



APPROVED

Brunswick County Board of Commissioners
ACTION AGENDA ITEM
October 4, 2021

Action Item # VI. - 2.

From: Engineering - Courthouse Exterior Sealing and Cleaning
Wm. L. Pinnix, P.E. - Engineering Director Presentation (Wm. L. Pinnix, P.E.)

Issue/Action Requested:

Request that the Board of Commissioners receive a presentation on the courthouse exterior construction and need for preventative maintenance and provide staff direction.

Background/Purpose of Request:

The courthouse addition and renovation project commenced on April 1, 2020 with a two year construction period. Phase 1 was the 15,000 SF addition and that was placed in service on April 9, 2021. Phase 2 renovations began on April 10th and are currently ongoing with Phase 3 renovations to follow. The project is scheduled for completion in early May of 2022.

The courthouse was completed in March of 2000 according to the asbuilt record drawings (dated 03/20/2000). The exterior walls are structural precast concrete panels with caulking applied to the joints between panels and around windows, doors, exhaust louvers, and other wall penetrations.

This type of construction requires periodic maintenance over time. The building is almost twenty-two years old and the exterior caulking is exhibiting degradation in many areas.

Staff recommends Board review of the attached presentation and provide direction to staff.

Fiscal Impact:

Reviewed By Director of Fiscal Operations

Approved By County Attorney:

Yes

County Manager's Recommendation:

Recommend the Board of Commissioners receive a presentation on the courthouse exterior construction and need for preventative maintenance and provide staff direction.

ATTACHMENTS:

Description

- ☐ BC CH Add Renov _ Exterior Sealing Update _ Attach (1)
- ☐ Bruns Co Courthouse _ Record Dwg _ 03202000 _ Attach (2)
- ☐ Bruns Co Courthouse _ Precast Joint Detail _ 03202000 _ Attach (3)

Brunswick County Courthouse
Addition and Renovation Project
Exterior Sealing & Cleaning Update

William L. Pinnix, P.E.,
Director of Engineering
October 4, 2021



BRUNSWICK COUNTY COURTHOUSE ADDITION & RENOVATIONS



SAWYER
SHERWOOD
& ASSOCIATE
ARCHITECTURE



Cheatham & Associates, P.A.
Plumbing, Mechanical and Electrical Engineers

Criser Troutman Tanner Consulting Engineers
Civil & Structural Engineers

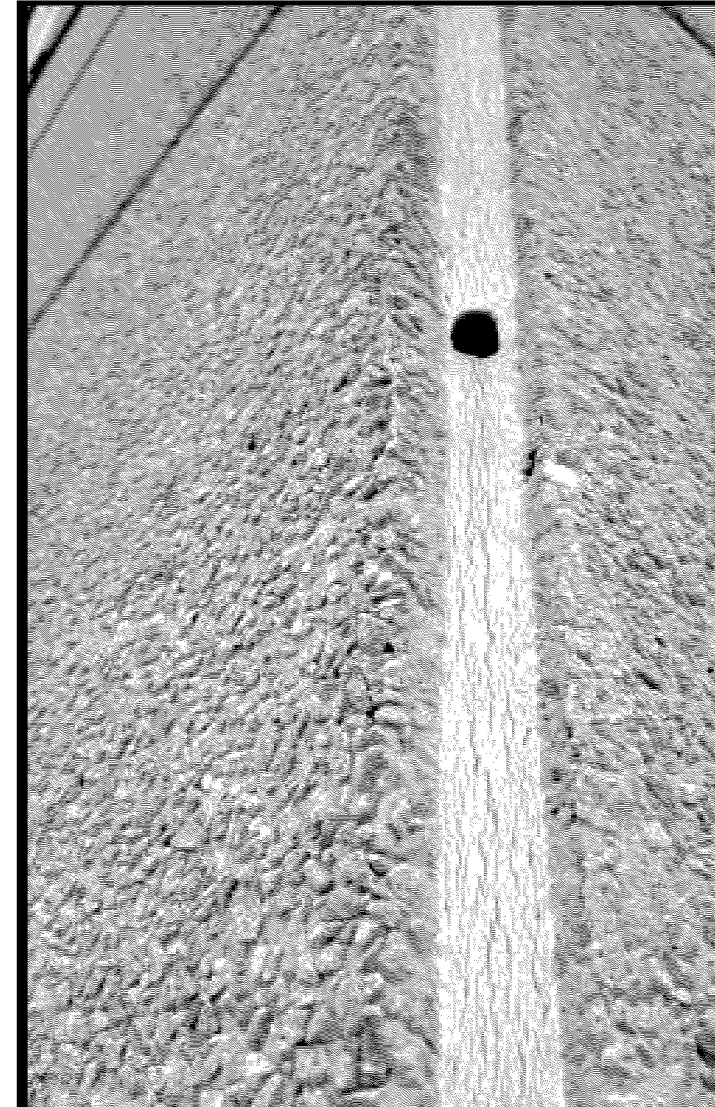
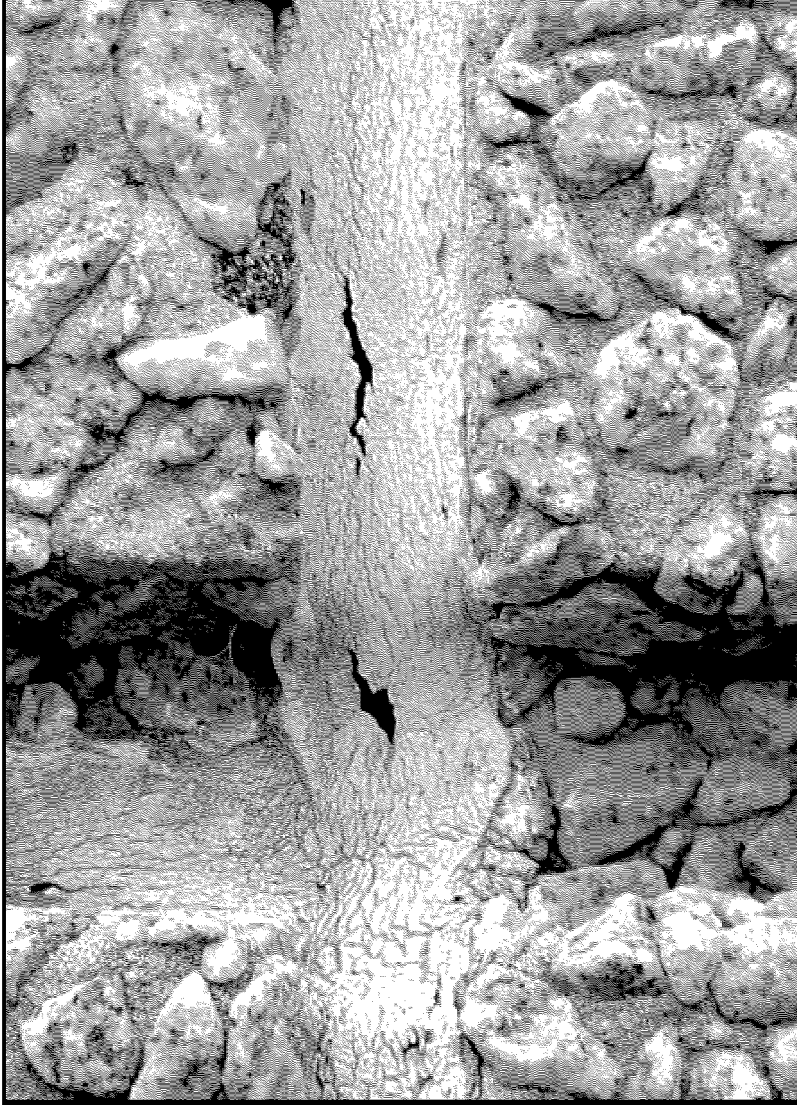
Sage Design
Landscape Architect

Mulford Cost Management
Cost Estimating

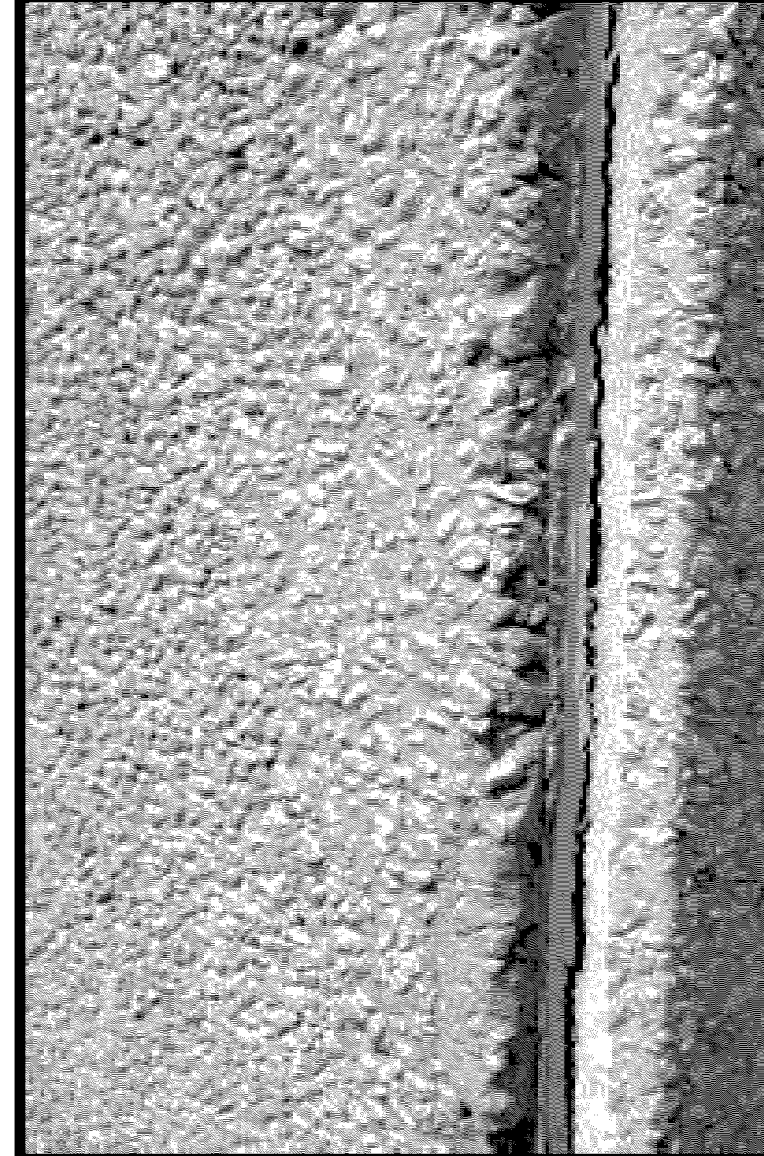
Courthouse Exterior Walls

- Exterior walls of the courthouse are precast concrete panels
- The concrete panels are also structural in nature that contribute to the building overall structural strength
- The panels have metal clips embedded in the backside concrete for adherence to the building
- Backside clips are welded to the structural steel framing of the building
- There are horizontal and vertical joints between panels that run all around the building and from ground level to the top
- The joints between concrete panels and around windows and doors are sealed using backer rod and joint sealant
- The existing joint sealing has held up well [building is approximately (22) years old] but showing visible signs of deterioration
- The existing building could also use a good cleaning

Existing Joint Sealant



Existing Joint Sealant



Existing Building Needs Cleaning



Existing Building Needs Cleaning



Modern Day Masonry Joint Backer Rod and Joint Se



Technical Data Sheet

DOWSIL™ 790 Silicone Building Sealant

Ultra-low-modulus sealant for sensitive natural stone, porous stone, masonry and concrete façades

Features & Benefits

- Low-staining and plasticizer free, suitable for porous substrates
- Excellent performance even in building joints that experience extreme movement
- Extension/compression capability of +100/-50 percent
- Conforms to ISO 11600F-25LM
- Excellent weathering properties and resistance to sunlight, rain, snow, and temperature extremes
- Excellent unprimed adhesion to masonry, concrete and natural stone substrates
- Easy application over a wide temperature range

Composition

- One-part, neutral-cure silicone sealant

Applications

- Sealing of joints between natural stone
- Sealing of curtainwall joints and mullion joints
- Sealing of expansion and control joints
- Sealing of precast concrete panel joints and many other construction joints

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test	Property	Unit	Result
As Supplied			
CTM ¹ 98	Skin-over Time (23°C, 50% R.H.)	min	9
CTM 95	Tack-Free Time (23°C, 50% R.H.)	min	31
CTM 663	Cure Rate (23°C, 50% R.H.)		
	1 Day	mm	2.8
	3 Days	mm	5.8
As Cured – After 28 Days at 23°C and 50% RH			
CTM 99	Durometer Hardness, Shore A		11
ISO ² 8339	Modulus 100%	MPa	0.08
ISO 8339	Elongation at Break	%	840

1. CTMs: Corporate Test Methods. Copies of CTMs are available upon request.
2. ISO: International Standardization Organization

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DOWSIL™ 790 Silicone Building Sealant
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Contractor Cost Estimates for Sealing Joints (anticipated start date = 2/1/2022)

Allowance Reduction Proposal



Wilmington
Raleigh
Charleston

208 Princess
Wilmington, NC 28401
P: 910-791-8101
monteithco.com

Bruns. Co. Eng. Dept.
08/04/2021 8:18:10 AM

Date: 8.03.21
Project: Brunswick County Courthouse Addition & Renovations
Owner Address: 310 Government Center Drive, NE
Bolivia, North Carolina 28422

ARP #: 107 R.1 - Exterior Caulking at Vertical & Horizontal Precast Joints

Proposal includes all labor, material, and equipment associated removing existing caulking at the vertical and horizontal precast joints on the existing courthouse building. Existing caulking will be removed, then closed cell backer rod, joints primed, and installation of Dow Corning 790. Price also includes ECS as a Third Party Inspection with scope outlined in their attached proposal. Installation warranty valid for 1 year.

<u>Subcontractor</u>	<u>Proposal Total</u>
Kool Green	\$38,000.00
MCC	\$896.00
ECS	\$3,500.00
Landscaping - Placeholder	\$1,000.00
TOTAL SUBCONTRACTS	\$43,396.00
5% GC FEE	\$2,169.80
TOTAL CHANGE AMOUNT	\$45,565.80

Sincerely,

Matt Brittan

Matt Brittan

Monteith Acceptance

Owner Acceptance

MONTEITH
CONSTRUCTION CORP.
RALEIGH | WILMINGTON

Allowance Reduction Proposal



Wilmington
Raleigh
Charleston

208 Princess
Wilmington, NC 28401
P: 910-791-8101
monteithco.com

Bruns. Co. Eng.
08/04/2021 8:18:4

Date: 8.03.21
Project: Brunswick County Courthouse Addition & Renovations
Owner Address: 310 Government Center Drive, NE
Bolivia, North Carolina 28422

ARP #114 R.1 - Exterior Caulking at Windows, Doors & Louvers

Proposal includes all labor, material, and equipment associated removing existing caulking at the windows, doors & louvers on the existing courthouse building. Existing caulking will be removed, then closed cell backer rod, joints primed, and installation of Dow Corning 790. Price also includes ECS as a Third Party Inspection with scope outlined in their attached proposal. Installation warranty valid for 1 year.

<u>Subcontractor</u>	<u>Proposal Total</u>
Kool Green	\$16,800.00
MCC	\$896.00
ECS	\$2,200.00
Landscaping - Placeholder	\$1,000.00
TOTAL SUBCONTRACTS	\$20,896.00
5% GC FEE	\$1,044.80
TOTAL CHANGE AMOUNT	\$21,940.80

Sincerely,

Matt Brittan

Matt Brittan

Monteith Acceptance

Owner Acceptance

MONTEITH
CONSTRUCTION CORP.
RALEIGH | WILMINGTON

Contractor Cost Estimates for Pressure Washing

Allowance Reduction Proposal



Wilmington
Raleigh
Charleston

208 Princess
Wilmington, NC 28401
P: 910-791-8101
monteithco.com

Bruns. Co. Eng. Dept.
08/04/2021 8:19:15 AM

Date: 7.12.21

Project: Brunswick County Courthouse Addition & Renovations

Owner Address: 310 Government Center Drive, NE
Bolivia, North Carolina 28422

ARP #: 127 - Exterior Building Pressure Washing

Proposal includes all labor, material, and equipment cost associated with pressure washing the existing Courthouse. Proposal includes vertical walls only, no roofing or sidewalks included. MCC is not responsible for any water intrusion issues when pressurewashing.

<u>Subcontractor</u>	<u>Proposal Total</u>
<u>Kool Green</u>	<u>\$13,000.00</u>
<u>MCC</u>	<u>\$448.00</u>
<u>N/A</u>	<u>\$0.00</u>
<u>N/A</u>	<u>\$0.00</u>
TOTAL SUBCONTRACTS	<u>\$13,448.00</u>
5% GC FEE	<u>\$672.40</u>
TOTAL CHANGE AMOUNT	<u>\$14,120.40</u>

Sincerely,

Matt Brittan

Matt Brittan

Monteith Acceptance

Owner Acceptance

MONTEITH
CONSTRUCTION CORP.
RALEIGH | WILMINGTON

Building Wall Precast Panel Removal – Phase 1 - April



Wall Sheathing Had to be Installed for the New 15,000 SF Addition – Ap



Summary

- The courthouse building is almost twenty-two years old now
- This is the only county building constructed with precast panels and this number of sealed joints
- The existing joint sealants have held up well but are deteriorating and will continue to degrade
- Lack of wall sheathing on the building makes it critical to keep all joints, windows, doors, etc., sealed against water intrusion behind the exterior panels
- The existing sealant should be removed, and new backer rod and silicone joint sealant installed in all exterior joints on the building to provide maximum protection and restore sealed joint longevity
- This work will be labor intensive and will require elevated lifts for a three-story building
- Most efficient course of action now is formal change order with current building contractor
- If not done as part of the building addition & renovation project, then must be budgeted for as a building deferred maintenance item in Operation Services budget as a future maintenance item

Questions??

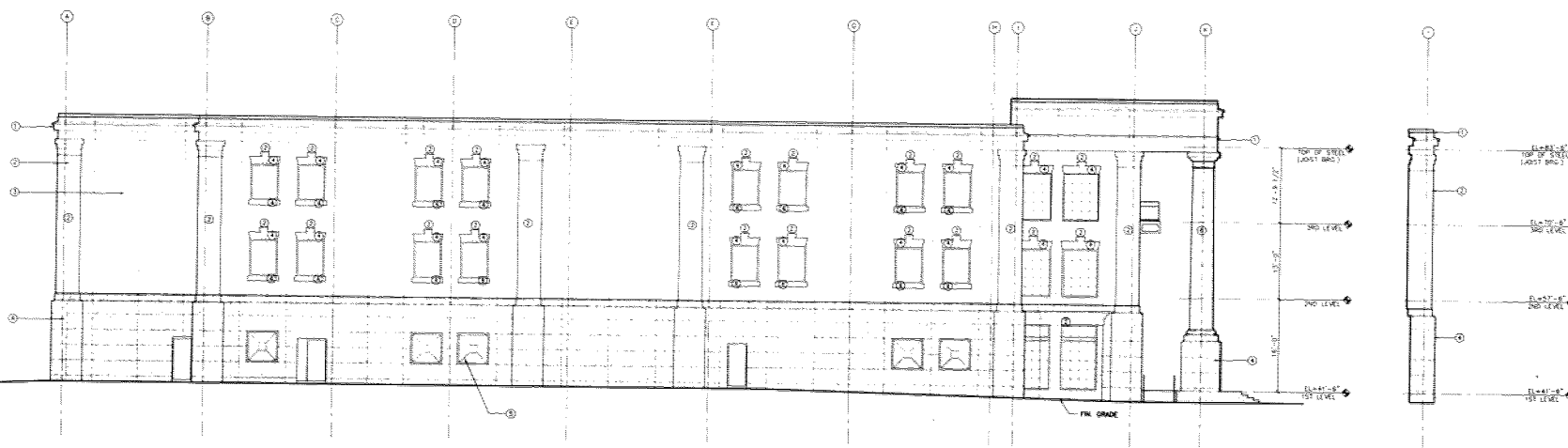


KEYED NOTES

- ① GLASS FIBER REINFORCED CONCRETE CORNICE - COLOR 1
- ② PRECAST CONCRETE PANELS - FINISH TYPE 14
- ③ PRECAST CONCRETE PANELS - FINISH TYPE 15
- ④ PRECAST CONCRETE PANELS - FINISH TYPE 17
- ⑤ METAL GRILLE
- ⑥ GLASS FIBER REINFORCED CONCRETE COLUMNS - COLOR 2

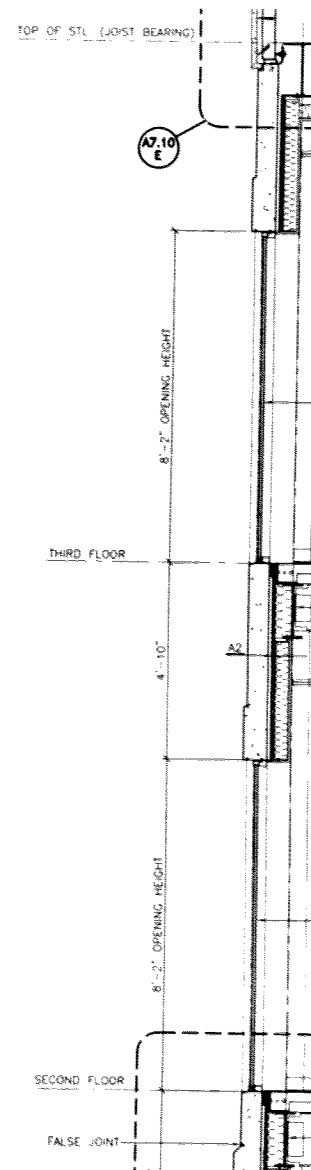
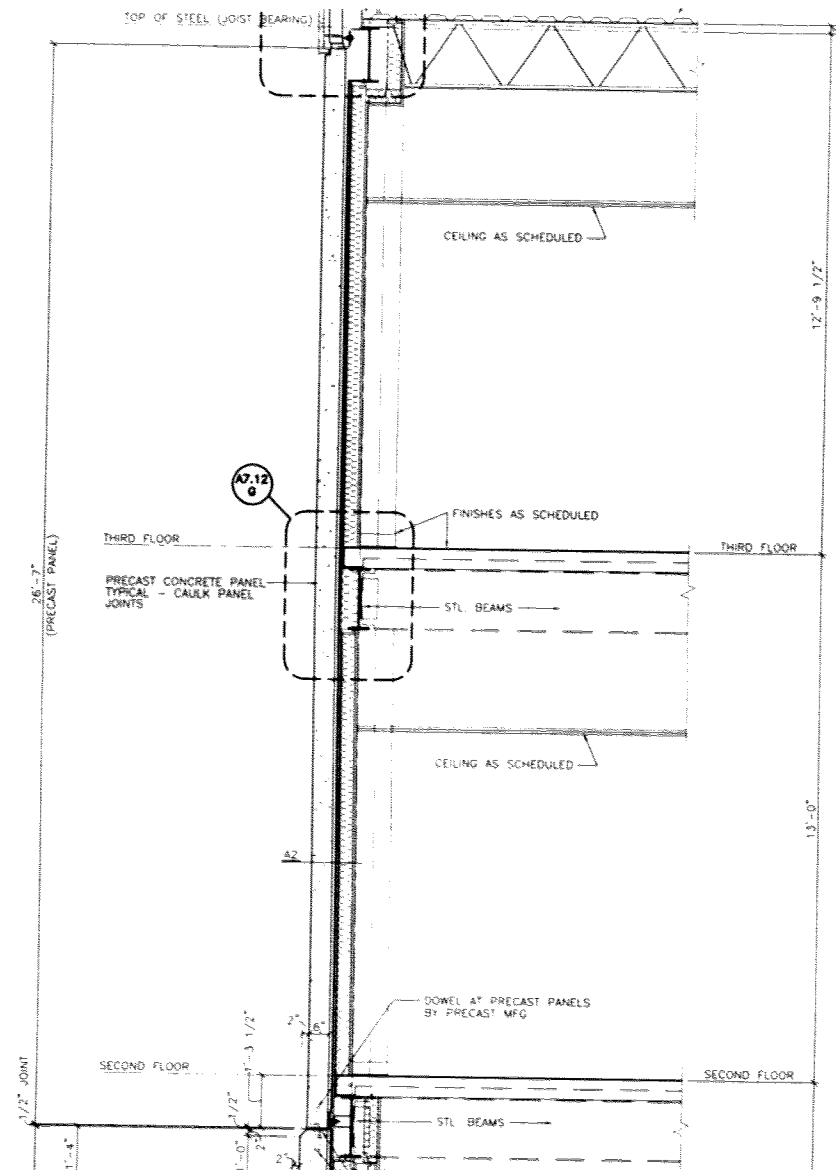
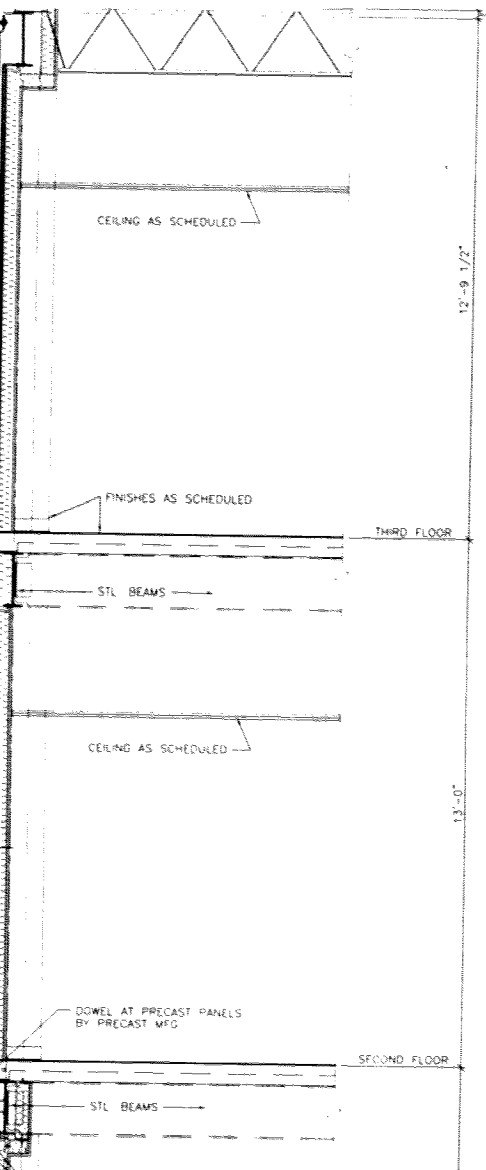


A NORTH ENTRANCE ELEVATION
SCALE: 1/8"=1'-0"



B EAST ELEVATION
SCALE: 1/8"=1'-0"

C CORNER ELEVATION
SCALE: 1/8"=1'-0"



End
Of
Original