	1/2"	-	ELKAY LZWS-EDFPBM117K, BOTTLE FILLER, 115V/60HZ
MS-1	MOP SINK	3"	3"	2"	1/2"	1/2"	BASIN: "WHITEBY K-6710" BY KOHLER; FAUCET: "MODEL 897" BY CHICAGO FAUCETS, 1.5GPM.
EW-1	EMERGENCY EYE WASH	2"	1-1/2"	2"	1"	-	GAURDIAN MODEL G1814, 3 GPM W/ THERMOSTATIC MIXING VALVE G3600 LF
HB-1	HOSE BIBB- WALL	-	-	-	1"	-	WOODFORD MODEL B67, NON-FREEZE WITH INTEGRAL VACUUM BREAKER
HB-2	HOSE BIBB- FLOOR	-	-	-	1"	-	WOODFORD MODEL Y95, NON-FREEZE WITH INTEGRAL VACUUM BREAKER

PLUMBING - DRAIN, CLEANOUT, AND SPECIALTY SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER	MODEL	REMARKS
RD/OD-1	ROOF & OVERFLOW DRAIN	ZURN	Z189	DURA COATED CAST IRON FOR PRIMARY DRAIN AT BOTTOM OF GUTTER. PROVIDE FLAT GRATE INSTALLED 2" ABOVE PRIMARY DRAIN FOR OVERFLOW DRAIN
GD-1	GUTTER DRAIN	ZURN		
DS-1	DOWNSPOUT NOZZLE	ZURN	Z199	ALL NICKLE BRONZE BODY
FD-1	FLOOR DRAIN	ZURN	Z415B	CAST IRON BODY, NICKEL BRONZE STRAINER, HEEL-PROOF GRATE MAXIMUM 1/4" GRATE OPENING W/TRAP PRIMER
FD-2	FLOOR DRAIN	ZURN	Z511	DURA COATED CAST IRON BODY AND HEAVY-DUTY GRATE W/TRAP PRIMER
FS-1	FLOOR SINK	ZURN	Z1900	COATED WANTI-SPLASH DOME STRAINER, 6" DEEP, HALF GRATE
FCO-1	FLOOR CLEANOUT	ZURN	Z1400	CAST IRON CLEANOUT
GCO	GRADE CLEANOUT	ZURN	Z1400	CAST IRON CLEANOUT WITH TRACTOR COVER
HD-1	HUB DRAIN	-	-	-
TD-1	TRENCH DRAIN	ZURN		DUCTILE IRON GRATE, CHANNEL WITH PRE-SLOPED BOTTOM, NO-HUB BOTTOM OUTLET AND CLAMPING COLLAR
TP-1	TRAP PRIMER	MFAB	MR500	BRASS BODY WITH INTEGRAL VACUUM BREAKER, ACTIVATE W/3 PSI DROP.
TP-2	TRAP PRIMER (ELECTRONIC)	MIFAB	MI-100-5	120V/1PH, FLUSH MOUNT
TP-3	TRAP PRIMER (ELECTRONIC)	MIFAB	MI-100-10	120V/1PH, FLUSH MOUNT
AD-1	AREA DRAIN- PODIUM	ZURN	Z-110	PROVIDE W/ CLEANOUT
WCO	WALL CLEANOUT	ZURN	Z1446	DURA COATED CAST IRON, STAINLESS STEEL WALL ACCESS COVER
WHA-1	WATER HAMMER ARRESTER	PPP	-	INSTALL PER MANFACTURER REQUIREMENTS

NOTES:

1. INSTALL PER MANUFACTURER REQUIREMENTS. ALL DRAIN SHALL BE PROVIDED WITH TRAP PRIMER CONNECTION

PLUMBING - WATER METER SCHEDULE

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	LOCATION	SERVICE	DESIGN LOAD DEMAND (GPM)	MAX CAPACITY (GPM)	OPERATING WEIGHT (LB)	NOTES

PLUMBING - BOOSTER PUMP SCHEDULE

▨ * CELLS WITH SHADED BACKGROUNDS ARE UNASSIGNED OR UNDER REVIEW

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	SERVICE	DESIGN LOAD DEMAND (GPM)	HEAD(FT)	RPM	ELECTRICAL					OPERATING WEIGHT (lb)	NOTES
										HP(W)	VOLT(V)	PHASE	FREQUENCY (Hz)	EMERG. PWR. (Y/N)		
BP	1						0	0.00		0	0	1	0	Yes	0.00	

PLUMBING - EXPANSION TANK SCHEDULE

▨ * CELLS WITH SHADED BACKGROUNDS ARE UNASSIGNED OR UNDER REVIEW

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	SERVICE	SYSTEM VOLUME (GAL)	TANK VOLUME (GAL)	ACCEPTANCE VOLUME (GAL)	MAX TEMP (°F)	MIN TEMP (°F)	WORKING PRESSURE (FT H20)	MAX PRESSURE (FT H20)	MIN PRESSURE (FT H20)	DIMENSIONS		OPERATING WEIGHT (LB)	NOTES
															HEIGHT	DIAMETER		

PLUMBING - ELECTRIC WATER HEATER SCHEDULE

▨ * CELLS WITH SHADED BACKGROUNDS ARE UNASSIGNED OR UNDER REVIEW

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	SERVICE	CAPACITY		OUTPUT (KW)	WATER CONNECTION SIZE	ELECTRICAL				DIMENSIONS				OPERATING WEIGHT (LB)	NOTES
							GPM	@ °F RISE			FLA (A)	VOLT (V)	PHASE	FREQUENCY (HZ)	LENGTH	WIDTH	HEIGHT	DIAMETER		
EWH	1						0	-460	0.00	0"	0	208	3	60			79"	35	0.00	

PLUMBING - TANKLESS ELECTRIC WATER HEATER SCHEDULE

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	SERVICE	DESIGN LOAD DEMAND (GPM)	TEMP RISE (DELTA T)	MINIMUM ACTIVATION FLOW (GPM)	ELECTRICAL				EMER. PWR (Y/N)	OPERATING WEIGHT	NOTES
										POWER (kW)	VOLTS	PHASE	FLA			
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	
IWH				TANKLESS WATER HEATER			0	-460	0	0	208	3	60		0.00	

PLUMBING - AIR COMPRESSOR SCHEDULE

▨ * CELLS WITH SHADED BACKGROUNDS ARE UNASSIGNED OR UNDER REVIEW

TYPE	EQUIPMENT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	LOCATION	DESIGN LOAD DEMAND (CFM)	DESIGN PRESUSURE (in-wg)	MAX CAPACITY (in-wg)	RECEIVER SIZE (GAL)	ELECTRICAL				EMERG. PWR. (Y/N)	OPERATING WEIGHT (lb)	NOTES
										MOTOR (W)	VOLTAGE (V)	PHASE	FLA (A)			
AC	1					0	0.00	0.00	100	0	0	1	0	Yes	0.00	[MODEL XX] [INCLUDED WITH PACKAGED SYSTEM] TERMINATE DRAIN OVER FLOORSINK WITH 1" AIRGAP, MIN

FILE NO. ?XX-XXXX?

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SEAL

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Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE

PLUMBING SCHEDULES

SHEET

P-601

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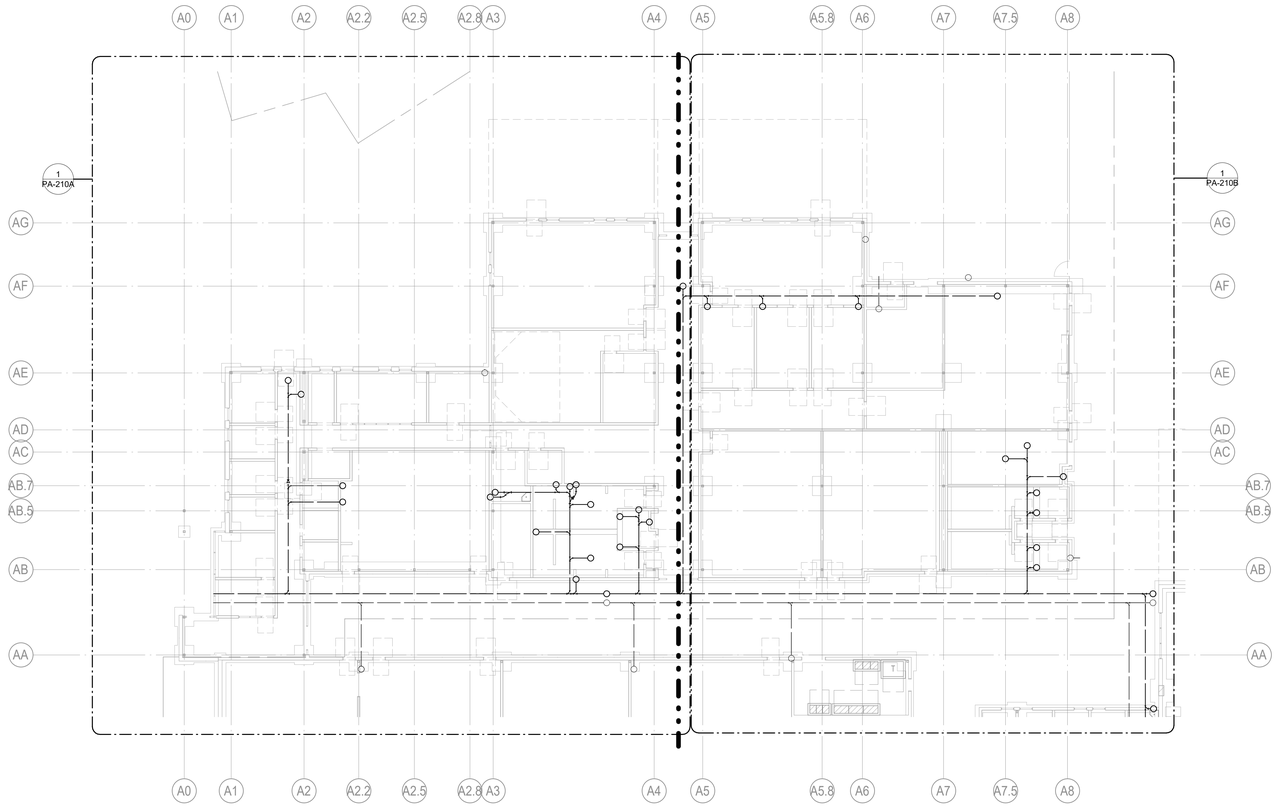
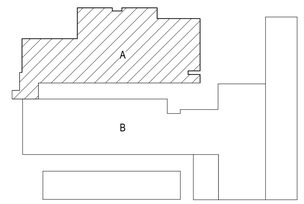


1 BUILDING A - PLUMBING OVERALL UNDERGROUND PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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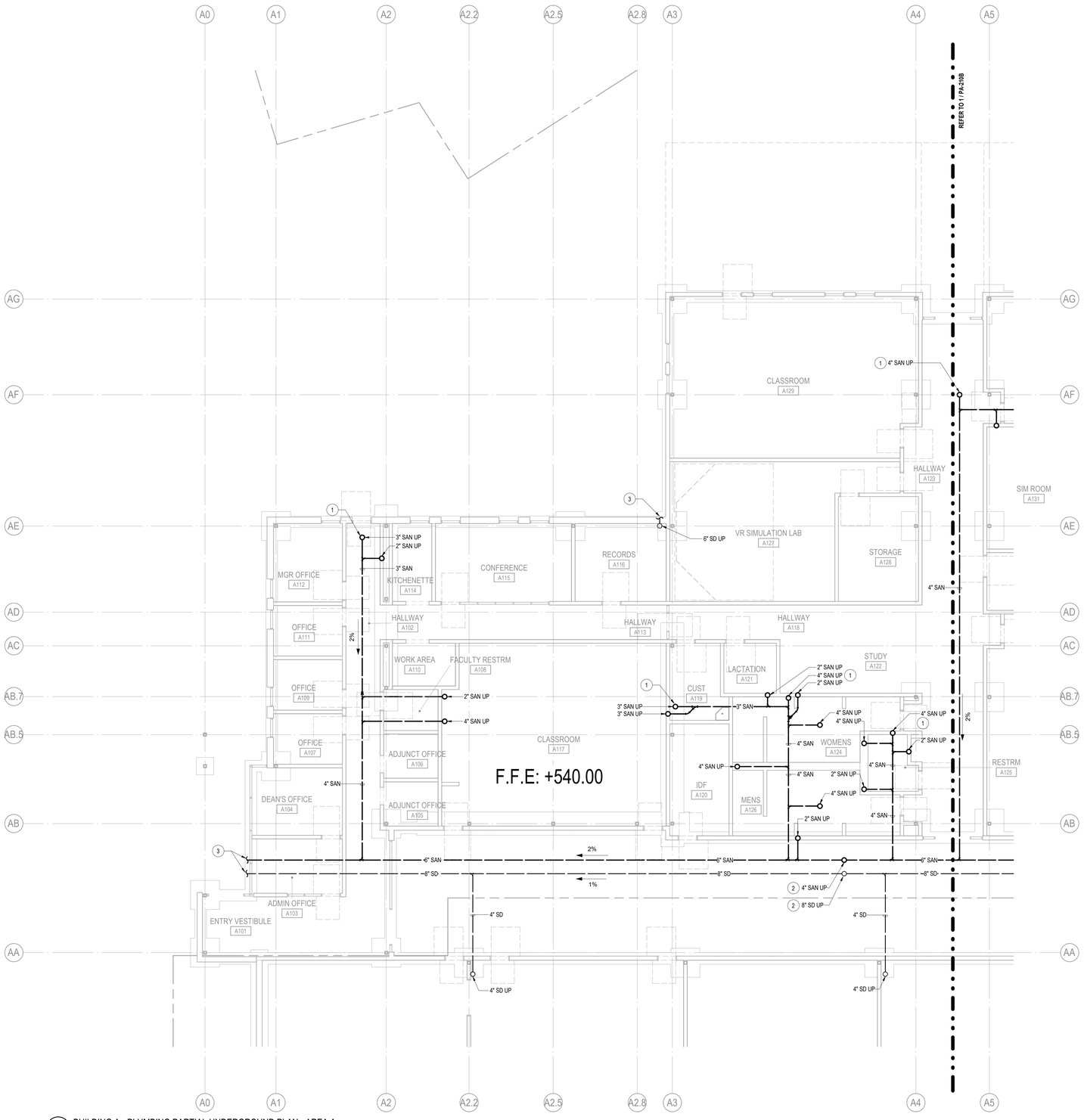
TITLE

BUILDING A - PLUMBING OVERALL UNDERGROUND PLAN

SHEET

PA-210



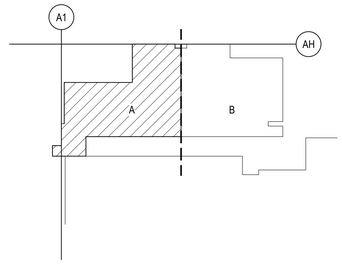
1 BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. UP TO FCO
2. UP TO GCO
3. SEE SHEET P-101 FOR CONTINUATION

KEY PLAN



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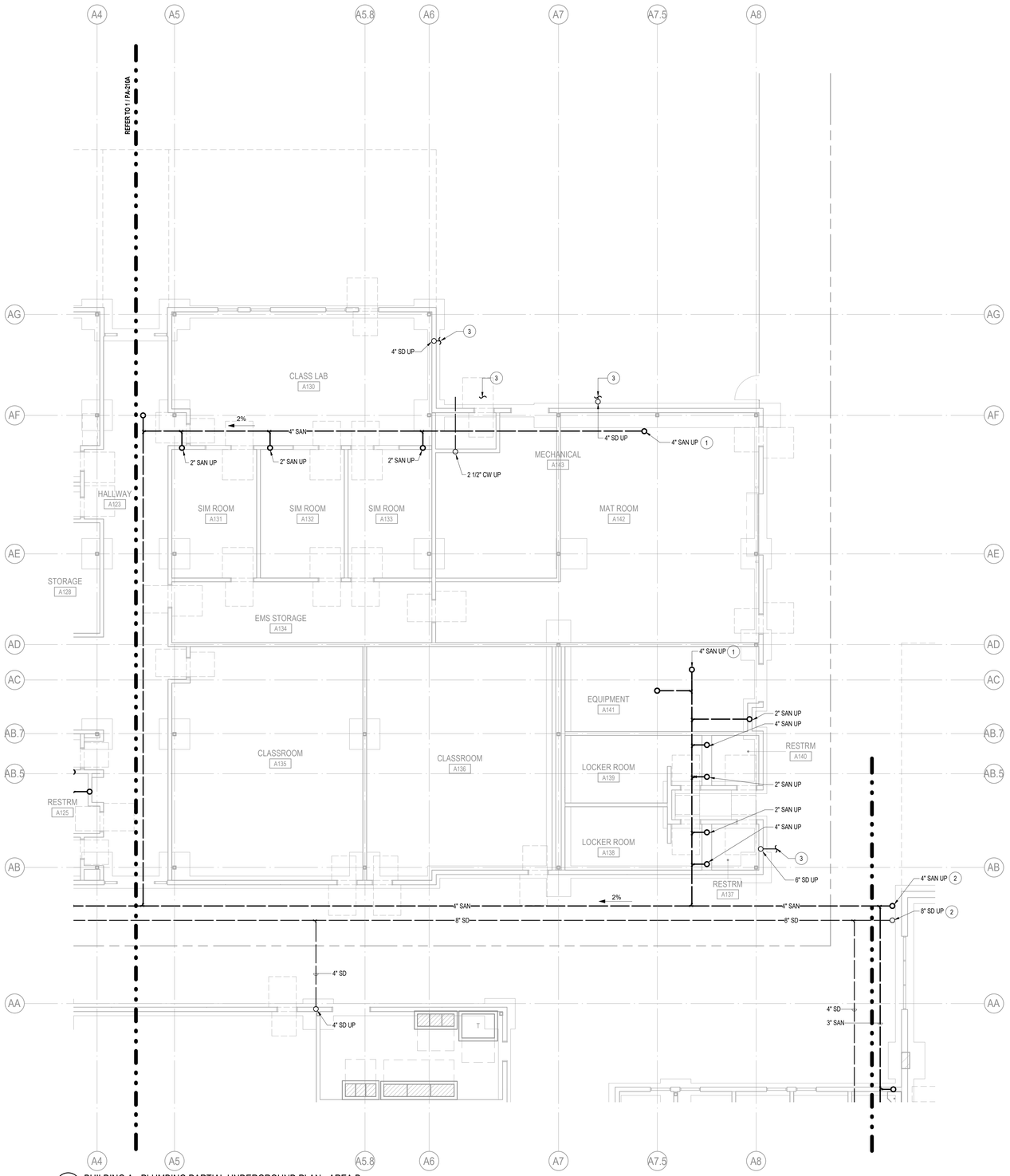
TITLE
BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A

SHEET
PA-210A



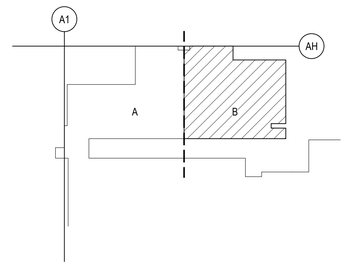
1 BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. UP TO FCO
2. UP TO GCO
3. SEE SHEET P-101 FOR CONTINUATION

KEY PLAN



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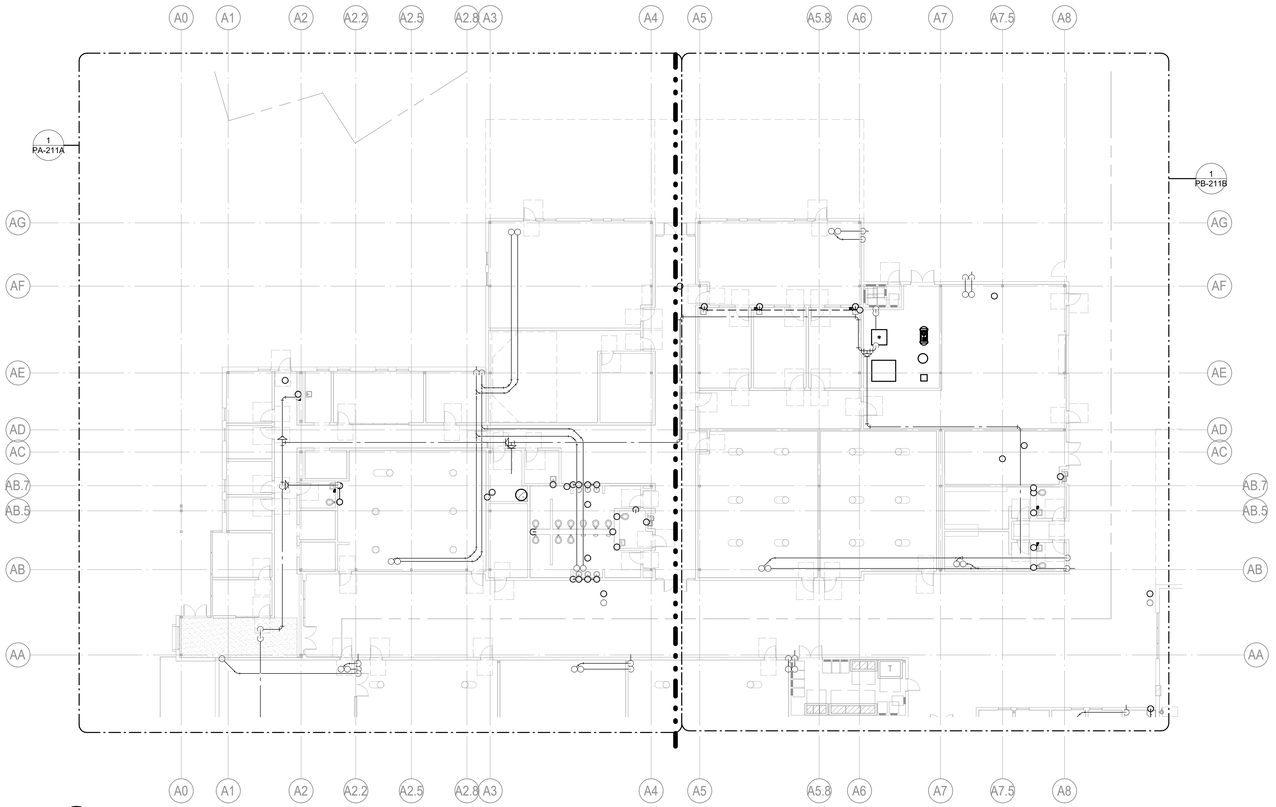
BUILDING A - PLUMBING PARTIAL UNDERGROUND PLAN - AREA B

SHEET
PA-210B

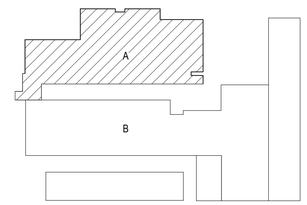


1 BUILDING A - PLUMBING OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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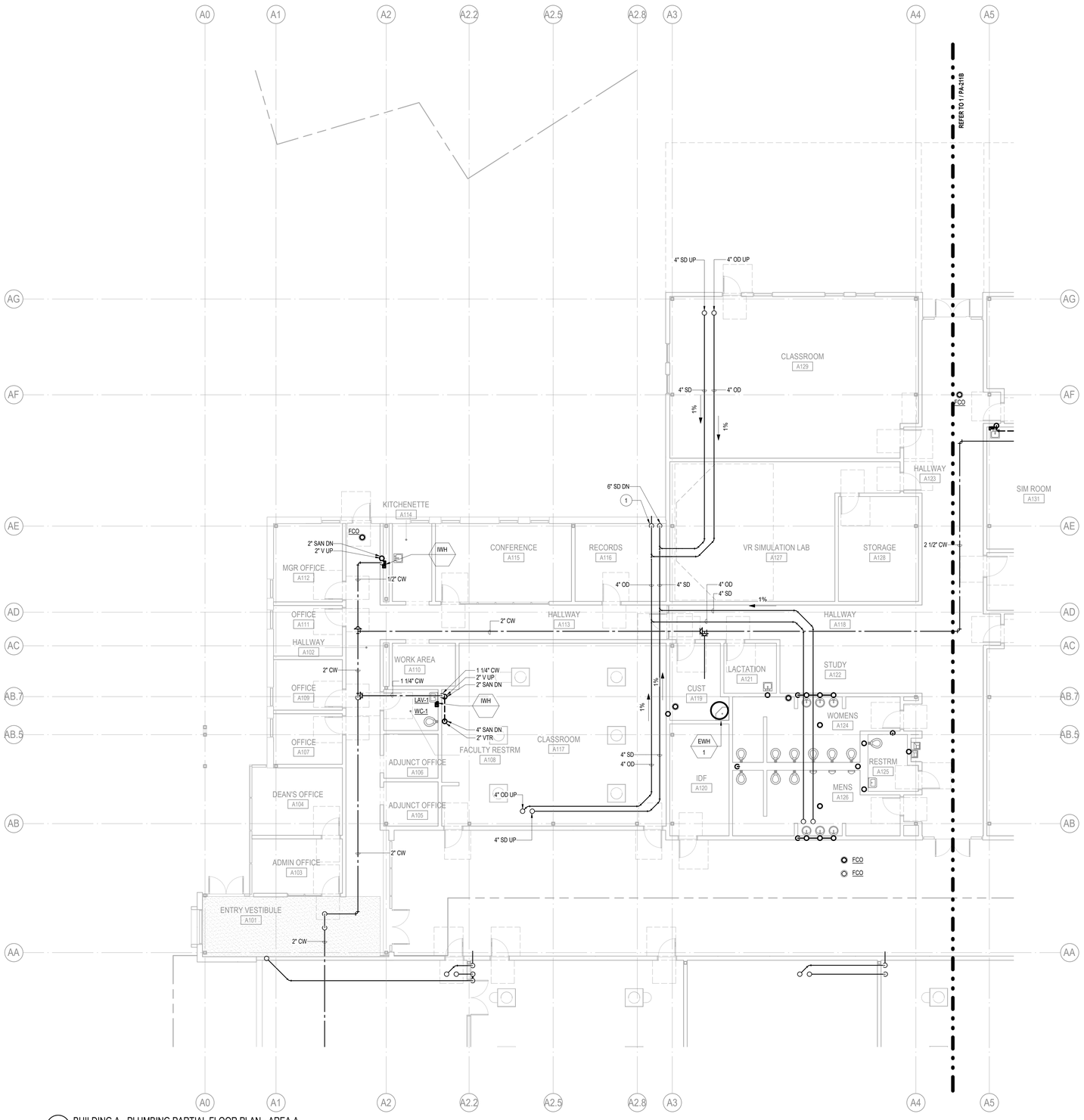
TITLE

BUILDING A - PLUMBING OVERALL FLOOR PLAN

SHEET

PA-211



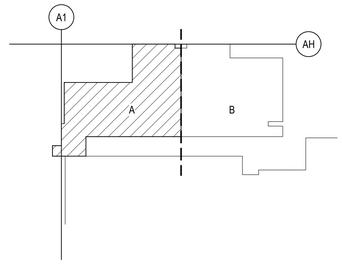
1 BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. OD DROP TO DISCHARGE 1'-0" ABOVE FINISHED GRADE ON CONCRETE PAD WITH DSN-1

KEY PLAN



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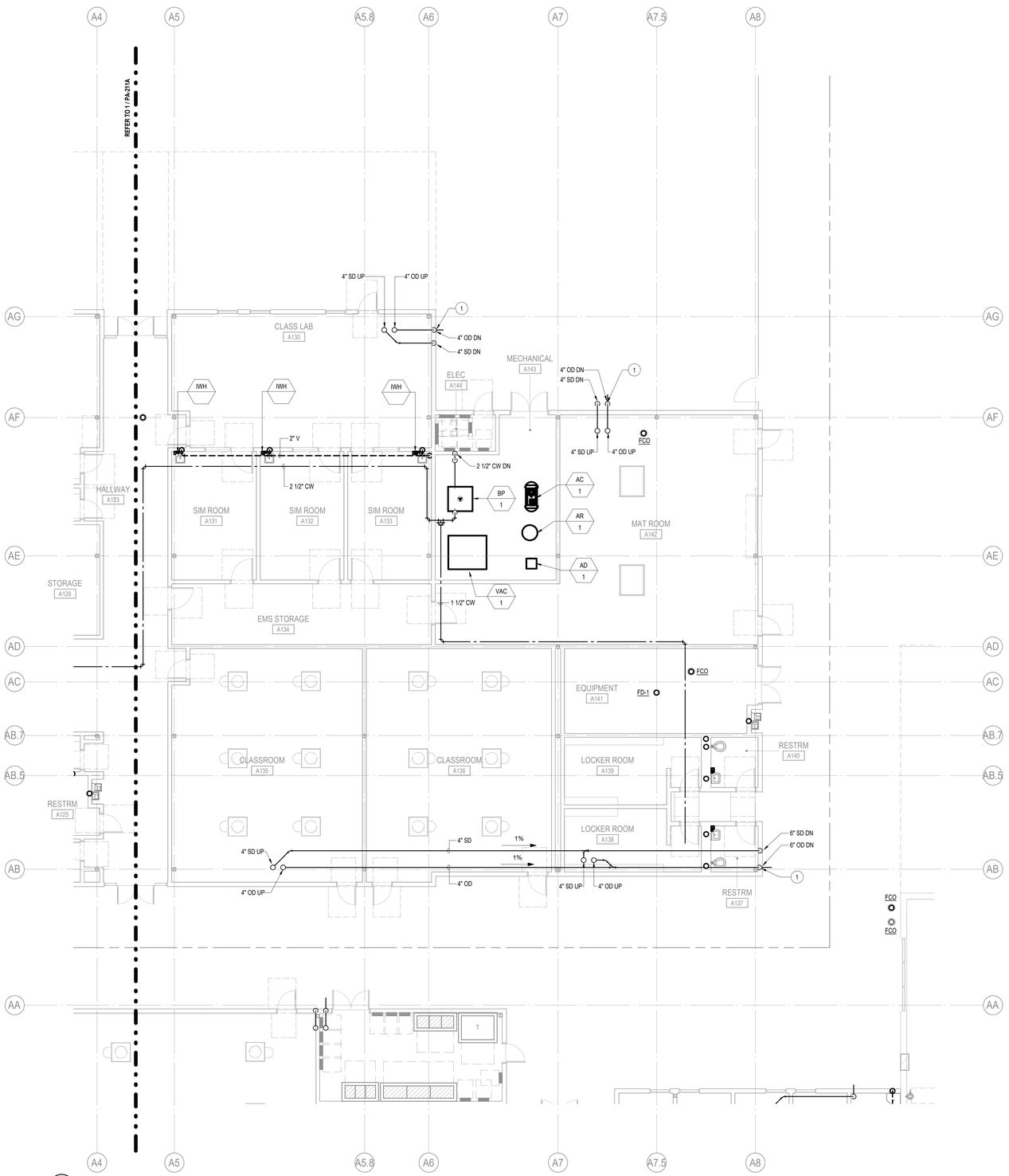
TITLE
BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA A

SHEET
PA-211A



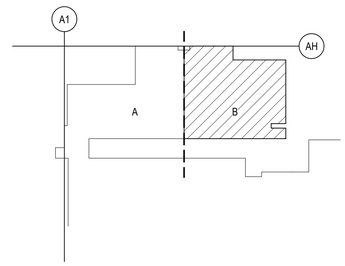
1 BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

(##) SHEET NOTES

1. OD DROP TO DISCHARGE 1'-0" ABOVE FINISHED GRADE ON CONCRETE PAD WITH DSN-1

KEY PLAN



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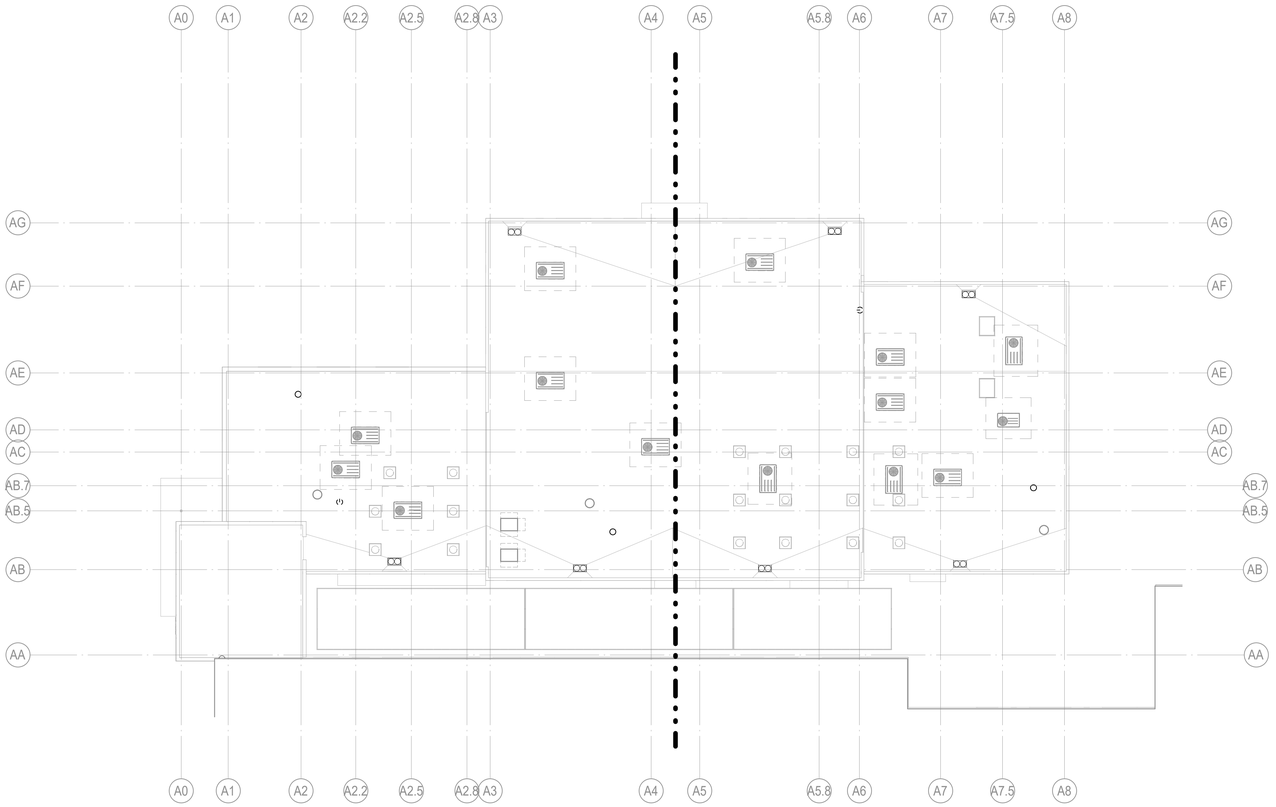
TITLE
BUILDING A - PLUMBING PARTIAL FLOOR PLAN - AREA B

SHEET
PA-211B

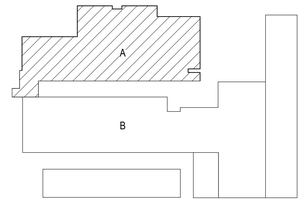


1 BUILDING A - PLUMBING OVERALL ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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MARK	DATE	DESCRIPTION
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MANAGEMENT

LIONAKIS PROJECT NO: 019051
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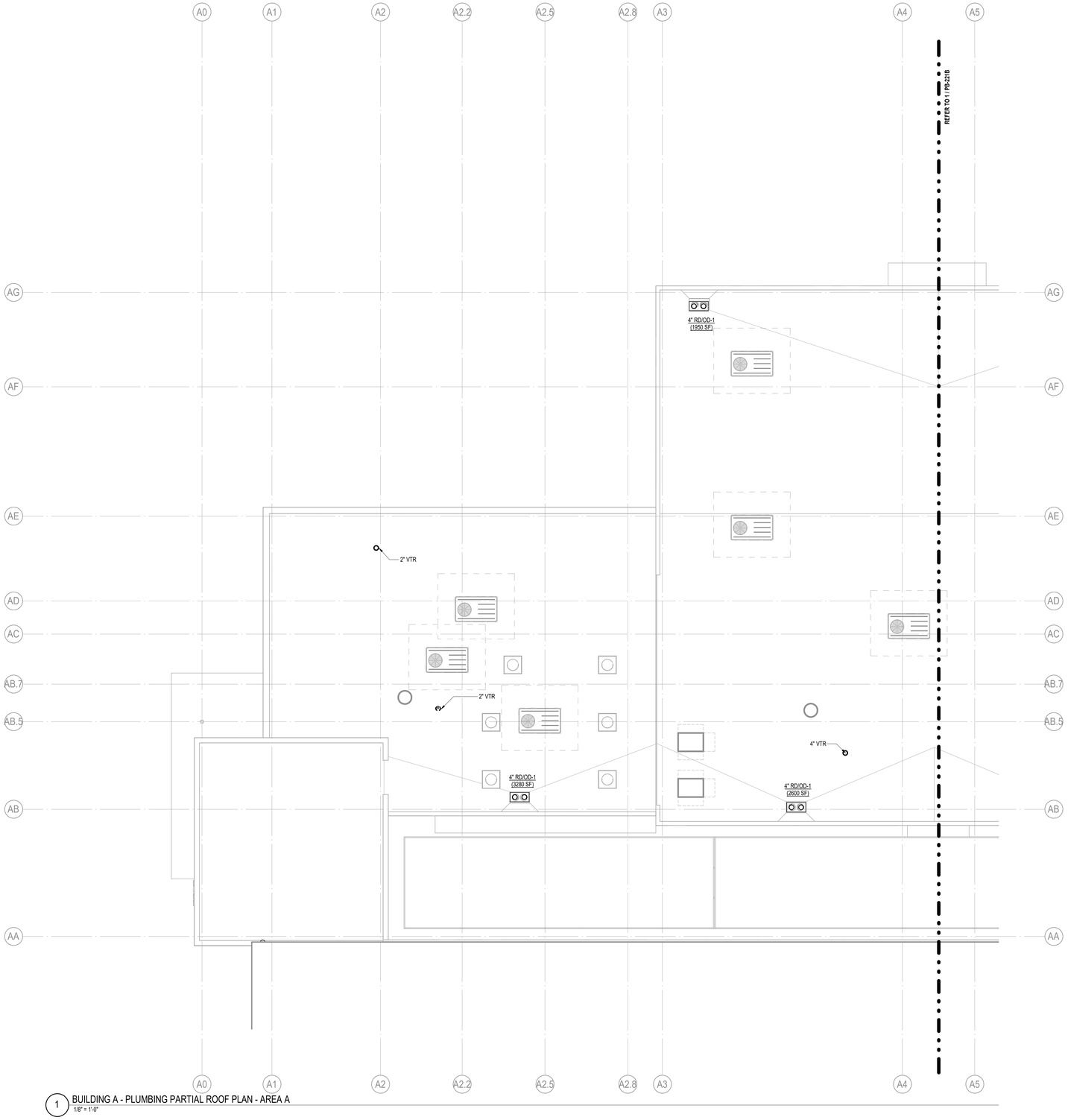
TITLE

BUILDING A - PLUMBING OVERALL ROOF PLAN

SHEET

PA-221

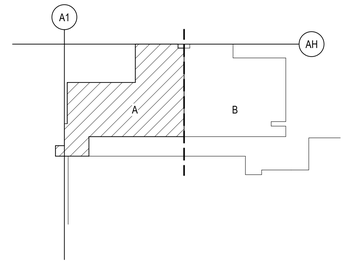


1 BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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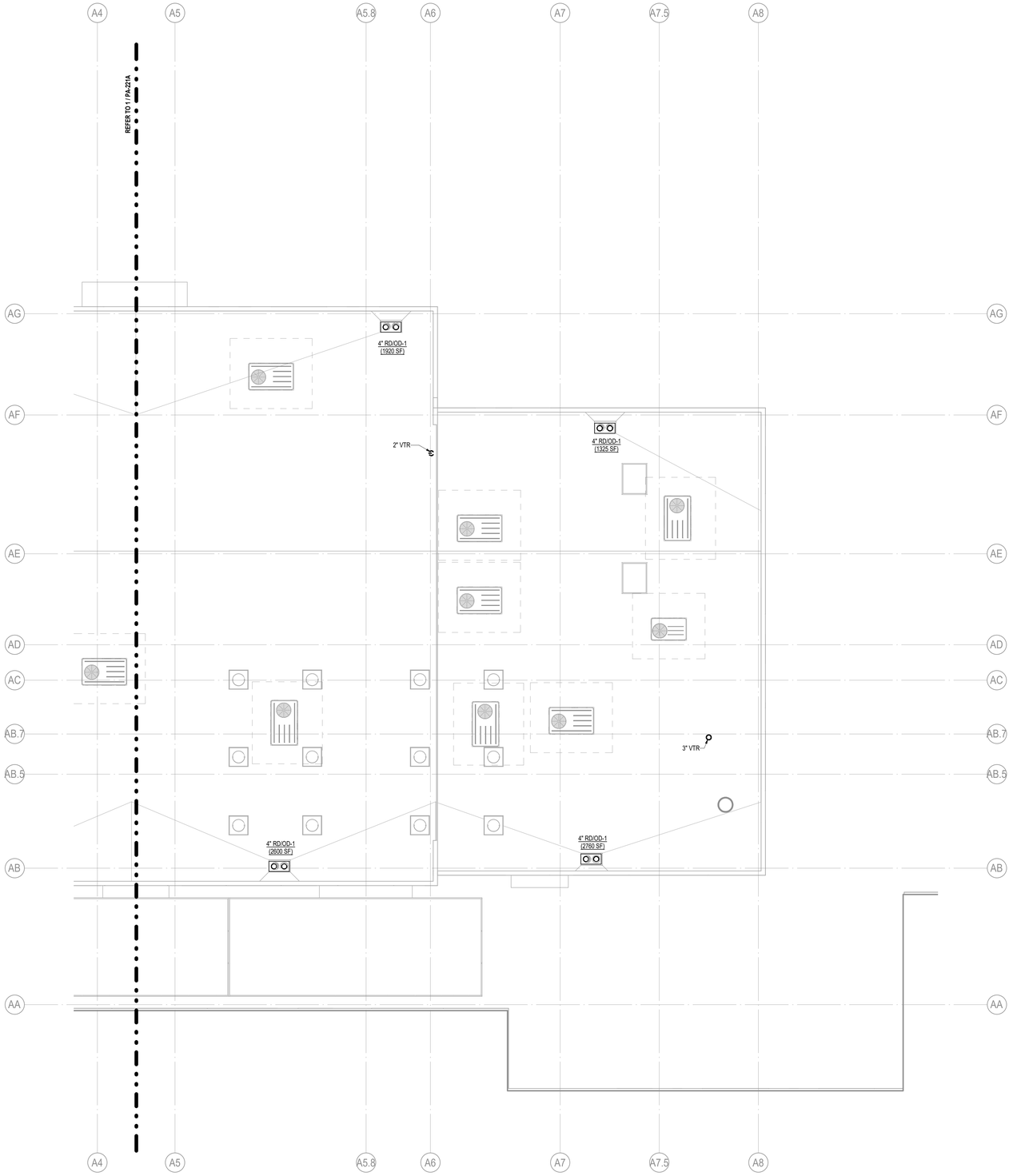
BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA A

SHEET

PA-221A

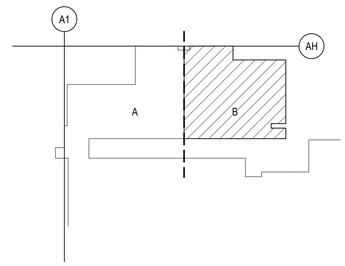


1 BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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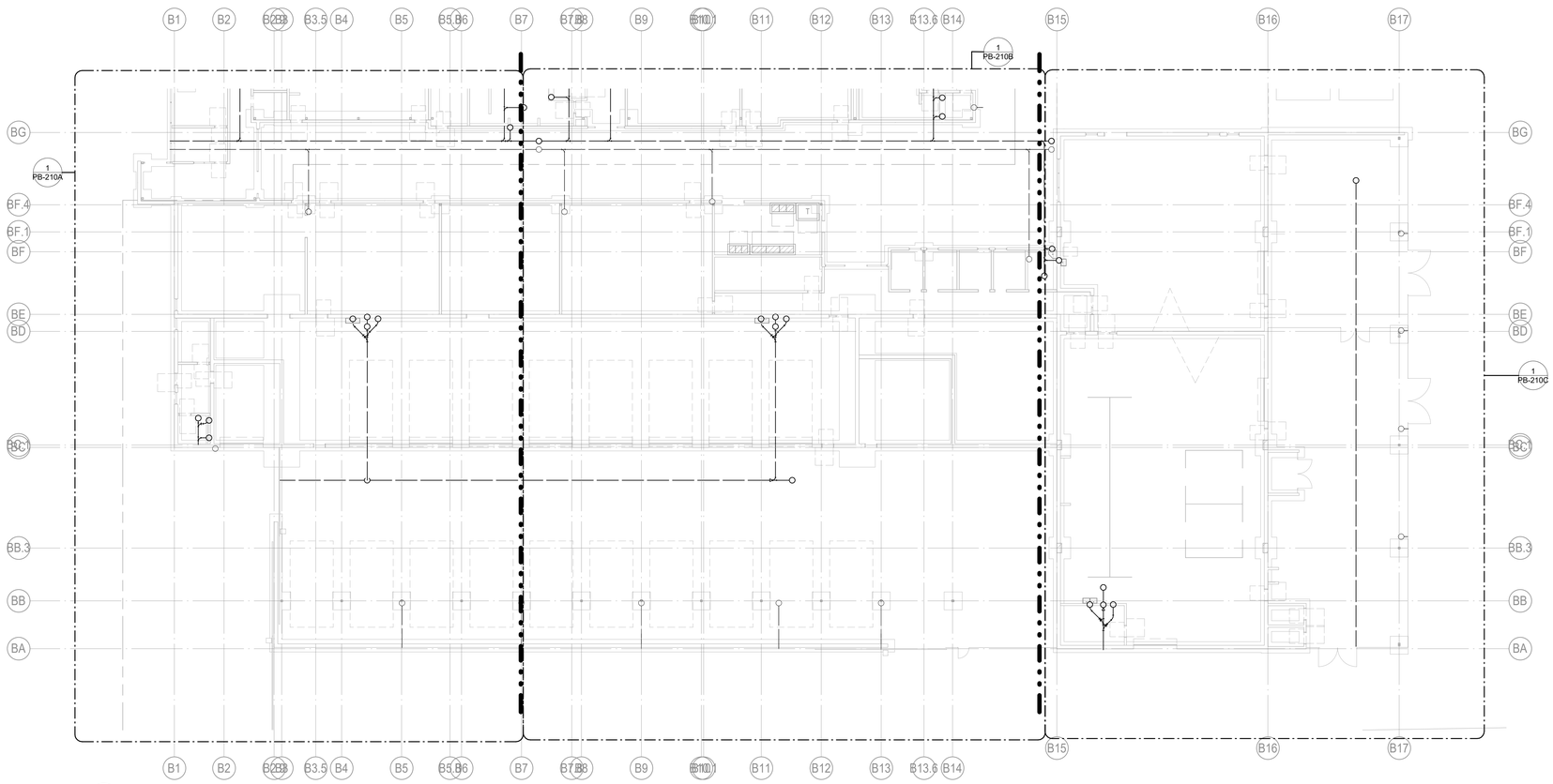
BUILDING A - PLUMBING PARTIAL ROOF PLAN - AREA B

SHEET

PA-221B

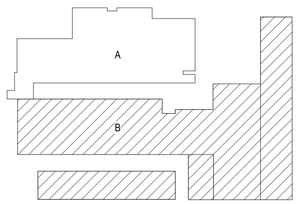


1 BUILDING B - PLUMBING OVERALL UNDERGROUND PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING B - PLUMBING OVERALL UNDERGROUND PLAN

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PB-210

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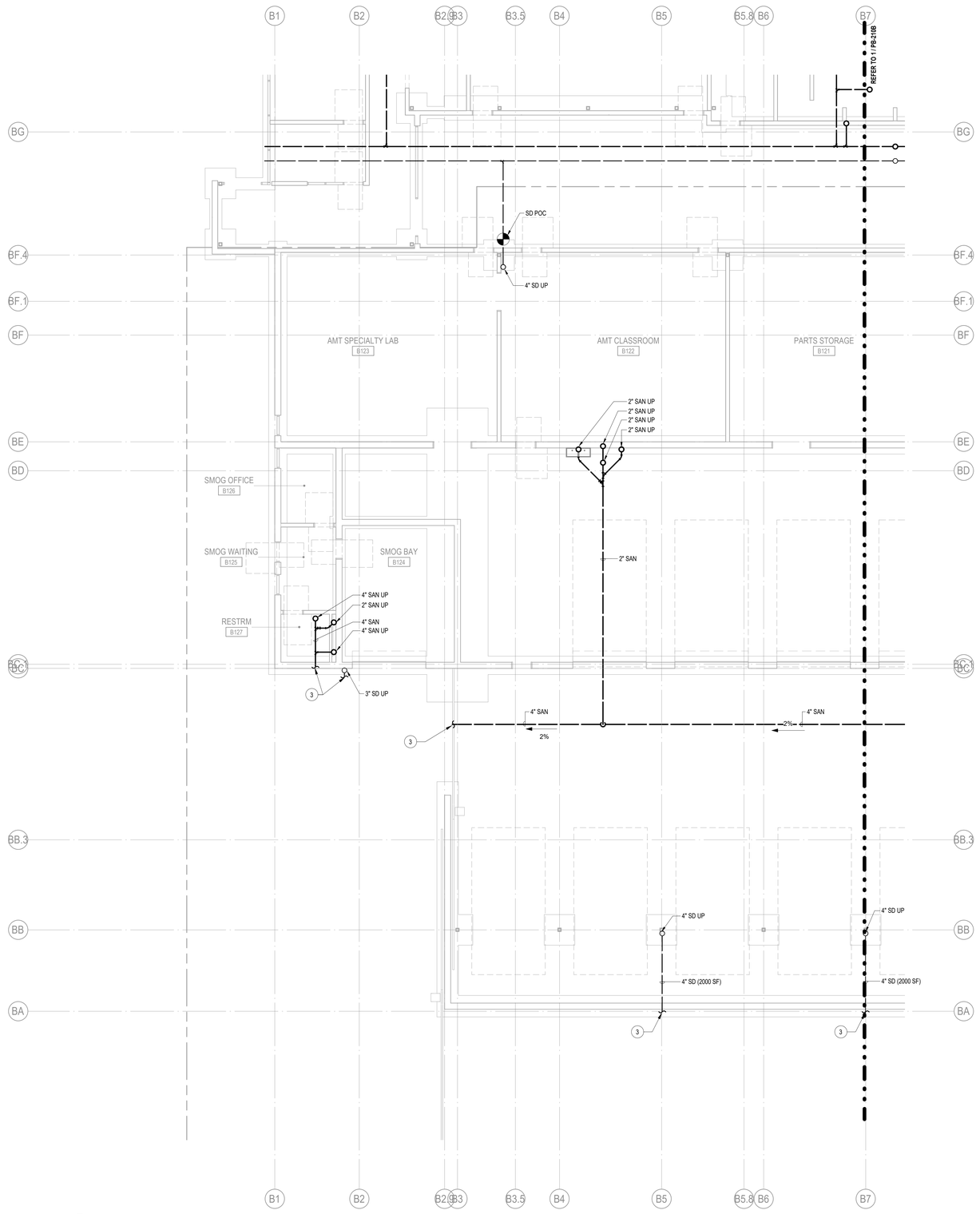

1 BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. UP TO FCO
2. UP TO GCO
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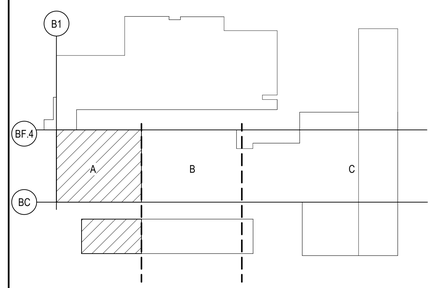
KEY PLAN



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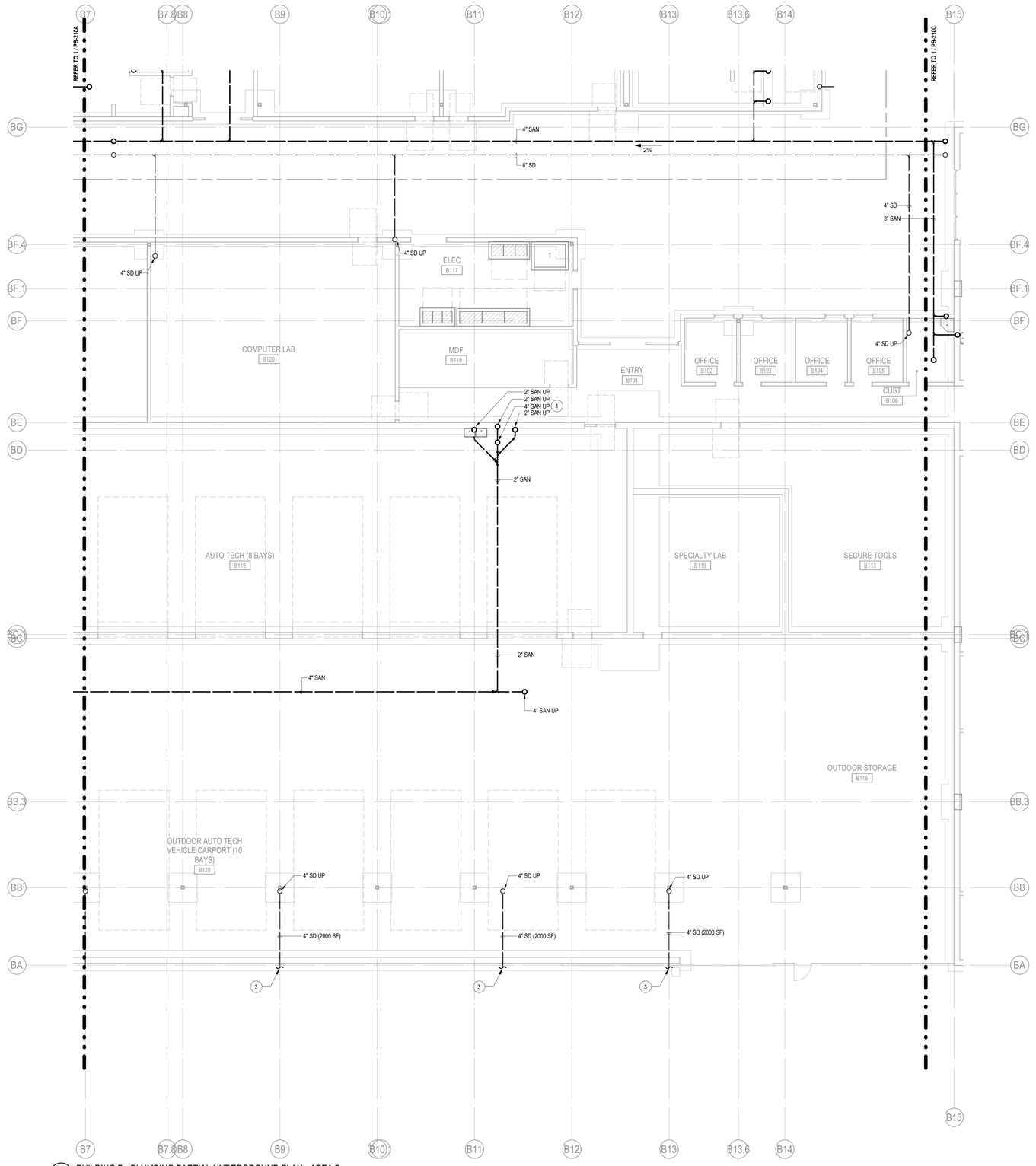
TITLE
BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA A

SHEET
PB-210A



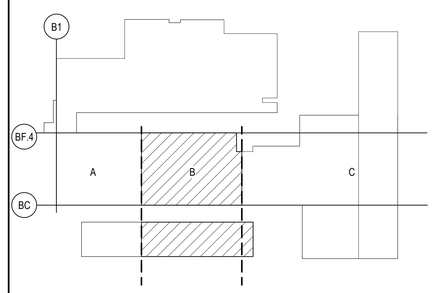
1 BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. UP TO FCO
2. UP TO GCO
3. SEE SHEET P-101 FOR CONTINUATION.

KEY PLAN



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3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

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TITLE
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SHEET
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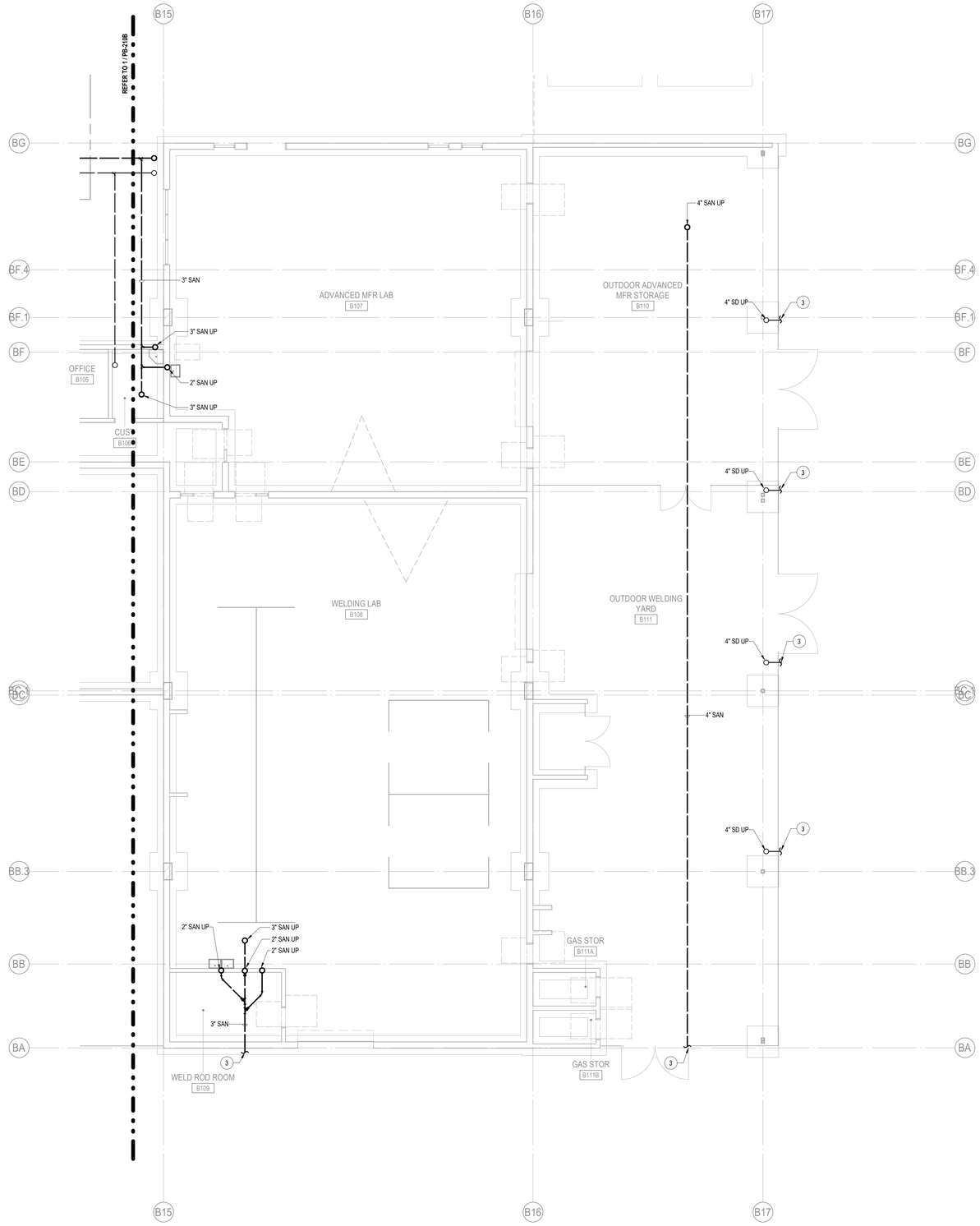


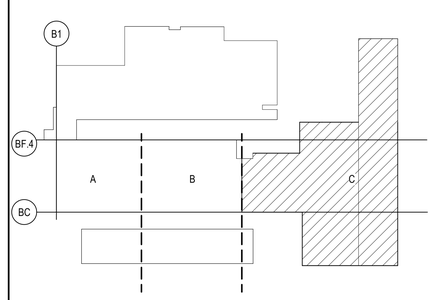
1 BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. UP TO FCO
2. UP TO GCO
3. SEE SHEET P-101 FOR CONTINUATION

KEY PLAN



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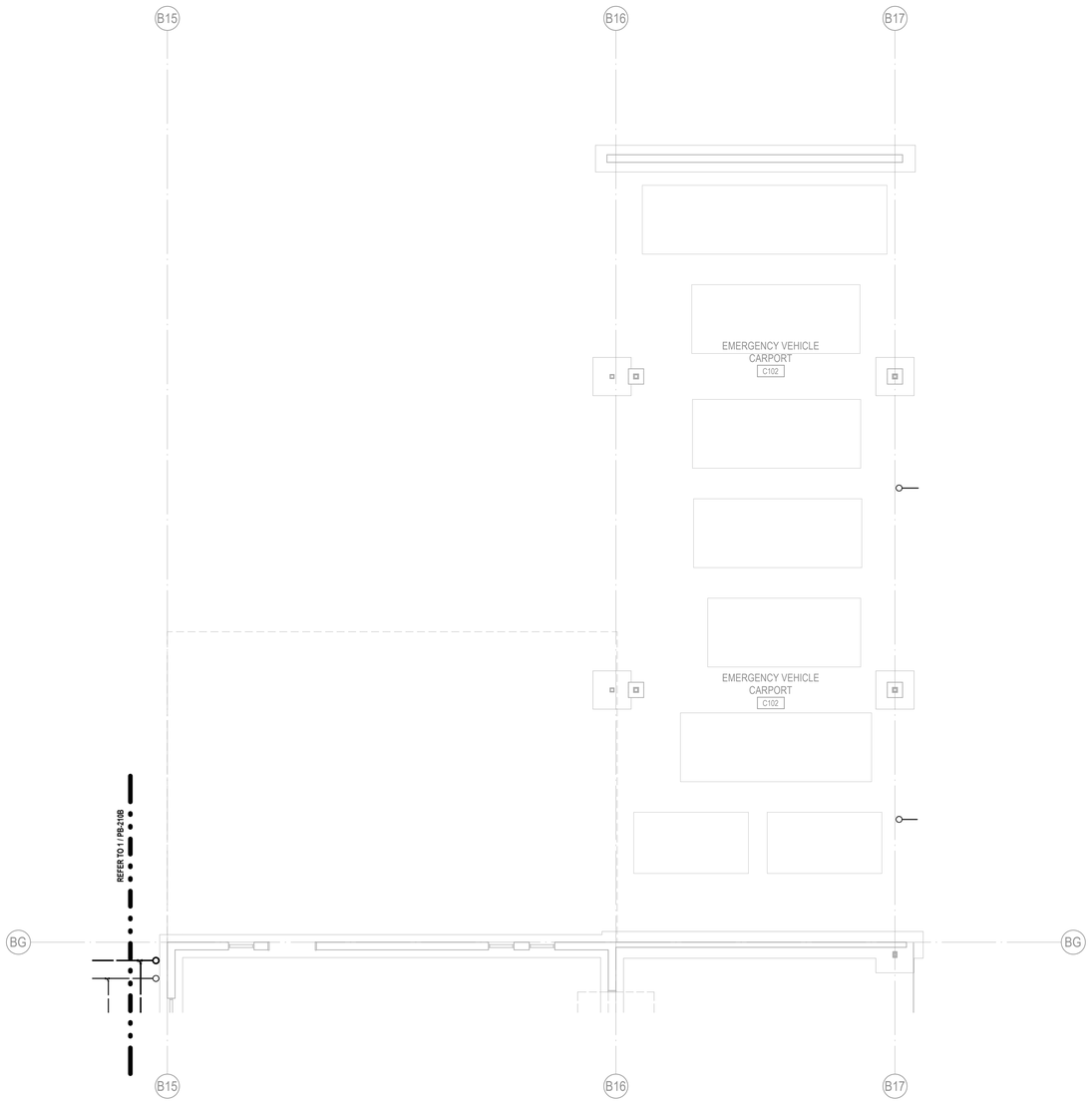
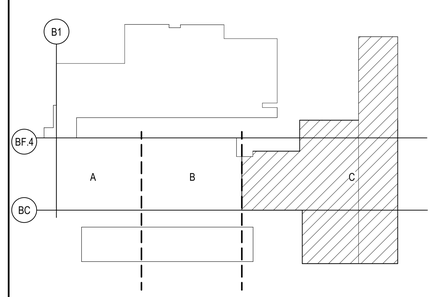
TITLE
BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - AREA C

SHEET
PB-210C



1 BUILDING B - PLUMBING PARTIAL UNDERGROUND PLAN - CARPORT
1/8" = 1'-0"

KEY PLAN



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0 1/4" 1/2" 1"

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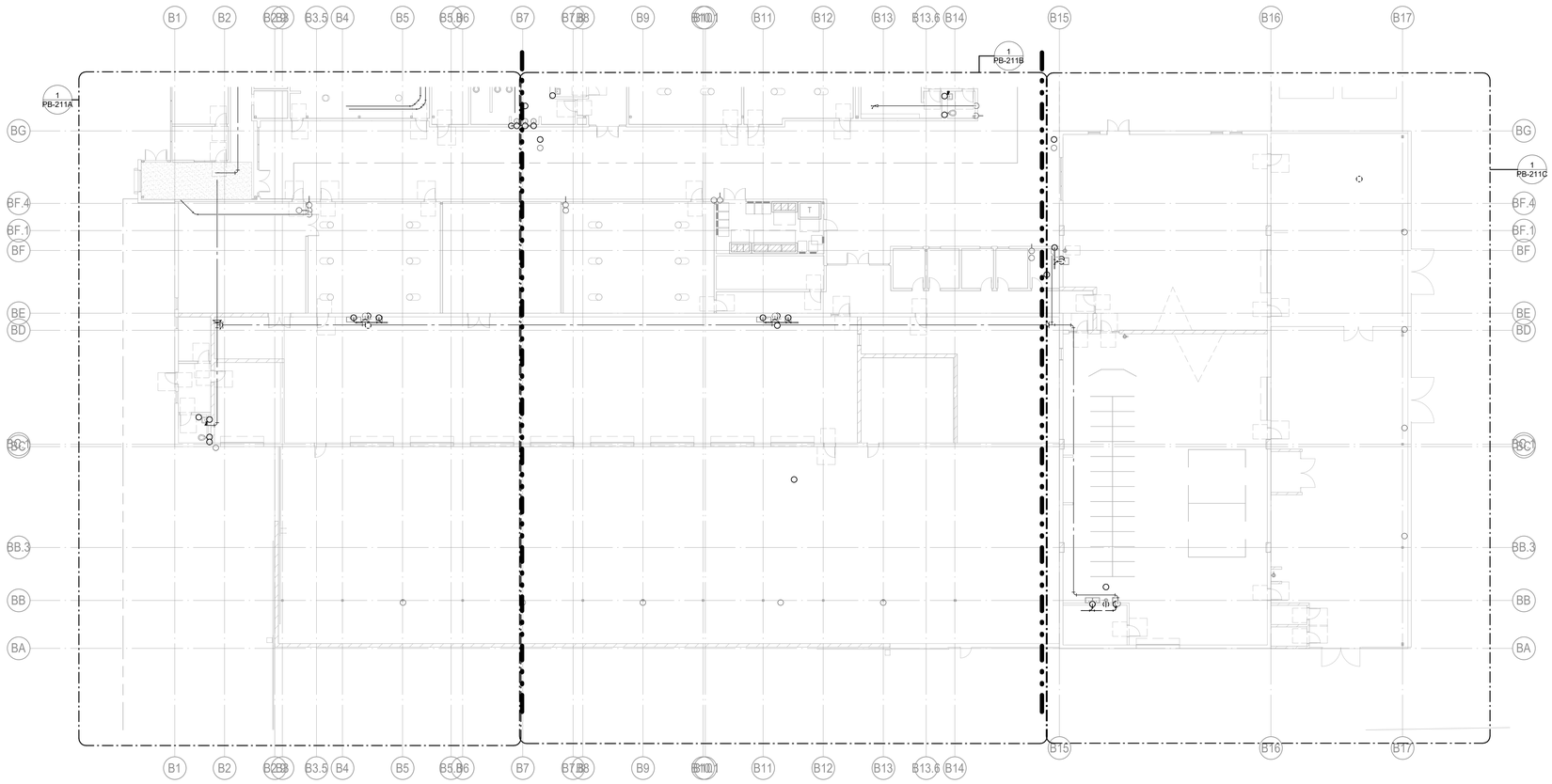
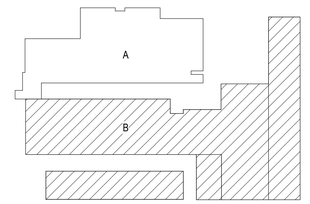


1 BUILDING B - PLUMBING OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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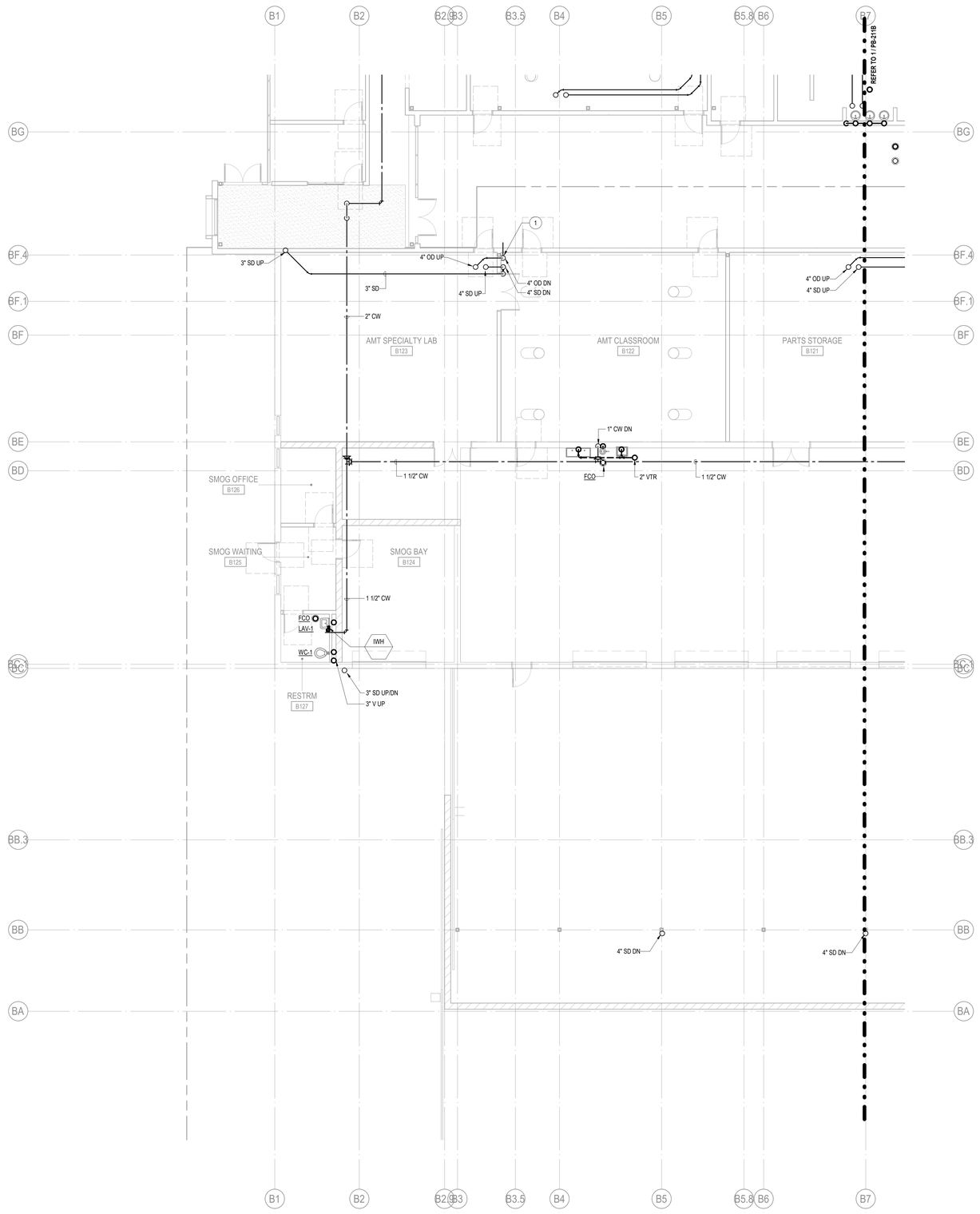


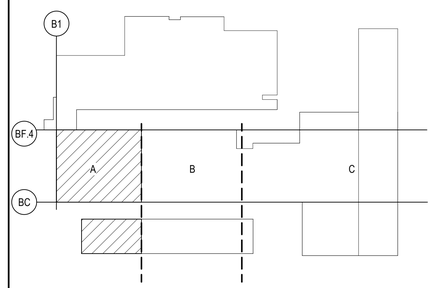
1 BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. OD DROP TO DISCHARGE 1'-0" ABOVE FINISHED GRADE ON CONCRETE PAD WITH DSN-1

KEY PLAN



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TITLE
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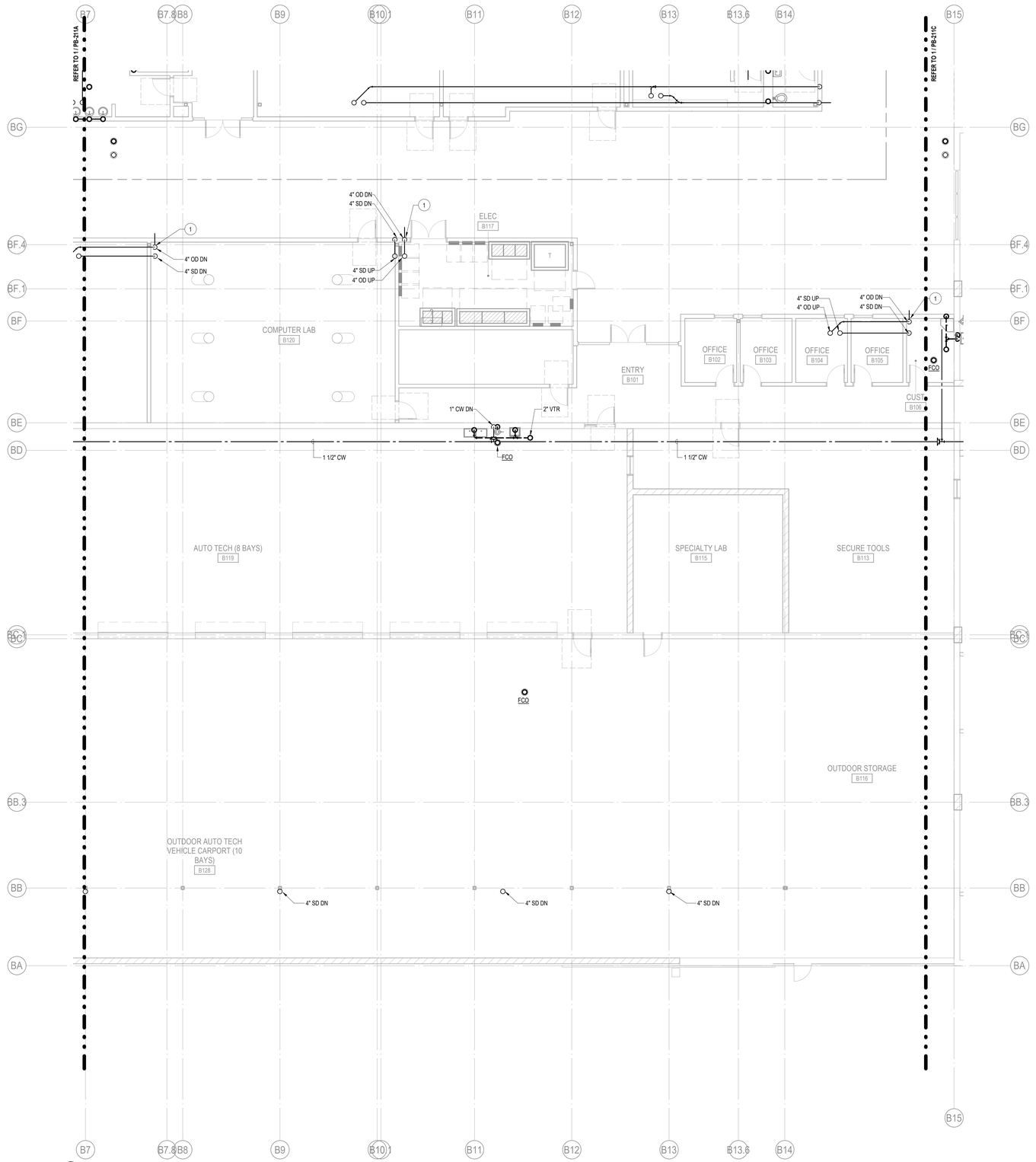
PB-211A



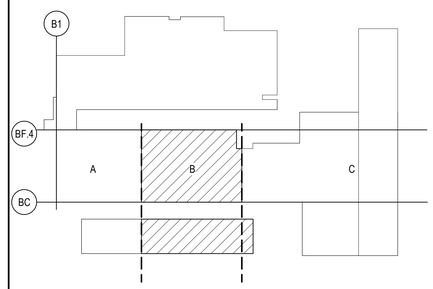
1 BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

1. OD DROP TO DISCHARGE 1'-0" ABOVE FINISHED GRADE ON CONCRETE PAD WITH DSN-1

KEY PLAN



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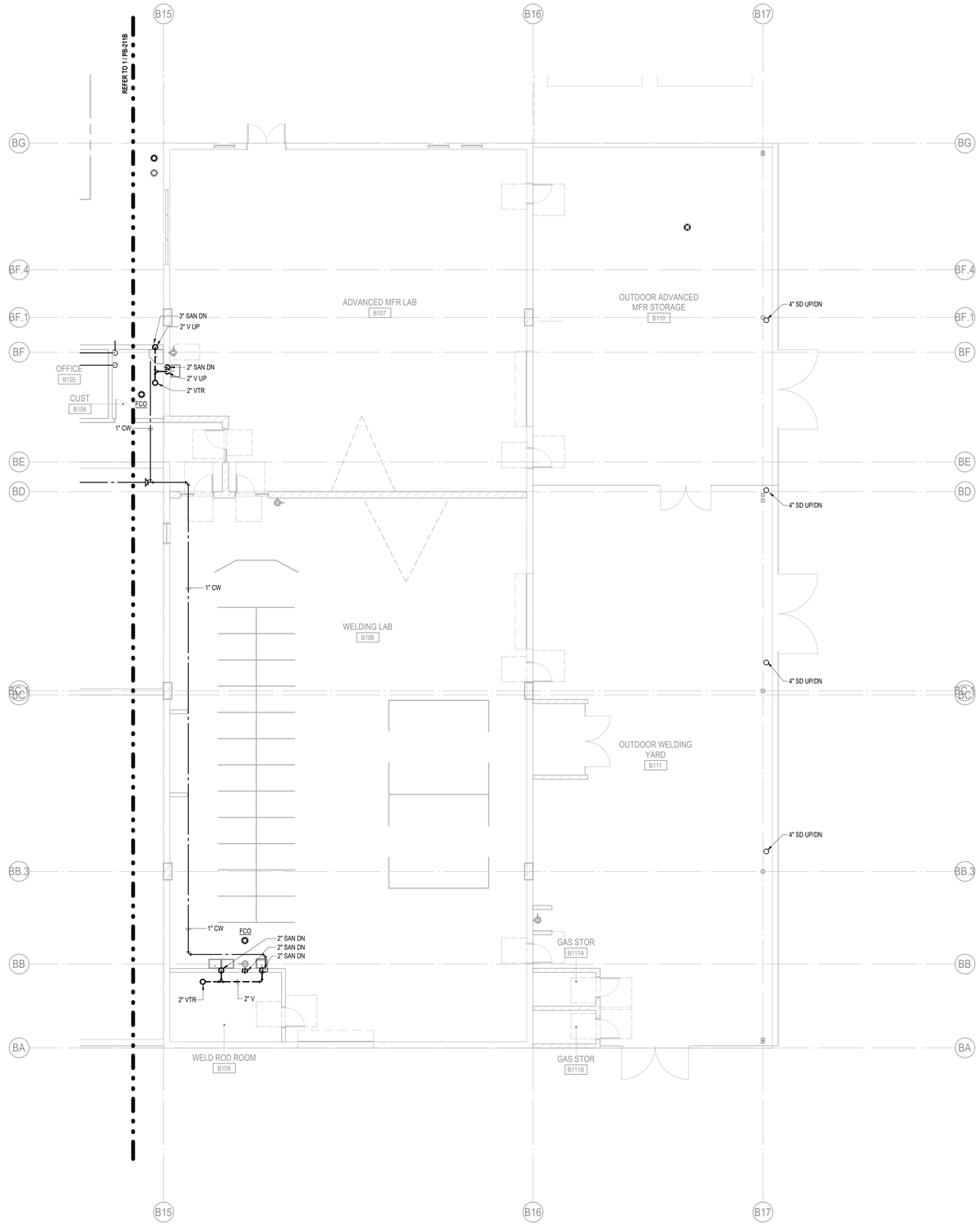
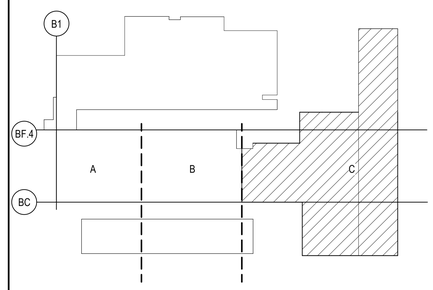


1 BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING B - PLUMBING PARTIAL FLOOR PLAN - AREA C

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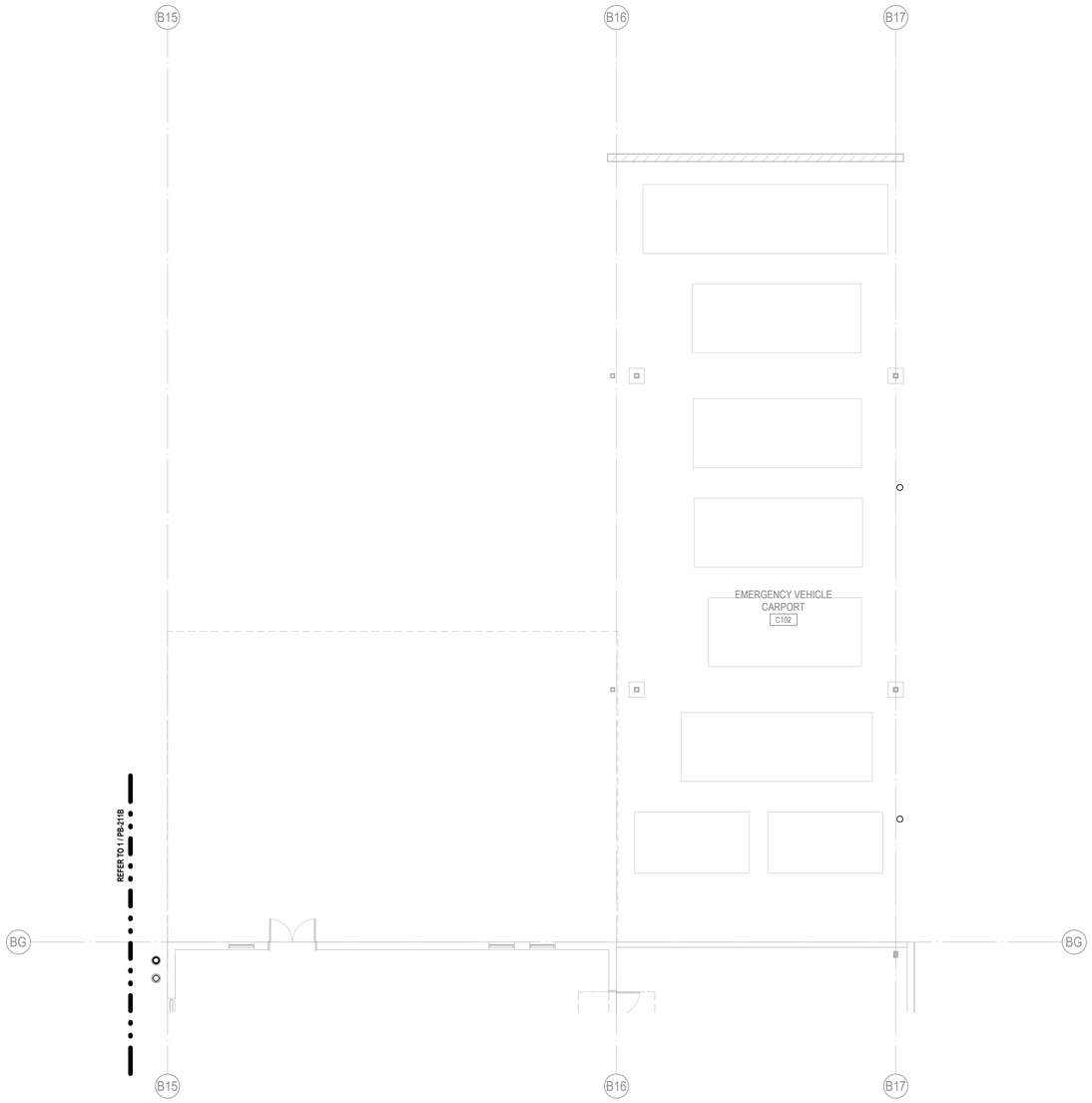
PB-211C



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1/8" = 1'-0"

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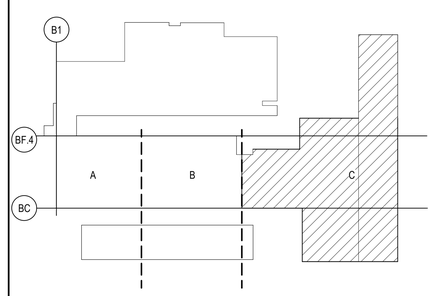

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BUILDING B - PLUMBING PARTIAL FLOOR PLAN - CARPORT

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MECHANICAL ABBREVIATIONS

ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL	ACOUSTIC LINING
ARCH	ARCHITECT/ARCHITECTURAL
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AW	ACID WASTE
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STEEL
BRD	BAROMETRIC RELIEF DAMPER
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CDW	CONDENSER WATER
CFM	CUBIC FEET PER MINUTE
CHW	CHILLED WATER
CLG	CEILING
CBC	CALIFORNIA BUILDING CODE
CH	CHILLER
CI	CAST IRON
CT	COOLING TOWER
CU	COPPER
CL	CENTERLINE
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUATION
CW	COLD WATER
DB	DRY BULB
DH	DEHUMIDIFIER
DIM	DIMENSION
DIA	DIAMETER
DN	DOWN
DWG	DRAWING
(E)	EXISTING
(ER)	EXISTING TO BE RELOCATED
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRICAL
ET	EXPANSION TANK
EW	EMERGENCY EYEWASH
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
(F)	FUTURE
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
FM	FLOW METER
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPM	FEET PER MINUTE
FS	FLOW SWITCH
FSD	COMBINATION FIRE SMOKE DAMPER WITH ACCESS
FT	FEET
GPM	GALLONS PER MINUTE
GR	GRADE
GV	GRAVITY VENTILATOR
HC	HEATING COIL
HHW	HEATING HOT WATER
HORIZ	HORIZONTAL
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER
HX	HEAT EXCHANGER
I	POUNDS PER SQUARE INCH
ID	INSIDE DIAMETER
IN.	INCHES
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
LB	POUND WEIGHT
LAV	LAVATORY
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
(N)	NEW
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NG	NATURAL GAS
NO	NORMALLY OPEN
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OPNG	OPENING
OS	OUTSIDE AIR
P	PUMP
PNG	OPENING
POC	POINT OF CONNECTION
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIA	PSI - ABSOLUTE
PSIG	PSI - GAUGE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
(R)	REMOVE
RA	RETURN AIR
RAH	RECIRC AIR HANDLER
RC	REHEAT COIL
RD	ROOF DRAIN
REF	ROOF EXHAUST FAN
SA	SUPPLY AIR / SOUND ATTENUATOR
SC	SCRUBBER
SCFM	STANDARD CUBIC FEET PER MINUTE
SCHD	SCHEDULE
SD	SMOKE DETECTOR
SF	SUPPLY FAN
SIM	SIMILAR
SMACNA	SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION
SMEF	SMOKE EXHAUST FAN
SPEC(S)	SPECIFICATION(S)
SS	STAINLESS STEEL
ST	SOUND ATTENUATOR TRAP
STD(S)	STANDARD(S)
TA	TRANSFER AIR
TE	TEMPERATURE ELEMENT
TEMP	TEMPERATURE
TI	TEMPERATURE INDICATOR
TOS	TOP OF STEEL
TYP	TYPICAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
V	VOLTS
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAK
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
VVR	VARIABLE VOLUME UNIT WITH REHEAT
W	WIDTH
W/O	WITHOUT
WB	WET BULB
WC	WATER CLOSET
WH	WATER HEATER
WLD	WELDED
WT	WEIGHT

MECHANICAL GENERAL NOTES

1. EXACT LOCATIONS OF ALL CEILING DIFFUSERS, REGISTERS AND GRILLES ARE DETAILED ON THE ARCHITECTURAL REFLECTED CEILING PLANS AND INTERIOR ELEVATIONS.
2. EXACT LOCATION OF ALL ROOF AND STRUCTURAL OPENINGS SHALL BE COORDINATED WITH THE STRUCTURAL AND ARCHITECTURAL DRAWINGS.
3. MECHANICAL EQUIPMENT PLATFORMS AND ROOF CURBS SHALL BE AS INDICATED ON THE STRUCTURAL PLANS. THE CONTRACTOR SHALL COORDINATE EXACT SIZES OF REQUIRED OPENING AND SUPPORTS FOR FURNISHED EQUIPMENT. SEE ARCHITECTURAL PLANS FOR ROOFING AND FLASHING.
4. MANUAL VOLUME DAMPERS SHALL BE PROVIDED IN ALL DUCT BRANCHES TO INDIVIDUAL DIFFUSERS, GRILLES AND REGISTERS, WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT. PROVIDE REMOTE DAMPER OPERATORS SUCH AS YOUNG'S REGULATOR OR EQUAL WHEN DAMPERS ARE LOCATED ABOVE INACCESSIBLE CEILINGS.
5. ALL EQUIPMENT, DUCTS PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHERPROOFED.
6. ALL APPLIANCES AND PLUMBING VENTS SHALL TERMINATE AT LEAST TEN (10) FEET IN A HORIZONTAL DIRECTION, OR THREE (3) FEET ABOVE OUTSIDE AIR INTAKES.
7. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. (SMACNA)
8. PENETRATIONS OF PIPES, CONDUITS, ETC. IN WALLS REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED.
9. FIRE STOP MATERIAL SHALL BE A UL-LISTED ASSEMBLY APPROVED BY THE FIRE MARSHAL.
10. DUCT/PIPE INSULATION AND DUCT LINING MATERIAL SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 AND SMOKE DEVELOPED RATING OF NOT MORE THAN 50 WHEN TESTED AS A COMPOSITE INSTALLATION INCLUDING INSULATION, FACING MATERIALS, TAPES AND ADHESIVES AS NORMALLY APPLIED. DUCT AND PIPE LABELS LOCATED IN THE CEILING SPACE USED ASA RETURN AIR PLENUM SHALL COMPLY WITH THE SAME REQUIREMENTS.
11. DESIGN DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL OFFSETS, BENDS ELBOWS OR OTHER ELEMENTS WHICH MAY BE REQUIRED. CONTRACTOR SHALL PROVIDE ALL ACCESSORIES AS NECESSARY FOR A COMPLETE INSTALLATION, WITH NO ADDITIONAL COST TO THE OWNER.
12. ALL SUPPLY AND EXHAUST AIR EQUIPMENT SHALL INCORPORATE DAMPERS THAT AUTOMATICALLY CLOSE DURING PERIODS OF NON-USE. THE DAMPERS SHALL BE EITHER MOTORIZED OR OF THE GRAVITY TYPE AS INDICATED ON DRAWINGS OR SPECIFIED.
13. DUCT SIZES INDICATED ON DRAWINGS REPRESENT NET INSIDE DIMENSIONS.
14. MATERIALS EXPOSED WITHIN DUCTS OR PLENUMS SHALL HAVE A FLAME-SPREAD INDEX NOT GREATER THAN 25 AND A SMOKE-DEVELOPED INDEX NOT GREATER THAN 50, WHEN TESTED AS A COMPOSITE PRODUCT PER TEST METHODS LISTED IN CHAPTER 6 OF THE CMC.
15. COMBUSTION AIR OPENINGS SHALL BE COVERED WITH CORROSION RESISTANT SCREEN NOT SMALLER THAN 1/4 INCH MESH.
16. REFRIGERANT SERVICE PORTS LOCATED OUTDOORS SHALL BE FITTED WITH LOCKING TYPE TAMPER RESISTANT CAPS OR SHALL BE PROTECTED FROM UNAUTHORIZED ACCESS BY AN ACCEPTABLE MEANS.
17. OUTDOOR AIR INTAKE OPENINGS SHALL BE COVERED WITH A SCREEN HAVING NOT LESS THAN 1/4-INCH OPENINGS AND NOT MORE THAN 1/2-INCH OPENINGS, UNLESS NOTED OTHERWISE.
18. AT THE TIME OF ROUGH INSTALLATION, OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING, AND VENTILATING EQUIPMENT, ALL DUCTS AND OF THE RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL, OR OTHER ACCEPTABLE METHODS TO REDUCE THE AMOUNT OF DUST, WATER, AND DEBRIS WHICH MAY ENTER THE SYSTEM.
19. HEATING, VENTILATING, AND AIR CONDITIONING SYSTEMS (INCLUDING HYDRONIC SYSTEMS) SHALL BE BALANCED IN ACCORDANCE WITH AN APPROVED METHODS PER SECTION 317.1 OF THE CALIFORNIA MECHANICAL CODE.
20. ALL AIR DISTRIBUTION SYSTEM DUCTS AND PLENUMS, INCLUDING, BUT NOT LIMITED TO, BUILDING CAVITIES, MECHANICAL CLOSETS, AIR-HANDLER BOXES AND SUPPORT PLATFORMS USED AS DUCTS OR PLENUMS SHALL BE INSTALLED, SEALED, AND INSULATED TO MEET THE REQUIREMENTS OF CHAPTER 6 OF THE CMC.
21. SUPPLY-AIR AND RETURN-AIR DUCTS CONVEYING HEATED OR COOLED AIR SHALL BE INSULATED TO A MINIMUM INSTALLED LEVEL OF R-4.2 (R-8 IF INSTALLED IN AN UNCONDITIONED SPACE) UNLESS DUCTS ARE IN CONDITIONED SPACE OR NOTED OTHERWISE.
22. THE PIPING FOR ALL SPACE CONDITIONING AND SERVICE WATER HEATING SYSTEMS SHALL BE INSULATED IN ACCORDANCE WITH TABLE 120.3-A OF THE ENERGY EFFICIENCY STANDARDS.
23. THE MINIMUM RATE OF OUTDOOR AIR REQUIRED PER SECTION 120.1(B) 2 SHALL BE SUPPLIED TO EACH SPACE AT ALL TIME THE SPACE IS USUALLY OCCUPIED.
24. THE LESSER OF THE MINIMUM RATE OF OUTDOOR AIR REQUIRED BY SEC. 120.1(B) 2, OR THREE COMPLETE AIR CHANGES SHALL BE SUPPLIED TO THE ENTIRE BUILDING DURING THE ONE-HOUR PERIOD IMMEDIATELY BEFORE THE BUILDING IS NORMALLY OCCUPIED.
25. THE THERMOSTATIC CONTROLS FOR HVAC SYSTEMS SHALL MEET THE FOLLOWING REQUIREMENTS AS APPLICABLE:
    A. EACH SPACE CONDITIONING ZONE SHALL BE CONTROLLED BY AN INDIVIDUAL THERMOSTATIC CONTROL THAT RESPONDS TO TEMPERATURE WITHIN THE ZONE AND MEETS THE FOLLOWING;
    B. EACH THERMOSTATIC CONTROL SHALL BE CAPABLE OF BEING SET LOCALLY OR REMOTELY BY ADJUSTMENT OR SELECTION OF SENSORS TO CONTROL:
        1. COMFORT HEATING DOWN TO 55°F OR LOWER.
        2. COMFORT COOLING UP TO 85°F OR HIGHER.
        3. BOTH HEATING AND COOLING, THE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.
26. DUCT SYSTEMS USED WITH BLOWER TYPE EQUIPMENT WHICH ARE PORTIONS OF A HEATING, COOLING, ABSORPTION, EVAPORATIVE COOLING OR OUTDOOR AIR VENTILATION SYSTEM SHALL BE SIZED IN ACCORDANCE WITH STANDARDS LISTED IN CHAPTER 17 OF THE 2013 CALIFORNIA MECHANICAL CODE.
27. SUPPLY AIR, RETURN AIR, AND OUTSIDE AIR FOR HEATING, COOLING, OR EVAPORATIVE COOLING SYSTEMS SHALL BE CONDUCTED THROUGH DUCT SYSTEMS CONSTRUCTED OF METAL AS SET FORTH IN THE SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, OR ANOTHER APPROVED DUCT CONSTRUCTION STANDARD.
28. AIR-MOVING SYSTEMS SUPPLYING AIR IN EXCESS OF 2,000 CFM SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF ACTIVATED BY SMOKE DETECTOR LOCATED IN THE MAIN SUPPLY-AIR DUCT. A SYSTEM MAY INCLUDE MORE THAN ONE PIECE OF AC UNIT WHICH SERVES A COMMON SPACE WITH AGGREGATE SUPPLY AIR OF MORE THAN 2,000 CFM.
29. HYDRONIC PIPING SHALL COMPLY WITH CHAPTER 12 PART I OF THE 2013 CALIFORNIA MECHANICAL CODE.
30. PRIOR TO PERMIT BEING FINALED, A COMPLETE REPORT OF THE TESTING AND ADJUSTING SHALL BE PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE AND FACILITIES OPERATOR AND FORM TESTING AND ADJUSTING SHALL BE COMPLETED AND PROVIDED TO THE INSPECTOR.
31. PRIOR TO PERMIT BEING FINALED, A COMPLETE REPORT OF THE COMMISSIONING PROCESS SHALL BE PROVIDED TO THE OWNER OR OWNER'S REPRESENTATIVE AND FACILITIES OPERATOR, AND FORM VERIFICATION SHALL BE COMPLETED AND PROVIDED TO THE INSPECTOR.
32. IF THE HVAC SYSTEM IS USED DURING CONSTRUCTION, PROVIDE RETURN AIR FILTERS WITH A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8, BASED ON ASHRAE 52.2-1999, OR AN AVERAGE EFFICIENCY OF 30 PERCENT, BASED ON ASHRAE 52.1-1992. REPLACE ALL FILTERS PRIOR TO OCCUPANCY OR AT THE CONCLUSION OF CONSTRUCTION.
33. AT THE TIME OF ROUGH INSTALLATION, OR DURING STORAGE ON THE CONSTRUCTION SITE AND UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL, OR OTHER ACCEPTABLE METHODS TO REDUCE THE AMOUNT OF WATER, DUST, AND DEBRIS WHICH MAY COLLECT/ENTER IN THE SYSTEM.
34. ALL MECHANICAL EXHAUST FANS IN ROOMS WITH A BATHTUB OR SHOWER SHALL COMPLY WITH THE FOLLOWING:
    A. FANS SHALL BE ENERGY STAR COMPLIANT AND BE DUCTED TO TERMINATE OUTSIDE THE BUILDING.
    B. FANS MUST BE CONTROLLED BY A HUMIDITY CONTROL CAPABLE OF ADJUSTMENT BETWEEN A RELATIVE HUMIDITY RANGE OF ≤50% TO A MAXIMUM OF 80% UNLESS FUNCTIONING AS A COMPONENT OF A WHOLEHOUSE VENTILATION SYSTEM.

OWNERSHIP OF INSTRUMENTS OF SERVICE

1. ALL REPORTS, DRAWINGS, SPECIFICATIONS, COMPUTER FILES, FIELD DATA, NOTES AND OTHER DOCUMENTS AND INSTRUMENTS PREPARED BY THE CONSULTANT AS INSTRUMENTS OF SERVICE SHALL REMAIN THE PROPERTY OF THE CONSULTANT. THE CONSULTANT SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT THERETO.
2. THE CLIENT ACKNOWLEDGES THE CONSULTANT'S CONSTRUCTION DOCUMENTS, INCLUDING ELECTRONIC FILES, AS INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE FINAL CONSTRUCTION DOCUMENTS PREPARED UNDER THIS AGREEMENT SHALL BECOME THE PROPERTY OF THE CLIENT UPON COMPLETION OF THE SERVICES AND PAYMENT IN FULL OF ALL MONIES DUE TO THE CONSULTANT. THE CLIENT SHALL NOT REUSE OR MAKE ANY MODIFICATION TO THE CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN AUTHORIZATION OF THE CONSULTANT. THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES AND SUBCONSULTANTS (COLLECTIVELY, CONSULTANT) AGAINST ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND DEFENSE COSTS, ARISING FROM OR ALLEGEDLY ARISING FROM OR IN ANY WAY CONNECTED WITH THE UNAUTHORIZED REUSE OR MODIFICATION OF THE CONSTRUCTION DOCUMENTS BY THE CLIENT OR ANY PERSON OR ENTITY THAT ACQUIRES OR OBTAINS THE CONSTRUCTION DOCUMENTS FROM OR THROUGH THE CLIENT WITHOUT THE WRITTEN AUTHORIZATION OF THE CONSULTANT.

CALIFORNIA GREEN NOTES:

1. AT THE TIME OF ROUGH INSTALLATION AND DURING STORAGE ON THE CONSTRUCTION SITE UNTIL FINAL STARTUP OF THE HEATING, COOLING AND VENTILATING EQUIPMENT, ALL DUCT AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH TAPE, PLASTIC, SHEET METAL OR OTHER METHODS ACCEPTABLE TO THE ENFORCING AGENCY TO REDUCE THE AMOUNT OF DUST , WATER AND DEBRIS WHICH MAY ENTER THE SYSTEM. (CAL GREEN SECTION: 5.504.3).
2. IN MECHANICALLY VENTILATED BUILDINGS, REGULARLY OCCUPIED AREAS OF THE BUILDING SHALL BE PROVIDED WITH AIR FILTRATION MEDIA FOR OUTSIDE AND RETURN AIR THAT PROVIDES AT LEAST A MINIMUM EFFICIENCY REPORTING VALUE (MERV) OF 8. MERV 8 FILTERS SHALL BE INSTALLED PRIOR TO OCCUPANCY, AND RECOMMENDATIONS FOR MAINTENANCE WITH FILTERS OF THE SAME VALUE SHALL BE INCLUDED IN THE OPERATION AND MAINTENANCE MANUAL. (CAL GREEN SECTION: 5.504.5.3)
3. INSTALLATIONS OF HVAC REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL COMPLY WITH SECTIONS 5.508.1.1 AND 5.508.1.2. HVAC REFRIGERATION AND FIRE SUPPRESSION EQUIPMENT SHALL NOT CONTAIN CHLOROFLUOROCARBONS (CFCs) AND SHALL NOT CONTAIN HALONS (SECTION: 5.508.1).
4. PROVIDE THE BUILDING OWNER OR REPRESENTATIVE WITH DETAILED OPERATING AND MAINTENANCE INSTRUCTIONS AND COPIES OF GUARANTIES/WARRANTIES FOR EACH SYSTEM. O&M INSTRUCTIONS SHALL BE CONSISTENT WITH OSHA REQUIREMENTS IN CCR. TITLE 8, SECTION 5142, AND OTHER RELATED REGULATIONS.

CALIFORNIA CODES AND STANDARDS

1. 2016 CALIFORNIA BUILDING CODE
2. 2016 CALIFORNIA ELECTRICAL CODE
3. 2016 CALIFORNIA MECHANICAL CODE
4. 2016 CALIFORNIA PLUMBING CODE
5. 2016 CALIFORNIA ENERGY CODE
6. 2016 CALIFORNIA FIRE CODE

MECHANICAL LEGEND

DUCT

- OUTSIDE AIR (OA) / SUPPLY AIR (SA)
- RETURN AIR (RA) / TRANSFER AIR (TA)
- EXHAUST AIR (EA) / RELIEF AIR
- DUCT ELBOW WITH VANES
- MITERED DUCT ELBOW
- RADIUS DUCT ELBOW
- FLEXIBLE DUCT
- SUPPLY AIR TERMINAL
- RETURN AIR TERMINAL
- EXHAUST AIR TERMINAL
- LINEAR DIFFUSER
- LOUVER
- DOOR UNDERCUT (UC)
- BELLMOUTH
- RECTANGULAR TO ROUND TRANSITION (24"x16" 16"ø)
- ROUND TO ROUND TRANSITION (24"ø 16"ø)
- RECTANGULAR TO RECTANGULAR TRANSITION (24"x16" 16"x16")
- RECTANGULAR FROM RECTANGULAR DUCT TAKE OFF
- ROUND FROM ROUND DUCT TAKE OFF
- ROUND FROM RECTANGULAR DUCT TAKE OFF
- DUCT WITH LINING (CLEAR INSIDE DUCT LINING DIMENSIONS) (20"x12" EA (L))
- DUCT WITH INSULATION (CLEAR INSIDE DUCT DIMENSIONS) (20"x12" SA)
- MOTORIZED DAMPERS (OPPOSED AND PARALLEL BLADE)
- BALANCING DAMPER
- FIRE SMOKE DAMPER

SYMBOLS AND ANNOTATION

- REVISION CLOUD AND DELTA
- EQUIPMENT TYPE (CH) / EQUIPMENT NUMBER (1)
- AIR TERMINAL TAG: EQUIPMENT TYPE / NECK SIZE (RECT.) / CFM (A-24x24-120) / CFM (A-12ø-120) / NECK SIZE (RECT.) / EQUIPMENT TYPE
- DETAIL DESIGNATION (1 / M6.02) / SHEET NUMBER
- DUCT FREE AREA DIMENSIONS / DUCT SYSTEM (20"x12" EA (L)) / LINING TYPE (IF APPLICABLE)
- POINT OF CONNECTION
- POINT OF DISCONNECTION

ROOM SENSORS (PLAN)

- THERMOSTAT (WITH VAV BOX REFERENCE) (T VAV-1)
- TEMPERATURE SENSOR (T)
- CO2 SENSOR (CO2)
- HUMIDISTAT (RH)
- RH SENSOR (RH)
- DEWPOINT SENSOR (DP)
- TEMPERATURE SENSOR IN SLAB (T SLAB)
- STATIC PRESSURE SENSOR (SP)
- CARBON NONOXIDE SENSOR (CO)
- OCCUPANCY SENSOR (OC)

EQUIPMENT (PLAN)

- PUMP
- EXHAUST FAN
- EXHAUST FAN
- SOUND ATTENUATOR
- VENTILATOR
- FAN COIL UNIT
- FAN POWERED AIR TERMINAL
- FAN POWERED AIR TERMINAL WITH COIL
- FAN POWERED AIR TERMINAL WITH COIL AND PLENUM BOX
- CEILING FAN
- UNDERFLOOR FAN POWERED AIR TERMINAL
- VENTURI VALVE
- SINGLE VALVE
- DOUBLE VALVE

VALVES AND HYDRONIC ACCESSORIES

- PRESSURE REDUCING VALVE
- PRESSURE REDUCING VALVE GAS
- PRESSURE REDUCING VALVE - LINE FEED
- BALANCING VALVE
- BALL VALVE
- BUTTERFLY VALVE
- BUTTERFLY VALVE W/OPERATOR
- CHECK VALVE
- CIRCUIT SETTER/BALANCING VALVE
- DRAIN VALVE
- FLOAT VALVE
- T&P RELIEF VALVE
- THERMOSTATIC MIXING VALVE
- SHUTOFF VALVE

SHUT-OFF VALVE TYPE
- BALL VALVE 2 1/2" AND BELOW
- BUTTERFLY VALVE 3" AND ABOVE

- WYE STRAINER
- WYE STRAINER WITH BLOW OFF
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- PLUG VALVE
- PETES PLUG
- TEMP GUAGE
- PRESSURE GUAGE
- UNION / FLANGE AS APPLICABLE
- FLEX CONNECTOR
- VACUUM BREAKER

PIPE LINE DESIGNATIONS

- HHWS — HEATING WATER SUPPLY
- HHWR — HEATING WATER RETURN
- CWS — COOLING WATER SUPPLY
- CWR — COOLING WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN

PIPE

- PIPE DROP
- PIPE RISE
- PIPE BRANCH RISE
- PIPE BRANCH DROP
- PIPE BRANCH TEE
- PIPE TEE RISE
- PIPE TEE DROP
- PIPE GUIDE
- PIPE ANCHOR
- CAPPED PIPE

AIRSIDE EQUIPMENT (DIAGRAMS)

AIR SIDE EQUIPMENT

- UPBLAST FAN
- GRAVITY VENTILATOR
- EXHAUST FAN
- PLENUM FAN
- FAN
- FAN (CENTRIFUGAL)
- COILS (C / H / H/C)
- FILTER
- AIR-TO-AIR HEAT EXCHANGER
- HEAT WHEEL
- CENTRIFUGAL FAN
- PLENUM FAN
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER
- BUTTERFLY DAMPER

AIR TERMINAL UNITS

- CEILING
- FLOOR

AIR TERMINALS (DIFFUSERS, REGISTERS, GRILLES)

- BATHROOM EXHAUST
- RETURN AIR GRILLE
- EXHAUST AIR TERMINAL
- KITCHEN HOOD EXHAUST
- SUPPLY AIR TERMINAL
- SUPPLY AIR GRILLE
- RETURN AIR GRILLE
- RETURN AIR TERMINA

AIR SYSTEM AND DIRECTION

- RECTANGULAR DUCT (OA / OA / TA / TA)
- ROUND DUCT (OA / OA / TA / TA)

ELECTRICAL OR NETWORK EQUIPMENT (DIAGRAMS)

- BACNET — THE NETWORK
- BACNET — BACNET GATEWAY OR NETWORK CONNECTION
- VFD — VARIABLE FREQUENCY DRIVE

CONTROL VALVES & ACTUATORS

- 2-WAY CONTROL VALVE, 2-POS (M)
- 2-WAY CONTROL VALVE, MODULATING (M)
- SOLENOID CONTROL VALVE, 2-POS (S)
- 3-WAY CONTROL VALVE, 2-POS (M)
- 3-WAY CONTROL VALVE, MODULATING (M)
- MOTORIZED ACTUATOR, 2 POSITION (M)
- MOTORIZED ACTUATOR, MODULATING (M)
- THERMOSTATIC ACTUATOR (T)

SENSORS

- TEMPERATURE SENSOR (T)
- TEMPERATURE SENSOR WITH THERMOWELL (T)
- TEMPERATURE SENSOR AVERAGING (T AVG)
- BTU METER
- FLOW SWITCH (FS)
- HYDRONIC FLOW METER
- HYDRONIC LEVEL SENSOR
- PRESSURE TRANSDUCER (DPT)
- DIFFERENTIAL PRESSURE SENSOR (DPS)
- ZONE CO2 SENSOR
- AIR FLOW MEASUREMENT STATION (AFMS)
- DEW POINT SENSOR (DEWpt)
- FLOW CROSS
- RAIN SENSOR (RAIN)
- CONDENSATION SENSOR (COND)
- RELATIVE HUMIDITY SENSOR (RH)
- WATER LEAK DETECTOR (LEAK)

HYDRONIC EQUIPMENT (DIAGRAMS)

PLANT EQUIPMENT

- HEAT PUMP
- HEAT PUMP
- RADIANT SLAB
- CHILLER
- BOILER
- AIR COOLED CHILLER
- HEAT EXCHANGER
- COOLING TOWER
- PUMP
- EXPANSION TANK
- CPF
- AIR SEPARATOR

ZONE COMPONENTS

- RADIANT SLAB MANIFOLD
- 2-PIPE CHILLED BEAM
- 4-PIPE CHILLED BEAM

SHEET LIST - MECHANICAL

NUMBER	NAME
M-001	MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES
MA-211	BUILDING A - MECHANICAL OVERALL FLOOR PLAN
MA-211A	BUILDING A - MECHANICAL PARTIAL FLOOR PLAN - AREA A
MA-211B	BUILDING A - MECHANICAL PARTIAL FLOOR PLAN - AREA B
MA-221	BUILDING A - MECHANICAL OVERALL ROOF PLAN
MA-221A	BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA A
MA-221B	BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA B
MB-211	BUILDING B - MECHANICAL OVERALL FLOOR PLAN
MB-211A	BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA A
MB-211B	BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA B
MB-211C	BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA C
MB-211D	BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - CARPORT
MB-221	BUILDING B - MECHANICAL OVERALL ROOF PLAN
MB-221A	BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA A
MB-221B	BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA B
MB-221C	BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA C
MB-221D	BUILDING B - MECHANICAL PARTIAL ROOF PLAN - CARPORT
M-501	MECHANICAL DETAILS
M-502	MECHANICAL DETAILS
M-503	MECHANICAL DETAILS
M-601	MECHANICAL EQUIPMENT SCHEDULE
M-602	MECHANICAL EQUIPMENT SCHEDULE
M-603	MECHANICAL EQUIPMENT SCHEDULE
M-604	MECHANICAL EQUIPMENT SCHEDULE

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

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PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

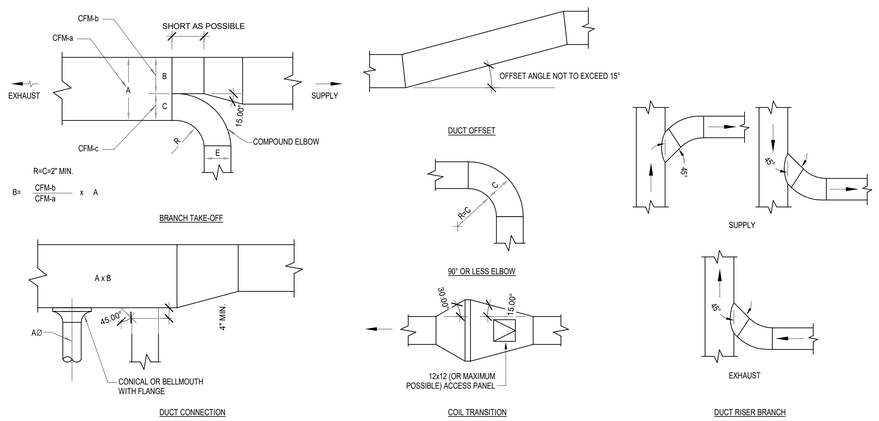
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

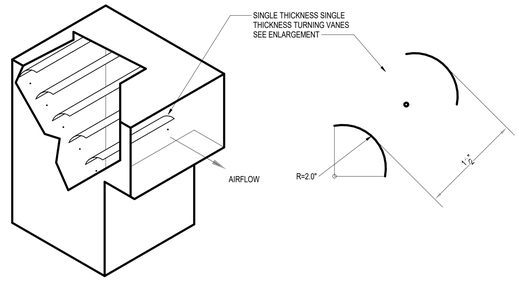
LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO:

TITLE
MECHANICAL LEGEND, ABBREVIATIONS, AND GENERAL NOTES

SHEET
M-001

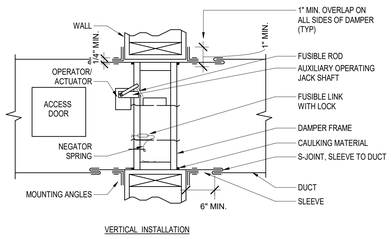


1 LOW PRESSURE DROP DUCT FITTINGS DETAIL
N.T.S.

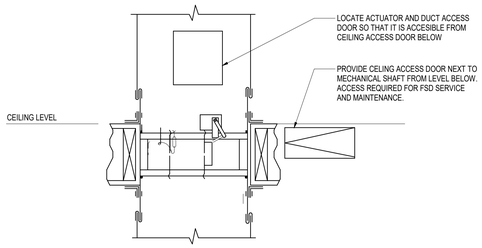


NOTE: TURNING VANES REQUIRED AT ALL 90° RECTANGULAR DUCT ELBOWS UNLESS NOTED OTHERWISE.

2 RECTANGULAR DUCT ELBOW W/ SGL VANE
N.T.S.



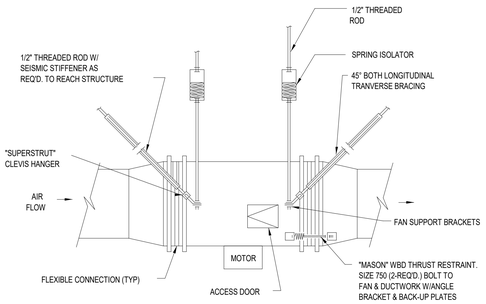
VERTICAL INSTALLATION



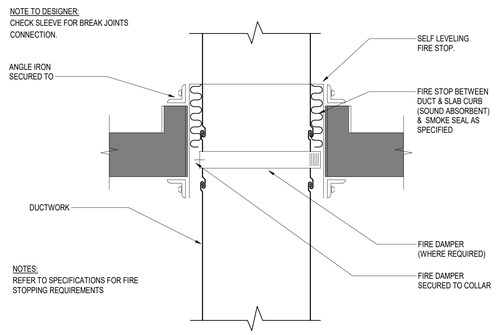
HORIZONTAL INSTALLATION

NOTES:
1. MOUNTING ANGLES SHALL BE 1 1/2" x 1 1/2" x 16 GAGE MIN. FASTENED WITH NO. 10 SCREWS 8" ON CENTER.
2. USE ONLY STATE OF CALIFORNIA FIRE MARSHALL LISTED FIRE DAMPERS & INSTALL IN ACCORDANCE WITH STATE FIRE MARSHALL LISTING NO. 3225-245:005 & U.L. STANDARD 555.
3. GENERAL CONTRACTOR SHALL COORDINATE CEILING ACCESS DOORS AS REQUIRED TO ACCESS DAMPER ACESS DOORS IN DUCT.
4. ACCESS DOOR SHALL BE PROVIDED IN DUCT AND SHALL BE OF ADEQUATE SIZE AND LOCATION TO PERMIT MAINTENANCE & RESETTING OF DAMPER.
5. DAMPER IS TO BE POWERED OPEN AND FAIL CLOSED.
6. DUCT SMOKE DETECTOR AT FSD SHALL SHUT DOWN THE FSD ON DETECTION OF SMOKE DUCT DETECTOR PROVIDED AND WIRED BY ELECTRICAL CONTRACTOR.
7. THE DUCT SMOKE DETECTORS FOR THE SMOKE DAMPERS LOCATED AT RATED WALL PENETRATIONS SHALL BE LOCATED WITHIN FOUR (4) FEET ON THE UPSTREAM SIDE OF THE RATED ASSEMBLY, BRANCHES AND REGISTERS OR ANY OTHER OPENING ARE NOT PERMITTED TO BE LOCATED IN THE DUCT BETWEEN THEM SMOKE DETECTOR AND THE RATED WALL.

3 FIRE/SMOKE DAMPER DETAIL
N.T.S.



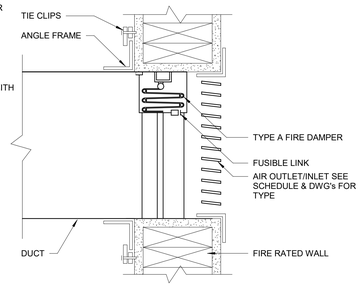
4 INLINE EXHAUST FAN MOUNTING DETAIL
N.T.S.



5 DUCT SLEEVE (THROUGH MECH ROOM AND WET FLOORS) DETAIL
N.T.S.

NOTE TO DESIGNER:
OVERSIZE GRILLE TO ALLOW FOR DEPTH OF FIRE DAMPER BLADES

NOTE:
INSTALL IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS & SMACNA RECOMMENDATIONS



6 VERTICAL FIRE DAMPER / GRILLE DETAIL
N.T.S.

FILE NO. ?XX-XXXX?

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CONSULTANT

INTEGRAL
427 13th Street
Oakland, CA 94612
510.663.2070 Telephone
E-Mail: info@integralgroup.com
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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

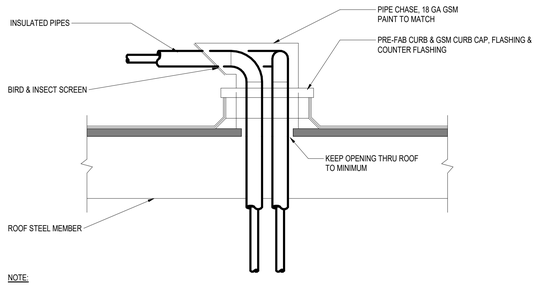
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
MECHANICAL DETAILS

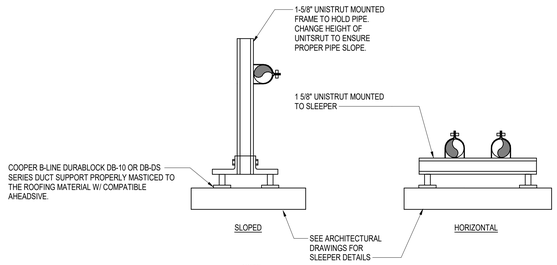
SHEET
M-501



NOTE:

1. PIPING SECURED BY 1/4"Ø MINIMUM BANDS TO ROOF STRUCTURE.

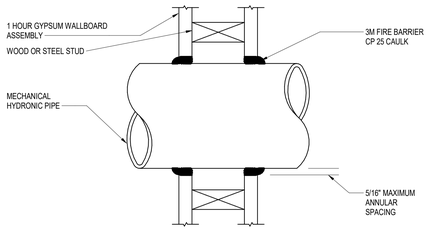
1 PIPE THROUGH ROOF DETAIL
N.T.S.



NOTE:

1. FOR CONDENSATE DRAIN PIPE, SLOPE 1/8" PER FT TO VTR.

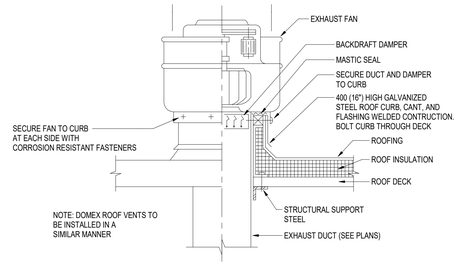
2 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



NOTE:

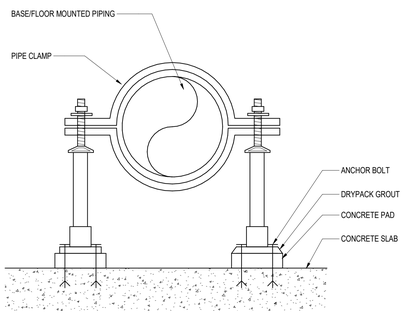
1. PENETRATION FIRESTOP FOR MAX. 12"Ø PIPE THROUGH A GYPSUM WALLBOARD ASSEMBLY
2. REFER TO ARCHITECTURAL DRAWINGS FOR RATED WALL LOCATIONS. APPLY DETAIL WHERE MECHANICAL HYDRONIC PIPE PENETRATES THE RATED WALLS.

3 RATED WALL MECHANICAL HYDRONIC PIPE PENTRATION DETAIL
N.T.S.

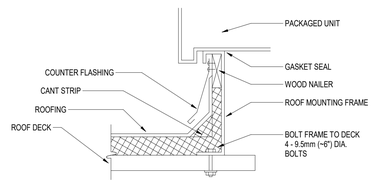


NOTE: MOUNTING DETAILS TO BE ADJUSTED AS REQUIRED TO SUIT MAKE OF EQUIPMENT

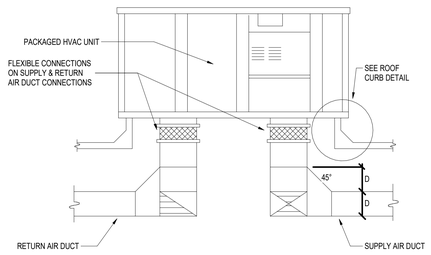
5 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



4 SLAB MOUNTED PIPE SUPPORT DETAIL
N.T.S.



6 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



7 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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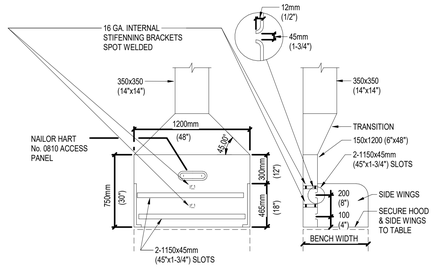
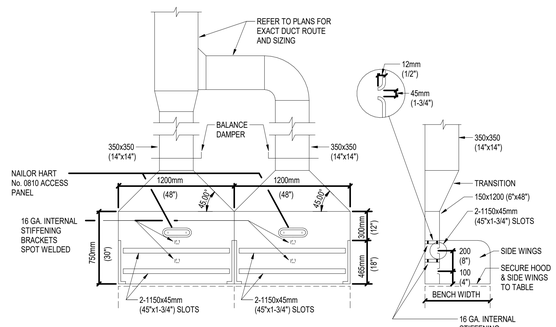
TITLE
MECHANICAL DETAILS

SHEET
M-502



NOTE: CONSTRUCTION OF HOOD AND SIDE WINGS TO BE FROM 16 GA. BLACK IRON SHEETS WITH WELDED AND GROUND SEAMS. HOOD FINISH PAINTED FLAT BLACK. EXACT HOOD DIMENSIONS TO SUIT TABLE SIZE. CHECK ON SITE AND ADJUST TO SUIT.

7 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



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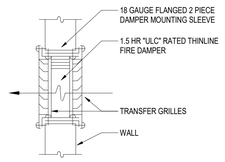
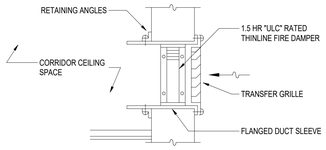
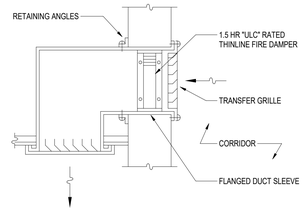
8 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



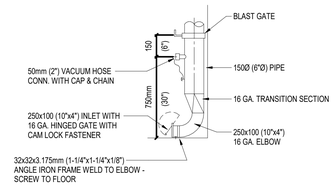
3 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



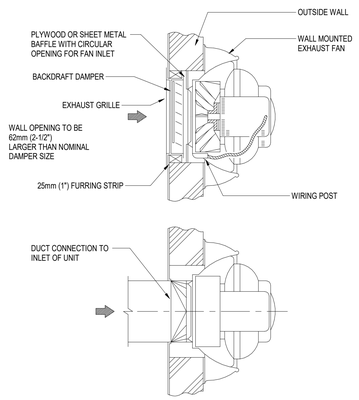
4 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



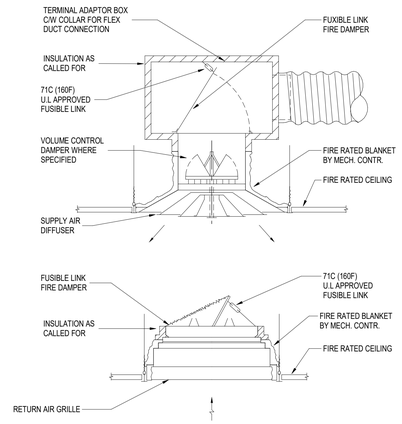
5 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



6 ROOF MOUNTED SLOPED PIPE SUPPORT DURABLOCK SLEEPER DETAIL
N.T.S.



1 RATED WALL MECHANICAL HYDRONIC PIPE PENTRATION DETAIL
N.T.S.



NOTE: FIRE DAMPERS SHOWN, ARE TO BE ACCESSIBLE FOR RESETTING

2 RATED WALL MECHANICAL HYDRONIC PIPE PENTRATION DETAIL
N.T.S.

FILE NO. ?XX-XXXX?

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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE
MECHANICAL DETAILS

SHEET
M-503

AIR HANDLING UNIT SCHEDULE - 01

TAG	AHU-1	AHU-2	AHU-3	AHU-4	AHU-5	AHU-6	AHU-7	AHU-8	AHU-9	AHU-10	AHU-11	AHU-12
QUANTITY	1	1	1	1	1	1	1	1	1	1	1	1
LOCATION	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF
SERVICE	OFFICE ADMIN AREA	CONF ROOM	CLASSROOM	CLASSROOM	VR SIMULATION LAB		SITUATION ROOM	SIM ROOMS	MECHANICAL ROOM	MAT ROOM	CLASSROOM	CLASSROOM
MANUFACTUER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
SYSTEM TYPE	VAV - MULTIPLE ZONE	VAV - MULTIPLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	VAV - MULTIPLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE
MODEL	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP
MODEL NO.	WHC092H3,4,W	WHC048H3,4,W	WHC092H3,4,W	WHC092H3,4,W	WHC048H3,4,W	WHC092H3,4,W	WHC102H3,4,W	WHC060H3,4,W	WHC060H3,4,W	WHC092H3,4,W	WHC092H3,4,W	WHC092H3,4,W
TYPE (HTG / CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)
NOMINAL TONNAGE	7.5	4.0	7.5	7.5	4.0	7.5	8.5	5.0	5.0	7.5	7.5	7.5
COOLING EER	11.8	13.0	11.8	11.8	13.0	11.8	12.0	16.4	16.4	11.8	11.8	11.8
HEATING COP	3.5	3.6	3.5	3.5	3.6	3.5	3.63	3.6	3.6	3.5	3.5	3.5
OPERATING WEIGHT (LBS)	1,200	800	1,200	1,200	800	1,200	1,400	950	950	1,200	1,200	1,200
VENTILATION AIR (CFM)	250	165	330	260	215	350	480	290	200	555	525	525
SUPPLY FAN												
MAX - SUPPLY AIR (CFM)	2,620	1,050	2,500	2,500	1,200	2,000	2,300	1,500	1,400	2,900	2,150	2,150
MIN - SUPPLY AIR (CFM)	1,310	525	1,250	1,250	600	1,000	1,150	750	700	1,450	1,075	1,075
EXTERNAL STATIC ("WC)	1.25	1.25	0.90	0.90	0.90	0.90	0.90	1.25	0.90	0.90	0.90	0.90
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	2.75	1.50	2.75	2.75	1.50	2.75	2.8	1.5	1.5	2.75	2.75	2.75
EXHAUST FAN												
MAX - SUPPLY AIR (CFM)	2,620	1,050	2,500	2,500	1,200	2,000	2,300	1,500	1,400	2,900	2,150	2,150
MIN - SUPPLY AIR (CFM)	1,310	525	1,250	1,250	600	1,000	1,150	750	700	1,450	1,075	1,075
EXTERNAL STATIC ("WC)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	0.7	0.4	0.7	0.7	0.4	0.7	0.7	0.4	0.4	0.7	0.7	0.7
HEATING COIL - ELEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CAPACITY (KW)	-	-	-	-	-	-	-	-	-	-	-	-
EAT (DEG. C)	-	-	-	-	-	-	-	-	-	-	-	-
LAT (DEG. C)	-	-	-	-	-	-	-	-	-	-	-	-
COOLING CAPACITY - HEAT PUMP												
SENSIBLE CAPACITY (BTUH)	53,150	23,315	53,540	51,345	27,470	45,522	54,778	35,003	18,285	57,009	53,595	53,595
TOTAL CAPACITY (BTUH)	61,900	27,645	79,880	79,880	38,340	56,250	67,275	39,488	31,500	65,250	72,563	72,563
TOTAL CAPACITY (TONS)	5.2	2.3	6.7	6.7	3.2	4.7	5.6	3.3	2.6	5.4	6.0	6.0
EAT DB (DEG. F)	73.8	75.6	74.8	74.0	76.2	77.1	77.1	76.6	75.1	76.6	78.1	78.1
EAT WB (DEG. F)	60.3	61.0	61.0	61.0	61.0	61.3	61.5	61.0	61.0	61.0	63.0	63.0
LAT DB (DEG. F)	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	63.0	58.3	55.0	55.0
LAT WB (DEG. F)	52.0	52.0	50.0	50.0	50.0	51.0	51.0	52.0	53.5	53.5	51.0	51.0
HEATING CAPACITY - HEAT PUMP												
HEATING CAPACITY (BTUH)	28,296	11,340	22,788	24,297	12,620	30,600	30,600	12,823	14,074	38,028	29,768	29,768
EAT (DEG. C)	45.0	45.0	66.0	67.1	64.2	63.1	63.1	63.7	65.6	63.8	61.8	61.8
LAT (DEG. C)	55.0	55.0	74.5	76.1	74.0	75.4	75.4	71.6	74.9	75.9	74.6	74.6
FILTERS												
PRE-FILTER	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7
MAIN FILTER	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13
ELECTRICAL CONNECTION												
CONNECTION (V/PH/CYC)	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60
LOAD (MCA)	20.0	11.0	20.0	20.0	11.0	20.0	22.0	15.0	15.0	20.0	20.0	20.0
NOTES	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

1. 100% ECONOMIZER CAPABILITY
2. ALL HOA AND VSD STARTERS ARE TO BE FACTORY INSTALLED AND BE INSTALLED IN NEMA 4 RATED ENCLOSURES.
3. PROIVDE BACnet COMMUNICATION INTERFACE
4. PROIVDE HUMAN INTERFACE - 5 " COLOR TOUCH SCREEN
5. PROVIDE 5-YEAR COMPLETE WARRANTY
6. PROVIDE MERV-13 FILTER WITH FILTER REMOVAL TOOLS
7. PROVIDE ANTI-SHORT CYCLE TIMER
8. PROVIDE AUX GAS HEAT
9. PROVIDE HIGH EFFICENTY UNIT ONLY
10. PROIVDE FACTOR SUPPLIED CO2 SENOR AND KIT
11. NOT USED
12. PROVIDE FAULT DETECTION AND DIAGNOSTIC TO MEET TITLE 24 REQUIREMENTS
13. PROVIDE HAIL GUARDS
14. PROIVDE HIGH STATIC MOTOR(S)
15. PROVIDE MOTORIZED OUTSIDE AIR DAMPER
16. PROIVDE MOTORIZED RELIEF DAMPER AND HOOD
17. PROVIDE MULTISPEED DIRECT DRIVE MOTOR(S)
18. PROVIDE PHASE LOSS PREVENTOR
19. PROIVDE VARIABLE SPEED POWERED EXHAUST
20. PROIVDE ALL STANDRAD FEATURES
21. PROVIDE DISCONNECT SWITCH
22. PROVIDE HINGED DOOR ACCESSS
23. PROVIDE MULTIPLE ZONE VAV CONTROL - WHERE APPLICABLE

AIR HANDLING UNIT SCHEDULE - 02

TAG	AHU-13	AHU-14	AHU-15	AHU-16	AHU-17	AHU-18	AHU-19	AHU-20A	AHU-20B	AHU-21	AHU-22	AHU-23A
QUANTITY	1	1	1	1	1	1	1	1	1	1	1	1
LOCATION	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF
SERVICE	EQUIPMENT ROOM	LOCKER ROOMS	AMT SPECIALTY LAB	AMT CLASSROOM	PARTS STORAGE	COMPUTER LAB	OFFICE / ADMIN	ADV MAF LAB - UNIT A	ADV MAF LAB - UNIT B	SMOG ADMIN	SMOG BAY	AUTO TECH BAYS
MANUFACTUER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
SYSTEM TYPE	SINGLE ZONE	VAV - MULTIPLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	VAV - MULTIPLE ZONE	SINGLE ZONE	SINGLE ZONE	VAV - MULTIPLE ZONE	SINGLE ZONE	SINGLE ZONE
MODEL	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP
MODEL NO.	WHC036H3,4,W	WHC060H3,4,W	WHC092H3,4,W	WHC092H3,4,W	WHC060H3,4,W	WHC102H3,4,W	WHC092H3,4,W	WHC120H3,4,W	WHC120H3,4,W	WHC060H3,4,W	WHC060H3,4,W	WHC120H3,4,W
TYPE (HTG / CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)
NOMINAL TONNAGE	3.0	5.0	7.5	7.5	5.0	8.5	7.5	10	10	5.0	5.0	10
COOLING EER	16.0	16.4	11.8	11.8	16.4	12.0	11.8	11.5	11.5	16.4	16.4	11.5
HEATING COP	3.6	3.6	3.5	3.5	3.6	3.63	3.5	3.63	3.63	3.6	3.6	3.63
OPERATING WEIGHT (LBS)	750	950	1,200	1,200	950	1,400	1,200	1,500	1,500	950	950	1,500
VENTILATION AIR (CFM)	100	440	400	400	480	400	215	2,800	2,800	205	700	2,675
SUPPLY FAN												
MAX - SUPPLY AIR (CFM)	530	900	2,000	1,800	1,300	2,300	2,000	4,000	4,000	750	1,200	3,450
MIN - SUPPLY AIR (CFM)	265	520	1,000	900	650	1,150	1,000	2,804	2,804	375	880	2,682
EXTERNAL STATIC ("WC)	0.90	1.90	0.90	0.90	0.90	0.90	1.25	0.90	0.90	1.25	0.90	0.90
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	1.5	1.5	2.75	2.75	1.5	2.75	2.75	2.8	2.8	1.5	1.5	2.8
EXHAUST FAN												
MAX - SUPPLY AIR (CFM)	530	900	2,000	1,800	1,300	2,300	2,000	4,000	4,000	750	1,200	3,450
MIN - SUPPLY AIR (CFM)	265	520	1,000	900	650	1,150	1,000	2,804	2,804	375	880	2,682
EXTERNAL STATIC ("WC)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	0.4	0.4	0.7	0.7	0.4	0.7	0.7	0.8	0.8	0.4	0.4	0.8
HEATING COIL - ELEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CAPACITY (KW)	-	-	-	-	-	-	-	-	-	-	-	-
EAT (DEG. C)	-	-	-	-	-	-	-	-	-	-	-	-
LAT (DEG. C)	-	-	-	-	-	-	-	-	-	-	-	-
COOLING CAPACITY - HEAT PUMP												
SENSIBLE CAPACITY (BTUH)	10,582	29,333	47,088	43,632	30,160	52,272	41,294	132,432	132,432	19,381	33,954	128,144
TOTAL CAPACITY (BTUH)	11,925	34,628	55,800	50,625	30,713	63,135	45,900	135,000	135,000	22,275	37,260	133,515
TOTAL CAPACITY (TONS)	1.0	2.9	4.7	4.2	2.6	5.3	3.8	11.3	11.3	1.9	3.1	11.1
EAT DB (DEG. F)	76.5	85.2	76.8	77.4	81.7	76.0	74.1	91.3	91.3	78.9	87.9	93.5
EAT WB (DEG. F)	61.0	64.5	61.5	61.5	63.0	61.0	60.3	66.0	66.0	63.0	65.0	67.0
LAT DB (DEG. F)	58.0	55.0	55.0	55.0	60.2	55.0	55.0	60.6	60.6	55.0	61.7	59.1
LAT WB (DEG. F)	53.5	52.0	52.0	52.0	55.0	51.0	52.5	55.0	55.0	52.0	55.0	54.0
HEATING CAPACITY - HEAT PUMP												
HEATING CAPACITY (BTUH)	7,568	9,720	26,384	25,398	27,399	26,127	21,600	158,000	158,000	8,100	38,539	158,000
EAT (DEG. C)	63.9	45.0	63.5	62.6	57.1	64.4	45.0	45.0	45.0	45.0	49.0	45.0
LAT (DEG. C)	77.1	55.0	75.7	75.7	76.6	75.0	55.0	82.0	82.0	55.0	78.7	88.0
FILTERS												
PRE-FILTER	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7
MAIN FILTER	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13
ELECTRICAL CONNECTION												
CONNECTION (V/PH/CYC)	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60
LOAD (MCA)	13.0	15.0	20.0	20.0	15.0	22.0	20.0	24.0	24.0	15.0	15.0	24.0
NOTES	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

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11. NOT USED
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22. PROVIDE HINGED DOOR ACCESSS
23. PROVIDE MULTIPLE ZONE VAV CONTROL - WHERE APPLICABLE

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
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SEAL

PROJECT
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3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
MECHANICAL EQUIPMENT SCHEDULE

SHEET
M-601

AIR HANDLING UNIT SCHEDULE - 03

TAG	AHU-23B	AHU-23C	AHU-23D	AHU-24	AHU-25	AHU-26A	AHU-26B	AHU-26C	AHU-26D	AHU-26E
QUANTITY	1	1	1	1	1	1	1	1	1	1
LOCATION	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF	ROOF
SERVICE	AUTO TECH BAYS	AUTO TECH BAYS	AUTO TECH BAYS	SPECIALTY LAB	AUTO TECH SECURE	WELDING LAB	WELDING LAB	WELDING LAB	WELDING LAB	WELDING LAB
MANUFACTUER	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE	TRANE
SYSTEM TYPE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE	SINGLE ZONE
MODEL	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP	PRECEDENT - HEAT PUMP
MODEL NO.	WHC120H3.4.W	WHC120H3.4.W	WHC120H3.4.W	WHC092H3.4.W	WHC120H3.4.W	WHC120H3.4.W	WHC120H3.4.W	WHC120H3.4.W	WHC120H3.4.W	WHC120H3.4.W
TYPE (HTG / CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)	HEAT PUMP (HTG & CLG)
NOMINAL TONNAGE	10	10	10	7.5	10	10	10	10	10	10
COOLING EER	11.5	11.5	11.5	11.8	11.5	11.5	11.5	11.5	11.5	11.5
HEATING COP	3.63	3.63	3.63	3.5	3.63	3.63	3.63	3.63	3.63	3.63
OPERATING WEIGHT (LBS)	1,500	1,500	1,500	1,200	1,200	1,200	1,200	1,200	1,200	1,200
VENTILATION AIR (CFM)	2,675	2,675	2,675	1,200	2,400	2,760	2,760	2,760	2,760	2,760
SUPPLY FAN										
MAX - SUPPLY AIR (CFM)	3,450	3,450	3,450	2,000	3,500	4,000	4,000	4,000	4,000	4,000
MIN - SUPPLY AIR (CFM)	2,682	2,682	2,682	1,190	2,400	2,760	2,760	2,760	2,760	2,760
EXTERNAL STATIC ("WC)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	2.8	2.8	2.8	2.75	2.8	2.8	2.8	2.8	2.8	2.8
EXHAUST FAN										
MAX - SUPPLY AIR (CFM)	3,450	3,450	3,450	2,000	3,500	4,000	4,000	4,000	4,000	4,000
MIN - SUPPLY AIR (CFM)	2,682	2,682	2,682	1,190	2,400	2,760	2,760	2,760	2,760	2,760
EXTERNAL STATIC ("WC)	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
FAN TYPE	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED	HIGH STATIC VARIABLE SPEED
MOTOR (HP)	0.8	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8
HEATING COIL - ELEC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CAPACITY (KW)	-	-	-	-	-	-	-	-	-	-
EAT (DEG. C)	-	-	-	-	-	-	-	-	-	-
LAT (DEG. C)	-	-	-	-	-	-	-	-	-	-
COOLING CAPACITY - HEAT PUMP										
SENSIBLE CAPACITY (BTUH)	128,144	128,144	128,144	67,584	106,687	114,819	114,819	114,819	114,819	114,819
TOTAL CAPACITY (BTUH)	133,515	133,515	133,515	73,710	120,488	126,000	126,000	126,000	126,000	126,000
TOTAL CAPACITY (TONS)	11.1	11.1	11.1	6.1	10.0	10.5	10.5	10.5	10.5	10.5
EAT DB (DEG. F)	93.5	93.5	93.5	87.6	90.9	1.0	1.0	1.0	1.0	1.0
EAT WB (DEG. F)	67.0	67.0	67.0	65.0	66.0	91.0	91.0	91.0	91.0	91.0
LAT DB (DEG. F)	59.1	59.1	59.1	57.8	62.7	66.0	66.0	66.0	66.0	66.0
LAT WB (DEG. F)	54.0	54.0	54.0	53.0	55.0	64.4	64.4	64.4	64.4	64.4
						56	56	56	56	56
HEATING CAPACITY - HEAT PUMP										
HEATING CAPACITY (BTUH)	158,000	158,000	158,000	72,924	115,780	134,125	134,125	134,125	134,125	134,125
EAT (DEG. C)	45.0	45.0	45.0	49.4	45.0	45.0	45.0	45.0	45.0	45.0
LAT (DEG. C)	88.0	88.0	88.0	81.6	75.6	76.0	76.0	76.0	76.0	76.0
FILTERS										
PRE-FILTER	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7	MERV 7
MAIN FILTER	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13	MERV 13
ELECTRICAL CONNECTION										
CONNECTION (V/PH/CYC)	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60	460 / 3 / 60
LOAD (MCA)	24.0	24.0	24.0	20.0	24.0	24.0	24.0	24.0	24.0	24.0
NOTES	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL	ALL

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20. PROIVDE ALL STANDRAD FEATURES
21. PROVIDE DISCONNECT SWITCH
22. PROVIDE HINGED DOOR ACCESSS
23. PROVIDE MULTIPLE ZONE VAV CONTROL - WHERE...

DIFFUSERS AND GRILLES SCHEDULE

EQUIPMENT TAG	DESCRIPTION/TYPE	MANUFACTURER	SERVICE	MODEL NUMBER	REMARKS
SD-1	600x600 SQUARE PLAQUE DIFFUSER	PRICE	SUPPLY AIR	SPD-600x600	1,2,3
SD-2	300x300 SQUARE PLAQUE DIFFUSER	PRICE	SUPPLY AIR	SPD-300x300	1,2,3
SG-1	SUPPLY GRILLE	PRICE	SUPPLY AIR	520D -20mm	1,2,3
RFD-1	ROUND FLOOR DIFFUSER	PRICE	SUPPLY AIR	RFDD-DBS	1,2,3
RG-1	45 DEG SLOTTED RETURN GRILLE	PRICE	RETURN AIR	535D - L	1,2,3
EG-1	45 DEG SLOTTED EXHAUST GRILLE	PRICE	EXHAUST AIR	535D - L	1,2,3
LNS-1	LINEAR SUPPLY DIFFUSER	PRICE	SUPPLY AIR	SDS-100	1,2,4,5
LNS-2	LINEAR SUPPLY DIFFUSER	PRICE	SUPPLY AIR	SDS-50	1,2,4,5
LNR-1	LINEAR RETURN DIFFUSER	PRICE	RETURN AIR	SDR	1,2,4,5
LNR-2	RETURN AIR COVE LINEAR SUPPLY DIFFUSER	PRICE	RETURN AIR	LBPH 25B - 6"	1,2,3
L-1	REFER TO ARCHITECTURAL SPECIFICATION AND DRAWINGS	-	-	-	1,3

NOTES:

1. PROVIDE DIFFUSERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT WALLS AND CEILING SYSTEMS. REFER TO TO ARCHITECTURAL DRAWINGS.
2. NC LEVELS BASED ON OCTAVE BANDS 2-7 SOUND POWER LEVELS MINUS A ROOM ABSORPTION OF 10 DB, MEASURED PER ASHRAE 70-91.
3. CUSTOM COLOUR OF PRODUCT TO BE SELECTED BY THE ARCHITECT DURING THE SHOP DRAWINGS SUBMITTAL PROCESS.
4. REFER TO EQUIPMENT TAG FOR LINEAR DIFFUSER # OF SLOTS AND THICKNESS
5. CONTRACTOR TO REFER TO MECHANICAL AND ARCHITECTURAL DETAILS FOR SUPPLY AND INSTALLATION OF LINEAR GRILLE.

EXHAUST FAN SCHEDULE

EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL	AIR FLOW (CFM)	E. S. P. ("WC)	FAN (RPM)	MOTOR (HP)	ELEC CONN (V/PH/CYC)	DRIVE TYPE	SOUND LEVEL (SONES)	NOTES
EF-01	1	WASHROOM (W/R) EX FAN	ROOF	UPBLAST CENT ROOF EX FAN	GREENHECK	CUE-080-G	150	0.4	1,300	1/30	115/1/60	DIRECT	6.00	
EF-02	1	W/R AND CUSTODIAN EX FAN	ROOF	CENTRIFUGAL ROOF EX FAN	GREENHECK	GB-131	1,000	0.7	1,177	0.25	115/1/60	BELT	8.70	
EF-03	1	LOCKER RM AND W/R EX FAN	ROOF	CENTRIFUGAL ROOF EX FAN	GREENHECK	GB-091	800	0.7	1,552	0.25	115/1/60	BELT	10.30	
EF-04	1	W/R EX FAN	ROOF	CENTRIFUGAL ROOF EX FAN	GREENHECK	G-080-G	150	0.4	1,300	1/30	115/1/60	DIRECT	6.00	
EF-05	1	SMOG EMG EX FAN	ROOF	CENTRIFUGAL ROOF EX FAN	GREENHECK	GB-121	1,000	0.4	1,083	0.25	115/1/60	BELT	7.40	
EF-06	1	CUSTODIAN EX FAN	ROOF	CENTRIFUGAL ROOF EX FAN	GREENHECK	G-097-VG	100	0.4	1,025	0.25	115/1/60	DIRECT	3.80	

NOTES:

1. PROVIDE MOTORIZED DAMPER HARDWIRED TO FAN
2. ACOUSTIC LINED CABINET.
3. REFER TO MOTORLIST FOR ELECTRICAL REQUIREMENTS
4. PROVIDE VARIABLE SPEED DRIVE (VFD) CONTROL.
5. VFD'S TO BE PROVIDED IN NEMA 4 ENCLOSURES MOUNTED ON ROOF.
6. BELT DRIVE MOUNTED OUTSIDE OF AIR STREAM.
7. PROVIDE SEISMIC RATED ROOF CURB
8. PROVIDE SPARK RESISTANT RATED FAN
9. PROVIDE EXPLOSION PROOF RATED FAN

SHOP EXHAUST FAN SCHEDULE

EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL	AIR FLOW (CFM)	E. S. P. ("WC)	FAN (RPM)	MOTOR (HP)	ELEC CONN (V/PH/CYC)	DRIVE TYPE	SOUND LEVEL (SONES)	NOTES
EF-AM-01	1	M5 - LATHE UNITS	ADVANCED MANF LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-01	1	WELDING STATION EXHAUST	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-02	1	WELDING STATION EXHAUST	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-03	1	EXHAUST HOOD EX FAN	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-04	1	EXHAUST HOOD EX FAN	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-05	1	EXHAUST HOOD EX FAN	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-06	1	EXHAUST HOOD EX FAN	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL
EF-W-07	1	WELDING ROOM EX FAN	WELDING LAB ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK						460/3/60			ALL

NOTES:

1. PROVIDE VARIABLE SPEED DRIVE (VFD) CONTROL.
2. VFD'S TO BE PROVIDED IN NEMA 4 ENCLOSURES MOUNTED ON ROOF.
3. BELT DRIVE MOUNTED OUTSIDE OF AIR STREAM.
4. PROVIDE SEISMIC RATED ROOF CURB
5. PROVIDE SPARK RESISTANT RATED FAN
6. PROVIDE EXPLOSION PROOF RATED FAN

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Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE

MECHANICAL EQUIPMENT SCHEDULE

SHEET

M-602

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

0 1/4" 1/2" 1"

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SINGLE DUCT VAV BOX SCHEDULE

UNIT TAG	QTY (#)	SERVICE ROOM NAME	SERVICE ROOM NO.	MANF.	MODEL NUMBER	MAX AIRFLOW (CFM) (EACH)	MIN AIRFLOW (CFM) (EACH)	ELEC CONN (V/PH/CYC)	ELECTRIC RE-HEAT COIL DESIGN HEATING LOAD BTUH (EA)	KW (EA) (EACH)	ACTUAL SIZE KW (EA) (EACH)	COIL AIR FLOW (CFM-EA)	EAT (DEG F)	LAT (DEG F)
AHU-1														
VAV-1.1	1	MGR OFFICE	-	PRICE	SDV-5	310	155	203/3/60	8,267	2.42	5.0	155	55	104
VAV-1.2	1	OFFICES	-	PRICE	SDV-6	450	225	208/3/60	14,853	4.35	6.0	225	55	115
VAV-1.3	1	DEAN OFFICE	-	PRICE	SDV-6	450	225	208/3/60	11,113	3.26	6.0	225	55	101
VAV-1.4	1	RECPT ADMIN	-	PRICE	SDV-5	300	150	208/3/60	8,142	2.38	5.0	150	55	105
VAV-1.5	1	ENTRY VEST	-	PRICE	SDV-5	350	175	208/3/60	7,666	2.25	5.0	175	55	96
VAV-1.6	1	COORIDOR	-	PRICE	SDV-6	400	200	208/3/60	7,630	2.23	6.0	200	55	90
VAV-1.7	1	ADJUNCT OFFICE	-	PRICE	SDV-5	360	180	208/3/60	12,012	3.52	5.0	180	55	115
AHU-2														
VAV-2.1	1	CONF ROOM	-	PRICE	SDV-8	750	375	208/3/60	19,304	5.65	11.0	375	55	103
VAV-2.2	1	RECORDS ROOM	-	PRICE	SDV-5	300	150	208/3/60	9,910	2.90	5.0	150	55	115
AHU-8														
VAV-8.1	1	SIM ROOM	-	PRICE	SDV-8	750	375	208/3/60	11,556	3.38	11.0	375	55	84
VAV-8.2	1	SIM ROOM	-	PRICE	SDV-8	750	375	208/3/60	11,556	3.38	11.0	375	55	84
VAV-8.3	1	SIM ROOM	-	PRICE	SDV-8	750	375	208/3/60	11,556	3.38	11.0	375	55	84
VAV-8.4	1	EMS STORAGE	-	PRICE	SDV-8	750	375	208/3/60	11,556	3.38	11.0	375	55	84
AHU-14														
VAV-14.1	1	LOCKER ROOM	-	PRICE	SDV-5	300	220	208/3/60	9,849	2.88	5.0	220	55	96.5
VAV-14.2	1	LOCKER ROOM	-	PRICE	SDV-7	600	300	208/3/60	14,084	4.13	9.0	300	55	98.5
AHU-19														
VAV-19.1	1	OFFICES	-	PRICE	SDV-7	600	300	208/3/60	14,084	4.13	9.0	300	55	99
VAV-19.2	1	OFFICES	-	PRICE	SDV-7	600	300	208/3/60	14,084	4.13	9.0	300	55	99
VAV-19.3	1	ENTRY	-	PRICE	SDV-8	800	400	208/3/60	21,120	6.19	11.0	400	55	104
AHU-21														
VAV-21.1	1	SMOG OFFICE	-	PRICE	SDV-5	350	175	208/3/60	8,837	2.59	5.0	175	55	102
VAV-21.2	1	SMOG WAITING	-	PRICE	SDV-6	400	200	208/3/60	10,399	3.05	6.0	200	55	103

VEHICLE EXHAUST FAN SCHEDULE

EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL	AIR FLOW (CFM)	E. S. P. ("WC)	FAN (RPM)	MOTOR (HP)	ELEC CONN (V/PH/CYC)	DRIVE TYPE	SOUND LEVEL (SONES)	NOTES
EF-V-1	1	HE-1 THRU HE-3	AUTOBAY - ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK	TCBRU-2-10	1,065	1.7	2,819	1.0	460/3/60	BELT	17.30	ALL
EF-V-2	1	HE-4 THRU HE-6	AUTOBAY - ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK	TCBRU-2-10	1,065	1.7	2,819	1.0	460/3/60	BELT	17.30	ALL
EF-V-3	1	HE-7 THRU HE-9	AUTOBAY - ROOF	TUBULAR CENTRIFUGAL UPBLAST EX...	GREENHECK	TCBRU-2-10	1,065	1.7	2,819	1.0	460/3/60	BELT	17.30	ALL

NOTES:

1. PROVIDE VARIABLE SPEED DRIVE (VFD) CONTROL.
2. VFD'S TO BE PROVIDED IN NEMA 4 ENCLOSURES MOUNTED ON ROOF.
3. BELT DRIVE MOUNTED OUTSIDE OF AIR STREAM.
3. PROVIDE SEISMIC RATED ROOF CURB
4. PROVIDE SPARK RESISTANT RATED FAN
5. PROVIDE EXPLOSION PROOF RATED FAN

VEHICLE EXHAUST REEL SCHEDULE

EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	MODEL TYPE	MODEL (NO.)	AIR FLOW (CFM)	P. DROP ("WC)	ELEC (V/PH/CYC)	ELEC LOAD (KVA)	NOTES
HE-1	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-2	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-3	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-4	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-5	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-6	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-7	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-8	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL
HE-9	1	VEHICLE REEL EXHAUST	AUTO TECH BAYS	MOTORIZED HOSE REEL EXHAUST	NEDERMAN	EX HS REEL - 865	20803885	355	1.00	120/1/60	325	ALL

NOTES:

1. PROVIDE A NFC-3 HOSE
2. COMPLETE WITH HOSE SECTION
3. WIDE BODY TYPE
4. 150 DIA HOSE
5. 7.5M HOSE LENGTH
6. ELECTRICAL MOTOR DRIVEN
7. PROVIDE PENDANT CONTROL WITH CABLE BRACKET
8. PROVIDE WITH TRANSMITTER WITH WALL BRACKET
9. PROVIDE WITH CEILING MOUNTING BRACKET
10. 8" EXHAUST CONNECTION

COMPUTER ROOM AC UNIT SCHEDULE

EQUIPMENT TAG	QTY	SERVICE	LOCATION	TYPE	MANUFACTURER	AC UNIT MODEL NO.	CONDENSING UNIT MODEL NO.	EVAPORATOR UNIT MODEL NO.	NOMINAL COOLING CAPACITY (TONS)	I/D AIR FLOW (CFM)	I/D ESP ("WC)	I/D FAN (HP)	CLG CAP. TOTAL (BTUH)	CLG CAP. SENS (BTUH)	RM SETPOINT (DEG F / RH %)	ELEC REHEAT CAP (KW)	HUMIDICATION CAP. (LBS/HR)	ELEC (V/PH/CYC)	POWER (FLA, OPD)	NOTES
CRAC-1A & 1B	2	DEDICATED COOLING SYSTEM	IDF ROOM	COMPUTER ROOM AC UNIT	LIEBERT	LIEBERT MINI-MATE - MMD96E	PFH096A-LN	MMD96E	8.0	5,000	0.4	3.0	90,400	77,900	72 / 50%	11.5	10.0	460/3/60	27.2, 35	ALL
CRAC-2A & 2B	2	DEDICATED COOLING SYSTEM	MDF ROOM	COMPUTER ROOM AC UNIT	LIEBERT	LIEBERT MINI-MATE - MMD96E	PFH096A-LN	MMD96E	8.0	5,000	0.4	3.0	90,400	77,900	72 / 50%	11.5	10.0	460/3/60	27.2, 35	ALL
CRAC-3A & 3B	2	DEDICATED COOLING SYSTEM	ELECTRICAL ROOM	COMPUTER ROOM AC UNIT	LIEBERT	LIEBERT MINI-MATE - MMD96E	PFH096A-LN	MMD96E	8.0	5,000	0.4	3.0	90,400	77,900	72 / 50%	11.5	10.0	460/3/60	27.2, 35	ALL

NOTES:

1. UNIT TO BE SINGLE POINT POWER CONNECTION
2. PROVIDE ELECTRIC REHEAT COIL.
3. PROVIDE HUMIDIFIER OPTION.
4. PROVIDE SEPARATE WATER GLYCOL CONDENSING UNIT.
5. PROVIDE LCD PROGRAMMABLE THERMOSTAT CONNECT TO BOTH UNITS
6. CONNECT ALARMS TO DDC SYSTEM.
7. PROVIDE CONDENSATE PAN AND DRAIN UNDER UNIT.
8. PROVIDE SMOKE DETECTOR AND ALARM OPTION.
9. PROVIDE MERV 8 EQUIVALENT FILTERS ON UNIT.
10. PROVIDE PACKAGED CONDENSATE PUMP.
11. PROVIDE INTERNAL TRAPPING FOR DRAIN.
12. BASED ON 72 DEG F DB / 60 DEG F WB - DESIGN CONDITION
13. PROVIDE FREE COOLING OPTION / SECTION

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC _____ FLS _____ SS _____
DATE _____

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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
MECHANICAL EQUIPMENT SCHEDULE

SHEET
M-603

LAS POSITAS PUBLIC SAFTEY BUILDING — **DATE: 3-Jan-19**

HVAC MOTORLIST - 50% DESIGN DEVELOPMENT

UNIT NUMBER	QTY	UNIT DESCRIPTION	UNIT LOCATION / SERVICE	EMG PWR REQUIRED (YES/NO)	ELEC LOAD (AS NOTED) (EACH)	VOLT	PH	EQUI... S	EQUI... I	EQUI... C	STAR... S	STAR... I	STAR... C	TYPE	CONT... S	CONT... I	CONT... C	TYPE	NOTES
		AIR HANDLING UNITS																	
AHU-1	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-1	1	SEPARATE LIGHTING CONNECTION	AHU-1	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-2	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	11.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-2	1	SEPARATE LIGHTING CONNECTION	AHU-2	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-3 & 4	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-3 & 4	2	SEPARATE LIGHTING CONNECTION	AHU-3 & 4	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-5	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	11.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-5	1	SEPARATE LIGHTING CONNECTION	AHU-5	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-6 & 7	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-6 & 7	2	SEPARATE LIGHTING CONNECTION	AHU-6 & 7	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-8 & 9	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	15.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-8 & 9	2	SEPARATE LIGHTING CONNECTION	AHU-8 & 9	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-10 -> 12	3	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-10 -> 12	3	SEPARATE LIGHTING CONNECTION	AHU-10, 11, 12	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-13	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	13.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-13	1	SEPARATE LIGHTING CONNECTION	AHU-13	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-14	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	15.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-14	1	SEPARATE LIGHTING CONNECTION	AHU-14	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-15 & 16	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-15 & 16	2	SEPARATE LIGHTING CONNECTION	AHU-15 & 16	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-17	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	15.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-17	1	SEPARATE LIGHTING CONNECTION	AHU-17	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-18	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	22.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-18	1	SEPARATE LIGHTING CONNECTION	AHU-18	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-19	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-19	1	SEPARATE LIGHTING CONNECTION	AHU-19	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-20A & 20B	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	24.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT- 20A & 20B	2	SEPARATE LIGHTING CONNECTION	AHU-20A & 20B	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-21 & 22	2	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	15.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-21 & 22	2	SEPARATE LIGHTING CONNECTION	AHU-21 7 22	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-23A -> 23D	4	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	24.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-23A -> 23D	4	SEPARATE LIGHTING CONNECTION	AHU-23A -> 23D	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-24	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	20.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-24	1	SEPARATE LIGHTING CONNECTION	AHU-24	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-25	1	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	24.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-25	1	SEPARATE LIGHTING CONNECTION	AHU-25	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
AHU-26A -> 26E	5	ROOF TOP PACKAGE HEAT PUMP AHU	ROOF	NO	24.0 MCA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,2,4
LT-26A -> 26E	5	SEPARATE LIGHTING CONNECTION	AHU-26A -> 26E	NO	15.0 AMPS	115	1	MECH	MECH	ELEC	-	-	-	-	MECH	MECH	MECH	SW	
		DEDICATED COOLING SYSTEMS																	
CRAC-1A & 1B	2	IDF ROOM - COMPUTER ROOM AC UNIT	I/D - IDF ROOM / O/D - ROOF	NO	27.2 FLA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,3
CRAC-2A & 2B	2	MDF ROOM - COMPUTER ROOM AC UNIT	I/D - MDF ROOM / O/D - ROOF	NO	27.2 FLA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,3
CRAC-3A & 3B	2	ELEC ROOM - COMPUTER ROOM AC UNIT	I/D - ELEC ROOM / O/D - ROOF	NO	27.2 FLA	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	DDC	1,3
		EXHAUST FANS																	
EF-01	1	WASHROOM (W/R) EX FAN	ROOF	NO	1/30 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-02	1	W/R AND CUSTODIAN EX FAN	ROOF	NO	0.25 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-03	1	LOCKER RM AND W/R EX FAN	ROOF	NO	0.25 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-04	1	W/R EX FAN	ROOF	NO	1/30 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-05	1	SMOG EMG EX FAN	ROOF	NO	0.25 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-06	1	CUSTODIAN EX FAN	ROOF	NO	0.25 HP	115	1	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
		SHOP EXHAUST FANS																	
EF-AM-01	1	M5 - LATHE UNITS	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-01	1	WELDING STATION EXHAUST	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-02	1	WELDING STATION EXHAUST	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-03	1	EXHAUST HOOD FAN	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-04	1	EXHAUST HOOD FAN	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-05	1	EXHAUST HOOD FAN	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-06	1	EXHAUST HOOD FAN	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-W-07	1	WELDING ROOM EXHAUST FAN	ROOF	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
		VEHICLE EXHAUST FANS																	
EF-V-1	1	VEHICLE NOZZLES EXHAUST FAN	ROOF	NO	1.0 HP	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-V-2	1	VEHICLE NOZZLES EXHAUST FAN	ROOF	NO	1.0 HP	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
EF-V-3	1	VEHICLE NOZZLES EXHAUST FAN	ROOF	NO	1.0 HP	460	3	MECH	MECH	ELEC	MECH	MECH	ELEC	VFD	MECH	MECH	MECH	DDC	1,3,4
		DUST COLLECTORS																	
DCS-1	1	DUST COLLECTOR SYSTEM	WELDING YARD	NO	TBD	460	3	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	INT	1
		VEHICLE EXHAUST REELS																	
HE-1 -> 9	9	VEHICLE REEL EXHAUST NOZZLES	AUTO TECH BAYS	NO	325 KVA	115	1	MECH	MECH	ELEC	MECH	MECH	MECH	INT	MECH	MECH	MECH	INT	1
		VARIABLE VOLUME BOXES (VAV)																	
VAV-1.1 -> 1.7	7	AHU-1 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
VAV-2.1 -> 2.2	2	AHU-2 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
VAV-8.1 -> 8.4	4	AHU-8 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
VAV-14.1 -> 14.2	2	AHU-14 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
VAV-19.1 -> 19.3	3	AHU-19 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
VAV-21.1 -> 21.2	2	AHU-21 VAV BOXES	REFER TO DWGS	NO	-	24v	-	MECH	MECH	MECH	-	-	-	-	MECH	MECH	MECH	DDC	6
		MISCELLANEOUS																	
CONTROL 120V	VS	120V CONTROL ELECTRICAL CONNECTION POINTS	REFER TO DRAWINGS	NO	-	115	1	ELEC	ELEC	ELEC	-	-	-	-	-	-	-	-	-
-	VS	DDC PANEL	REFER TO DRAWINGS	YES	-	115	1	MECH	MECH	ELEC	-	-	-	-	-	-	-	-	-

DEFINITIONS:

ELEC = ITEM IS IN THE ELECTRICAL (DIV 16) CONTRACTOR SCOPE OF WORK
MECH = ITEM IS IN THE MECHANICAL (DIV 15) SCOPE OF WORK
S = SUPPLIED BY
I = INSTALLED BY
C = CONNECTED BY
HOA = MAGNETIC STARTER C/W HAND/OFF/AUTO SWITCH & AUX STATUS CONTACTS
MAN = MANUAL STARTER
MAG = MAGNETIC STARTER C/W AUX STATUS CONTACTS
INT = CONTROL IS INTEGRAL TO UNIT (BY MANUFACTURER)
AQUA = PUMP CONTROLLED BY AQUASTAT
PH = POWER PHASE
SW = WIRED TO SWITCH/STARTER
HSW= EXHAUST HOOD MOUNTED START AND STOP SWITCH
VS = REFER TO DRAWINGS FOR QUANTITY OF UNITS
RSTAT = REVERSE ACTING THERMOSTAT
U-TSTAT = CONTROLLED BY THERMOSTAT
TSTAT = CONTROLLED BY THERMOSTAT
VFD = VARIABLE FREQUENCY DRIVE
OS = OCCUPANT SENSOR
VOLT = REQUIRED SUPPLY VOLTAGE
BCP = BOILER CONTROL PANEL
MCA = MINIMUM CIRCUIT AMPS
TBD = TO BE DETERMINED
FLA = UNIT FULL LOAD AMPS
MOP = MAXIMUM OVERCURRENT PROTECTION
HP = UNIT OR MOTOR HORSE POWER
DDC= DIRECT DIGITAL CONTROL SYSTEM
FAP = FIRE ALARM PANEL

NOTES:

1 ALL DISCONNECTS ARE TO S, I AND C BY ELECTRICAL
2 ALL DUCT MOUNTED SMOKE DETECTORS TO BE S, I AN C BY ELECTRICAL
3 SINGLE POINT CONNECTION UNIT
4 ENSURE HOA / VFD IS LOCATED IN A NEMA 4 (OUTDOOR RATED) ENCLOSURE.
5 UNIT VFD TO BE SUPPLIED WITH A BYPASS.
6 UNIT TO BE PROVIDED POWER VIA THE DDC SYSTEM (24V)

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Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

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MANAGEMENT

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CLIENT PROJECT NO: -

TITLE
MECHANICAL EQUIPMENT SCHEDULE

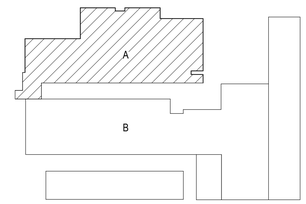
SHEET
M-604

1 BUILDING A - MECHANICAL OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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TITLE
BUILDING A - MECHANICAL OVERALL FLOOR PLAN

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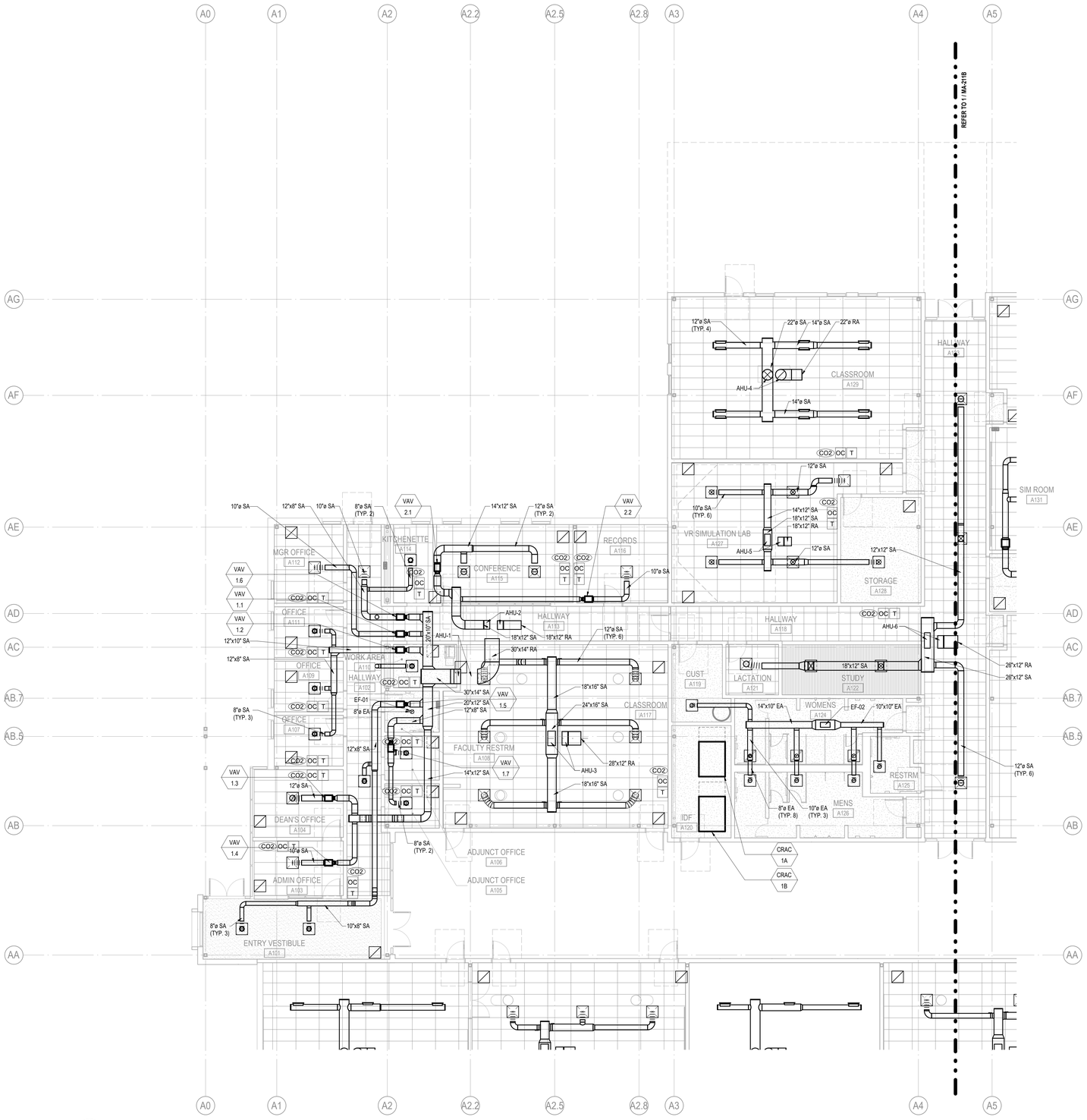
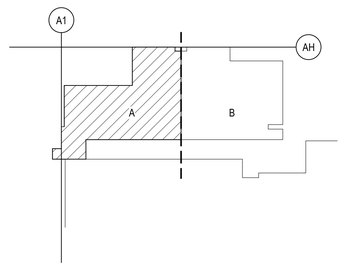


1 BUILDING A - MECHANICAL PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING A - MECHANICAL PARTIAL FLOOR PLAN - AREA A

SHEET
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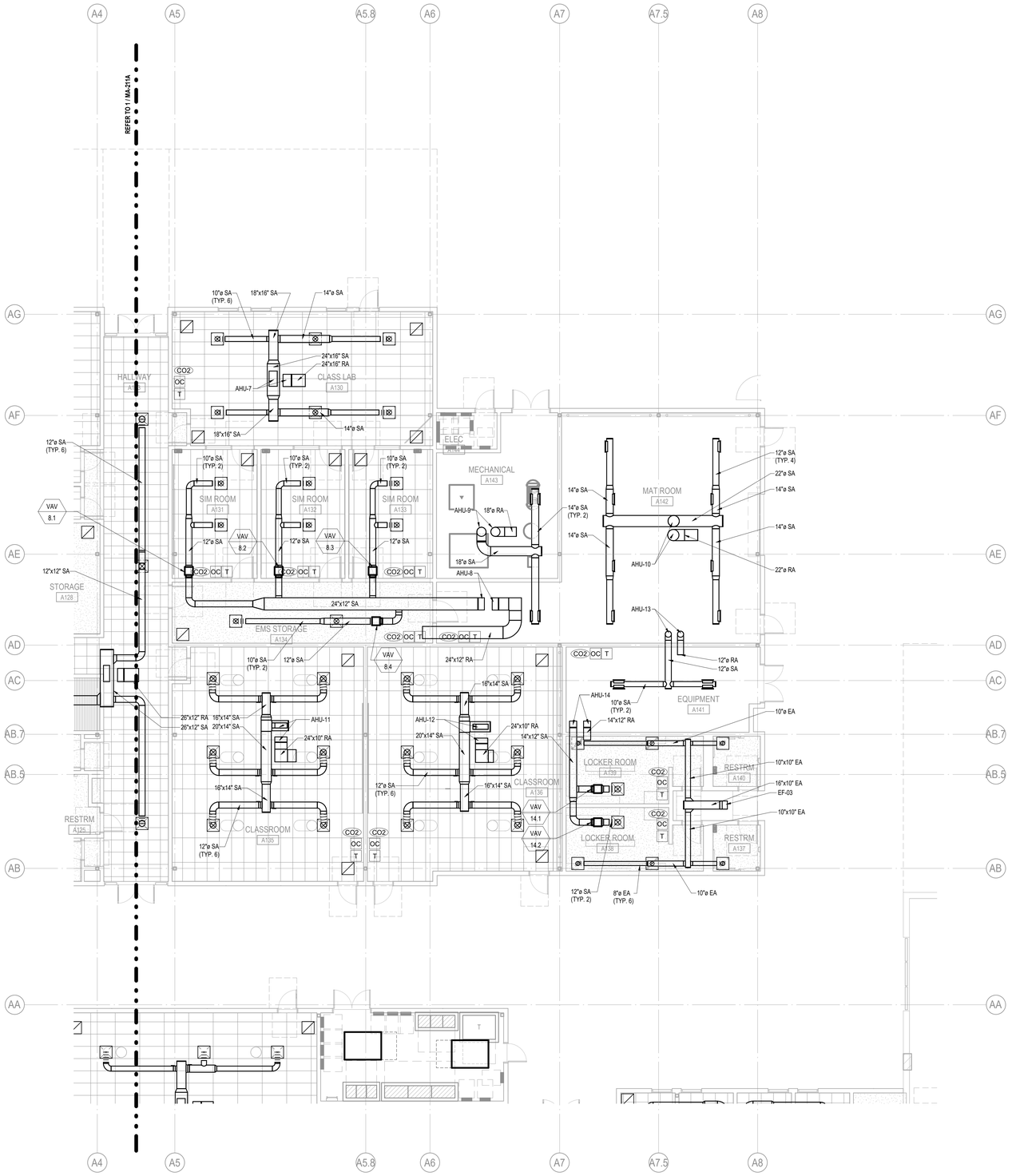
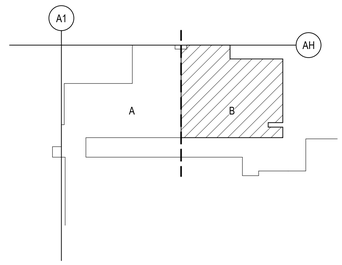


1 BUILDING A - MECHANICAL PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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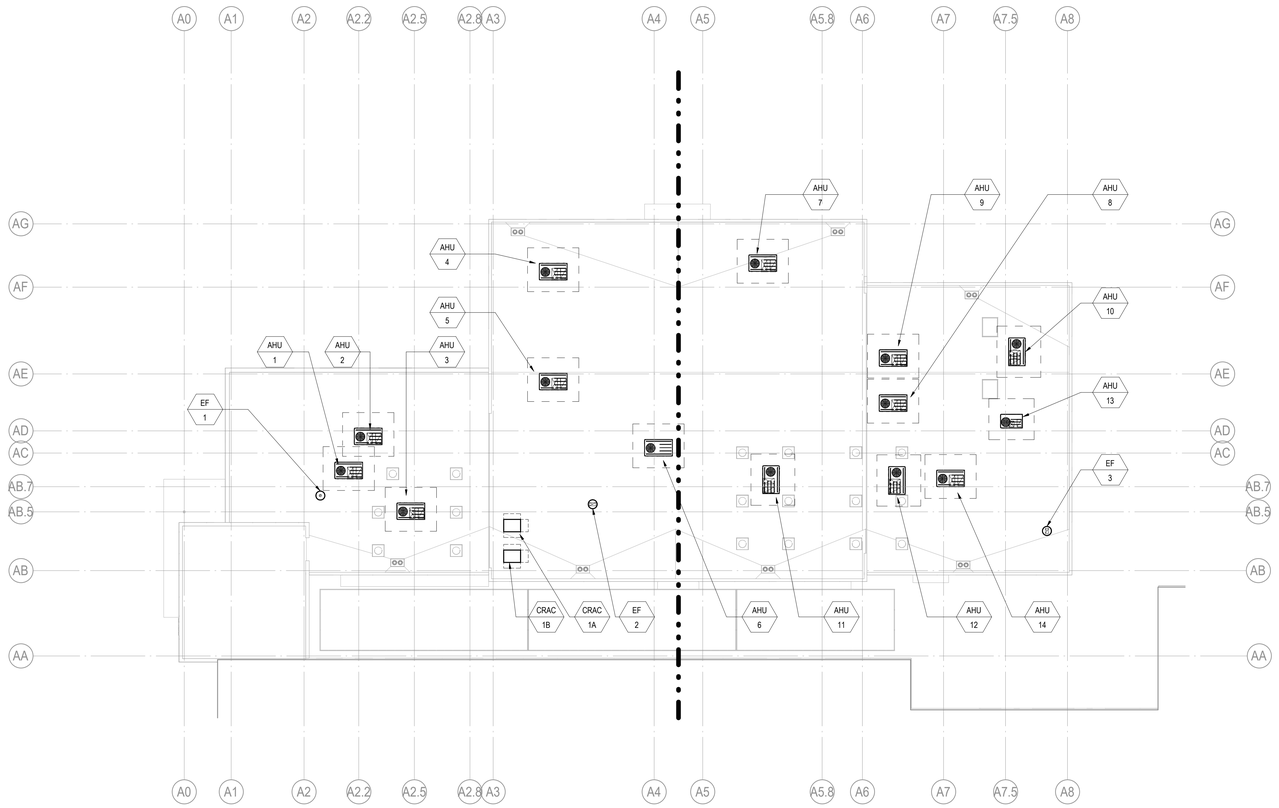
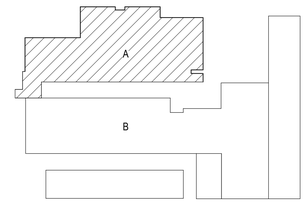


1 BUILDING A - MECHANICAL OVERALL ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING A - MECHANICAL OVERALL ROOF PLAN

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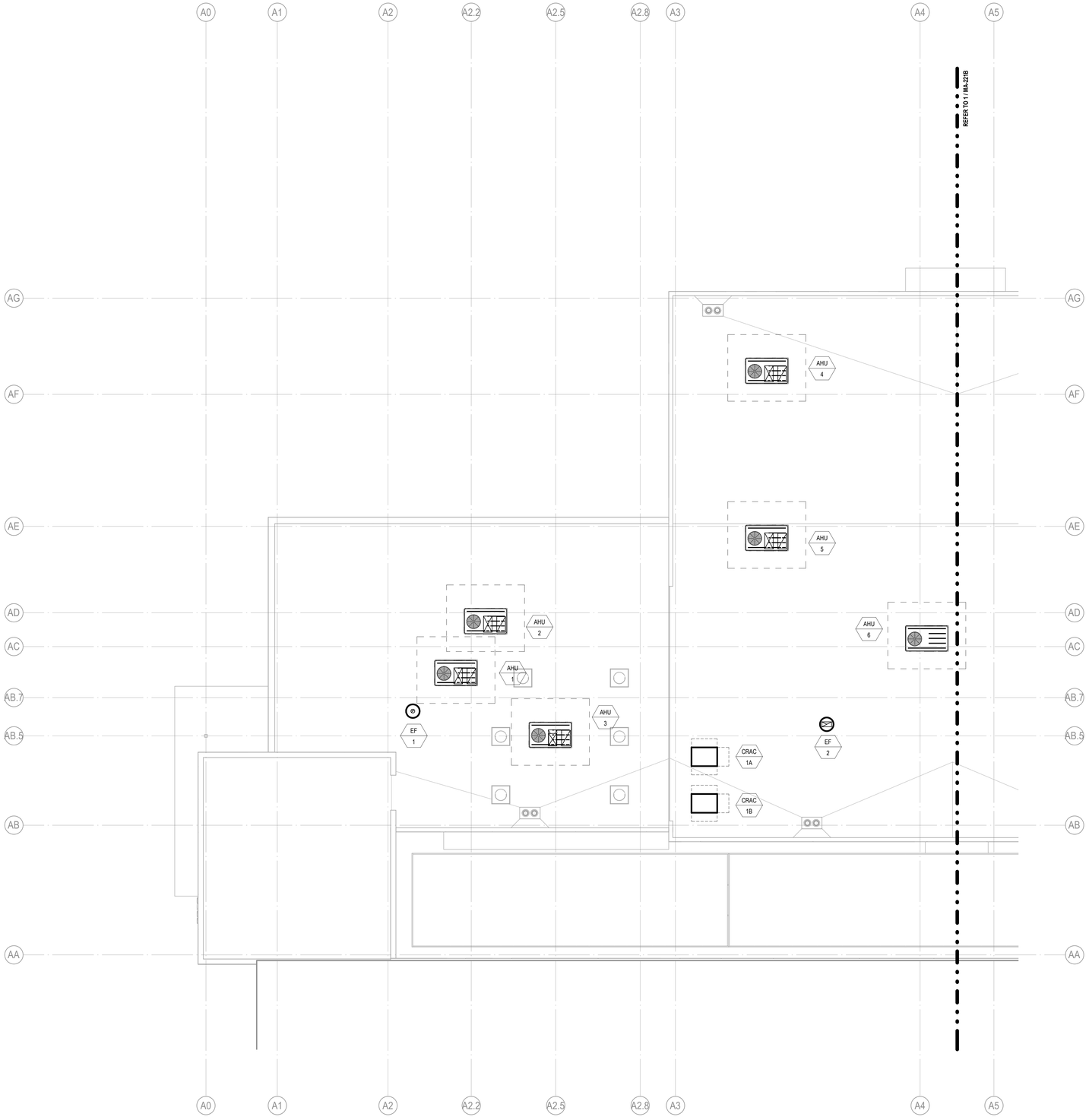
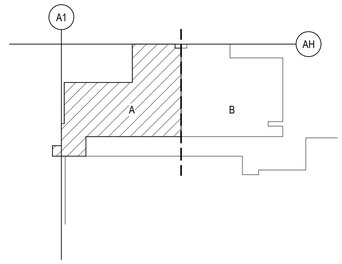


1 BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA A

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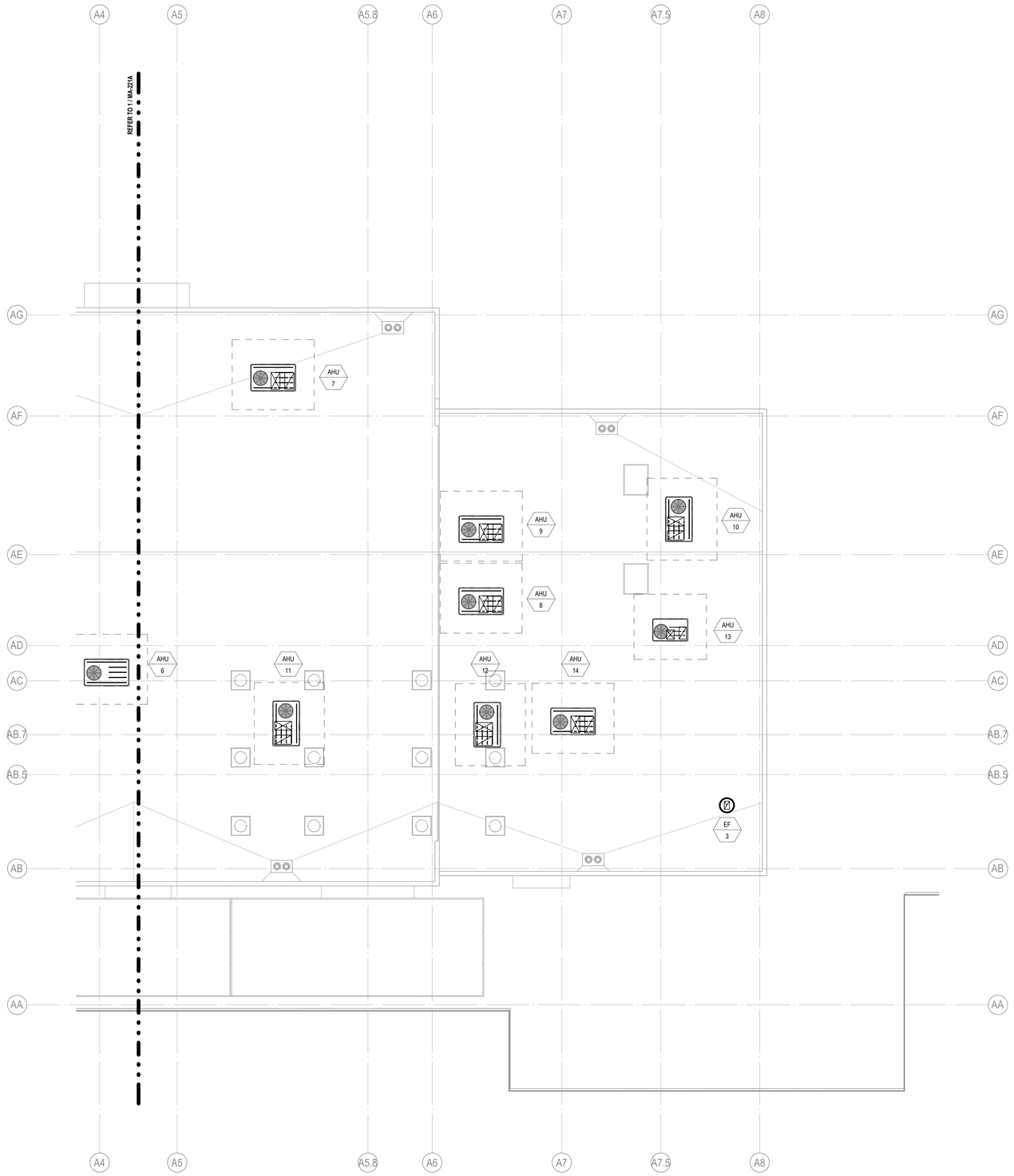
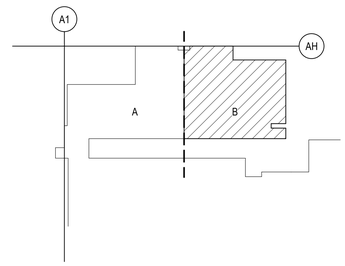


1 BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING A - MECHANICAL PARTIAL ROOF PLAN - AREA B

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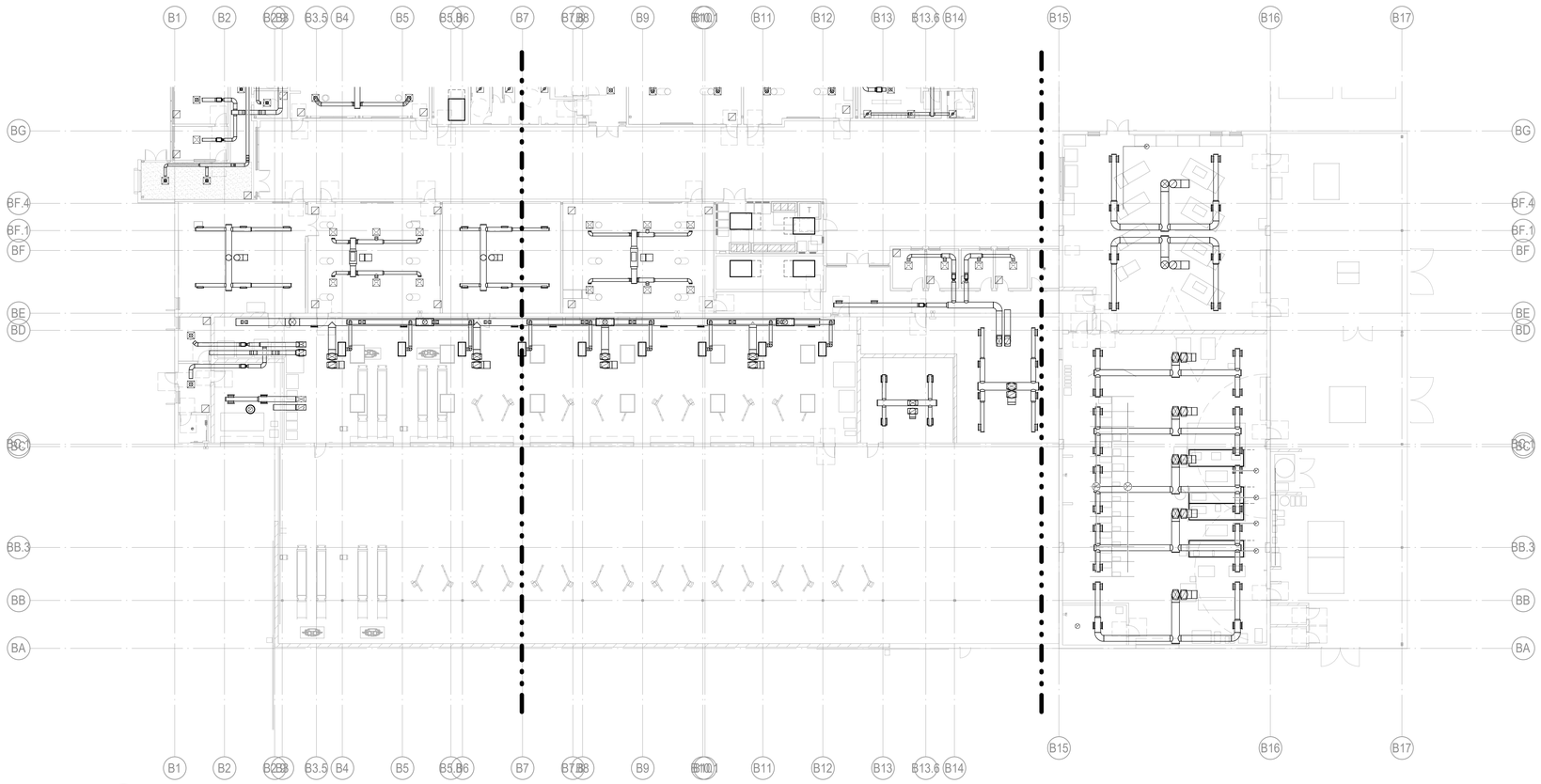
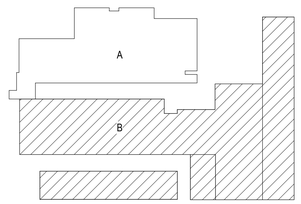


1 BUILDING B - MECHANICAL OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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TITLE

BUILDING B - MECHANICAL OVERALL FLOOR PLAN

SHEET

MB-211

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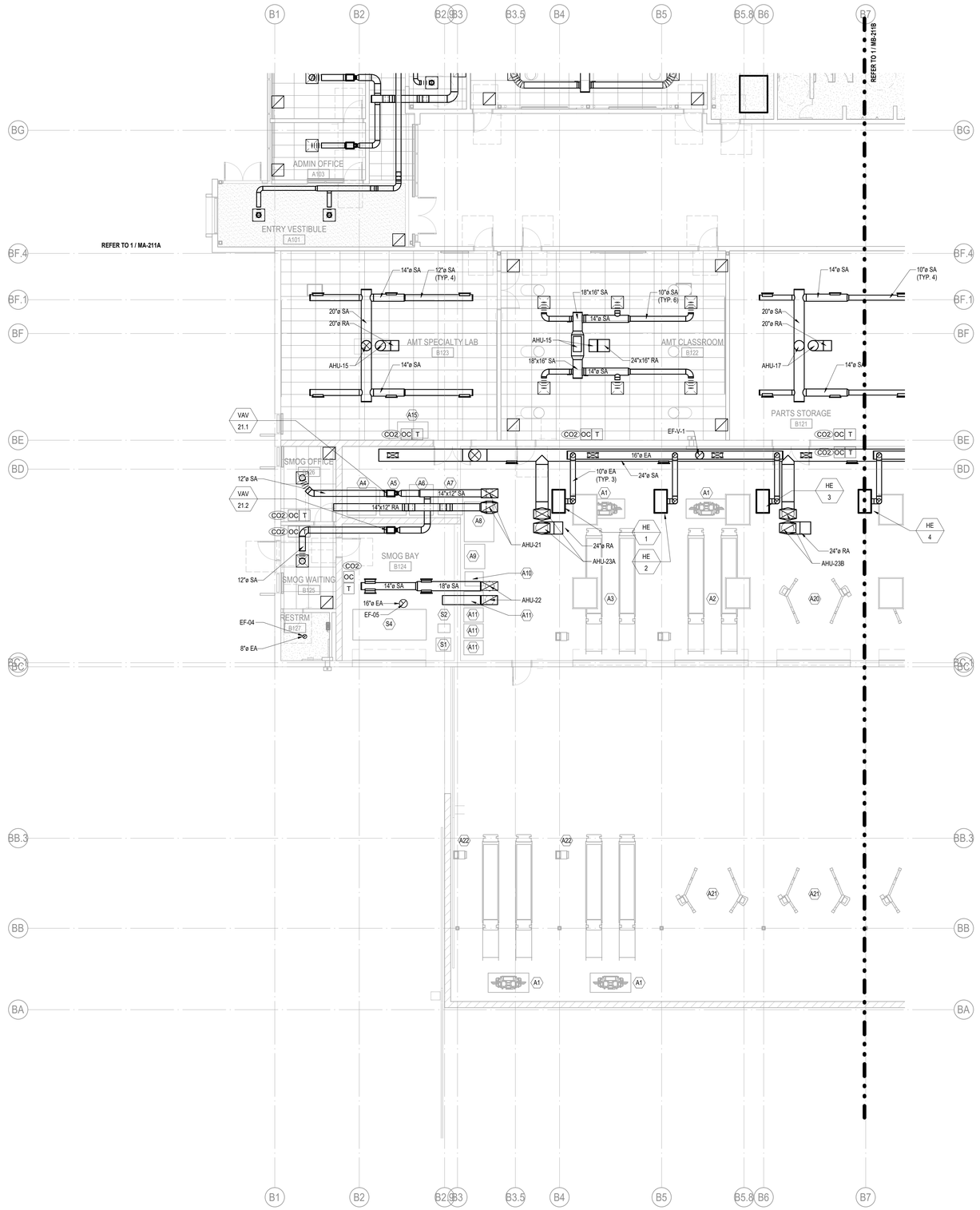


1 BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

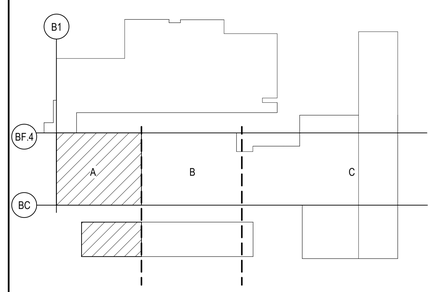
GENERAL NOTES

SHEET NOTES

EQUIPMENT SCHEDULE - AUTO TECH	
MARK	EQUIPMENT DESCRIPTION (WxHxD)
A1	HUNTER ALIGNMENT SYSTEM
A2	EXISTING FLUSH LIFT
A3	EXISTING PH LIFT
A4	HUNTER TC3800 TIRE MACHINE (54"x76"x57")
A5	HUNTER TIRE BALANCER (52"x72"x48")
A6	SNAP ON/ JB WHEEL BALANCER X
A7	PRESS
A8	SNAP ON/ JOHN BEAN TIRE MACHINE (58"x88"x78")
A9	DYNAPACK CHASSIS WATER TANK (48"x46"x40")
A10	DYNAPACK CHASSIS TOOL CART (36"x48"x28")
A11	DYNAPACK CHASSIS LOAD CELLS (28"x28"x38")
A15	HYBRID TRAINER (COMPUTER) (60"x65"x32")
A20	NEW ROTARY VEHICLE LIFT (168"x140"x84")
A21	EXISTING ROTARY VEHICLE LIFT (168"x140"x84")
A22	ROTARY VEHICLE LIFT POWER UNIT

EQUIPMENT SCHEDULE - SMOG BAY	
MARK	EQUIPMENT DESCRIPTION (WxHxD)
S1	SMOG REFEREE OIS INSPECTION CONSOLE (26"x65"x29")
S2	SMOG REFEREE LOW PRESSURE FUEL EVAPORATIVE TESTER (24"x38"x17")
S4	SMOG REFEREE BAR97 EMISSIONS DYNAMOMETER (144"x66"x60")

KEY PLAN



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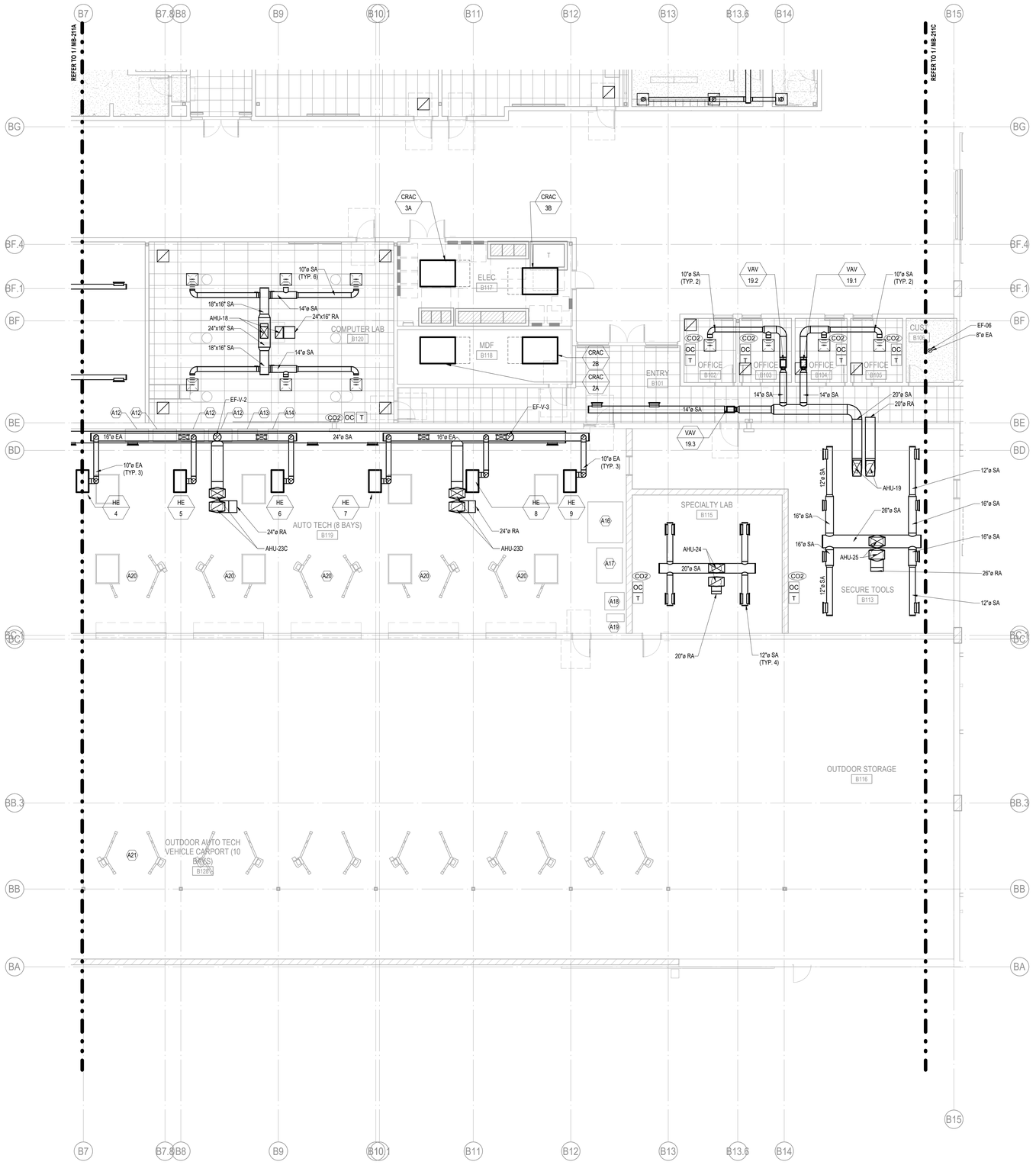


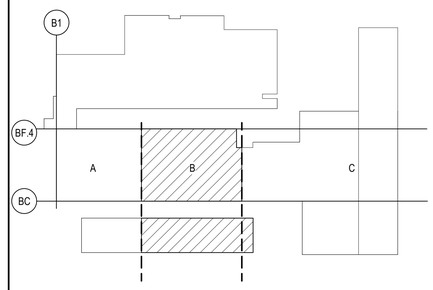
1 BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

EQUIPMENT SCHEDULE - AUTO TECH	
MARK	EQUIPMENT DESCRIPTION (WxHxD)
A12	AMMCO BRAKE LATHE (48"x68"x26")
A13	SNAP ON/ JOHN BEAN BRAKE LATHE (40"x71"x24")
A14	PEDESTAL GRINDER (19"x52"x24") X
A16	GM TIRE MACHINE (84"x79"x72") X
A17	GM TIRE BALANCER (72"x79"x53") X
A18	GM BRAKE LATHE (40"x71"x36")
A19	GM PRESS (36"x70"x16")
A20	NEW ROTARY VEHICLE LIFT (168"x140"x84")
A21	EXISTING ROTARY VEHICLE LIFT (168"x140"x84")

KEY PLAN



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PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

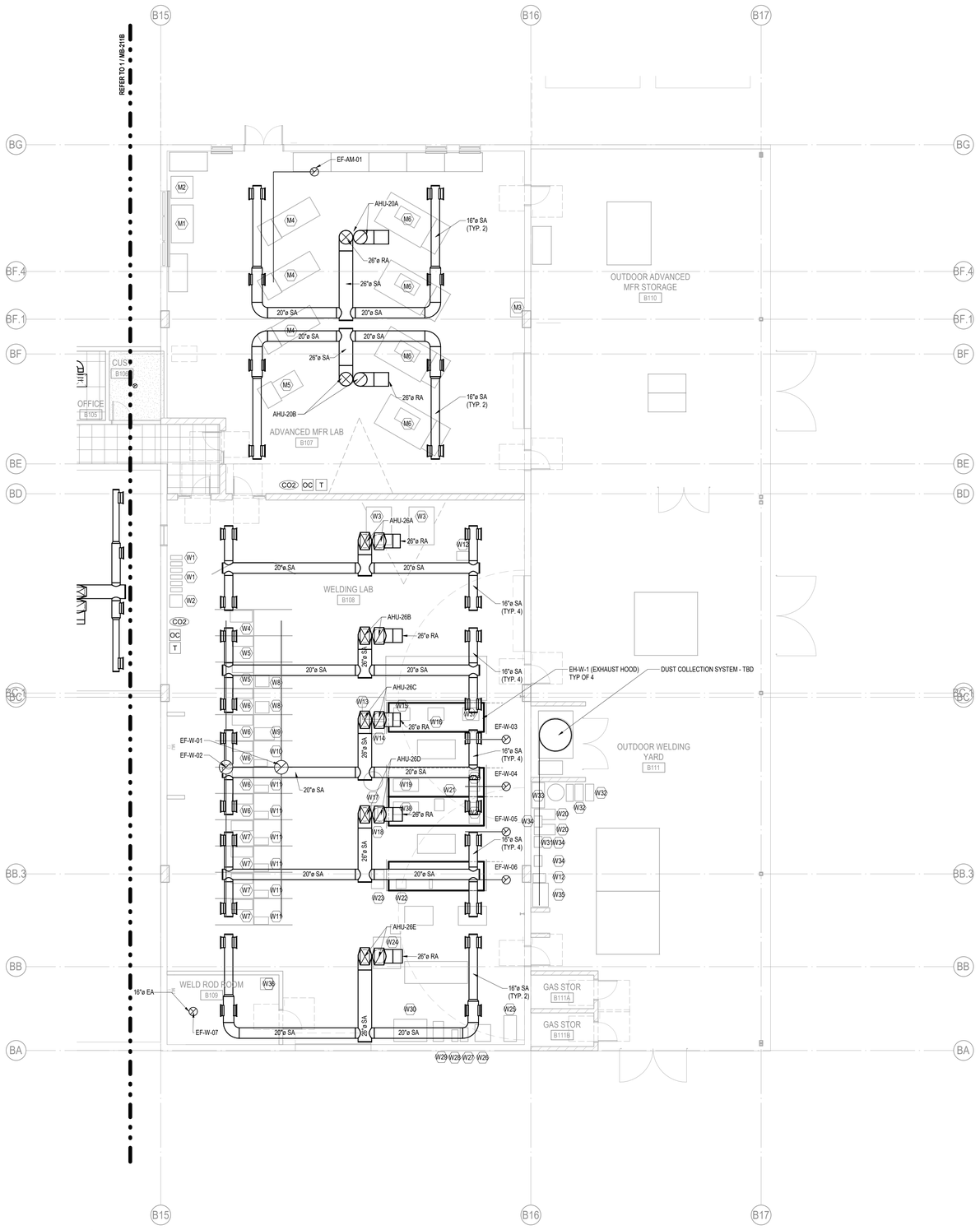
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA B

SHEET
MB-211B



1 BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA C
1/8" = 1'-0"

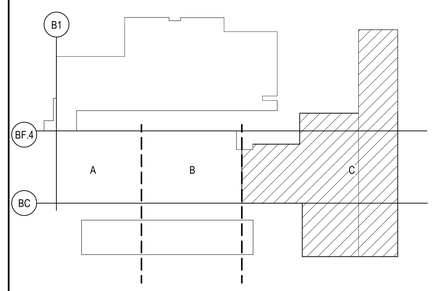
GENERAL NOTES

SHEET NOTES

EQUIPMENT SCHEDULE - ADVANCED MFR LAB		
Type Mark	EQUIPMENT DESCRIPTION (WxHxD)	COMMENTS
M1	LASER CUTTER	CUT SHEET REQUIRED
M2	3D PRINTER	CUT SHEET REQUIRED
M3	MEGA 250 COLD SAW AND COOLANT PUMP (28"x30"x36")	CUT SHEET REQUIRED
M4	SI LATHE 1630SX- HSSX (84"x71"x40")	-
M5	JET 1024 LATHE (49"x59"x34")	CUT SHEET REQUIRED
M6	SI MILL DPMSX2P (101"x92"x63-1/2")	-

EQUIPMENT SCHEDULE - WELDING LAB		
Type Mark	EQUIPMENT DESCRIPTION (WxHxD)	COMMENTS
W1	MILLER 280DX WELDING POWER SUPPLY (8"x12"x22")	-
W2	TIG BENCH GRINDER (24"x42"x24")	CUT SHEET REQUIRED
W3	K3962-1, LINCOLN VRTEX 360 (48"x72"x72")	-
W4	MILLER MP-75E (22-1/4"x34"x42")	-
W5	MILLER GMAW 252 (19"x30"x40")	-
W6	MILLER GMAW 251(19"x32"x39")	-
W7	MILLER 350P (19"x34"x41")	-
W8	K2822-1 PRECISION TIG 375 (22 "x 31 "x 26 ")	-
W9	450AMP, DIM 452 (21-1/8"x30"x35")	-
W10	K4160-1, FLEXCUT 125 (12-1/4"x20-3/4"x25-1/2")	-
W11	GMAW, POWER WAVE C300	-
W12	MILLER AC WELDER (17"x36"x24")	CUT SHEET REQUIRED
W13	TORCHMATE CNC PLASMA CUTTER (42"x60"x42")	CUT SHEET REQUIRED
W14	250 DX, SYNCHROWAVE (23"x36-1/4"x28") X	-
W15	ORBITAL WELDER	CUT SHEET REQUIRED
W16	SHT. SHEAR	-
W17	TRIANGLE ENGINEERING TEST PLATE BENDER (36" DIAMETER, 54"H)	CUT SHEET REQUIRED
W18	HYPERTHERM PLASMA CUTTER (12"x17"x24")	CUT SHEET REQUIRED
W19	PAN BREAK	-
W20	WELDER	CUT SHEET REQUIRED
W21	PIPE PRO 450 (17-3/32"x31"X19-3/32")	-
W22	PIPE ROLL	-
W23	PIPE ROTATORS AND TABLE (24 "x 54 "x 36 ")	-
W24	LASER STAR WELDER/ CUTTER AND AIR FILTER (LASER 60"x77"x52", AIR FILTER 17.5"x28-1/2"x19-1/2")	CUT SHEET REQUIRED
W25	UNIVERSAL FABRICATOR (24"x63"x49")	CUT SHEET REQUIRED
W26	IRON WORKER (30"x68"x32")	CUT SHEET REQUIRED
W27	ROCKWELL DRILL PRESS (15"x68"x26")	CUT SHEET REQUIRED
W28	OTMT DRILL PRESS (12"x63"x22")	CUT SHEET REQUIRED
W29	CHOP SAW AND TABLE (38"x60"x21")	CUT SHEET REQUIRED
W30	FMB HORIZONTAL BANDSAW (63"x75"x42")	CUT SHEET REQUIRED
W31	TIG WATER PUMP SYSTEM	-
W32	GRINDER (32"x55"x16")	CUT SHEET REQUIRED
W33	TRIANGLE ENGINEERING BACKING PLATE GRINDER (24"x48"x48")	CUT SHEET REQUIRED
W34	9682081D, 8" BENCH GRINDER (21"x15"x15")	CUT SHEET REQUIRED
W35	CYCLONE ABRASIVE BLAST CABINET (45"x60"x30")	CUT SHEET REQUIRED
W36	PHOENIX ROD OVEN (22" DIAMETER)	CUT SHEET REQUIRED
W37	SHEET ROLLER	-
W38	BENDER	-

KEY PLAN



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MANAGEMENT

LIONAKIS PROJECT NO:	019051
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TITLE
BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - AREA C

SHEET
MB-211C

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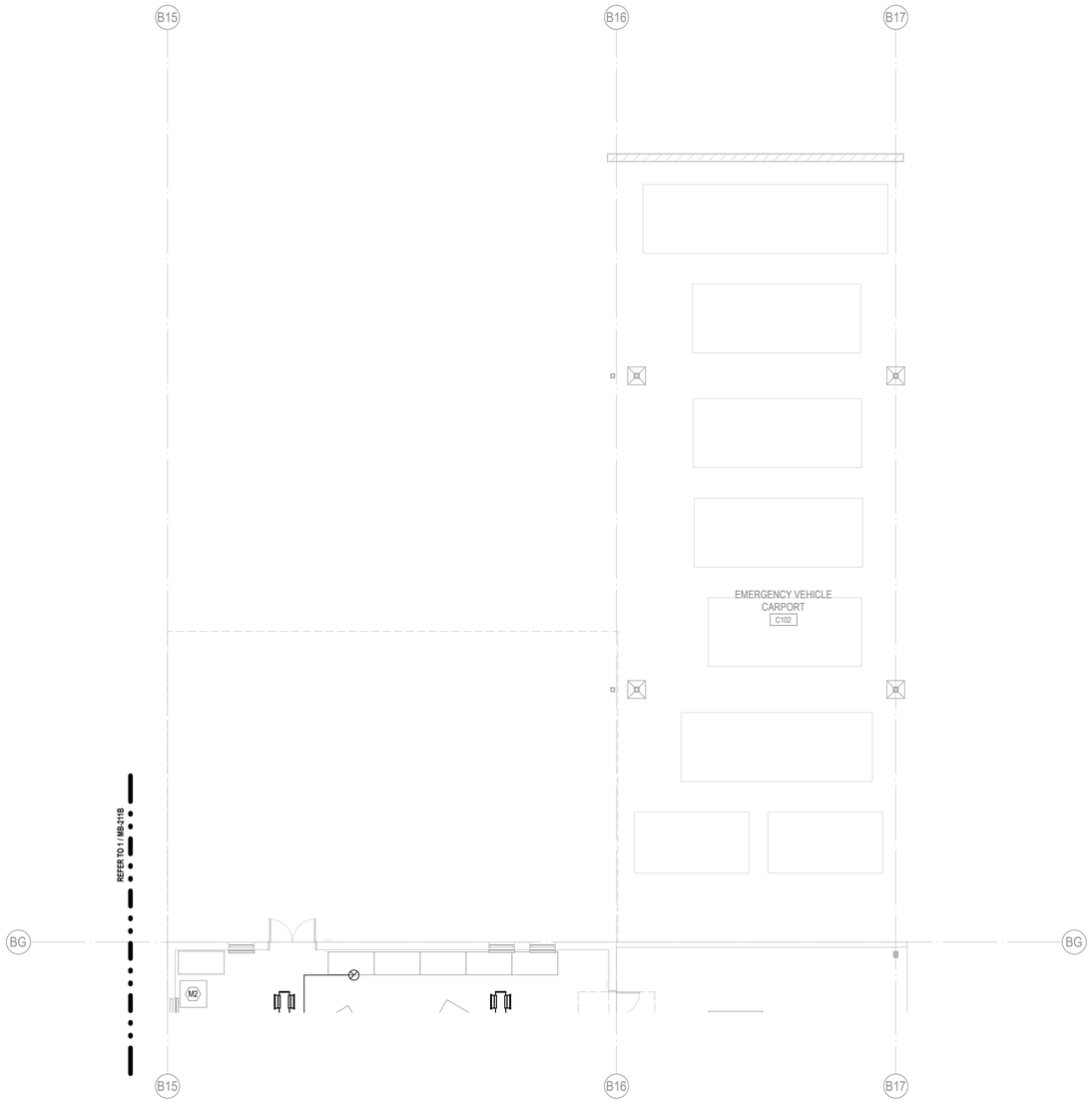
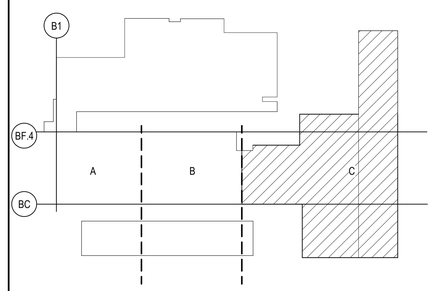


1 BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - CARPORT
1/8" = 1'-0"

KEY PLAN



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TITLE

BUILDING B - MECHANICAL PARTIAL FLOOR PLAN - CARPORT

SHEET

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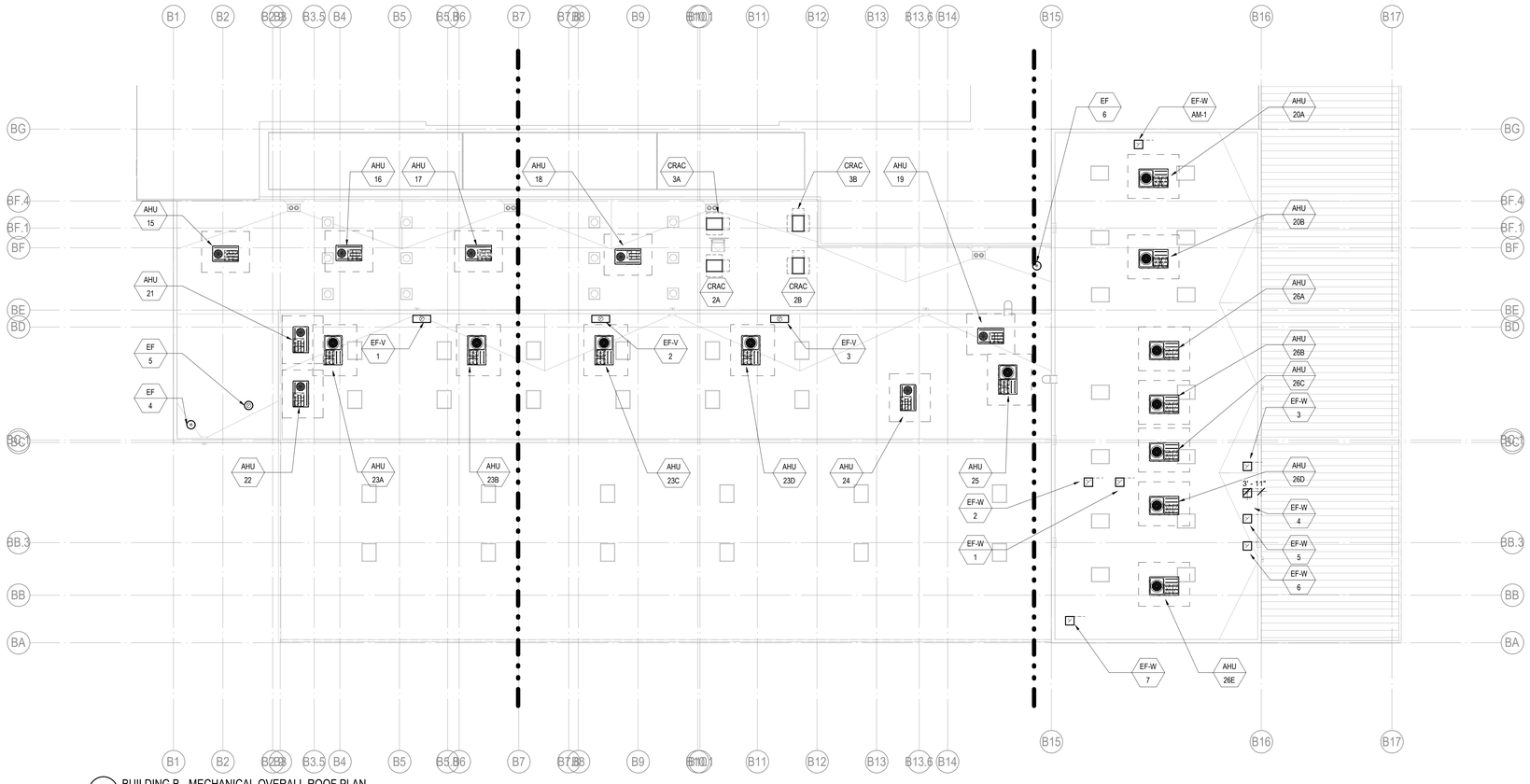
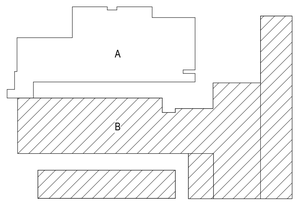


1 BUILDING B - MECHANICAL OVERALL ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



NORTH

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TITLE
BUILDING B - MECHANICAL OVERALL ROOF PLAN

SHEET
MB-221

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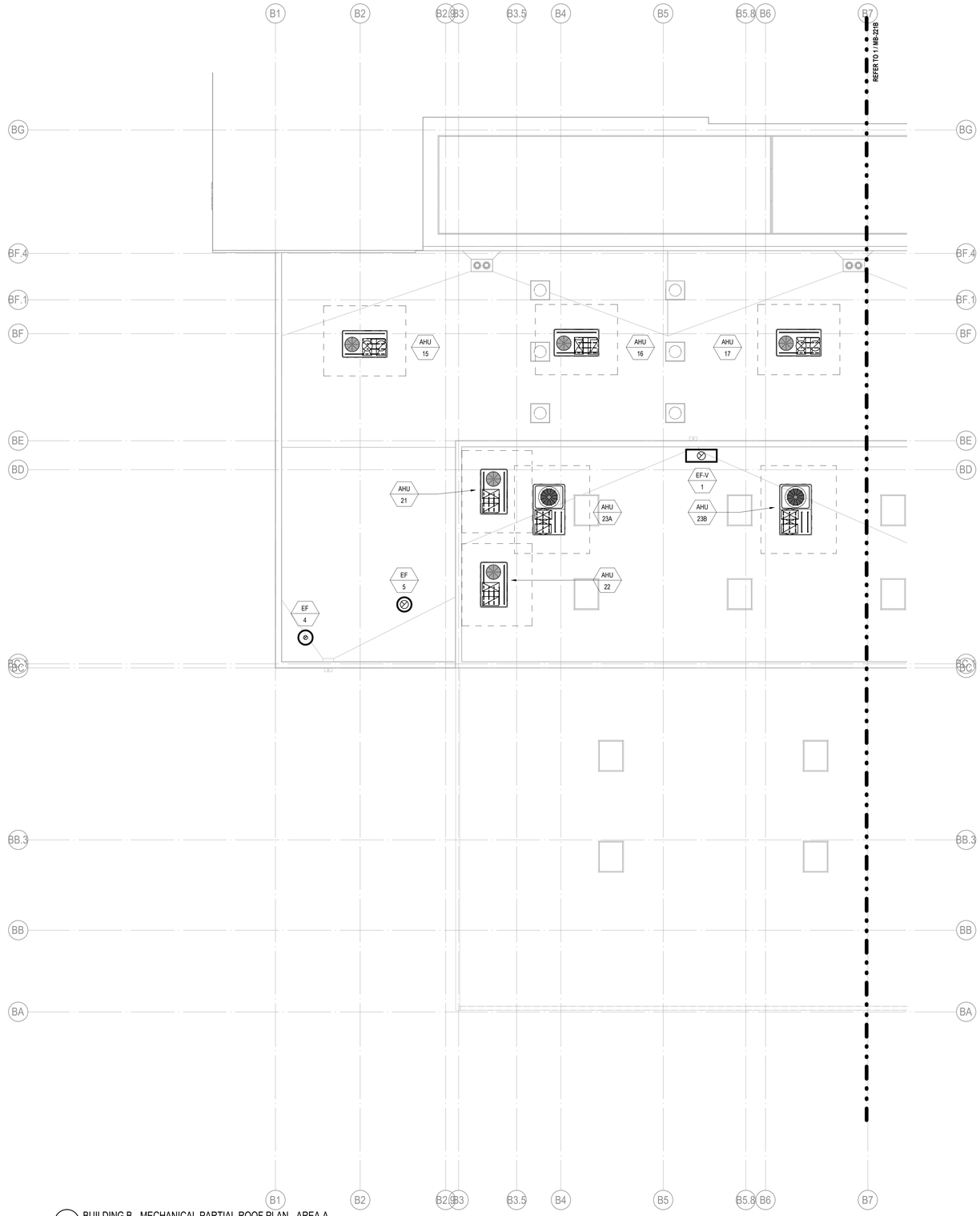
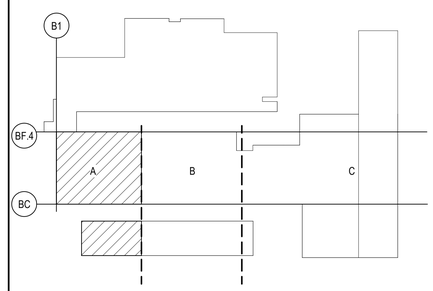


1 BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA A
1/8" = 1'-0"

KEY PLAN



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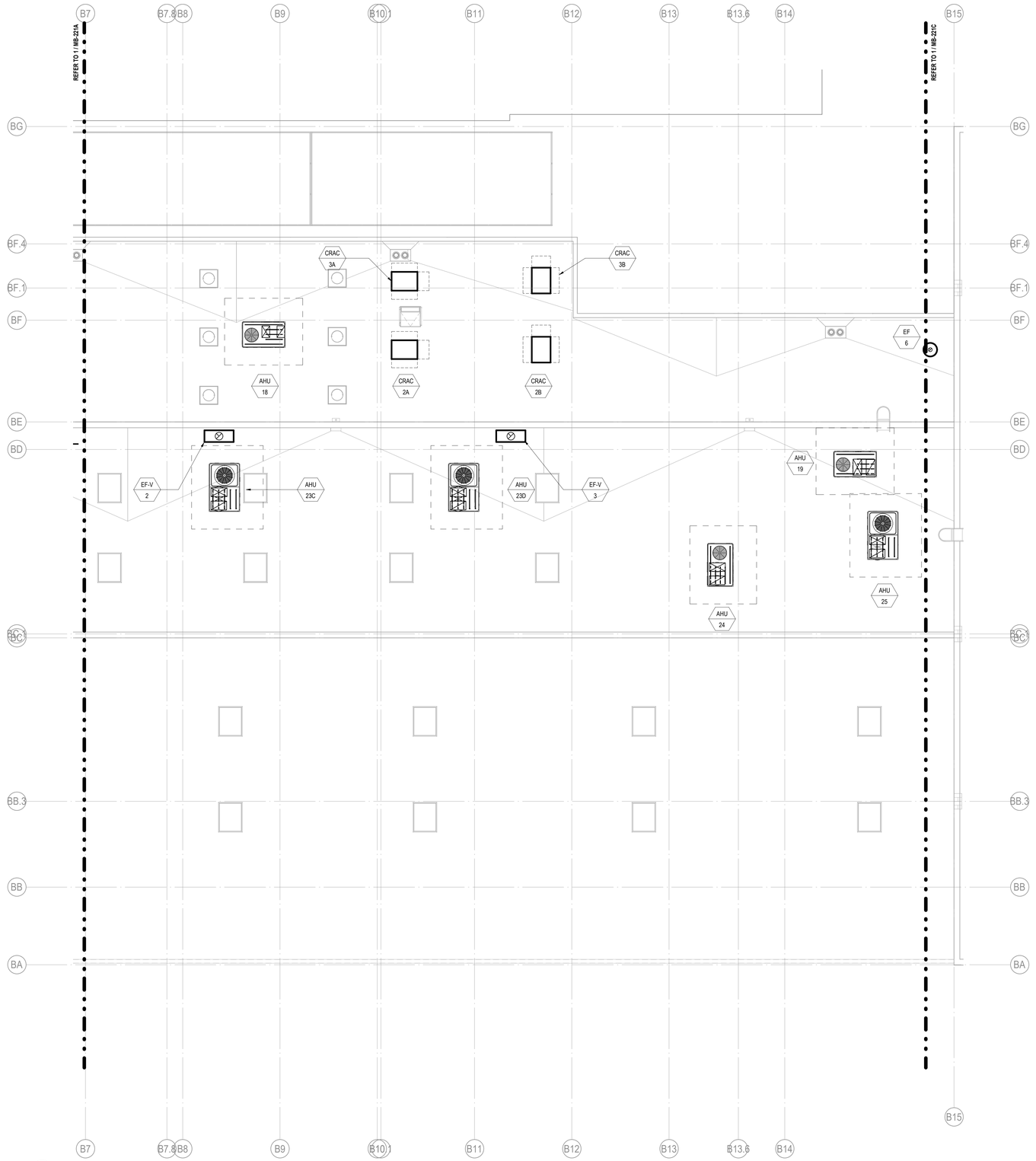
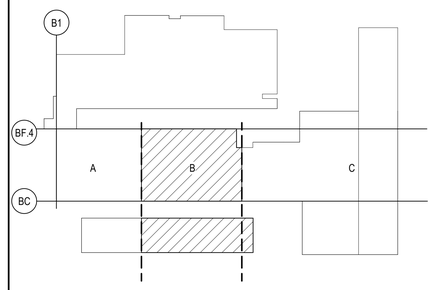
TITLE
BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA A

SHEET
MB-221A



1 BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA B
1/8" = 1'-0"

KEY PLAN



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BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA B

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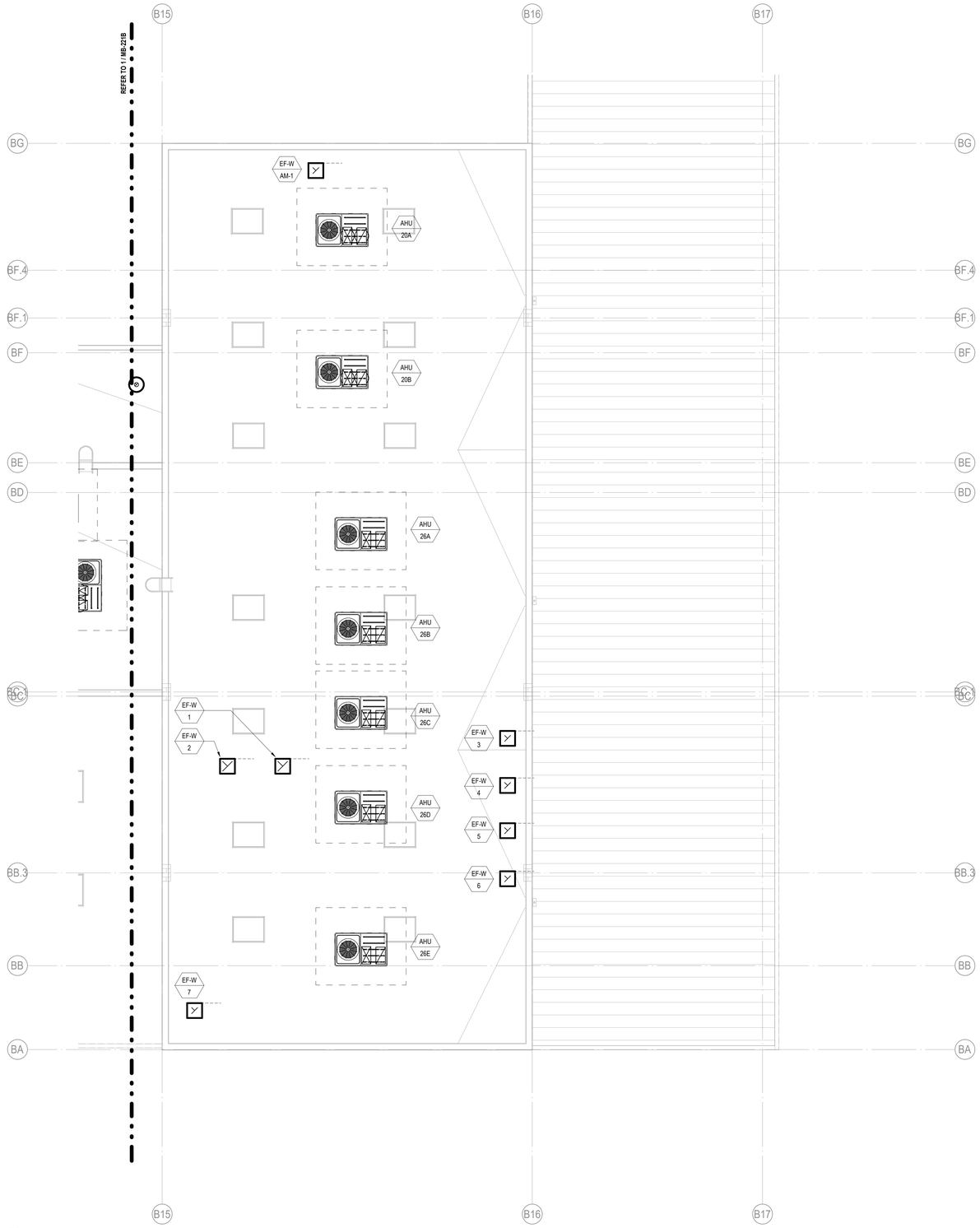
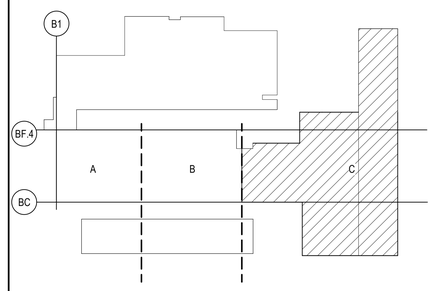


1 BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

SHEET NOTES

KEY PLAN



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BUILDING B - MECHANICAL PARTIAL ROOF PLAN - AREA C

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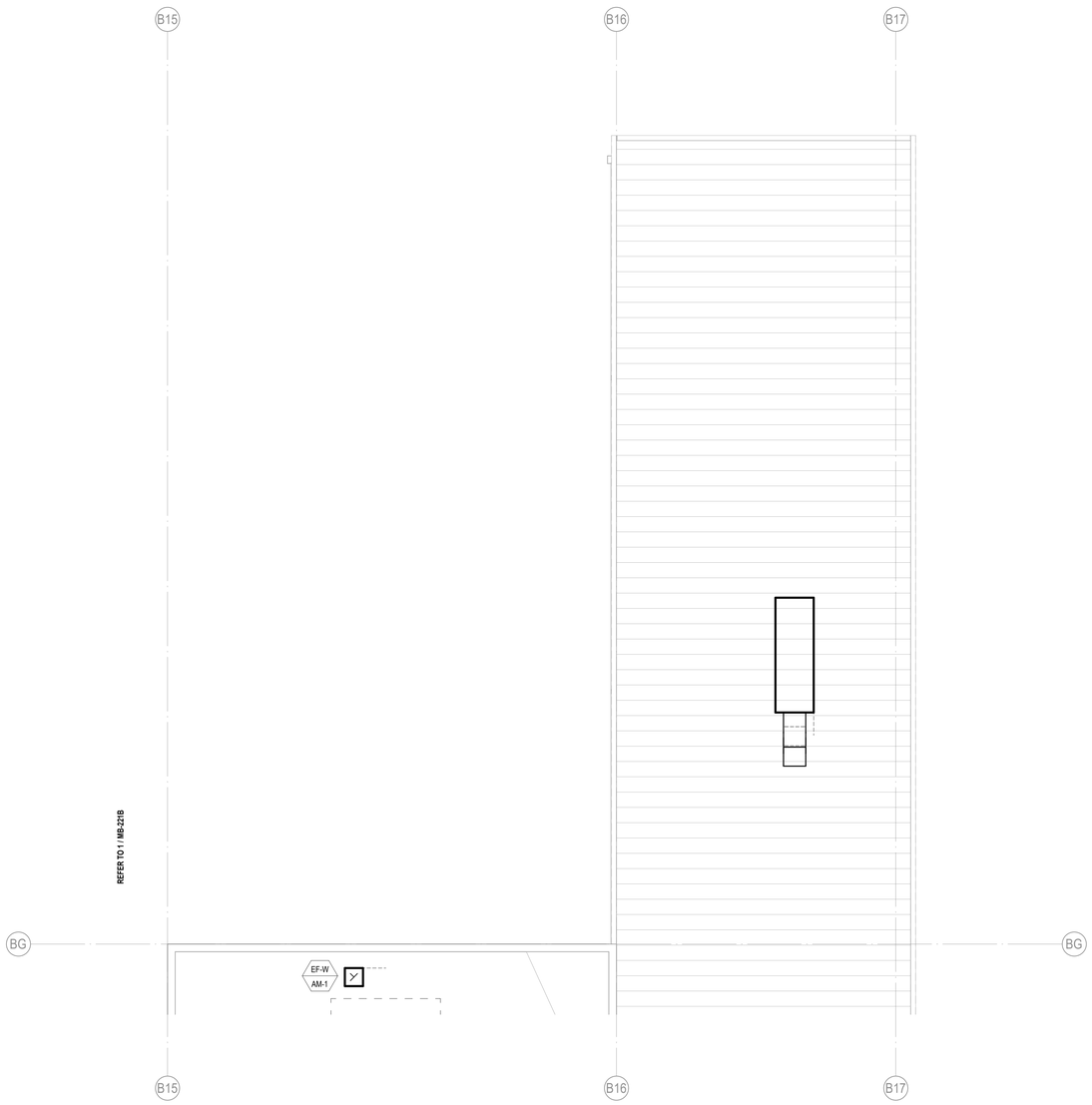

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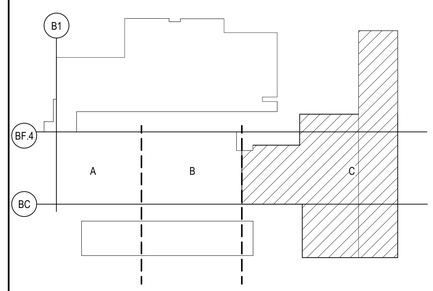
1/8" = 1'-0"

KEY PLAN



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TITLE
BUILDING B - MECHANICAL PARTIAL ROOF PLAN - CARPORT

SHEET
MB-221D

ELECTRICAL SYMBOLS AND LEGEND

EXISTING / DEMOLITION

- EXISTING EQUIPMENT / RACEWAYS TO REMAIN
- EXISTING EQUIPMENT / RACEWAYS TO BE REMOVED
- NEW EQUIPMENT / RACEWAYS
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- NEW EQUIPMENT, LIGHTING FIXTURE OR DEVICE

SINGLE LINE DIAGRAM

- TRANSFORMER , AS NOTED ON SINGLE LINE DISGRAM
- TRANSFORMER , AS NOTED ON SINGLE LINE DISGRAM
- CIRCUIT BREAKER, 3 POLE UNLESS NOTED OTHERWISE
- MOTOR STARTER WITH OVERCURRENT PROTECTION, 3 POLE UNLESS NOTED OTHERWISE
- MOTOR STARTER WITH FUSED AND DISCONNECT SWITCH, 3 POLE UNLESS NOTED OTHERWISE
- GROUND FAULT RELAY
- SHUNT TRIP RELAY
- DRAW-OUT CIRCUIT BREAKER
- NON-FUSED DISCONNECT SWITCH, 30 AMP, 3P UNLESS NOTED OTHERWISE
- FUSED DISCONNECT SWITCH, 3 POLE UNLESS NOTED OTHERWISE
- DEMAND TYPE KWH METER
- DEMAND TYPE KWH METER WITH ENCLOSURE
- PROVISION FOR UTILITY COMPANY KWH METER
- KIRK-KEY INTERLOCK BETWEEN DEVICES
- AUTOMATIC TRANSFER SWITCH WITH GENERATOR STARTING AND TRANSFER SWITCH STATUS CONTACTS
- AUTOMATIC TRANSFER SWITCH WITH BY-PASS ISOLATION, GENERATOR STARTING CONTACTS AND TRANSFER SWITCH STATUS CONTACT
- CURENT TRANSFORMER (CT)
- AMMETER
- ELECTRONIC METER
- SEPARABLE CONNECTOR(S)
- GROUND

GROUNDING SYSTEM

FLOOR	WALL	
		GROUND PLATE, FLAT TAPPED SIDE TO BE FLUSH WITH FURNISHED SURFACE. CADWELD B164-2Q OR EQUIVALENT
G	G	GROUND BUS
TG	TG	TECHNICAL GROUND BUS
		GROUND ROD
		GROUND ROD TEST WELL
		EXOTHERMIC GROUND CONNECTION
		GROUND WIRE

RECEPTACLES / POWER

POKE THRU	FLOOR	WALL	CEILING	
		(18)		MULTI-OUTLET RACEWAY WITH PREWIRED RECEPTACLES MOUNTED 12" ON CENTER UNLESS OTHERWISE NOTED. NUMBER IN (X) PARENTHESIS INDICATES DISTANCE BETWEEN DEVICES. WHERE MULTIPLE CIRCUITS ARE INDICATED CIRCUITS ALTERNATE ALONG ENTIRE LENGTH OF RACEWAY
				SIMPLEX RECEPTACLES
				DUPLEX RECEPTACLES
				QUADRUPLEX RECEPTACLES
		X	X	SPECIAL RECEPTACLES (DUPLEX & QUADRUPLEX). REFER TO SPECIAL RECEPTACLE SCHEDULE, THIS SHEET
				GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLES
				ABOVE COUNTER RECEPTACLES. INSTALL ABOVE COUNTER OR DEFINED HEIGHT
				HALF CONTROLLED DUPLEX
				HALF CONTROLLED QUADRUPLEX
				SWITCHED RECEPTACLES
				CLOCK RECEPTACLES
	J	J	J	JUNCTION BOX 4" SQUARE MINIMUM FOR WALL OR CEILING MOUNTED
		J	J	JUNCTION BOX. SIZE AS REQUIRED FOR NUMBER OF WIRES OR RACEWAYS
	P	P	P	SYSTEM FURNITURE POWER FEED, REFER TO DETAIL FOR RACEWAY AND BOX REQUIREMENTS

NOTE: ALL RECEPTACLE OUTLETS ON WALLS ARE MOUNTED AT 18" AFF, UON.

LETTER	RATING	NEMA	SPECIAL RECEPTACLE DESCRIPTION SCHEDULE NOTE: NUMBER OF WIRES INCLUDE GROUND
A	125V, 1Ø, 30A, 2P, 3W	5-30R	WITH 5-30P PLUG
B	125V, 1Ø, 50A, 2P, 3W	5-50R	WITH 5-50P PLUG
D	125/250V, 1Ø, 20A, 3P, 4W	14-20R	WITH 14-20P PLUG
F	125/250V, 1Ø, 30A, 3P, 4W	14-30R	WITH 14-30P PLUG
J	250V, 1Ø, 20A, 2P, 3W	6-20R	WITH 6-20P PLUG
K	250V, 1Ø, 30A, 2P, 3W	6-30R	WITH 6-30P PLUG
L	-	-	'L' INDICATES ASSOCIATED RECEPTACLE IS LOCKING TYPE. PROVIDE MATCHING PLUG FOR EACH RECEPTACLE
M	250V, 1Ø, 50A, 2P, 3W	6-50R	WITH 6-50P PLUG
N	250V, 3Ø, 20A, 3P, 4W	15-20R	WITH 15-20P PLUG
P	250V, 3Ø, 30A, 3P, 4W	15-30R	WITH 15-30P PLUG
R	250V, 3Ø, 50A, 3P, 4W	15-50R	WITH 15-50P PLUG
S	480V, 3Ø, 30A, 3P, 4W	L16-30R	WITH L12-30P PLUG
T	125V, 1Ø, 20A, 2P, 3W	5-20R	ISOLATED GROUND WITH INTEGRAL TRANSIENT SUPPRESSER AND DEDICATED GREEN/YELLOW CONDUCTOR BACK TO GROUND BUS AT PANEL
X	125V, 1Ø, 20A, 2P, 3W	5-20R	DEDICATED CIRCUIT
Z	480V, 3Ø, 20A, 3P, 4W	L16-20R	WITH L16-20R PLUG

LIGHTING

WALL	CEILING	
		RECESSED MOUNTED TROFFER
		SURFACE MOUNTED TROFFER
		SUSPENDED OR PENDANT MOUNTED LUMINAIRE
		STRIP OR TRACK LIGHT
		SURFACE MOUNTED DOWNLIGHT
		RECESSED MOUNTED DOWNLIGHT
		PENDANT MOUNTED DOWNLIGHT
		WALL MOUNTED LUMINAIRE
		DIRECTIONAL LUMINAIRE
		POLE MOUNT FIXTURES (1, 2, 3, 4 HEADS)
EXIT		EXIT SIGN: SHADED PORTION INDICATES ILLUMINATED FACE. DIRECTIONAL ARROWS AS INDICATED ON PLANS. PROVIDE MASTER/SLAVE HIGH AND LOW LEVEL EXIT SIGNS WHEREVER AN EXIT SIGN IS INDICATED ON PLANS
TRACK		
LED		
MULTIPLES		
UNDERWATE		

NOTES:
A. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING FIXTURE TYPE AND MOUNTING CONDITIONS REGARDLESS OF SYMBOL USED ON PLANS.
B. REFER TO FIXTURE SCHEDULE FOR FIXTURE DESCRIPTION, MOUNTING AND LAMP INFORMATION. SHADED FIXTURE SYMBOLS INDICATE FIXTURE IS CONNECTED TO THE LIFE SAFETY SYSTEM OR HAS SECONDARY POWER SOURCE.

EXAMPLES: NORMAL, EMERGENCY, NORMAL, EMERGENCY

LUMINAIRE NOMENCLATURE: A 3,a,z1

"A" DENOTES FIXTURE TYPE
"3" DENOTES CIRCUIT NUMBER
"a" DENOTES SWITCH ZONE
"z1" DENOTES DAYLIGHT ZONE
"r1" DENOTES SITE RELAY ZONE

SWITCHING

WALL	CEILING	
S_M		MANUAL MOTOR STARTER WITH THERMAL OVERLOAD NUMBER OF POLES AS REQUIRED
S_X		LOW VOLTAGE LIGHTING SWITCH, SUBSCRIPT INDICATES: X = NONE - SINGLE POLE X = 3 - THREE WAY X = A,B,C - OUTLET CONTROLLED X = 2 - DOUBLE POLE X = KP - KEY OPERATED WITH PILOT LIGHT X = P - PILOT LIGHT X = R - MOMENTARY RELAY ON/OFF X = OS - OCCPANCY SENSOR SWITCH
S_{ab}		2-SINGLE POLE SWITCHES, UNDER COMMON PLATE, + 42" UON
S_{abc}		3-SINGLE POLE SWITCHES, UNDER COMMON PLATE, + 42" UON
		ROOM TYPE OCCUPANCY SENSOR, ARROW INDICATES DIRECTION OR ORIENTATION, SUBSCRIPT INDICATES SWITCH LEG OR CIRCUIT TO BE CONTROLLED
		ROOM TYPE OCCUPANCY SENSOR, ARROW INDICATES DIRECTION OR ORIENTATION, SUBSCRIPT INDICATES SWITCH LEG OR CIRCUIT TO BE CONTROLLED
		CORRIDOR TYPE OCCUPANCY SENSOR, ARROW INDICATES DIRECTION OR ORIENTATION, SUBSCRIPT INDICATES SWITCH LEG OR CIRCUIT TO BE CONTROLLED
X	X	SENSOR TYPE SUBSCRIPT INDICATES: X = DT - DUAL TECHNOLOGY X = H - HALLWAY X = HB - HIGH BAY X = IR - PASSIVE INFRARED X = US - ULTRASONIC
		PUSH-BUTTON STATION. +42" UON
P	P	PHOTOSENSOR - WALL MOUNT WITH DIRECTIONAL VIEW. ARROW INDICATES AIMING DIRECTION
P	P	PHOTOSENSOR - CEILING MOUNT WITH DIRECTIONAL VIEW. ARROW INDICATES AIMING DIRECTION
P	P	PHOTOSENSOR - CEILING MOUNT WITH 360 VIEW

GENERAL ELECTRICAL SYMBOLS

RECESSED	SURFACE	
		DISCONNECT SWITCH, 30 AMP MINIMUM UNLESS NOTED OTHERWISE
		FUSED DISCONNECT SWITCH, 30 AMP MINIMUM UNLESS NOTED OTHERWISE
		COMBINATION DISCONNECT SWITCH MOTOR STARTED
	S	MOTOR, 5 HP INDICATED
	T	TRANSFORMER
		RELAY OR EQUIPMENT CABINET AS INDICATED ON PLAN
		LIGHTING OR POWER PANEL BOARD
		FREE STANDING SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD
		FIRE TREATED PLYWOOD BACKBOARD 3/4"X96" HIGH X LENGTH AS INDICATED
EEE		ELECTRICAL EQUIPMENT DESIGNATION DESIGNED "EQ01"
1		REFERENCE TO NOTE "1" ON SAME SHEET
FA		LIGHTING FIXTURE DESIGNATION FA = FIXTURE TYPE
P 1		MECHANICAL EQUIPMENT DESIGNATION "P-1" INDICATED
X33		EQUIPMENT NAME OR NUMBER
+4'-6"		MOUNTING HEIGHT FROM FINISHED FLOOR TO CENTERLINE OF OUTLET OR EQUIPMENT
MH=4'-6"		MOUNTING HEIGHT FROM FINISHED FLOOR TO BOTTOM OF OUTLET OR EQUIPMENT
1 E-6		DETAIL REFERENCE NUMBER "1" ON DRAWING "E-6"
A E-6		SECTION OR ELEVATION REFERENCE LETTER "A" ON DRAWING "E-6"
A-1,3,5		INDICATES HOMERUN WITH THREE CIRCUITS AND A SEPARATE NEUTRALS

RACEWAYS AND WIRING

FLOOR	WALL	CEILING	
			CONDUIT CONCEALED IN CEILING OR WALL SPACE
			CONDUIT RUN EXPOSED
			CONDUIT RUN UNDERGROUND OR CONCEALED IN FLOOR SPACE
			EXISTING CONDUIT TO REMAIN
			CONDUIT RISING UP FROM RUN
			CONDUIT DROPPING DOWN FROM RUN
A-1	A-1	A-1	HOMERUN TO PANELBOARD, CABINET OR TERMINAL BACKBOARD AS INDICATED
(MS-01)	(MS-01)	(MS-01)	HOMERUN TO SWITCHBOARD OR MCC AS INDICATED. REFER TO SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE SIZES
<RA-1>	<RA-1>	<RA-1>	HOMERUN TO PANEL VIA INDICATED LIGHTING CONTROL RELAY CABINET. REFER TO INDICATED RELAY CABINET SCHEDULE FOR ADDITIONAL INFORMATION AND CONTROL REQUIREMENTS

SHEET LIST - ELECTRICAL

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT
LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
ELECTRICAL LEGEND

SHEET
E-001

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

LIGHTING NOTES:

A. **GENERAL PROVISIONS**

1. LIGHTING DESIGNER SHALL MEAN THE PARTY RESPONSIBLE FOR THE DESIGN OF THE LIGHTING SYSTEM.
2. ALL EQUIPMENT SHALL BE FACTORY TESTED TO ENSURE PROPER OPERATION PRIOR TO SHIPMENT TO JOB SITE.
3. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP RELATED TO THE ELECTRICAL INSTALLATION AS REQUIRED IN THE SPECIFICATIONS FROM THE DATE WHICH THE OWNER ACCEPTS THE FINISHED PROJECT. ANY DEFECTS IN MATERIALS OR WORKMANSHIP DURING THIS GUARANTEED PERIOD SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER OR TENANT.
4. ALL EQUIPMENT, ELECTRICAL CHARACTERISTICS, LOCATIONS, AND CONNECTION REQUIREMENTS SHALL BE VERIFIED PRIOR TO ANY ROUGH-IN WORK.
5. CONTRACTOR SHALL BE LICENSED BY THE JURISDICTION WHERE THE PROJECT IS LOCATED AND CAPABLE OF EMPLOYING THE PROPER LABOR FORCE NECESSARY TO COMPLETE THE INSTALLATION AS INSTRUCTED BY THE OWNER.
6. PROVIDE SHIPMENT OF ALL LIGHTING AND RELATED EQUIPMENT TO BE DELIVERED TO THE JOB SITE.
7. DELIVERY OF EQUIPMENT TO THE JOB SITE SHALL BE IN CLEARLY IDENTIFIED CRATES, CARTONS, OR APPROPRIATE SHIPPING CONTAINERS AS TO ITEM, QUANTITY, AND INSTALLATION LOCATION.
8. EMERGENCY WARRANTY REPAIRS SHALL BE PERFORMED WITHIN TWENTY-FOUR (24) HOURS OF NOTIFICATION WHEN A SYSTEM OR COMPONENT MALFUNCTIONS DURING USE.
9. ALL WARRANTY REPAIRS SHALL BE PERFORMED BY QUALIFIED PERSONNEL IN THE REGULAR EMPLOY OF THE MANUFACTURER AND SHALL NOT BE SUBCONTRACTED OR ASSIGNED WITHOUT THE WRITTEN CONSENT OF THE OWNER. IN NO CASE SHALL THE MANUFACTURER BE RELIEVED OF RESPONSIBILITY FOR THE PERFORMANCE OF WARRANTY REPAIRS.
10. THE CONTRACTOR SHALL NOTIFY LIGHTING DESIGNER OF ANY PROVISION OF THIS SPECIFICATION THAT IS IN CONFLICT WITH LOCAL OR NATIONAL CODES AND AN ADDENDUM SHALL BE ISSUED TO CORRECT THE SPECIFICATION.
11. ALL MEASUREMENTS FOUND IN LIGHTING PLANS ARE APPROXIMATE. CONTRACTOR IS REQUIRED TO MAKE FIELD MEASUREMENTS BASED ON ACTUAL SITE CONDITIONS TO DEVELOP COMPLETE ORDERS AND INSTALL SYSTEMS PER DRAWINGS AND SPECIFICATIONS.
12. LUMINARIES SHALL NOT BE USED AS WORK LIGHTS DURING CONSTRUCTION AND SHALL BE FULLY OPERATIONAL AT THE TIME OF ACCEPTANCE BY OWNER OR TENANT

• **BIDDING**

1. INCLUDE WITH BID, ADDITIVE AND DEDUCTIVE UNIT PRICES FOR EACH FIXTURE TYPE PRICES TO INCLUDE:
   a. ITEMIZED LABOR AND MATERIAL REQUIRED TO PERFORM WORK.
   b. ANY REQUIRED ENGINEERING, LAYOUT, CLEANUP, TESTING AND STARTUP.
2. PRICING TO BE BASED UPON CONSTRUCTION DOCUMENT REQUIREMENTS FOR QUALITY, ACCEPTABLE MANUFACTURERS AND INSTALLATION REQUIREMENTS.
3. UNIT PRICES SHALL INCLUDE SELECTED MANUFACTURER FOR EACH FIXTURE TYPE.
4. BIDS THAT DO NOT INCLUDE UNIT PRICING WILL BE REJECTED AS INCOMPLETE.

• **INSTALLATION**

1. BURN ALL LAMPS THAT REQUIRE SPECIFIC AGING PERIOD TO OPERATE PROPERLY, PRIOR TO OCCUPANCY BY OWNER. BURN IN FLUORESCENT AND COMPACT FLUORESCENT LAMPS INTENDED TO BE DIMMED FOR AT LEAST 100 HOURS AT FULL VOLTAGE.

• **EXECUTION**

1. CONTRACTOR TO SUPPLY A MINIMUM OF TWO ELECTRICIANS FOR EACH LIGHTING DESIGNER DIRECTING FOCUS DURING THE COMMISSIONING PHASE (AKA FOCUS AND PROGRAMMING). IBEW ELECTRICIANS TO BE MINIMUM JOURNEYMAN LEVEL EXPERIENCE, THEATRICAL ELECTRICIANS TO HAVE A MINIMUM OF 2 YEARS FIELD EXPERIENCE. ELECTRICAL CONTRACTOR MUST SUPPLY ADEQUATE SUPPORT INCLUDING LADDERS, LIFTS OR OTHER EQUIPMENT REQUIRED TO ACCESS LUMINAIRES AT THE TIME FOR FOCUS, INCLUDING EVENING OR NIGHT WORK AS MAY BE REQUIRED DUE TO SCHEDULE CONFLICT OR DAYLIGHT IMPACT. CONTROL SOFTWARE SHOULD BE INSTALLED BY A TRAINED FACTORY REPRESENTATIVE PRIOR TO FINAL FOCUS OF THE LIGHTING SYSTEM. ALL CONTROL SYSTEMS SHOULD BE COMMISSIONED BY AUTHORIZED FACTORY PERSONNEL.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL NECESSARY EQUIPMENT AVAILABLE THROUGHOUT COMMISSIONING PHASE INCLUDING, BUT NOT LIMITED TO:
   a. STANDARD ELECTRICAL HAND TOOLS, INCLUDING BUT NOT LIMITED TO, ADJUSTABLE C-WRENCH
   b. SOCKET SET.
   c. CLEAN RAGS TO WIPE LENSES.
   d. SPARE LAMPS FOR LUMINAIRES BEING FOCUSED.
   e. LADDERS OR OTHER MEANS OF ACCESS TO AREAS BEING FOCUSED.
   f. SAFETY HARNESSES OR OTHER DEVICES AS REQUIRED.

• **SUBMITTALS**

1. THE DESIGN IS BASED UPON THE FIRST NAMED PRODUCT IN THE LUMINAIRE SCHEDULE. ANY ADDITIONAL LISTING IS CONSIDERED AN APPROVED ALTERNATE FIXTURE. ANY ALTERNATE FIXTURE MUST PROVIDE PHOTOMETRIC CALCULATIONS FOR KEY AREAS UPON REQUEST INCLUDING BUT NOT LIMITED TO EGRESS CALCULATIONS. CALCULATIONS MUST INCLUDE THE FOLLOWING:
   a. VERTICAL AND HORIZONTAL FOOTCANDLES AT WORKPLANE OR FLOOR AS REQUIRED.
   b. IN THE CASE OF INDIRECT FIXTURES, THE CEILING MUST ALSO BE CALCULATED WITH UNIFORMITY RATIOS FOR ALL SURFACES.
   c. SURFACE REFLECTANCES, LIGHT LOSS FACTORS MUST BE SHOWN ON THE CALCULATION ALONG WITH MOUNTING HEIGHTS OF FIXTURES.
   d. FIXTURES MUST BE CLEARLY IDENTIFIED IN THE LUMINAIRE SUMMARY.
2. REQUESTS FOR APPROVAL OF NON-SPECIFIED PRODUCTS MUST BE ACCOMPANIED BY THE FOLLOWING AT LEAST FIVE (5) BUSINESS DAYS IN ADVANCE OF THE BID SUBMITTAL DATE.
   a. SPECIFICATION DATA SHEET COMPLETE WITH MANUFACTURER NAME CONTACT INFORMATION AND SPECIFIED MODEL NUMBER.
   b. A LIST OF COMPARABLE PROJECTS WHERE THE PRODUCT HAS BEEN USED IN THE LAST TWO (2) YEARS.
   c. A WORKING SAMPLE OF SPECIFIED PRODUCT AND PROPOSED ALTERNATE.
   d. ALL THE THE CALCULATIONS REQUIRED FOR APPROVED ALTERNATES LISTED ABOVE.
   e. THE AMOUNT OF MONEY TO BE DEDUCTED FROM THE BASE BID FOR EACH PRODUCT SUBSTITUTED AND RETURNED TO THE OWNER.
   f. THESE ITEMS SHALL BE APPROVED BY DESIGNER PRIOR TO ANY COMMENCEMENT OF PLACING ORDERS OR PERFORMING ANY ROUGH-IN WORK.
3. SAMPLE FIXTURES MAY BE REQUIRED FOR VERIFICATION AND OWNER APPROVAL. SAMPLES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER UPON REQUEST OF OWNER, DESIGNER OR ARCHITECT. SAMPLES SHALL INCLUDE:
   a. LAMPS AS SPECIFIED b.CORDS AND PLUGS INSTALLED
   b. CORDS AND PLUGS INSTALLED
4. SAMPLE FIXTURES FOR MOCKUPS MAY BE REQUIRED FOR INSTALLATION IN A SIMULATION FOR OWNER REVIEW AND APPROVAL. CONTRACTOR TO PROVIDE ALL COMPONENTS REQUIRED FOR INSTALLATION INCLUDING LAMPS. OBTAIN ARCHITECT'S APPROVAL FOR ALL FIXTURES PRIOR TO STARTING INSTALLATION. APPROVED FIXTURES IN MOCKUPS MAY BECOME PART OF THE COMPLETED WORK IF UNDISTURBED AT TIME OF SUBSTANTIAL COMPLETION.
5. MANUFACTURERS OF SUBMITTED PRODUCTS MUST HAVE BEEN IN BUSINESS FOR FIVE (5) YEARS AND IN NO INSTANCE WILL THIS PROJECT BE THE OCCASION OF THE FIRST INSTALLATION OF THIS PRODUCT IF IT IS NOT LISTED ON THE SPECIFICATION.
6. CONTRACTOR SHALL ALLOW PROPER ORDERING TIME FOR PROCUREMENT OF LUMINAIRES. DESIGNER SHALL BE NOTIFIED OF ANY PRODUCT SUBSTITUTIONS AS A RESULT OF DELIVERY, PRIOR TO ORDERING ALTERNATE PRODUCT. FAILURE TO ORDER LUMINAIRES WITH ADEQUATE LEAD-TIME TO MEET THE INSTALLATION SCHEDULE DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO PROVIDE THE SPECIFIED PRODUCT WITHOUT COMPENSATION TO THE OWNER.
7. SHOULD A MANUFACTURER FAIL TO DELIVER A PRODUCT THAT HAS BEEN ORDERED WITHIN REASONABLE LEAD-TIME, CONTRACTOR SHALL NOTIFY DESIGNER WITH A PROPOSED ALTERNATE LUMINAIRE. DESIGNER SHALL MAINTAIN FINAL AUTHORITY FOR AUTHORIZATION OF ANY SUBSTITUTION.
8. LAMPS AND ANY ACCESSORIES SPECIFIED SHALL BE INCLUDED IN THE SUBMITTAL PACKAGE FOR ALL LUMINAIRES.
9. SUBMITTAL TO INCLUDE INFORMATION DETAILING LUMINAIRE TYPES, MANUFACTURER NAMES AND MODEL NUMBERS, LAMPING, ACCESSORIES, AND CURRENTLY QUOTED LEAD TIMES FOR DELIVERY OF ALL PRODUCTS TO BE BE PROVIDED. FOR ALL PRODUCTS WITH LONG LEAD TIMES, WHICH MAY ADVERSELY IMPACT THE CONSTRUCTION SCHEDULE, PROVIDE A MINIMUM OF TWO (2) ALTERNATE EQUIVALENT PRODUCTS FOR THE OWNER'S REVIEW AND APPROVAL. NO PRODUCTS SHALL BE PROCURED WITHOUT WRITTEN APPROVAL OF THE SUBMITTALS.
10. DESIGNER RESERVES THE RIGHT TO REVIEW ALL SUBMITTALS. ANY REQUEST FOR PRODUCT SUBSTITUTION REQUIRES AN ITEM BY ITEM COMPARISON OF THE PROPOSED SUBSTITUTION TO THE SPECIFIED FIXTURE. TIME FOR REVIEWING SUBSTITUTIONS SHALL BE CHARGED TO THE OWNER AND REIMBURSED BY THE CONTRACTOR AT THE RATE OF $200/HR, MINIMUM OF 4 HOURS PER SUBSTITUTED PRODUCT. PAYMENT FOR SERVICES TO REVIEW PRODUCT SUBSTITUTIONS IS IN NO WAY A GUARANTEE OF APPROVAL.

• **LUMINAIRE SPECIFICATIONS**

1. ALL EXTERIOR EQUIPMENT SHALL BE RATED FOR WET LOCATION AND THE IP RATING OF ALL EQUIPMENT SHALL CONFORM TO THE CONDITIONS IN WHICH THE LUMINAIRE IS MOUNTED.
2. ALL LUMINAIRES SHALL BE SUPPLIED WITH LAMPS, COLOR FILTERS AND ACCESSORIES AS SPECIFIED
3. COLOR FILTERS SHALL BE GLASS, DICHROIC OR FADE-NOT AS SPECIFIED UNLESS OTHERWISE INDICATED ON DRAWINGS OR LIGHTING DOCUMENTATION PACKAGE. ALL GLASS AND DICHROIC FILTERS SHALL INCLUDE MESH FRAMES AND SAFETY CABLES PER OVERHEAD SAFETY REQUIREMENTS.
4. COLOR TO BE CONFIRMED WITH LIGHTING DESIGNER PRIOR TO ORDERING.
5. CONTRACTOR TO VERIFY ALL LUMINAIRES SPECIFIED WITH A COLOR FILTER ARE SUPPLIED WITH ANY AND ALL ATTACHMENT DEVICES FOR THE FILTER. THIS INCLUDES FRAMES, SNAP RINGS, ATTACHMENT HARDWARE AND/OR FILTER STANDOFFS. ALL ATTACHMENT HARDWARE MUST BE SUBMITTED BY SUPPLIER FOR REVIEW PRIOR TO ORDERING OF LUMINAIRE. REVIEW AND APPROVAL SHALL BE BY LIGHTING DESIGNER.
6. CONTRACTOR TO VERIFY ALL LUMINAIRES SPECIFIED WITH A TEMPLATE (PATTERN OR "GOBO") ARE SUPPLIED WITH ANY AND ALL ATTACHMENT DEVICES FOR THE PATTERN. THIS INCLUDES PATTERN HOLDERS, SNAP RINGS, AND/OR INSTALLATION HARDWARE. ELECTRICAL CONTRACTOR TO VERIFY SIZE AND TYPE OF TEMPLATE MATERIAL IN CONJUNCTION WITH LUMINAIRE SPECIFICATIONS. ALL ATTACHMENT HARDWARE MUST BE SUBMITTED BY SUPPLIER FOR REVIEW PRIOR TO ORDERING OF TEMPLATE AND HARDWARE. REVIEW AND APPROVAL SHALL BE BY LIGHTING DESIGNER.
7. CONTRACTOR TO PROVIDE ADDITIONAL MATERIALS MATCHING PRODUCTS INSTALLED AND ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND LABELED FOR IDENTIFICATION.
   a. LAMPS FOR ALL LUMINAIRES IN FULL CASES TO EXCEED THE NUMBER REQUIRED BY NO LESS THAN 10%.
   b. DIFFUSERS AND LENSES: ONE FOR EVERY 100 OF EACH TYPE. FURNISH AT LEAST ONE OF EACH TYPE.
   c. BALLASTS: ONE FOR EVERY 100 OF EACH TYPE AND RATING INSTALLED. FURNISH AT LEAST ONE OF EACH TYPE.
   d. GLOBES AND GUARDS: ONE FOR EVERY 20 OF EACH TYPE AND RATING INSTALLED. FURNISH AT LEAST ONE OF EACH TYPE.
   e. CONTRACTOR TO REPLACE ALL LAMPS WITH NEW LAMPS AT THE END OF THE CONSTRUCTION PHASE PRIOR TO COMMISSIONING PHASE AND OWNER OCCUPANCY OR PROJECT OPENING.
   f. REMOTE BALLASTS: DISTANCE BETWEEN THE BALLAST AND THE FIXTURE SHALL NOT EXCEED THAT RECOMMENDED BY BALLAST MANUFACTURER. VERIFY, WITH BALLAST MANUFACTURER, MAXIMUM DISTANCE BETWEEN BALLAST AND LUMINAIRE.
8. TEMPORARY LIGHTING: IF IT IS NECESSARY, AND APPROVED BY THE ARCHITECT, TO USE PERMANENT FIXTURES FOR TEMPORARY LIGHTING, INSTALL AND ENERGIZE THE MINIMUM NUMBER OF LUMINAIRES NECESSARY. WHEN CONSTRUCTION IS SUFFICIENTLY COMPLETE, REMOVE THE TEMPORARY LUMINAIRES, DISASSEMBLE, CLEAN THOROUGHLY, INSTALL NEW LAMPS AND REINSTALL.

• **QUALITY ASSURANCE**

1. MANUFACTURER LUMINAIRE PHOTOMETRIC DATA TESTING LABORATORY QUALIFICATIONS: PROVIDED BY MANUFACTURER'S LABORATORIES THAT ARE ACCREDITED UNDER THE NATIONAL VOLUNTEER LABORATORY ACCREDITATION PROGRAM FOR ENERGY EFFICIENT LIGHTING PRODUCTS.
2. MANUFACTURER LUMINAIRE PHOTOMETRIC DATA TESTING LABORATORY QUALIFICATIONS: PROVIDED BY AN INDEPENDENT AGENCY WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT THE TESTING INDICATED, THAT IS AN NRTL AS DEFINED BY OSHA IN 29 CFR 1910, COMPLYING WITH THE IESNA LIGHTING MEASUREMENTS TESTING AND CALCULATION GUIDELINES.
3. ELECTRICAL COMPONENTS, DEVICES AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
4. COMPLY WITH NFPA 70.
5. FM GLOBAL COMPLIANCE: LIGHTING FIXTURES FOR HAZARDOUS LOCATIONS SHALL BE LISTED AND LABELED FOR INDICATED CLASS AND DIVISION OF HAZARD BY FM GLOBAL.
6. LIGHTING FIXTURES SHALL BE LISTED BY A RECOGNIZED TESTING LABORATORY AS COMPLIANT WITH THE CONDITION TO WHICH THEY ARE BEING INSTALLED.

GENERAL ELECTRICAL NOTES

A. **GENERAL PROVISIONS:**

1. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT A COMPLETE AND WORKABLE ELECTRICAL INSTALLATION BE PROVIDED FOR ALL THE EQUIPMENT DESCRIBED OR SHOWN AS BEING IN THIS CONTRACT. TOWARD THIS END, CONTRACTOR SHALL FURNISH ALL LABOR AND TOOLS NECESSARY, FURNISH AND INSTALL ALL APPARATUS, MATERIALS, AND EQUIPMENT IN A MANNER COMPLYING WITH ALL APPLICABLE CODES, INCLUDING ITEMS REQUIRED BUT NOT NECESSARILY SHOWN, SUCH AS LAMPS, COUPLINGS, HANGERS, BRACKETS, CLAMPS, BOXES, CONNECTORS, AND HARDWARE.
2. ALL CONDUCTORS SHALL BE COPPER, TYPE "THWN/THNN" 90 DEGREE INSULATION. ALL LUGS SHALL BE 75 DEGREE MINIMUM. ALL CONDUIT SHALL BE EMT OF RIGID STEEL. USE OF FLEX IS NOT ALLOWED EXCEPT UP TO 6 FOOT FOR FINAL CONNECTION TO LIGHTING FIXTURES OR VIBRATING EQUIPMENT.
3. BEFORE SUBMITTING THE BID PROPOSAL, CONTRACTOR SHALL VISIT THE JOB SITE TO FULLY FAMILIARIZE HIMSELF WITH THE SITE CONDITIONS, REQUIREMENTS, INCLUDING ALL NECESSARY ADDITIONAL SCOPE OF WORK, WHETHER SHOWN ON DRAWING(S) OR NOT, BUT REQUIRED FOR PROVIDING A COMPLETE AND FUNCTIONING ELECTRICAL SYSTEM.
4. CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS AND WIRING DIAGRAMS FOR ITEMS AND DEVICES TO BE FURNISHED, INSTALLED AND/OR CONNECTED FOR A COMPLETE AND OPERABLE HEATING, VENTILATION AND AIR CONDITIONING (HVAC) SYSTEM. VERIFY EXACT LOCATION OF HVAC EQUIPMENT AND CONDUIT TERMINATION AT EQUIPMENT WITH MECHANICAL CONTRACTOR.
5. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND INDICATE THE LOCATION OF OUTLETS AND EQUIPMENT THOUGH NOT NECESSARILY INDICATING THE ACTUAL ROUTES OF CONDUITS, THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS PROPER COORDINATION WITH THE WORK OF OTHER TRADES AND SPACE WILL PERMIT. SIMPLIFY INSTALLATION WHEREVER POSSIBLE BUT SUBJECT TO APPROVAL OF OWNER'S REPRESENTATIVE FOR VISUAL AND STRUCTURAL REASONS. IT IS NOT WITHIN THE SCOPE OF THE DRAWINGS TO SHOW ALL NECESSARY OFFSETS, BENDS, PULL BOXES AND OBSTRUCTIONS. THE DRAWINGS ARE NOT INTENDED TO BE SCALED AND THE CONTRACTOR SHALL REFER TO THE GENERAL CONSTRUCTION DRAWINGS FOR DIMENSIONS.
6. ALL PERMITS SHALL BE PROCURED FROM ALL LEGALLY CONSTITUTED AUTHORITIES, ARRANGE FOR ALL INSPECTION AND PAY ALL COSTS FOR FEES AND TESTS IN CONNECTION THEREWITH, COMPLY WITH CODES. PRESENT THE SIGNED CERTIFICATE OF FINAL INSPECTION TO THE OWNER'S REPRESENTATIVE PRIOR TO PRESENTING THE WORK FOR FINAL ACCEPTANCE.
7. CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE BARRIERS, PROTECTIVE DEVICES, LIGHTS AND WARNING SIGNS WHERE REQUIRED FOR THE PROTECTION OF THE PUBLIC AND EMPLOYEES ABOUT THE BUILDING.
8. CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE FOR CONSTRUCTION POWER AND ILLUMINATION FOR ALL TRADES. ALL COSTS OF LABOR AND COST MATERIAL REQUIRED FOR THE TEMPORARY ELECTRICAL SERVICE SHALL BE INCLUDED IN THE ELECTRICAL CONTRACT.
9. ELECTRICAL ROOMS HAVING A TRANSFORMER(S) RATED 112.5KVA OR ABOVE SHALL BE PROVIDED WITH 1-HOUR FIRE-RATED ENCLOSURE.
10. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBMITTALS, ACCEPTABLE MATERIALS, COORDINATION REQUIREMENTS, TESTING, STARTUP, TRAINING AND PROJECT CLOSEOUT.
11. PROVIDE A CODE APPROVED DISCONNECT SWITCH OR BREAKER WITHIN SIGHT OF EVERY MOTOR. FOR LOCATION OF DISCONNECT SWITCH, COORDINATE WITH EQUIPMENT SUPPLIER TO DETERMINE THE BEST LOCATION ON SITE WHILE REMAINING ACCESSIBLE.
12. CONTRACTOR SHALL TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY, GROUNDS, SHORT CIRCUITS, AND OTHER DEFECTS BEFORE ANY EQUIPMENT OR FIXTURES ARE CONNECTED THERETO. CABLES SHALL BE CHECKED FOR CONTINUITY, SHORTS, INSULATION RESISTANCE, AND PROPER PHASING.
13. PROVIDE PULL ROPE IN ALL EMPTY CONDUITS.
14. COORDINATE ROUTING OF RACEWAYS FEEDERS AND HOMERUNS IN COOPERATION WITH THE WORK OF OTHER TRADES.
15. EXPOSED RACEWAYS ON ROOF SHALL BE AMBIENT TEMPERATURE COMPENSATED PER NEC TABLE 310-15(B)(2)(C) BASED UPON DISTANCE RACEWAY IS MOUNTED ABOVE ROOF AND DESIGN TEMPERATURE OF ROOF.
16. NO MORE THAN THREE CIRCUITS PER HOME RUN. DO NOT COMBINE HOMERUNS WITHOUT PRIOR APPROVAL.
17. NO INTERMEDIATE SPLICING OF FEEDERS OR BRANCH CIRCUITS SHALL BE DONE WITHOUT PRIOR APPROVAL.
18. MINIMUM SIZE FOR EXTERIOR BELOW GRADE CONDUIT SHALL BE 1-1/4 INCH.
19. FOR 120V, 20 AMP CIRCUITS, WHERE CIRCUIT DISTANCE FROM PANELBOARD TO FARTHEST DEVICE EXCEEDS 75 FEET, PROVIDE #10 SIZE CONDUCTOR.

B. **LIGHTING:**

1. ALL LIGHTING FIXTURES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
2. CONTRACTOR SHALL VERIFY THE TYPE OF CEILING, COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ORDERING FIXTURES. CONTRACTOR IS FULLY RESPONSIBLE FOR PROVIDING ALL FIXTURES. MOUNTING HARDWARE TO FIT CEILING CONDITIONS AT NO EXTRA COST TO THE OWNER.
3. REFER TO ARCHITECTURAL CEILING PLANS FOR EXACT DIMENSIONS, CEILING CONFIGURATION, LIGHTING PLACEMENT AND QUANTITIES.
4. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND MOUNTING HEIGHT OF WALL MOUNTED LIGHTING FIXTURES.
   a. LIGHTING IN ELECTRICAL, MECHANICAL TELE/COM AND EQUIPMENT ROOMS ARE SHOWN FOR QUANTITY ONLY. ACTUAL FIXTURE LOCATIONS TO BE DETERMINED AFTER COORDINATING WITH WORK OF ALL OTHER TRADES. FIXTURES TO BE LOCATED SO THAT MAINTENANCE AND LIGHT OUTPUT ARE NOT OBSTRUCTED. FIXTURES ARE TO BE INSTALLED AFTER ALL OTHER WORK IS SUBSTANTIALLY COMPLETE.

C. **POWER:**

1. PROVIDE CONCRETE PADS (MINIMUM 4" HIGH OR AS INDICATED) FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT INSTALLED IN EQUIPMENT ROOMS AND IN AREAS SUSCEPTIBLE TO BEING WET OR HOSED DOWN. SUBMIT PAD DETAIL PLANS INCLUDING DIMENSIONS FOR APPROVAL.
2. THE LOCATION OF ALL OUTLETS SHALL BE COORDINATED WITH ARCHITECTURAL PLANS BY THE CONTRACTOR PRIOR TO INSTALLATION. MOUNTING HEIGHTS OF RECEPTACLES, SWITCHES, WIRING DEVICES AND DEDICATED EQUIPMENT OUTLETS SHALL BE COORDINATED WITH OTHER TRADES PRIOR TO INSTALLATION.
3. ALL DISCONNECT SWITCHES SHALL BE PAD-LOCKABLE IN THE "OFF" POSITION.
4. ALL FEEDER LENGTH SHOWN ON SINGLE LINE DIAGRAM ARE FOR VOLTAGE DROP CALCULATION ONLY. DO NOT USE FOR ANY OTHER PURPOSES.
5. VERIFY AND COORDINATE EXACT LOCATION, POWER REQUIREMENTS AND METHOD OF CONNECTION OF ALL MECHANICAL EQUIPMENT AND PERTINENT ITEMS AND DEVICES PRIOR TO INSTALLATION OF ELECTRICAL SYSTEM.
6. PROVIDE A MINIMUM OF 12" SEPARATION BETWEEN POWER AND COMMUNICATION CONDUITS, WHERE THEY ARE INSTALLED IN PARALLEL OR IN THE SAME TRENCH.
7. LABEL ALL RECEPTACLES, J-BOXES, DISCONNECT SWITCHES AND CONTROL DEVICES WITH THEIR SERVING CIRCUIT NUMBERS. LABELS SHALL BE PER THE SPECIFICATION.
8. PROVIDE A MINIMUM 24" HORIZONTAL SEPARATION THAT USUALLY APPLIES BETWEEN BOXES INSTALLED ON OPPOSITE SIDES OF THE WALL IN ORDER TO MAINTAIN THE FIRE-RESISTIVE RATING OF ASSEMBLIES WHERE PENETRATION OR OPENINGS ARE MADE.

D. **GROUNDING:**

1. THE EQUIPMENT GROUNDING CONDUCTOR SHALL RUN CONTINUOUS FROM PANEL TO LAST OUTLET. THIS WIRE SHALL BE PIGTAILED TO BOX AND DEVICE. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSULATED GREEN CONDUCTORS.
2. GROUNDING OF CABLE TRAY SHALL BE PER NEC 392-7.
3. PROVIDE EQUIPMENT GROUNDING CONDUCTOR IN ALL LIGHTING AND POWER CONDUITS.

E. **PENETRATIONS:**

1. PENETRATIONS IN WALLS REQUIRING PROTECTED OPENINGS MUST BE FIRESTOPPED WITH AN APPROVED MATERIAL IN ACCORDANCE WITH CBC SECTION 709.6. SPACE BETWEEN PENETRATING MATERIALS (DESCRIBED BELOW) MUST BE DESIGNED TO PREVENT THE SPREAD OF HOT FLAME OR GASES.
2. COPPER OR FERROUS PIPES OR CONDUITS MAY PENETRATE THE WALLS OR PARTITIONS, PROVIDED THEY ARE FIRESTOPPED.
3. OPENINGS FOR STEEL ELECTRICAL OUTLET BOXES NOT EXCEEDING 16 SQUARE INCHES ARE PERMITTED PROVIDED OPENINGS DO NOT AGGREGATE MORE THAN 100 SQUARE INCHES OR 100 SQUARE FEET OF WALL OF PARTITIONS. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY A HORIZONTAL DISTANCE OF 24 INCHES.

F. **AESTHETIC CRITERIA NOTES:**

1. WHERE BENDING MULTIPLE CONDUITS ALONG A COMMON PATH, FIELD BEND THE CONDUITS AROUND A COMMON CENTER POINT FOR ALL CONDUITS SO THAT THE SEPARATION BETWEEN CONDUITS REMAINS CONSTANT THROUGH ENTIRE LENGTH OF BEND.
2. CONDUIT FITTING SHALL BE ALIGNED AND PERPENDICULAR TO THE DIRECTION OF THE RACEWAYS. FITTINGS SHALL HAVE SET SCREWS LOCATED ON TOP OF RACEWAYS AND NOT VISIBLE FROM THE FLOOR.
3. ALL EXPOSED CONDUIT, RACEWAYS AND BOXES SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO ADJACENT BUILDING ELEMENTS AND FASTENED NEATLY AND CONSISTENTLY. IN PUBLIC AREAS, GROUP RACEWAYS IN MINIMUM GROUPS OF THREE RACEWAYS ON A COMMON SUPPORT SYSTEM.
4. MANUFACTURERS LABELS SHALL BE TURNED AWAY FROM PUBLIC VIEW. NO CONSTRUCTIONNOTATIONS SHALL BE VISIBLE IN AREAS EXPOSED TO PUBLIC VIEW.
5. ALL NEW DEVICES, OUTLETS, SWITCHES, CONTROLS, ECT. SHALL BE INSTALLED WITH CONCERN FOR ALIGNMENT WITH WORK OF OTHER TRADES. PROVIDE VERTICAL AND HORIZONTAL ALIGNMENT WITH EQUAL SPACING BETWEEN CENTER LINES. IF DOCUMENTS DO NOT INDICATE ALIGNMENT AND/OR SPACING CONSULT WITH ARCHITECT PRIOR ROUGH IN.

G. **ACOUSTICAL NOTES:**

1. ALL PENETRATIONS INTO SOUND RATED PARTITIONS OR FLOOR-CEILING ASSEMBLIES WILL BE SEALED, LINED OR INSULATED WITH APPROVED PERMANENT RESILIENT ACOUSTIC SEALANT AND FIRE CAULK (WHERE APPLIES).
2. ALL RIGID CONDUIT LOCATED IN SOUND ASSEMBLIES WILL BE ISOLATED FROM THE BUILDING CONSTRUCTION BY MEANS OF RESILIENT SLEEVES, MOUNTS OR MINIMUM 1/4" THICK APPROVED RESILIENT MATERIAL.
3. ELECTRICAL OUTLETS BOXES IN OPPOSITE FACES OF SEPARATION WALLS WILL BE SEPARATED HORIZONTALLY BY 24" AND NOTE THAT BACK AND SIDES OF BOXES WILL BE SEALED WITH 1/8" RESILIENT SEALANT AND BACKED BY MINIMUM OF 2" THICK MATERIAL FIBER INSULATION. (TV, TELEPHONE AND INTERCOM OUTLETS MUST BE INSTALLED IN BOXES ACCORDINGLY.
4. NO ELECTRICAL TRANSFORMER OR RELAYS SHALL BE INSTALLED ON OR IN SOUND RATED PARTITIONS.

H. **COORDINATION**

1. THERE IS NO ASSURANCE THAT THE LOCATION OF SUBSTRUCTURES SHOWN ON THIS DRAWING ARE ACCURATE, OR THAT ALL EXISTING SUBSTRUCTURES ARE SHOWN ON THIS DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL SUBSTRUCTURES WHETHER SHOWN OR NOT. ANY DAMAGE TO THE EXISTING SUBSTRUCTURES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE DEMOLITION LIMIT LINE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL EXISTING UTILITIES, STRUCTURES, PLANTERS, TREES, AND ALL OTHER SITE FEATURES, UNLESS OTHERWISE NOTED ON THE PLAN.
3. COORDINATE WITH LANDSCAPE CONSULTANT FOR TREE LOCATIONS. DO NOT DISTURB ROOT BALL.
4. CONTRACTOR SHALL PROVIDE 1/4" SCALE DRAWING FOR ALL ELECTRICAL ROOMS, CLOSETS AND EQUIPMENT SPACES DEMONSTRATING THAT INSTALLATION HAS BEEN COORDINATED WITH WORK OF OTHER TRADES. USE ACTUAL DIMENSIONS FROM APPROVED EQUIPMENT SUBMITTALS TO COORDINATE LAYOUT AND INSTALLATION OF ELECTRICAL EQUIPMENT, DEVICES AND COMPONENTS WITH OTHER CONSTRUCTION INCLUDING HOUSEKEEPING PADS, CONDUIT, PIPING, EQUIPMENT, AND ADJACENT SURFACES. MAINTAIN MAXIMUM MOUNTING HEIGHTS FOR OPERABLE DEVICES AND REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.

I. **STRUCTURAL NOTES:**

1. DO NOT EMBED CONDUITS OR SLEEVES IN STRUCTURAL CONCRETE, INCLUDING CONCRETE ON METAL DECK WITHOUT SPECIFIC ACCEPTANCE FROM ARCHITECT. LOCATE ELECTRICAL CONDUIT MINIMUM OF 3" APART AND WITHIN MIDDLE 1/3 OF MEMBER.
2. CONDUITS MUST BE SUPPORTED ON APPROVED CHAIRS AFFIXED TO THE SLAB FORMWORK, AND TIGHTLY SECURED TO ADJACENT REINFORCING STEEL WHERE FEASIBLE SO AS TO ASSURE NO MOVEMENT DURING CONCRETE PLACEMENT.
3. MULTIPLE LAYERS OF CONDUIT CROSSING EACH OTHER WITHIN THE 1/3" PLACEMENT ZONE IS ACCEPTABLE; HOWEVER, NO LESS THAN 3/4" VERTICAL CLEARANCE BETWEEN STACKED CONDUITS IS ALLOWED, AND NO MORE THAN THREE LAYERS OF CONDUIT WITHIN THE 1/3" PLACEMENT ZONE ARE ALLOWED AT ANY ONE LOCATION.
4. MULTIPLE CONDUITS PLACED SIDE-BY-SIDE MUST MAINTAIN AT LEAST 3 CONDUIT DIAMETER HORIZONTAL CLEARANCE, BASED ON THE LARGER OF ADJACENT CONDUITS.
5. CONDUIT "BANKS" CONSISTING OF 4 OR MORE CONDUITS MUST BE PLACED IN PLAN VIEW WITHIN THE MIDDLE THIRD OF THE DISTANCE BETWEEN COLUMNS OR BETWEEN COLUMNS AND ENDS/FACES OF WALLS. NO SINGLE "BANK" OF CONDUITS SHALL EXCEED 25 CONDUITS OR A TOTAL WIDTH OF 5 FEET, INCLUDING REQUIRED SPACING BETWEEN CONDUITS.
6. NO CONDUITS ARE ALLOWED TO CROSS OVER THE STUD RAILS/BETWEEN STUDS LOCATED AT COLUMNS AND CERTAIN WALL LOCATIONS. CONDUITS RUNNING ADJACENT TO STUD RAILS MUST HAVE AT LEAST 12" CLEARANCE BETWEEN STUDS AND CONDUIT.
7. JUNCTION BOXES ARE NOT ALLOWED IN THE ZONE AROUND COLUMNS OR ENDS OF WALLS WHERE STUD RAILS ARE LOCATED. THE OUTER PERIMETER OF THE ZONE OF EXCLUSION IS DEFINED BY CONNECTING THE ENDS OF ALL STUD RAILS BY A STRAIGHT LINE.
8. WHERE NO STUD RAILS ARE SHOWN NEAR COLUMNS OR ENDS OF WALLS, JUNCTION BOXES ARE NOT ALLOWED WITHIN 18" OF THE COLUMN FACE OR WITHIN A ZONE DEFINED BY A 36" DIAMETER CIRCLE CENTERED ON THE FACE OF THE WALL AT THE CENTER OF THE WALL.
9. JUNCTION BOXES MAY NOT BE PLACED CLOSER TO EACH OTHER THAN THE LARGEST PLAN DIMENSION OF THE BOX IN EITHER DIRECTION. NO MORE THAN TWO JUNCTION BOXES MAY BE PLACED ADJACENT TO EACH OTHER.
10. THE CONTRACTOR MUST SUBMIT FOR APPROVAL A DETAILED LAYOUT OF CONDUIT BANKS. THE LOCATIONS OF INDIVIDUAL CONDUIT RUNS OR RUNS OF UP TO THREE ADJACENT CONDUITS DO NOT NEED TO BE PRE-APPROVED, BUT MUST FOLLOW ALL APPLICABLE REQUIREMENTS SET FORTH IN THE DOCUMENTS.
11. NO CONCRETE FLOOR SLABS ARE ALLOWED TO BE POURED WITHOUT APPROVAL OF THE CONDUIT LAYOUT PLAN.
12. EXCEPTIONS TO THE ABOVE RULES WILL BE EVALUATED BY THE STRUCTURAL ON A CASE-BY-CASE BASIS.

J. **DEMOLITION:**

1. EXISTING CONDITIONS INDICATED ON DOCUMENTS ARE BASED UPON REVIEW OF AVAILABLE RECORD DOCUMENTS AND VISUAL FIELD SURVEY AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ACTUAL EXISTING CONDITIONS PRIOR TO COMMENCING WORK.
2. SURVEY EXISTING CONDITIONS, INVENTORY AND RECORD THE CONDITION OF ITEMS TO BE REMOVED AND REINSTALLED.
3. RECORD EXISTING CONDITION BY USE OF MEASURED DRAWINGS, PRECONSTRUCTION PHOTOGRAPHS, AND/OR VIDEO TAPES. RECORD CONDITION OF AREAS ADJACENT TO DEMOLITION IN ADDITION TO AREAS TO BE DEMOLISHED.
4. WHERE UTILITIES, FEEDERS, RACEWAYS PASS THROUGH AREAS OR WALLS TO BE DEMOLISHED, DETERMINE SOURCE, FUNCTION AND LOAD PRIOR TO DEMOLITION. IF THESE ARE SERVING AREAS OR LOADS THAT ARE TO REMAIN, PROVIDE PROVISIONS FOR RELOCATING PRIOR TO DEMOLITION.
5. AREAS OR LOADS THAT ARE TO REMAIN, PROVIDE PROVISIONS FOR RELOCATING PRIOR TO DEMOLITION. SOURCE OR FIRST UP STREAM DEVICE TO REMAIN IN SERVICE.
6. REMOVE ALL ABANDONED RACEWAY, CABLES AND EQUIPMENT FROM AREAS TO BE DEMOLISHED/REMODELED UNLESS NOTED OTHERWISE. DEMOLITION TO INCLUDE POWER, LIGHTING FIRE ALARM DEVICES AND RACEWAYS, COMMUNICATION DEVICES AND RACEWAYS, LOW VOLTAGE AND CONTROL SYSTEMS.
7. WHERE RACEWAYS ENTER OR EXIT SLABS OR PARTITIONS TO REMAIN, CUT RACEWAYS FLUSH WITH FINISH SURFACE, REMOVE CONDUCTORS AND PREPARE FOR REFINISH OF AREA.
8. VERIFY THAT ALL UTILITIES HAVE BEEN DISCONNECTED AND MADE SAFE PRIOR TO COMMENCING DEMOLITION.

DELEGATED DESIGN

A. DELEGATED DESIGN ELEMENTS ARE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ENGINEERED DOCUMENTATION ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

B. REFER TO SPECIFICATION FOR DELEGATED DESIGN DOCUMENTATION AND SUBMISSION REQUIREMENTS.

C. ALL DELEGATED DESIGN ELEMENTS SHALL BE PREPARED UNDER THE DIRECTION OF AN ENGINEER LICENSED IN THE STATE OF CALIFORNIA.

D. DELEGATED DESIGN ELEMENTS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING, REFER TO CONSTRUCTION DOCUMENTS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND SUBMISSION REQUIREMENTS:

1. DESIGN SUPPORTS FOR MULTIPLE RACEWAY SYSTEMS CAPABLE OF SUPPORTING THE COMBINED WEIGHT OF ALL RACEWAYS AND SUPPORT COMPOUNDS.
2. DESIGN HOUSEKEEPING PADS AND SUPPORT OF EQUIPMENT ATTACHED TO PAD TO WITHSTAND SEISMIC FORCES.
3. DESIGN SUPPORTS FOR WALL MOUNTED ELECTRICAL EQUIPMENT.
4. DESIGN SUPPORTS FOR CEILING MOUNTED ELECTRICAL EQUIPMENT.
5. PROVIDE SHORT CIRCUIT STUDY USING ACTUAL EQUIPMENT FEEDER LENGTHS AND FEEDER SIZES.
6. PROVIDE ELECTRICAL COORDINATION STUDY USING ACTUAL EQUIPMENT PURCHASED FOR THIS PROJECT.
7. PROVIDE ARC FLASH STUDY USING ACTUAL EQUIPMENT, FEEDER LENGTHS AND SIZES.
8. DESIGN ACOUSTIC ENCLOSURE FOR EMERGENCY GENERATOR CONSIDERING SPACE CONSTRAINTS DEPICTED ON CONSTRUCTION DOCUMENTS AND ACTUAL SOUND LEVELS OF THE GENERATOR PURCHASED FOR USE ON THIS INDICATED IN CONSTRUCTION DOCUMENTS. .
9. CATHODIC PROTECTIONS FOR METALLIC RACEWAYS, RACEWAY FITTINGS, SUPPORTS AND BOXES.

A. INFORMATION COORDINATION DOCUMENTS REQUIRED TO DEMONSTRATE COORDINATION BETWEEN ELECTRICAL AND WORK OF OTHER TRADES.

1. 1/4" SCALE EQUIPMENT LAYOUT DRAWINGS FOR ALL ELECTRICAL SPACES. DRAWING SHALL INCLUDE THE FOLLOWING INFORMATION: FLOOR PLANS LOCATING ALL EQUIPMENT, HOUSEKEEPING PADS, NEC REQUIRED WORKING SPACE AND MANUFACTURERS RECOMMENDED WORKING AND OPERATION SPACE REQUIREMENTS.
2. ARCHITECTURAL, STRUCTURAL ELEMENTS AND WORK OF OTHER TRADES THAT ARE LOCATED WITHIN THE ELECTRICAL SPACES.
3. WALL ELEVATIONS OF ALL WALL THAT INCLUDE ELECTRICAL EQUIPMENT AND ATTACHMENT RECOMMENDATION FOR MOUNTING EQUIPMENT TO WALLS.

B. DESIGN FOOTINGS FOR POLE MOUNTED FIXTURES CONSIDERING FORCES IMPOSED ON THE POLE AND FIXTURES FROM WIND, ICE OR SEISMIC FORCES.

ELECTRICAL ABBREVIATIONS

A, AMP	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME, AMPERE FUSE
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ANN	ANNUNCIATOR
AS	AMPERE SWITCH
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BC	BARE COPPER
BCW	BARE COPPER WIRE
BKBD	BACKBOARD
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CEC	CALIFORNIA ELECTRICAL CODE
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY
COM	COMMON
COMM	COMMUNICATIONS
CONN	CONNECT
CONT	CONTINUE
CT	CURRENT TRANSFORMER
CU	COPPER
(D)	DEMOLISH
DB	DIRECT BURIED
DEF	DUAL ELEMENT FUSE
DIA	DIAMETER
DIM	DIMENSION
DISC	DISCONNECT
DIST	DISTRIBUTION
DN	DOWN
DP	DISTRIBUTION PANEL
DPDT	DOUBLE-POLE DOUBLE-THROW
DWG	DRAWING
(E)	EXISTING
EGC	EQUIPMENT GROUND CONDUCTOR
ELEC	ELECTRICAL
EM, EMER	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
EPO	EMERGENCY POWER OFF
EQUIP	EQUIPMENT
(F)	FUTURE
F	FUSE(D)
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FATC	FIRE ALARM TERMINAL CABINET
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE
FLR	FLOOR
FT	FOOT, FEET
G, GND	GROUND
GALV	GALVANIZE(D)
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GFI	GROUND FAULT CIRCUIT INTERRUPTER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IMB	MAX POWER CURRENT
IN	INCH, INCHES
INV	INVERTER
ISC	SHORT CIRCUIT CURRENT
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER, HEAT PUMP
HPF	HIGH POWER FACTOR
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HZ	HERTZ
IC	INTERRUPTING CAPACITY IN AMPS RMS
IG	ISOLATED GROUND
ISC	SHORT CIRCUIT CURRENT
J, JB	JUNCTION BOX
KAIC	KILOAMPERE INTERRUPTING CAPACITY
KA	THOUSAND AMPERES
KCMIL	THOUSAND CIRCUILAR MILS

KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KWH	KILOWATT-HOUR
KVAR	KILOVAR
LCL	LONG CONTINUOUS LOAD
LF	LINEAR FOOT
LRA	LOCKED ROTOR AMP
LTG	LIGHTING
LV	LOW VOLTAGE
M	MAGNETIC STARTER COIL
MAX	MAXIMUM
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCM	THOUSAND CIRCULAR MILS
MDF	MAIN DISTRIBUTION FRAME
MDP	MAIN DISTRIBUTION PANEL
MFR	MANUFACTURER
MH	METAL HALIDE
MI	MINERAL INSULATED
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
(N)	NEW
N	NEUTRAL
NB	NEUTRAL BUS
NEC	NATIONAL ELECTRIC CODE
NF	NON-FUSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
NTS	NOT TO SCALE
P	POLE(S)
PF	POWER FACTOR
PH/Ø	PHASE
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
(R)	EXISTING TO BE RELOCATED
RECP	RECEPTACLE
RGS	RIGID GALVANIZED STEEL CONDUIT
RM, RMS	ROOM, ROOMS
RT	RADIOTOUCH SYSTEM
SCA	SHORT CIRCUIT AMPS
SEC	SECONDARY
SFD	SMOKE FIRE DAMPER
SPKR	SPEAKER
SQ FT	SQUARE FEET
SUSP	SUSPEND(ED)
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TC	TIME CLOCK
TEL	TELEPHONE
TEMP	TEMPORARY
TTB	TELECOMMUNICATIONS BACKBOARD
TMH	TELECOMMUNICATIONS MANHOLE
TRANSF	TRANSFORMER
TYP	TYPICAL
TVSS	TRANSIENT VOLTAGE SUPRESSION SYSTEM
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT, VOLTS
VA	VOLT-AMPERES
VAV	VARIABLE AIR VOLUME
VFD	VARIABLE FREQUENCY DRIVE
VMP	VOLTAGE AT MAXIMUM POWER
VOC	VOLTAGE OPEN CIRCUIT
W	WATT OR WIRE
WAP	WIRELESS ACCESS POINT
WP	WEATHER PROOF
WT	WATERTIGHT
XFMR	TRANSFORMER

OWNERSHIP OF INSTRUMENTS OF SERVICES

1. ALL REPORTS, DRAWINGS, SPECIFICATIONS, COMPUTER FILES, FIELD DATA, NOTES AND OTHER DOCUMENTS AND INSTRUMENTS PREPARED BY THE CONSULTANT AS INSTRUMENTS OF SERVICE SHALL REMAIN THE PROPERTY OF THE CONSULTANT. THE CONSULTANT SHALL RETAIN ALL COMMON LAW, STATUTORY AND OTHER RESERVED RIGHTS, INCLUDING THE COPYRIGHT THERETO.
2. THE CLIENT ACKNOWLEDGES THE CONSULTANT'S CONSTRUCTION DOCUMENTS, INCLUDING ELECTRONIC FILES, AS INSTRUMENTS OF PROFESSIONAL SERVICE. NEVERTHELESS, THE FINAL CONSTRUCTION DOCUMENTS PREPARED UNDER THIS AGREEMENT SHALL BECOME THE PROPERTY OF THE CLIENT UPON COMPLETION OF THE SERVICES AND PAYMENT IN FULL OF ALL MONIES DUE TO THE CONSULTANT. THE CLIENT SHALL NOT REUSE OR MAKE ANY MODIFICATION TO THE CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN UTHORIZATION OF THE CONSULTANT. THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES AND SUB-CONSULTANTS (COLLECTIVELY, CONSULTANT) AGAINST ANY DAMAGES, LIABILITIES OR COSTS, INCLUDING REASONABLE ATTORNEY'S FEES AND DEFENSE COSTS, ARISING FROM OR ALLEGEDLY ARISING FROM OR IN ANY WAY CONNECTED WITH THE UNAUTHORIZED REUSE OR MODIFICATION OF THE CONSTRUCTION DOCUMENTS BY THE CLIENT OR ANY PERSON OR ENTITY THAT ACQUIRES OR OBTAINS THE CONSTRUCTION DOCUMENTS FROM OR THROUGH THE CLIENT WITHOUT THE WRITTEN AUTHORIZATION OF THE CONSULTANT.

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL E BRACED TO COMPLY WITH THE FORCES AND DISPLACEMENTS PRESCRIBED IN ASCE 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.8, 13.6.7, 13.6.5.6, AND 2013 CBC, SECTIONS 1616A.1.23, 1616A1.24, 161A.1.25 AND 1616A.1.26.

THE BRACING AND ATTACHMENTS TO THE STRUCTURE SHALL E DETAILED ON THE APPROVED DRAWINGS OR THEY SHALL COMPLY WITH ONE OF THE OSHPD PRE-APPROVALS (OPM#).

COPIES OF THE BRACING SYSTEM INSTALLATION GUIDE OR MANUAL SHALL E AVAILABLE ON THE JOB SITE PRIOR TO THE START OF HANGING AND BRACING OF THE PIPE, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS.

THE STRUCTURAL ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF THE STRUCTURE TO SUPPORT THE HANGER AND BRACE LOADS.

FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

?XX-XXX?

AC ____ FLS ____ SS ____

DATE ____

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SEAL

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE

ELECTRICAL GENERAL NOTES AND ABBREVIATIONS

SHEET

E-002

BIM 360://320304 - Lionakis Las Positas PSC-AMT/IG_LasPositas PSC-AMT_MEP_18.rvt

1/17/2020 3:11:30 PM

INTERIOR LUMINAIRE SCHEDULE

FIXTURE TAG KEY: G = GROUND MOUNT; L = LINEAR FIXTURES THAT HAVE VARIABLE LENGTH ON THE PROJECT; P = PENDANT MOUNTED; R = RECESSED; S = SURFACE MOUNTED;
T = TRACK OR TRACK HEAD; W = WALL MOUNTED; X = EXIT SIGNS; Y = POLE MOUNTED; Z = EXTERIOR - TO PRECEDE OTHER FIXTURE TAGS - E.G. ZW1 WOULD BE AN EXTERIOR WALL MOUNTED FIXTURE

ALL FIXTURES BELOW ARE PROVIDED AS A BASIS OF DESIGN ONLY.

FIXTURE TAG	IMAGE	INPUT WATTS	VOLTS	DESCRIPTION	MANUFACTURER	LIGHT SOURCE	COLOR TEMP	CRI	OUTPUT	EFFICACY (LPW)	LED DRIVER OR BALLAST	LOCATION(S)	FINISH	REMARKS
P1				LED DIRECT/INDIRECT LINEAR PENDANT	ZUMTOBEL SLOTLIGHT LED3							CLASSROOMS, LABORATORIES		
P2				LED DECORATIVE PENDANT	DELRAY LUMA LED METAL							ENTRANCE LOBBY		
P3				LED LOW BAY/HIGH BAY TROFFER, EXTERIOR RATED.	KENALL ENVIROPRO							MANUFACTURING LABS, COVERED OUTDOOR YARDS		
R1A				4" RECESSED DOWNLIGHT WITH WIDE BEAM SPREAD IN A GYPITILE CEILING.	ZUMTOBEL BASYS							GENERAL		
R1B				SAME AS R1A BUT IN A WOOD CEILING.	ZUMTOBEL BASYS							STUDY A122		
R1C				SAME AS R1A BUT WITH A NARROWER BEAM SPREAD.	ZUMTOBEL BASYS							CORRIDOR SOFFIT		
R2A				4" RECESSED WALL WASH IN A GYPITILE CEILING.	ZUMTOBEL BASYS							GENERAL		
R2B				SAME AS R2A BUT IN A WOOD CEILING.	ZUMTOBEL BASYS							STUDY A122		
R3				RECESSED LED 2X2 TROFFER	PHILIPS LEDALITE VECTRA							CORRIDOR		
R4				RECESSED LED 2X4 TROFFER	PHILIPS LEDALITE VECTRA							OFFICE, CONFERENCE, SIMULATION ROOMS		
R5				RECESSED LED PERIMETER FIXTURE WITH ASYMMETRIC DISTRIBUTION	ZUMTOBEL SLOTLIGHT LED3							RESTROOMS		
R6				RECESSED LED PERIMETER FIXTURE WITH DIRECT DISTRIBUTION	ZUMTOBEL SLOTLIGHT LED3							CORRIDOR		
S1				4'-0" LED UTILITY FIXTURE	EATON SNLED							BACK OF HOUSE AREAS		
S2				4'-0" LED LINEAR SURFACE MOUNTED FIXTURE	ZUMTOBEL ICOS SURFACE							LOCKER ROOM		
S3				SURFACE MOUNTED LOW BAY FIXTURE	EATON TBLED							GYMNASIUM		
S4		6 W/FT	120	1" x 3.62" PROFILE LINEAR SURFACE MOUNTED UNDERCABINET LIGHT WITH 120 DEGREE BEAM ANGLE	PRIMA NOVO TASK II #54TLENGTH-FINISH-359	LED	3500K	90	167 DELIV. LUM/FT	28	INTEGRAL DIMMING WITH MOST INCANDESCENT DIMMERS	UNDERCABINETS	STANDARD UNLESS SPECIFIED BY ARCHITECT.	COORDINATE LENGTHS OF UNDERCABINET LIGHT WITH MILLWORK CONFIGURATION.
TA				LED TRACK HEAD								ENTRANCE LOBBY, CORRIDOR		
T1				RECESSED TRACK								CORRIDOR		
T2				PENDANT TRACK								ENTRANCE LOBBY		
W1		6 W/FT	120	1.14" SQUARE PROFILE ARM MOUNTED TO 3" LONG ARM, LINEAR LIGHT WITH 370 DEGREE ROTATION AND ANGLE LOCK AND 40 DEGREE SYMMETRIC BEAM SPREAD AND REMOTE POWER SUPPLY	VODE LIGHTING BOX RAIL 107 #107-BX-01-LENGTH-LENGTH-WA-3-4R-AE-1-0-Z-SO-399-S1-0-FINISH	LED	3500K	90	279 DELIV. LUM/FT	47	REMOTE 0-10V 1% DIMMING DRIVER	WHITEBOARDS	FINISH BY ARCHITECT.	REFER TO PLANS FOR LENGTHS.

1. PROVIDE 10% ATTIC STOCK OF ALL LED BOARDS, DRIVERS AND LENSES, AND NO LESS THAN (1) PER FIXTURE TYPE.

EXTERIOR LUMINAIRE SCHEDULE

FIXTURE TAG KEY: G = GROUND MOUNT; L = LINEAR FIXTURES THAT HAVE VARIABLE LENGTH ON THE PROJECT; P = PENDANT MOUNTED; R = RECESSED; S = SURFACE MOUNTED;
T = TRACK OR TRACK HEAD; W = WALL MOUNTED; X = EXIT SIGNS; Y = POLE MOUNTED; Z = EXTERIOR - TO PRECEDE OTHER FIXTURE TAGS - E.G. ZW1 WOULD BE AN EXTERIOR WALL MOUNTED FIXTURE

ALL FIXTURES BELOW ARE PROVIDED AS A BASIS OF DESIGN ONLY.

FIXTURE TAG	IMAGE	INPUT WATTS	VOLTS	DESCRIPTION	MANUFACTURER	LIGHT SOURCE/B...	COLOR TEMP	CRI	OUTPUT	EFFICACY (LPW)	LED DRIVER OR BALLAST	LOCATION	FINISH	REMARKS
ZG1				LED FLOODLIGHT	BK LIGHTING DENALI SERIES							LANDSCAPE		
ZR1				RECESSED LED DOWNLIGHT, EXTERIOR RATED.	BEGA 24 817							MAIN ENTRANCE		
ZS1				LED BOLLARD	BEGA 99570							PATHWAYS		
ZW1				WALL MOUNTED HIGH PERFORMANCE LED SCONCE	PHILIPS LED GARDCO SCONCE							EXTERIOR PROMENADE		
ZW2				WALL MOUNTED SCONCE	PHILIPS LED GARDCO MINI SCONCE							ENTRANCES		
ZY1				LED PEDESTRIAN POLE	EATON INVUE									

1. ALL FIXTURE FINISHES TO MATCH RAL 7016 ANTHRACITE DARK GRAY UNLESS NOTED.
2. PROVIDE 10% ATTIC STOCK OF ALL LED BOARDS, DRIVERS AND LENSES, AND NO LESS THAN (1) PER FIXTURE TYPE.

MEP COMPONENT ANCHORAGE NOTE

A. ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AN DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2013 CBC, SECTION 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

1. ALL PERMANENT EQUIPMENT AND COMPONENTS.
2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.g HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER.
3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8 HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

B. THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT THE ATTACHMENT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

1. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OR ROOF LEVEL THAT DIRECTLY SUPPORT THE COMPONENT.
2. COMPONENTS WEIGHING LESS THAN 20 POUNDS, OR IN THE CASE OF DISTRIBUTED SYSTEMS, LESS THAN 5 POUNDS PER FOOT, WHICH ARE SUSPENDED FROM THE ROOF OR FLOOR OR HUNG FROM A WALL.

C. FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE STRUCTURAL ENGINEER OR RECORD AND THE DSA DISTRICT STRUCTURAL ENGINEER. THE PROJECT INSPECTOR WILL VERIFY THAT ALL COMPONENTS AND EQUIPMENT HAVE BEEN ANCHORED IN ACCORDANCE WITH ABOVE REQUIREMENTS.

FILE NO. ?XX-XXXX?

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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
LIGHTING FIXTURE, PANEL, EQUIPMENT SCHEDULES

SHEET
E-003

LIGHTING CONTROL SEQUENCE OF OPERATIONS

INTERIOR: ALL INTERIOR LIGHTING CONTROLLED VIA WATTSTOPPER DLM SYSTEM.

SPACE/FUNCTION	LOCALIZED NETWORK MANUAL CONTROL OVERRIDE SWITCH	AUTO-ON & AUTO OFF OCCUPANCY SENSING WITH TIME DELAY:	DAYLIGHT HARVESTING (FC SET POINT)	ASTRONOMICAL TIME CLOCK	DEMAND RESPONSE LIGHTING POWER REDUCTION
CORRIDORS/ENTRY/VESTIBULE	ON/OFF. DIMMING	5 MIN.		N/A	ADJUST DOWN 20%
IDF/MDF ROOM ELECTRICAL/MECHANICAL ROOMS	ON/OFF. DIMMING	N/A		SET TO REGULAR HOURS	ADJUST DOWN 20%
STUDY/WORK AREAS	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
KITCHENETTE	ON/OFF. DIMMING	5 MIN.		N/A	ADJUST DOWN 20%
CUSTODIAN CLOSET	ON/OFF. DIMMING	5 MIN.		N/A	ADJUST DOWN 20%
RESTROOMS	ON/OFF. DIMMING	5 MIN.		N/A	ADJUST DOWN 20%
STORAGE ROOMS	ON/OFF. DIMMING	5 MIN.		N/A	ADJUST DOWN 20%
LOCKER ROOM	ON/OFF. DIMMING	10 MIN.		N/A	ADJUST DOWN 20%
MAT ROOM	ON/OFF. DIMMING	10 MIN.		N/A	ADJUST DOWN 20%
CLASSROOMS	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
VR LABS/SIMULATION ROOMS	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
COMPUTER LABS	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
AMT CLASSROOMS	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
AUTO TECH/SMOG BAY	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
WELDING/MANUFACTURING LAB	ON/OFF. DIMMING	20 MIN.		N/A	ADJUST DOWN 20%
OFFICES	ON/OFF. DIMMING	10 MIN.		N/A	ADJUST DOWN 20%
CONFERENCE ROOMS	ON/OFF. DIMMING W/ 2HR OFF OVERRIDE	20 MIN.		N/A	ADJUST DOWN 20%

EXTERIOR: ALL EXTERIOR BUILDING AND SITE LIGHTING CONTROLLED VIA WATTSTOPPER DLM SYSTEM.

SPACE/FUNCTION	LCP MANUAL CONTROL OVERRIDE SWITCH	AUTO-ON & AUTO OFF OCCUPANCY SENSING WITH TIME DELAY:	DAYLIGHT HARVESTING (FC SET POINT)	ASTRONOMICAL TIME CLOCK	DEMAND RESPONSE LIGHTING POWER REDUCTION
PARKING LOT LIGHTING	ON/OFF (DIMMING CAPABLE)	OCCUPANCY OVERRIDE AT 10PM UNTIL 30 MIN AFTER SUNRISE	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, OVERRIDEN BY OCCUPANCY SENSOR AT 10PM	N/A
BOLLARD PATHWAY LIGHTING	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, DIM DOWN 50% AT 10PM, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
EXTERIOR BUILDING MOUNTED LIGHTING	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
EXTERIOR PATHWAY LIGHTING	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, DIM DOWN 50% AT 10PM, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
LANDSCAPE LIGHTING	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
OUTDOOR CARPORT	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
OUTDOOR WELDING YARD	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A
SIGN LIGHTING	ON/OFF (DIMMING CAPABLE)	N/A	N/A	SCHEDULED ON AT 30MIN BEFORE SUNSET, SCHEDULED OFF 30MIN AFTER SUNRISE	N/A

GENERAL NOTES:
1. THE INTENT OF THIS SCHEDULE IS TO CLARIFY THE PROGRAMMING AND FUNCTION OF CONTROLS THAT MAY BE LOCATED IN EACH SPACE TYPE.
2. THIS SCHEDULE IS NOT INTENDED TO DEFINE WHICH CONTROLS ARE TO BE INSTALLED IN EACH SPACE TYPE.
3. FOR CONTROL DEVICES TO BE INSTALLED IN EACH SPACE, REFER TO PLANS.
4. ALL SETPOINTS AND TIME SCHEDULES TO BE VERIFIED WITH OWNER PRIOR TO PROGRAMMING.
5. BUILDING LIGHTING CONTROL SYSTEM TO BE DEMAND RESPONSE CAPABLE AND ABLE TO REDUCE TOTAL LIGHTING POWER BY AT LEAST 15%.
6. PHOTOCELL CONTROLLED LIGHT FIXTURES TO BE REDUCED TO 65% OF LIGHTING OUTPUT (MINIMUM) WHEN THE LIGHTING ILLUMINANCE RECEIVED FROM THE DAYLIGHT IS GREATER THAN 150% OF THE ILLUMINANCE OF THE GENERAL LIGHTING. LIGHT...
7. LIGHTING CONTROL SYSTEM SHALL INTERCONNECT TO BMS. REFER TO MECHANICAL DRAWINGS FOR WIRING CONNECTION REQUIREMENTS.
8. N/A = NOT APPLICABLE WITH CONTROL DESIGN.
9. ALL MANUAL OVERIDE SWITCHES SHALL BE ON NETWORK.
10. INDOOR LIGHTS WILL BE CONTROLLED BY WATTSTOPPER DLM, WHILE OUTDOOR LIGHTS WILL BE CONTROLLED BY LCP. REFER TO THE RELAY SCHEDULE ON SHEET E0.04, FOR ADDITIONAL OUTDOOR LIGHTING CONTROL INFORMATION.

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Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

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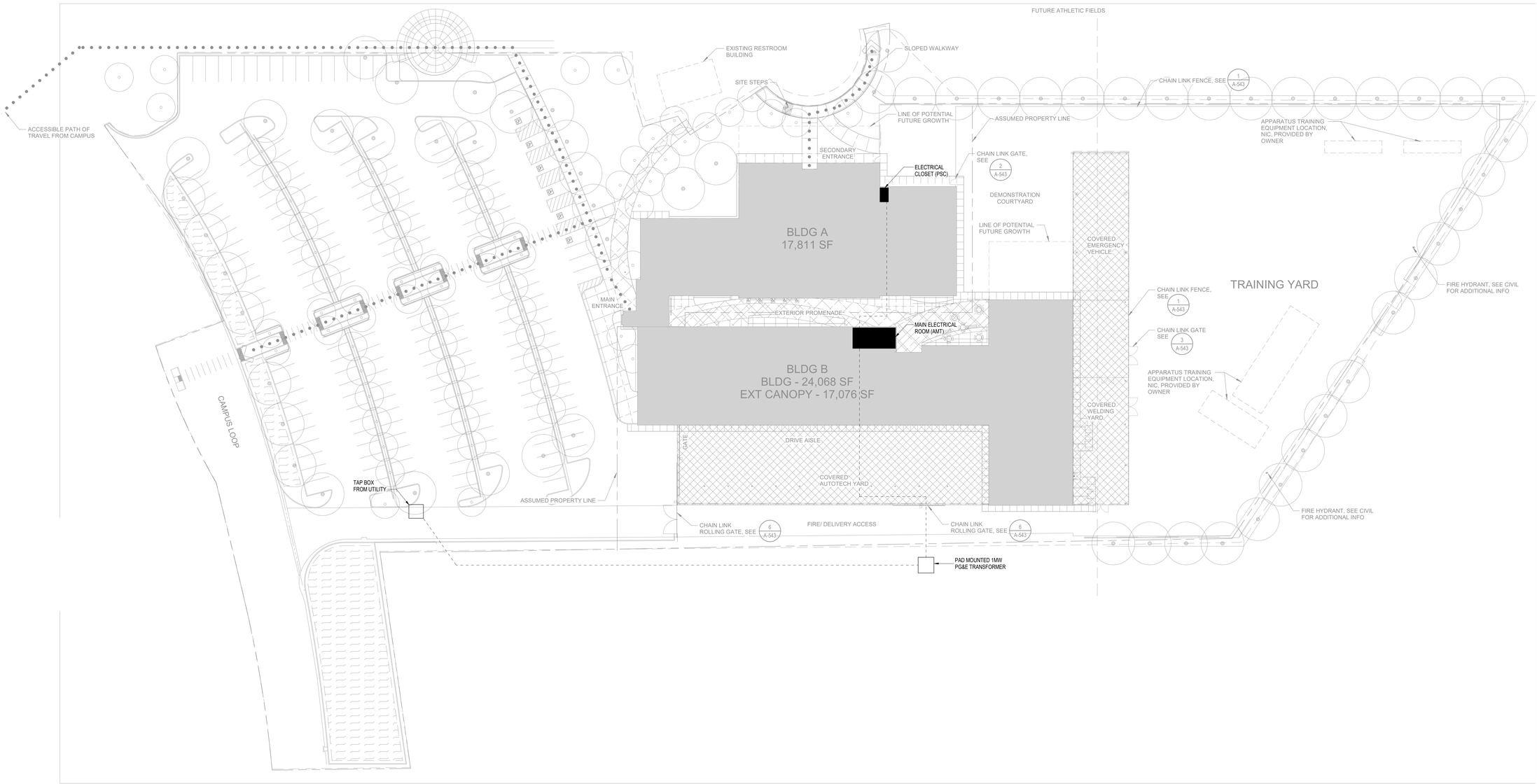
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
SEQUENCE OF OPERATIONS

SHEET
E-004



1 SITE ELECTRICAL PLAN
1" = 30'-0"

SHEET NOTES

1. AAA
2. BBB
3. CCC

GENERAL NOTES

A. CAUTION: EXISTING UNDERGROUND UTILITIES AND STRUCTURES ARE KNOWN TO EXIST ON THE PROJECT SITE. CONTRACTOR TO MAKE USE OF ALL CONSTRUCTION DOCUMENTS TO ASSIST IN LOCATING THE UNDERGROUND UTILITIES AND STRUCTURES. NO REPRESENTATION AS TO ACCURACY OR COMPLETENESS OF THE LOCATION OF THE UNDERGROUND UTILITIES OR STRUCTURES EXISTS.

B. CONTRACTOR TO EXERCISE PRECAUTIONARY MEANS INCLUDING HAND DIGGING OR VACUUM EXCAVATION TO PROTECT THE EXISTING UTILITIES AND STRUCTURES. WHERE EXACT LOCATIONS OF UTILITIES AND STRUCTURES CAN NOT BE DETERMINED HAND OR VACUUM EXCAVATION WILL BE REQUIRED.

C. INSTALLATION OF PG&E SERVICE CONDUITS, GROUNDINGS, ETC SHALL BE VERIFIED AND COORDINATED WITH PG&E PRIOR TO INSTALLATION. ALL WORK SHALL CONFORM WITH PG&E RULES, REGULATIONS, AND STANDARDS. THE PROPOSED PG&E SERVICE FEEDER ROUTING AND SIZE ARE SUBJECT TO PG&E ENGINEERING, REVIEW, AND APPROVAL. AT THE TIME OF ISSUANCE OF THESE DOCUMENTS, PG&E ENGINEERING HAS NOT BEEN COMPLETED. CONTRACTOR SHALL COORDINATE AND VERIFY REQUIREMENTS FOR THE PROJECT WITH PG&E PRIOR TO COMMENCEMENT OF WORK.

D. MINIMUM CONDUCTOR SIZE FOR SITE LIGHTING AND SITE RECEPTACLES SHALL BE #10 INCLUDING NEUTRAL CONDUCTOR.

E. PULL BOXES FOR STRAIGHT PULL ONLY. PROVIDE ADDITIONAL 1-1/4"C. SPARE FOR EACH PULL BOX.

F. PROVISIONS SHALL BE MADE TO DISCONNECT EXISTING SERVICE EQUIPMENT AND RECONNECT NEW SERVICE EQUIPMENT WITH MINIMAL POWER DISRUPTION.

G. PROVIDE SEPARATE PULL BOXES FOR POWER AND COMMUNICATIONS CONDUIT. LABEL IN GRADE POWER PULL BOXES AS "ELECTRICAL." LABEL IN GRADE COMMUNICATIONS PULL BOXES AS "SIGNAL."

H. INSTALLATION OF TELEPHONE SERVICE CONDUITS, ETC., SHALL BE VERIFIED AND COORDINATED WITH TELEPHONE PROVIDER PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE AND VERIFY REQUIREMENTS FOR THE PROJECT WITH TELEPHONE PROVIDER PRIOR TO COMMENCEMENT OF WORK.

I. POWER FOR BLUE PHONES, SECURITY CAMERAS AND WIRELESS ACCESS POINTS TO BE COORDINATED IN DD.

FILE NO. ?XX-XXXX?

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ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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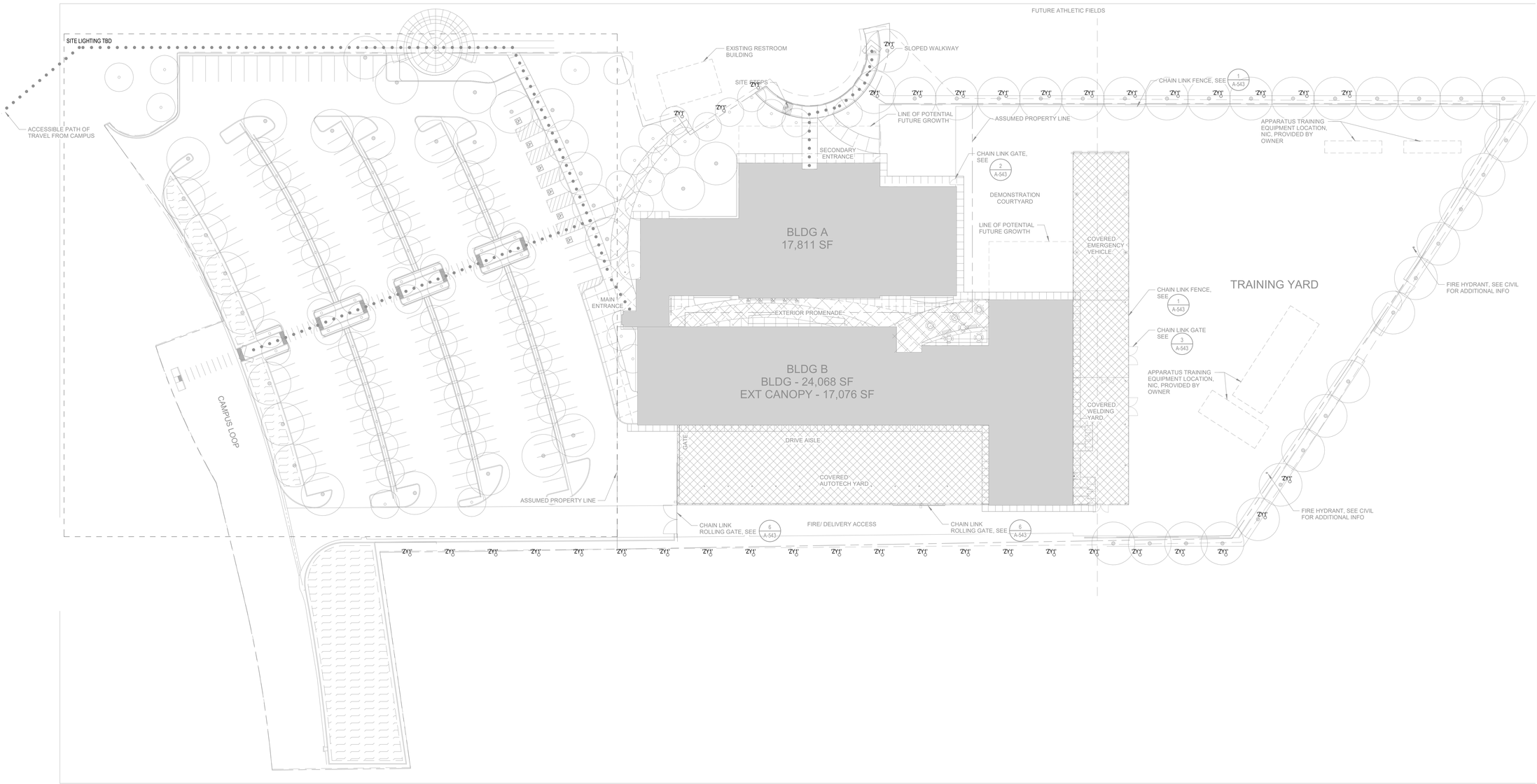
TITLE
SITE ELECTRICAL PLAN

SHEET
E-101



1 SITE LIGHTING PLAN
1" = 30'-0"

SHEET NOTES

1. ALL EXTERIOR BUILDING MOUNTED FIXTURES SHOWN ON BUILDING PLANS.
2. BBB
3. CCC

GENERAL NOTES

A. AAA
B. BBB
C. CCC

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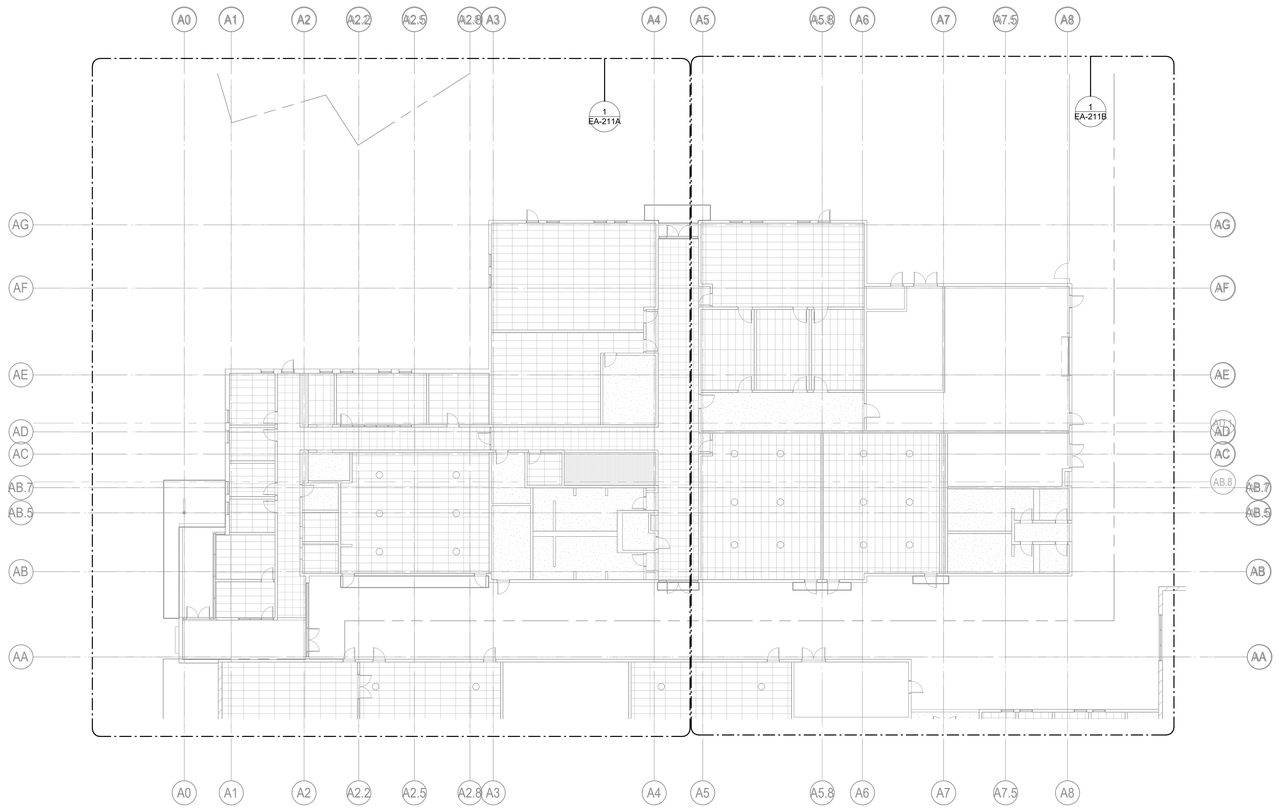
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
SITE LIGHTING PLAN

SHEET
E-102



1 BUILDING A - LIGHTING OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

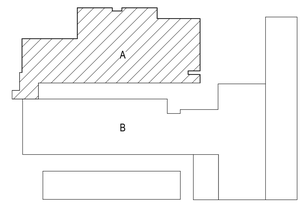
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

FILE NO. ?XX-XXXX?

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	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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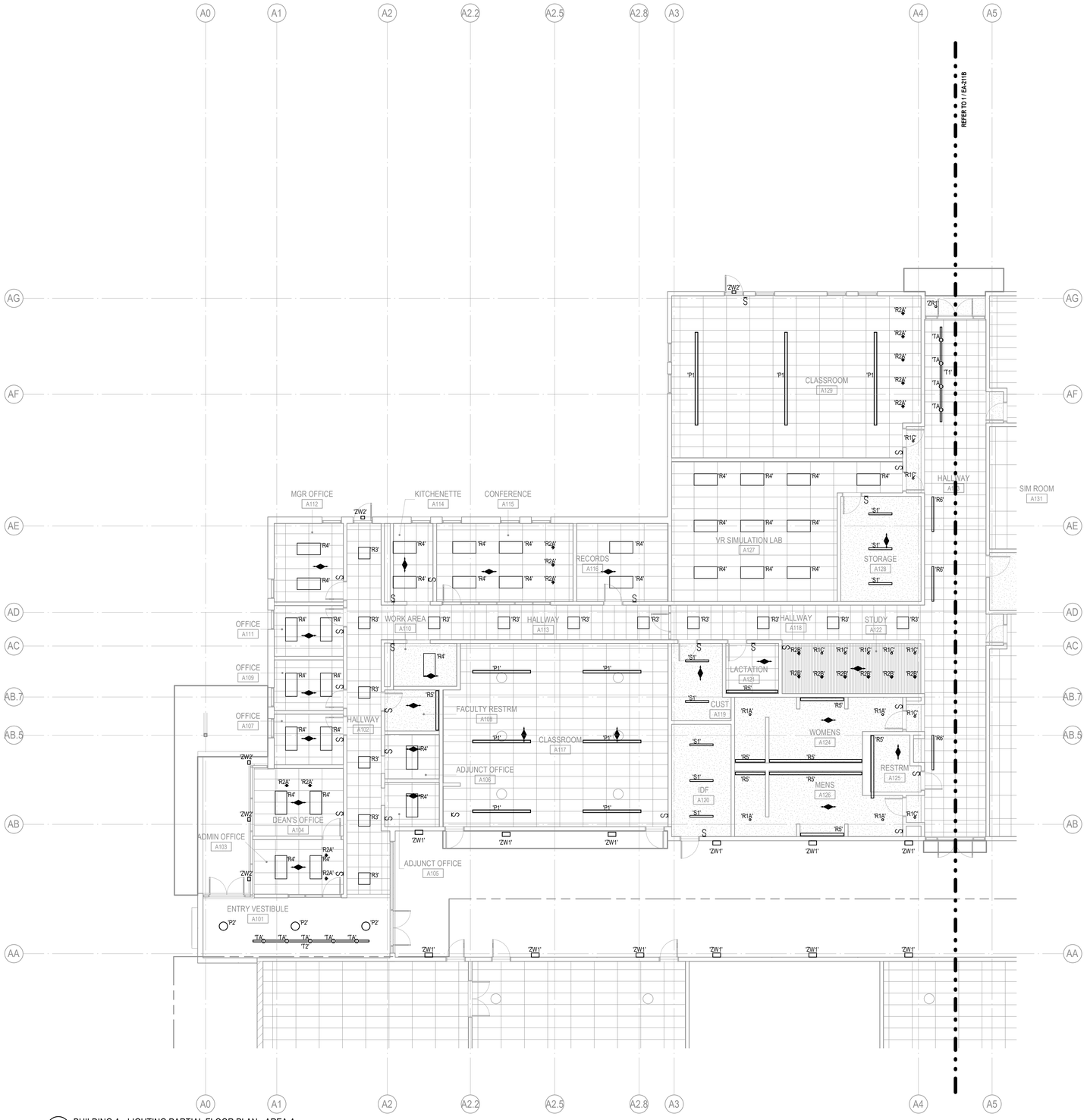
TITLE
BUILDING A - LIGHTING OVERALL FLOOR PLAN

SHEET
EA-211



1 BUILDING A - LIGHTING PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

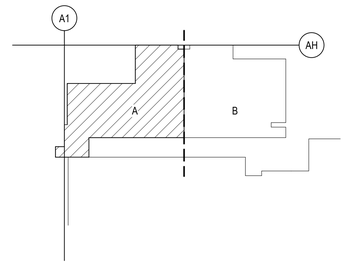
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6' SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

FILE NO. ?XX-XXXX?

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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXXX?
Building No: ?XXX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE
BUILDING A - LIGHTING PARTIAL FLOOR PLAN - AREA A

SHEET
EA-211A

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0 1/4" 1/2" 1"

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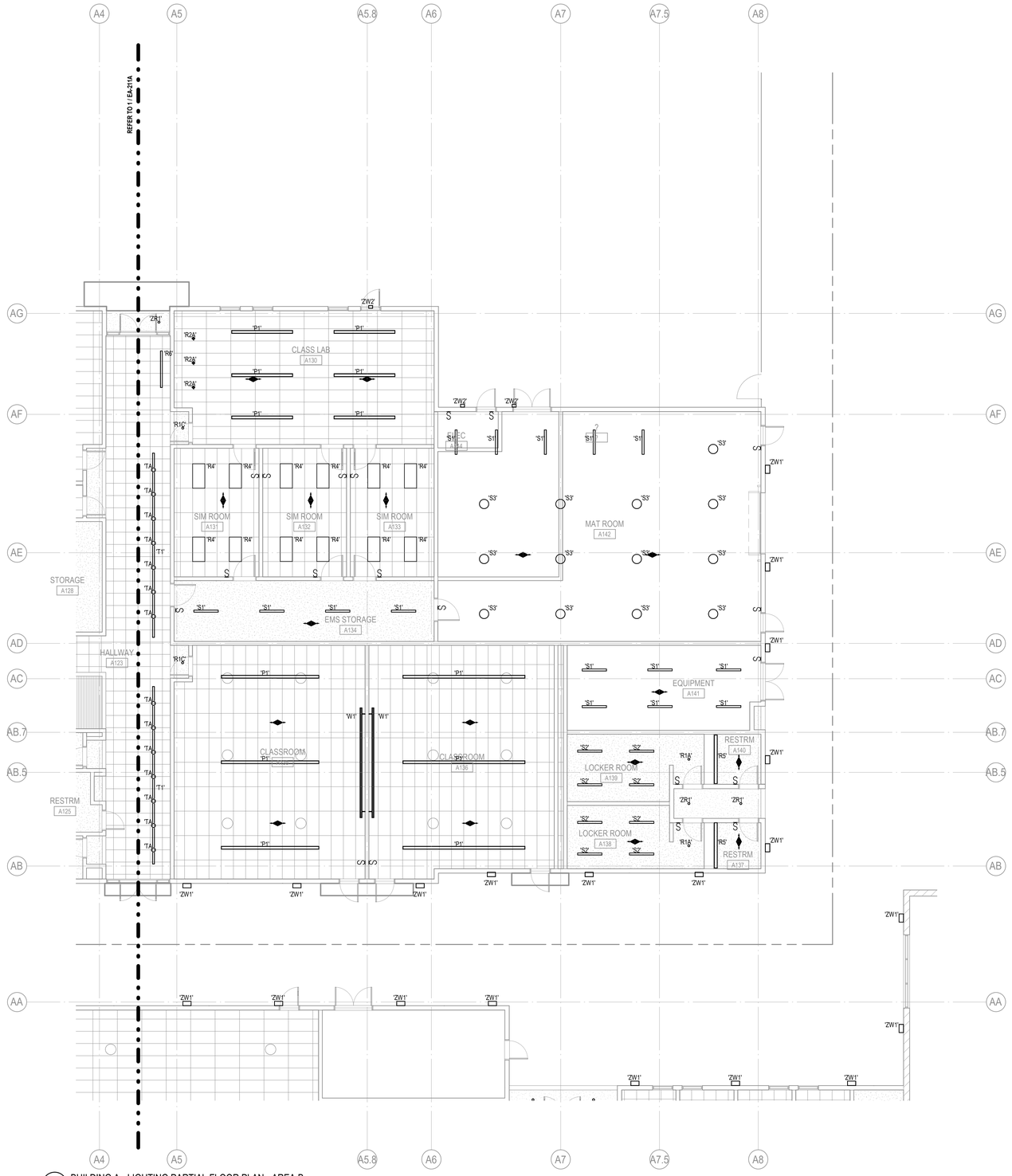


1 BUILDING A - LIGHTING PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

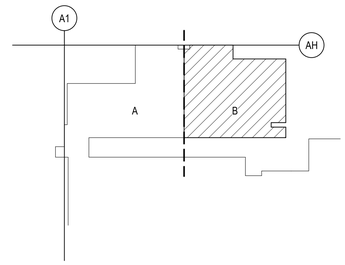
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6' SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

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MANAGEMENT

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TITLE
BUILDING A - LIGHTING PARTIAL FLOOR PLAN - AREA B

SHEET
EA-211B

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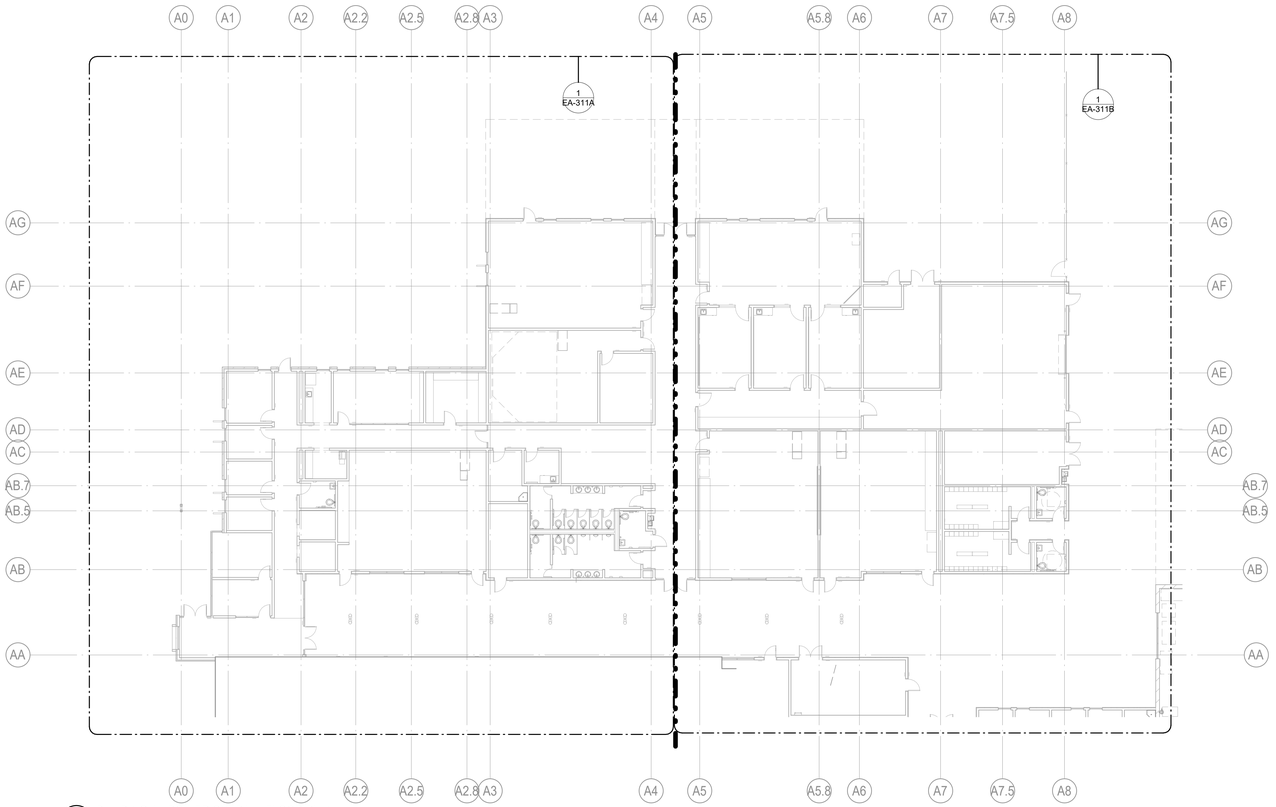

1 BUILDING A - POWER OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATIONS OF ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.

B. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

C. STUB A MINIMUM OF 4 SPARE 3/4" CONDUITS FROM ALL NEW RECESSED PANELBOARDS TO ACCESSIBLE CEILING LOCATION.

D. SEE EQUIPMENT SCHEDULE, SINGLE LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON WIRING, LAYOUT AND CONNECTIONS.

E. PROVIDE POWER 120V/24V TRANSFORMER AS REQUIRED TO POWER VAV/BY-PASS DAMPERS, RESTROOM PLUMBING CONTROLS, DUCT SMOKE DETECTORS, MAGNETIC DOOR HOLDERS AND FIRE SMOKE DAMPERS FOR MECHANICAL EQUIPMENT. SEE DIAGRAMS ON MECHANICAL AND PLUMBING DRAWINGS FOR CONNECTION TO MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE CIRCUIT FORM NEAREST AVALIABLE PANEL, UNLESS OTHERWISE NOTED.

F. SIZE FUSES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

G. REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

(##) SHEET NOTES

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2. BBB
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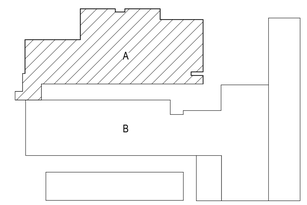
KEY PLAN



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MANAGEMENT

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TITLE
BUILDING A - POWER OVERALL FLOOR PLAN

SHEET
EA-311

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1 BUILDING A - POWER PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

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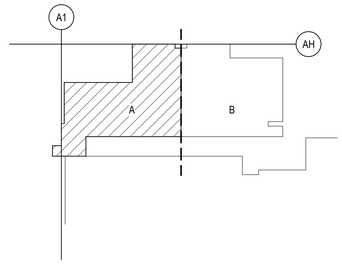

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MANAGEMENT

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TITLE
BUILDING A - POWER PARTIAL FLOOR PLAN - AREA A

SHEET
EA-311A

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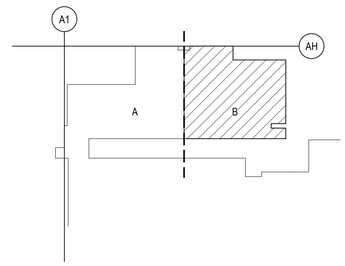

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MANAGEMENT

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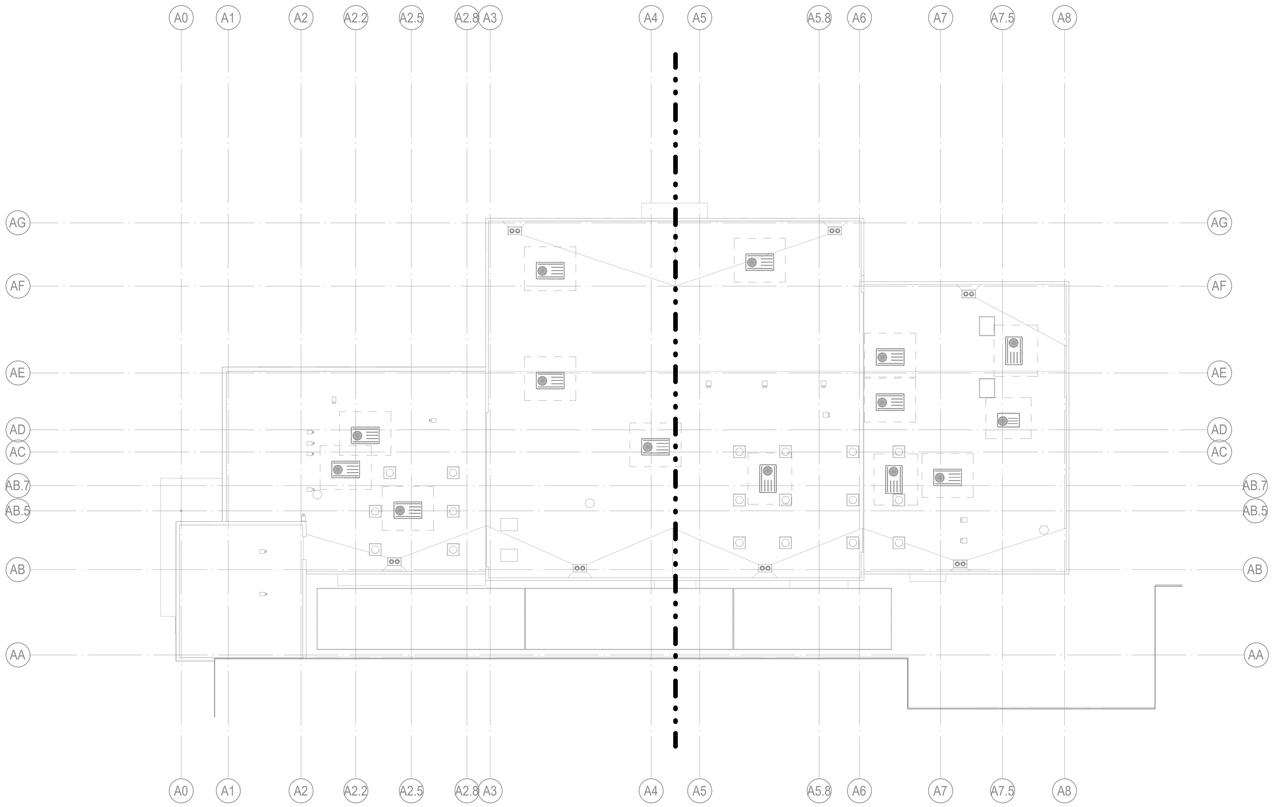
TITLE
BUILDING A - POWER PARTIAL FLOOR PLAN - AREA B

SHEET
EA-311B



1 BUILDING A - POWER OVERALL ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

1. INSTALLED LOCAL TO EQUIPMENT SERVED
2. WITHIN PROXIMITY OF EQUIPMENT SERVER.

B. USE LIQUID FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO EQUIPMENT. MAXIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT: 6 FEET. SUPPORT PER NEC ARTICLE 350 AT 4- 1/2 FEET. INTERVALS AND WITHIN 12 INCHES OF EACH OUTLET AND TERMINATION.

C. MOUNT DISCONNECT SWITCHES, COMBINATION STARTERS, RECEPTACLES, AND OTHER DEVICES FREE AND INDEPENDENT OF MECHANICAL EQUIPMENT HOUSINGS EXCEPT, EXCEPT WHERE ALL THE FOLLOWING CONDITIONS APPLY, THE DISCONNECT MAY BE MOUNTED TO THE MECHANICAL EQUIPMENT SERVED FROM THE DISCONNECT SWITCH:

1. WHERE ACCEPTABLE TO THE MECHANICAL CONTRACTOR
2. WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION
3. WHERE THE LOCATION PROVIDES FREE AND CLEAR FRONT ACCESS TO DEVICES AND SWITCHESFOR SERVICE AND USE.
4. WHERE THE LOCATION DOES NOT INHIBIT ACCESS TO MECHANICAL EQUIPMENT FOR SERVICE,INSPECTION, AND OPERATION.
5. WHERE AIR FLOW PATHS ARE NOT OBSTRUCTED.

D. ALL ROOF PENETRATIONS TO BE PERFORMED BY A LICENSED ROOFING CONTRACTOR. COORDINATE ROOF PENETRATION AND FLASHING WITH ROOFING CONTRACTOR.

E. CONSTRUCTION OF ROOF SUPPORTS (SLEEPERS) FOR RUNS OF HORIZONTAL CONDUIT DEDICATED TO EQUIPMENT SERVED TO BE BY LICENSED ROOFING CONTRACTOR AND ATTACHED TO ROOF STRUCTURE.

F. SECURE CONDUIT TO SUPPORTS AT CODE REQUIRED INTERVALS.

G. ROOF PENETRATIONS MATERIALS AND CONSTRUCTION BY LICENSED ROOFING CONTRACTOR. SEE ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

H. VERIFY EXACT LOCATION, LAYOUT AND ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN .

I. REFER TO CONTROLS CONTRACTOR WHERE REQUIRED FOR ALL CONDUIT REQUIREMENTS.

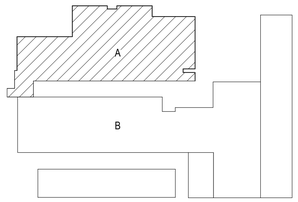
J. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT POWER POINT OF CONNECTION TO ALL UNITS AND LOCATE DISCONNECT WHERE CODE REQUIRE CLEARANCES WILL BE MAINTAINED. LOCATION OF DISCONNECT ARE DIAGRAMMATIC, CONTRACTOR SHALL PROVIDE FLOOR PEDESTALS OR UNISTRUT AT THE AC ENCLOSURE FOR MOUNTING OD DISCONNECT.

K. FIRE ALARM DEVICES, DAMPERS, SMOKE DETECTORS AND REQUIRED CONTROLS POWER SHALL BE COORDINATED WITH HVAC AND FIRE ALARM SYSTEM INSTALLER.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

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MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
BUILDING A - POWER OVERALL ROOF PLAN

SHEET
EA-321

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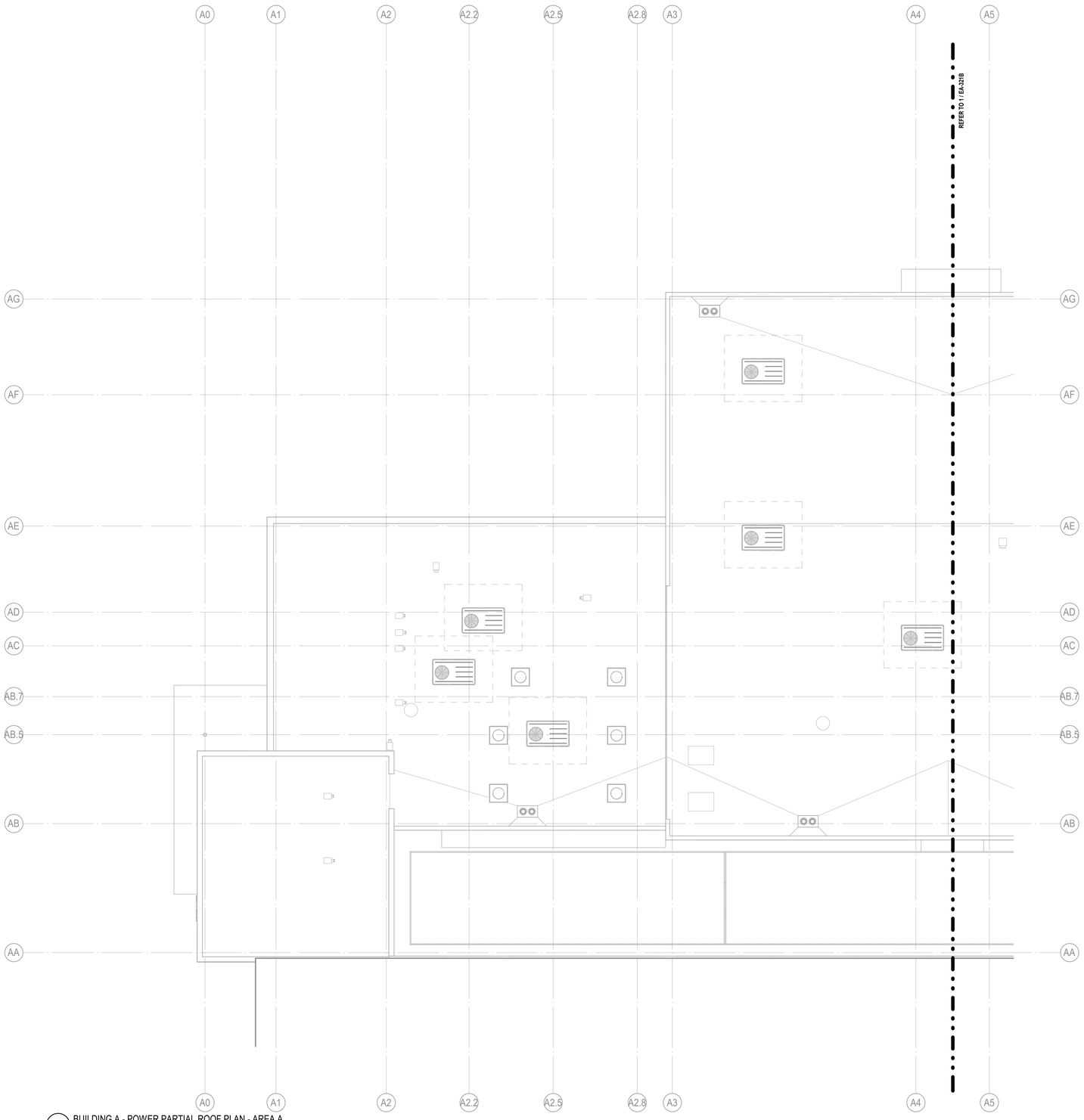

1 BUILDING A - POWER PARTIAL ROOF PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

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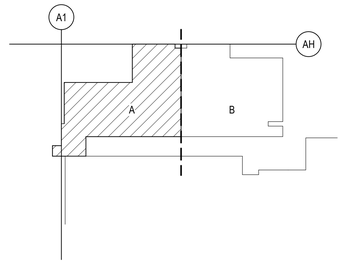

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	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BUILDING A - POWER PARTIAL ROOF PLAN - AREA A

SHEET
EA-321A

1 BUILDING A - POWER PARTIAL ROOF PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

1. INSTALLED LOCAL TO EQUIPMENT SERVED
2. WITHIN PROXIMITY OF EQUIPMENT SERVER.

B. USE LIQUID FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO EQUIPMENT. MAXIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT: 6 FEET. SUPPORT PER NEC ARTICLE 350 AT 4- 1/2 FEET. INTERVALS AND WITHIN 12 INCHES OF EACH OUTLET AND TERMINATION.

C. MOUNT DISCONNECT SWITCHES, COMBINATION STARTERS, RECEPTACLES, AND OTHER DEVICES FREE AND INDEPENDENT OF MECHANICAL EQUIPMENT HOUSINGS EXCEPT, EXCEPT WHERE ALL THE FOLLOWING CONDITIONS APPLY, THE DISCONNECT MAY BE MOUNTED TO THE MECHANICAL EQUIPMENT SERVED FROM THE DISCONNECT SWITCH:

1. WHERE ACCEPTABLE TO THE MECHANICAL CONTRACTOR
2. WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION
3. WHERE THE LOCATION PROVIDES FREE AND CLEAR FRONT ACCESS TO DEVICES AND SWITCHESFOR SERVICE AND USE.
4. WHERE THE LOCATION DOES NOT INHIBIT ACCESS TO MECHANICAL EQUIPMENT FOR SERVICE,INSPECTION, AND OPERATION.
5. WHERE AIR FLOW PATHS ARE NOT OBSTRUCTED.

D. ALL ROOF PENETRATIONS TO BE PERFORMED BY A LICENSED ROOFING CONTRACTOR. COORDINATE ROOF PENETRATION AND FLASHING WITH ROOFING CONTRACTOR.

E. CONSTRUCTION OF ROOF SUPPORTS (SLEEPERS) FOR RUNS OF HORIZONTAL CONDUIT DEDICATED TO EQUIPMENT SERVED TO BE BY LICENSED ROOFING CONTRACTOR AND ATTACHED TO ROOF STRUCTURE.

F. SECURE CONDUIT TO SUPPORTS AT CODE REQUIRED INTERVALS.

G. ROOF PENETRATIONS MATERIALS AND CONSTRUCTION BY LICENSED ROOFING CONTRACTOR. SEE ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

H. VERIFY EXACT LOCATION, LAYOUT AND ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN .

I. REFER TO CONTROLS CONTRACTOR WHERE REQUIRED FOR ALL CONDUIT REQUIREMENTS.

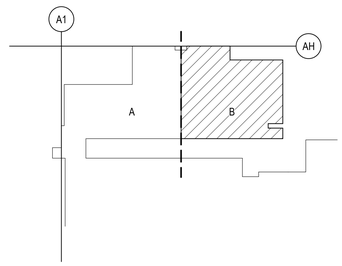
J. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT POWER POINT OF CONNECTION TO ALL UNITS AND LOCATE DISCONNECT WHERE CODE REQUIRE CLEARANCES WILL BE MAINTAINED. LOCATION OF DISCONNECT ARE DIAGRAMMATIC, CONTRACTOR SHALL PROVIDE FLOOR PEDESTALS OR UNISTRUT AT THE AC ENCLOSURE FOR MOUNTING OD DISCONNECT.

K. FIRE ALARM DEVICES, DAMPERS, SMOKE DETECTORS AND REQUIRED CONTROLS POWER SHALL BE COORDINATED WITH HVAC AND FIRE ALARM SYSTEM INSTALLER.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

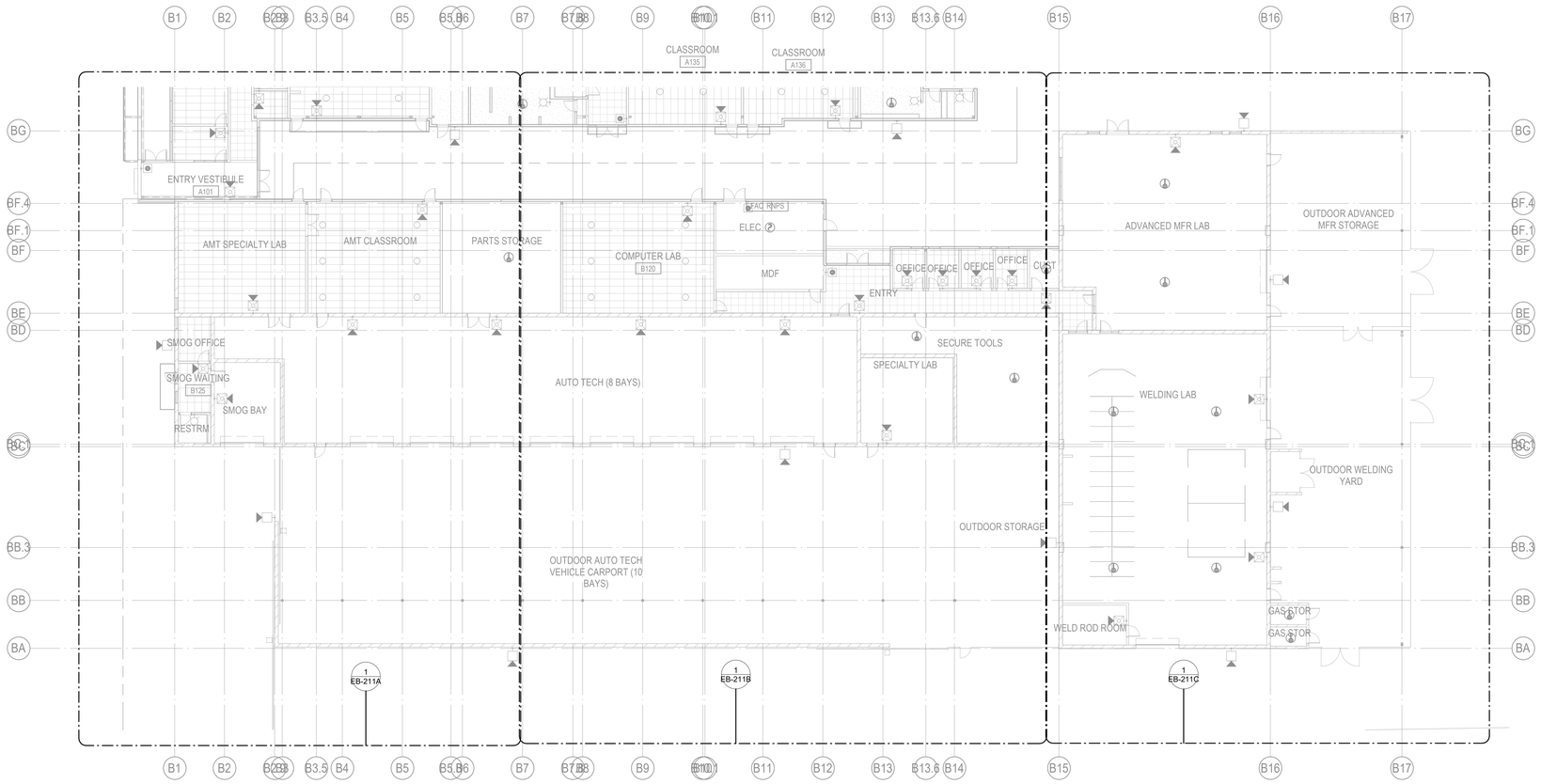
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
BUILDING A - POWER PARTIAL ROOF PLAN - AREA B

SHEET
EA-321B



1 BUILDING B - LIGHTING OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

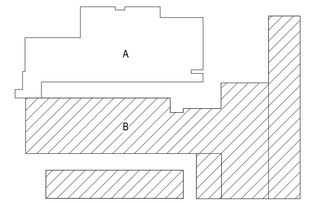
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6' SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

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OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
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TITLE
BUILDING B - LIGHTING OVERALL FLOOR PLAN

SHEET
EB-211

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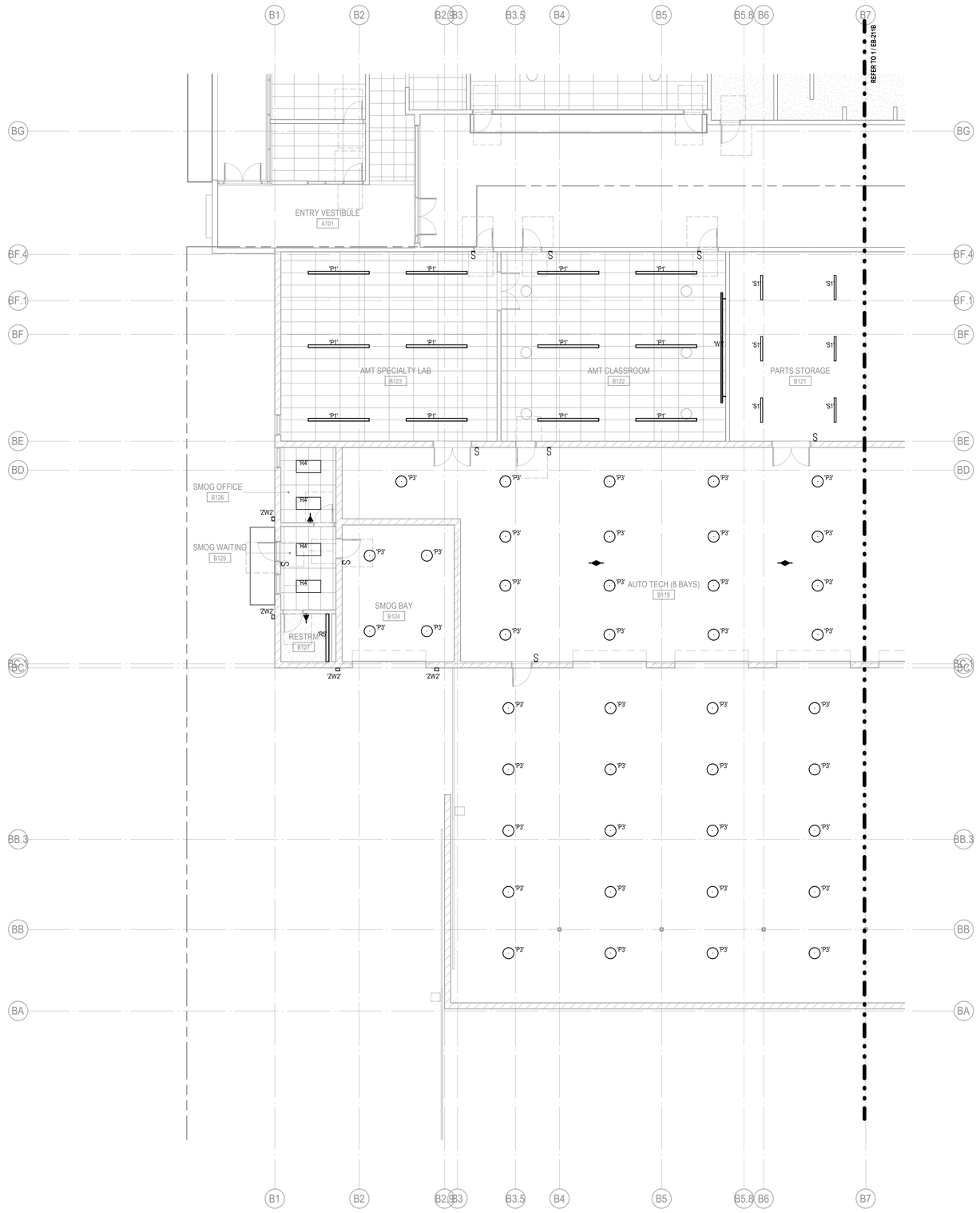


1 BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

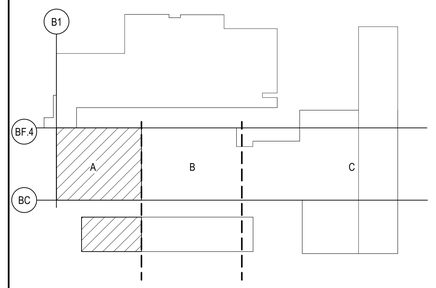
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6" SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
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Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA A

SHEET
EB-211A

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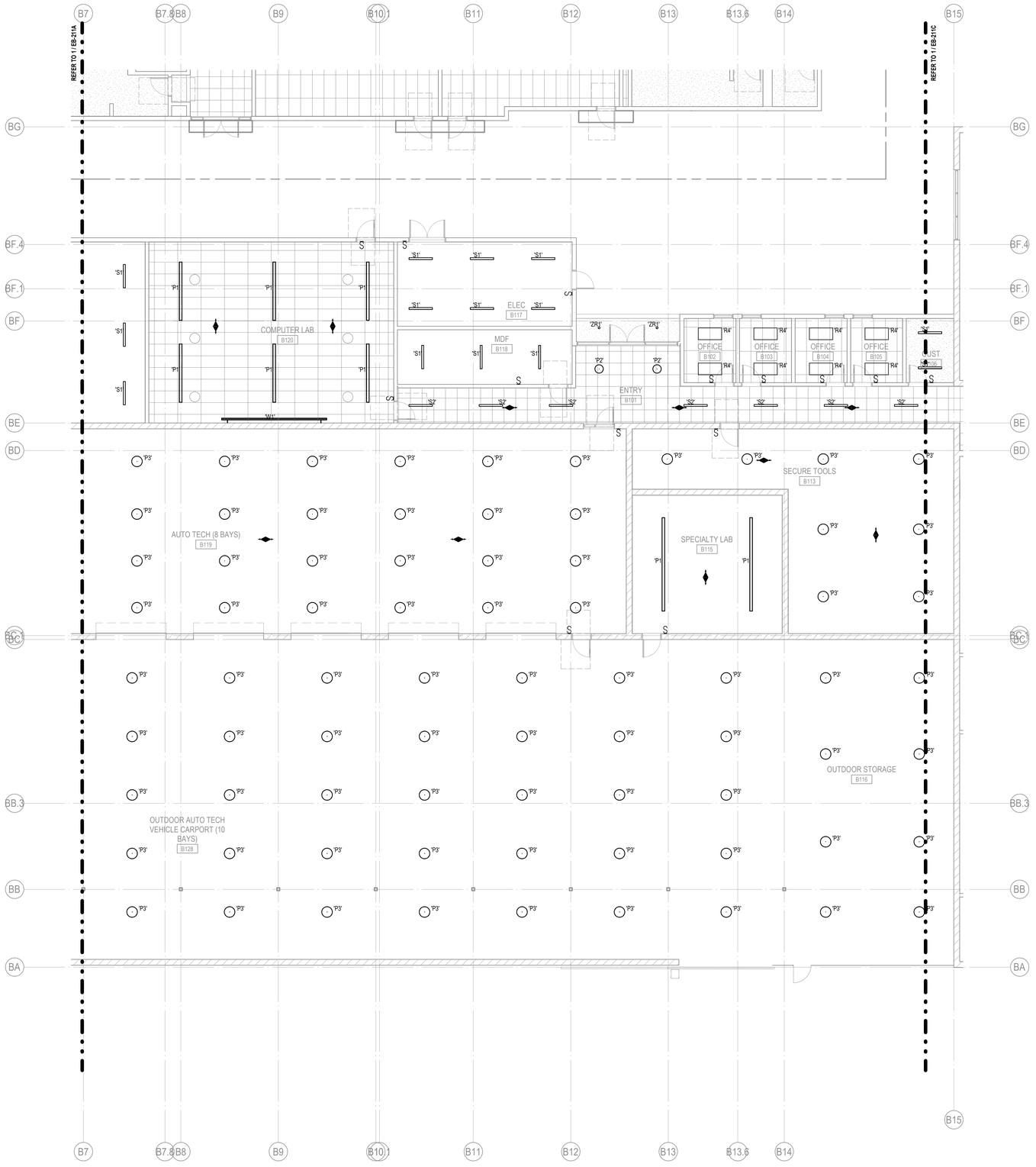


1 BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

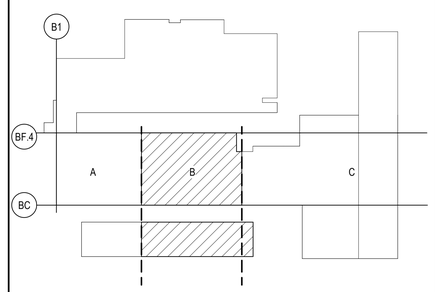
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6' SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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7600 DUBLIN BLVD
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Building No: ?XX?
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ISSUED

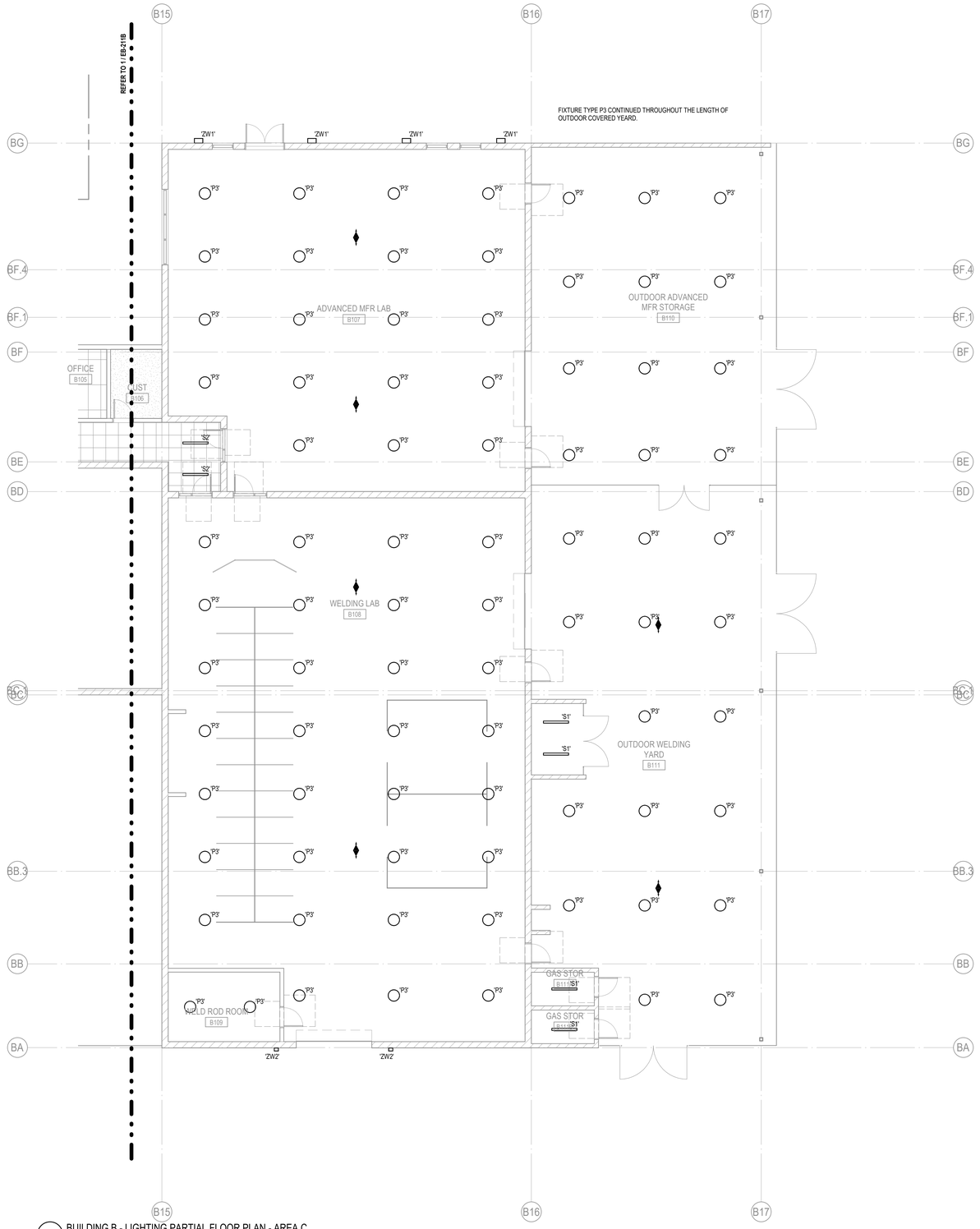
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO:

TITLE
BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA B

SHEET
EB-211B



1 BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO ARCHITECTURAL CONSTRUCTION DOCUMENTS FOR TYPES AND MATERIALS. COORDINATE LIGHTING FIXTURE CEILING ROUGH-IN, TRIMS AND SUPPORT WITH LIGHTING SUPPLIER PRIOR TO RELEASE OF LIGHTING FIXTURES.

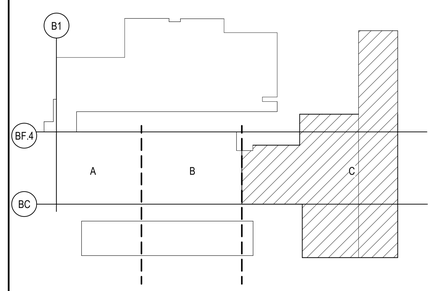
B. FIELD MEASURE ALL LIGHTING COVES TO DETERMINE EXACT LENGTHS. LIGHTING FIXTURES SHALL PROVIDE UNIFORM LIGHTING FROM END TO END OF COVE. MAXIMUM 6' SPACE IS ALLOWED AT EACH END OF COVE FOR CONTINUOUS INSTALLATIONS.

C. OCCUPANCY SENSOR IN OFFICES SHOULD BE "MANUAL ON / AUTO OFF".

SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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TITLE
BUILDING B - LIGHTING PARTIAL FLOOR PLAN - AREA C

SHEET
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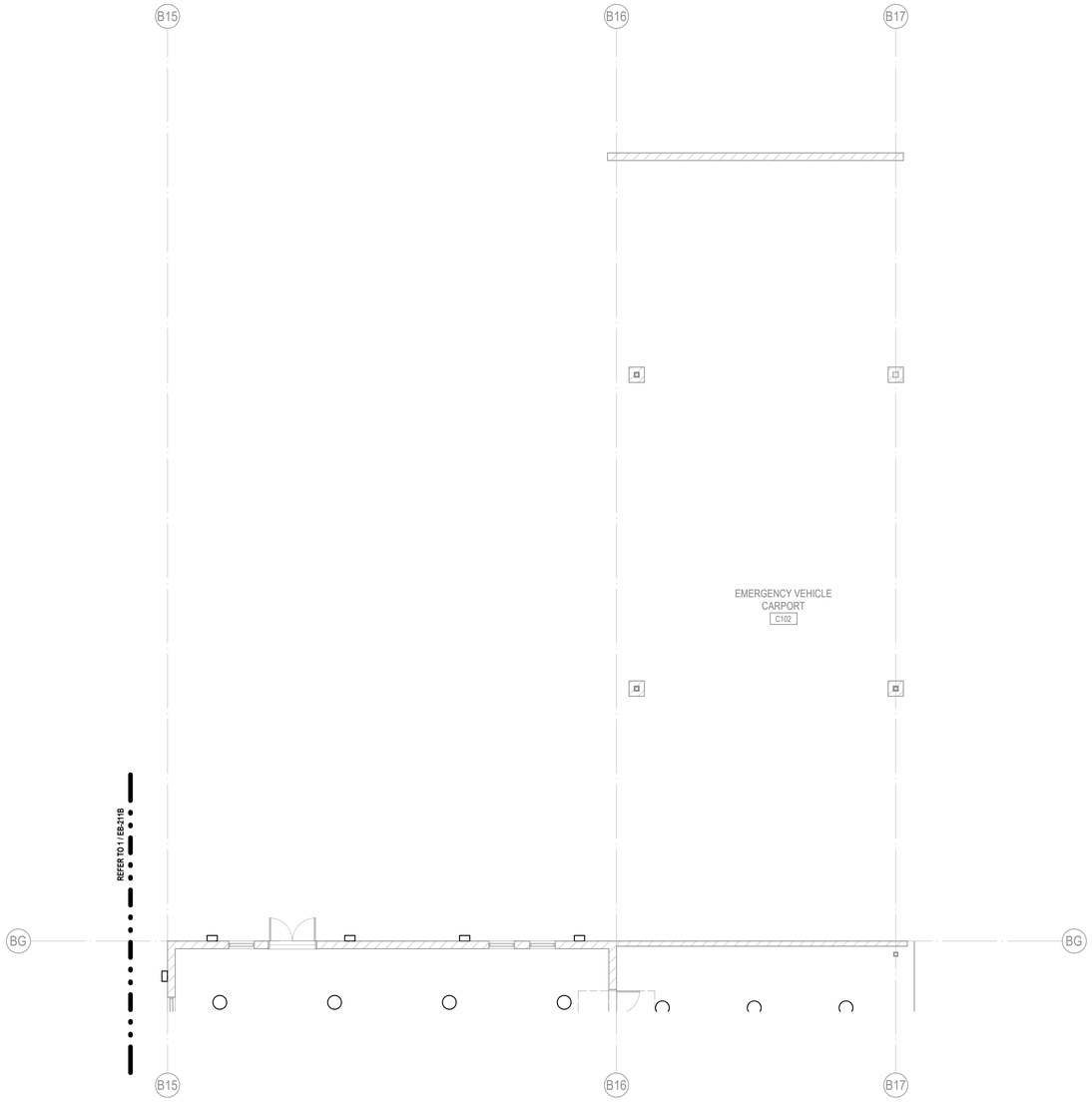
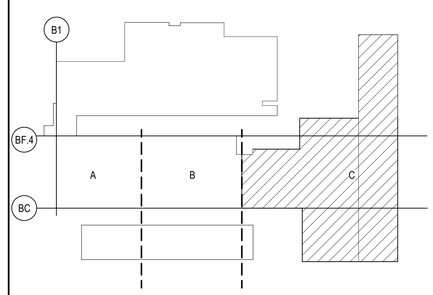


1 BUILDING B - LIGHTING PARTIAL FLOOR PLAN - CARPORT
1/8" = 1'-0"

KEY PLAN



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Building No: ?XX?
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MANAGEMENT

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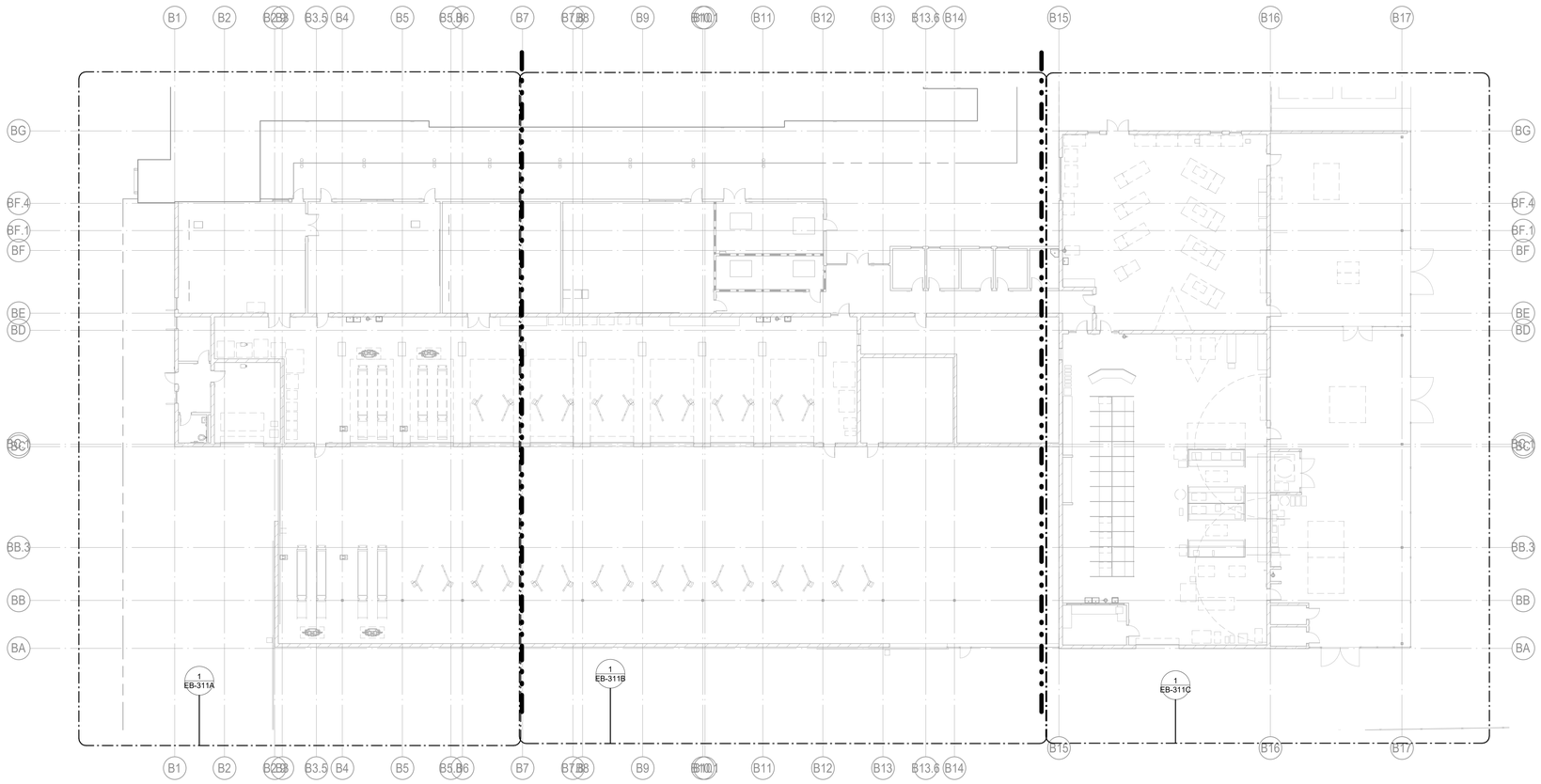
TITLE
BUILDING B - LIGHTING PARTIAL FLOOR PLAN - CARPORT

SHEET
EB-211D



1 BUILDING B - POWER OVERALL FLOOR PLAN
1/16" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATIONS OF ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.

B. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

C. STUB A MINIMUM OF 4 SPARE 3/4" CONDUITS FROM ALL NEW RECESSED PANELBOARDS TO ACCESSIBLE CEILING LOCATION.

D. SEE EQUIPMENT SCHEDULE, SINGLE LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON WIRING, LAYOUT AND CONNECTIONS.

E. PROVIDE POWER 120V/24V TRANSFORMER AS REQUIRED TO POWER VAV/BY-PASS DAMPERS, RESTROOM PLUMBING CONTROLS, DUCT SMOKE DETECTORS, MAGNETIC DOOR HOLDERS AND FIRE SMOKE DAMPERS FOR MECHANICAL EQUIPMENT. SEE DIAGRAMS ON MECHANICAL AND PLUMBING DRAWINGS FOR CONNECTION TO MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE CIRCUIT FORM NEAREST AVALIABLE PANEL, UNLESS OTHERWISE NOTED.

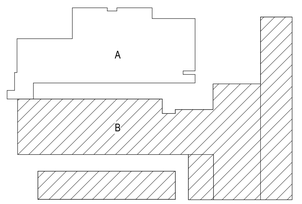
F. SIZE FUSES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

G. REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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MARK	DATE	DESCRIPTION
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MANAGEMENT

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TITLE
BUILDING B - POWER OVERALL FLOOR PLAN

SHEET
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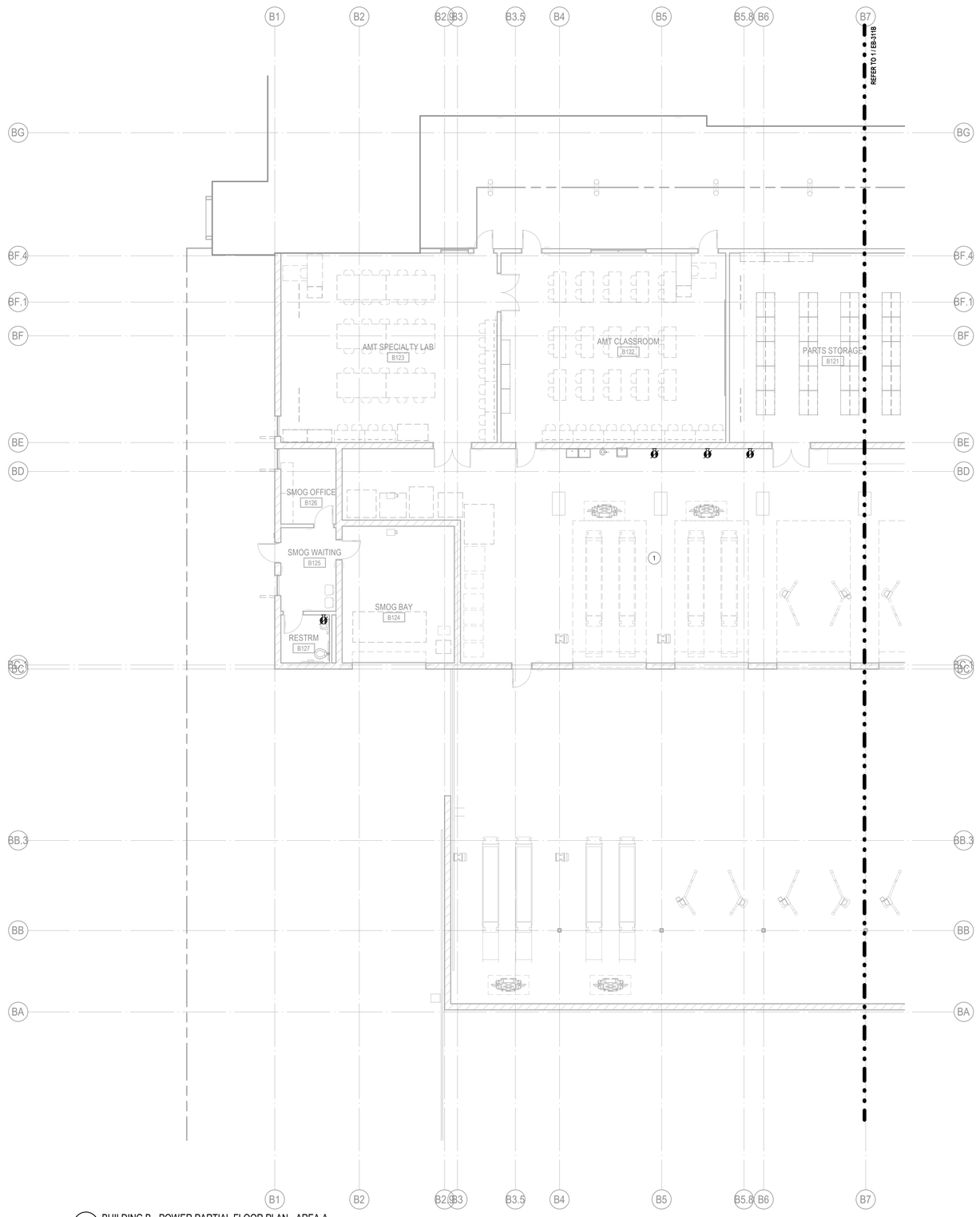


1 BUILDING B - POWER PARTIAL FLOOR PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATIONS OF ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.

B. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

C. STUB A MINIMUM OF 4 SPARE 3/4" CONDUITS FROM ALL NEW RECESSED PANELBOARDS TO ACCESSIBLE CEILING LOCATION.

D. SEE EQUIPMENT SCHEDULE, SINGLE LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON WIRING, LAYOUT AND CONNECTIONS.

E. PROVIDE POWER 120V/24V TRANSFORMER AS REQUIRED TO POWER VAV/BY-PASS DAMPERS, RESTROOM PLUMBING CONTROLS, DUCT SMOKE DETECTORS, MAGNETIC DOOR HOLDERS AND FIRE SMOKE DAMPERS FOR MECHANICAL EQUIPMENT. SEE DIAGRAMS ON MECHANICAL AND PLUMBING DRAWINGS FOR CONNECTION TO MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE CIRCUIT FORM NEAREST AVALIABLE PANEL, UNLESS OTHERWISE NOTED.

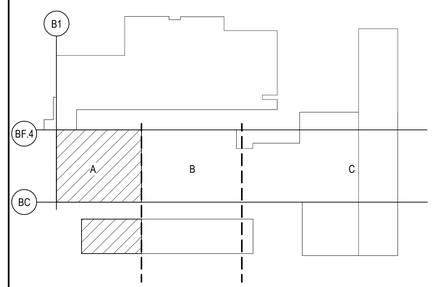
F. SIZE FUSES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

G. REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

SHEET NOTES

1. EQUIPMENT CONNECTIONS IN AUTO TECH AREA TO BE COORDINATED IN DD.
2. BBB
3. CCC

KEY PLAN



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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
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TITLE
BUILDING B - POWER PARTIAL FLOOR PLAN - AREA A

SHEET
EB-311A

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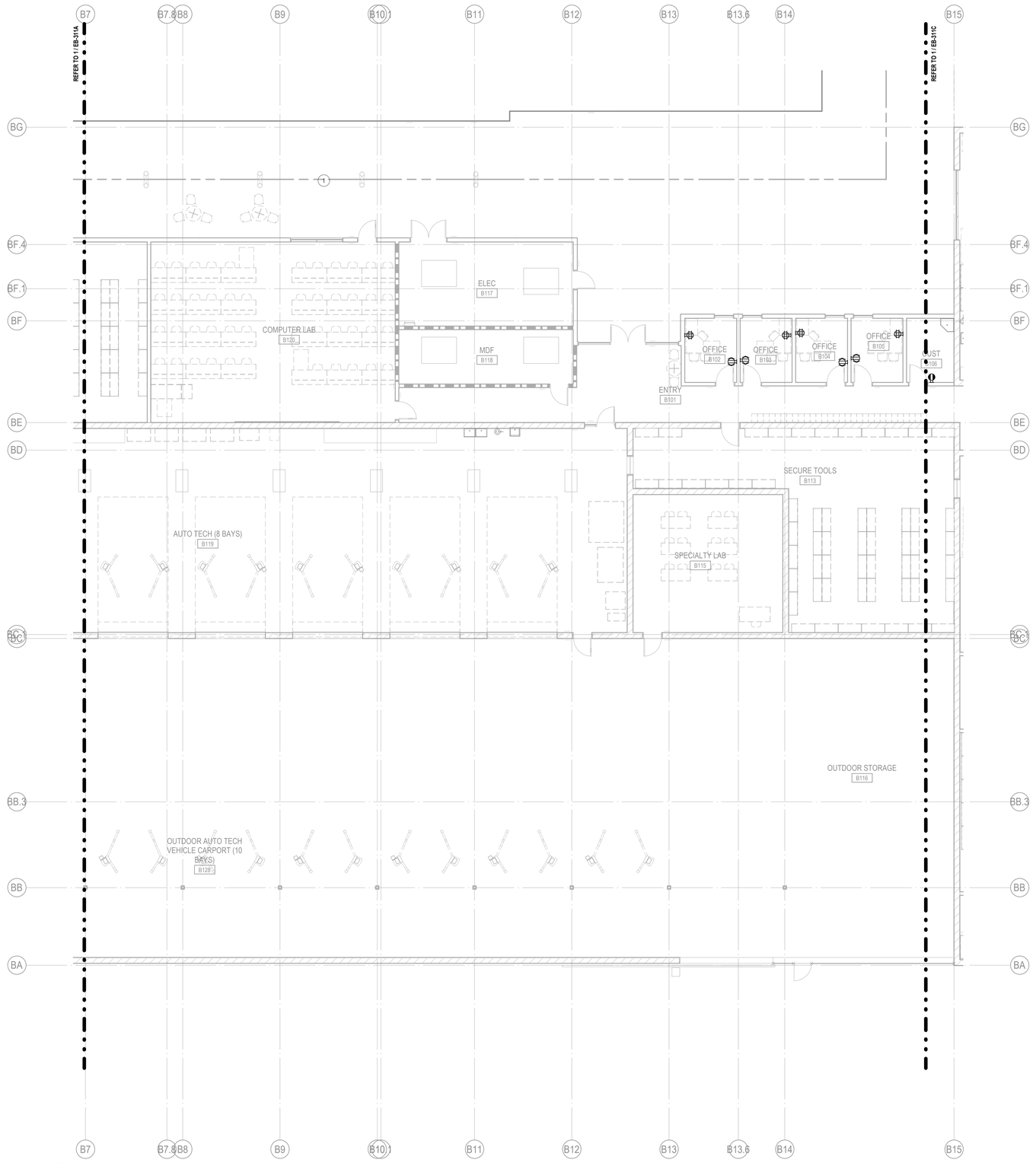


1 BUILDING B - POWER PARTIAL FLOOR PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATIONS OF ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.

B. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

C. STUB A MINIMUM OF 4 SPARE 3/4" CONDUITS FROM ALL NEW RECESSED PANELBOARDS TO ACCESSIBLE CEILING LOCATION.

D. SEE EQUIPMENT SCHEDULE, SINGLE LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON WIRING, LAYOUT AND CONNECTIONS.

E. PROVIDE POWER 120V/24V TRANSFORMER AS REQUIRED TO POWER VAV/BY-PASS DAMPERS, RESTROOM PLUMBING CONTROLS, DUCT SMOKE DETECTORS, MAGNETIC DOOR HOLDERS AND FIRE SMOKE DAMPERS FOR MECHANICAL EQUIPMENT. SEE DIAGRAMS ON MECHANICAL AND PLUMBING DRAWINGS FOR CONNECTION TO MECHANICAL AND PLUMBING EQUIPMENT. PROVIDE CIRCUIT FORM NEAREST AVALIABLE PANEL, UNLESS OTHERWISE NOTED.

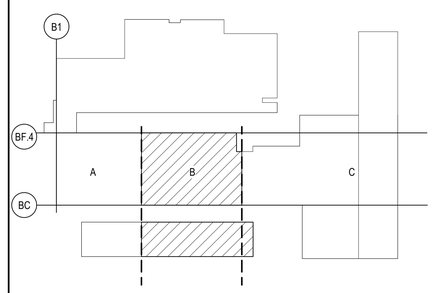
F. SIZE FUSES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

G. REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

(##) SHEET NOTES

1. EQUIPMENT CONNECTIONS IN AUTO TECH AREA TO BE COORDINATED IN DD.
2. BBB
3. CCC

KEY PLAN



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DATE ____

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MANAGEMENT

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TITLE
BUILDING B - POWER PARTIAL FLOOR PLAN - AREA B

SHEET
EB-311B

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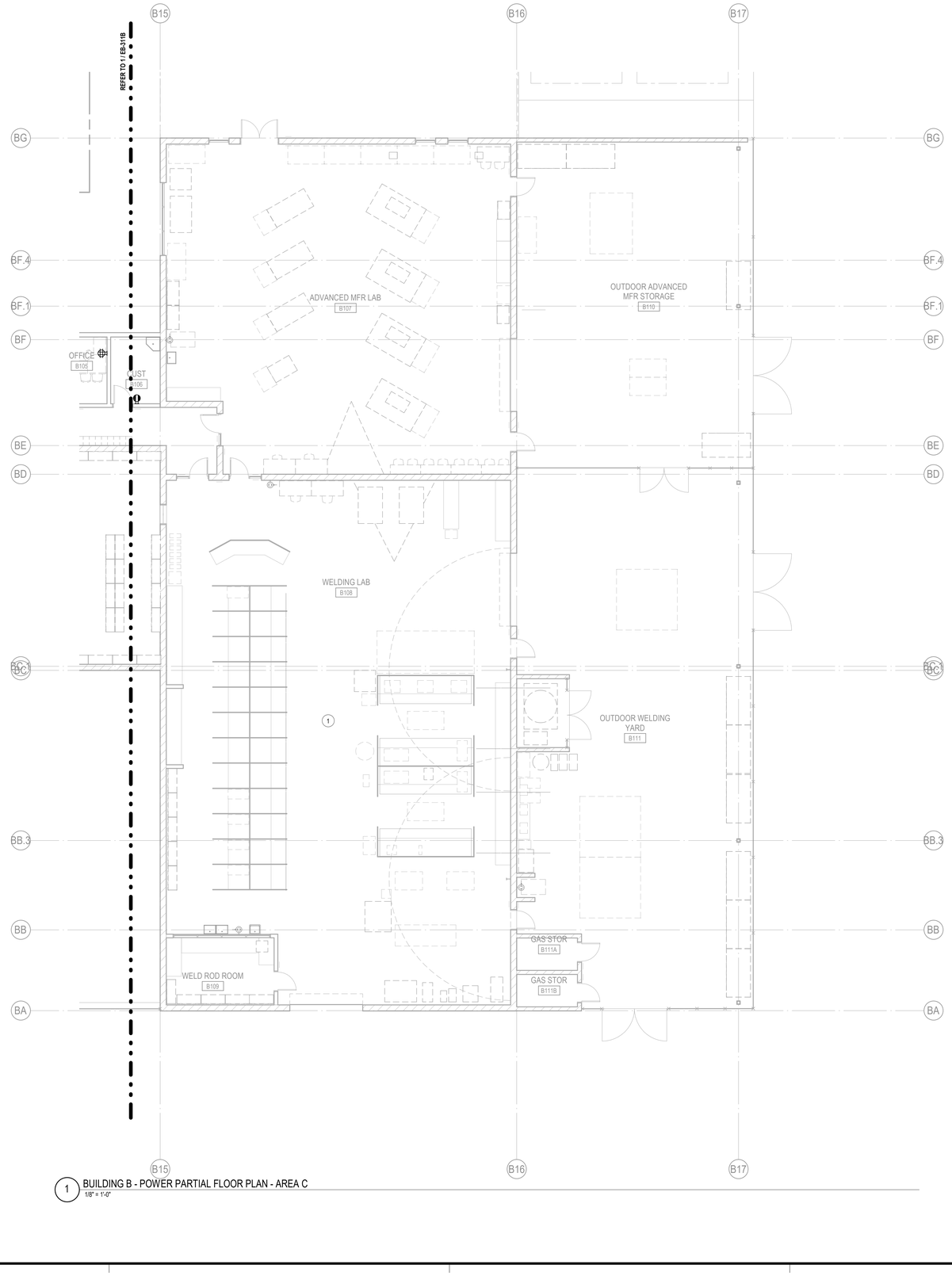

1 BUILDING B - POWER PARTIAL FLOOR PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATIONS OF ALL ARCHITECTURAL, MECHANICAL AND PLUMBING EQUIPMENT WITH ARCHITECTURAL, MECHANICAL AND PLUMBING DRAWINGS.

B. IN FINISHED INTERIOR AREAS, RUN ALL CONDUITS CONCEALED, UNLESS OTHERWISE NOTED. PAINT ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.

C. STUB A MINIMUM OF 4 SPARE 3/4" CONDUITS FROM ALL NEW RECESSED PANELBOARDS TO ACCESSIBLE CEILING LOCATION.

D. SEE EQUIPMENT SCHEDULE, SINGLE LINE DIAGRAMS AND DETAILS FOR ADDITIONAL INFORMATION ON WIRING, LAYOUT AND CONNECTIONS.

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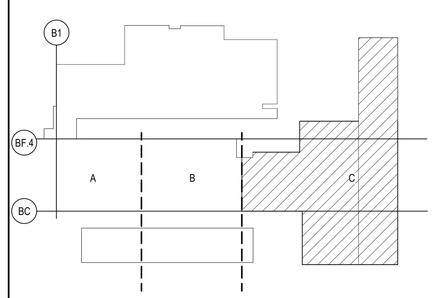
F. SIZE FUSES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

G. REFER TO DATA/TELECOM, AUDIO-VISUAL AND SECURITY PLANS FOR ALL ITEMS, LOCATIONS, DEVICES AND EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR INCLUDING BUT NOT LIMITED TO ALL CONDUITS AND JUNCTION BOXES.

SHEET NOTES

1. EQUIPMENT CONNECTIONS IN WELDING AREA TO BE COORDINATED IN DD.
2. BBB
3. CCC

KEY PLAN



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MANAGEMENT

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TITLE
BUILDING B - POWER PARTIAL FLOOR PLAN - AREA C

SHEET
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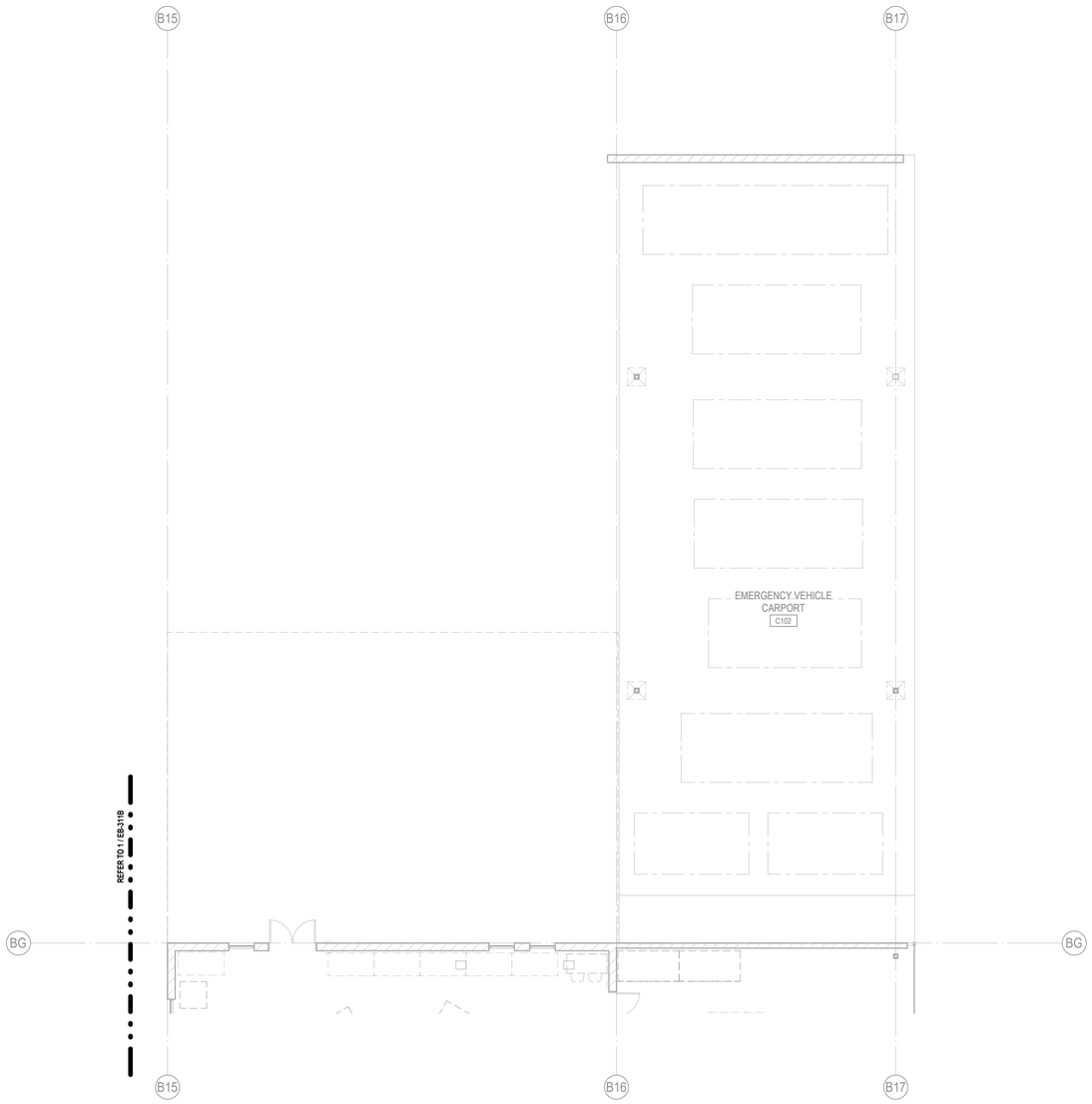
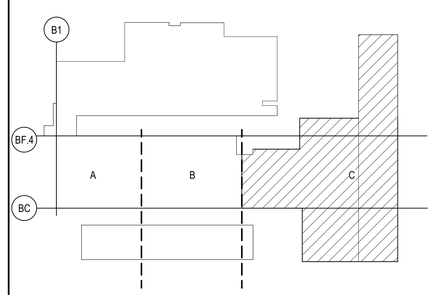


1 BUILDING B - POWER PARTIAL FLOOR PLAN - CARPORT
1/8" = 1'-0"

KEY PLAN



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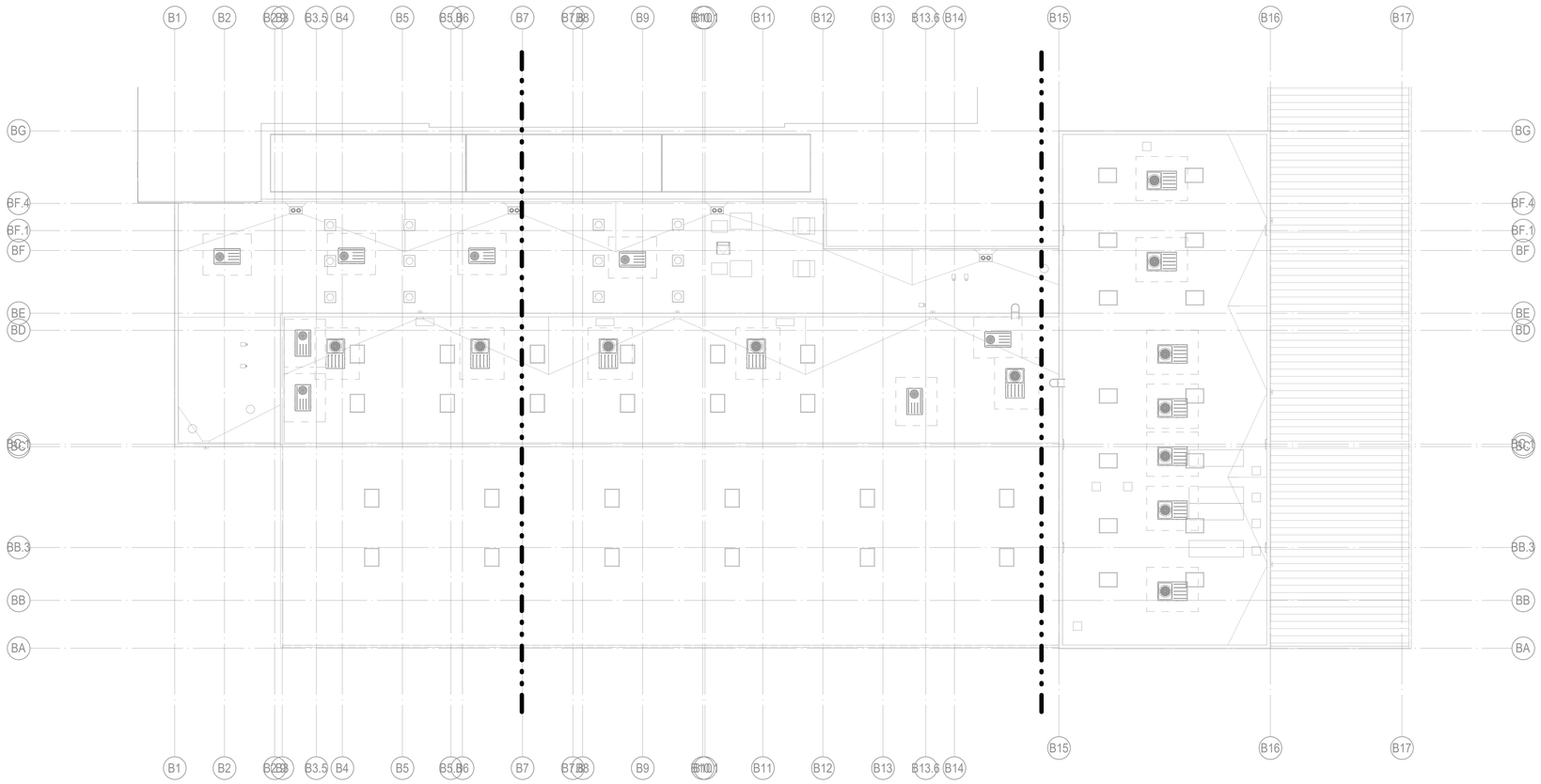
TITLE

BUILDING B - POWER PARTIAL FLOOR PLAN - CARPORT

SHEET

EB-311D



1 BUILDING B - POWER OVERALL ROOF PLAN
1/16" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

1. INSTALLED LOCAL TO EQUIPMENT SERVED
2. WITHIN PROXIMITY OF EQUIPMENT SERVER.

B. USE LIQUID FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO EQUIPMENT. MAXIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT: 6 FEET. SUPPORT PER NEC ARTICLE 350 AT 4- 1/2 FEET. INTERVALS AND WITHIN 12 INCHES OF EACH OUTLET AND TERMINATION.

C. MOUNT DISCONNECT SWITCHES, COMBINATION STARTERS, RECEPTACLES, AND OTHER DEVICES FREE AND INDEPENDENT OF MECHANICAL EQUIPMENT HOUSINGS EXCEPT, EXCEPT WHERE ALL THE FOLLOWING CONDITIONS APPLY, THE DISCONNECT MAY BE MOUNTED TO THE MECHANICAL EQUIPMENT SERVED FROM THE DISCONNECT SWITCH:

1. WHERE ACCEPTABLE TO THE MECHANICAL CONTRACTOR
2. WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION
3. WHERE THE LOCATION PROVIDES FREE AND CLEAR FRONT ACCESS TO DEVICES AND SWITCHESFOR SERVICE AND USE.
4. WHERE THE LOCATION DOES NOT INHIBIT ACCESS TO MECHANICAL EQUIPMENT FOR SERVICE,INSPECTION, AND OPERATION.
5. WHERE AIR FLOW PATHS ARE NOT OBSTRUCTED.

D. ALL ROOF PENETRATIONS TO BE PERFORMED BY A LICENSED ROOFING CONTRACTOR. COORDINATE ROOF PENETRATION AND FLASHING WITH ROOFING CONTRACTOR.

E. CONSTRUCTION OF ROOF SUPPORTS (SLEEPERS) FOR RUNS OF HORIZONTAL CONDUIT DEDICATED TO EQUIPMENT SERVED TO BE BY LICENSED ROOFING CONTRACTOR AND ATTACHED TO ROOF STRUCTURE.

F. SECURE CONDUIT TO SUPPORTS AT CODE REQUIRED INTERVALS.

G. ROOF PENETRATIONS MATERIALS AND CONSTRUCTION BY LICENSED ROOFING CONTRACTOR. SEE ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

H. VERIFY EXACT LOCATION, LAYOUT AND ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN .

I. REFER TO CONTROLS CONTRACTOR WHERE REQUIRED FOR ALL CONDUIT REQUIREMENTS.

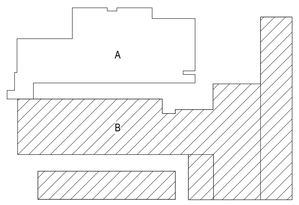
J. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT POWER POINT OF CONNECTION TO ALL UNITS AND LOCATE DISCONNECT WHERE CODE REQUIRE CLEARANCES WILL BE MAINTAINED. LOCATION OF DISCONNECT ARE DIAGRAMMATIC, CONTRACTOR SHALL PROVIDE FLOOR PEDESTALS OR UNISTRUT AT THE AC ENCLOSURE FOR MOUNTING OD DISCONNECT.

K. FIRE ALARM DEVICES, DAMPERS, SMOKE DETECTORS AND REQUIRED CONTROLS POWER SHALL BE COORDINATED WITH HVAC AND FIRE ALARM SYSTEM INSTALLER.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



NORTH

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Facility No: ?XXXXX?
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MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

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TITLE
BUILDING B - POWER OVERALL ROOF PLAN

SHEET
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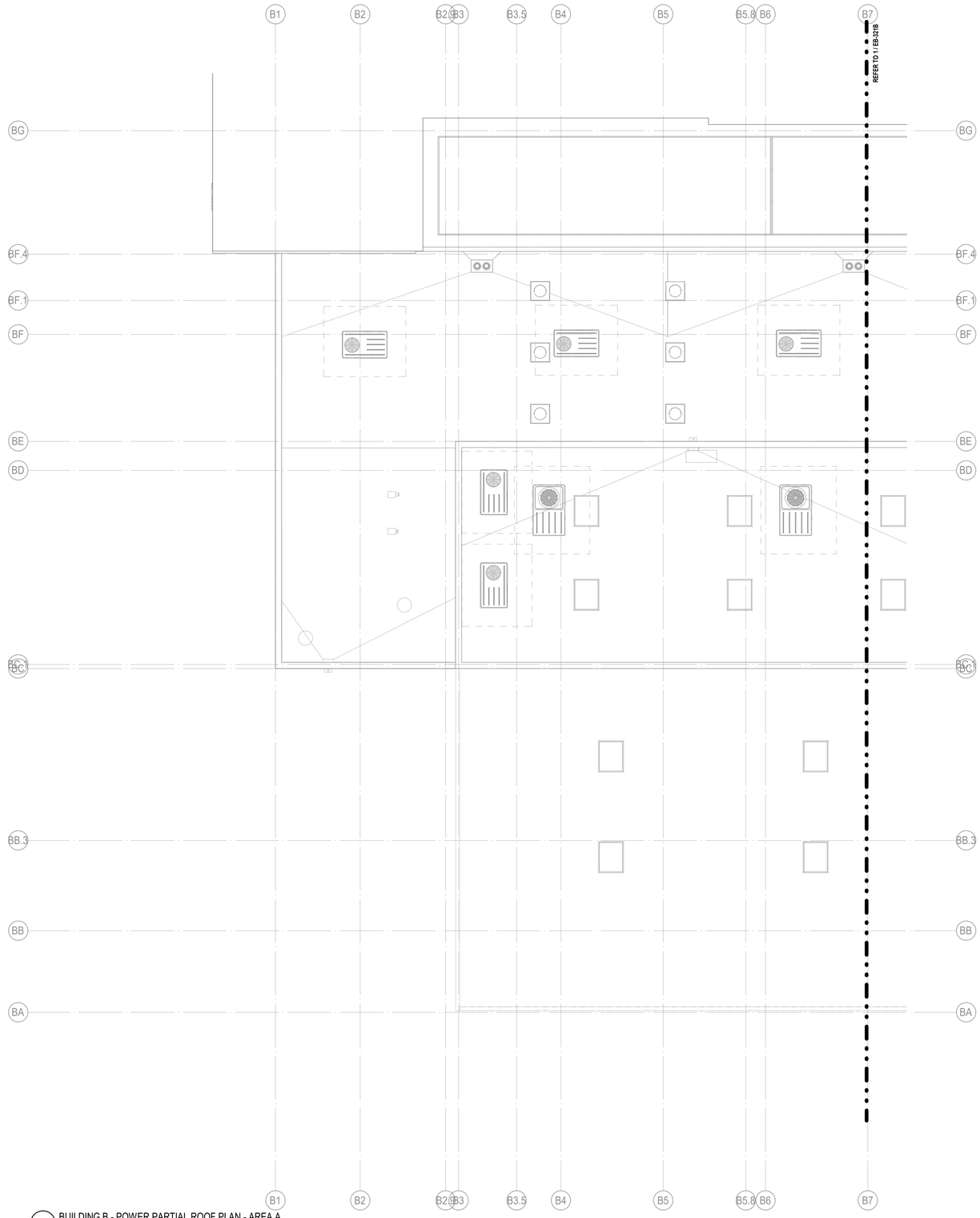

1 BUILDING B - POWER PARTIAL ROOF PLAN - AREA A
1/8" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

1. INSTALLED LOCAL TO EQUIPMENT SERVED
2. WITHIN PROXIMITY OF EQUIPMENT SERVER.

B. USE LIQUID FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO EQUIPMENT. MAXIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT: 6 FEET. SUPPORT PER NEC ARTICLE 350 AT 4- 1/2 FEET. INTERVALS AND WITHIN 12 INCHES OF EACH OUTLET AND TERMINATION.

C. MOUNT DISCONNECT SWITCHES, COMBINATION STARTERS, RECEPTACLES, AND OTHER DEVICES FREE AND INDEPENDENT OF MECHANICAL EQUIPMENT HOUSINGS EXCEPT, EXCEPT WHERE ALL THE FOLLOWING CONDITIONS APPLY, THE DISCONNECT MAY BE MOUNTED TO THE MECHANICAL EQUIPMENT SERVED FROM THE DISCONNECT SWITCH:

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4. WHERE THE LOCATION DOES NOT INHIBIT ACCESS TO MECHANICAL EQUIPMENT FOR SERVICE,INSPECTION, AND OPERATION.
5. WHERE AIR FLOW PATHS ARE NOT OBSTRUCTED.

D. ALL ROOF PENETRATIONS TO BE PERFORMED BY A LICENSED ROOFING CONTRACTOR. COORDINATE ROOF PENETRATION AND FLASHING WITH ROOFING CONTRACTOR.

E. CONSTRUCTION OF ROOF SUPPORTS (SLEEPERS) FOR RUNS OF HORIZONTAL CONDUIT DEDICATED TO EQUIPMENT SERVED TO BE BY LICENSED ROOFING CONTRACTOR AND ATTACHED TO ROOF STRUCTURE.

F. SECURE CONDUIT TO SUPPORTS AT CODE REQUIRED INTERVALS.

G. ROOF PENETRATIONS MATERIALS AND CONSTRUCTION BY LICENSED ROOFING CONTRACTOR. SEE ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

H. VERIFY EXACT LOCATION, LAYOUT AND ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN .

I. REFER TO CONTROLS CONTRACTOR WHERE REQUIRED FOR ALL CONDUIT REQUIREMENTS.

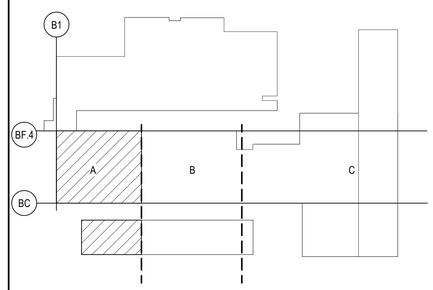
J. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT POWER POINT OF CONNECTION TO ALL UNITS AND LOCATE DISCONNECT WHERE CODE REQUIRE CLEARANCES WILL BE MAINTAINED. LOCATION OF DISCONNECT ARE DIAGRAMMATIC, CONTRACTOR SHALL PROVIDE FLOOR PEDESTALS OR UNISTRUT AT THE AC ENCLOSURE FOR MOUNTING OD DISCONNECT.

K. FIRE ALARM DEVICES, DAMPERS, SMOKE DETECTORS AND REQUIRED CONTROLS POWER SHALL BE COORDINATED WITH HVAC AND FIRE ALARM SYSTEM INSTALLER.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



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MANAGEMENT

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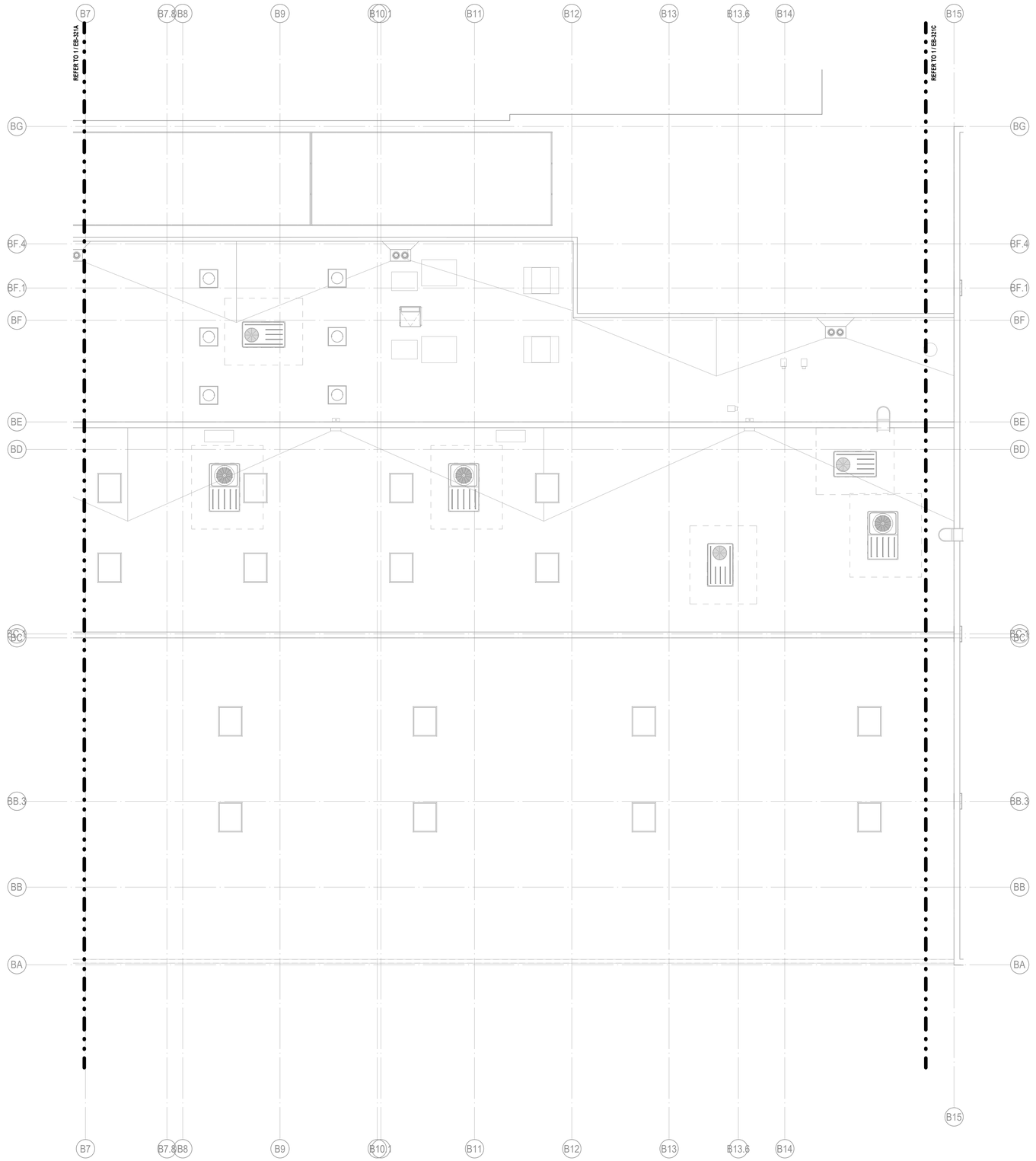
TITLE
BUILDING B - POWER PARTIAL ROOF PLAN - AREA A

SHEET
EB-321A



1 BUILDING B - POWER PARTIAL ROOF PLAN - AREA B
1/8" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

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(##) SHEET NOTES

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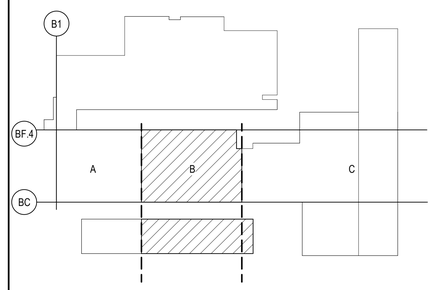
2. BBB
3. CCC

KEY PLAN



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SEAL

PROJECT
PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT
CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

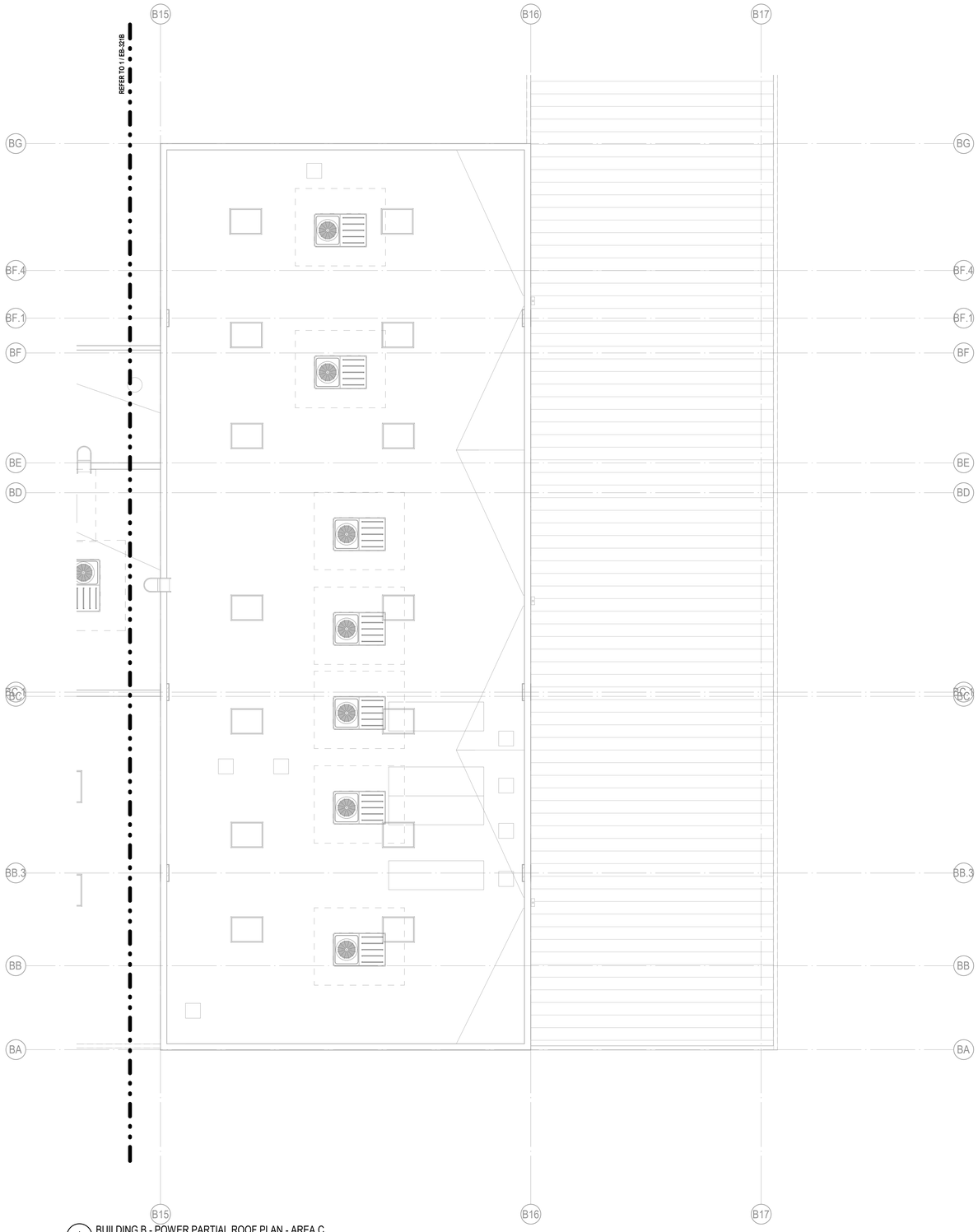
MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE
BUILDING B - POWER PARTIAL ROOF PLAN - AREA B

SHEET
EB-321B



1 BUILDING B - POWER PARTIAL ROOF PLAN - AREA C
1/8" = 1'-0"

GENERAL NOTES

A. WHERE PANELBOARDS ARE LOCATED ON FLOOR BELOW TO FEED ITEMS ON ROOF: PENETRATE ROOF FROM SPACE BELOW TO LOCATION OF DEVICE OR MOTOR. SMALL SECTIONS OF HORIZONTAL CONDUIT NOT EXCEEDING 10 FEET ARE PERMITTED WHERE:

1. INSTALLED LOCAL TO EQUIPMENT SERVED
2. WITHIN PROXIMITY OF EQUIPMENT SERVER.

B. USE LIQUID FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO EQUIPMENT. MAXIMUM LENGTH OF LIQUID TIGHT FLEXIBLE METAL CONDUIT: 6 FEET. SUPPORT PER NEC ARTICLE 350 AT 4- 1/2 FEET. INTERVALS AND WITHIN 12 INCHES OF EACH OUTLET AND TERMINATION.

C. MOUNT DISCONNECT SWITCHES, COMBINATION STARTERS, RECEPTACLES, AND OTHER DEVICES FREE AND INDEPENDENT OF MECHANICAL EQUIPMENT HOUSINGS EXCEPT, EXCEPT WHERE ALL THE FOLLOWING CONDITIONS APPLY, THE DISCONNECT MAY BE MOUNTED TO THE MECHANICAL EQUIPMENT SERVED FROM THE DISCONNECT SWITCH:

1. WHERE ACCEPTABLE TO THE MECHANICAL CONTRACTOR
2. WHERE APPROVED BY THE AUTHORITY HAVING JURISDICTION
3. WHERE THE LOCATION PROVIDES FREE AND CLEAR FRONT ACCESS TO DEVICES AND SWITCHESFOR SERVICE AND USE.
4. WHERE THE LOCATION DOES NOT INHIBIT ACCESS TO MECHANICAL EQUIPMENT FOR SERVICE,INSPECTION, AND OPERATION.
5. WHERE AIR FLOW PATHS ARE NOT OBSTRUCTED.

D. ALL ROOF PENETRATIONS TO BE PERFORMED BY A LICENSED ROOFING CONTRACTOR. COORDINATE ROOF PENETRATION AND FLASHING WITH ROOFING CONTRACTOR.

E. CONSTRUCTION OF ROOF SUPPORTS (SLEEPERS) FOR RUNS OF HORIZONTAL CONDUIT DEDICATED TO EQUIPMENT SERVED TO BE BY LICENSED ROOFING CONTRACTOR AND ATTACHED TO ROOF STRUCTURE.

F. SECURE CONDUIT TO SUPPORTS AT CODE REQUIRED INTERVALS.

G. ROOF PENETRATIONS MATERIALS AND CONSTRUCTION BY LICENSED ROOFING CONTRACTOR. SEE ARCHITECTURAL DETAILS AND SPECIFICATIONS FOR MORE INFORMATION.

H. VERIFY EXACT LOCATION, LAYOUT AND ELECTRICAL REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO ROUGH-IN .

I. REFER TO CONTROLS CONTRACTOR WHERE REQUIRED FOR ALL CONDUIT REQUIREMENTS.

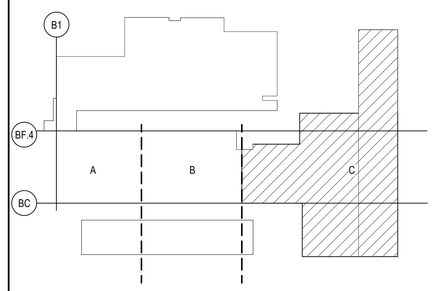
J. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT POWER POINT OF CONNECTION TO ALL UNITS AND LOCATE DISCONNECT WHERE CODE REQUIRE CLEARANCES WILL BE MAINTAINED. LOCATION OF DISCONNECT ARE DIAGRAMMATIC, CONTRACTOR SHALL PROVIDE FLOOR PEDESTALS OR UNISTRUT AT THE AC ENCLOSURE FOR MOUNTING OD DISCONNECT.

K. FIRE ALARM DEVICES, DAMPERS, SMOKE DETECTORS AND REQUIRED CONTROLS POWER SHALL BE COORDINATED WITH HVAC AND FIRE ALARM SYSTEM INSTALLER.

(##) SHEET NOTES

1. AAA
2. BBB
3. CCC

KEY PLAN



FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT
?XX-XXX?
AC ____ FLS ____ SS ____
DATE ____

LIONAKIS
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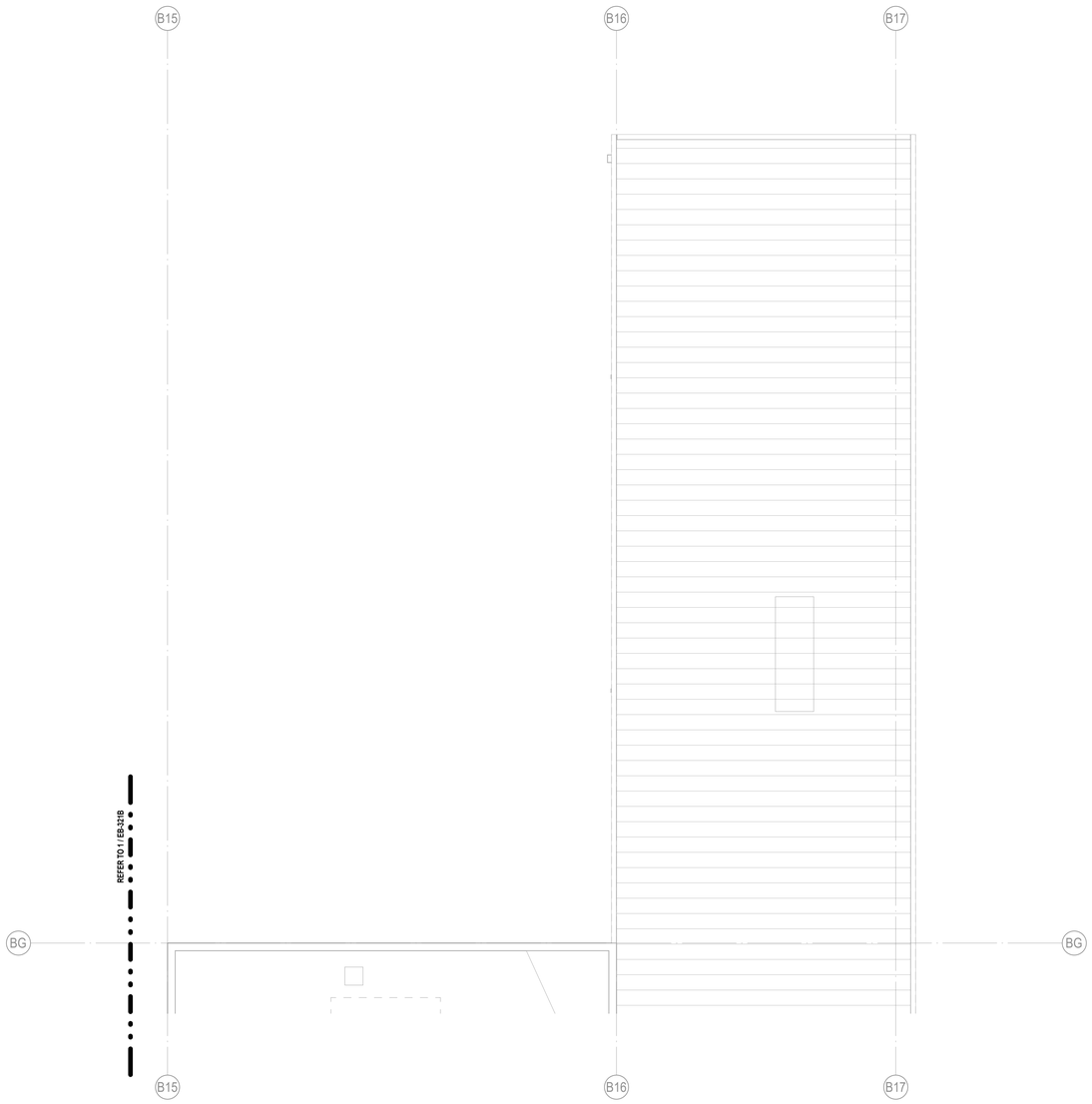
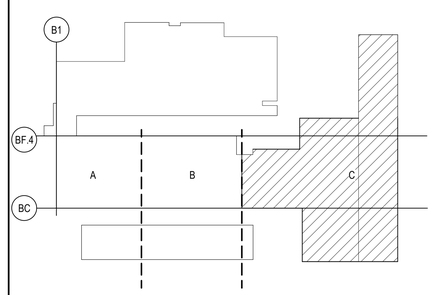
TITLE
BUILDING B - POWER PARTIAL ROOF PLAN - AREA C

SHEET
EB-321C



1 BUILDING B - POWER PARTIAL ROOF PLAN - CARPORT
1/8" = 1'-0"

KEY PLAN



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TITLE

BUILDING B - POWER PARTIAL ROOF PLAN - CARPORT

SHEET

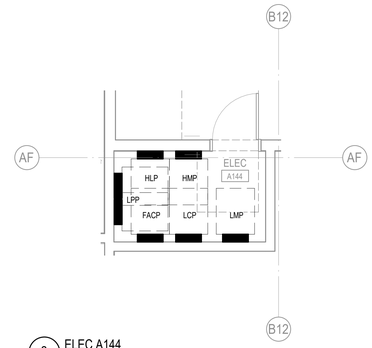
EB-321D

IF THIS SHEET IS NOT 30"x42", IT IS A REDUCED PRINT - SCALE ACCORDINGLY

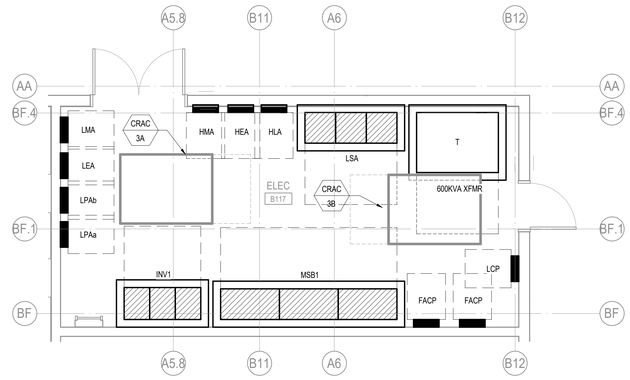
0 1/4" 1/2" 1"

BIM 360://320304 - Lionakis Las Positas PSC-AMT/IG_LasPositas PSC-AMT_MEP_18.rvt

1/17/2020 3:14:11 PM



2 ELEC A144
1/4" = 1'-0"



1 MAIN ELECTRICAL ROOM B117
1/4" = 1'-0"

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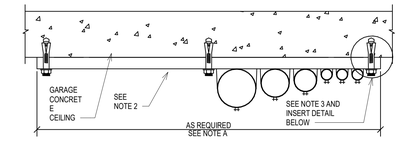
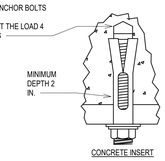
TITLE
ELECTRICAL ENLARGED PLANS

SHEET
E-401



SINGLE RACK

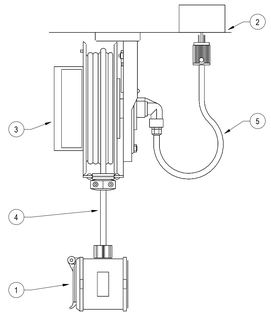


CONCRETE INSERT

GENERAL DETAIL NOTES

A. LENGTH VARIES WITH NUMBER OF CONDUITS TO BE SUPPORTED.
B. UNISTRUT WITH ALLOWABLE LOADING PER MANUFACTURER'S RECOMMENDATIONS.
C. FOR SUPPORT IN CONCRETE, USE SWIVEL CONCRETE INSERTS, AS SHOWN.

4 260529-071 CONDUIT SUPPORT DETAIL
N.T.S.



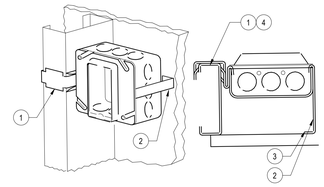
REFERENCED NOTES

1. PORTABLE OUTLET BOX WITH LIFT COVER AND SEE PLANS FOR NEMA TYPE
2. CEILING MOUNTED RECEPTACLE LOCATED WITHIN 18" OF CORD REEL.
3. INDUSTRIAL CEILING MOUNTED CORD REEL. CORD REEL TO BE ANCHORED TO STRUCTURAL SLAB.
4. MINIMUM 45' 3 CONDUCTOR, SJO CORD. SEE PLANS FOR AQG SIZE
5. THREE FOOT SUPPLY CORD WITH TWIST-LOCK CORD CAP. SEE PLANS FOR CORD RATING

GENERAL NOTES

A. MANUFACTURER - HUBBEL HBL45 SERIES CORD REEL WITH DUPLEX PORTABLE OUTLET BOX.
B. REFER TO CONSTRUCTION DOCUMENTS FOR ELECTRICAL POWER, LOCATION AND QUANTITIES.
C. COORDINATE SUPPORT WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO ROUGH-IN.
D. CONTRACTOR SHALL PROVIDE SUPPORT DETAILS TO STRUCTURAL ENGINEER OF RECORD FOR REVIEW PRIOR TO INSTALLATION.

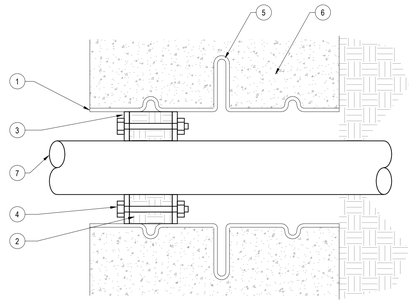
6 260533-14 CORD REEL WITH CORD & PLUG
N.T.S.



(#) SHEET NOTES:

1. CADDY METAL STUD CLIP CAT. NO. MSF.
2. CADDY FAR SIDE BOX SUPPORT CAT NO. 768.
3. BEND CLIP TO DESIRED STUD DEPTH AND ATTACH TO BOX. RETAINING TAB SHOULD LINE UP WITH ONE OF THE KNOCKOUT RECESSES.
4. ATTACH TO METAL STUD. VERIFY MOUNTING HEIGHT PRIOR TO ROUGH-IN. ATTACH BOX TO STUD CLIP AFTER CLIP HAS BEEN SET ON STUD

3 260529-04 JUNCTION BOX WALL INSTALLATION
N.T.S.



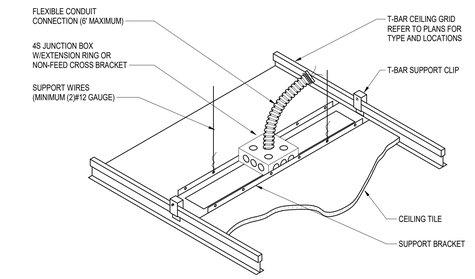
NOTES:

1. AMANUFACTURER - LINK-SEAL CAST-IN-PLACE CENTURY LINE SEAL OR EQUAL.
2. REFER TO CONSTRUCTION DOCUMENTS FOR ELECTRICAL POWER AND LOW VOLTAGE SYSTEMS TO DETERMINE QUANTITY AND SIZE OF LOW VOLTAGE AND POWER RACEWAYS.
3. COORDINATE PENETRATION LOCATIONS WITH ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO ROUGH-IN.

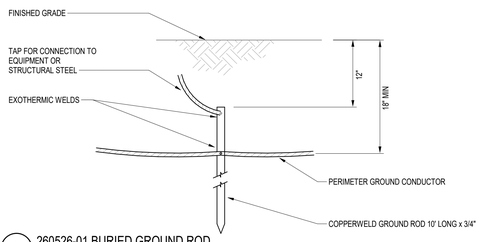
(#) SHEET NOTES:

1. MOLDED HIGH DENSITY POLYETHYLENE SLEEVE SIZED PER MANUFACTURERS RECOMMENDATIONS FOR CONDUIT DIAMETER. SLEEVE RATED FOR MINIMUM 20 PSIG.
2. ELASTOMERIC SEAL.
3. PRESSURE PLATE
4. BOLT
5. ANCHOR COLLAR/WATER STOP.
6. CAST IN PLACE OR SHOTCRETE WALL. REFER TO CONSTRUCTION DOCUMENTS FOR TYPE AND THICKNESS OF WALL.
7. ELECTRICAL SYSTEM CONDUIT. REFER TO CONSTRUCTION DOCUMENTS FOR SIZE, TYPE, LOCATION, AND QUANTITY.

5 260533-02 BELOW GRADE CONDUIT PENETRATION
N.T.S.



2 260529-02 CEILING JUNCTION BOX SUPPORT
N.T.S.



1 260526-01 BURIED GROUND ROD
N.T.S.

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MANAGEMENT

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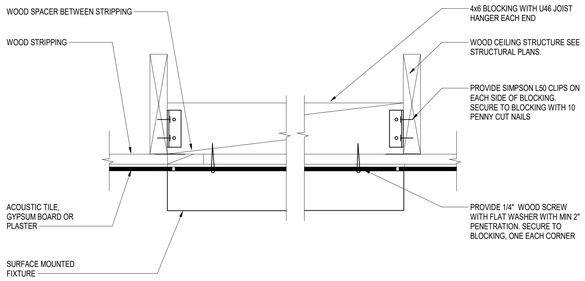
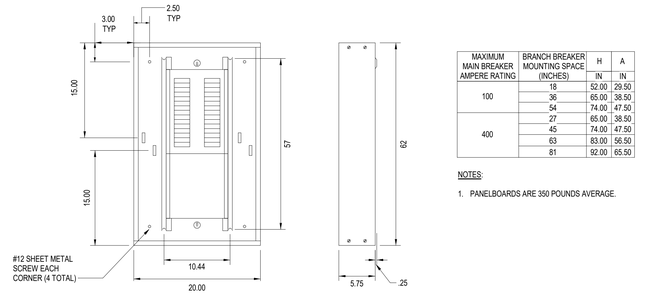
TITLE
ELECTRICAL DETAILS

SHEET
E-501



6 L-MISC - SURFACE FIXTURE MOUNTING
N.T.S.

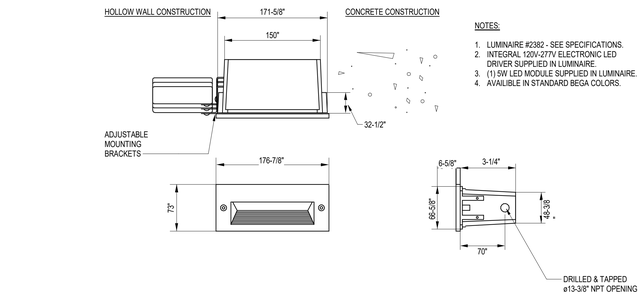


MAXIMUM MAIN BREAKER AMPERE RATING	BRANCH BREAKER MOUNTING SPACE (INCHES)	H	A
		IN	IN
100	18	52.00	29.50
	36	65.00	38.50
	54	74.00	47.50
400	27	65.00	38.50
	45	74.00	47.50
	63	83.00	56.50
	81	92.00	65.50

NOTES:

1. PANELBOARDS ARE 350 POUNDS AVERAGE.

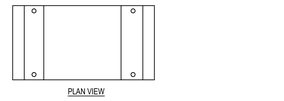
3 EP - TYPICAL BRANCH PANELBOARD DETAIL
N.T.S.



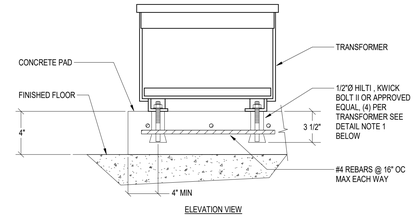
NOTES:

1. LUMINAIRE #2382 - SEE SPECIFICATIONS.
2. INTEGRAL 120V-277V ELECTRONIC LED DRIVER SUPPLIED IN LUMINAIRE.
3. (1) 5W LED MODULE SUPPLIED IN LUMINAIRE.
4. AVAILIBLE IN STANDARD BEGA COLORS.

5 L-MISC - RECESSED WALL LUMINAIRE MOUNTING
N.T.S.



PLAN VIEW

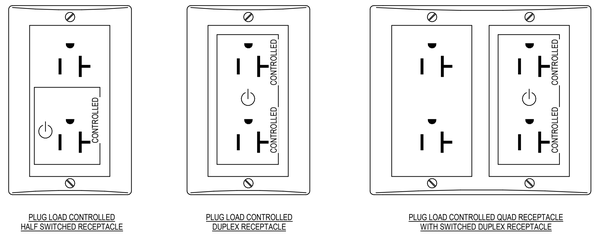


ELEVATION VIEW

GENERAL DETAIL NOTES

A. 50% OF THE ANCHORAGES SHOWN BELOW SHALL BE FIELD TESTED TO 2300 LBS. TENSION LOAD OR 80 FT-LB TORQUE TO VERIFY ADEQUACY.
B. TRANSFORMERS UP TO 1450 LBS.
C. CONCRETE COMPRESSIVE STRENGTH, f ' = 2500 PSI.

2 EP - TRANSFORMER ANCHORAGE PAD ON FLOOR
N.T.S.



PLUG LOAD CONTROLLED HALF SWITCHED RECEPTACLE

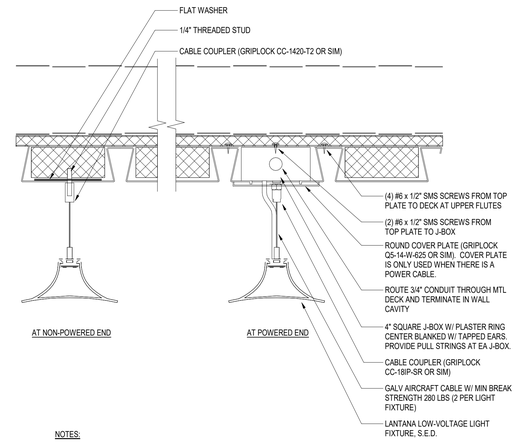
PLUG LOAD CONTROLLED DUPLEX RECEPTACLE

PLUG LOAD CONTROLLED QUAD RECEPTACLE WITH SWITCHED DUPLEX RECEPTACLE

NOTE:

1. CONTROLLED RECEPTACLES SHALL BE MARKED WITH PERMANENT IDENTIFICATION.
2. INSTALL WITH GROUND PIN UP.

4 262726-01 PLUG LOAD CONTROL IDENTIFICATION
N.T.S.



AT NON-POWERED END

AT POWERED END

NOTES:

1. BASED ON EPIC DECK EPICORE CEILING STRUCTURE. REFER TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION OF ALL ANCHORS.
2. ENSURE FIXTURE CAN SWING 45° IN ANY DIRECION WITHOUT CONTACT WITH STRUCTURE, OTHER FIXTURES, ANY ACCESSORIES OR DUCTS/PIPES.
3. CONTRACTOR TO FIELD VERIFY CONDUIT ROUTING BEFORE INSTALL.
4. SEE ARCHITECTURAL DETAILS FOR MORE INFORMATION.

1 EL - PENDANT MOUNT LUMINAIRE AT EPICORE DECK
N.T.S.

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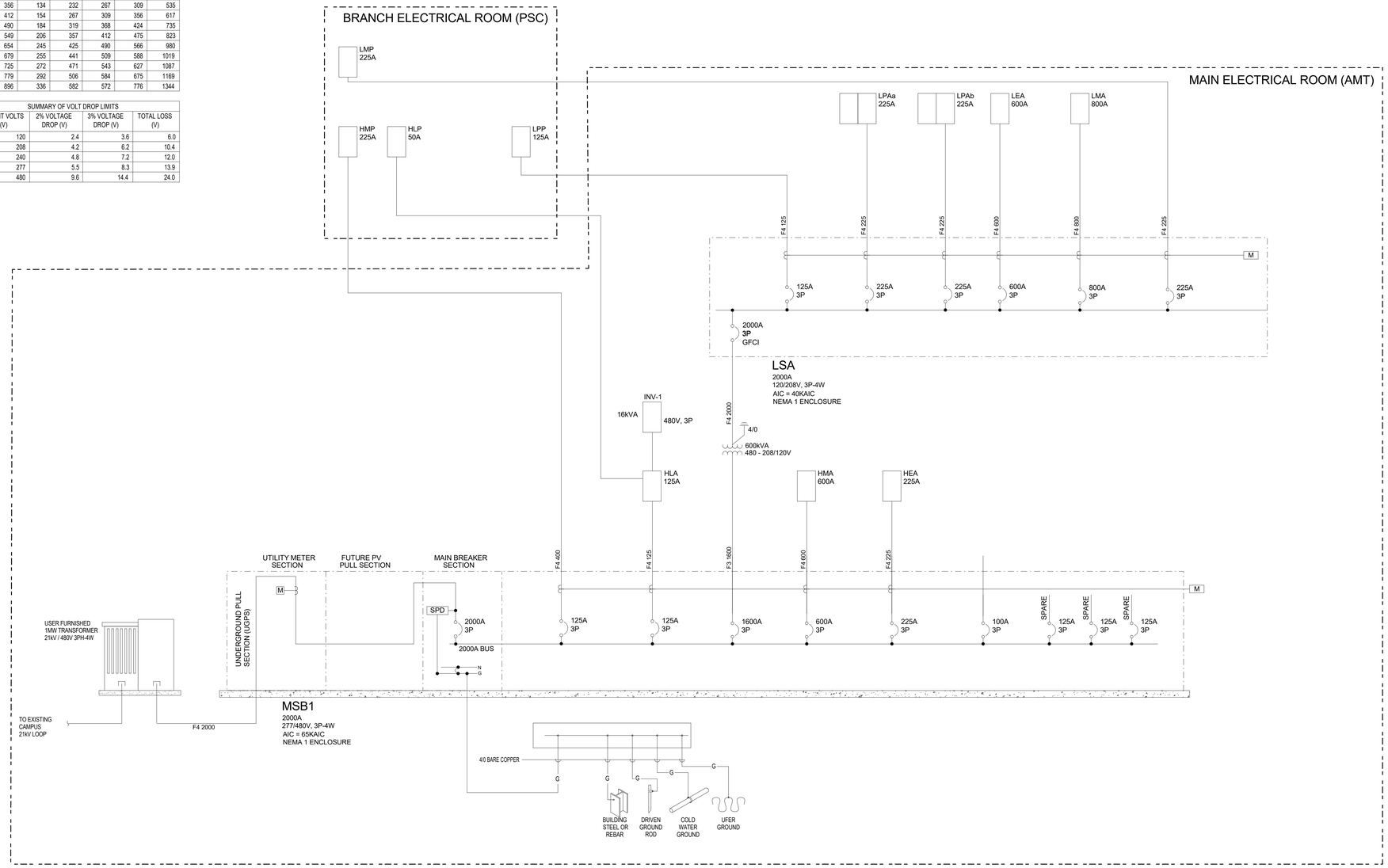
ELECTRICAL DETAILS

SHEET
E-502

ELECTRICAL FEEDER TABLE											
2 WIRE + GROUND											
FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP.GROUND	ISOLATED GROUND						
F250	(1)1	1#6	1#6	1#8	-						
3 WIRE + GROUND						4 WIRE + GROUND					
FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP.GROUND	ISOLATED GROUND	FEEDER CODE	CONDUIT	PHASE	NEUTRAL	EQUIP.GROUND	ISOLATED GROUND
F320	(1)3/4	3#12	-	1#12	-	F420	(1)3/4	3#12	1#12	1#12	-
F330	(1)3/4	3#10	-	1#10	-	F430	(1)3/4	3#10	1#10	1#10	-
F340	(1)1	3#8	-	1#10	-	F440	(1)1	3#8	1#8	1#10	-
F350	(1)1	3#6	-	1#8	-	F450	(1)1 1/4	3#6	1#6	1#8	-
F370	(1)1 1/4	3#4	-	1#8	-	F470	(1) 1 1/4	3#4	1#4	1#8	-
F390	(1) 1 1/4	3#2	-	1#8	-	F490	(1) 1 1/2	3#2	1#2	1#8	-
F3125	(1) 1 1/2	3#1	-	1#6	-	F4125	(1) 2	3#1	1#1	1#6	-
F3150	(1) 1 1/2	3#1/0	-	1#6	-	F4150	(1)2	3#1/0	1#1/0	1#6	-
F3175	(1) 2	3#2/0	-	1#6	-	F4175	(1)2	3#2/0	1#2/0	1#6	-
F3200	(1)2	3#3/0	-	1#6	-	F4200	(1)2 1/2	3#3/0	1#3/0	1#6	-
F3225	(1)2	3#4/0	-	1#4	-	F4225	(1)2 1/2	3#4/0	1#4/0	1#4	-
F3250	(1)2 1/2	3#250	-	1#4	-	F4250	(1)3	3#250	1#250	1#4	-
F3300	(1)3	3#350	-	1#4	-	F4300	(1)3	3#350	1#350	1#4	-
F3350	(1)4	3#500	-	1#2	-	F4350	(1)4	3#500	1#500	1#2	-
F3400	(2)2	6#3/0	-	2#2	-	F4400	(2)2 1/2	6#3/0	2#3/0	2#2	-
F3450	(2)2 1/2	6#4/0	-	2#1	-	F4450	(2)2 1/2	6#4/0	2#4/0	2#1	-
F3500	(2)2 1/2	6#250	-	2#1	-	F4500	(2)3	6#250	2#250	2#1	-
F3600	(2)3	6#350	-	2#1	-	F4600	(2)3	6#350	2#350	2#1	-
F3700	(2)3	6#500	-	2#1/0	-	F4700	(2)4	6#500	2#500	2#1/0	-
F3800	(3)3	9#350	-	3#1/0	-	F4800	(3)3	9#350	3#350	3#1/0	-
F31000	(3)4	9#500	-	3#2/0	-	F41000	(3)4	9#500	3#500	3#2/0	-
F31200	(4)3	12#350	-	4#3/0	-	F41200	(4)3	12#350	4#350	4#3/0	-
F31500	(5)3	15#350	-	4#4/0	-	F41500	(5)3	15#350	5#350	4#4/0	-
F31600	(5)3	15#500	-	5#4/0	-	F41600	(5)3 1/2	15#500	5#500	5#4/0	-
F32000	(6)4	19#500	-	6#250	-	F42000	(6)3 1/2	18#500	6#500	6#250	-

SUMMARY OF MAXIMUM FEEDER AND BRANCH CIRCUIT LENGTHS											
WIRE (AWG)	CIRCUIT AMPS (A)	MAXIMUM FEEDER LENGTH (ft)					MAXIMUM BRANCH CIRCUIT LENGTH (ft)				
		120V	208V	240V	277V	480V	120V	208V	240V	277V	480V
14	12	39	67	78	90	156	58	101	117	135	233
12	16	46	80	93	107	185	69	120	139	160	278
10	24	48	83	96	111	192	72	125	144	166	288
8	32	57	99	115	132	229	86	149	172	199	344
6	40	73	127	146	169	293	110	190	220	253	439
4	52	89	154	178	206	356	134	232	267	309	535
2	72	103	178	206	237	412	154	267	309	356	617
0	96	123	212	245	283	490	184	319	368	424	735
00	108	137	238	274	317	549	206	357	412	475	823
0000	144	163	283	327	377	654	245	425	490	566	980
250	164	170	294	340	392	679	255	441	509	588	1019
300	184	181	314	362	418	725	272	471	543	627	1087
350	200	195	338	390	450	779	292	506	584	675	1169
500	248	224	388	448	517	896	336	582	572	776	1344

SUMMARY OF VOLT DROP LIMITS			
CIRCUIT VOLTS (V)	2% VOLTAGE DROP (V)	3% VOLTAGE DROP (V)	TOTAL LOSS (V)
120	2.4	3.6	6.0
208	4.2	6.2	10.4
240	4.8	7.2	12.0
277	5.5	8.3	13.9
480	9.6	14.4	24.0



FILE NO. ?XX-XXXX?

IDENTIFICATION STAMP
DIV. OF THE STATE ARCHITECT

?XX-XXX?

AC ____ FLS ____ SS ____

DATE ____

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CONSULTANT

INTEGRAL

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SEAL

PROJECT

PUBLIC SAFETY COMPLEX / ADVANCED MANUFACTURING AND TRANSPORTATION PROJECT

LAS POSITAS COLLEGE
3000 CAMPUS HILL DRIVE
LIVERMORE, CA 94551

CLIENT

CHABOT-LAS POSITAS COMMUNITY COLLEGE DISTRICT
7600 DUBLIN BLVD
DUBLIN, CA 94568

Facility No: ?XXXXX?
Building No: ?XX?
OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO: 019051
CLIENT PROJECT NO: -

TITLE

ELECTRICAL SINGLE LINE DIAGRAM

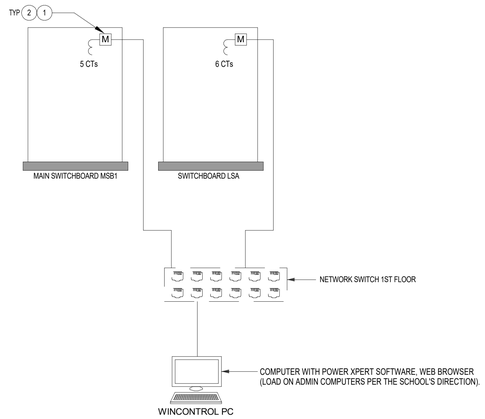
SHEET

E-601

GENERAL NOTES

A. METER COMMUNICATION. PROVIDE RS-485 CONNECTION TO EACH METER, TO NETWORK (MODBUS TCP AND BACnet/IP). METER DATA TO BE COLLECTED BY LOCAL COMPUTER SOFTWARE.

B. MULTI-METER. PROVIDE EATON PXM 2000 SERIES OR EQUAL. EACH BREAKER SHALL BE INDIVIDUALLY METERED



LEVEL 1

1 METER RISER DIAGRAM
NTS

FILE NO. ?XX-XXXX?

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OSHPD No: ?P-2016-XXXXX?

ISSUED

MARK	DATE	DESCRIPTION
	01/10/2020	50% DESIGN DEVELOPMENT

MANAGEMENT

LIONAKIS PROJECT NO:	019051
CLIENT PROJECT NO:	-
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TITLE
METER RISER DIAGRAM

SHEET
E-602