



Department of Public Works  
Infrastructure Services

Ghassan Korban  
Commissioner of Public Works

Preston D. Cole  
Director of Operations

Jeffrey S. Polenske  
City Engineer

May 24, 2012

Subject: Official Notice No. 73

New Chase and High Rise Upgrades  
Police Administration Building  
749 West State Street  
Milwaukee, Wisconsin

For which bid will be received on  
Friday, June 1, 2012

Addendum No. 3

Gentlemen:

- A. In regard to our advertisement for the New Chase and High Rise Upgrades at the Police Administration Building, located at 749 W. State Street, Milwaukee, Wisconsin this attached Addendum No. 3 is issued to modify the original documents and is hereby made part of the proposal.
- B. Each bidder shall read the entire addendum. Proposals shall include all items included in this Addendum No. 3.

Very truly yours,

Paul Fredrich, Facilities Manager  
Facilities Development & Management Section

**Official Notice No. 73**

New Chase and High Rise Upgrades  
Police Administration Building  
at 749 West State Street  
Milwaukee, Wisconsin

Addendum No. 3

IMMEDIATELY UPON RECEIPT OF THE ADDENDUM, PLEASE SIGN THIS RECEIPT AND FAX BACK TO ISD – FACILITIES DEVELOPMENT AND MANAGEMENT SECTION AT (414) 286-5907.

Company Name

Name

Date

\_\_\_\_\_

**Addendum No. 3**

**May 24, 2012**

**New Chase and High Rise Upgrades  
Police Administration Building  
749 West State Street  
Milwaukee, Wisconsin**

**Specific Official Notice Addendum:**

**ON THE Specific Official Notice No. 73 (& Invitation to Bid)**

**CHANGE the Bid date:**

The Bid Opening date has been changed. The first page of the Official Notice should read as follows:  
"Seal bids will be opened on Thursday, June 7, 2012."

**Invitation to Bid Addendum:**

**Substitute Bid Form:**

Substitute and use for providing bid the attached "Bid Form" attached and including **Informational Price 3**.

**Specifications Addendum:**

**Section 100, Instruction to Bidders**

**Add Site Visit as follows:**

There will be a Contractor Walk Thru at the Police Administration Building on Thursday, May 31 10:00 am to 11:30am. Enter the building on the Municipal Courts Floor.

**Section 100, Instruction to Bidders**

**Add Informational Price as follows:**

**Informational Price 3:**

State the amount **(deducted or added)** to the Base Bid to perform all work and furnish all materials to provide a Composite wall Panel system. Components shall include:

Division 05 Section "Cold Formed Metal Framing"

Division 06 Section "Sheathing"

Division 07 Section "Fluid Applied Air Barrier"

Division 07 Section "Joint Sealants"

Division 07 Section "Composite Wall Panels" (in lieu of GFRC or Precast Concrete Wall Panels)

This Composite panel and associated wall system as shown on drawings A 200A and A 500A is to be, in lieu of "Precast Concrete Wall Panels".

**Add Specification Sections as Follows and attached:**

**Section 06 16 00 Sheathing**

The entire section is being issued for the first time

**Section 07 27 26 Fluid Applied Membrane Air Barrier**

The entire section is being issued for the first time

**Section 07 42 43 Composite Wall Panels**

The entire section is being issued for the first time

**Construction Drawings Addenda:**

**Revision**

The following revisions are to be incorporated into the Architectural Drawings:

- **MODIFY** keyed note 02-14, on sheets A102, A103, A104, A105, A107, to read as follows:  
*EXISTING CEILING TO BE REMOVED BY OTHERS*
- **MODIFY** keyed note 02-14A on sheet A105 to read as follows:  
*EXISTING STEEL CEILING TO BE REMOVED BY OTHERS AND SALVAGED FOR REINSTALLATION*
- **REPLACE** keyed note 02-14 on sheets A101 and A106 with keyed note 02-14B to read as follows:  
*REMOVE EXISTING CEILING*
- **REPLACE** keyed note 07-06 with keyed note 07-32 on sheet A106

**Add**

The following Drawing Sheets are being issued for the first time:

**A 200A** Informational Price 3, Composite Wall Panel System Elevations & Sections  
**A 500A** Informational Price 3, Composite Wall Panel System Details

**Add Original Building Drawings**

The following drawings of the original building construction set dated January 4, 1969 are being provided for informational purposes (these drawings are not to scale):

**S-1** Foundation Plan  
**S-2** Sub Basement Plan  
**S-3** Basement and Mezzanine Plans  
**S-4** Mall Level Plan  
**S-14** 7<sup>th</sup> Floor Framing Plan  
**S-16** Roof Framing Plan  
**A-8** 4<sup>th</sup> Floor Plan  
**A-15** East & West Elevation  
**A-22** Wall Sections  
**A-23** Wall Sections  
**A-24** Wall Sections  
**A-29** East & West Precast Elevations  
**A-31** Precast Panel Details  
**A-33** Precast Panel Details  
**A-34** Precast Panel Details  
**A-38a** Precast Panel & Related Details

**ADDENDA #3**  
**USE IN LIEU OF ORIGINAL BID FORM (included in "Invitation to Bid")**

**Official Notice No. 73**

**Police Administration Building  
New Chase and High Rise Upgrades  
749 West State Street  
Milwaukee WI**

**BASE BID:**

(Bid in Figures) \_\_\_\_\_ lump sum

(Bid in Words) \_\_\_\_\_ lump sum

**ALTERNATE BID:**

Each bidder shall examine the plans and project manual thoroughly to determine what extent the Alternate will affect the bid.

**Alternate Deduct No. 1:**

State the amount to be **deducted from** the Base Bid to perform all work and furnish all materials for new fire pump, jockey pump and controllers located in dedicated room to replace existing fire pump as shown on drawings and indicated in Project Manual.

(Bid in Figures) \_\_\_\_\_ lump sum

(Bid in Words) \_\_\_\_\_ lump sum

**Alternate Deduct No. 2:**

State the amount to be **deducted from** the Base Bid to perform all work and furnish all materials for new pressurization fans and controls for stair towers and elevator hoist ways as shown on drawings and indicated in Project Manual.

(Bid in Figures) \_\_\_\_\_ lump sum

(Bid in Words) \_\_\_\_\_ lump sum

The Commissioner of Public Works will award the on the basis of the Base Bid only or the Base Bid and the Deduct Alternate as funds permit.

**INFORMATIONAL PRICE:**

The requested prices are for informational purposes to be considered after contract award and would be used at the City's discretion to adjust work as a change to the contract. Price is to include all coordination, modification or adjustment to adjacent work, miscellaneous devices and accessory objects as required to completely integrate the work of this change into Project. These prices will not be used in the awarding of the bid.

Informational Price 1:

State the adjustment amount (**deducted or added**) to the Base Bid to perform all work and furnish all materials to provide Glass Fiber Reinforced Concrete "GFRC" Wall Panels in accordance with the requirements of section 3 "GFRC" in lieu of "Precast Concrete Wall Panels".

(Bid in Figures)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

(Bid in Words)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

Informational Price 2:

State the amount (**deducted or added**) to the Base Bid to construct the east and west Mechanical Shafts in sequence and not concurrently as included in base bid. This Informational Price is to include (but not limited to) all costs impacts to associated staging, demolition, temporary enclosure and new construction costs, in lieu of constructing the shafts in concurrently .

(Bid in Figures)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

(Bid in Words)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

Informational Price 3:

State the amount (**deducted or added**) to the Base Bid to perform all work and furnish all materials to provide a Composite wall Panel system. Components shall include:

Division 05 Section "Cold Formed Metal Framing"

Division 06 Section "Sheathing"

Division 07 Section "Fluid Applied Air Barrier"

Division 07 Section "Joint Sealants"

Division 07 Section "Composite Wall Panels" (in lieu of GFRC or Precast Concrete Wall Panels)

This Composite panel and associated wall system as shown on drawings A 200A and A 500A is to be, in lieu of "Precast Concrete Wall Panels".

(Bid in Figures)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

(Bid in Words)  
**(State Deduct or Add)** \_\_\_\_\_ lump sum

## SECTION 061600 - SHEATHING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Wall sheathing.
- B. Related Sections include the following:
  - 1. Division 05 Section "Cold Formed Metal Framing".

#### 1.3 SUBMITTALS

- A. Product Data: For each factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
- B. Research/Evaluation Reports: show compliance with building code in effect for Project:

#### 1.4 DELIVERY, STORAGE, AND HANDLING

- A. Stack plywood and other panels flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

### PART 2 - PRODUCTS

#### 2.1 WALL SHEATHING

- A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.
  - 1. Product: Subject to compliance with requirements, provide "Dens-Glass Gold" by G-P Gypsum Corporation.
  - 2. Type and Thickness: Type X, 5/8 inch (15.9 mm) thick.
  - 3. Size: 48 by 96 inches (1219 by 2438 mm)

## 2.2 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
- B. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing board to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
  - 1. For steel framing less than 0.0329 inch (0.835 mm) thick, attach sheathing to comply with ASTM C 1002.
  - 2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, attach sheathing to comply with ASTM C 954.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction, unless otherwise indicated.
- C. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- D. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

### 3.2 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions.
  - 1. Fasten gypsum sheathing to cold-formed metal framing with screws.
  - 2. Install boards with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
  - 3. Install boards with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
- B. Apply fasteners so heads bear tightly against face of sheathing boards but do not cut into facing.
  - 1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.

END OF SECTION 061600

## SECTION 072726 FLUID-APPLIED MEMBRANE AIR BARRIERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Fluid-applied membrane air barrier, vapor retarding indicated on drawings as “Seamless Air Infiltration and Vapor Barrier”.
- B. Related Sections include the following
  - 1. Division 6 Section “Sheathing”
  - 2. Division 7 Section “ Composite Wall Panels”

#### 1.3 DEFINITIONS

- A. ABAA: Air Barrier Association of America.
- B. Air Barrier Assembly: The collection of air barrier materials and auxiliary materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. General: Air barrier shall be capable of performing as a continuous vapor-retarding air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.

#### 1.5 SUBMITTALS

- A. Product Data: Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of air barrier.
- B. Shop Drawings: Show locations and extent of air barrier. Include details for substrate joints and cracks, counterflashing strip, penetrations, inside and outside corners, terminations, and ties with adjoining construction.

1. Include details of interfaces with other materials that form part of air barrier.
- C. Product Certificates: For air barriers, certifying compatibility of air barrier and accessory materials with Project materials that connect to or that come in contact with the barrier; signed by product manufacturer.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for air barriers.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store liquid materials in their original undamaged packages in a clean, dry, protected location and within temperature range required by air barrier manufacturer.
- B. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- C. Store rolls according to manufacturer's written instructions.
- D. Protect stored materials from direct sunlight.

#### 1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended by air barrier manufacturer. Protect substrates from environmental conditions that affect performance of air barrier. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

### **PART 2 - PRODUCTS**

#### 2.1 FLUID-APPLIED MEMBRANE AIR BARRIER

- A. Fluid-Applied, Vapor-Retarding Membrane Air Barrier: Elastomeric membrane.
  1. Products: Subject to compliance with requirements, provide one of the following:
    - a. Elastomeric Modified Bituminous Membrane:
      - 1) Carlisle Coatings & Waterproofing; Barriseal.
      - 2) Tremco Incorporated; ExoAir.
    - b. Synthetic Polymer Membrane:
      - 1) Grace, W. R. & Co.; Perm-A-Barrier Liquid.
  2. Physical and Performance Properties:
    - a. Membrane Air Permeance: Not to exceed 0.004 cfm x sq. ft. of surface area at 1.57-lbf/sq. ft. pressure difference; ASTM E 2178.
    - b. Membrane Vapor Permeance: Not to exceed 0.1 perm ASTM E 96.

## 2.2 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by air barrier manufacturer for intended use and compatible with air barrier membrane. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
- B. Primer: Liquid primer recommended for substrate by manufacturer of air barrier material.
- C. Counterflashing Strip: Modified bituminous, 40-mil- thick, self-adhering sheet consisting of 36 mils of rubberized asphalt laminated to an 4-mil thick, crosslaminated high density polyethylene film with release liner backing.
- D. Butyl Strip: Vapor-retarding, 30- to 40-mil- thick, self-adhering; polyethylene-film-reinforced top surface laminated to layer of butyl adhesive with release liner backing.
- E. Joint Reinforcing Strip: Air barrier manufacturer's glass-fiber-mesh tape.
- F. Substrate Patching Membrane: Manufacturer's standard trowel-grade substrate filler.
- G. Adhesive and Tape: Air barrier manufacturer's standard adhesive and pressure-sensitive adhesive tape.
- H. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, 0.0250 inch thick, and Series 300 stainless-steel fasteners.
- I. Sprayed Polyurethane Foam Sealant: 1- or 2-component, foamed-in-place, polyurethane foam sealant, 1.5 to 2.0 lb/cu. ft density; flame spread index of 25 or less according to ASTM E 162; with primer and noncorrosive substrate cleaner recommended by foam sealant manufacturer.
- J. Modified Bituminous Transition Strip: Vapor-retarding, 40-mil- (1.0-mm-) thick, smooth-surfaced, self-adhering; consisting of 36 mils (0.9 mm) of rubberized asphalt laminated to a 4-mil- (0.1-mm-) thick polyethylene film with release liner backing.
- K. Preformed Silicone-Sealant Extrusion: Manufacturer's standard system consisting of cured low-modulus silicone extrusion, sized to fit opening widths, with a single-component, neutral-curing, Class 100/50 (low-modulus) silicone sealant for bonding extrusions to substrates.
- L. Joint Sealant: ASTM C 920, single-component, neutral-curing silicone; Class 100/50 (low-modulus), Grade NS, Use NT related to exposure, and, as applicable to joint substrates indicated.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance.
  - 1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.

2. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 SURFACE PREPARATION

- A. Clean, prepare, treat, and seal substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for air barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate patching membrane.
- E. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
- F. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet mechanically fastened to structural framing to provide continuous support for air barrier.

### 3.3 JOINT TREATMENT

- A. Gypsum Sheathing: Fill joints greater than 1/4 inch with sealant according to ASTM C 1193 and with air barrier manufacturer's written instructions. Apply first layer of fluid air barrier membrane at joints. Tape joints with joint reinforcing strip after first layer is dry. Apply a second layer of fluid air barrier membrane over joint reinforcing strip.

### 3.4 TRANSITION STRIP INSTALLATION

- A. Install strips, transition strips, and auxiliary materials according to air barrier manufacturer's written instructions to form a seal with adjacent construction and maintain a continuous air barrier.
  1. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
  2. Install butyl strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over both substrates.
- B. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.
  1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- C. At end of each working day, seal top edge of strips and transition strips to substrate with termination mastic.

- D. Apply joint sealants forming part of air barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- E. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counterflashings or ending in reglets with termination mastic.
- F. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending 6 inches (150 mm) beyond repaired areas in strip direction.
- G. Install Stainless steel flashing and fasteners where indicated on drawings and bituminous counter-flashing strips over metal flashings as indicated

### 3.5 AIR BARRIER MEMBRANE INSTALLATION

- A. Apply air barrier membrane to form a seal with strips and transition strips and to achieve a continuous air barrier according to air barrier manufacturer's written instructions.
- B. Apply air barrier membrane within manufacturer's recommended application temperature ranges.
- C. Apply primer to substrates at required rate and allow to dry. Limit priming to areas that will be covered by air barrier sheet in same day. Reprime areas exposed for more than 24 hours.
  - 1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.
- D. Apply a continuous unbroken air barrier to substrates according to the following minimum thickness. Apply membrane in full contact around protrusions such as masonry ties.
  - 1. Vapor-Retarding Membrane Air Barrier: 40-mil dry film thickness over substrates. At substrate joint locations apply to 80 mil dry film thickness.
- E. Apply strip and transition strip according to air barrier manufacturer's written instructions.
- F. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air barrier components.

### 3.6 FIELD QUALITY CONTROL

- A. Inspections: Air barrier materials and installation are subject to inspection for compliance with requirements. Inspections may include the following:
  - 1. Continuity of air barrier system has been achieved throughout the building envelope with no gaps or holes.
  - 2. Site conditions for application temperature and dryness of substrates have been maintained.
  - 3. Maximum exposure time of materials to UV deterioration has not been exceeded.
  - 4. Surfaces have been primed, if applicable.

5. Laps in strips and transition strips have complied with minimum requirements and have been shingled in the correct direction (or mastic has been applied on exposed edges), with no fishmouths.
6. Termination mastic has been applied on cut edges.
7. Strips and transition strips have been firmly adhered to substrate.
8. Compatible materials have been used.
9. Transitions at changes in direction and structural support at gaps have been provided.
10. Connections between assemblies (membrane and sealants) have complied with requirements for cleanliness, preparation and priming of surfaces, structural support, integrity, and continuity of seal.
11. All penetrations have been sealed.

### 3.7 CLEANING AND PROTECTION

- A. Protect air barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.
  1. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer. Remove and replace air barrier exposed for more than 30 days.
  2. Protect air barrier from contact with creosote, uncured coal-tar products, TPO, EPDM, flexible PVC membranes, and sealants not approved by air barrier manufacturer.
- B. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
- C. Remove masking materials after installation.

END OF SECTION 072726

## SECTION 074243 COMPOSITE WALL PANELS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

#### 1.2 SUMMARY

- A. Composite metal wall panel system consisting of aluminum-faced composite panels in a rain-screen application as part of the assembly described below.
  - 1. Metal Wall Panels over Outside-Insulated Framed Wall System: Aluminum-faced composite panels applied as exterior rainscreen cladding over wall framing specified in Division 05 Section "Cold-Formed Metal Framing" with exterior sheathing specified in Division 07 Section "Sheathing", an applied membrane that provides air, moisture, and water vapor control specified in Division 07 Section "Fluid Applied Membrane Air Barriers", and thermal insulation specified in this Section.
  - 2. Metal wall panel installation specified in this Section includes secondary metal subgirt framing and mounting clips for panel attachment and rigid insulation.

#### 1.3 RELATED SECTIONS

- A. Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal copings, flashings, reglets and roof drainage items.
- B. Division 07 Section "Joint Sealants" for field-applied joint sealants.

#### 1.4 SYSTEM DESCRIPTION

- A. Composite Metal Wall Panel System: Drained and back-ventilated rainscreen design consisting of dry seal joinery designed to minimize water penetration and induce air circulation in the space behind the panel system. Moisture weeping trim at panel base details allows water to drain out of the system.

#### 1.5 REFERENCE STANDARDS

- A. American Architectural Manufacturer's Association (AAMA):
  - 1. AAMA 509 - Voluntary Test and Classification Method for Drained and Back Ventilated Rain Screen Wall Cladding Systems.
  - 2. AAMA 620 - Voluntary Specification High Performance Organic Coatings on Coil Coated Architectural Aluminum.
  - 3. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. American Society of Civil Engineers (ASCE):

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International (ASTM):

1. ASTM A 653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM B 209 - Specification for Aluminum and Aluminum Alloy Sheet and Plate.
3. ASTM C 645 - Specification for Nonstructural Steel Framing Members.
4. ASTM D 3359 - Standard Test Methods for Measuring Adhesion by Tape Tests.
5. ASTM E 84 - Test Methods for Surface Burning Characteristics of Building Materials.
6. ASTM E 329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing.

D. National Fire Protection Association (NFPA):

1. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.

## 1.6 PERFORMANCE REQUIREMENTS

- A. General: Provide composite wall panel system meeting performance requirements as determined by application of specified tests by a qualified testing agency on manufacturer's standard assemblies.

- B. Structural Performance: Design composite wall panel system fabricated to withstand effects of indicated loads and stresses within limits and under conditions indicated below.

1. Wind Loads: Loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on Sheet S100 "Design Data Table".
2. Limits of Deflection: Composite wall panel system shall withstand scheduled wind pressure with the following allowable deflection:
  - a. Maximum allowable deflection limited to  $L/175$  deflection of panel head and sill normal to plane of wall.
  - b. Maximum allowable deflection of panel stiffeners and aluminum panel material combined limited to  $L/60$ .

- C. Drained and Back Ventilated Rain Screen Performance: Per AAMA 509-09:

1. Water penetration through panel system: W1 classification.
2. Ventilation: V4 classification.
3. Air/Moisture Barrier: Refer to Division 07 Fluid Applied Membrane Air Barrier section.

- D. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction.

## 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum 10 years experience in manufacture of similar products in successful use in similar applications.

- B. Wall Systems Installer Qualifications: Experienced Installer with minimum of 5 years experience with successfully completed projects of a similar nature and scope.
- C. Fire Performance Characteristics: Provide metal composite wall systems with the following fire-test characteristics determined by indicated test standard as applied by UL or other testing and inspection agency acceptable to authorities having jurisdiction.
  - 1. Surface-Burning Characteristics: Provide metal composite wall system panels with the following characteristics when tested per ASTM E 84.
    - a. Flame spread index: 25 or less.
    - b. Smoke developed index: 450 or less.
  - 2. Intermediate Scale Multistory Fire Test: Representative mock up tested per NFPA 285

## 1.8 SUBMITTALS

- A. Product Data: Manufacturers data sheets for specified products.
- B. Shop Drawings: Provide shop drawings prepared by manufacturer or manufacturer's authorized dealer. Include full elevations showing openings and penetrations. Include details of each condition of installation and attachment. Provide details at a minimum scale 1-1/2-inch per foot of all required trim and extrusions needed for a complete installation
  - 1. Include data indicating compliance with performance requirements.
  - 2. Indicate points of supporting structure that must coordinate with composite wall panel system installation.
- C. Samples for Initial Selection: For each product specified including sealants and gaskets. Provide representative color charts of manufacturer's full range of colors.
- D. Samples for Verification: Provide 24-inch (600 mm) section of wall panel showing finishes, horizontal joinery, vertical joint return, injected core material, panel stiffener and anchoring details. Provide 12-inch (300 mm) long pieces of each extruded aluminum trim and gaskets.
- E. Product Test Reports: Indicating compliance of products with requirements, from a qualified independent testing agency.
- F. Manufacturer's warranty: Submit sample warranty.
- G. Comprehensive engineering analysis and calculations for the Composite Wall Panel System signed and sealed by the qualified professional engineer, licensed in the State of Wisconsin, responsible for its preparation.

## 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protect products of composite wall panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
  - 1. Deliver, unload, store, and erect composite wall panel system and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

## 1.10 WARRANTY

- A. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace metal wall panel assemblies that fail in materials and workmanship within two years from date of Substantial Completion.
- B. Special Panel Finish Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace wall panels that evidence deterioration of finish within 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis of Design: CENTRIA, FormaBond II Composite Wall Panel System, in compliance with the requirements of this section or comparable product by one of the following:
  - 1. Miller Clapperton Inc System 500
  - 2. Sobotec LTD

### 2.2 MATERIALS

- A. Aluminum Sheet: Smooth surface coil-coated sheet, ASTM B209.
- B. Aluminum Extrusions: ASTM B 221, 6063 T5 Aluminum.

### 2.3 COMPOSITE METAL PANELS

- A. Composite Metal Panels: Factory-formed, aluminum-faced composite panels fabricated from two sheets of 0.020 inch (0.51 mm) thick aluminum facing sheets with metal facings bonded to thermoplastic core, and rout and return joinery.
  - 1. Thickness: 4 mm nominal.
  - 2. Panel Flatness: Maximum allowable distortion: 1/32 inch in 24 inches (0.794 mm in 600 mm) in any direction.
  - 3. Panel Core: Thermo-set polymeric, fire retardent.
  - 4. Stiffeners: Manufacturer's standard stiffener as required to meet performance requirements.
- B. Face Sheet Surface: Smooth.
- C. Face Sheet Coil-Coated Finish:
  - 1. Fluoropolymer Two-Coat System: 0.2 mil primer with 0.8-mil 70 percent PVDF fluoropolymer color coat, AAMA 620.
  - 2. Custom Color: Match Architects Sample.
- D. Unexposed Finish: Manufacturer's standard primer.
- E. Exposed Trim and Fastener Finish: Match panel finish.

## 2.4 SECONDARY METAL FRAMING

- A. Miscellaneous Framing Components, General: Cold-formed metallic-coated steel sheet, ASTM C 645, Grade 50, with ASTM A 653/A 653M, G90 (Z180) hot-dip galvanized zinc coating.
  - 1. Z- Furring Channels: 0.053 inch/16 ga. (1.34 mm) minimum.
  - 2. Sill Channels: 0.053 inch/16 ga. (1.34 mm) minimum.

## 2.5 FOAM-PLASTIC BOARD INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C 578, of type and minimum compressive strength indicated below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84, and an R-Value of 5 per inch of thickness.
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. DiversiFoam Products.
    - b. Dow Chemical Company (The).
    - c. Owens Corning.
    - d. Pactiv Building Products.
  - 2. Type IV, 25 psi
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type I, Class 1,, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84 and an R-Value of 6 per inch of thickness.
  - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    - a. Atlas Roofing Corporation.
    - b. Dow Chemical Company (The).
    - c. Rmax, Inc.
- C. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates without damaging insulation and substrates.

## 2.6 ACCESSORIES

- A. Provide manufacturer's factory-formed clips, shims, flashings, sealants, tapes and stainless steel fasteners for a complete installation.
- B. Extruded Trim: Aluminum, minimum thickness 0.060 inch (1.59 mm) for trim and 0.90 inch (2.38 mm) for structural units. Include manufacturer-provided extruded trim for the following locations and as indicated on Drawings:
  - 1. Base trim.
  - 2. Coping.
  - 3. Panel installation perimeter.
  - 4. Opening perimeters.
- C. Splines: Match panel material and finish.

- D. Gaskets: Panel manufacturer's EPDM or neoprene, fire-retardant-treated.
- E. Sealants: Type recommended by composite wall panel system manufacturer for application, meeting requirements of Division 07 Section "Joint Sealants."
- F. Flashing Tape: 4 inch (102 mm) wide self-adhering butyl flashing tape.

## 2.7 FABRICATION

- A. General: Fabricate composite wall panels and accessories at factory identical to tested units using manufacturer's standard procedures and processes necessary to meet performance requirements.
  - 1. Provide components of composite wall panel system that are products of one manufacturer, including composite panels, gaskets, head and sill trim, bottom weep, base extrusion, and metal copings.
- B. Composite Panels: Fabricate composite wall panels with extruded aluminum stiffeners requiring no further fabrication or modification in field.
  - 1. Horizontal Joints: Dry seal, drained and back ventilated.
  - 2. Vertical Joints: Pre-formed returns with metal spline and aluminum extrusion receptors and extruded drain channels.
  - 3. Reveals: 0.50 inch (12 mm).
  - 4. Formed Panel Thickness: 2.50 inch (63.5 mm).

## PART 3 - EXECUTION

### 3.1 INSPECTION

- A. Examine composite wall panel system substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of composite wall panel system.
  - 1. Inspect framing that will support composite wall panel system to determine if support components are installed as indicated on approved shop drawings and are within tolerances acceptable to composite wall panel system manufacturer.
    - a. Maximum deviations acceptable to composite wall panel system manufacturer:
      - 1) 1/4-inch in 20 feet (6.4 mm in 6 m) vertically or horizontally from face plane of framing.
      - 2) 1/2-inch (12.7 mm) maximum deviation from flat substrate on any building elevation.
      - 3) 1/8-inch in 5 feet (3.2 mm in 1.5 m).
  - 2. Confirm presence of acceptable framing members to match installation requirements of composite wall panel system.
    - a. Confirm framing minimum .053 inch/16 ga (1.34 mm) at maximum 24 inch (610 mm) spacing.

3. Verify that window, door, louver and other penetrations match layout on shop drawings.
- B. Correct out-of-tolerance work and other deficient conditions prior to proceeding with composite wall panel system installation.

### 3.2 INSTALLATION OF INSULATION

- A. Foam-Plastic Board Insulation: Fit courses of insulation between z furring, with edges butted tightly in both directions. Press units firmly against inside substrates.
- B. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive to provide permanent placement and support of units.
- C. Seal joints between units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

### 3.3 COMPOSITE WALL PANEL SYSTEM INSTALLATION

- A. General: Install composite wall panel system in accordance with approved shop drawings and manufacturer's recommendations.
- B. Install Z Furring to Cold Formed Metal Framing Substrate using manufacturer's standard stainless steel fasteners
- C. Installation: Attach panels to metal framing using recommended clips, screws, fasteners, sealants, and adhesives indicated on approved shop drawings.
  1. Horizontal Joinery: Working from base of installation to top, connect upper panel to lower panel at dry seal joinery utilizing field-applied attachment clip.
  2. Vertical Joinery: Provide reveal between vertical ends of panels as shown on shop drawings using hardware furnished by manufacturer.
    - a. Install splines where indicated.
  3. Galvanic Action: Where elements of metal composite wall system will come into contact with dissimilar materials, treat faces and edges in contact with dissimilar materials as recommended by manufacturer.
- D. Rainscreen Installation: Proceed with installation of manufacturer's dry seal horizontal joinery. Keep open spaces in horizontal joinery intended to ventilate cavity behind system.

### 3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a service representative authorized by metal wall panel manufacturer to inspect completed installation. Submit written report. Correct deficiencies noted in report.

### 3.5 CLEANING AND PROTECTION

- A. Remove temporary protective films within 2 weeks of erection. Clean finished surfaces as recommended by metal wall panel manufacturer. Clear weep holes and drainage channels of obstructions, dirt, and sealant. Maintain in a clean condition during construction.
- B. Replace damaged panels and accessories that cannot be repaired by field repair.

END OF SECTION

**PROJECT INFORMATION**  
**PAB - NEW CHASE AND HIGH-RISE UPGRADES**  
 749 West State Street  
 Milwaukee, WI

**ISSUANCE AND REVISIONS**  
**CONSTRUCTION DOCUMENTS**

**REVISIONS**

#	DATE	DESCRIPTION

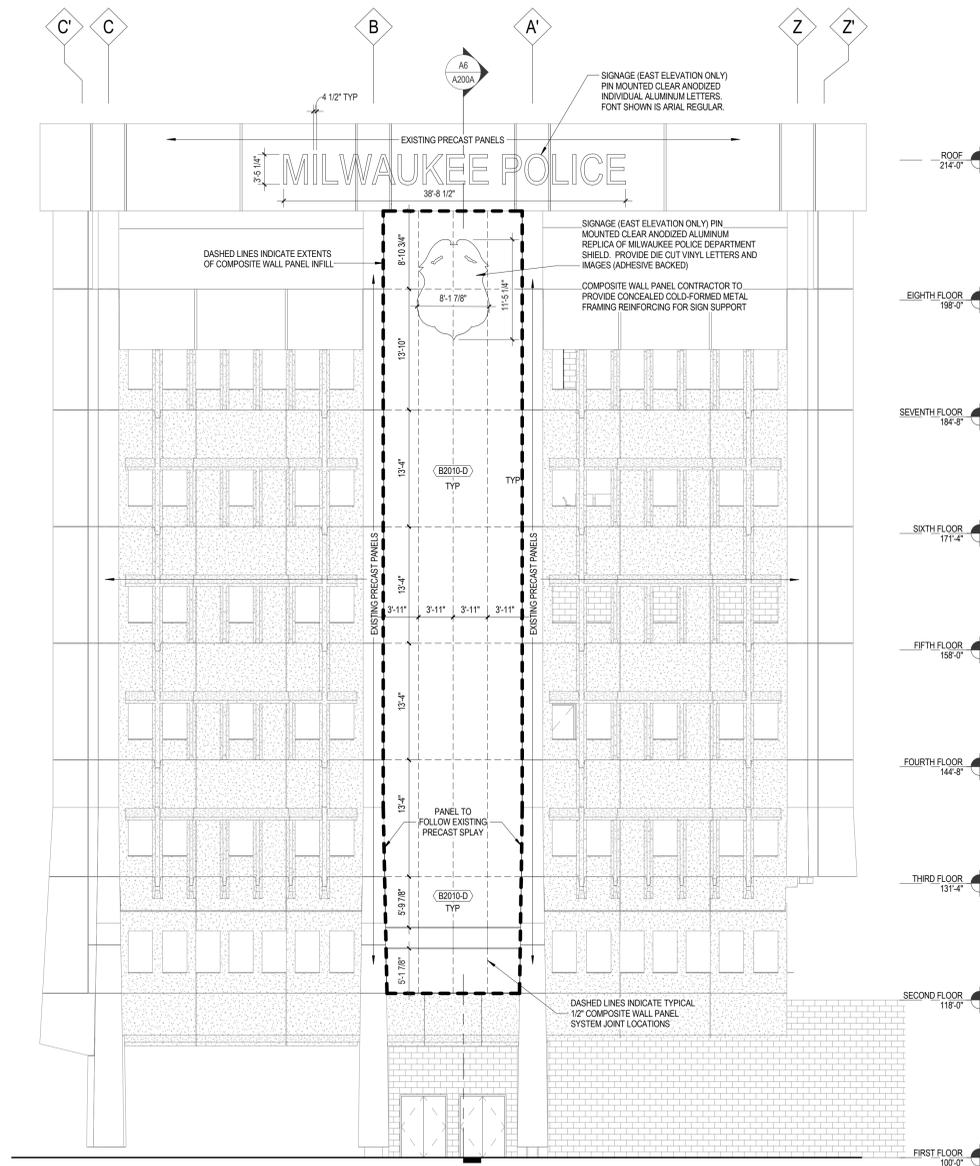
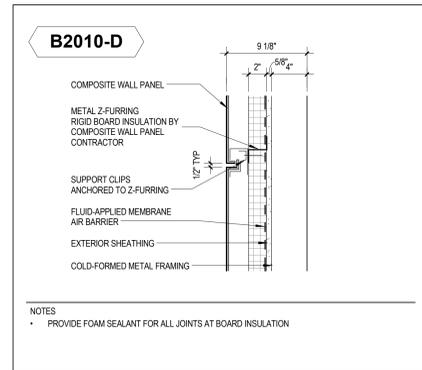
**KEY PLAN**

**SHEET INFORMATION**

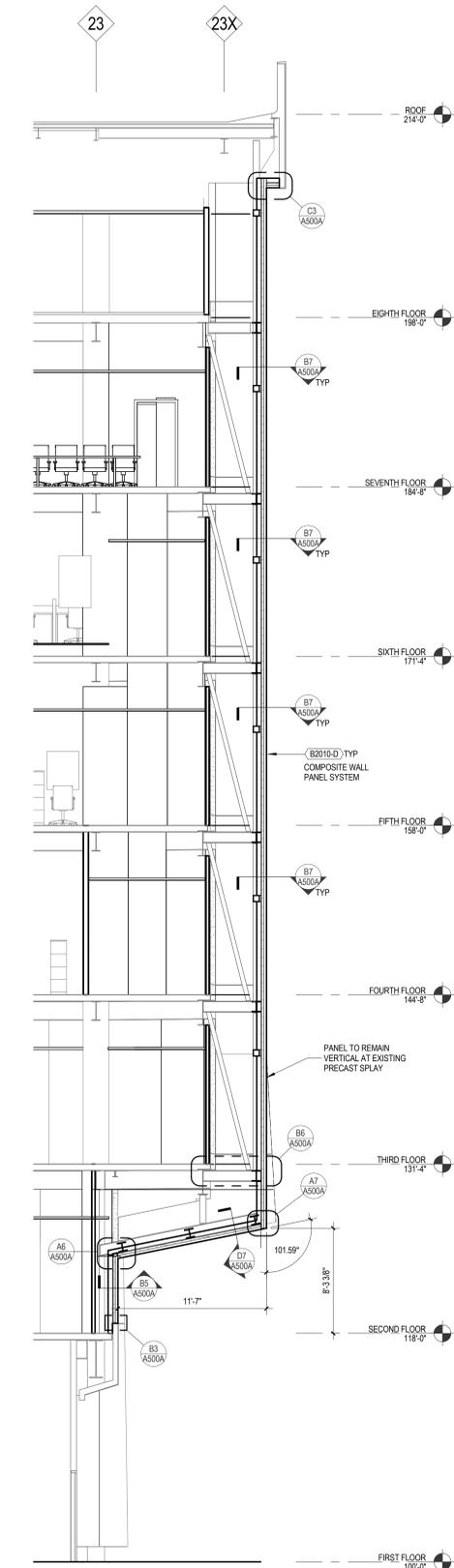
PROJECT MANAGER PK  
 PROJECT NUMBER 310077-09  
 DATE 04/02/2012

INFORMATIONAL PRICE 3 - COMPOSITE WALL PANEL SYSTEM  
**ELEVATIONS & SECTION**

**A200A**



**A4** EAST ELEVATION (WEST ELEVATION SIM.)  
 1/8" = 1'-0"



**A6** WALL SECTION LOOKING NORTH  
 3/16" = 1'-0"

PROJECT INFORMATION

**PAB - NEW CHASE  
 AND HIGH-RISE  
 UPGRADES**

749 West State Street  
 Milwaukee, WI

ISSUANCE AND REVISIONS

**CONSTRUCTION  
 DOCUMENTS**

REVISIONS

#	DATE	DESCRIPTION

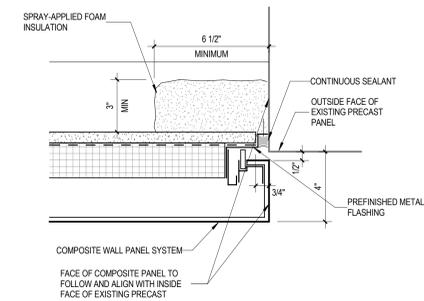
KEY PLAN

SHEET INFORMATION

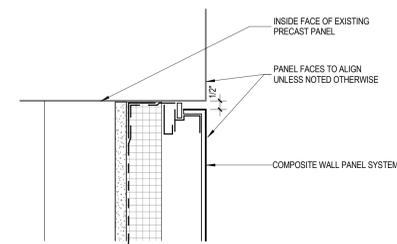
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PROJECT NUMBER	310077-09
DATE	04/02/2012
INFORMATIONAL PRICE 3 - COMPOSITE WALL PANEL SYSTEM	

DETAILS

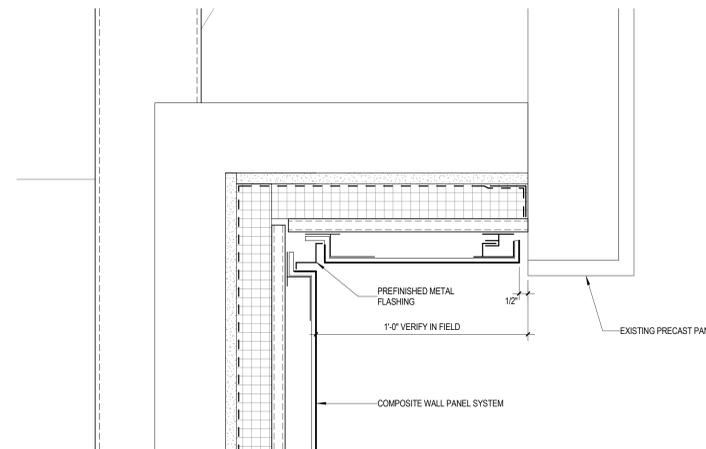
**A500A**



**D7** PANEL END DETAIL AT HORIZONTAL  
 3/8" = 1'-0"

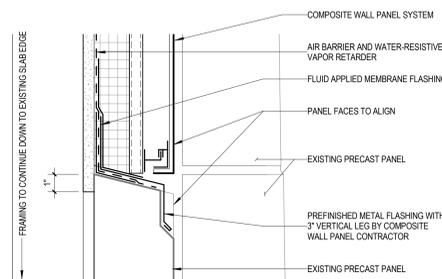


**B7** PANEL END DETAIL  
 3/8" = 1'-0"

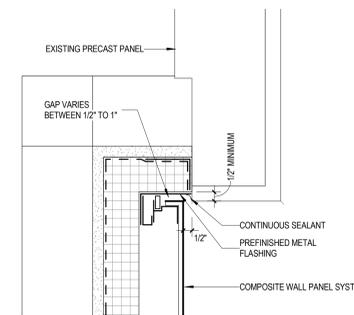


REFER TO SHEET A200A FOR DETAILED INFORMATION ON COMPOSITE WALL PANEL ASSEMBLY

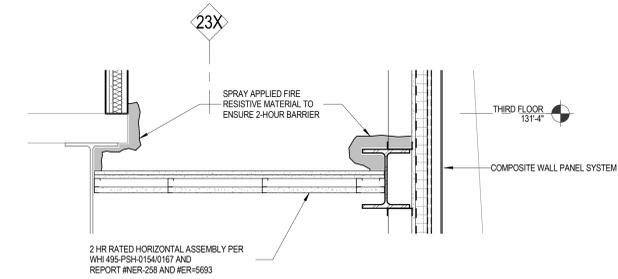
**C3** PANEL AT EXISTING PRECAST FASCIA  
 3/8" = 1'-0"



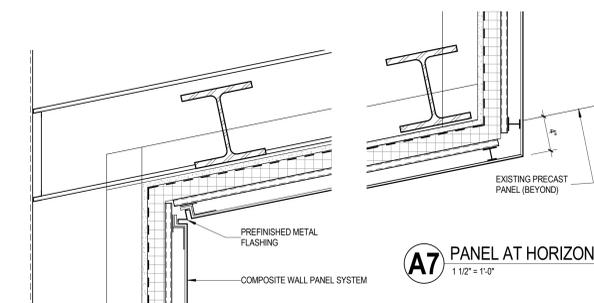
**B3** PANEL TRANSITION DETAIL  
 3/8" = 1'-0"



**B5** METAL PANEL JAMB DETAIL  
 3/8" = 1'-0"

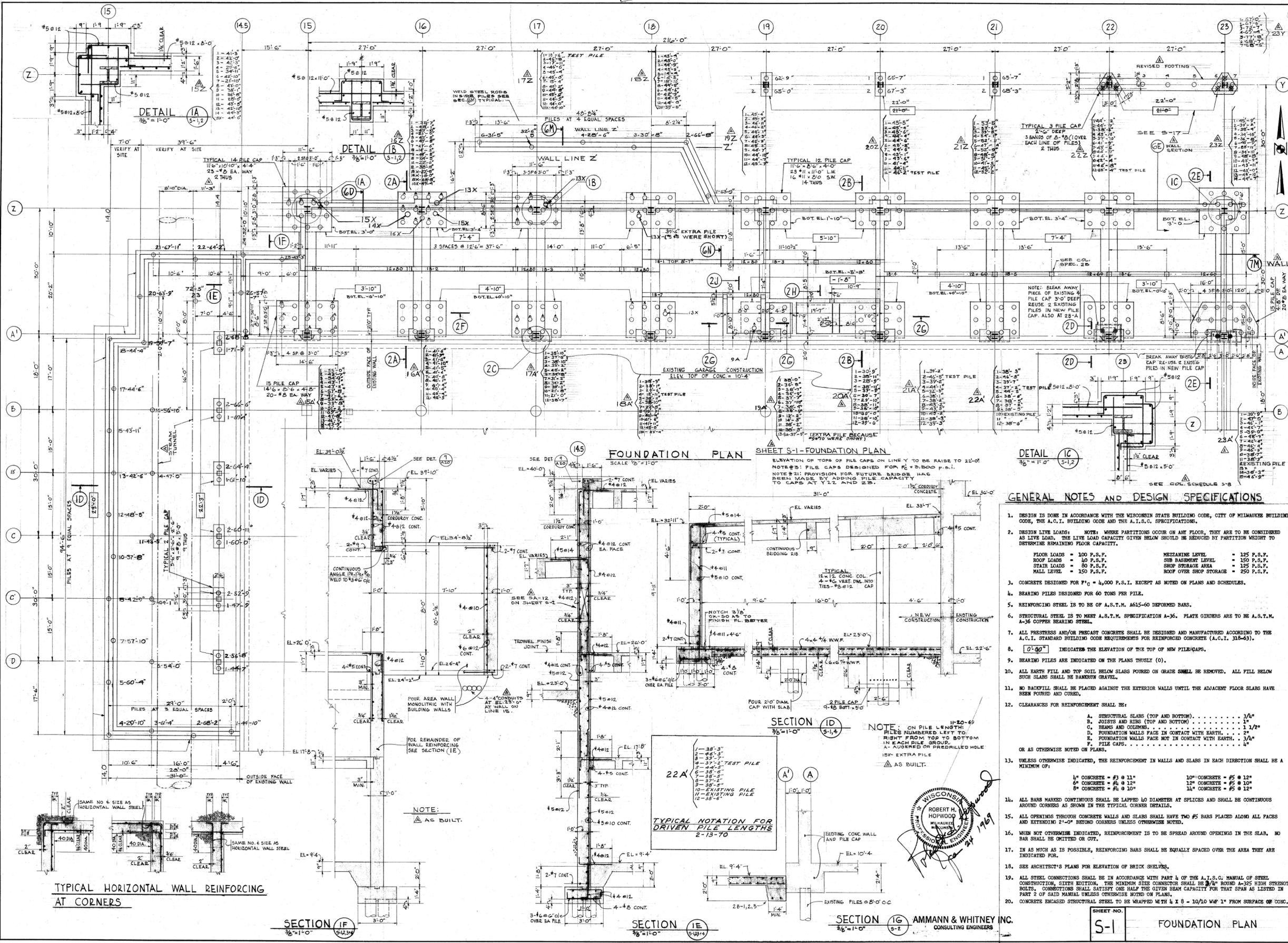


**B6** HORIZONTAL SHAFT WALL DETAIL  
 1" = 1'-0"



**A7** PANEL AT HORIZONTAL RETURN  
 1 1/2" = 1'-0"

**A6** PANEL CONVERSION DETAIL  
 1 1/2" = 1'-0"



**FOUNDATION PLAN**

SCALE 1/8" = 1'-0"  
 ELEVATION OF TOPS OF PILE CAPS ON LINE Y TO BE RAISE TO 22'-0"  
 NOTE: PILE CAPS DESIGNED FOR F<sub>2</sub> = 2,000 P.S.I.  
 NOTE: PROVISION FOR FUTURE BRIDGE HAS BEEN MADE BY ADDING PILE CAPACITY TO CAPS AT Y 22 AND 23.

**GENERAL NOTES AND DESIGN SPECIFICATIONS**

- DESIGN IS DONE IN ACCORDANCE WITH THE WISCONSIN STATE BUILDING CODE, CITY OF MILWAUKEE BUILDING CODE, THE A.C.I. BUILDING CODE AND THE A.I.S.C. SPECIFICATIONS.
- DESIGN LIVE LOADS: NOTE: WHERE PARTITIONS OCCUR ON ANY FLOOR, THEY ARE TO BE CONSIDERED AS LIVE LOAD. THE LIVE LOAD CAPACITY GIVEN BELOW SHOULD BE REDUCED BY PARTITION WEIGHT TO DETERMINE REMAINING FLOOR CAPACITY.
 

FLOOR LOADS = 100 P.S.F.	MERCHANDISE LEVEL = 125 P.S.F.
ROOF LOADS = 40 P.S.F.	SUB BASEMENT LEVEL = 150 P.S.F.
STAIR LOADS = 80 P.S.F.	SHOP STORAGE AREA = 125 P.S.F.
MALL LEVEL = 150 P.S.F.	ROOF OVER SHOP STORAGE = 250 P.S.F.
- CONCRETE DESIGNED FOR F<sub>2</sub> = 4,000 P.S.I. EXCEPT AS NOTED ON PLANS AND SCHEDULES.
- BEARING PILES DESIGNED FOR 60 TONS PER PILE.
- REINFORCING STEEL IS TO BE OF A.S.T.M. A615-60 DEFORMED BARS.
- STRUCTURAL STEEL IS TO MEET A.S.T.M. SPECIFICATION A-36. PLATE GIRDERS ARE TO BE A.S.T.M. A-36 COPPER BEARING STEEL.
- ALL PRESTRESS AND/OR PRECAST CONCRETE SHALL BE DESIGNED AND MANUFACTURED ACCORDING TO THE A.C.I. STANDARD BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (A.C.I. 318-63).
- 0.00' INDICATES THE ELEVATION OF THE TOP OF NEW PILE CAPS.
- BEARING PILES ARE INDICATED ON THE PLANS THUSLY (O).
- ALL BARTH FILL AND TOP SOIL BELOW SLABS POURED ON GRADE SHALL BE REMOVED. ALL FILL BELOW SUCH SLABS SHALL BE BANKRUN GRAVEL.
- NO BACKFILL SHALL BE PLACED AGAINST THE EXTERIOR WALLS UNTIL THE ADJACENT FLOOR SLABS HAVE BEEN POURED AND CURED.
- CLEARANCES FOR REINFORCEMENT SHALL BE:
 

A. STRUCTURAL SLABS (TOP AND BOTTOM) . . . . .	3/4"
B. JOISTS AND RIBS (TOP AND BOTTOM) . . . . .	1"
C. BEAMS AND COLUMNS . . . . .	1 1/2"
D. FOUNDATION WALLS FACE IN CONTACT WITH EARTH. . . . .	2"
E. FOUNDATION WALLS FACE NOT IN CONTACT WITH EARTH. . . . .	3/4"
F. PILE CAPS . . . . .	1"

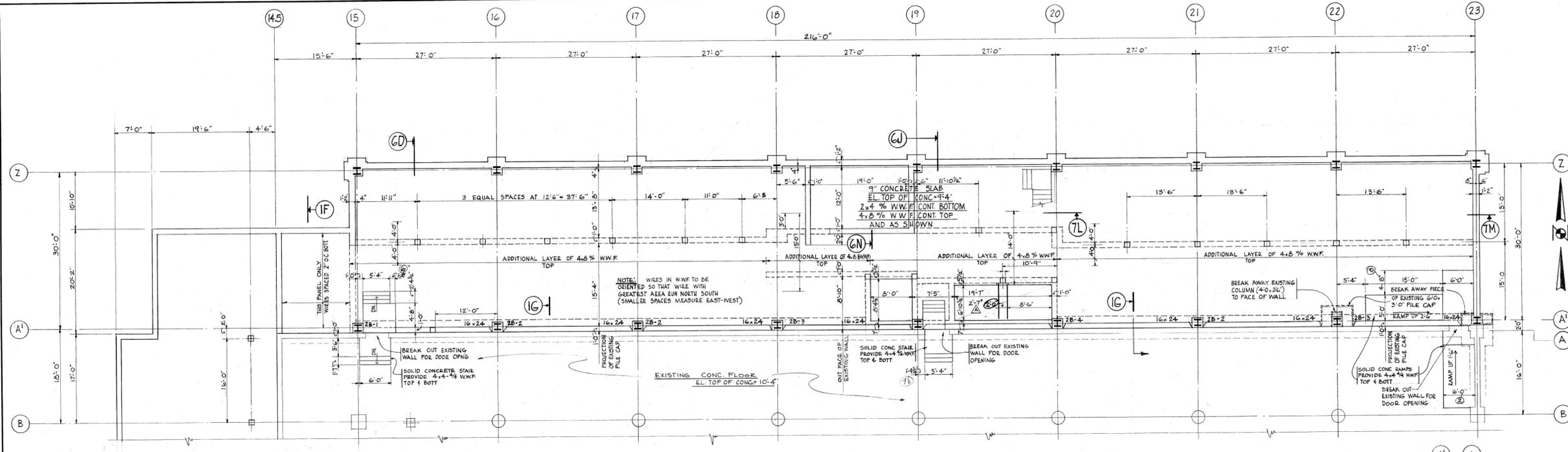
 OR AS OTHERWISE NOTED ON PLANS.
- UNLESS OTHERWISE INDICATED, THE REINFORCEMENT IN WALLS AND SLABS IN EACH DIRECTION SHALL BE A MINIMUM OF:
 

1" CONCRETE = #3 @ 11"	10" CONCRETE = #5 @ 12"
6" CONCRETE = #4 @ 12"	12" CONCRETE = #5 @ 10"
8" CONCRETE = #4 @ 10"	11" CONCRETE = #5 @ 12"
- ALL BARS MARKED CONTINUOUS SHALL BE LAPPED TO DIAMETER AT SPICES AND SHALL BE CONTINUOUS AROUND CORNERS AS SHOWN IN THE TYPICAL CORNER DETAILS.
- ALL OPENINGS THROUGH CONCRETE WALLS AND SLABS SHALL HAVE TWO #5 BARS BUILT ALONG ALL FACES AND EXTENDING 2'-0" BEYOND CORNERS UNLESS OTHERWISE NOTED.
- WHEN NOT OTHERWISE INDICATED, REINFORCEMENT IS TO BE SPREAD AROUND OPENINGS IN THE SLAB. NO BAR SHALL BE OMITTED OR CUT.
- IN AS MUCH AS IS POSSIBLE, REINFORCING BARS SHALL BE EQUALLY SPACED OVER THE AREA THEY ARE INDICATED FOR.
- SEE ARCHITECT'S PLANS FOR ELEVATION OF BRICK SHELVES.
- ALL STEEL CONNECTIONS SHALL BE IN ACCORDANCE WITH PART 4 OF THE A.I.S.C. MANUAL OF STEEL CONSTRUCTION, SIXTH EDITION. THE MINIMUM SIZE CONNECTOR SHALL BE 3/4" ROUND A-36 HIGH STRENGTH BOLTS. CONNECTIONS SHALL SATISFY ONE HALF THE GIVEN BEAM CAPACITY FOR THAT SPAN AS LISTED IN PART 2 OF SAID MANUAL UNLESS OTHERWISE NOTED ON PLANS.
- CONCRETE ENCASED STRUCTURAL STEEL TO BE WRAPPED WITH 4 X 8 - 10/10 W/F 1" FROM SURFACE OF CONC.

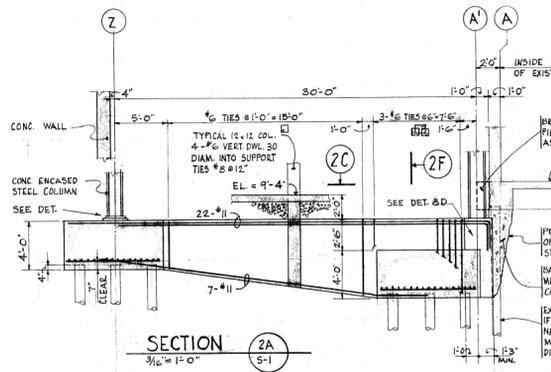


**TYPICAL HORIZONTAL WALL REINFORCING AT CORNERS**

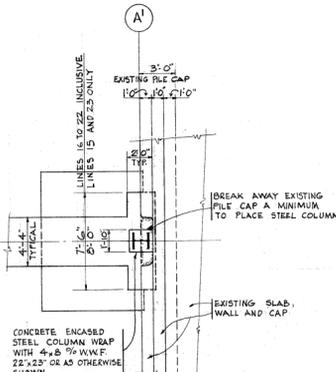
**TYPICAL NOTATION FOR DRIVEN PILE LENGTHS**



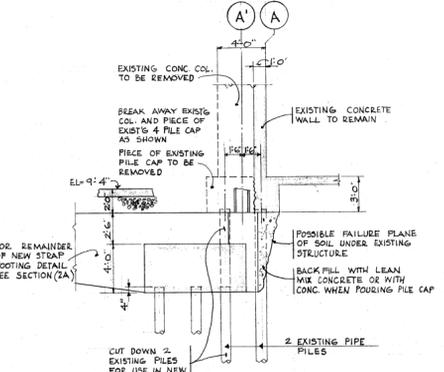
**SUB-BASEMENT FRAMING PLAN**  
SCALE 1/8" = 1'-0"



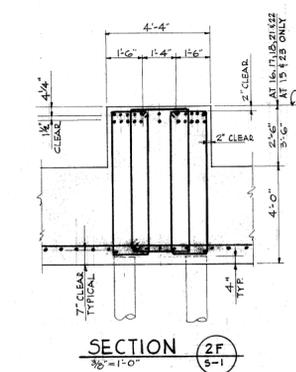
**SECTION 2A**  
3/8" = 1'-0"



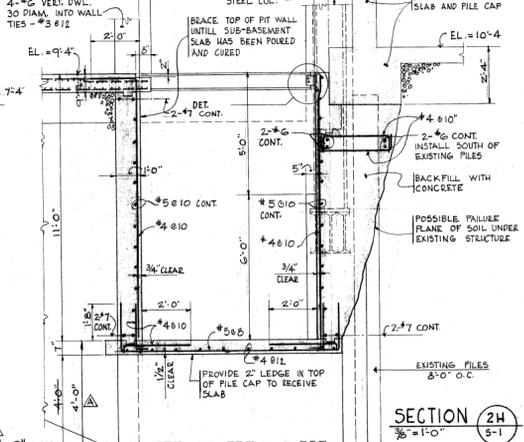
**DETAIL 2C**  
3/8" = 1'-0"



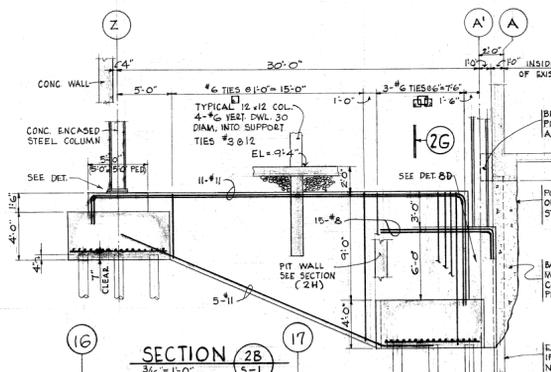
**SECTION 2D**  
3/8" = 1'-0"



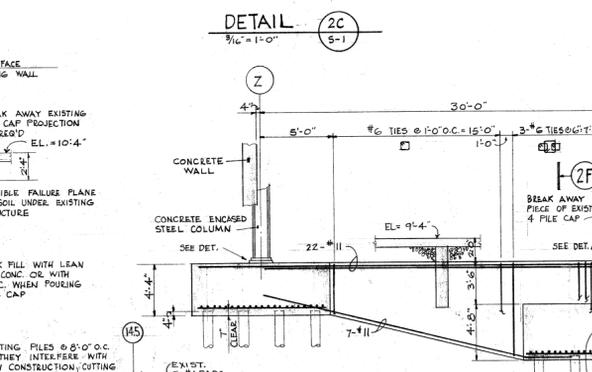
**SECTION 2F**  
3/8" = 1'-0"



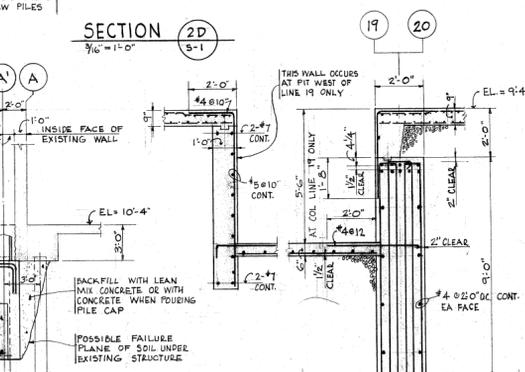
**SECTION 2H**  
3/8" = 1'-0"



**SECTION 2B**  
3/8" = 1'-0"

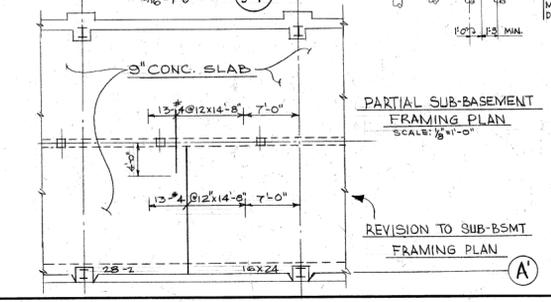


**SECTION 2E**  
3/8" = 1'-0"



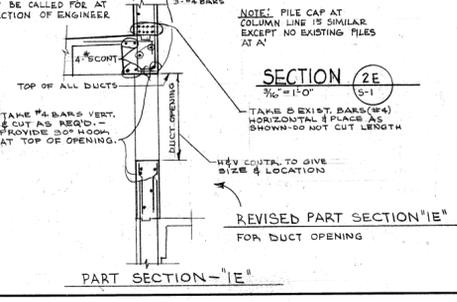
**SECTION 2G**  
3/8" = 1'-0"

**NOTE:**  
△ AS BUILT



**PARTIAL SUB-BASEMENT FRAMING PLAN**  
SCALE 1/8" = 1'-0"

**REVISION TO SUB-BSTMT FRAMING PLAN**



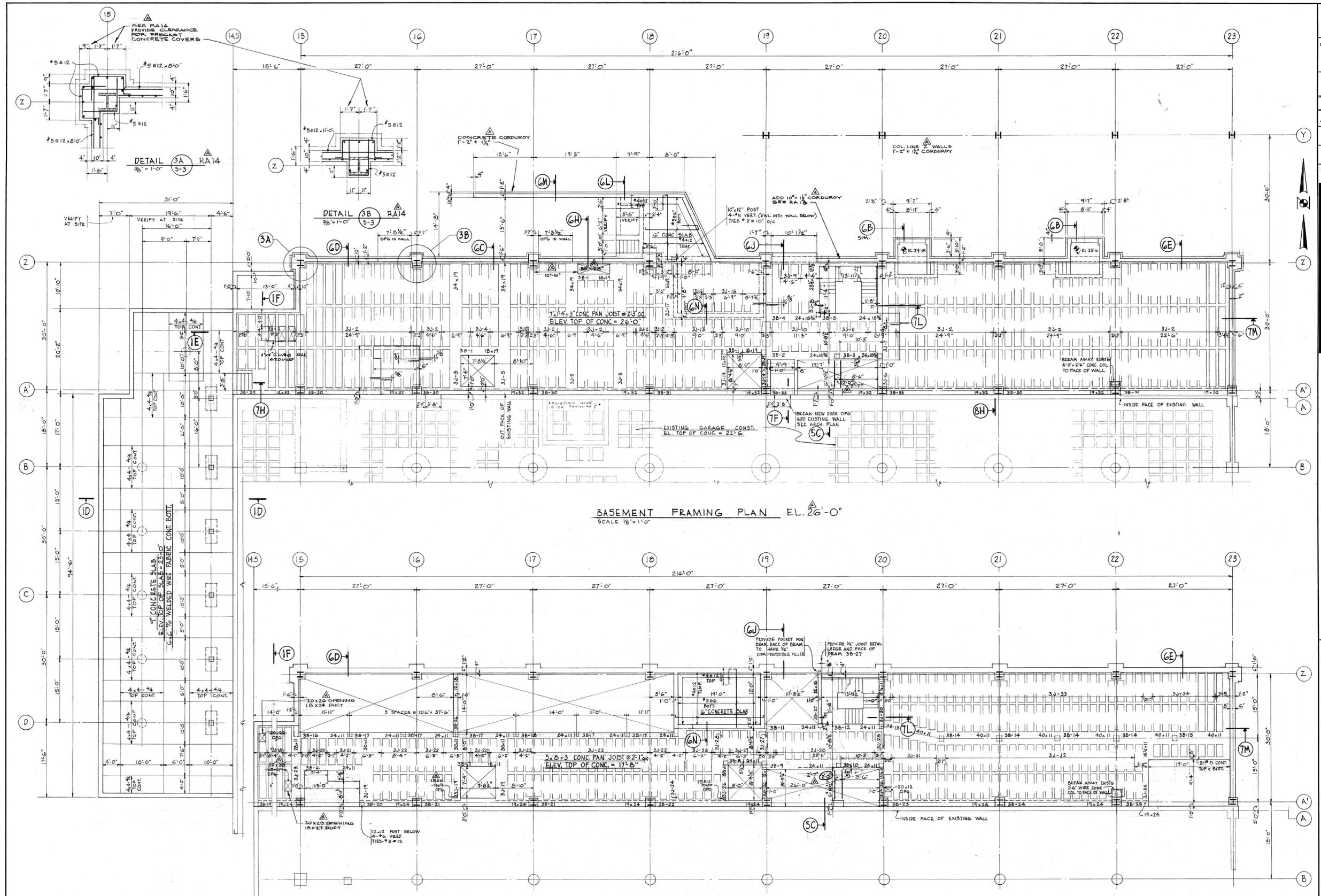
**PART SECTION 1E**

SHEET NO. **6718**  
 JOB No. **6718**  
 DATE **1-24-69**

**DEPARTMENT OF PUBLIC WORKS**  
 BUREAU OF BRIDGES AND PUBLIC BUILDINGS  
 CITY OF MILWAUKEE

**POLICE ADMINISTRATION BUILDING**  
 LOCATED ON THE MILWAUKEE CIVIC CENTER PLAZA  
 SEVENTH & STATE STREETS  
 MILWAUKEE, WISCONSIN

**GRELLINGER - ROSE - JURGENC - KLUMB - RAPPL - HAAS, INC.**  
 ARCHITECTS - ENGINEERS  
 MILWAUKEE, WISCONSIN



BASEMENT FRAMING PLAN EL. 26'-0"  
SCALE 1/8" = 1'-0"

MEZZANINE FRAMING PLAN EL. 17'-8"  
SCALE 1/8" = 1'-0"

NOTE:

AS BUILT

S-3

BASEMENT AND MEZZANINE PLANS

SHEET NO.

JOB No. 6718

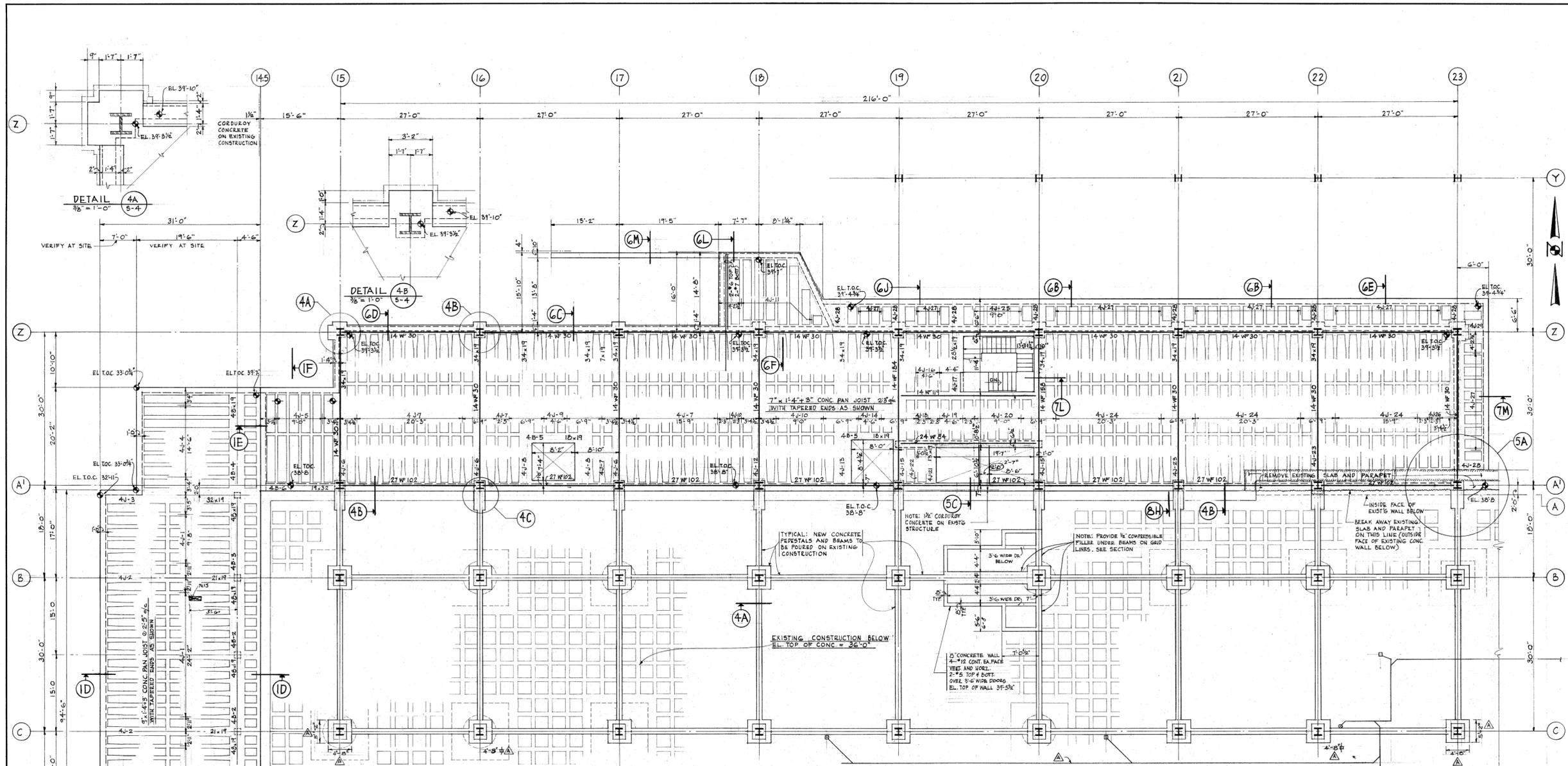
DATE 1-24-69

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF BRIDGES AND PUBLIC BUILDINGS  
CITY OF MILWAUKEE

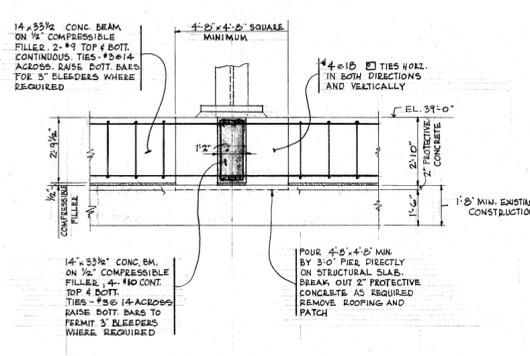
POLICE ADMINISTRATION BUILDING  
LOCATED ON THE MILWAUKEE CIVIC CENTER PLAZA  
SEVENTH & STATE STREETS  
MILWAUKEE, WISCONSIN

GRELLINGER - ROSE - JURENEC - KLUMB - RAPPL - HAAS, INC.  
ARCHITECTS - ENGINEERS  
MILWAUKEE, WISCONSIN

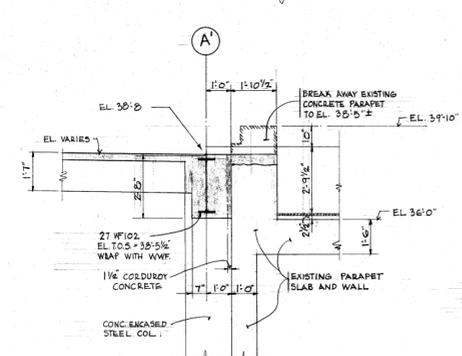
S-3



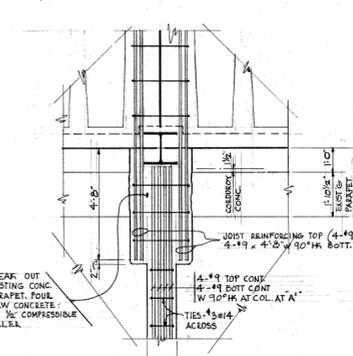
MALL FRAMING PLAN  
SCALE: 1/8" = 1'-0"



SECTION 4A SEE RA 18  
3/8" = 1'-0"



SECTION 4B SEE RA 18  
3/8" = 1'-0"



DETAIL 4C  
3/8" = 1'-0"

BEAM END REACTIONS		
BEAM	SPAN	END REACTION
14-WF104	30'	66 KIPS
14-WF15B	30'	53 KIPS
14-WF30	30'	29 KIPS

NOTE:  
AS BUILT

SHEET NO.  
S-4

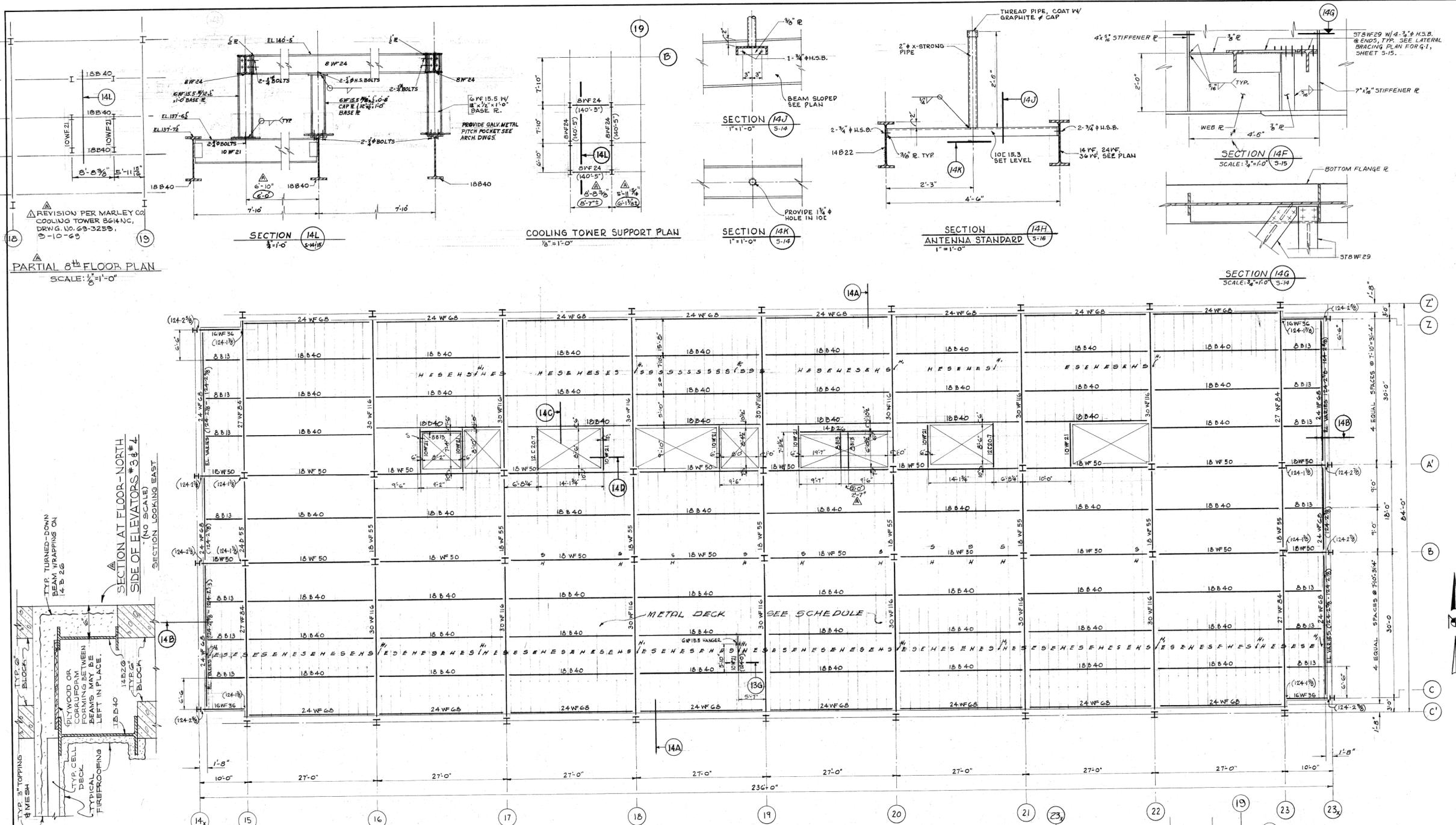
MALL LEVEL PLAN

SHEET NO. 6718  
JOB No. 6718  
DATE 1-24-69

DEPARTMENT OF PUBLIC WORKS  
BUREAU OF BRIDGES AND PUBLIC BUILDINGS  
CITY OF MILWAUKEE

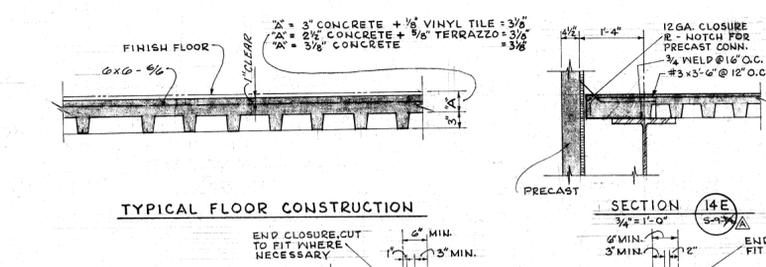
POLICE ADMINISTRATION BUILDING  
LOCATED ON THE MILWAUKEE CIVIC CENTER PLAZA  
SEVENTH & STATE STREETS  
MILWAUKEE, WISCONSIN

GRELINGER - ROSE - JURENEC-KLUMB - RAPPL - HAAS, INC.  
ARCHITECTS - ENGINEERS  
MILWAUKEE, WISCONSIN

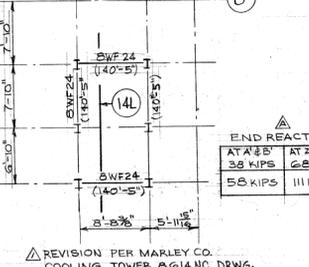
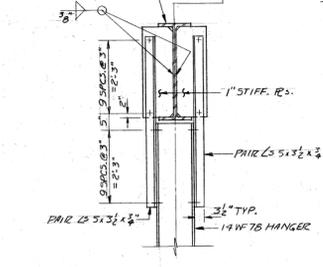
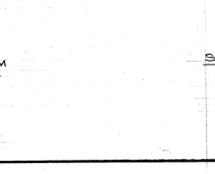
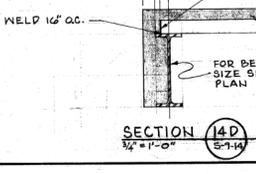
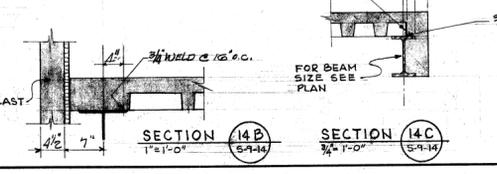
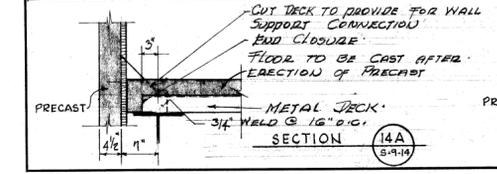


**METAL FLOOR DECK SCHEDULE**

MARK	SECTION	METAL GAUGE	MIN. TO ELEM.	MIN. TO ELEM. SECT. MOD.
H	14	14	16	2.36
H <sub>1</sub>	14	14	16	1.18
E	16	16	16	1.26
S	14	14	16	1.26



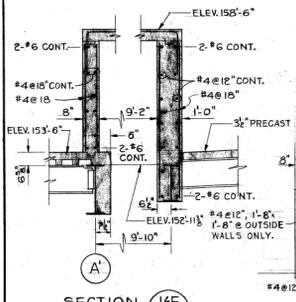
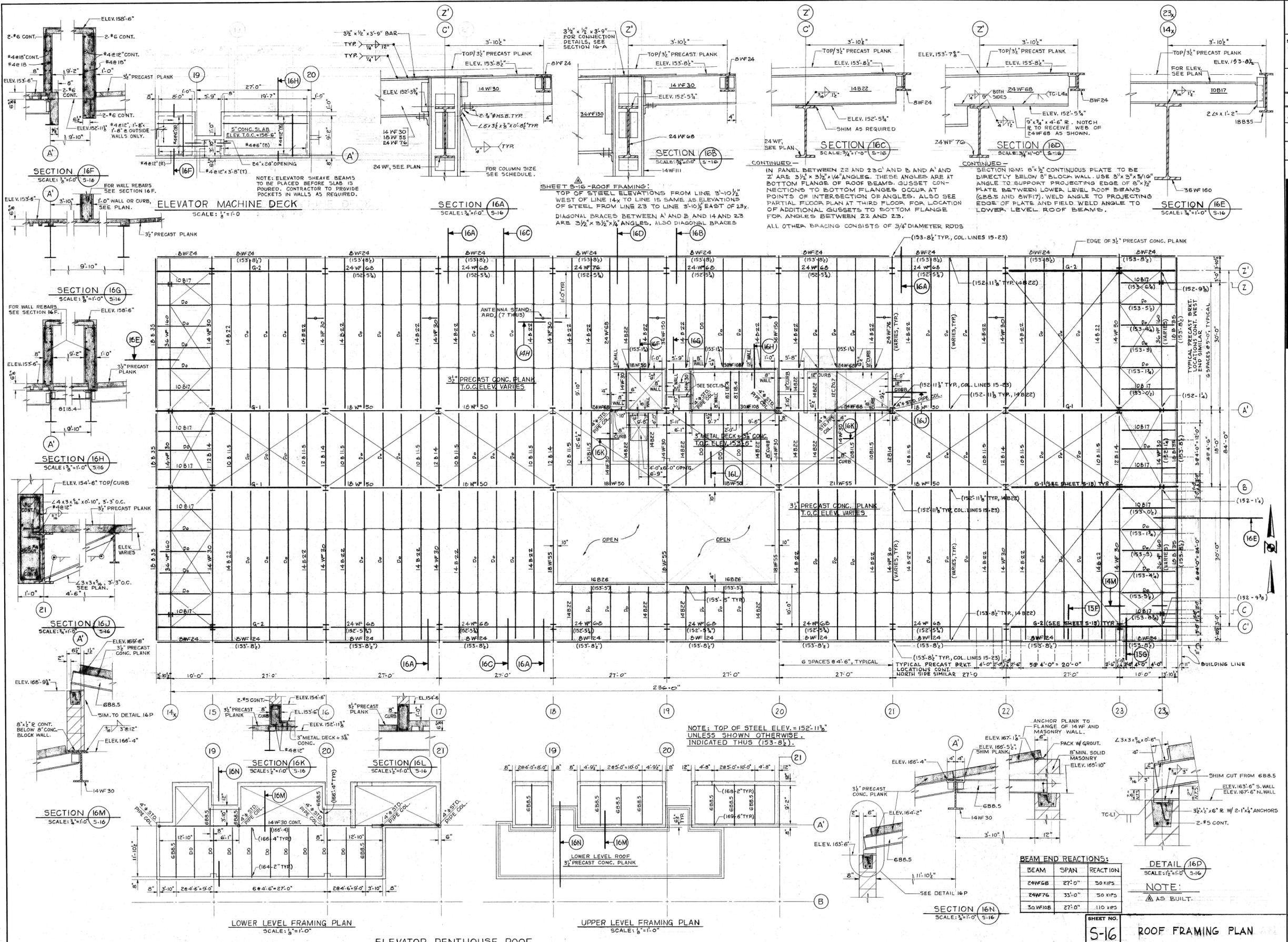
NOTE: TOP OF STEEL ELEV = 124'-1 1/8" UNLESS SHOWN OTHERWISE INDICATED THUS (124'-0")



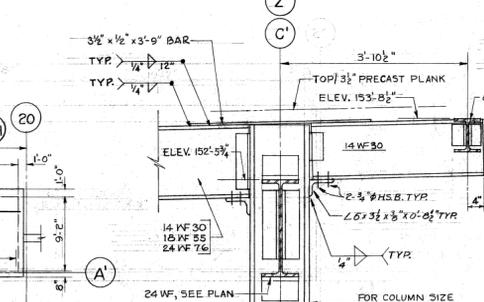
**BEAM END REACTIONS:**

BEAM	SPAN	END REACTION
16WF36	10'-0"	50 KIPS
18B40	27'-0"	23 KIPS
18WF50	10'-0"	90 KIPS
24VFB	ALL SPANS	45 KIPS
27WF84	33'-0"	55 KIPS
30WF116	33'-0"	65 KIPS

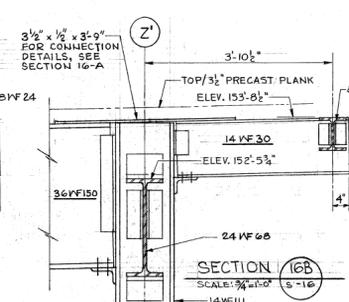
NOTES:  
AS BUILT.



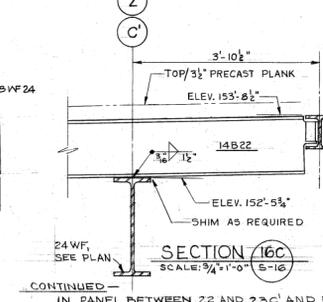
ELEVATOR MACHINE DECK  
SCALE: 1/8"=1'-0"



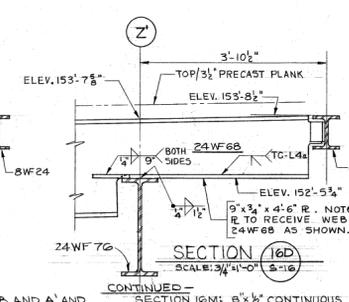
SECTION 16A  
SCALE: 3/8"=1'-0"



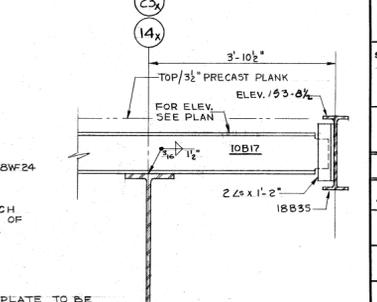
SECTION 16B  
SCALE: 3/8"=1'-0"



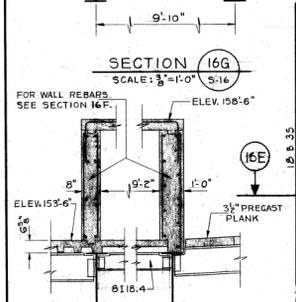
SECTION 16C  
SCALE: 3/4"=1'-0"



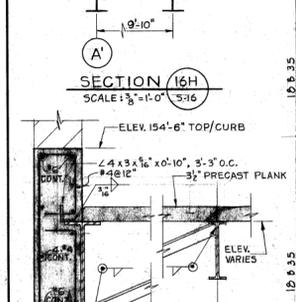
SECTION 16D  
SCALE: 3/4"=1'-0"



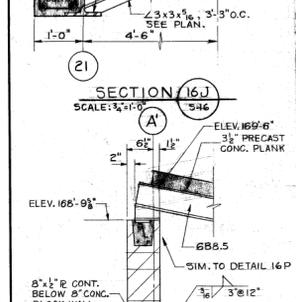
SECTION 16E  
SCALE: 3/4"=1'-0"



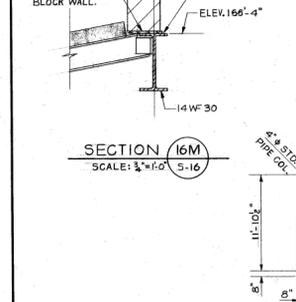
SECTION 16G  
SCALE: 3/8"=1'-0"



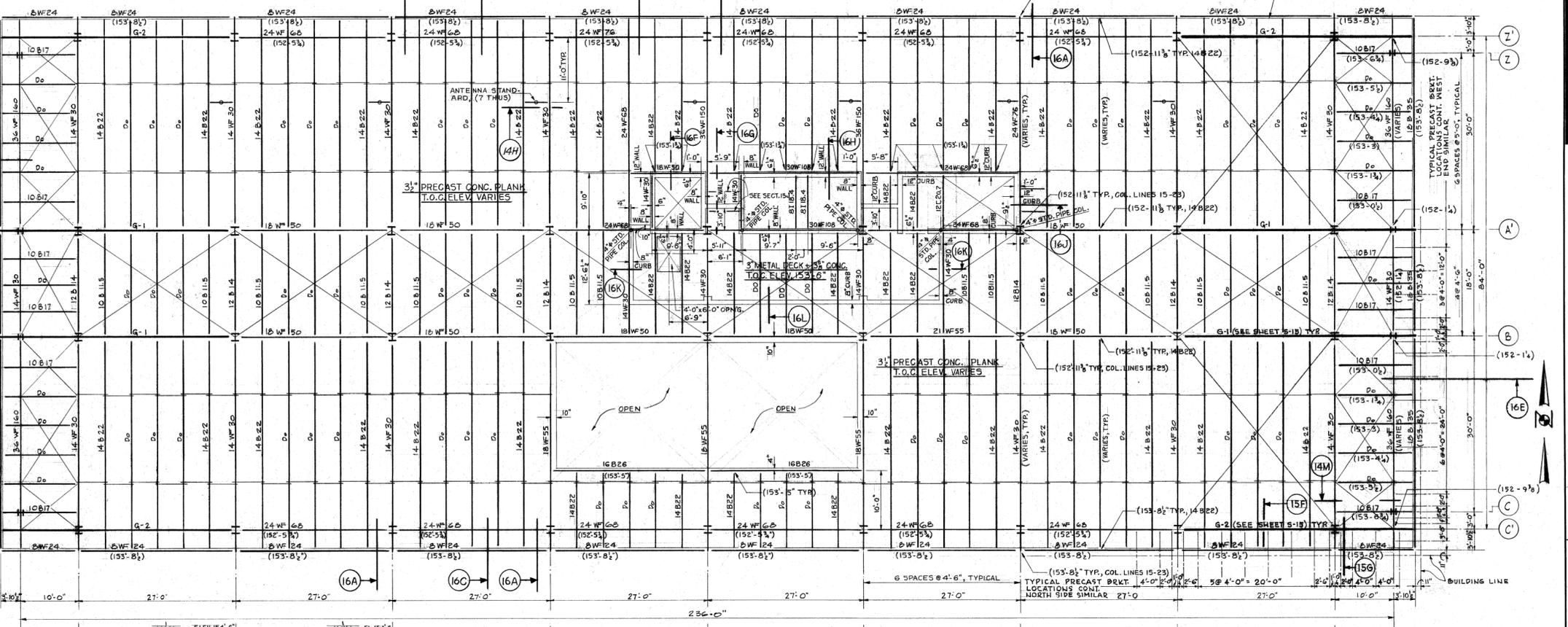
SECTION 16H  
SCALE: 3/8"=1'-0"



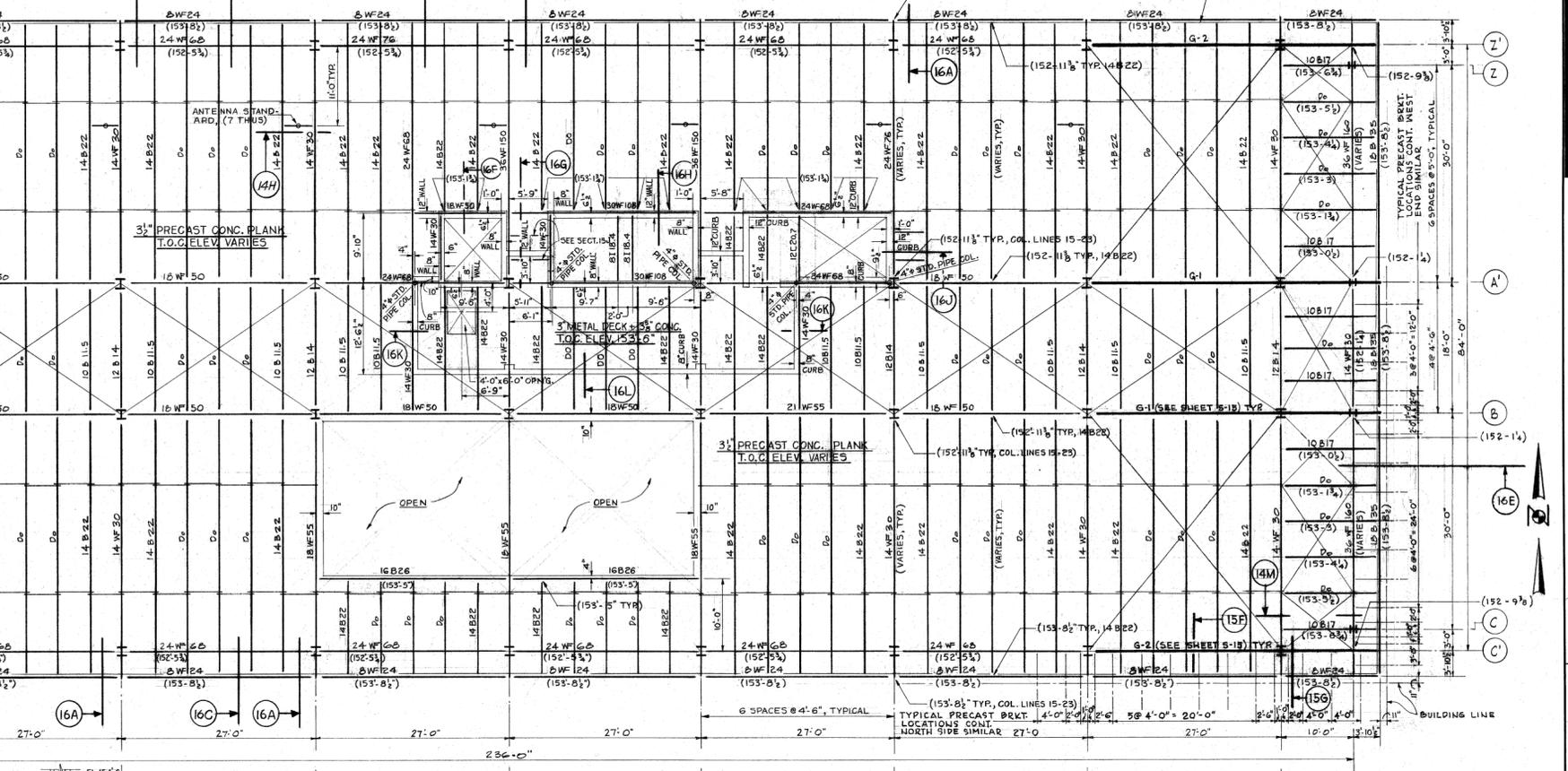
SECTION 16I  
SCALE: 3/8"=1'-0"



SECTION 16J  
SCALE: 3/8"=1'-0"



LOWER LEVEL FRAMING PLAN  
SCALE: 1/8"=1'-0"



UPPER LEVEL FRAMING PLAN  
SCALE: 1/8"=1'-0"

BEAM END REACTIONS:

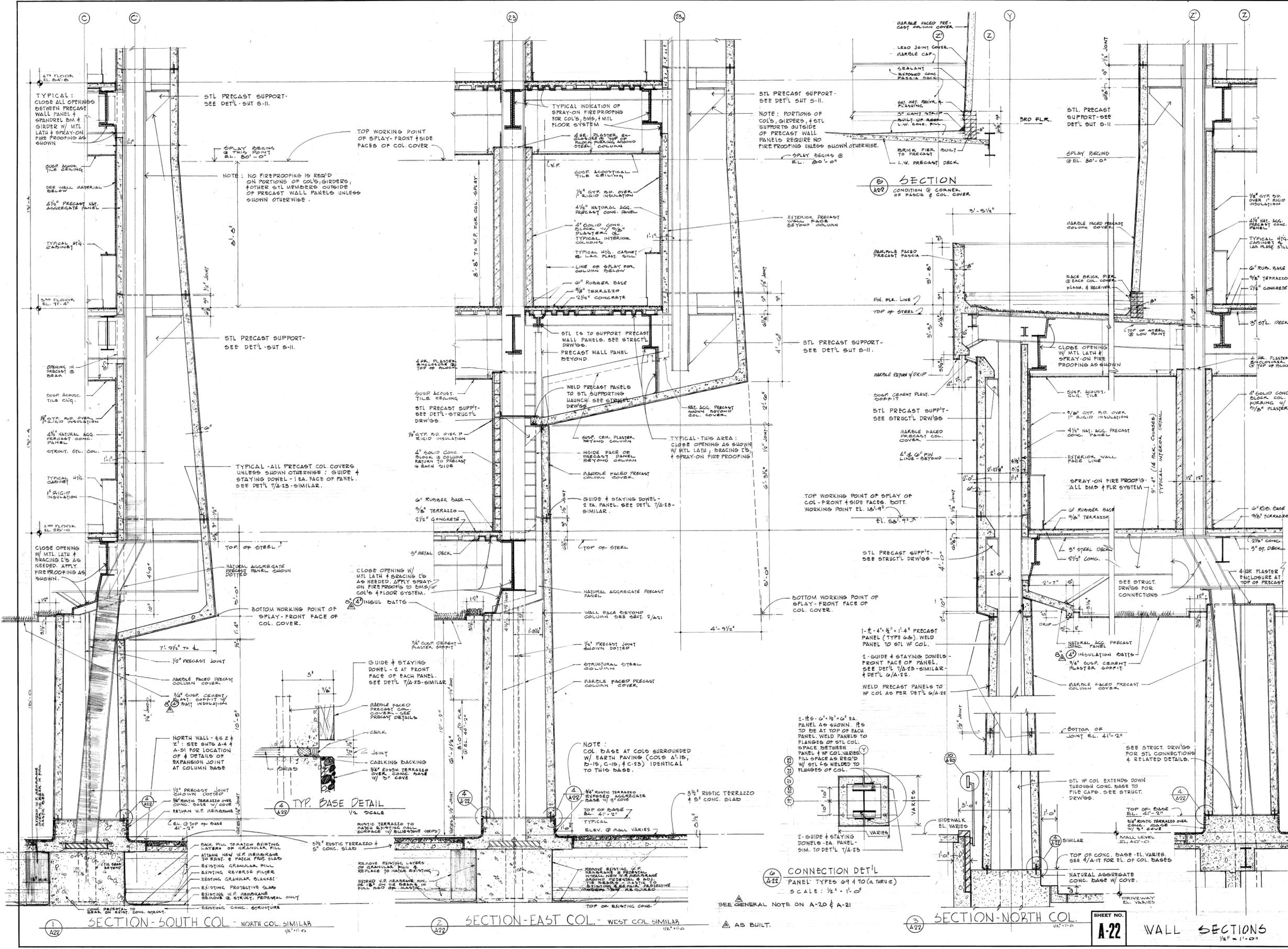
BEAM	SPAN	REACTION
24WF68	27'-0"	30 KIPS
24WF76	33'-0"	50 KIPS
30WF108	27'-0"	110 KIPS

DETAIL 16P  
SCALE: 1/2"=1'-0"  
NOTE:  
AS BUILT.

ROOF FRAMING PLAN  
SCALE: 1/8"=1'-0"







TYPICAL: CLOSE ALL OPENINGS BETWEEN PRECAST WALL PANEL & SPANREL BM & GIRDER W/ MTL LATH & SPRAY-ON FIRE PROOFING AS SHOWN

STL PRECAST SUPPORT- SEE DET'L-SHT 8-II.

NOTE: NO FIREPROOFING IS REQ'D ON PORTIONS OF COL'S/GIRDERS, & OTHER STL MEMBERS OUTSIDE OF PRECAST WALL PANELS UNLESS SHOWN OTHERWISE.

STL PRECAST SUPPORT- SEE DET'L-SHT 8-II.

TYPICAL - ALL PRECAST COL COVERS UNLESS SHOWN OTHERWISE: @ GUIDE & STAYING DOWEL - 1 EA. FACE OF PANEL. SEE DET'L 7/A-23-SIMILAR.

BOTTOM WORKING POINT OF SPLAY - FRONT FACE OF COL. COVER.

NORTH WALL - SEE 2 & 3: SEE SHTS A-4 & A-5 FOR LOCATION OF DETAILS OF EXPANSION JOINT AT COLUMN BASE

TYP. BASE DETAIL

REMOVE EXISTING LAYERS OF GRANULAR FILL & EXISTING REVERSE FILTER. REMOVE EXISTING GRANULAR PLANKET. EXISTING PROTECTIVE SLAB. EXISTING W.P. MEMBRANE. REMOVE & STRUT. PREPARE ONLY EXISTING CONC. STRUCTURE.

TYPICAL INDICATION OF SPRAY-ON FIREPROOFING FOR COL'S, BM'S & MTL FLOOR SYSTEM.

STL IS TO SUPPORT PRECAST WALL PANELS. SEE STRUCT'L PRECAST WALL PANEL BEYOND.

STL PRECAST SUPPT- SEE DET'L-STRUCT'L DRWG'S.

CLOSE OPENING W/ MTL LATH & BRACING C'S AS NEEDED. APPLY SPRAY-ON FIRE PROOFING TO ENG'G OF COL'S & FLOOR SYSTEM.

GUIDE & STAYING DOWEL - 2 AT FRONT FACE OF EACH PANEL. SEE DET'L 7/A-23-SIMILAR.

MARBLE FACED PRECAST COLUMN COVER.

TYP. BASE DETAIL

REMOVE EXISTING W.P. MEMBRANE. REMOVE EXISTING GRANULAR FILL & EXISTING REVERSE FILTER. REMOVE EXISTING GRANULAR PLANKET. EXISTING PROTECTIVE SLAB. EXISTING W.P. MEMBRANE. REMOVE & STRUT. PREPARE ONLY EXISTING CONC. STRUCTURE.

STL PRECAST SUPPORT- SEE DET'L-SHT 8-II.

NOTE: PORTIONS OF COL'S, GIRDERS, & STL SUPPORTS OUTSIDE OF PRECAST WALL PANELS REQUIRE NO FIRE PROOFING UNLESS SHOWN OTHERWISE.

STL PRECAST SUPPORT- SEE DET'L-SHT 8-II.

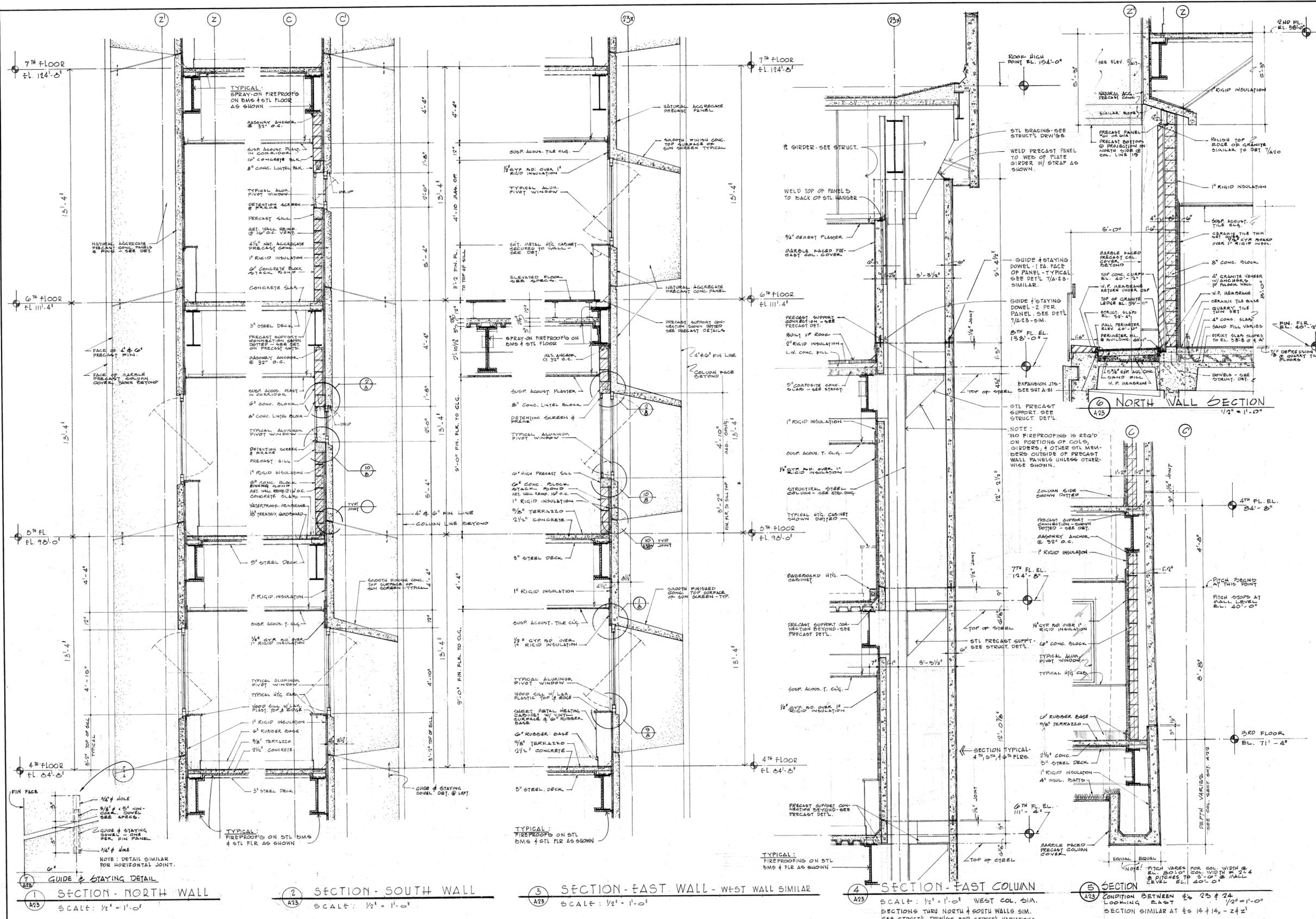
STL PRECAST SUPPT- SEE STRUCT'L DRWG'S.

TOP WORKING POINT OF SPLAY OF COL - FRONT & SIDE FACES. BOTTOM WORKING POINT EL. 12'-4".

STL PRECAST SUPPT- SEE STRUCT'L DRWG'S.

BOTTOM WORKING POINT OF SPLAY - FRONT FACE OF COL. COVER.

MARBLE FACED PRECAST COLUMN COVER.



1 SECTION - NORTH WALL  
 SCALE: 1/2" = 1'-0"

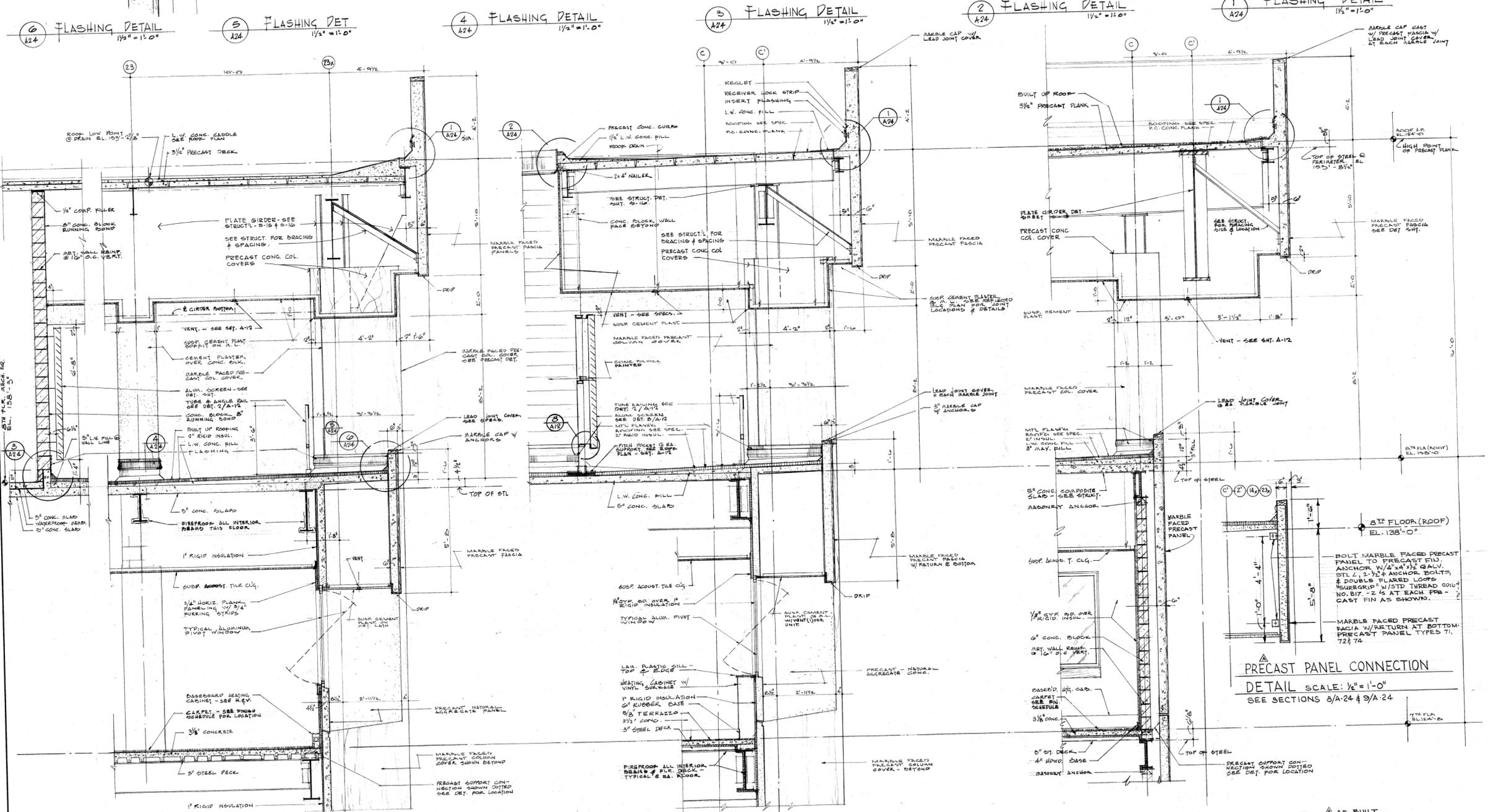
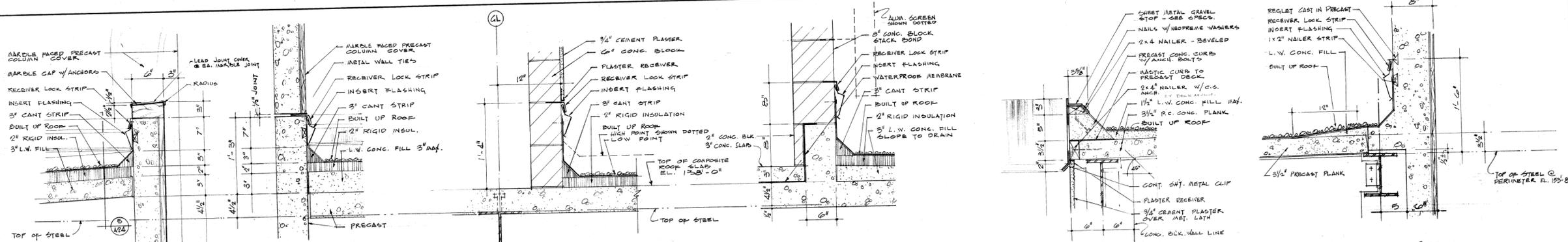
2 SECTION - SOUTH WALL  
 SCALE: 1/2" = 1'-0"

3 SECTION - EAST WALL - WEST WALL SIMILAR  
 SCALE: 1/2" = 1'-0"

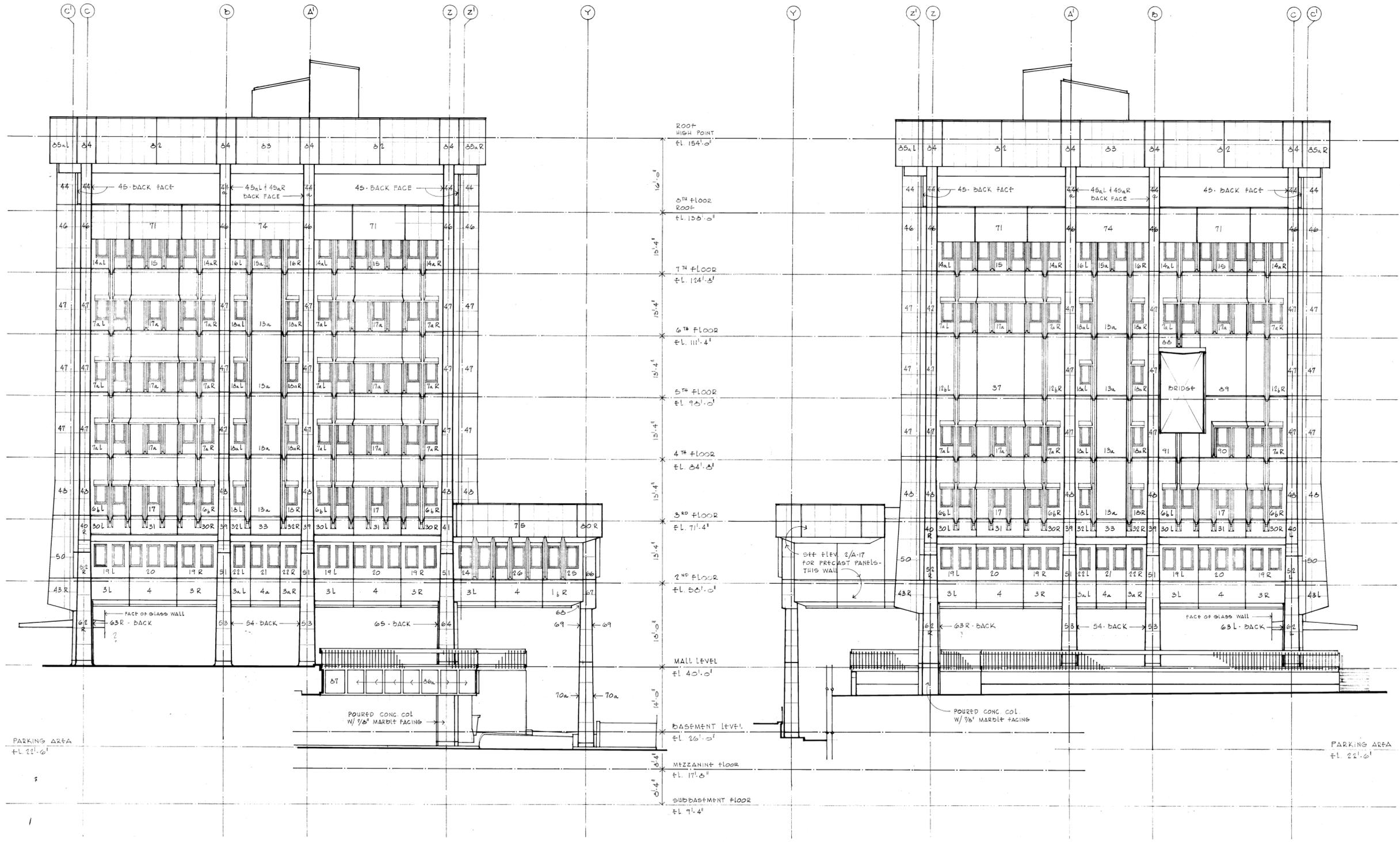
4 SECTION - EAST COLUMN  
 SCALE: 1/2" = 1'-0" WEST COL. SIM.  
 SECTIONS THRU NORTH & SOUTH WALLS SIM.  
 SEE STRUCT'L DRWG'S FOR STRUCT'L VARIATIONS

5 SECTION CONDITION BETWEEN #23 & #24  
 LOOKING EAST  
 SECTION SIMILAR AT #6 14 & 24 2'

SEE GENERAL NOTE ON A-20 & A-21.



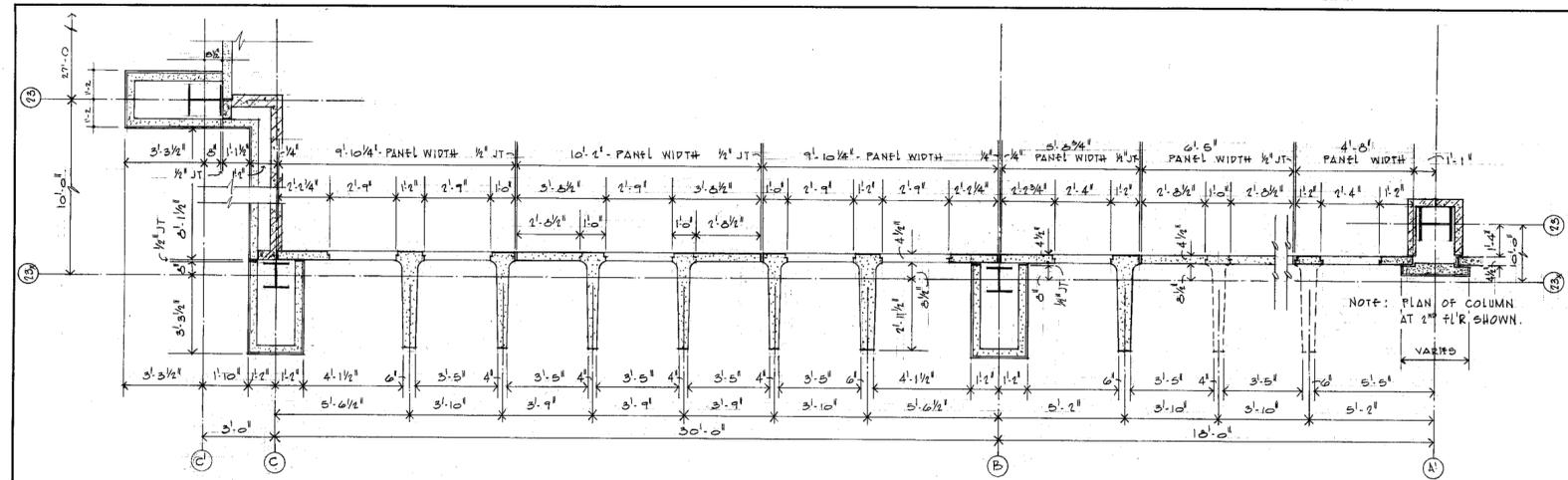
PRECAST PANEL CONNECTION  
 DETAIL SCALE: 1/2" = 1'-0"  
 SEE SECTIONS 8/A-24 & 9/A-24



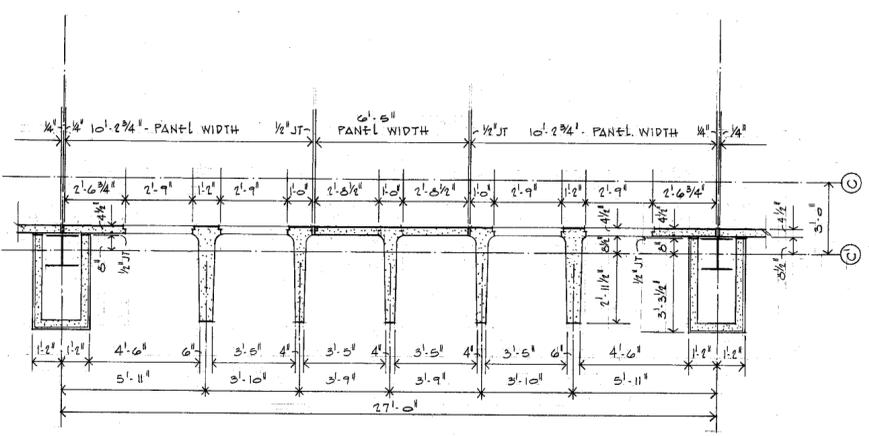
EAST PRECAST ELEVATION

WEST PRECAST ELEVATION

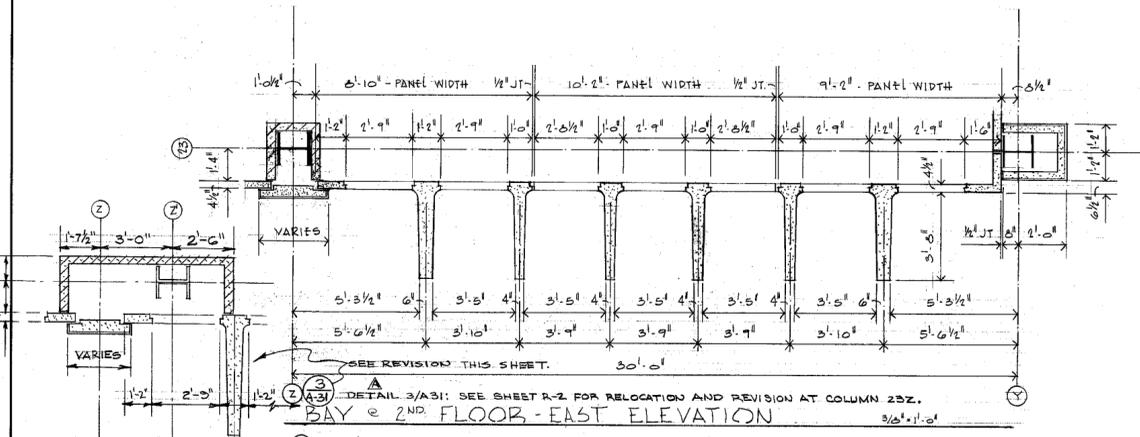
NOTE: SEE INDIVIDUAL PRECAST PANEL DETAILS  
 & RELATED DETAILS - SHTS A-31 THRU A-35



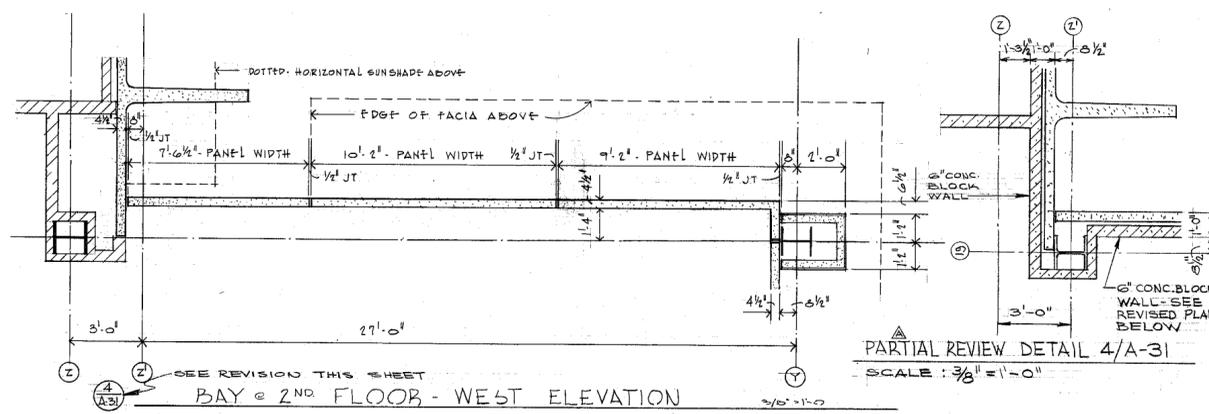
**1 A-31 TYPICAL BAYS @ 4TH FLOOR EAST WALL (WEST WALL SIMILAR)**  
 SEE WALL ELEVATIONS, WALL SECTIONS, PANEL DETAILS, & WINDOW DETAILS FOR VARIATIONS AT OTHER FLOORS.



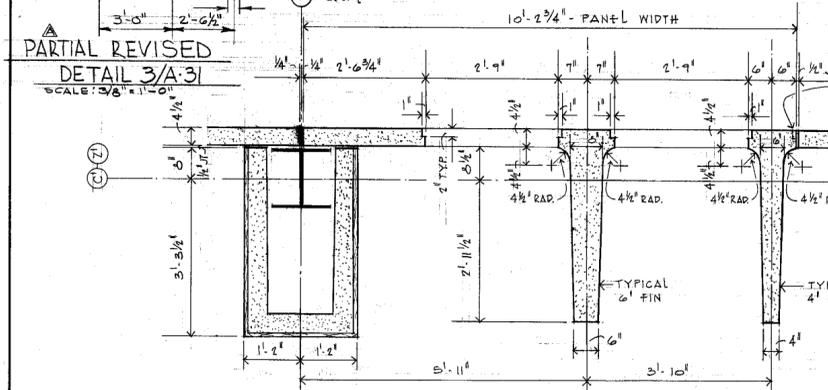
**2 A-31 TYPICAL BAY @ 4TH FLOOR SOUTH WALL (NORTH WALL SIMILAR)**  
 SEE WALL ELEVATIONS, WALL SECTIONS, PANEL DETAILS, & WINDOW DETAILS FOR VARIATIONS AT OTHER FLOORS.



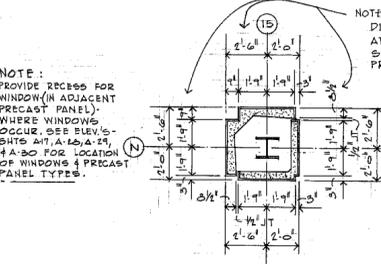
**3 A-31 BAY @ 2ND FLOOR - EAST ELEVATION**  
 SEE REVISION THIS SHEET.



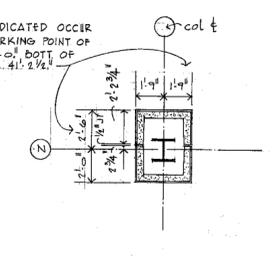
**4 A-31 BAY @ 2ND FLOOR - WEST ELEVATION**  
 PARTIAL REVIEW DETAIL 4/A-31  
 SCALE: 3/8" = 1'-0"



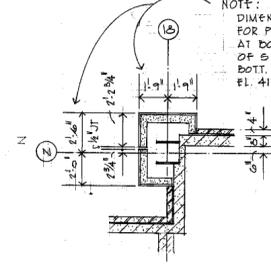
**5 A-31 PARTIAL REVISED DETAIL 3/A-31**  
 SCALE: 3/8" = 1'-0"



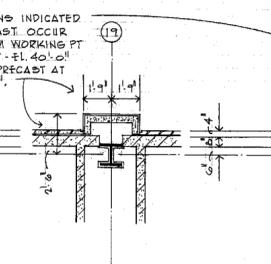
**6 A-31 PLAN COL. AT MALL LEVEL**  
 cols 15-C, 18-Z, & 23-C SIMILAR  
 SCALE: 1/4" = 1'-0"



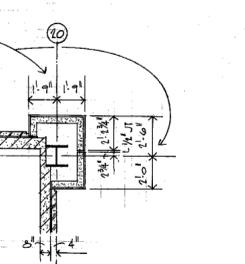
**7 A-31 INTERMEDIATE COL. AT MALL LEVEL**  
 cols at C similar  
 SCALE: 1/4" = 1'-0"



**8 A-31 PLAN COL. 16-Z AT MALL**  
 SCALE: 1/4" = 1'-0"

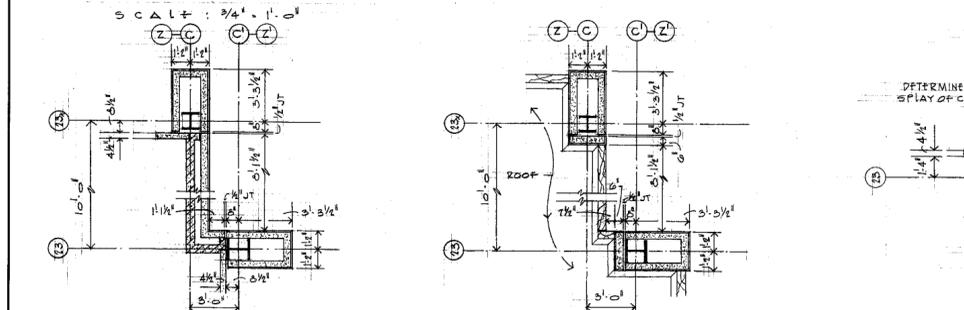


**9 A-31 PLAN COL. 17-Z AT MALL**  
 SCALE: 1/4" = 1'-0"



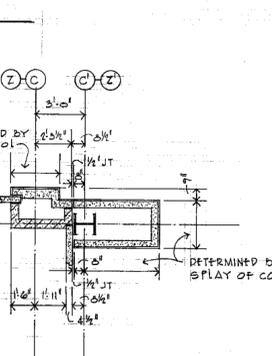
**10 A-31 PLAN COL. 10-Z AT MALL**  
 SCALE: 1/4" = 1'-0"

**11 A-31 4TH FLOOR PLAN - TYPICAL PRECAST COL. & FIN - 27'-0" BAY SHOWN**  
 SEE WALL ELEVATIONS, WALL SECTIONS & WINDOW DETAILS FOR VARIATIONS AT OTHER FLOORS & PANEL DETAILS FOR PANEL VARIATIONS.



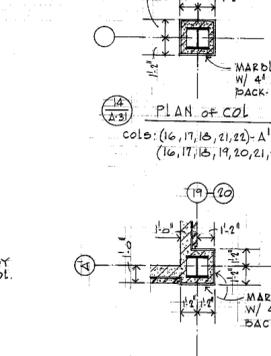
**11 A-31 PLAN COL'S AT 4TH FL THRU 7TH FL**  
 SCALE: 1/4" = 1'-0"

**SHEET A-31 - PRECAST DETAILS:**  
 DETAIL 13/A-31 APPLIES TO COLUMNS AT 15C, 15C, 15Z, 15Z, 23C AND 23C, BUT NOT AT OR 23Z.



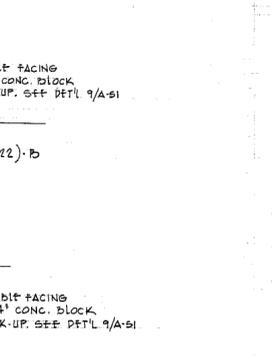
**13 A-31 PLAN COL'S AT 3RD FLOOR**  
 SCALE: 1/4" = 1'-0"

**SHEET A-31 - PRECAST DETAILS:**  
 DETAIL 13/A-31 APPLIES TO COLUMNS AT 15C, 15C, 15Z, 15Z, 23C AND 23C, BUT NOT AT OR 23Z.



**15 A-31 PLAN COL'S AT 2ND FLOOR**  
 SCALE: 1/4" = 1'-0"

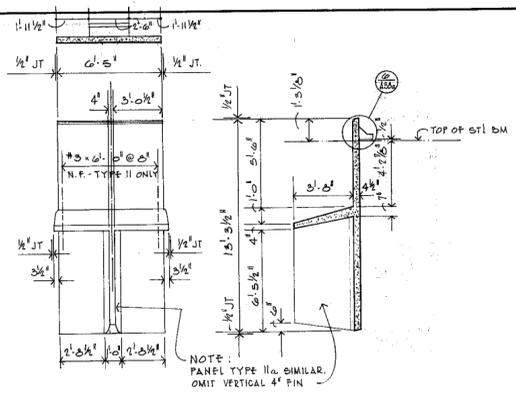
**SHEET A-31 - PRECAST DETAILS:**  
 DETAIL 13/A-31 APPLIES TO COLUMNS AT 15C, 15C, 15Z, 15Z, 23C AND 23C, BUT NOT AT OR 23Z.



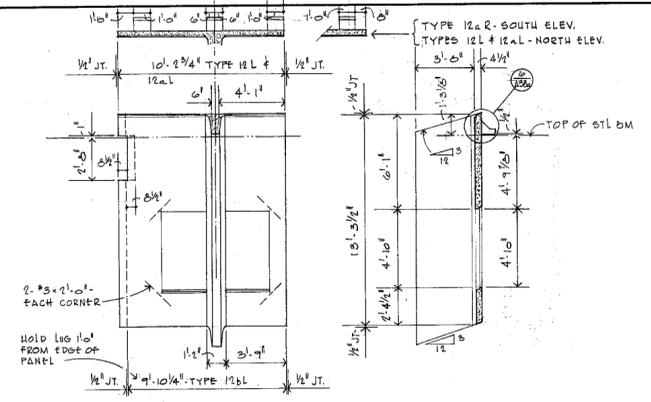
**15 A-31 PLAN OF COL.**  
 SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

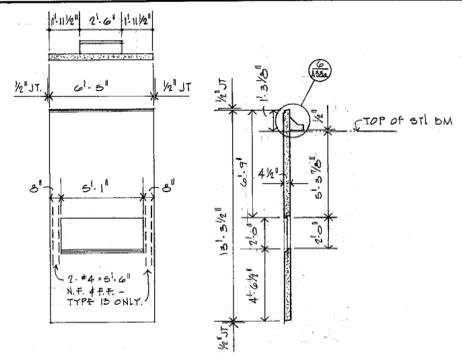
- SEE PRECAST ELEVATIONS - SHTS A-17, A-26, A-29, & A-30 FOR LOCATION OF SPECIFIC PRECAST PANELS.
- SEE SHT A-30a FOR TYPICAL REINFORCING IN ALL PRECAST WALL PANELS, HORIZONTAL FINES, & VERTICAL FINES.
- SEE SHT A-30a FOR TYPICAL REINFORCING & ANCHORAGE IN ALL PRECAST PANELS W/ 7/8" MARBLE FACING.
- SEE SHT A-30a FOR REINFORCING IN BEARING LUGS.
- SEE SHT A-30a FOR TYPICAL HORIZONTAL & VERTICAL JOINT DETAILS & CAULKING W/ CAULKING BACKING DETAILS.
- SEE WALL SECTIONS - SHTS A-20 THRU A-25 FOR RELATIONSHIPS WITH & CONNECTIONS TO STL. STRUCTURE.
- SEE WINDOW DETAILS - SHT # 8 FOR JAMB, HEAD, & SILL CONDITIONS AT WINDOW OPENINGS IN PRECAST PANELS.
- SEE ELEVATIONS - SHTS A-17, A-26, A-29, & A-30 FOR LOCATIONS OF JOINTS BETWEEN INDIVIDUAL MARBLE PANELS.



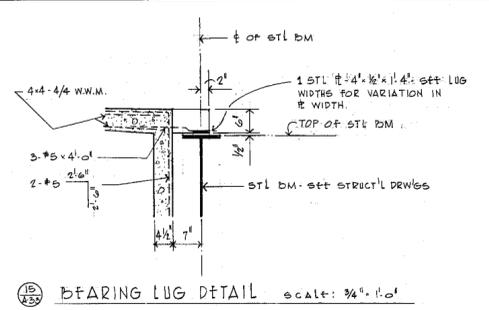
1 PRECAST PANEL TYPE II & IIa  
 • TYPE IIa - OMIT VERTICAL 4" FIN.



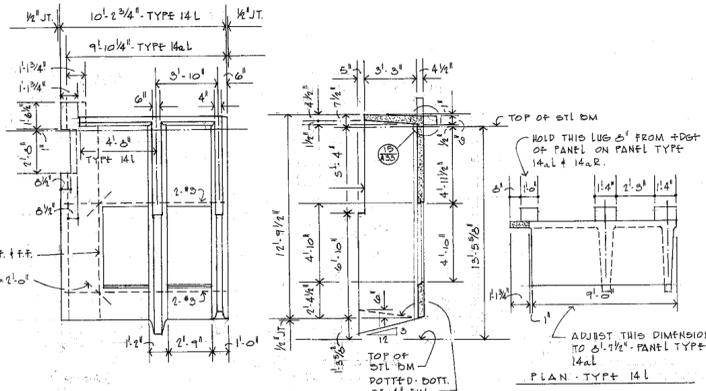
2 PRECAST PANEL TYPES 12L - TYPE 12R OPPOSITE HAND  
 • TYPE 12L & 12a R (OPPOSITE HAND) SIMILAR. OMIT WINDOWS.  
 • TYPE 12a L & 12a R (OPPOSITE HAND) SIMILAR. OMIT WINDOWS.



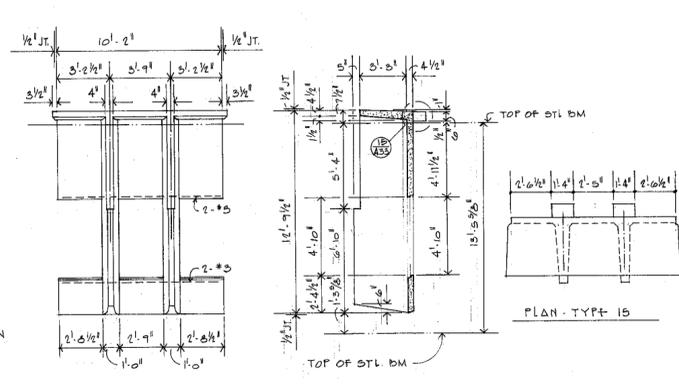
3 PRECAST PANEL TYPE 13 & 13a  
 • TYPE 13a SIMILAR. OMIT WINDOWS.



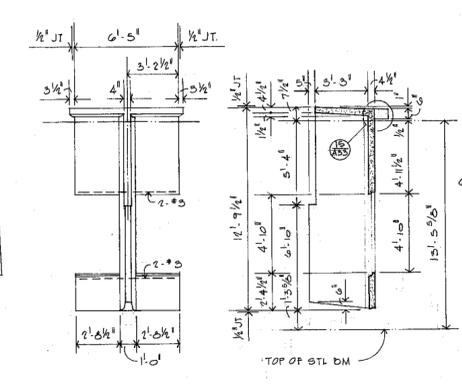
10 BEARING LUG DETAIL scale: 3/4" = 1'-0"



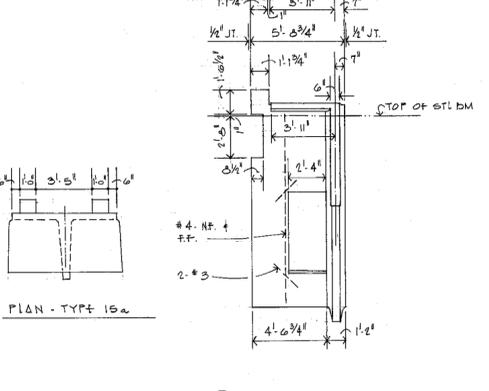
4 PRECAST PANEL TYPE 14L & 14aL - TYPE 14R & 14aR OPPOSITE HAND



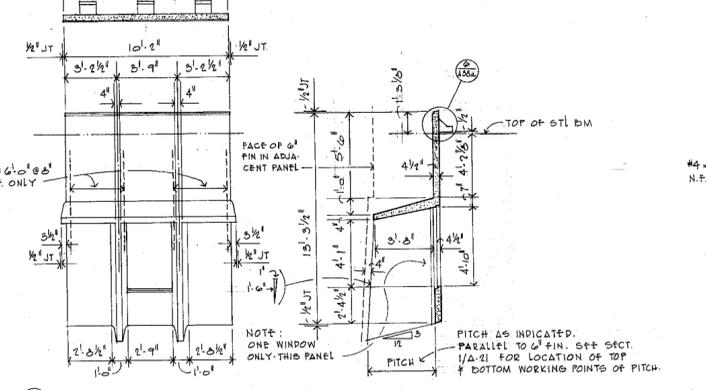
5 PRECAST PANEL TYPE 15



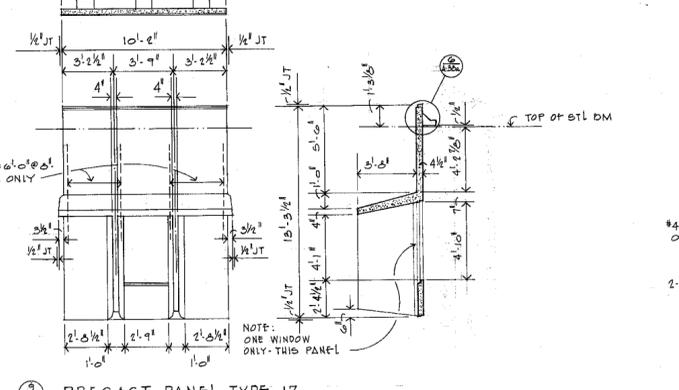
6 PRECAST PANEL TYPE 15a



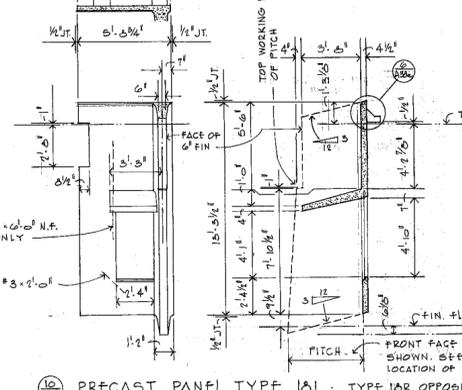
7 PRECAST PANEL TYPE 16L  
 • TYPE 16R OPPOSITE HAND SECTION SIMILAR TO TYPE 14L



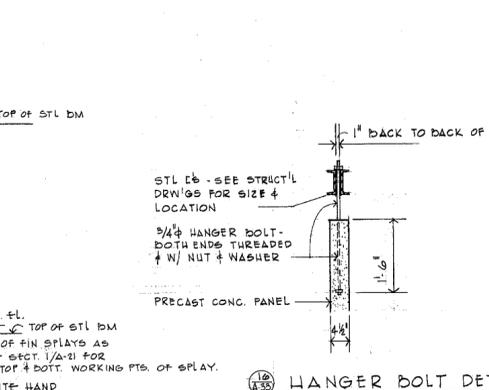
8 PRECAST PANEL TYPE 17



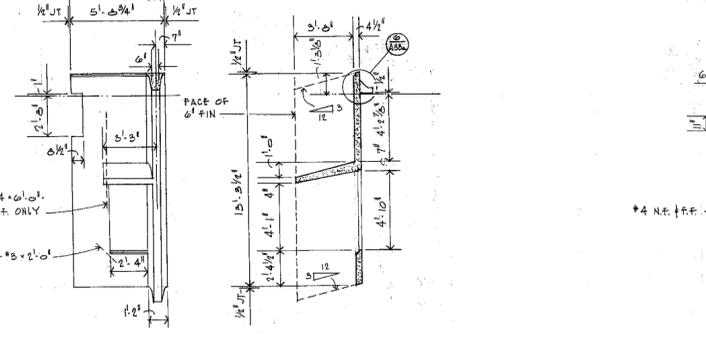
9 PRECAST PANEL TYPE 17a



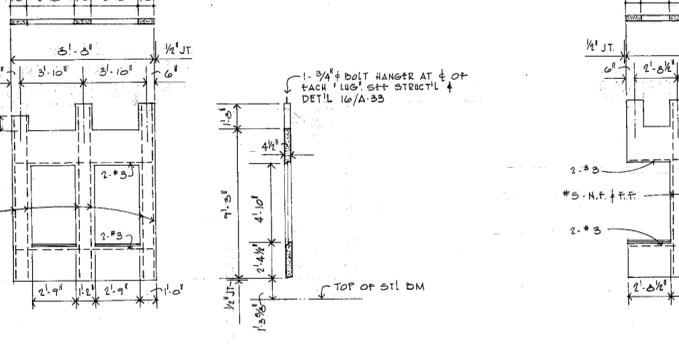
10 PRECAST PANEL TYPE 18L - TYPE 18R OPPOSITE HAND



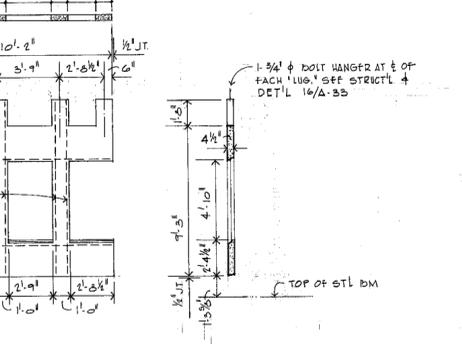
11 HANGER BOLT DETAIL scale: 1/2" = 1'-0"



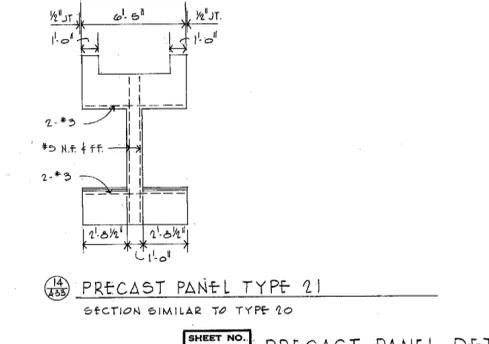
12 PRECAST PANEL TYPE 18aL - TYPE 18aR OPPOSITE HAND



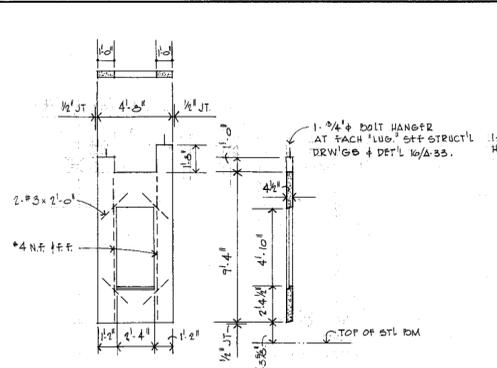
13 PRECAST PANEL TYPE 19L - TYPE 19R OPPOSITE HAND



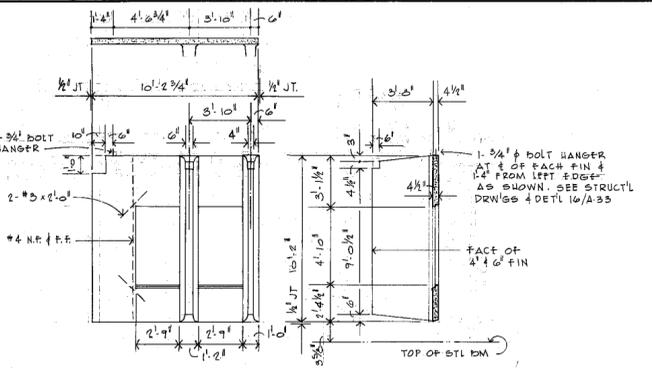
14 PRECAST PANEL TYPE 20



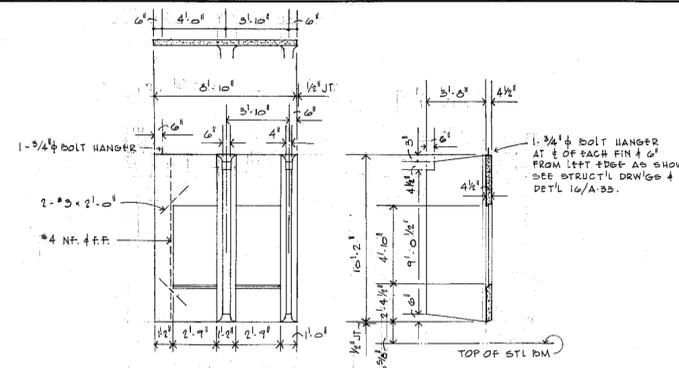
15 PRECAST PANEL TYPE 21  
 SECTION SIMILAR TO TYPE 20



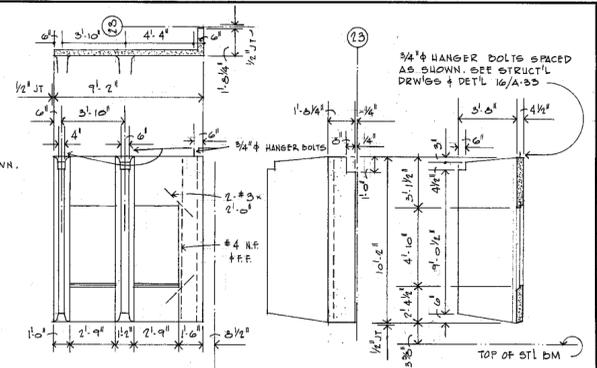
① PRECAST PANEL TYPE 22L  
• TYPE 22R OPPOSITE HAND



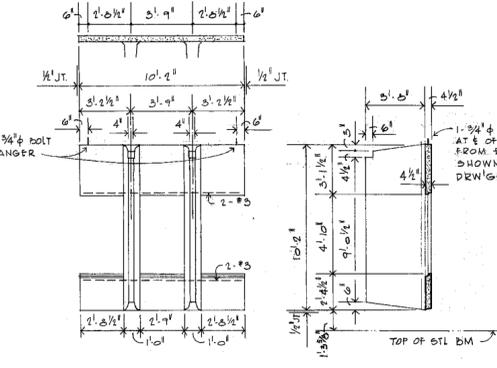
② PRECAST PANEL TYPE 23L - TYPE 23R OPPOSITE HAND



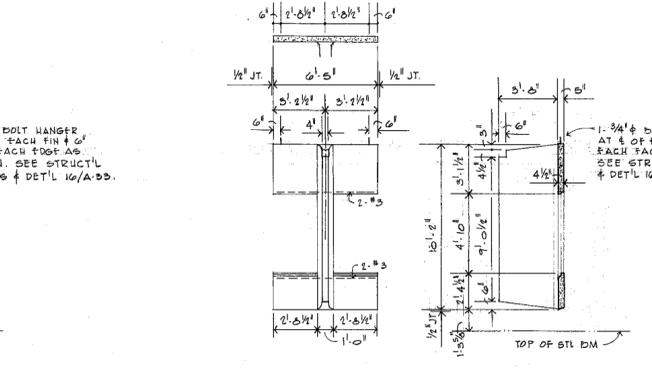
③ PRECAST PANEL TYPE 24



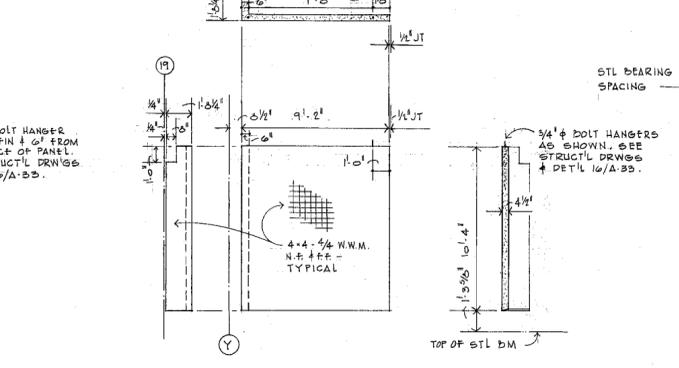
④ PRECAST PANEL TYPE 25



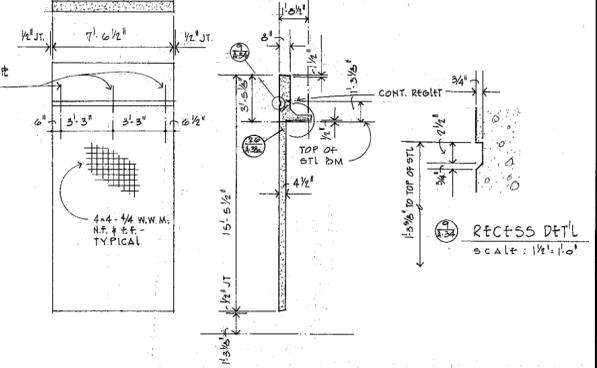
⑤ PRECAST PANEL TYPE 26



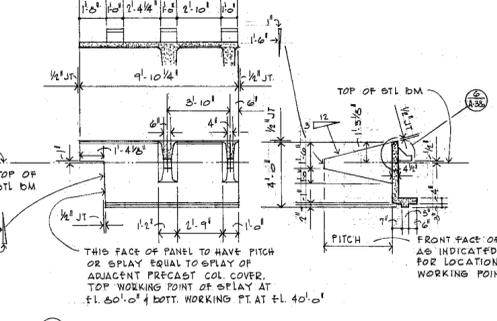
⑥ PRECAST PANEL TYPE 27



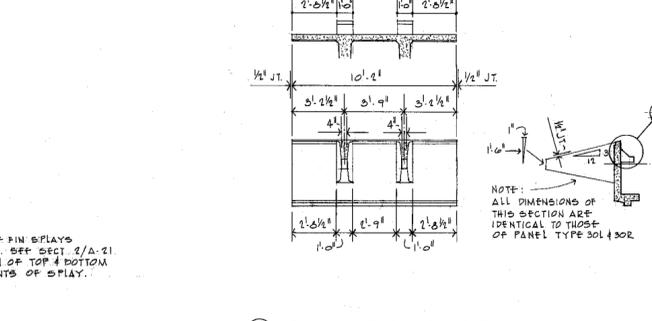
⑦ PRECAST PANEL TYPE 28



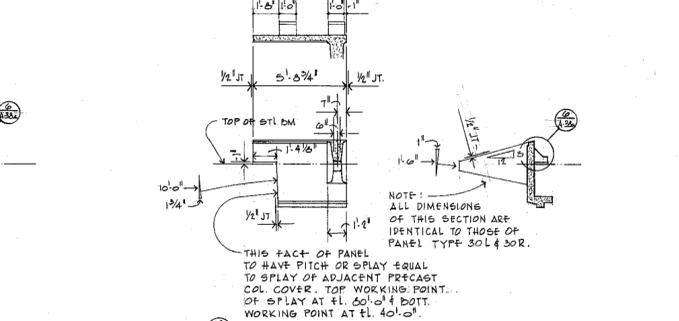
⑧ PRECAST PANEL TYPE 29



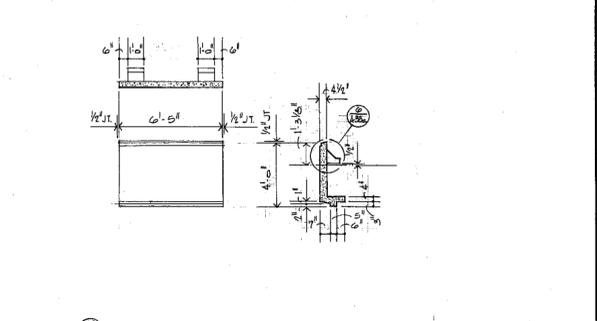
⑨ PRECAST PANEL TYPE 30L & 30R - TYPE 30R OPPOSITE HAND



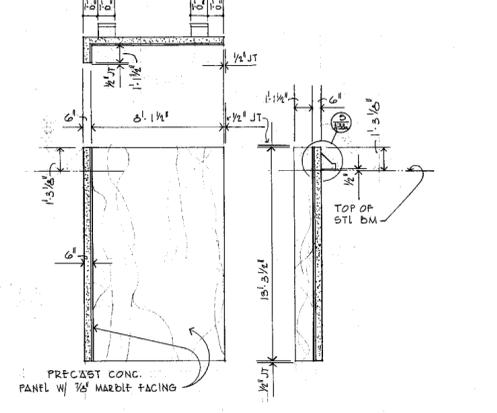
⑩ PRECAST PANEL TYPE 31



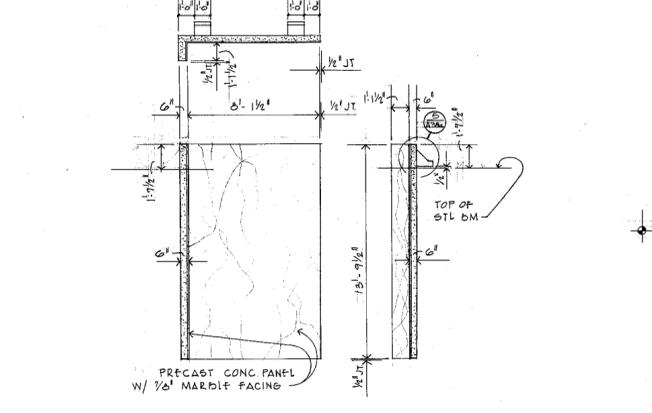
⑪ PRECAST PANEL TYPE 32L & 32R  
• TYPE 32R OPPOSITE HAND



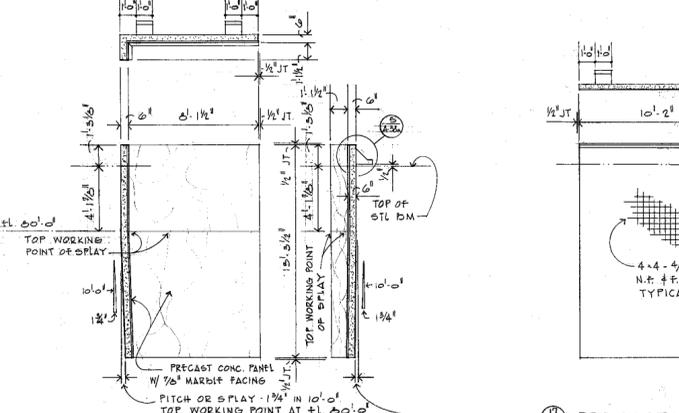
⑫ PRECAST PANEL TYPE 33



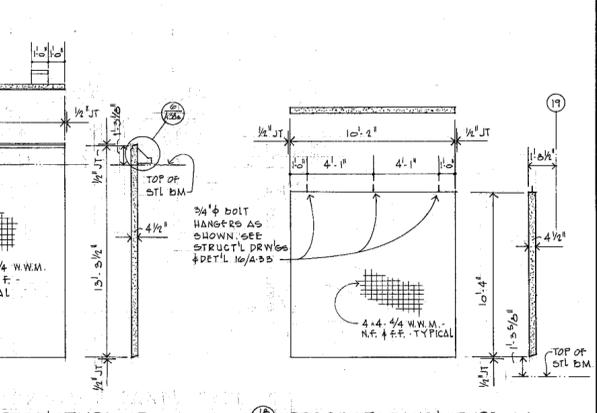
⑬ PRECAST PANEL TYPE 34R  
• TYPE 34L OPPOSITE HAND



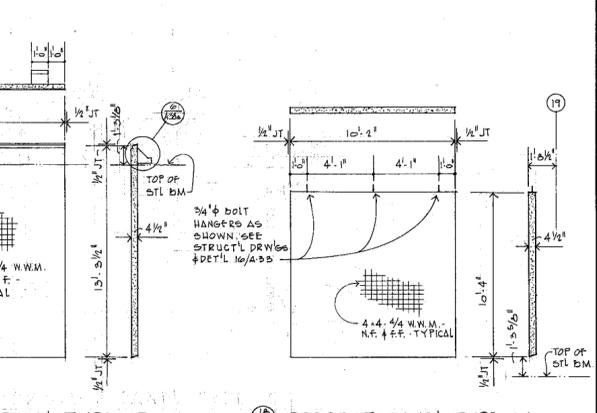
⑭ PRECAST PANEL TYPE 35R  
• TYPE 35L OPPOSITE HAND



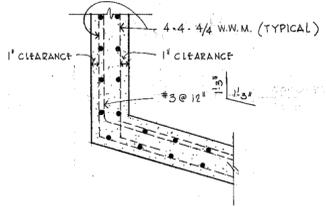
⑮ PRECAST PANEL TYPE 36R  
• TYPE 36L OPPOSITE HAND



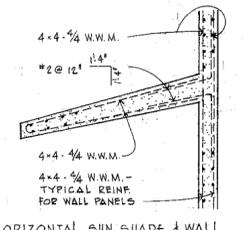
⑯ PRECAST PANEL TYPE 37



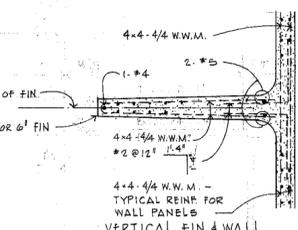
⑰ PRECAST PANEL TYPE 38



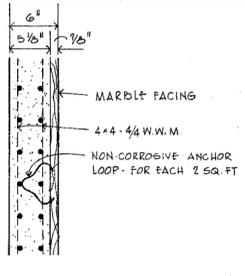
1 TYPICAL REINFORCING FOR CORNERS  
 SCALE: 1/2" = 1'-0"



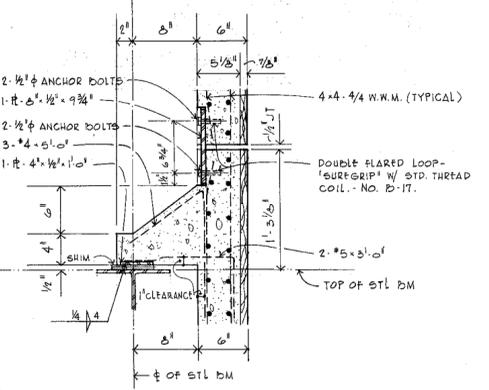
2 TYPICAL REINFORCING FOR PRECAST WALL PANELS  
 SCALE: 3/4" = 1'-0"  
 NOTE: SEE INDIVIDUAL PANEL DETAILS FOR SPECIAL REINFORCING



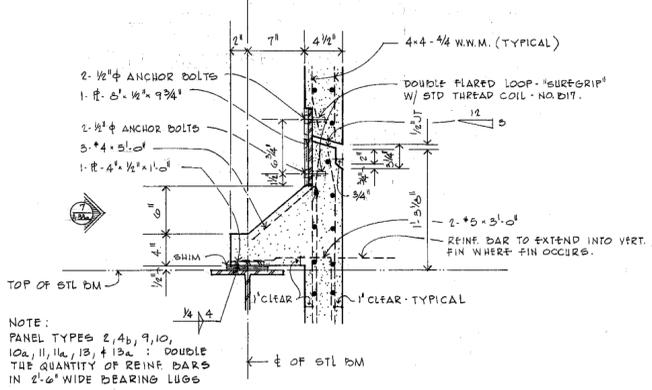
3 TYPICAL REINFORCING FOR MARBLE FACED PRECAST PANEL  
 SCALE: 1/2" = 1'-0"



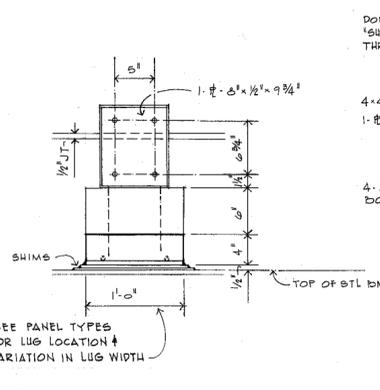
4 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"



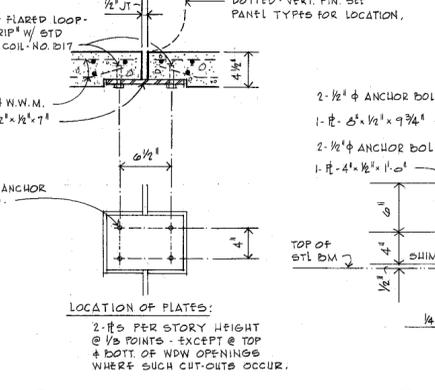
5 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"  
 SEE PANEL TYPES FOR NUMBER OF & LOCATION OF LUGS



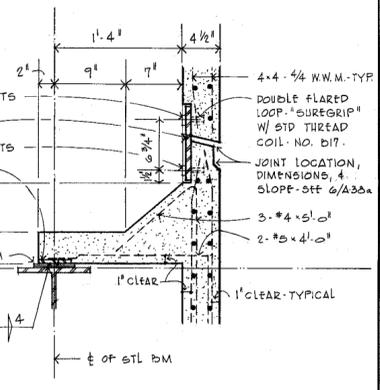
6 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"  
 SEE PANEL TYPES FOR NUMBER OF & LOCATION OF LUGS



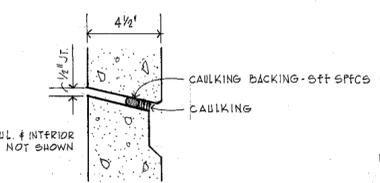
7 ELEVATION-CONNECTING PLATE  
 SCALE: 1/2" = 1'-0"



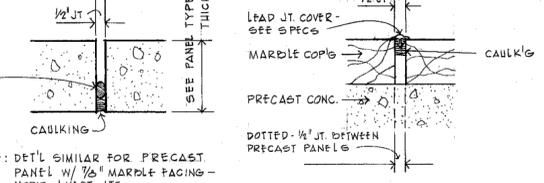
8 CONNECTING PLATE DETAIL - VERTICAL JT. BETWEEN PANELS  
 SCALE: 1/2" = 1'-0"



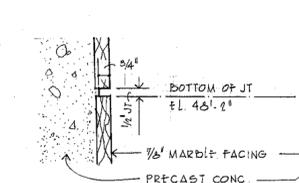
9 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"



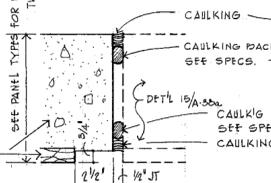
10 TYP HORIZONTAL JT  
 SCALE: 3" = 1'-0"



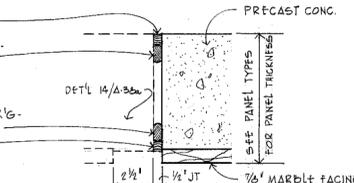
11 TYP VERTICAL JT  
 SCALE: 3" = 1'-0"



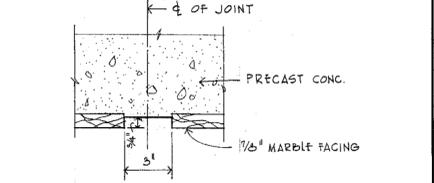
12 DETAIL - MARBLE JT  
 SCALE: 3" = 1'-0"



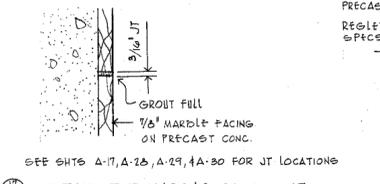
13 FACIA JT. DETAIL  
 SCALE: 3" = 1'-0"



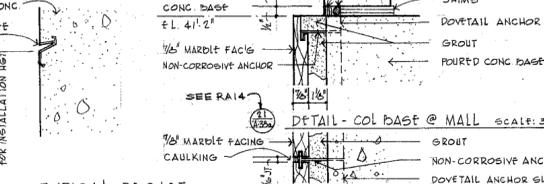
14 FACIA JT. DETAIL  
 SCALE: 3" = 1'-0"



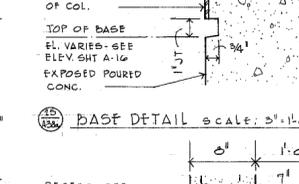
15 FACIA JT. DETAIL  
 SCALE: 3" = 1'-0"



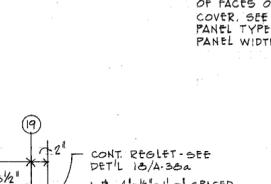
16 DETAIL - TYP MARBLE FACING JT.  
 SCALE: 3" = 1'-0"



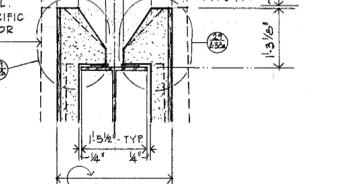
17 TYPICAL REGLET  
 SCALE: 3" = 1'-0"



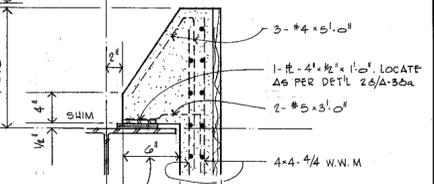
18 DETAIL - COL BASE @ MALL  
 SCALE: 3" = 1'-0"



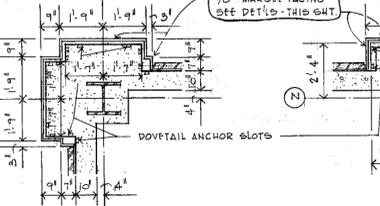
19 BASE DETAIL  
 SCALE: 3" = 1'-0"



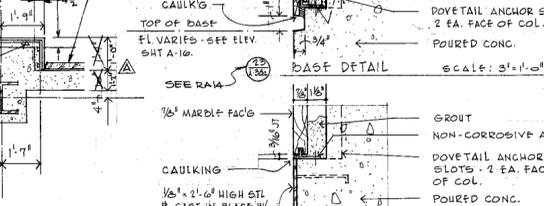
20 BEARING LUG DETAIL  
 SCALE: 3/4" = 1'-0"



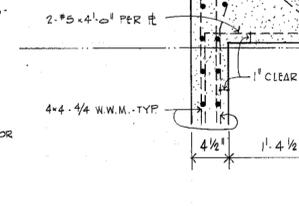
21 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"



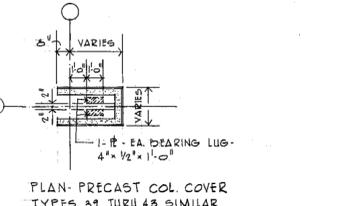
22 PLAN - COL W/ MARBLE FAC'G  
 SCALE: 3/8" = 1'-0"



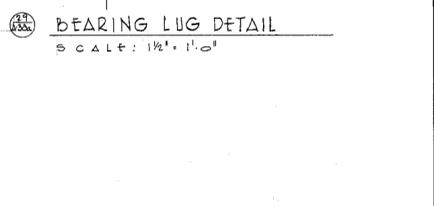
23 PLAN - COL W/ MARBLE FAC'G  
 SCALE: 3/8" = 1'-0"



24 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"



25 BEARING LUG DETAIL  
 SCALE: 1/4" = 1'-0"



26 BEARING LUG DETAIL  
 SCALE: 1/2" = 1'-0"

SECTIONS 19, 20, 21, 22, 23 & 24 REVISED. SEE RA 25.