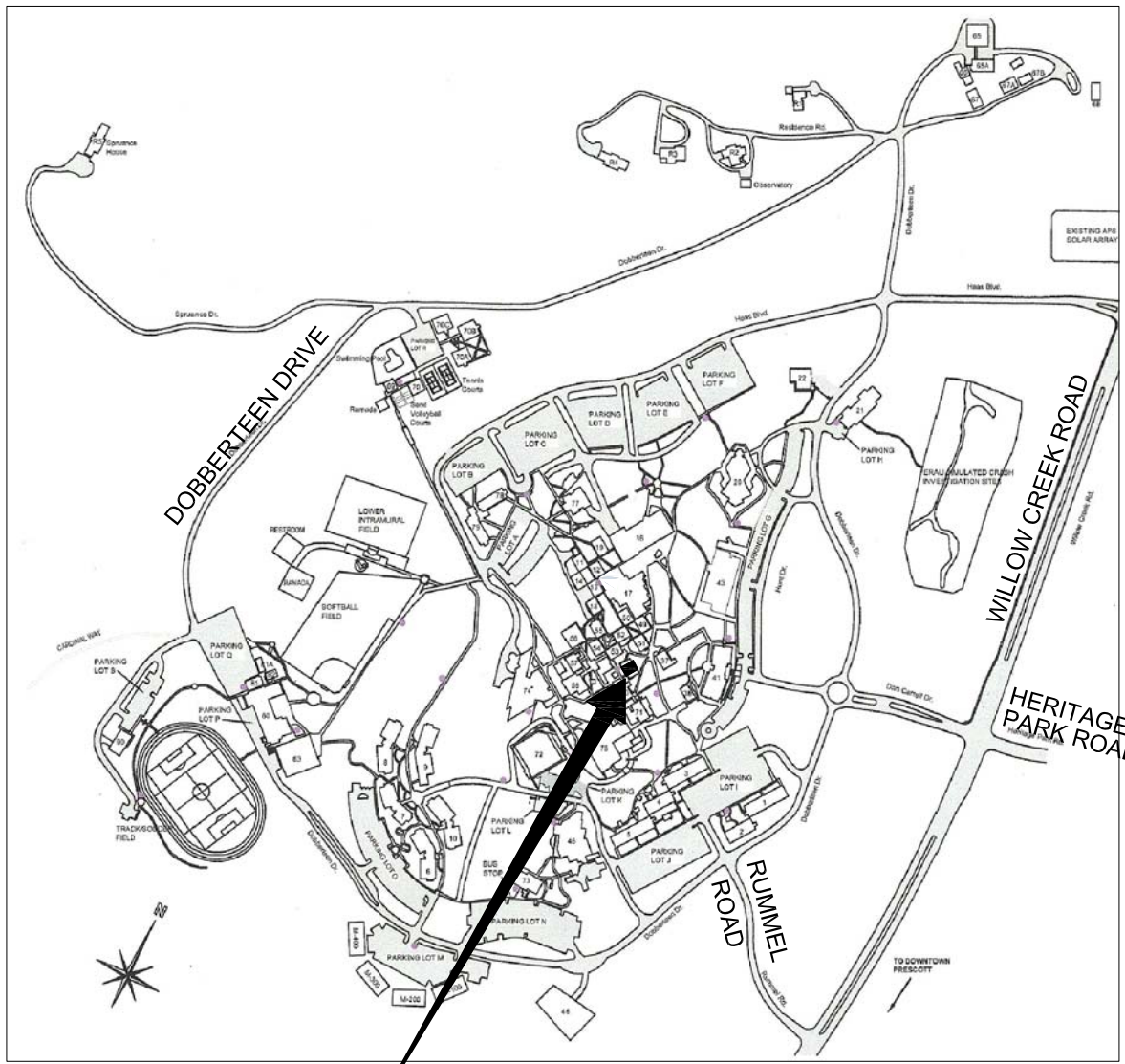


# Project Description

Embry-Riddle Aeronautical University intends to renovate building 61. The Space Physics Laboratory will become the Gaming and Simulation room. The existing Prep / storage room and Exotic Propulsion room will be modified and become three offices. Existing furniture will be removed along with associated electrical wiring / low voltage. New electrical and low voltage will be provided to accommodate the new layout. The HVAC will be upgraded as required for the new Gaming and Simulation room usage as well as for the new offices. The existing ceiling, light fixtures, etc., will be removed and replaced to accommodate the new layout.

# Site / Vicinity Map



# Graphic Standards

	NORTH ARROW INDICATOR		ELEVATION DESIGNATOR
	DETAIL DESIGNATOR		DESRIPTIVE NOTE DESIGNATOR
	BUILDING SECTION DESIGNATOR		ROOM NUMBER / FINISH DESIGNATOR
	REVISION DESIGNATOR		DOOR NUMBER DESIGNATOR
	TYPICALLY INDICATES EXISTING DOOR & FRAME TO BE REMOVED		DOOR TYPE DESIGNATOR
	TYPICALLY INDICATES EXISTING DOOR & FRAME TO REMAIN		WINDOW TYPE DESIGNATOR
			GRID LINE DESIGNATOR
			TYPICALLY INDICATES PROPOSED DOOR & FRAME - REFER TO DOOR SCHEDULE

# IMPROVEMENTS FOR EMBRY-RIDDLE BUILDING 61 REMODEL

## Project Information

<b>OWNER:</b>	Embry-Riddle Aeronautical University 3700 Willow Creek Road Prescott, AZ 86301	PH: 928-777-6600 FAX: 928-777-3950 CONTACT: Carl Beumer beumerc@erau.edu
<b>PREPARED BY:</b>	W. Alan Kenson & Associates, P.C. P.O. Box 11593 Prescott, AZ 86304	PH: 928-443-5812 FAX: 928-443-5815 CONTACT: Alan Kenson waka@cableone.net
<b>CONTRACTOR:</b>	To be determined	
<b>SCOPE OF WORK:</b>	Classroom Renovation	
<b>PROJECT ADDRESS:</b>	3700 Willow Creek Road (Building 69) Prescott, AZ 86301 (APN: 106-03-004)	
<b>ZONE:</b>	BG - PAD	
<b>OCCUPANCY:</b>	B (Educational Facility for students above the 12th grade) , Non-Separated	
<b>CONSTRUCTION TYPE:</b>	V-B Non Sprinklered	
<b>ACTUAL AREA</b>		
<b>BUILDING 61:</b>	Existing 1,911 SQUARE FEET	

## Sheet Index

<b>ARCHITECTURAL</b>	
CS1	Cover Sheet
CS2	Code Summary
A0.0	Construction Access Plan
A1.0	Demolition plan
A2.0	Reference / Dimension / Wall Types Floor Plan
A3.0	Demolition and Proposed Reflected Ceiling Plan
A4.0	Roof Plan, Stair Sections, Room Finish Plan and Interior Elevations
A5.0	Wall Sections
A6.0	Schedules and Door & Window Types
A6.1	Details
A7.0	Specifications
<b>MECHANICAL</b>	
M1.0	Mechanical Floor Plan
M2.0	Mechanical Schedules and Specs
M3.0	Mechanical Details
<b>PLUMBING</b>	
P1.0	Plumbing Floor Plan
<b>ELECTRICAL</b>	
E1.0	Electrical Symbols, Panel Schedules, Specifications & Notes
E1.1	Lighting Design & Lighting Demo Floor Plan, Fixture Schedule and Notes
E1.2	Power Design and Demo Floor Plan with Notes

## Architect:

## W. Alan Kenson & Associates, P.C.

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## ARCHITECTURE & PLANNING



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ARCHITECTURE & PLANNING

DRAWING: Cover Sheet

PROJECT: ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

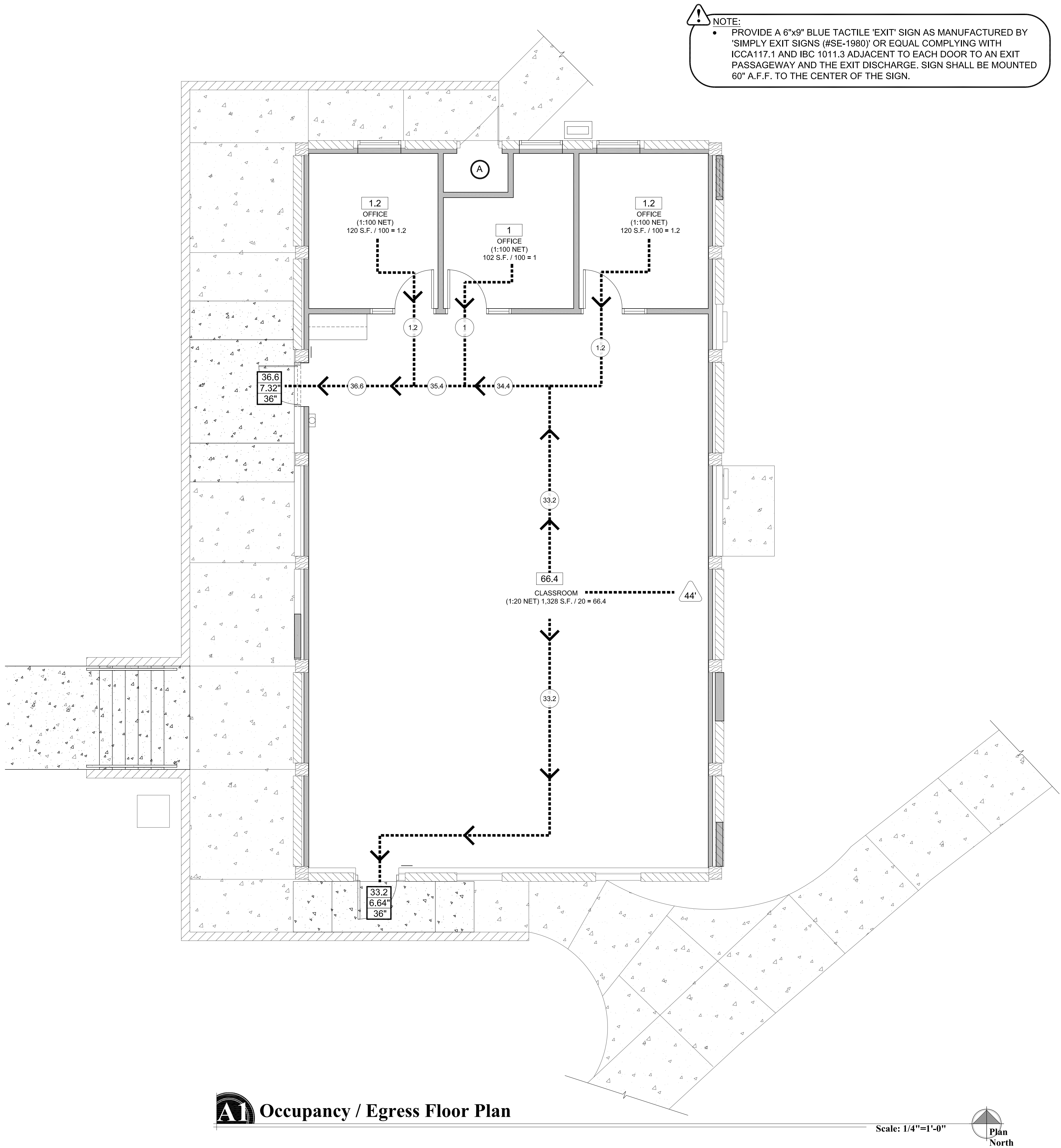
APN: 106-03-004

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# CS1



Mar 01, 2017 - 12:40pm



## A1 Occupancy / Egress Floor Plan

### Accessibility Notes

- ACCESS TO THESE FACILITIES SHALL BE AT PRIMARY ENTRANCES.
- THE SLOPE OF PUBLIC WALKS SHALL NOT EXCEED A MAXIMUM CROSS SLOPE OF 2%.
- WALKING SURFACES GREATER THAN 2% SHALL BE SLIP RESISTANT.
- PROVIDE A 44"x60" MINIMUM LANDING ON THE STRIKE SIDE OF THE ENTRANCE DOOR WITH 44" MINIMUM WIDTH IN THE DIRECTION OF TRAVEL.
- WALLS SHALL EXTEND 18" TO THE SIDE OF THE STRIKE EDGE OF A DOOR OR GATE THAT SWINGS TOWARDS THE OCCUPANT.
- RAMPS SHALL HAVE A NON-SLIP SURFACE.
- RAMPS SHALL BE A MINIMUM OF 36" WIDE.
- EVERY REQUIRED EXIT DOORWAY SHALL BE SIZED FOR A DOOR NOT LESS THAN 36" WIDE BY NOT LESS THAN 6'-8" HIGH CAPABLE OF OPENING 90 DEGREES AND MOUNTED SO THE CLEAR WIDTH OF THE EXIT WAY IS 32" MINIMUM.
- THRESHOLDS TO BE A MAXIMUM OF 1/4" ABOVE ADJACENT FLOOR FINISH. ONE-HALF INCH THRESHOLD MAY BE USED IF BEVELED PER A.D.A. STANDARDS.
- MAXIMUM EFFORT TO OPERATE A DOOR SHALL NOT EXCEED 5 POUNDS.
- THE BOTTOM 10 INCHES OF ALL DOORS EXCEPT AUTOMATIC AND SLIDING DOORS SHALL HAVE A SMOOTH UNINTERRUPTED SURFACE.
- PROVIDE LEVER TYPE HARDWARE, PANIC BARS, PUSH AND PULL ACTIVATING BARS, OR OTHER HARDWARE DESIGNED TO PROVIDE PASSAGE WITHOUT REQUIRING THE ABILITY TO GRASP THE OPENING HARDWARE. (30" TO 44" A.F.F.)

### Egress Legend:

EXIT ACCESS	
A ACCESSORY USE (NO OCCUPANCY)	
XX ROOM OCCUPANCY LOAD	
XX SUBTOTAL OCCUPANCY LOAD	
XX OCCUPANCY TOTAL	
XX REQUIRED EXIT WIDTH (FACTOR = 0.2)	
XX PROVIDED EXIT WIDTH	
# WORST CASE TRAVEL DISTANCE	
FUNCTION OF SPACE	OCCUPANT LOAD FACTOR
CLASSROOM	20 NET
OFFICE	100 GROSS

### Occupant load

NOTE:		
GROSS SQUARE FOOTAGE LISTED BELOW DOES NOT INCLUDE ACCESSORY AREAS.		
OFFICE AREA:	342 SQ. FT.	3 OCCUPANTS
CLASSROOMS/LABS:	1,328 SQ. FT.	67 OCCUPANTS
TOTAL:	1,670 SQ. FT.	70 OCCUPANTS

NOTE: SHARED BUILDING RESTROOMS ARE LOCATED APPROXIMATELY 50' AWAY. NEW TOILET FIXTURES ARE NOT REQUIRED.

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**ARCHITECTURE & PLANNING**

**DRAWING:** Code Summary & Occupancy/Egress Floor Plan

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:** 106-03-004

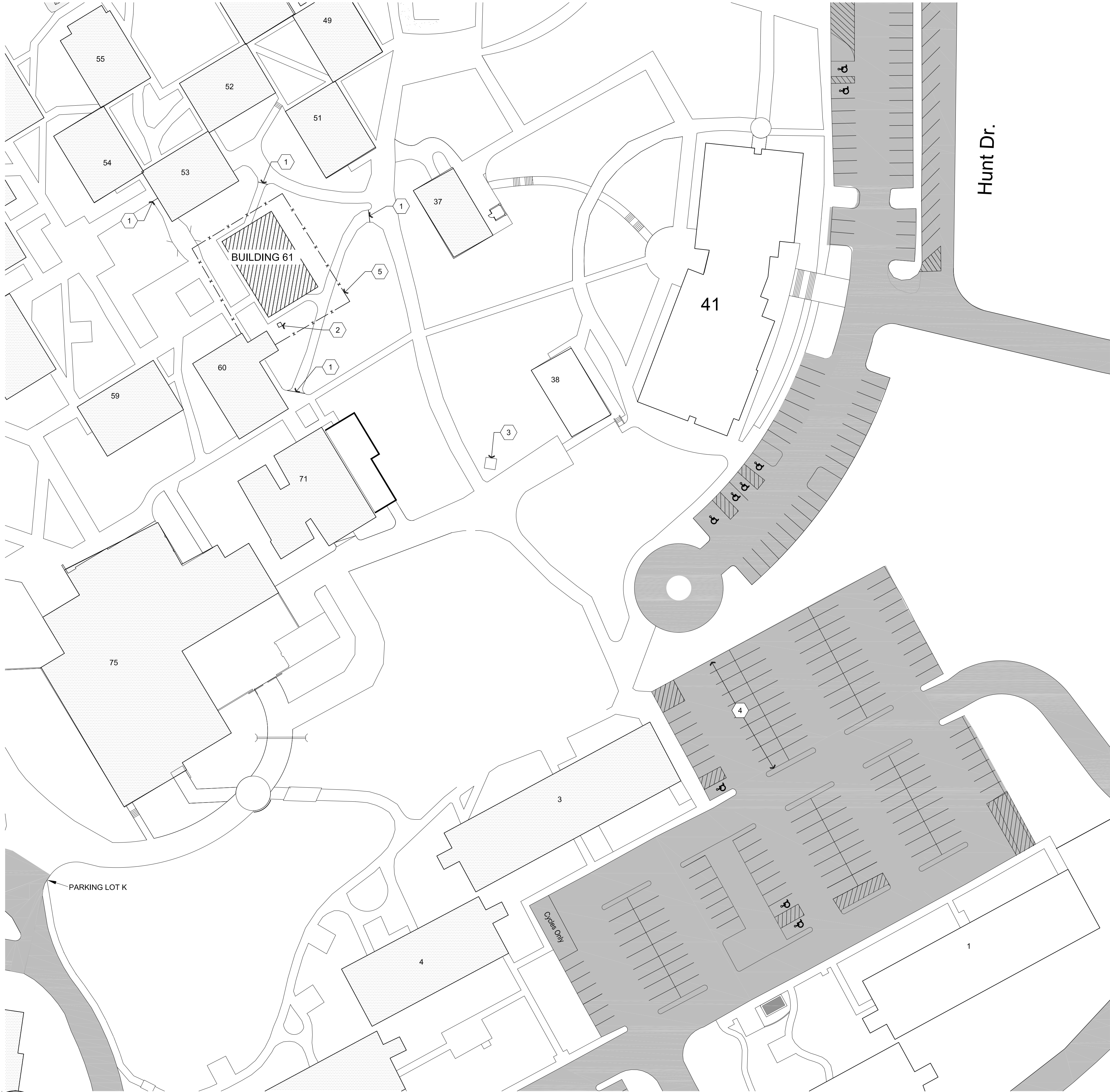
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JOB NO.	695
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CS2



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**A1 Construction Access Plan**

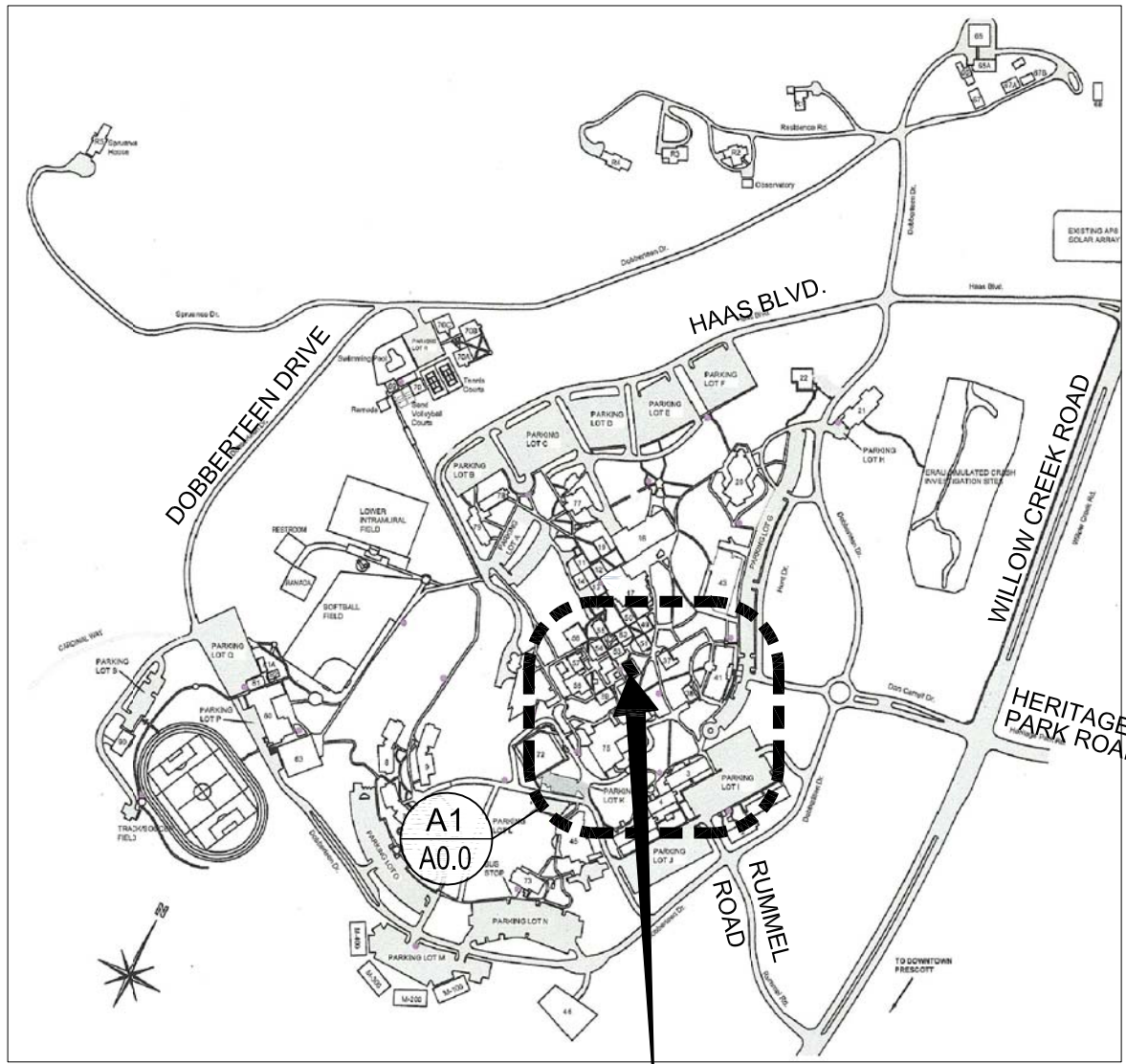


Scale: 1"=30'-0"



**Descriptive Keynotes**

1. PROVIDE BARRICADES WITH SIGNAGE FOR SIDEWALK CLOSURE.
2. LOCATION FOR J-JON.
3. LOCATION OF 6 YARD TRASH DUMPSTER PROVIDED BY OWNER.
4. CONTRACTOR PARKING AREA. 10 SPACES AVAILABLE. CONTRACTOR TO PROVIDE SIGNAGE DESIGNATING SPACES FOR CONSTRUCTION PARKING.
5. 6' TALL TEMPORARY CHAIN LINK FENCING BY CONTRACTOR.



**B1 Vicinity Map**

Scale: N.T.S.



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**ARCHITECTURE & PLANNING**

**DRAWING:** Construction Access Plan

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

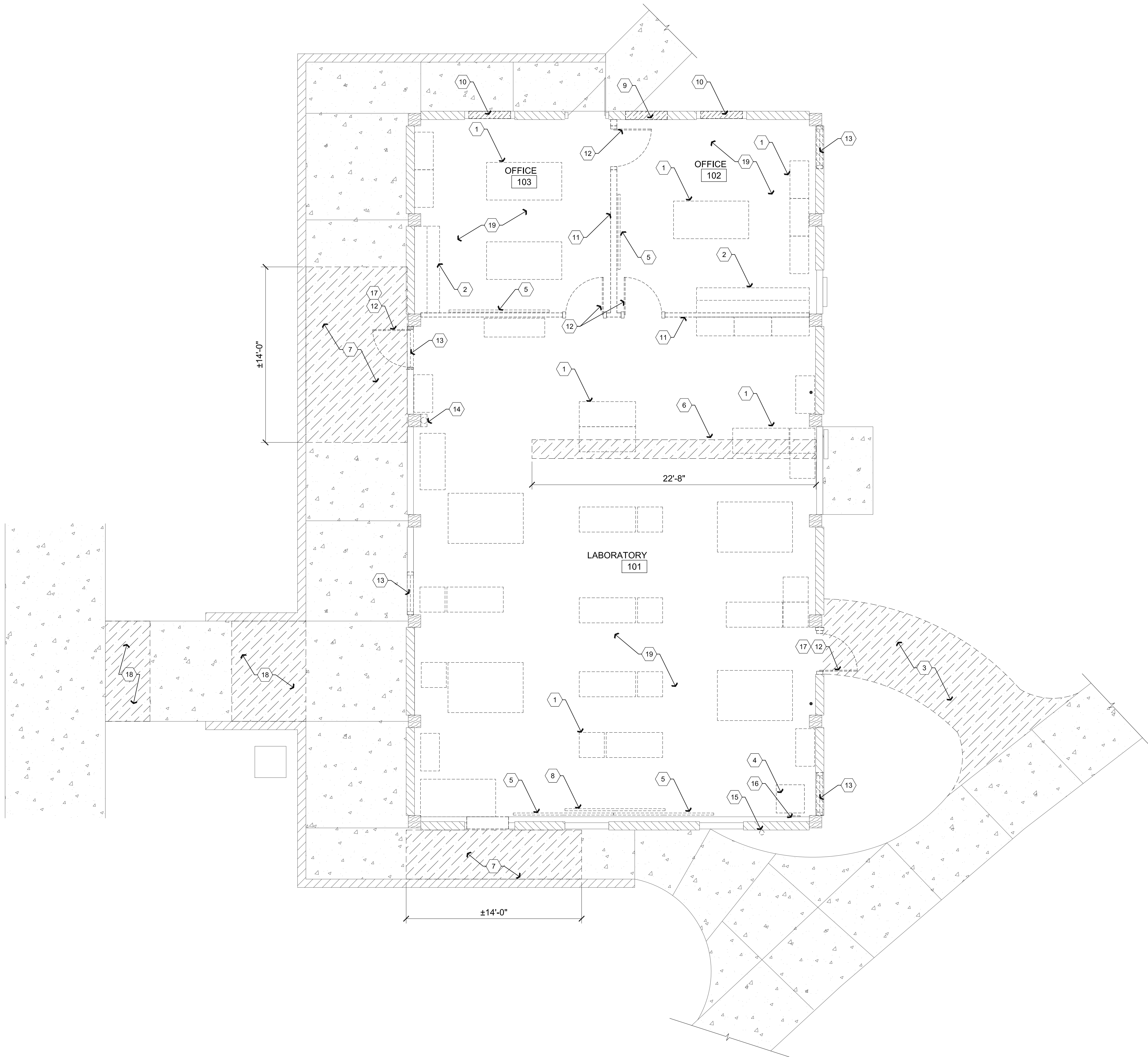
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**A1** Demolition Floor Plan

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



## Descriptive Keynotes

1. REMOVE FURNITURE AND RETURN TO ERAU, TYPICAL.
2. REMOVE EXISTING UPPER AND LOWER CABINETRY, TYPICAL.
3. DEMOLISH PORTION OF SIDEWALK THAT LEADS TO THE DOOR THAT WILL BE REMOVED.
4. REMOVE EXISTING SINK, SOAP AND PAPER TOWEL DISPENSER AND RETURN TO ERAU.
5. REMOVE WHITEBOARD AND RE-USE IN NEW LAYOUT OR RETURN TO ERAU.
6. SAWCUT EXISTING SLAB AND REMOVE CONCRETE AS REQUIRED FOR NEW ELECTRICAL & DATA GUTTER. REFER TO ELECTRICAL PLANS.
7. REMOVE EXISTING CONCRETE AS REQUIRED TO PROVIDE NEW CONCRETE LANDING AT HEIGHT OF FINISH FLOOR, WITH MAXIMUM 1/4":12" SLOPE, AND RAMPS WITH 1:12 MAX SLOPE. REFER TO REFERENCE FLOOR PLAN.
8. REMOVE SCREEN AND RETURN TO ERAU.
9. REMOVE PORTION OF EXISTING CMU WALL FOR INSTALLATION OF NEW WINDOW.
10. REMOVE PORTION OF EXISTING WOOD FRAME WALL FOR INSTALLATION OF NEW WINDOW.
11. REMOVE EXISTING WALL.
12. REMOVE EXISTING DOOR AND FRAME.
13. REMOVE EXISTING CLERESTORY WINDOW.
14. REMOVE FIRE EXTINGUISHER AND RE-INSTALL IN SEMI RECESSED CABINET AS MANUFACTURED BY LARSON OR EQUAL IN NEW LOCATION.
15. REMOVE EXISTING DRAIN LINE. CAP BELOW GRADE. REFER TO PLUMBING PLANS.
16. REMOVE EXISTING ACCESS PANEL. REPAIR TO MATCH EXISTING.
17. REMOVE DOOR HARDWARE. REFER TO HARDWARE SCHEDULE.
18. REMOVE PORTION OF CONCRETE SIDEWALK FOR INSTALLATION OF NEW CONCRETE STAIRS.
19. REMOVE EXISTING VINYL FLOOR COVERING.

NOTE:  
ALL REMOVED ITEMS ARE TO BE DELIVERED TO OWNER AT OWNER'S DISCRETION. ITEMS ARE TO BE DELIVERED TO THE FACILITIES MANAGEMENT DEPARTMENT ON CAMPUS.

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**ARCHITECTURE & PLANNING**

**DRAWING:** Demolition Floor Plan

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:** 106-03-004

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W.A.K.  
DATE  
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**A1.0**

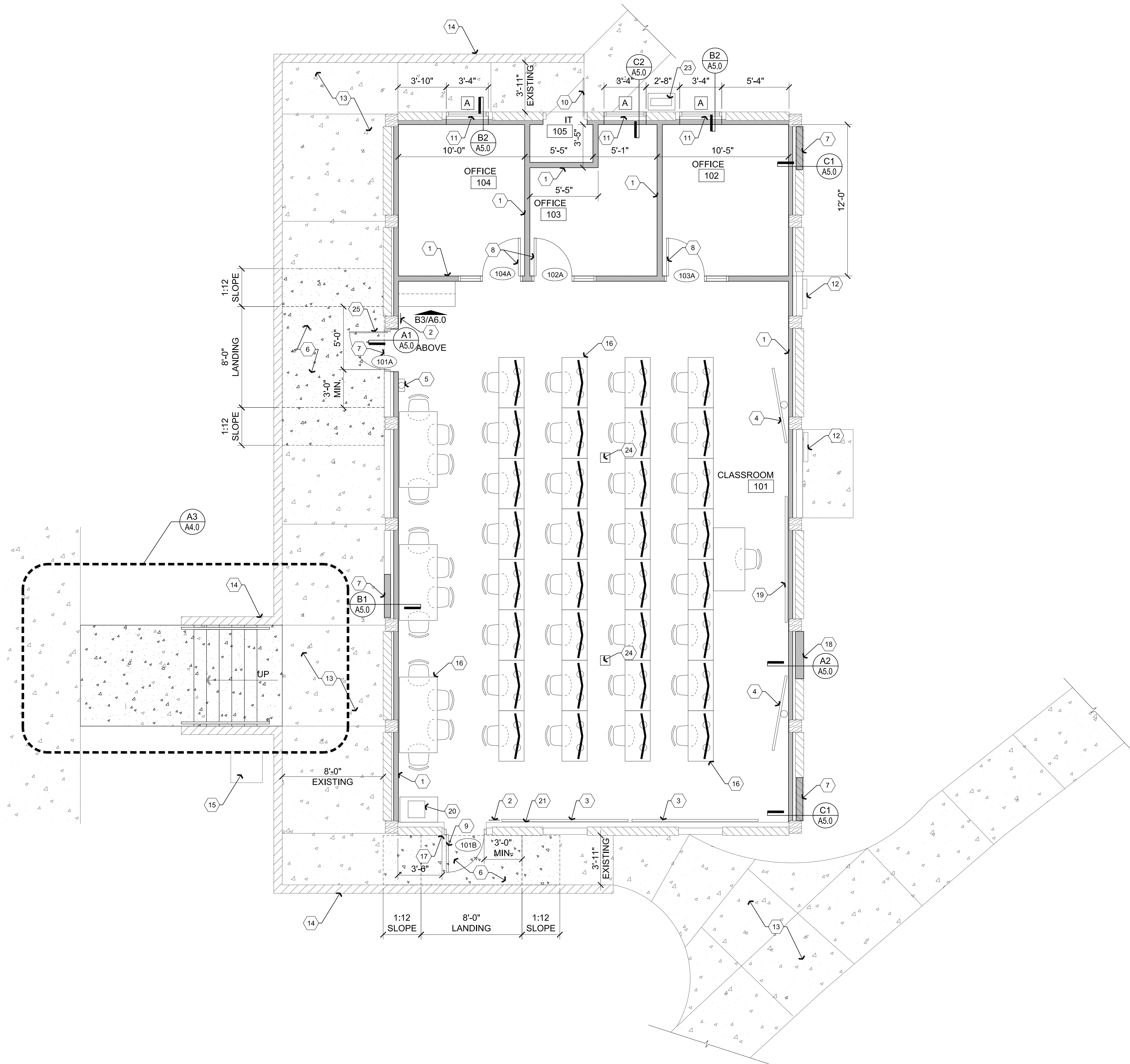
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*W. Alan Kenson*  
REGISTERED ARCHITECT  
25648  
W. ALAN KENSON  
DATE SIGNED 03/01/17  
ARIZONA  
EXPIRES: 6/30/18



Mar 01, 2017 - 12:43pm



**A1** Reference / Dimension / Wall Types Floor Plan  
Furniture Shown for Reference Only



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



## Descriptive Keynotes

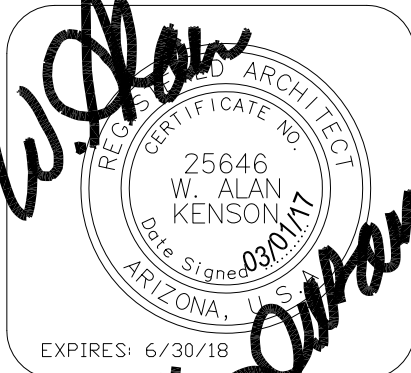
1. PROVIDE NEW WALL. REFER TO WALL TYPES.
2. PROVIDE A 6"x9" BLUE TACTILE 'EXIT' SIGN AS MANUFACTURED BY 'SIMPLY EXIT SIGNS (#SE-1980)' OR EQUAL COMPLYING WITH ICCA117.1 AND IBC 1011.3 ADJACENT TO EACH DOOR TO AN EXIT PASSAGEWAY AND THE EXIT DISCHARGE. SIGN SHALL BE MOUNTED 60" A.F.F. TO THE CENTER OF THE SIGN.
3. RE-INSTALL WHITEBOARD AND ALL REQUIRED BACKING IN NEW LOCATION TO MAKE ROOM FOR DOORWAY.
4. INSTALL MONITOR, PROVIDED BY OWNER, AND ALL REQUIRED BACKING.
5. REINSTALL FIRE EXTINGUISHER IN SEMI RECESSED CABINET AS MANUFACTURED BY LARSON OR EQUAL.
6. PROVIDE NEW 4" CONCRETE LANDING OVER 4" COMPACTED ABC WITH MAXIMUM 1/4":12" SLOPE, REMOVE EXISTING CONCRETE AS REQUIRED.
7. INFILL OPENING ABOVE WHERE THE CLERESTORY WINDOW WAS REMOVED.
8. PROVIDE DOOR, REFER TO DOOR SCHEDULE.
9. PROVIDE EXTERIOR DOOR IN NEW OPENING, REFER TO DOOR SCHEDULE.
10. EXISTING DOOR AND FRAME TO REMAIN.
11. PROVIDE NEW WINDOW, REFER TO WINDOW TYPES.
12. EXISTING ELECTRIC PANEL.
13. EXISTING CONCRETE SIDEWALK.
14. EXISTING BLOCK WALL.
15. EXISTING ELECTRIC TRANSFORMER.
16. PROPOSED FURNITURE LAYOUT FOR REFERENCE ONLY.
17. EDGE OF EXISTING MASONRY WALL.
18. INFILL OPENING WHERE DOOR WAS REMOVED.
19. INSTALL WHITEBOARD, PROVIDED BY OWNER, AND ALL REQUIRED BACKING.
20. TABLETOP PRINTER BY OWNER.
21. EXISTING FURRED OUT WALL TO REMAIN. RE-TEXTURE AND PAINT TO MATCH NEW WALLS.
22. IN-FILL OPENING WHERE DOOR WAS REMOVED.
23. PROVIDE MINI-SPLIT CONDENSING UNIT WITH PRE-MANUFACTURED BASE PAD, REFER TO MECHANICAL PLANS.
24. REPAIR CONCRETE WHERE ELECTRICAL CONDUIT WAS REMOVED.
25. PROVIDE EXTERIOR DOOR AND FRAME AT EXISTING OPENING, REFER TO DOOR SCHEDULE.

## Wall Types

-  INTERIOR PARTITION WALL AT EXISTING EXTERIOR WALL : EXISTING CMU WALL OR FRAMED WALL. PROVIDE NEW WALL CONSISTING OF 3-5/8" 25 GAUGE METAL STUDS AT 2'-0" O.C. WITH 5/8" GPDW ON EXPOSED SIDE. PROVIDE R-11 UNFACED BATT INSULATION. ALIGN EDGE OF STUD FLUSH WITH EXISTING WOOD COLUMNS.
-  INTERIOR PARTITION WALL: PROVIDE TO 6" ABOVE CEILING 3-5/8" 25 GA. STEEL STUDS AT 2'-0" O.C. WITH 5/8" GPDW ON EXPOSED SIDES. PROVIDE R-11 UNFACED BATT INSULATION.

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**ARCHITECTURE & PLANNING**

**DRAWING:** Reference / Dimension / Wall Types Floor Plan

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

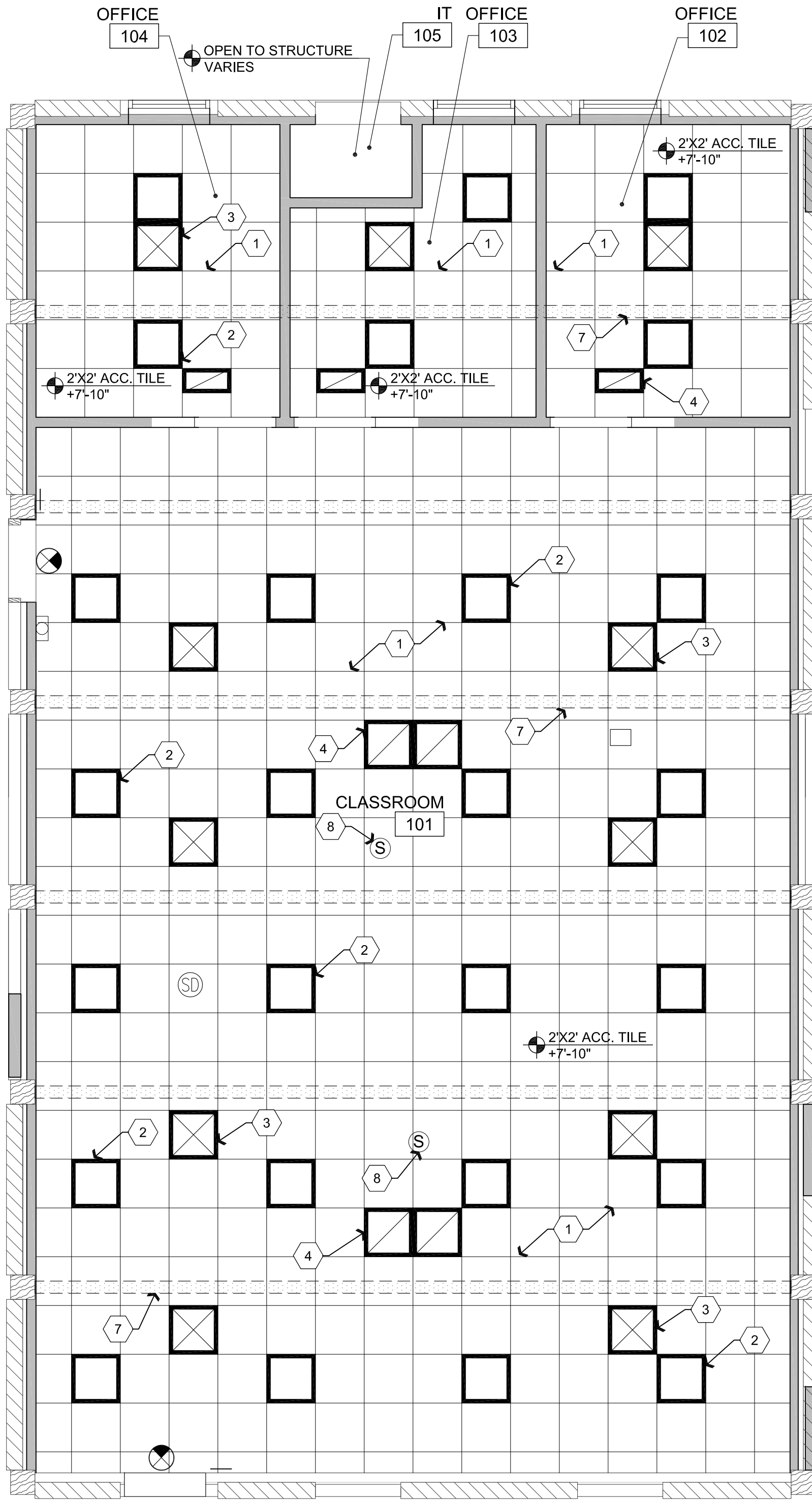
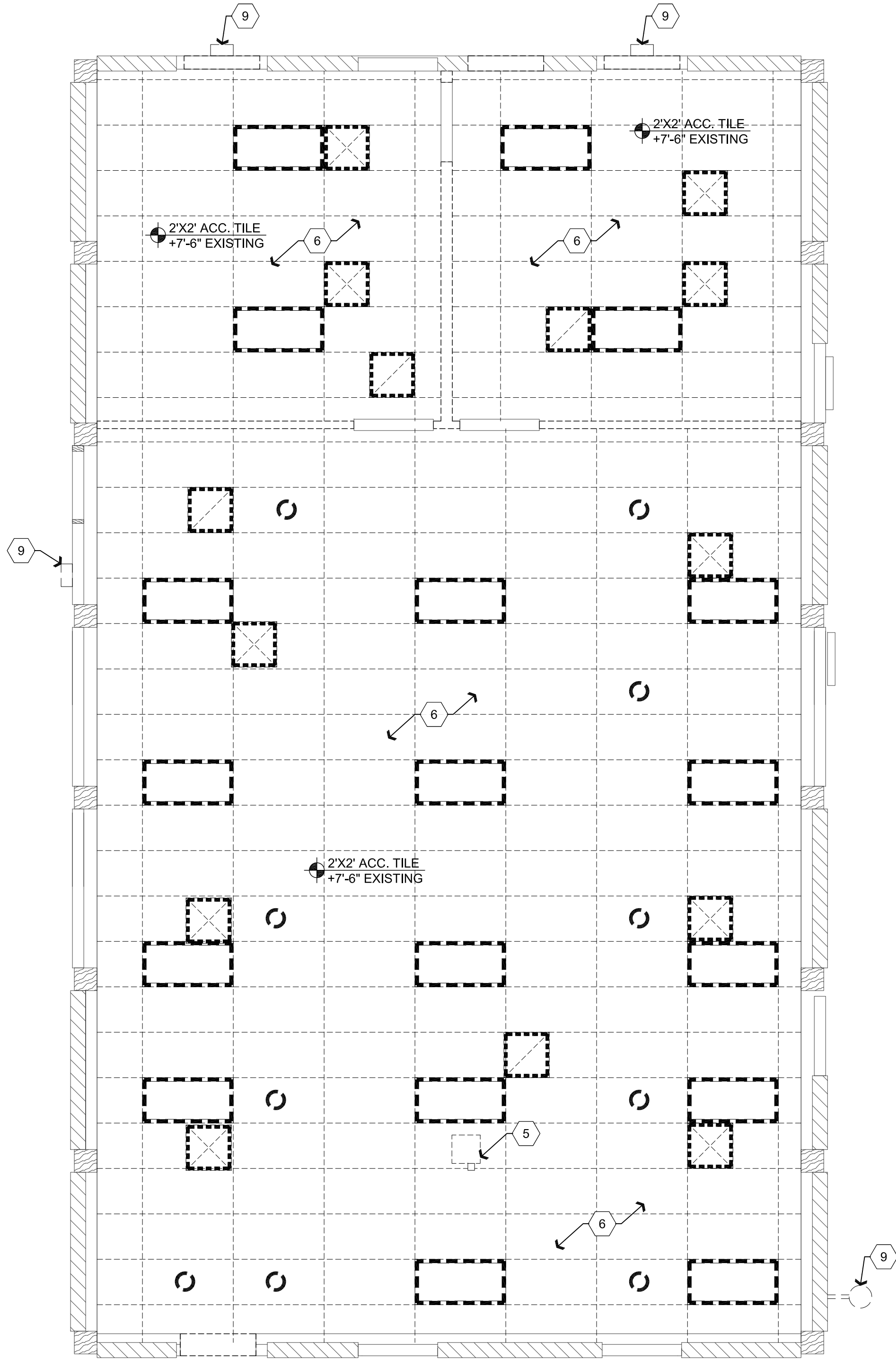
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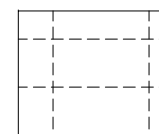


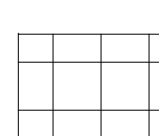
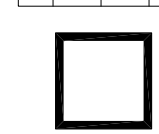
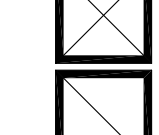



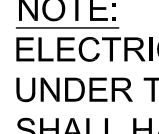
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## Descriptive Keynotes

1. PROVIDE NEW SUSPENDED CEILING. GRID TO BE INSTALLED BELOW EXISTING WOOD BEAMS, TYPICAL. ACT-1
2. LIGHT FIXTURES SHOWN FOR QUANTITY AND LOCATION ONLY. REFER TO ELECTRICAL PLANS.
3. HVAC SUPPLY, TYPICAL. REFER TO MECHANICAL PLANS.
4. HVAC RETURN, TYPICAL. REFER TO MECHANICAL PLANS.
5. EXISTING PROJECTOR TO BE REMOVED AND RETURNED TO ERAU.
6. DEMOLISH ENTIRE SUSPENDED CEILING THIS AREA, INCLUDING ALL MECHANICAL, ELECTRICAL, & LOW VOLTAGE. EXISTING WOOD BEAMS TO REMAIN.
7. EXISTING WOOD BEAM ABOVE CEILING GRID. BOTTOM OF WOOD BEAM @ 8'-0".
8. OWNER TO INSTALL SPEAKERS PROVIDED BY ERAU.
9. REMOVE EXTERIOR LIGHT AND RETURN TO OWNER.

## Legend

-  2'x4' ACOUSTICAL PANEL CEILING AND GRID TO BE REMOVED
-  2'x4' TROFFER LIGHT FIXTURE TO BE REMOVED
-  2'x2' HVAC SUPPLY DIFFUSER TO BE REMOVED
-  2'x2' HVAC RETURN TO BE REMOVED
-  NEW 2'x2' ACOUSTIC PANEL CEILING ACT-1
-  NEW 2'x2' LED TROFFER LIGHT FIXTURE
-  NEW 2'x2' HVAC SUPPLY DIFFUSER
-  NEW 2'x2' HVAC RETURN
-  EMERGENCY EXIT SIGN WITH BATTERY BACK-UP
-  EXISTING WOOD BEAM ABOVE CEILING GRID, BOTTOM OF WOOD BEAM @ 8'-0" A.F.F.

NOTE:  
REFER TO ELECTRICAL AND MECHANICAL PLANS.



NOTE:  
ELECTRIC, DATA AND A/V WIRES SHALL BE RUN UNDER THE BEAMS, ABOVE THE CEILING. NO BEAMS SHALL HAVE HOLES DRILLED THROUGH THEM.

NOTE:  
ALL REMOVED ITEMS ARE TO BE DELIVERED TO OWNER AT OWNER'S DISCRETION. ITEMS ARE TO BE DELIVERED TO THE FACILITIES MANAGEMENT DEPARTMENT ON CAMPUS.

REVISIONS	BY

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ARCHITECTURE & PLANNING

REGISTERED ARCHITECT

DRAWING: Demolition and Proposed Reflected Ceiling Plans

PROJECT: ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

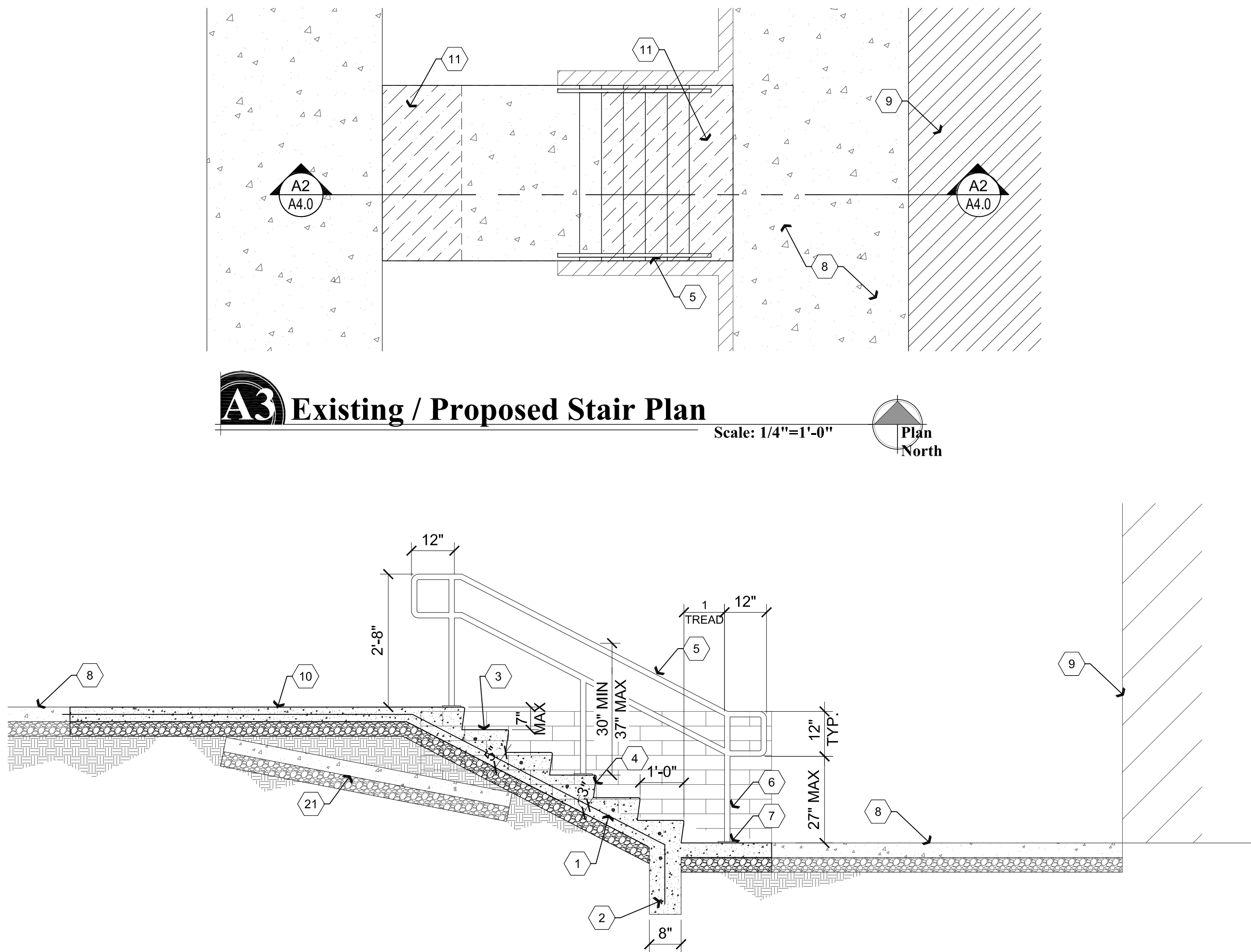
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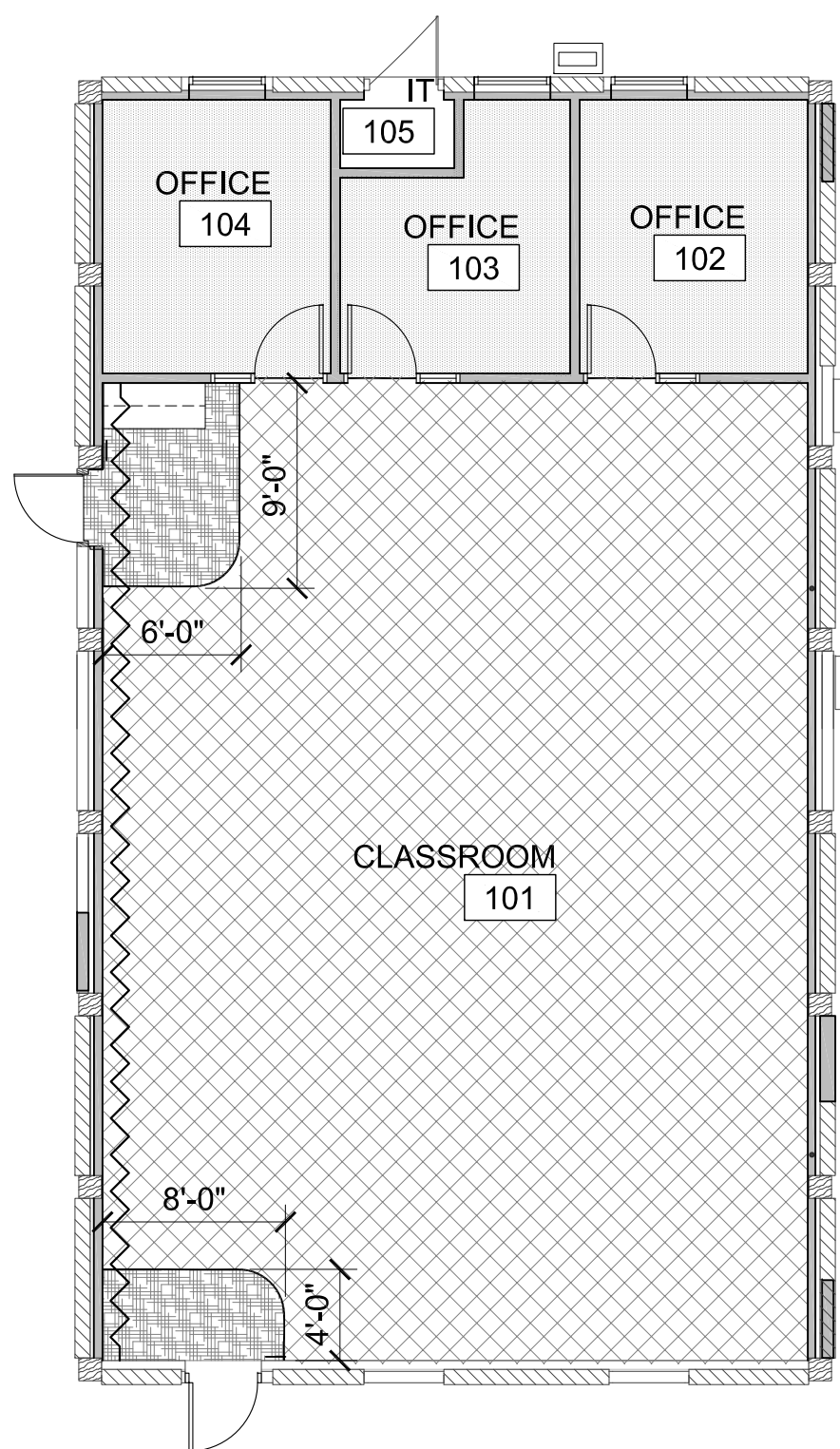


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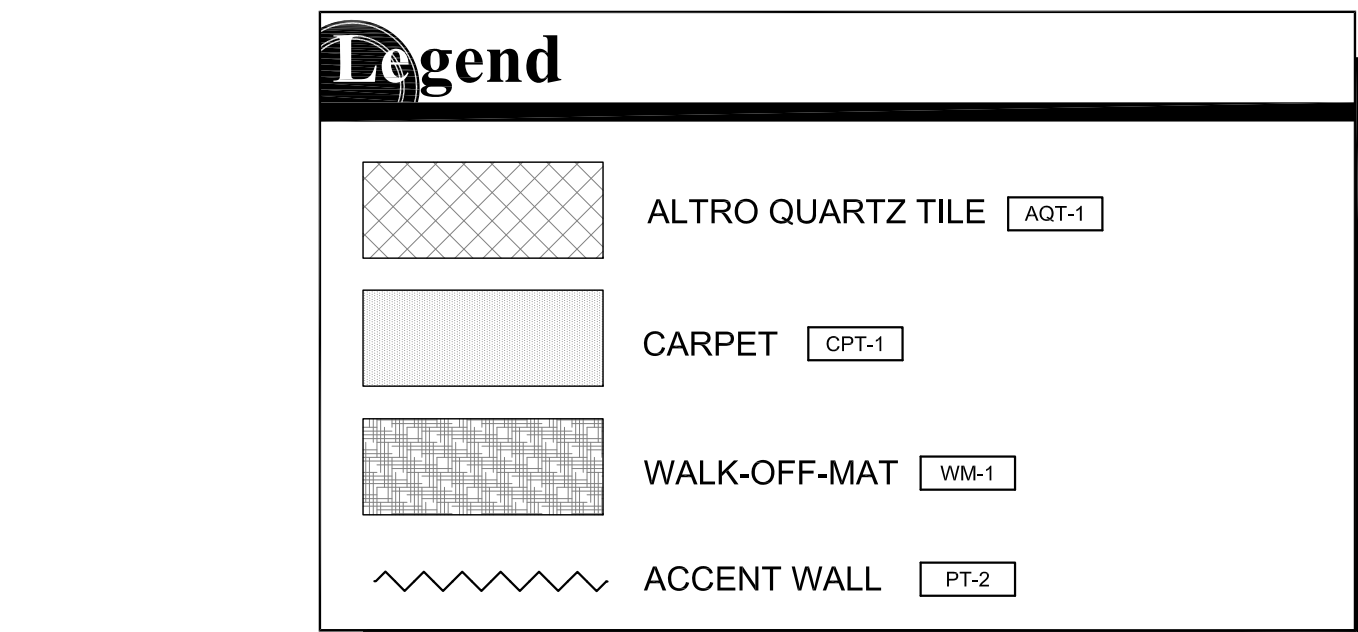
**A2** Stair Section

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



**A1** Room Finish Plan

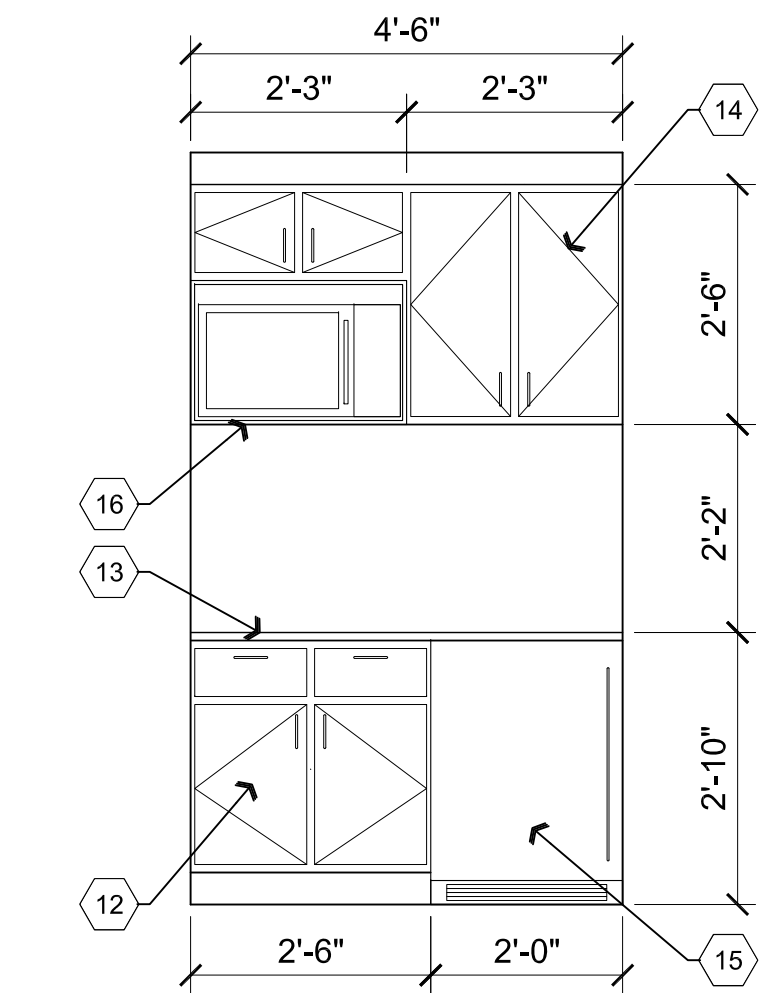
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**Room Finish Schedule**

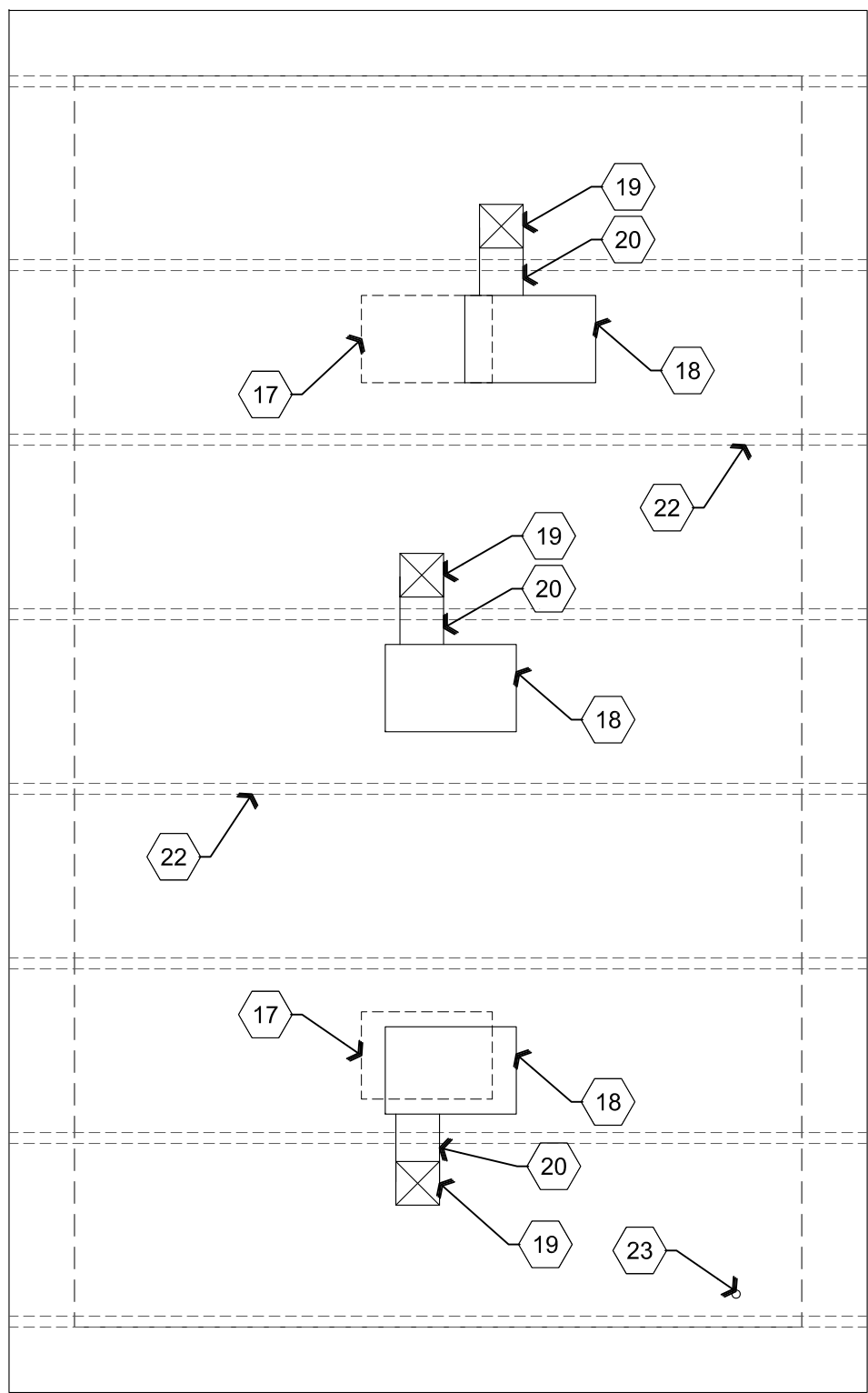
NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING	HEIGHT
101	CLASSROOM	F1, F3	B1	W1	C1	7'-10"
102	OFFICE	F2	B1	W1	C1	7'-10"
103	OFFICE	F2	B1	W1	C1	7'-10"
104	OFFICE	F2	B1	W1	C1	7'-10"
105	IT	F4	B1	W1	C2	VARIES

FLOOR:	BASE:
F1 AQT AQT-1	B1 RUBBER BASE RB-1
F2 CARPET CPT-1	WALLS:
F3 WALK-OFF-MAT WM-1	W1 PAINTED GPDW PT-1 PT-2
F4 EXISTING FLOORING TO REMAIN	CEILING:
	C1 2x2 SUSPENDED ACOUSTICAL PANELS ACT-1
	C2 EXPOSED STRUCTURE



**B3** North Elevation

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



**B1** Roof Plan

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

## Descriptive Keynotes

- #3 AT 12" O.C. EACH WAY.
- (1) #4 TOP AND BOTTOM.
- (5) 12" TREADS.
- (6) 7" MAX RISERS EQUAL HEIGHT. VERIFY IN FIELD.
- 1 1/2" DIAMETER SCHEDULE 40 PAINTED METAL HANDRAIL, TYPICAL.
- 1 1/2" DIAMETER SCHEDULE 40 PAINTED METAL BALUSTER, TYPICAL.
- 1/2"x4"x4" STEEL PLATE WITH 6" LONG x 1/2" DIAMETER HSA, TYPICAL.
- EXISTING CONCRETE SIDEWALK.
- EXISTING BUILDING.
- 4" THICK CONCRETE SIDEWALK W/ #3 @ 3'-0" O.C. EACH WAY OVER 4" COMPACTED A.B.C. PROVIDE 8" MINIMUM TURNDOWN ON SIDES.
- REMOVE PORTION OF EXISTING CONCRETE SIDEWALK AS REQUIRED FOR INSTALLATION OF NEW CONCRETE STAIRS.
- PLASTIC LAMINATE LOWER CABINETS. PL-2
- PLASTIC LAMINATE COUNTERTOP WITH EDGE BANDING. PL-1
- PLASTIC LAMINATE UPPER CABINET. PL-2
- REFRIGERATOR BY OWNER.
- MICROWAVE SHELF, PLATFORM BASE TO EXTEND 6" BEYOND FACE OF CABINETRY. (MICROWAVE SUPPLIED BY OWNER)
- REMOVE EXISTING HVAC UNIT ELECTRICAL, GAS PIPING AND RELATED EQUIPMENT SUPPORTS. REPAIR ROOF AS REQUIRED.
- INSTALL OWNER PROVIDED HVAC UNIT AND OWNER PROVIDED ROOF CURB. STENCIL HVAC UNIT NUMBER ON UNIT HOUSING IN ACCORDANCE WITH OWNER'S REQUEST. REFER TO MECHANICAL PLANS. REPAIR ROOF AS REQUIRED.
- PROVIDE NEW DUCT THROUGH ROOF. DUCTWORK SHALL BE PRIMED AND PAINTED WHITE TO MATCH ROOF. REFER TO MECHANICAL PLANS.
- PROVIDE NEW DUCT ON ROOF. REFER TO MECHANICAL PLANS.
- PORTION OF EXISTING CONCRETE RAMP TO REMAIN.
- EXISTING BEAM BELOW ROOF, TYPICAL.
- REMOVE PLUMBING VENT AND REPAIR ROOF AS REQUIRED.

NOTE:  
EXISTING ROOF STRUCTURE IS ADEQUATE TO SUPPORT NEW HVAC UNITS.

NOTE:  
ELECTRIC WIRES SHALL BE RUN UNDER THE BEAMS, ABOVE THE CEILING. NO BEAMS SHALL HAVE NEW HOLES DRILLED THROUGH THEM.

NOTE:  
ALL ROOF PENETRATIONS WILL BE MADE BY A CERTIFIED SOPREMA ROOF INSTALLER. NO OTHER CONTRACTOR OR ROOFING SYSTEM IS ACCEPTABLE. PROVIDE SOPREMA APPROVED ROOF JACK TO ROOFING CONTRACTOR FOR INSTALLATION.  
CONTACT SOPREMA ROOFING  
REPRESENTATIVE:  
WALT HITCHCOCK  
CELL: 480-694-3433  
EMAIL: WHITCHCOCK@SOPREMA.US

REVISIONS	BY

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**ARCHITECTURE & PLANNING**

**DRAWING:** Roof Plan, Stair Sections, Room Finish Plan and Interior Elevations

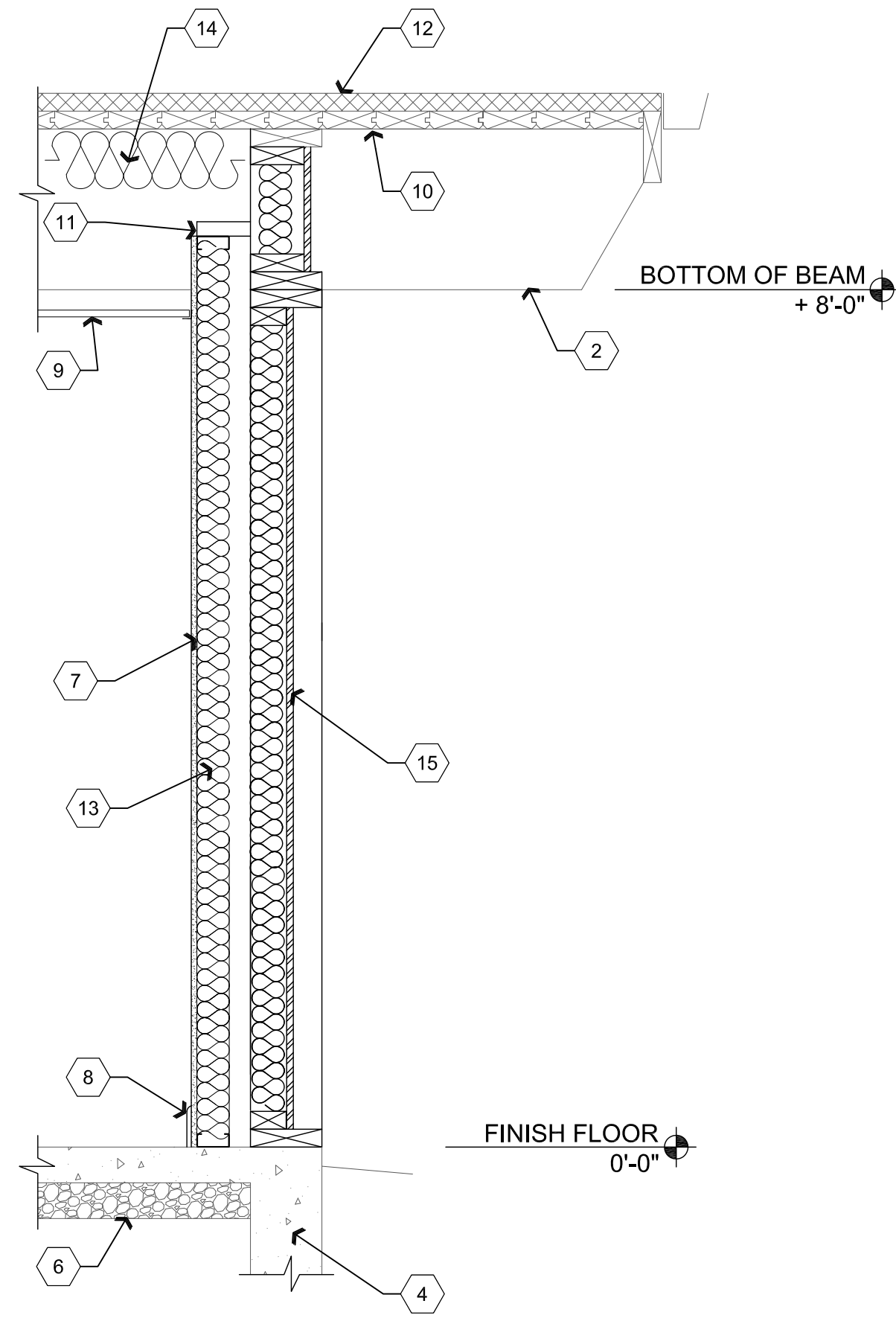
**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:** 106-03-004

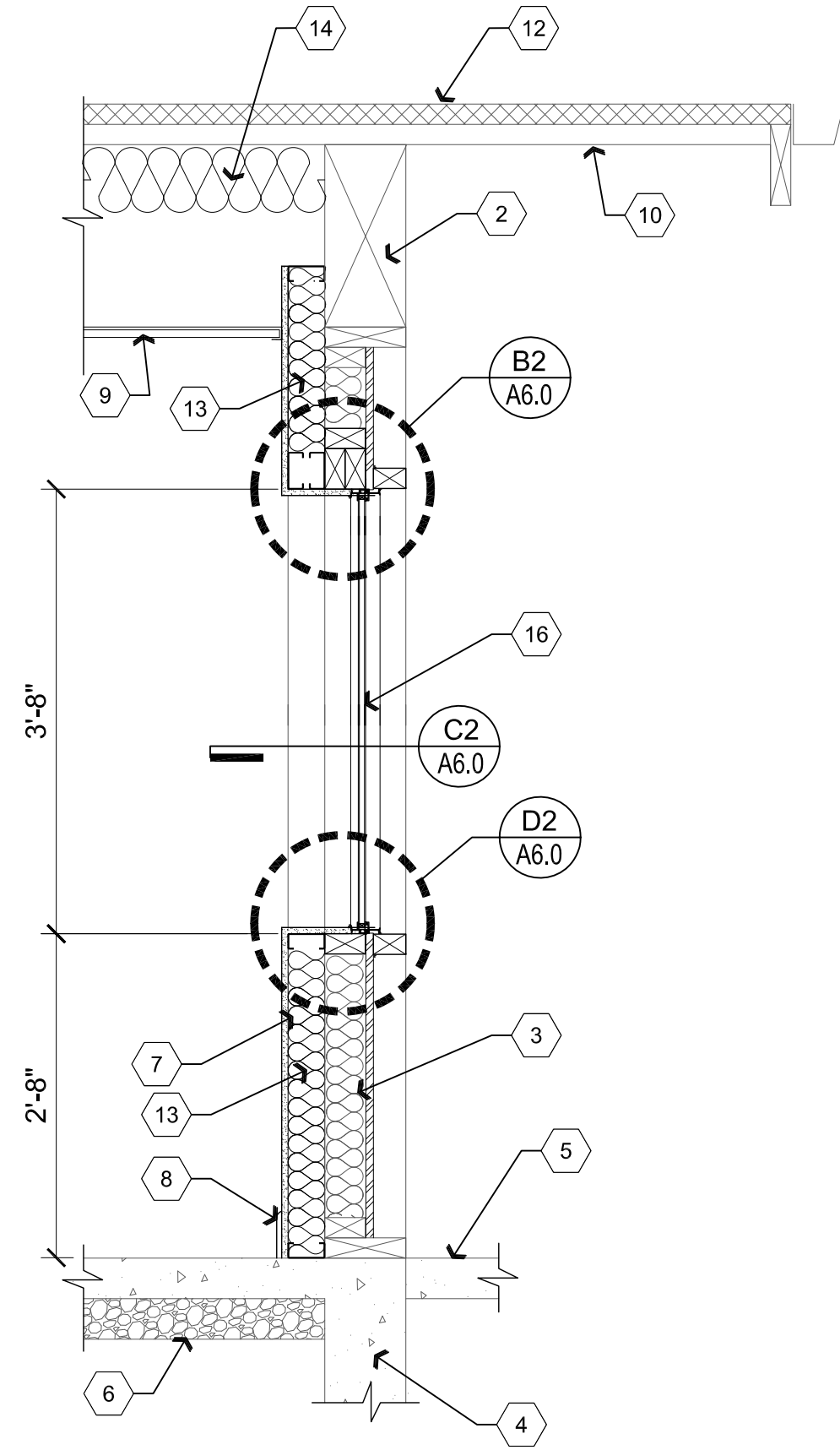
DRAWN BY L.O.
CHECKED BY W.A.K.
DATE March 1st, 2017
JOB NO. 695
SHEET

**A4.0**

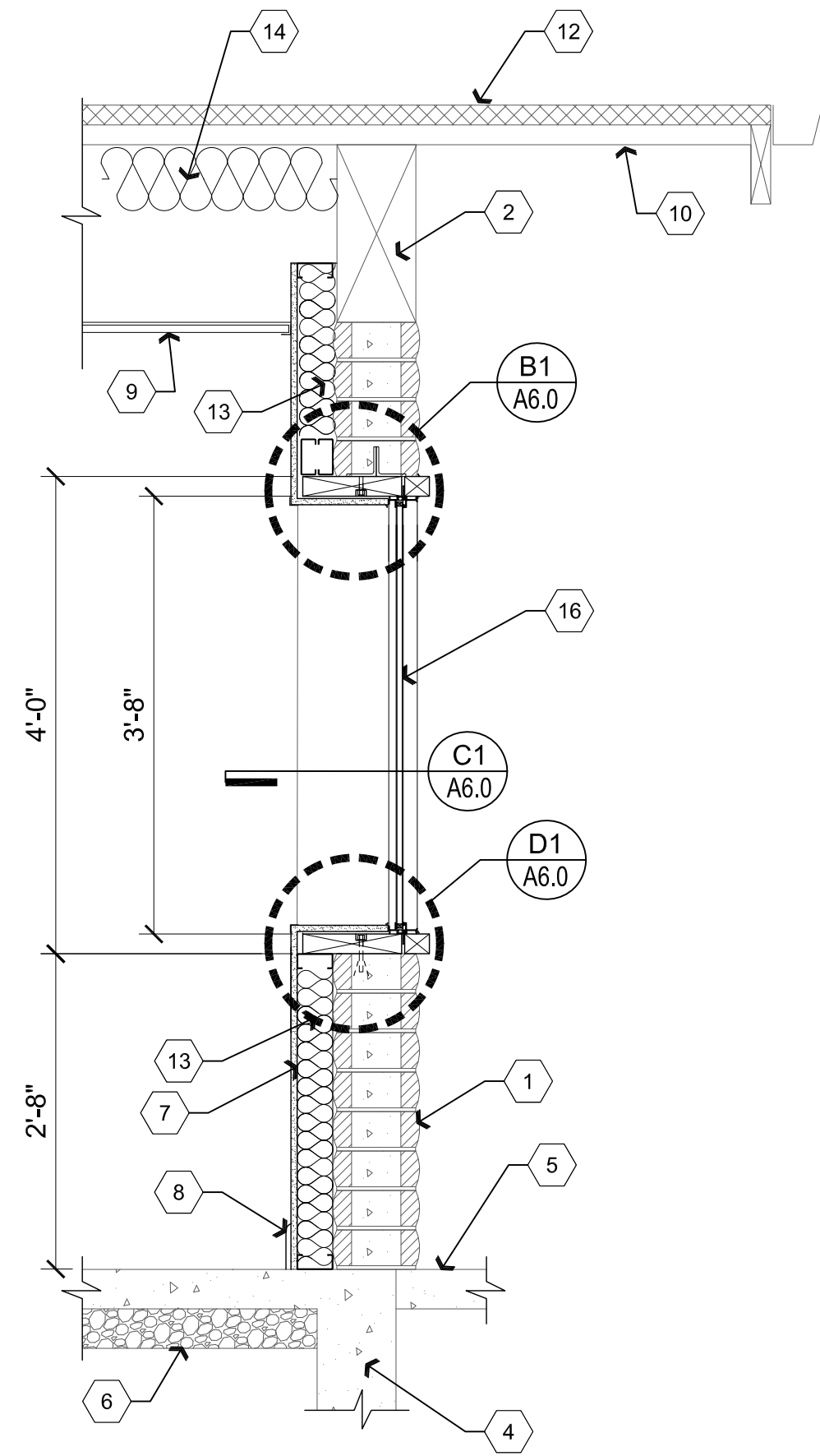




**A2** Wall Section  
Scale: 3/4"=1'-0"

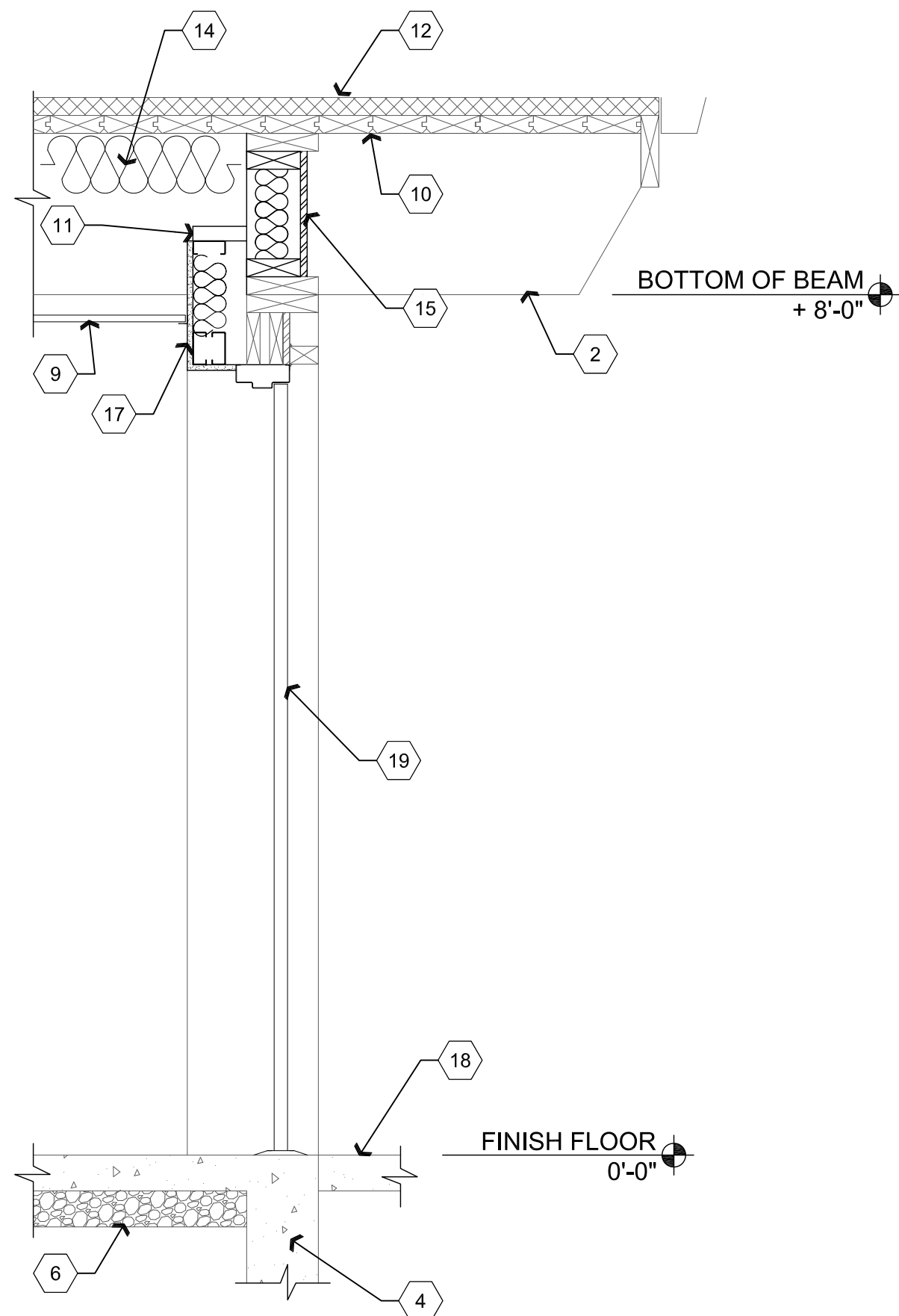


**B2** Wall Section  
Scale: 3/4"=1'-0"

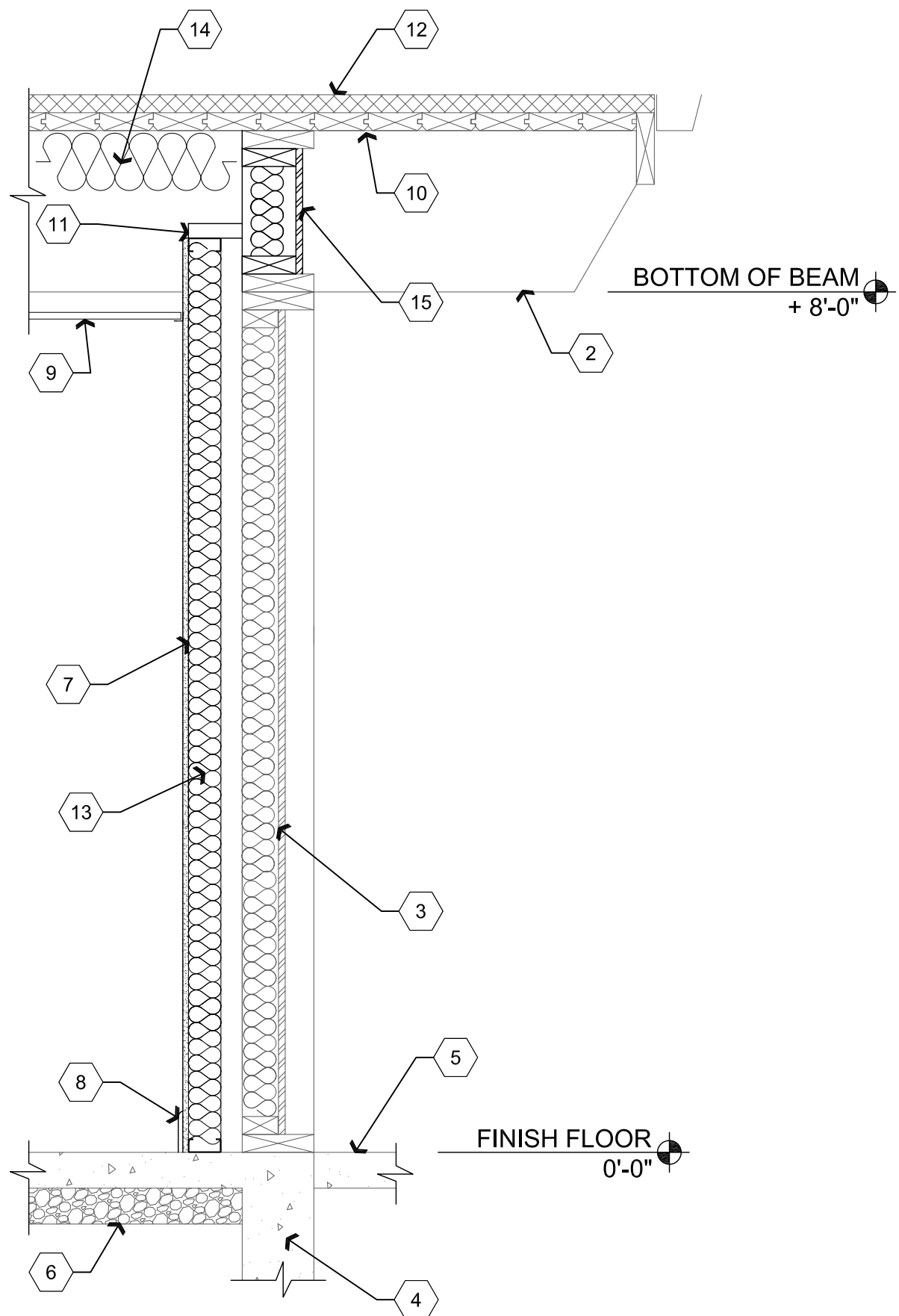


**C2** Wall Section  
Scale: 3/4"=1'-0"

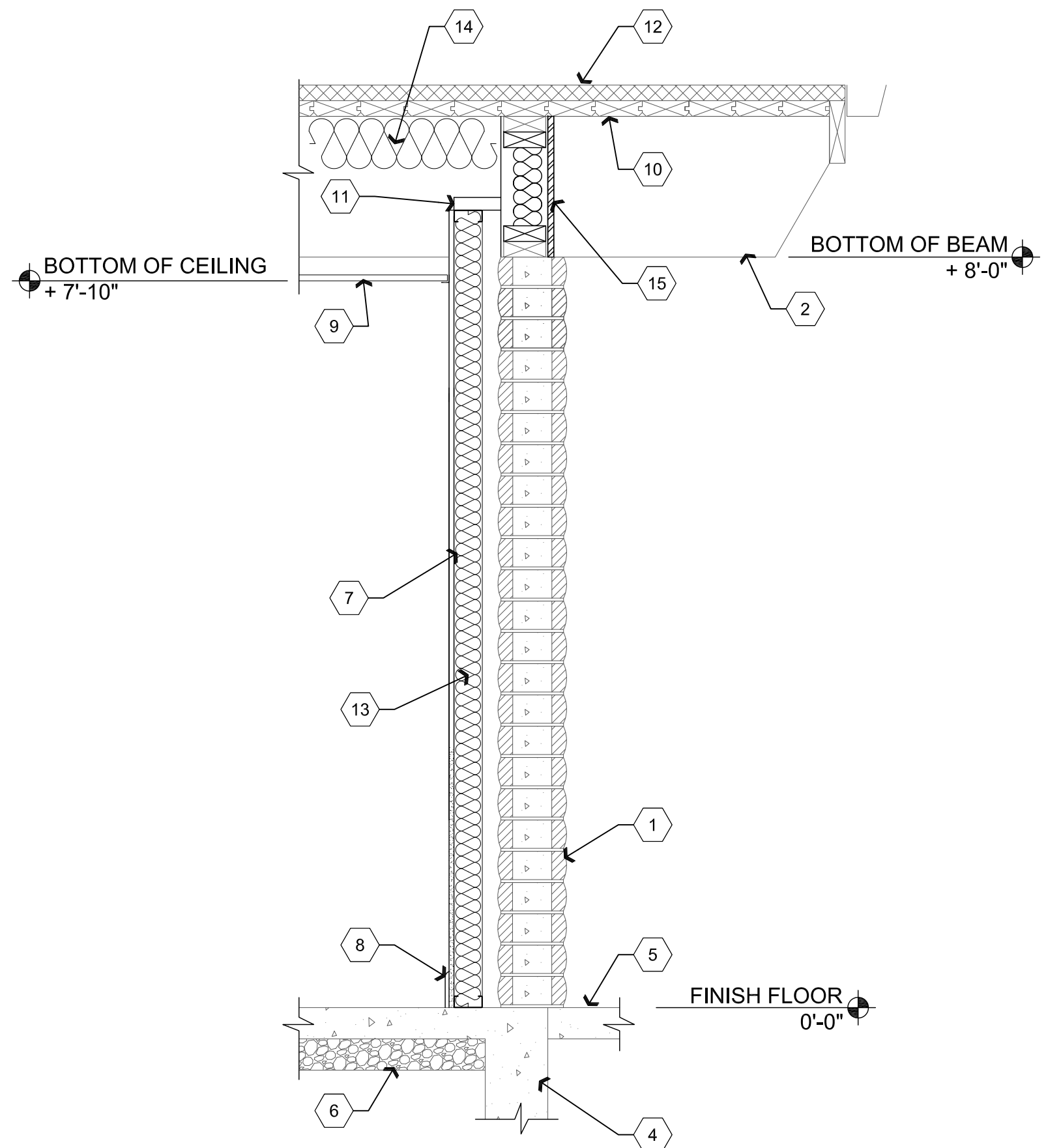
- ### Descriptive Keynotes
- EXISTING 8"x4"x16" SLUMP BLOCK INFILL WALL.
  - EXISTING WOOD BEAM.
  - EXISTING WOOD FRAMED INFILL WALL, WITH SIDING.
  - EXISTING FOUNDATION.
  - EXISTING EXTERIOR CONCRETE SLAB.
  - EXISTING COMPACTED ABC.
  - NEW METAL STUD WALL. REFER TO WALL TYPES PLAN.
  - PROVIDE RUBBER BASE.
  - PROVIDE SUSPENDED ACOUSTICAL CEILING, REFER TO REFLECTED CEILING PLAN.
  - EXISTING 2x TONGUE AND GROOVE WOOD DECK.
  - PROVIDE STEEL STUD BRACING BACK TO WALL @ 4'-0" O.C.
  - EXISTING ROOFING.
  - PROVIDE R-11 UNFACED BATT INSULATION.
  - PROVIDE R-19 UNFACED BATT INSULATION WIRED IN PLACE.
  - INFILL OPENING WITH 2x6 WOOD STUDS @ 16" O.C., PROVIDE 5/8" T-111 INSET SHEATHING TO MATCH EXISTING. PROVIDE SEALANT AT ALL EDGES WHERE SHEATHING MEETS OUTER FRAME. PAINT SHEATHING TO MATCH EXISTING AT EXTERIOR. PROVIDE R-19 FRICTION FIT BATT INSULATION AT EACH STUD CAVITY. SECURE WOOD INFILL FRAME TO EXISTING FRAMING.
  - PROVIDE WINDOW. REFER TO REFERENCE FLOOR PLAN AND WINDOW TYPES.
  - INTERIOR WALL, REFER TO WALL TYPES PLAN.
  - NEW CONCRETE SLAB, REFER TO REFERENCE FLOOR PLAN.
  - NEW HOLLOW METAL DOOR IN EXISTING FRAME.



**A1** Wall Section  
Scale: 3/4"=1'-0"



**B1** Wall Section  
Scale: 3/4"=1'-0"



**C1** Wall Section  
Scale: 3/4"=1'-0"

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**ARCHITECTURE & PLANNING**

**DRAWING:** Wall Sections

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:** 106-03-004

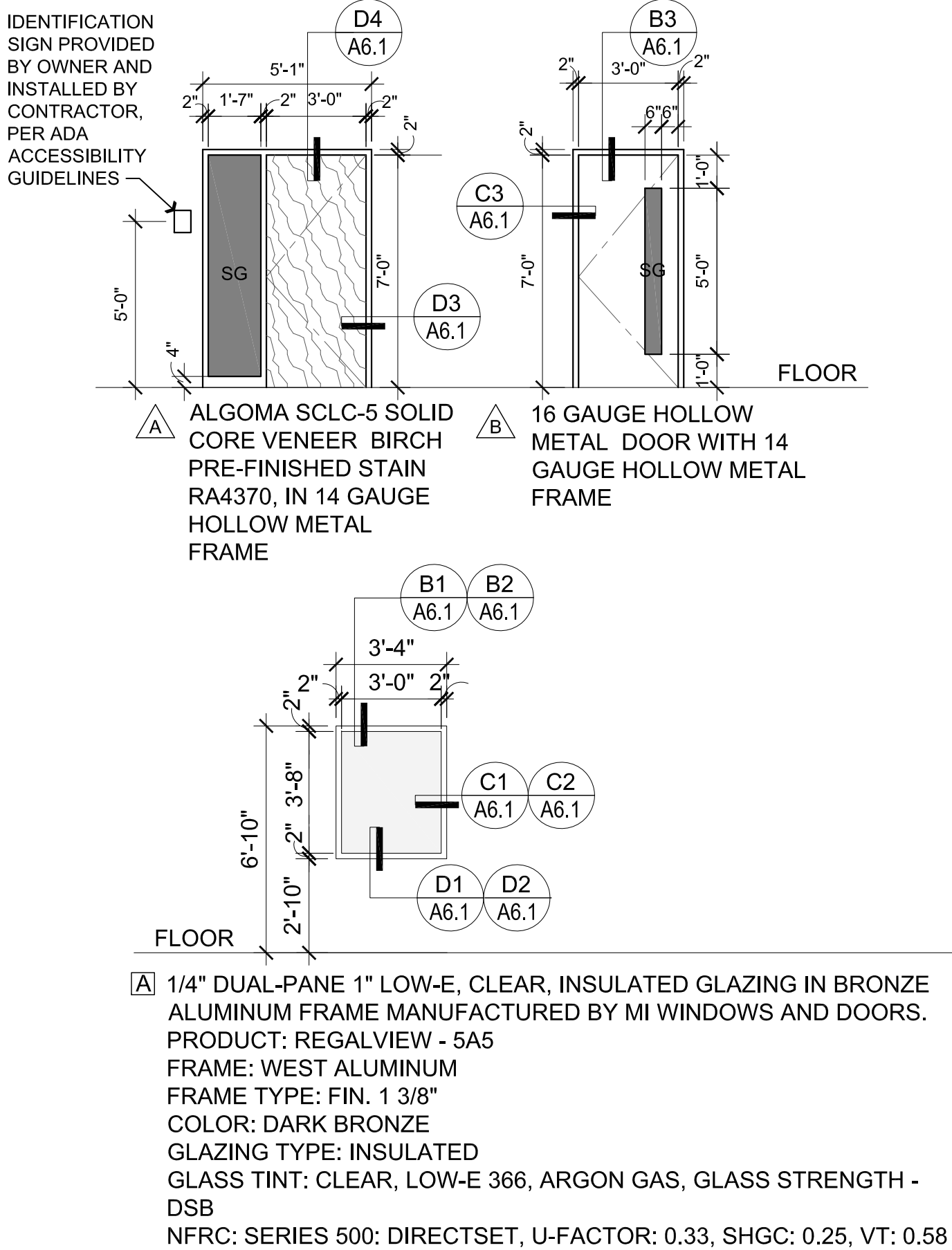
DRAWN BY L.O.
CHECKED BY W.A.K.
DATE March 1st, 2017
JOB NO. 695
SHEET

**A5.0**



Door Schedule								
NO.	ROOM NAME	SIZE	TYPE	DOOR MATERIAL	DOOR FINISH	FRAME MATERIAL	FRAME FINISH	HARDWARE TYPE
101A	CLASSROOM	3'-0"x7'-0"	B	HM	PAINT	HM	PAINT	02
101B	CLASSROOM	3'-0"x7'-0"	B	HM	PAINT	HM	PAINT	02
102A	OFFICE	3'-0"x7'-0"	A	SCWD	STAIN	HM	PAINT	01
103A	OFFICE	3'-0"x7'-0"	A	SCWD	STAIN	HM	PAINT	01
104A	OFFICE	3'-0"x7'-0"	A	SCWD	STAIN	HM	PAINT	01

Hardware Schedule						
<b>Heading # HW-01</b>						
1 SGL	Door 104A	Classroom 101 to Office 104	LH	90 Deg		
1 SGL	Door 102A	Classroom 101 to Office 103	LH	90 Deg		
1 SGL	Door 103A	Classroom 101 to Office 102	RH	90 Deg		
Single Opening 3-0 x 6-8 x 1-3/4 SCWD x HMF						
Each Door To Receive:						
3 EA.	Hinge	FBF179 4-1/2 x 4-1/2	652	Stanley		
1 EA.	Entry	9K3 7AB 15D S3	626	Best		
1 EA.	Core	By Owner	626	Best		
1 EA.	Wall Stop	236W	626	Hager		
1 EA.	Silencer	SR64	GRY	Ives		
<b>Heading # HW-02</b>						
1 SGL	Door 101A	Exterior From Classroom 101	LHR	90 Deg		
1 SGL	Door 101B	Exterior From Classroom 101	LHR	90 Deg		
Single Opening 3-0 x 7-0 x 1-3/4 HMD x HMF						
Each Door To Receive:						
3 EA.	Hinge	FBF168 4-1/2 x 4-1/2 NRP	652	Stanley		
1 EA.	Electric Hinge	FBF168 4-1/2 x 4-1/2 TW12	652	Stanley		
1 EA.	Exit	9EO - 36"	626	Von Duprin		
1 EA.	Trim	E996L Electric trim	626	Von Duprin		
1 EA.	Rim Cylinder	12E7212S2 RP	626	Best		
1 EA.	Prox. Reader	HID R40		HID		
1 EA.	Perm Core	By Owner				
1 EA.	Closer	4040XP H Cush	689	LCN		
2 EA.	Kick Plate	8400 10"x 34"	630	Ives		
1 EA.	Weather-strip	303AS 36" x 84"	Alum	Pemko		
2 EA.	Door Sweep	315CN - 36"	Alum	Pemko		
1 EA.	Threshold	171A - 72" MS/ES	Alum	Pemko		
Equipment by Security 101						
Control Panel (1) PW-6000 Intelligent Controller PW6k11C						
Cabinet / Enclosure (1) PW-Series High Density Enclosure PW5k2ENC1						
Reader Board Type #1 (1) PW-Series Dual Reader Module PW6k1R2						
Power Supply - Control Panel (1) Power Supply with Battery Backup AL400ULX						
Power Supply - Locks (1) 6 amp Power Supply with Battery Backup ACMCB AL600ILACM8CB						
Batteries (4) 12V 7AH Battery NP7-12						



## Window & Door Types

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

Materials Schedule				
CODE	MATERIAL	LOCATION	MANUFACTURER	SPECIFICATION
ACT-1	ACOUSTICAL CEILING TILE	REFER TO THE REFLECTED CEILING PLANS	ARMSTRONG	ASTM C 36; 2'x2' #770 NON DIRECTIONAL SQUARE LAY-IN TILE, WHITE SUSPENDED GRIDS; 15/16" METAL WHITE
CPT-1	CARPET	OFFICES	TANDUS CENTIVA	CRAYON POWERBOND CUSHION RS PRECIOUS METAL #48010 (PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR)
AQT-1	ALTRO QUARTZ TILE	CLASSROOM	ALTRO	COLOR TO BE DETERMINED
PL-1	PLASTIC LAMINATE	COUNTERTOPS	WILSONART	COLOR TO BE DETERMINED
PL-2	PLASTIC LAMINATE	VERTICAL SURFACES	WILSONART	COLOR TO BE DETERMINED
PT-1	PAINT	OFFICES & CLASSROOMS	SHERWIN WILLIAMS	COLOR TO BE DETERMINED
PT-2	PAINT	CLASSROOM ACCENT WALL	SHERWIN WILLIAMS	COLOR TO BE DETERMINED
PT-3	PAINT	INTERIOR TRIM (DOORS, FRAMES, WOOD TRIM)	SHERWIN WILLIAMS	COLOR TO BE DETERMINED
PT-4	PAINT	EXTERIOR METAL DOORS/TRIM	SHERWIN WILLIAMS	RAINSTORM SW6230
PT-5	PAINT	EXTERIOR BODY	SHERWIN WILLIAMS	SANDS OF TIME SW 6101
PT-6	PAINT	EXTERIOR TRIM	SHERWIN WILLIAMS	PORTABELLO SW6102
RB-1	4" RUBBER BASE	ALL CARPETED AND AQT AREAS	ARMSTRONG OR ROPPE	4" COVED WITH PRE-FORMED CORNERS, BLACK (PROVIDED AND INSTALLED BY CONTRACTOR)
WM-1	WALK-OFF MAT	INTERIOR ENTRY	TANDUS CENTIVA	ABRASIVE ACTION POWER BOND CUSHION CHARCOAL #19100

REVISIONS

BY

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EXPIRES: 6/30/18

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Prescott, AZ 86304

ARCHITECTURE & PLANNING

DRAWING: Schedules and Door & Window Types

PROJECT: ERAU Building 61 Remodel 3700 Willow Creek Road Prescott, AZ 86301

APN: 106-03-004

DRAWN BY L.O.

CHECKED BY W.A.K.

DATE March 1st, 2017

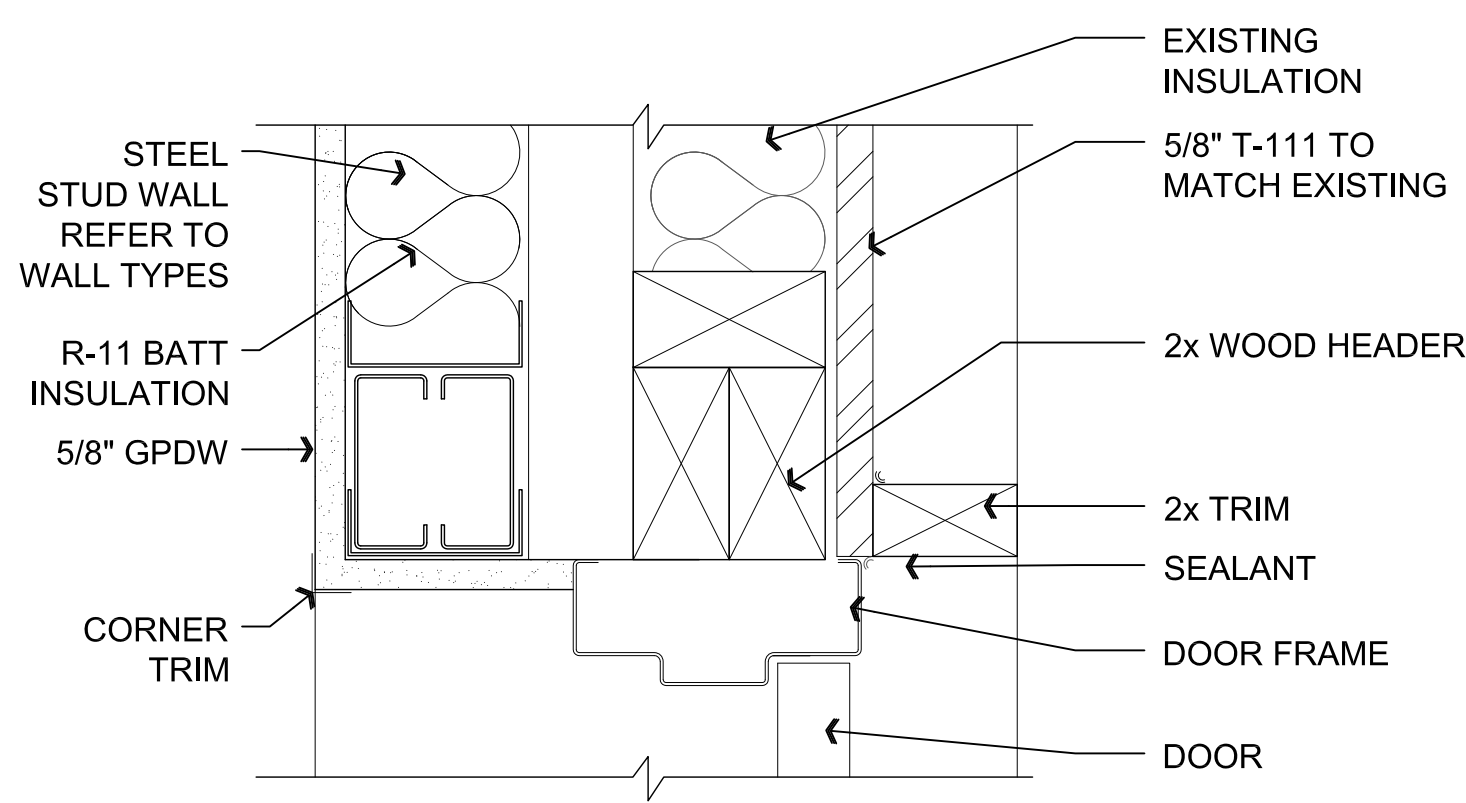
JOB NO. 695

SHEET

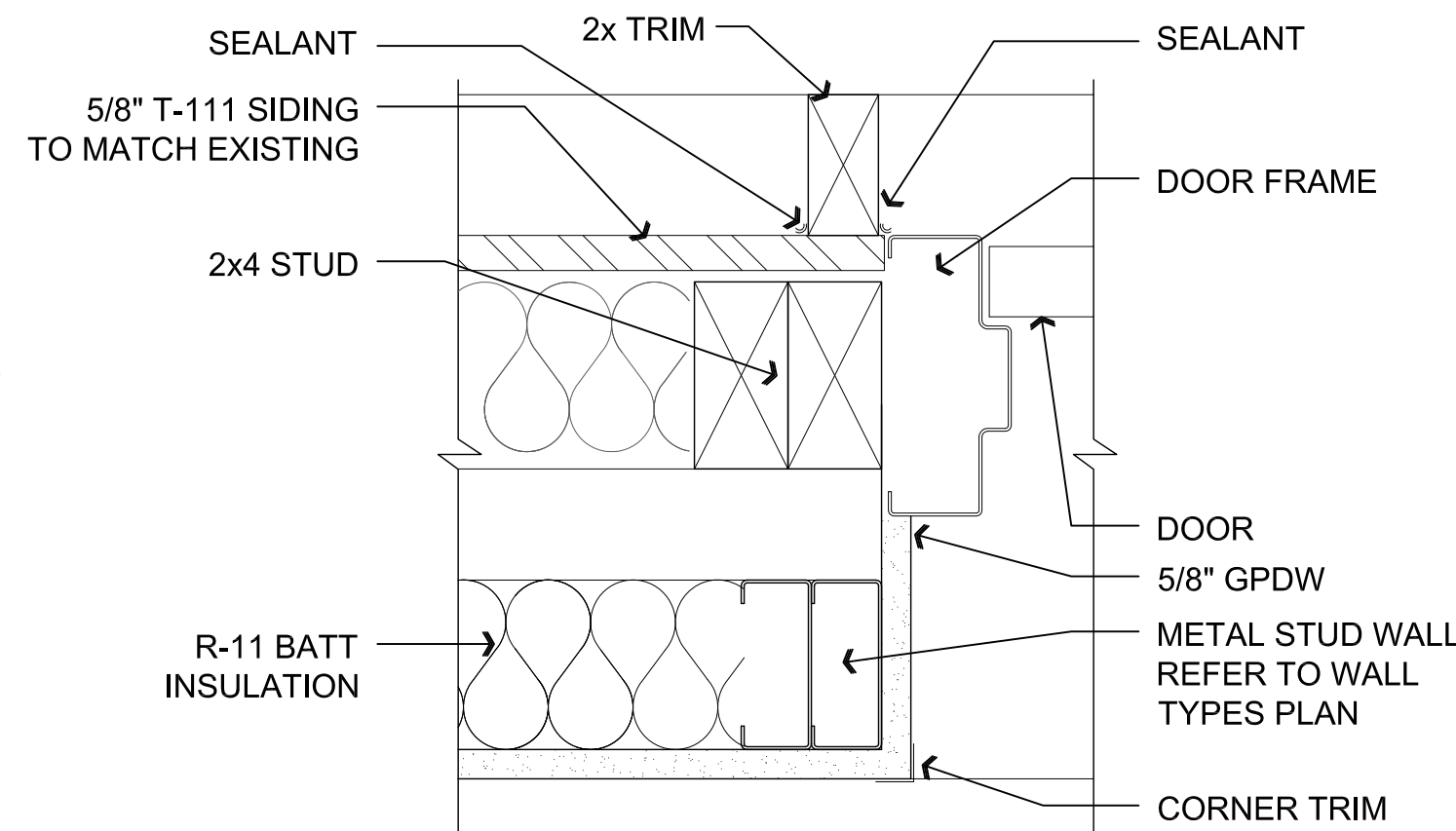
A6.0



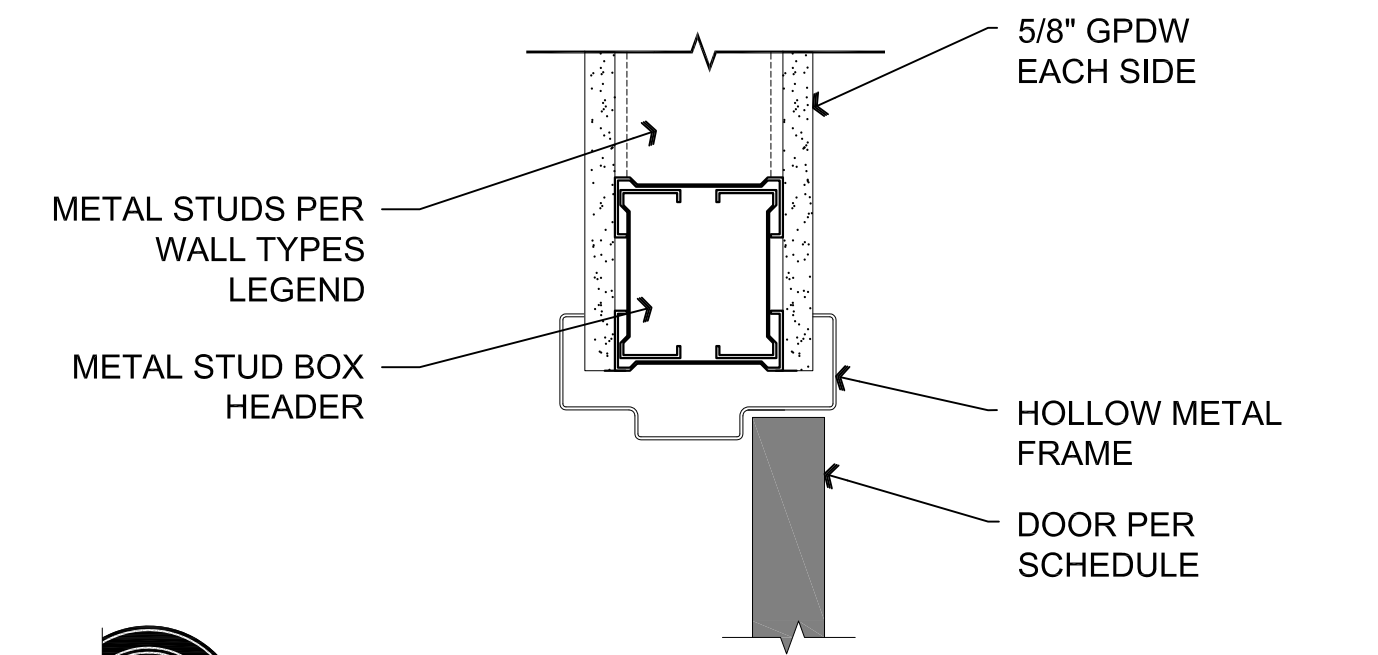
Mar 01, 2017 - 12:44pm



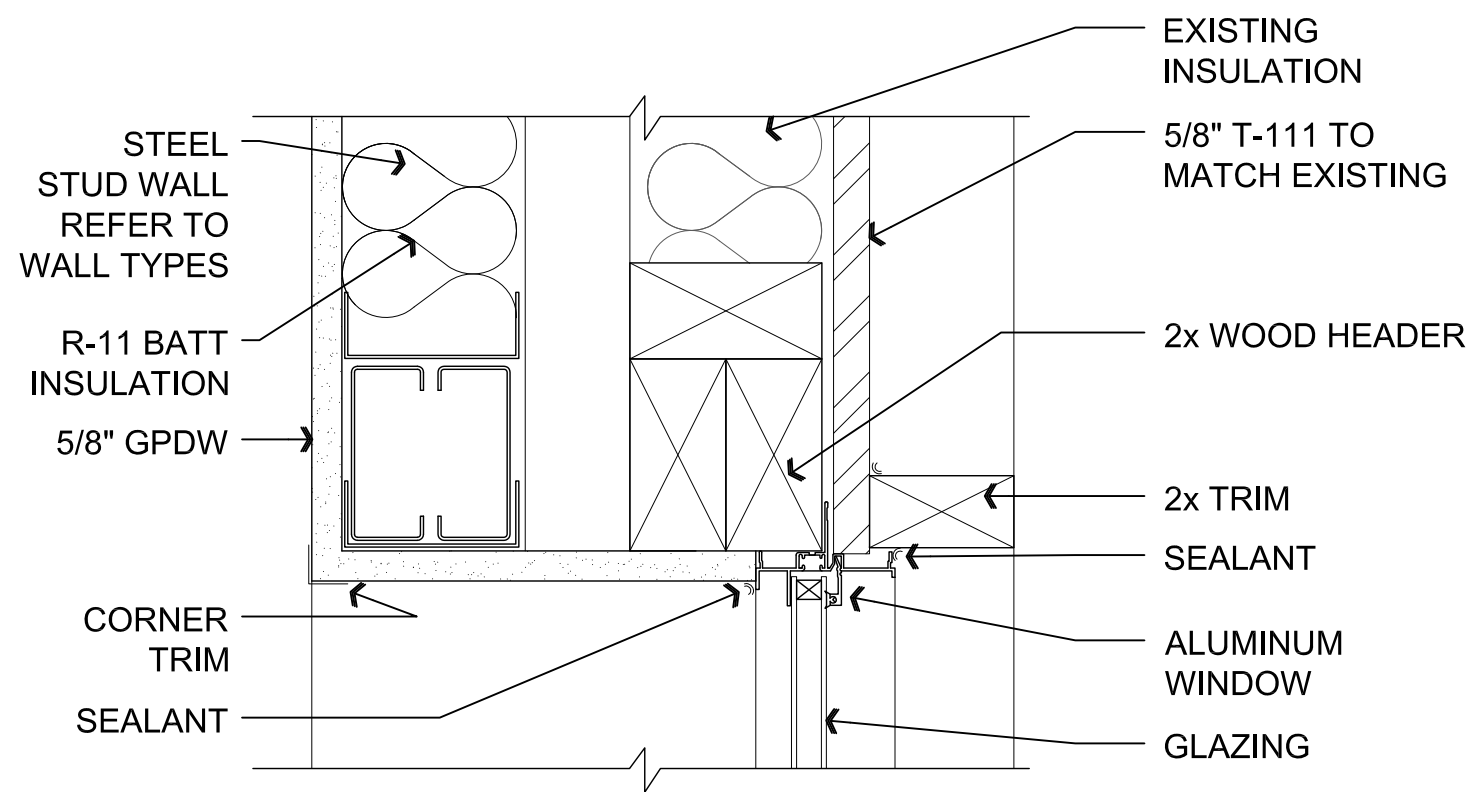
**B3** Door Head @ Framed Wall  
SCALE: 3" = 1'-0"



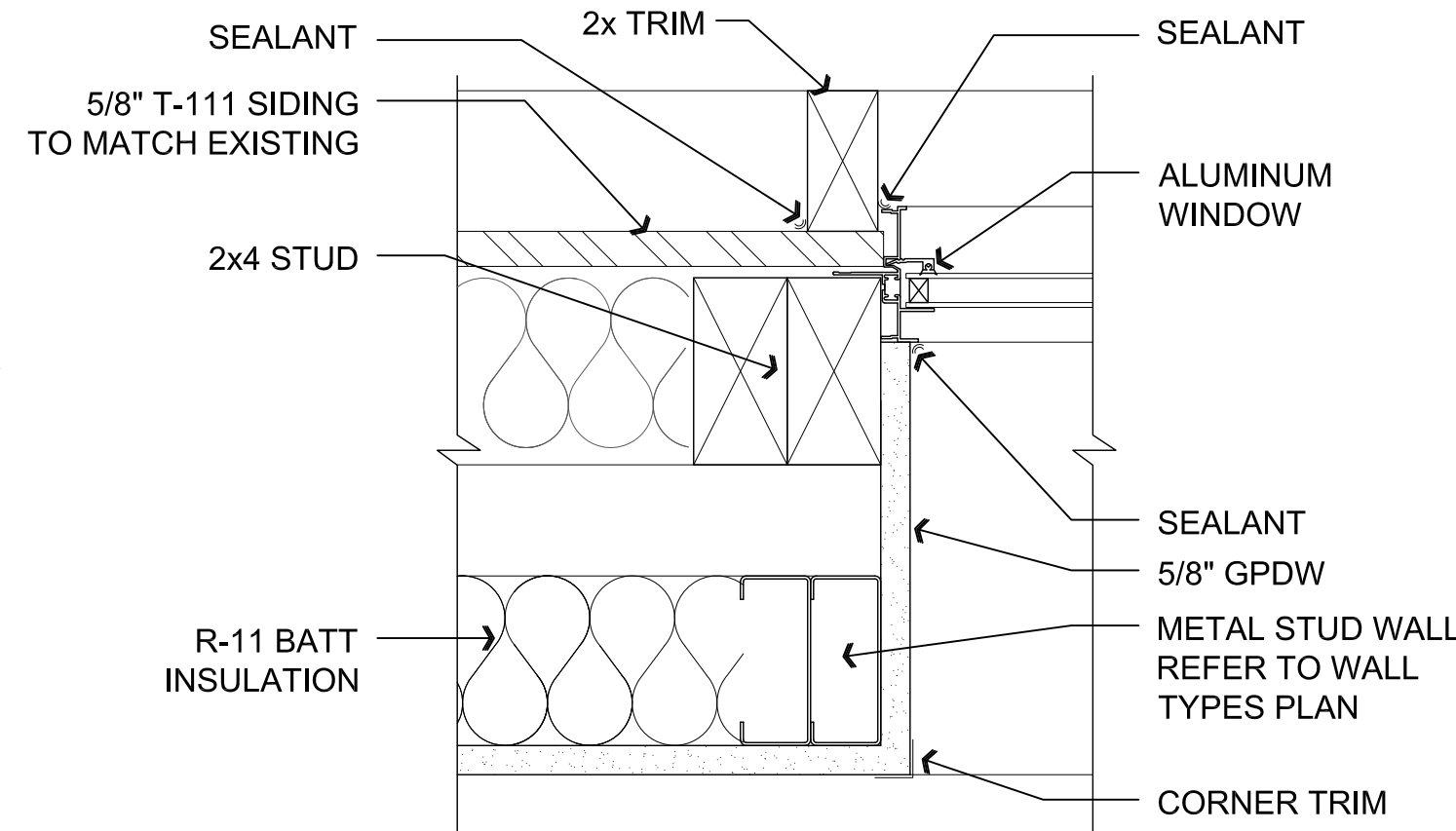
**C3** Door Jamb @ Framed Wall  
SCALE: 3" = 1'-0"



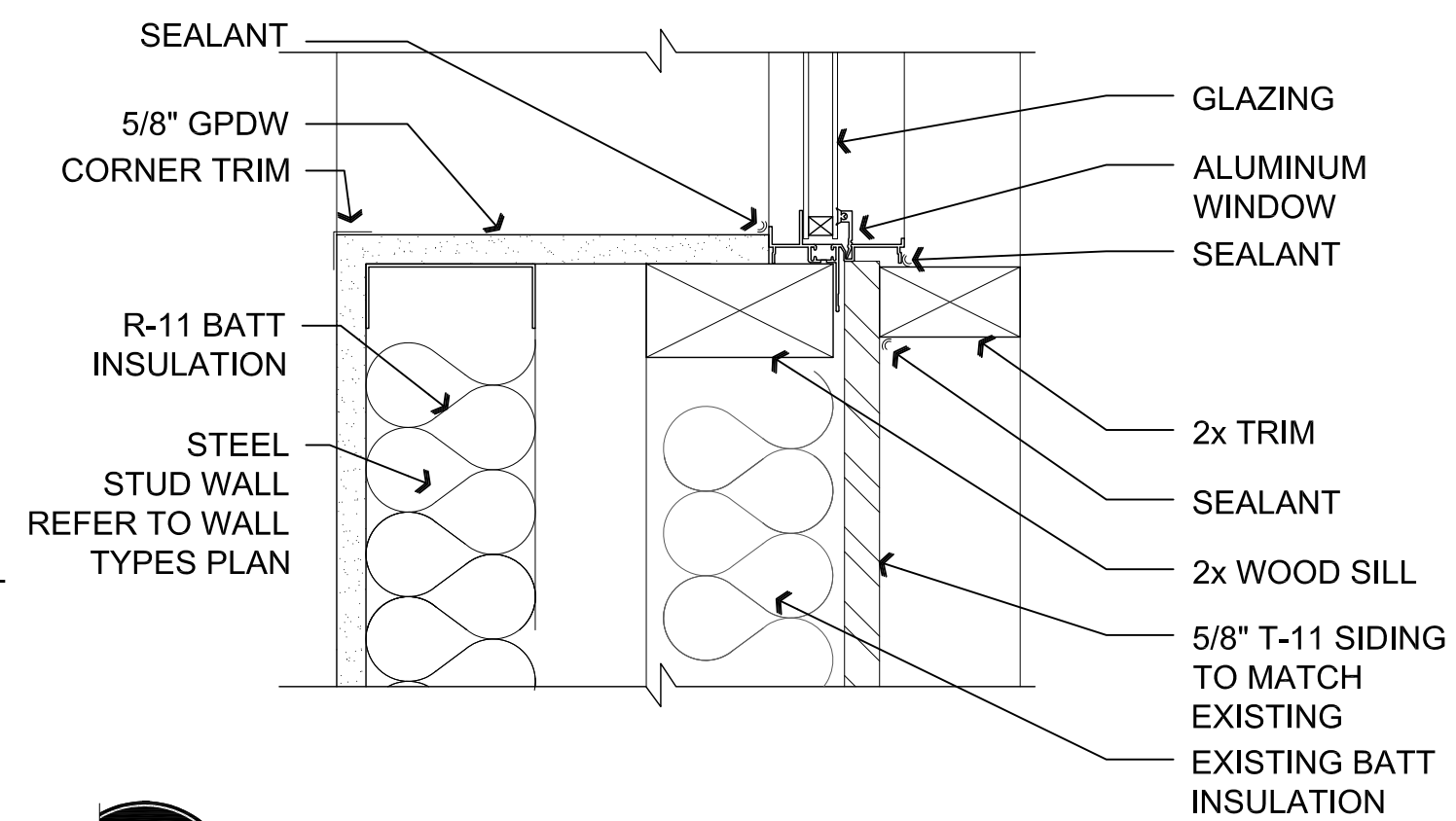
**D4** Door Head @ Framed Wall  
SCALE: 3" = 1'-0"



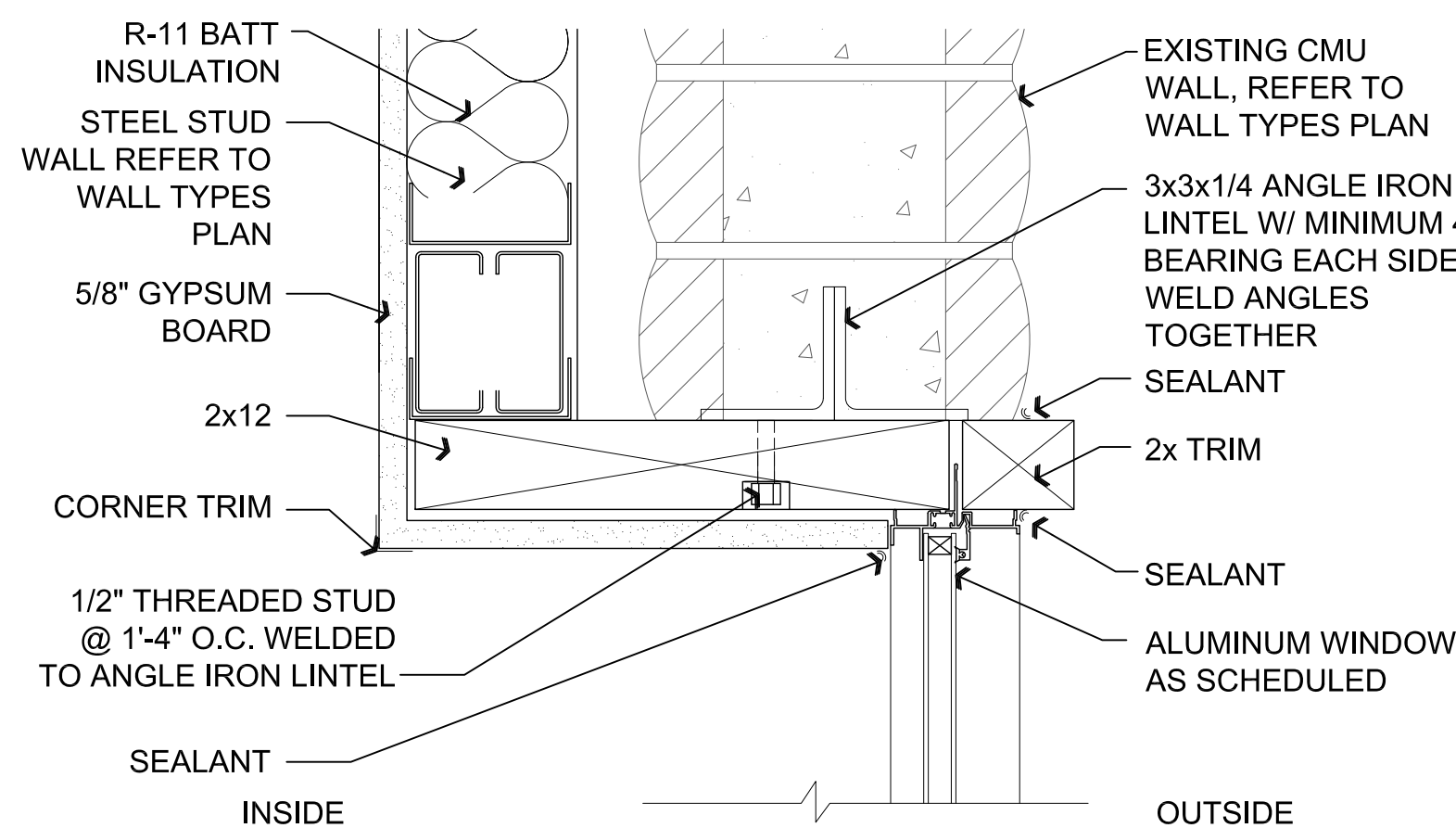
**B2** Window Head @ Framed Wall  
SCALE: 3" = 1'-0"



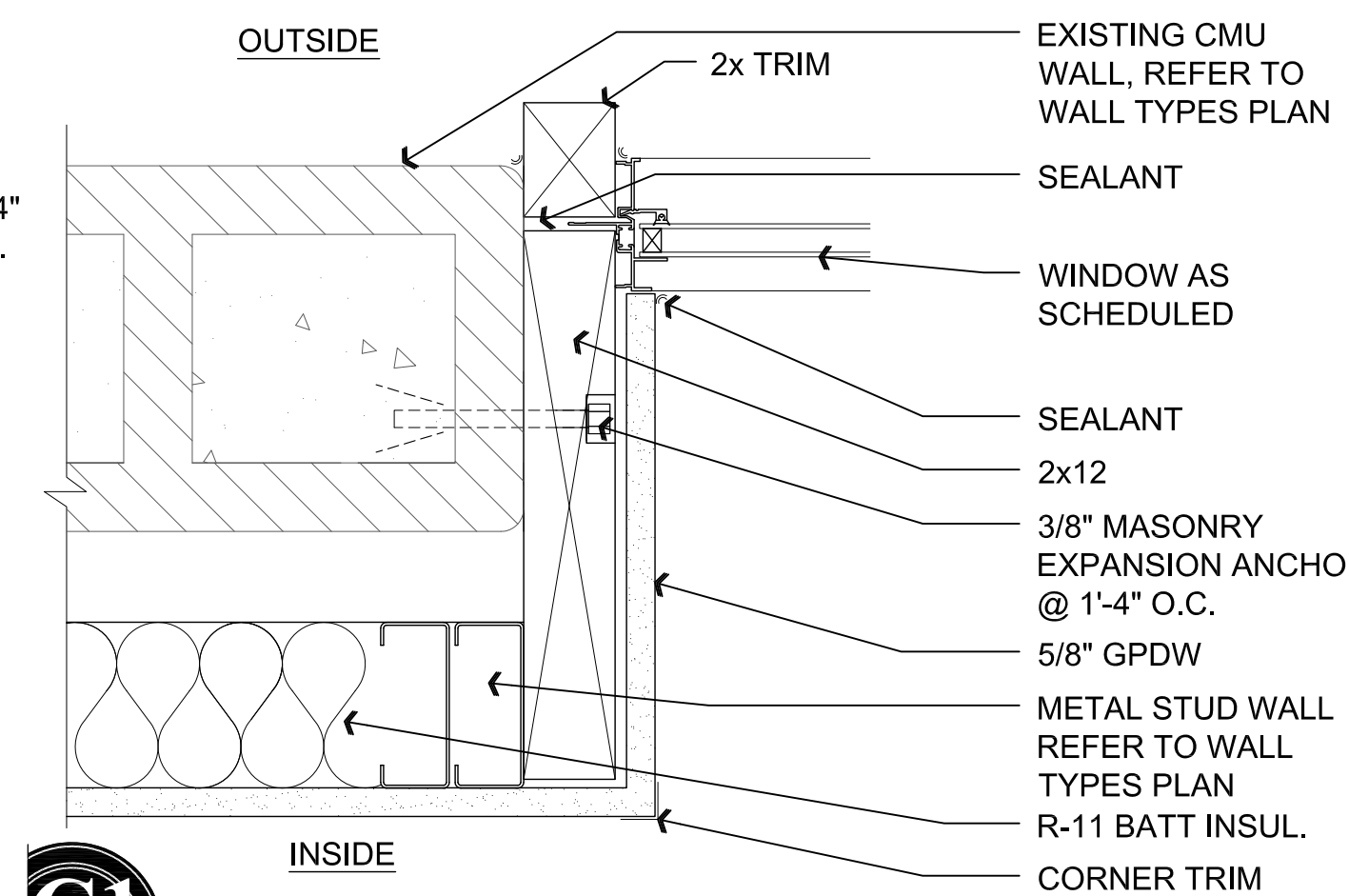
**C2** Window Jamb @ Framed Wall  
SCALE: 3" = 1'-0"



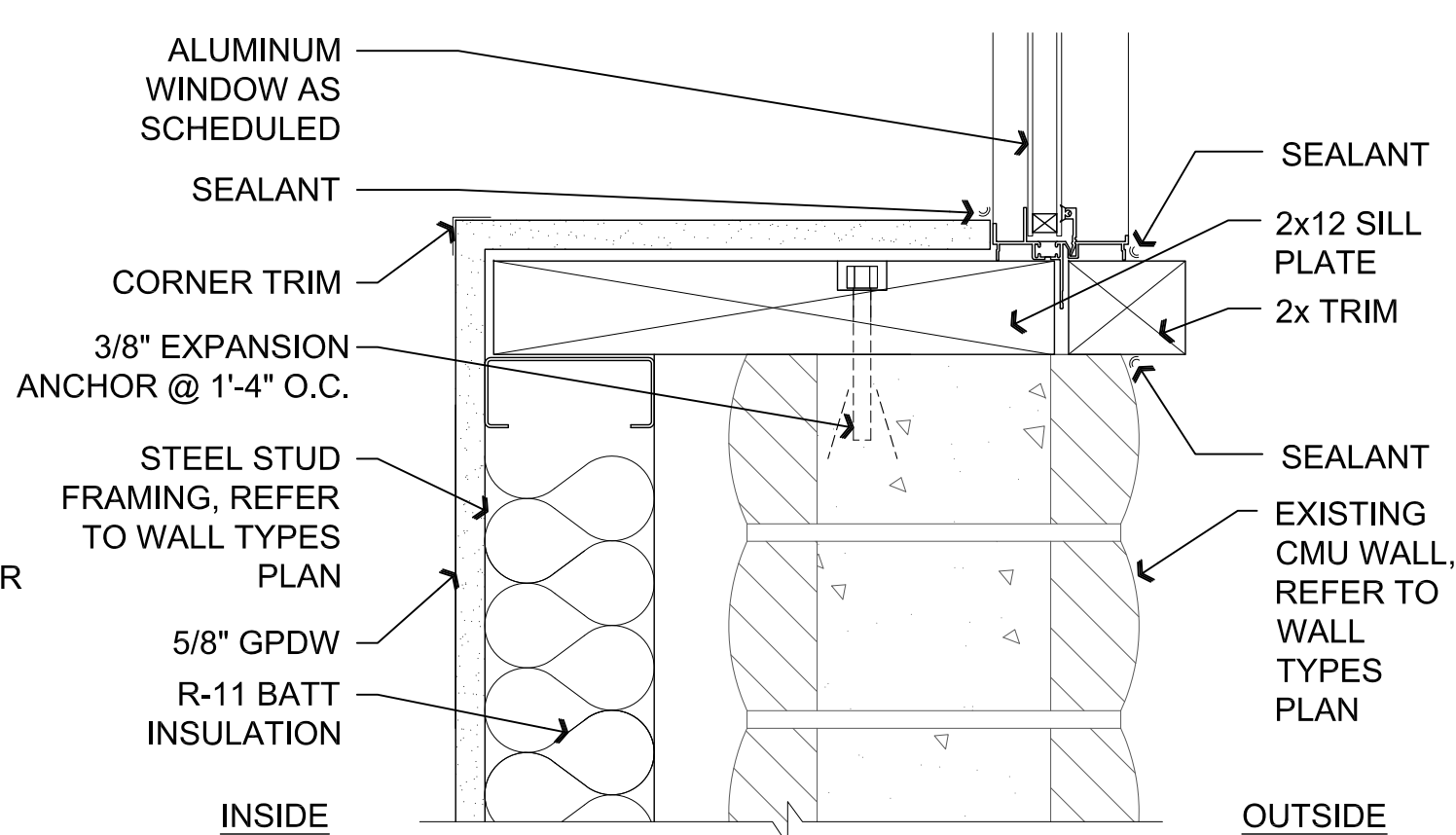
**D3** Door Jamb @ Framed Wall  
SCALE: 3" = 1'-0"



**B1** Window Head @ CMU  
SCALE: 3" = 1'-0"



**C1** Window Jamb @ CMU  
SCALE: 3" = 1'-0"

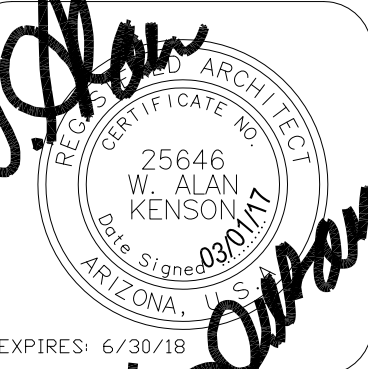


**D2** Window Sill @ Framed Wall  
SCALE: 3" = 1'-0"

**D1** Window Sill @ CMU  
SCALE: 3" = 1'-0"

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**ARCHITECTURE & PLANNING**

Details  
ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301  
106-03-004

**DRAWING:**  
**PROJECT:**  
**APN:**

DRAWN BY  
L.O.  
CHECKED BY  
W.A.K.  
DATE  
March 1st, 2017  
JOB NO.  
695  
SHEET

**A6.1**

00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 70 00 - GENERAL CONDITIONS

General Conditions of the Contract for Construction, AIA Document A201, 2007 Edition, is made a part of the Construction Documents by reference. A copy of the referenced document is available for inspection at the office of the Architect.

01 - GENERAL REQUIREMENTS

01 30 00 - ADMINISTRATIVE REQUIREMENTS

Shop Drawings

Two (2) paper copies of Shop Drawings and/or Catalog Cut Sheets and one (1) electronic file are to be submitted to the Architect for review and approval. The Architect will review the shop drawings and affix a stamp to the electronic file and paper copy, indicating the findings of the review and return to the Contractor. The Contractor shall correct and resubmit as necessary. Required for all products and samples and materials to be included in the project.

Meetings

Contractor shall hold construction progress meetings at jobsite every week. Representatives from owner, architect, contractor, and any relative subcontractor or suppliers shall attend. Contractor shall take minutes of the meetings and distribute to all attendees.

Portable Toilet Facility

Contractor to maintain portable toilet facility throughout construction period.

Dumpster

Contractor to provide dumpster throughout construction period.

Samples

Three (3) samples of each color or style of the products to be submitted to the Architect.

01 50 00 - TEMPORARY FACILITIES AND CONTROLS

Designated Areas

Owner shall provide designated areas for the contractor's employee parking, material storage and staging. Contractor shall control his employees, sub-contractors and material suppliers from parking in un-designated areas.

Protection

Contractor shall take All necessary precautionary measures to protect their work and ensure the safety of workmen, public and property. Neither the Owner nor Architect shall have any responsibility or control of construction means, methods, techniques, sequences or procedures affecting job-site safety, or for safety precautions and programs. contractor shall legally defend and hold harmless the Owner and Architect from all such claims.

Contractor's Responsibility

The Contractor shall supervise and direct the work, and be solely responsible for and have control over all methods, techniques and procedures necessary for the proper execution of the work. Where the work of this agreement affects owner's utilities, fire alarm, fire suppression or controls systems, the contractor shall give the owner a minimum of 24 hours advance notice.

The Contractor shall be responsible to the owner for the acts and omissions of the Contractor's employees, agents, sub-contractors, and their agents, employees, and other persons performing portions of the work under a contract with the Contractor to the fullest extent permitted by law.

The Contractor shall indemnify and hold harmless the Owner, the Owner's consultants, agents and employees of any of them from and against claims, damages, losses and expenses including but not limited to attorney's fees arising out of or resulting from performance of the work, provided that such claim damages, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury or destruction of tangible property other than the work itself, including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the contractor, a sub-contractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable regardless of whether or not such damage, claim, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this paragraph.

Material

The Contractor warrants that unless otherwise specified, all materials and equipment shall be new, free from defects, suitable for the intended purpose, and in conformance with laws in effect on the date of this agreement.

01 70 00 - EXECUTION REQUIREMENTS

General

Contractor shall field verify all existing conditions and lay out all of the work prior to starting construction on any part of the work. As a minimum contractor shall verify:

- all dimensions, both horizontal and vertical
- Utility locations, buried and overhead
- existing conditions affecting this project

Conflicts

If Contractor discovers an existing condition which differs from that shown (or is not shown), Contractor shall immediately notify the Architect.

Cutting and Demolition

In all cases, exercise extreme care in cutting operations and perform such operations under adequate supervision by competent mechanics skilled in the applicable trade. Openings shall be neatly cut and shall be kept as small as possible to avoid unnecessary damage. careless and/or avoidable cutting damage, etc. will not be tolerated and the contractor will be held responsible for such avoidable or wilful damage.

Patching and Refinishing

All replacing, patching and repairing of materials and surfaces cut or damaged in the execution of the work shall be performed by experienced mechanics of the specific trades involved. Such repairing and/or patching shall be done with the applicable materials in a manner that all surfaces so replaced, etc. will, upon completion of the work, match the surrounding similar surfaces.

Locations

Walls - paint all affected walls, interior and exterior from corner to corner. (e.g. if you install a door in an existing frame, you need only to paint the door and frame, but if you install a door and frame, paint the entire wall to match existing) Gypsum wall board ceilings - Paint the entire ceiling of the room affected. (e.g. if anything is installed in/on/through the ceiling of a room, paint the ceiling of that room) Roofs - Replace portion of roof covering as required to flash new assembly. If roof warranty is still in effect, Contractor issuing warranty shall perform the required work. All patching and refinishing will be performed in a manner such that at the completion of the work, it shall not be obvious where an item was removed from, or added to.

Disposal

Remove all materials noted on the drawings and all miscellaneous materials which will be rendered useless with removal of the item noted. Unless specifically noted otherwise, materials shall become the property of the contractor and shall be removed from the site in a legal and safe manner. Patch and repair all adjacent surfaces such that at the completion of the work, it shall not be obvious where an item was removed from or added to. Final appearance shall be totally acceptable to the owner. Contractor shall provide and maintain his own trash receptacles, unless specifically directed otherwise. All surplus materials become the property of the contractor. Remove all trash, rubbish and surplus materials from the site and dispose of in a legal and safe manner.

As-Builts

Contractor shall maintain a clean set of drawings at the job site that is specifically set aside for recording:

- all differences between the work as shown on the drawings and the work installed.
- All work added or deleted during the course of construction
- Exact measurements of all buried and/or concealed work (e.g. conduit below slab, conduit and data cable below raised platforms, conduit in walls etc.)

All recordings shall be neat and legible. Stamp this set of drawings 'As-Built drawings' and list as a minimum, the name, address and telephone number of the General Contractor and all major sub-contractors. (e.g. electrical, HVAC, etc.) At the completion of the project as prerequisite for final payment, Contractor shall turn these as-builts over to the owner.

Final Cleaning

After the construction of each phase and before occupancy, thoroughly clean the space by dusting the sills, washing windows, vacuuming the carpet and replace all HVAC filters. Clean site areas of any refuse created in the scope of work.

03 - CONCRETE

03 30 00 CAST-IN-PLACE-CONCRETE

General

Structural notes on the engineering drawings shall supersede this section.

Mix Design

Concrete Mix # 160X109 in Winter and #160X149 in Summer as produced by Hanson products. Curing compound provided on all slabs per ACI and ASTM specifications.

06 - WOOD, PLASTICS, COMPOSITES

06 10 00 - ROUGH CARPENTRY

General

Identify each piece of lumber or plywood used for structural framing with grade and trade mark of a lumber grading organization. Trade mark of manufacturer shall also appear on each piece. Grading Rules: conform with applicable requirements of American Lumber Standards "Simplified Practice Recommendation R-16" and to grading rules of manufacturer's association under whose rules the lumber is produced. Standards: Conform with requirements of The Engineered Wood Association, U.S. Department of Commerce Commercial Standards and American Wood Preservers Institute Standards (www.preservedwood.com), as they apply.

Products

Lumber Species: Douglas Fir - Larch, Hem Fir graded in accordance with Standard Grading and Dressing Rules of WCLIB. Framing lumber shall be stress grade. All sides shall be surfaced. Lumber Grades: provide dimensional lumber framing of grades indicated on Drawings, and the following:

One inch boards: Construction. Misc. blocking, bridging, etc.: Utility, Grounds and furring: Construction Grade Douglas Fir or No. 2 White Pine. Moisture content: Lumber shall be air-dried or kiln-dried. At time of installation, moisture content, expressed as a percentage of the weight of the oven-dry wood, shall not exceed 19 percent for lumber of up to two inches nominal thickness. Moisture content of lumber over two inches nominal thickness shall conform to the rules of the association under which it is graded.

Plywood

3/4" C-D plugged

Installation

General design requirements and maximum spacing are as indicated on drawings.

Connections

Securely attach carpentry work to substrates by anchoring and fastening as require by these specifications.

Connectors

1. Make framed connections with pre-manufactured framing on each side.
2. Pre-drill all holes for nails larger than 20d.
3. Field drill bolt holes for proper size.
4. Nailing schedule in accordance with 2012 IBC section 2304.8.3.2 and table 2304.9.1 unless noted otherwise.

Blocking

Blocking to be of size and shape required for securing and supporting other work or equipment.

06 20 00 - FINISH CARPENTRY

General

Formaldehyde containing particleboard and similar composition products are not allowable.

06 40 00 - ARCHITECTURAL WOODWORK

General

The installation of all architectural woodwork and casework shall comply with premium grade per AWI specifications. This section also includes natural stone, engineered stone, recycled glass and all materials associated with millwork.

Custom Casework

Case or millwork specified as receiving a painted finish should be limited to lower cost species (birch, poplar, etc...).

All cabinet and millwork tops, sides, dividers, shelving, etc., shall be 3/4" minimum stock.

Stained veneer materials shall conform to AWI custom grade, minimum thickness 1/16".

Doors and drawer fronts shall be 3/4" minimum core stock.

Drawer boxes shall be 1/2" minimum with minimum 1/4" plywood bottoms.

Cabinet tops should be of sufficient height to comply with minimum disabled accessibility requirements.

Most shelving should be designed as fully adjustable, 3/4" minimum thickness.

"line bore and pin" method of shelving adjustment (either in cabinets or standing shelving) is desired. Shelf standards mortised in with brackets is also acceptable.

All millwork and accessory hardware shall comply with ANSI A156.9, minimum quality level type 2 (Institutional). Hinges, guides, slides, etc., shall utilize bearings complying with BHMA 201.

All cabinet hinges should be self-closing.

Drawer slides should allow full extension (1" longer than total drawer depth) and be specified as heavy duty (100 lb minimum). Blum or approved alternate.

The use of painted particleboard as the finish for cabinets and tops is not acceptable.

Particleboard is allowable as core stock in low/no moisture areas when receiving a high-pressure plastic laminate finish.

Particleboard is not an acceptable material for shelving with greater than a 2 foot unsupported span.

The use of melamine or other similar low mill finishes (less than .020") as interior cabinet lining or underside of shelving is not acceptable. Melamine thermo fused 3/4" is acceptable for interior finish of cabinets only.

All exposed cabinetry hardware should be specified with a permanent, durable finish that is easily cleanable. Cabinet pulls 4" brushed aluminum wire.

All countertops designed as work surfaces shall be of an appropriate height to accommodate the physically disabled.

Restroom counter tops for lavatories will be composite material open on bottom with self-rimming sinks. Sheet mirror mounted full length of wall above top. Top manufacturer to cut lavatory openings in top to dimensions supplied by the plumber.

All millwork designed to support electrical equipment (computers, phones, clocks, etc....) shall have grommet openings allowing cords, interconnect cables, etc., to be concealed or routed internally. Grommets shall be 2-1/2" minimum diameter plastic, color to match adjacent finish. Grommet holes are to be drilled don-site b cabinet installer after equipment layout is determined by IT staff who will mark appropriate locations.

Refer to materials & finish schedule for finishes.

08 - OPENINGS

08 11 00 - METAL DOORS AND FRAMES

General

Provide metal doors and frames as shown on the drawings per steel door institute standards.

08 14 00 - WOOD DOORS AND FRAMES

General

Provide wood veneer doors and frames per schedule.

08 70 00 - HARDWARE

General

Refer to hardware schedule.

08 80 00 - GLAZING

General

Provide and install glass and glazing as indicated on the drawings and specified herein. Comply with building code, safety standard for architectural glazing materials and consumer products safety commission.

09 - FINISHES

09 29 00 - GYPSUM BOARD

General

Installation and application of materials to be in accordance with the latest printed instructions of the U.S. gypsum company or approved equal. After finishing, make joints invisible. No gaps or voids between gypsum board units or between drywall and adjacent work unless otherwise detailed. Not more than 1/8" in 10'-0" deviation from true plane, plumb and level in finished work.

Gypsum Board

ASTM C 36; regular types except where special types are required. Minimum 5/8" thick. Texture: Light Skip Trowel.

09 30 00 - TILE

General

Install porcelain tile as indicated on the drawings and in strict accordance with manufacturer's recommended instructions.

09 50 00 - CEILING TILE

General

Provide and install suspended acoustical ceiling system where indicated on drawings and refer to interior materials & finish schedule.

09 65 00 - RESILIENT FLOORING

Vinyl Composition Tile

VCT shall be applied with a suitable waterproof mastic. All VCT tile floors are to be sealed by the contractor. minimum 2 layers, per manufacturer's recommendations. Refer to Interior materials & finish schedule and floor finish plan for layout.

Base

Install base where indicated on drawings and in strict accordance with manufacturer's printed instructions. Refer to interior materials & finish schedule and floor finish plan for layout.

09 68 00 - CARPET

General

Refer to materials & finish schedule and floor finish plan for layout.

Preparation of Surfaces

Inspect surfaces to receive carpet, make tests recommended by manufacturer, take corrective action deemed necessary or notify owner in writing of any condition which could be detrimental to carpet installation. Remove all foreign and incompatible materials and vacuum clean surfaces immediately prior to installation of carpet. Fill cracks, construction joints and other surface imperfections with latex underlayment compound troweled level with adjacent surface. Commencement of work constitutes acceptance of surfaces and responsibility for them.

09 90 00 - PAINTING

General

Painting products shall be specified from Sherwin Williams. Break room, restrooms, labs, doors, door trim and window trim shall be Semi-gloss. Classrooms, offices, corridors, and reception areas shall be eggshell. All wet areas to have semi-gloss mildew resistant paint.

Scope of Work

- Items included, but not limited to interior conditions:
1. Refer to room finish schedule on the drawings.
  2. Drywall partitions and soffits - new and existing.
  3. Wood doors and hm frames.
  4. Access doors and panels, electric panels, exposed cable trays, miscellaneous trim and surfaces not prefinished or excluded specifically.
  5. Wall mounted mechanical grilles, registers, diffusers, and electrical cable trays. Paint to match adjacent surfaces.

Number of Coats

Number of coats listed below are minimum number. Apply as many coats as necessary to obtain full coverage and uniform appearance.

Paint Schedule

Interior drywall  
1 coat B28W02600 - ProMar® 200 Zero VOC Interior Latex Primer White  
2 coats K46W00151 - Pro Industrial PreCatalyzed Waterbased Semi-Gloss Epoxy Extra White

Gypsum ceilings  
1 coat B28W02600 - ProMar® 200 Zero VOC Interior Latex Primer White  
2 coats K46W00151 - Pro Industrial PreCatalyzed Waterbased Semi-Gloss Epoxy Extra White

Hollow metal doors, finish - semi gloss  
Frames and other ferrous materials  
1 coat B66W00310 - Pro Industrial Pro-Cryl® Universal Acrylic Primer Off White  
2nd-3rd coats K46W00151 - Pro Industrial PreCatalyzed Waterbased Semi-Gloss Epoxy Extra White

Refer to materials and finish schedule for color and location.

REVISIONS	BY

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DRAWING:	Specifications
	PROJECT:
	APN:
	106-03-004

ERAU Building 61 Remodel 3700 Willow Creek Road Prescott, AZ 86301
106-03-004

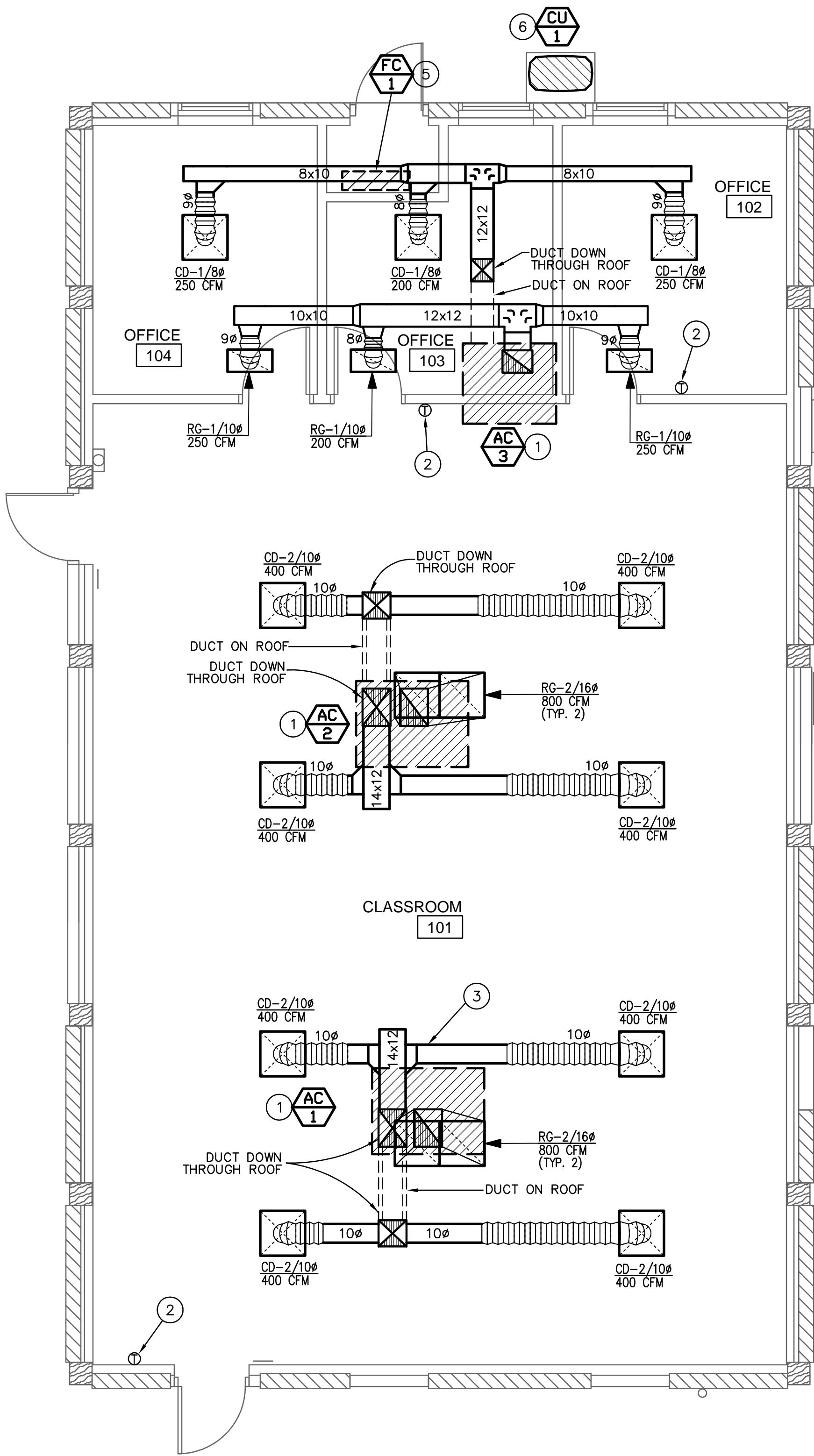
DRAWN BY L.O.
CHECKED BY W.A.K.
DATE March 1st, 2017
JOB NO. 695
SHEET

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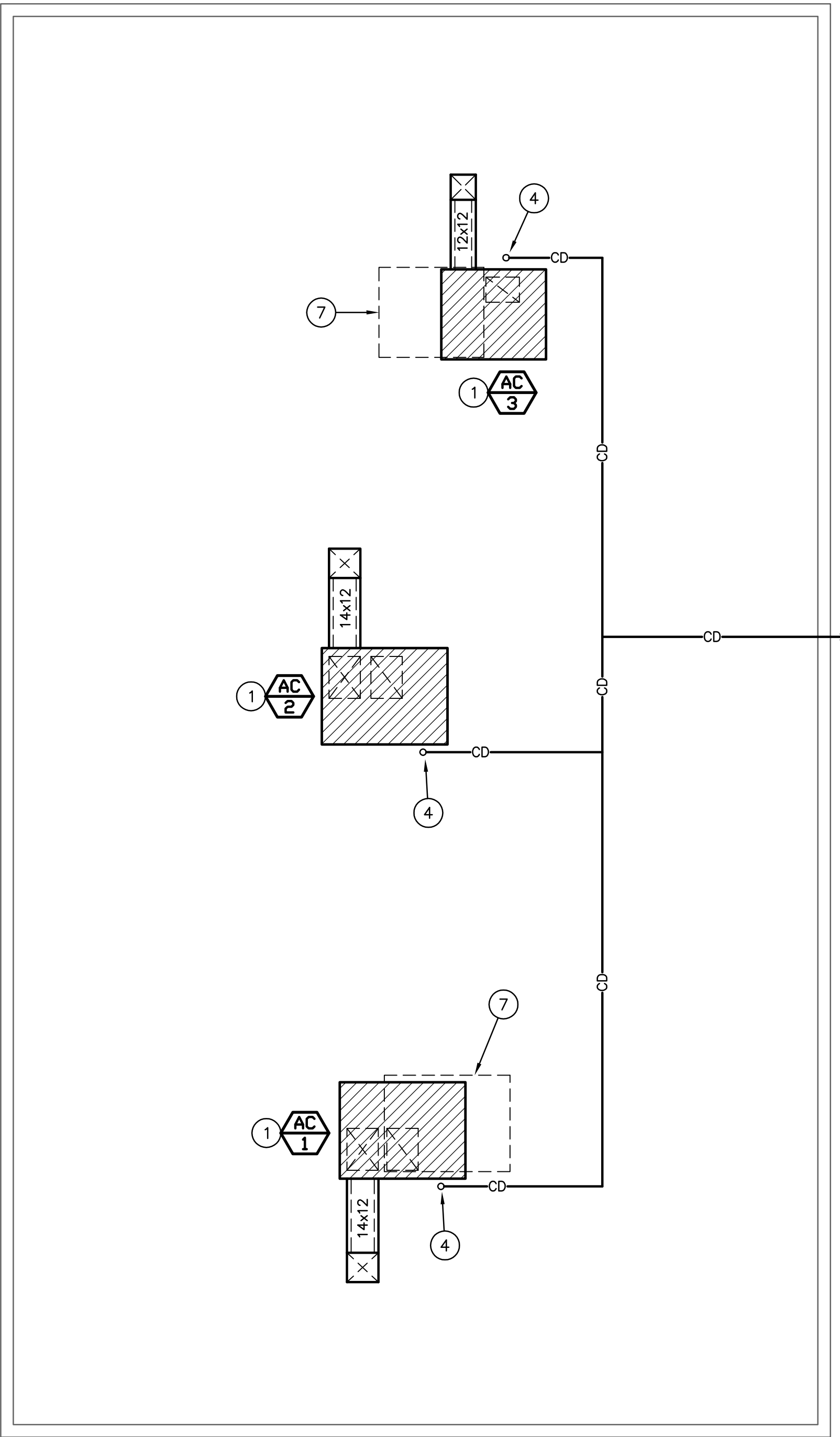


Dec 12, 2016 - 8:51 am

**M1 Mechanical Floor Plan**  
Scale: 1/4"=1'-0"  
Plan North



**M2 Mechanical Roof Plan**  
Scale: 1/4"=1'-0"  
Plan North



## KEYNOTES

- 1 ROOF MOUNTED PACKAGED A/C UNIT ON NEW 8" ROOF CURB. EXTEND SUPPLY AND RETURN AIR DUCTS DOWN THROUGH ROOF OR HORIZONTALLY ON ROOF AS SHOWN. PROVIDE CLEARANCES PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE FINAL LOCATION WITH EXISTING CONDITIONS AND ARCHITECT PRIOR TO COMMENCING WORK.
- 2 HEATING/COOLING PROGRAMMABLE THERMOSTAT ON WALL AT 48" ABOVE FINISHED FLOOR. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH ARCHITECT/OWNER.
- 3 BRANCH TAKE-OFFS ABOVE CEILING SHALL HAVE SPIN-IN FITTINGS WITH BALANCING DAMPER AND FLEX DUCT RUNOUT TO DIFFUSER. BALANCE TO CFM SHOWN. FLEX DUCT SHALL NOT EXCEED 8'-0" IN LENGTH. SIZE TO CORRESPOND WITH INLET NECK OF DIFFUSER. (TYPICAL).
- 4 EXTEND NEW 3/4" TYPE 'M' COPPER CONDENSATE DRAIN PIPING FROM UNIT DRAIN CONNECTION. ROUTE PIPING AT 1/8" PER FOOT ON ROOF TO ROOF DRAIN GUTTER.
- 5 MINI SPLIT FAN COIL UNIT MOUNTED ON WALL AT APPROX. 84" A.F.F. EXTEND CONDENSATE DRAIN DOWN THROUGH WALL AND TO EXTERIOR.
- 6 MINI SPLIT CONDENSING UNIT MOUNTED ON PREMANUFACTURED PAD. SLEEVE REFRIGERANT PIPING THROUGH WALL TO FAN COIL.
- 7 REMOVE AND DISPOSE EXISTING ROOFTOP UNIT AND REPAIR ROOF AS REQUIRED.

### NOTE:

ALL ROOF PENETRATIONS WILL BE MADE BY A CERTIFIED SOPREMA ROOF INSTALLER. NOT OTHER CONTRACTOR OR ROOFING SYSTEM IS ACCEPTABLE. PROVIDE SOPREMA APPROVED ROOF JACK TO ROOFING CONTRACTOR FOR INSTALLATION.

### CONTACT SOPREMA ROOFING REPRESENTATIVE:

WALT HITCHCOCK  
CELL: 480-694-3433  
EMAIL: WHITCHCOCK@SOPREMA.US

### NOTE:

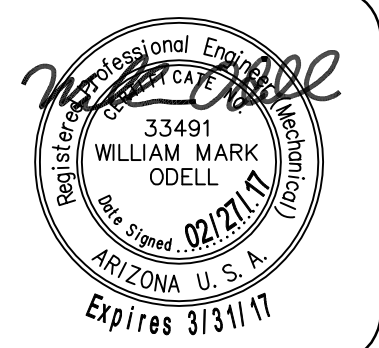
A COPY OF THE AIR BALANCE REPORT, SIGNED BY MECHANICAL CONTRACTOR, SHALL BE PROVIDED TO THE ARCHITECT FOR FINAL APPROVAL.

**OSE**  
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Consulting Engineers

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**ARCHITECTURE & PLANNING**

**DRAWING:** Mechanical Floor Plan

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:**

DRAWN BY
CHECKED BY
DATE
JOB NO. 695
SHEET

**M1.0**



MECHANICAL SPECIFICATIONS	
<p><b>GENERAL REQUIREMENTS</b> GENERAL PROVISIONS WHICH MAKE SPECIFIC REFERENCE TO ELECTRICAL DIVISION ONLY ARE INCLUDED HEREIN FOR CLARITY AND SIMPLIFICATION OF SPECIFICATIONS WRITING, AND ARE NOT PART OF THE MECHANICAL WORK. THE WORK OF DIVISION 15, MECHANICAL, IS SUBJECT TO THE CONDITIONS OF THE CONDITIONS OF THE CONTRACT, DIVISION 1, GENERAL REQUIREMENTS, AND APPLICABLE REQUIREMENTS OF OTHER PORTIONS OF THE CONTRACT DOCUMENTS. EXAMINE AND BECOME FAMILIAR WITH ALL CONTRACT DOCUMENTS AND COORDINATE THE MECHANICAL WORK ACCORDINGLY.</p> <p><b>INTENT</b> IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. ANY APPARATUS, APPLIANCE, MATERIAL OR WORK NOT SHOWN ON THE DRAWINGS, BUT MENTIONED IN THE SPECIFICATIONS OR VICE VERSA, OR ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE AND READY FOR OPERATION, EVEN IF NOT PARTICULARLY SPECIFIED, SHALL BE PROVIDED WITHOUT ADDITIONAL EXPENSE TO THE OWNER. SHALL THERE APPEAR TO BE DISCREPANCIES OR QUESTIONS OF INTENT IN THE CONTRACT. DOCUMENTS, REFER THE MATTER TO THE ARCHITECT FOR HIS DECISION BEFORE ORDERING ANY MATERIALS OR EQUIPMENT OR BEFORE THE START OF ANY RELATED WORK. THE DECISION OF THE ARCHITECT SHALL BE FINAL, CONCLUSIVE AND BINDING.</p> <p><b>DRAWINGS AND DATA</b> DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE OF WORK AND TO INDICATE GENERAL ARRANGEMENT OF EQUIPMENT, DUCTS, CONDUITS, PIPING AND FIXTURES. THEY ARE NOT INTENDED TO SHOW EVERY OFFSET OR FITTINGS OR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING INSTALLATION OF THE WORK. LOCATION OF ALL ITEMS NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. EXACT LOCATIONS NECESSARY TO SECURE BEST CONDITIONS AND RESULTS MUST BE DETERMINED AT PROJECT AND SHALL HAVE OVAL OF ARCHITECT BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS. IF SO DIRECTED BY ARCHITECT, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN LAYOUT AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF WORK. INCLUDE MINOR DETAILS NOT USUALLY SHOWN OR SPECIFIED, BUT NECESSARY FOR PROPER INSTALLATION AND OPERATION OF A SYSTEM OR PIECE OF EQUIPMENT IN BID PRICE.</p> <p><b>CODES</b> INCLUDE IN WORK, WITHOUT EXTRA COST TO OWNER, LABOR, MATERIALS, SERVICES, APPARATUS, DRAWINGS (IN ADDITION TO CONTRACT DRAWINGS AND DOCUMENTS) REQUIRED TO COMPLY WITH APPLICABLE LAWS, ORDINANCES, RULES AND REGULATIONS. DRAWINGS AND SPECIFICATIONS TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT THAN CODES, ORDINANCES, STANDARDS AND STATUTES. CODES, ORDINANCES, STANDARDS AND STATUTES TAKE PRECEDENCE WHEN THEY ARE MORE STRINGENT OR CONFLICT WITH DRAWINGS OR SPECIFICATIONS. FOLLOWING INDUSTRY STANDARDS, SPECIFICATIONS AND CODES ARE MINIMUM REQUIREMENTS:</p> <p>A. APPLICABLE CITY, COUNTY, AND STATE MECHANICAL, ELECTRICAL, GAS, PLUMBING, HEALTH AND SANITARY CODES, LAWS AND ORDINANCES. B. 2012 INTERNATIONAL MECHANICAL CODE WITH LOCAL AMENDMENTS. C. REGULATIONS, PERMITS, INSPECTIONS: COMPLY WITH ALL APPLICABLE CODED, RULES AND REGULATIONS. ALL MATERIALS, EQUIPMENT AND WORK MUST CONFORM TO THE UNIFORM MECHANICAL CODE. OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, ALL WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES.</p> <p><b>GENERAL</b> MATERIALS AND EQUIPMENT STANDARD PRODUCTS OF A REPUTABLE MANUFACTURER REGULARLY ENGAGED IN MANUFACTURE OF THE SPECIFIED ITEMS. WHERE MORE THAN ONE UNIT IS MANUFACTURE OF ANY ITEM, FURNISHED BY THE SAME MANUFACTURER, EXCEPT WHERE SPECIFIED OTHERWISE. INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. SHOULD VARIANCE BETWEEN PLANS AND SPECIFICATIONS OCCUR WITH THESE CONTACT ARCHITECT IMMEDIATELY SO THAT VARIATIONS IN INSTALLATION CAN BE KNOWN BY ALL PARTIES CONCERNED. PROVIDE EQUIPMENT FROM MANUFACTURER WHOSE PRODUCTS HAVE LOCAL REPRESENTATION.</p> <p><b>EXECUTION</b> PROTECT EXISTING ACTIVE SERVICES (WATER, GAS, SEWER, ELECTRIC) WHEN ENCOUNTERED, AGAINST DAMAGE FROM CONSTRUCTION WORK. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES WHICH ARE TO REMAIN. IF WORK MAKES TEMPORARY SHUTDOWNS OF SERVICES UNAVOIDABLE, CONSULT WITH OWNER AS TO DATES, PROCEDURES, AND ESTIMATED DURATION OF AT LEAST 10 WORKING DAYS IN ADVANCE OF DATE WHEN WORK IS TO BE PERFORMED. ARRANGE WORK FOR CONTINUOUS PERFORMANCE TO ASSURE THAT EXISTING OPERATING SERVICES WILL BE SHUT DOWN ONLY DURING THE TIME REQUIRED TO MAKE NECESSARY CONNECTIONS. IF A SYSTEM CANNOT SHUT DOWN, INSTALL TEMPORARY BYPASSES OR JUMPERS UNTIL CONNECTIONS ARE COMPLETE. CONTRACTOR RESPONSIBLE FOR ALL COSTS INCURRED BY ABOVE SHUTDOWNS, INCLUDING BYPASS OR JUMPER INSTALLATIONS, FOR WORK PERFORMED UNDER THIS SECTION. IF EXISTING ACTIVE UTILITY SERVICES ARE ENCOUNTERED WHICH REQUIRE RELOCATION, MAKE REQUEST TO PROPER AUTHORITIES FOR DETERMINATION OF PROCEDURES. PROPERLY TERMINATE EXISTING SERVICES TO BE ABANDONED IN CONFORMANCE WITH REQUIREMENTS OF AUTHORITIES. WHERE CONNECTIONS OR DISRUPTIONS ARE MADE TO EXISTING SYSTEMS, REACTIVATE, REFILL, AND RECHARGE ALL COMPONENTS AND RESTORE SYSTEMS TO OPERATING CONDITIONS AT TIME OF DISRUPTION.</p> <p><b>GUARANTEE</b> EACH COMPLETE SYSTEM GUARANTEED BY CONTRACTOR FOR A PERIOD OF ONE YEAR, FROM DATE OF ACCEPTANCE OF WORK BY OWNER IN WRITING, TO BE FREE OF DEFECTS OF MATERIALS AND WORKMANSHIP, AND TO PERFORM SATISFACTORILY UNDER ALL CONDITIONS OF LOAD OR SERVICE. THE GUARANTEES PROVIDE THAT ANY ADDITIONAL CONTROLS, PROTECTIVE DEVICES, OR EQUIPMENT BE PROVIDED AS NECESSARY TO MAKE THE SYSTEM OF EQUIPMENT OPERATE SATISFACTORILY, AND THAT ANY FAULTY MATERIALS OR WORKMANSHIP BE REPLACED OR REPAIRED. ON FAILURE OF GUARANTOR TO DO THE ABOVE AFTER WRITTEN NOTICE FROM OWNER, THE OWNER MAY HAVE THE WORK DOWN AT THE COST OF GUARANTOR. LOSS OF REFRIGERANT IS CONSIDERED A DEFECT IN WORKMANSHIP AND/OR EQUIPMENT, TO BE CORRECTED AS REQUIRED AT NO EXTRA COST TO THE OWNER.</p> <p>PROVIDE EXTENDED FIVE (5) YEAR FACTORY PARTS &amp; LABOR WARRANTY ON ALL AIR CONDITIONING COMPRESSORS.</p>	
<p><b>AIR CONDITIONING, HEATING AND VENTILATING</b></p> <p><b>SCOPE</b> WORK UNDER THIS SECTION INCLUDES FURNISHING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY FOR THE REMODELING, INSTALLATION AND PLACING INTO OPERATION THE HEATING, VENTILATING AND AIR CONDITIONING WORK AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS.</p> <p><b>VERIFICATION OF DIMENSIONS:</b> SCALED AND FIGURED DIMENSIONS ARE APPROXIMATE ONLY. BEFORE PROCEEDING WITH WORK, CAREFULLY CHECK AND VERIFY AT THE SITE, AND RESPONSIBLE FOR PROPERLY FITTING EQUIPMENT AND MATERIALS TOGETHER AND TO THE STRUCTURE IN SPACES PROVIDED. DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND MANY OFFSETS, BENDS, SPECIAL FITTINGS AND EXACT LOCATIONS ARE NOT INDICATED. CAREFULLY STUDY DRAWINGS AND PREMISES IN ORDER TO DETERMINE BEST METHODS, EXACT LOCATIONS, ROUTES AND BUILDING OBSTRUCTIONS, PRESERVE HEADROOM, AND KEEP OPENINGS AND PASSAGEWAYS CLEAR.</p> <p><b>CUTTING AND PATCHING:</b> CUT EXISTING WORK AND PATCH AS NECESSARY TO PROPERLY INSTALL THE NEW WORK. AS THE WORK PROGRESSES, LEAVE NECESSARY OPENINGS, HOLES AND CHASES, ETC., IN THEIR CORRECT LOCATIONS. IF THE REQUIRED OPENINGS, HOLES AND CHASES ETC., ARE NOT IN THEIR CORRECT LOCATIONS, MAKE THE NECESSARY CORRECTIONS AT NO COST TO THE OWNER. AVOID EXCESSIVE CUTTING AND DO NOT CUT STRUCTURAL MEMBERS WITHOUT CONSENT OF ARCHITECT.</p> <p><b>REGULATIONS, PERMITS &amp; INSPECTIONS</b> COMPLY WITH ALL APPLICABLE CODES, RULES AND REGULATIONS. ALL MATERIALS, EQUIPMENT AND WORK MUST CONFORM TO THE INTERNATIONAL MECHANICAL CODE. OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND LICENSES. WHEN REQUIRED BY CODE, ALL WORK MUST BE INSPECTED AND APPROVED BY LOCAL AUTHORITIES.</p> <p><b>DUCTWORK</b> ALL DUCTWORK FABRICATED AS PER LATEST INTERNATIONAL MECHANICAL CODE REQUIREMENTS AND SMACNA MANUAL. EXTENSION OF EXISTING DUCTWORK SHALL BE MADE WITH SOME MATERIAL. DUCTWORK SHALL BE CONSTRUCTED OF NEW HOT-DIPPED GALVANIZED SHEET METAL ASTM A-120 FOR EACH SIDE, WITH 1", 1 1/2 LB. DENSITY DUCT LINER. TAPE ALL CROSS-JOINTS IN SHEET METAL DUCT WITH HARDCAST. TAKE-OFF FITTINGS SHALL BE CONICAL SPIN-IN WITH QUADRANT DAMPER. TURNING VANES SHALL BE INSTALLED IN ALL MITERED ELBOWS.</p> <p><b>FLEXIBLE DUCT</b> FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTION TO AIR DISTRIBUTION DEVICES, BUT SHALL NOT EXCEED 6 FEET IN LENGTH. FLEXIBLE DUCT SHALL HAVE A MINIMUM R-8 INSULATION VALUE.</p> <p><b>DUCT INSULATION</b> DUCT SIZES ON DRAWINGS ARE "CLEAR INSIDE." INCREASE SHEET METAL SIZES ACCORDINGLY FOR LINED DUCTWORK. ADHESIVE AND INSULATING MATERIALS SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS MAXIMUM 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED. ADHESIVES SHALL BE WATERPROOF.</p> <p><b>DUCT INSULATION SCHEDULE:</b> CONCEALED RECTANGULAR LINED CONCEALED ROUND LINED</p> <p><b>DUCTS IN CONDITIONED SPACE OR UNCONDITIONED SPACE SEPARATED FROM BUILDING EXTERIOR:</b> RECTANGULAR LINED DUCTWORK - SEMI-RIGID GLASS FIBER INSULATION, 1 1/2 PCF. 1 1/2" THICK, THERMAL CONDUCTIVITY AT 75°. MAXIMUM 0.17 BTU/IN./SQ. FT./DEG./HR. MINIMUM "R-VALUE" SHALL BE 6.0.</p> <p><b>DUCTS IN UNCONDITIONED SPACE OR EXTERIOR:</b> LINED DUCTWORK - SEMI-RIGID GLASS FIBER INSULATION, 1 1/2 PCF, 2" THICK, THERMAL CONDUCTIVITY AT 75°. MAXIMUM 0.13 BTU/IN./SQ. FT./DEG./HR. MINIMUM "R-VALUE" SHALL BE 8.0.</p> <p>EXTERIOR DUCT SHALL BE SEALED WATER TIGHT.</p> <p><b>ACCEPTABLE MANUFACTURERS</b> THE FOLLOWING IS A LIST OF MANUFACTURERS WHOSE EQUIPMENT AND HVAC MATERIALS ARE ACCEPTABLE, SUBJECT TO CONFORMANCE WITH CONTRACT DOCUMENTS. VERIFY THAT THE EQUIPMENT WILL MEET ALL CAPACITIES, SPACE ALLOCATIONS, AND THAT THE WEIGHTS WILL NOT EXCEED STRUCTURAL DESIGN LOADS.</p> <p>PACKAGED A/C: TRANE GRILLES, REGISTERS, DIFFUSERS: KRUEGER, METAL-AIRE, TITUS, FLEXIBLE DUCT: GENFLEX, THERMAFLEX, OR EQUIVALENT. DUCT AND PIPE INSULATION: KNAUF, OWENS-CORNING, MANVILLE, CERTAIN-TEED, PPG.</p> <p><b>AIR SYSTEM BALANCING</b> AIR SYSTEMS AND AIR DISTRIBUTION TEST AND BALANCE: THE CONTRACTOR SHALL INCLUDE IN HIS BID THE BALANCING AND TESTING OF HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS TO BALANCE, ADJUST AND TEST AIR MOVING EQUIPMENT AND AIR DISTRIBUTING OR EXHAUSTING SYSTEMS AS HEREIN SPECIFIED. PROVIDE CERTIFIED REPORT.</p> <p><b>INSTRUCTIONS/O&amp;M MANUAL</b> THE CONTRACTOR SHALL INSTRUCT THE OWNER IN THE PROPER OPERATION AND MAINTENANCE OF ALL INSTALLED HVAC EQUIPMENT. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF TWO (2) BOUND OPERATING AND MAINTENANCE MANUALS TO THE OWNER AT THE COMPLETION OF THE PROJECT. THE MANUAL SHALL INCLUDE: CONTROL AND/OR INTERLOCK WIRING DIAGRAMS, SEQUENCE OF OPERATION, PREVENTATIVE MAINTENANCE ITEMS, AND A PARTS LIST WITH THE NOMENCLATURE, MAINTENANCE SCHEDULE, AND NAME, ADDRESS AND PHONE NUMBER OF THE LOCAL PRODUCT REPRESENTATIVE.</p>	

PACKAGE ROOFTOP A/C W/ GAS HEAT SCHEDULE (SUPPLIED BY OWNER)																				
EQUIP. NO.	MANUFACTURER	NOMINAL TONS	MODEL NO.	CFM	OSA CFM	FAN HP	COOLING CAPACITY				HEATING (NAT. GAS)			VOLTS/ PHASE	MCA	MAX FUSE	MIN. SEER	WEIGHT LBS.	REMARKS	
							TOTAL MBH	SENS. MBH	ENT. AIR TEMP DB (F)	WB (F)	AMB. TEMP	INPUT	OUTPUT							A.F.U.E.
AC-1	TRANE	4	4YCZ6048A1096	1600	248	3/4	48.3	36.3	80	67	95	96	72.0	80%	208/3	25.2	35	16	531	①②③④⑤⑥⑦⑧
AC-2	TRANE	4	4YCZ6048A1096	1600	248	3/4	48.3	36.3	80	67	95	96	72.0	80%	208/3	25.2	35	16	531	①②③④⑤⑥⑦⑧
AC-2	TRANE	1.5	4YCY4024C1060	700	29	1	1/2	17.7	80	67	95	60	48	81%	208-230/1	16.5	25	14	385	①②③④⑤⑥⑦⑧
<div>① PROVIDE WITH #BAYCURB051A FULL PERIMETER ROOF CURB SLOPED TO MATCH ROOF SLOPE.</div> <div>② EXTEND FULL SIZE TYPE "M" COPPER CONDENSATE DRAIN FROM UNIT AND SLOPE @ 1/8" PER FT. ON ROOF TO GUTTER.</div> <div>③ PROVIDE CLEARANCES AS PER MANUFACTURERS REQUIREMENTS.</div> <div>④ PROVIDE WITH #BAYECON14A ECONOMIZER W/ BAROMETRIC RELIEF WITH #BAYENTH001A ENTHALPY CONTROL.</div> <div>⑤ PROVIDE TRANE #TCONT800 TOUCHSCREEN, PROGRAMMABLE, THERMOSTAT.</div> <div>⑥ PROVIDE WITH #BAYFLTR201B FILTER FRAME AND 2 SETS OF FILTERS.</div> <div>⑦ PROVIDE WITH #BAYLOAM105A LOW AMBIENT CONTROL.</div> <div>⑧ PROVIDE WITH #BAYCCHT102S CRANK CASE HEATER.</div>																				

DUCT FREE SPLIT SYSTEM																
OUTDOOR UNIT									INDOOR UNIT							REMARKS
EQUIP. NO.	MANUFACTURER	MODEL NO.	TYPE	MCA ①	VOLTS/ PHASE	TOTAL COOLING CAPACITY @95° F	SENSIBLE COOLING CAPACITY @95° F	WEIGHT	EQUIP. NO.	MANUFACTURER	MODEL NO.	NOMINAL COOLING CAPACITY BTUH	VOLTS/ PHASE	WEIGHT		
CU-1	MITSUBISHI	MUY-GL24NA	A/C	17.1	208/230, 1ø	22,800	16,700	108 LBS	FC-1	MITSUBISHI	MSY-GL24NA	24,000	208/203, 1ø	26 LBS	②③④	
① COMBINED INDOOR/OUTDOOR UNIT AMPS.																
② PROVIDE LOW AMBIENT KIT FOR OPERATIONS DOWN TO 20°F.																
③ SIZE AND INSTALL REFRIGERANT LINES AS RECOMMENDED BY MANUFACTURER'S WRITTEN INSTRUCTIONS. INSULATE PIPING WITH 1" INSULATION, PER IECC.																
④ PROVIDE REMOTE MOUNTED T-STAT.																

GRILLES/REGISTERS/DIFFUSERS SCHEDULE										
MARK	DESCRIPTION	MODULE SIZE	TYPE	OBD	FRAME	MATERIAL	FINISH	MANUF.	MODEL	REMARKS
CD-1	SUPPLY DIFFUSER	24" x 24"	PERFORATED FACE	NO	T-BAR	STEEL	WHITE	TITUS	TMS	8ø NECK
CD-2	SUPPLY DIFFUSER	24" x 24"	PERFORATED FACE	NO	T-BAR	STEEL	WHITE	TITUS	TMS	10ø NECK
RG-1	FILTER RETURN GRILLE	24" x 12"	PERFORATED FACE FILTER RETURN	NO	T-BAR	STEEL	WHITE	TITUS	8FF	W/ HINGED 1" FILTER FRAME
RG-2	FILTER RETURN GRILLE	24" x 24"	PERFORATED FACE FILTER RETURN	NO	T-BAR	STEEL	WHITE	TITUS	8FF	W/ HINGED 1" FILTER FRAME
NOTES:										
1. NECK SIZE SHOWN ON PLANS AND CORRESPONDS TO DUCT CONNECTION SIZE.					3. MOUNTING HEIGHT OF GRILLES AND EXACT LOCATION OF ALL DIFFUSERS TO FIELD COORDINATED AND APPROVED BY OWNER.					
2. CONTRACTOR SHALL PROVIDE SQUARE TO ROUND ADAPTERS AS REQUIRED FOR INSTALLATION.					4. VERIFY MAKE, MODEL AND COLOR OF ALL DEVICES WITH OWNER.					

DUCT CONSTRUCTION NOTES

- 1 - ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH "ASHRAE GUIDE" AND "SMACNA STANDARDS" AND IN CONFORMANCE WITH REQUIREMENTS OF LOCAL BUILDING, MECHANICAL AND ENERGY CONSERVATION CODES. WHERE MORE THAN ONE REGULATION OR CODE APPLIES, THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
- 2 - FLEXIBLE DUCTWORK SHALL COMPLY WITH THE CLASS I REQUIREMENTS OF THE NFPA BULLETIN NO. 90A AND SHALL BE INSULATED WITH 1" FIBERGLASS, SUPPORTED BY HELICALLY WOUND STEEL WIRE WITH REINFORCED METALIZED OUTER JACKET RATED FOR USE IN PLENUMS. ATTACHMENT SHALL BE WITH WORM DRIVE CLAMPS. LENGTH SHALL NOT EXCEED 10'-0", EXCEPT AS APPROVED BY ARCHITECT.
- 3 - PROVIDE MANUAL BALANCING DAMPER AT EACH BRANCH DUCT TAKE OFF.
- 4 - ALL DUCTWORK JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS AND CONNECTION ON DUCTWORK SHALL BE LISTED AND LABELED BY UL 181A OR 181B TAPES AND MASTICS.
- 5 - ALL AIR SUPPLY AND RETURN DUCTS LOCATED IN CONDITIONED SPACES OR UNCONDITIONED SPACES SEPARATED FROM BUILDING EXTERIOR SHALL HAVE A MIN. R-5 INSULATION VALUE. ALL AIR SUPPLY AND RETURN DUCTS LOCATED IN UNCONDITIONED SPACES NOT SEPARATED FROM BUILDING EXTERIOR SPACES OR EXTERIOR DUCTS SHALL HAVE A MIN. R-8 INSULATION.
- 6 - PROVIDE RADIUS ELBOWS, TURNING VANES, AND SPLITTER DAMPERS IN BRANCHES AND EXTRACTORS WHERE APPLICABLE.
- 7 - TURNING VANES SHALL BE INSTALLED IN ALL MITERED ELBOWS.
- 8 - BRANCH DUCT SERVING DIFFUSERS SHALL BE SIZE AS INDICATED. PROVIDE INCREASER OR SHEET METAL PLENUM TO CONNECT TO DIFFUSER AS REQUIRED.
- 9 - ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS. IF DUCT LINER IS USED FOR INSULATION, CONTRACTOR SHALL INCREASE DUCT SIZE ACCORDINGLY.
- 10 - HANGERS FOR SHEET METAL DUCTWORK SHALL BE INSTALLED AS REQUIRED BY 2012 IMC.

COORDINATION NOTES

- 1 - COORDINATE OPENING'S FOR GRILLES, REGISTERS, DIFFUSERS AND DUCTWORK WITH FRAMING CONTRACTOR PRIOR TO ROUGH-IN.
- 2 - COORDINATE EXACT LOCATION OF ALL GRILLES, REGISTERS AND DIFFUSERS WITH ARCHITECTURAL PLANS.
- 3 - LIGHTING & SPRINKLER HEADS TAKE PRECEDENCE OVER DIFFUSER LOCATION. CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS TO DIFFUSERS TO AVOID ANY CONFLICT WITH LIGHTING LAYOUT & SPRINKLER HEADS.
- 4 - CONTRACTOR TO COORDINATE THERMOSTAT LOCATIONS WITH OWNER & ARCHITECT PRIOR TO MOUNTING.
- 5 - ALL THERMOSTATS ARE TO BE MOUNTED AT A HEIGHT OF 48" TO 54" ABOVE THE FLOOR LEVEL FOR DISABLED ACCESS.

GENERAL REQUIREMENTS

- 1 - PROVIDE CLEARANCES AS PER MANUFACTURER'S RECOMMENDATIONS.
- 2 - PITCH CONDENSATE DRAIN LINE 1/8" PER 12" RUN TOWARDS TERMINATION. INSULATE IN CONDENSATE DRAIN LINE WITH 3/8" CLOSED CELL "ARMIFLEX" TUBE INSULATION, TO PREVENT CONDENSATE DRIP.
- 3 - PRIOR TO THE CONTRACTOR ORDERING OR SETTING ANY AIR CONDITIONING EQUIPMENT, DUCTWORK, OR AIR DEVICE, HE SHALL VERIFY LOCATION OF PLACEMENT WITH STRUCTURAL DRAWINGS AND CONFIRM WEIGHTS, DISCHARGE CONFIGURATION, SIZES, ELECTRICAL CHARACTERISTICS AND ANY OTHER DIMENSIONAL DATA WHICH MIGHT AFFECT THE SUCCESSFUL INSTALLATION OF THE EQUIPMENT.
- 4 - KEEP ALL VENTS THROUGH ROOF AND EXHAUST DISCHARGE DUCTS A MINIMUM OF 10'-0" FROM OUTSIDE AIR INTAKES OR WINDOWS AND FROM ALL VERTICAL PORTIONS OF THE BUILDING.



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BY

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Professional Engineer  
No. 33491  
WILLIAM MARK ODELL  
State of ARIZONA U.S.A.  
Date signed 02/27/17  
Expires 3/31/17

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ARCHITECTURE & PLANNING

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P.O. Box 11593  
Prescott, AZ 86304

ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

DRAWING: Mechanical Schedules & Specs

PROJECT:

APN:

DRAWN BY
CHECKED BY
DATE
JOB NO. 695
SHEET

M2.0



ASHRAE 62.1 OSA CALC

Outside Air for Unit AC-1 & AC-2

Space	Area	Occ Density	Rp	Pz	Ra	Az	Vbz
Computer Lab	1,340	25	10	33.5	0.12	1340	495.8
Balance AC-1 & AC-2 to 248 CFM OSA EA.				Total Net OSA Required		496	

Outside Air for Unit AC-3

Space	Area	Occ Density	Rp	Pz	Ra	Az	Vbz
Office	342	5	5	1.71	0.06	342	29.1
Balance AC-3 to 29 CFM OSA				Total Net OSA Required		29	

6.2.2.1 Breathing Zone Outdoor Airflow. The design outdoor airflow required in the breathing zone of the occupiable space or spaces in a zone, i.e., the breathing zone outdoor airflow ( $V_{bz}$ ), shall be determined in accordance with Equation 6-1.

$$V_{bz} = R_p \cdot P_z + R_a \cdot A_z \quad (6-1)$$

where

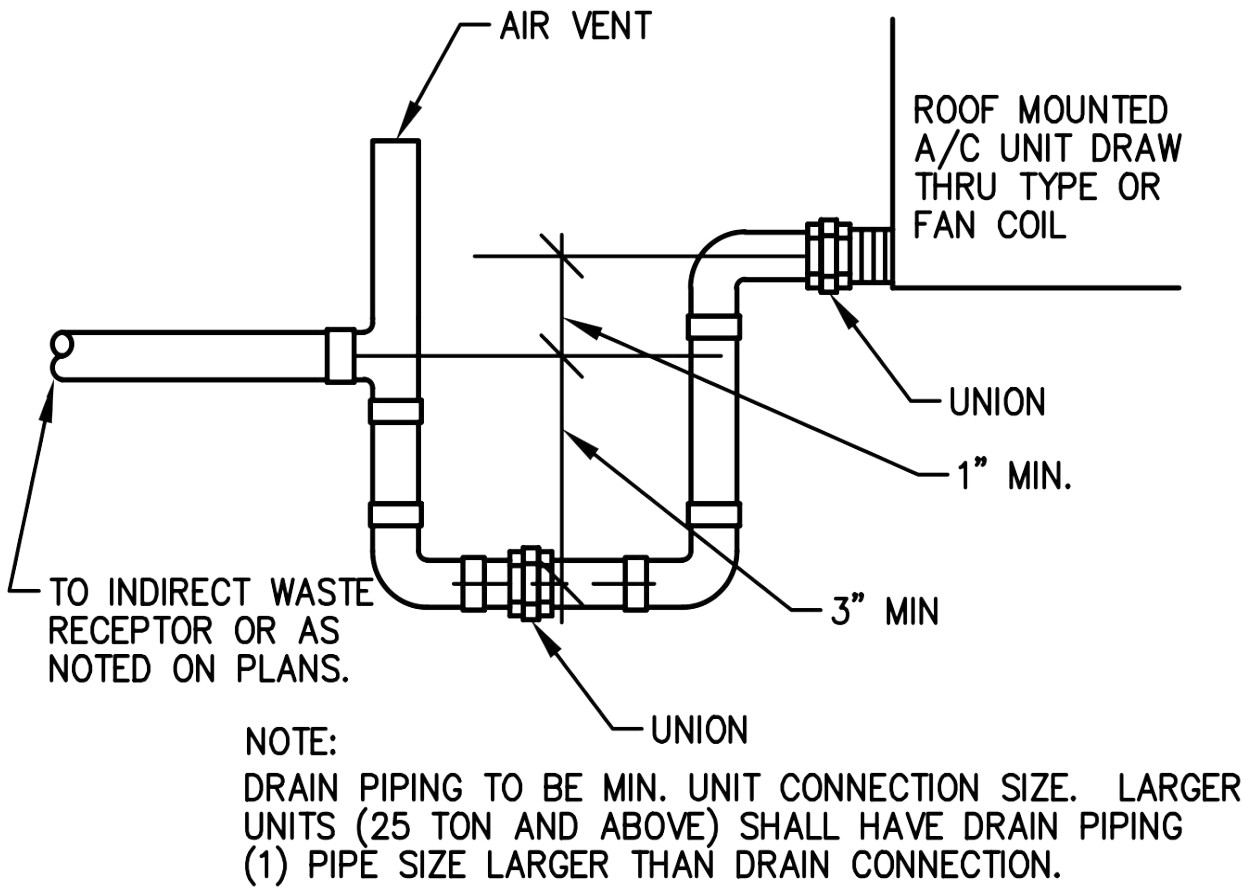
$A_z$  = zone floor area: the net occupiable floor area of the zone  $m^2$  ( $ft^2$ )

$P_z$  = zone population: the largest number of people expected to occupy the zone during typical usage. If the number of people expected to occupy the zone fluctuates,  $P_z$  may be estimated based on averaging approaches described in Section 6.2.6.2

Note: If  $P_z$  cannot be accurately predicted during design, it shall be an estimated value based on the zone floor area and the default occupant density listed in Table 6-1.

$R_p$  = outdoor airflow rate required per person as determined from Table 6-1

Note: These values are based on adapted occupants.  
 $R_a$  = outdoor airflow rate required per unit area as determined from Table 6-1

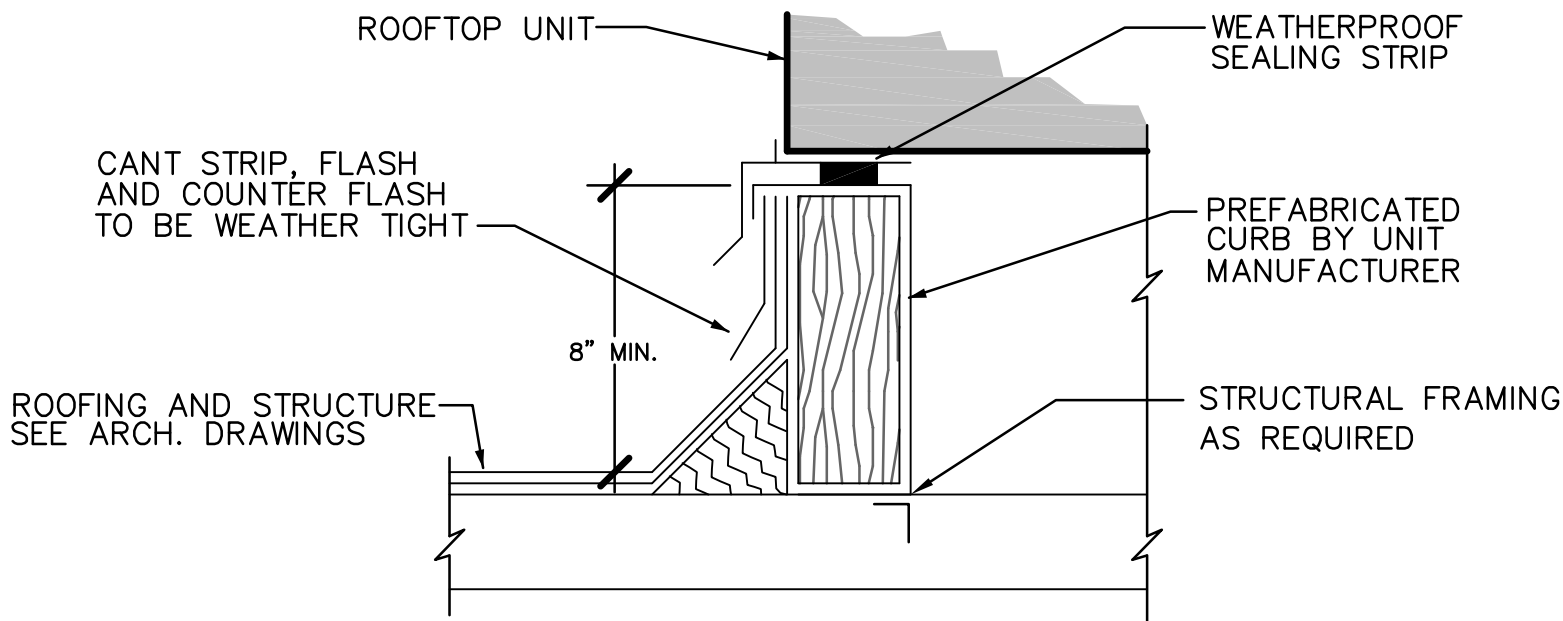


CONDENSATE DRAIN TRAP

NOT TO SCALE

4

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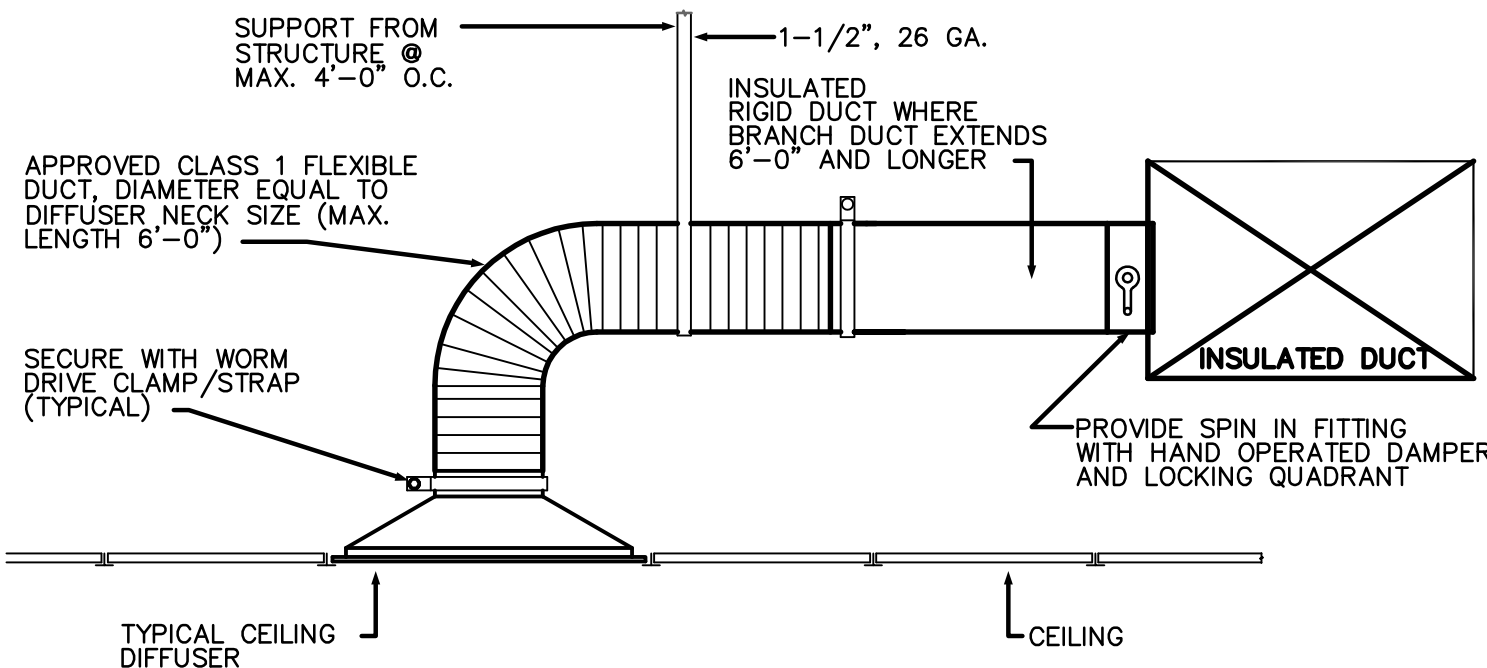


HEAT PUMP UNIT MOUNTING DETAIL

NOT TO SCALE

1

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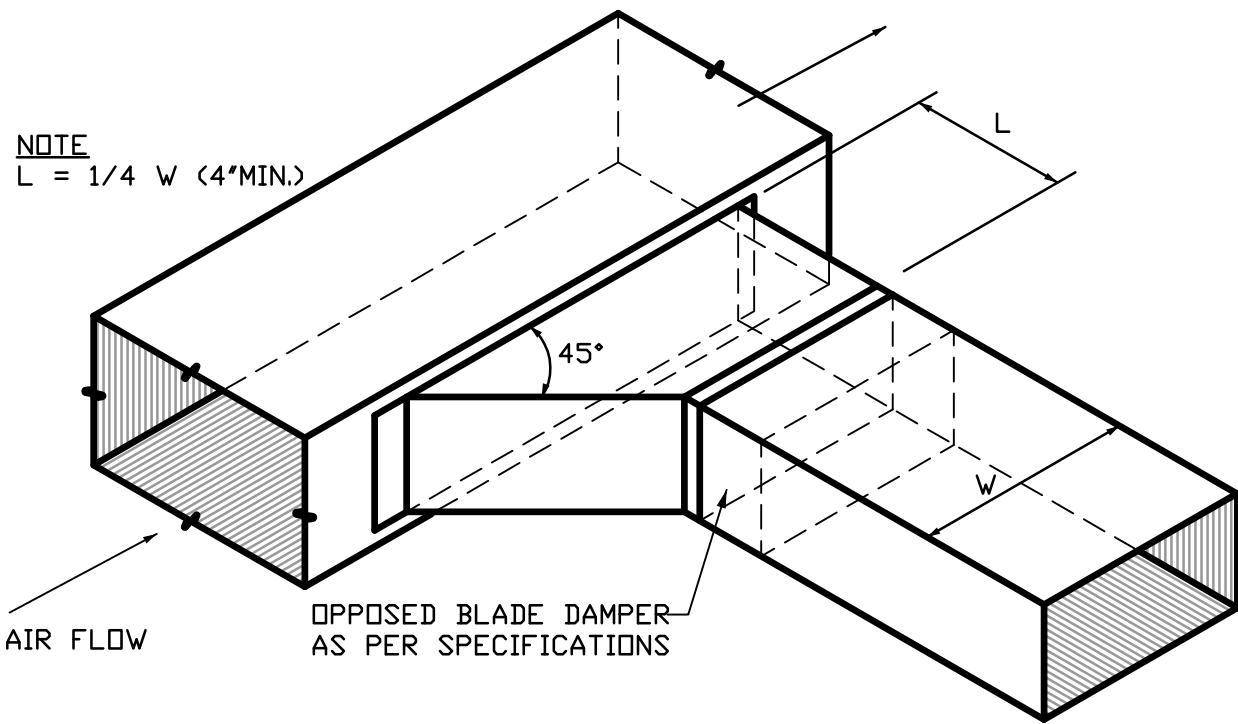


BRANCH DUCT TAKE-OFF DETAIL

NOT TO SCALE

5

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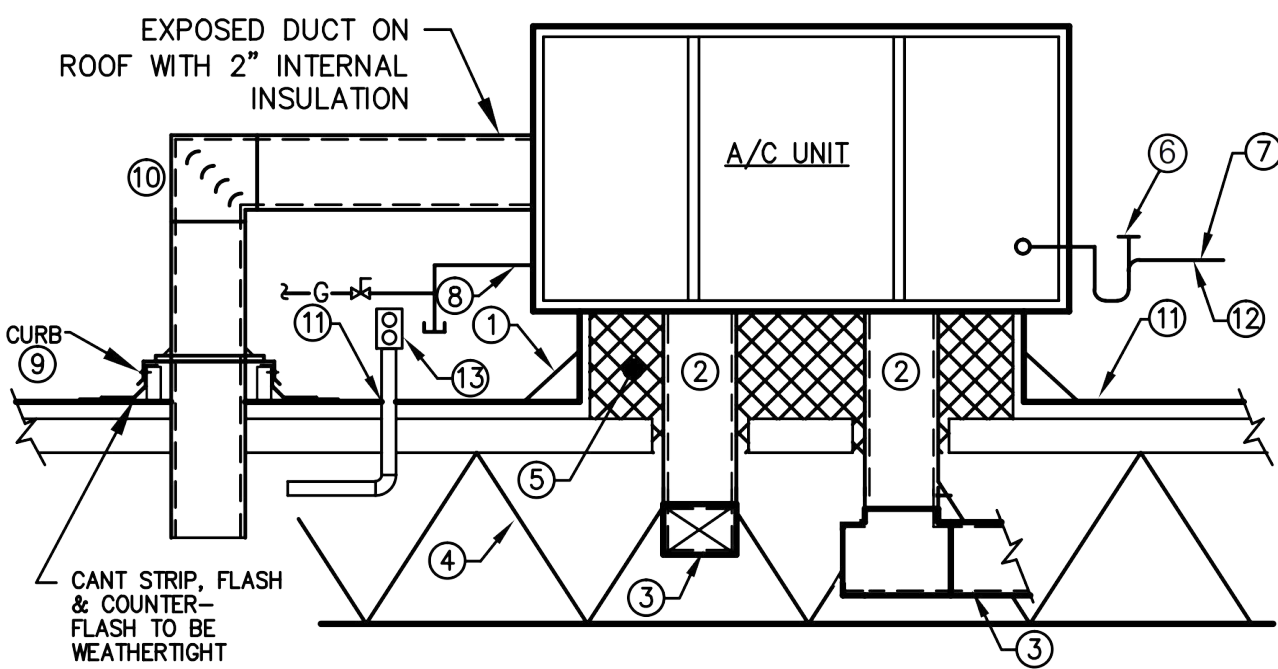


BRANCH DUCT TAKE-OFF DETAIL

NOT TO SCALE

2

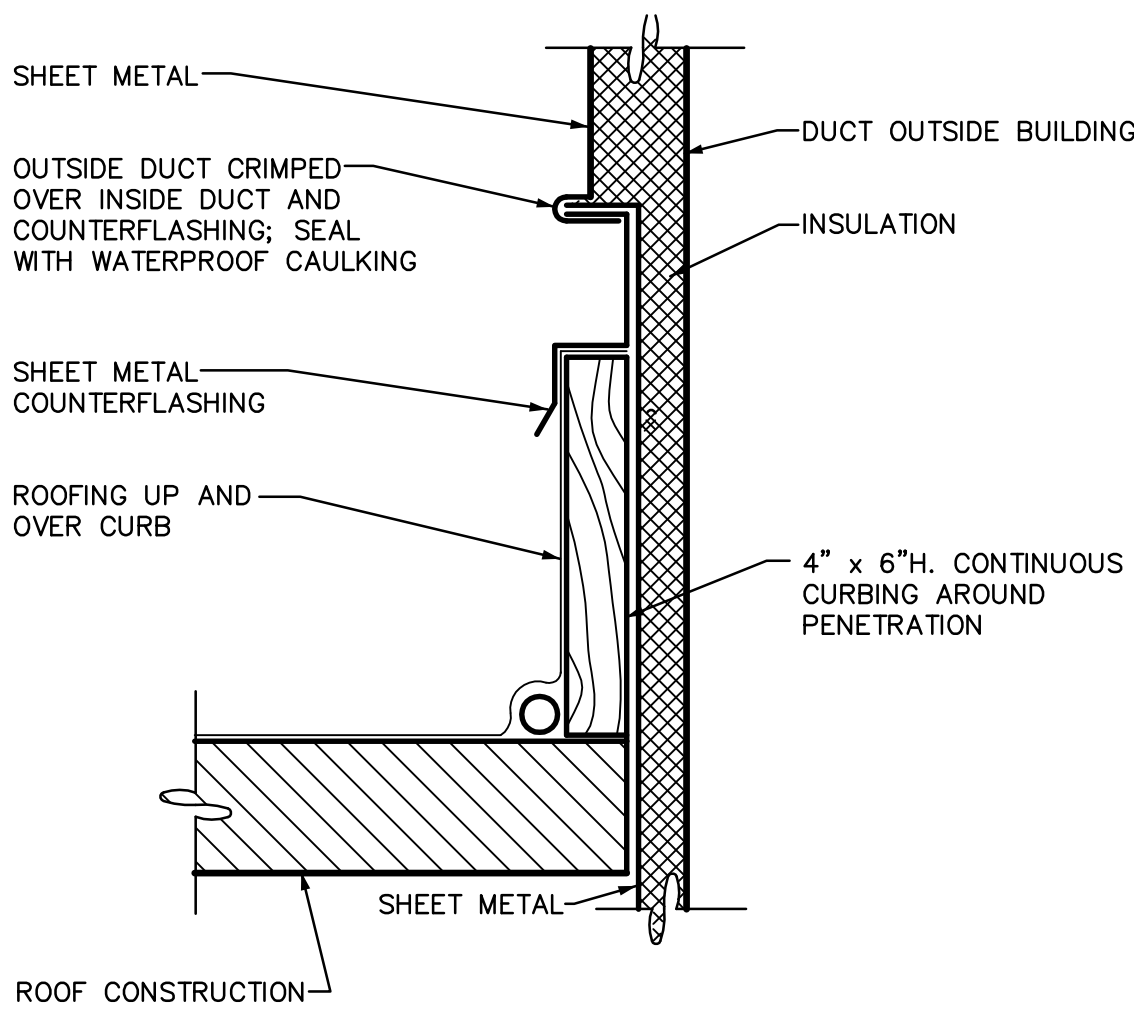
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ROOFTOP A/C

NOT TO SCALE

- 1 SET OWNER PROVIDED ROOF CURB ON ROOF DECK - SHIM DEAD DEAD LEVEL SECURE ROOF CURB TO DECK AND A/C UNIT TO ROOF CURB.
- 2 TRANSITION TO CONNECTION SIZES IN DUCT RISER (FIELD VERIFY EXACT SIZE)
- 3 NEW TRUNK LINE
- 4 REFER TO STRUCTURAL DRAWINGS FOR JOIST LOCATIONS, SIZES, AND DIRECTION.
- 5 PACK OPENING BETWEEN ROOF DECK AND DUCTS & ENTIRE CURB CAVITY W/ FIBER-GLASS INSULATION. PROVIDE SHEET MTL. ENCLOSURE AT DUCT PENETRATION OF ROOF DECK TO COVER UP & HOLD INSULATION IN PLACE.
- 6 NEW COND. TRAP SEE COND. TRAP DETAIL
- 7 COPPER CONDENSATE DRAIN W/ CLEANOUT & 4" DEEP SEAL TRAP PER MFR'S REQUIREMENTS.
- 8 EXISTING GAS CONNECTION PROVIDE NEW VALVE WITH DIRT LEG
- 9 SEE ROOF PLAN DETAILS
- 10 TURNING VANES - (TYP)
- 11 FLASH AND CONTERFLASH PIPE THRU ROOF.
- 12 3/4" COPPER CONDENSATE SLOVE AT 1/8" PER FOOT. TERMINATE AT ROOF GUTTER
- 13 120V, GFCI SERVICE RECEPTACLE REFER TO ELECTRICAL PLANS



DUCT THRU ROOF DETAIL

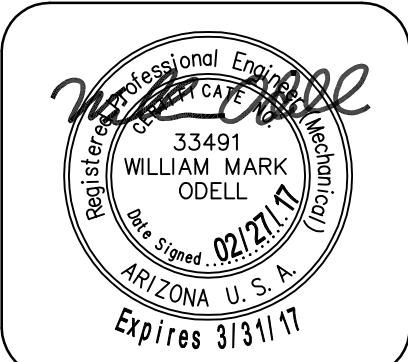
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3

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**ARCHITECTURE & PLANNING**

**DRAWING:** Mechanical Details

**PROJECT:** ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

**APN:**

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DATE
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SHEET

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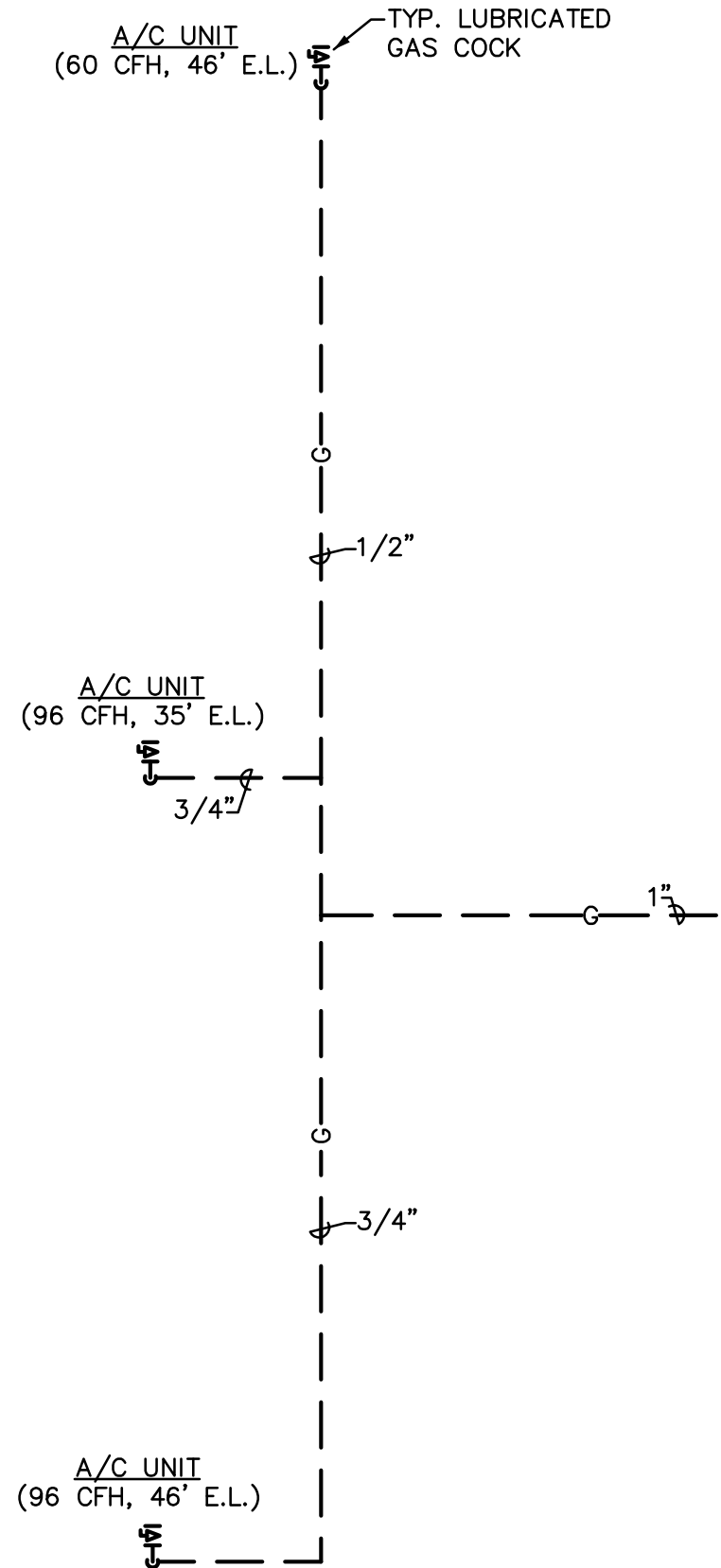


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- GAS PIPING NOTES:**
1. GAS PIPING SHALL NOT RUN IN HOLLOW CORE OF BLOCK.
  2. PROVIDE SHUT-OFF COCK, UNION AND 6" LONG DIRT LEG WITH CAP AT EACH GAS LINE DROP TO APPLIANCE.
  3. ALL GAS USING EQUIPMENT TO BE NATURAL FUEL.
  4. DO NOT USE FLEXIBLE PIPE CONNECTIONS TO EQUIPMENT.
  5. ALL GAS PIPING, MATERIALS, VALVES, FITTINGS, INSTALLATION AND TESTING SHALL COMPLY WITH CHAP. 4, INTERNATIONAL FUEL GAS CODE.
  6. VERIFY ALL GAS BTU/H INPUTS WITH ACTUAL BTU/H INPUT OF APPLIANCE SUPPLIED.
  7. ALL GAS LINES INSTALLED THROUGH CMU WALLS, ETC., SHALL BE SLEEVED WITH STEEL PIPE A MINIMUM OF (2) (TWO) PIPE SIZES LARGER THAN THE GAS PIPE.

## GAS PIPING DIAGRAM

NTS

### PLUMBING SPECIFICATIONS:

#### 1. GENERAL

1.1 Scope: Work under this section includes coordinating and furnishing all labor and material necessary to install a complete plumbing system as shown and specified and in accordance with the codes. Contractor shall pay for all permits, meters, fees, city inspections, legal notices, etc., as required.

1.2 Submittals: Within 15 days after award of contract, submit 8 copies of all items.

1.3 Record Drawings: Provide a set to the Architect at completion of project.

1.4 Instructions: Provide maintenance manual and instruct Owner in the proper operation and maintenance of the equipment.

1.5 Guarantee: One year on labor, material and equipment.

#### 2. PRODUCTS

##### 2.1.1 Gas Piping:

2.1.1.1 (Above grade, exterior): All pipe sizes, black steel pipe, Schedule 40, wrought steel butt welded fittings.

2.1.1.2 (Above grade, inside building): Schedule 40 black steel. Pipe fittings shall conform to the following:

Pipe 2" and Smaller: Malleable iron threaded fittings.

Pipe 2-1/2" and Larger: Wrought steel butt welded fittings.

##### 2.2 Valves:

2.2.1 Gas Valves, 1/2" and Smaller: Milwaukee BB-1-102.

2.2.2 Gas Valves, 1" to 1-1/2": Rockwell-Nordstrom #142 with #555 lubricant for natural gas service.

2.2.3 Gas Valves, 2" and Larger: Rockwell-Nordstrom #143 with #555 lubricant for natural gas service.

2.3 Pipe Hangers and Supports: Fee & Mason Figure 103 clevis hanger for insulated pipe and Figure 104 clevis hanger for cast iron pipe. Install #500 Trisolators on uninsulated copper lines at all hangers and wall penetrations.

2.4 Acceptable Manufacturers: The following is a list of manufacturers whose equipment is acceptable as to manufacturer, subject to conformance with all drawings, specifications and addenda items:

Valves: Milwaukee, Rockwell-Nordstrom, Butterball.

Hangers: Grinnell, Fee & Mason, Elcen, Kin-Line, F & S, B-Line, Michigan.

#### 3. EXECUTION

##### 3.1 Tests and Inspections:

3.1.1 All work to be tested and approved before covering as directed by Architect. Remake all leaking joints.

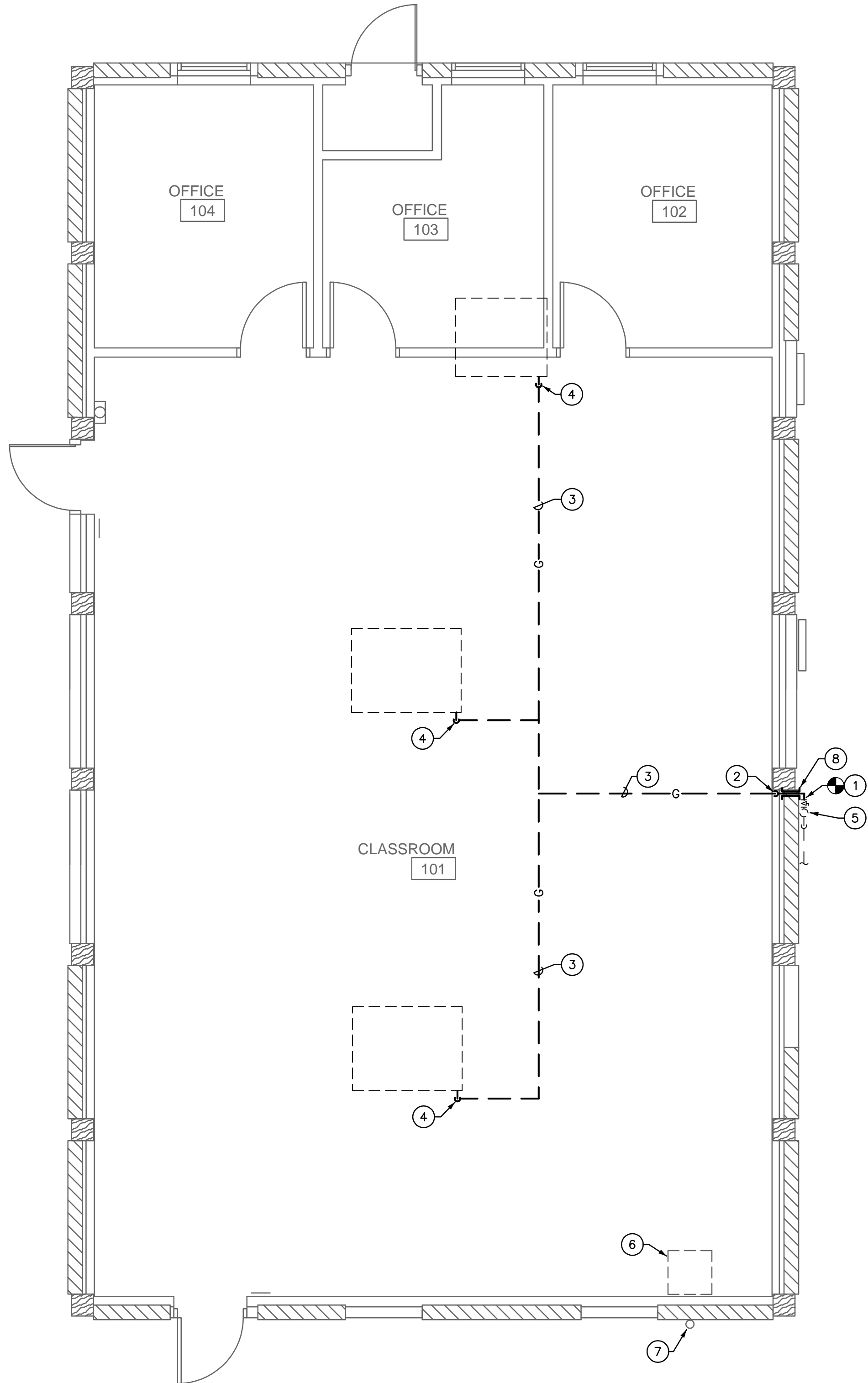
3.1.2 Gas System: Hold at 50 psi pneumatic for four hours with no pressure loss.

##### 3.2 Flashing, Sleeves and Escutcheon Plates:

3.2.1 Flashing: Supply flashing for all vent pipe and other types of piping through roof to be installed with roofing. Flash vents with Stoneman S1300-4 or with sheet lead weighing not less than 4 pounds per square foot or equal. Extend flashing into roofing at least 10" from vent and turn flashing over and down into vent opening.

3.2.2 Sleeves: Use 20 gauge galvanized steel sleeves around pipes passing through masonry walls and concrete slabs.

3.2.3 Escutcheon Plates: Install cast brass split ring with setscrew at all locations where exposed pipes pass through walls, floors and/or ceilings. Provide polished chrome-plated escutcheons in finished rooms, all others polished brass.



## 1 Plumbing Floor Plan

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



### KEYNOTES

- 1 CONNECT NEW GAS LINE TO EXISTING LOW PRESSURE OUTLET OF EXIST. GAS REGULATOR.
- 2 RISE WITH NEW GAS LINE WITHIN INTERIOR WALL & PENETRATE ROOF. FLASH PIPING AT ROOF PENETRATION.
- 3 GAS PIPING ROUTED ON ROOF, SUPPORT PIPING WITH PIPESTANDS, EQUAL TO "MIRO" MODEL No. 002, AT 10' O.C. SPACING. COORDINATE PIPE ROUTING WITH EXISTING CONDITIONS. PAINT PIPING PER ARCHITECT.
- 4 GAS PIPING CONNECTION TO NEW ROOFTOP HVAC UNIT. PROVIDE LUBRICATED GAS COCK & 6" DIRT LEG AT UNIT CONNECTION.
- 5 LOCATION OF EXISTING NATURAL GAS 2ND STAGE REGULATOR.
- 6 REMOVE EXISTING FIXTURE, FAUCET, & WATER HEATER. REMOVE ALL WATER SUPPLY AND WASTE LINES. CAP CW LINE AS DIRECTED BY ARCHITECT. REPAIR WALL AS REQUIRED.
- 7 REMOVE EXTERIOR WASTE LINE ABOVE SIDEWALK FROM DEMO'D. FIXTURE TO BELOW GRADE. CAP WITH BRASS CLEANOUT FLUSH WITH TOP OF SIDEWALK.
- 8 SLEEVE GAS PIPING PENETRATION THROUGH CMU WALL PER GAS PIPING NOTE 7.

NOTE: REMOVE ALL EXISTING GAS PIPING.

PLUMBING LEGEND		
SYMBOL	ABBR.	DESCRIPTION
	SOC	SHUTOFF COCK
	G	NATURAL GAS PIPING



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DRAWING: Plumbing Floor Plan

PROJECT: ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

APN:

DRAWN BY

CHECKED BY

DATE

JOB NO.

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SHEET

# P1.0



## ELECTRICAL SYMBOLS

NOTE: NOT ALL SYMBOLS ARE USED ON THIS PROJECT

	FLUORESCENT FIXTURE, WITH FIXTURE DESIGNATED BY LETTER. SMALL LETTER INDICATES SWITCH LEG
	NIGHT LIGHT- NOT SWITCHED OR EMERGENCY
	FLUORESCENT STRIP FIXTURE.
	CEILING OR WALLMOUNTED FIXTURE.
	PORCELAIN PULL CHAIN FIXTURE
	JUNCTION BOX
	JUNCTION BOX WITH FLEX CONNECTION.
	SINGLE FACE EXIT SIGN- NOT SWITCHED
	DOUBLE FACED EXIT SIGN- NOT SWITCHED.
	TWO HEAD EMERGENCY LIGHT WITH BATTERY.
	S SINGLE POLE SWITCH, + 48" A.F.F. (20A-120/277V)
	S3 THREE WAY SWITCH, + 48" A.F.F. (20A-120/277V)
	S4 4-WAY SWITCH +48" AFF (20A-120/277V)
	Sp SWITCH AND PILOT LIGHT (20A-120-/277V)
	SK SINGLE POLE SWITCH, KEY OPERATED (20A)
	WALL OR CEILING MOUNTED MOTION SENSOR MANUFACTURE BY LAVITON
	DIMMER CONTROL, + 48" A.F.F. TYPE, RATING AS NOTED
	DUPLEX RECEPTACLE, + 18" A.F.F. (20A)
	DUPLEX RECEPTACLE ABOVE COUNTER, VERIFY HEIGHT. (20A)
	FOURPLEX RECEPTACLE, + 18" A.F.F. (20A)
	HALF SWITCHED DUPLEX RECEPTACLE (20A)
	SPECIAL RECEPTACLE - SIZE & TYPE AS NOTED
	POWER / PHONE / DATA FLUSH FLOOR OUTLET
	TELEPHONE OUTLET PLASTER RING AT + 18" A.F.F. HUBBELL #P12 COVERPLATE. 3/4"C TO CEILING SPACE UNLESS SHOWN WITH HOMERUNS.
	DATA SYSTEM OUTLET, 4" SQUARE BOX AND COVERPLATE, 3/4" C. TO CEILING SPACE UNLESS SHOWN WITH HOMERUN, + 18" A.F.F.
	TELE/DATA COMBO OUTLET, 4" SQUARE BOX AND COVERPLATE, 3/4" C. TO CEILING SPACE UNLESS SHOWN WITH HOMERUN, + 18" A.F.F.
	CABLE TELEVISION (CATV) OUTLET PLASTER RING AT + 18" A.F.F. U.N.O. HUBBELL COVERPLATE. 3/4"C TO CEILING SPACE UNLESS SHOWN WITH HOMERUNS.
	TELEPHONE SYSTEM CONDUIT HOMERUN WITH NYLON PULLWIRE (1"C MIN UNO)
	CLOSED CIRCUIT TV (CCTV) OUTLET SAME AS CATV OUTLET
	REMOTE CONTROL STATION @ +48" AFF
	DISCONNECT SWITCH, FUSE PER EQUIPMENT MANUFACTURERS RECOMMENDATION. OUTSIDE NEMA 3R - N.F. = NON-FUSED.
	COMBINATION STARTER AND FUSIBLE DISCONNECT SWITCH SIZE AS NOTED
	EQUIPMENT TERMINATION CONNECTION POINT VERIFY EXACT LOCATION LOAD AND VOLTAGE AS NOTED
	MOTOR
	SM THERMAL PROTECTED SWITCH
	MOTOR STARTER - SHADING INDICATES F.B.O.
	DISTRIBUTION PANELBOARD.
	BRANCH CIRCUIT PANELBOARD.
	CONDUIT BELOW FLOOR OR UNDERGROUND
	CONDUIT IN WALL OR ABOVE CEILING
	HOMERUN TO PANEL
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUB-OUT, MARK AND CAP AS DIRECTED
	GROUND WIRE (SIZE AS NOTED) EXTENDED AND CONNECTED TO APP'D GROUND

## SPECIFICATIONS

- PRIOR TO SUBMITTING BID, SUBCONTRACTORS SHALL EXAMINE ALL GENERAL CONSTRUCTION DRAWINGS AND VISIT THE CONSTRUCTION SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS UNDER WHICH HE WILL HAVE TO OPERATE AND WHICH IN ANY WAY AFFECTS THE WORK UNDER HIS CONTRACT. NO SUBSEQUENT ALLOWANCE WILL BE MADE IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.
- THE SUBCONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR THE PROPER RESTORATION OF ALL EXISTING SURFACES REQUIRING PATCHING, PLASTERING, PAINTING AND /OR OTHER REPAIR DUE TO THE INSTALLATION OF ELECTRICAL WORK UNDER THE TERMS OF THE CONTRACT. CLOSE ALL OPENINGS, REPAIR ALL SURFACES, ETC., AS REQUIRED.
- SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, ELEVATIONS AND BUILDING DETAILS. VERIFY LOCATION OF ALL OUTLETS, SWITCHES, AND WALL MOUNTED LIGHTING FIXTURES WITH ARCHITECTURAL DRAWINGS AND ACTUAL CONDITIONS. VERIFY ALL CEILING TYPES WITH ARCHITECTURAL DRAWINGS BEFORE ORDERING FIXTURES.
- PRIOR TO ROUGH-IN AND FINAL CONNECTION, VERIFY ELECTRICAL CHARACTERISTICS AND EXACT LOCATION OF EQUIPMENT.
- GROUT AND SEAL ALL CONDUIT PENETRATIONS OF WALLS AND FLOOR SLABS TO PRESERVE FIRE RATING AND WATERTIGHT INTEGRITY.
- BRANCH CIRCUIT WIRING SHALL BE THHN/THWN INSULATION. PANEL FEEDERS SHALL BE TYPE XHHW. ALL WIRE SHALL BE COPPER. MINIMUM WIRE SIZE SHALL BE #12.
- ALL WIRING TO BE INSTALLED IN RACEWAYS. TYPE OF RACEWAY SHALL BE AS REQUIRED BY CODE. MINIMUM CONDUIT SIZE SHALL BE 1/2".
- PROVIDE CODE SIZED BOND WIRE IN ALL EMT, FLEXIBLE CONDUIT
- ALL ELECTRICAL EQUIPMENT SHALL BE NEW , U.L. APPROVED AND COMMERCIAL GRADE.
- WIRE RATED FOR 150° CENTIGRADE SHALL BE USED FOR ALL INCANDESCENT LIGHTING FIXTURES.
- ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL CODE, (N.E.C.), AND ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
- PROVIDE TYPEWRITTEN DESCRIPTIVE PANEL DIRECTORIES

## GENERAL ELECTRICAL DEMOLITION NOTES

- RETURN REMOVED MATERIAL DEEMED SALVAGEABLE TO OWNER'S REPRESENTATIVE. MATERIALS DEEMED NOT SALVAGEABLE SHALL BE REMOVED FROM THE PREMISES.
- THE CONTRACTOR WILL EXAMINE THE PREMISES AND SATISFIED HIMSELF AS TO EXISTING CONDITIONS UNDER WHICH HE WILL BE OBLIGED TO PERFORM HIS WORK. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND THE CONTRACTOR SHALL FIELD VERIFY ALL DETAILS OF DEMOLITION.
- REMOVE ALL EXISTING WIRING DEVICES, LIGHT FIXTURES, WIRE, CONDUIT, DISCONNECTS, ETC., AS NOTED OR INDICATED WITHIN DEMOLITION AREA. (ALL ITEMS MAY NOT BE SHOWN.) REMOVAL AS NECESSARY ALL CIRCUITING WHICH REQUIRES CONTINUATION THROUGH THE AREA.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK REQUIRED TO REMOVE/RELOCATE ANY EXISTING ELECTRICAL EQUIPMENT SUCH THAT ELECTRIC SHOCK HAZARDS TO WORKMEN ARE ELIMINATED DURING DEMOLITION AND NEW CONSTRUCTION.
- REMOVED OR DAMAGED CONDUIT, WIRE AND FITTINGS SHALL NOT BE RE-USED
- WORK REQUIRED FOR EXISTING EQUIPMENT NOTED AS "EXISTING TO BE REMOVED" SHALL INCLUDE:
  - SALVAGING OR DISPOSING OF ALL MATERIAL OR EQUIPMENT AS DIRECTED BY OWNER OR OWNER'S REPRESENTATIVE.
  - REMOVAL OF FEEDER OR CABLING FROM EQUIPMENT TO POINT OF FEED.
  - REMOVAL OR RE-CIRCUITING (AS REQUIRED OR AS NOTED ON PANELS) OF ALL BRANCH CIRCUITING.
  - REMOVAL OF ALL FITTINGS, SUPPORTS, BRACKETS, ETC.
  - REPAIR AND PATCHING OF WALLS, FLOORS AND CEILINGS TO MATCH EXISTING OR PER ARCHITECT'S INSTRUCTIONS.
  - CAPPING OF IN-SLAB FEEDER CONDUITS FLUSH WITH THE FINISHED FLOOR.
- CAPPING OF FEEDER CIRCUITS AT 6" ABOVE OR BELOW THE FLOOR OR CEILING FOR IN-SLAB CONDUITS LOCATED UP NEXT TO A WALL OR FOR CEILING AREA CONDUITS.
- THE OPPOSITE END LOCATION OF ALL EMPTY FEEDER CONDUITS AT SWITCHBOARDS, PANELBOARDS, ETC., SHALL BE MARKED USING AN ENGRAVED BRASS TAG ATTACHED TO THE CONDUIT.
- EXISTING FEEDER CONDUITS SHALL BE REMOVED OR CUT OFF AND ABANDONED IF FOUND TO BE UNSALVAGEABLE BY THE OWNER, ARCHITECT OR ENGINEER.
- EXISTING EQUIPMENT NOT IMPLICITLY SHOWN ON THE DRAWINGS IS INTENDED TO BE "EXISTING TO REMAIN, " UNLESS NOTED OTHERWISE.

## FIRE WALL/FLOOR PENETRATION

ALL PENETRATIONS OF FIRE RESISTIVE FLOORS OR SHAFT WALLS SHALL BE PROTECTED BY MATERIALS AND INSTALLATION DETAIL THAT CONFORM TO UNDERWRITERS LABORATORY'S LISTINGS FOR THROUGH PENETRATION FIRESTOP SYSTEMS. THE CONTRACTOR SHALL SUBMIT SHOP DRAWING DETAILS WHICH SHOW COMPLETE CONFORMANCE WITH THE LISTING TO THE ARCHITECT AND SUCH DRAWINGS SHALL BE AVAILABLE TO THE LOCAL GOVERNING INSPECTORS. THE DRAWINGS SHALL BE SPECIFIC FOR EACH PENETRATION WITH ALL VARIABLES DEFINED.

ALL WIRING #6 AWG AND LARGER SHALL BE XHHW COPPER. #8 AWG AND SMALLER SHALL BE THHN/THWN COPPER

## OUTLET MOUNTING HEIGHTS PER AMERICAN DISABILITY ACT

SWITCHES	+48" (MAX)
RECEPTACLES	+18" (MIN)
TELEPHONE/DATA	+18" (MIN)
SIDE REACH	+54" (MAX)

(EXISTING)

PANELBOARD					61A		SCHEDULE				
MAINS: 200A MCB					LOCATION: SEE PLAN						
VOLTAGE: 120/240V, 1Ø, 3Ø					MOUNTING: SURFACE (NEMA 3Ø)						
TYPE: GE (EXISTING)					MIN. A.I.C.: (EXISTING FIELD VERIFY)						
LOAD-VA											
CIRCUIT DESCRIPTION		BKR.	CIR. NO.	Ø A	Ø B	CIR. NO.	BKR.	CIRCUIT DESCRIPTION			
STUDENT TABLE POWER		20	1	1600		20	1	LIGHTS			
			3	1284			2				
			5	1600	1600		4	- EXTERIOR			
			7	900	263		6	RECEPT'S.			
			9	1600	1600		8				
			11	900	900		10				
			13		1600		12	SPARE			
SPARE BREAKER		30	13			30	13	SPARE BREAKER			
			15				14				
STUDENT TABLE POWER		20	17	1600		20	17	RECEPT'S.			
			19	540			18				
			21	600	1600		20	- MICROWAVE			
RECEPT'S.			23	1080	600		22				
			25	360	900		24				
- ROOF MOUNTED			27				26	SPARE			
SPACE			29		1576	30	28	A/C MINI-SPLIT SYS. CU-1/FC-1			
			31	1576		30	2	137 RLA, 230V, 1Ø			
			33				32	SPACE			
			35				34				
			37				36				
			39				38				
			41				40				
							42				
TOTAL LOAD PER PHASE:				13640	11839	H1Ø 13640 / 120 = 113.7					

NOTE TO ELEC. CONTRACTOR:  
ELECTRICAL CONTRACTOR MAY REUSE EXISTING BREAKERS FOR NEW EQUIPMENT FROM EXISTING PANEL. FIELD VERIFY ALL REQUIREMENTS PRIOR TO ROUGH-IN.

(EXISTING)

PANELBOARD 61B SCHEDULE									
MAINS: 150A MCB					LOCATION: SEE PLAN				
VOLTAGE: 120 / 208V, 3Ø, 4W					MOUNTING: SURFACE (NEMA 3Ø)				
TYPE: SIEMENS					MIN. A.I.C.: EXISTING FIELD VERIFY				
CIRCUIT DESCRIPTION		BKR.	CIR. NO.	Ø A	Ø B	Ø C	CIR. NO.	BKR.	CIRCUIT DESCRIPTION
HVAC UNIT AC-1		35	1	3024			2	30	SPARE
25.2 MCA, 208V, 3Ø			3		3024				
			5			3024			
			7	3024			6	30	SPARE
HVAC UNIT AC-2		35	7	3024			8		
25.2 MCA, 208V, 3Ø			9		3024				
			11			3024			
			13	1716			12	3	
HVAC UNIT AC-3		25	13	1716			14	20	
15.5 MCA, 208V, 1Ø			15		1716		16	1	
SPACE			17				18		
			19				20		
			21				22		
			23				24		
TOTAL LOAD PER PHASE:				7764	7764	6048	HØ 7764 / 120 = 64.7		

## PANELBOARD SYMBOLS

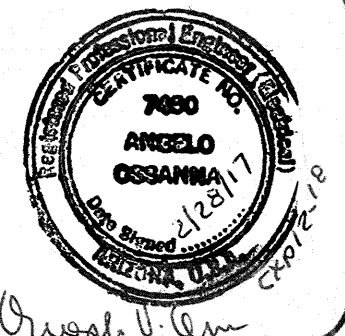
- \* CONTINUOUS DUTY/LARGEST MOTOR @ 125%
- ◆ PROVIDE BREAKER W/ HANDLE "LOCK-ON" DEVICE
- CIRCUIT VIA TIMECLOCK
- ▲ CIRCUIT VIA PHOTOCELL
- HACR TYPE CIRCUIT BREAKER
- EXISTING BREAKER W/ NEW LOAD
- EXISTING BREAKER W/ NEW LOAD
- △ NEW BREAKER W/ NEW LOAD

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JOB# 17-01

REVISIONS	BY

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ARCHITECTURE &amp; PLANNING

DRAWING: Electrical Symbols, Panel Schedules, Specifications &amp; Notes

PROJECT:  
ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

APN:

DRAWN BY R.A.
CHECKED BY A.O.
DATE 1-25-17
JOB NO. 695
SHEET

E1.0



Feb 27, 2017 - 6:06pm

## Lighting Demo Floor Plan

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



### GENERAL LIGHTING NOTES:

1. CONTRACTOR SHALL VERIFY ALL MOUNTING HEIGHTS, EXACT LOCATION AND REQUIREMENTS OF ALL LIGHTING FIXTURES AND SWITCHES WITH OWNER PRIOR TO ROUGH-IN.
2. NIGHT LIGHTS (NL), EMERGENCY & EXIT LIGHT FIXTURES SHALL BE CONNECTED TO UNSWITCHED LEG OF CIRCUIT.
3. ROMAX IS NOT ALLOWED ABOVE T-BAR CEILING.

GENERAL NOTE:  
ELECTRICAL CONTRACTOR SHALL REMOVE ALL EXISTING LIGHT FIXTURES AND REPLACE WITH NEW AS INDICATED (TYPICAL)

### ABBREVIATIONS

EX	EXISTING LIGHT OR DEVICE TO REMAIN
RE	EXISTING LIGHT OR DEVICE TO BE REPLACED OR RELOCATED EXTEND CIRCUITING AS REQUIRED IF NOT SHOWN.
ER	REPLACED OR RELOCATED LIGHT OR DEVICE
RM	REMOVED LIGHT OR DEVICE
A.F.F.	ABOVE FINISHED FLOOR ( ¢ OF OUTLET )
A.F.G.	ABOVE FINISHED GRADE ( ¢ OF OUTLET )
E.C.	EMPTY CONDUIT
UNO	UNLESS OTHERWISE NOTED
FBO	FURNISHED BY OTHERS
NL	NIGHT LIGHT
TYP	TYPICAL

## LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER AND MODEL NO.	VOLTS	LAMPS	MOUNTING	FINISH	REMARKS
A	RAB LIGHTING PANEL 2'x2' - 41N 4000K	120	39.5 WATT LEDS	LAY-IN	STANDARD	PANEL 2' x 2' LED - 4000 COLOR TEMP.
B	SPAULDING - LAREDO SERIES LMC-30LU-3K-3-1	120	LEDs - 35 WATT	WALL-TO MATCH EXISTING	BRONZE	LED EXTERIOR WALL MOUNTED LUMINAIRE M-VOLT 40K
C	LITHONIA FMML 7 840	120	LEDs - 9.3 WATT	CEILING MOUNTED SURFACE	STANDARD	LED CEILING MOUNTED LUMINAIRE M-VOLT 40K
D	LITHONIA LHQM S W 1 R 120 H	120	LED & (2) 6W HAL FURN'D. WITH UNIT	WALL- 12" ABOVE DOOR	WHITE HOUSING RED LETTER	COMBINATION EMERGENCY/EXIT LIGHT WITH LEAD-CAL. BATTERY

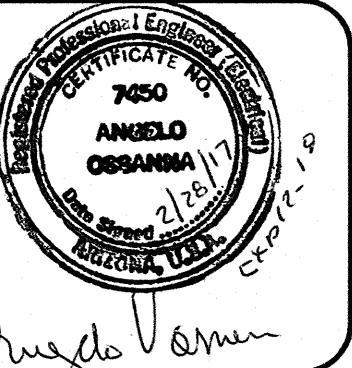
NOTES: ① VERIFY ALL FINAL MOUNTING HEIGHTS WITH ARCHITECT.

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ARCHITECTURE & PLANNING

DRAWING: Lighting Design & Demo Floor Plan  
With Fixture Schedule & Notes

PROJECT: ERAU Building 61 Remodel  
3700 Willow Creek Road  
Prescott, AZ 86301

APN:

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R.A.  
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## Lighting Floor Plan

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



ALL LIGHTING SHALL BE CONTROLLED WITH NEW MOTION SENSORS ELECTRICAL CONTRACTOR SHALL REMOVE EXISTING SWITCHES. (TYP.)

CEILING MOUNTED MOTION SENSOR ACUITY CONTROLS CMR 10 OR EQUAL INSTALL PER MANUF. RECOMMENDATION (TYP. OF 6)

ONE SWITCH TO CONTROL FRONT (EAST) ROW OF LIGHTS NOT ON MOTION SENSOR.

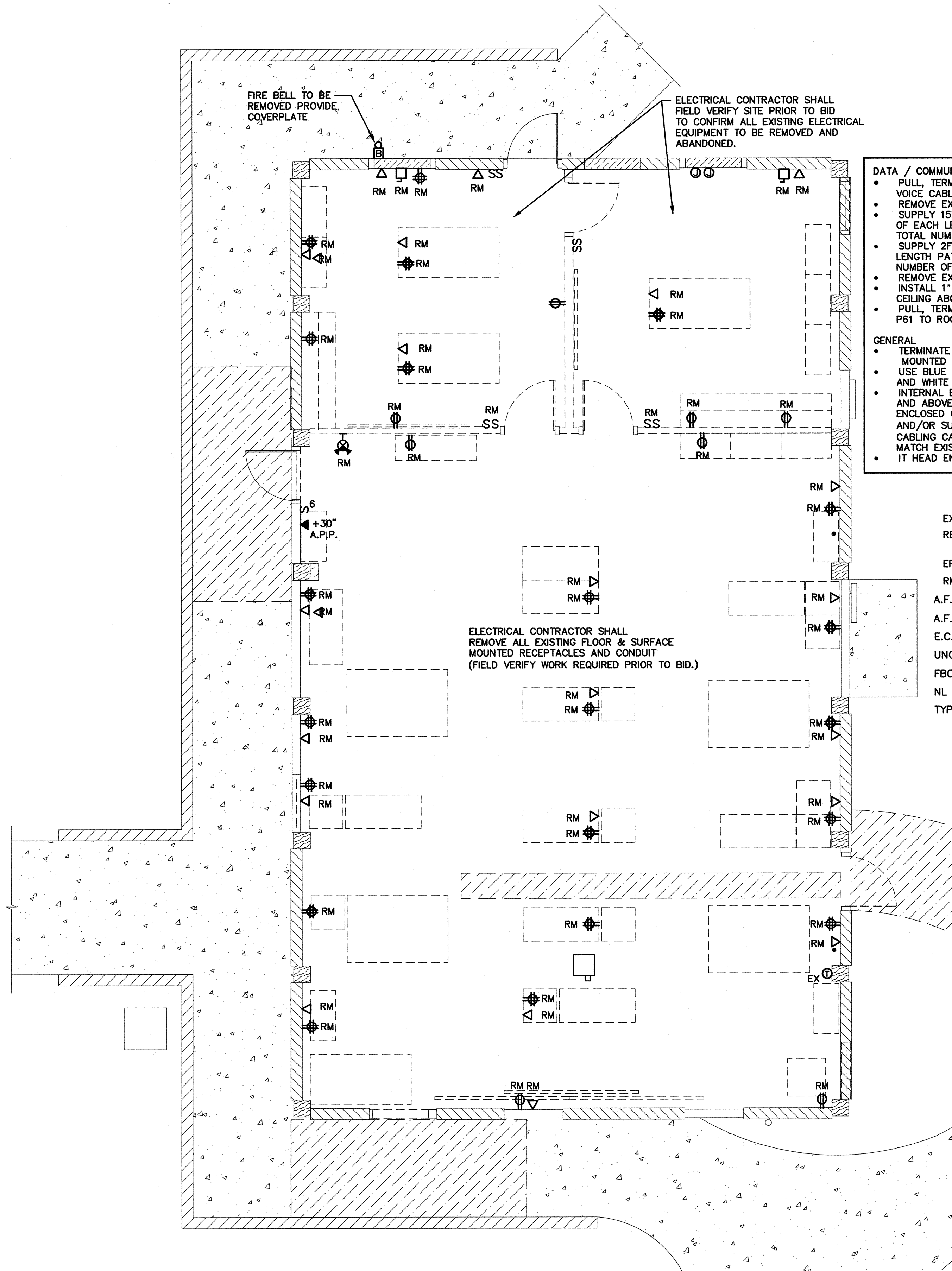
SECOND SWITCH TO CONTROL BACK (WEST) THREE ROWS OF LIGHTS ON MOTION SENSOR WITH OVERRIDE

61A-4 THRU TIME CLOCK (PHOTOCELL ON, T.C. OFF)

61A-2



Mar 01, 2017 - 1:33pm



## Power Demo Floor Plan

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



GENERAL NOTE:  
ELECTRICAL CONTRACTOR SHALL  
REMOVE ALL ABANDONED OR UNUSED  
CONDUIT & WIRING ECT. BACK TO PANEL.

### DATA / COMMUNICATIONS:

- PULL, TERMINATE, AND TEST A TOTAL OF 59 NEW DATA & 7 VOICE CABLES PER REMODEL PROGRAM.
- REMOVE EXISTING CAT5 CABLES AND IT ENCLOSURE.
- SUPPLY 15FT AND 2FT BLUE CAT6 PATCH CABLES. QUANTITY OF EACH LENGTH PATCH CABLES SUPPLIED SHALL EQUAL THE TOTAL NUMBER OF DATA PORTS INSTALLED.
- SUPPLY 2FT WHITE CAT6 PATCH CABLES. QUANTITY OF EACH LENGTH PATCH CABLES SUPPLIED SHALL EQUAL THE TOTAL NUMBER OF VOICE PORTS INSTALLED.
- REMOVE EXISTING 25-PAIR COPPER FROM P61 INTO BUILDING 61.
- INSTALL 1" RIGID CONDUIT FROM PEDESTAL P61 TO ACCESSIBLE CEILING ABOVE ROOM 104.
- PULL, TERMINATE, AND TEST 25-PAIR COPPER FROM PEDESTAL P61 TO ROOM 61.

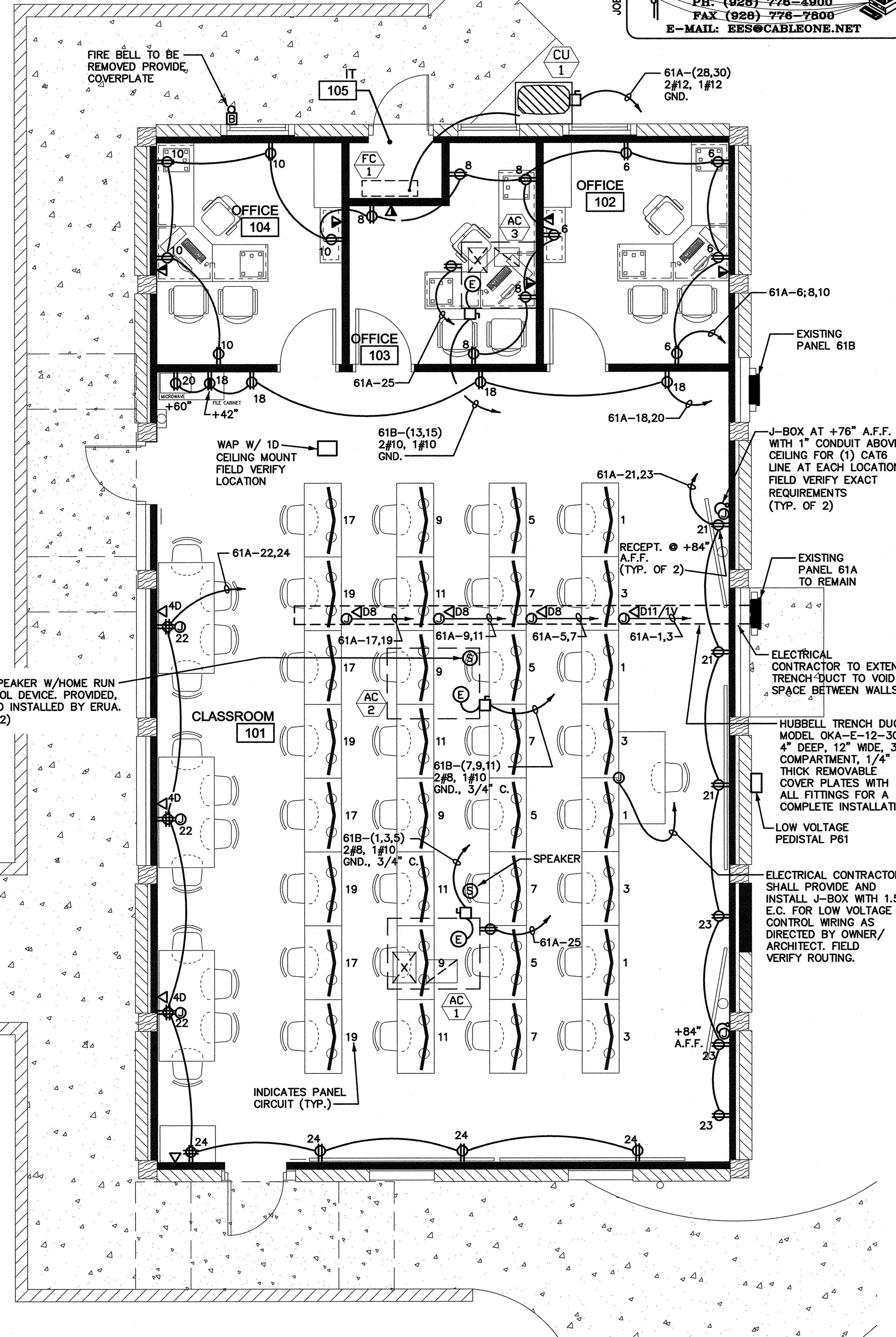
### GENERAL:

- TERMINATE HORIZONTAL DATA AND VOICE CABLES TO NEW WALL MOUNTED 48-PORT CAT6 PATCH PANELS IN ROOM 105.
- USE BLUE COLORED CAT6 CABLE AND JACKS FOR DATA PORTS AND WHITE COLORED CAT6 CABLE AND JACKS FOR PHONE PORTS.
- INTERNAL BUILDING CABLES SHALL BE ROUTED IN FRAMED WALLS AND ABOVE CEILING. CABLES MAY BE NEATLY SUSPENDED IN ENCLOSED CEILING AREAS USING CABLE HANGERS, CABLE MOLDING AND/OR SURFACE MOUNTED CONDUITS ACCEPTABLE IF THE CABLING CAN NOT BE ROUTED IN WALLS AND/OR ABOVE CEILING. MATCH EXISTING WALL COLORS WITHALL SURFACE MOUNTED ITEMS.
- IT HEAD END EQUIPMENT WILL BE OWNER SUPPLIED.

### ABBREVIATIONS

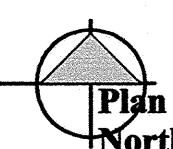
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E.C.	EMPTY CONDUIT
UNO	UNLESS OTHERWISE NOTED
FBO	FURNISHED BY OTHERS
NL	NIGHT LIGHT
TYP	TYPICAL

CEILING SPEAKER W/HOME RUN  
TO CONTROL DEVICE. PROVIDED,  
WIRED AND INSTALLED BY ERUA.  
(TYP. OF 2)



## Power Floor Plan

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



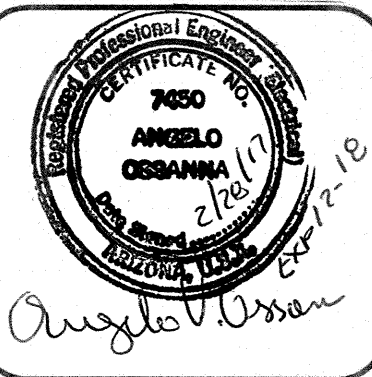
### GENERAL POWER NOTES:

- CONTRACTOR SHALL VERIFY ALL MOUNTING HEIGHTS EXACT LOCATION AND REQUIREMENTS OF ALL ELECTRICAL EQUIPMENT AND DEVICES WITH ENG., OWNER OR ARCHITECT PRIOR TO ROUGH-IN.
- ELECTRICAL CONTRACTOR SHALL RE-USE EXISTING CIRCUITS WHENEVER POSSIBLE.
- ALL RECEPTACLES IN AREAS WITH-IN 6'-0" OF A SINK SHALL BE GFCI TYPE PER NEC
- EXTERIOR & ROOF MOUNTED MAINT. RECEPT'S. SHALL BE WP, GFCI TYPE PER NEC
- VERIFY THE EXACT LOCATIONS OF ALL TELEPHONE OUTLETS, DATA OUTLETS AND SPECIAL SYSTEMS OUTLETS WITH THE ARCHITECT/OWNER PRIOR TO ROUGH-IN.
- ELECTRICAL CONTRACTOR SHALL PROVIDE COVER PLATES FOR ALL UNUSED OUTLETS, DATA OUTLETS AND SPECIAL SYSTEMS OUTLETS, FIELD VERIFY DEVICE NOT USED
- ELECTRICAL CONTRACTOR SHALL VERIFY MECHANICAL EQUIPMENT REQUIREMENTS BREAKER, DISC. & WIRE SIZE WITH MANUFACTURER PRIOR TO ROUGH-IN.

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ARCHITECTURE & PLANNING

DRAWING: Power Design & Demo Floor Plan  
With Notes

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