



# CIVIC AUDITORIUM

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17 JANUARY 2020





DESIGN CRITERIA

1. Applicable Codes
  - IBC 2018 International Building Code w/ Georgia amendments
  - IEBC-18 International Existing Building Code
  - AISC 360-16 Specification for Structural Steel Buildings
  - ACI 318-14 Building Code Requirements for Structural Concrete
  - TMS 402-2016 Building Code for Masonry Structures (ACI 530/530.1)
2. Live Loads
  - Assembly Areas
    - 60 psf (fixed seats)
    - 100 psf (movable seats)
  - Lobbies
    - 100 psf
  - Stage Floor
    - 150 psf
  - Catwalks
    - 40 psf
  - Dressing Rooms
    - 40 psf
  - Fly loft
    - 60 psf (grating)
    - 1000 lb/ft (header beams)
  - Projection Room
    - 150 psf
  - Balconies and decks
    - 1.5 times the live load of the area served not to exceed 100 psf
  - Corridors (first floor)
    - 100 psf
  - Corridors above first floor
    - 80 psf (reducible)
  - Office
    - 50 psf (excludes partitions)
  - Kitchen
    - 150 psf (or equipment weight)
  - Mechanical/Electrical Rooms
    - 125 psf (or equipment weight)
  - Storage (light)
    - 125 psf (non-reducible)
  - Storage (heavy)
    - 250 psf (non-reducible)
  - Stairs
    - 100 psf
  - Rest Rooms
    - 60 psf
  - Elevator Machine Room
    - 150 psf
3. Roof Live Loads
  - Roof
    - 20 psf (reducible)
4. Superimposed Dead Loads
  - MEP, Ceilings, and Misc.\*\*
    - 10 psf
  - Roofing\*\*
    - 5 psf

\*\* does not include acoustical treatment

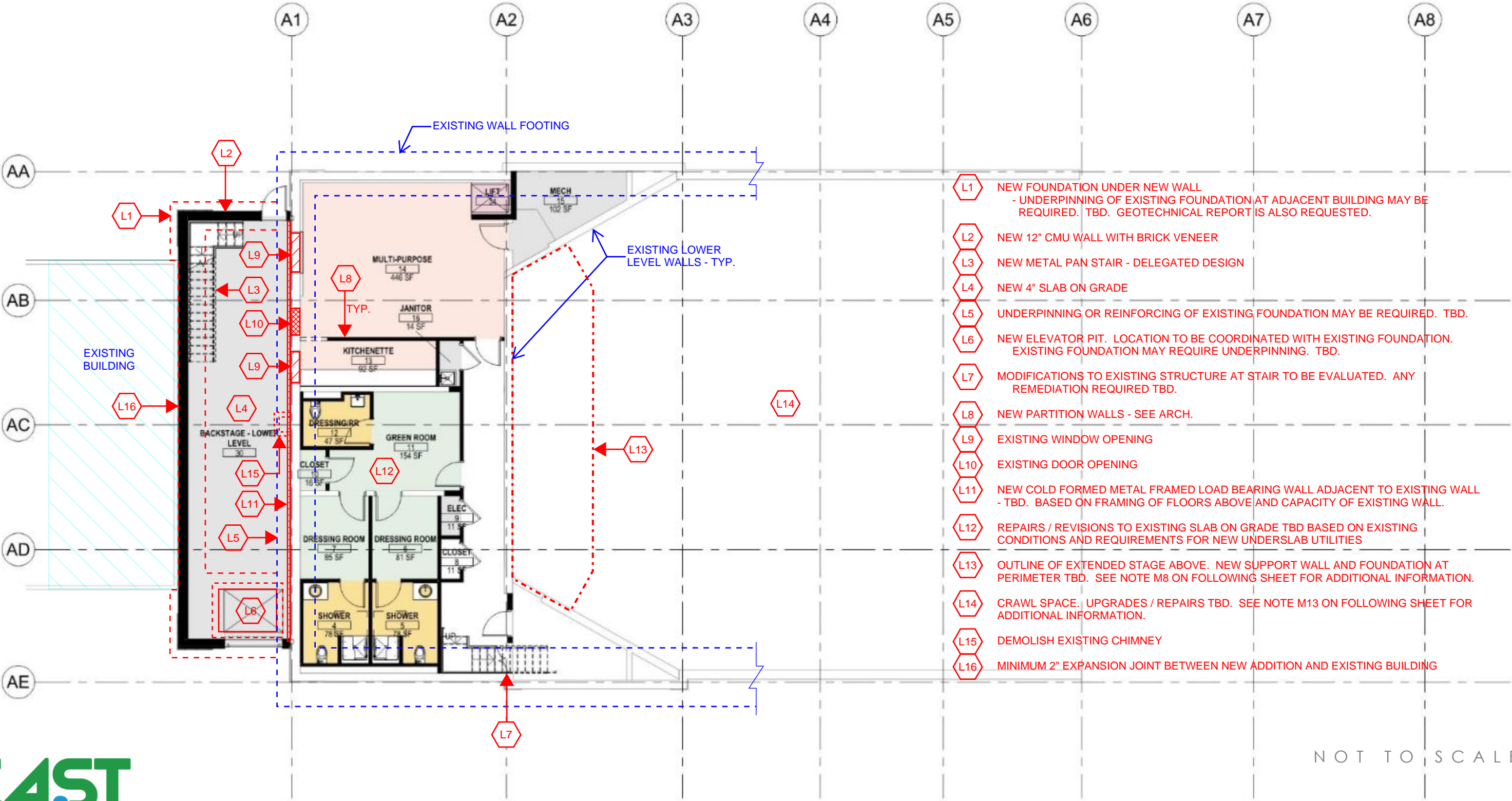
DESIGN CRITERIA (CONTINUED)

5. Snow Loads
  - Ground Snow Load
    - 5 psf
  - Exposure Factor -  $C_e$ 
    - 0.9
  - Thermal Factor -  $C_t$ 
    - 1.0
  - Importance Factor -  $I$ 
    - 1.1
  - Sloped Roof Factor -  $C_s$ 
    - 1.0
6. Design Wind Loads
  - Basic Wind Speed
    - 120
  - Exposure
    - C
  - Risk Category
    - III
7. Design Seismic Loads
  - Seismic Design Category
    - C
  - Importance Factor
    - 1.25
  - Risk Category
    - III
  - Site Class
    - D (assumed)
  - $S_s$ 
    - 0.178g
  - $S_1$ 
    - 0.084g
  - $S_{ds}$ 
    - 0.189g
  - $S_{d1}$ 
    - 0.135g
- Seismic Resisting Systems
  - New Structures
    - Bearing Wall Systems:
      - Ordinary Reinforced Masonry Shear Walls
        - $R = 2$
        - $C_d = 1.75$
        - Overstrength Factor ( $\Omega$ ) = 2.5
- Analysis Procedure: Equivalent Lateral Force Analysis

MATERIAL PROPERTIES

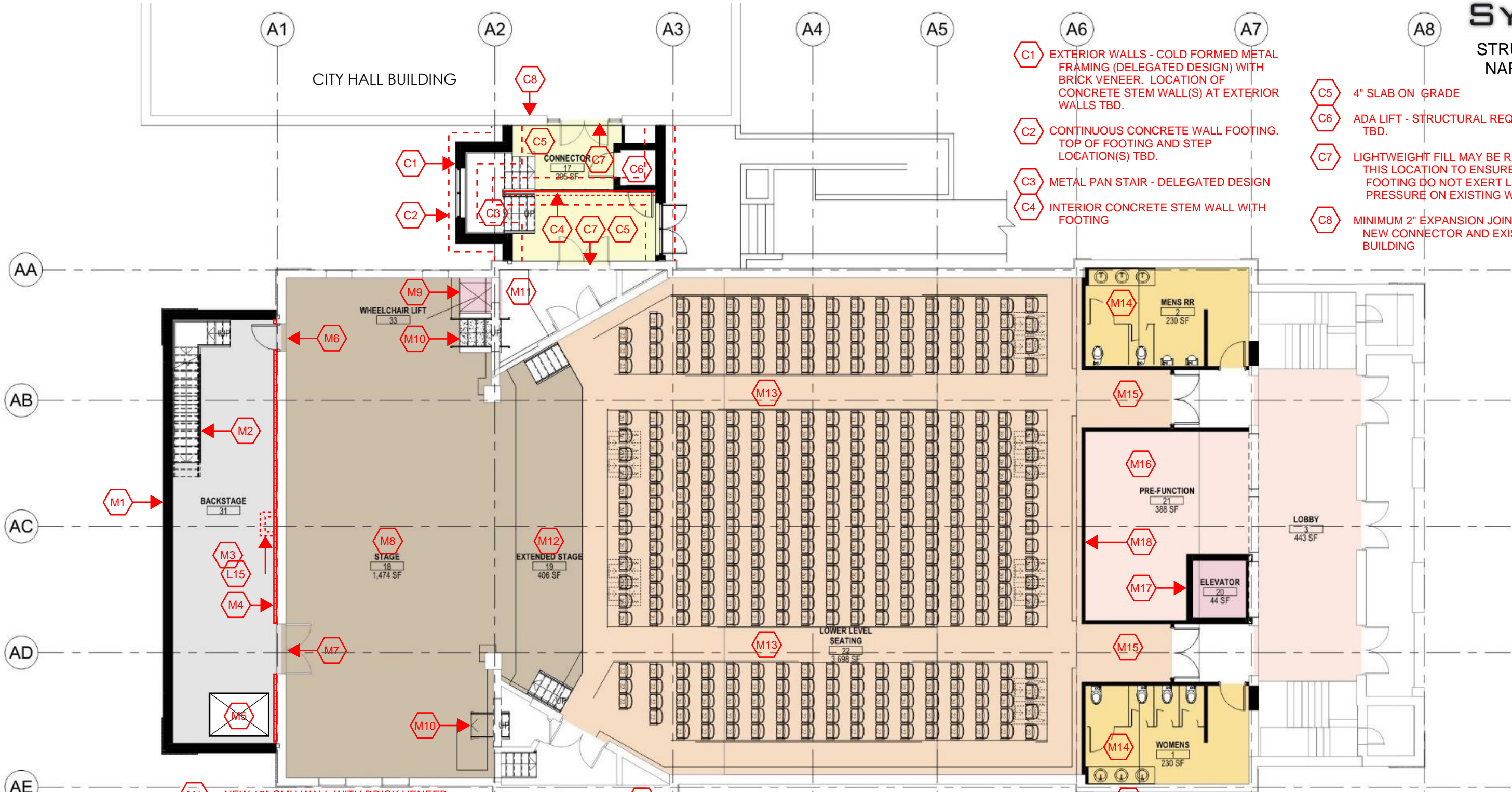
1. Reinforcement:
  - Reinforcing Steel
    - ASTM A615, Grade 60
2. Concrete:
  - Footings
    - $f'_c = 4,000$  psi (normal weight)
  - Slab-on-Grade
    - $f'_c = 4,000$  psi (normal weight)
  - Walls
    - $f'_c = 4,000$  psi (normal weight)
  - Elevated Concrete Slab
    - $f'_c = 4,000$  psi (light weight)
3. Structural Steel:
  - WF Beams/Columns
    - ASTM A992, Grade 50
  - HSS Beams/Columns Round
    - ASTM A500, Grade B ( $F_y=42$  ksi)
  - HSS Beams/Columns Rectangular
    - ASTM A500, Grade B ( $F_y=46$  ksi)
  - Pipe Columns
    - ASTM A53, Grade B ( $F_y=35$  ksi)
  - Angles, Channels, Plates
    - ASTM A36, Grade 36 or A572, Grade 50
- ADDITIONAL PRICING INFORMATION
- P1. Decisions regarding final structural floor and roof framing system at addition to be determined. Selection to be based on economy, scheduling, owner preference, etc.
- P2. Based on previous structural assessment report by Foresite Group on February 8, 2019, the framing at the stage floor is adequate to support a live load of 100 psf. Excessive deterioration of the concrete deck in this area was noted and the recommendation was to remove the entire concrete deck. Additional evaluation is required here to determine capacity of existing framing based on the code required stage floor live load of 150 psf. In addition, the layout of the lower level may require the demolition of load bearing walls. New support girders, columns and foundations may also be required. Connections of existing framing at existing bearing walls will also be necessary.
- P3. Many options are available to frame the extended stage area. If new concrete (and possibly new structure) is to be constructed at the existing stage, continuing that framing system at the extended stage area may be desirable. Depending on crawl space access requirements, new concrete on metal deck can be supported on new steel framing, cold formed framing, masonry knee walls (all with concrete footings) or even slab on grade on lightweight fill. Final decision to be based on economy, scheduling, owner preference, etc.
- P4. The report by Foresite Group states that the main auditorium seating area has some damaged areas and cracking. The report also states the structural system is adequate in strength to support only the existing self weight and code required live loads, but fails for deflection. Four options were presented for repair / replacement. Damaged areas will need to be repaired and final decision regarding approach to overall floor system to be determined. At areas that need to be built up and leveled out, a completely new structure may be desirable.







LEVEL ONE FLOOR PLAN



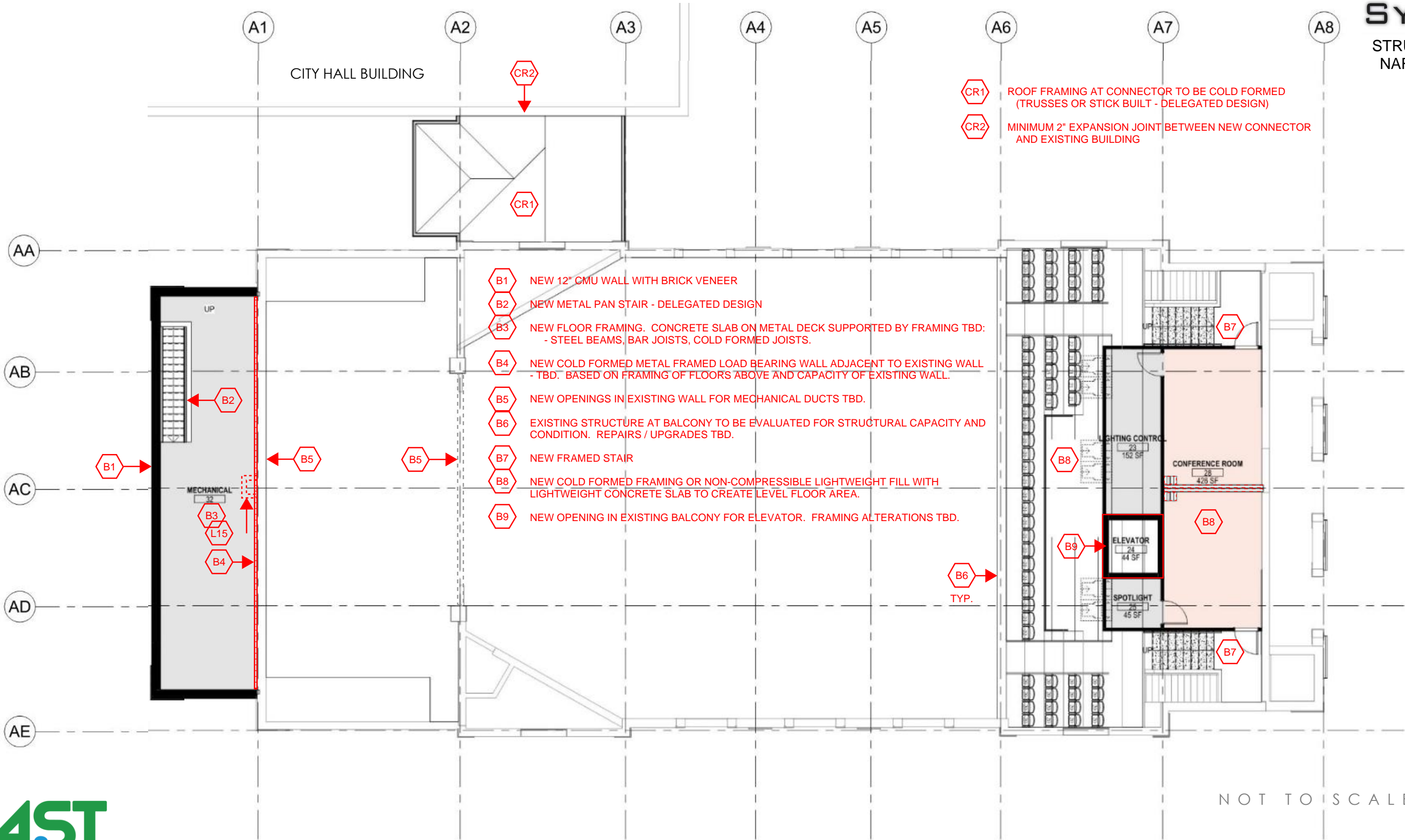
- M1 NEW 12" GCMU WALL WITH BRICK VENEER
- M2 NEW METAL PAN STAIR - DELEGATED DESIGN
- M3 NEW FLOOR FRAMING. CONCRETE SLAB ON METAL DECK SUPPORTED BY FRAMING TBD:
  - STEEL BEAMS, BAR JOISTS, COLD FORMED JOISTS.
- M4 NEW COLD FORMED METAL FRAMED LOAD BEARING WALL ADJACENT TO EXISTING WALL - TBD. BASED ON FRAMING OF FLOORS ABOVE AND CAPACITY OF EXISTING WALL.
- M5 OPENING FOR NEW ELEVATOR. WALLS / RAIL SUPPORT TBD.
- M6 NEW OPENING IN EXISTING WALL
- M7 EXISTING OPENING IN EXISTING WALL

- M8 DEMOLITION / REINFORCING AT EXISTING STAGE TBD. SEE NOTE P2 ON SHEET 2
- M9 OPENING FOR NEW LIFT IN EXISTING SLAB. EXISTING FRAMING RECONFIGURATION / REINFORCING TBD.
- M10 NEW STAIR AT STAGE. EXISTING FRAMING RECONFIGURATION / REINFORCING TBD.
- M11 EXISTING STAIR TO BE DEMOLISHED
- M12 NEW FRAMING AT EXTENDED STAGE TBD. SEE NOTE P3 ON SHEET 2.
- M13 EXISTING FRAMING AT MAIN SEATING AREA. REPAIR / REINFORCING OF EXISTING SLAB AND SUPPORTING FRAMING TBD. SEE NOTE P4 ON SHEET 2.

- M14 LEVEL EXISTING SLAB AT ENLARGED RESTROOMS. REINFORCING OF EXISTING FRAMING BELOW TBD. SEE NOTE P4 ON SHEET 2.
- M15 LEVEL / UPDATE SLOPE AT EXISTING SLAB. REINFORCING OF EXISTING FRAMING BELOW TBD. SEE NOTE P4 ON SHEET 2.
- M16 LEVEL EXISTING SLAB AT NEW PRE-FUNCTION SPACE. REINFORCING OF EXISTING FRAMING BELOW TBD. SEE NOTE P4 ON SHEET 2.
- M17 NEW LIMITED USE ELEVATOR. DEMOLITION EXTENTS OF EXISTING SLAB AND/OR REINFORCING OF EXISTING FRAMING BELOW TBD. SEE NOTE P4 ON SHEET 2.
- M18 NEW PARTITION WALLS - SEE ARCH.



# BALCONY LEVEL FLOOR PLAN



NOT TO SCALE



