

ISSUE FOR BID JANUARY 18, 2012

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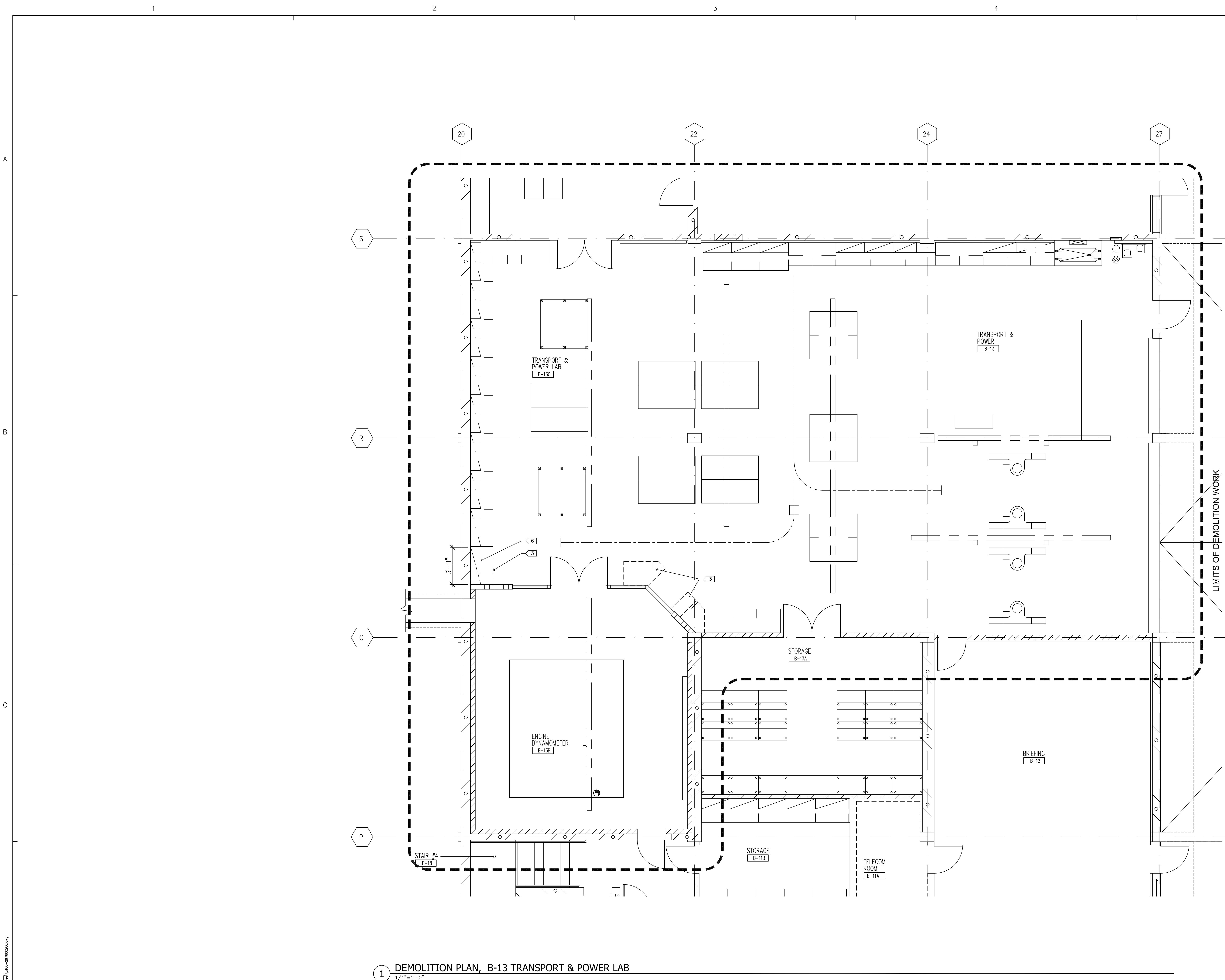
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SPECIAL SYMBOLS			
	AT		PERPENDICULAR
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SPECIFICATION SECTION	ABBREVIATION	DESCRIPTION	SPECIFICATION SECTION	ABBREVIATION	DESCRIPTION
095100	ACT	ACOUSTIC CEILING TILE ACT-2: (24x48, 5/8", tegular edge, 15/16 grid) ACT-6A: Clean Room ACT, gasketed grid	092200	MET STUD	METAL STUD FRAMING SYSTEMS (INTERIOR) MET STUD-1: Non-load bearing, 20 ga, size as indicated
102813	CH	COAT HOOK(S) CH-1: Single coat hook CH-2: Double coat hook	101100	MKBD	MARKER BOARD(S) MKBD-1: Dry-type marker board, low gloss, size as indicated
033000	CONC FIN	CONCRETE FINISH(ES) Horizontal Surfaces CONC FIN-1: Steel trowel (smooth) CONC FIN-2: Non-slip broom CONC FIN-3: Non-slip abrasive CONC FIN-6: Fleat finish CONC FIN-7: (Sandblast finish)	064000	PLAM	PLASTIC LAMINATE PLAM-1: (Mfr, series number, name)
		Vertical Surfaces CONC FIN-20: Exposed (smooth form finish) typical CONC FIN-21: Exposed (smooth rubbed finish) CONC FIN-22: Exposed (Grout cleaned finish)	099000	PT	PAINT PT-1: (Mfr, color number, color name) PT-2: (Mfr, color number, color name) PT-3: (Mfr, color number, color name) PT-4: (Mfr, color number, color name)
		Special Finishes CONC FIN-30: (To be determined - stained or patterned)	102813	PTC	PAPER TOWEL CABINET(S) PTC-1: Surface mounted PTC-4: Recessed mounted
			064000	R & S	ROD AND SHELF R & S-1: Plastic laminated shelf with rod
104400	FE	FIRE EXTINGUISHER FE-3: 10 lbs extinguisher on wall bracket	096500	RB	RESILIENT BASE RB-1: 4" and 5" base, (cove type)
078100	FP	FIREPROOFING (Spray Fire Resistive Materials) FP-1: Cementitious fireproofing, normal density (concealed spaces) FP-2: Cementitious fireproofing, medium density (exposed)	096723	RES	RESINOUS FLOORING RES-1: Epoxy flooring
061000	FRT	FIRE RETARDANT TREATED FRT-1: Fire retardant treated wood materials	096500	RSF	RESILIENT SHEET FLOORING RSF-1: (Mfr, series, color TBD) RSF-2: (Heat welded seams, mfr, series, color ??)
078400	FSTOP	FIRESTOPPING FSTOP: Thru-penetration fire stops at all locations, except slab edges	096500	RTS	RESILIENT TRANSITION STRIP RTS-1: Tapered resilient strip, resilient to resilient RTS-4: Resilient to concrete
088000	GL	GLASS, GLAZING Monolithic Glass GL-1: Clear annealed glass, 1/4" unless otherwise indicated GL-1T: Tempered clear annealed glass, 1/4" unless otherwise indicated	102813	SDISP	SOAP DISPENSER(S) SDISP-1: Surface, horizontal design,
064000	GROM	GROMMET GROM-1: Power cord grommet, 1-7/8" diameter	079000	SLNT	SEALANT(S) SLNT: Sealant Schedule - Refer to Specifications
092900	GYP BD	GYPSUM BOARD 5/8" Gypsum Panels GYP BD-1: 5/8" fire-rated type "X" wallboard GYP BD-2: 5/8" fire-rated type "X" water-resistant wallboard	064000	SSF	SOLID SURFACE FABRICATION(S) SSF-1: 1/2 inch cast polymer (color ____) SSF-2: 1/8" veneer (color ____)
092900	GYP TRIM	GYPSUM BOARD TRIM & ACCESSORIES GYP TRIM-1: control joint GYP TRIM-2: Not used	102600	WCG	WALL CORNER GUARD WCG-4: (Stainless steel cornerguard, 2"x2" leg, surface mounted)
092900	INSUL	INSULATION Acoustical Insulation INSUL-40: Acoustical Batts (for use with interior stud walls)	064000	WD	WOOD (TYPE AND FINISH) WD-1: (Red oak, transparent finish) WD-2: (White oak, transparent finish) WD-3: (American cherry with vertical grain, transparent finish) WD-4: (Select white maple, transparent finish) WD-5: (Birch or poplar, painted finish)
123213	MCW	MANUFACTURED CASEWORK MCW-2: Plastic laminate base & wall cabinets with epoxy tops	061000	WD BLKG	WOOD BLOCKING WD BLKG-1: Exposed or concealed wood blocking
055000	MET FAB	METAL FABRICATION(S) MET FAB-2: (Ceiling hung support assembly for T COMP) MET FAB-3: (Equip support systems - Unistrut)	061000	WD SHTG	WOOD SHEATHING Subfloor and Underlayment WD SHTG-13: Subflooring, particleboard, (5/8") (3/4") WD SHTG-14: Underlayment APA INT w/ exterior glue WD SHTG-15: Underlayment, APA EXT A-C WD SHTG-16: Particleboard (M-1) (M-2), 1/2" minimum
092200	MET FURG	METAL FURRING (INTERIOR) MET FURG-1: Hat channels MET FURG-2: Z-furring MET FURG-3: Channel bridging MET FURG-4: Resilient channels	102600	WG	WALL GUARD WG-1: Sheet vinyl (Acrovyn), 0.022" thick, size as indicated
			122126	WT	WINDOW TREATMENT WT-3: (Manual blackout window shades, color TBD)

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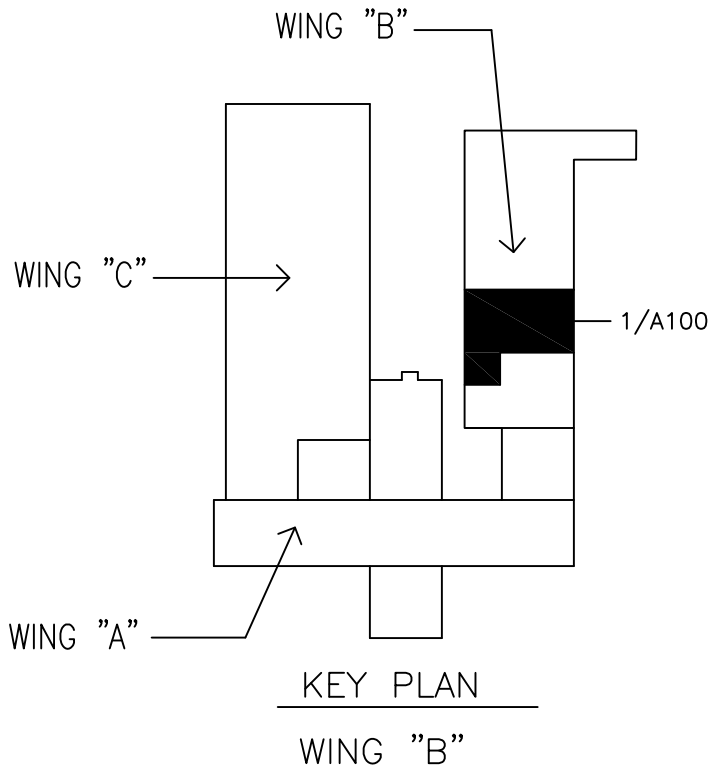


1 DEMOLITION PLAN, B-13 TRANSPORT & POWER LAB
1/4"=1'-0"

- DEMOLITION PLAN GENERAL NOTES**
- A. VERIFY EXISTING CONDITIONS AND DIMENSIONS. COORDINATE THE EXTENT OF DEMOLITION WORK AND EXISTING WORK TO REMAIN WITH NEW FLOOR PLAN AND PROJECT SITE PRIOR TO PRICING, FABRICATION AND INSTALLATION. NOTIFY ARCHITECT OF ALL CONFLICTS IMMEDIATELY.
- B. WHERE WALLS OR PARTITIONS ARE INDICATED TO BE REMOVED, REMOVE ENTIRE WALL OR PARTITIONS AS WELL AS DUCTS, PIPING, CONDUITS AND OTHER ELEMENTS IN OR ON THEM WHICH MAY OR MAY NOT BE SPECIFICALLY IDENTIFIED, UNLESS OTHERWISE NOTED. COORDINATE WITH OWNER ALL EQUIPMENT TO BE SALVAGED.
- C. REFER TO MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION NOTES.
- D. REPAIR/PATCH OPENINGS IN WALLS, PARTITIONS, FLOORS AND CEILINGS THAT ARE EXISTING OR WHERE DEMOLITION OCCURS TO MATCH EXISTING ADJACENT FINISH SURFACE. MAINTAIN CODE AND FIRE RATING REQUIREMENTS.
- E. EXISTING FINISHES TO BE REMOVED SHALL HAVE THE ORIGINAL SUBSTRATE PREPARED TO RECEIVE NEW FINISHES.
- F. PROVIDE SAFE MEANS OF EGRESS THROUGH AND/OR AROUND THE BUILDING AND/OR SITE AT ALL TIMES.
- G. AVOID DISRUPTION TO ADJACENT FLOORS/AREAS AS MUCH AS POSSIBLE. KEEP NOISE TO A LEVEL ACCEPTABLE TO THE OWNER BY SCHEDULING EXCESSIVE NOISE TASKS WITH OWNER. ALL SAW-CUTTING AND NOISE/VIBRATION PRODUCING CONSTRUCTION TO BE SCHEDULED WITH OWNER AS NOT TO INTERFERE WITH CLASS OR INSTRUCTION. THIS MAY REQUIRE AFTER HOURS WORK.
- H. PROVIDE DUST CONTROL BETWEEN CONSTRUCTION AREAS AND OCCUPIED AREAS AT ALL TIMES. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- J. ALL SHUTDOWNS OF MECHANICAL, SPRINKLER, FIRE ALARM AND/OR ELECTRICAL SYSTEMS SHALL BE COORDINATED WITH OWNER AND MAY OCCUR DURING NON-BUSINESS HOURS.
- K. ALL ITEMS INDICATED TO BE REMOVED FROM EXISTING WALLS (TACK BOARDS, MARKER BOARDS, BUMPER RAILS, CORNER GUARDS, MIRRORS, ETC) SHALL BE RETURNED TO OWNER, UNLESS DIRECTED OTHERWISE. PATCH WALLS AS REQUIRED FOR NEW FINISHES.
- L. PROVIDE FIRE EXTINGUISHERS PER CODE AT ALL TIMES THROUGHOUT CONSTRUCTION AREA.

- DEMOLITION PLAN KEYNOTES <##>**
1. SALVAGE EXISTING FURNITURE—COORDINATE W/OWNER.
 2. REMOVE (E) DOOR AND FRAME
 3. REMOVE (E) BUILT-IN CASEWORK
 4. (E) TO REMAIN
 5. REMOVE (E) SINK
 6. REMOVE (E) UPPER WALL CABINET
 7. REMOVE (E) EQUIPMENT
 8. REMOVE (E) PORTION OF WALL TO ACCOMMODATE DOOR OPENING
 9. REMOVE (E) WALL

LIMITS OF DEMOLITION WORK



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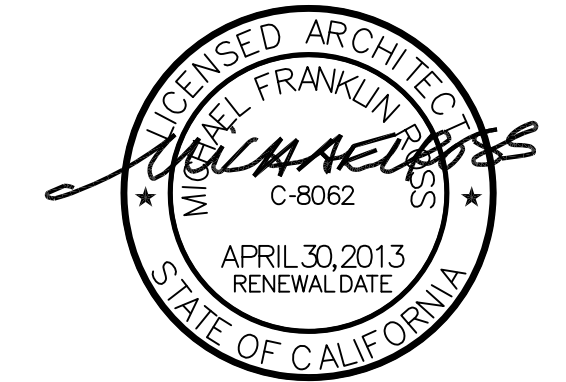
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CALIFORNIA STATE
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5151 STATE UNIVERSITY DR.
LOS ANGELES, CA 90032



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1	1	ISSUE FOR BID	1-18-12

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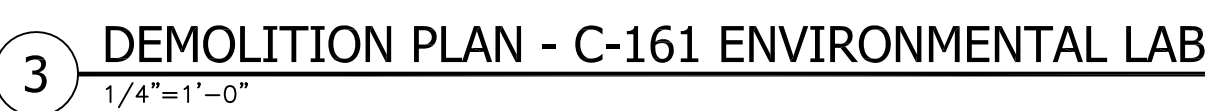
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DEMOLITION PLAN
B-13 TRANSPORT
& PWR LAB

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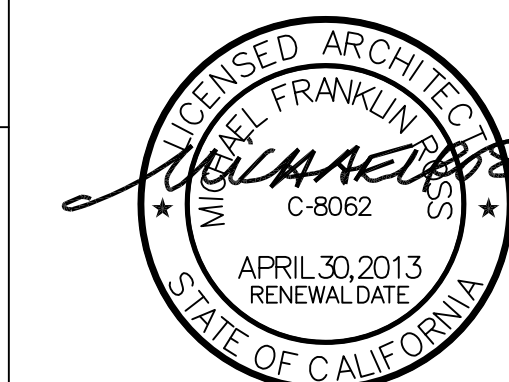
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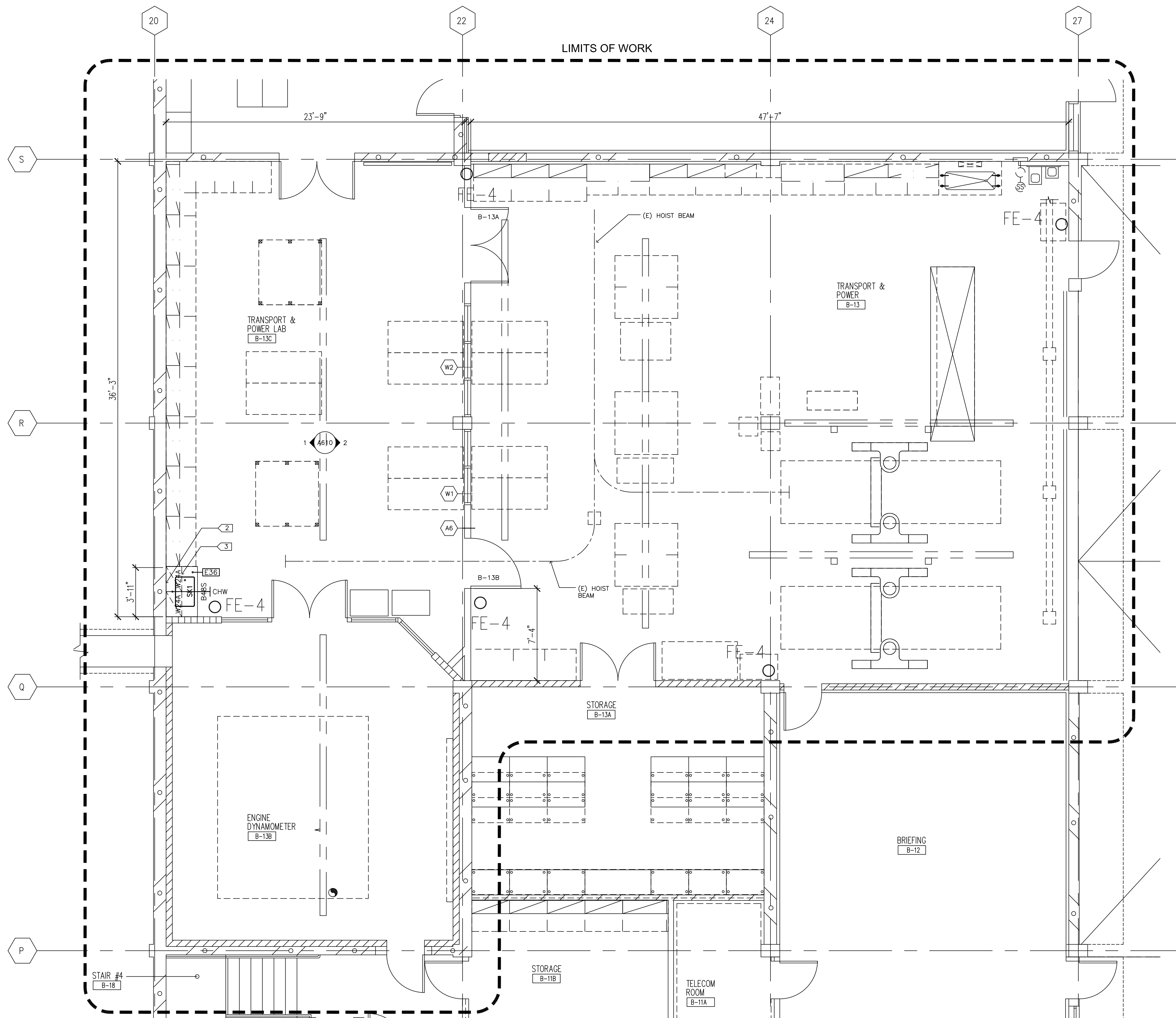
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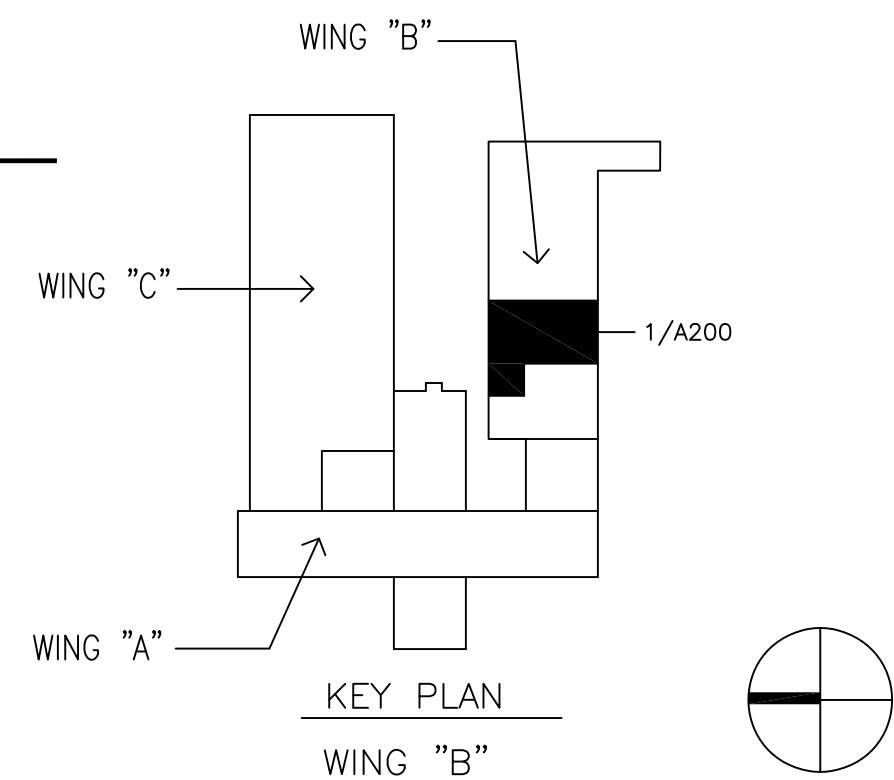
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1 IMPROVEMENT PLAN - B-13 TRANSPORT & POWER / LAB
1/4"=1'-0"



- FLOOR PLAN GENERAL NOTES
- A. ALL INTERIOR PARTITIONS SHALL BE "A3" UNO.
- B. REFER TO SHEET A080 FOR DETAIL OF TYPICAL DOOR JAMB AT ABUTTING WALLS OR PARTITIONS.
- C. ALL PIPING, CONDUITS AND RELATED MECHANICAL AND ELECTRICAL ITEMS SHALL BE CONCEALED WITHIN DRYWALL FURRING AS REQUIRED IN FINISHED AREAS. WHETHER SHOWN ON DWGS OR NOT, UNO IN MEP DWGS.
- D. PROVIDE METAL PLATE BACKING AND/OR TREATED WOOD BLOCKING IN WALLS WHERE WALL-MOUNTED EQUIPMENT IS SHOWN ON PLANS OR ELEVATIONS. VERIFY HEIGHT AND LENGTH WITH ACTUAL EQUIPMENT. SEE DETAIL X/AXXX.
- E. FINISHED FLOOR ELEVATIONS (UNO):
XXX'-X" = GROUND LEVEL
100'-0" = FIRST FLOOR
XXX'-X" = SECOND FLOOR
XXX'-X" = THIRD FLOOR
XXX'-X" = ROOF (TOP OF DECK ELEVATION)
- F. VERIFY EXISTING DIMENSIONS, CONDITIONS AND FINISHES BEFORE PRICING AND/OR PROCEEDING WITH WORK. DISCREPANCIES SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION IMMEDIATELY.
- G. ALL DIMENSIONS ARE CLEAR FROM THE FACE OF FINISHED WALL/PARTITION TO FACE OF FINISHED WALL/PARTITION OR FACE OF EXISTING WALLS. SEE PARTITION TYPES FOR ACTUAL THICKNESS OF PARTITIONS. MASONRY WALLS ARE DIMENSIONED TO NOMINAL FACE.
- H. MATCH FINISHED WALL OR PARTITION THICKNESS WHERE NEW WALLS OR PARTITIONS OCCUR IN LINE WITH EXISTING WALLS.
- J. PATCH ALL HOLES IN EXISTING SURFACES WHERE EQUIPMENT HAS BEEN REMOVED OR DEMOLITION HAS OCCURRED. PREPARE SURFACES AS REQUIRED FOR NEW FINISHES. PATCH TO MATCH ADJACENT SURFACE IF NOT SCHEDULED.
- K. ALL EXISTING FLOOR OPENINGS AND DEPRESSIONS IN THE WORK SHALL BE FILLED OR CLOSED, UNO, WITH MATERIALS TO MATCH ADJACENT SURFACES, FINISHES AND FIRE RATINGS.
- L. REF: STRUCT, MECH, PLUMB, ELEC & LAB DRAWINGS FOR ALL LAB EQUIPMENT REQUIREMENTS.

- FLOOR PLAN KEYNOTES 
1. DASHED LINE INDICATES EDGE OF OPENING ABOVE.
2. PATCH WALL TO MATCH ADJACENT WHERE (E) CASEWORK WAS REMOVED.
3. LAB CASEWORK - SEE LD DRAWINGS FOR MORE INFO
4. WALL-MOUNTED SINK - SEE LAB AND PLUMBING DRAWINGS FOR MORE INFO.
5. (E) OWNER-FURNISHED EQUIPMENT

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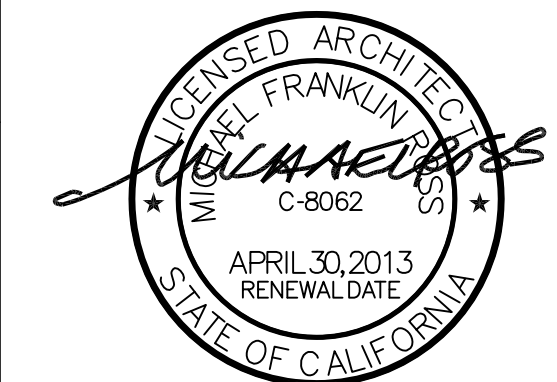
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IMPROVEMENT
PLAN
B-13 TRANSPORT
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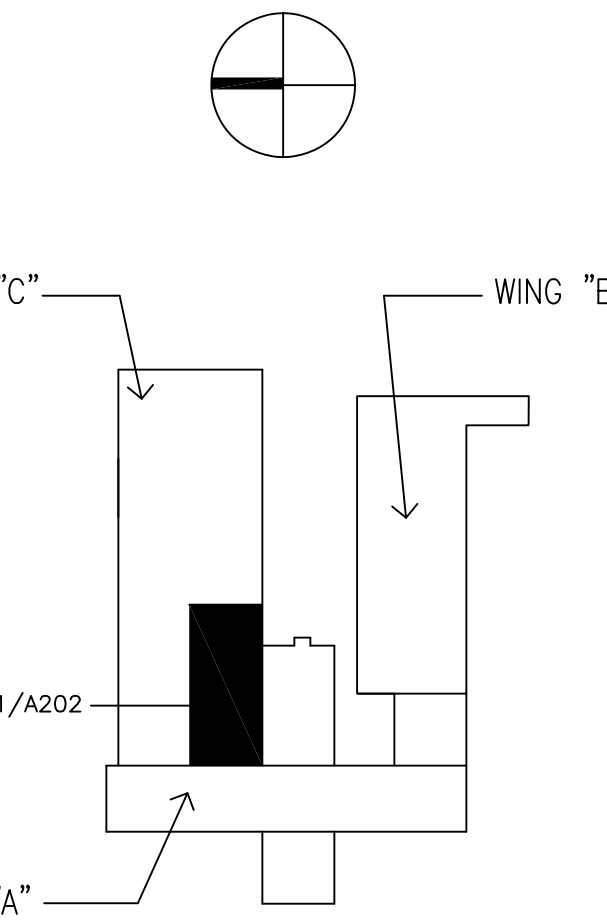
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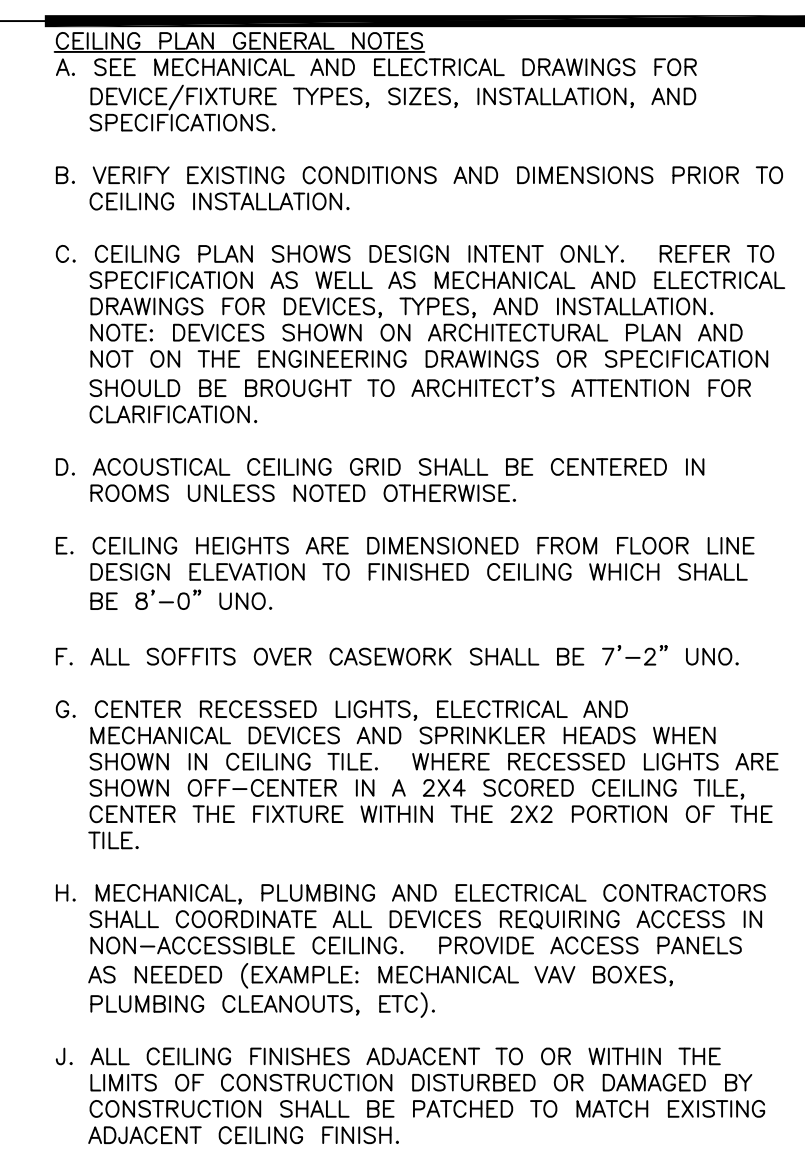
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FLOOR PLAN KEYNOTES	<##>
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2. PATCH WALL TO MATCH ADJACENT WHERE (E) CASEWORK WAS REMOVED.	
3. LAB CASEWORK — SEE LD DRAWINGS FOR MORE INFO	
4. WALL-MOUNTED SINK — SEE LAB AND PLUMBING DRAWINGS FOR MORE INFO.	
5. (E) OWNER—FURNISHED EQUIPMENT	

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1 IMPROVEMENT PLAN - C-259 FLUID MECHANICS LAB
1/4"=1'-0"



1. EXPOSED OR NO CEILING IN THIS ROOM OR AREA.
2. REPLACE OR REPAIR CEILING COMPONENTS AS NEEDED.
3. (E) LIGHT FIXTURE
4. MECHANICAL REGISTER - SEE MECHANICAL DRAWINGS FOR MORE INFO.
5. LIGHT FIXTURE - SEE ELECTRICAL DRAWINGS FOR MORE INFO.
6. COORDINATE (E) LIGHT FIXTURES WITH NEW CEILING
7. CEILING SERVICE PANEL - SEE LAB DRAWINGS FOR MORE INFO. CONTRACTOR TO COORDINATE WITH CEILING TILE AND PROVIDE METAL TRIM PIECE TO MATCH PANEL.
8. LAB SERVICE - SEE LAB DRAWINGS FOR MORE INFO. CONTRACTOR TO COORDINATE WITH CEILING TILE AND PROVIDE METAL TRIM PIECE TO MATCH PANEL.
9. CONTRACTOR TO COORDINATE SUPPORT FRAME BRACING WITH CEILING TILE - PROVIDE TRIM PIECE AT EACH PENETRATION, TYP.

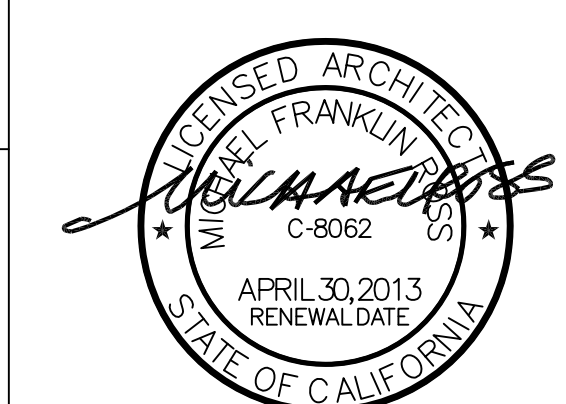
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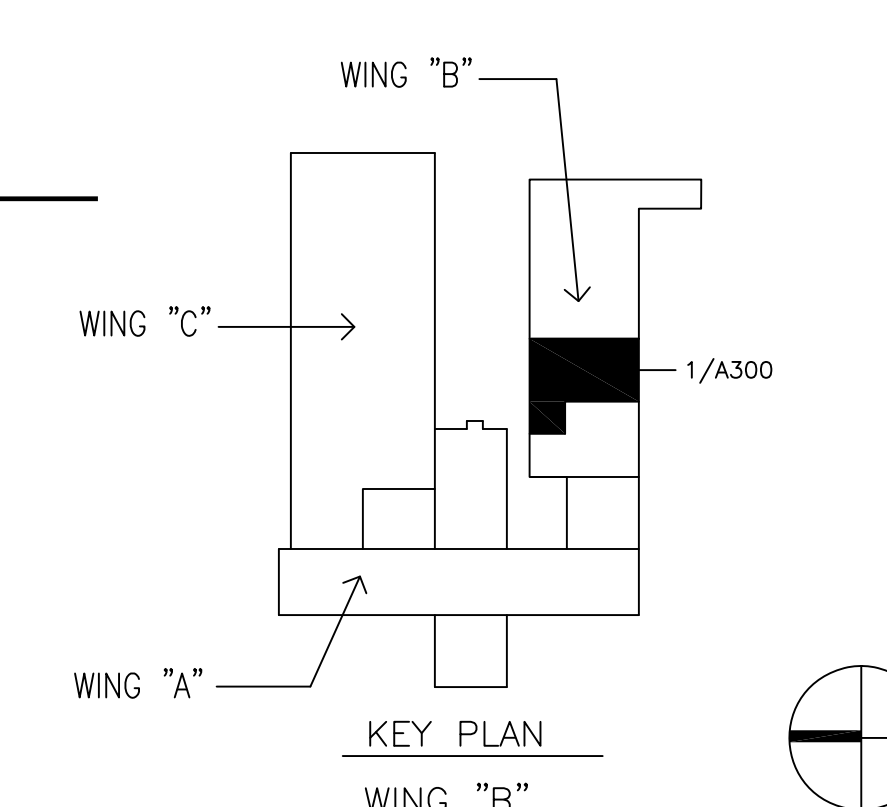
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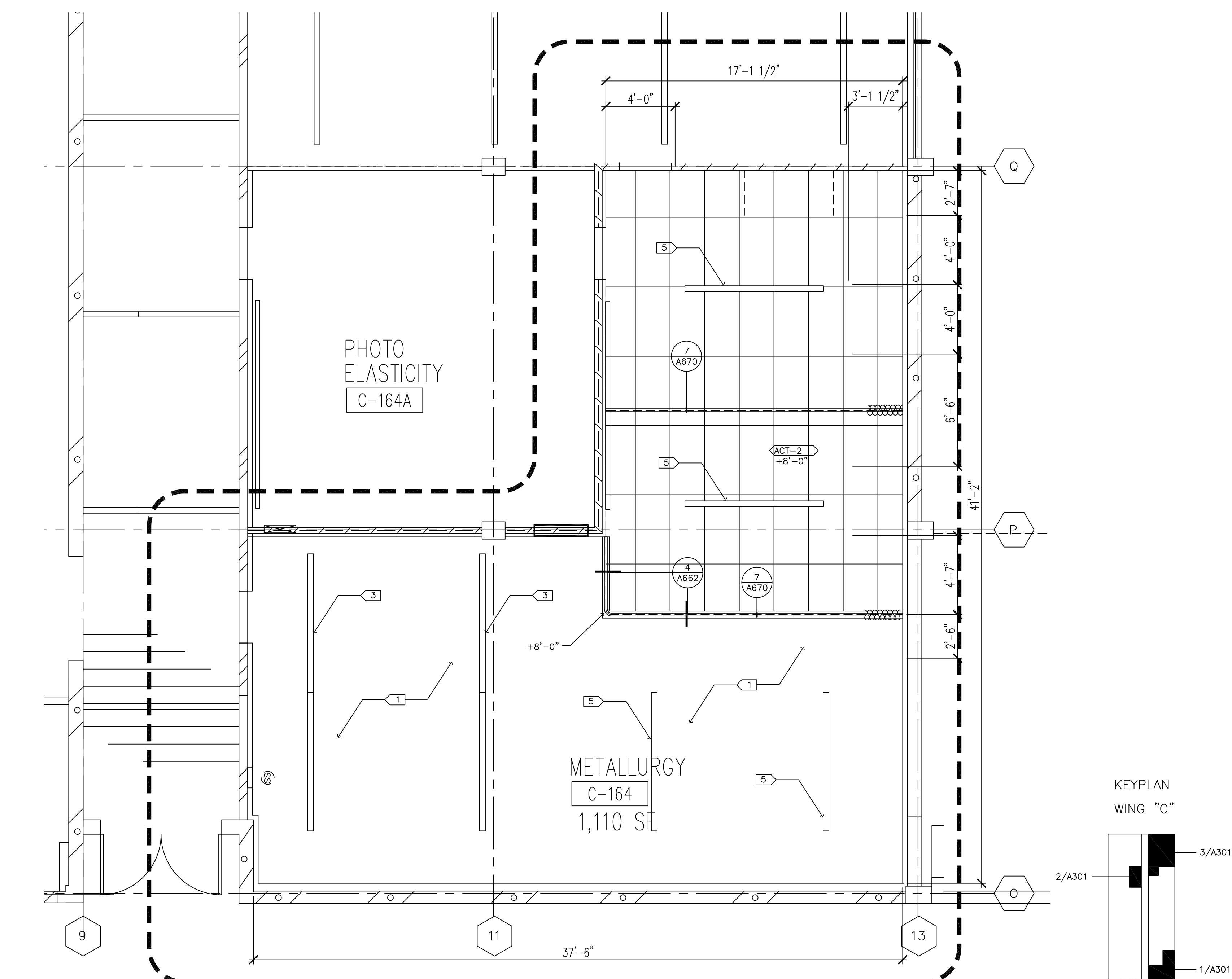
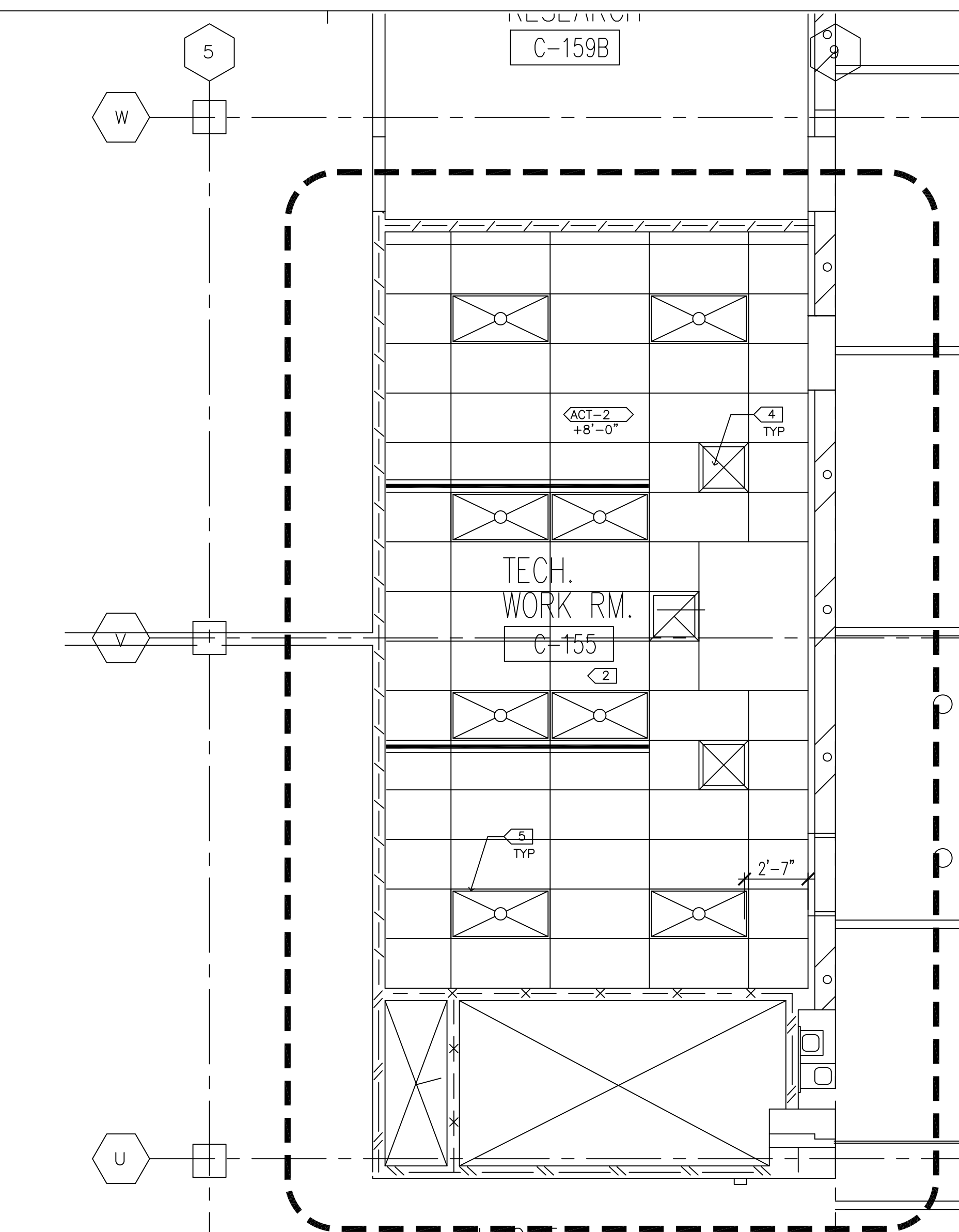
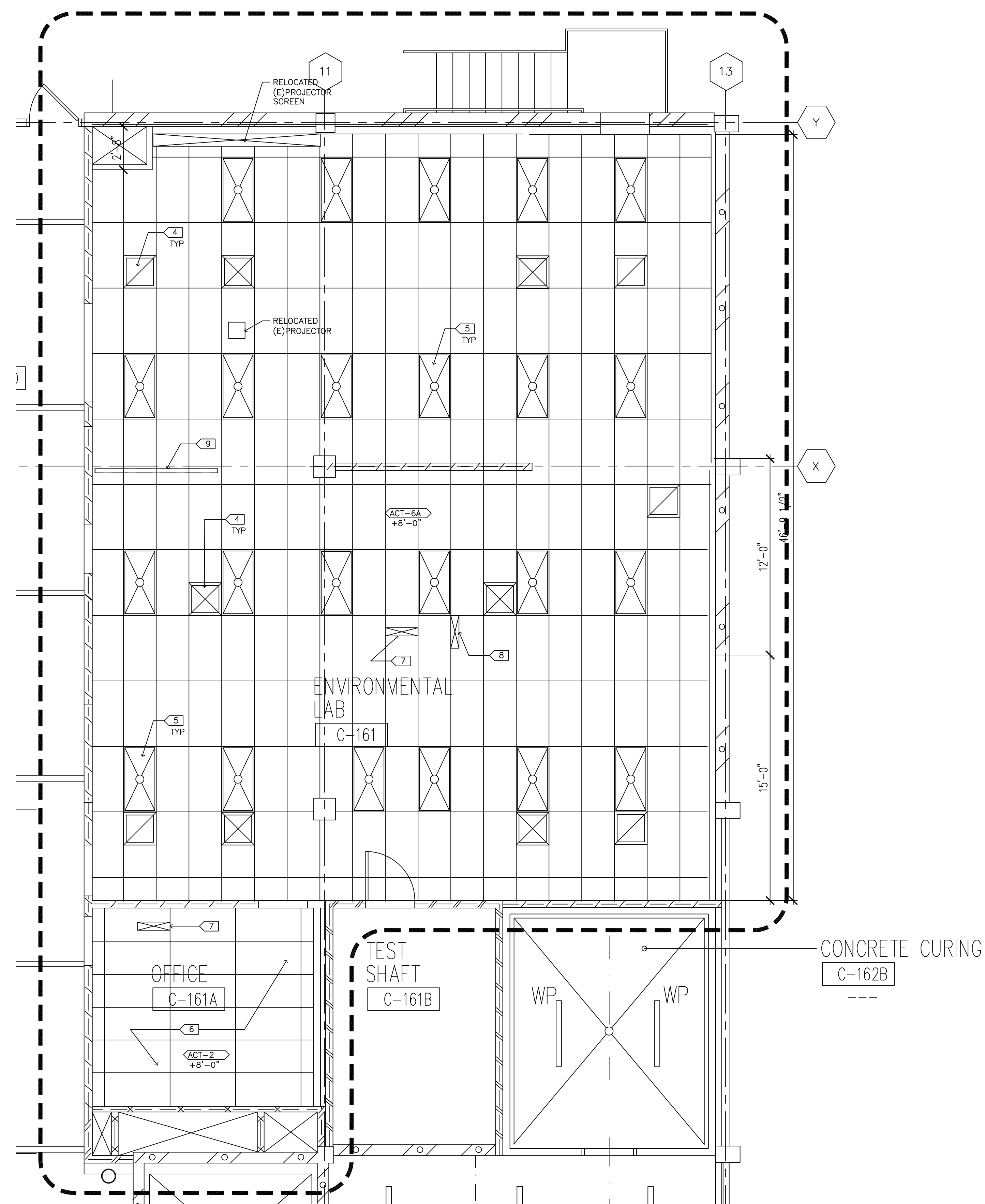
B-13 REFLECTED
CEILING PLAN
TRANSPORT
& POWER LAB

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CEILING PLAN GENERAL NOTES

- A. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR REQUIRED DIFFUSIVE TYPES, SIZES, INSTALLATION, AND SPECIFICATIONS.
- B. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CEILING INSTALLATION.
- C. CEILING PLAN SHOWS DESIGN INTENT ONLY. REFER TO MECHANICAL AS WELL AS MECHANICAL AND ELECTRICAL DRAWINGS FOR DEVICE TYPES, AND INSTALLATION. NOTE: DEVICES SHOWN ON ARCHITECTURAL PLAN AND NOT ENGINEERED DRAWINGS OR SPECIFICATION SHOULD BE BROUGHT TO ARCHITECT'S ATTENTION FOR CLARIFICATION.
- D. ACOUSTICAL CEILING GRID SHALL BE CENTERED IN ROOMS UNLESS NOTED OTHERWISE.
- E. CEILING HEIGHTS ARE DIMENSIONED FROM FLOOR TO CEILING DOWNSIDE TO FINISHED CEILING WHICH SHALL BE 8'-0" UNO.
- F. ALL SOFFITS OVER CASEWORK SHALL BE 7'-2" UNO.
- G. CENTER RECESSED LIGHTS, ELECTRICAL AND MECHANICAL DEVICES AND SPRINKLER HEADS WHEN SHOWN IN CEILING TILE. WHERE RECESSED LIGHTS ARE NOT SHOWN, CENTER IN 2'x4' SPOURED CEILING TILE. CENTER THE FIXTURE WITHIN THE 2X2 PORTION OF THE TILE.
- H. MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS SHALL COORDINATE ALL DEVICES REQUIRING ACCESS IN NON-ACCESSIBLE PANEL. PROVIDE ACCESS PANELS AS NEEDED (EXAMPLE: MECHANICAL VAV BOXES, PLUMBING CLEANOUTS, ETC).
- J. ALL CEILING FINISHES SHOULD OR VARY WITHIN THE LIMITS OF CONSTRUCTION DISTURBED OR DAMAGED BY OTHERS. FINISH SHALL BE PATCHED TO MATCH EXISTING ADJACENT CEILING FINISH.

CEILING PLAN KEYNOTES

1. EXPOSED OR NO CEILING IN THIS ROOM OR AREA.
2. REPLACE OR REPAIR CEILING COMPONENTS AS NEEDED.
3. (E) LIGHT FIXTURE
4. MECHANICAL REGISTER - SEE MECHANICAL DRAWINGS FOR MORE INFO.
5. LIGHT FIXTURE - SEE ELECTRICAL DRAWINGS FOR MORE INFO.
6. COORDINATE (E) LIGHT FIXTURES WITH NEW CEILING.
7. CEILING SERVICE PANEL - SEE LAB DRAWINGS FOR MORE INFO. CONTRACTOR TO COORDINATE WITH CEILING TILE AND PROVIDE METAL TRIM PIECE TO MATCH PANEL.
8. LAB SERVICE - SEE LAB DRAWINGS FOR MORE INFO. CONTRACTOR TO COORDINATE WITH CEILING TILE AND PROVIDE METAL TRIM PIECE TO MATCH PANEL.
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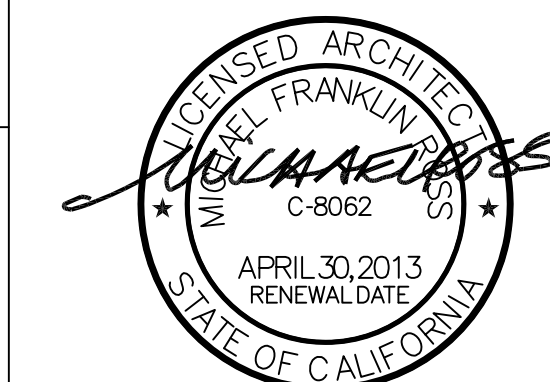
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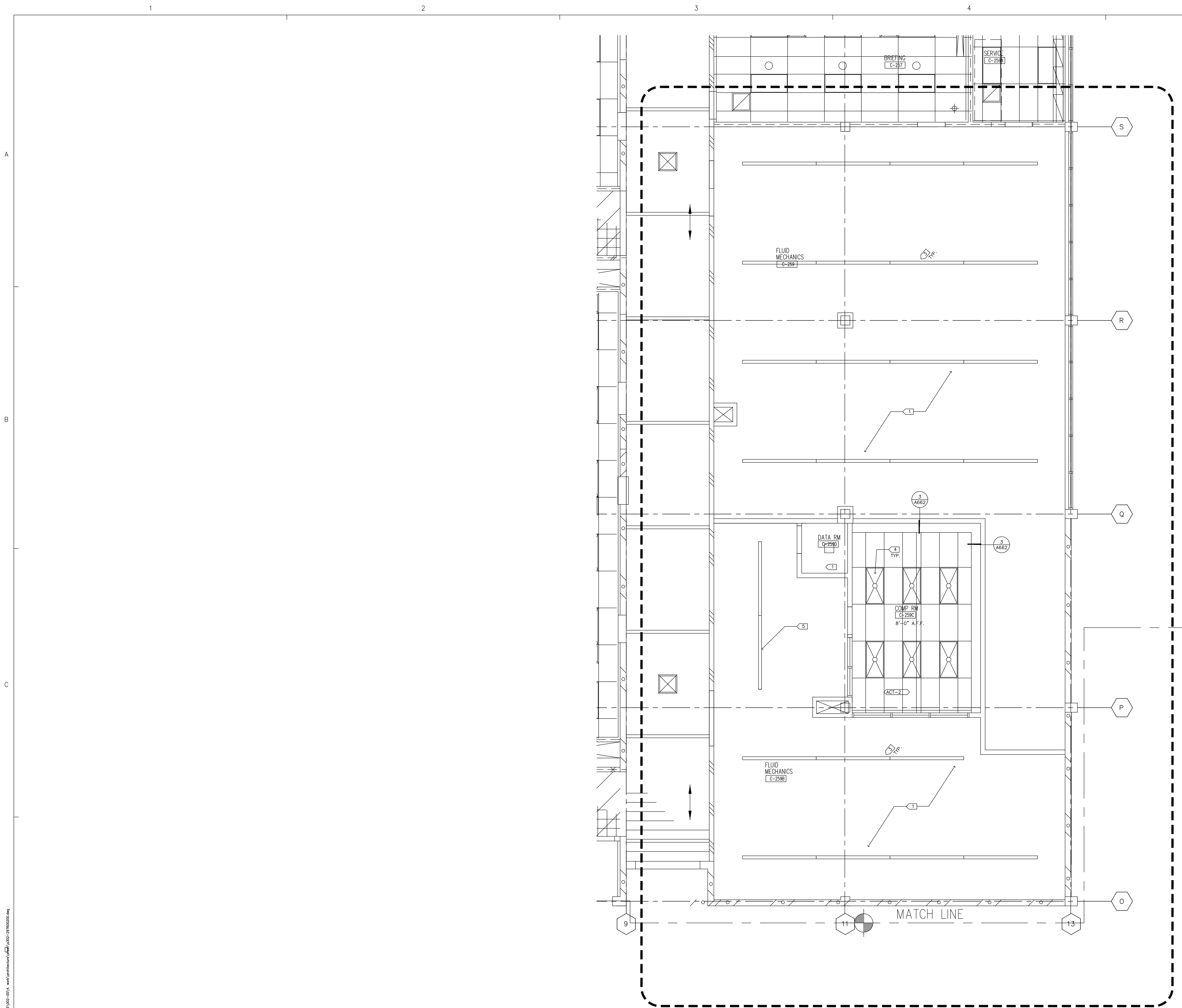
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REFLECTED
CEILING PLAN

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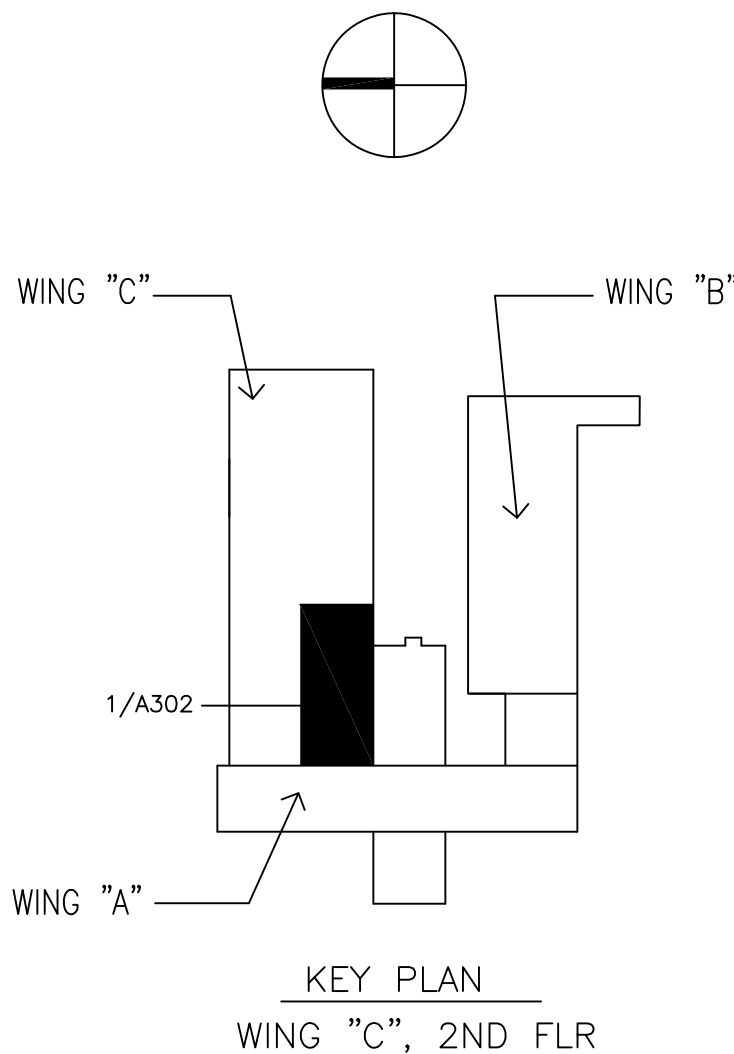


1 REFLECTED CEILING PLAN - C-259 FLUIDS MECHANICS LAB
1/4"=1'-0"

- CEILING PLAN GENERAL NOTES
- A. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR DEVICE/FIXTURE TYPES, SIZES, INSTALLATION, AND SPECIFICATIONS.
- B. VERIFY EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CEILING INSTALLATION.
- C. CEILING PLAN SHOWS DESIGN INTENT ONLY. REFER TO SPECIFICATION AS WELL AS MECHANICAL AND ELECTRICAL DRAWINGS FOR DEVICES, TYPES, AND INSTALLATION. NOTE: DEVICES SHOWN ON ARCHITECTURAL PLAN AND NOT ON THE ENGINEERING DRAWINGS OR SPECIFICATION SHOULD BE BROUGHT TO ARCHITECT'S ATTENTION FOR CLARIFICATION.
- D. ACOUSTICAL CEILING GRID SHALL BE CENTERED IN ROOMS UNLESS NOTED OTHERWISE.
- E. CEILING HEIGHTS ARE DIMENSIONED FROM FLOOR LINE DESIGN ELEVATION TO FINISHED CEILING WHICH SHALL BE 8'-0" UNO.
- F. ALL SOFFITS OVER CASEWORK SHALL BE 7'-2" UNO.
- G. CENTER RECESSED LIGHTS, ELECTRICAL AND MECHANICAL DEVICES AND SPRINKLER HEADS WHEN SHOWN IN CEILING TILE. WHERE RECESSED LIGHTS ARE SHOWN OFF-CENTER IN A 2X4 SCORED CEILING TILE, CENTER THE FIXTURE WITHIN THE 2X2 PORTION OF THE TILE.
- H. MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS SHALL COORDINATE ALL DEVICES REQUIRING ACCESS IN NON-ACCESSIBLE CEILING. PROVIDE ACCESS PANELS AS NEEDED (EXAMPLE: MECHANICAL VAV BOXES, PLUMBING CLEANOUTS, ETC).
- J. ALL CEILING FINISHES ADJACENT TO OR WITHIN THE LIMITS OF CONSTRUCTION DISTURBED OR DAMAGED BY CONSTRUCTION SHALL BE PATCHED TO MATCH EXISTING ADJACENT CEILING FINISH.

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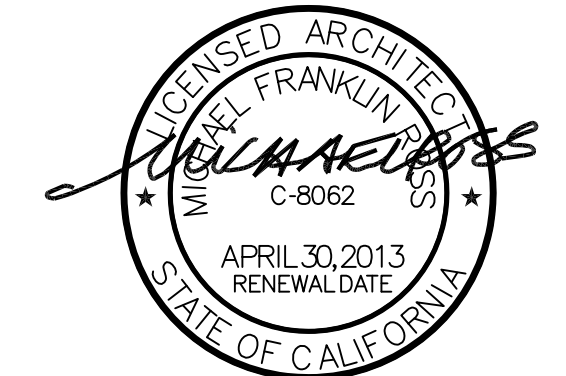
Consultant

Project Title

ENGINEERING &
TECHNOLOGY CORE
RENOVATION

CALIFORNIA STATE
UNIVERSITY, LOS
ANGELES

5151 STATE UNIVERSITY DR.
LOS ANGELES, CA 90032



Revisions		
Number	Description	Date
1	ISSUE FOR BID	1-18-12

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Drawn
Checked
Approved

Date 1-18-12

Submittal AS NOTED

Scale AS NOTED

Sheet Title

REFLECTED
CEILING PLAN
C-259 FLUIDS
MECHANICS LAB

Sheet Number

A302

of

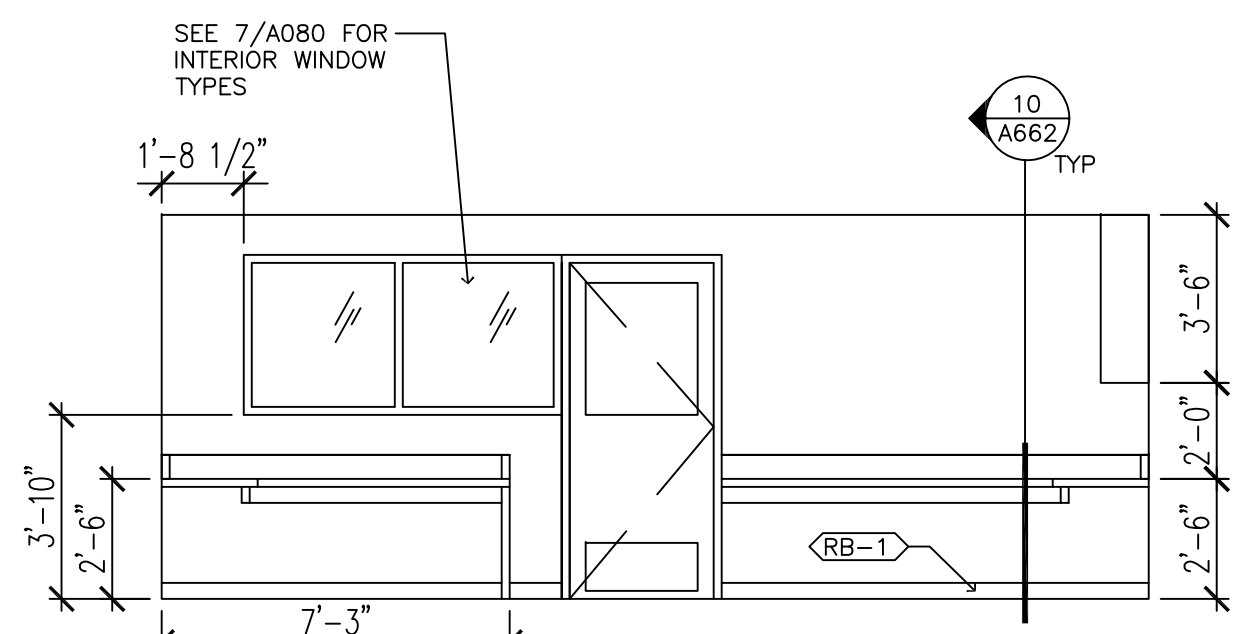
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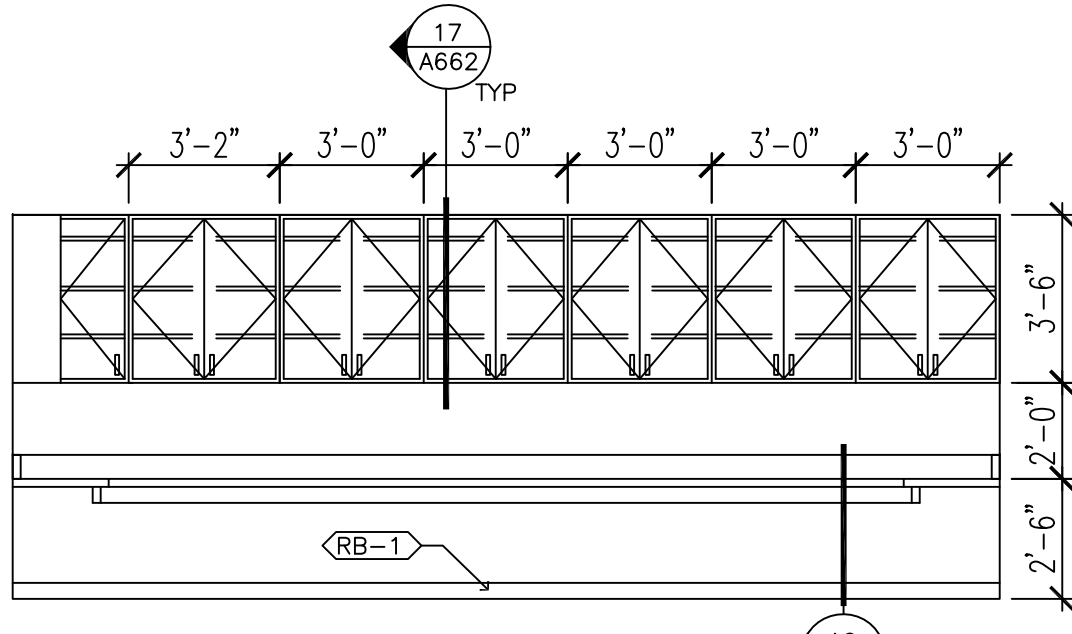
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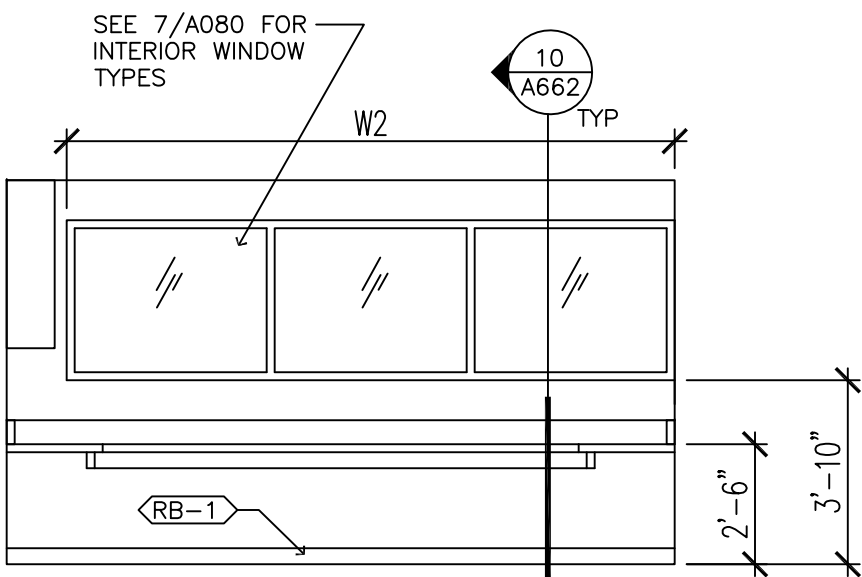
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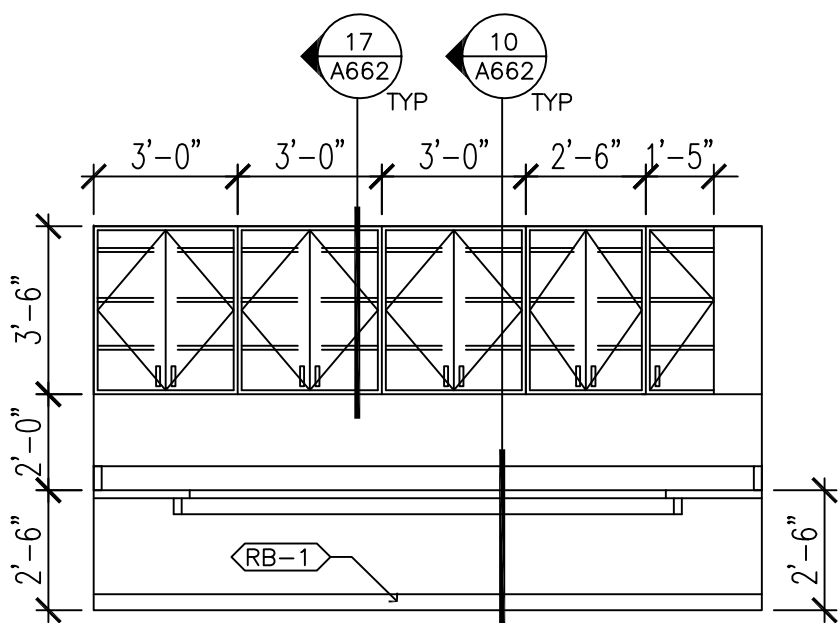
8 C-259C INTERIOR ELEVATION D
1/4" = 1'-0"



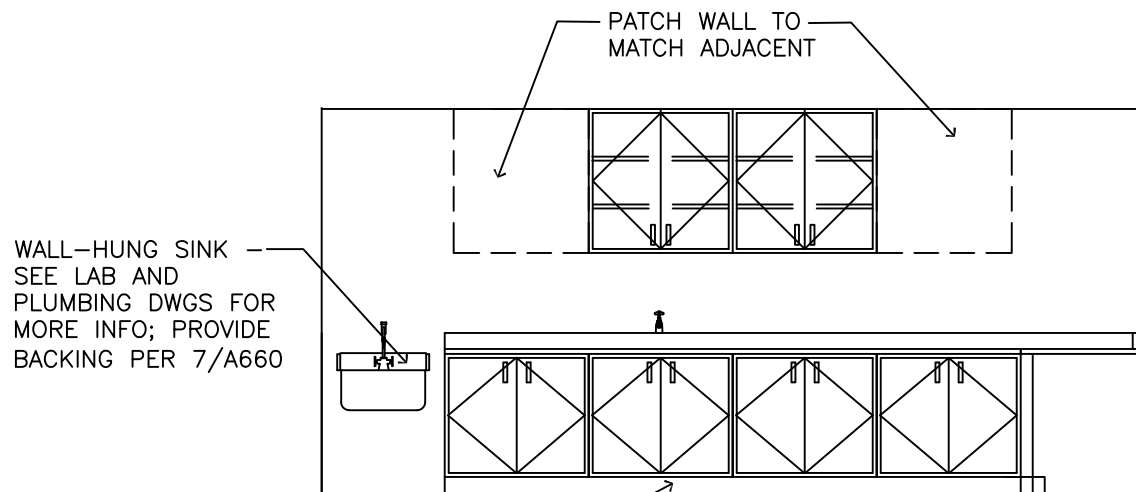
6 C-259C INTERIOR ELEVATION B
1/4" = 1'-0"



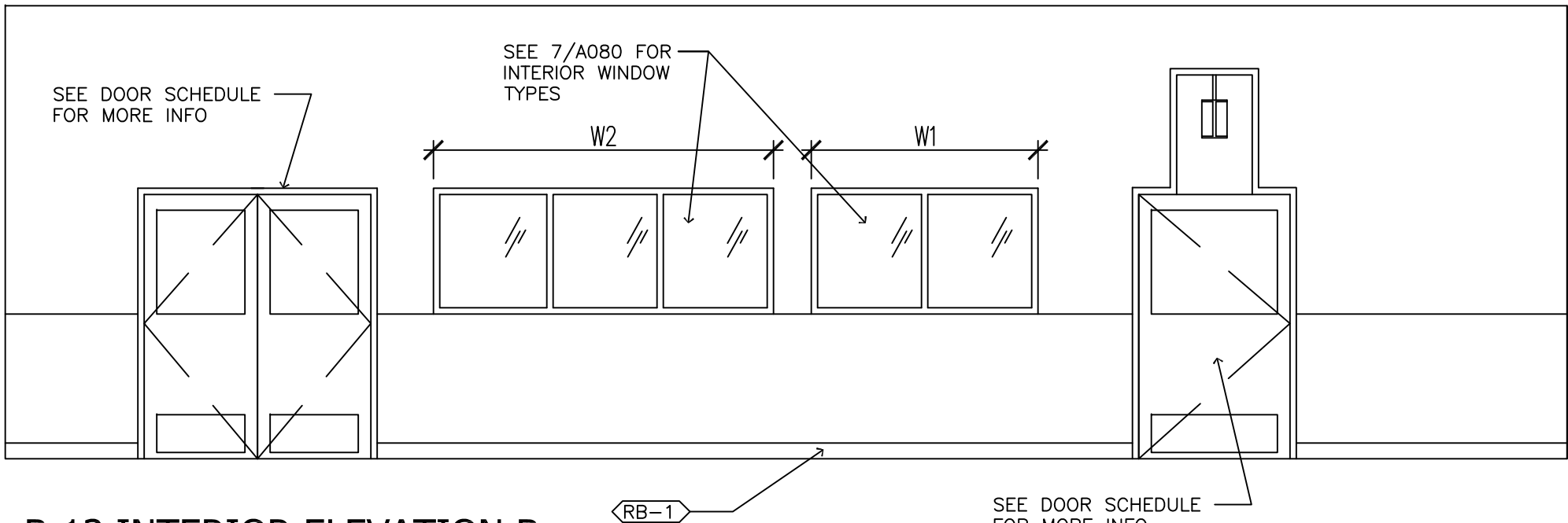
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1/4" = 1'-0"



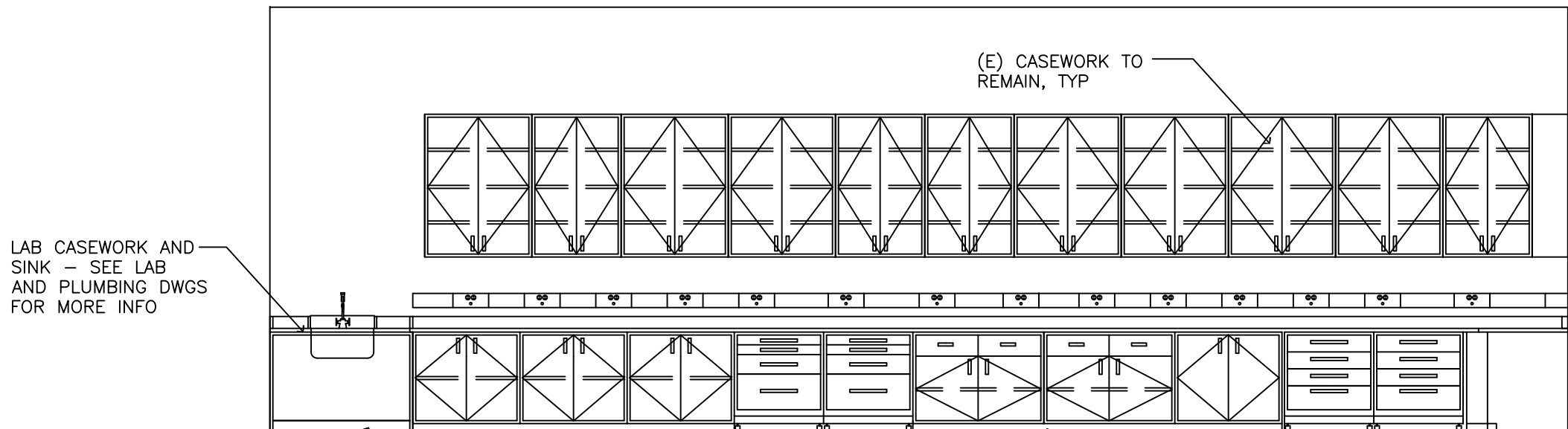
5 C-259C INTERIOR ELEVATION A
1/4" = 1'-0"



3 C-155 INTERIOR ELEVATION
1/4" = 1'-0"



2 B-13 INTERIOR ELEVATION B
1/4" = 1'-0"



1 B-13 INTERIOR ELEVATION A
1/4" = 1'-0"



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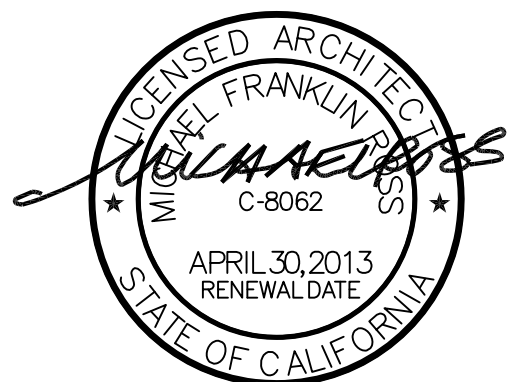
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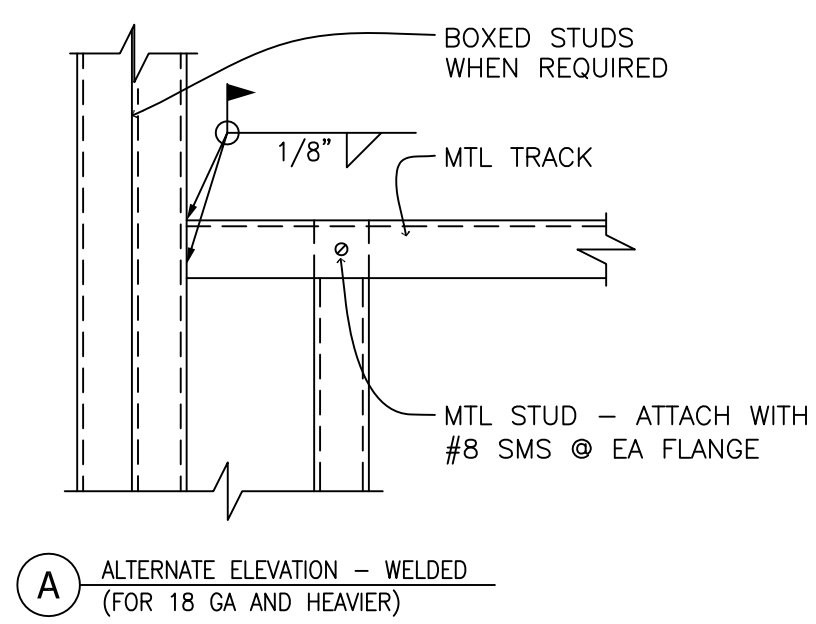
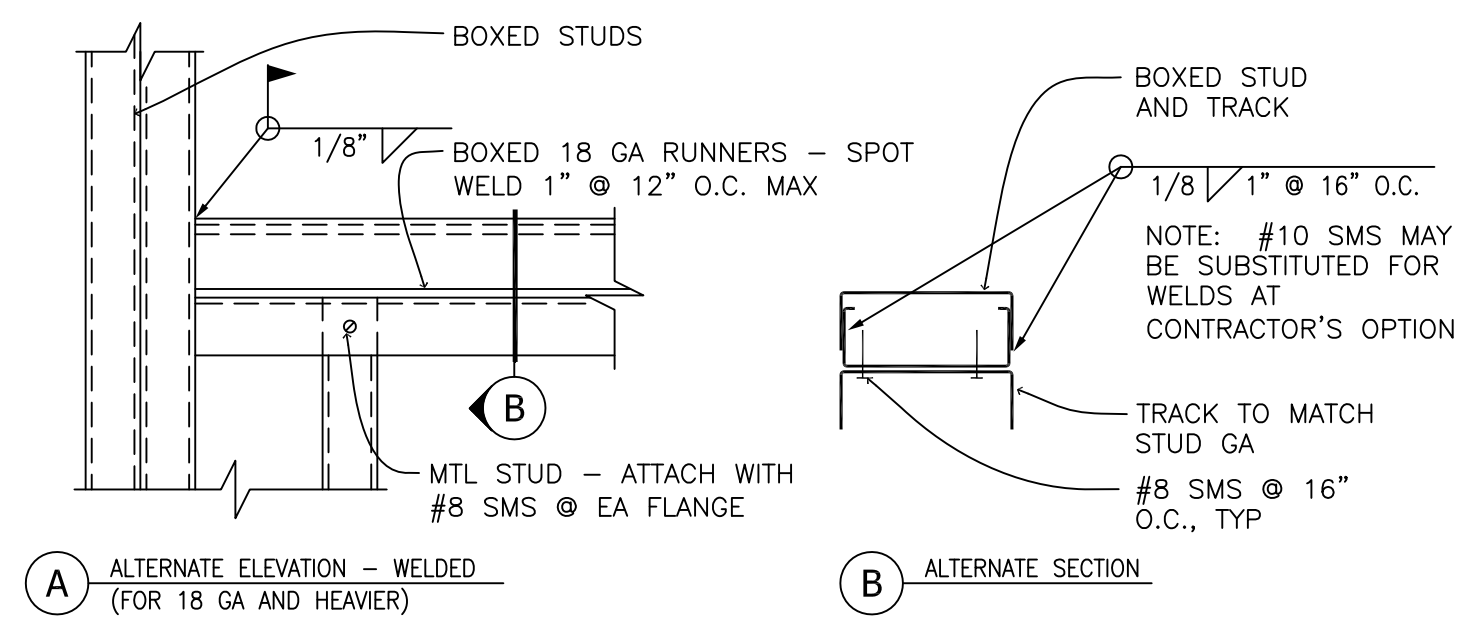
INTERIOR
ELEVATIONS

Sheet Number

A610

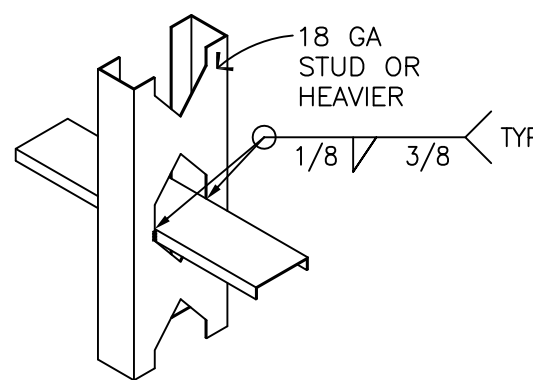
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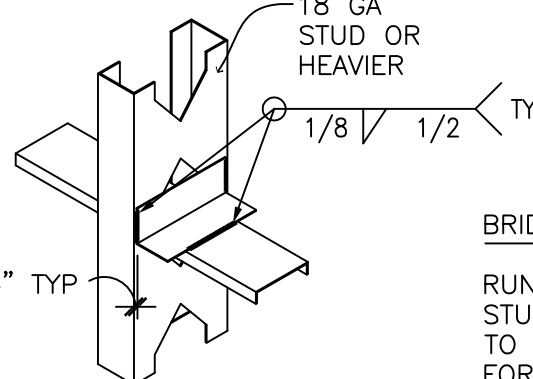
BRIDGING CHANNEL WELDED TO STUD IN PUNCH OUT

FOR WELDABLE STUDS (14, 16 & 18 GA)



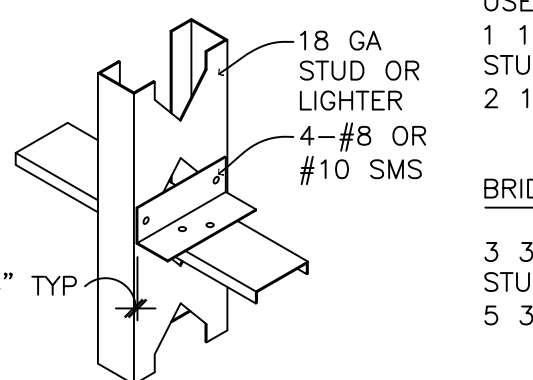
BRIDGING CHANNEL WELDED TO STUD WITH CLIP

FOR WELDABLE STUDS (14, 16 & 18 GA)



BRIDGING CHANNEL SCREWED TO STUD WITH CLIP

FOR SCREWABLE STUDS (20 & 25 GA)



BRIDGING CHANNELS

RUN CONTINUOUSLY THROUGH STUD PUNCH OUTS. FASTEN TO EACH STUD AS INDICATED. FOR WELDING IN PUNCH OUT USE:

1 1/2"x16 GA @ 3 5/8" STUD

2 1/2"x16 GA @ 6" STUD

BRIDGING CLIPS

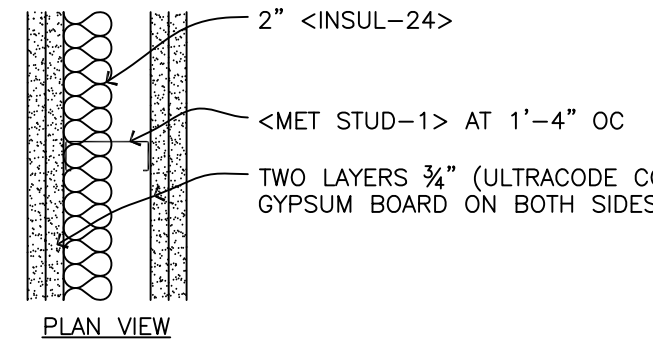
3 3/8"x14 GA @ 3 5/8" STUD

5 3/4"x14 GA @ 6" STUD

J SERIES

NON COMBUSTIBLE

AVAILABLE FIRE RESISTANCE: 4 HOUR NON-BEARING



PARTITION TYPE	STUD WIDTH	PARTITION WIDTH	4 HOUR CONSTRUCTION TESTS	STC W/O INSUL	W/ INSUL	NOTES	AS DRAWN DIMENSION
J2	2 1/2"	5 1/2"	UL DES NO U490	N/A	45-49		5 1/2"
J3	3 3/4"	6 3/4"	UL DES NO U490	N/A	45-49		6 3/4"
J6	6"	9"	UL DES NO U490	N/A	45-49		9"

NOTES: UL# 4490 (NOTES APPLICABLE AT FIRE RATED PARTITIONS):

1. FLOOR AND CEILING RUNNERS - CHANNEL SHAPED, ATTACHED TO FLOOR AND CEILING WITH STEEL FASTENERS SPACED 24" OC.

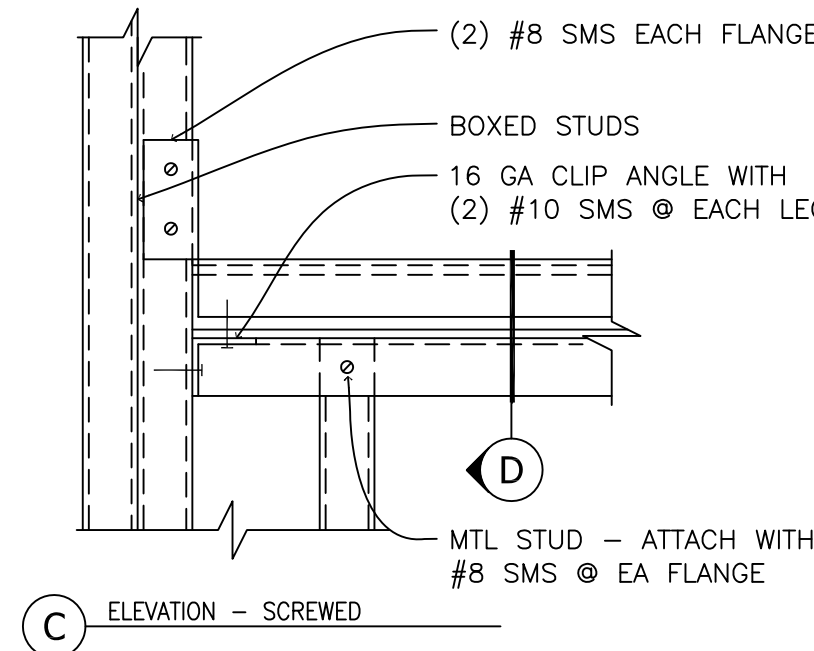
2. STEEL STUDS - CHANNEL SHAPED, SPACED A MAX 24" OC, FABRICATED FROM MIN 25 MSG GALV STEEL, MIN 1/4" WIDE BY 1/2" DEEP WITH 1/4" FOLDED BACK RETURN FLANGE LEGS. STUDS TO BE CUT 1/8" LESS THE ASSEMBLY HEIGHT, STEEL STUDS FRICION -FITTED INTO FLOOR AND CEILING RUNNERS.

3. BATTIS AND GLUES - MIN 2" THICK MINERAL WOOL BATTIS, FRICION FIT BETWEEN THE STUDS AND FLOOR AND CEILING RUNNERS.

4. GYPSUM BOARD - 1/2" THICK, 4 FT WIDE, TWO LAYERS OF WALLBOARD APPLIED TO EACH STUD. OUTER LAYER APPLIED VERTICALLY WITH JOINTS CENTERED OVER STUDS AND STAGGERED ON OPPOSITE SIDES OF STUDS. INNER LAYER APPLIED HORIZONTALLY WITH VERTICAL JOINTS STAGGERED FROM INNER LAYER JOINTS. JOINTS VERTICALLY WITH JOINTS CENTERED OVER STUDS AND STAGGERED ON OPPOSITE SIDE OF STUDS. INNER LAYER SECURED WITH 1/2" LONG TYPE "S" STEEL SCREWS SPACED 24" OC ALONG THE PERIMETER AND IN THE FIELD. OUTER LAYER WHEN APPLIED HORIZONTALLY, SECURED WITH 2 1/2" LONG TYPE "S" STEEL SCREWS SPACED 12" OC ALONG THE PERIMETER AND IN THE FIELD. ALONG THE HORIZONTAL JOINTS OF THE OUTER LAYER, 1/2" LONG TYPE "S" STEEL SCREWS TO BE APPLIED MIDWAY BETWEEN THE STUDS (24" OC) AND 1" FROM THE LONGITUDINAL JOINT. OUTER LAYER WHEN APPLIED VERTICALLY, JOINTS STAGGERED, SECURED WITH 2 1/2" LONG TYPE "S" STEEL SCREWS SPACED 12" OC ALONG THE PERIMETER AND IN THE FIELD.

5. JOINT TAPE AND COMPOUND - OUTER LAYER JOINTS COVERED WITH JOINT COMPOUND AND PAINTED TO MATCH THE SCREW HEADS COVERED WITH JOINT COMPOUND.

6. STUD AND RUNNER GAUGES ARE MINIMUM ALLOWED BY UL TEST. GREATER THICKNESS MAYBE REQUIRED BY OTHER PROVISIONS OF THE DOCUMENTS.



10 SILL DETAILS AT BOXED SECTION

3" = 1'-0"

9 SILL DETAILS AT SINGLE TRACK

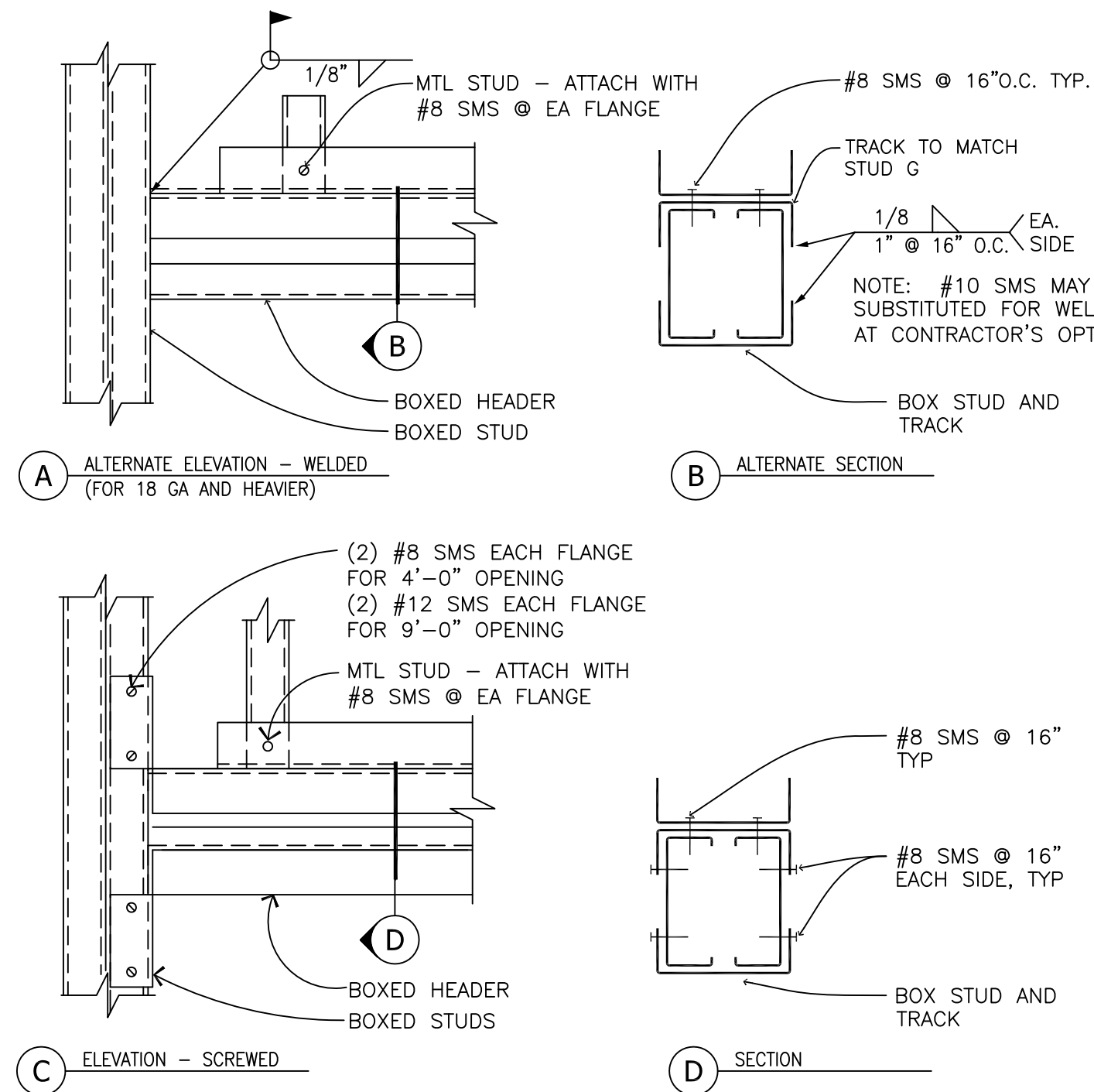
3" = 1'-0"

8 TYPICAL BRIDGING ATTACHMENT

NTS

4 INTERIOR PARTITION TYPE - J SERIES

1 1/2" = 1'-0"

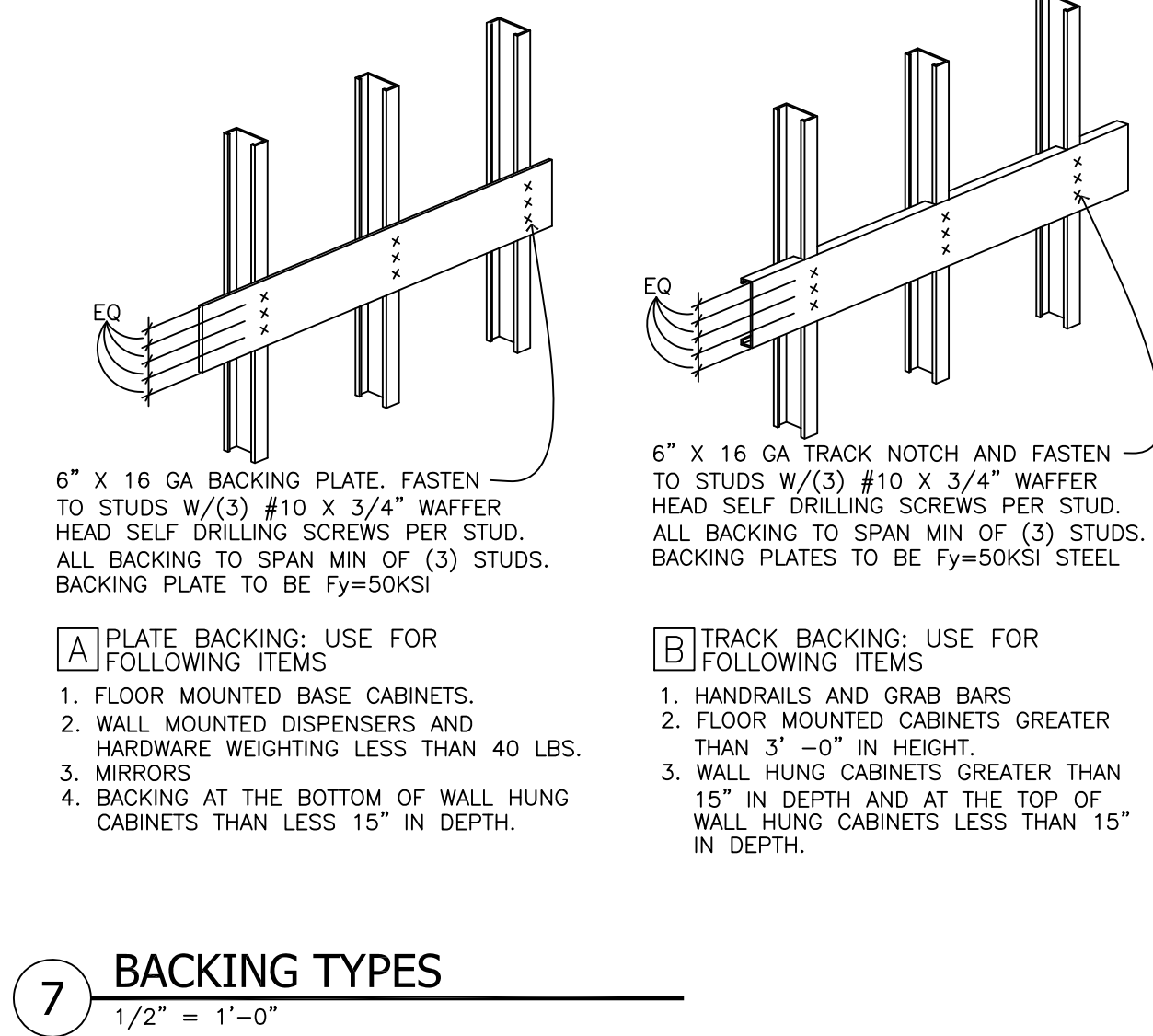
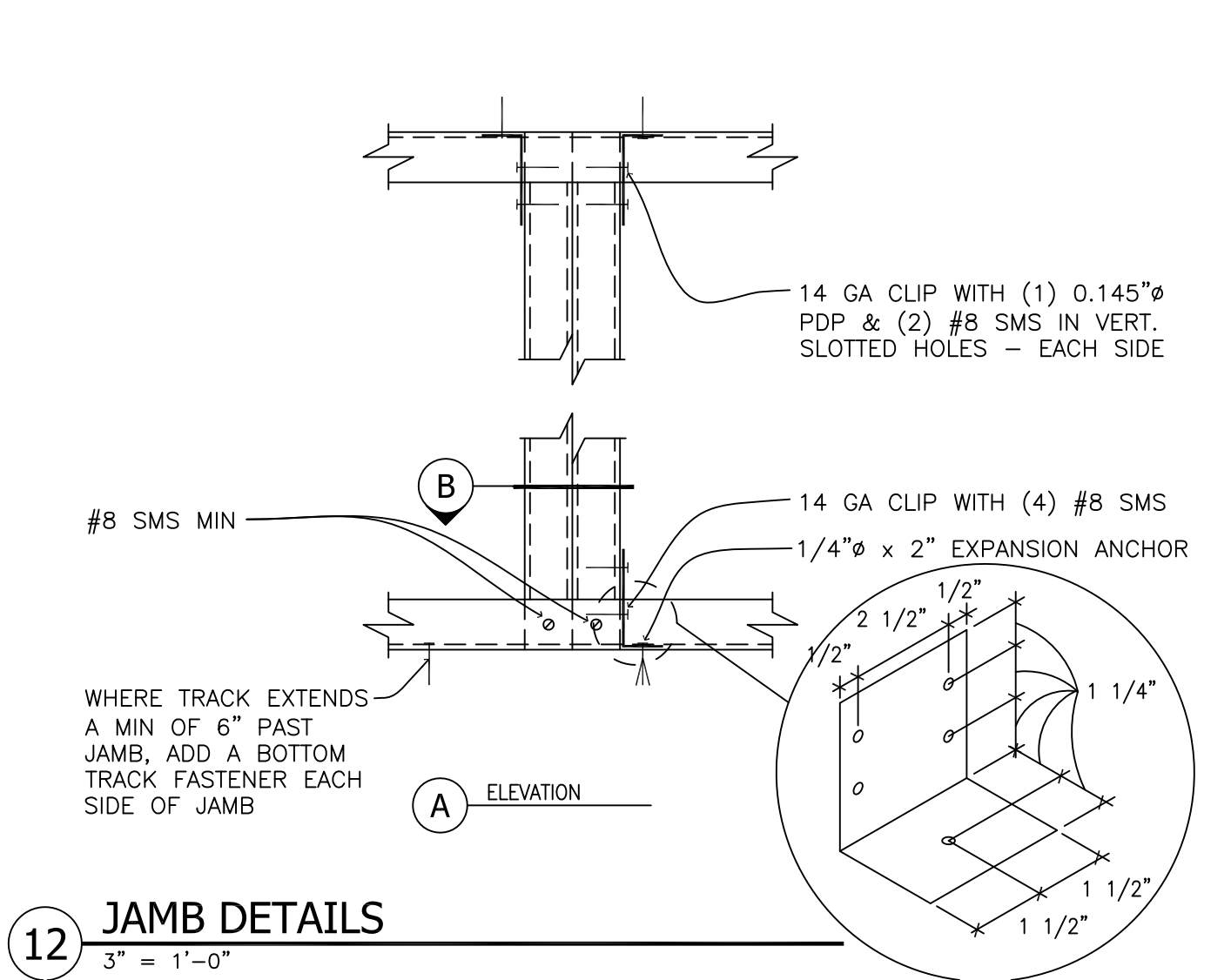
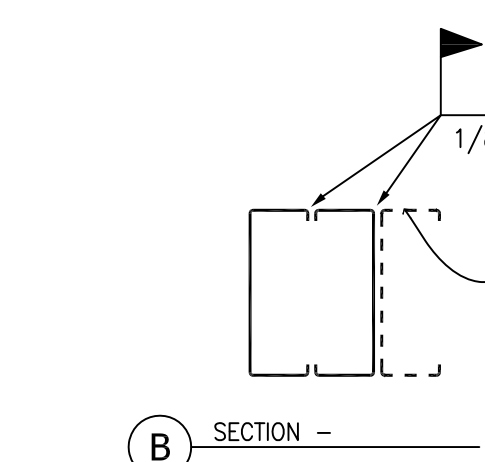
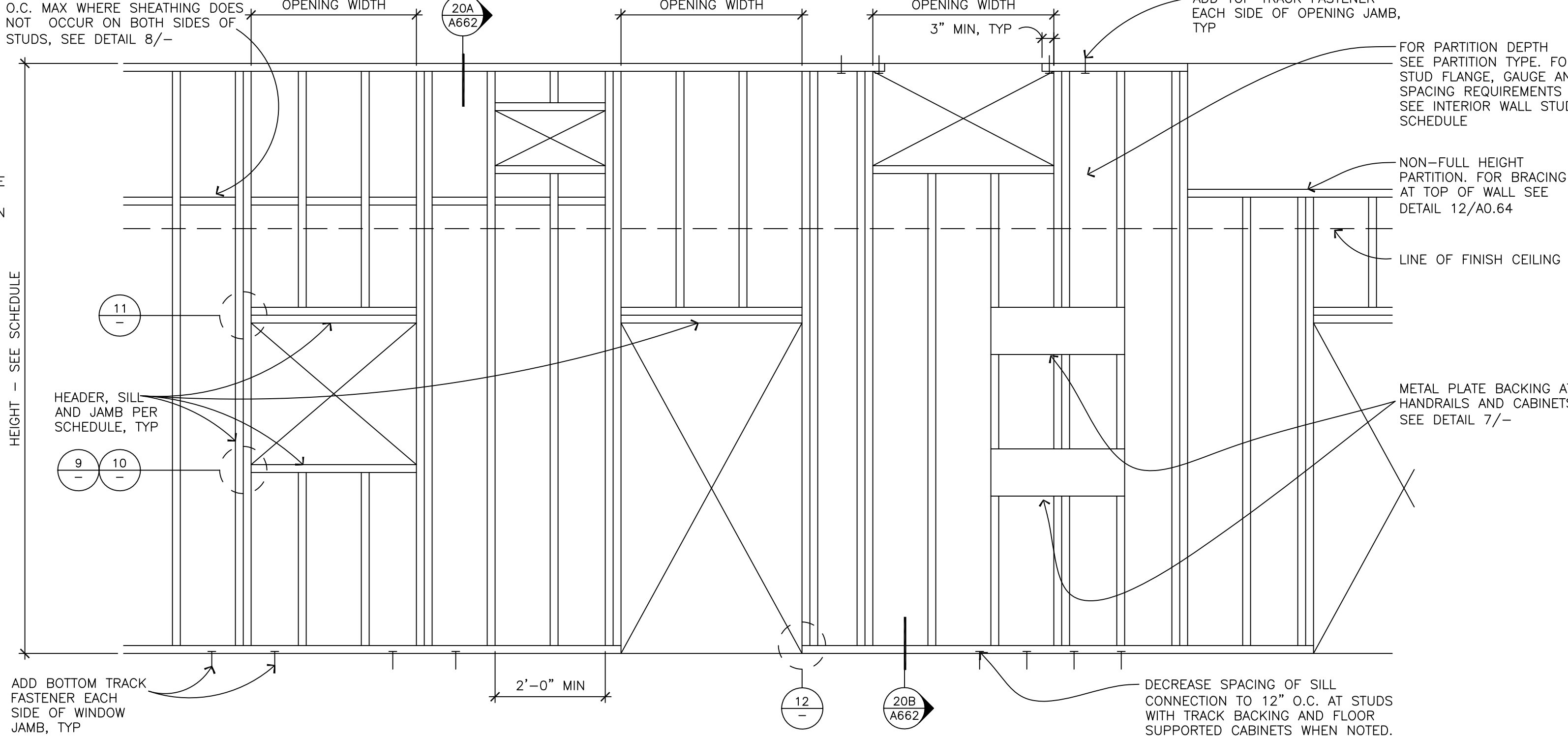


11 HEADER DETAIL AT BOXED SECTION

3" = 1'-0"

5 TYPICAL FRAMING ELEVATION

1/2" = 1'-0"



INTERIOR WALL OPENING FRAMING SCHEDULE									
MAX OPNG WIDTH	MAX WALL HEIGHT	DETAIL NO	JAMB		HEADER		SILL		SECTION
			STUD SIZE	TRACK SIZE	STUD SIZE	TRACK SIZE	STUD SIZE	TRACK SIZE	
4'-0"	20'	8/A0.64	NONE		7/A0.64	6" x 20GA	1 1/4" LEGx20GA	5/A0.64	NONE
9'-0"	20'	8/A0.64	NONE		7/A0.64	8" x 18GA	1 1/4" LEGx18GA	5/A0.64	3 5/8" x 18GA 6" x 20GA 1 1/4" LEGx18GA

NOTES:

1. USED TRIPLE STUD FOR 3 3/4" STUD WALL AND DOUBLE STUD JAMB FOR 6" AND 8" STUD WALLS.

2. USE A HSS 3 1/2 x 3 1/2 x 3/8 FOR 3 3/4" STUD WALL, TRIPLE STUD FOR 6" WALL, AND DOUBLE STUD FOR 8" WALL.

INTERIOR WALL STUD SCHEDULE							
STUD DEPTH	MAXIMUM HEIGHT	SPACING	GAUGE	Fy	FLANGE WIDTH	BACKING CAPACITY	WEB STIFFENER
3 5/8"	16'	16" OC	18	33	2"	YES	NO
3 5/8"	20'	8" OC	18	33	2"	YES	NO
6"	16'	16" OC	20	33	1 5/8"	YES	NO
6"	20'	16" OC	20	33	1 5/8"	YES	NO
8"	16'	16" OC	18	33	1 5/8"	YES	NO
8"	20'	16" OC	18	33	1 5/8"	YES	NO

NOTES:

1. ALL STUD SECTIONS SHALL HAVE A STIFFENER LIP.

2. TRACKS SHALL HAVE A 1/4" FLANGE MINIMUM EXCEPT AS NOTED OTHERWISE FOR NESTED TRACKS.

3. BACKING CAPACITY INDICATES STUD IS DESIGNED FOR HALF OF A 200 LB. GRAB BAR LOAD. WALLS THAT SUPPORT CABINETS OR OTHER FIXTURES THAT REQUIRE BACKING SHALL BE SUPPORTED BY STUDS THAT ARE INDICATED TO HAVE BACKING CAPACITY.

4. WALLS ARE DESIGNED FOR DEFLECTIONS LESS THAN L/240.

6 INTERIOR WALL STUD AND OPENING FRAMING SCHEDULES

N/A

A. PARTITIONS SHALL BE TYPE A3 UNLESS NOTED OTHERWISE.

B. ALL PARTITIONS SHALL BE ACOUSTICALLY RATED UNLESS NOTED OTHERWISE. ALL ELEMENTS OF ACOUSTIC RATED PARTITIONS SHALL EXTEND TO ROOF OR FLOOR DECK ABOVE.

C. SEE SHEET AXXX FOR PARTITION DETAILS.

D. SEE "INTERIOR PARTITION TYPE SUBSCRIPT KEY" BELOW FOR SYMBOLS USED TO IDENTIFY ADDITIONAL REQUIREMENTS MODIFICATIONS TO BASIC PARTITION TYPES.

E. PARTITION TYPES DESCRIBE GENERAL REQUIREMENTS FOR PARTITIONS. REFER TO THE MANUFACTURER'S SPECIFICATIONS AND REQUIREMENTS OF APPLICABLE TESTING AGENCIES FOR SPECIFICS OF PARTITION CONSTRUCTION.

F. PARTITION REQUIREMENTS SHOWN ARE CONSIDERED MINIMUM STANDARDS. WHERE CONDITIONS OF THE WORK CALL PARTITION TO EXCEED LIMITS RECOMMENDED BY MANUFACTURER, REINFORCE PARTITION.

G. PENETRATIONS IN RATED PARTITIONS AND CONNECTIONS OF THE PARTITIONS TO OTHER PORTIONS OF THE WORK SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED DETAILS AND IN COMPLIANCE WITH APPLICABLE TESTING AGENCY REQUIREMENTS.

H. WHERE A CLEAR DIMENSION OR OPENING IS REQUIRED OR NOTED, MEASURE DIMENSION TO FACE OF PARTITION FINISH.

J. SEE STRUCTURAL DRAWINGS FOR EXTENT AND DESCRIPTION OF INTERIOR STRUCTURAL WALLS NOT IDENTIFIED BY PARTITION TYPES.

K. INSTALL BLOCKING OR BACKER MATERIAL FOR ATTACHMENT/MOUNTING OF WALL HUNG ITEMS OR EQUIPMENT DESCRIBED IN THE DOCUMENTS.

L. GA AND UL TEST NUMBERS WILL VARY DEPENDING ON THE MANUFACTURER OF COMPONENTS ACTUALLY USED. VARIATION FROM DESIGNATED UL TESTS IS NOT ALLOWED WITHOUT PRIOR APPROVAL.

M. PROVIDE SPECIFIED METAL STUD <MET STUD-1> UNLESS NOTED OTHERWISE.

N. PROVIDE 5/8" RATED GYPSUM BOARD <GYP BD-1> UNLESS NOTED OTHERWISE.

P. PROVIDE RATED TYPE "X" GYPSUM BOARD AT FIRE RATED PARTITIONS.

Q. PROVIDE WATER RESISTANT TYPE GYPSUM BOARD <GYP BD-2> AT AREAS THAT ARE SCHEDULED TO RECEIVE CERAMIC TILE FINISH AND AS REQUIRED BY CODE (EXCEPT AS NOTED IN NOTE "R" BELOW).

R. PROVIDE TILE BACKER BOARD <GYP BD-23> AT SHOWER AREAS AND AT OTHER WET AREAS THAT ARE SCHEDULED IN ROOM FINISH SCHEDULE TO RECEIVE CERAMIC TILE FINISH.

S. PROVIDE VENEER PLASTER BASE BOARD <GYP BD-24> WHERE PARTITION IS SCHEDULED IN ROOM FINISH SCHEDULE TO RECEIVE VENEER PLASTER.

T. INSTALLATION OF GYPSUM BOARD, BACKER BOARD AND BASE BOARD SHALL CONFORM TO REQUIREMENTS FOR FIRE RATINGS AND ACOUSTICAL RATINGS.

U. PARTITION TYPE SYMBOLS AND SUBSCRIPT DEFINITIONS FOR PARTITIONS INDICATED ABOVE

V. PARTITION TYPE SYMBOLS AND SUBSCRIPT DEFINITIONS FOR PARTITIONS INDICATED ABOVE

W. REFERENCE: CURRENT EDITION OF FIRE RESISTANCE DIRECTORY, VOL. 1: -FIRE RESISTANCE RATINGS-ANSI/UL 263 (BXV), PAGE 5- GYPSUM BOARD: GYPSUM BOARD THICKNESSES SPECIFIED IN SPECIFIC DESIGNS ARE MINIMUMS. GREATER THICKNESSES OF GYPSUM BOARD ARE PERMITTED AS LONG AS THE FASTENER LENGTH IS INCREASED TO PROVIDE PENETRATION INTO FRAMING THAT IS EQUAL TO OR GREATER THAN THAT ACHIEVED WITH THE SPECIFIED GYPSUM BOARD THICKNESS AND FASTENERS. ADDITIONAL LAYERS OF GYPSUMBOARD ARE PERMITTED TO BE ADDED TO ANY DESIGN.

-FIRE RESISTANCE RATINGS-ANSI/UL 263 (BXV), PAGE 10- STEEL STUDS: THE DIMENSIONS AND GAUGE OF STEEL STUDS ARE MINIMUMS. THE HOURLY RATINGS APPLY WHEN THE STEEL STUD DIMENSIONS ARE GREATER THAN SPECIFIED IN A DESIGN.

1. INTERIOR PARTITION GENERAL NOTES

UNDERSTANDING OF PARTITION TYPES AND SUBSCRIPTS

20A A662

20B A662

1 A670

NO SUBSCRIPT: NO ACROUSTICAL INSULATION

SUBSCRIPT (S): STUDS TO EXTEND TOTAL PARTITION TO STRUCTURE

SUBSCRIPT (T): STUDS TO EXTEND TOTAL PARTITION TO CEILING

SUBSCRIPT (C): STUDS TO EXTEND TOTAL PARTITION TO CEILING

SUBSCRIPT (A): STUDS TO EXTEND TOTAL PARTITION TO CEILING

SUBSCRIPT (N): NO ACOUSTICAL INSULATION

SUBSCRIPT (16 GA): STUD GAUGE OTHER THAN SPECIFIED

SUBSCRIPT (X" OC): STUD SPACING OTHER THAN SPECIFIED

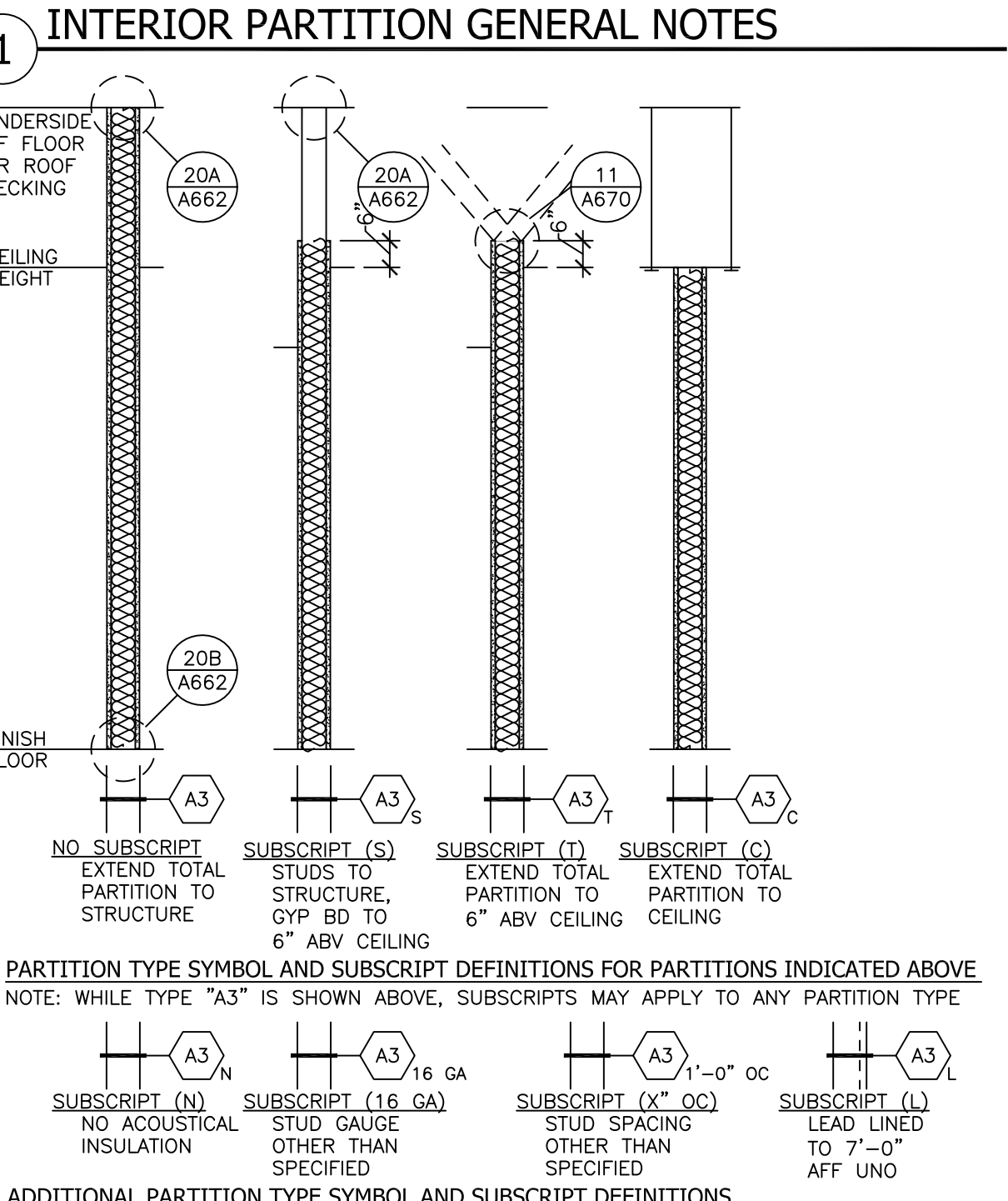
SUBSCRIPT (L): LEAD LINED TO 7'-0" AFF UNO

ADDITIONAL PARTITION TYPE SYMBOL AND SUBSCRIPT DEFINITIONS

NOTE: WHILE TYPE "A3" IS SHOWN ABOVE, SUBSCRIPTS MAY APPLY TO ANY PARTITION TYPE

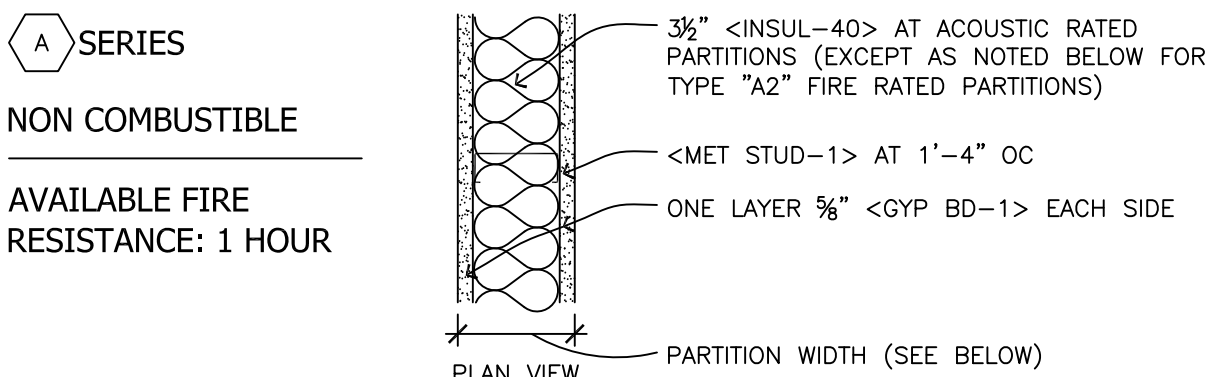
1. INTERIOR PARTITION TYPE - J SERIES

1 1/2" = 1'-0"



2 INTERIOR PARTITION TYPE SUBSCRIPT KEY

NOT TO SCALE



PARTITION TYPE	STUD WIDTH	PARTITION WIDTH	1 HOUR RATING REFERENCE	STC W/O INSUL	W/ INSUL	NOTES	AS DRAWN DIMENSION
A2	2 1/2"	3 3/4"	UL DES NO U448	40-44	47 EST	1 HR REQ. 1 1/2" MIN OF <INSUL-24>	3 3/4"
A3	3 3/4"	5"	UL DES NO U465	40-44	45-49		5"
A6	6"	7 3/4"	UL DES NO U465	40-44	45-49		7 3/4"
A8	8"	9 3/4"	UL DES NO U465	40-44	45-49		9 3/4"

NOTES: UL# 4485 & #448 (NOTES APPLICABLE AT FIRE RATED PARTITIONS):

1. FLOOR AND CEILING RUNNERS - CHANNEL SHAPED, ATTACHED TO FLOOR AND CEILING WITH FASTENERS SPACED 24" OC MAX.

2. STEEL STUDS - CHANNEL SHAPED, SPACED A MAX 24" OC, FABRICATED FROM MIN 25 MSG GALV STEEL, MIN 1/4" WIDE BY 1/2" DEEP WITH 1/4" FOLDED BACK RETURN FLANGE LEGS. STUDS TO BE CUT 1/8" LESS THE ASSEMBLY HEIGHT, STEEL STUDS FRICION -FITTED INTO FLOOR AND CEILING RUNNERS.

3. BATTIS AND GLUES - MIN 2" THICK MINERAL WOOL BATTIS, FRICION FIT BETWEEN THE STUDS AND FLOOR AND CEILING RUNNERS.

4. GYPSUM BOARD - 1/2" THICK, 4 FOOT WIDE, ATTACHED TO STEEL STUDS AND FLOOR AND CEILING RUNNERS WITH 1/2" LONG TYPE "S" STEEL SCREWS SPACED 24" OC ALONG EDGES OF BOARD AND 12" OC IN THE FIELD OF THE BOARD. JOINT ORIENTED VERTICALLY AND STAGGERED ON OPPOSITE SIDES.

5. JOINT TAPE AND COMPOUND - MIN 1/4" THICK, 4 FT WIDE, TWO LAYERS OF WALLBOARD APPLIED TO EACH STUD. OUTER LAYER APPLIED VERTICALLY WITH JOINTS CENTERED OVER STUDS AND STAGGERED ON OPPOSITE SIDES OF STUDS. INNER LAYER APPLIED HORIZONTALLY WITH VERTICAL JOINTS STAGGERED FROM INNER LAYER JOINTS. JOINTS VERTICALLY WITH JOINTS CENTERED OVER STUDS AND STAGGERED ON OPPOSITE SIDE OF STUDS. INNER LAYER SECURED WITH 1/2" LONG TYPE "S" STEEL SCREWS SPACED 24" OC ALONG THE PERIMETER AND IN THE FIELD. OUTER LAYER WHEN APPLIED HORIZONTALLY, SECURED WITH 2 1/2" LONG TYPE "S" STEEL SCREWS SPACED 12" OC ALONG THE PERIMETER AND IN THE FIELD. ALONG THE HORIZONTAL JOINTS OF THE OUTER LAYER, 1/2" LONG TYPE "S" STEEL SCREWS TO BE APPLIED MIDWAY BETWEEN THE STUDS (24" OC) AND 1" FROM THE LONGITUDINAL JOINT. OUTER LAYER WHEN APPLIED VERTICALLY, JOINTS STAGGERED, SECURED WITH 2 1/2" LONG TYPE "S" STEEL SCREWS SPACED 12" OC ALONG THE PERIMETER AND IN THE FIELD.

6. STUD AND RUNNER GAUGES ARE MINIMUM ALLOWED BY UL TEST. GREATER THICKNESS MAYBE REQUIRED BY OTHER PROVISIONS OF THE DOCUMENTS.

3 INTERIOR PARTITION TYPE - A SERIES

1 1/2" = 1'-0"

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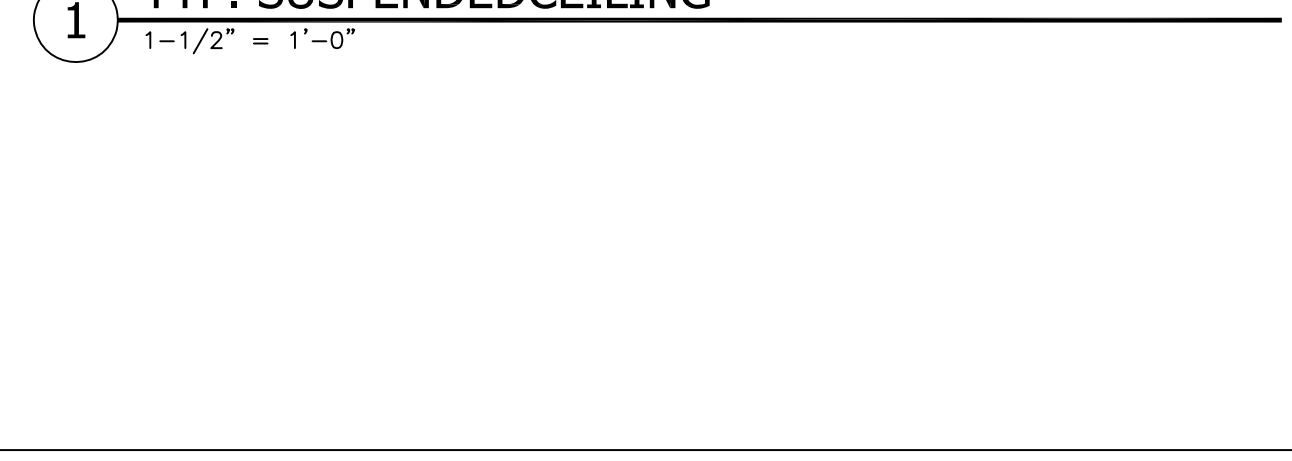
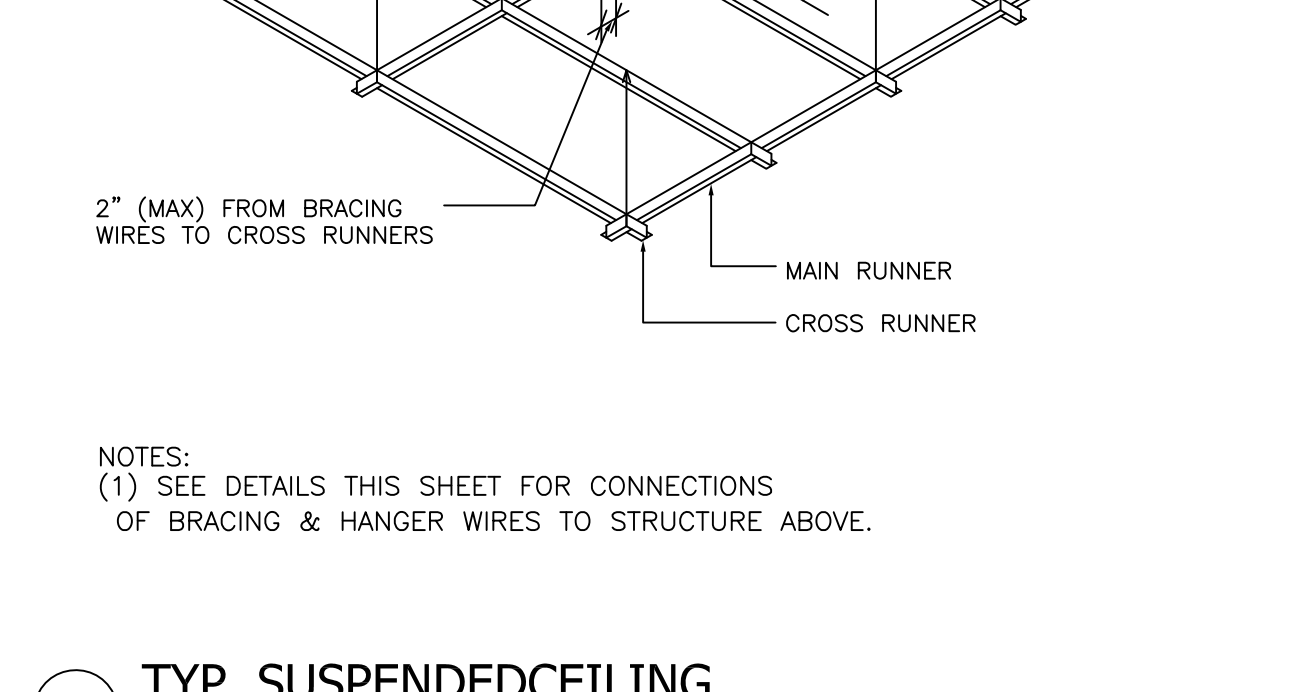
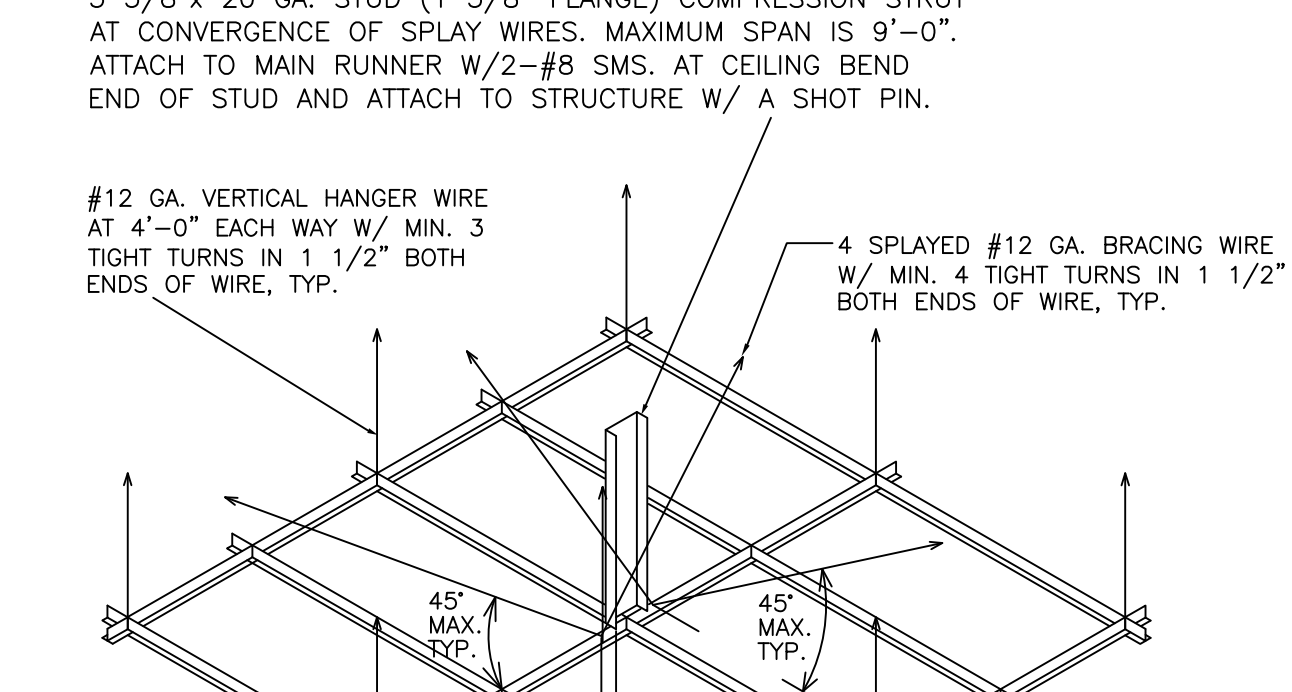
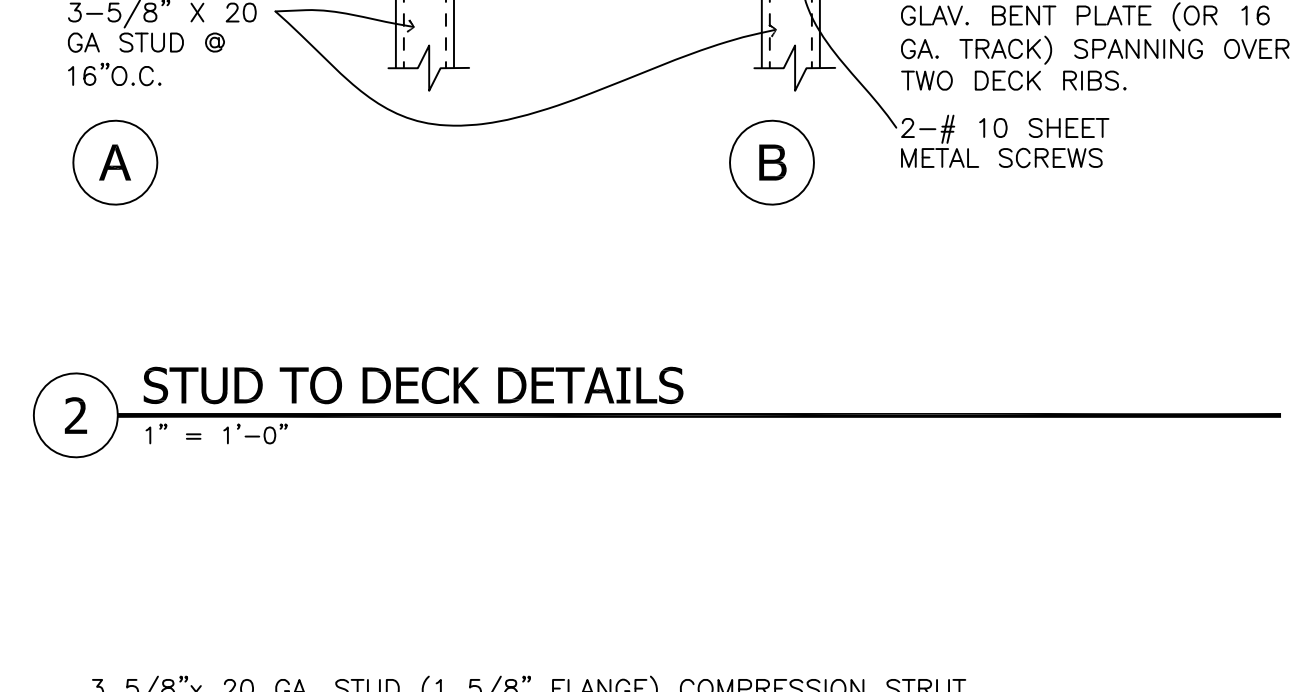
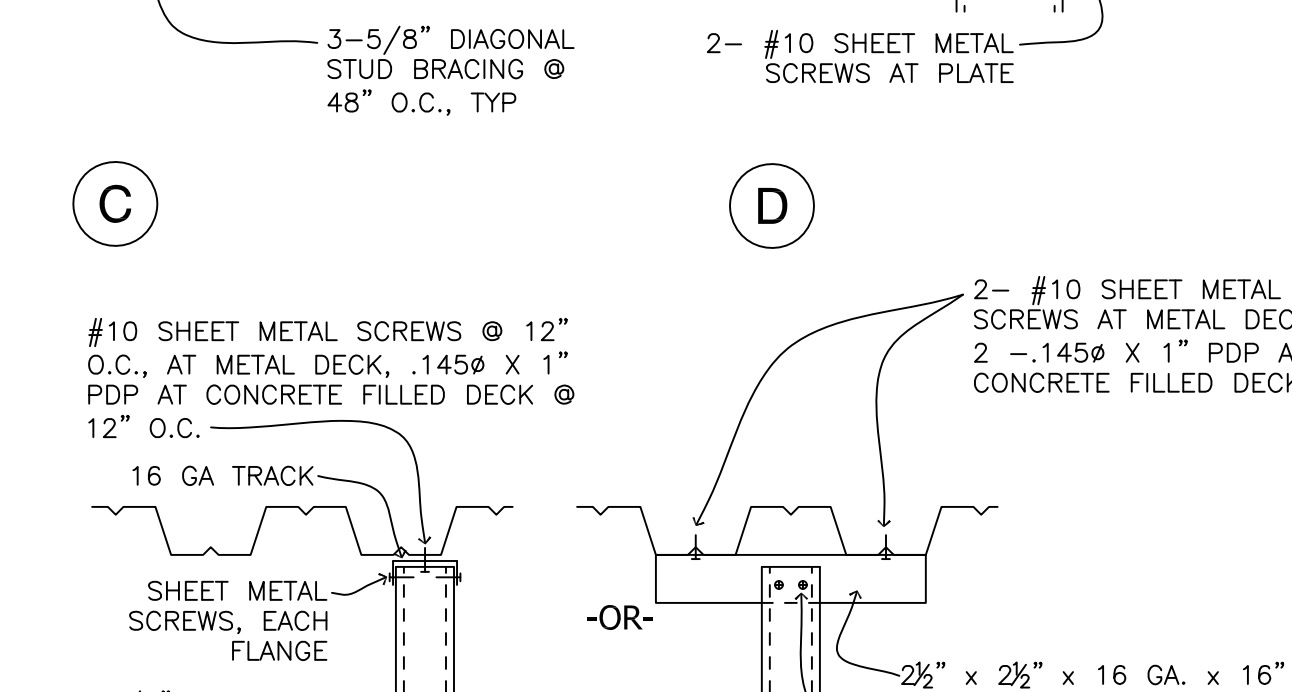
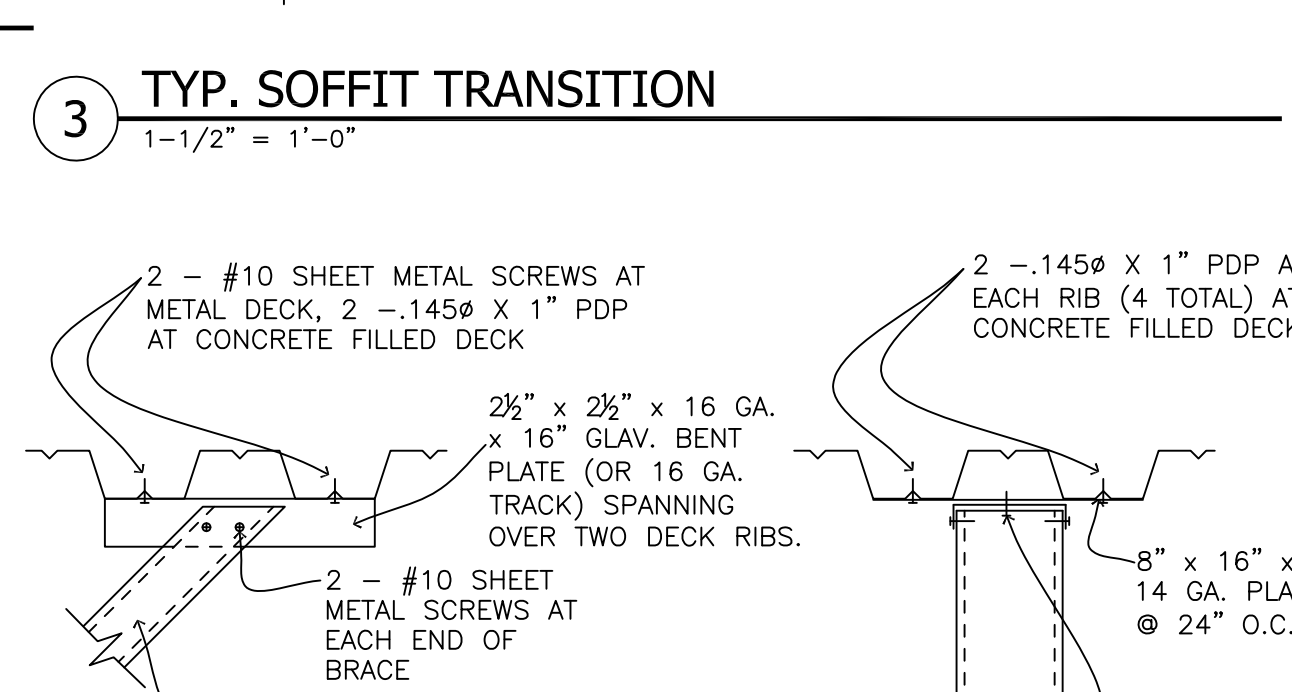
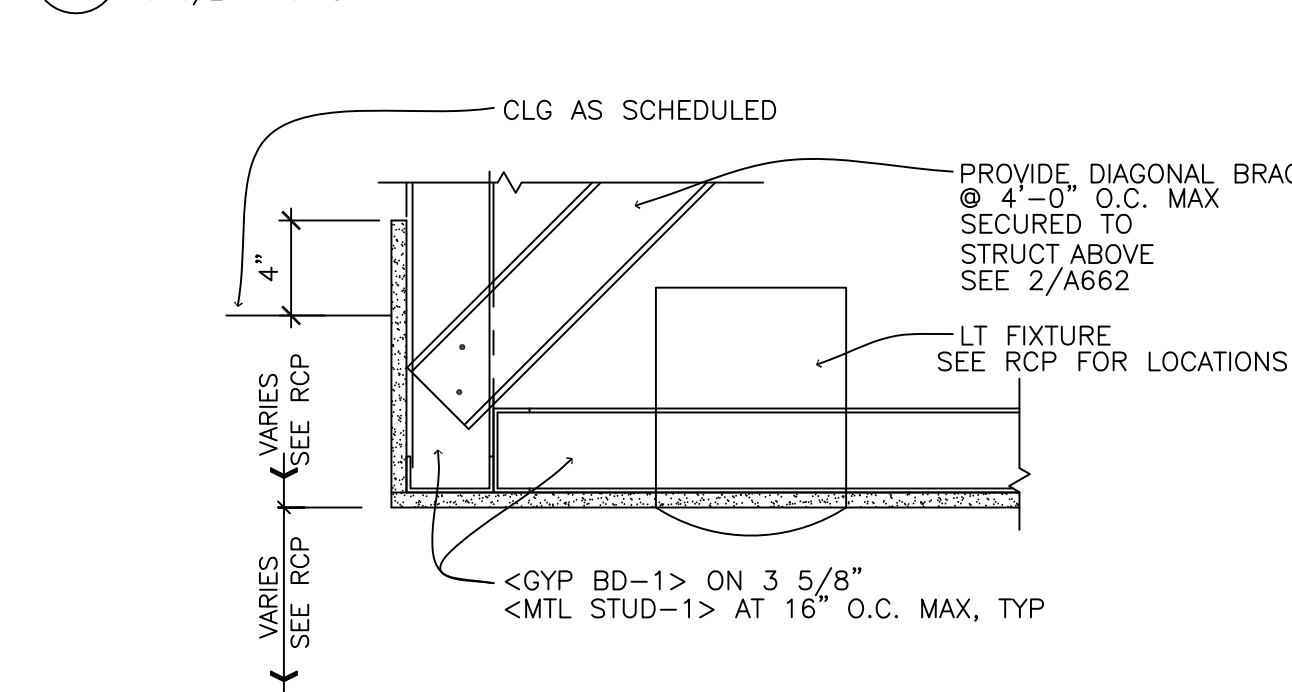
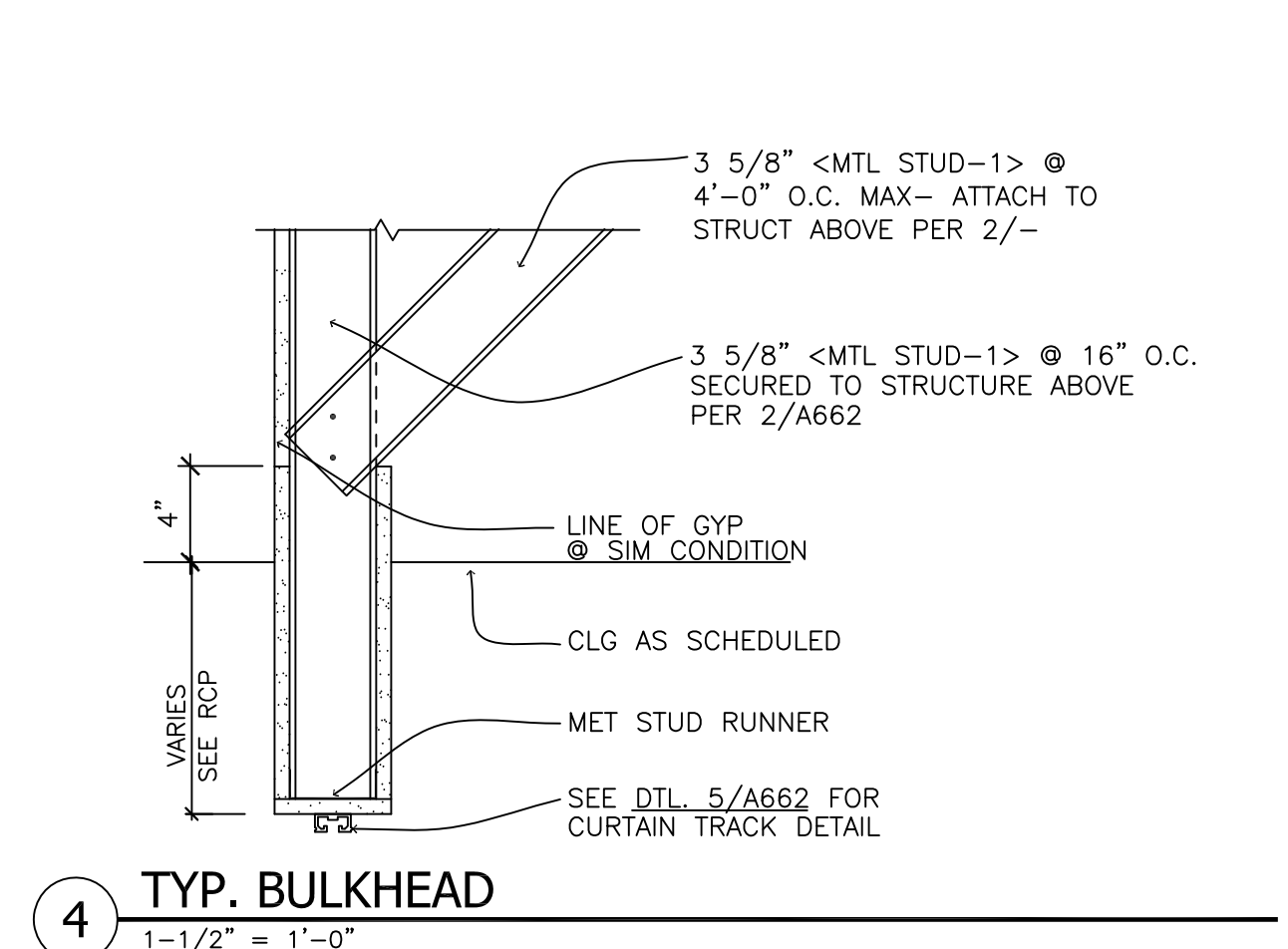
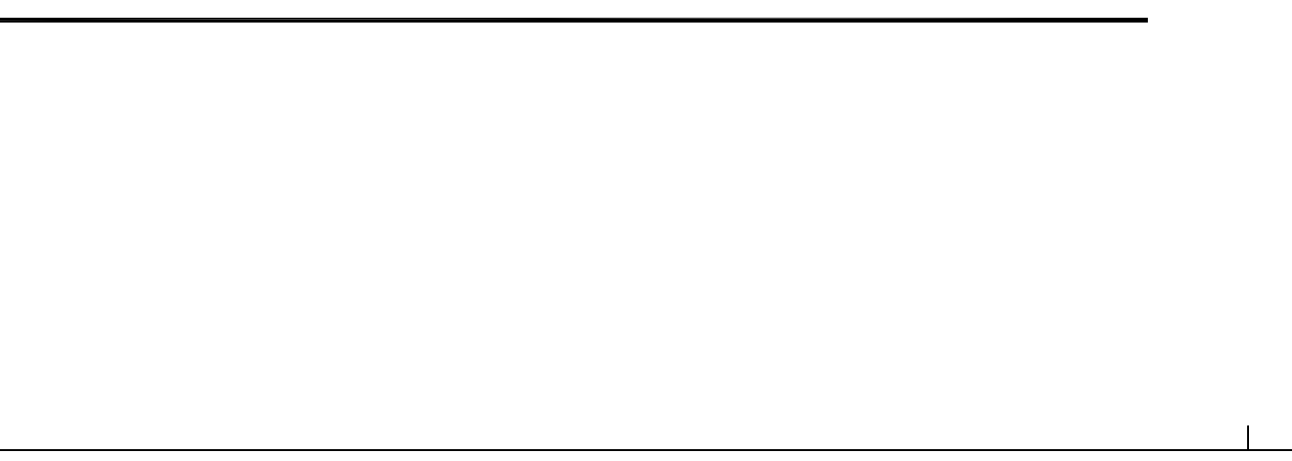
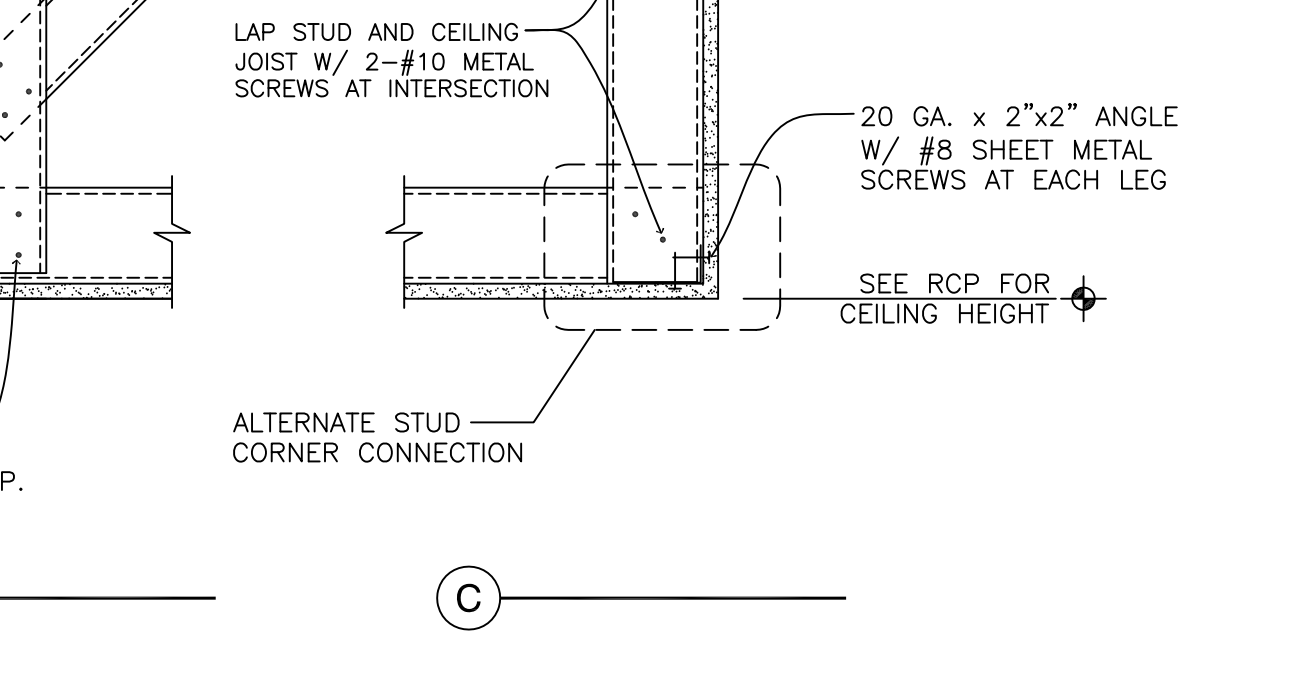
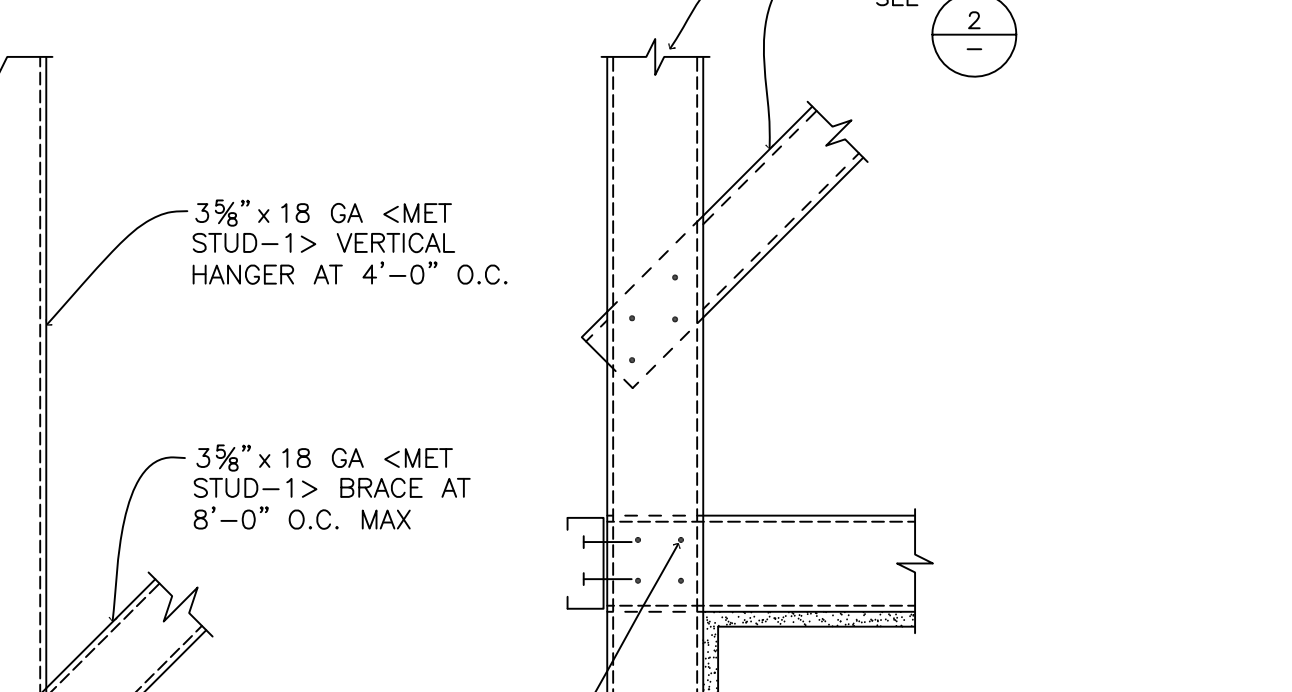
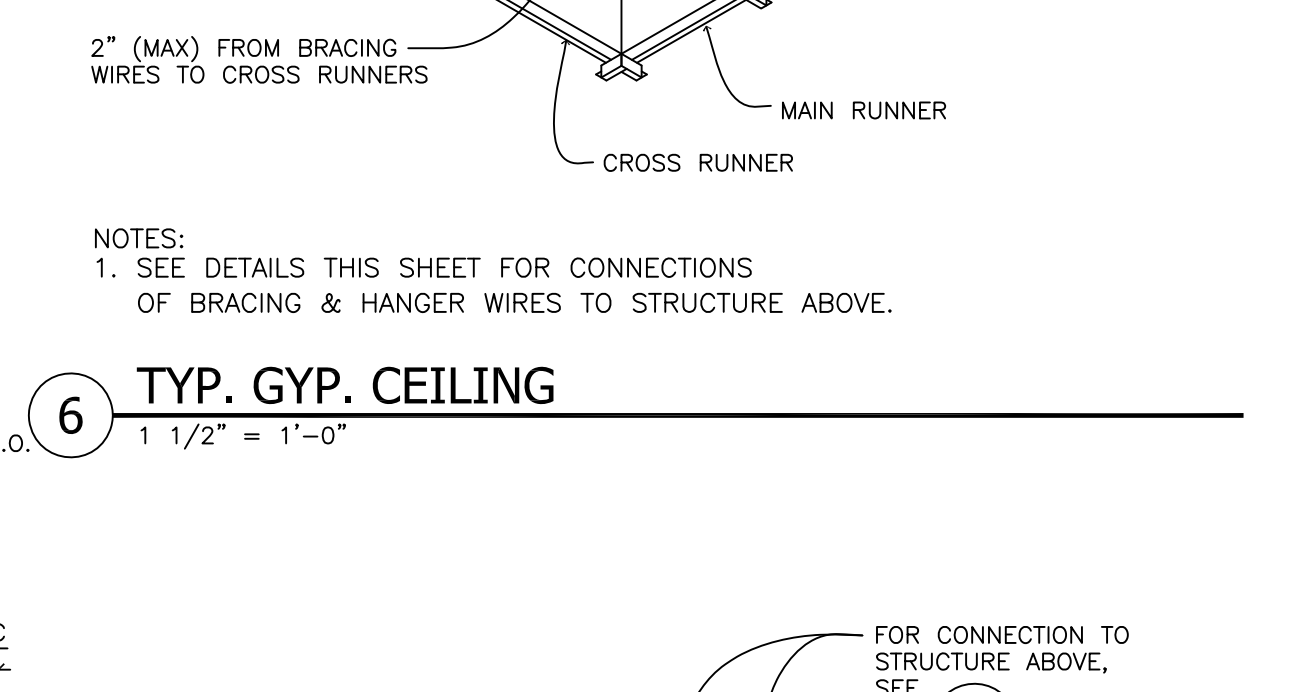
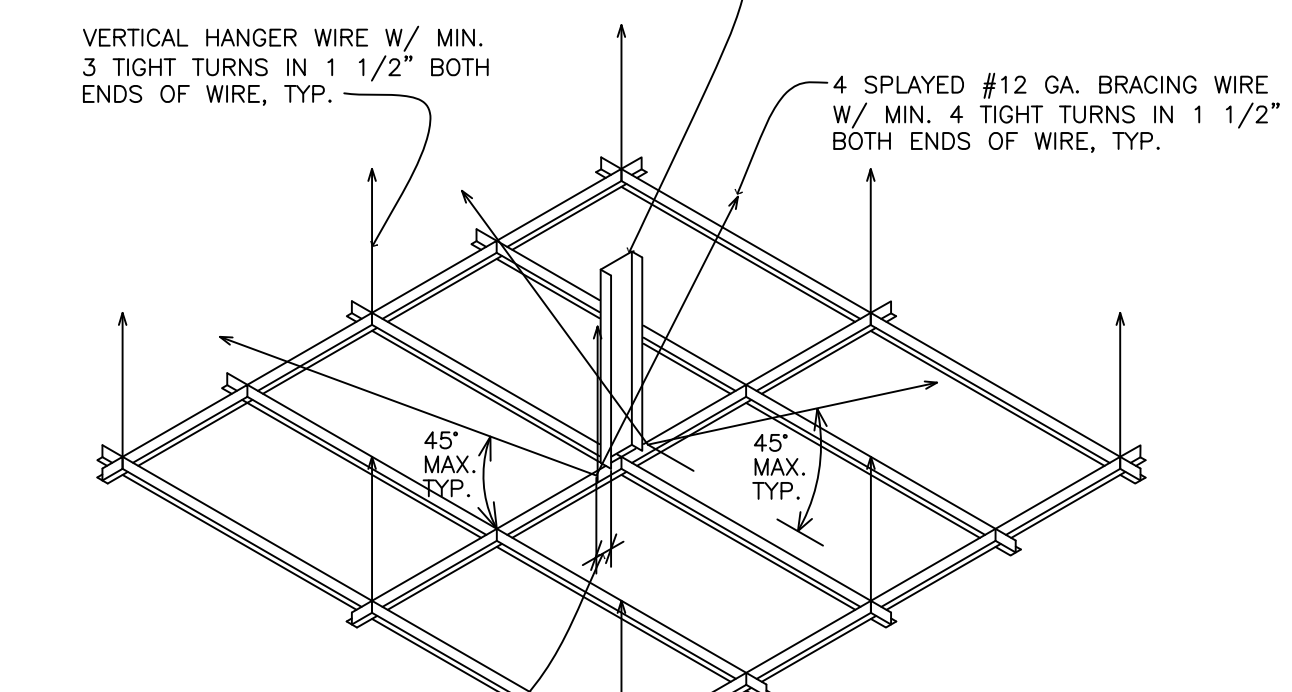
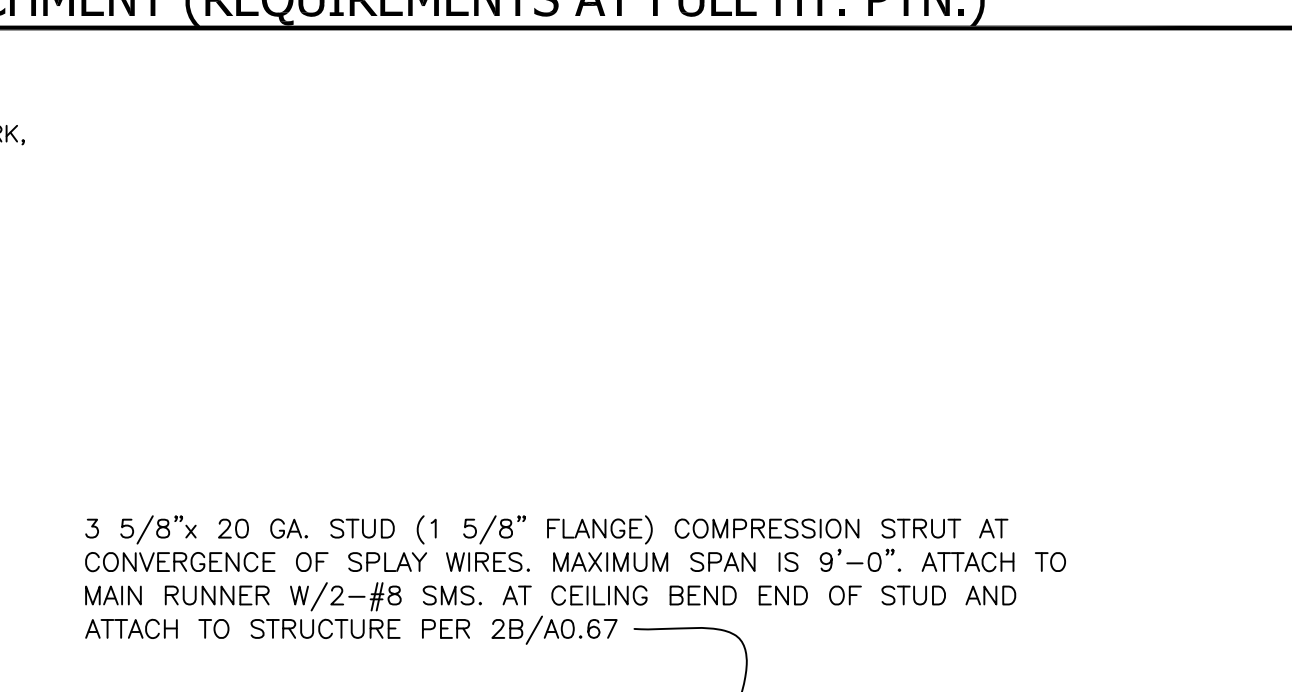
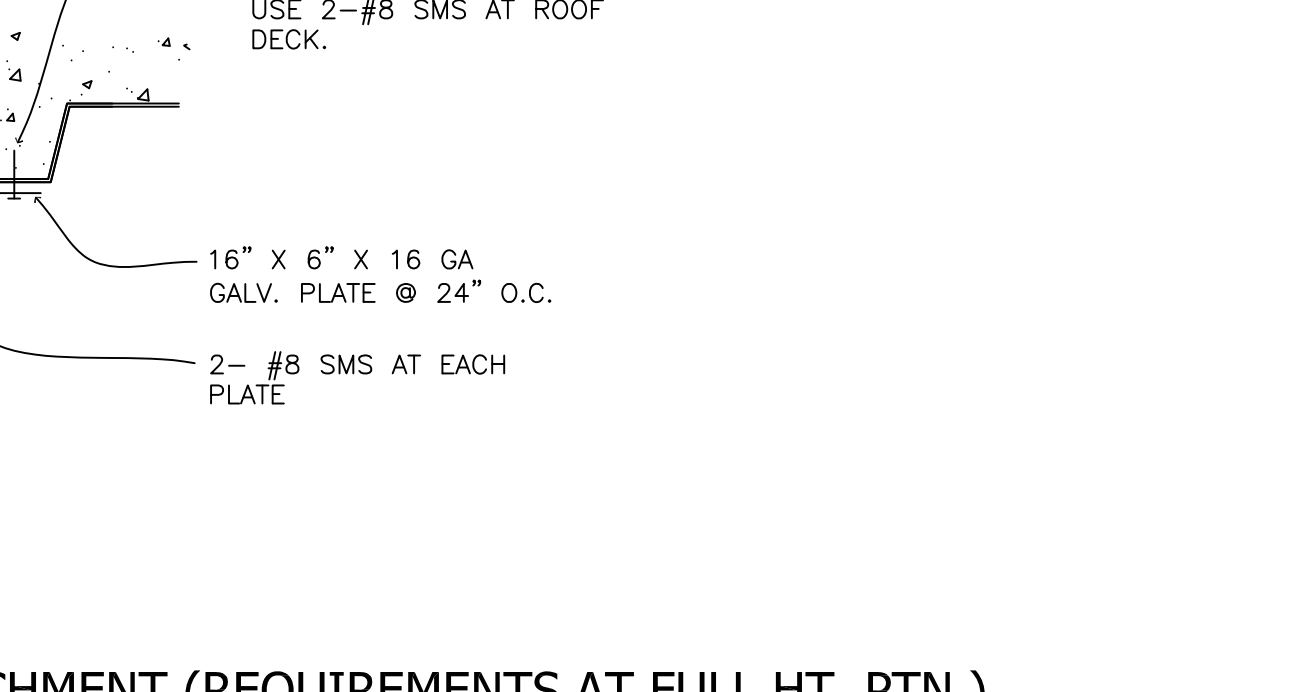
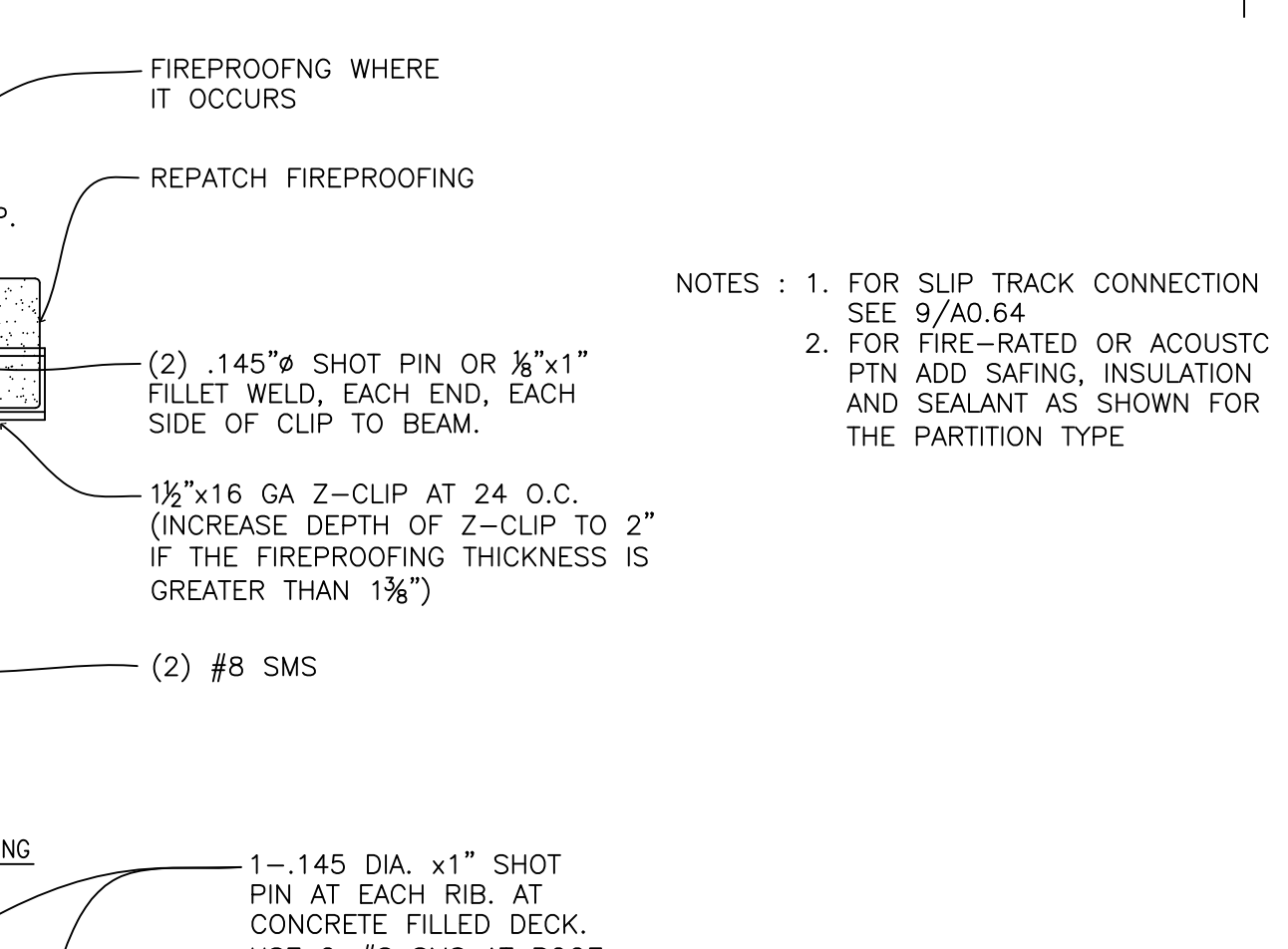
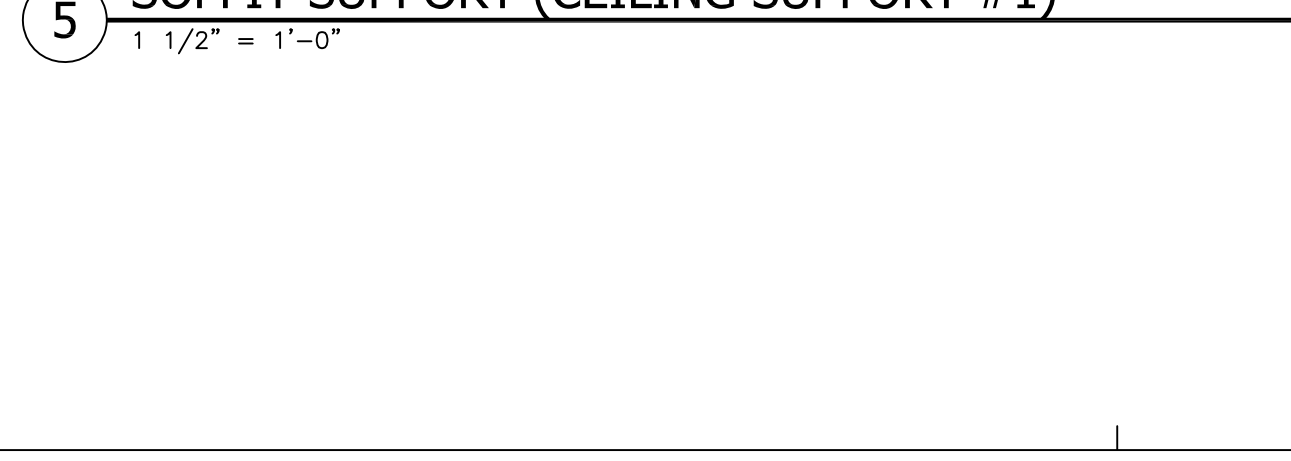
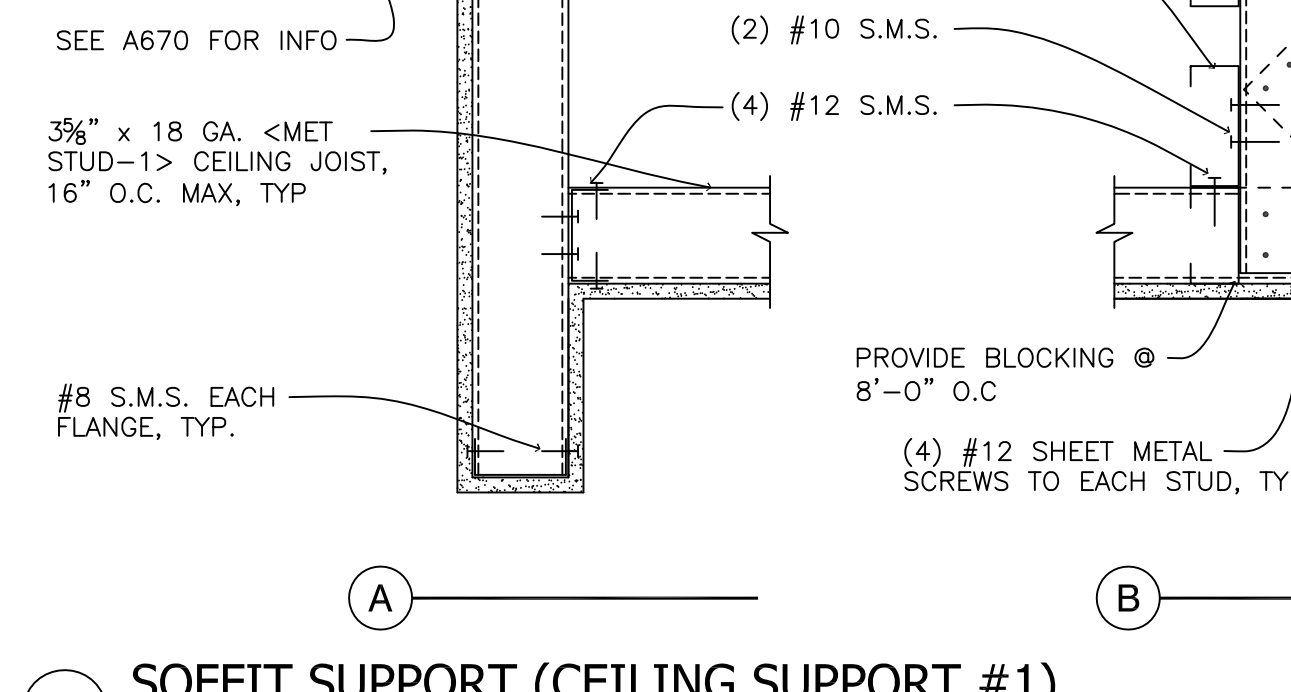
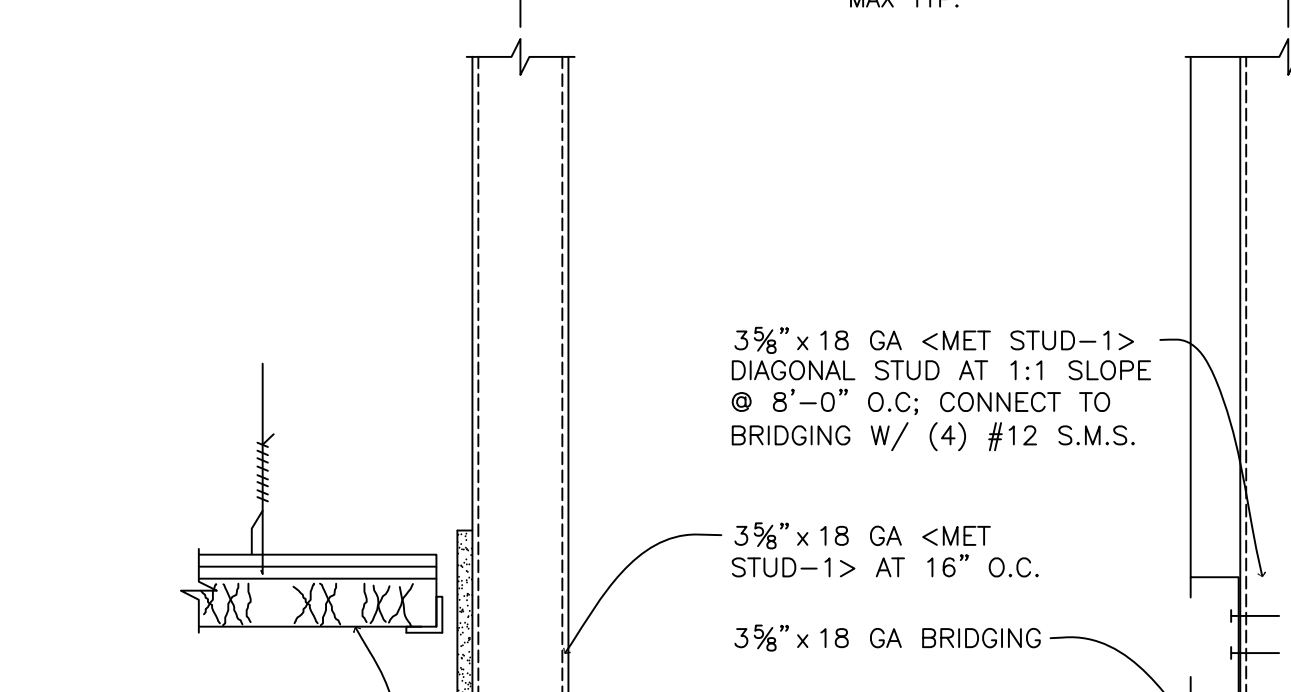
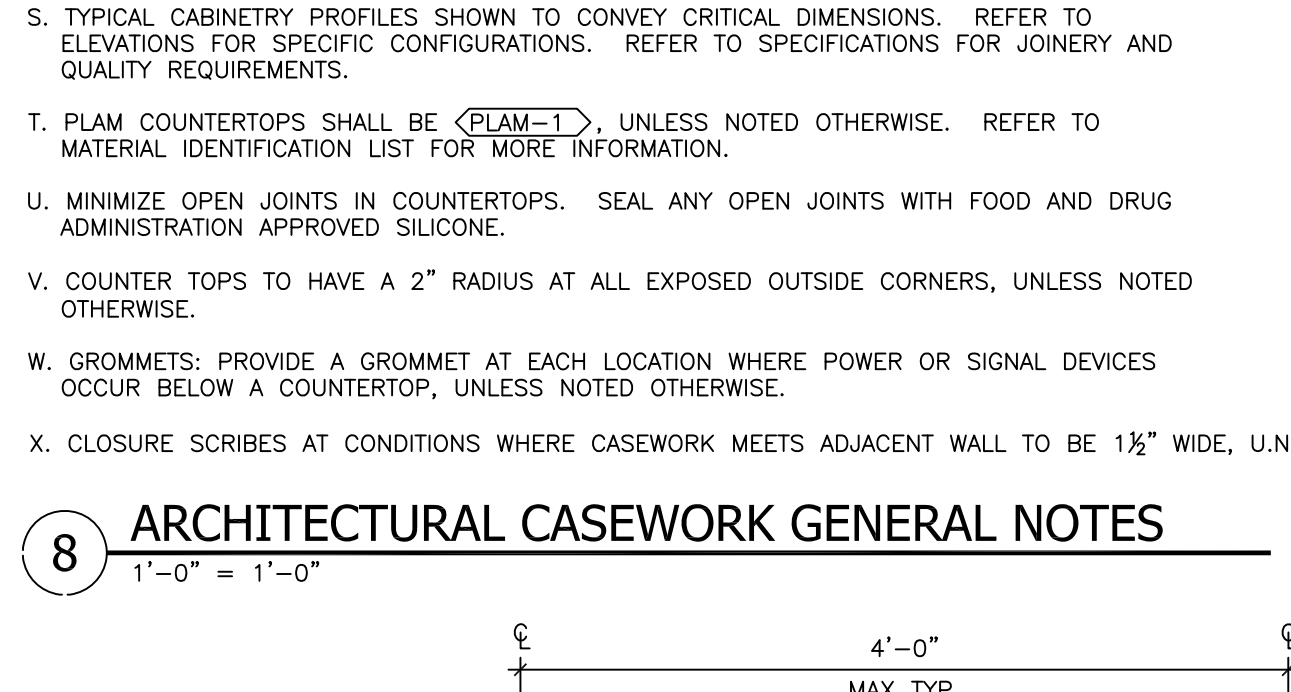
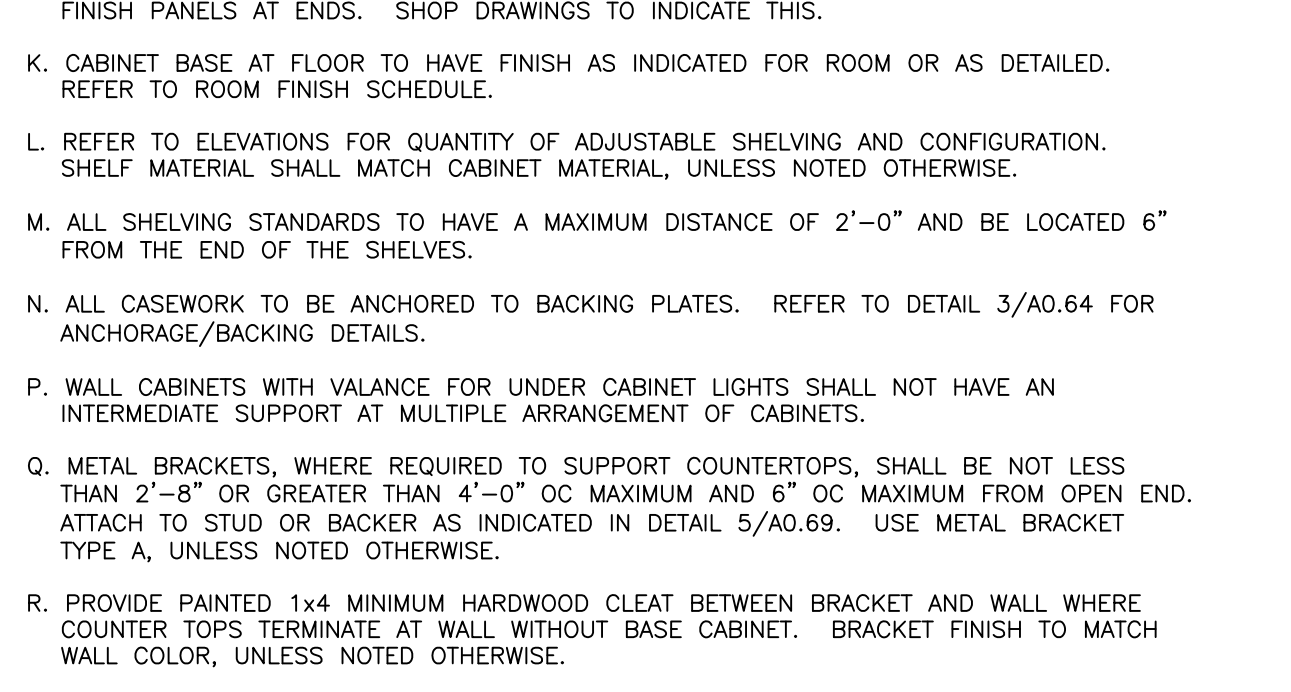
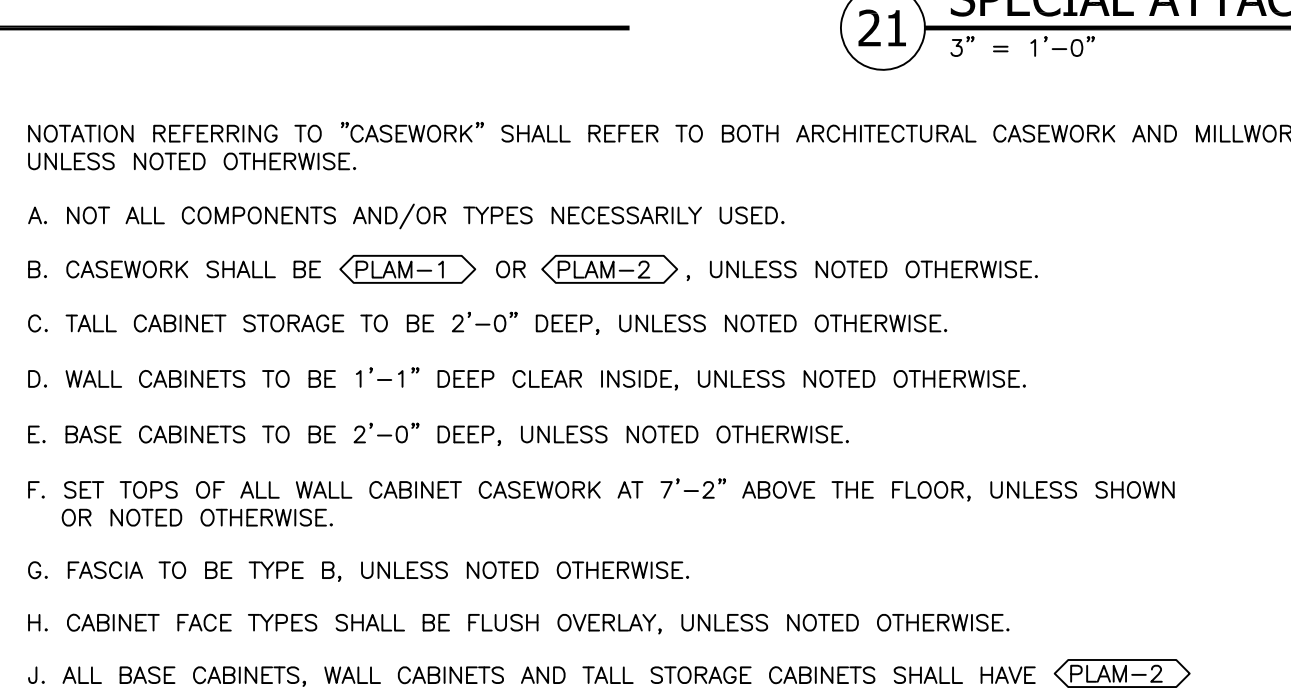
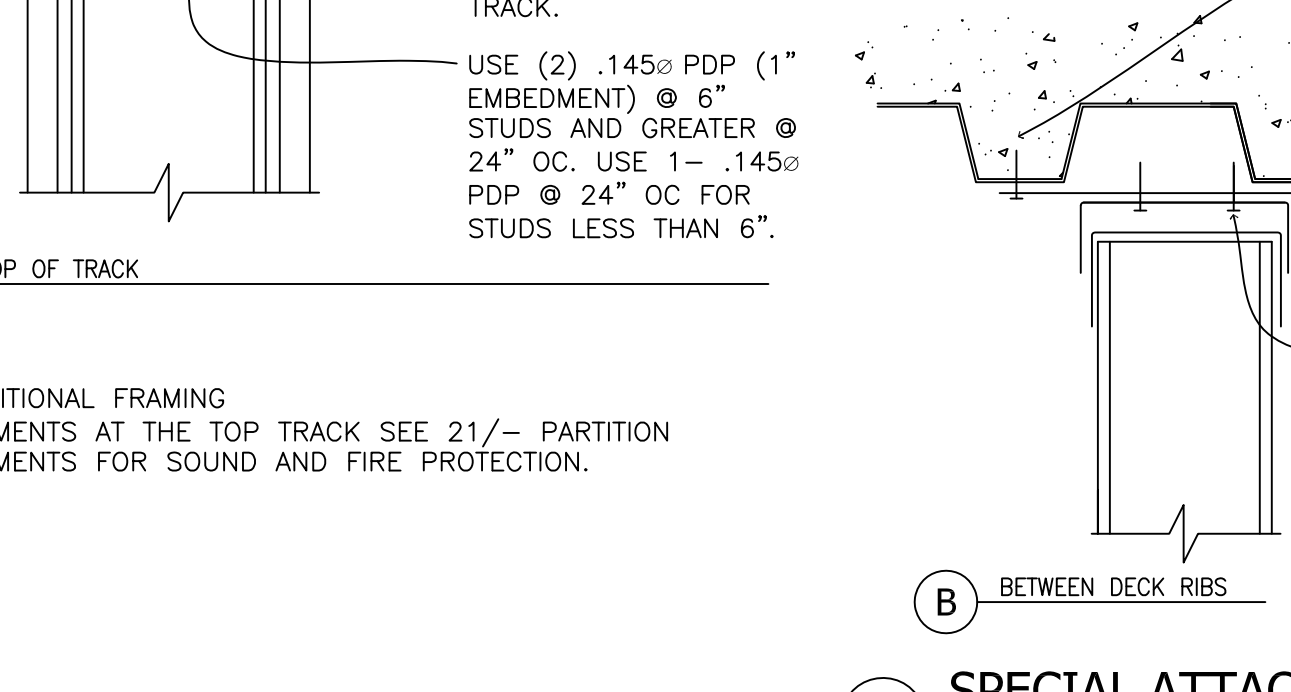
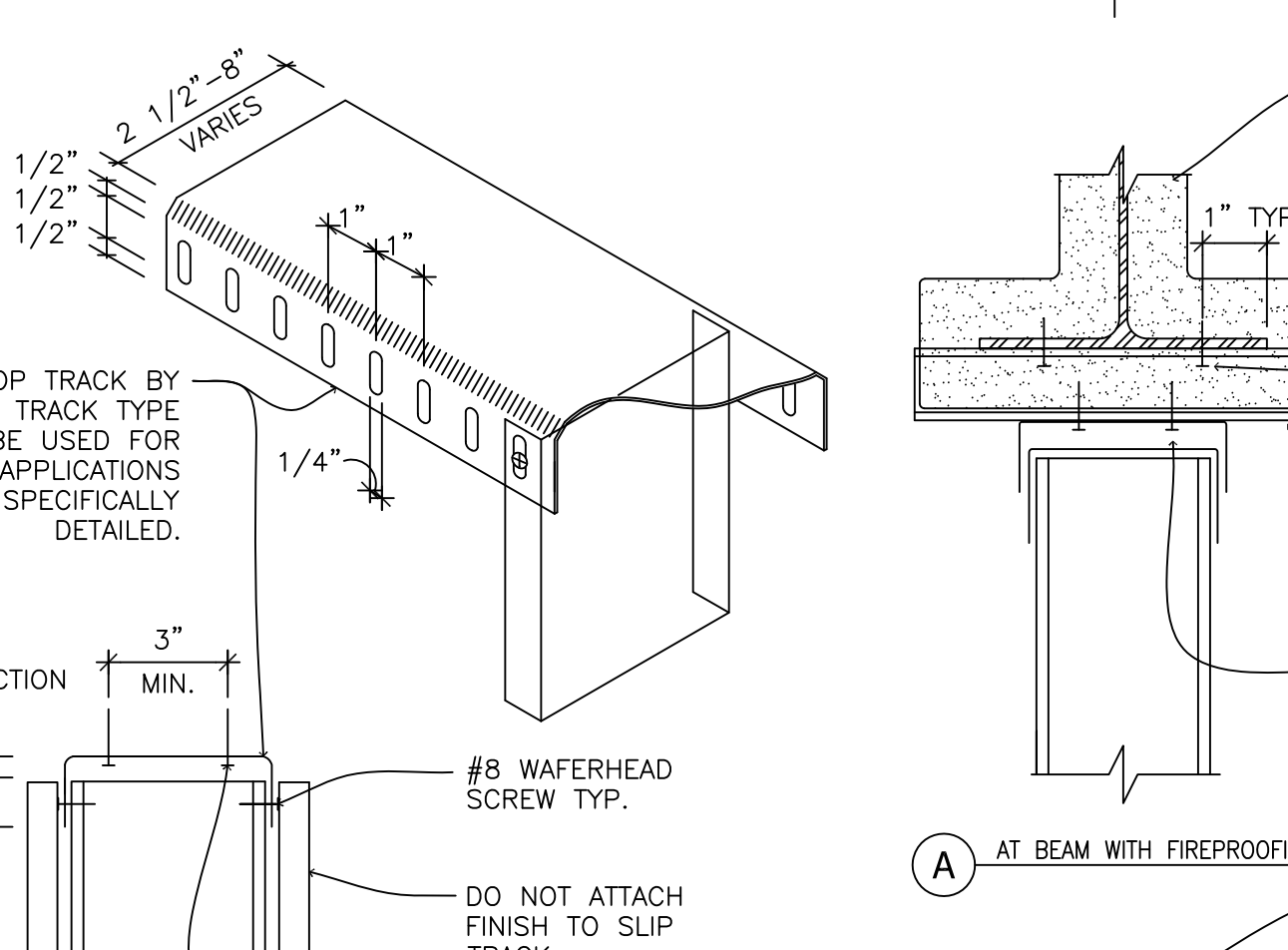
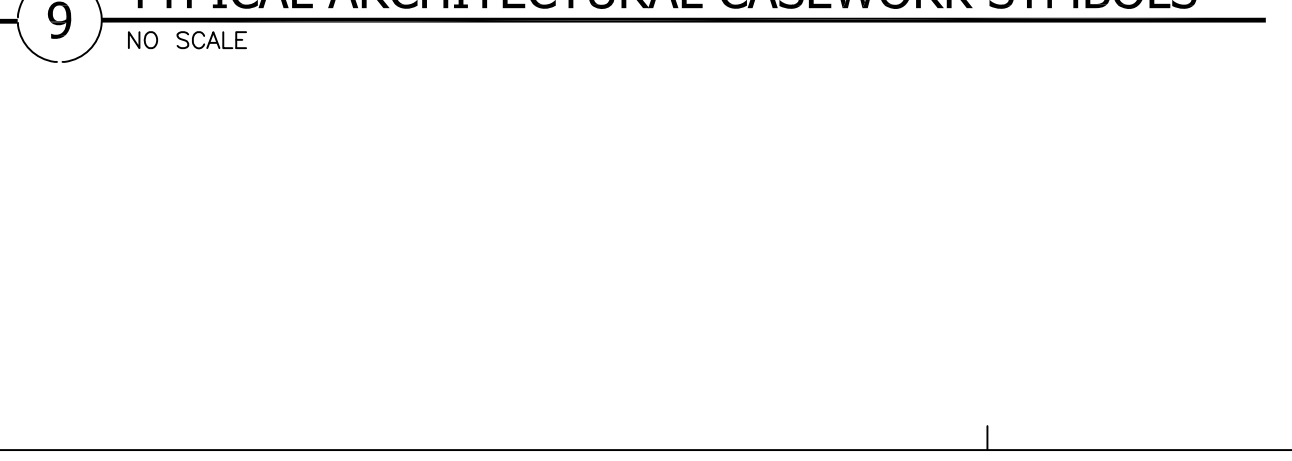
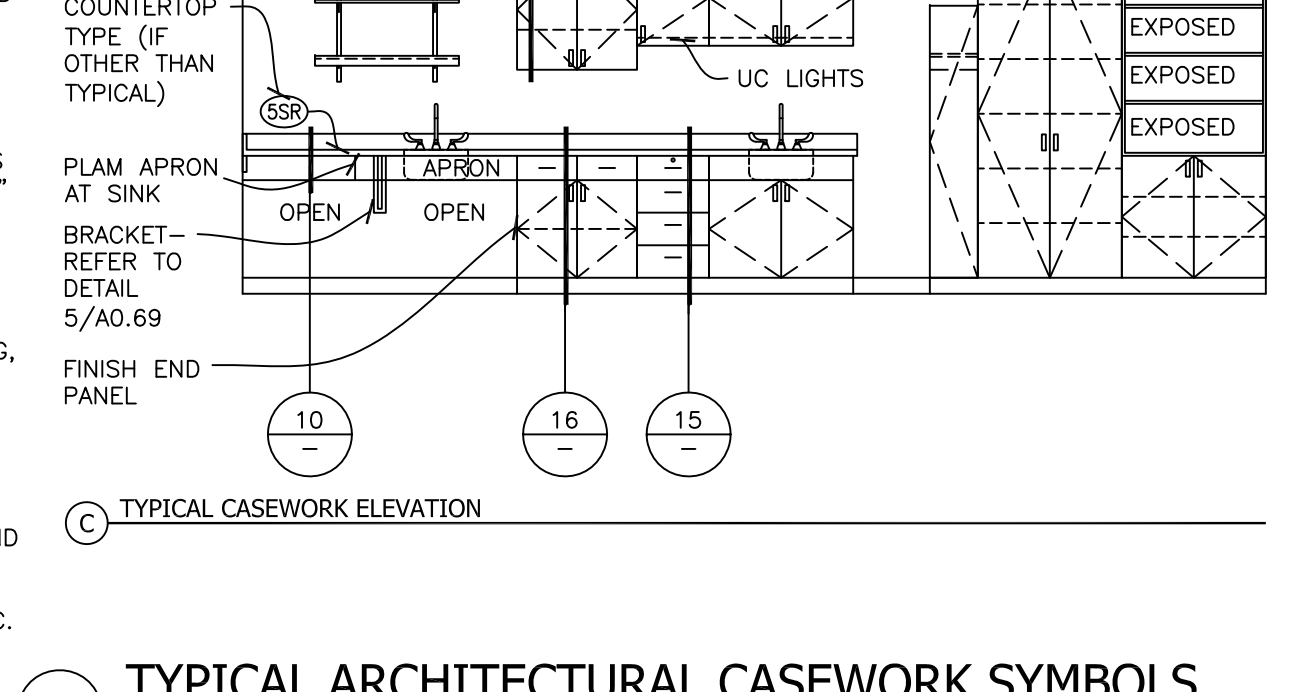
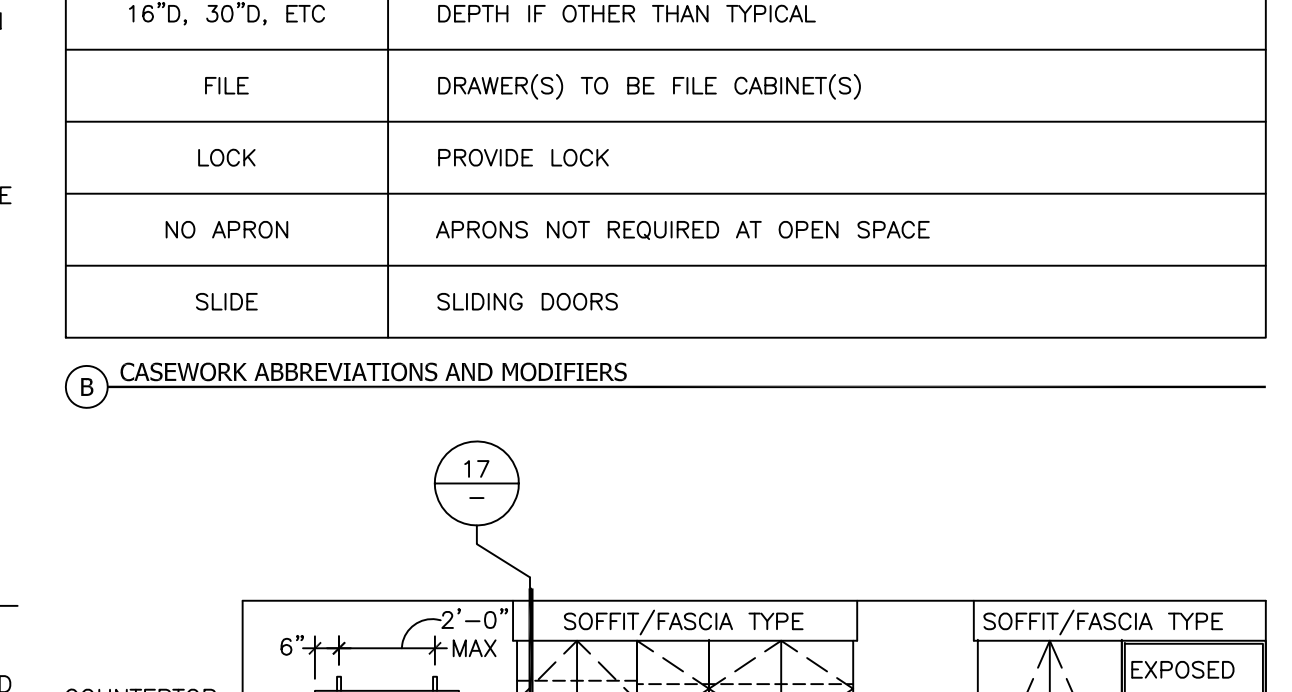
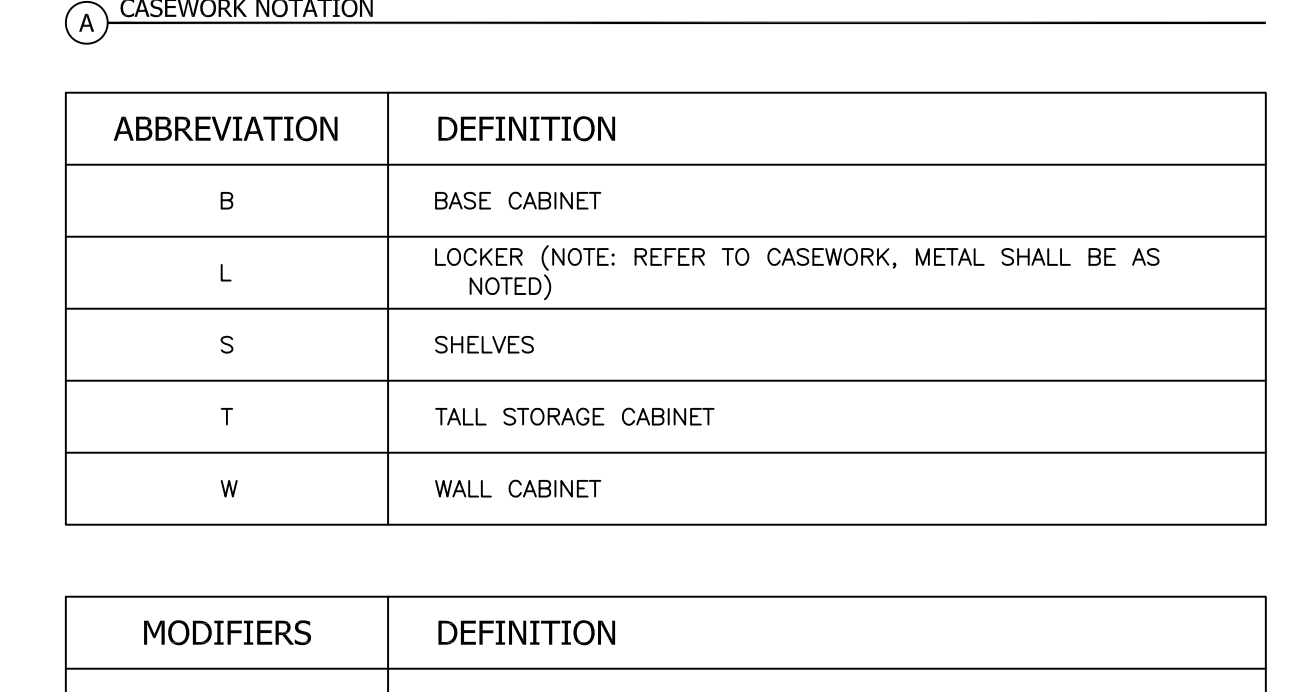
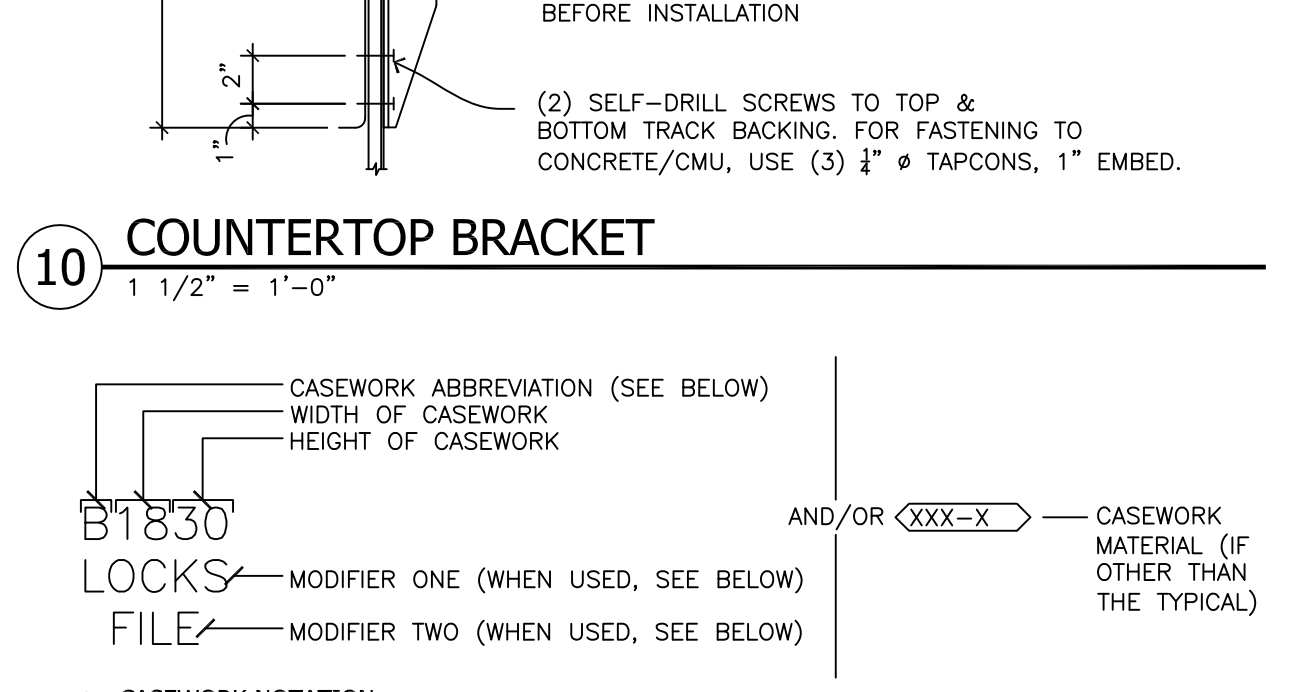
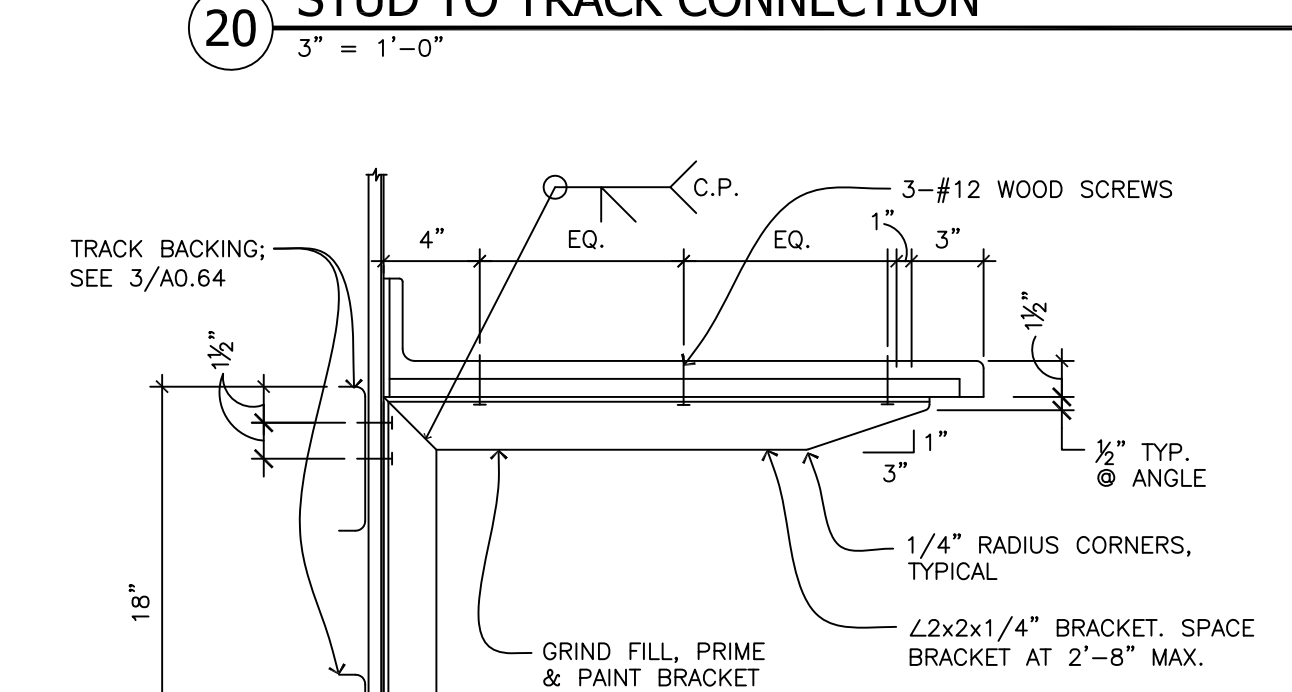
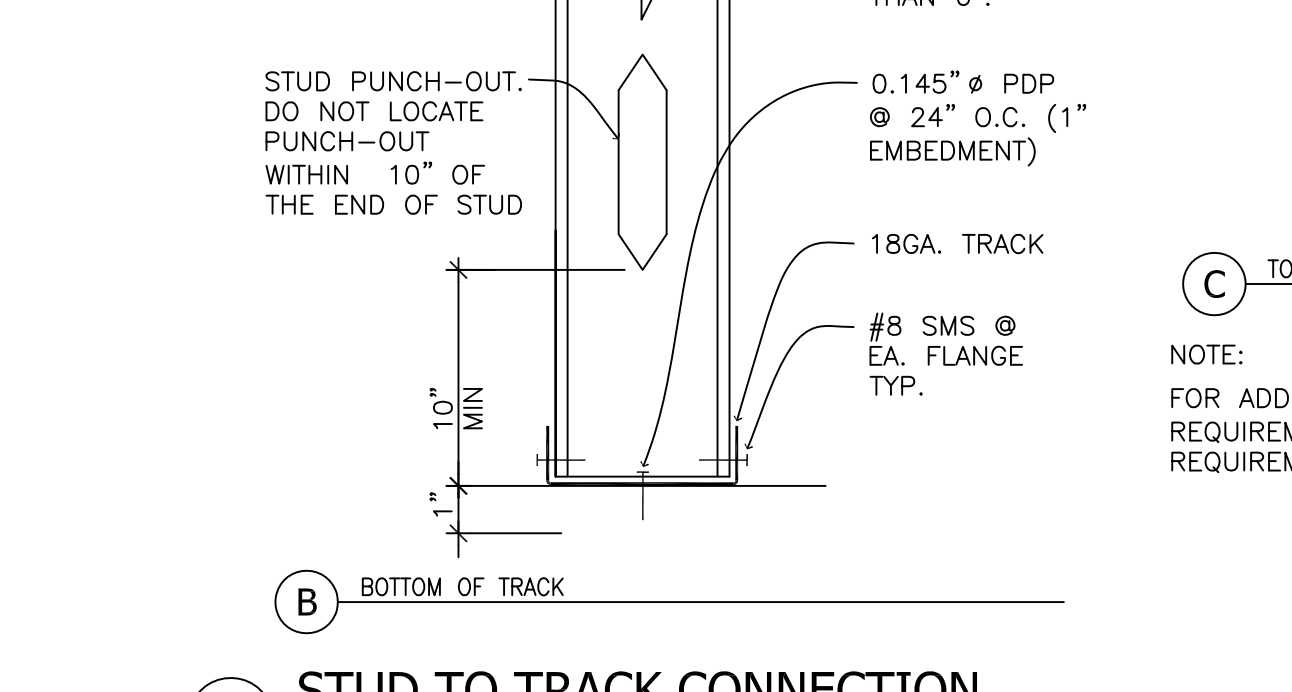
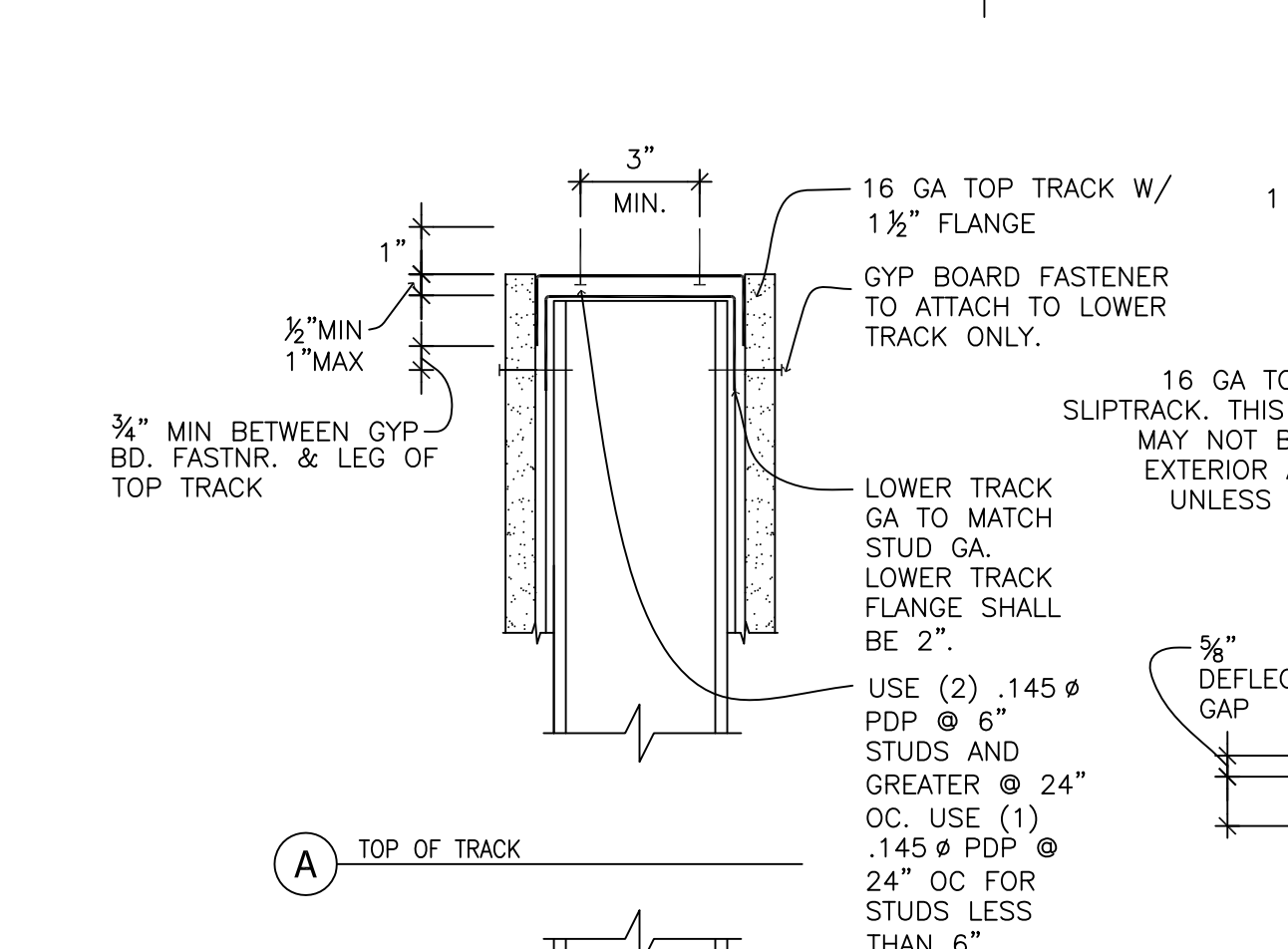
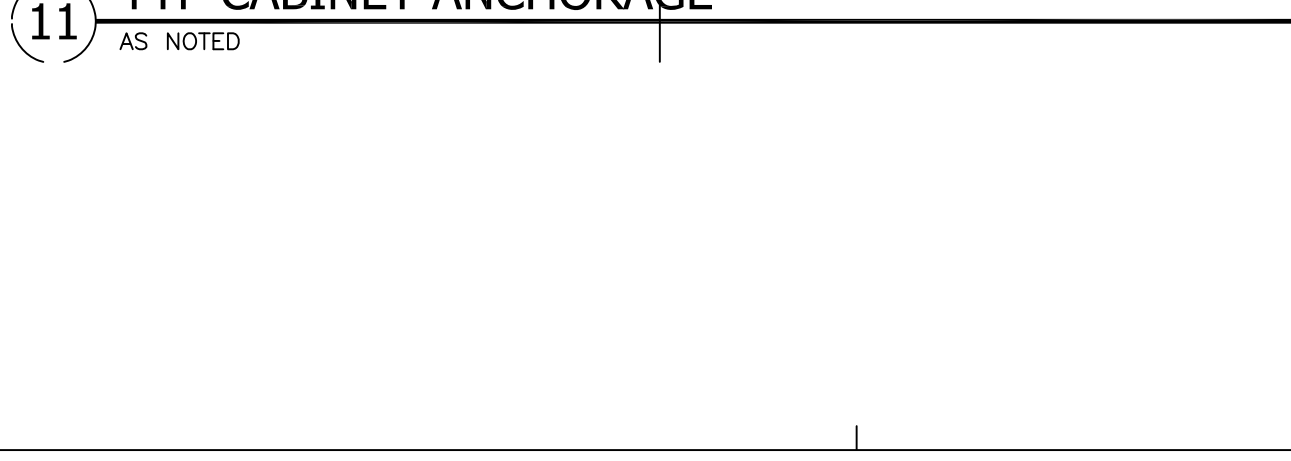
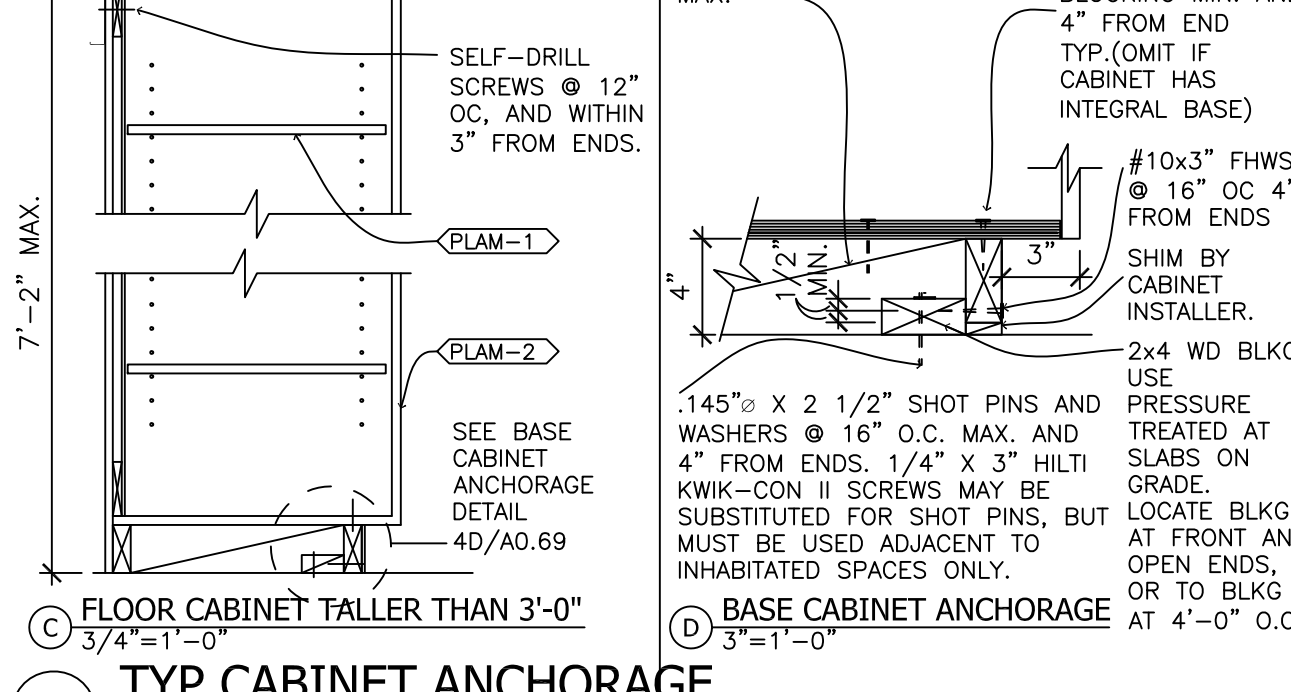
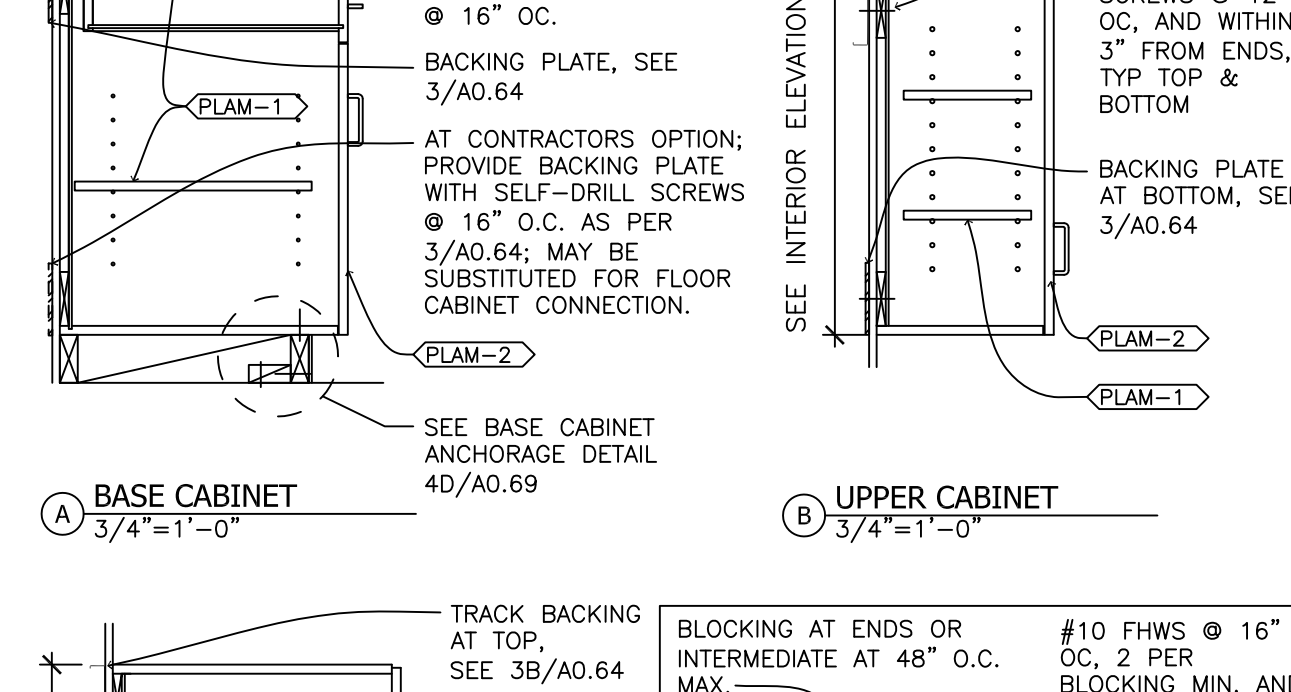
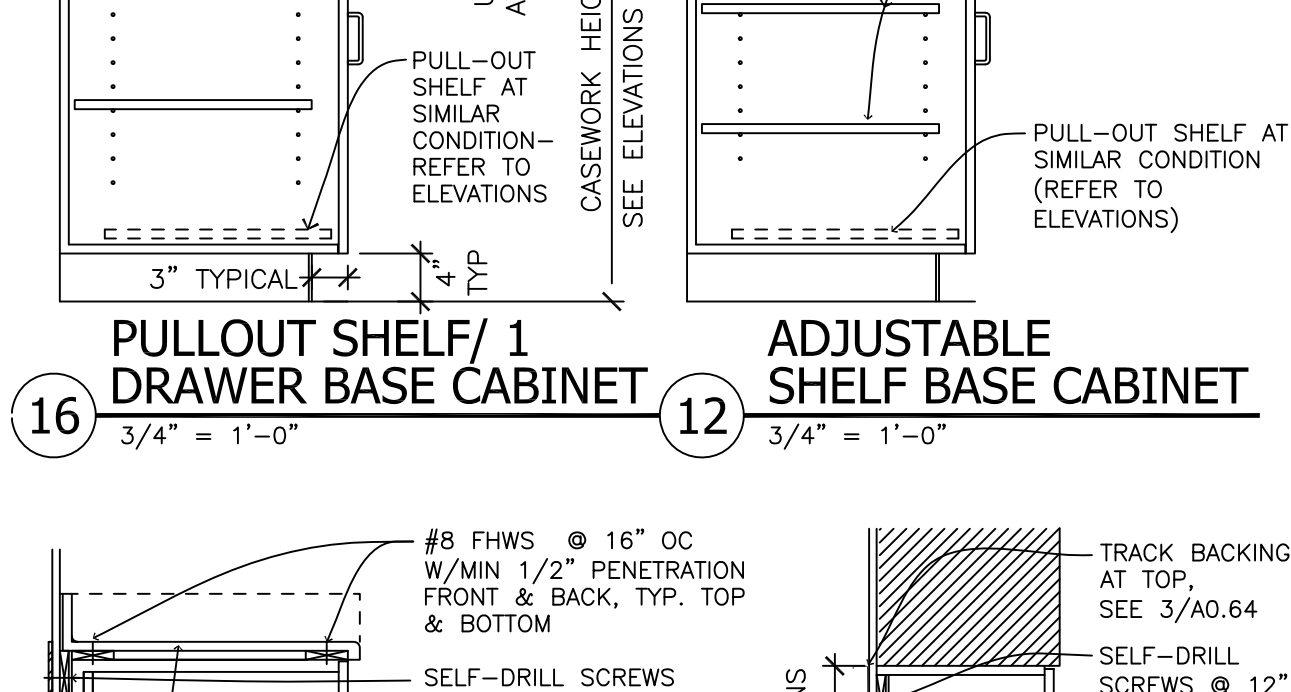
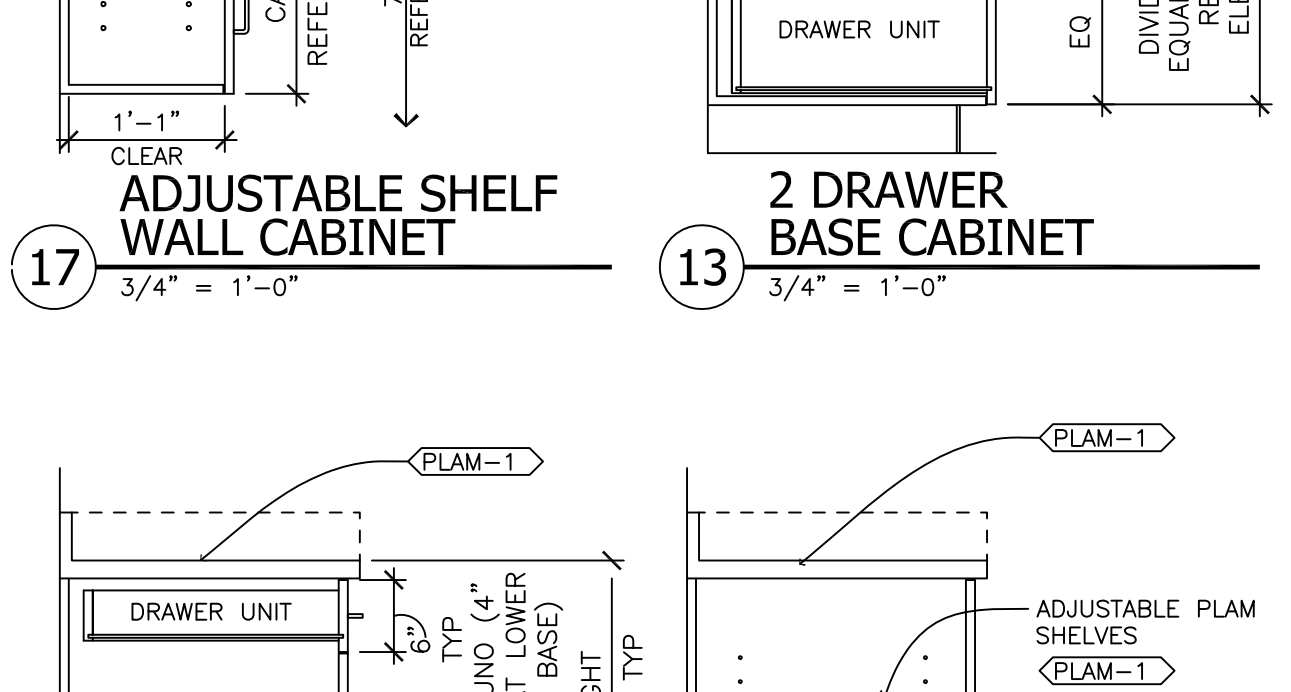
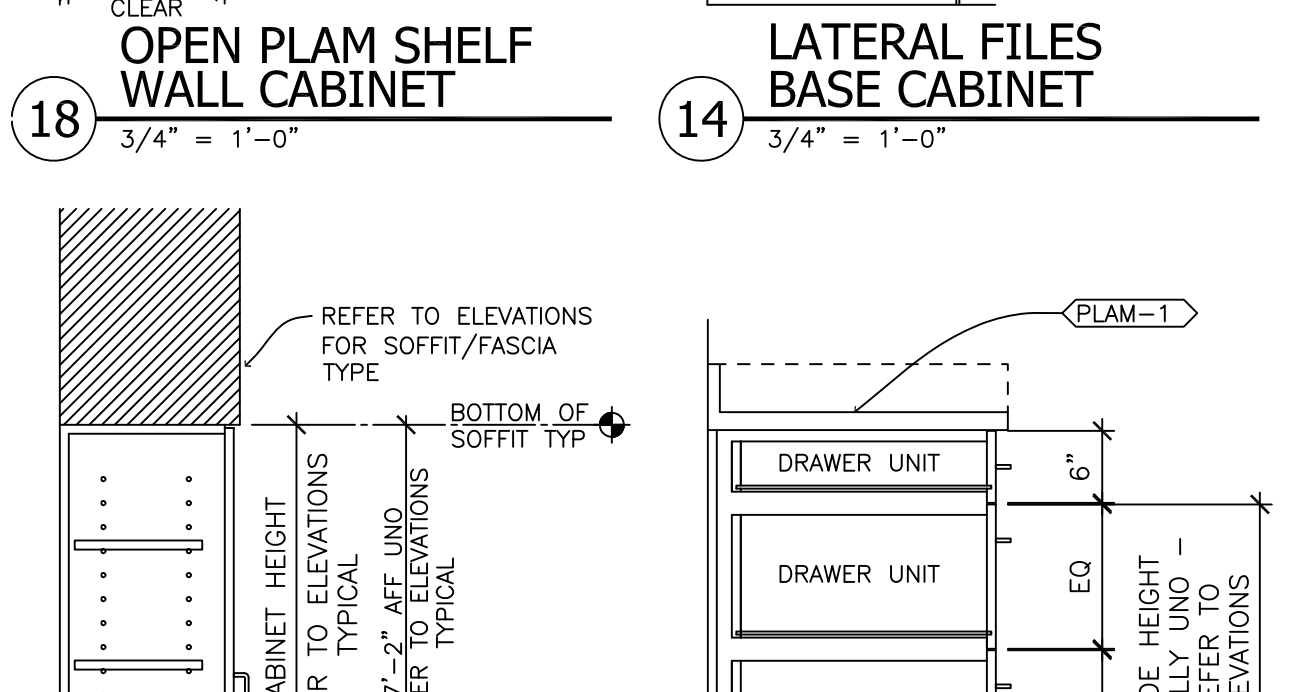
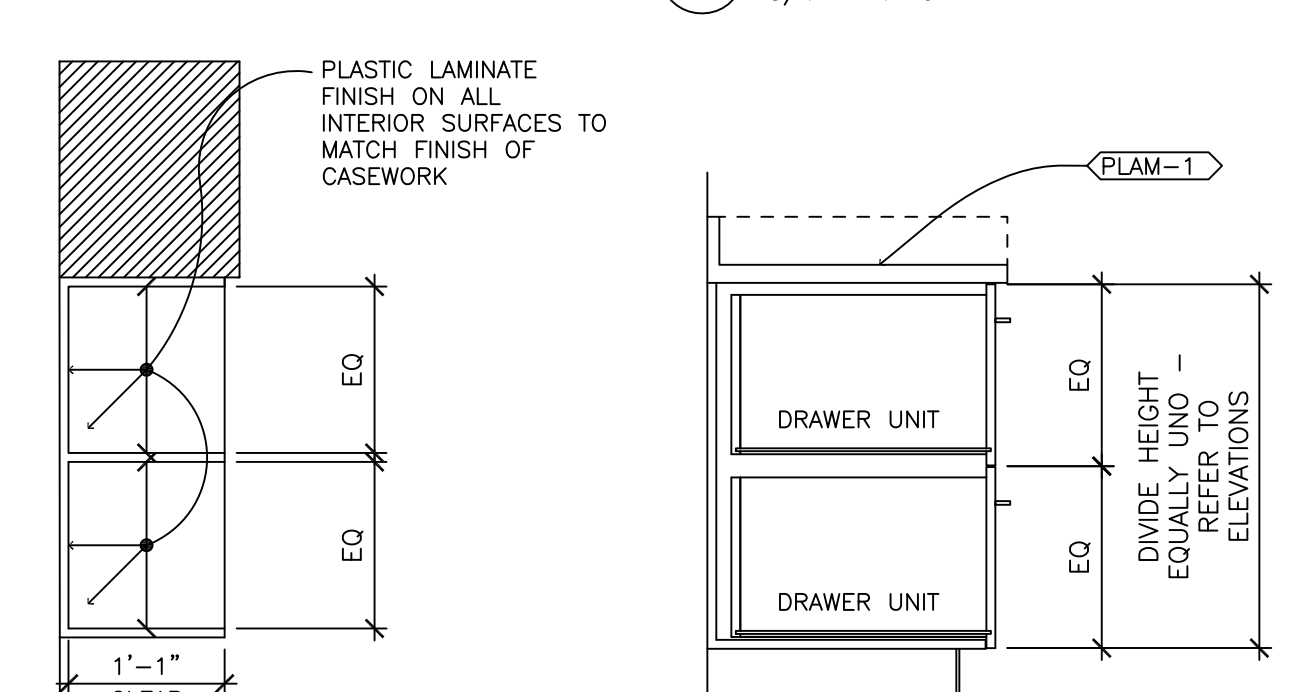
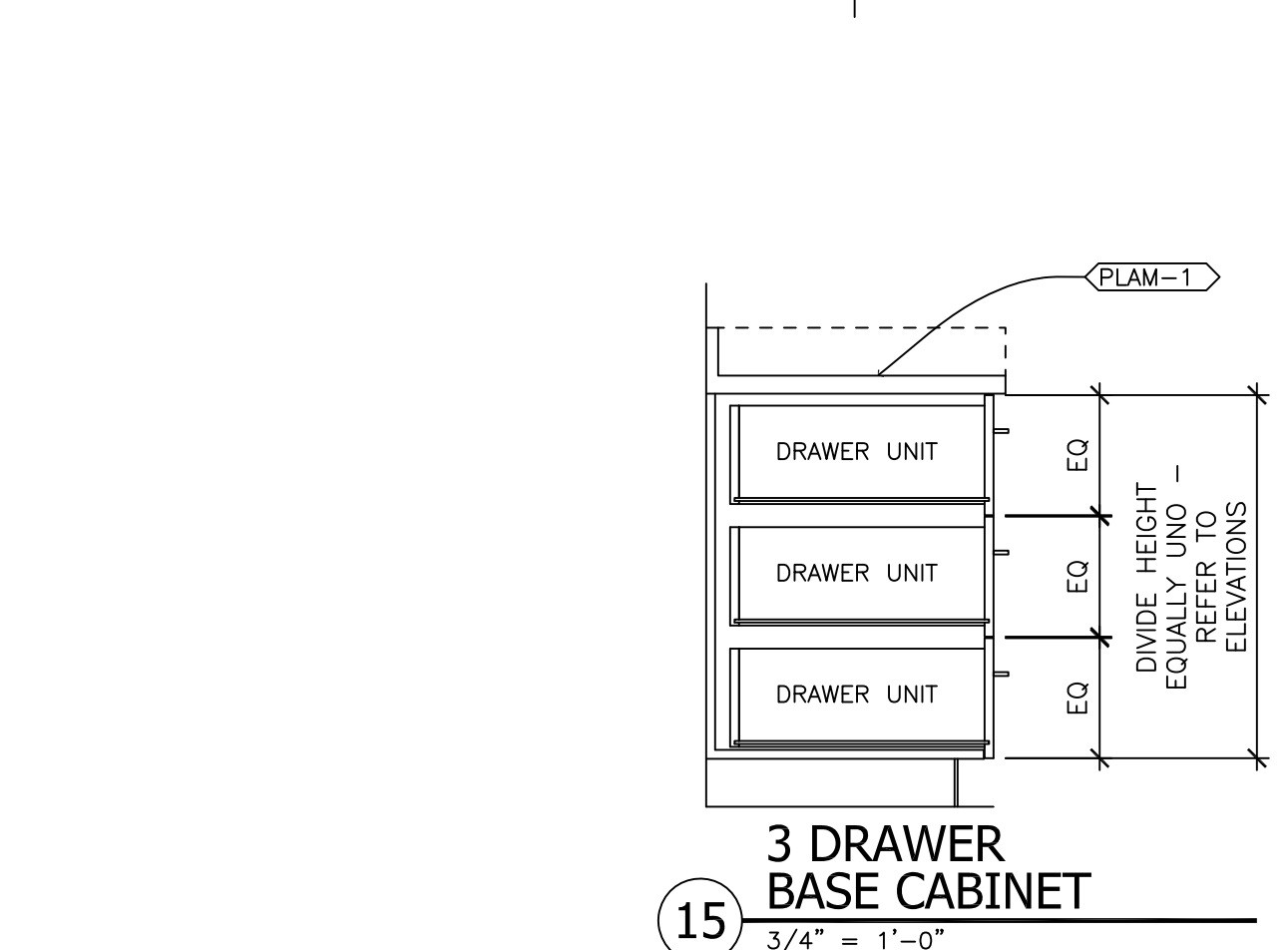
TYPICAL INTERIOR PARTITION DETAILS

Sheet Number

A660

of

J6098



p2s

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Consultant

Project Title

ENGINEERING & TECHNOLOGY CORE RENOVATION

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

5151 STATE UNIVERSITY DR.
LOS ANGELES, CA 90032

APPROVED ARCHITECT
MICHAEL FRANKLIN
C-8062
APRIL 30, 2013
RENEWAL DATE

Revisions

Number	Description	Date
1	ISSUE FOR BID	1-18-12

Designed
Drawn
Checked
Approved

Date 1-18-12

Submittal AS NOTED

Scale

Sheet Title

TYP. CEILING, SOFFIT, AND CASEWORK DETAILS

Sheet Number A662

of

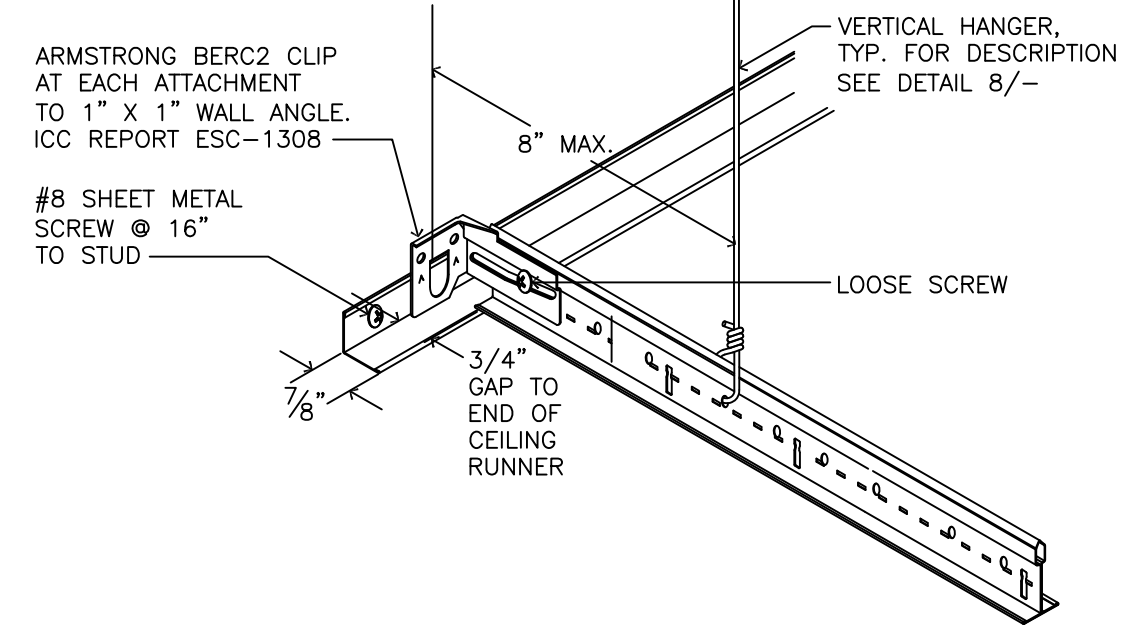
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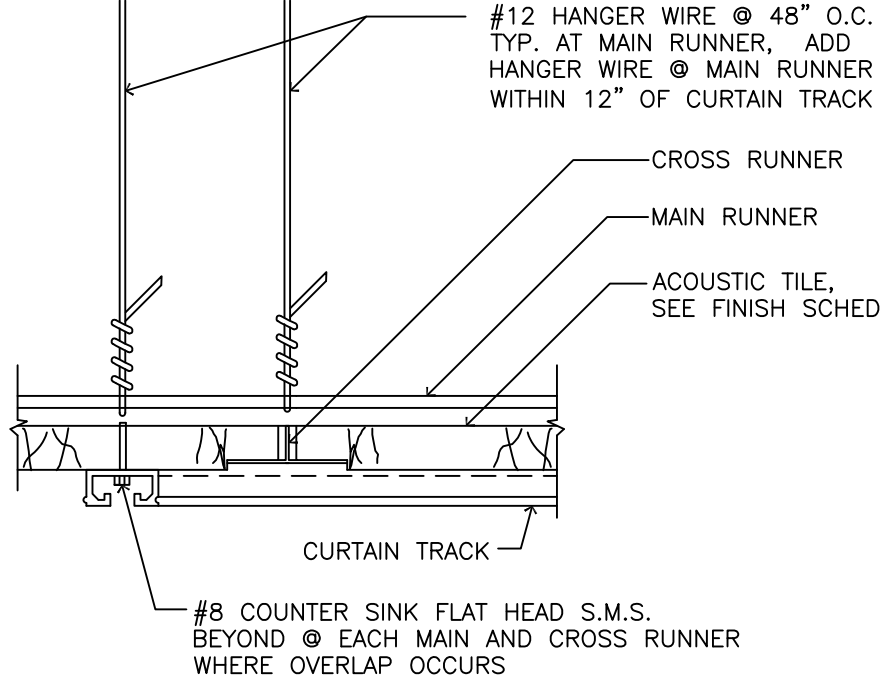
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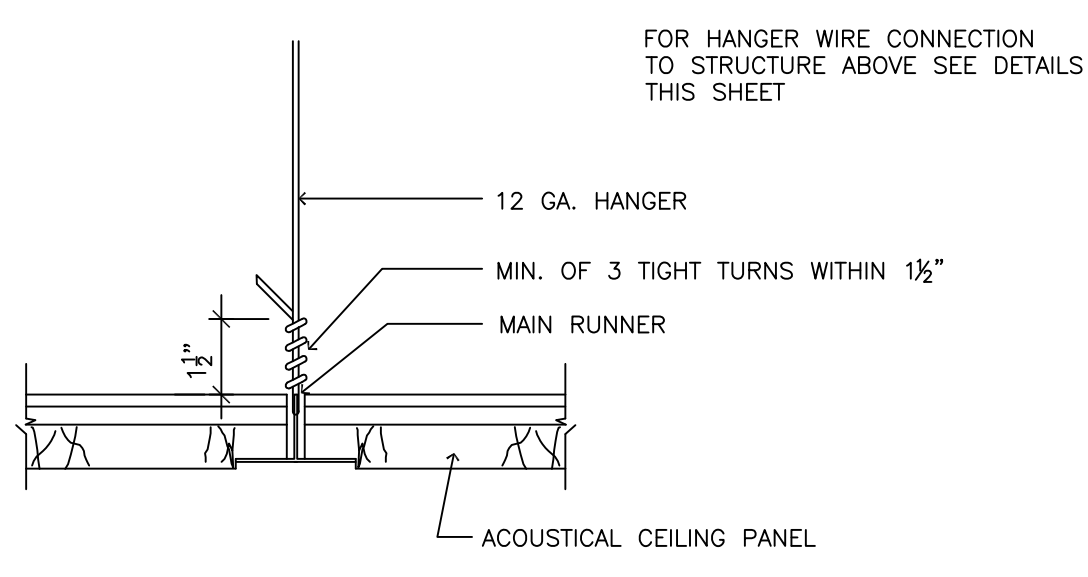
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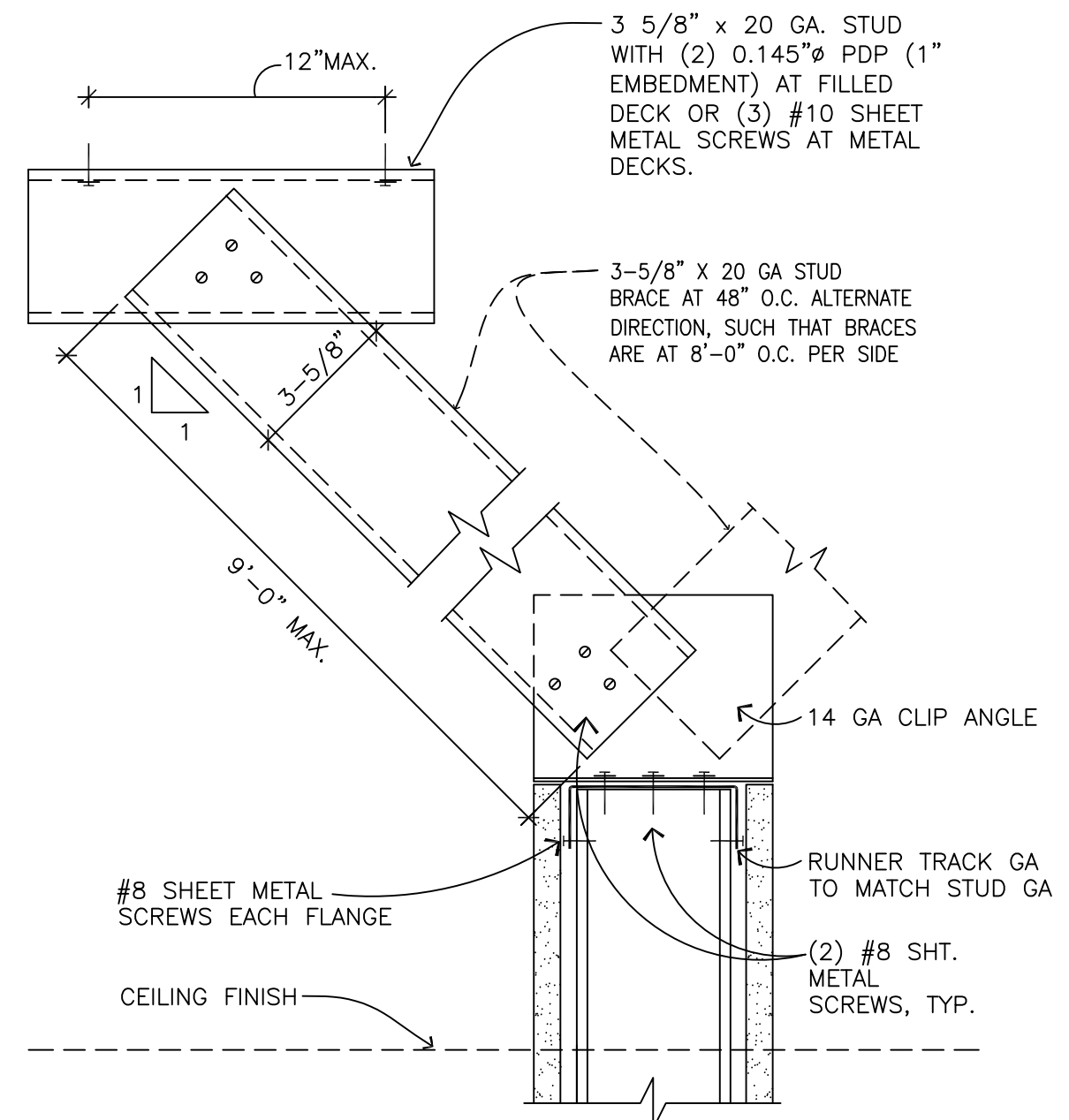
6 FREE-END SUSPENDED CEILING
NO SCALE



7 CURTAIN TRACK
3\"/>

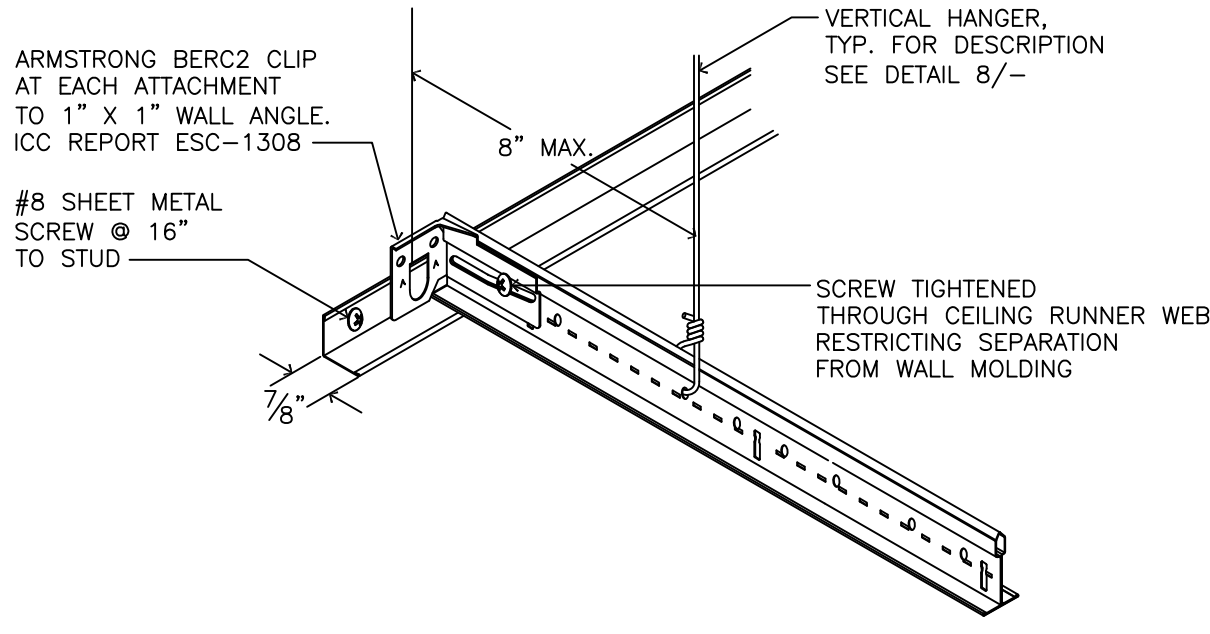


8 HANGER WIRE CONNECTION TO GRID
3\"/>

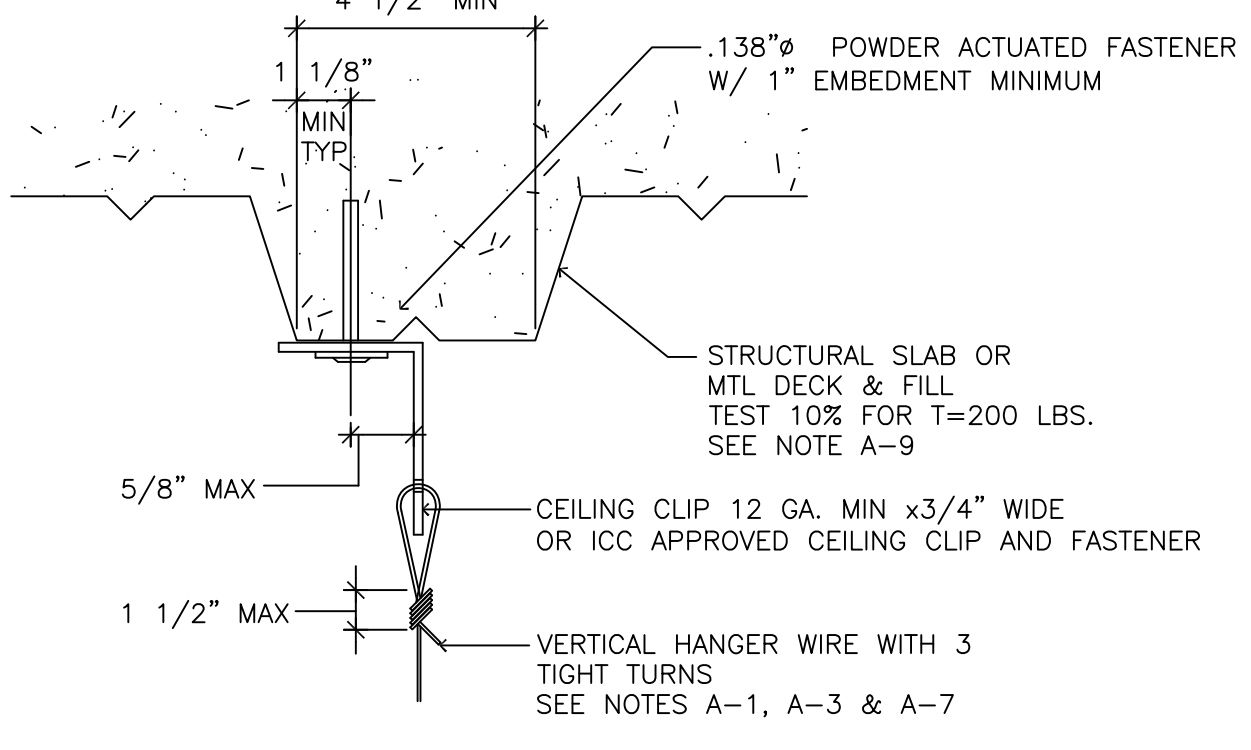


11 NON-FULL HEIGHT PARTITION
NTS

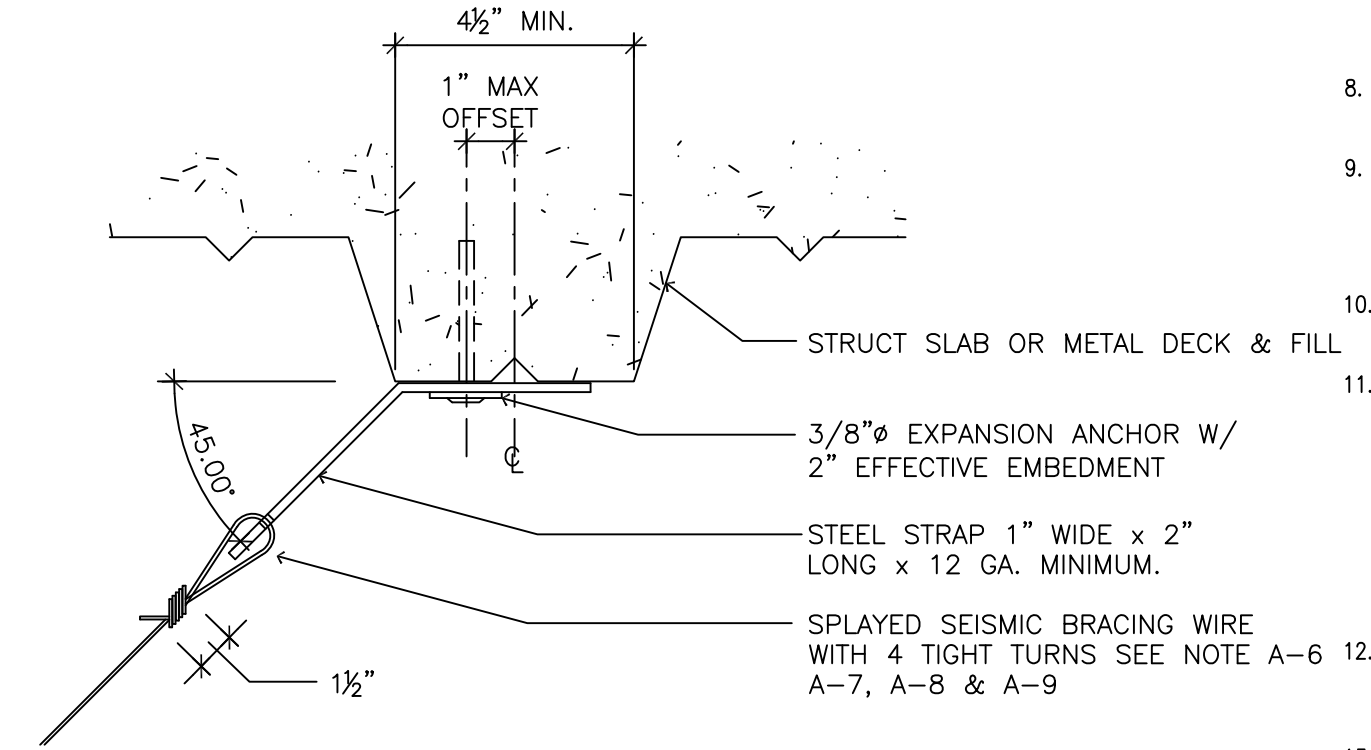
9 SPREADER BAR ASSEMBLY
NTS



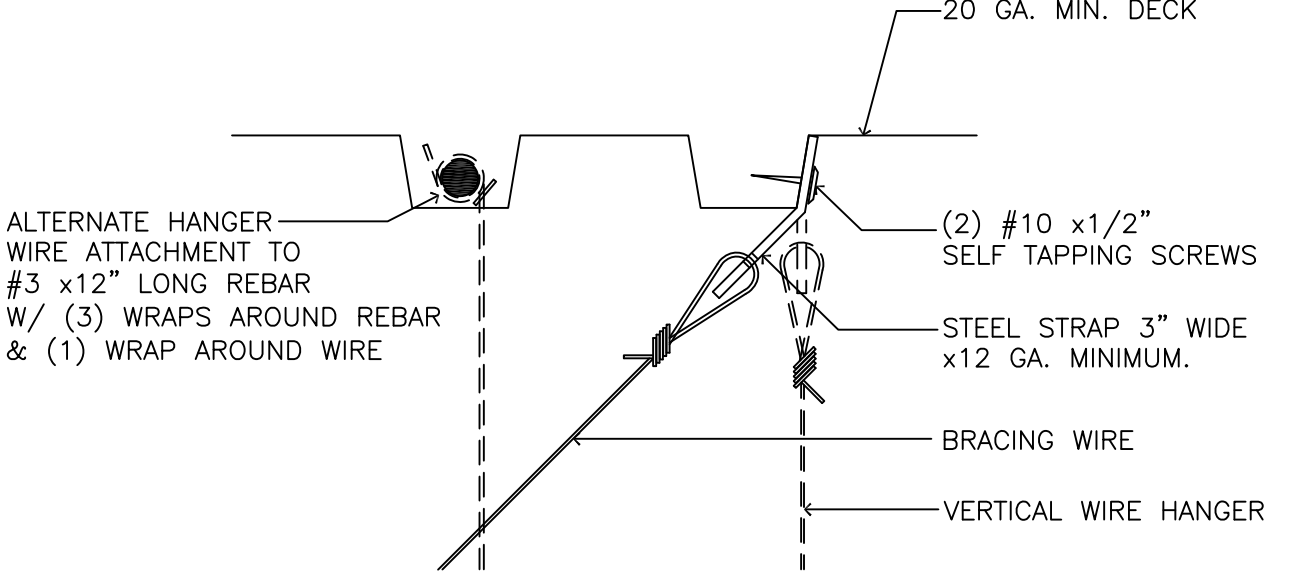
10 FIX-END SUSPENDED CEILING
NO SCALE



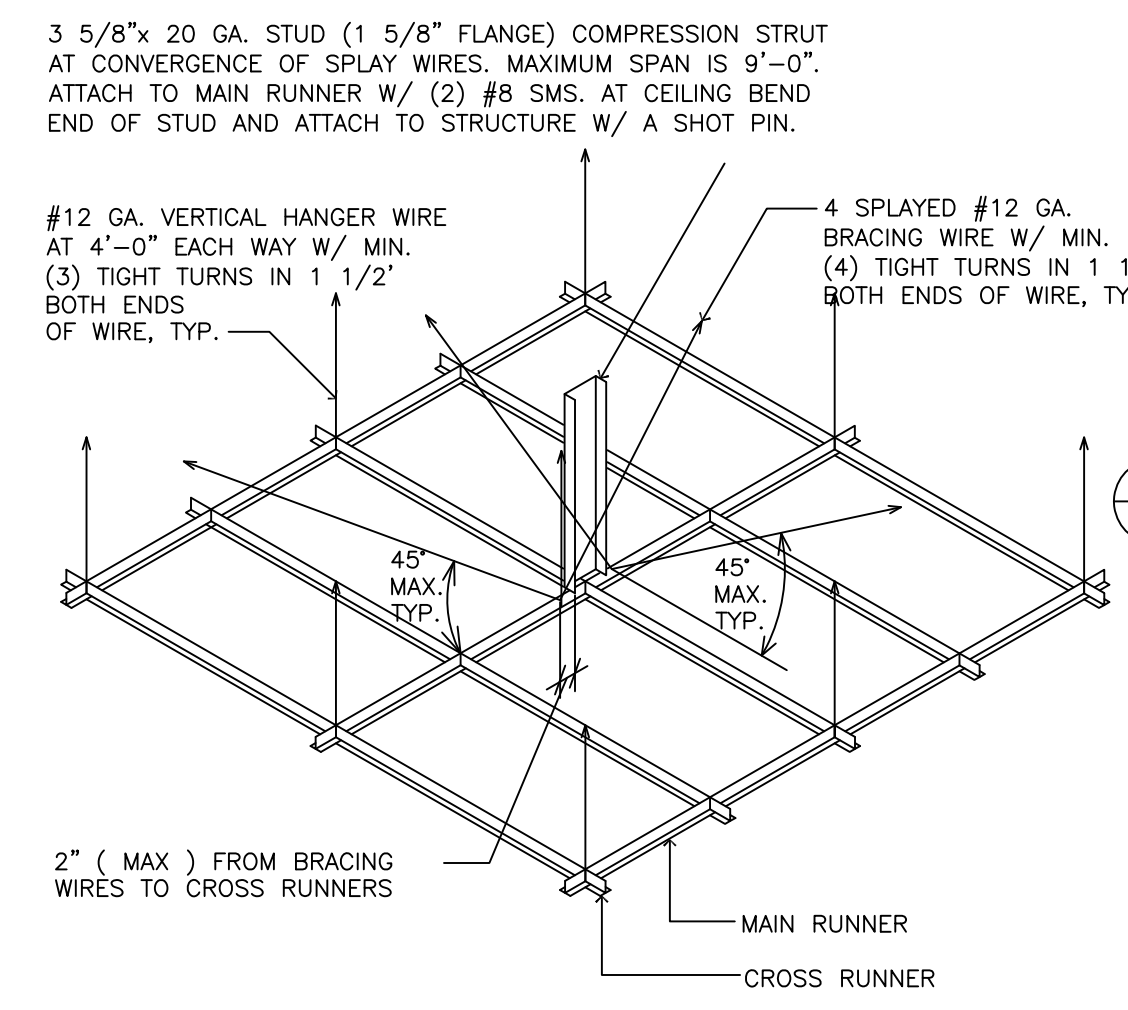
2 VERT HANGER WIRE ATTACHMENT
NTS



3 SPLAYED SEISMIC BRACING
NTS



4 AT ROOF DECK
NTS



NOTES:
(1) SEE DETAILS THIS SHEET FOR CONNECTIONS OF BRACING & HANGER WIRES TO STRUCTURE ABOVE.

5 BRACING AT ACOUSTICAL CEILING
NO SCALE

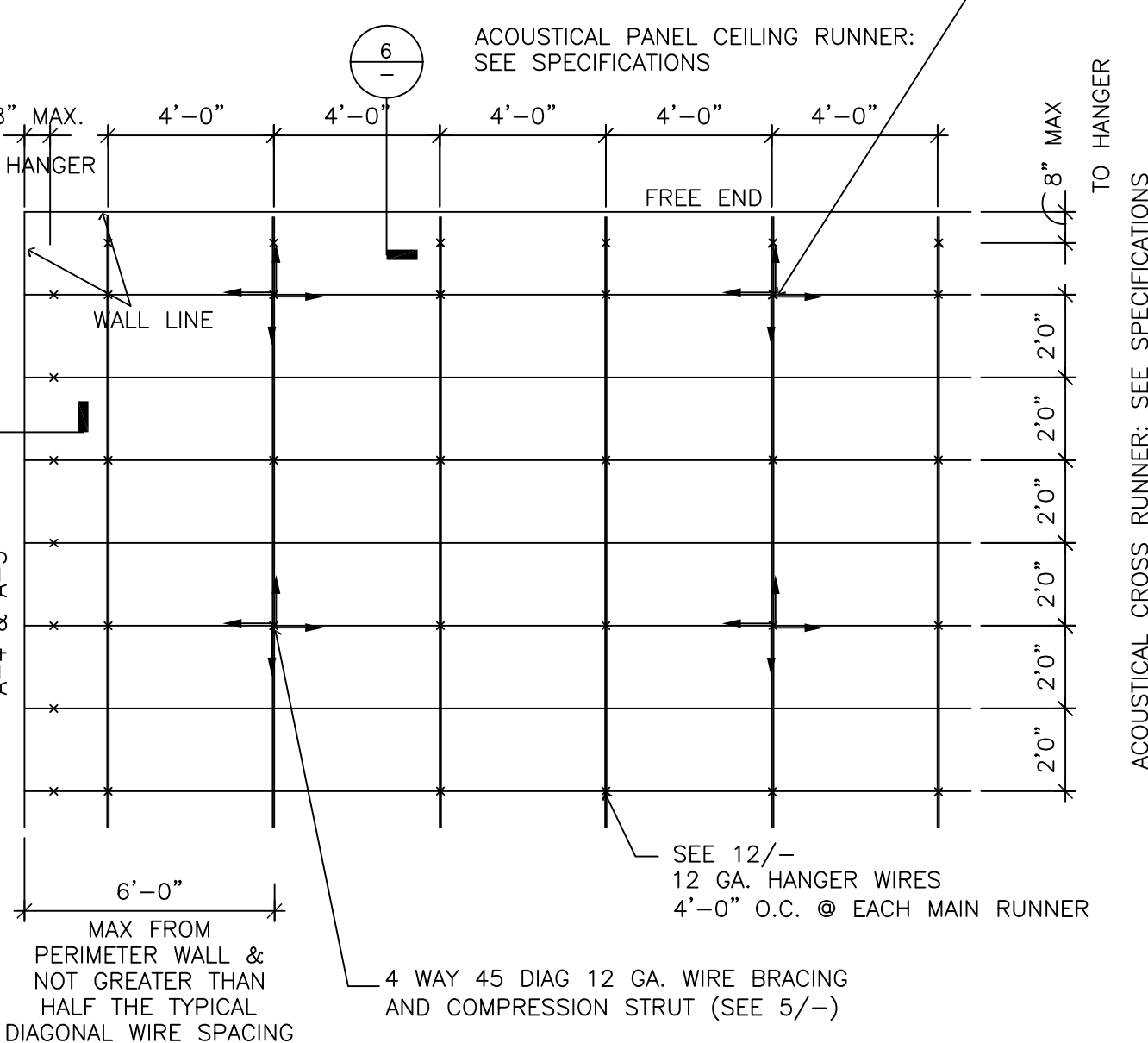
- A. Lay-in Panel & Gypsum Board Ceilings:**
The following notes apply to ceiling systems whose total weight including air conditioning grilles and light fixtures does not exceed four (4) gpf.
- 12 ga. (min.) hanger wires may be used for up to and including 4'-0" by 4'-0" grid spacing and shall be attached to main runners. Splices will not be permitted in any hanger wires unless specifically approved by the enforcement agency.
 - Provide 12 ga. hanger wires at the ends of all main and cross runners within 8 inches from the support or within 1/4 of the length of the end tee, whichever is least, for the perimeter of the ceiling area. End connections for runners which are designed and detailed to resist the applied vertical and horizontal forces may be used in lieu of the 12 ga. hanger wires, subject to enforcement agency review and approval. Perimeter is not required when the length of the end tee is 8 inches or less.
 - Provide trusses or other supplementary support members of obstructions to maintain hanger spacing. Provide additional hangers, struts or bracing as required at all ceiling breaks, soffits or discontinuous areas. Hanger wires that are more than 1 (horizontal) in 6 (vertical) out of plumb are to have counter-sloping wires.
 - Ceiling grid members shall be attached to 2 adjacent walls. Ceiling grid members shall be at least 3/4 inch clear of other wall. If walls run diagonally to ceiling grid system runners, one end of main and cross runners shall be free with a minimum of 3/4 inch clear at wall.
 - At the perimeter of the ceiling area where main or cross runners are not connected to the adjacent wall, provide interconnection between the runners at the free end to prevent lateral spreading unless Armstrong BERC2 Clip is used. A metal strut or a 16 ga. wire with a positive mechanical connection to the runner may be used. Where the perpendicular distance from the wall to the first parallel runner is 12 inches or less, this interlock is not required.
 - Provide lateral-forces bracing assemblies consisting of a compression strut and four 12 ga. splayed bracing wires oriented 90 degrees from each other at the following spacing:
6.a. For essential services buildings (for lay-in and gypsum board ceilings), space bracing assemblies not more than 8 feet by 12 feet on center. For all other buildings space bracing assemblies not more than 12 ft. by 12 ft. on center.
6.b. Provide bracing wires at locations not more than 1/2 the spacings (6a) above from each perimeter wall and at the edge of vertical ceiling offsets. The slope of these wires should not exceed 45 degrees from a horizontal plane and should be fast without causing the ceiling to tilt. Compression struts attached to the ceiling and the structure shall be provided at bracing points. Splices in bracing wires are not to be permitted without special enforcement agency approval.
6.c. Suspended acoustical ceiling system with a ceiling area of 144 sq. ft. or less, and fire rated suspended acoustical ceiling systems with a ceiling area of 96 sq. ft. or less, surrounded by walls which connect directly to the structure above or walls independently braced above ceiling to structure above, do not require bracing assemblies when attached to two adjacent walls.
6.d. Partitions: Non-bearing partitions that extend to and terminate at a suspended ceiling shall be laterally supported by an adequate bracing system of splayed wires or stud bracing spaced not more than 8 feet on center along the top edge of the partition or by other equivalent means.
 - Fasten hanger wires with not less than 3 light turns. Fasten bracing wires with 4 light turns. Make all light turns within a distance of 1-1/2 inches. Hanger or bracing wire anchors to the structure should be installed in such a manner that the direction of the anchor aligns as closely as possible with the direction of the wire.
 - Separate all ceiling hanger and bracing wires at least 6 inches from all unbraced ducts, pipes, conduit, etc.
 - When drilled-in concrete anchors or shot-in anchors are used in reinforced concrete for hanger wires, 1 out of 10 wire/anchor assemblies must be field tested for 200 pounds in tension. When drilled-in concrete anchors are used for bracing wires, 1 out of 2 must be field tested for 440 pounds in tension in the direction of the wire. Shot-in anchors in concrete are not permitted for bracing wires.
 - Attach all light fixtures and ceiling mounted air terminals, to the ceiling grid runners to resist a horizontal force equal to the weight of the fixtures. Screws or approved fasteners are required.
 - Flush or recessed light fixtures weighing less than 56 pounds and mechanical terminals or services weighing less than 20 pounds may be supported directly on the runners of a heavy duty grid system but, in addition, they must have a minimum of two 12 ga. slack safety wires attached to the fixture at diagonal corners and anchored to the structure above. All 4 feet by 4 feet light fixtures must have slack safety wires at each corner. All flush or recessed light fixtures weighing 56 pounds or more and mechanical terminals or services weighing 20 pounds or more must be independently supported by not less than 4 tout 12 ga. wires, each attached to the fixture and to the structure above. The 4 tout 12 ga. wires including their attachment to the structure above must be capable of supporting 4 times the weight of the unit.
 - All fixtures and air terminals or services supported on intermediate duty grid systems must be independently supported by not less than 4 tout 12 ga. wires each attached to the fixture or terminal and to the structure above.
 - Support surface mounted light fixtures by at least two positive devices which surround the ceiling runner and which are each supported from the structure above by a 12 ga. wire. Spring clips or clamps that connect only to the runner are not acceptable. Provide additional supports when light fixtures are 8 feet or longer.
 - Support pendant mounted light fixtures directly from the structure above with hanger wires or cables passing through each pendant hanger and capable of supporting 2 times the weight of the fixture. The pendant mounted fixture shall be positively attached to the ceiling runners and shall have bracing wires and a compression strut added where the pendant penetrates the ceiling.
 - Penetrations through the ceiling for sprinkler heads and other similar devices that are not integrally tied to the ceiling system in the lateral direction shall have a two inch oversized ring, sleeve or adapter through the ceiling tile to allow free movement of one inch in all directions. Alternatively, swing joint may be provided per ASCE 7-05, Section 13.5.6.2.2.(a).

B. Additional Requirements for Fire Rated Ceilings

- Provide Underwriter Laboratory (UL) design number or State Fire Marshal (SFM) listing number. The components and installation details must conform in every respect with the UL or SFM approval for the design number specified. Custom designs which combine components from different approved designs but have not been tested as a complete assembly will not be acceptable.
- A set of 4 bracing wires is required for each 96 square feet. The first set of bracing wires are required not more than 4'-0" from each wall. A minimum of one set of bracing wires is required between any two adjacent expansion cut-outs on runners being braced.
- Pop rivets, screws, or other attachments are not acceptable unless specifically detailed on the drawings and approved by UL and SFM.

A METAL SUSPENSION SYSTEMS NOTES

SEISMIC BRACE TO CEILING ABOVE: USE #12 DIAGONAL WIRE SPACED ON A 8' x 12' GRID. SEISMIC BRACE TO BE LOCATED AT INTERSECTION OF MAIN RUNNER AND CROSS RUNNER SEE 5/-



1 DIAGRAMMATIC PLAN ACOUSTICAL CEILING
NTS



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Consultant

Project Title

ENGINEERING &
TECHNOLOGY CORE
RENOVATION

CALIFORNIA STATE
UNIVERSITY, LOS
ANGELES

5151 STATE UNIVERSITY DR.
LOS ANGELES, CA 90032



Revisions

Number	Description	Date
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1 ISSUE FOR BID 1-18-12

Designed
Drawn
Checked
Approved

Date 1-18-12

Submittal AS NOTED

Scale

Sheet Title

TYPICAL
ACOUSTICAL
CEILING DETAILS

Sheet Number

A670

of

J6098

ABBREVIATIONS

THIS LIST IS FOR INFORMATION ONLY; OTHER ABBREVIATIONS MAY BE USED. ABBREVIATIONS THAT ARE UNCLEAR SHOULD BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR CLARIFICATION.

& L @ A.B. ARCH'L	AND ANGLE AT ANCHOR BOLT ARCHITECTURAL	INFO. INT. JST. JT.	INFORMATION INTERIOR JOIST JOINT
BET. BLKG. BM. BOTT.	BETWEEN BLOCKING BEAM BOTTOM	MATL. MAX. M.B. MFR. MIN. MISC. MTL. M.J.	MATERIAL MAXIMUM MACHINE BOLT MANUFACTURER MINIMUM MISCELLANEOUS METAL MASONRY JOINT
C.J. CL. CLR. COL. CONC. CONT. CTR. CTSK.	CONSTRUCTION JOINT CENTERLINE CLEAR COLUMN CONCRETE CONTINUOUS CENTER COUNTERSUNK	N.S.A. N.S.G. N.S. N.T.S.	NELSON STUD ANCHOR NON-SHRINK GROUT NEAR SIDE NOT TO SCALE
D/B DBL. DET. DIAG. DN. DWGS. DWP	DESIGN BUILD DOUBLE DETAIL DIAGONAL DOWN DRAWINGS DEPT. OF WATER & POWER	O.C. OPNG. OPP. PERP. PL. PSF	ON CENTER OPENING OPPOSITE PERPENDICULAR PLATE POUNDS PER SQUARE FOOT
(E) EA. E.F. E.J. EL. EQ. EQUIP. E.S. E.W. EXP. EXT.	EXISTING EACH EACH FACE EXPANSION JOINT ELEVATION EDGE NAILING EQUAL EQUIPMENT EACH SIDE EACH WAY EXPANSION EXTERIOR	P.T. REINF. REQ'D R.R. SCHED. SHTG. SIM. SMS S.O.G. STAG. STD. STL STRL	PRESSURE TREATED REINFORCING REQUIRED ROOF RAFTER SCHEDULE SHEATHING SIMILAR SHEET METAL SCREW SLAB ON GRADE STAGGERED STANDARD STEEL STRUCTURAL
FDN. F.F. FIN. FLR. F.O. F.O.C. F.O.M. F.O.S. F.S. FTG.	FOUNDATION FINISH FLOOR FINISH FLOOR FACE OF FACE OF CONCRETE FACE OF MASONRY FACE OF STUD FAR SIDE FOOTING	THK. T.O.S. TOT. TS TYP. UBC	THICK TOP OF SLAB TOTAL TUBE STEEL TYPICAL UNIFORM BUILDING CODE
GA. GB. GLB GND. GR.	GAGE GRADE BEAM GLUE LAMINATED BEAM GROUND GRADE	UNO VERT. V.I.F.	UNLESS NOTED OTHERWISE VERTICAL VERIFY IN FIELD
HDR. HORIZ. HT.	HEADER HORIZONTAL HEIGHT	W/ W/O WS W.W.F.	WITH WITHOUT WOOD SCREW WELDED WIRE FABRIC

SHEET INDEX

SHEET	DESCRIPTION
S1.0	STRUCTURAL NOTES AND INFORMATION
S2.0	FLOOR FRAMING PLANS
S3.0	STRUCTURAL DETAILS

PROJECT DESIGN CRITERIA

- CODES: A. CALIFORNIA BUILDING CODE, 2010 EDITION AND STANDARDS REFERENCED THEREIN.
B. CSU SEISMIC REQUIREMENTS, JULY 13, 2009.
- STRUCTURAL DESIGN INFORMATION:

VERTICAL LOADS	
LIVE LOAD AND EQUIPMENT	SEE PLANS

EARTHQUAKE DESIGN	DATA
OCCUPANCY CATEGORY	III
SEISMIC IMPORTANCE FACTOR	I = 1.25 , Ip=1.50 (HOOD), Ip=1.00 (WATER EQUIPMENT)
MAPPED SPECTRAL RESPONSE ACCELERATIONS	S _S = 1.92g , S ₁ = 0.67g
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENTS	S _{DS} = 1.28g , S _{D1} = 0.67g
SEISMIC DESIGN CATEGORY	D

CONTRACTOR DESIGN SUBMITTALS

- CONTRACTOR DESIGN SUBMITTAL ITEMS AS LISTED BELOW SHALL BE DESIGNED BY OTHERS AS RETAINED AND PAID FOR BY THE CONTRACTOR. RODRIGUEZ ENGINEERING, INC. HAS NOT DESIGNED THE FOLLOWING CONTRACTOR DESIGN SUBMITTAL ITEMS:
 - WAVE TANK SECTION RELOCATION AND MODIFICATIONS:
 - THE WAVE TANK SUPPORTS AND ANCHORAGE LOADS SHALL BE DISTRIBUTED DIRECTLY OVER A MINIMUM OF TWO EXISTING FLOOR JOISTS AND NOT ON THE SLAB AREA BETWEEN THE FLOOR JOIST WEBS.
 - FOR BIDDING PURPOSES ONLY, ASSUME A 48" LONG GALV. HSS5x2x1/4 FLAT SLEEPER WITH (4) STAINLESS STEEL EXPANSION ANCHORS OR THRU BOLT ANCHORS WILL BE REQUIRED ON EACH SIDE OF THE WAVE TANK SECTION. THE WAVE TANK BASE TO BE SHIMMED, AND WELDED OR BOLTED TO THE HSS SLEEPERS AS REQUIRED. PROVIDE FLOOR WATERPROOFING AS REQUIRED.
 - NO EXISTING CONCRETE SLAB OR FLOOR JOIST REINFORCEMENT SHALL BE CUT. NON-DESTRUCTIVE TESTING SHALL BE PERFORMED TO LOCATE EXISTING REINFORCING BAR LAYOUT. ADJUST SUPPORTS AND ANCHORS AS REQUIRED TO AVOID CONFLICT WITH THE EXISTING REINFORCING BARS.
 - THE REQUIRED MODIFICATIONS TO THE EXISTING WAVE TANK SHALL BE COORDINATED AND APPROVED BY THE UNIVERSITY.
 - OPEN CHANNEL FLOW FLUME RELOCATION AND MODIFICATIONS:
 - THE OPEN CHANNEL FLOW FLUME SUPPORTS AND ANCHORAGE LOADS SHALL BE BE DISTRIBUTED DIRECTLY OVER A MINIMUM OF TWO EXISTING FLOOR JOISTS AND NOT ON THE SLAB AREA BETWEEN THE FLOOR JOIST WEBS.
 - FOR BIDDING PURPOSES ONLY, ASSUME A CONTINUOUS GALV. HSS5x2x1/4 FLAT SLEEPER WITH STAINLESS STEEL EXPANSION ANCHOR OR THRU BOLT ANCHOR AT 25.5" INCHES ON-CENTER WILL BE REQUIRED ON EACH LONGITUDINAL SIDE OF THE OPEN CHANNEL FLOW FLUME LENGTH. EACH OF THE OPEN CHANNEL FLOW FLUME BASE PLATES SHALL BE SHIMMED, AND WELDED OR BOLTED TO THE CONTINUOUS HSS SLEEPERS AS REQUIRED. PROVIDE FLOOR WATERPROOFING AS REQUIRED.
 - NO EXISTING CONCRETE SLAB OR FLOOR JOIST REINFORCEMENT SHALL BE CUT. NON-DESTRUCTIVE TESTING SHALL BE PERFORMED TO LOCATE EXISTING REINFORCING BAR LAYOUT. ADJUST SUPPORTS AND ANCHORS AS REQUIRED TO AVOID CONFLICT WITH THE EXISTING REINFORCING BARS.
 - THE REQUIRED MODIFICATIONS TO THE EXISTING OPEN CHANNEL FLOW FLUME SHALL BE COORDINATED AND APPROVED BY THE UNIVERSITY.
 - WATER TUNNEL:
 - THE STRUCTURAL FRAMING SUPPORTS, FRAMING CONNECTIONS, AND ANCHORAGE TO THE CONCRETE FLOOR SYSTEM.
 - THE WATER TUNNEL SUPPORTS AND ANCHORAGE LOADS SHALL BE DISTRIBUTED OVER A MINIMUM OF TWO EXISTING FLOOR JOISTS AND NOT ON THE SLAB AREA BETWEEN THE FLOOR JOISTS. REFER TO THE PLAN FOR OTHER FLOOR LOADING LIMITATIONS/REQUIREMENTS. PROVIDE FLOOR WATERPROOFING AS REQUIRED.
 - NO EXISTING CONCRETE SLAB OR FLOOR JOIST REINFORCEMENT SHALL BE CUT. NON-DESTRUCTIVE TESTING SHALL BE PERFORMED TO LOCATE EXISTING REINFORCING BAR LAYOUT. ADJUST SUPPORTS AND ANCHORS AS REQUIRED TO AVOID CONFLICT WITH THE EXISTING REINFORCING BARS.
 - DOUBLE DOOR OPENING REINFORCEMENT:
 - OPENING STRUCTURAL FRAMING SUPPORTS, FRAMING CONNECTIONS, ANCHORAGE TO THE EXISTING CMU, AND ANCHORAGE AND SUPPORT TO THE CONCRETE FLOORS.
 - NO EXISTING CONCRETE SLAB OR FLOOR JOIST REINFORCEMENT SHALL BE CUT. NON-DESTRUCTIVE TESTING SHALL BE PERFORMED TO LOCATE EXISTING REINFORCING BAR LAYOUT. ADJUST SUPPORTS AND ANCHORS AS REQUIRED TO AVOID CONFLICT WITH THE EXISTING REINFORCING BARS.
- ANY STRUCTURE THAT IS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY THE OTHER PROJECT DISCIPLINES SUCH AS ARCHITTECTURAL, ELECTRICAL, MECHANICAL, PLUMBING, ETC.
- THE CONTRACTOR SHALL SUBMIT STRUCTURAL PLANS, DETAILS, AND CALCULATIONS FOR ALL CONTRACTOR DESIGN ITEMS TO THE UNIVERSITY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- THE DRAWINGS, DETAILS, AND CALCULATIONS AS NECESSARY FOR THE CONTRACTOR DESIGN ITEMS SHALL BE SIGNED AND SEALED BY A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE OF CALIFORNIA. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIREMENT OF THE UNIVERSITY AND COMPLIANCE WITH THE GOVERNING CODES & PROJECT DESIGN CRITERIA.
- SUBMITTAL DOCUMENTS FOR CONTRACTOR DESIGN SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE UNIVERSITY, WHO SHALL REVIEW THEM FOR THE SOLE PURPOSE OF CONFIRMING THAT THE CONTRACTOR DESIGN SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND IN GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS.

STRUCTURAL STEEL

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH "SPECIFICATION FOR THE DESIGN AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS," AISC, 13TH EDITION, AND THE 2010 CBC.
- STEEL MEMBERS SHALL CONFORM TO THE FOLLOWING MATERIAL SPECIFICATIONS (U.N.O.):
 - PLATES, ANGLES, CHANNELS, WT'S – ASTM A36, GRADE 36, Fy=36 KSI
 - STRUCTURAL TUBES – ASTM A500, GRADE B, Fy=46 KSI
 - STRUCTURAL PIPES – ASTM A53, TYPE S, GRADE B, Fy=35 KSI
 - WIDE FLANGE – ASTM A992 OR ASTM A572 GRADE 50, Fy=50 KSI
 - STRUCTURAL BOLTS – ASTM A325-ST (SNUG-TIGHTENED JOINT)
 - NUTS – ASTM A563 GALV., GRADE D1
 - WASHERS – ASTM F436 GALV., TYPE 1
- ALL WELDING SHALL BE PERFORMED BY EXPERIENCED, CERTIFIED WELDERS USING THE ELECTRIC ARC WELDING PROCESS, E70XX SERIES ELECTRODES FOR WELDING STRUCTURAL STEEL. WELDING SHALL CONFORM TO AISC AND AWS STANDARDS.
- ALL WELDS NOT SPECIFIED SHALL BE CONTINUOUS FILLET WELDS. SIZE OF WELD SHALL BE BASED ON AISC STANDARDS FOR THICKER PART JOINED.
- HOLES FOR BOLTS IN STRUCTURAL STEEL SHALL BE DRILLED OR PUNCHED. BURNING OF HOLES SHALL NOT BE PERMITTED.
- ALL COPEs SHALL BE SAWCUT, UNLESS OTHERWISE PERMITTED BY THE STRUCTURAL ENGINEER IN WRITING.
- ALL STRUCTURAL STEEL AND CONNECTORS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123, WHERE THE HOT DIP GALVANIZING IS DAMAGED OR OR REMOVED DURING CONSTRUCTION, REPAIR WITH AN EXTERIOR APPROVED COLD GALVANIZING PAINTING SYSTEM.
- THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP AND ERECTION DRAWINGS OF ALL STRUCTURAL STEEL FOR ENGINEER'S REVIEW PRIOR TO FABRICATION. ALL STEEL FABRICATION SHALL BE PERFORMED IN A SHOP APPROVED BY THE UNIVERSITY AND BY THE CITY OF LOS ANGELES. CONTRACTOR SHALL NOT ERECT ANY STRUCTURAL STEEL UNTIL THE SHOP DRAWINGS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD ARE RECEIVED AT THE JOBSITE. SHOP AND ERECTION DRAWINGS SHALL CONTAIN ALL INFORMATION NECESSARY TO ERECT ALL STRUCTURAL STEEL IN THE FIELD WITHOUT HAVING TO REFER TO THE STRUCTURAL DRAWINGS. SHOP DRAWINGS SHALL NOT CONTAIN ANY REPRODUCTION OF THE STRUCTURAL DRAWINGS.

EPOXY/EXPANSION ANCHOR TESTING

- ALL ANCHORS SHALL BE INSTALLED PER THEIR CORRESPONDING ICC RESEARCH REPORT.
- SPECIAL INSPECTION IS REQUIRED FOR ALL ANCHOR INSTALLATIONS.
- ON SITE TENSION TESTING IS REQUIRED FOR ALL OF THE INSTALLED ANCHORS IN ACCORDANCE WITH THE TABLE(S) BELOW. TESTING SHALL COMPLY WITH ASTM E-488.
- TEST VALUES:

	HILTI KWIK BOLT TZ I.C.C. ESR-1917	
ANCH. DIA	PROOF LOAD	TORQUE
3/8"	1100 LB	25 LB-FT
1/2"	2000 LB	40 LB-FT
5/8"	2300 LB	60 LB-FT
3/4"	3700 LB	110 LB-FT

	HILTI HIT-RE 500-SD I.C.C. ESR-2322	
ANCH. DIA	PROOF LOAD	TORQUE
3/8"	1300 LB	--
1/2"	2000 LB	--
5/8	2300 LB	--
3/4"	3700 LB	--

- ANCHOR DIAMETER REFERS TO THE THREAD SIZE FOR THE WEDGE.
- APPLY PROOF TEST LOADS TO WEDGE ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT & INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS OF THE ORIGINAL NUT USING A TORQUE WRENCH & APPLY LOAD.
- THE FOLLOWING CRITERIA APPLY FOR THE ACCEPTANCE OF INSTALLED ANCHORS:
 - HYDRAULIC RAM METHOD: THE ANCHOR SHOULD 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: THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN THE FOLLOWING LIMITS:
 - WEDGE TYPE: ONE-HALF (1/2) TURN OF THE NUT.
- TESTING SHOULD OCCUR 24 HOURS MINIMUM AFTER INSTALLATION OF THE SUBJECT ANCHORS, IN THE PRESENCE OF THE INSPECTOR OF RECORD.
- THE TEST PROCEDURES FOR EXPANSION-TYPE ANCHORS SHALL ALSO BE USED FOR EPOXY-TYPE (ADHESIVE) ANCHORS. TORQUE TESTING OF EPOXY-TYPE (ADHESIVE) ANCHORS IS NOT PERMITTED.
- WHEN DRILLED EXPANSION-TYPE ANCHORS ARE USED IN LIEU OF CAST-IN-PLACE BOLTS, THE ALLOWABLE SHEAR AND TENSION VALUES AND TEST LOADS SHALL BE ACCEPTABLE TO THE ENFORCEMENT AGENCY.
- THE TENSION TESTING OF THE EXPANSION ANCHORS SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR AND A REPORT OF THE TEST RESULTS SHALL BE SUBMITTED TO THE ENFORCEMENT AGENCY. IF ANY ANCHORS FAIL THE TENSION-TESTING REQUIREMENTS, THE ADDITIONAL TESTING REQUIREMENTS SHALL BE ACCEPTABLE TO THE ENFORCEMENT AGENCY. THE ABOVE REQUIREMENTS SHALL ALSO APPLY TO BOLTS OR ANCHORS SET IN CONCRETE WITH CHEMICAL (ADHESIVES) IF THE LONG-TERM DURABILITY AND STABILITY OF THE CHEMICAL MATERIAL AND ITS RESISTANCE TO LOSS OF STRENGTH AND CHEMICAL CHANGE AT ELEVATED TEMPERATURES ARE ESTABLISHED TO THE SATISFACTION OF THE ENFORCEMENT AGENCY.

GENERAL NOTES

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SITE CONDITIONS BEFORE STARTING WORK. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES OR OMISSIONS ON THE DRAWINGS OR IN THE SPECIFICATIONS OR ANY VARIATIONS NEEDED IN ORDER TO CONFORM TO CODES, RULES AND REGULATIONS. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- DIMENSIONS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. TYPICAL DETAILS AND GENERAL NOTES ARE MINIMUM REQUIREMENTS TO BE USED WHEN CONDITIONS ARE NOT SHOWN OTHERWISE. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK.
- WHERE MEMBER LOCATIONS ARE NOT SPECIFICALLY DIMENSIONED, MEMBERS ARE LOCATED EITHER ON COLUMN LINES OR EQUALLY SPACED BETWEEN MEMBERS ON COLUMN LINES OR BETWEEN MEMBER OTHERWISE LOCATED.
- ALL WORK AND MATERIALS SHALL CONFORM TO THE MINIMUM STANDARDS OF THE 2010 EDITION OF THE CALIFORNIA BUILDING CODE AND ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, INCLUDING THE STATE OF CALIFORNIA DIVISION OF INDUSTRIAL SAFETY, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
- APPROVAL BY THE FIELD INSPECTOR DOES NOT MEAN COMPLIANCE WITH THE PLANS AND SPECIFICATIONS. ANY DESIGN WHICH IS UNCLEAR OR AMBIGUOUS MUST BE REFERRED TO THE STRUCTURAL ENGINEER FOR INTERPRETATION OR CLARIFICATION.
- THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE INDICATED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE, WORKMEN, AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR CONSTRUCTION EQUIPMENT, SHORING FOR THE BUILDING, FORMS AND SCAFFOLDING.
- ALL SHOP DRAWINGS SHALL BE CHECKED AND APPROVED BY THE CONTRACTOR BEFORE SUBMITTAL TO THE STRUCTURAL ENGINEER.

EXISTING CONDITIONS VERIFICATION

- THE CONTRACTOR SHALL OBTAIN AND REVIEW A SET OF THE ORIGINAL AS-BUILT RECORD DRAWINGS FROM THE UNIVERSITY.
- THE CONTRACTOR SHALL VERIFY THAT THE EXISTING AS-BUILT CONDITIONS AND STRUCTURAL MEMBERS AND ELEMENTS ARE MATCHING THE RECORD DRAWINGS. NOTIFY THE UNIVERSITY OF ANY DISCREPANCIES FOUND.



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CALIFORNIA STATE
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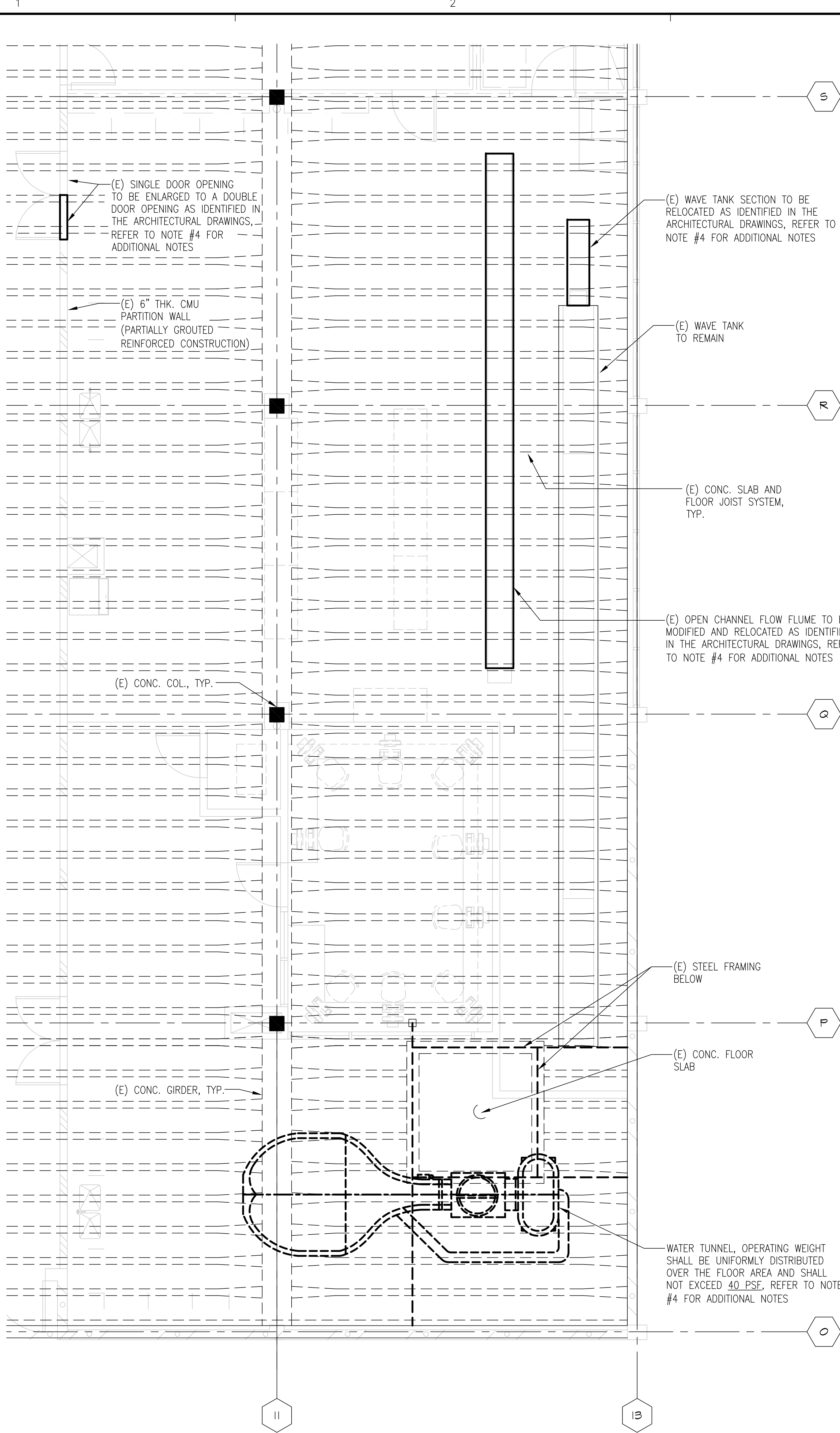
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STRUCTURAL
NOTES AND
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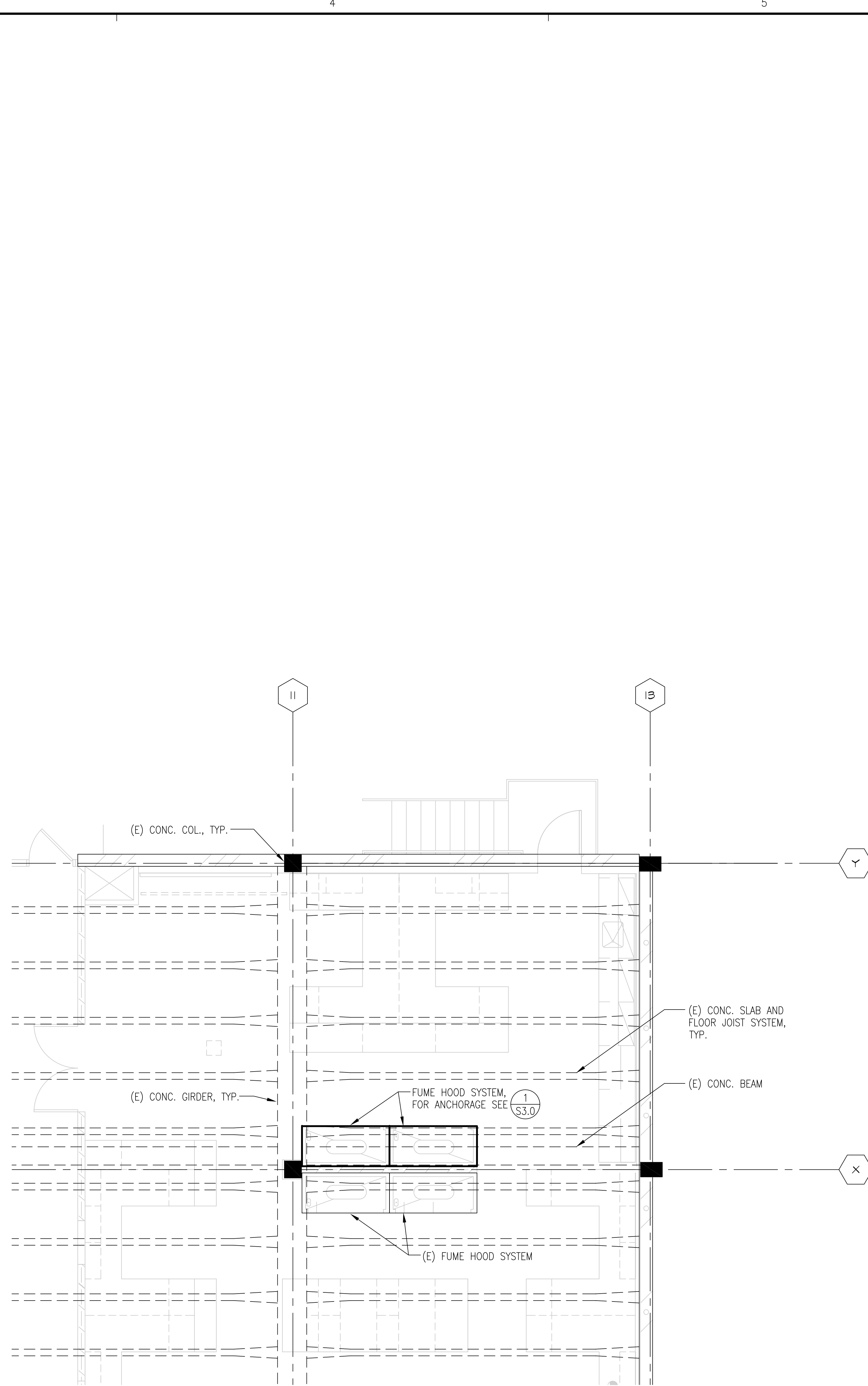
- NOTES:
- REFERENCE SHEET S1.0 FOR STRUCTURAL NOTES AND INFORMATION.
 - CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL AND OTHER PLANS FOR DETAILED DIMENSIONS AND OTHER INFORMATION NOT SHOWN ON THIS PLAN.
 - CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS PRIOR TO STARTING WORK AND FABRICATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES IN THE DRAWINGS OR SITE CONDITIONS SO PROPER CLARIFICATIONS CAN BE MADE BEFORE WORK IS STARTED.
 - THIS IS A CONTRACTOR DESIGN SUBMITTAL ELEMENT/ITEM. REFER TO SHEET S1.0 "CONTRACTOR DESIGN SUBMITTALS" FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

ROOM C-259 LIVE LOAD SHALL BE LIMITED TO 40 PSF MAXIMUM (CLASSROOM). OWNER SHALL ENFORCE.



SECOND FLOOR FRAMING PLAN :: C-259 FLUIDS LAB

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



- NOTES:
- REFERENCE SHEET S1.0 FOR STRUCTURAL NOTES AND INFORMATION.
 - CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL AND OTHER PLANS FOR DETAILED DIMENSIONS AND OTHER INFORMATION NOT SHOWN ON THIS PLAN.
 - CONTRACTOR TO VERIFY ALL DIMENSIONS, ELEVATIONS, AND CONDITIONS PRIOR TO STARTING WORK AND FABRICATION. NOTIFY ARCHITECT OF ANY DISCREPANCIES IN THE DRAWINGS OR SITE CONDITIONS SO PROPER CLARIFICATIONS CAN BE MADE BEFORE WORK IS STARTED.

ROOM C-161 LIVE LOAD SHALL BE LIMITED TO 40 PSF MAXIMUM (CLASSROOM). OWNER SHALL ENFORCE.



FIRST FLOOR FRAMING PLAN :: C-161 ENVIRONMENTAL LAB

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

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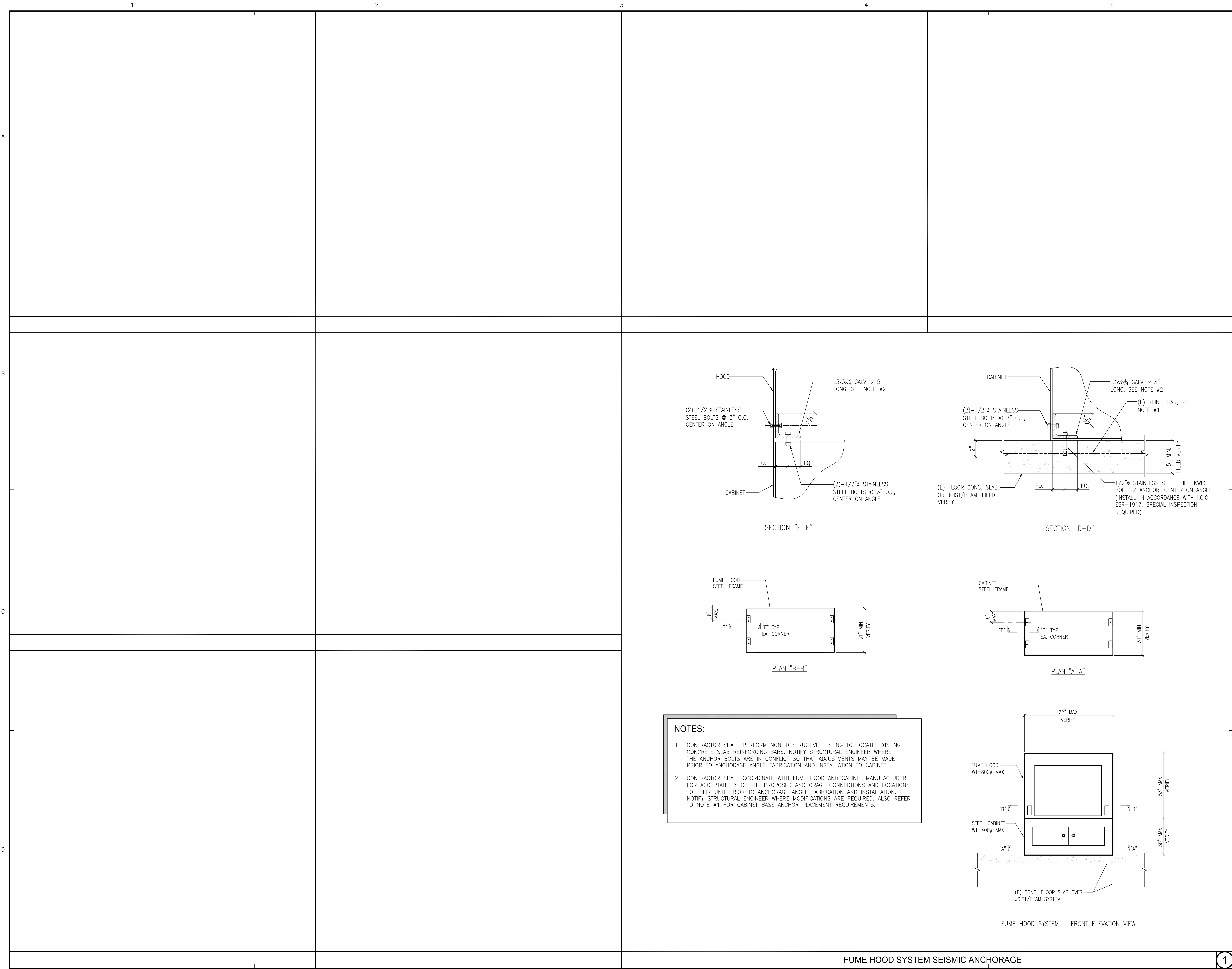
FLOOR FRAMING
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**MECHANICAL
AREA OF WORK
KEY MAPS**

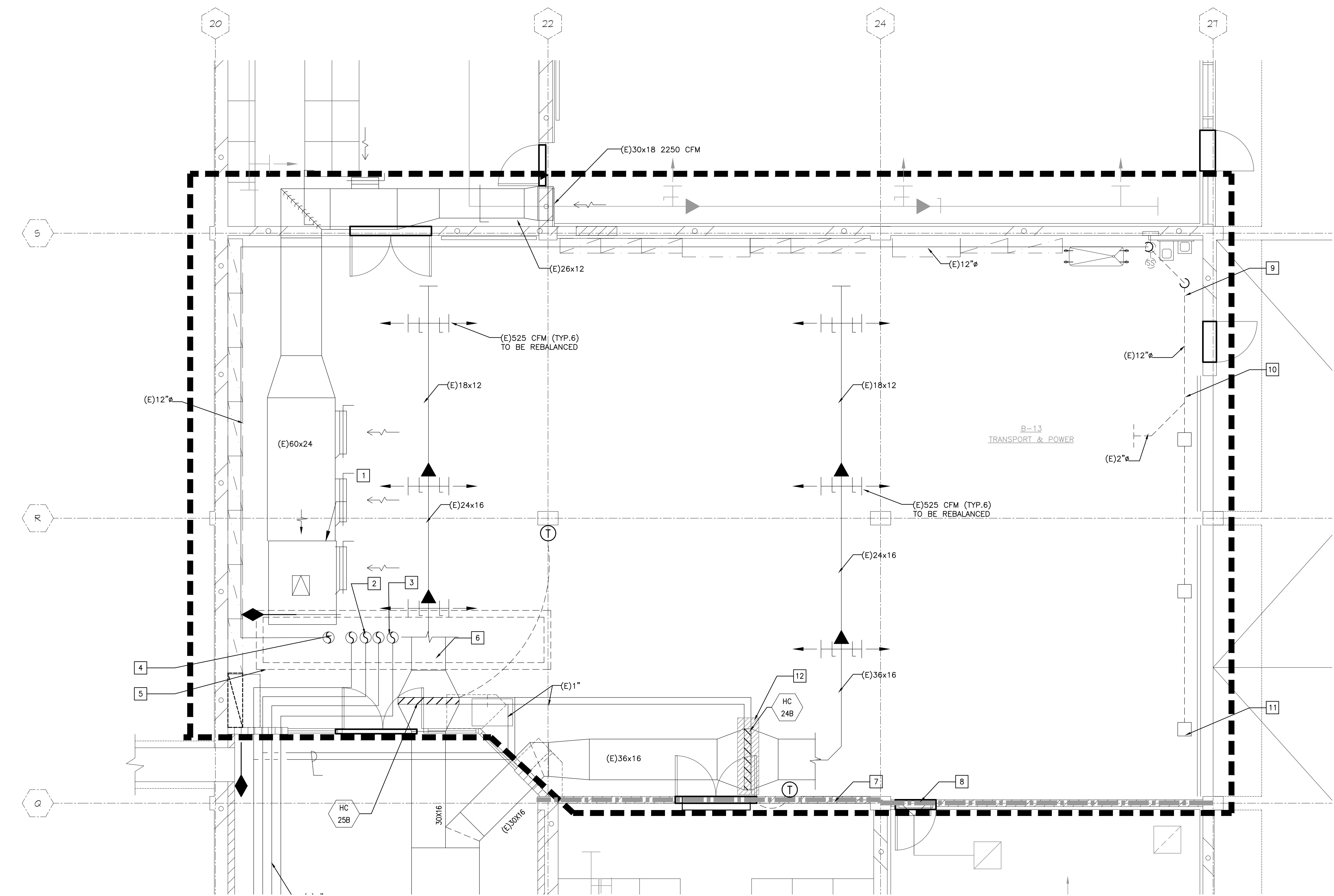
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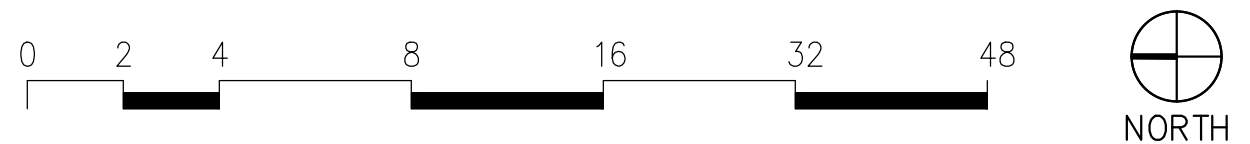
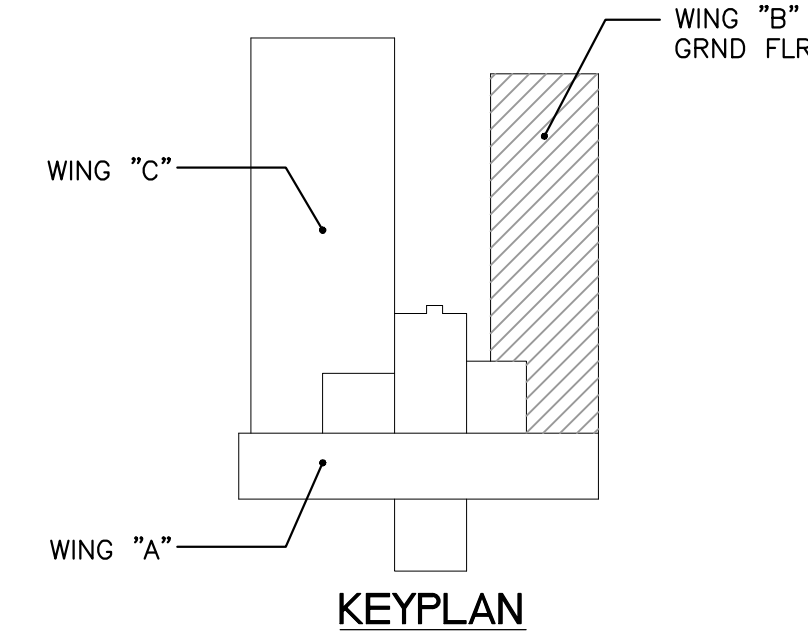
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- NOTES**
- 1 (E)60x24x4\"/>
 - 2 (E)4\"/>
 - 3 (E)4\"/>
 - 4 (E)12\"/>
 - 5 (E)DUCT CHASE ABOVE
 - 6 (E)36x16 SA DUCT BELOW ENCLOSURE TI REMAIN
 - 7 (E)60x20 WALL OPNG W GRILLE TO REMAIN
 - 8 (E)30x16 WALL OPNG W/SFD TO REMAIN
 - 9 (E)DRYWELL TO REMAIN
 - 10 (E)UNDERGROUND EXH. SYSTEM TO REMAIN
 - 11 (E)TEMPERATURE FLEX HOSE INSERT (600 CFM) TO REMAIN
 - 12 (E)HC24B TO BE REMOVED AND REPLACED. CUT AND CAP HW PIPING IN PREPARATION TO RECEIVE NEW COIL



ROOM B13 MECHANICAL DEMOLITION PLAN

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



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**ROOM B13
MECHANICAL
DEMOLITION
PLAN**

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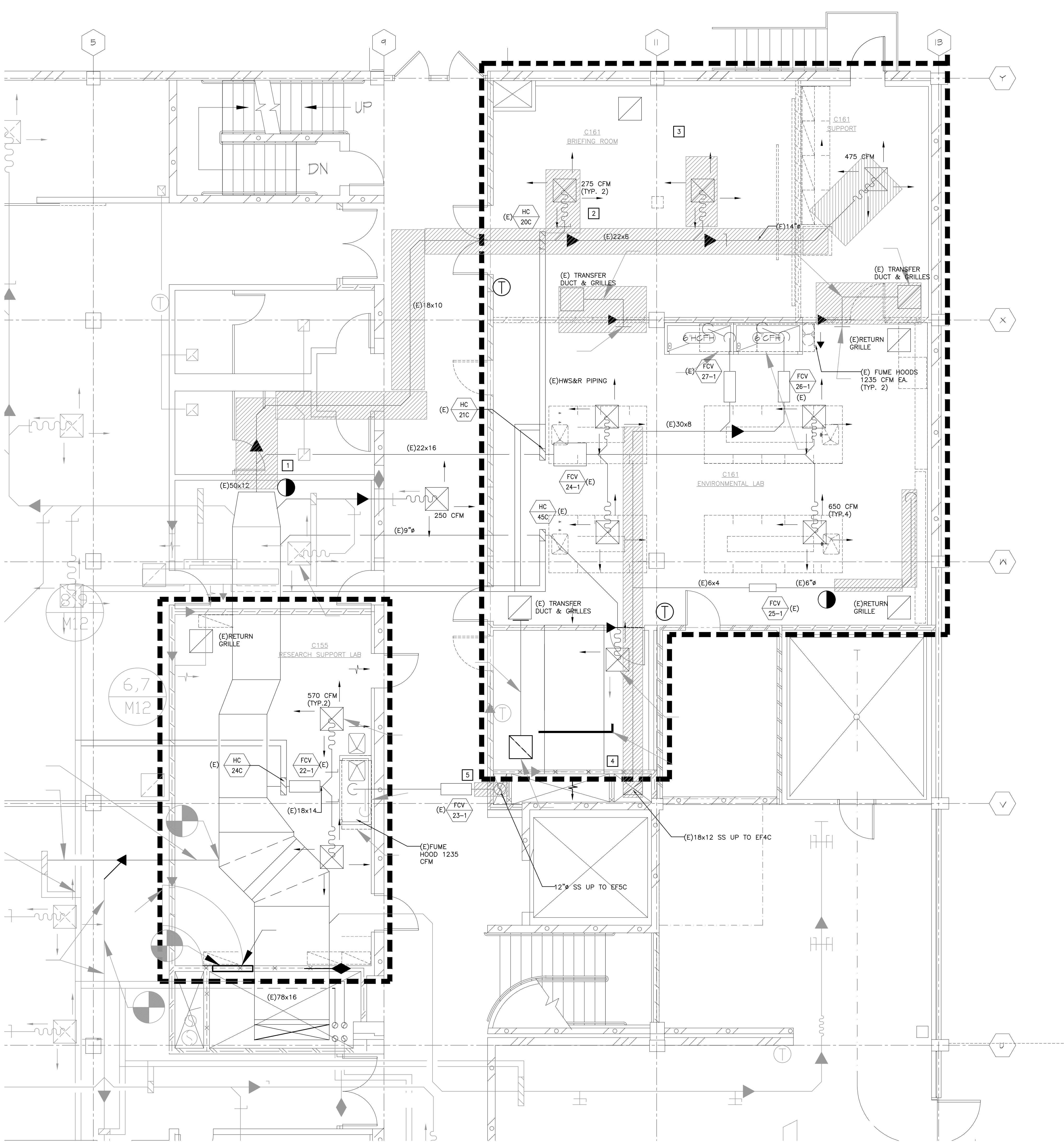
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NOTES

- DEMOLISH MAIN DUCT AND EXISTING FIRE SMOKE DAMPER. CAP UNTIL READY TO PREPARE DUCT FOR NEW CONFIGURATION. IF FIRE SMOKE DAMPER ANNUNCIATES TO CAMPUS FIRE ALARM SYSTEM, COORDINATE DISCONNECTION WITH THE UNIVERSITY.
- DEMOLISH BRANCH DUCTWORK, DIFFUSERS, TRANSFER GRILLES, FIRE SMOKE DAMPERS, AND REHEAT COIL AS SHOWN. KEEP EXISTING THERMOSTAT TO REUSE IF IN GOOD CONDITION. IF FIRE SMOKE DAMPERS ANNUNCIATE TO CAMPUS FIRE ALARM SYSTEM, COORDINATE THEIR DISCONNECTION WITH THE UNIVERSITY.
- WORK ABOVE EXISTING CEILING WILL BE REQUIRED. IF EXISTING CEILING IS TO REMAIN, CONTRACTOR SHALL COORDINATE WITH UNIVERSITY TO REMOVE CEILING TILES AS REQUIRED TO PERFORM DEMOLITION WORK.
- DEMOLISH EXISTING EXHAUST DUCT THROUGH SPACE, UP IN SHAFT AND UP TO ROOF WHERE IT CONNECTS TO EXHAUST FAN EF4C. DEMOLISH THE EXISTING MOTOR FROM FAN EF4C AND CAP ELECTRICAL CONNECTIONS UNTIL READY TO INSTALL AND WIRE NEW MOTOR.
- DEMOLISH EXISTING HORIZONTAL EXHAUST DUCT, VERTICAL EXHAUST DUCT IN SHAFT, AND DUCTWORK OUT ON ROOF UP TO CONNECTION TO EXHAUST FAN EF5C. DEMOLISH THE EXISTING FAN MOTOR AT EF5C AND CAP ELECTRICAL CONNECTIONS UNTIL READY TO INSTALL AND WIRE NEW MOTOR.

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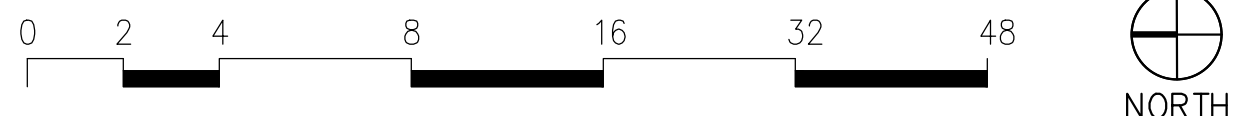
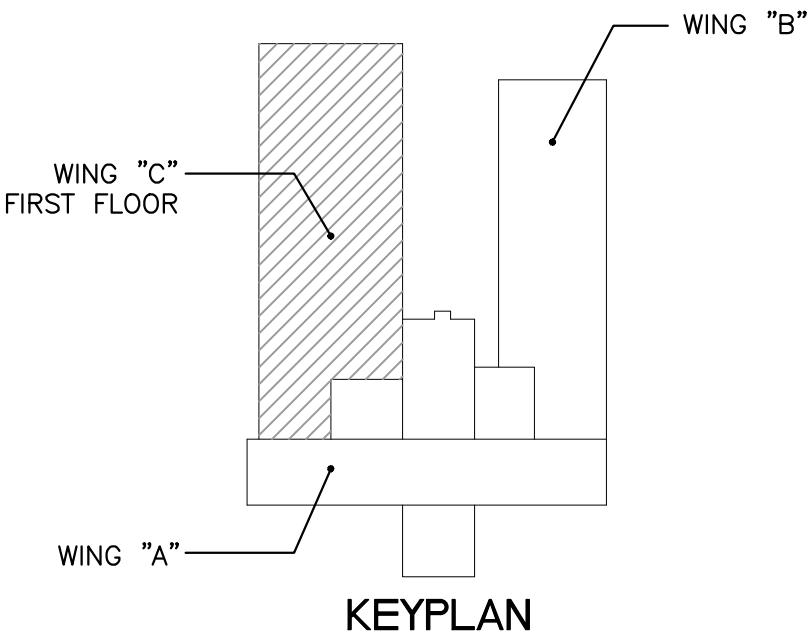
**RMS C155 & 161
MECHANICAL
DEMOLITION
PLAN**

Sheet Number

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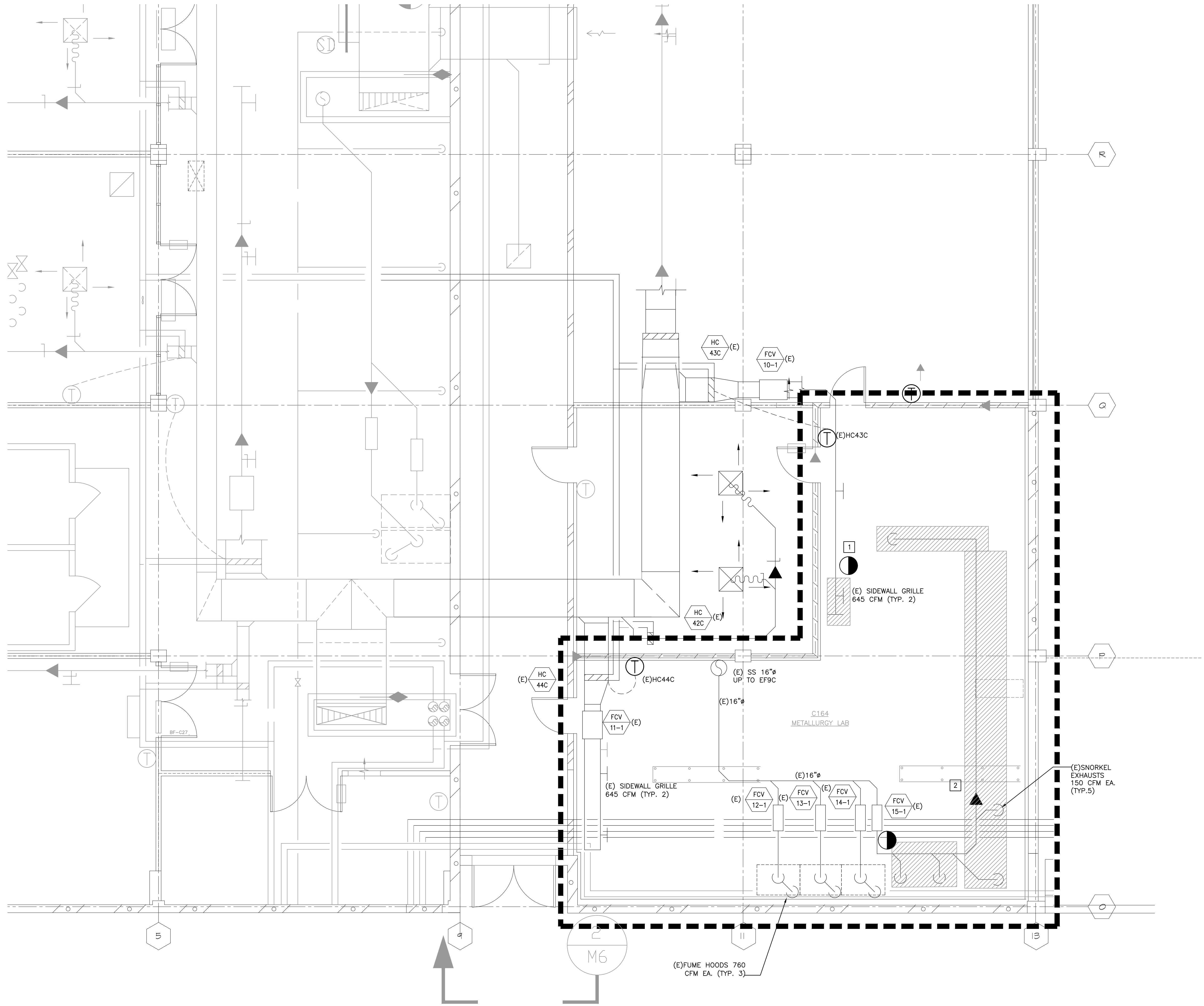
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ROOMS C155 AND C161 MECHANICAL DEMOLITION PLAN

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



NOTES

- 1 DEMOLISH SECTION OF (E) SUPPLY AND PREPARE TO RECONFIGURE TO ACCOMMODATE NEW SPACE LAYOUT.
- 2 DEMOLISH SNORKEL EXHAUST DUCTWORK AND KEEP EXISTING SNORKELS. PREPARE FOR LAYOUT OF NEW SNORKEL EXHAUST DUCTWORK AND RELOCATION OF EXISTING SNORKELS.

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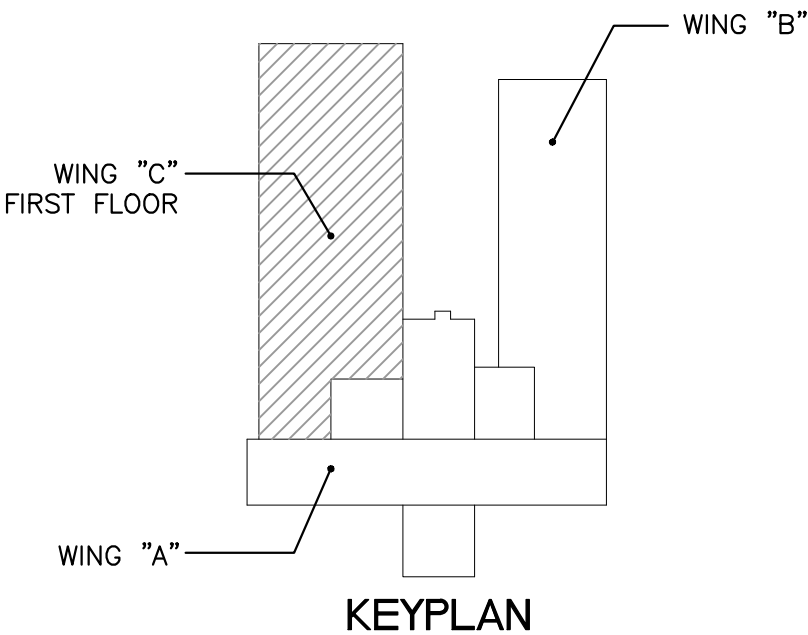
**ROOM C164
MECHANICAL
DEMOLITION
PLAN**

Sheet Number

M1.2

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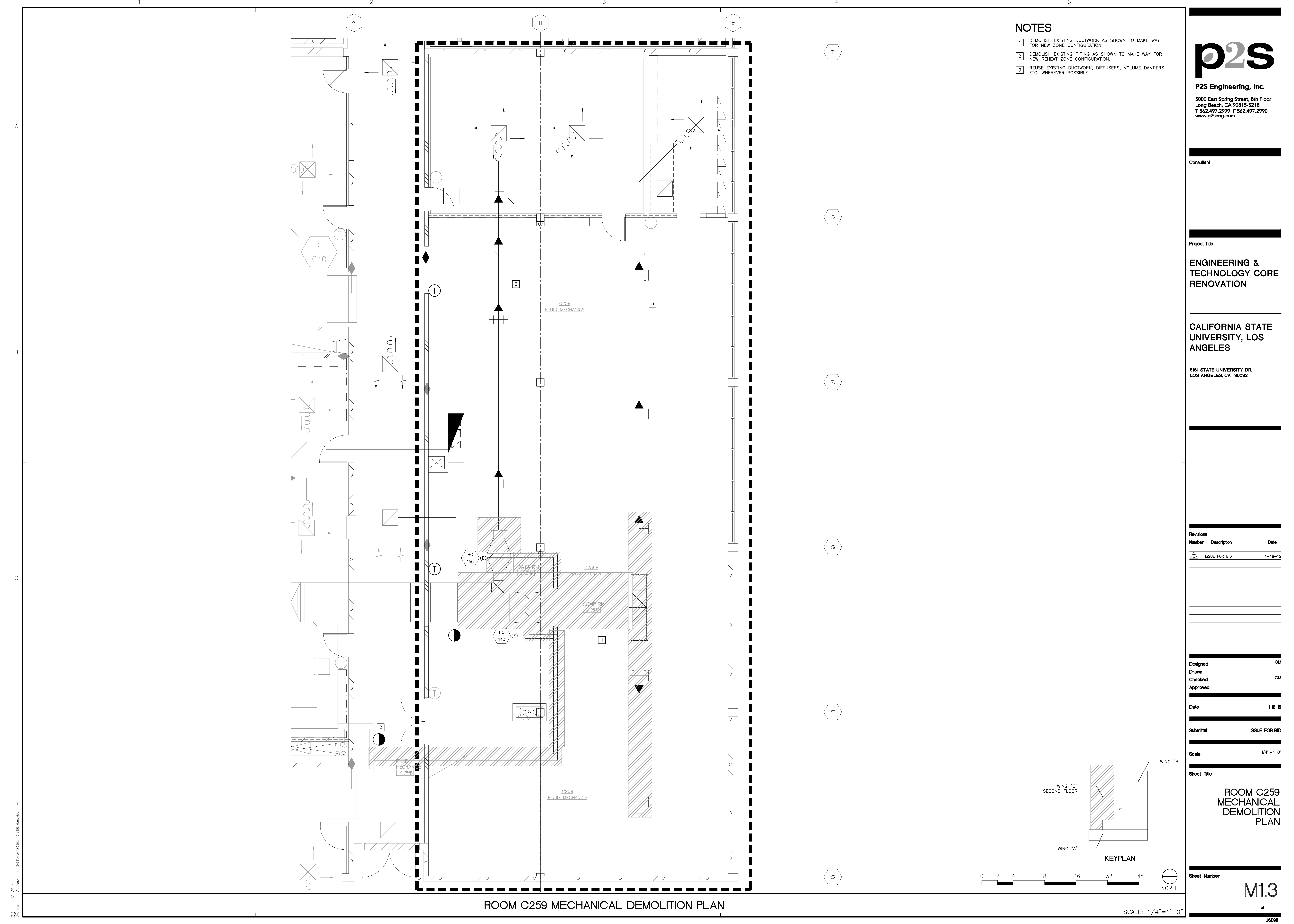


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SCALE: 1/4"=1'-0"

ROOM C164 MECHANICAL DEMOLITION PLAN



NOTES

- 1 DEMOLISH EXISTING DUCTWORK AS SHOWN TO MAKE WAY FOR NEW ZONE CONFIGURATION.
- 2 DEMOLISH EXISTING PIPING AS SHOWN TO MAKE WAY FOR NEW REHEAT ZONE CONFIGURATION.
- 3 REUSE EXISTING DUCTWORK, DIFFUSERS, VOLUME DAMPERS, ETC. WHEREVER POSSIBLE.

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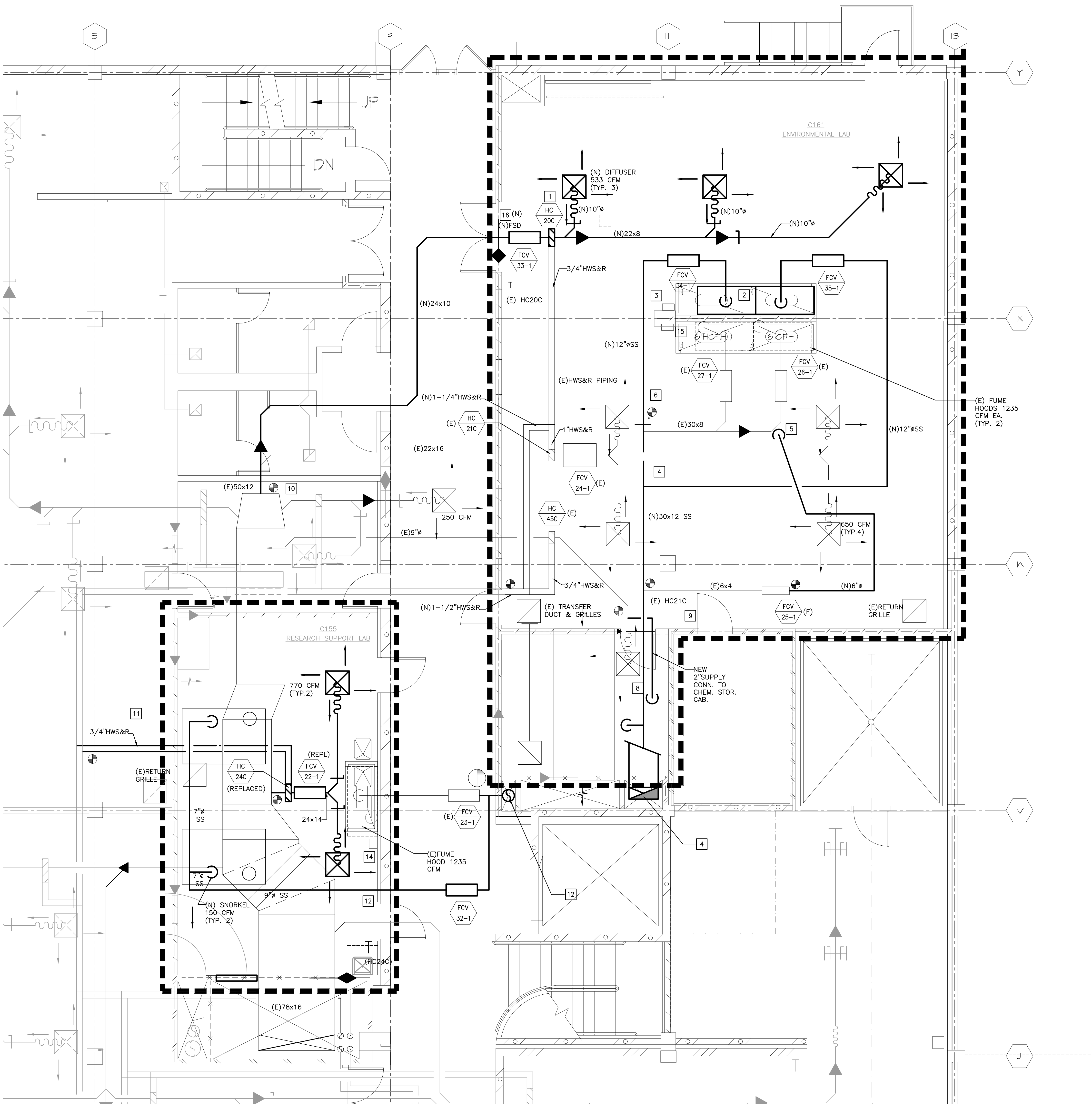
**ROOM C259
MECHANICAL
DEMOLITION
PLAN**

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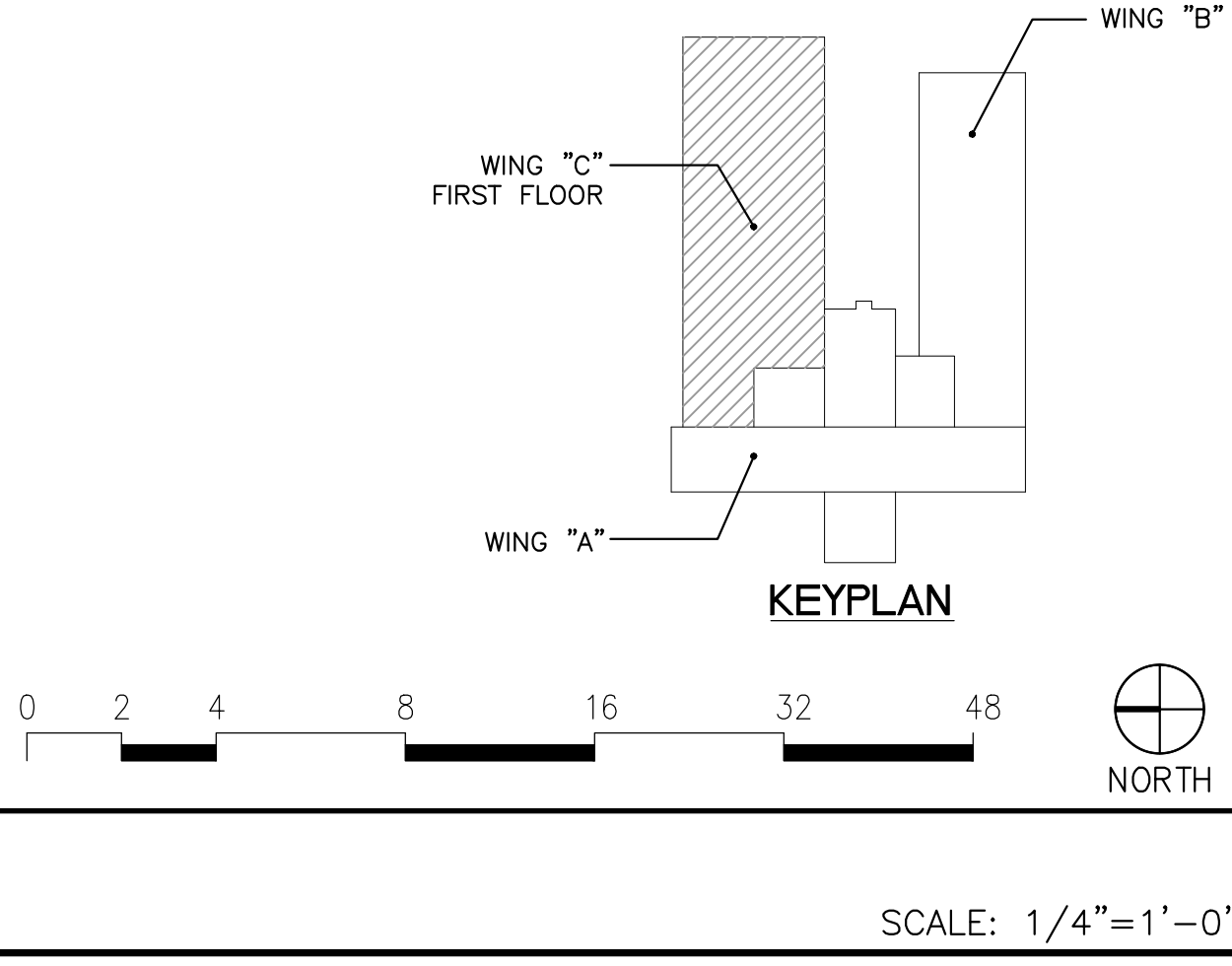
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NOTES

- 1 PROVIDE NEW TRUNK DUCT, NEW FIRE SMOKE DAMPER, NEW VENTURI VALVE, NEW REHEAT COIL, AND NEW BRANCH DUCTS AND DIFFUSERS FOR MAKEUP AIR TO THE NEW FUME HOODS. REUSE EXISTING THERMOSTAT TO HC20C IF IN GOOD WORKING CONDITION, OTHERWISE REPLACE. PROVIDE POWER TO NEW FIRE SMOKE DAMPER AND ANNUNCIATE BACK TO FIRE ALARM SYSTEM.
- 2 NEW 6 FOOT FUME HOODS, 800 CFM, TYP. 2. PROVIDE NEW VENTURI EXHAUST VALVES AND FUME HOOD CONTROLLERS.
- 3 PRELIMINARY LOCATION FOR NEW FUME HOOD CONTROLLER.
- 4 NEW 30x12 STAINLESS STEEL EXHAUST MAIN AND BRANCHES TO SERVE NEW AND EXISTING FUME HOODS. PROVIDE NEW HORIZONTAL AND VERTICAL DUCTWORK UP INTO SHAFT AND OUT ON ROOF TO EXHAUST FAN EF4C. PROVIDE NEW MOTOR FOR EF4C.
- 5 RELOCATE EXISTING SNORKEL DUCT. STUB OUT AT LOCATION SHOWN. PROVIDE A DUCT DROP AND DAMPER FOR FUTURE CONNECTION TO A NEW SNORKEL THAT WILL BE PROVIDED BY END USERS.
- 6 EXISTING EXHAUST DUCTWORK FROM EXISTING FUME HOODS TO REMAIN AND TIE IN TO NEW MAIN EXHAUST DUCTWORK.
- 7 NOT USED
- 8 ADD ALTERNATE: PROVIDE 2" EXHAUST AND SUPPLY DUCTS TO CHEMICAL STORAGE CABINET. COORDINATE EXACT LOCATION TO CONNECT TO CABINET IN FIELD.
- 9 REUSE EXISTING THERMOSTAT FOR HC21C IF IN GOOD CONDITION, OTHERWISE REPLACE. CLEAN AND RECALIBRATE THE SENSOR AND DEMONSTRATE THAT THE SIGNAL FROM THE SENSOR PROPERLY OPERATES THE REHEAT COIL VALVE TO MAINTAIN ZONE TEMPERATURE.
- 10 NEW SUPPLY DUCT POINT OF CONNECTION TO EXISTING SUPPLY DUCT TO ACCOMMODATE ADDITIONAL AIR FOR MAKEUP TO NEW FUME HOODS. PROVIDE NEW SHEAVES AT AHU-6 AND SPEED UP AHU-6 TO PROVIDE ADDITIONAL 2,000 CFM FOR SERVICE TO NEW FUME HOODS IN C161 AND NEW SNORKELS IN C155.
- 11 ADD ALTERNATE: PROVIDE NEW BRANCH DUCT, NEW UP-SIZED VENTURI VALVE, UP-SIZED REHEAT COIL, HW PIPING, THERMOSTAT, AND INCREASED SUPPLY DIFFUSERS FOR MAKEUP TO EXISTING HOOD AND NEW SNORKELS IN C155.
- 12 ADD ALTERNATE: PROVIDE NEW SS DUCTWORK, VENTURI EXHAUST VALVE AND 2 SNORKEL DROPS FOR RELOCATED EQUIPMENT IN C155. TIE EXISTING FUME HOOD EXHAUST DUCT INTO NEW DUCTWORK. PROVIDE NEW 14" DUCT IN SHAFT UP TO ROOF AND OUT TO CONNECT TO FAN EF5C. PROVIDE NEW FAN MOTOR AT FAN EF5C. PROVIDE FIRE WRAP AT EXHAUST DUCT UP TO SHAFT.
- 13 REUSE EXISTING THERMOSTAT FOR RHC 24C IF IN GOOD CONDITION, OTHERWISE REPLACE. CLEAN AND RECALIBRATE THE SENSOR AND DEMONSTRATE THAT THE SIGNAL FROM THE SENSOR PROPERLY OPERATES THE REHEAT COIL VALVE TO MAINTAIN ZONE TEMPERATURE.
- 14 EXISTING FUME HOOD CONTROLLER TO REMAIN
- 15 EXISTING FUME HOOD CONTROLLER. COORDINATE LOCATION WITH RELOCATED EYEWASH.
- 16 NEW FSD. PROVIDE POWER AND INTERFACE TO FIRE ALARM SYSTEM.



ROOMS C155 AND C161 MECHANICAL RENOVATION PLAN



P2S Engineering, Inc.
5000 East Spring Street, 8th Floor
Long Beach, CA 90815-5218
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Consultant

Project Title

**ENGINEERING &
TECHNOLOGY CORE
RENOVATION**

**CALIFORNIA STATE
UNIVERSITY, LOS
ANGELES**

5161 STATE UNIVERSITY DR.
LOS ANGELES, CA 90032

Revisions

Number	Description	Date
1	ISSUE FOR BID	1-18-12

Designed

GM

Drawn

GM

Checked

GM

Approved

GM

Date 1-18-12

Submittal ISSUE FOR BID

Scale 1/4" = 1'-0"

Sheet Title

RMS C155 & C161

MECHANICAL

RENOVATION

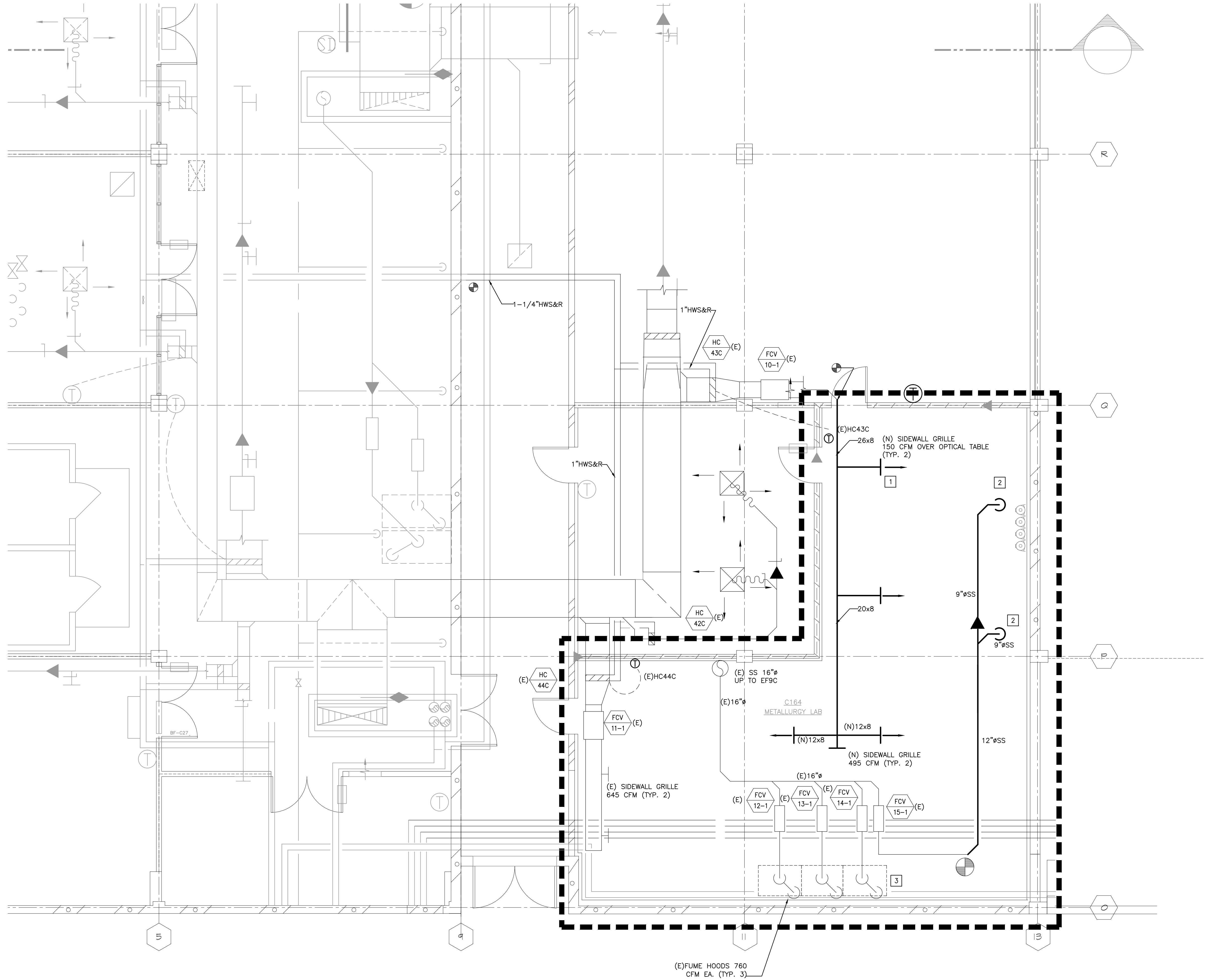
PLAN

Sheet Number

M2.1

of

J6098



NOTES

- 1 RECONFIGURE (E) SUPPLY DUCT, ADD NEW DUCTWORK AND SIDEWALL GRILLES TO SUPPLY A PORTION OF THE AIR OVER THE OPTICAL TABLES.
- 2 PROVIDE NEW SS DUCTWORK AND EXTEND OVER THE OPTICAL TABLES. RELOCATE FOUR EXISTING SNORKELS. COMBINE INTO TWO SNORKELS EACH TO DROP OVER OPTICAL TABLES. EXACT LOCATION AND MOUNTING HEIGHT OF RELOCATED SNORKELS TO BE COORDINATED WITH END USER. PROVIDE PROPER SUPPORT TO EACH SNORKEL. BALANCE SNORKELS TO 300 CFM EACH.
- 3 EXISTING FUME HOODS TO REMAIN IN SERVICE IN CURRENT LOCATION.

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Revisions

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Date 1-18-12

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Sheet Title

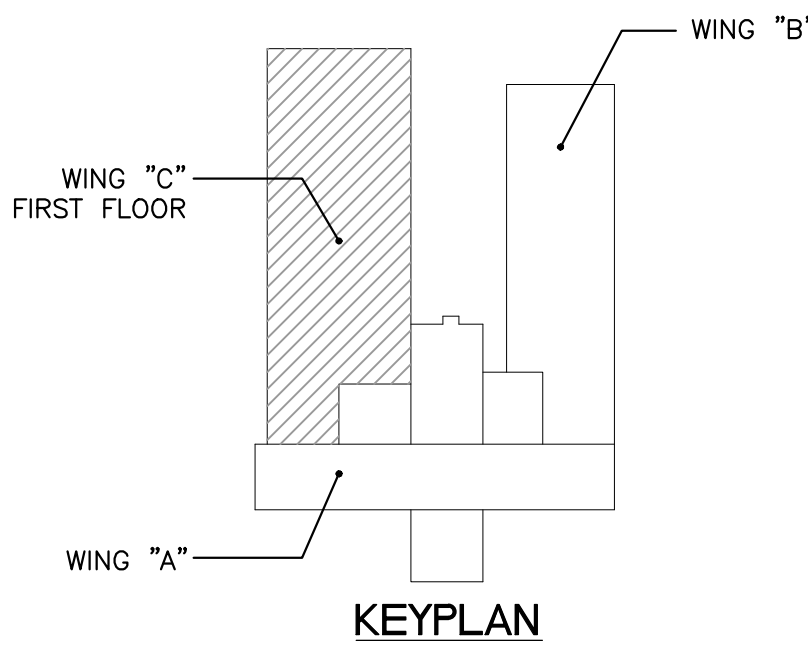
**ROOM C164
MECHANICAL
RENOVATION
PLAN**

Sheet Number

M2.2

of

J6098



0 2 4 8 16 32 48



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

ROOM C164 MECHANICAL RENOVATION PLAN

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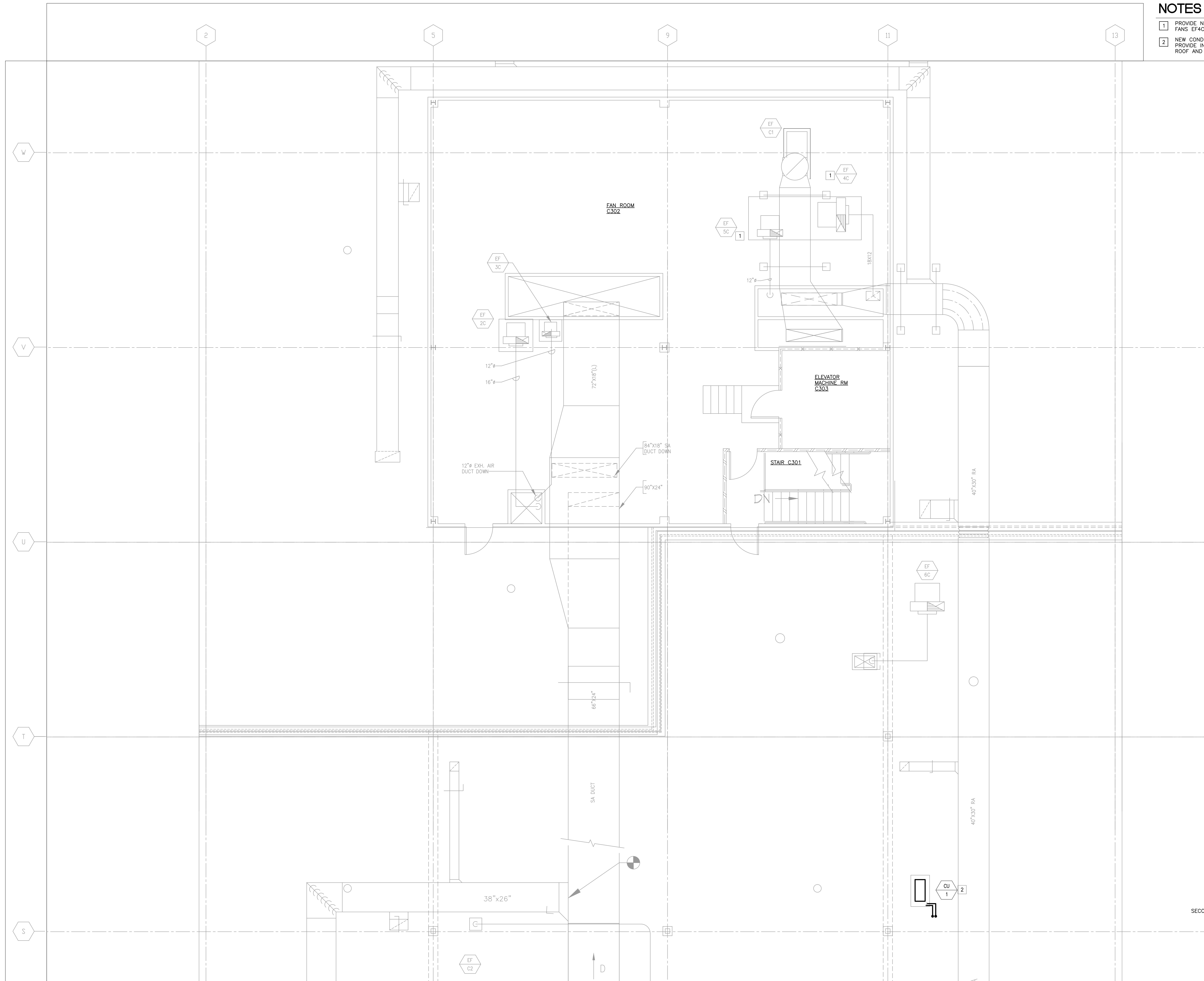
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1/19/2012



NOTES

- 1 PROVIDE NEW FAN MOTOR AND ELECTRICAL SERVICE FOR FANS EF4C AND EF5C AS SCHEDULED.
- 2 NEW CONDENSING UNIT TO SERVE FCU-1 IN ROOM C-259. PROVIDE INSULATED REFRIGERANT LINES DOWN THROUGH ROOF AND RUN TO FAN COIL UNIT IN ROOM C259.

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Approved

GM

Date

1-18-12

Submittal

ISSUE FOR BID

Scale

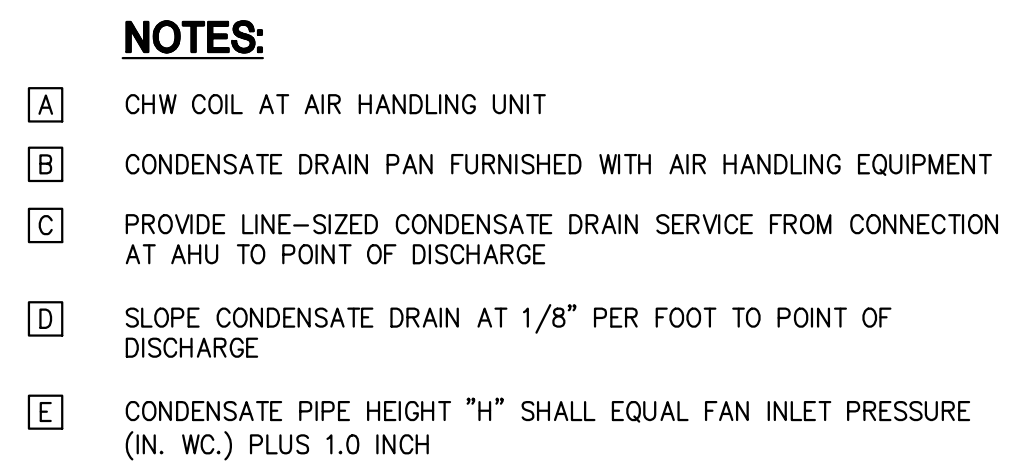
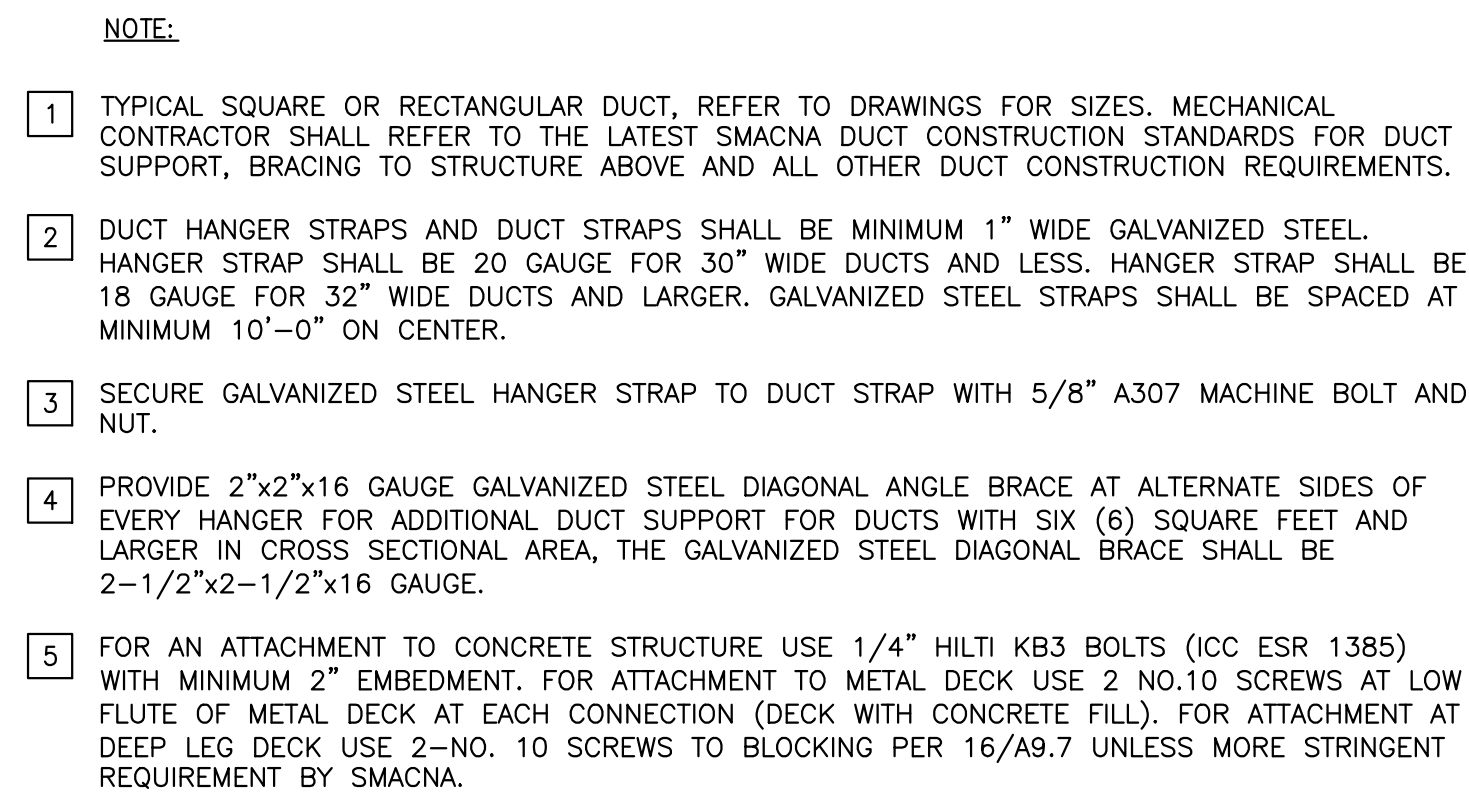
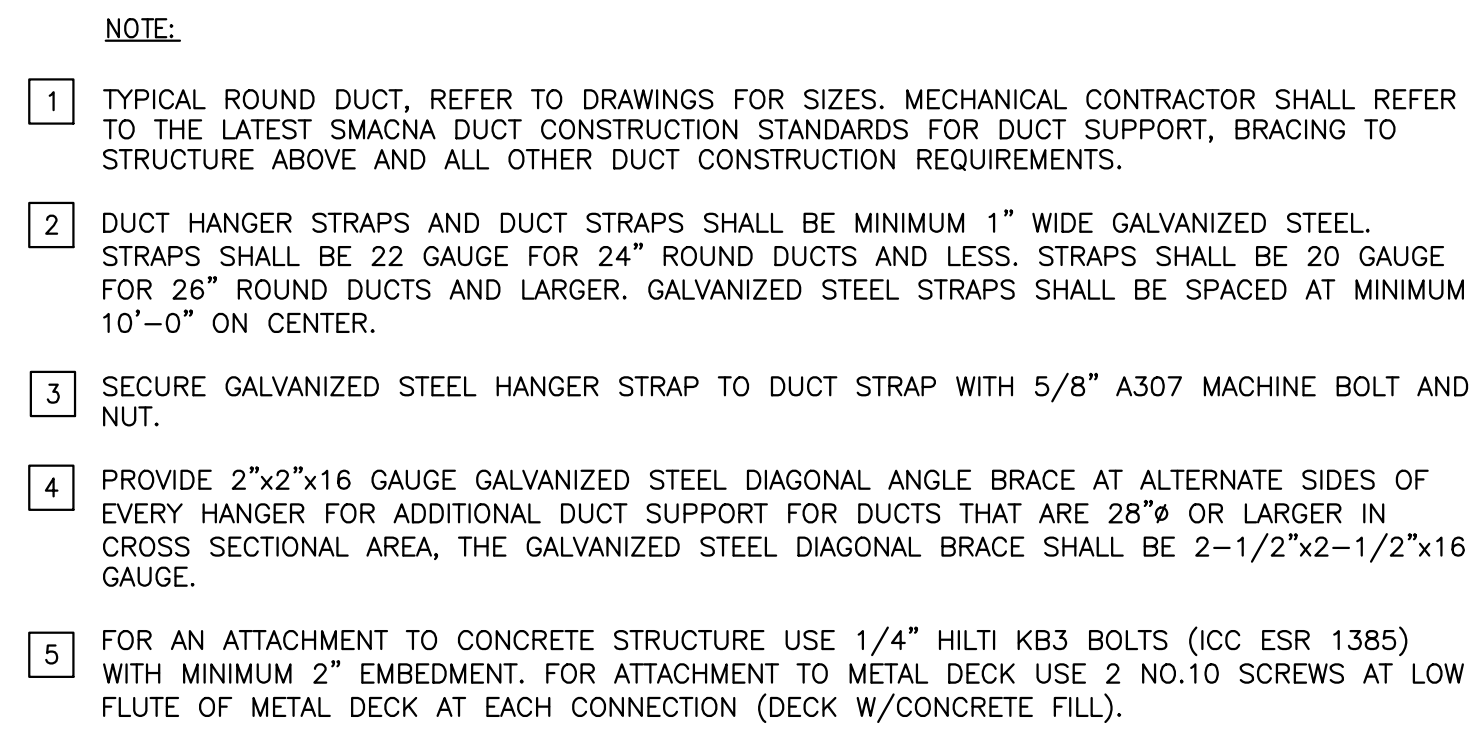
1/4" = 1'-0"

Sheet Title

**PARTIAL ROOF
WING C
MECHANICAL
PLAN**

Sheet Number

M2.4
of
J6098

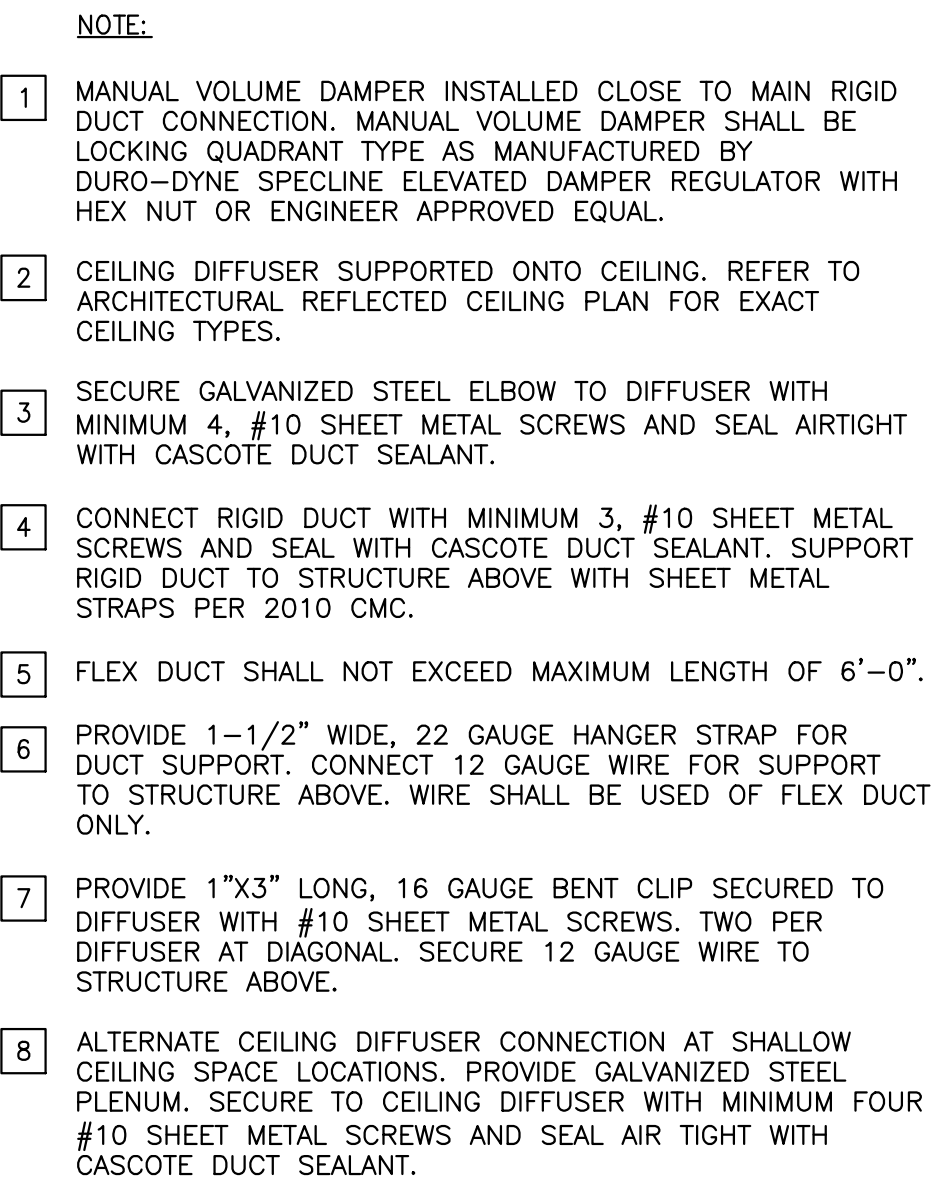
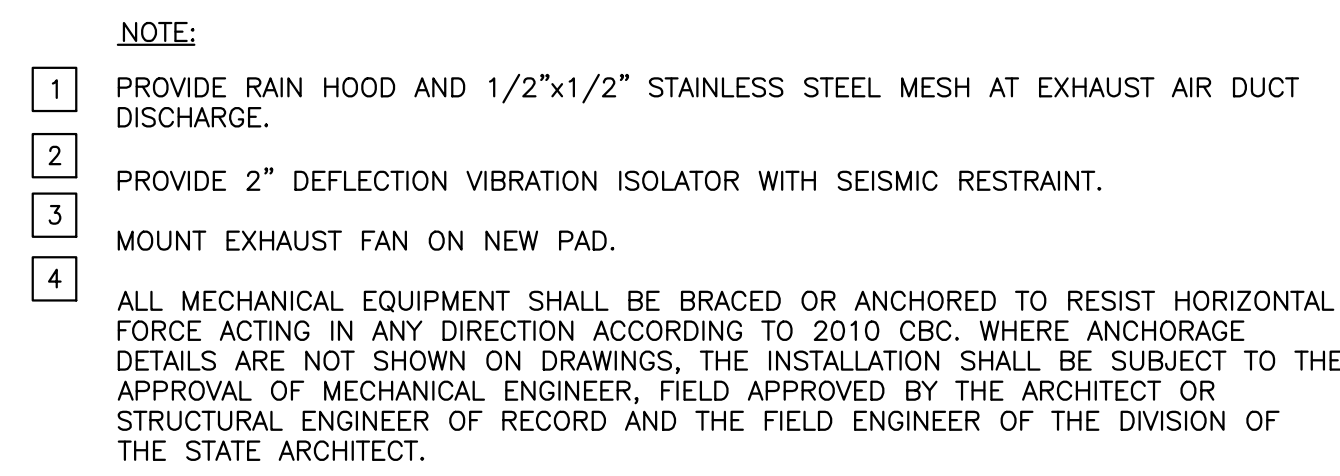


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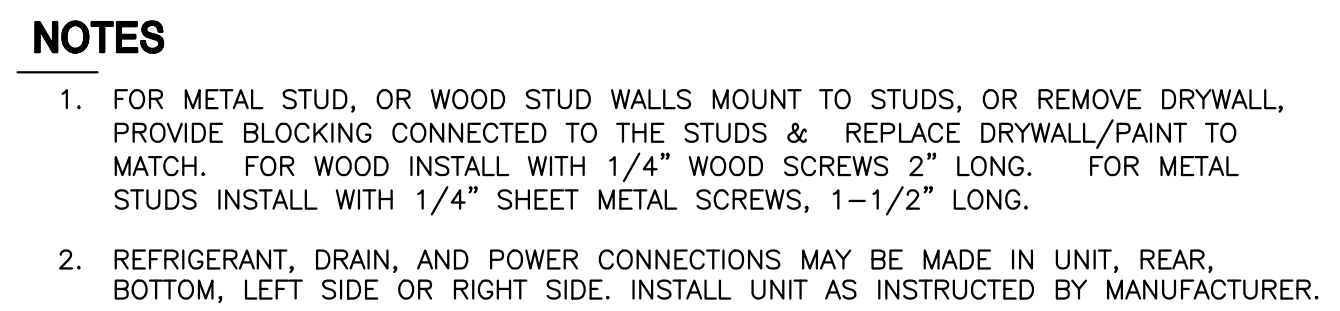
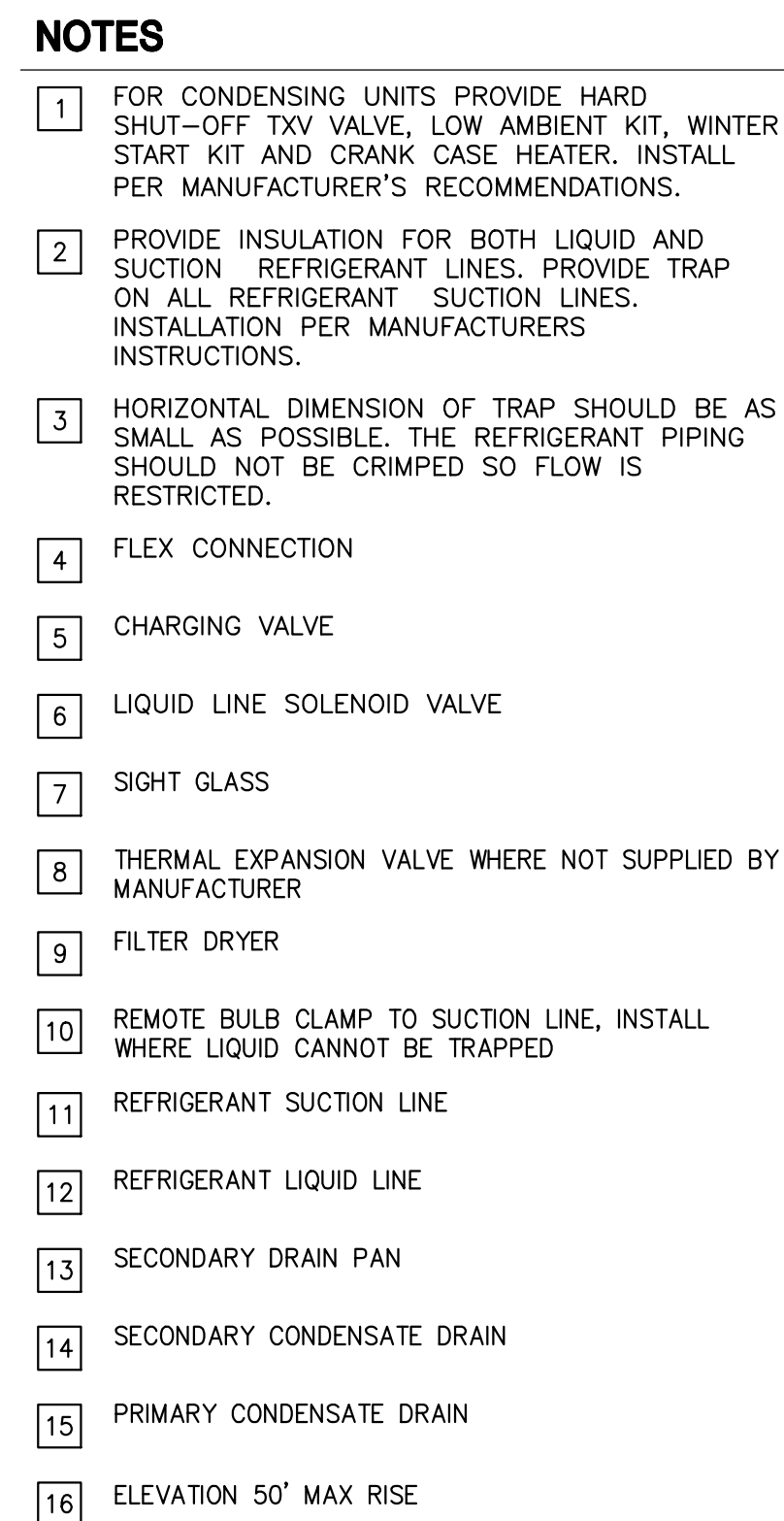


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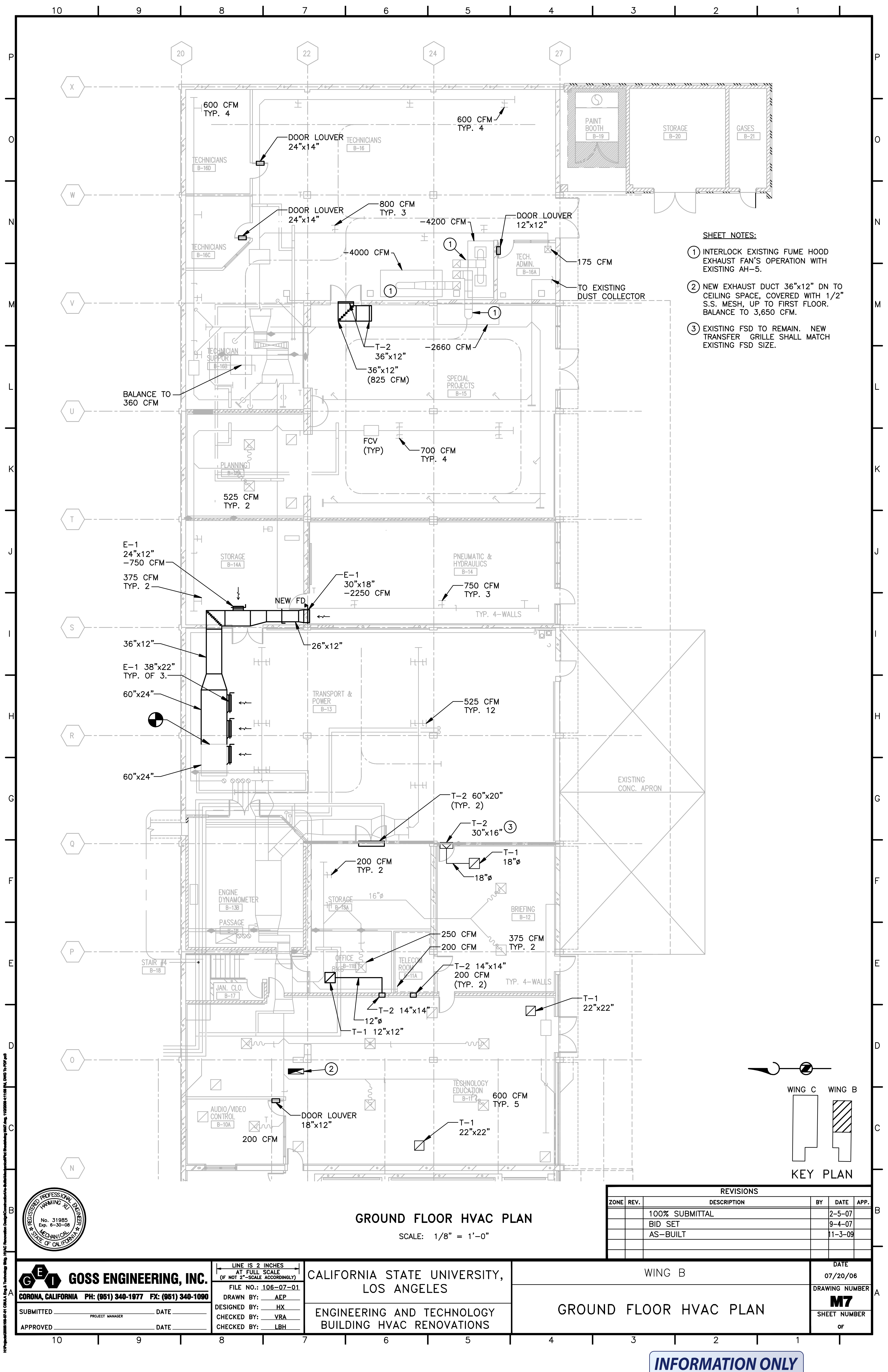
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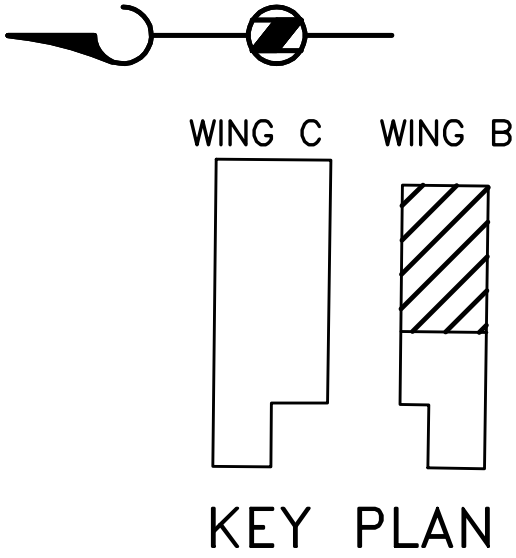


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- SHEET NOTES:**
- ① INTERLOCK EXISTING FUME HOOD EXHAUST FAN'S OPERATION WITH EXISTING AH-5.
 - ② NEW EXHAUST DUCT 36"x12" DN TO CEILING SPACE, COVERED WITH 1/2" S.S. MESH, UP TO FIRST FLOOR. BALANCE TO 3,650 CFM.
 - ③ EXISTING FSD TO REMAIN. NEW TRANSFER GRILLE SHALL MATCH EXISTING FSD SIZE.



GROUND FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
		100% SUBMITTAL		2-5-07
		BID SET		9-4-07
		AS-BUILT		11-3-09

GOSS ENGINEERING, INC.
CORONA, CALIFORNIA PH: (951) 340-1977 FX: (951) 340-1090

SUBMITTED _____ DATE _____

APPROVED _____ DATE _____

PROJECT MANAGER

LINE IS 2 INCHES
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(IF NOT 2"=SCALE ACCORDINGLY)

FILE NO.: 106-07-01

DRAWN BY: AEP

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CHECKED BY: LBH

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BUILDING HVAC RENOVATIONS

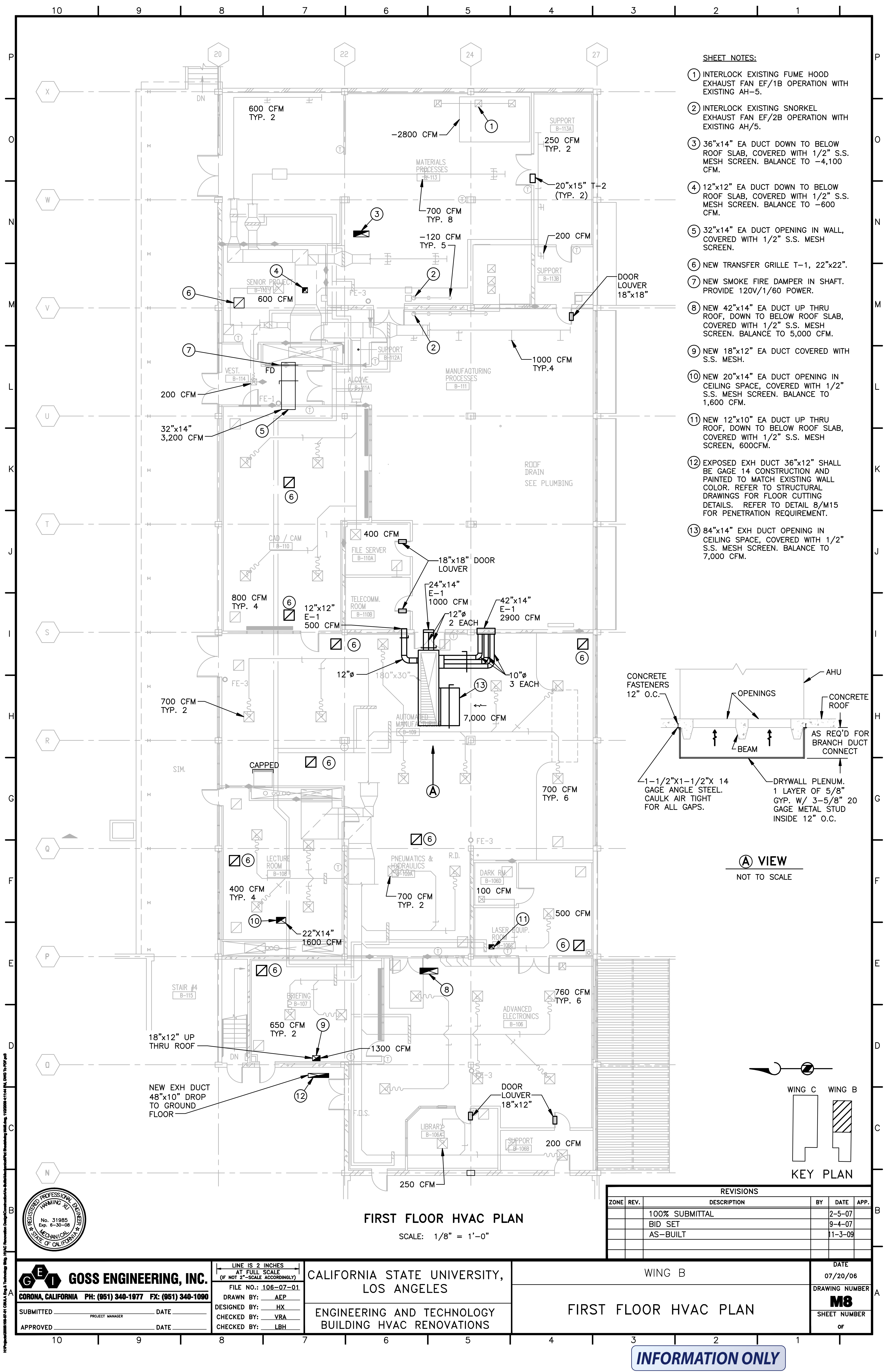
WING B

GROUND FLOOR HVAC PLAN

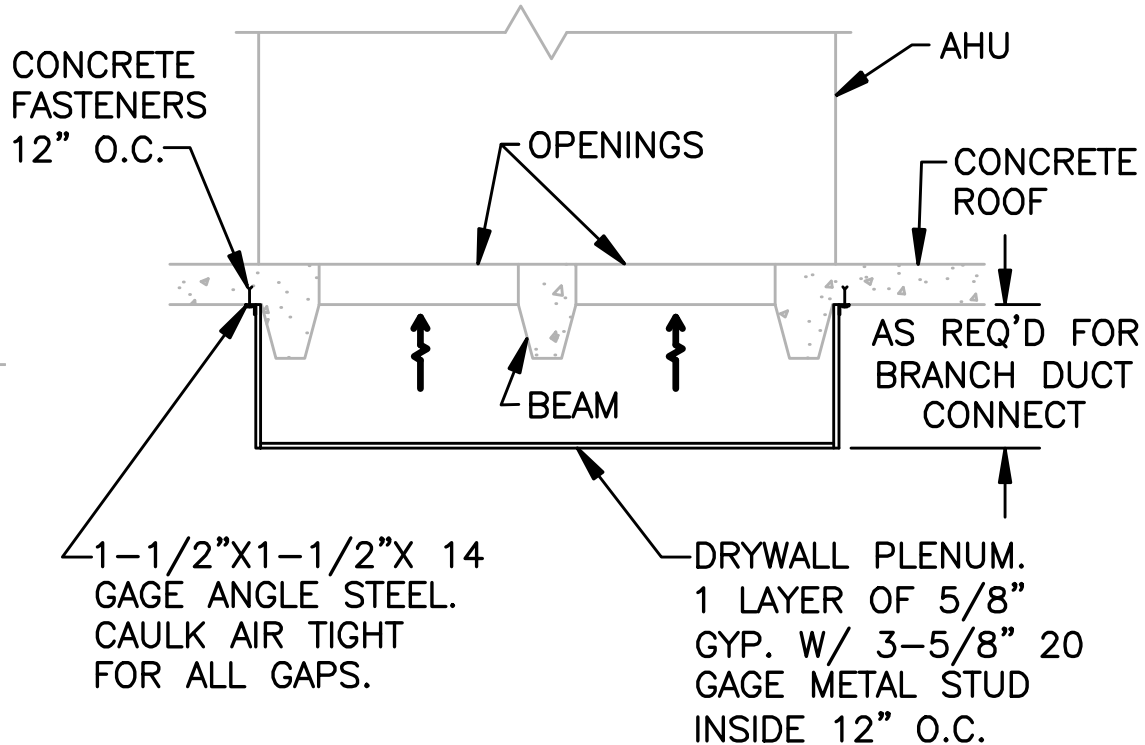
DATE
07/20/06

DRAWING NUMBER
M7

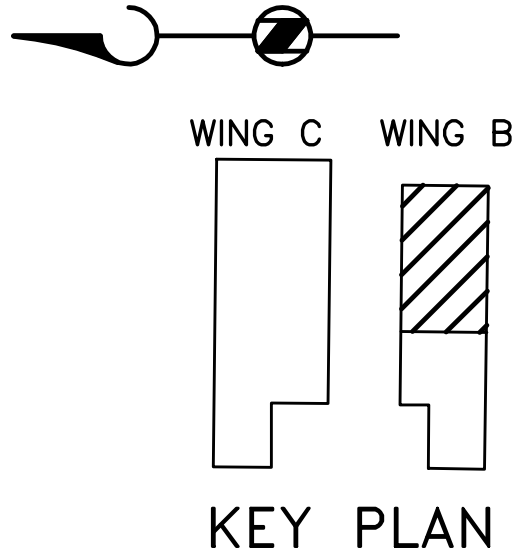
SHEET NUMBER
OF



- SHEET NOTES:**
- 1 INTERLOCK EXISTING FUME HOOD EXHAUST FAN EF/1B OPERATION WITH EXISTING AH-5.
 - 2 INTERLOCK EXISTING SNORKEL EXHAUST FAN EF/2B OPERATION WITH EXISTING AH/5.
 - 3 36"x14" EA DUCT DOWN TO BELOW ROOF SLAB, COVERED WITH 1/2" S.S. MESH SCREEN. BALANCE TO -4,100 CFM.
 - 4 12"x12" EA DUCT DOWN TO BELOW ROOF SLAB, COVERED WITH 1/2" S.S. MESH SCREEN. BALANCE TO -600 CFM.
 - 5 32"x14" EA DUCT OPENING IN WALL, COVERED WITH 1/2" S.S. MESH SCREEN.
 - 6 NEW TRANSFER GRILLE T-1, 22"x22".
 - 7 NEW SMOKE FIRE DAMPER IN SHAFT. PROVIDE 120V/1/60 POWER.
 - 8 NEW 42"x14" EA DUCT UP THRU ROOF, DOWN TO BELOW ROOF SLAB, COVERED WITH 1/2" S.S. MESH SCREEN. BALANCE TO 5,000 CFM.
 - 9 NEW 18"x12" EA DUCT COVERED WITH S.S. MESH.
 - 10 NEW 20"x14" EA DUCT OPENING IN CEILING SPACE, COVERED WITH 1/2" S.S. MESH SCREEN. BALANCE TO 1,600 CFM.
 - 11 NEW 12"x10" EA DUCT UP THRU ROOF, DOWN TO BELOW ROOF SLAB, COVERED WITH 1/2" S.S. MESH SCREEN, 600CFM.
 - 12 EXPOSED EXH DUCT 36"x12" SHALL BE GAGE 14 CONSTRUCTION AND PAINTED TO MATCH EXISTING WALL COLOR. REFER TO STRUCTURAL DRAWINGS FOR FLOOR CUTTING DETAILS. REFER TO DETAIL 8/M15 FOR PENETRATION REQUIREMENT.
 - 13 84"x14" EXH DUCT OPENING IN CEILING SPACE, COVERED WITH 1/2" S.S. MESH SCREEN. BALANCE TO 7,000 CFM.



A VIEW
NOT TO SCALE



FIRST FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
		100% SUBMITTAL		2-5-07
		BID SET		9-4-07
		AS-BUILT		11-3-09



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DRAWN BY: AEP
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CHECKED BY: LBH

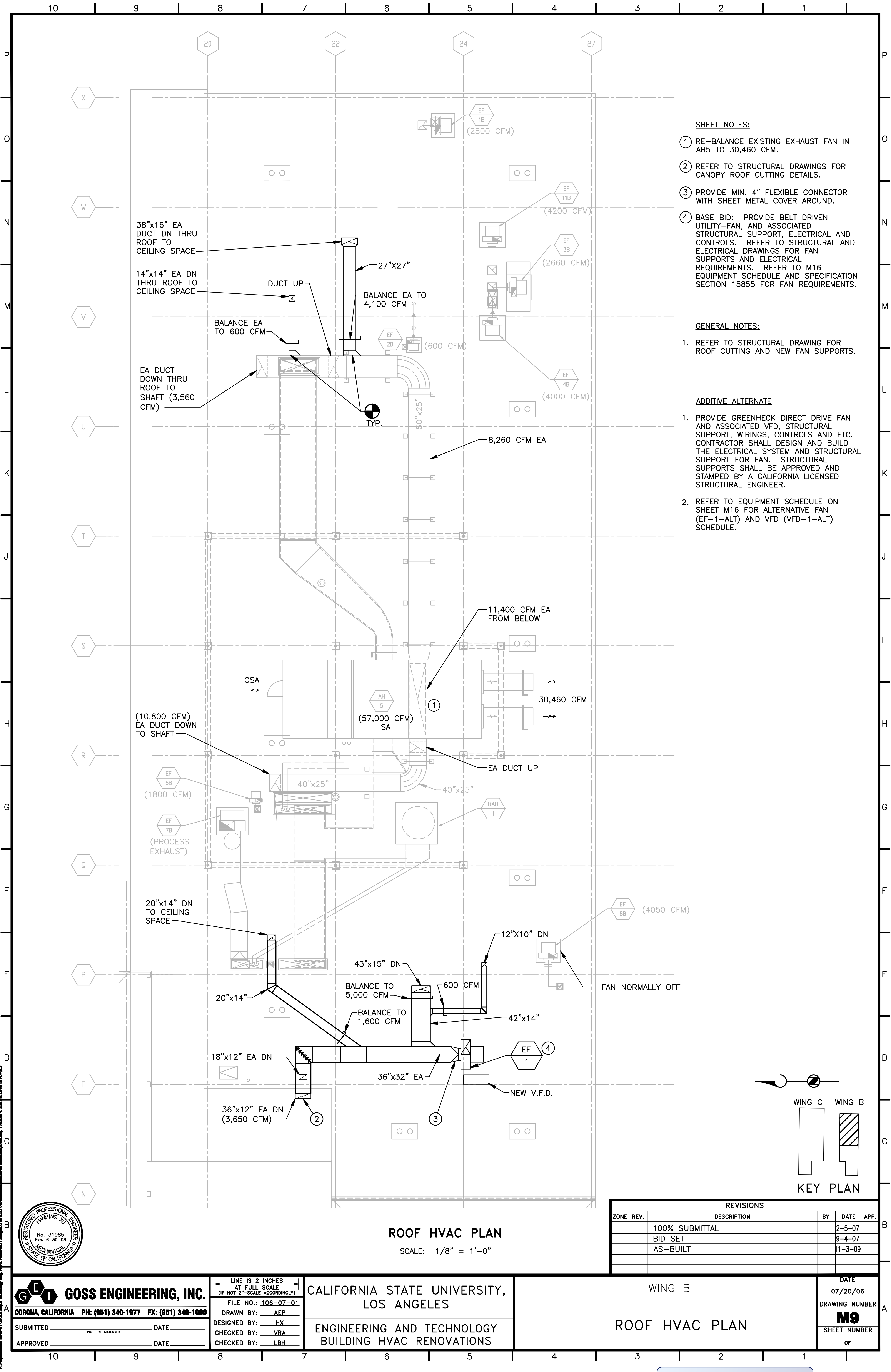
SUBMITTED _____ DATE _____
PROJECT MANAGER

APPROVED _____ DATE _____

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BUILDING HVAC RENOVATIONS

WING B
FIRST FLOOR HVAC PLAN

DATE
07/20/06
DRAWING NUMBER
M8
SHEET NUMBER
OF



SHEET NOTES:

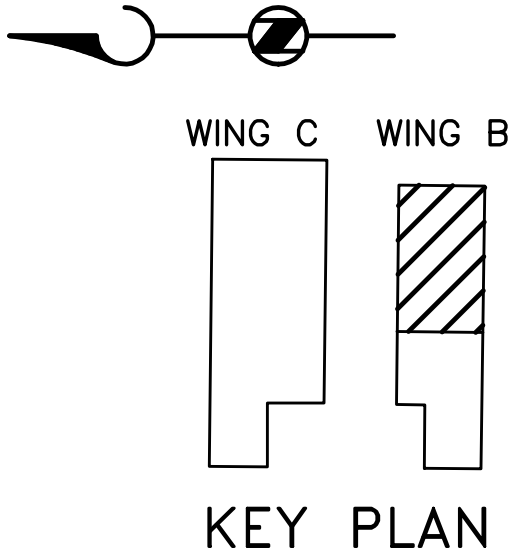
- ① RE-BALANCE EXISTING EXHAUST FAN IN AH5 TO 30,460 CFM.
- ② REFER TO STRUCTURAL DRAWINGS FOR CANOPY ROOF CUTTING DETAILS.
- ③ PROVIDE MIN. 4" FLEXIBLE CONNECTOR WITH SHEET METAL COVER AROUND.
- ④ BASE BID: PROVIDE BELT DRIVEN UTILITY-FAN, AND ASSOCIATED STRUCTURAL SUPPORT, ELECTRICAL AND CONTROLS. REFER TO STRUCTURAL AND ELECTRICAL DRAWINGS FOR FAN SUPPORTS AND ELECTRICAL REQUIREMENTS. REFER TO M16 EQUIPMENT SCHEDULE AND SPECIFICATION SECTION 15855 FOR FAN REQUIREMENTS.

GENERAL NOTES:

1. REFER TO STRUCTURAL DRAWING FOR ROOF CUTTING AND NEW FAN SUPPORTS.

ADDITIVE ALTERNATE

1. PROVIDE GREENHECK DIRECT DRIVE FAN AND ASSOCIATED VFD, STRUCTURAL SUPPORT, WIRINGS, CONTROLS AND ETC. CONTRACTOR SHALL DESIGN AND BUILD THE ELECTRICAL SYSTEM AND STRUCTURAL SUPPORT FOR FAN. STRUCTURAL SUPPORTS SHALL BE APPROVED AND STAMPED BY A CALIFORNIA LICENSED STRUCTURAL ENGINEER.
2. REFER TO EQUIPMENT SCHEDULE ON SHEET M16 FOR ALTERNATIVE FAN (EF-1-ALT) AND VFD (VFD-1-ALT) SCHEDULE.



ROOF HVAC PLAN

SCALE: 1/8" = 1'-0"

REVISIONS					
ZONE	REV.	DESCRIPTION	BY	DATE	APP.
		100% SUBMITTAL		2-5-07	
		BID SET		9-4-07	
		AS-BUILT		11-3-09	



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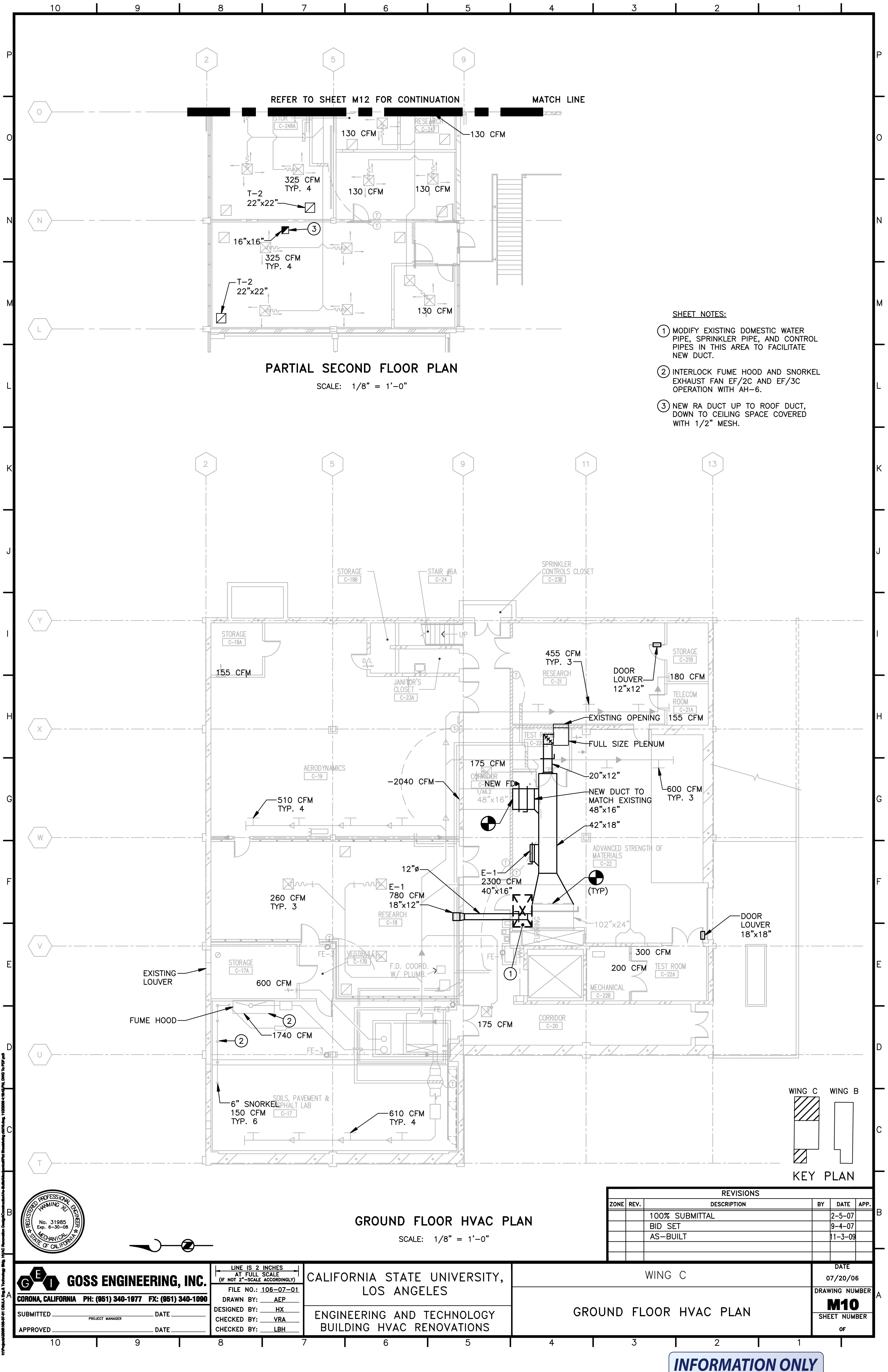
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CHECKED BY: LBH

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WING B
ROOF HVAC PLAN

DATE
07/20/06
DRAWING NUMBER
M9
SHEET NUMBER
OF



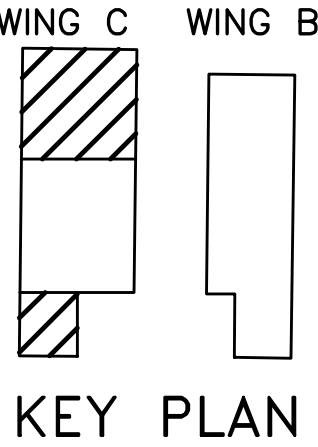
REFER TO SHEET M12 FOR CONTINUATION MATCH LINE

PARTIAL SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

SHEET NOTES:

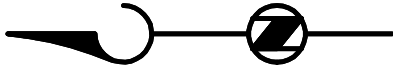
- 1 MODIFY EXISTING DOMESTIC WATER PIPE, SPRINKLER PIPE, AND CONTROL PIPES IN THIS AREA TO FACILITATE NEW DUCT.
- 2 INTERLOCK FUME HOOD AND SNORKEL EXHAUST FAN EF/2C AND EF/3C OPERATION WITH AH-6.
- 3 NEW RA DUCT UP TO ROOF DUCT, DOWN TO CEILING SPACE COVERED WITH 1/2" MESH.



GROUND FLOOR HVAC PLAN

SCALE: 1/8" = 1'-0"

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
		100% SUBMITTAL		2-5-07
		BID SET		9-4-07
		AS-BUILT		11-3-09



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WING C

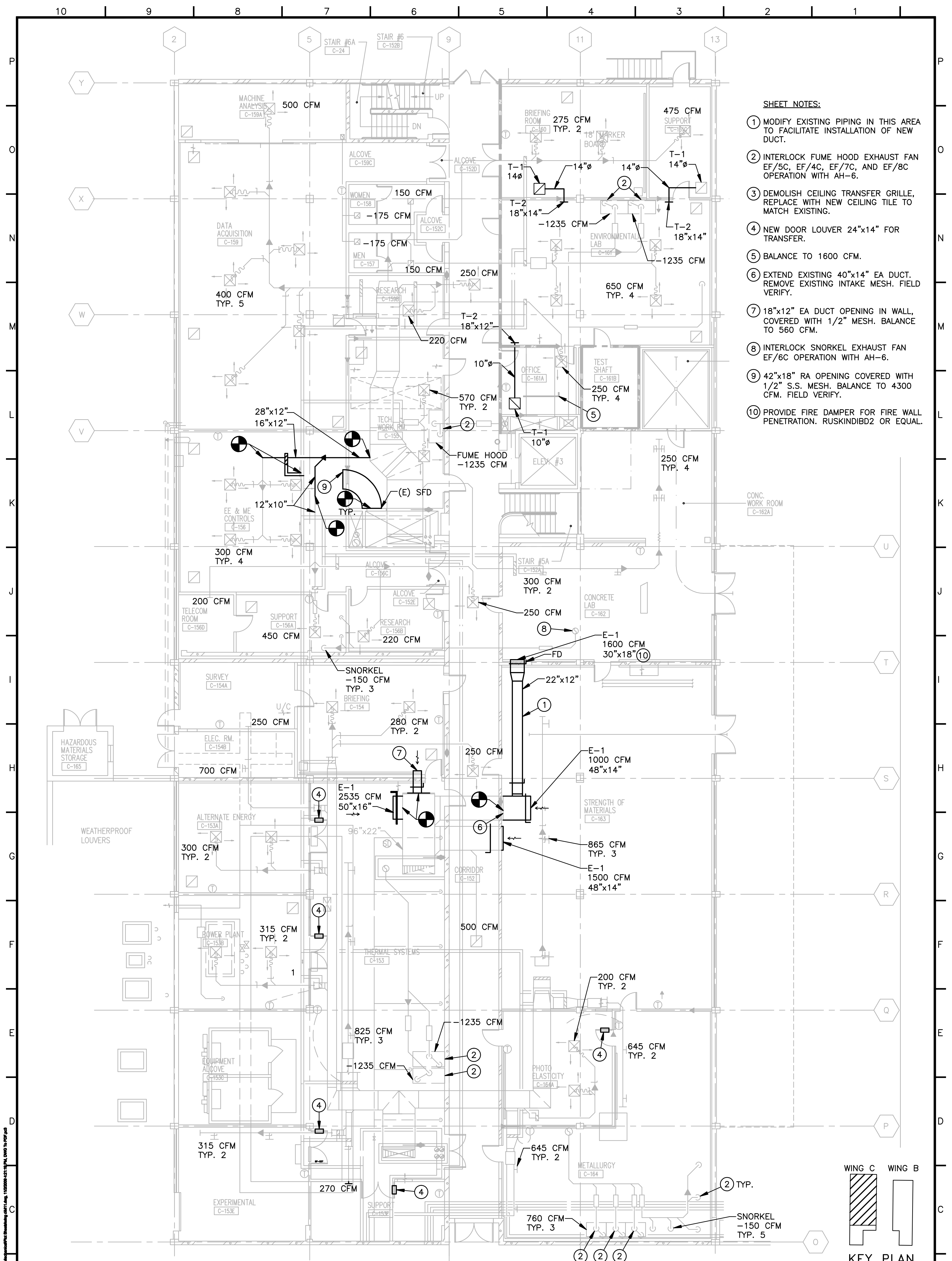
GROUND FLOOR HVAC PLAN

DATE
07/20/06

DRAWING NUMBER
M10

SHEET NUMBER
OF

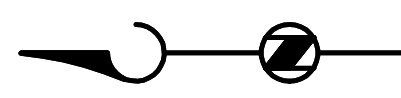
INFORMATION ONLY



- SHEET NOTES:**
- ① MODIFY EXISTING PIPING IN THIS AREA TO FACILITATE INSTALLATION OF NEW DUCT.
 - ② INTERLOCK FUME HOOD EXHAUST FAN EF/5C, EF/4C, EF/7C, AND EF/8C OPERATION WITH AH-6.
 - ③ DEMOLISH CEILING TRANSFER GRILLE, REPLACE WITH NEW CEILING TILE TO MATCH EXISTING.
 - ④ NEW DOOR LOUVER 24"x14" FOR TRANSFER.
 - ⑤ BALANCE TO 1600 CFM.
 - ⑥ EXTEND EXISTING 40"x14" EA DUCT. REMOVE EXISTING INTAKE MESH. FIELD VERIFY.
 - ⑦ 18"x12" EA DUCT OPENING IN WALL, COVERED WITH 1/2" MESH. BALANCE TO 560 CFM.
 - ⑧ INTERLOCK SNORKEL EXHAUST FAN EF/6C OPERATION WITH AH-6.
 - ⑨ 42"x18" RA OPENING COVERED WITH 1/2" S.S. MESH. BALANCE TO 4300 CFM. FIELD VERIFY.
 - ⑩ PROVIDE FIRE DAMPER FOR FIRE WALL PENETRATION. RUSKINDIBD2 OR EQUAL.

FIRST FLOOR HVAC PLAN
SCALE: 1/8" = 1'-0"

REVISIONS				
ZONE	REV.	DESCRIPTION	BY	DATE
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		BID SET		9-4-07
		AS-BUILT		11-3-09



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DATE

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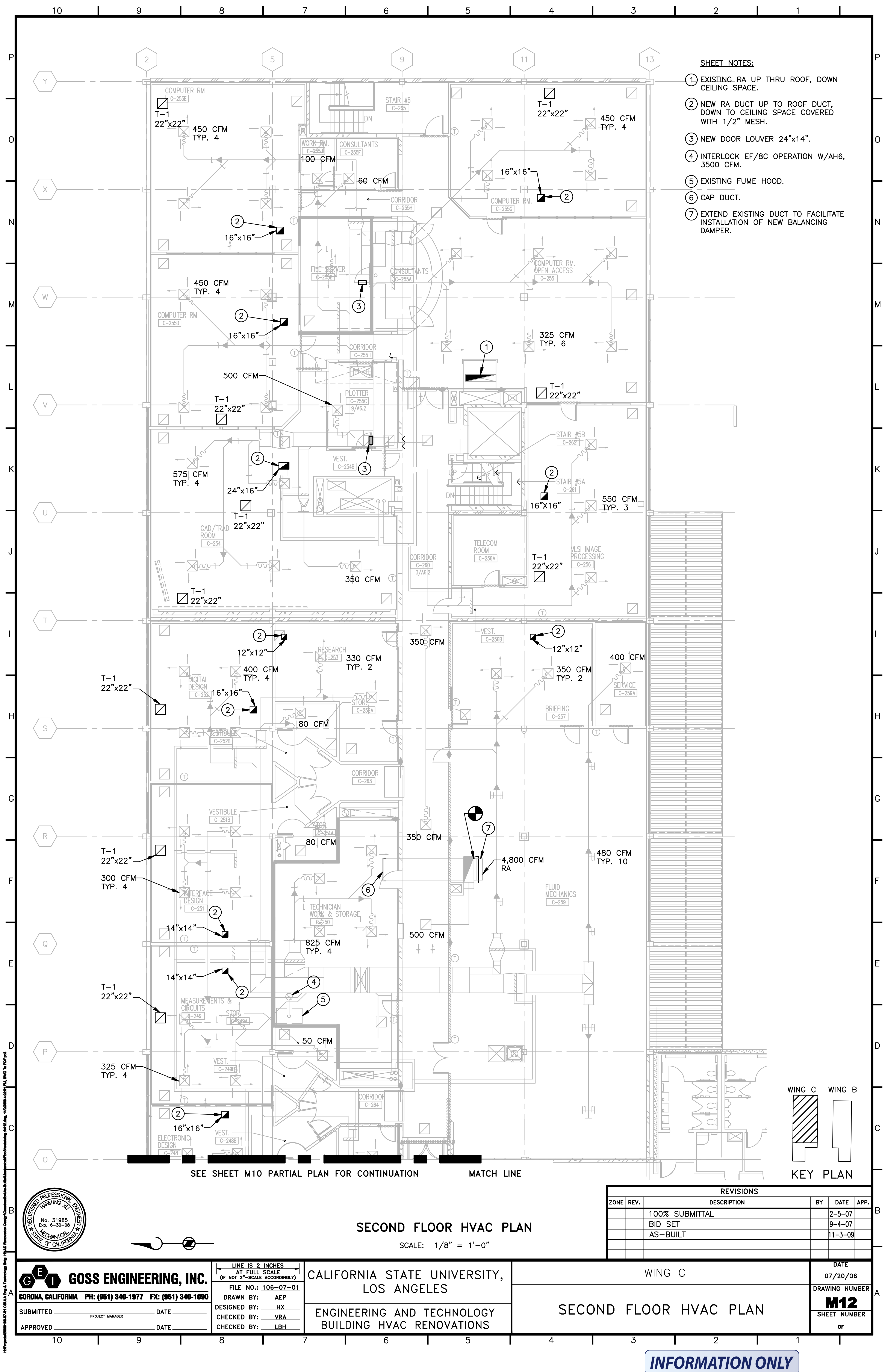
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FIRST FLOOR HVAC PLAN

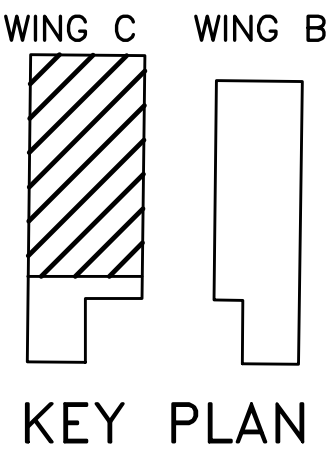
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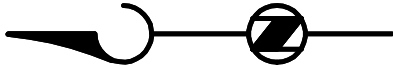
SHEET NUMBER
OF



- SHEET NOTES:**
- ① EXISTING RA UP THRU ROOF, DOWN CEILING SPACE.
 - ② NEW RA DUCT UP TO ROOF DUCT, DOWN TO CEILING SPACE COVERED WITH 1/2" MESH.
 - ③ NEW DOOR LOUVER 24"x14".
 - ④ INTERLOCK EF/8C OPERATION W/AH6, 3500 CFM.
 - ⑤ EXISTING FUME HOOD.
 - ⑥ CAP DUCT.
 - ⑦ EXTEND EXISTING DUCT TO FACILITATE INSTALLATION OF NEW BALANCING DAMPER.



REVISIONS				
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		100% SUBMITTAL		2-5-07
		BID SET		9-4-07
		AS-BUILT		11-3-09



SECOND FLOOR HVAC PLAN

SCALE: 1/8" = 1'-0"

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FILE NO.: 106-07-01

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SUBMITTED _____ DATE _____

APPROVED _____ DATE _____

WING C

SECOND FLOOR HVAC PLAN

DATE
07/20/06

DRAWING NUMBER
M12

SHEET NUMBER
OF

