

# MEETING MINUTES

ISSUE DATE 6-29-23

## MEETING INFORMATION

MEETING DATE	June 2, 2023	MEETING TIME	Noon
MEETING NAME	Design Meeting #10	MEETING LOCATION	Cascade City Hall
PROJECT NAME	Cascade Public Library		
FEH PROJECT NUMBER	2021310		
MINUTES PREPARED BY	Michael Gehl		

ATTENDEE NAME	ORGANIZATION	PHONE	EMAIL
<input type="checkbox"/> Kevin Eipperle	FEH Design	563-583-4900	kevine@fehdesign.com
<input type="checkbox"/> Christy Monk	FEH Design	563-583-4900	christym@fehdesign.com
<input checked="" type="checkbox"/> Michael Gehl	FEH Design	563-583-4900	michaelg@fehdesign.com
<input type="checkbox"/> Amy Ludwig	Library Board		baludwig@netins.net
<input checked="" type="checkbox"/> Melissa Kane	Library Director		cpl@netins.net
<input checked="" type="checkbox"/> Mike Beck	Community Member		Beckcon@netins.net
<input checked="" type="checkbox"/> Monica Recker	Friend of Library		mnrecker@gmail.com
<input checked="" type="checkbox"/> Marie Thomas	Community Member		newhome813@gmail.com
<input checked="" type="checkbox"/> Megan Olophant	City Council		Olophant.megan@gmail.com
<input checked="" type="checkbox"/> Lisa Kotter	City Administrator		admin@citycascade.com
<input checked="" type="checkbox"/> Riley Rausch	City Council		Cascadeseat4@gmail.com
<input checked="" type="checkbox"/> Steve Knepper	Mayor		
<input type="checkbox"/> John Noonan	Community Member		<a href="mailto:jnoonan@cascade-mfg-co.com">jnoonan@cascade-mfg-co.com</a>
<input type="checkbox"/> Maureen McDermott	Donor		
<input checked="" type="checkbox"/> Ellie Wigginton	FEH Design	563-583-4900	elliew@fehdesign.com
<input checked="" type="checkbox"/> Dieter Muhlack	DELTA 3	563-542-9005	muhlackd@delta3eng.biz
<input checked="" type="checkbox"/> Brian Fuller	JDR Engineering	608-819-0206	fuller@jdreng.com
<input checked="" type="checkbox"/> Mike Delaney	City Council		Cascadeseat3@gmail.com

DISTRIBUTION Library Board

PURPOSE FEH Design Process

DISCUSSION

### 1. Data and Power Meeting

- a. It was a request to have the ethernet ports and solid access point in the large meeting room.
- b. The library equipment would be wired into the internet and the guests could use Wi-Fi.



- c. Mike Delaney stated he prefers to use NETGEAR products.
- d. A firewall is preferred rather than a general router with some access points.
- e. To project to a monitor, they will use Chromecast because that is what they use at the City Hall, and it seems to be easy.
  - i. There was a request for an HDMI port by the large meeting room monitor to direct-broadcast in case there are technical difficulties with Chromecast.
  - ii. Also provide a network cable at this location.
- f. There is a need for two data ports for the computers.
- g. There are currently floor boxes shown under the tables and there will be power and data in the large meeting room.
  - i. In the meeting room there will be one ethernet connection under each group of tables.
  - ii. All floor boxes will have dual power and data for ease of future expansion.
- h. There will be no USB charging ports integrated into the outlets due to the worry of them becoming outdated.
- i. There was a worry about the outlets in the silo and whether it was safe for children. These outlets will be tamper resistant.
- j. The outlets that are going to be added near the soffit for Christmas lights will be on a separate switch.
- k. There was a request for exterior receptacles along the building and near the electronic sign that would be large enough for events.
  - i. Would be able to support bouncy houses, food trucks, etc.
  - ii. Add a couple outlets on the west side of the building by the parking lot.
- l. Cameras
  - i. The entire exterior, corridors, meeting rooms and entire library will be under surveillance.
  - ii. There will be a separate monitor provided at the circulation desk for viewing the cameras.
  - iii. A recording device will be on the IT rack.
- m. Motion sensor lights.
  - i. All of the restrooms will have motion sensor lights and the lights will not turn off on a person since there are no toilet partitions blocking motion.
  - ii. The community room will also have motion sensor lights.
  - iii. The entire building will have occupancy sensors throughout the entire building.
- n. The display case will have lights hardwired and will have one outlet.
- o. Exterior Lighting
  - i. It was questioned whether the flagpole will have lights on the pole, or the light will be mounted on the building pointing towards the flag. *The design intent is to have a pole-mounted light.*
  - ii. Both locations of exterior lettering will be illuminated.
  - iii. More lights will be added to the library parking lot.
    - 1. The city will provide poles to match the existing.
    - 2. The city will add additional streetlights on Second Ave.
    - 3. The light poles will be owner furnished and contractor installed.
- p. The typical light temperature in the building will be a soft light at 3,000Kelvin.
- q. All Light fixtures will have the ability to dim except in the restrooms.



- r. **Box Cast Camera**
  - i. If it can be located in the center of the room and be manually rotated this would work unless Box Cast says the camera needs to be in a corner.
    - 1. If it has to be located in the corner Mike would prefer multiple mounting locations around the room so the camera can be manually moved to different locations.
    - 2. At each location for the Box Cast Camera there needs to be a network and electrical receptacle. Cat 6 will work but Cat 7 is preferred by Mike.
  - s. Data and power will be provided at the electronic sign, it was questioned whether the sign will be on a timer.
  - t. The large meeting room will have outlets on the east wall that will support roasters and crockpots.
  - u. There will be no power grommets in the furniture.

**2. Goals for Success**

**3. Timeline**

**4. Budget**

**5. Design Review**

**a. Electrical**

**i. Data and Power Locations**

- 1. A brief recap was provided of the earlier meeting, see meeting minutes above.
- ii. The committee thought it would be a good idea to illuminate the exterior book drop so this will be added to the scope.
- iii. Brian Fuller was visiting the site after the meeting to look at existing parking lot lights.
- iv. Will there be Wi-Fi provided in the outdoor greenspace. It is possible that the interior Wi-Fi will be sufficient to provide access outside.

**b. Mechanical**

**i. Water Softener**

- 1. The purpose is to increase the life of the water heater.
- 2. It was decided that the city will rent the softener so that the company takes care of it and keeps it full of salt.
- 3. Water Softener will be owner furnished and owner installed.

**ii. The water heater will be an electric small storage water heater.**

**iii. Geothermal**

- 1. The bore field may be a horizontal field instead of vertical.
  - a. This would require more space so it would be under the new and existing parking lot.
  - b. This could cost less since there would be no need for a DNR permit.

**c. Site**

- i. The committee decided that there should be enough bike racks for 5-7 bikes.
- ii. The city will provide the site furniture including the benches, trash cans and other exterior seating that will be on the patios so it will match the existing park furniture.
- iii. All site furniture provided by owner except bike racks and flagpole.
- iv. Site Furniture will be owner furnished and owner installed.

**d. Plan**



- i. Casework
  - 1. The lower casework should have roll out shelves in the staff work area.
  - 2. The committee stated they only want the single row of upper casework with no soffit above, in all locations.
  - 3. There will be no lockable cabinets in the staff work area.
  - 4. One set of double door base cabinets should have a lock in the meeting room.
  - 5. They decided they want one tall cabinet in the work area with a hanging rod.
- ii. There will be one full-sized refrigerator and one microwave in both kitchenette areas.
- iii. Restroom paper towel dispenser.
  - 1. The towel dispenser and trash receptacle will be one unit recessed into the wall.
- iv. The committee decided to eliminate the ½ wall at the coffee bar.
- e. **Exterior Design**
- f. **Finishes**
  - i. Base Trim
    - 1. The committee determined that they do not want any wood base board, they want resilient base around the entire space.
      - a. The Resilient base color will coordinate with each flooring type.
  - ii. Stain Color
    - 1. The committee stated they would like to see a darker brown option, similar to the brown on the name tags at the City Hall, for the trim and circulation desk.
    - 2. The species of wood that will be used on the ceiling and in the clerestory was questioned. It was questioned whether this wood would be able to be stained similarly to the trim?
    - 3. The ceiling will be pre-stained or stained on site – to be determined later.
  - iii. Material Board
    - 1. The committee asked for material boards for both the interior finishes and the exterior finishes, so they can see everything together.
    - 2. This material board was selected instead of realistic renderings due to a lesser cost.
  - iv. Circulation Desk
    - 1. There will be three monitors, one for the security camera display and the other two for staff.
    - 2. One locking drawer is needed.
    - 3. There is no need for file drawers.
      - a. Mobile furniture can be added for additional storage in the future.
  - v. The tile chosen for the fireplace hearth was – Crossville, Gotham – Penthouse
  - vi. It was decided that the general paint throughout will be a lighter gray than what we showed, Colonnade Gray SW 7641.
  - vii. Accent Paints



1. FEH Design recommended the following walls have an accent paint color: west wall of Study 1 (Room 115), east wall of Study 2 (Room 116), and south wall of Conference (Room 117).
2. The final accent colors were not decided, but the committee's favorite is the dark blue (SW 99059). They also liked the red (SW 6313) and purple (SW 9072).

**6. Other Items**

- a. The letter for site preparation will clearly explain how to fill in the existing foundations once the houses are demolished.
- b. When the project goes out to bid there will be a list of local contractors that want to provide an in-kind donation and we will make a note explaining that the bid should reflect the donations in the bid.

**7. Next Steps and assignments**

**a. FEH Design**

- i. Continue Construction Documents
- ii. Send Lisa the Geothermal Rebate Information
- iii. Create a Material Boards
- iv. Send Brian Fuller Electronic Sign Specifications.
- v. Provide neutral colored resilient base (RB) samples for LVT areas to match wood.

**b. City of Cascade/ Committee**

- i. Committee to inform FEH Design about equipment to be purchased by owner.
- ii. Lisa to send FEH Design the specs for the Electric Car Charging Station.
- iii. Send Brian Fuller the Specifications for the City Street Lights
- iv. Melissa is to send FEH Design updated book inventory and yearly percentage of growth.

**8. Next Meeting: June 23, 2023**

This is the author's understanding of the items discussed. Please notify us of any discrepancies within 7 days so revised minutes can be issued.

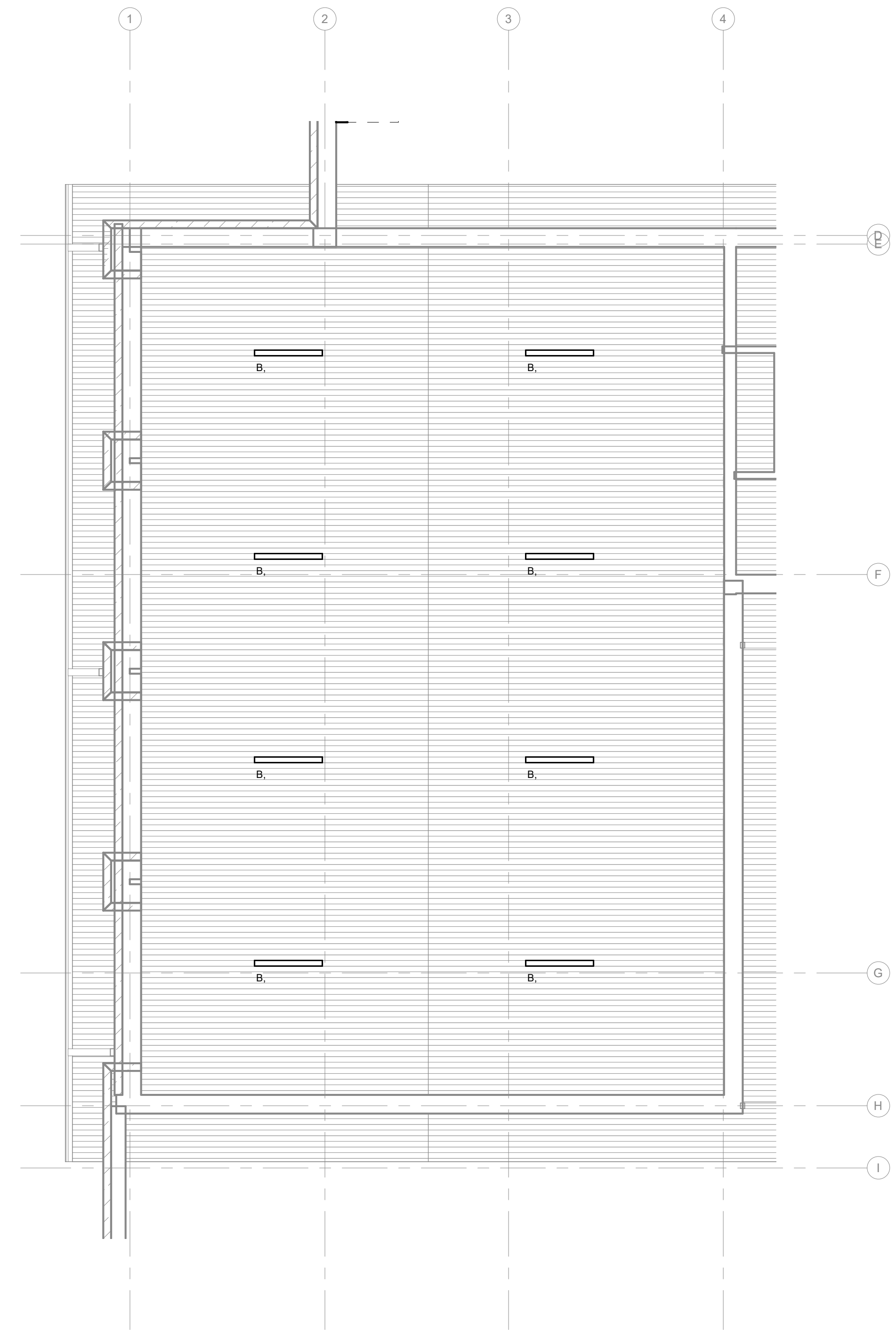
Attachments: Plan/ Drawings

# Cascade Public Library Goals for Success

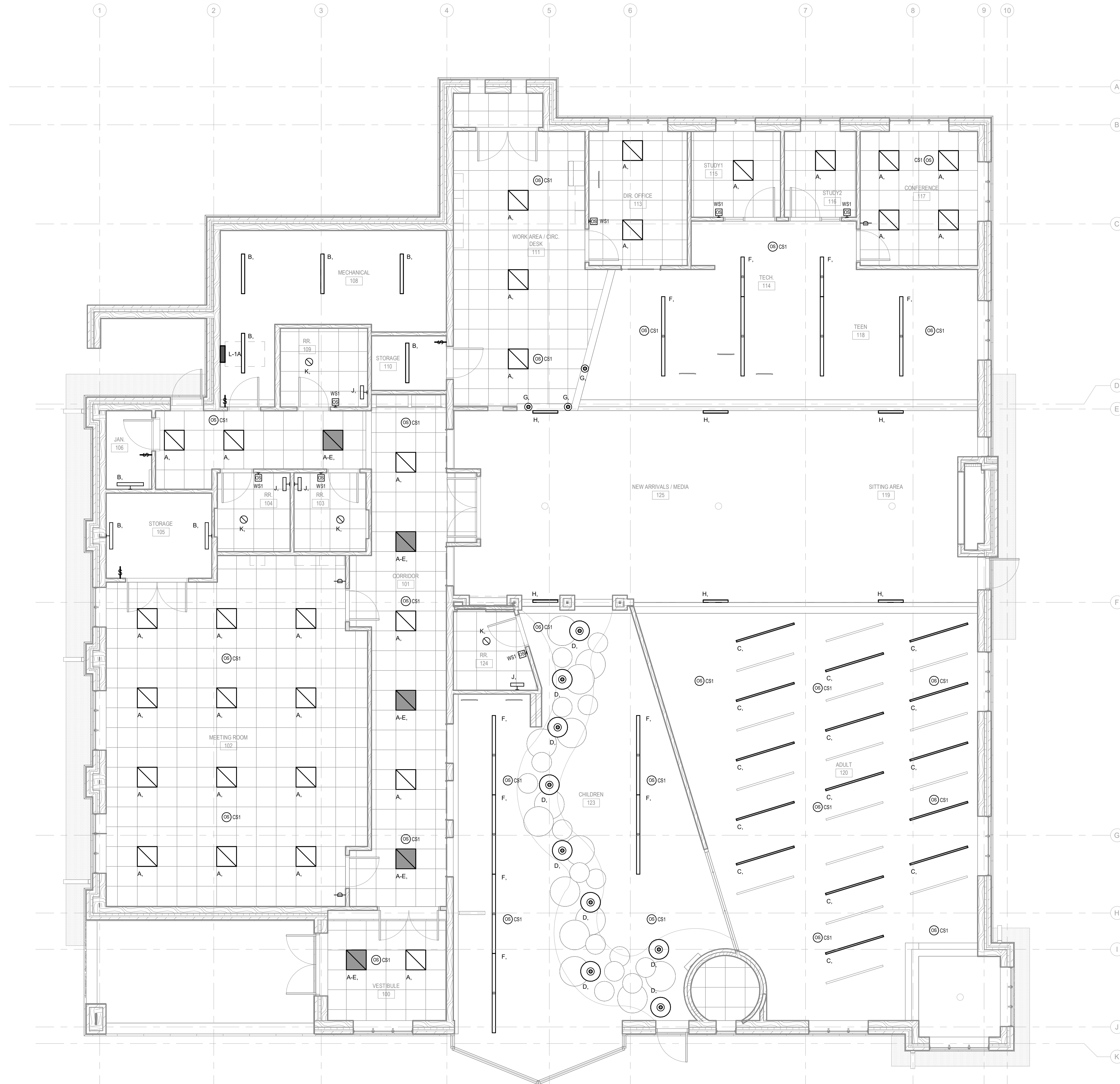
1 July 2021

Create a new Cascade Library that:

- provides adequate space for a robust collection.
- offers adequate space for delivering services and programming.
- provides access to current, 21<sup>st</sup> Century technologies and tools (i.e. internet, computers, digital media, 3D printer, laser cutter).
- is expandable and flexible to accommodate change in the future to best insure its longevity.
- is built with materials to withstand the test of time.
- is developed after a thorough evaluation of the possible options to best insure its suitability for the community.
- becomes a space for the community to gather.
- is inviting and welcoming to people of all ages, especially preteens/teens that are overlooked by current library spaces.
- is family friendly and an exciting and fun place to visit.
- provides barrier free access for everyone.
- is a safe and secure place for all users.
- is centrally located and has walking access.
- reflects the Heart and Soul values of Cascade:
  - C – Community: We cherish our history, but look towards the future to bring together long-time residents and newcomers alike.
  - A- Atmosphere: We pride ourselves on the generous, kind people who support one another, creating a family atmosphere.
  - S – Safety: We are dedicated to sustaining a well-kept, safe community that everyone can call home.
  - C – Convenience: We value our centrally-located community with amenities for all.
  - A – Activities: We treasure the activities that bring our community together through music, sports, faith & other events.
  - D – Development: We value our local businesses and industries that create jobs and encourage growth & revitalization.
  - E – Education: We invest in future generations by offering excellent choices in childcare, schools & extracurricular activities.



2 ATTIC PLAN - LIGHTING  
E201 SCALE: 3/16" = 1'-0"



1 FIRST FLOOR PLAN - LIGHTING  
E201 SCALE: 3/16" = 1'-0"

KEYED NOTES  
(KEYED NOTES PER PROJECT)



DES MOINES, IA (515) 288-2000  
DUBUQUE, IA (663) 583-4500  
SIOUX CITY, IA (712) 252-3889  
OCONOMOWOC, WI (262) 968-2055

IN ASSOCIATION WITH  
JDR ENGINEERING, INC.  
5525 NOBEL DRIVE  
SUITE 100  
MADISON, WI 53711  
PH: 608.277.7128 FAX: 608.271.7046  
JDR PROJECT NO.: 2310081

SHEET TITLE  
FIRST FLOOR PLAN - LIGHTING

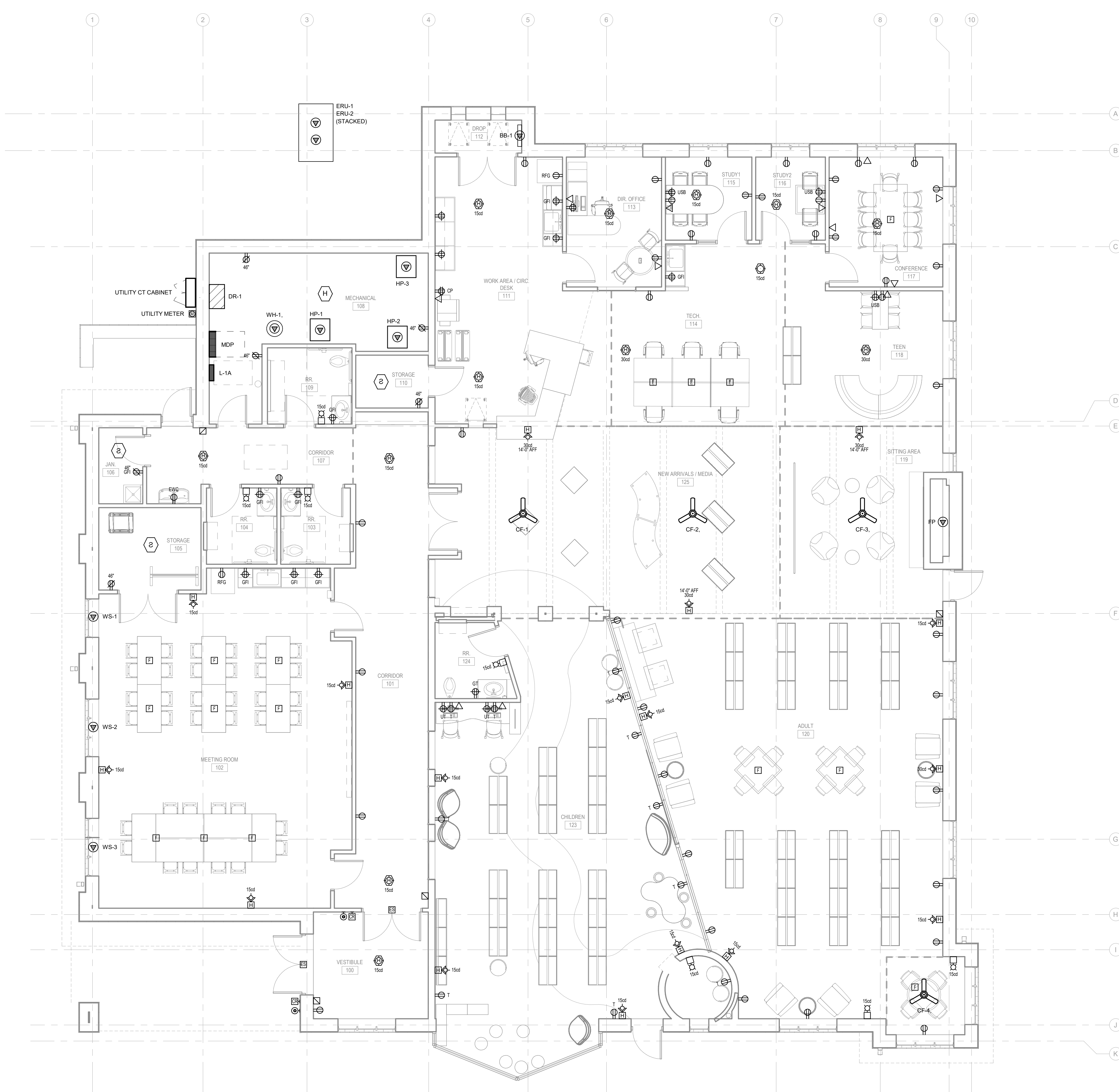
PROJECT TITLE  
CITY OF CASCADE  
CASCADE PUBLIC LIBRARY

DATE ISSUED 8 MAY 2023  
REV. NO. DATE

PROJECT NUMBER  
2021310

SHEET  
E201

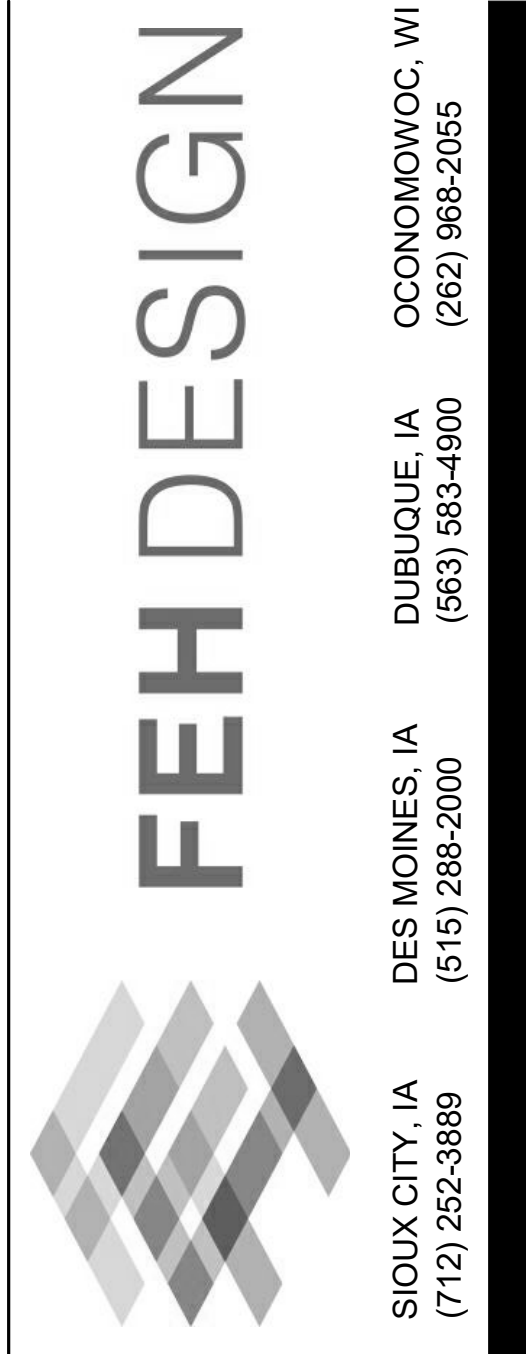
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NOT FOR CONSTRUCTION



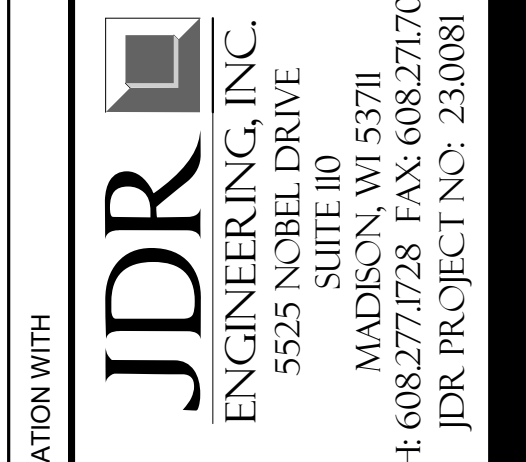
1  
E202  
SCALE: 3/8" = 1'-0"

FIRST FLOOR PLAN - POWER AND SPECIAL SYSTEMS

KEYED NOTES  
(KEYED NOTES PER PROJECT)



SIOUX CITY, IA (712) 252-3889  
 DES MOINES, IA (515) 288-2000  
 DUBUQUE, IA (663) 583-4500  
 OCONOMOWOC, WI (262) 968-2055



MADISON, WI 53711  
 5525 NOBEL DRIVE  
 SUITE 110  
 JDR PROJECT NO. 2310081  
 PH: 608.277.0728 FAX: 608.271.7046

IN ASSOCIATION WITH  
 SHEET TITLE  
 FIRST FLOOR PLAN - POWER AND SPECIAL SYSTEMS

PROJECT TITLE  
 CITY OF CASCADE  
 CASCADE PUBLIC LIBRARY  
 SECOND AVENUE SW,  
 CASCADE, IOWA

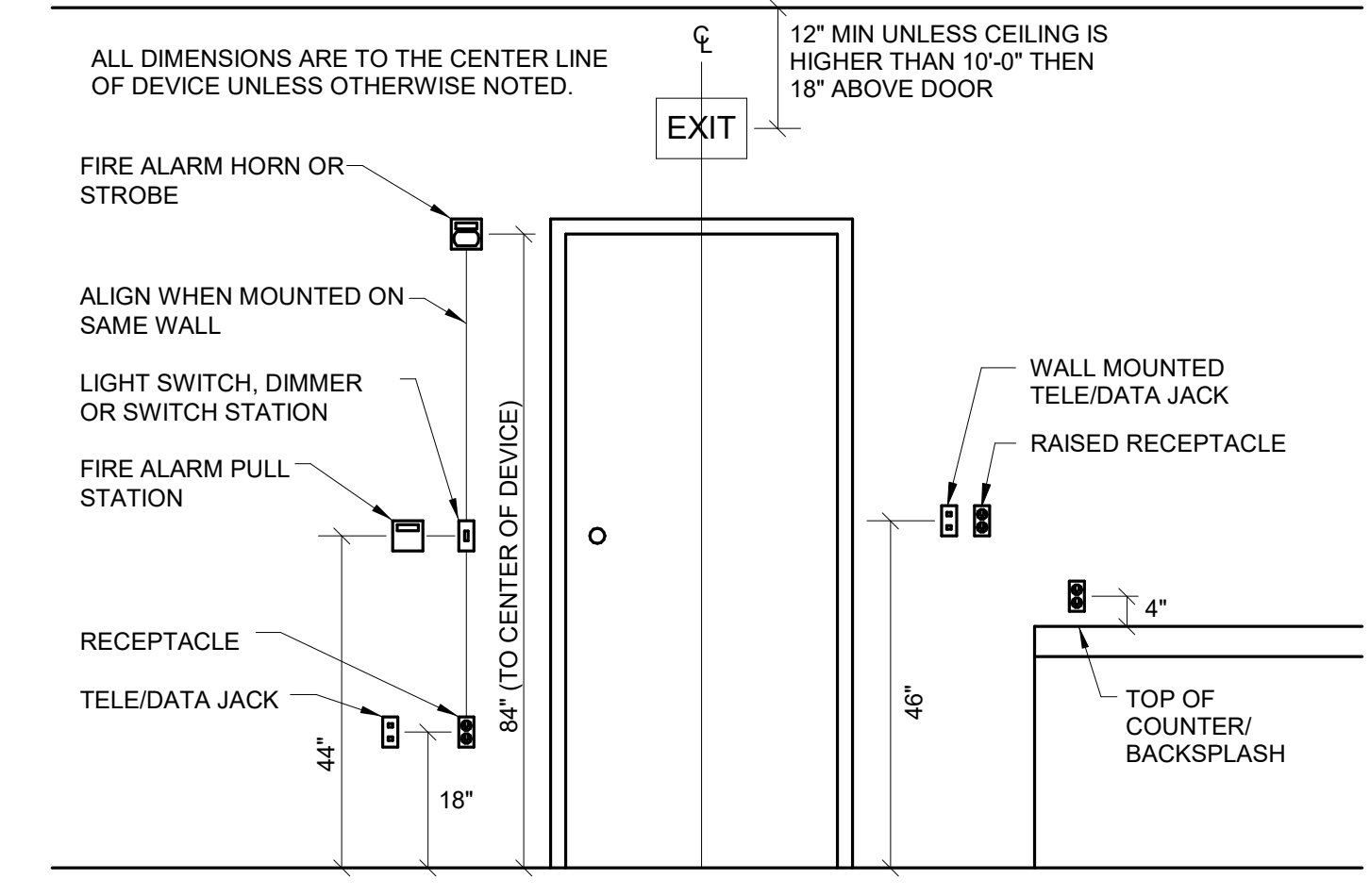
DATE ISSUED 8 MAY 2023  
 REV. NO. DATE

PROJECT NUMBER  
 2021310

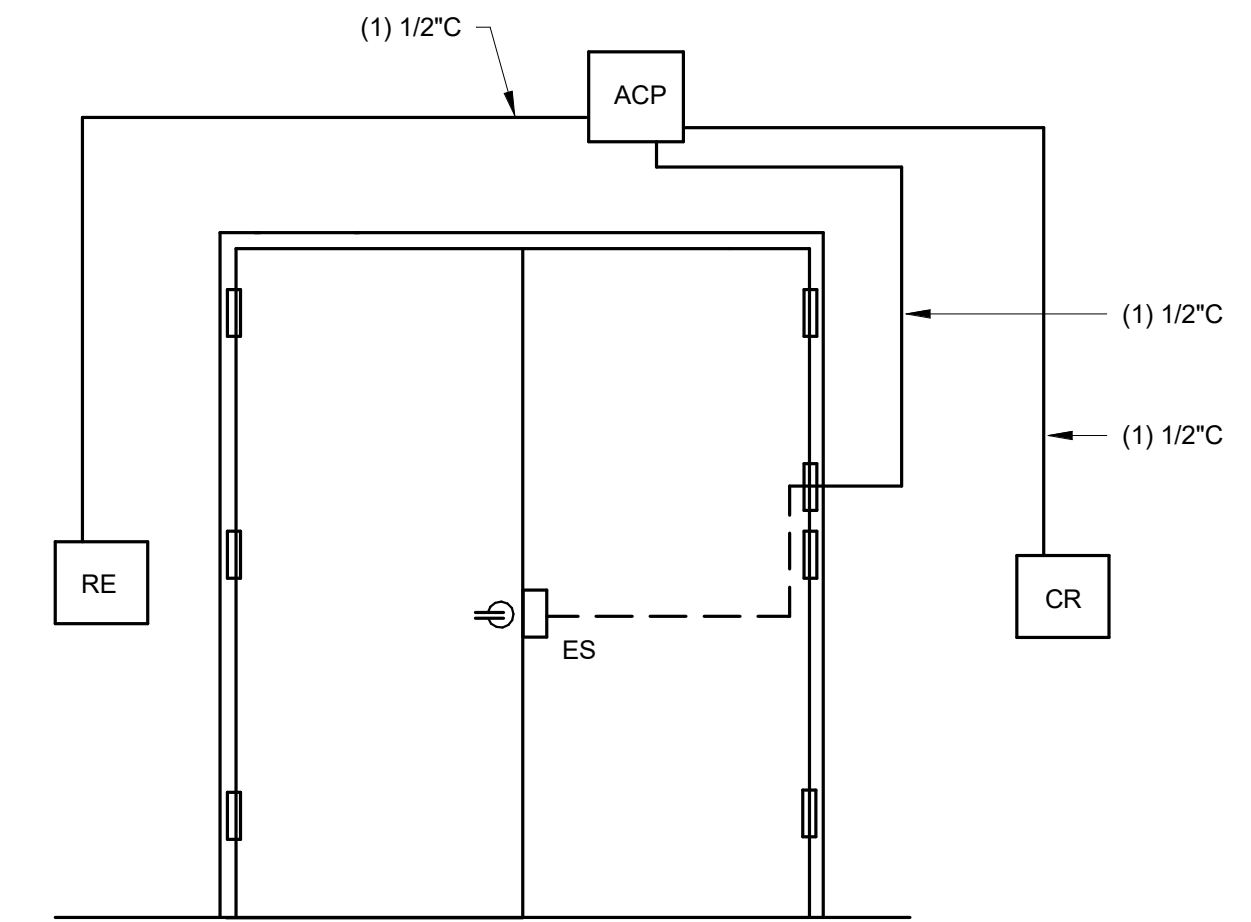
SHEET  
 E202

**PRELIMINARY**  
 NOT FOR CONSTRUCTION





**1** TYPICAL DEVICE MOUNTING HEIGHT  
SCALE: 1/2" = 1'-0"

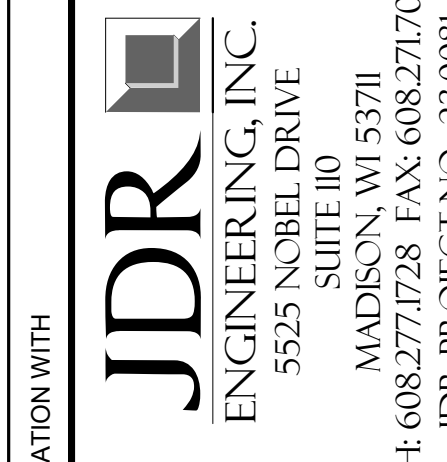


- CARD READER CONTROL WITH ELECTRIC STRIKE.
- ENTRY BY CARD READER, EXIT IS MANUAL AND ALWAYS AVAILABLE.
- REQUEST TO EXIT OR PUSHBUTTON ACTIVATION SHOWN ON PLANS
- NOT ALL DEVICES ON DETAIL ARE AT EACH DOOR. REFER TO PLAN.

**2** ACCESS CONTROLS DETAIL - DOUBLE DOOR  
SCALE: NONE



SIOUX CITY, IA (712) 252-3889  
DES MOINES, IA (515) 288-2000  
DUBUQUE, IA (663) 583-4900  
OCONOMOWOC, WI (262) 968-2055



MADISON, WI 53711  
5525 NOBEL DRIVE, SUITE 110  
JDR PROJECT NO.: 2310081  
PH: 608.277.1728 FAX: 608.271.7046

IN ASSOCIATION WITH

SHEET TITLE  
DETAILS - ELECTRICAL

PROJECT TITLE  
CITY OF CASCADE  
CASCADE PUBLIC LIBRARY  
SECOND AVENUE SW,  
CASCADE, IOWA

DATE ISSUED: 8 MAY 2023

REV. NO. DATE

PROJECT NUMBER  
2021310

SHEET  
E900

**PRELIMINARY**  
NOT FOR CONSTRUCTION

**WATER SOURCE HEAT PUMPS**

BASIS OF DESIGN: CLIMIT MASTER

TAG NUMBER	UNIT LOCATION ROOM NO	AREA SERVED	HEAT PUMP MODEL NUMBER	COOLING CAPACITY TOTAL MBH	HEATING CAPACITY MBH	AHRI ISO13256-1 EER PART/FULL LOAD	AHRI ISO1326-1 COP	FAN SUPPLY CFM	ESP	OA CFM	LOOP WATER GPM	FT HEAD AT 32 DEG EWT	VOLTS/PHASE/HERTZ	MCA	MOCP
HP-1	108	111 WORK, OFFICE & TEEN AREAS	TE-072	70.3	51.8	26.7/18.8	3.5	1900	0.5	450	15.0	12.2	208-230/1/60	45.1	70
HP-2	108	120 ADULT & 123 CHILDREN	TE-072	70.3	51.8	26.7/18.8	3.5	1950	0.5	450	15.0	12.2	208-230/1/60	45.1	70
HP-3	ATTIC	102 MEETING ROOM	TE-064	63.8	48.7	23.2/16.9	3.8	1850	0.4	300	13.0	7.4	208-230/1/60	41.8	60
TOTALS				204.4	152.3						43.00				

NOTES: SELECTIONS BASED ON 410a REFRIGERANT, COOLING EAT 80/67, HEATING EAT 80, 30% GLYCOL, COOLING EWT 55, HEATING EWT 32  
 ALL UNITS PROVIDED WITH FACTORY INSTALLED ACCESSORIES: COMPRESSOR SOUND BLANKET, ECM FAN MOTORS.  
 PROVIDED UNITS WITH RIGHT OR LEFT HAND RETURN CONFIGURATION AS SHOWN ON PLANS AND INDICATE ON SUBMITTALS FOR REVIEW.  
 PROVIDE PUMP ON EACH HEAT PUMP TO CYCLE ON WHEN A THERMOSTAT CALLS FOR HEATING OR COOLING.  
 ALL VERTICAL UNITS REQUIRE 2" MERV 8 FILTERS, AND PROVIDE 1 LOOSE SETS OF FILTERS FOR EACH UNIT.  
 PROVIDE ALL UNITS WITH 2 STAGE WALL THERMOSTATES THAT HAVE 7 DAY PROGRAMMING AND AN OCCUPIED OVERRIDE BUTTON, OVERRIDE SHALL BE ADJUSTABLE SET FOR 2 HRS

**AIR TERMINALS**

BASIS OF DESIGN: KRUEGER

TAG	MODEL	DESCRIPTION	MOUNT TYPE	FINISH
S-1	880	STEEL DOUBLE DEFLECTION SIDEWALL GRILLE	SURFACE	PRIME
S-2	RS80RD	ROUND ALUMINUM DOUBLE DEFLECTION GRILLE	END OF DUCT	PRIME
S-3	PLQ	4 WAY 24X24 PLAQUE DIFFUSER	LAY-IN	WHITE
R-1	EGCS	EGG GRATE ALUMINUM RETURN GRILLE	LAY-IN	WHITE
R-2	S80	STEEL RETURN GRILLE W/ 35° DEFLECTION	SURFACE	PRIME
E-1	EGCS	EGG GRATE ALUMINUM EXHAUST GRILLE	LAY-IN	WHITE
E-2	S80	STEEL EXHAUST GRILLE W/ 35° DEFLECTION	SURFACE	PRIME
T-1	EGCS	EGG GRATE ALUMINUM TRANSFER GRILLE	LAY-IN	WHITE
T-2	S80	STEEL TRANSFER GRILLE W/ 35° DEFLECTION	SURFACE	PRIME

NOTES: 1 REFER TO PLANS FOR SIZES.  
 2 R-1, E-1, AND T-1 GRILLES SHALL BE PROVIDED WITH SRAC325 SQUARE TO ROUND ADAPTOR, MIN 3.25" SIDE HEIGHT.  
 3 PRIME AIR TERMINALS WILL BE FIELD PAINTED BY GC  
 4 PAINT INSIDE OF VISIBLE DUCTWORK FLAT BLACK BEHIND AIR TERMINALS  
 5 ADJUST S-1 AND S-2 DEFLECTION TO PROVIDE SPREAD LISTED AT UNIT

**HYDRONIC PUMPS**

BASIS OF DESIGN: WILO

TAG	SERVICE	MODEL	FLOW GPM	HEAD FT	V/PH/Hz	RATED POWER	OPERATING RPM	EFFICIENCY
P-1	HEAT PUMP 1	TOP S 1.5X50	15	48	230/1/60	0.94	3380	21.1%
P-2	HEAT PUMP 1	TOP S 1.5X50	15	48	230/1/60	0.94	3380	21.1%
P-3	HEAT PUMP 3	TOP S 1.5X50	13	45	230/1/60	0.92	3380	18.7%

NOTES: SELECTION BASED ON 30% PROPYLENE GLYCOL AT 32 DEG F.  
 PUMP SHALL CYCLE ON WHEN ANY HEAT PUMP CALLS FOR HEATING OR COOLING.

**LOUVERS**

BASIS OF DESIGN: RUSKIN

TAG	MODEL	SERVICE	CFM	SIZE	FREE SF	VELOCITY	IN WG	MATERIAL
L-1	ELF6375DX	INTAKE	1200	24X84	8.03	150 FPM	0.01	ALUMINUM
L-2	ELF6375DX	EXHAUST	1100	14X84	4.38	251 FPM	0.01	ALUMINUM

NOTES: PROVIDE LOUVERS WITH BIRD SCREEN.  
 PROVIDE PLENUMS WITH INSULATED ACCESS DOORS FOR CLEANING.  
 PITCH BOTTOM OF PLENUM TO DRAIN OUTSIDE, OR PROVIDE DRAIN AND PIPING TO FD.  
 COLOR SELECTED BY ARCHITECT FROM STANDARD COLORS.

**ZONE DAMPERS**

BASIS OF DESIGN: CARRIER VVT OR EQUAL

TAG	MODEL	CFM	DUCT SIZE	STAT LOCATION	POWER
Z1-1	33CD06ZC-01	1070	20x12	CONFERENCE 117	120 V, 40 VA
Z1-2	33CD06ZC-01	320	10x10	OFFICE 113	120 V, 40 VA
Z1-3	33CD06ZC-01	310	10x10	103OFFICE	120 V, 40 VA
Z1-4	33CD06ZC-01	1000	12x10	BYPASS	120 V, 40 VA
Z2-1	33CD08ZC-01	995	18x12	ADULT 120	120 V, 40 VA
Z2-2	33CD06ZC-01	945	18x12	CHILDRENS 123	120 V, 40 VA
Z2-3	33CD06ZC-01	900	12x10	BYPASS	120 V, 40 VA

NOTES: 1 PROVIDE TRANSFORMERS, WIRING, ETC, FOR A COMPLETE SYSTEM  
 2 LOCATE CONTROL PANEL IN MECH ROOM  
 3 SET ZONE DAMPERS FOR MINIMUM 30% AIR FLOW  
 4 SET BYPASS PRESSURE TO INCREASE OPEN ZONE AIR FLOW BY APPROX 20%

**EXHAUST FANS**

BASIS OF DESIGN: LOREN COOK OR EQUAL

TAG	MODEL	SONES	CFM	ESP	MOTOR	V/PH/Hz
EF-1	GC-322	0.3	100	0.1	28.6 WATTS	115/1/60

NOTES: 1 PROVIDE FAN WITH TIME CLOCKS TO OPERATE IN OCCUPIED HOURS.  
 2 PROVIDE FAN WITH FSC SPEED CONTROL.

**EXPANSION TANK**

BASIS OF DESIGN: WESSELS

TAG	MODEL	TANK VOLUME	TANK ACCEPTANCE	DIMENSIONS ØxH
ET-1	CX30-125	8.0	5	14X22.5

NOTES: SELECTION BASED ON 30% PROPYLENE GLYCOL  
 PROVIDE WITH DIAPHRAGM AND 0 TO 30 PSI PRESSURE GAUGE

**GLYCOL FEED UNIT**

BASIS OF DESIGN: AXIOM

TAG	MODEL	FLOW GPM @ PSI	TANK SIZE	V/PH/Hz	WATTS
GF-1	MF200	.5 @ 15	6.6 GAL	115/1/60	50

FILL UNIT WITH 30% PROPYLENE GLYCOL AND SET UNIT TO MAINTAIN 10 PSI

**AIR & DIRT SEPARATOR**

BASIS OF DESIGN: ITT BELL & GOSSETT

TAG	MODEL	CONNECTION SIZE	FLOW	CV
AS-1	CRSN2-1/2	2-1/2"	68 GPM	116

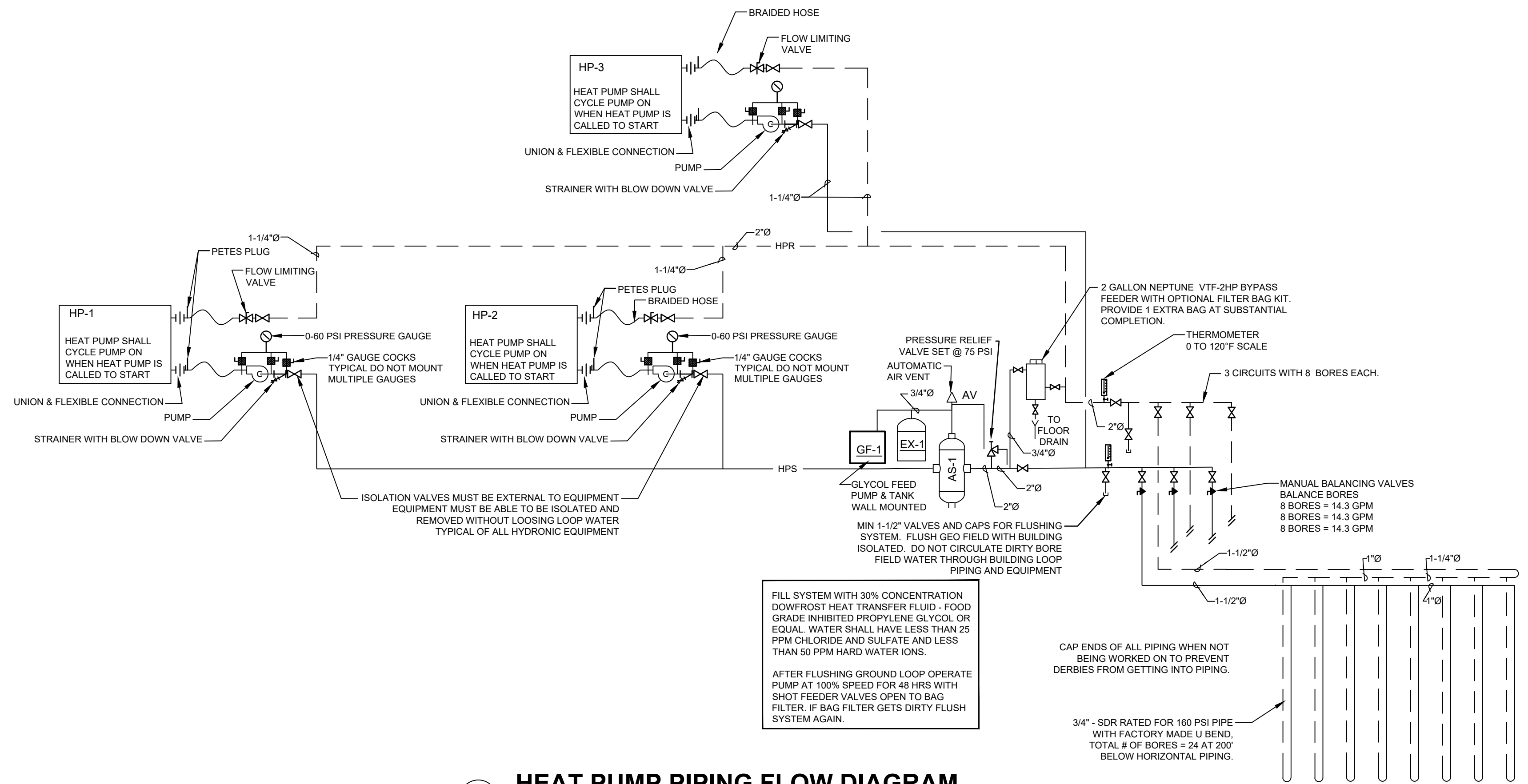
PROVIDE DRAIN VALVE WITH HOSE CONNECTION

**CEILING FANS**

BASIS OF DESIGN: BIG ASS FAN OR EQUAL

TAG	MODEL	SIZE IN DIA	CFM	MAX RPM	CFM/WATT	WEIGHT	MOTOR	V/PH/Hz
CF-1	i6	60	9676	170	260	34 LB	35.4 WATTS	100-277/1/60
CF-2	i6	60	9676	170	260	34 LB	35.4 WATTS	100-277/1/60
CF-3	i6	60	9676	170	260	34 LB	35.4 WATTS	100-277/1/60
CF-4	i6	60	9676	170	260	34 LB	35.4 WATTS	100-277/1/60

NOTES: 1 PROVIDE FANS WITH FIXED WALL MOUNTED CONTROLS AND OPTIONAL DOWN RODS.  
 2 PROVIDE FANS WITH BRUSHED ALUMINUM FINISH



1 HEAT PUMP PIPING FLOW DIAGRAM  
 SCALE: N.T.S.

**SYMBOLS & ABBREVIATIONS**

- ☒ → SUPPLY DUCT UP
- ☒ ↘ RETURN / OUTSIDE AIR DUCT UP
- ☒ ↙ EXHAUST DUCT UP
- ☒ ← SUPPLY DUCT DOWN
- ☒ ↘ RETURN / OUTSIDE AIR DUCT DOWN
- ☒ ↙ EXHAUST DUCT DOWN
- 18x10 DUCT SIZE IS 18" WIDE AND 10" TALL FREE AREA
- MANUAL VOLUME DAMPER
- FIRE DAMPER
- FLEXIBLE DUCTWORK
- ☒ TAG NECK/FACE SIZE C.F.M. NOTES
- OPEN END DUCT
- ⊙ THERMOSTAT SENSOR 48" OR AS NOTED
- ⊙ ROOM CO2 SENSOR BY CONTROLS CONTR.
- TYP TYPICAL
- MFG MANUFACTURER
- DN DOWN
- AHJ AUTHORITY HAVING JURISDICTION

NOTES: MECHANICAL CONTRACTOR SHALL PROVIDE ALL CONTROLS AND POWER FOR CONTROLS UNLESS SHOWN OTHERWISE

**RECTANGULAR DUCT 90° FULL RADIUS ELBOW**  
 SCALE: N.T.S.

**RECTANGULAR DUCT 90° MITERED ELBOW**  
 SCALE: N.T.S.

**FLEXIBLE DUCT ELBOW GUIDE**  
 SCALE: N.T.S.

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SHEET TITLE  
**HVAC SCHEDULES, DETAILS AND FLOW DIAGRAM**

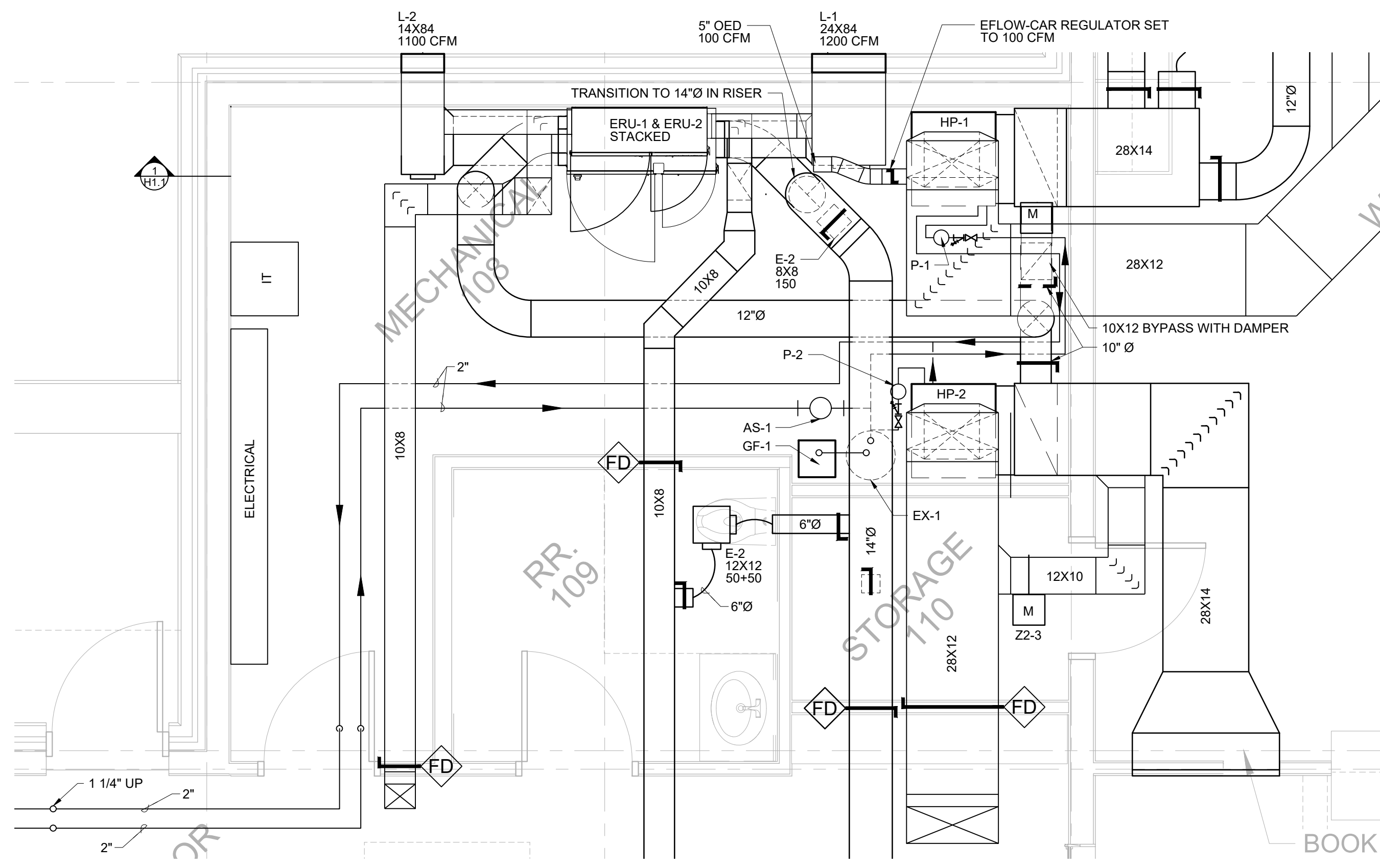
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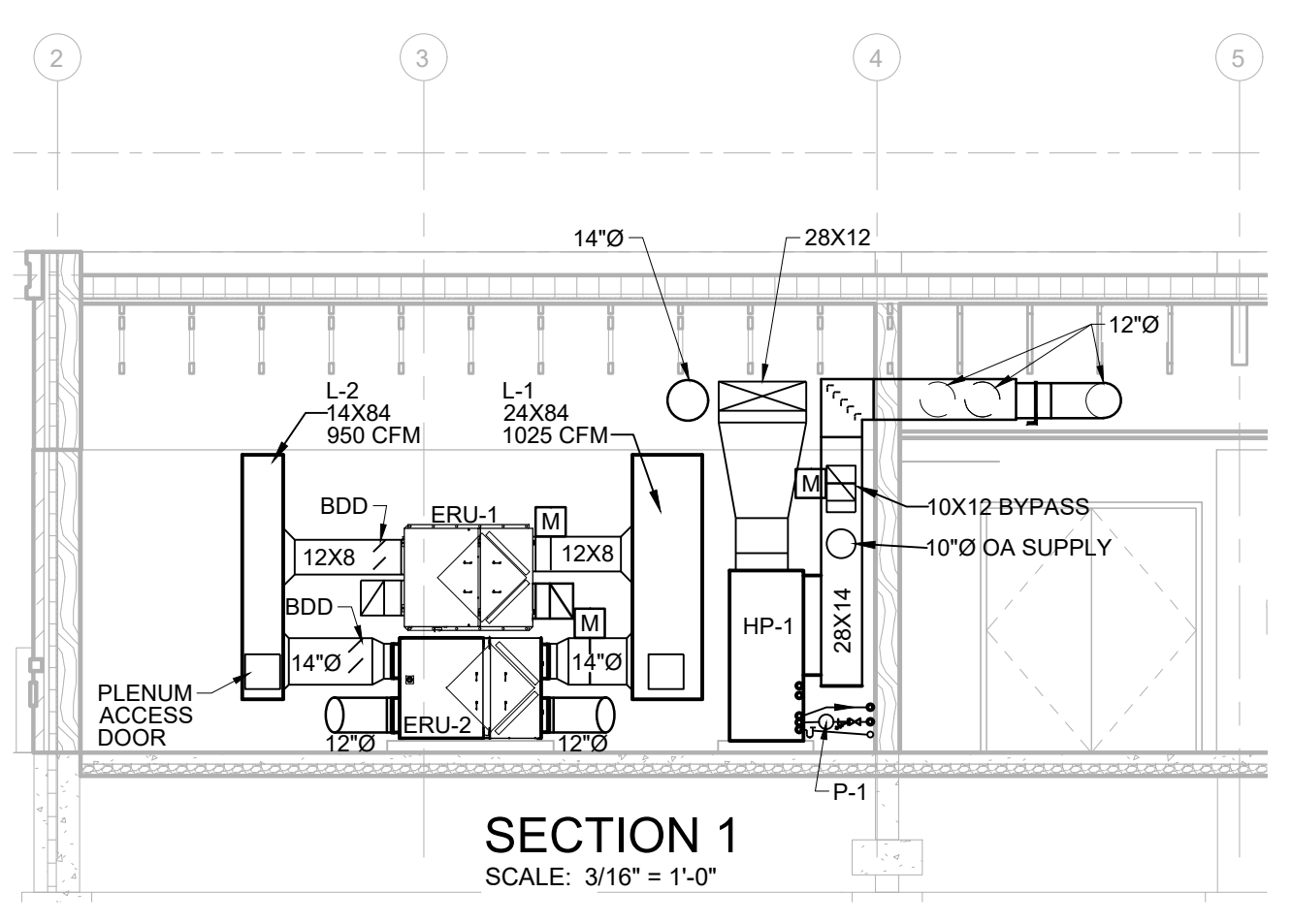
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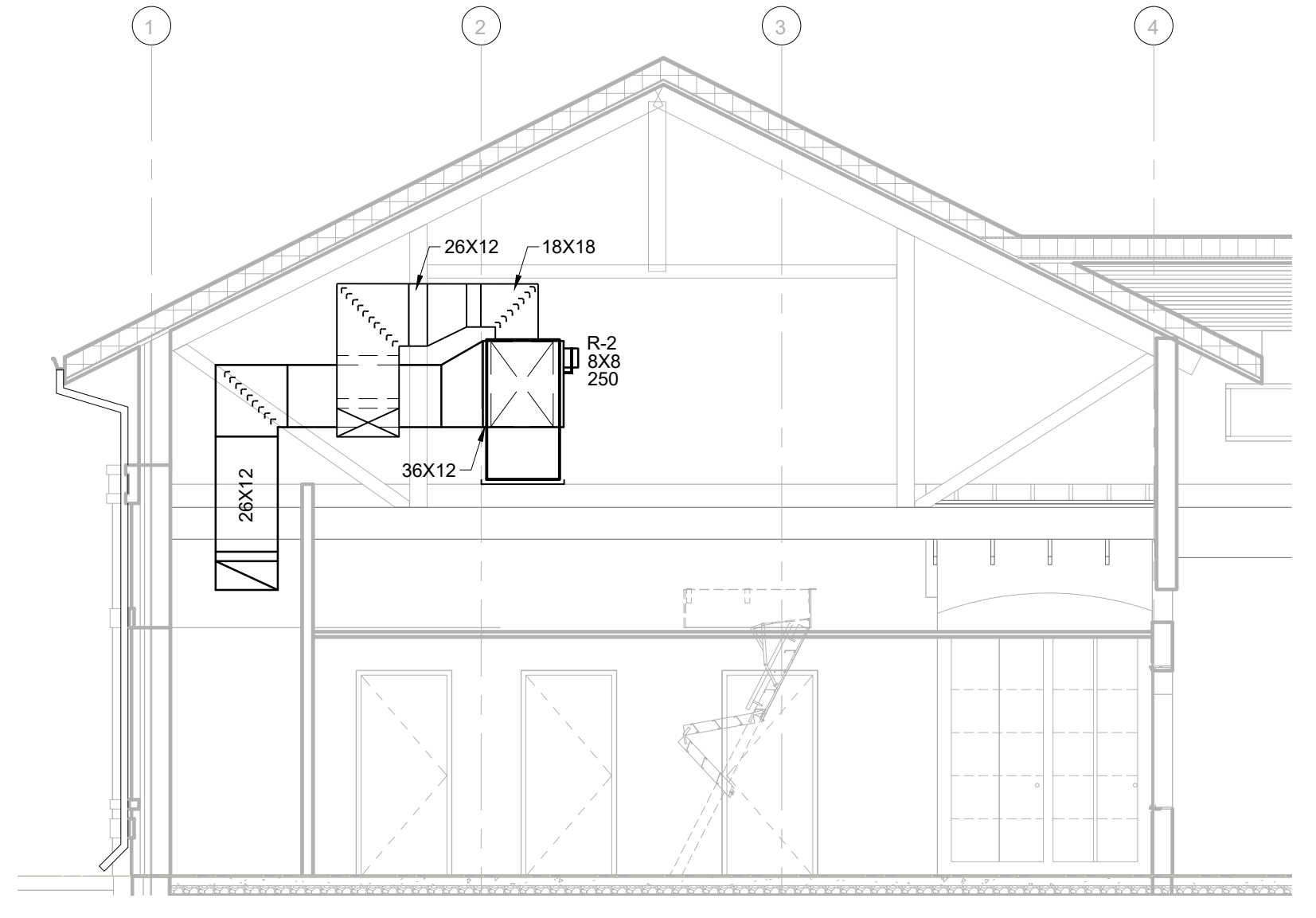
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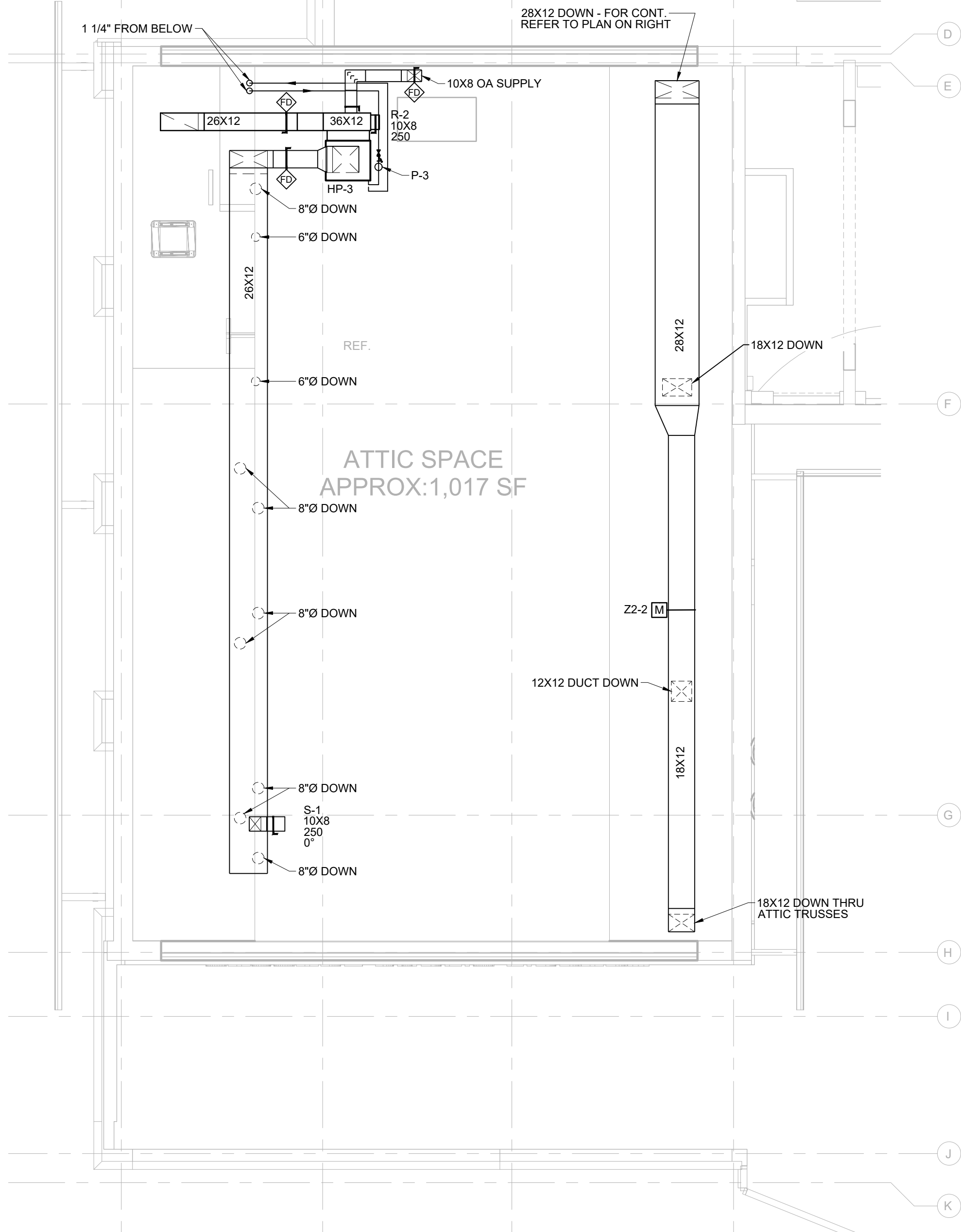
LARGE SCALE MECHANICAL ROOM HVAC PLAN  
SCALE: 3/8" = 1'-0"



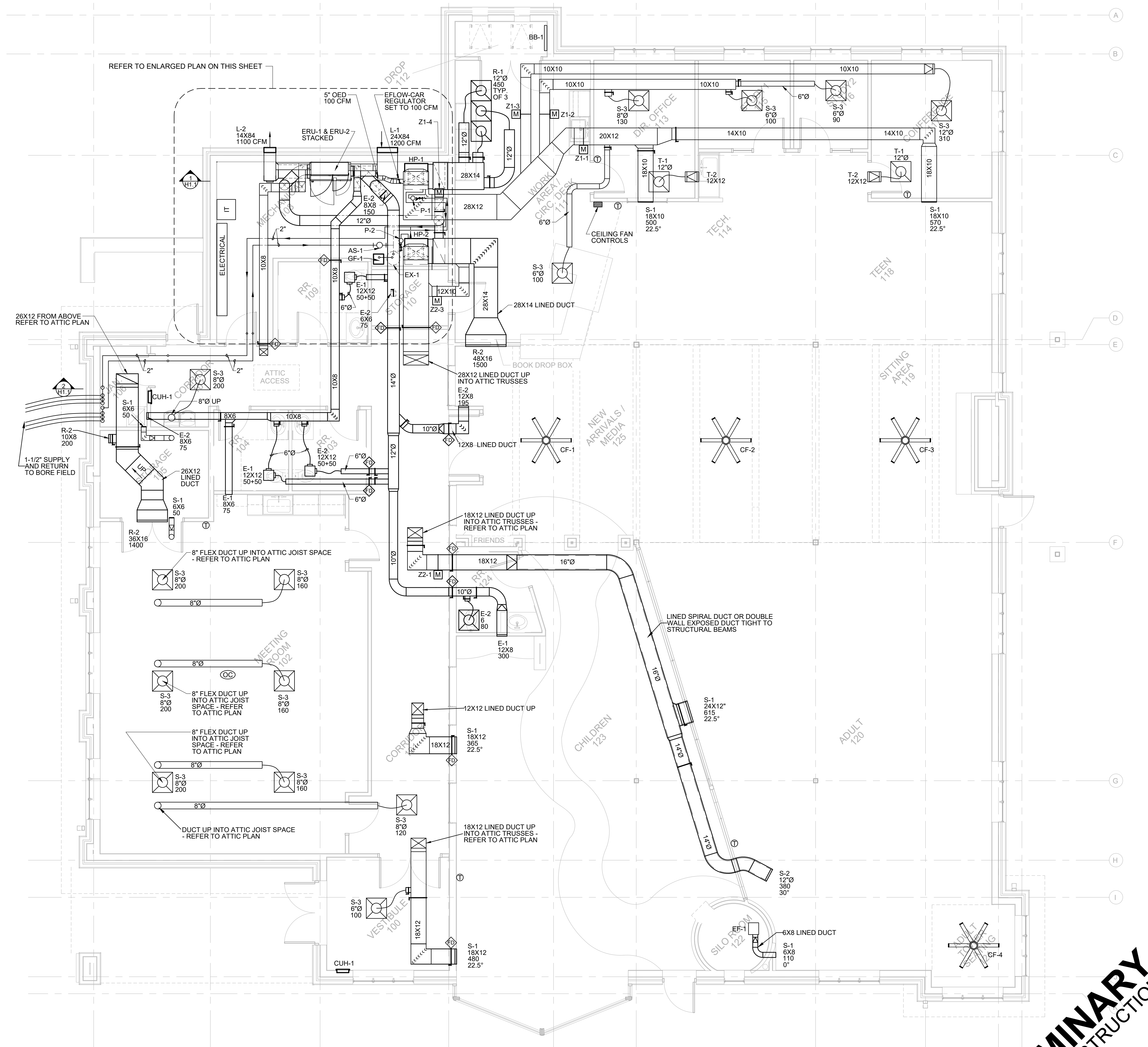
SECTION 1  
SCALE: 3/16" = 1'-0"



SECTION 2  
SCALE: 3/16" = 1'-0"



HVAC ATTIC PLAN  
SCALE: 3/16" = 1'-0"



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

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SHEET TITLE  
HVAC PLANS AND SECTIONS

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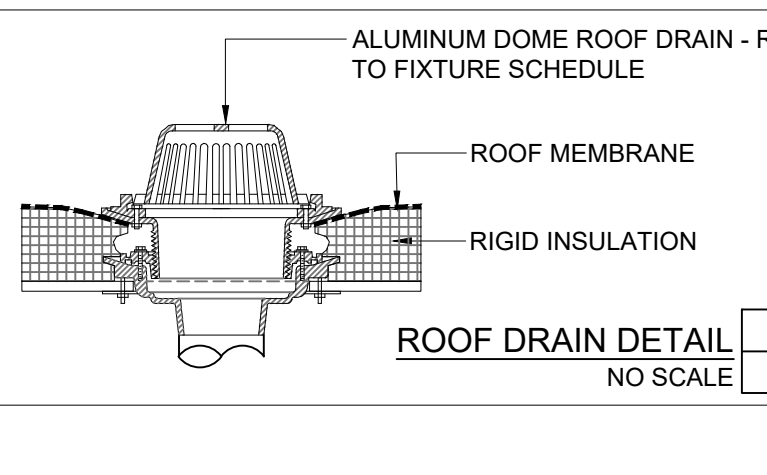
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PLUMBING LEGEND	
---	SANITARY DRAIN, WASTE, OR SEWER
---	SANITARY VENT
---	COLD WATER - DOMESTIC
---	COLD WATER - HARD
---	HOT WATER - DOMESTIC
---	HW RECIRCULATION - DOMESTIC
---	NATURAL GAS PIPING
---	NATURAL GAS SERVICE
---	TEE - BRANCH TO SIDE
---	RISER UP
---	RISER DOWN
---	FLOOR CLEAN OUT
---	WALL CLEAN OUT
---	UNION
---	COUPLING
---	INCREASER
---	FLOW
---	SHUT-OFF ISOLATION VALVE
---	CHECK VALVE
---	PRESSURE REDUCING VALVE
---	BALANCING VALVE
---	THERMOSTATIC MIXING VALVE
---	CIRCULATION PUMP
---	IN-LINE BOOSTER PUMP
---	DRAIN VALVE
---	PIPE STRAINER
---	HOSE BIBB
---	WATERTIGHT CAP
---	WATER HAMMER ARRESTOR
---	FLOOR DRAIN
---	OPEN HUB DRAIN

ABBREVIATIONS	
AIR	COMPRESSED AIR
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
BFF	BELOW FINISH FLOOR
BFG	BELOW FINISH GRADE
BFV	BACKFLOW VALVE
BP	BOOSTER PUMP
BWV	BACK WATER VALVE
CB	CATCH BASIN
CP	CLEAN-IN-PLACE
CMV	COMMON VENT
CO	CLEAN OUT
CSW	COLD SOFT WATER
CL	CIRCUIT VENT
CW	COLD WATER
CWW	CLEAR WATER WASTE
CWV	CLEAR WATER VENT
DF	DRINKING FOUNTAIN
DF	DOMESTIC HEAT EXCHANGER
DKX	DRAIN STACK
DS	DISHWASHER
DW	EXISTING
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY EYE WASH / SHOWER
FCO	FLOOR CLEAN OUT
FWG	FOOD WASTE GRINDER
FD	FLOOR DRAIN
GAS	NATURAL GAS
GC	GENERAL CONTRACTOR
HBB	HOSE BIBB
HC	HVAC CONTRACTOR
HW	HOT WATER
HWR	HOT WATER RETURN
IE	INVERT ELEVATION
MB	MOP BASIN
MH	MANHOLE
MV	MIXING VALVE

ABBREVIATIONS	
NPC	NON-POTABLE COLD WATER
NPH	NON-POTABLE HOT WATER
NPR	NON-POTABLE HW RETURN
OD	OVERFLOW DRAIN
OHD	OVERFLOW ROOF DRAIN
PC	PLUMBING CONTRACTOR
PCW	PROCESS COLD WATER
PHW	PROCESS HOT WATER
PHWR	PROCESS HW RETURN
PHX	PLATE HEAT EXCHANGER
PRV	PRESSURE REDUCING VALVE
PRZ	PROTECTION REDUCED PRESSURE ZONE BACKFLOW
RC	RECIRCULATION PUMP
RCV	RELIEF VENT
S	SINK
SAN	SANITARY
SD	SUBSOIL DRAIN
SH	SHOWER
SH	STORM
ST	TEMPERED HOT WATER
TD	TRENCH DRAIN
TBV	THERMOSTATIC BALANCING VALVE
TMV	THERMOSTATIC MIXING VALVE
UR	URINAL
US	UTILITY SINK
VS	VENT STACK
VTR	VERTICAL THROUGH ROOF
VWV	VERTICAL WET VENT
W	DOMESTIC WATER
WC	WATER CLOSURE
WCO	WALL CLEAN OUT
WH	WATER HEATER
WHA	WATER HAMMER ARRESTOR
WS	WATER SOFTENER
YCO	YARD CLEAN OUT

PLUMBING DRAIN SYSTEM FIXTURE SCHEDULE		
ID	FIXTURE	DESCRIPTION
FD-1	FLOOR DRAIN	2" P-TRAP
OHD	OPEN HUB DRAIN	2" P-TRAP
FCO	FLOOR CLEANOUT	FIXTURE: SIOUX CHIEF 842-4PSRV, ON-GRADE ADJUSTABLE FLOOR DRAIN, NICKEL-BRONZE RING / STRAINER, ABS HEAD ADAPTER W/ BRASS THREAD INSERTS, PVC BASE ADAPTER, MEETS ASME A112.8.3.
WCO	WALL CLEANOUT	FIXTURE: SIOUX CHIEF 852, ADJUSTABLE CLEAN OUT, SQUARE GRATE, STAINLESS STEEL RING / COVER, PVC HEAD ADAPTER, PVC BASE ADAPTER - SEE PLAN FOR PIPE DIAMETER DESIGNATION
CO	CLEANOUT	FIXTURE: EXPOSED CLEAN-OUT CAP
YCO	YARD CLEANOUT	FIXTURE: REFER TO THIS SHEET FOR DETAIL



**GENERAL PLUMBING NOTES:**

- DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, PLUMBING, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT ACTUAL INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF ALL EQUIPMENT, PLUMBING, AND PIPING, AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS AS REQUIRED. DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. CONTRACTOR TO FIELD VERIFY ALL CONDITIONS.
- PLUMBING CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO COMMENCEMENT OF WORK.
- FURNISH AND INSTALL PLUMBING PRODUCTS IN COMPLIANCE WITH LOCAL BUILDING CODES, THE AUTHORITY HAVING JURISDICTION, AND IN ACCORDANCE WITH GENERALLY ACCEPTED INDUSTRY STANDARDS AND PRACTICES. INSTALL PLUMBING PRODUCTS PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR TO PROVIDE FIRE SEAL AT ALL FLOOR AND RATED WALL ASSEMBLY PIPING SYSTEMS PENETRATIONS.
- ALL SANITARY DRAIN AND VENT PIPING TO BE SCHEDULE 40 PVC SOLID CORE.
- BUILDING SEWER PIPING AND STORM SEWER PIPING OUTSIDE OF BUILDING BY OTHERS - REFER TO CIVIL SHEET.

**SANITARY SEWER & VENT PIPING:**

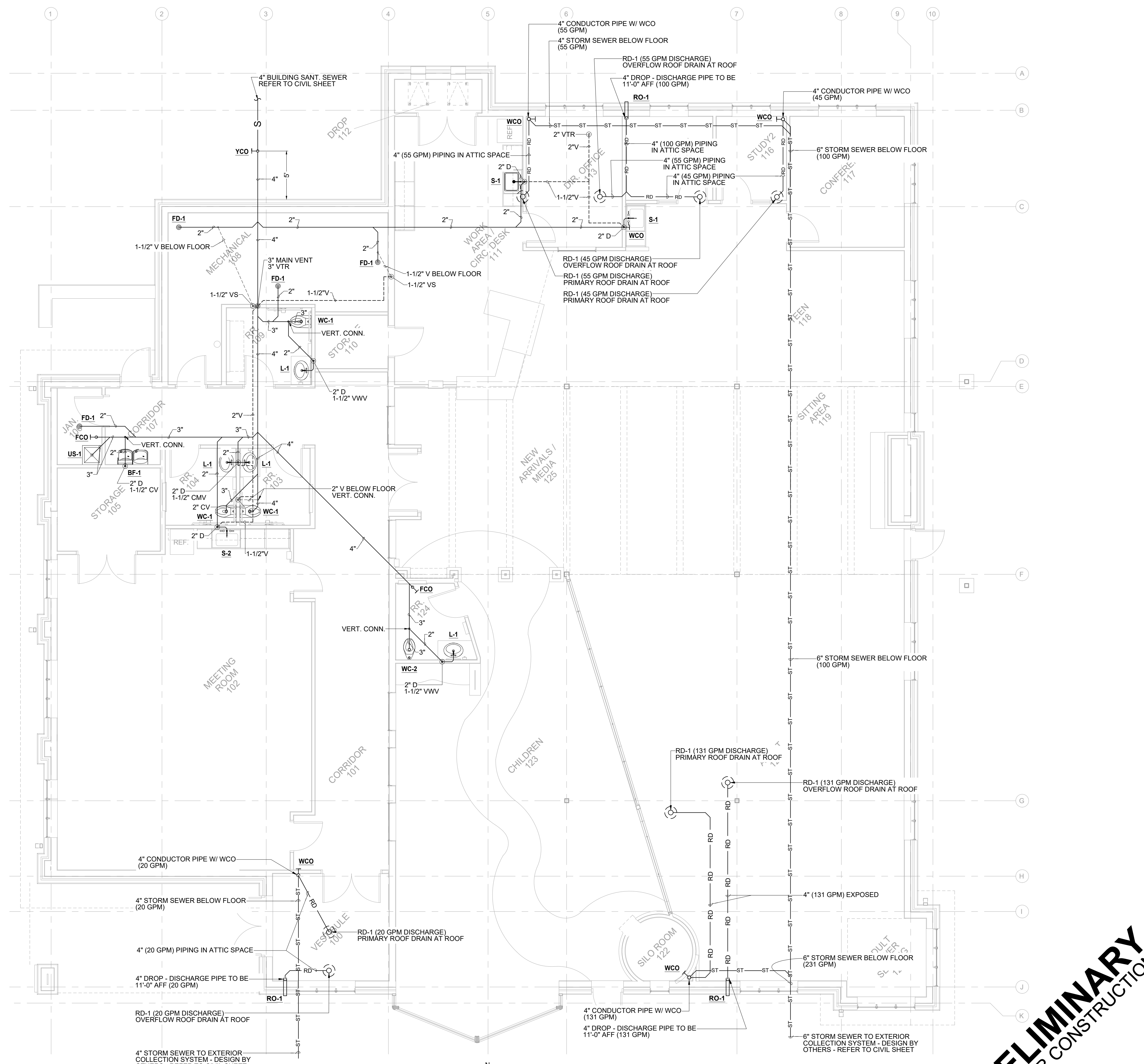
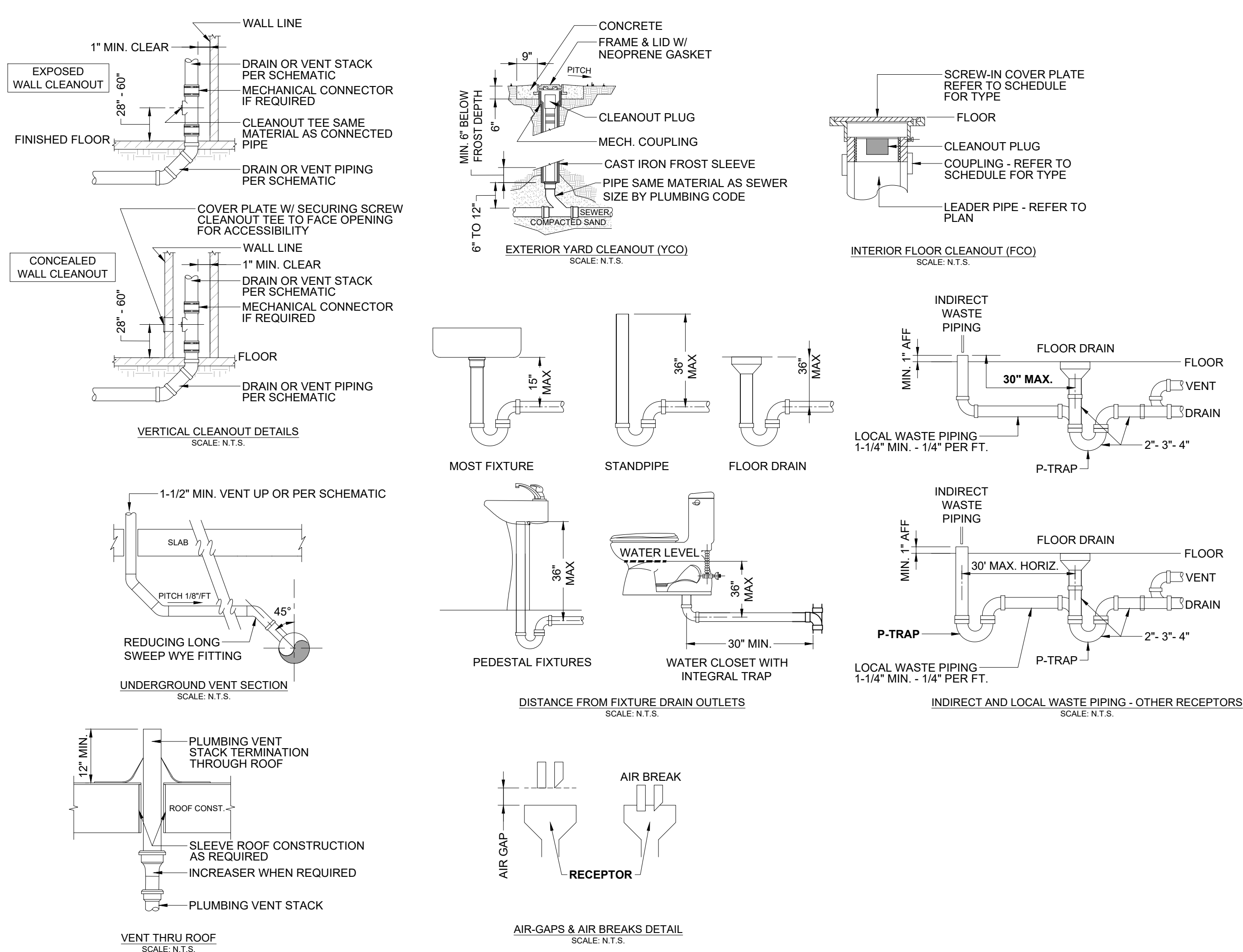
ALL SANITARY SEWER PIPING SHALL BE SOLID PVC SCHEDULE 40 WITH DRAINAGE FITTINGS. SEWER PIPING 2" AND UNDER SHALL SLOPE AT 1/4" PER FOOT AND 3" AND LARGER PIPING SHALL SLOPE AT 1/8" PER FOOT DOWN TOWARDS SANITARY MAIN CONNECTION POINT.

**SOLID-WALL PVC PIPE:** ASTM D 2665, DRAIN, WASTE, AND VENT.

**PVC SOCKET FITTINGS:** ASTM D 2665, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS AND TO FIT SCHEDULE 40 PIPE.

**ADHESIVE PRIMER:** ASTM F 656.

- ADHESIVE PRIMER SHALL HAVE A VOC CONTENT OF 550 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
- PVC SOLVENT CEMENT SHALL HAVE A VOC CONTENT OF 510 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).



1 DRAIN, WASTE, AND VENT PLUMBING PLAN / ROOF DRAINAGE  
SCALE: 3/16" = 1'-0"

**PRELIMINARY**  
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SHEET TITLE  
**DRAIN, WASTE, AND VENT PLUMBING PLAN / ROOF DRAINAGE**

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SHEET  
**P1.1**

ID	FIXTURE	DESCRIPTION
L-1	LAVATORY INTEGRAL BOWL AND TOP	<b>FIXTURE:</b> INTEGRAL BOWL AND TOP ASSEMBLY TO MEET ASME A112.19.2. COORDINATE W/ ARCHITECT, OWNER, GENERAL CONTRACTOR AND PLUMBER. <b>FAUCET:</b> SLOAN SF-2250, SENSOR FAUCET, INFARED, DECKMOUNT 4" TRIMPLATE, CONTROL MODULE HARDWARE WITH PLUG ADAPTER, CHROME FINISH, ADA, 0.50 gpm, 1/2" H-C SUPPLIES TO BELOW DECK MIXING VALVE MEETS ASME A112.18.1 <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>DRAIN:</b> MAINLINE ML760 GRID DRAIN, 1-1/4"Ø, 17 GA, CHROME FINISH, ADA 19 HOLES <b>P-TRAP:</b> DEARBORN 704 SERIES, 1-1/2" P-TRAP, FLANGE, QUARTER BEND, J-BEND, RUBBER WASHERS, NUTS, 17GA. <b>FIXTURE:</b> ELKAY LUSTERTONE CLASSIC LRAD17226SD, 18GA SS, DROP-IN, 17"x22"x6-1/2", ADA, LUSTROUS SATIN FINISH, BOTTOM ONLY PADS FIXTURE MEETS ASME A112.19.3 <b>FAUCET:</b> DELTA FAUCET 27C4944-L5-T1, CAST DECKMOUNT, 6" 120° SWING SPOUT, 3-1/2" BLADE HANDLE WITH SANITARY HOOD, 4" CENTERS, RED / BLUE INDICATORS, CHROME FINISH, ADA, 1.50 gpm, 1/2" H-C SUPPLIES, SEPARATE MIXING VALVE, MEETS ASME A112.18.1, NSF 61 & 372 <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>DRAIN:</b> ELKAY LKPD1, 1-1/2" DRAIN, 3/4" SS BODY / STRAINER, 1-1/2" DRAIN TAILPIECE, MEETS ASME A112.18.2 <b>P-TRAP:</b> MAINLINE MLP9703, 1-1/2" PVC TUBE P-TRAP W/ ADAPTER, 1-1/2" SLIP NUT. <b>MIXING VALVE:</b> WATTS SERIES LFUSG-B-MS, UNDER SINK GUARDIAN THERMOSTATIC MIXING VALVE TEMP. SETTING 105°F RECOMMENDED, MEETS ASSE1070.
S-1	SINK SINGLE BOWL DROP IN	<b>FIXTURE:</b> ELKAY LUSTERTONE CLASSIC LRAD17226SD, 18GA SS, DROP-IN, 17"x22"x6-1/2", ADA, LUSTROUS SATIN FINISH, BOTTOM ONLY PADS FIXTURE MEETS ASME A112.19.3 <b>FAUCET:</b> DELTA FAUCET 27C4944-L5-T1, CAST DECKMOUNT, 6" 120° SWING SPOUT, 3-1/2" BLADE HANDLE WITH SANITARY HOOD, 4" CENTERS, RED / BLUE INDICATORS, CHROME FINISH, ADA, 1.50 gpm, 1/2" H-C SUPPLIES, SEPARATE MIXING VALVE, MEETS ASME A112.18.1, NSF 61 & 372 <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>DRAIN:</b> ELKAY LKPD1, 1-1/2" DRAIN, 3/4" SS BODY / STRAINER, 1-1/2" DRAIN TAILPIECE, MEETS ASME A112.18.2 <b>P-TRAP:</b> MAINLINE MLP9703, 1-1/2" PVC TUBE P-TRAP W/ ADAPTER, 1-1/2" SLIP NUT. <b>MIXING VALVE:</b> WATTS SERIES LFUSG-B-MS, UNDER SINK GUARDIAN THERMOSTATIC MIXING VALVE TEMP. SETTING 105°F RECOMMENDED, MEETS ASSE1070.
S-2	SINK TWIN BOWL DROP IN	<b>FIXTURE:</b> ELKAY LUSTERTONE CLASSIC LRAD33196SD, 18GA SS, DROP-IN, 17"x22"x6-1/2", ADA, LUSTROUS SATIN FINISH, BOTTOM ONLY PADS FIXTURE MEETS ASME A112.19.3 <b>FAUCET:</b> DELTA FAUCET 27C4944-L5-T1, CAST DECKMOUNT, 6" 120° SWING SPOUT, 3-1/2" BLADE HANDLE WITH SANITARY HOOD, 4" CENTERS, RED / BLUE INDICATORS, CHROME FINISH, ADA, 1.50 gpm, 1/2" H-C SUPPLIES, SEPARATE MIXING VALVE, MEETS ASME A112.18.1, NSF 61 & 372 <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>DRAIN:</b> ELKAY LKPD1, 1-1/2" DRAIN, 3/4" SS BODY / STRAINER, 1-1/2" DRAIN TAILPIECE, MEETS ASME A112.18.2 <b>P-TRAP:</b> MAINLINE MLP9703, 1-1/2" PVC TUBE P-TRAP W/ ADAPTER, 1-1/2" SLIP NUT. <b>MIXING VALVE:</b> WATTS SERIES LFUSG-B-MS, UNDER SINK GUARDIAN THERMOSTATIC MIXING VALVE TEMP. SETTING 105°F RECOMMENDED, MEETS ASSE1070.
VB-1	VALVE BOX REFRIGERATOR WATER SUPPLY	<b>FIXTURE:</b> SIOUX CHIEF 896 SERIES OXBOX, ICE MAKER OUTLET BOX, FRAME, BRACKET, DEBRIS COVER, 1/4 TURN VALVE, 1/2" MALE SUPPLY CONNECTOR WITH ARRESTER, MEETS ASME A112.18.1, ASSE 101, NSF-372 COMPLIANT.
US-1	UTILITY SINK FLOOR MOUNTED 3" P-TRAP	<b>FIXTURE:</b> FIAT MOLDED-STONE MOP BASIN, 24"x24"x10" BASIN, 3" DRAIN, MODEL MSB2424, MOP HANGER, STRAINER, STAINLESS STEEL WALL GUARDS, VINYL BUMPERGUARD. <b>FAUCET:</b> FIAT 835-AA SERVICE SINK FAUCET, 1/2" H-C SUPPLIES, 8" CENTERS, 4 ARM HANDLES WALL AND REAR DESIGNATIONS, SERVICE FAUCET W/ 3/4" HOSE THREAD, VACUUM BREAKER, CHROME PLATED, WALL BRACE, PAIL HOOK, MEETS ANSI-A112.18.1M AND ASSE 1001 <b>ACCESSORIES:</b> WATTS SERIES LFNB-CD BACKFLOW PREVENTER (HIGH HAZARD BACKSPHONAGE BACKFLOW & LOW-HEAD BACKPRESSURE PER ASSE 1052) <b>FIXTURE:</b> KOHLER CMAARRON K-5310-RA TOILET, FLOOR MOUNTED, ADA, SKIRTED TRAPWAY, 12" ROUGH-IN OUTLET, ELONGATED FRONT, 2-1/8" TRAPWAY, 1.29 gpm, MIN. STATIC PRESSURE 20 psi, MIN. FLOW PRESSURE 25 psi <b>FIXTURE:</b> MEETS ASME A112.19.2 <b>ACCESSORIES:</b> KOHLER LUSTRA K-4666-CA, OPEN FRONT LESS COVER ELONGATED TOILET SEAT, 5-1/2" MOUNTING HOLES, SELF SUSTAINING HINGES MEETS ANSI Z124.5. <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>FIXTURE:</b> KOHLER WELLWORTH CLASSIC TOILET, FLOOR MOUNTED, ADA, SKIRTED TRAPWAY, 12" ROUGH-IN OUTLET, ELONGATED FRONT, 2-1/8" TRAPWAY, 1.6 gpm, MIN. STATIC PRESSURE 20 psi, MIN. FLOW PRESSURE 25 psi <b>FIXTURE:</b> MEETS ASME A112.19.2 <b>ACCESSORIES:</b> KOHLER LUSTRA K-4666-CA, OPEN FRONT LESS COVER ELONGATED TOILET SEAT, 5-1/2" MOUNTING HOLES, SELF SUSTAINING HINGES, MEETS ANSI Z124.5. <b>STOPS &amp; SUPPLIES:</b> MCGUIRE LOOSE KEY QUARTER TURN ANGLE STOPS W/ CHROME ESCUTCHEONS, FLUIDMASTER CONNECTORS & FLEXIBLE BRAIDED SUPPLY LINE, MEETS ASME A112.18.8, NFS STANDARD 61, SECTION 9. <b>FIXTURE:</b> WOODFORD MODEL B65, 3/4" INLET, 3/4" MALE HOSE THREAD NOZZLE, AUTOMATIC OPERATION, FREEZE-LESS, SINGLE CHECK HOSE CONNECTION, ANTI-SIPHON VACUUM BREAKER, KEY OPERATED, LOCKABLE BOX AND DOOR, CHROME FINISH, MEETS ASSE 1019-B AND 1011. <b>FIXTURE:</b> U.S. WATER SYSTEMS MATRIXX WATER SOFTENER 080-MXBCS-125 1-1/4" INLET / OUTLET, RATED AT 35 gpm AT 20 PSI 15 PSI DROP CONTINUOUS FLOW, 25 PSI DROP PEAK FLOW. 8.0 gpm at 20 PSI MAX. BACKWASH CYCLE, 3.0 gpm at 20 PSI MAX BRINE FLOW COLD WATER VALVE RANGE 35-110 PSI, 100K GRAINS FOR 35 GPM CONTINUOUS FLOW TESTING FOR HARDNESS OF WATER TO BE COORDINATED W/ OWNER, PLUMBING CONTRACTOR, AND SOFTENER SUPPLIER FOR FINAL OPERATIONAL DESIGN. <b>MF-1</b> SUPPLY PIPE MANIFOLD <b>FIXTURE:</b> 1" COPPER L HEADER PIPE, CLOSED END, WITH (6) BRANCH CONNECTIONS FOR 3/4" HOSE BIBB PEX-A PIPING TO UNDERFLOOR, (1) 1/2" COPPER L SUPPLY PIPING UP TO SUSPENDED CEILING SPACE. ALL BRANCH CONNECTIONS TO HAVE INDIVIDUAL ISOLATION VALVES AT MANIFOLD LOCATION. MANIFOLD TO BE MOUNTED TO ADJACENT WALL. <b>RPZ</b> REDUCED PRESSURE ZONE ASSEMBLY <b>FIXTURE:</b> WATTS LF909M1-FS-QT-S REDUCED PRESSURE ZONE ASSEMBLY W/ STRAINER, 1-1/2" INLET, VERTICAL INSTALLATION, PROVIDE AIR GAP FITTINGS - 909AL-F, MEETS ASSE 1013 <b>PRV</b> PRESSURE REDUCING VALVE <b>FIXTURE:</b> WATTS LF25AJUB-23, WATER PRESSURE REDUCING VALVE, 1-1/2" INLET, BYPASS VALVE INTEGRAL, PROVIDE PRESSURE GAUGE, LOW PRESSURE RANGE 10-35 PSI, PRESSURE DROP 12 PSI FOR 30 GPM FLOW RANGE, CONNECTION TYPE DETERMINED BY PLUMBING CONTRACTOR, MEETS ASSE 1003

ID	MANUFACTURER MODEL #	ELEMENT WATTS	INLET / OUTLET PIPE Ø	RECOVERY GPH	RISE °F	TANK CAP GAL USG	1ST. HOUR DELIVERY USGPH	% EFF.	USABLE STORAGE USG	ELECTRICAL POWER VOL-TAGE
WH	RHEEM LIGHT DUTY WATER HEATER ELD40	(2) 4500 SIMULTANEOUS	3/4" INLET 3/4" OUTLET	32	100	40	32	97	32	208v
RCP	HOT WATER RETURN CIRCULATION PUMP PROCESS	<b>FIXTURE:</b> GRUNDFOS UPS 15-33 SFC, IN-LINE 3-SPEED 3/20 hp, SS PUMP HOUSING, 2-BOLT FLANGE 3/4", 84w 115v MAX. FLOW 21.8 gpm, MAX. HEAD 12.14ft <b>BALANCING VALVE:</b> THERMOMEGATECH CIRCUITSOLVER UNION, THERMOSTATIC BALANCING VALVE, CSU-12-115 1/2" UNION CONNECTION TYPE, 115°F RETURN TEMP., PROVIDE SHUT-OFF VALVES BOTH INLET / OUTLET SIDES.								

NOMINAL PIPE SIZE (INCHES)	VOLUME (LIQUID OUNCES PER FOOT LENGTH)	MAXIMUM PIPING LENGTH (FEET)		NOMINAL PIPE SIZE (INCHES)	VOLUME (LIQUID OUNCES PER FOOT LENGTH)	MAXIMUM PIPING LENGTH (FEET)	
		PUBLIC LAVATORY FAUCETS	OTHER FIXTURES AND APPLIANCES			PUBLIC LAVATORY FAUCETS	OTHER FIXTURES AND APPLIANCES
1/4	0.33	6	50	7/8	4	0.5	16
5/16	0.5	4	50	1	5	0.5	13
3/8	0.75	3	50	1 1/4	8	0.5	8
1/2	1.5	2	43	1 1/2	11	0.5	6
5/8	2	1	32	2	18	0.5	4
3/4	3	0.5	21			1 GALLON = 128 OUNCES	

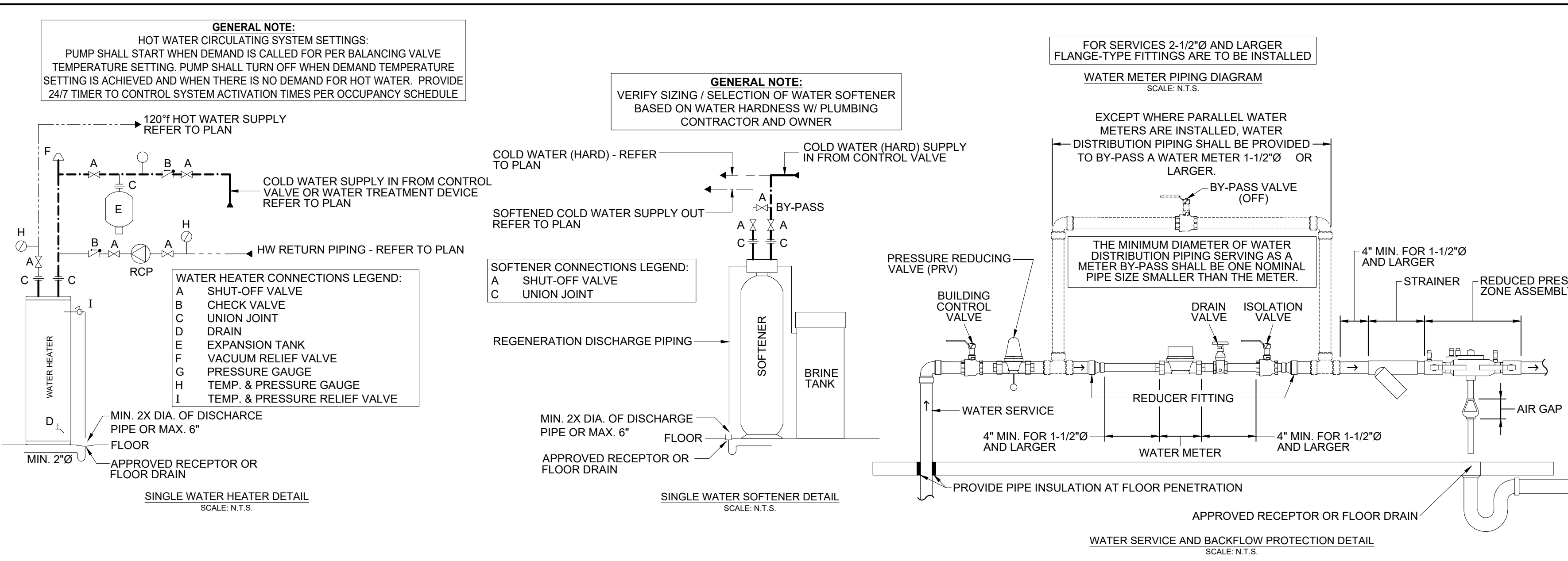
PIPE MATERIAL	MAXIMUM HORIZONTAL SPACING (FT)	MAXIMUM VERTICAL SPACING (FT)
ACRYLONITRILE BUTADIENE STYRENE (ABS)	4	10
COPPER OR COPPER - ALLOY PIPE	12	10
COPPER OR COPPER - ALLOY TUBING: < 1 1/4"Ø	6	10
COPPER OR COPPER - ALLOY TUBING: > 1 1/2"Ø	10	10
CROSSLINKED POLYETHYLENE (PEX)	2 3/4	4
DUCTILE IRON	5'	15
GALVANIZED STEEL	12	15
POLYVINYL CHLORIDE, FLEXIBLE (PVC)	2	4
POLYVINYL CHLORIDE (PVC)	4	10
STAINLESS STEEL	12	15

1. STRENGTH HANGERS, ANCHORS AND SUPPORTS FOR PIPING SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE PIPING AND ITS CONTENTS. DRAIN PIPING SHALL BE CONSIDERED AS BEING FULL OF WATER. UNDERGROUND PIERS FOR PIPE SUPPORT SHALL BE OF CONCRETE, MASONRY, PLASTIC OR PRESSURE TREATED WOOD.
2. HANGERS AND STRAPS SHALL BE OF A COMPATIBLE MATERIAL THAT WILL REDUCE THE POTENTIAL FOR GALVANIC ACTION WITH THE PIPING.
3. HANGERS AND STRAPS MAY NOT DISTORT, CUT OR ABRASE PIPING.
4. PIPING HANGERS AND ANCHORS SHALL BE SECURELY ATTACHED TO THE BUILDING'S STRUCTURE AT INTERVALS TO SUPPORT THE PIPING AND ITS CONTENTS, BUT NOT AT INTERVALS GREATER THAN THOSE SPECIFIED IN THE CURRENT PLUMBING CODE. THE CONNECTION OF DRAIN PIPING TO A FIXTURE OR APPLIANCE SHALL BE CONSIDERED A POINT OF SUPPORT.
5. HUB-LESS PIPE INSTALLED IN THE HORIZONTAL POSITION SHALL BE SUPPORTED WITHIN 24" ON EACH SIDE OF A JOINT, UNLESS THE JOINT HAS AN ALIGNMENT RETAINING SHIELD.
6. HANGERS SHALL NOT BE ATTACHED TO A BUILDING'S STRUCTURE BY MEANS OF WOOD PLUGS.
7. SHOWER VALVES AND PIPING FROM THE SHOWER VALVE TO THE SHOWER HEAD OUTLET SHALL BE SECURELY ATTACHED TO THE STRUCTURE.

PIPE	SIZE	THICKNESS	CONDUCTIVITY
HOT WATER SUPPLY 140°F MAX	≤ 1 1/2"	1	21 - 28
HOT WATER SUPPLY 140°F MAX	≥ 2"	1.5	21 - 28
COLD WATER SUPPLY ABOVE GRADE	≤ 1 1/2"	0.5	21 - 27
COLD WATER SUPPLY ABOVE GRADE	≥ 2"	1	21 - 27
HOT WATER RETURN	≤ 1 1/2"	1	21 - 28



**DOMESTIC WATER PIPING:**  
COPPER TYPE L, K, M  
ASTM B 88 TYPE L COPPER TUBE  
ASTM B 16 CAST COPPER, SOLDER-JOINT PRESSURE FITTINGS  
ASTM B 162 WROUGHT COPPER, SOLDER-JOINT PRESSURE FITTINGS  
ASTM B 163 BRONZE FLANGES CLASS 150 WITH SOLDER-JOINT ENDS  
ASTM B 165 MECHANICAL PRESS COPPER FITTINGS  
MSS SP-123 CAST COPPER UNIONS, CAST COPPER ALLOY, HEXAGONAL STOCK BODY, BALL AND SOCKET, METAL TO METAL SEATING SURFACES AND SOLDER-JOINT OR THREADED ENDS  
LEAD FREE SOLDER JOINTS FITTINGS. ALL VALVES SHALL BE FULL PORT BRONZE W/ STAINLESS STEEL TRIM BALL VALVES, NIBCO, WATTS, APOLLO, OR EQUAL CERTIFIED NSF 61 AND 372.

**DOMESTIC WATER PIPING:**  
PEX-A  
ASTM F 876 STANDARD SPECIFICATION FOR CROSS-LINKED POLYETHYLENE (PEX) TUBING  
ASTM F 877 STANDARD SPECIFICATION FOR CROSS-LINKED POLYETHYLENE (PEX) PLASTIC HOT AND COLD WATER DISTRIBUTION SYSTEMS  
ASTM F 1969 STANDARD SPECIFICATION FOR COLD EXPANSION FITTINGS WITH PEX REINFORCING RINGS FOR USE WITH CROSS-LINKED POLYETHYLENE (PEX) TUBING  
ASTM F 1807 METAL INSERT FITTINGS AND COPPER CRIMP RINGS  
ASTM F 1960 COLD EXPANSION FITTINGS AND REINFORCING RINGS  
ASSE 1891 PUSH-FIT FITTINGS  
ASTM F 879 MANIFOLDS WITH MULTIPLE OUTLET PLASTIC OR CORROSION RESISTANT METAL ASSEMBLY  
FITTING MATERIALS: FITTINGS SHALL BE MANUFACTURED OF ENGINEERED PLASTIC (EP), BRASS MATERIALS ARE ALLOWED ONLY FOR TRANSITION FITTINGS. FITTINGS SHALL BE PEX-A COLD EXPANSION TYPE.  
MINIMUM BEND RADIUS FOR COLD BENDING OF THE PEX-A TUBING SHALL NOT BE LESS THAN 8 TIMES THE OUTSIDE DIAMETER. BENDS WITH A RADIUS LESS THAN STATED SHALL REQUIRE THE USE OF A BEND SUPPORT AS SUPPLIED BY TUBE MANUFACTURER.



1 WATER DISTRIBUTION PLUMBING PLAN  
SCALE: 3/16" = 1'-0"

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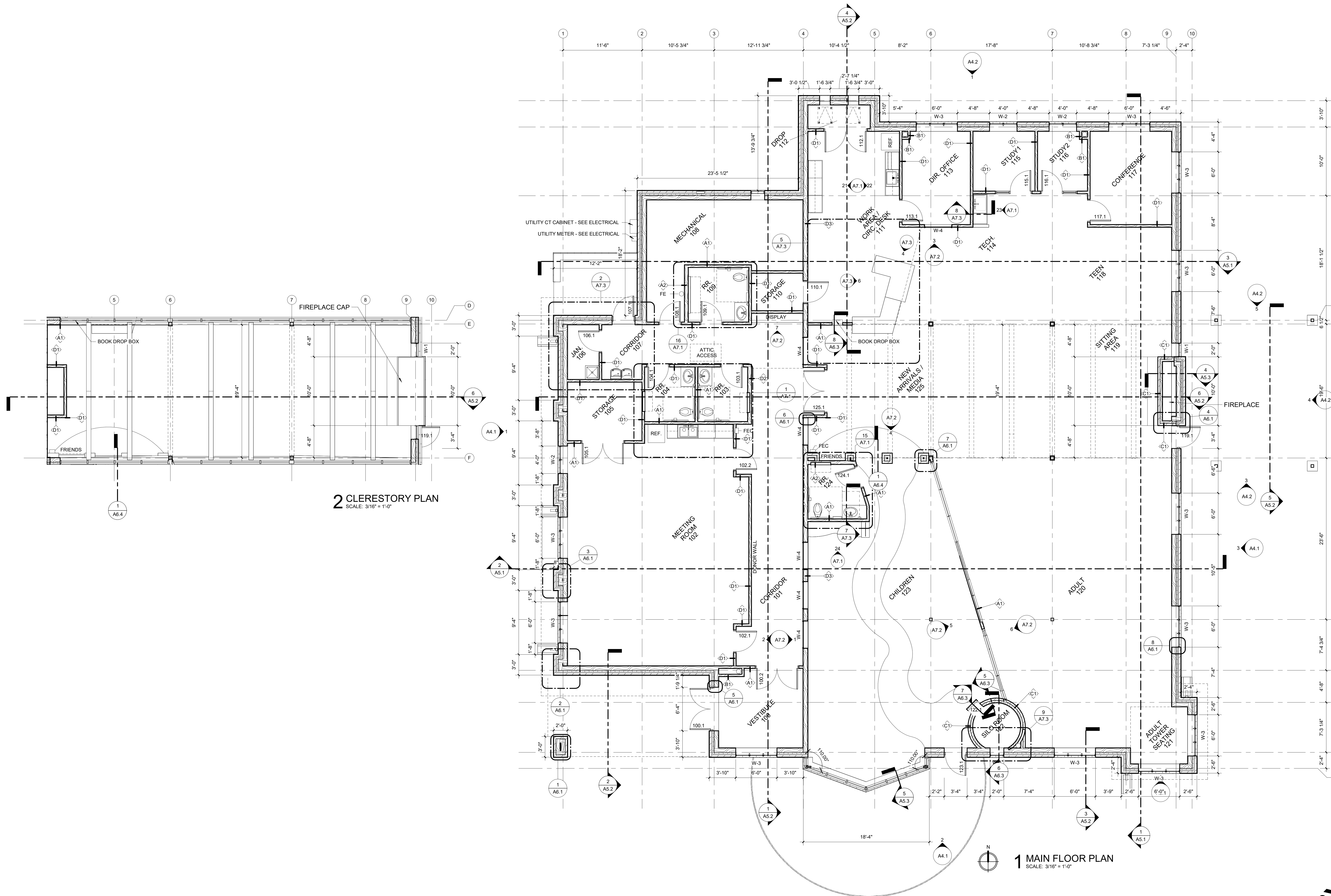
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**P1.2**



FLOOR PLAN LEGEND

- BULLNOSE CMU OUTSIDE CORNER
- FIRE EXTINGUISHER ON BRACKET (FE)
- FIRE EXTINGUISHER CABINET (FEC)

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SHEET TITLE  
FLOOR PLANS

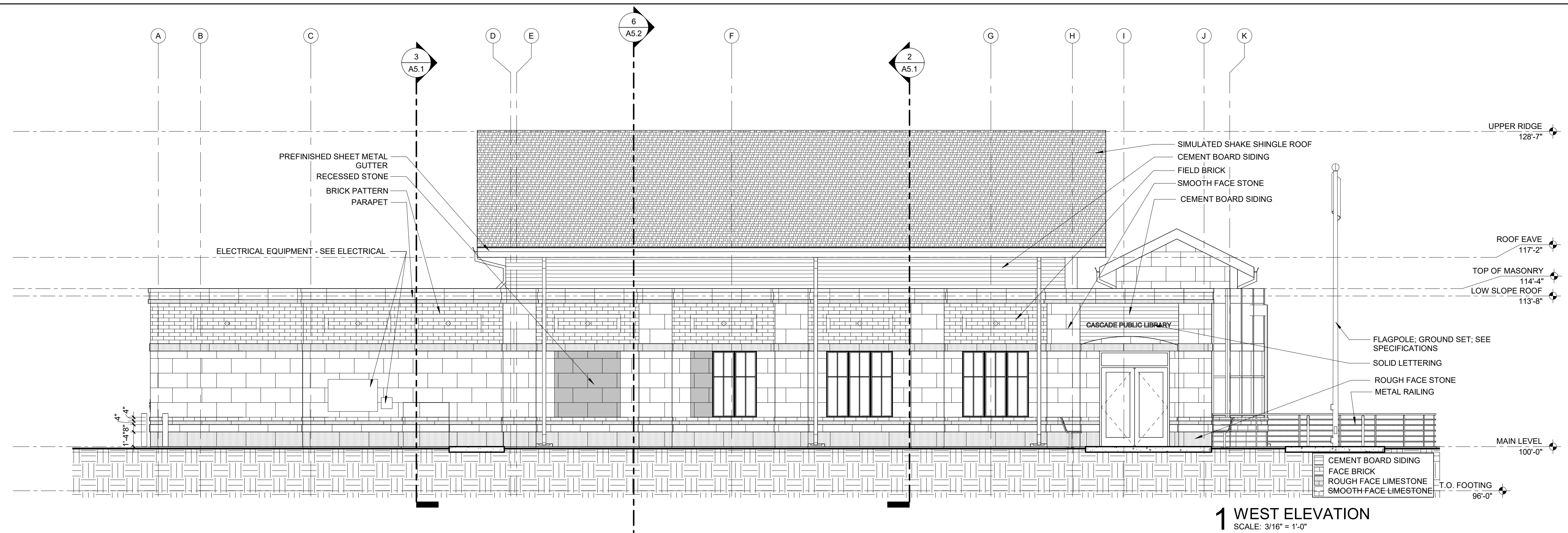
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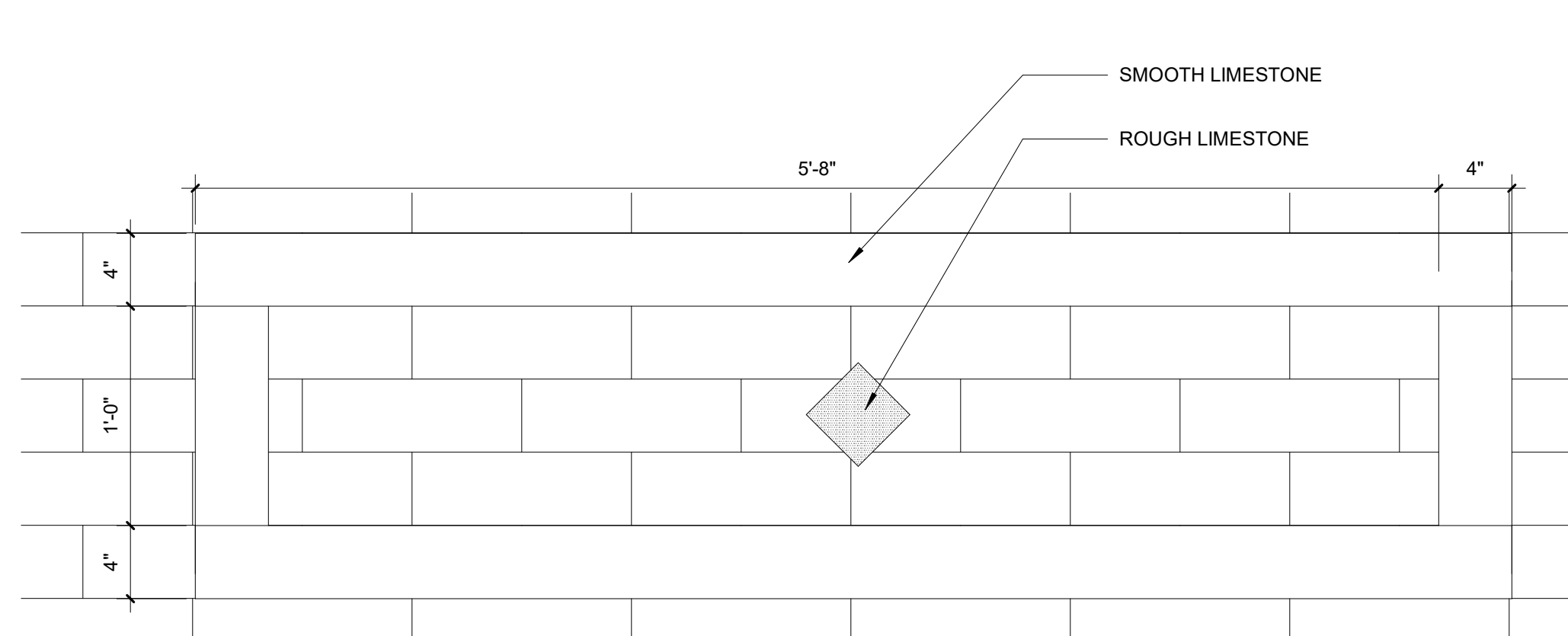
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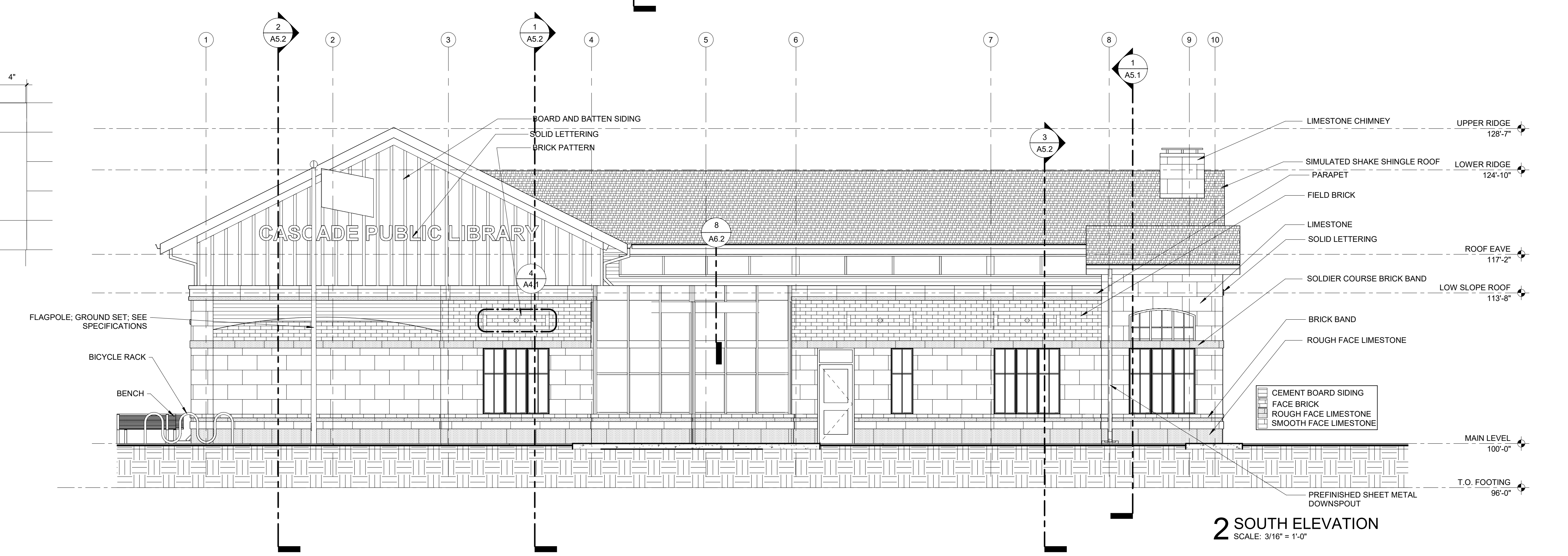
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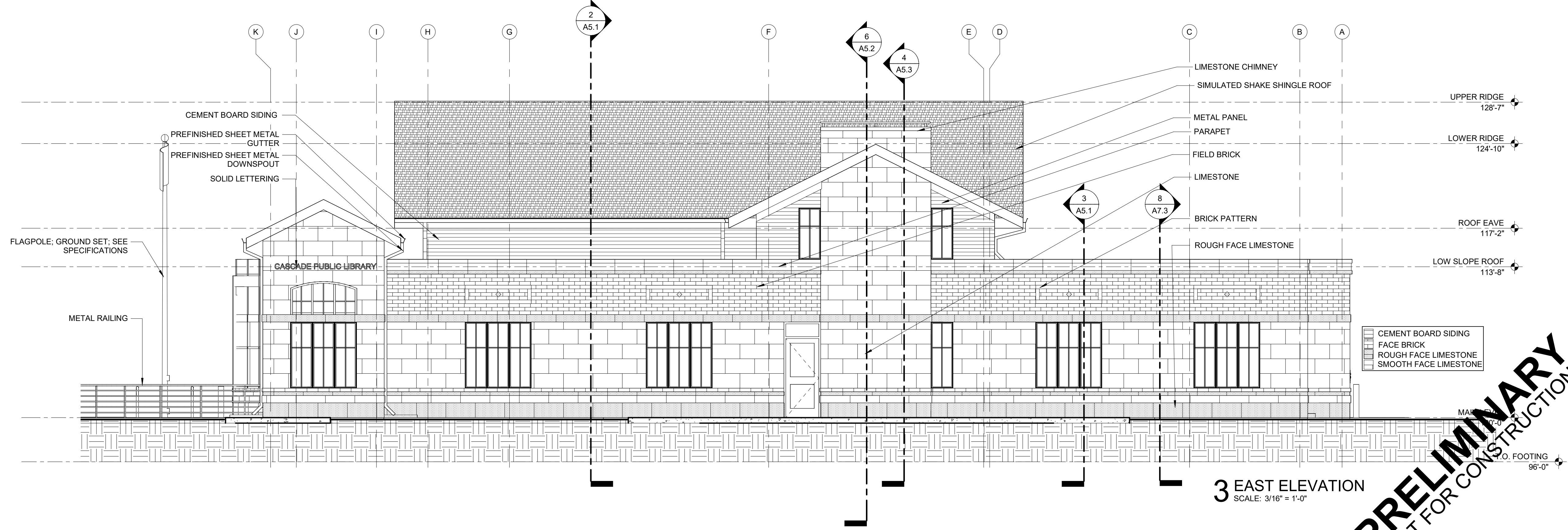
**1 WEST ELEVATION**  
SCALE: 3/16" = 1'-0"



**4 BRICK PATTERN**  
SCALE: 1 1/2" = 1'-0"



**2 SOUTH ELEVATION**  
SCALE: 3/16" = 1'-0"



**3 EAST ELEVATION**  
SCALE: 3/16" = 1'-0"

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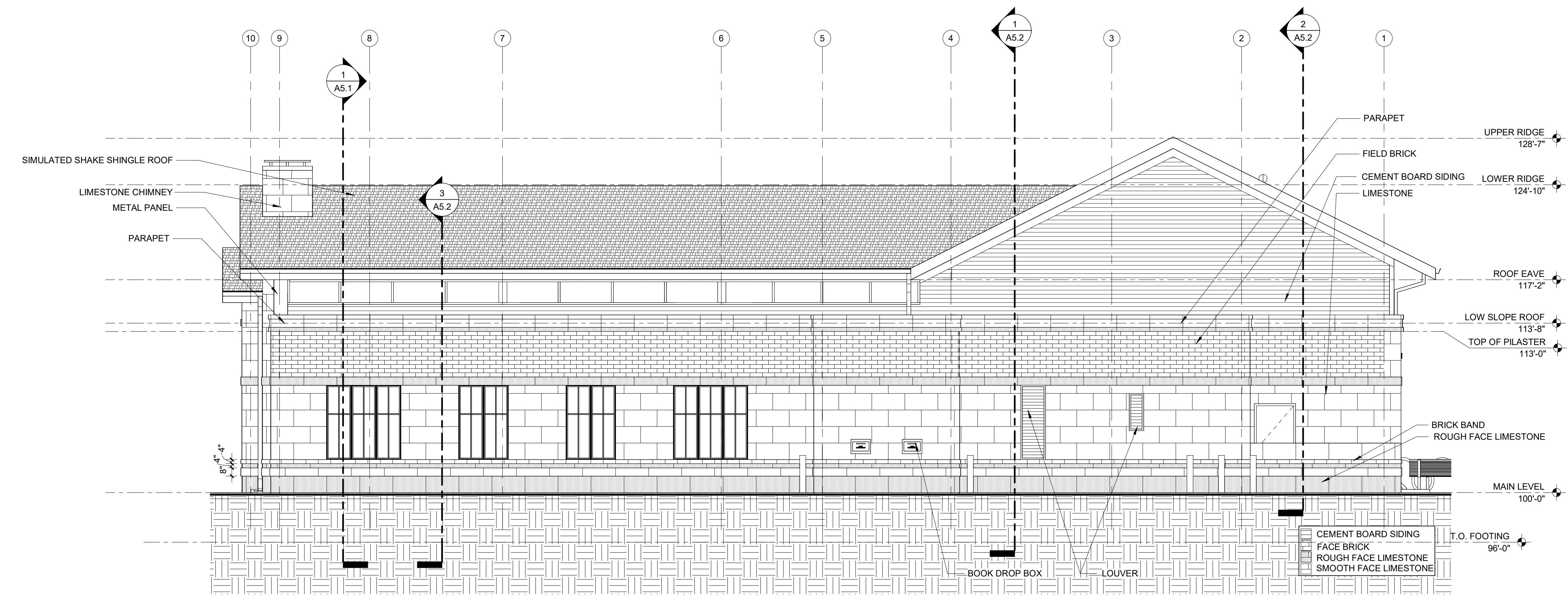
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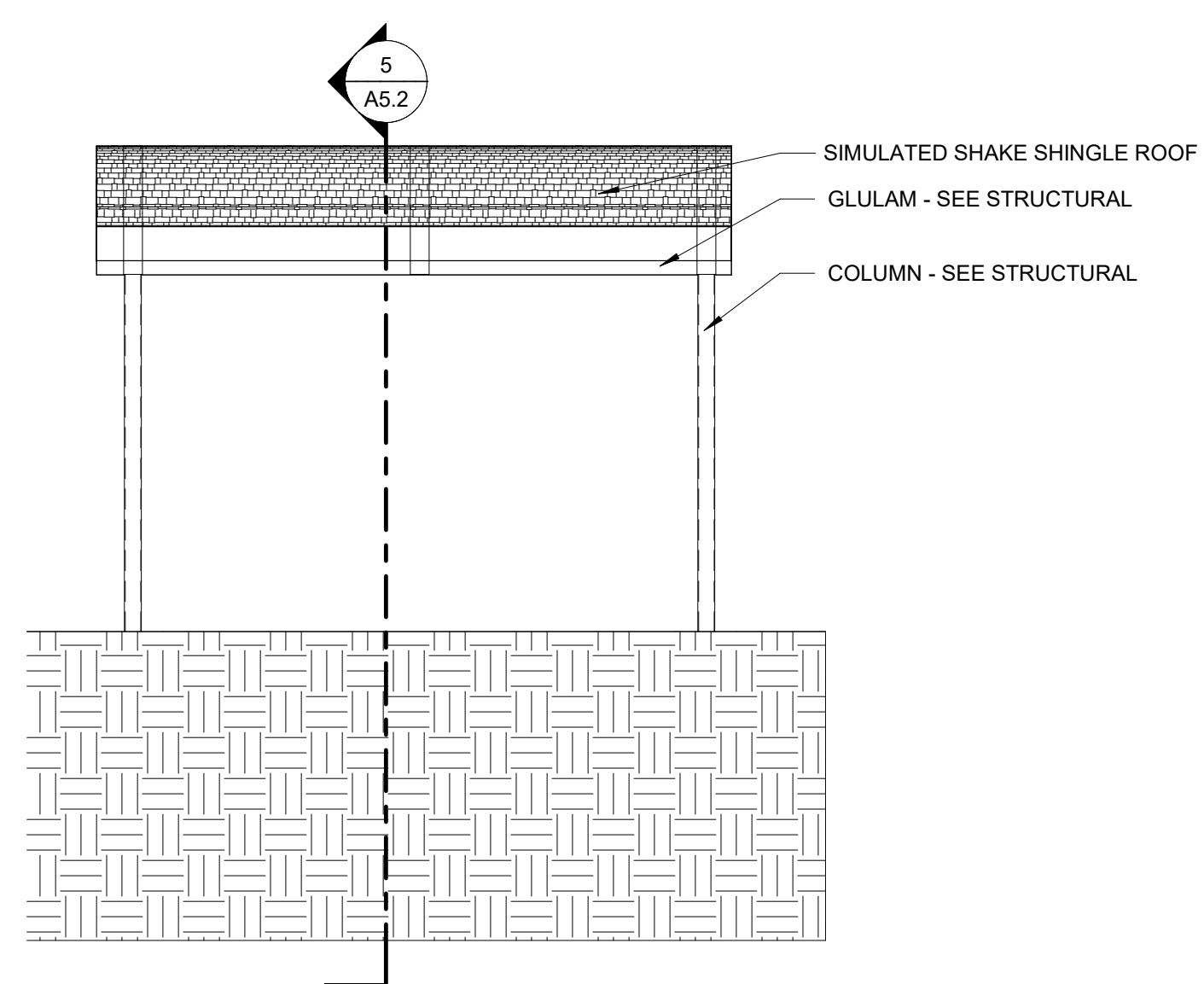
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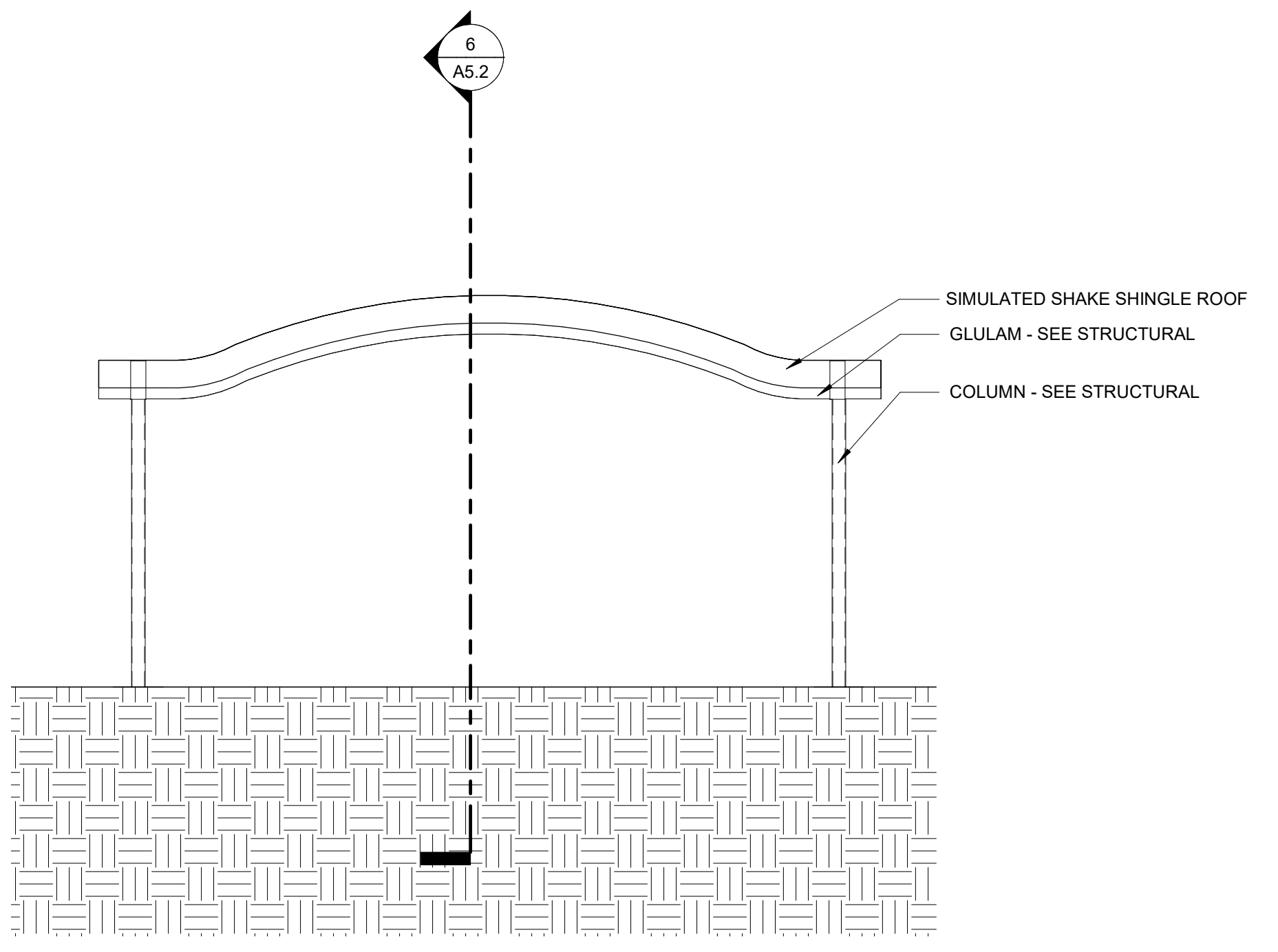
SHEET TITLE: EXTERIOR ELEVATIONS



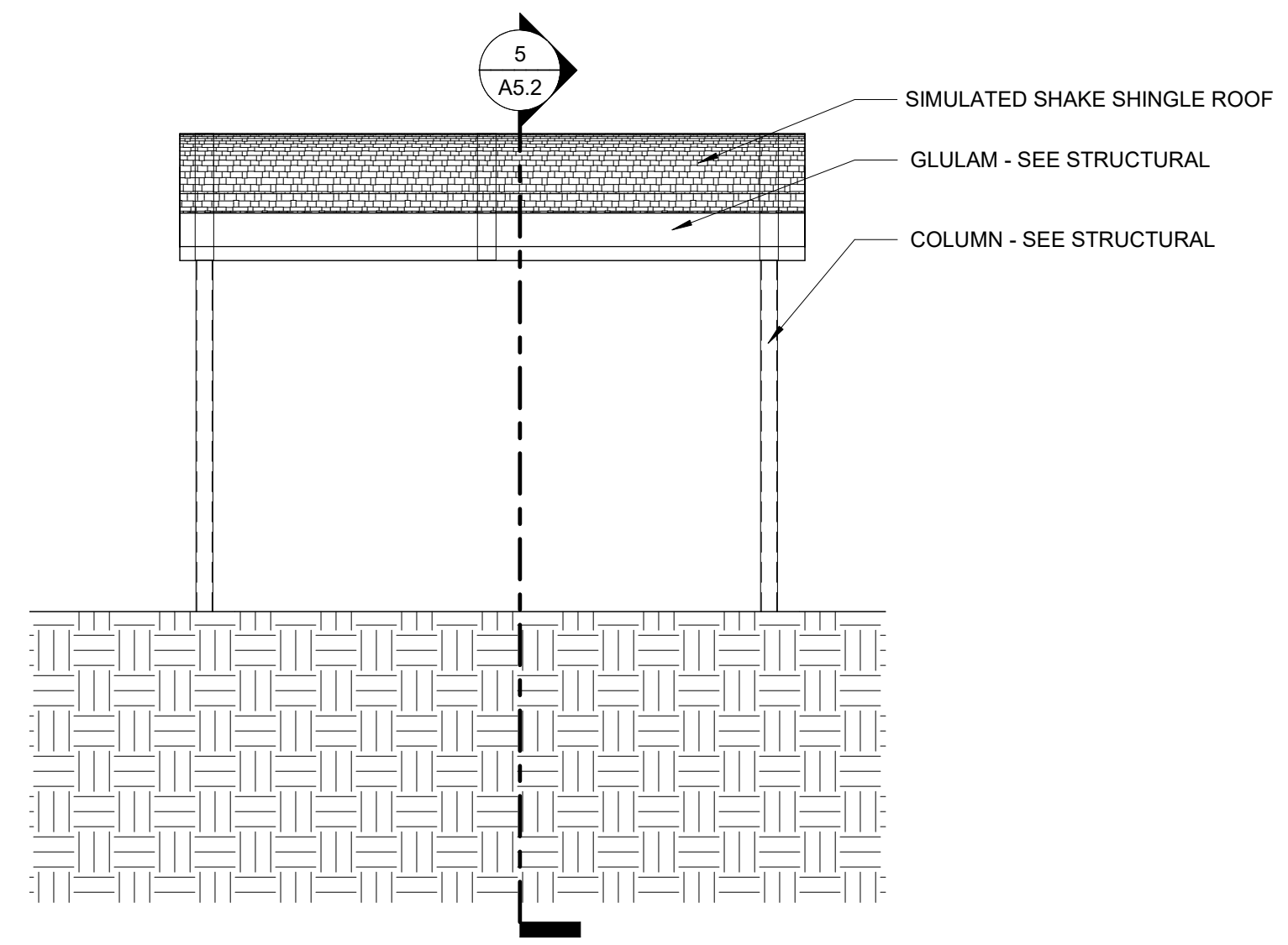
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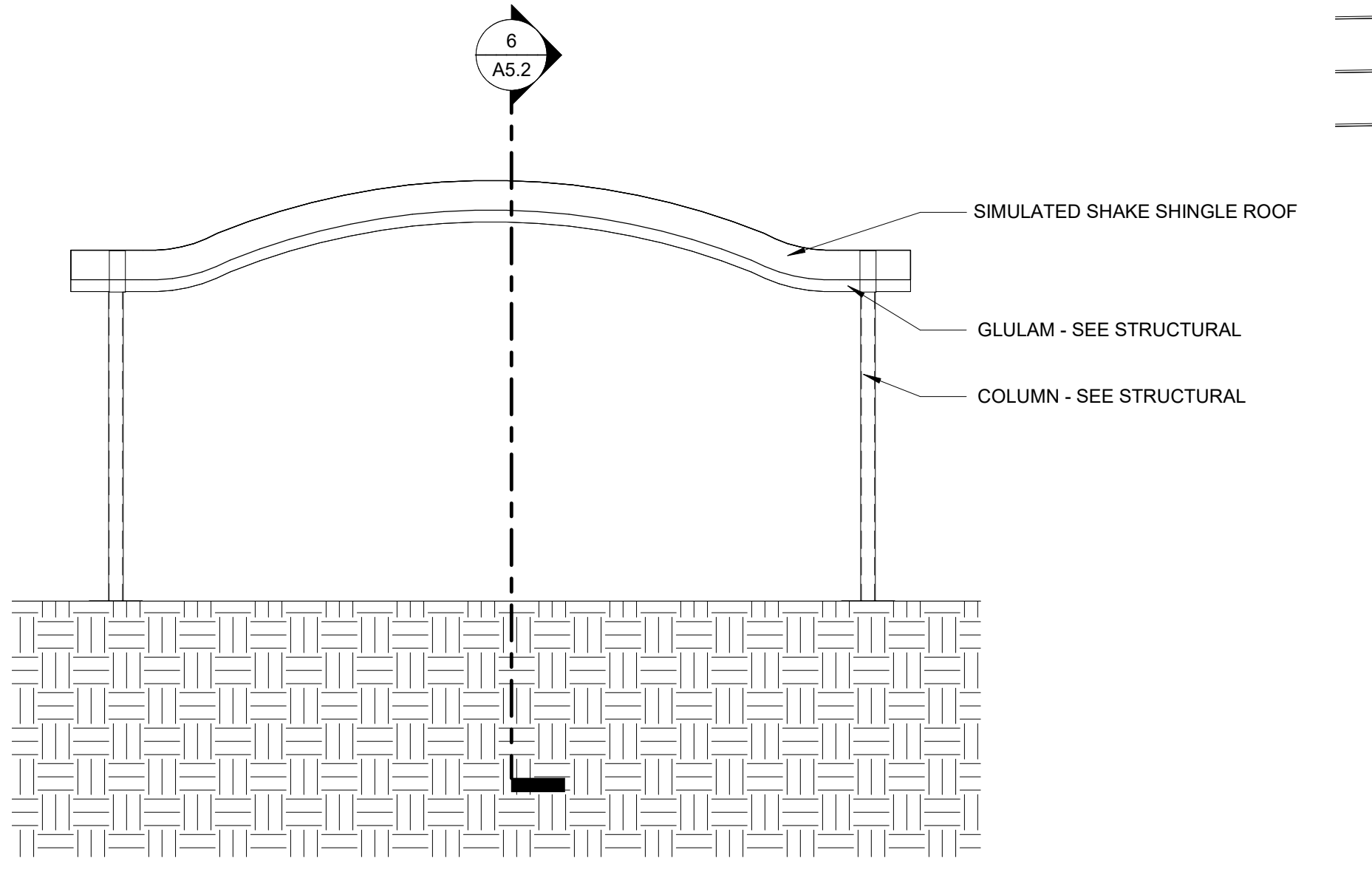
**5 SHADE STRUCTURE - NORTH**  
 SCALE: 1/4" = 1'-0"



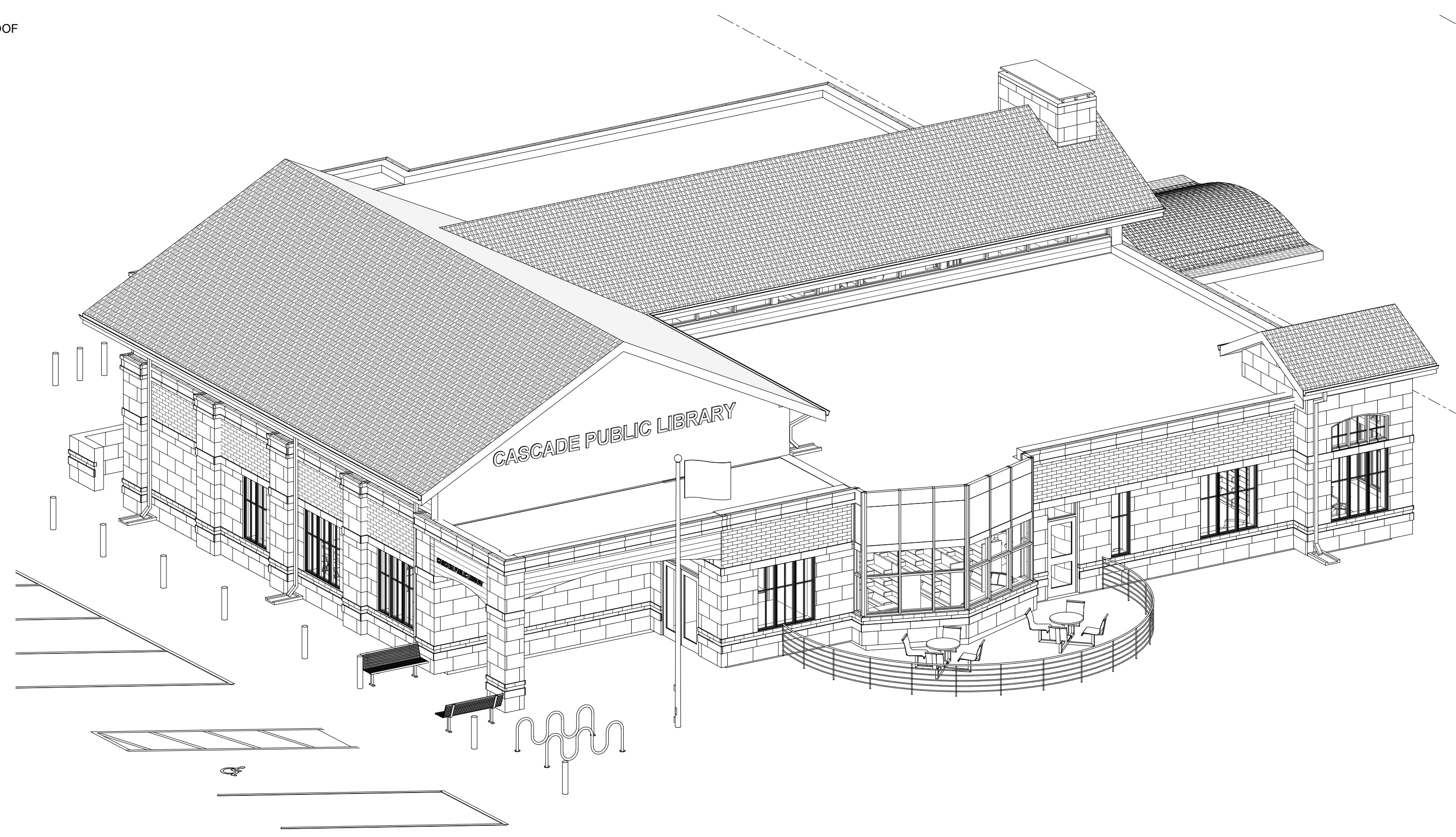
**4 SHADE STRUCTURE - EAST**  
 SCALE: 1/4" = 1'-0"



**3 SHADE STRUCTURE - SOUTH**  
 SCALE: 1/4" = 1'-0"



**6 SHADE STRUCTURE - WEST**  
 SCALE: 1/4" = 1'-0"



**2 3D VIEW - SOUTH WEST**  
 SCALE:

IN ASSOCIATION WITH

SHEET TITLE  
 EXTERIOR ELEVATIONS

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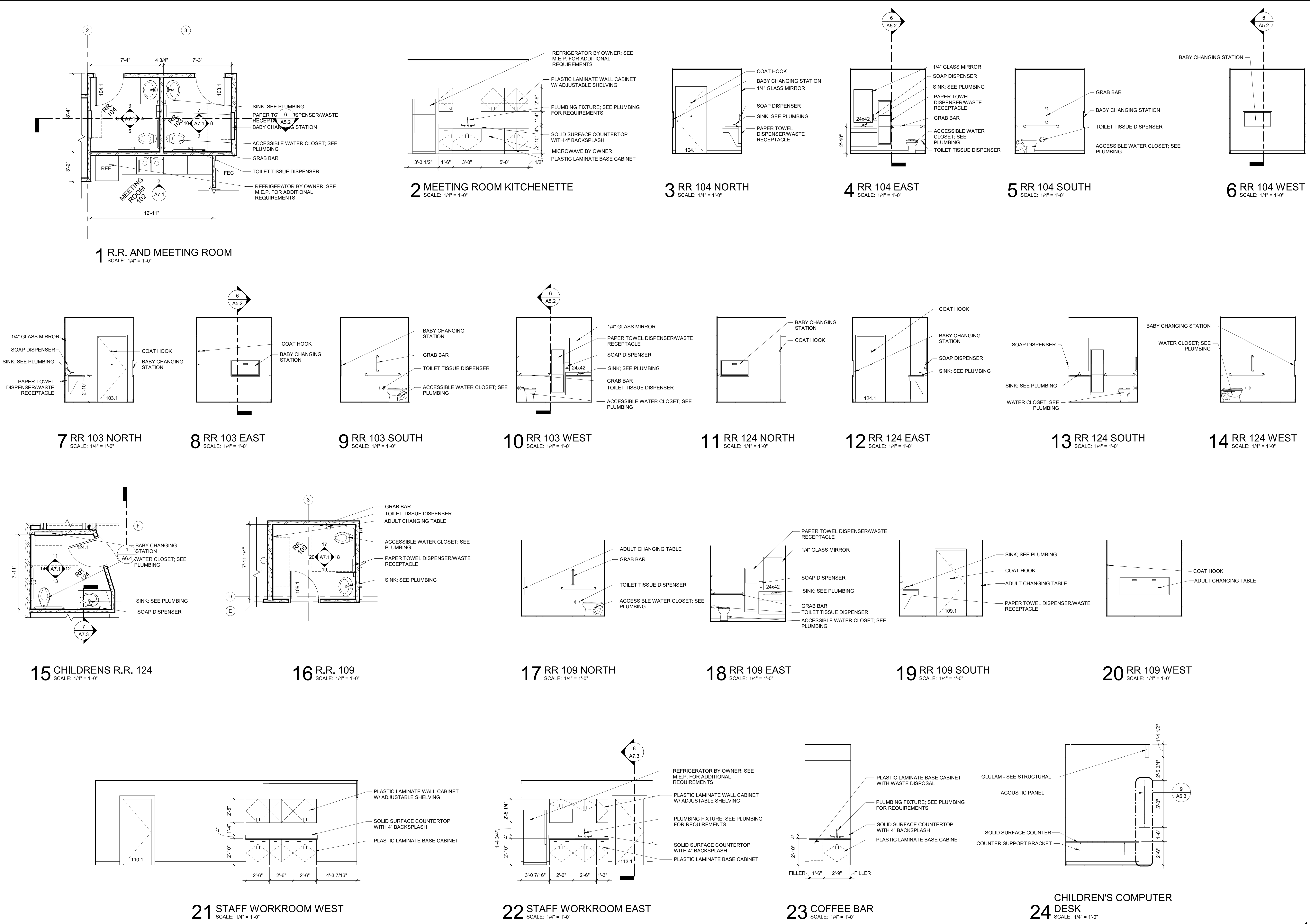
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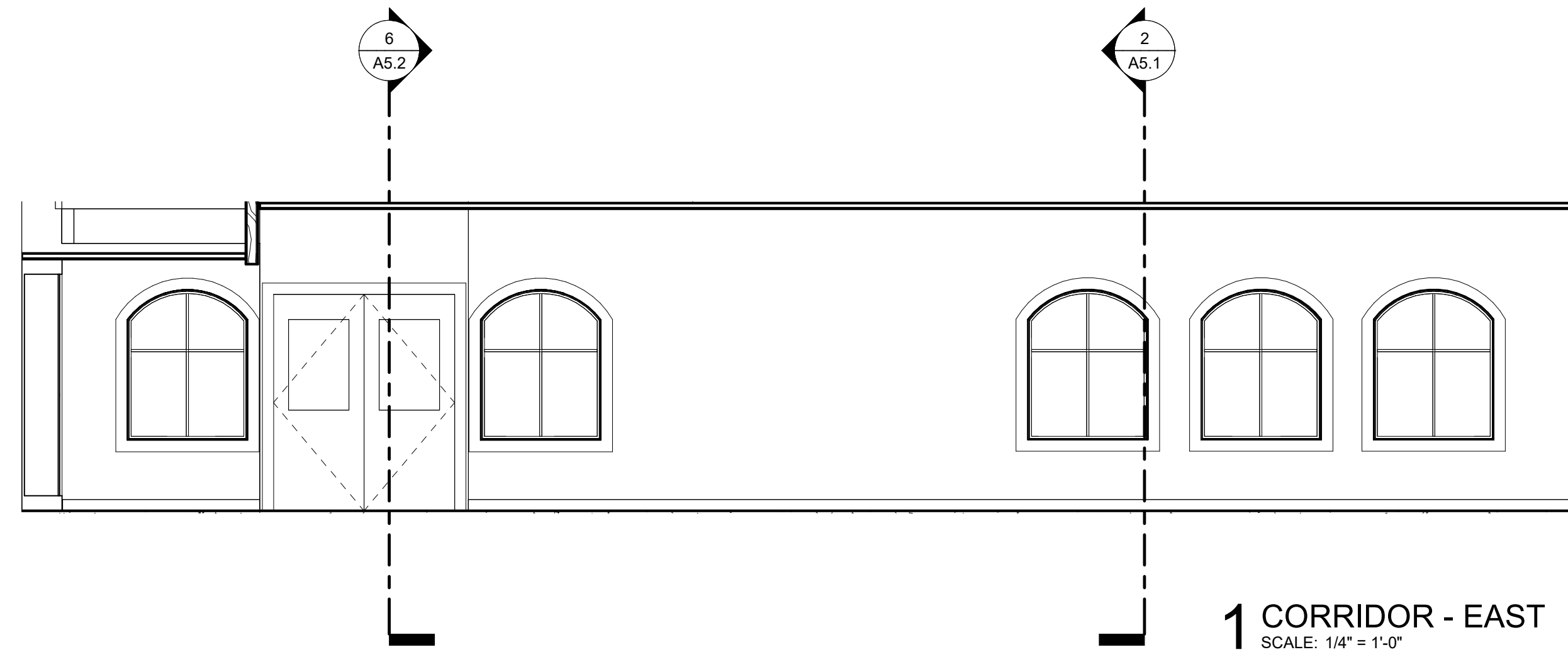
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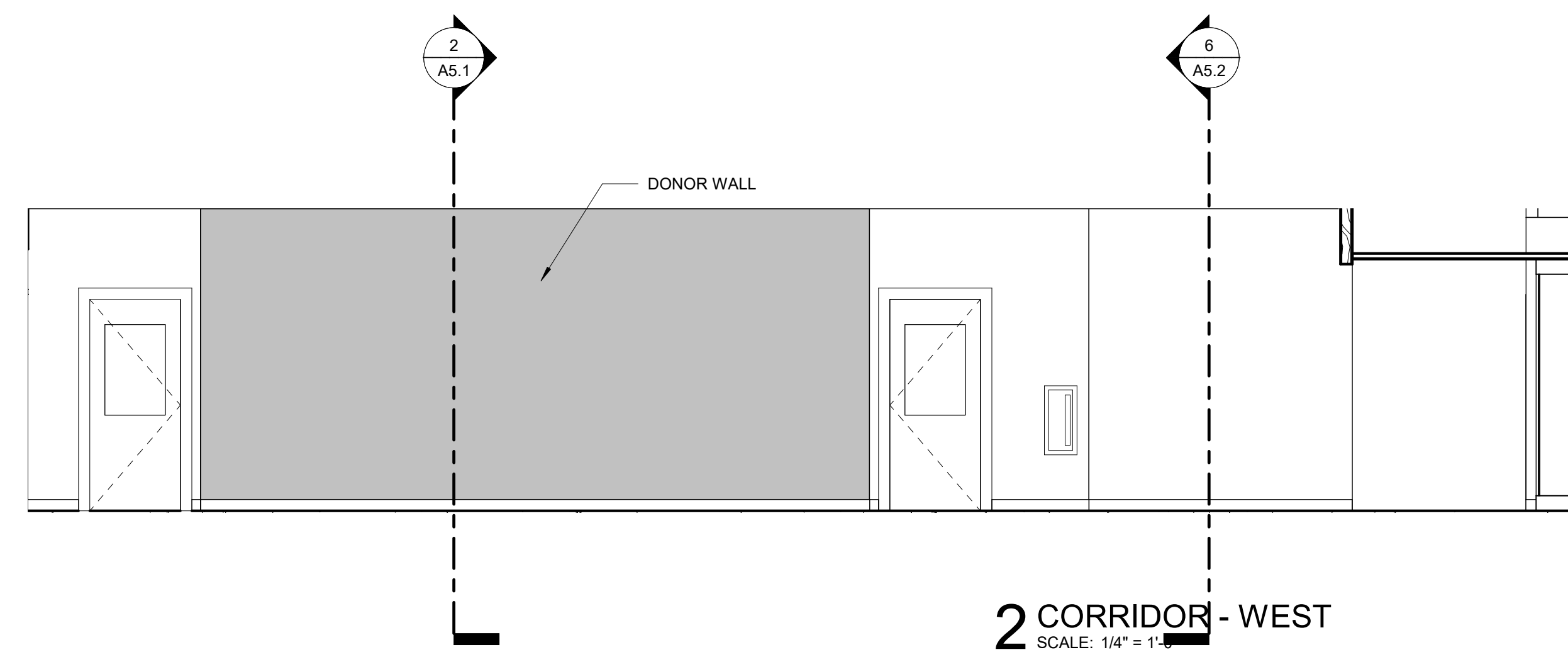
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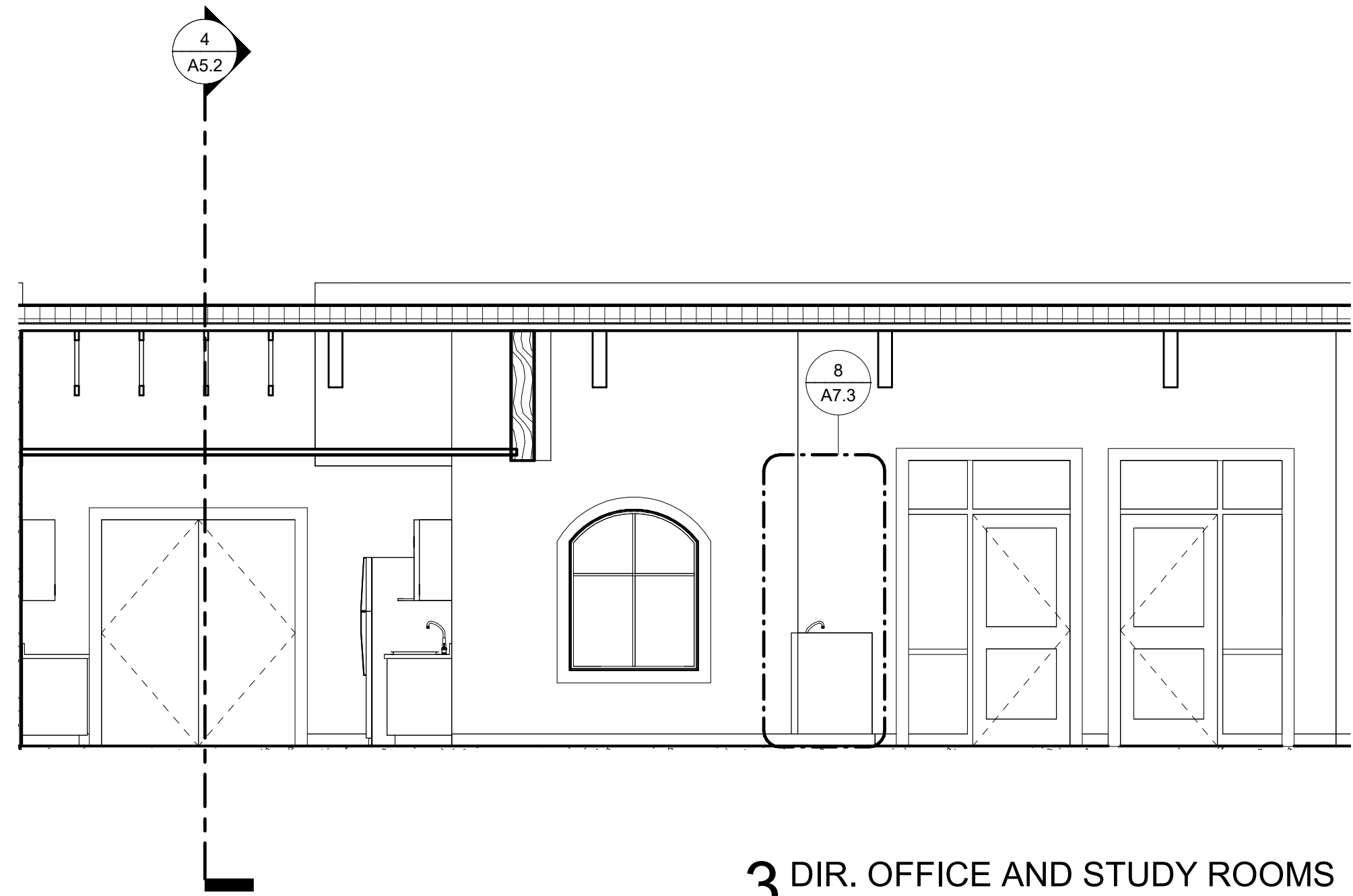




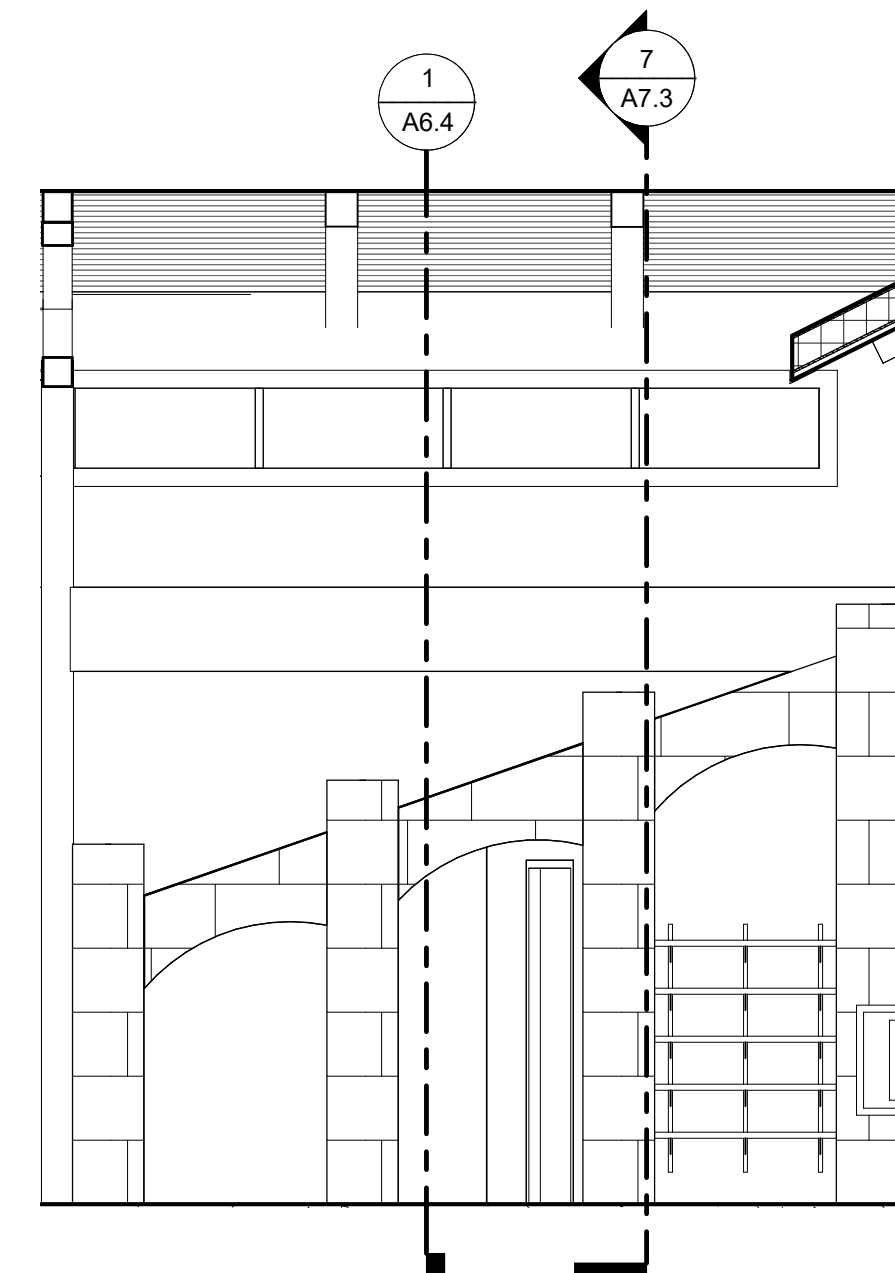
1 CORRIDOR - EAST  
SCALE: 1/4" = 1'-0"



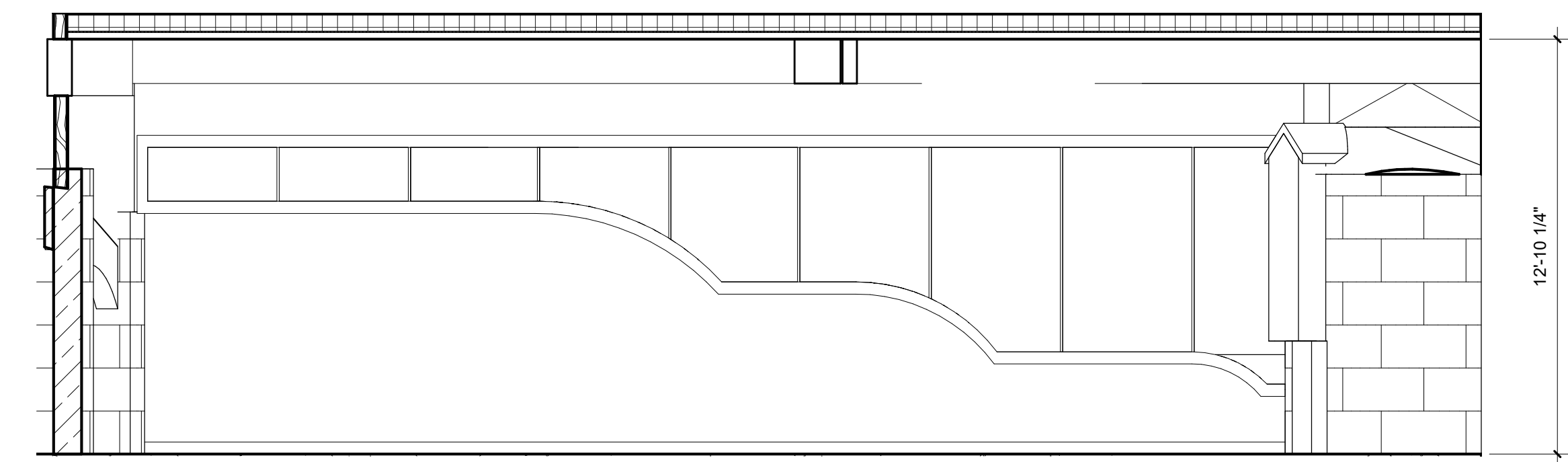
2 CORRIDOR - WEST  
SCALE: 1/4" = 1'-0"



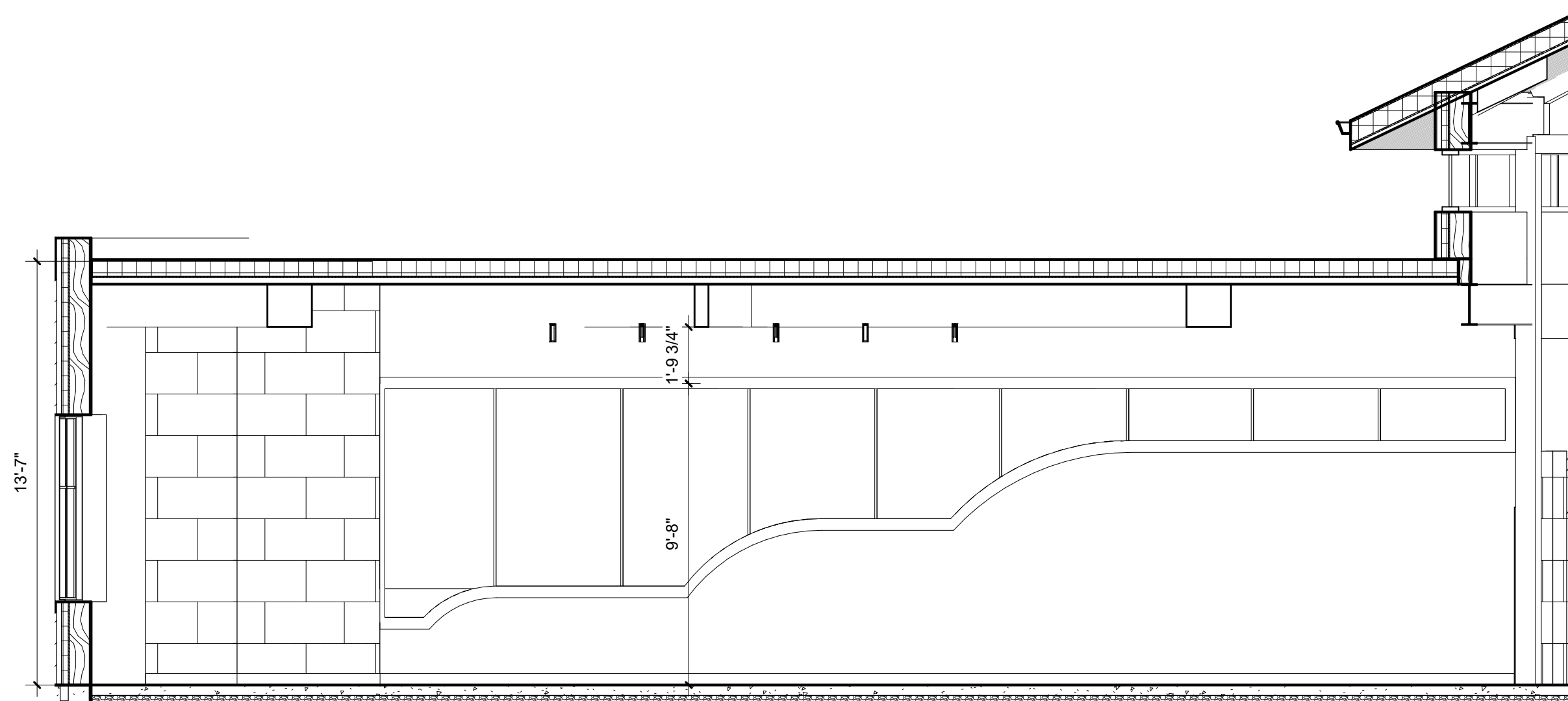
3 DIR. OFFICE AND STUDY ROOMS  
SCALE: 1/4" = 1'-0"



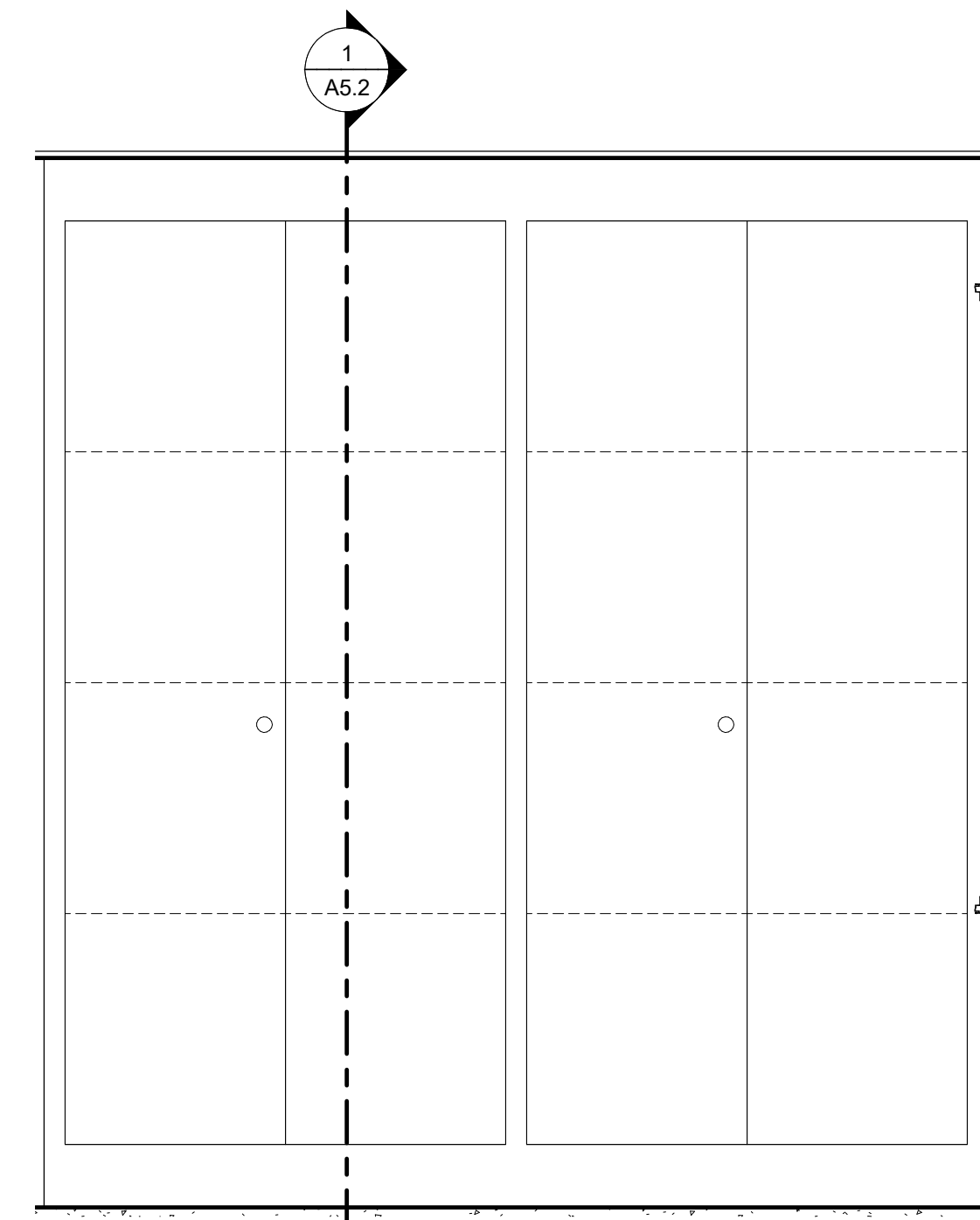
4 CHILDREN ENTRY  
SCALE: 1/4" = 1'-0"



5 CHILDREN'S FALLS WINDOW  
SCALE: 1/4" = 1'-0"



6 ADULT FALLS WINDOW  
SCALE: 1/4" = 1'-0"



7 CORRIDOR - DISPLAY CASE  
SCALE: 3/4" = 1'-0"

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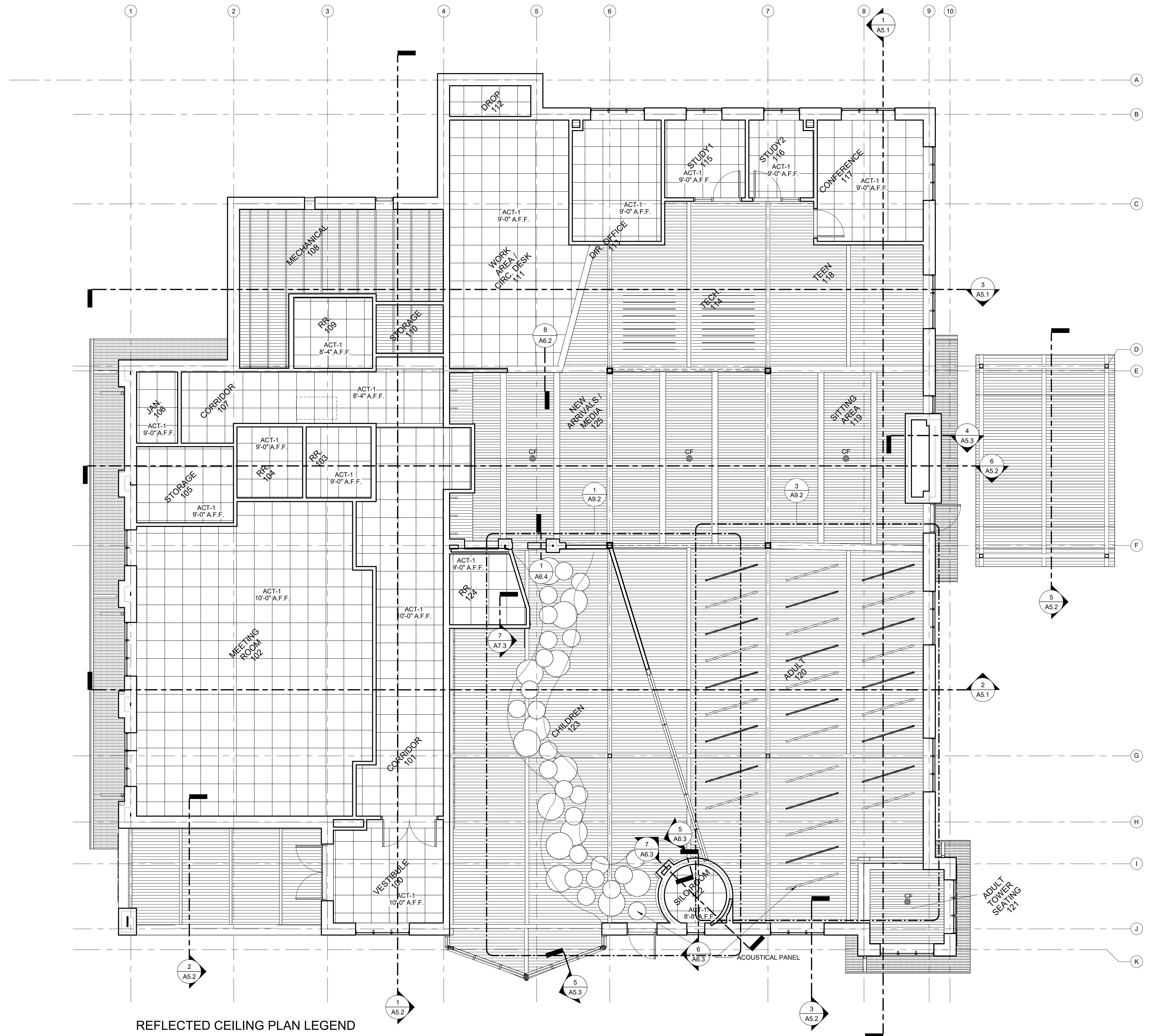
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**REFLECTED CEILING PLAN NOTES**

1. CEILING GRID TO BE CENTERED EACH WAY WITHIN ROOMS AND ARE AS SHOWN ON THE REFLECTED CEILING PLAN. U.N.O.
2. ALL ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION DEVICES TO BE CENTERED WITHIN CEILING TILES. U.N.O.
3. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION (IF APPLICABLE) DRAWINGS FOR DUCTWORK, DEVICES, EQUIPMENT, & FIXTURES NOT SHOWN ON THE REFLECTED CEILING PLANS. COORDINATE LOCATION OF THESE ITEMS WITH THOSE SHOWN.
4. IN ROOMS AND/OR AREAS SCHEDULED TO HAVE EXPOSED STRUCTURE, ALL WALL MATERIALS AND FINISHES TO EXTEND TO UNDERSIDE OF ROOF OR FLOOR DECK. U.N.O.
5. CEMENT BOARD AND GYPSUM BOARD CEILINGS TO BE INSTALLED ON SUSPENSION SYSTEM PER PROJECT MANUAL. U.N.O.
6. WALL GYPSUM BOARD SHALL EXTEND 6" MINIMUM ABOVE HIGHEST ADJACENT CEILING AT PARTITIONS NOT IDENTIFIED TO BE FULL-HEIGHT. BRACE TOP OF WALL TO STRUCTURE ABOVE WITH METAL FRAMING AT 48" O.C. EACH WAY.
7. GYPSUM BOARD VERTICAL RETURNS ON SOFFITS AND BULKHEADS TO EXTEND 6" MINIMUM ABOVE HIGHEST ADJACENT CEILING HEIGHT. U.N.O.
8. REFER TO MECHANICAL DRAWINGS & PROJECT MANUAL FOR REQUIRED LOCATIONS OF ACCESS PANELS IN GYPSUM BOARD OR CEMENT BOARD CEILINGS NOT SHOWN ON THE REFLECTED CEILING PLANS. COORDINATE PANEL LOCATION WITH ARCHITECT.
9. PAINT ALL EXPOSED STEEL, CONDUIT, DUCTWORK, PIPING, ETC. IN ROOMS AND/OR AREAS NOTED OR SCHEDULED TO RECEIVE PAINTED FINISHES.
10. PROVIDE SUPPORT WIRE ABOVE THE CEILING AT 2'-0" O.C. ON CEILING GRID MEMBERS AROUND ALL CEILING MOUNTED PROJECTION SCREEN LOCATIONS NOTED ON THE DRAWINGS.
11. PROVIDE ESCUTCHEONS AT ALL CEILING PENETRATIONS. U.N.O.
12. HOLD GYPSUM BOARD AND/OR CEMENT BOARD 1/2" OFF STRUCTURE.
13. SEE TYPICAL WALL TYPES FOR TOP OF WALL CONSTRUCTION.

**REFLECTED CEILING PLAN LEGEND**

	ACOUSTIC TILE CEILING
	GYPSUM WALL BOARD
	WOOD DECKING
	SOFFIT

**NOTES:**

- \* ALL WALLS TO STRUCTURE UNLESS NOTED OTHERWISE.
- \*\* AT FIRE RATED WALLS, SEAL TO STRUCTURE WITH FIRE-RAPING INSULATION / MASTIC AT GYP BOARD WALLS OR FIRE CAULK AT MASONRY WALLS.



**1 MAIN LEVEL REFLECTED CEILING PLAN**  
SCALE: 3/16" = 1'-0"

SHEET TITLE  
REFLECTED CEILING PLANS

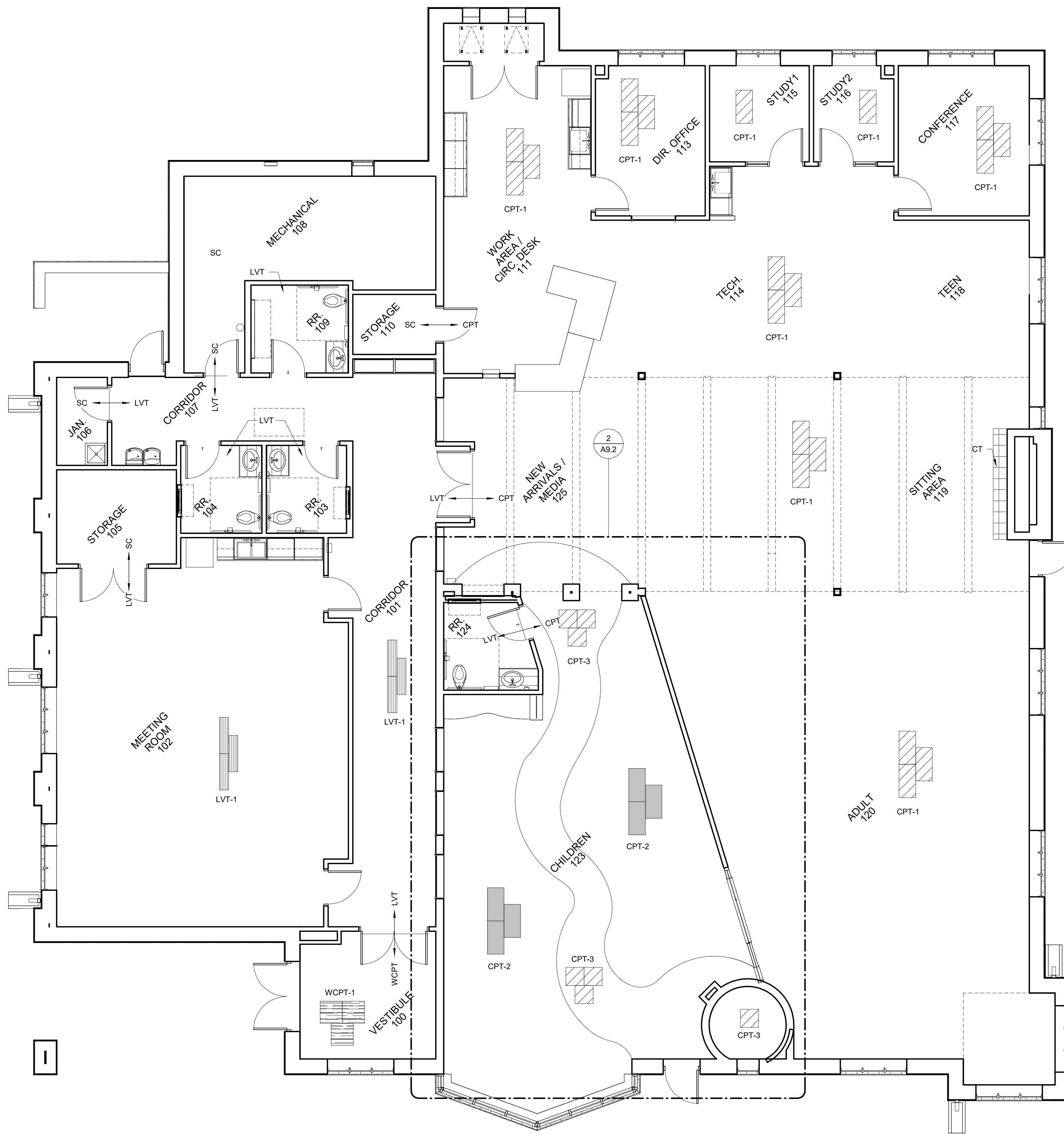
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**1 MAIN LEVEL FLOOR FINISH PLAN**  
SCALE: 3/16" = 1'-0"

**FLOOR FINISH LEGEND**

	SC: SEALED CONCRETE		CT: CERAMIC TILE
	CPT-1: CARPET TILE, TYPE 1		LVT: LUXURY VINYL TILE
	CPT-2: CARPET TILE, TYPE 2		WCPT: WALK OFF CARPET TILE
	CPT-3: CARPET TILE, TYPE 3		

NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL				CEILING FINISH	COMMENTS
				NORTH	SOUTH	EAST	WEST		
100	VESTIBULE	WCPT-1	RB	P	P	P	P	ACT	
101	CORRIDOR	LVT-1	RB	P	P	P	P	ACT	
102	MEETING ROOM	LVT-1	RB	P	P	P	P	ACT	
103	RR	LVT-2	RB	P	P	P	P	GB-P	
104	RR	LVT-2	RB	P	P	RWC	P	GB-P	
105	STORAGE	SC	RB	P	P	P	P	EXP	
106	JAN.	SC	RB	P	P	P	P	EXP	
107	CORRIDOR	LVT-1	RB	P	P	P	P	ACT	
108	MECHANICAL	SC	RB	P	P	P	P	EXP	
109	RR	LVT-2	RB	P	P	RWC	P	GB-P	
110	STORAGE	SC	RB	P	P	P	P	EXP	
111	WORK AREA / CIRC. DESK	CPT-1	RB	P	P	P	P	ACT/GB-P	
112	DROP	CPT-1	RB	P	P	P	P	EXP	
113	DIR. OFFICE	CPT-1	RB	P	P	P	P	ACT	
114	TECH.	CPT-1	RB	P	-	-	-	EXP	
115	STUDY1	CPT-1	RB	P	P	P	P	ACT	
116	STUDY2	CPT-1	RB	P	P	P	P	ACT	
117	CONFERENCE	CPT-1	RB	P	P	P	P	ACT	
118	TEEN	CPT-1	RB	P	-	-	-	EXP	
119	SITTING AREA	CPT-1	RB	-	-	-	-	EXP	
120	ADULT	CPT-1	RB	P	P	P	P	EXP	
121	ADULT TOWER SEATING	CPT-1	RB	P	P	P	P	EXP	
122	SILO ROOM	CPT-3	RB	P	P	P	P	EXP	
123	CHILDREN	CPT-2	RB	P	P	P	P	EXP	
124	RR	LVT-2	RB	P	RWC	P	P	GB-P	
125	NEW ARRIVALS / MEDIA	CPT-1	RB	P	P	P	-	EXP	

**ROOM FINISH NOTES**

- FINISHES FOR CLOSETS AND AREAS NOT SHOWN SHALL RECEIVE THE SAME FINISH TO THAT OF THE ADJACENT ROOM.
- ELECTRICAL PANELS AND ACCESS DOOR PANELS SHALL BE PRIMED AND PAINTED TO MATCH ADJACENT WALLS (VERIFY WITH OWNER).
- CONCRETE FLOORS THAT ARE NOT SCHEDULED FOR A FINISH FLOOR MATERIAL SHALL RECEIVE SEALER PER THE PROJECT MANUAL. CONCRETE FLOORS ARE TO BE CLEANED OF ALL FOREIGN MATERIAL PRIOR TO THE APPLICATION OF THE SEALER.
- PROVIDE EXPANSION JOINTS AT ALL SLAB EDGES AGAINST EXTERIOR WALLS. REFER TO STRUCTURAL.
- SLOPE INTERIOR FLOOR SLAB TO DRAIN AT 1/8" PER FOOT WHERE SLOPED SLABS ARE INDICATED, U.N.O.
- FLOOR SLAB TO BE SLOPED DOWN AROUND DRAINS WHERE FLOOR SLAB IS NOT INDICATED TO BE SLOPED, EXCEPT IN RESTROOMS WITH TILE. IN RESTROOMS WITH TILE, INSTALL DRAIN TO BE FLUSH WITH ADJACENT FLOOR TILE. REFER TO MECHANICAL DRAWINGS FOR ALL FLOOR DRAINS.
- FLOOR DRAINS AND TRENCH DRAINS INDICATED FOR LOCATION AND CONFIGURATION ONLY, REFER TO MECHANICAL DRAWINGS FOR PRODUCT AND PIPING INFORMATION.
- JOINT LAYOUT LOCATIONS SHOWN ARE FOR BIDDING PURPOSES ONLY. VERIFY LAYOUT / LOCATIONS WITH ARCHITECT PRIOR TO BEGINNING WORK AND SUBMIT JOINT LAYOUT DRAWING FOR APPROVAL.
- VERIFY WALL AND FLOOR TILE PATTERN LAYOUT WITH ARCHITECT PRIOR TO BEGINNING WORK.
- 4x4, 8x8 TILE JOINTS (BOTH ON WALL AND FLOOR) ARE TO ALIGN WITH MASONRY JOINTS ON WALL. WHERE TILE JOINTS DO NOT ALIGN WITH THAT OF CMU, CUT TILES AT MIDDLE OF THE RUN OR AT THE DOOR, OR AS SHOWN ON FLOOR FINISH PLANS. IF DISCREPANCY IS FOUND, CONTACT ARCHITECT BEFORE LAYING TILE.
- DEPRESS CONCRETE SLABS FOR FLOOR FINISHES OVER 1/2" DEPTH. VERIFY DEPTH REQUIRED.
- ALL FLOOR FINISH TRANSITIONS TO BE LOCATED UNDER DOOR CENTERLINES, U.N.O.

**ROOM FINISH SCHEDULE LEGEND**

**FLOORS**

CPT	CARPET TILE
CT	CERAMIC TILE
SC	SEALED CONCRETE
WCPT	WALK-OFF CARPET TILE

**BASE**

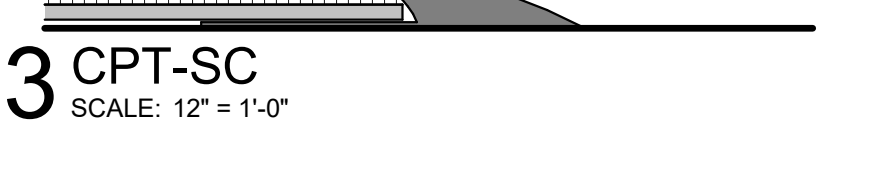
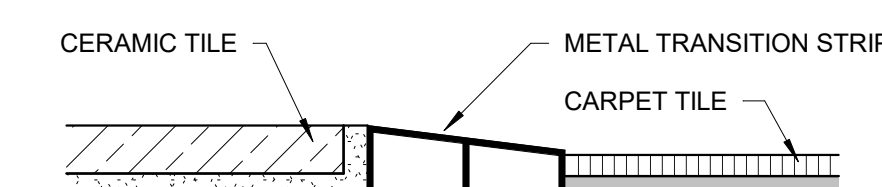
CT	CERAMIC TILE BASE
RB	RESILIENT BASE
WD	WOOD BASE

**WALL**

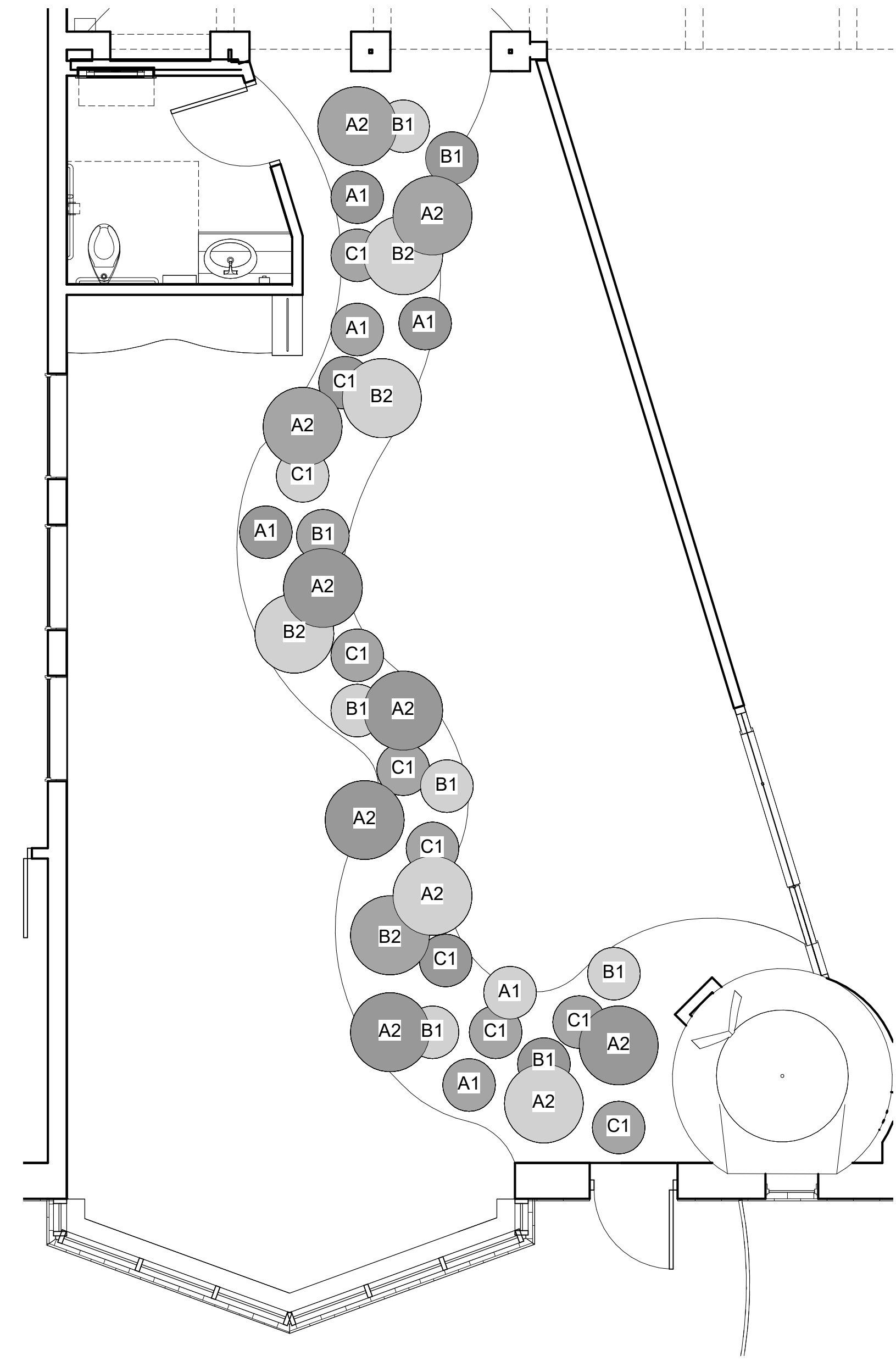
CT	CERAMIC TILE
P	PAIN

**CEILING**

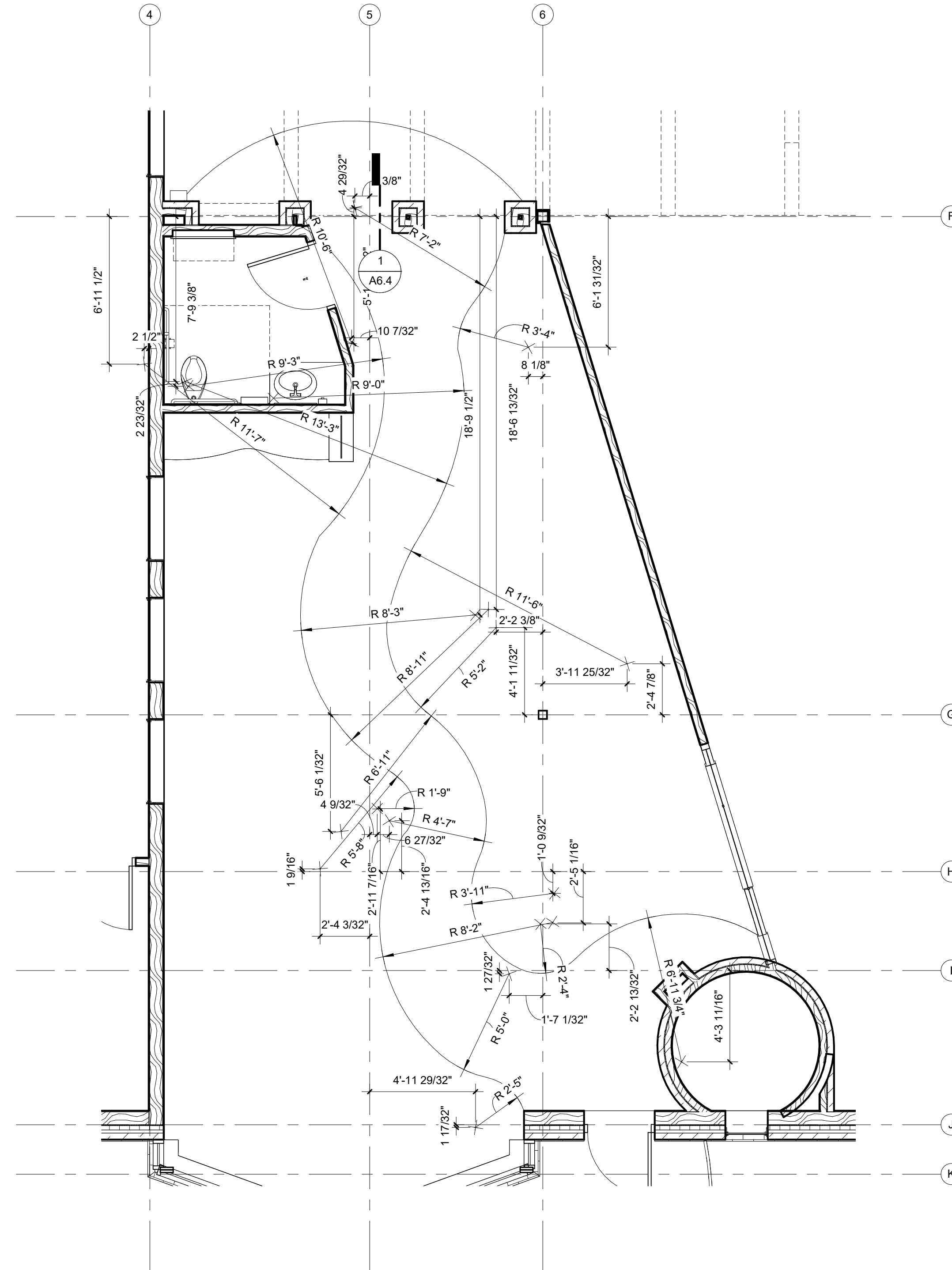
ACT-1	ACOUSTICAL CEILING TILE, TYPE 1
ACT-2	ACOUSTICAL CEILING TILE, TYPE 2
EXP	EXPOSED STRUCTURE, NO PAINT
EXP-P	EXPOSED STRUCTURE, PAINT
GB-P	GYP-SUM BOARD, PAINT
WP	WOOD PANEL



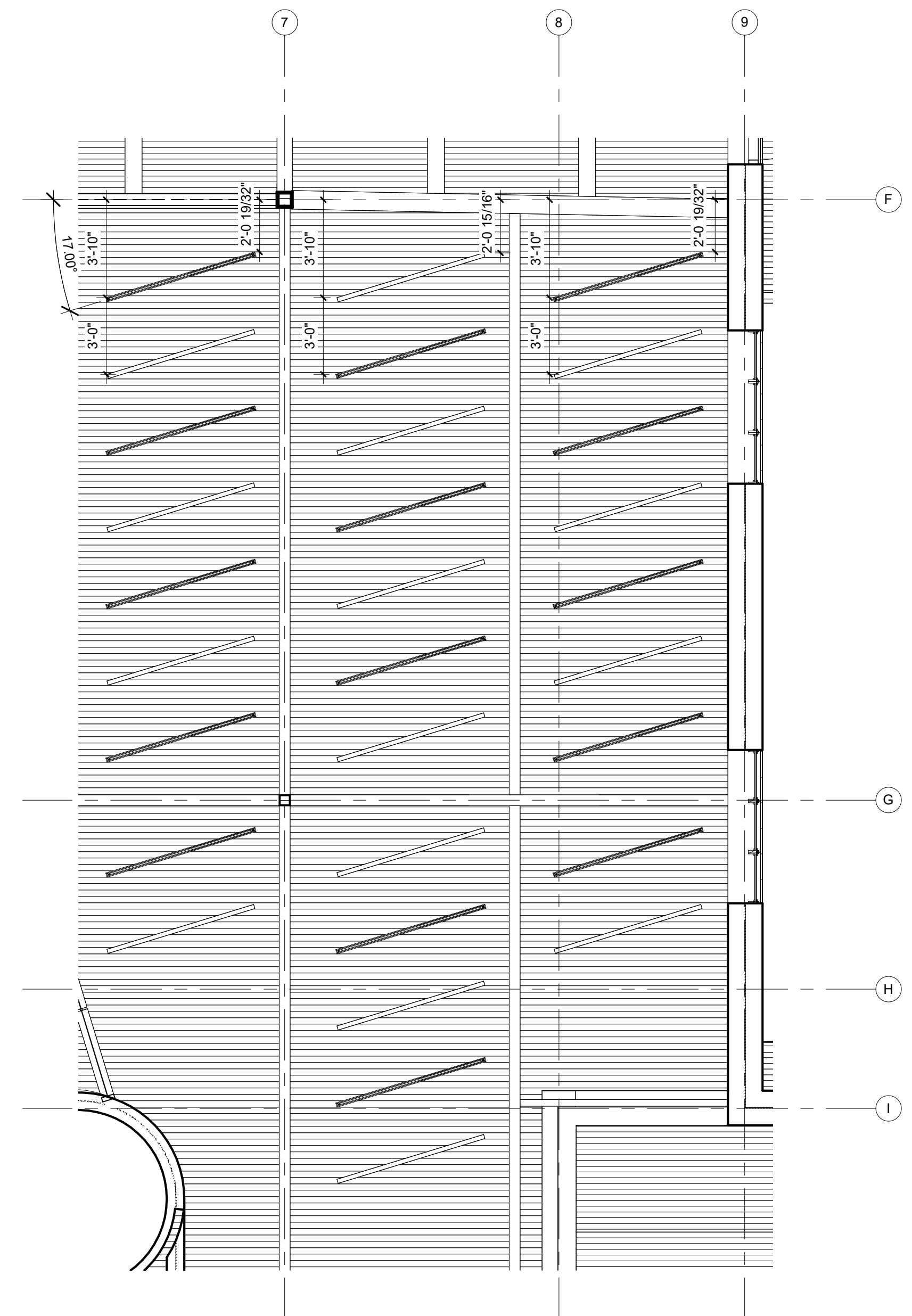
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**1 CHILDREN'S AREA - CEILING BAFFLES**  
SCALE: 1/4" = 1'-0"



**2 CHILDREN'S AREA - RIVER LAYOUT**  
SCALE: 1/4" = 1'-0"



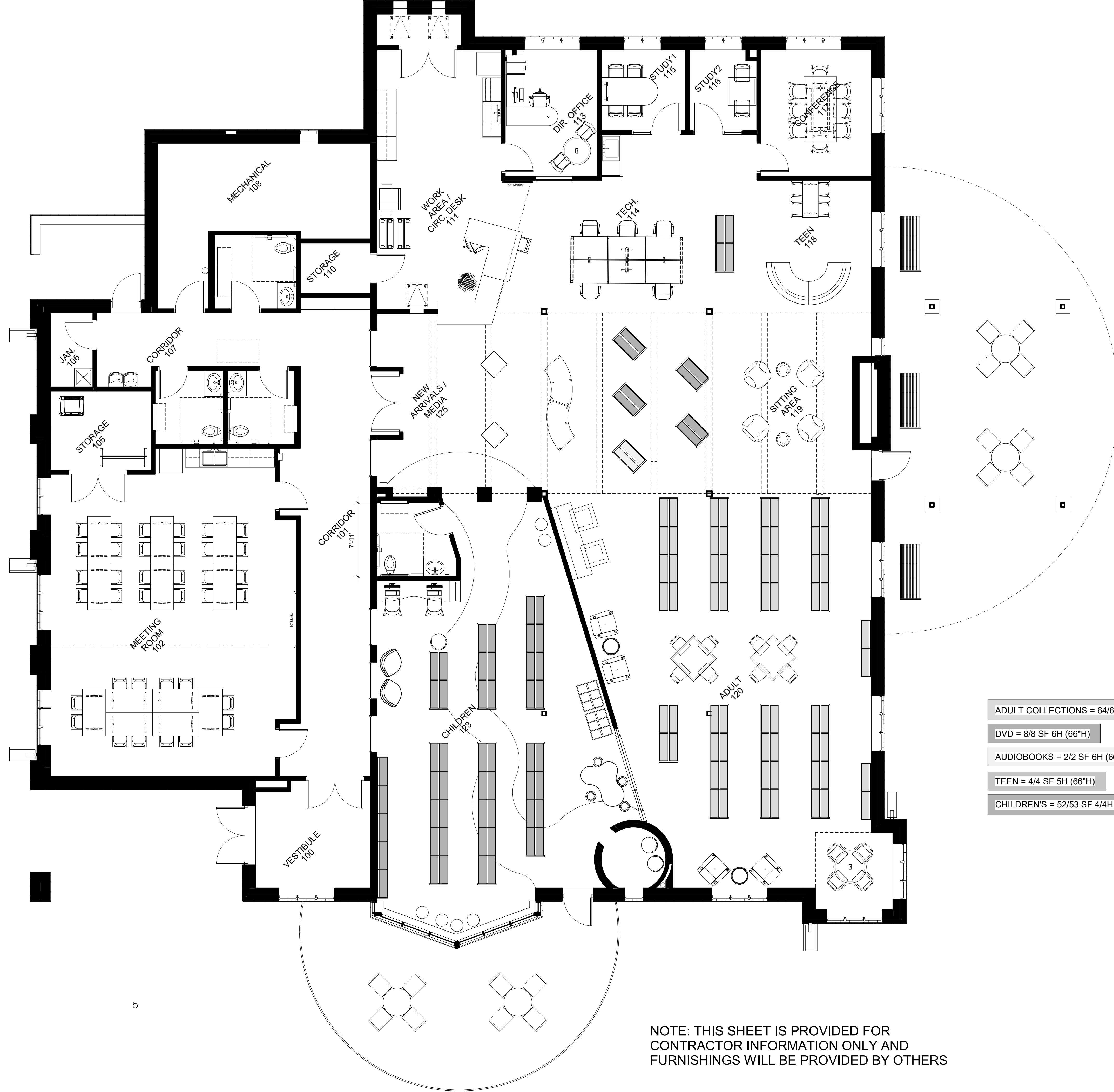
NOTE: ALL BAFFLES ARE ROTATED 17 DEGREES AND SPACED 3' APART. 11' - 0" AFF

**3 ADULT AREA - CEILING BAFFLES**  
SCALE: 1/4" = 1'-0"

**CEILING BAFFLES LEGEND**

- |   |                                   |  |                                |
|---|-----------------------------------|--|--------------------------------|
| A | FELT CEILING BAFFLE, 9'-6" A.F.F. |  | FELT BAFFLE, COLOR: MARBLE     |
| B | FELT CEILING BAFFLE, 8'-6" A.F.F. |  | FELT BAFFLE, COLOR: GRANITE    |
| C | FELT CEILING BAFFLE, 8'-0" A.F.F. |  | FELT BAFFLE, COLOR: EVER GREEN |
| 1 | FELT CEILING BAFFLE, 24" DIAMETER |  |                                |
| 2 | FELT CEILING BAFFLE, 36" DIAMETER |  |                                |

**PRELIMINARY**  
NOT FOR CONSTRUCTION



NOTE: THIS SHEET IS PROVIDED FOR CONTRACTOR INFORMATION ONLY AND FURNISHINGS WILL BE PROVIDED BY OTHERS

1 MAIN FLOOR FURNITURE PLAN  
SCALE: 3/16" = 1'-0"

**PRELIMINARY**  
NOT FOR CONSTRUCTION

PROJECT TITLE: CITY OF CASCADE  
**CASCADE PUBLIC LIBRARY**  
SECOND AVENUE SW.  
CASCADE, IOWA

DATE ISSUED: 2 JUNE 2023

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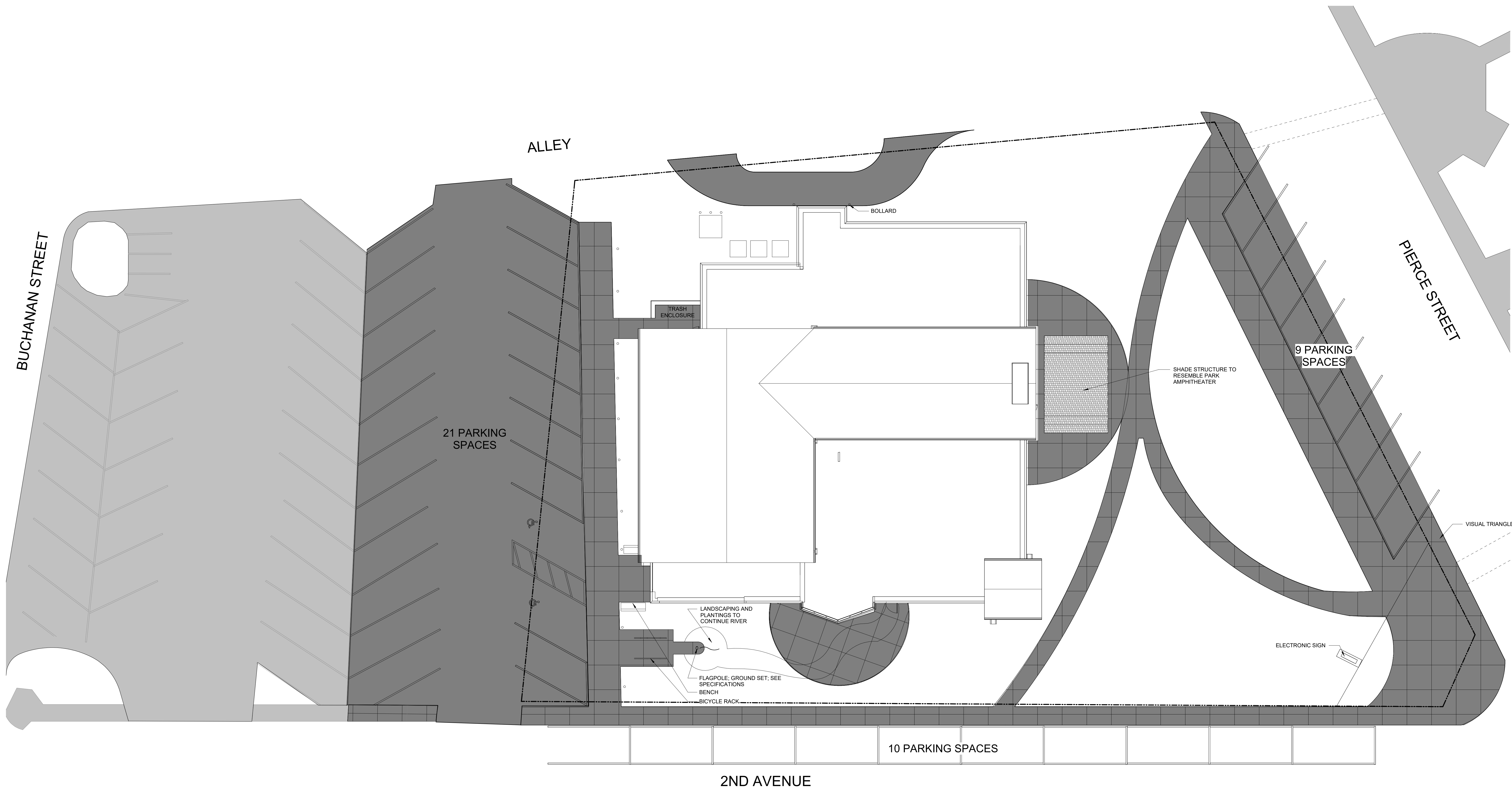
PROJECT NUMBER: 2021310  
SHEET: **A10.1**

SHEET TITLE: FURNITURE LAYOUT PLANS

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- EXISTING PARKING
- NEW PARKING
- NEW CONCRETE SIDEWALK/PATIO

1 SITE PLAN  
SCALE: 1" = 10'-0"

**PRELIMINARY**  
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PROJECT NUMBER: 2021310

SHEET: **AS1.2**

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SHEET TITLE: SITE DEVELOPMENT PLAN

IN ASSOCIATION WITH: