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

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

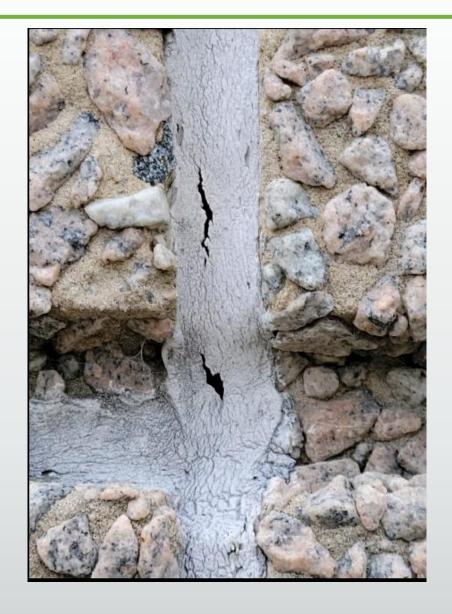


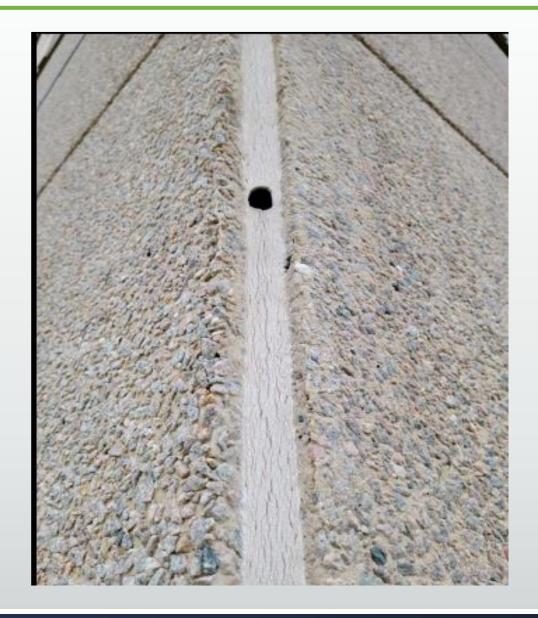


## Courthouse Exterior Walls

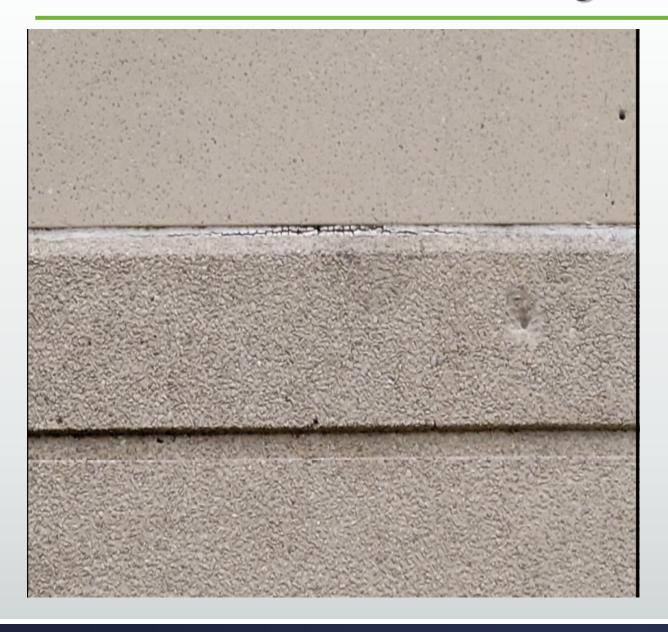
- Exterior walls of the courthouse are precast concrete panels
- The concrete panels are also structural in nature that contribute to the building overall structural strength
- The panels have metal clips embedded in the backside concrete for adherence to the building
- Backside clips are welded to the 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 roof
- 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 Sealant





Technical Data Sheet

#### DOWSIL™ 790 Silicone Building Sealant

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

#### 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

Page 1 of 4

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

Test	Property	Unit	Result	
	As Supplied			
CTM1 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 3 Days	mm mm	2.8 5.8	
	As Cured – After 28 Days at 23°C and 50% RH			
CTM 99	Durometer Hardness, Shore A		11	
ISO <sup>2</sup> 8339	Modulus 100%	MPa	0.08	
ISO 8339	Elongation at Break	%	840	

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

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Form No. 62-2147-01-0220 S2D

### Contractor Cost Estimates for Sealing Joints (anticipated start date = 2/1/2022 if approved)

#### **Allowance Reduction Proposal**



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

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

**Proposal Total** 

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

Subcontractor

#### 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.

Kool Green		\$38,000.00
мсс		\$896.00
ECS		\$3,500.00
Landscaping - Pleaseholder		\$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
Owner Acceptance	N	lonteith Acceptance

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CONSTRUCTION CORP
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#### **Allowance Reduction Proposal**



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

**Bruns. Co. Eng. Dept.** 08/04/2021 8:18:48 AM

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.

Subcontractor		Proposal Total
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
Owner Acceptance	N	Ionteith Acceptance

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## Contractor Cost Estimates for Pressure Washing

#### **Allowance Reduction Proposal**

V	M
4	M
Wilmir	ngton
Rale	igh
Charle	ston

Date:

Project:

Owner Address:

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

7.12.21

310 Government Center Drive, NE

Brunswick County Courthouse Addition & Renovations

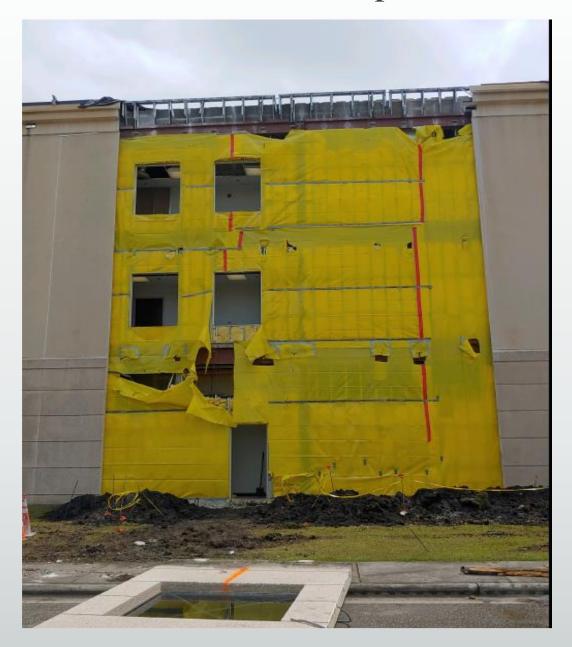
Bruns. Co. Eng. Dept. 08/04/2021 8:19:15 AM

ARP #: :		
	127 - Exterior Building Pressure W	ashing ashing
Courthouse. Proposal includes v	terial, and equipment cost associated with ertical walls only, no roofing or sidewalks in ly water intrusion issues when pressurewas	cluded. MCC is not responsible
Subco	ntractor	<u>Proposal Total</u>
Kool Green		\$13,000.00
MCC		\$448.00
N/A		\$0.00
N/A		\$0.00
	TOTAL SUBCONTRACTS	\$13,448.00
	5% GC FEE	\$672.40
	TOTAL CHANGE AMOUNT	\$14,120.40
	Sincerely	,
		Matt Brittan
		Matt Brittan
Owner Acceptance		Monteith Acceptance

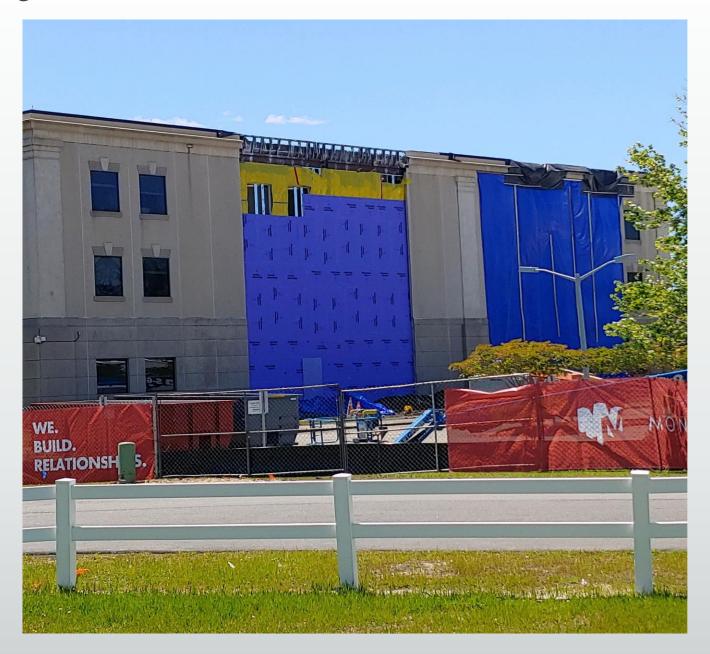
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## <u>Building Wall Precast Panel Removal – Phase 1 - April 2020</u>





## Wall Sheathing Had to be Installed for the New 15,000 SF Addition – April 2020



### **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??

