



AGENDA

Thursday, August 14, 2025: 4:00 PM

Historic District Commission

Community Development Building, 801 SE Service Road

1. CALL TO ORDER

2. APPROVAL OF MINUTES

a. July 10, 2025 Regular Meeting

3. PUBLIC HEARINGS

a. HD-17-25 COA - Major Work for 125 SE Broad Street

b. HD-18-25 COA - Major Work for 180 SW Broad Street

c. HD-19-25 COA - Major Work for the Downtown Park

4. UNFINISHED BUSINESS

5. NEW BUSINESS

a. Discussion regarding CLG Training in Southern Pines on October 3, 2025

b. E.S. Douglass Community Center National Register Nomination Status

6. ADJOURNMENT

Agenda Item

To: Historic District Commission

From: Mason Mattox, Planner II

Subject: HD-17-25 – 125 SE Broad Street (Town of Southern Pines Administration Building)

Date: August 14, 2025

I. SUMMARY OF APPLICATION REQUEST:

Darren Johnson, Facilities Superintendent for the Town of Southern Pines, is requesting a Certificate of Appropriateness – Major Work for the Town of Southern Pines Administration Department building located at 125 SE Broad Street to construct a required ADA-compliant ramp on the East Pennsylvania Avenue entrance to the building, replace the original windows with new windows that will be identical in appearance, replace broken or damaged slate roof tiles with matching slate, repair the roof underlayment, install new drip-edges and replace the ridge caps.

II. APPLICATION CONTINUANCE AND REVISIONS

The public evidentiary hearing for Application HD-19-25 was called to order on July 10, 2025, with six members of the Historic District Commission present. The oath was administered to all individuals intending to provide testimony. Planning staff entered the Staff Report dated July 10, 2025, as Exhibit A, followed by staff's presentation from the same date, which was entered as Exhibit B.

Following deliberation, the Commission voted to continue the application for one month, citing concerns regarding the proposed appearance and materials of the replacement windows. The applicant acknowledged these concerns and agreed to address them prior to the continued hearing.

Since the July 10 hearing, the applicant has acquired a sample window from the manufacturer to provide a visual representation of the proposed replacement. The sample, constructed of vinyl, is intended to demonstrate the applicant's intention to replace all fifteen (15) of the building's original windows with new units that, while modern in material, closely replicate the appearance and design of the existing historical windows. The applicant states that the original windows are currently deteriorated or deteriorating due to age, weathering, and lack of material resilience. The proposed vinyl replacements are designed to mirror the aesthetic qualities of the originals while offering the practical benefits of improved cost-efficiency, durability, energy performance, and reduced maintenance. This approach is being presented to ensure that the proposed alterations are appropriate within the character of the local historic district, while simultaneously

safeguarding the building’s long-term structural integrity.

Additionally, the applicant has researched appropriate materials for roof fixtures such as ridge caps and drip edges. Based on availability and compatibility, the applicant continues to propose the use of copper-colored aluminum to achieve a historically appropriate appearance while using modern, more durable materials.

III. SITE INFORMATION:

A. Physical Address

125 SE Broad Street
Southern Pines, NC 28387

B. Property Owner

The Town of Southern Pines
125 SE Broad Street
Southern Pines, NC 28387

C. Applicant & Authorized Agent

Darren Johnson, Facilities Superintendent, Town of Southern Pines
Authorized by Mike Cameron, Assistant Town-Manager, Town of Southern Pines

D. Zoning of Property

The subject property is presently zoned Facilities Resource and Recreation (FRR) and is located within the Town’s Local Historic District.

E. Historical Context of Subject Property

The following historical description of the building is taken from the 1991 National Register Nomination Form: “Dr. J.S. Milliken Office” (Constructed 1901, Renovated 1926)

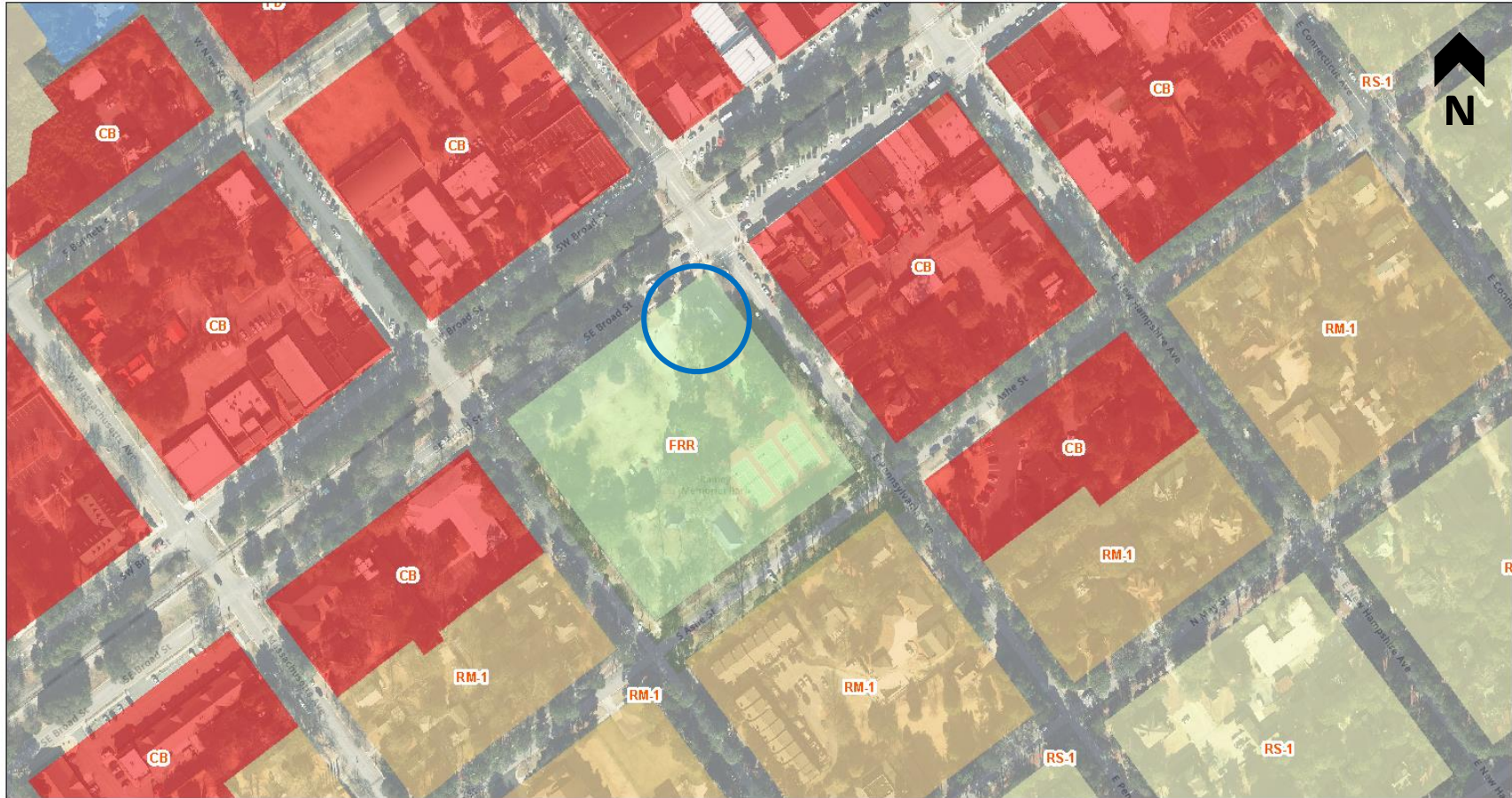
L-shaped Colonial Revival style office building with high, hipped slate roofs; originally frame; brick veneered and remodeled in 1926; three-bay west elevation has central, gabled portico with triple Doric columns, arched ceiling; flanking windows have cast stone sills and lintels, panels above them; six panel door with arched fanlight; north street elevation four bays with off-center pedimented Doric portico, windows with cast stone sills and lintels, panels; rear entrance with pedimented hood; windows all six-over-six with panelled shutters; large corbelled-capped chimney; office built for Dr. J.S. Milliken in 1901 on site of earlier Dr. Swett office; brick veneered and remodelled in 1926; detailing of remodelling matches buildings designed by Aymar Embury II during the same period.



125 SE Broad Street. (Photo provided by staff)

Figure 1: Vicinity & Zoning Map (Subject Property is Circled in Blue)

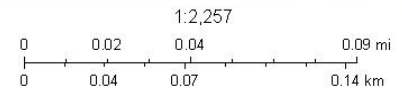
125 SE Broad Street & Downtown Park



7/11/2025, 11:06:20 AM

Zoning Text
 All Zoning Over Aerial
 CB, Central Business
 CB-CD, Central Business Conditional District

FRR, Facilities Resources Recreation
 OS, Office Services
 PD, Planned Development
 RM-1, Residential Single & Multi-Family
 RM-2, Residential Single & Multi-Family
 RS-1, Residential Single Family



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, OpenStreetMap contributors, and the GIS User Community. Sources: Esri, Maxar, Airbus DS, USGS, NOAA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodienstverlen, Rijkswaterstaat, GSA, Geoland,

Source: TOSP Planning Mapping Site
 The Town of Southern Pines, its agents and employees make NO warranty as to the correctness or accuracy of the information set forth on this media whether express or implied.

Figure 3: Existing Roof Conditions

125 SE Broad Street – “Street-Facing Roof.” Google Maps, retrieved June 30, 2025.

- According to the applicant, the roof has several holes creating weather-proofing issues.
- According to the applicant, the existing ridge caps are metal, and have a silver-like appearance.
- Also, no drip-edges currently exist on the building, creating additional rain collection issues.



Figure 4: Ridge caps as seen from Broad Street. (Photo provided by staff)

Figure 5: Pennsylvania Avenue-facing elevation, displaying a lack of drip-edges. (Photo provided by staff)



Figure 6: Existing twelve-light window with three-over-four layout. (Photo provided by staff)



Figure 7: Proposed replacement rendering. The proposal is to replace 15 (fifteen) windows in total, with vinyl windows otherwise identical in appearance and design.

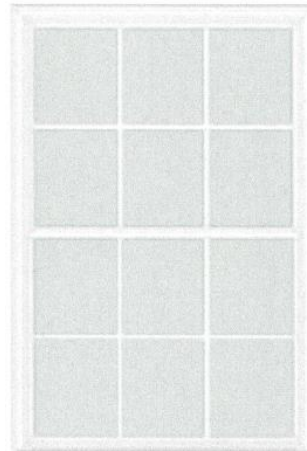


Figure 8: Proposed replacement window model – with and without paneling.



Figure 9: Proposed replacement up-close detail.

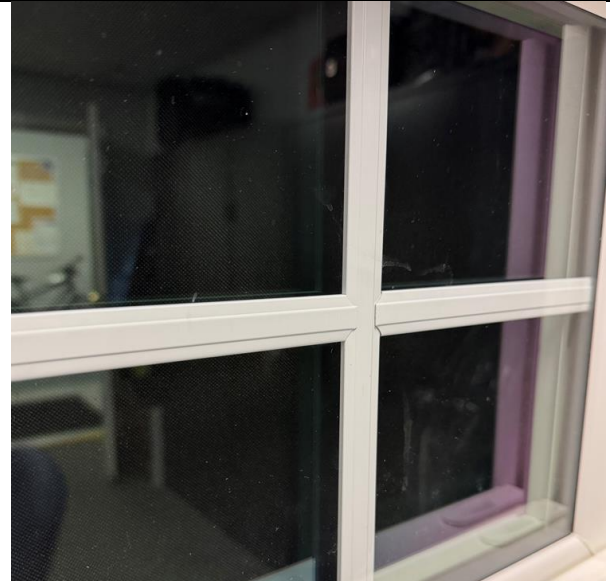


Figure 10: Park-facing elevation windows.
(Photo provided by staff)



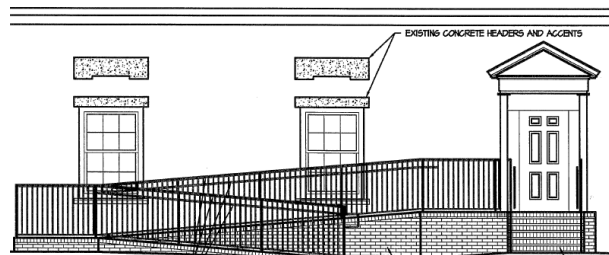
Figure 11: Corner elevation facing Pennsylvania Avenue and Downtown Park displaying a sign that the facility does not meet ADA-compliant standards.



Figure 12: Pennsylvania Avenue-facing elevation. (Photo provided by staff)



Figure 13: Pennsylvania Avenue-facing elevation with proposed ramp addition.



See ramp detail included as an attachment with this staff report for a more detailed rendering.



IV. STAFF REVIEW:

1. Application Processing and Public Notice

1. Application submitted: June 18, 2025
2. Notice of Public Hearing:
 - Posted On-site: June 24, 2025
 - Mailed: June 23, 2025
 - Internet: June 23, 2025
3. HDC Evidentiary Hearing: Thursday, July 10, 2025
4. HDC Evidentiary Hearing (Continued): Thursday, August 14, 2025

2. Application Materials

A complete application has been submitted including renderings to illustrate the project. The application, including renderings and other supporting images, is

enclosed in its entirety with this document as attachments. Staff note that the same ADA ramp proposal was approved as a Certificate of Appropriateness – Major Work under HD-24-20, but was never constructed due to budget constraints. The Certificate was issued on December 14, 2020, and expired on December 14, 2022.

3. Criteria for Review

Each criterion is listed below in bold, and *italicized* staff comments follow.

Section 2.28 Certificate of Appropriateness – Major Work.

2.28.10. Criteria

- A. In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural Significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public Right-of-Way. The Commission shall not consider interior arrangement or use.**

Planning staff find that the proposed window replacements, roof repairs, and ramp addition are compatible with the building's historic form and appearance as viewed from the public Right-of-Way. The copper-colored drip-edges and ridge caps are consistent with traditional detailing colors.

- B. The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:**

- 1) The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
Staff find this factor inapplicable because the proposed work does not alter the height of the existing structure.
- 2) The setback and placement on lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
Staff find this factor inapplicable because the footprint of the building will remain unchanged.
- 3) Exterior construction materials, including texture and pattern.
Slate roofing will be repaired in-kind. Window replacements will differ in material but match the texture and pattern of the originals.
- 4) Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
Architectural details are retained and new components will replicate existing details in appearance.

- 5) Roof shapes, forms and materials.
The roof form will remain unchanged. Repairs will use matching slate, copper-colored ridge caps, and drip-edges, consistent with historic shapes and forums but not materials. The new drip-edges, and the replacement ridge caps will be constructed of metal that is copper in color due to cost.
- 6) Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
Window replacements will match the original configuration in all visible aspects.
- 7) General form and proportions of buildings and structures.
Staff find this factor inapplicable because the proposed work would not change the building's form or overall proportions.
- 8) Appurtenant fixtures and other features such as lighting.
A new metal drip-edge, copper in color, is proposed as part of the roof repairs. It will be compatible in scale, location, and appearance with the building's historic detailing.
- 9) Structural conditions and soundness.
The applicant has stated that the original windows are, in his professional opinion, compromised and subject to failure, and that replacement is necessary to maintain safety and structural performance.
- 10) Architectural scale.
New elements will be consistent with the building's scale and would not introduce visually disruptive changes.
- 11) Secretary of the Interior Guidelines.
The Standards (Department of the Interior regulations, 36, CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.
 1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The proposed work meets applicable standards. Replacement features will match originals in design and appearance, and roof work preserves the historic material of slate.

C. Prior to approving the application, the Commission shall make the following findings:

- 1) Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of

material, design, dimensions, mass, scale, orientation, color and other applicable considerations;

The proposed work is compatible in appearance and scale and retains the defining character of the building.

- 2) Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and

No character-defining features will be removed, the building's historic contribution will be maintained.

- 3) Work is consistent with the adopted design guidelines for the historic district.

The proposal is consistent with the Town's Historic District Design Guidelines as the scope will maintain the district's visual integrity and preserve the character of the building, and larger Local Historic District.

4. Outside Agency Comments

This application was reviewed at the July 01, 2025 Technical Review Committee (TRC) Meeting with no comments from Fire or Public Works. Any comments received after completion of this staff report will be shared during the evidentiary hearing.

5. Staff Recommendation

Staff recommend approval of the Certificate of Appropriateness – Major Work for HD-17-25. The proposed window replacements, roof repairs, copper-colored ridge caps and drip-edges, and ADA-compliant ramp addition are compatible with the historic character of the structure and surrounding district. The work meets the applicable criteria of the Unified Development Ordinance, the Historic District Design Guidelines, and the Secretary of the Interior's Standards for Rehabilitation.

V. ATTACHMENTS:

1. Draft Findings of Fact and COA
2. Application
3. Historic District Design Guidelines (Listed as "HDDG pp.86-87")
4. Draft HD-24-20 Written Decision for the HDC's consideration.

VI. HISTORIC DISTRICT COMMISSION ACTION

UDO Section 2.28.4(A) states that the Historic District Commission shall approve, approve with conditions, or deny an application for a COA Major Works based on the criteria established in UDO Section 2.28.20. To either approve or deny a *Certificate of*

Appropriateness – Major Work application, the Historic District Commission must make findings of fact and conclusions to the applicable standards. The Historic District Commission shall first vote on whether the application is complete and the facts submitted are relevant to the case. The Historic District Commission shall then vote on whether the application complies with the Criteria for a Certificate of Appropriateness, including the Principles and Guidelines of the Historic District. Staff has prepared Draft Findings of Fact for the Commission’s consideration which can be found below. The Commission may discuss, amend and/or adopt these Findings of Fact.

I move to:

1. Adopt **Attachment 1** of the staff report, as drafted as Findings of Fact regarding proposed Certificate of Appropriateness – Major Work HD-17-25

-OR-

2. Adopt **Attachment 1** of the staff report as Findings of Fact regarding the proposed Certificate of Appropriateness – Major Work, with the following changes:

Therefore, I move to:

1. Approve HD-17-25

- OR -

2. Approve HD-17-25 with the following conditions of approval:

-OR-

3. Deny HD-17-25, based on the following:

FINDINGS OF FACT
Case Number: HD-17-25

1. The Historic District Commission finds that the application is complete and that the facts submitted are relevant to the case because the request for a Certificate of Appropriateness (COA) Major Work approval has met the specified submittal requirements as outlined in the Town of Southern Pines Unified Development Ordinance (UDO) Appendices. The applicants have submitted adequate evidence addressing the criteria for a COA Major Work, including images, and relevant documentation. The evidence provided includes sworn testimony by qualified experts and substantiated materials.
2. The Historic District Commission finds that the application is consistent with UDO §2.28.10(A)-(C), the Town of Southern Pines Historic District Design Guidelines, as well as the standards provided by the Department of the Interior, for the following reasons:
 - A. The Commission finds that the proposed replacement of the original windows with new units identical in design, proportion, and appearance will preserve the architectural character of the building. The materials, while not original, are visually indistinguishable from the originals when viewed from the public right-of-way and will retain the six-over-six pane configuration and dimensions.
 - B. The Commission finds that the repair of the slate roof with in-kind materials and the replacement of ridge caps and addition of drip-edges—both to be metal with a copper-like appearance—will not detract from the character of the structure. These features are compatible in appearance, scale, and color and will protect the long-term integrity of the historic resource.
 - C. The Commission finds that the construction of the ADA-compliant ramp on the Pennsylvania Avenue entrance, previously approved under HD-24-20, continues to meet the Historic District Design Guidelines and is located at a secondary entrance to avoid interfering with the primary façade. The ramp design integrates seamlessly with the structure and surroundings and maintains the overall appearance of the building.
 - D. The Commission further finds that the proposed work is compatible with the historic character of the structure and the surrounding district and that it meets the intent and requirements of the Historic District Design Guidelines, the Unified Development Ordinance, and The Secretary of the Interior’s Standards for Rehabilitation. The proposed work is necessary for continued safe use of the building and preserves its defining features.
3. Therefore, based on the evidence presented, the Commission finds that the proposed work meets the applicable standards. The Certificate of Appropriateness, as drafted and dated August 14, 2025, is incorporated herein and approved as the scope of work.

DRAFT CERTIFICATE OF APPROPRIATENESS – MAJOR WORK
Case Number: HD-17-25

Addresses of proposed work: 125 SE Broad Street, Southern Pines, NC 28387

The Town of Southern Pines Historic District Commission has reviewed the application submitted and approved a request for a *Certificate of Appropriateness – Major Work*, for Darren Johnson for the following scope of work:

1. The replacement of fifteen (15) windows:
 - Replacement windows to match the original units in design, color, dimensions, pane configuration, and overall appearance.
 - Windows will be constructed of durable modern materials but will be visually indistinguishable from the original design when viewed from the public right-of-way.
 - One window on the Downtown Park-facing side (opposite the building face of Pennsylvania Avenue) shall have paneling to mirror adjacent windows where paneling has previously not existed.
2. Roof repairs and restoration:
 - Broken or damaged slate tiles will be replaced in-kind.
 - Existing roof underlayment will be repaired.
 - New metal ridge caps and drip-edges will be installed, both copper-colored for historic compatibility.
3. ADA ramp construction:
 - A new ADA-compliant ramp will be constructed on the Pennsylvania Avenue side of the building, in accordance with previously approved design under HD-24-20.
 - Brick and iron railing materials will match existing features in color, scale, and detailing.
 - The ramp will preserve the building’s main front elevation and maintain the historic streetscape and character.

All work shall be completed in accordance with the submitted application and supporting materials dated June 18, 2025, and incorporated into this Certificate by reference.

Please reference project file for project specifics and associated documentation.

This certificate is valid pursuant to the development approval timeframes described in UDO §2.8.1 (24 months from the date of approval). Please notify the Town of Southern Pines Planning Office when the work is complete **OR IF THE SCOPE OF WORK CHANGES IN ANY MANNER FROM WHAT IS STATED IN THIS CERTIFICATE. If you are unable to complete the above-approved project within the development approval timelines, please contact the Town of Southern Pines Planning Office at (910) 692-4003 regarding extension of the development approval timeline pursuant to UDO §2.8.2.**

Application for: **Certificate of Appropriateness
Major Work**

FOR OFFICE USE ONLY		Fee Paid: <input type="text" value="N/A"/>
Date Received: <input type="text"/>	Case No.: HD-	<input type="text" value="17-25"/>

Project Information:

Street Address:

PIN: Parcel ID:

Site Size: Zoning:

Applicant:

Name(s):

Email: Phone:

Mailing Address:

Authorized Agent, if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

Legal Property Owner(s), if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

Application for: **Certificate of Appropriateness
Major Work**

TO THE TOWN OF SOUTHERN PINES HISTORIC DISTRICT COMMISSION:

I submit this application for a Certificate of Appropriateness – Major Work to make the following change(s) which may alter the exterior appearance of property within the Town of Southern Pines Historic District:

The construction of a required ADA-compliant ramp on the East Pennsylvania Avenue side of the Town's Administration Building, the replacement of all of the original windows with windows identical in appearance, but with new materials, the replacement of broken or damaged slate roof tiles with matching slate, the repair of the roof underlayment, the installation of new drip-edges, and the replacement of the building's ridge caps.

Date:



Applicant

Note: The attached Appointment of Agent form must be submitted if the Applicant is not the property owner.

TO SUBMIT THIS FORM

click here to e-mail [click here](#) or e-mail as attachment to plan@southernpines.net

APPOINTMENT OF AGENT

The undersigned owner(s), hereby appoint(s) as the exclusive agent for the purpose of making an application to the Town of Southern Pines for a **Certificate of Appropriateness – Major Work** on the property described in the attached application. The owner(s) hereby agrees that this agent has the authority to act for and on behalf of the owner(s) as follows:

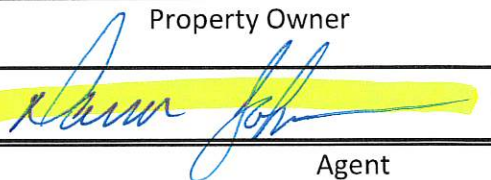
1. to submit an application and required supplemental materials;
2. to appear at public meetings and give representation and comments on behalf of the owner(s);
3. to accept conditions or recommendations made by the Town of Southern Pines Historic District Commission for the issuance of a **Certificate of Appropriateness – Major Work** on the subject property; and
4. to act on behalf of the owner(s) without limitations with regard to any and all things directly or indirectly connected with or arising out of any application for a **Certificate of Appropriateness – Major Work** under the Southern Pines Unified Development Ordinance.

This Appointment of Agent shall remain in effect until final resolution of the attached application.

Date Signed



Property Owner



Agent

TO SUBMIT THIS FORM

click here to e-mail [or](#) e-mail as attachment to plan@southernpines.net

- (A) In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public right-of-way. The Commission shall not consider interior arrangement or use.
- (B) The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:
1. The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
 2. The setback and placement on a Lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
 3. Exterior construction materials, including texture and pattern.
 4. Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
 5. Roof shapes, forms and materials.
 6. Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
 7. General form and proportions of buildings and structures.
 8. Appurtenant fixtures and other features such as lighting.
 9. Structural conditions and soundness.
 10. Architectural scale.
 11. Secretary of the Interior Guidelines.
- (C) Prior to approving the application, the Commission shall make the following findings:
1. Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of material, design, dimensions, mass, scale, orientation, color and other applicable considerations;
 2. Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and
 3. Work is consistent with the adopted design guidelines for the historic district.

REQUIRED APPLICATION MATERIALS:

- Application fee** in the amount of **\$250.00**.
- Completed Application** for a Certificate of Appropriateness – Major Work signed by the applicant. Please do not leave anything blank and make sure all of the information provided is correct.
- Appointment of Agent**, if applicable, signed by the property owner(s) and the agent as evidence that the current property owner(s) approve(s) of the proposed work.
- List of Adjacent Property Owners**: Please list all properties that are that are within two hundred (200) feet of the outermost boundaries of the subject property (**not counting streets, railroads or other transportation corridors**). Attach additional pages if needed. No fewer than ten (10) property owners shall be notified by mail.
- Deed** copy to provide proof of ownership and property boundaries.
- Project description**: Please tell us what currently exists and what changes you are proposing. Please attach written descriptions, maps, illustrations/renderings, photographs, material samples, etc. as necessary.
- Written narrative**: Please address compliance with all of the criteria listed in **UDO §2.28.10 Criteria for a Certificate of Appropriateness – Major Work**. The Historic District Commission will determine if the application meets the established criteria for approval. The list of criteria is attached.
- Electronic copy (PDF) of all application materials** submitted to plan@southernpines.net.

PLEASE SUBMIT ONLY ONE (1) COMPLETE SET OF ALL MATERIALS.

REVIEW AND APPROVAL:

1. **Staff review**: Planning staff will review the application and notify the applicant if additional materials are needed. It is the applicant's responsibility to demonstrate compliance with applicable criteria.
2. **Public hearing**: The applicant is expected to attend a public hearing before the Historic District Commission at its regular monthly meeting. Please refer to the **Application Processing Timeline** to determine the hearing date.
3. **Issuance of Certificate of Appropriateness**: If the request is approved by the Historic District Commission, a Certificate of Appropriateness - Major Work setting forth any conditions of approval will be issued to the applicant. All construction associated with the project and/or the operation of the development must comply with the Certificate of Appropriateness.

**PLANNING DEPARTMENT
TOWN OF SOUTHERN PINES
801 SE Service Road, Southern Pines, NC 28387
plan@southernpines.net (910) 692-4003 www.southernpines.net**

SEAL

NSI

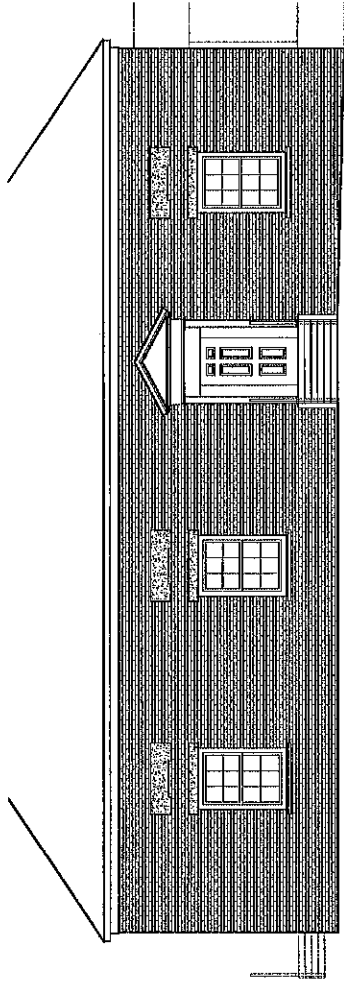
Neal Smith Engineering, Inc.
139 Rockledge - Suite C
Raleigh, NC 27601
Phone: (919) 852-4412
Fax: (919) 852-4413
www.neal-smith-engineering.com
License No. 01615

REVISIONS

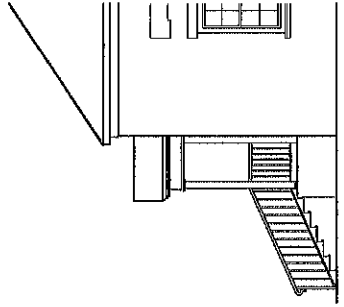
NO.	DESCRIPTION

TOWN OF SOUTHERN PINES
Southern Pines, NC

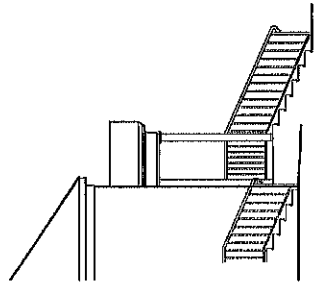
EXTERIOR ELEVATIONS



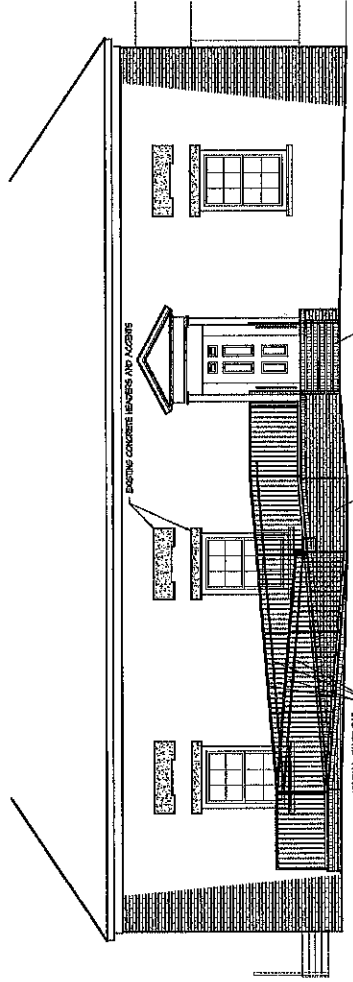
1 E. Pennsylvania Ave. Elevation
1/8" = 1'-0"



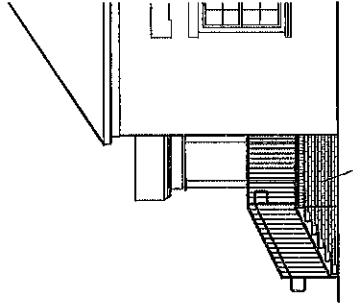
2 NE Broad St. Elevation - Partial
1/8" = 1'-0"



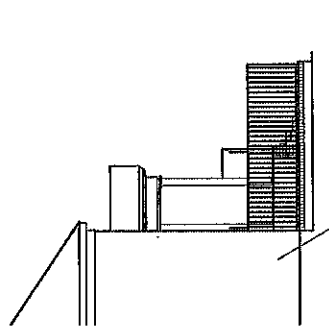
3 Rear Elevation - Partial
1/8" = 1'-0"



4 E. Pennsylvania Ave. Elevation
1/8" = 1'-0"



5 NE Broad St. Elevation - Partial
1/8" = 1'-0"

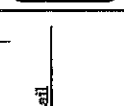


6 Rear Elevation - Partial
1/8" = 1'-0"

EXISTING ELEVATIONS
RENOVATED ELEVATIONS

FOUNDATION PLAN AND DETAILS

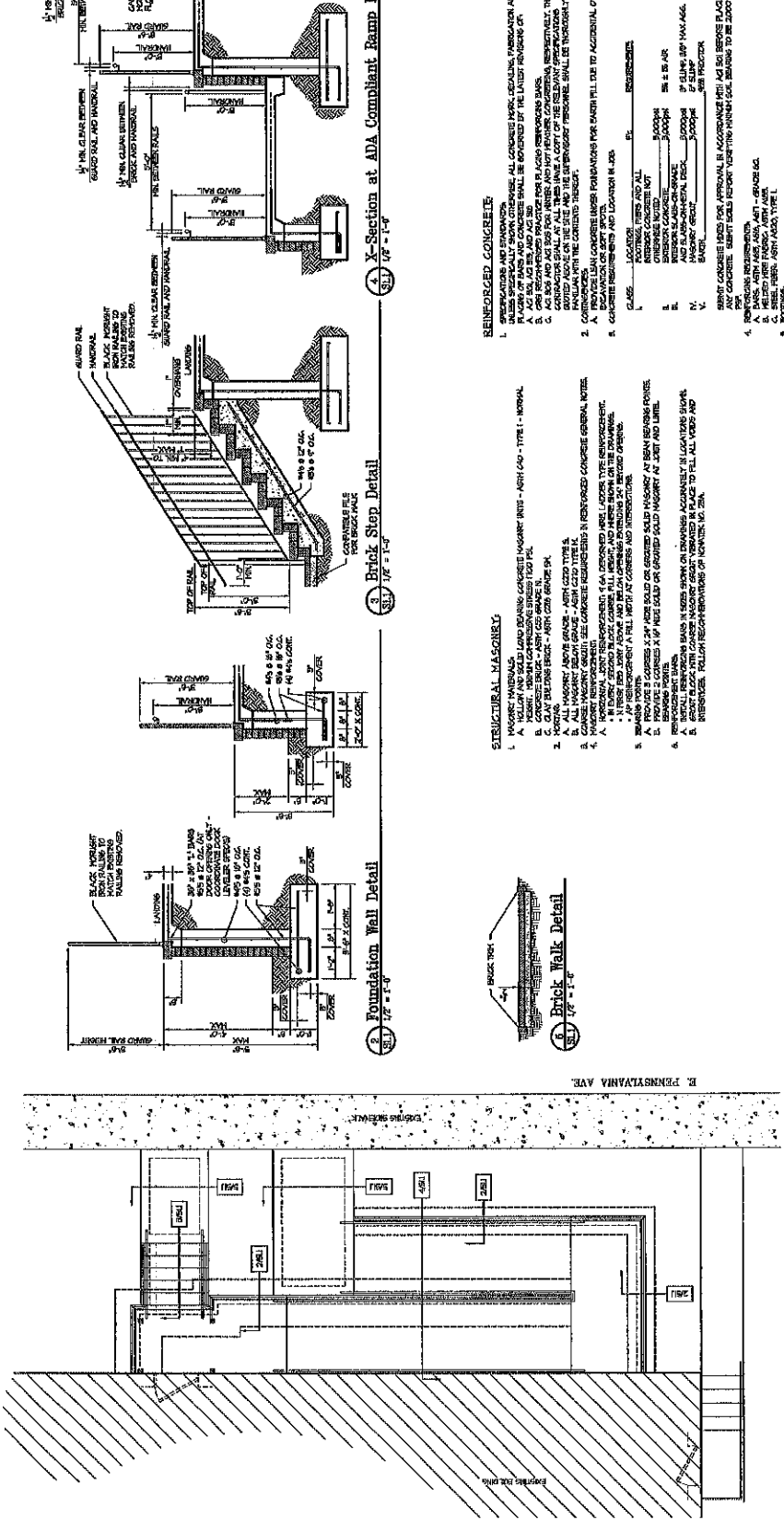
TOWN OF SOUTHERN PINES
Southern Pines, NC



NSI
Neal Smith Engineering, Inc.
133 Brookstone - Suite C
Brookstone Park, NC 28520
Phone: (919) 693-8833
Fax: (919) 693-8833



DATE: 10/20/2020
BY: [Signature]
CHECKED BY: [Signature]
CONSTRUCTION SET



REINFORCED CONCRETE

1. SPECIFICATIONS AND STANDARDS: ALL CONCRETE WORK, INCLUDING FOUNDATION AND SLABS SPECIFICALLY SHOWN OTHERWISE, SHALL BE CONFORMED TO THE LATEST EDITIONS OF:
 A. ACI 308 AND ACI 318
 B. ACI 309
 C. ACI 310 AND ACI 311
 D. ACI 312 AND ACI 313
 E. ACI 314 AND ACI 315
 F. ACI 316 AND ACI 317
 G. ACI 318 AND ACI 319
 H. ACI 320 AND ACI 321
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 JC. ACI 830 AND ACI 831
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 JF. ACI 836 AND ACI 837
 JG. ACI 838 AND ACI 839
 JH. ACI 840 AND ACI 841
 JI. ACI 842 AND ACI 843
 JJ. ACI 844 AND ACI 845
 JK. ACI 846 AND ACI 847
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 JS. ACI 862 AND ACI 863
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 KW. ACI 922 AND ACI 923
 KX. ACI 924 AND ACI 925
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 MI. ACI 998 AND ACI 999
 MJ. ACI 1000 AND ACI 1001

STRUCTURAL MASONRY

1. MASONRY MATERIALS: UNLESS OTHERWISE SPECIFIED, ALL MASONRY SHALL BE CONFORMED TO THE LATEST EDITIONS OF:
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 B. ACI 531
 C. ACI 532
 D. ACI 533
 E. ACI 534
 F. ACI 535
 G. ACI 536
 H. ACI 537
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 X. ACI 553
 Y. ACI 554
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 OO. ACI 908
 OP. ACI 909
 OQ. ACI 910
 OR. ACI 911
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 OT. ACI 913
 OU. ACI 914
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 OX. ACI 917
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 PN. ACI 933
 PO. ACI 934
 PP. ACI 935
 PQ. ACI 936
 PR. ACI 937
 PS. ACI 9



1311 S. Main St
Salisbury, NC 28144
(704) 637-0700

PROPOSAL

January 07, 2025
Rep, Rodney Spicer
(704) 637-0700



Prepared For:

Darren Johnson
Southern pines
801 S. E. Service Rd.
Southern Pines NC 28387

ABOUT US

We Don't Cut Corners and we Have A Firm, No-Pressure Sales Policy—In Writing.

As a local, family-owned business that started in 1978, we have listened to our client's feedback over the last 45 years, and have designed our process to be straightforward and upfront. We have a firm, no-pressure sales policy, and treat our clients as we want to be treated. We believe that every job is different so we tailor everything to your needs, home, and your budget all while prioritizing quality products and workmanship. We have longstanding direct relationships with some of the best brands in the industry, offering a wide selection of styles, designs, and materials at affordable prices.

WHAT WE DO

Enclosures

Our enclosures are a great way to add additional living space while maintaining the appearance of your home in Salisbury.

Windows

Installing replacement windows is one of the best things you can do to improve the energy efficiency of your Salisbury home.

Patio Covers

If you want to cover your patio but don't want to invest in a full new patio room, then our patio covers are just what you need in Salisbury.

Home Improvement

Our customers know that they can expect the high level of workmanship they deserve from us during every home improvement project in Salisbury.

Doors

Our selection of new doors offers the efficiency, durability, and strength you need for your home in Salisbury.

Siding

If your home is lacking the curb appeal that it once had, you may find that updated landscaping only does so much to help the actual appearance of your home.

TESTIMONIALS

Joe M.

The installers paid attention to detail, and could not have been more polite or respectful of home and property. They were more concerned with the process of doing the job properly versus hurry up and get done.

Their focus was on the construction process and not production. Truly professional people that take pride in their work. I would highly recommend Speaks Custom Windows to anyone wanting to improve their home.

T. Powlas

Jay Henderson came out, gave us all the facts, and even made a recommendation, and I couldn't be more in love with the big sliding window in my dining room. The windows were ready in just a few weeks. The guys who came out to install hit the ground running. They installed the windows in a day. They sealed them and cleaned them, and there was no trace of the old windows or that any work had been done. The outside trim looks amazing. I went to work and came home to a bright, shining home. Thank you so much, Speaks Custom Window & Sunrooms!!

Mike M.

Tom was extremely helpful and informative. Josh and Billy were talented installers, paid attention to detail, and could not have been more polite or respectful of home and property. JOB WELL DONE!!

Speaks Custom Window, Seller, hereby sells and finishes, and Buyer hereby buys, upon the terms and conditions set forth below and on the reverse hereof, the following materials to be installed on Buyer's property at the above listed job location. All labor to be performed according to Seller's quality specifications.

Additional Information

- Measurements shown are estimates only. Actual measurements are determined by certified measurement technicians.
- Any furniture must be moved at least 5 feet away from windows to be replaced.
- All Pets must be secured during installation.
- Driveway shall remain clear during date of installation.
- Removal and reinstallation of alarm components will be the responsibility of homeowner.



PROPOSAL

1311 S. Main Street
Salisbury, NC 28144
704.637.0700

• <https://speakscustomwindow.com> •

Customer Information

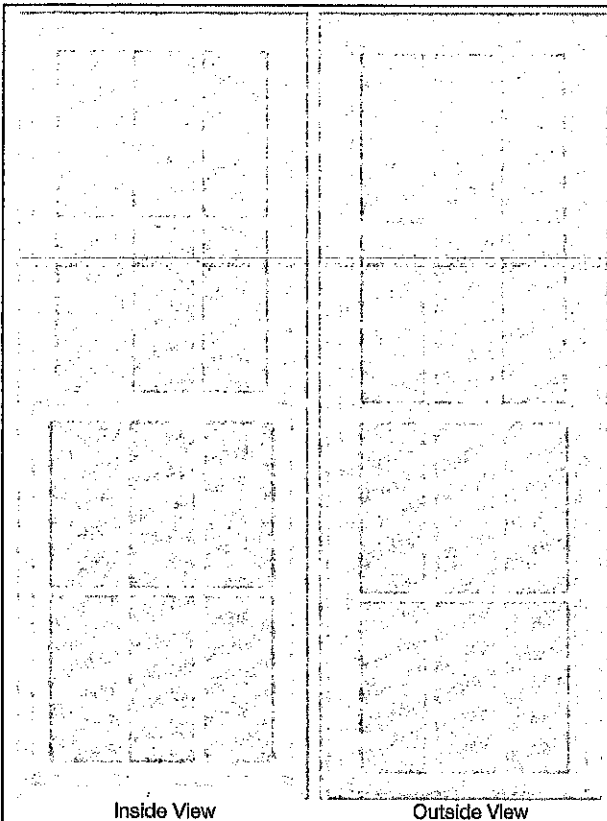
Darren Johnson
Southern pines
801 S. E. Service Rd.
Southern Pines NC 28387

Ext. 6240: 910-692-6240
djohnson@southernpines.net

Date: 01/07/2025
Rep: Rodney Spicer
rodney@speakscustomwindow.com

ProVia

		<p>Aspect Window - AP500 Series</p> <ul style="list-style-type: none"> -501 - Double Hung -White -Opening Size: 44" x 65" -Unit Size: 43 1/2" x 64 1/2" -Constant Force Roller Tilt Balance System -Snap-In Frame Sash Stops -Double Profile SA Locks -White Vent Locks -White Hardware -INNERGY Thermal Sash Reinforcement -Roll Form Bottom Screen (White) with BetterVue Screen Mesh -Sill Extender -ComforTech DLA -Single Strength Glass -3/4" IG Thickness -Colonial Contoured Grid - 2V x 1H -White Grids 	<p>Quantity</p> <p>8</p> <p>12729320</p>
<p>Inside View</p>	<p>Outside View</p>		
<p>Location</p>		<p>Office</p>	
<p>Additional Details</p>		<p>Administration building</p>	



Aspect Window - AP500 Series

- 501 - Double Hung
- White
- Opening Size: 24" x 65"
- Unit Size: 23 1/2" x 64 1/2"
- Constant Force Roller Tilt Balance System
- Snap-In Frame Sash Stops
- Single Profile SA Lock
- White Vent Locks
- White Hardware
- INNERGY Thermal Sash Reinforcement
- Roll Form Bottom Screen (White) with BetterVue Screen Mesh
- Sill Extender
- Comfortech DLA
- Single Strength Glass
- 3/4" IG Thickness
- Colonial Contoured Grid - 2V x 1H
- White Grids

Quantity

4

12729320

Inside View

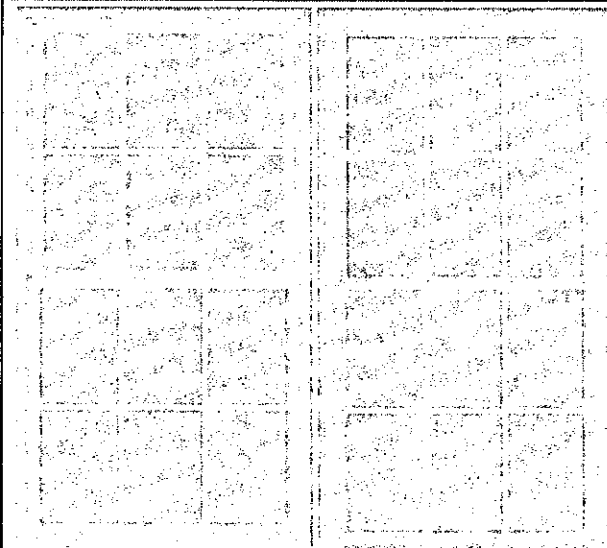
Outside View

Location

Office

Additional Details

Administration building



Aspect Window - AP500 Series

- 501 - Double Hung
- White
- Opening Size: 35" x 65"
- Unit Size: 34 1/2" x 64 1/2"
- Constant Force Roller Tilt Balance System
- Snap-In Frame Sash Stops
- Double Profile SA Locks
- White Vent Locks
- White Hardware
- INNERGY Thermal Sash Reinforcement
- Roll Form Bottom Screen (White) with BetterVue Screen Mesh
- Sill Extender
- Comfortech DLA
- Single Strength Glass
- 3/4" IG Thickness
- Colonial Contoured Grid - 2V x 1H
- White Grids

Quantity

3

12729320

Inside View

Outside View

Location

Office

Additional Details

Administration building

Additional Details

Administration Building

Take out old wood windows. Repair any frame damage. Install new virgin vinyl windows with internal grids. All: Double pane, argon gas insulated, Low E, super spacers, and screens (in operable windows). Speaks will haul away and dispose of old windows and construction debris.

Please feel free to contact me with any questions

Rodney Spicer
336-267-5483

Payment Options

Total Contract Amount	\$17,860.00
Deposit	\$8,930.00
Deposit Form of Payment	Check
Balance Due	\$8,930.00
Balance Form of Payment	Check

SITE DEVELOPMENT GUIDELINES - COMMERCIAL & RESIDENTIAL

PEDESTRIAN WALKWAYS AND ACCESSIBILITY

A pleasant pedestrian experience is an important measure of a viable, walkable historic district. Paving of pedestrian walkways can have a dramatic affect on how pedestrians view the comfort, safety, and setting of the district. Many commercial buildings in the downtown have a zero setback from town sidewalk; thus, the paving material is already established by the concrete and brick-patterned sidewalks along the public streets. However, some buildings have larger setbacks and utilize walks or paved plazas for pedestrian entries. Traditional paving materials for walkways on commercial properties set back from the sidewalks include concrete and brick walks.

Accessibility within the district is important and must work with the character-defining features of the building and the site. Historic buildings rarely were constructed to be readily accessible for people with differing levels of mobility. Today, state and local codes provide guidance for achieving uniform access to publicly accessible buildings. While the guidance provided in these *Historic District Design Guidelines* do not place restrictions or mandates on accessibility, we recommend owners of publicly accessible historic properties consider the following:

- Thoroughly record and assess the historic integrity and character-defining features of the property;
- Identify and evaluate accessibility options that do little harm to historic integrity of the building and the spatial character and integrity of the historic site;
- When making modification to improve accessibility, use traditional materials that work with the historic character of the building and site.



The basketweave brick pattern of this plaza reflects the traditional vocabulary of the district. The accessible ramp is subtle and serves as the main route to the building entry.

Pedestrian Walkways and Accessibility - Recommended Practices

- ✓ Use poured-in-place concrete for walkways that use local aggregates for exposed aggregate finishes and local sand to reinforce a timeless appearance;
- ✓ Use brick paving in herringbone, basketweave, or running bond pattern on smaller-scaled commercial properties;
- ✓ Use large native stone pavers laid in a flagstone pattern;
- ✓ Regular maintenance pedestrian ways;
- ✓ Provide accessible routes to publicly accessible buildings through raised grade of walks where feasible.

Pedestrian Walkways and Accessibility - Discouraged Practices

- × Using non-traditional materials, interlocking pavers, stamped asphalt, stamped concrete, or brightly-colored, white, or smooth-finish concrete;
- × Using residential-scale applications of stone laid in turf as stepping stones (approved for residential properties);
- × Building ramps or wheelchair lifts that are not the primary route of ingress for all users.

TOWN OF SOUTHERN PINES

Historic District Commission Meeting

December 10, 2020

4:00 pm

The Haney Room

450 West Pennsylvania Avenue

DECISION OF THE COMMISSION

Petitioner: Mr. Jack Taylor on behalf of The Town of Southern Pines

Case Number: HD-24-20

The meeting was called to order with four (4) members present (Commissioners Steady Mears and Leslie Brians absent). The oath was administered to all witnesses choosing to speak. Ms. Suzy Russell, Planner for the Town of Southern Pines, presented the staff report. For the petitioner, staff answered questions from the Commission.

Matter at Issue:

HD-24-20: Certificate of Appropriateness – Major Work, installation of an ADA handicap ramp at 125 SE Broad Street; Town of Southern Pines.

On behalf of the Town of Southern Pines, Mr. Jack Taylor submitted an application requesting a Certificate of Appropriateness: Major Works for the purpose of constructing an ADA compliant ramp on the east side of the Administration Building which involves removing the old railing at the existing steps and installing new railing on the existing steps and the new handicap ramp, removing and replacing the brick on existing walkway and steps as well as placing new brick on the side of the ramp and removing existing vegetation and replacing with new vegetation. The subject parcel is identified as PIN 858106288054 (Parcel ID 0039725). Per the Moore County GIS, the property owner(s) is listed as Town of Southern Pines. The subject property is zoned FRR (Facilities, Resource and Recreation).

Ms. Suzy Russell entered HD-24-20 memo into the record and presented the Town of Southern Pines staff report (Exhibit A) and provided an overview of the application.

After presenting details of the development, Town Staff answered questions from members of the Historic District Commission.

No additional testimony was provided by Town staff, the applicant or members of the public.

Historic District Commission Action:

Having heard all evidence submitted by those wishing to speak, the Historic District Commission then closed the public hearing. After closing the public hearing, the Historic District Commission made the following findings of fact on the application as presented by staff:

Finding of Fact #1: By a vote of 4-2, the Historic District Commission moved that as a finding of fact the application is complete and that the facts submitted are relevant to the case because the request for Certificate of Appropriateness Major Work has met the specified submittal requirements as required in the Town of Southern Pines Unified Development Ordinance.

Finding of Fact #2: By a vote of 4-2, the Historic District Commission finds that the application complies with UDO Section 2.28.10, Criteria for a Certificate of Appropriateness – Major Work, Criteria (C) (1) through (3) in that:

1. The proposed work of replacing the existing steps and iron railing along with constructing a new ADA handicap ramp is compatible and appropriate in that the iron railings will match the existing iron railings and the brick will match the existing brick.
2. The proposed work of constructing a new ADA handicap ramp will not remove any of the existing building and all materials used will integrate and match existing materials, as to not adversely affect its contribution to the larger historic district.
3. The proposed work of constructing a new ADA handicap ramp maintains the secondary entrance to the building while also tying into the secondary entrance as to not disturb the main front entrance as is recommended in the Historic District Guidelines.

By a vote of 4-2, the Historic District Commission then voted to approve the Certificate of Appropriateness Major Work HD-24-20 as requested by the applicant and as described in staff report HD-24-20, attachments and in Exhibit A.

Decision of the Board:

Therefore, the Historic District Commission approves the request under Certificate of Appropriateness Major Work application HD-24-20 for the installation of the ADA handicap ramp.

This is the 14th day of December, 2020.

For the Historic District Commission:



Mart Gibson, Vice-Chairperson

cc:
jacktaylor@southernpines.net

Agenda Item

To: Historic District Commission

From: Mason Mattox, Planner II

Subject: HD-18-25 – 180 SW Broad Street (Town of Southern Pines Finance Building)

Date: August 14, 2025

I. SUMMARY OF APPLICATION REQUEST:

Darren Johnson, Facilities Superintendent for the Town of Southern Pines, is requesting a Certificate of Appropriateness – Major Work to replace the original windows in the Town of Southern Pines Finance Department building located at 180 SW Broad Street with new windows identical in appearance.

II. APPLICATION CONTINUANCE AND REVISIONS

The public evidentiary hearing for Application HD-19-25 was called to order on July 10, 2025, with six members of the Historic District Commission present. The oath was administered to all individuals intending to provide testimony. Planning staff entered the Staff Report dated July 10, 2025, as Exhibit A, followed by staff's presentation from the same date, which was entered as Exhibit B.

Following deliberation, the Commission voted to continue the application for one month, citing concerns regarding the proposed appearance and materials of the replacement windows. The applicant acknowledged these concerns and agreed to address them prior to the continued hearing.

Since the July 10 hearing, the applicant has acquired a sample window from the manufacturer to provide a visual representation of the proposed replacement. The sample, constructed of vinyl, is intended to demonstrate the applicant's intention to replace the eight of the original front-facing arched windows, which the applicant states are currently deteriorated or deteriorating due to age and weathering. The vinyl replacement, while modern, is designed to mirror the aesthetic qualities of the historical windows. The applicant argues that the vinyl window maintains the visual integrity of the property while offering improved costs, durability, energy efficiency, and reduced maintenance, making it a suitable and beneficial replacement. This approach is being presented to ensure that the proposed changes are appropriate with the character of the local historic district while safeguarding the long-term structural integrity of the building. Without replacement, the continued deterioration of the windows may lead to more significant damage, compromising the preservation of the building. The remaining twelve (12) windows were previously replaced with substitute materials as well.

This staff report, and, where applicable, its attachments include clarifications and are documented herein.

III. SITE INFORMATION:

A. Physical Address

180 SW Broad Street
Southern Pines, NC 28387

B. Property Owner

The Town of Southern Pines
125 SE Broad Street
Southern Pines, NC 28387

C. Applicant & Authorized Agent

Darren Johnson, Facilities Superintendent, Town of Southern Pines
Authorized by Mike Cameron, Assistant Town-Manager, Town of Southern Pines

D. Zoning of Property

The subject property is presently zoned Central Business (CB) and is located within the Town's Local Historic District.

E. Historical Context of Subject Property

The following historical description of the building is taken from the 1991 National Register Nomination Form: "Southern Pines Library (Constructed 1939)
Brick Colonial Revival style library, set back from street, with additions at rear and side; symmetrically-arranged main pavilion is side-gable, five bay rectangle; Tuscan-columned, projecting portico with four wood columns, stuccoed tympanum with lunette; two round-arched windows on either side have gothic tracery sash, stone keystones and spring blocks, panels below; end elevations have same windows on either side of end chimneys; gable-roofed, L-shaped brick wing extends from north elevation, has plain six-over-six windows with stone keystones, pedimented gable end; original section and 1947 side wing designed by Aymar Embury II; built with Public Works Administration funds; 1947 wing gift of Boyd family, contains paneling and mantel from Montgomery County houses; rear brick additions made in 1962, 1974. (National Register of Historic Places Registration Form.)



180 SW Broad Street – “Street-Facing Façade.” Google Maps, retrieved June 30, 2025.

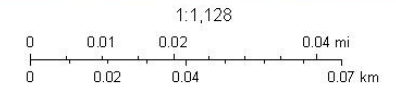
Figure 1: Vicinity & Zoning Map (Subject Property is Circled in Blue)

180 SW Broad Street



6/30/2025, 10:22:56 AM

- Zoning Text CB-CD, Central Business Conditional District
- All Zoning Over Aerial FRR, Facilities Resources Recreation
- CB, Central Business
- PD, Planned Development



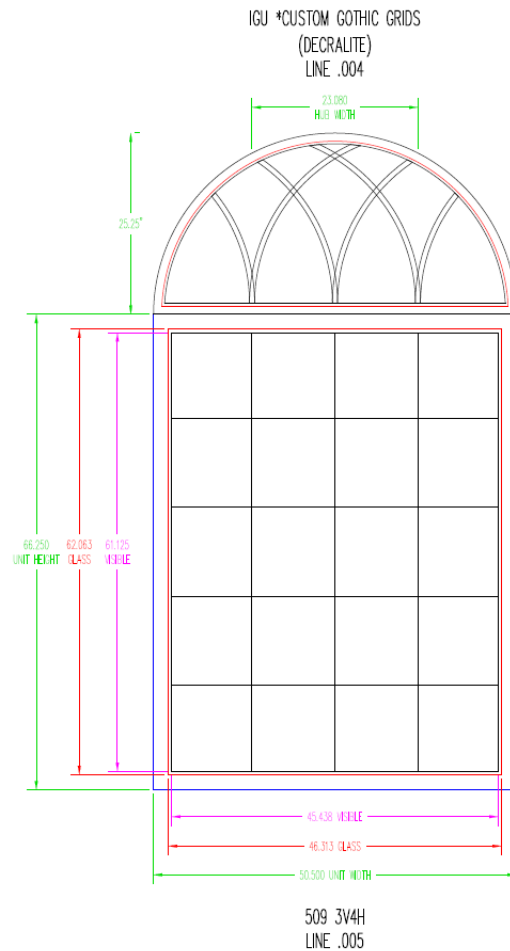
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community. Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland,

Source: TOSP Planning Mapping Site
The Town of Southern Pines, its agents and employees make NO warranty as to the correctness or accuracy of the information set forth on this media whether express or implied.

Figure 3: Existing Window
View of one window from interior,
Provided by the Town of Southern Pines (20
June 2025).



Figure 4: Proposed Window Rendering
The proposal is to replace eight of the more
ornate, arched windows in total.



The application proposes the replacement of all windows in the building. Specifically, eight (8) of the original windows will be replaced with new materials, as previously outlined, while the remaining twelve (12) windows will be replaced in-kind with like-for-like materials, as they are already constructed of vinyl. One of the twelve non-original windows also functions as a patio door, and will be replaced with a similar vinyl structure to maintain both its aesthetic and functional integrity.

Figure 5: Proposed replacement window model – with and without paneling.



Figure 6: Proposed replacement up-close detail.



Figure 6: Interior Window Damage (One)



Figure 7: Interior Window Damage (Two)



Figure 8: Interior Window Damage (Three)



Figure 9: Interior Window Damage (Four)



Figure 10: Interior Window Damage (Five)



IV. STAFF REVIEW:

1. Application Processing and Public Notice

1. Application submitted: June 18, 2025
2. Notice of Public Hearing:
 - Posted On-site: June 24, 2025
 - Mailed: June 23, 2025
 - Internet: June 23, 2025
3. HDC Evidentiary Hearing: Thursday, July 10, 2025
4. HDC Evidentiary Hearing (Continued): Thursday, August 14, 2025

2. Application Materials

A complete application has been submitted including renderings to illustrate the project. The application, including renderings and other supporting images, is enclosed in its entirety with this document as attachments.

3. Criteria for Review

Each criterion is listed below in bold, and *italicized* staff comments follow.

Section 2.28 Certificate of Appropriateness – Major Work.

2.28.10. Criteria

- A. In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural Significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public Right-of-Way. The Commission shall not consider interior arrangement or use.**

Planning staff, in considering the historical and/or architectural Significance and the impact of the proposed modifications as visible from the public Right-of-Way have found no inconsistencies with the proposal to replace the building's windows with like-for-like with the exception of materials. No other external modifications or additions have been proposed.

- B. The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:**

- 1) The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
Staff find this factor inapplicable because no change to building height has been proposed as a part of the application.

- 2) The setback and placement on lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
Staff find this factor inapplicable because no change to the building footprint has been proposed as a part of the application.
- 3) Exterior construction materials, including texture and pattern.
The proposed windows match texture and pattern, but not materials. Vinyl panes will replace the existing glass. Per the guidance of Preservation Brief 16 which can be found as an attachment with this report, the use of substitute materials is permissible when the appearance of the historic material is matched, and if the substitute material is deemed to be more economically feasible.
- 4) Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
The proposal includes replacing all architectural detailing with an identical match in appearance.
- 5) Roof shapes, forms and materials.
Staff find this factor inapplicable because no work is taking place on the roof.
- 6) Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
The proposed windows match the existing historic windows in proportion, shape, positioning, pattern, and size, preserving the original fenestration appearance. Materials do not match but staff find this change acceptable because of the same appearance and economic reasons listed under item 3.
- 7) General form and proportions of buildings and structures.
Staff find this factor inapplicable because no change to the general form of the building has been proposed with the application.
- 8) Appurtenant fixtures and other features such as lighting.
Staff find this factor inapplicable because no additional lighting or replacement lighting has been proposed with the application.
- 9) Structural conditions and soundness.
Applicant Darren Johnson has stated that the structural integrity and soundness of the building's windows is compromised, and that in his professional opinion, there is potential for complete failure or destruction of the units in the event of a severe weather emergency.
- 10) Architectural scale.

The scale of the window replacements is proposed to be identical to the existing.

11) Secretary of the Interior Guidelines.

The Standards (Department of the Interior regulations, 36, CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the

massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The proposed windows match the originals in appearance and preserve the building's historic character. Replacement is appropriate due to needed repairs and will not alter or obscure the appearance of significant features. Materials are changing to vinyl but staff find that this is acceptable because of the Secretary of the Interior's guidance which prioritizes appearance over the original material type in circumstances of ensuring economic feasibility

C. Prior to approving the application, the Commission shall make the following findings:

- 1) Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of material, design, dimensions, mass, scale, orientation, color and other applicable considerations;

The proposed window replacement is compatible and appropriate, matching the original windows in design, dimensions, scale, and color, while utilizing alternative materials that improve the energy efficiency of the building while still preserving the building's historic character.

- 2) Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and

The work does not remove or damage any character-defining features and will not negatively impact the building's contribution to the historic district because the work is fully reversible and would not visually impact the building's contribution to the historic district.

- 3) Work is consistent with the adopted design guidelines for the historic district.

The project aligns with the adopted historic district design guidelines by maintaining the historic appearance and integrity of the structure. This is achieved by the use of modern materials as substitutions provided that they match the original configuration in design, profile, size, pattern, texture,

durability, etc. Similarly, the appearance of the various design treatments of the existing windows will be fully preserved in appearance as no changes to the design and style have been proposed

4. Outside Agency Comments

This application was reviewed at the July 01, 2025 Technical Review Committee (TRC) Meeting with no comments from Fire or Public Works. Any comments received after completion of this staff report will be shared during the evidentiary hearing.

5. Staff Recommendation

Planning staff recommend approval of the Certificate of Appropriateness – Major Work for the proposed window replacements as the project meets all applicable review criteria and preserves the historic appearance of the structure. The replacement windows will be identical in appearance to the originals and will not adversely impact the appearance of the character-defining features of the building or its contribution to the historic district.

V. ATTACHMENTS:

1. Draft Findings of Fact and COA
2. Application
3. Presentation Brief 16 on Substitute Materials

VI. HISTORIC DISTRICT COMMISSION ACTION

UDO Section 2.28.4(A) states that the Historic District Commission shall approve, approve with conditions, or deny an application for a COA Major Works based on the criteria established in UDO Section 2.28.20. To either approve or deny a *Certificate of Appropriateness – Major Work* application, the Historic District Commission must make findings of fact and conclusions to the applicable standards. The Historic District Commission shall first vote on whether the application is complete and the facts submitted are relevant to the case. The Historic District Commission shall then vote on whether the application complies with the Criteria for a Certificate of Appropriateness, including the Principles and Guidelines of the Historic District. Staff has prepared Draft Findings of Fact for the Commission’s consideration which can be found below. The Commission may discuss, amend and/or adopt these Findings of Fact.

I move to:

1. Adopt **Attachment 1** of the staff report, as drafted as Findings of Fact regarding proposed Certificate of Appropriateness – Major Work HD-18-25

-OR-

2. Adopt **Attachment 1** of the staff report as Findings of Fact regarding the proposed Certificate of Appropriateness – Major Work, with the following changes:

Therefore, I move to:

1. Approve HD-18-25

- OR -

2. Approve HD-18-25 with the following conditions of approval:

-OR-

3. Deny HD-18-25, based on the following:

FINDINGS OF FACT
Case Number: HD-18-25

1. The Historic District Commission finds that the application is complete and that the facts submitted are relevant to the case because the request for a Certificate of Appropriateness (COA) Major Work approval has met the specified submittal requirements as outlined in the Town of Southern Pines Unified Development Ordinance (UDO) Appendices. The applicants have submitted adequate evidence addressing the criteria for a COA Major Work, including images, and relevant documentation. The evidence provided includes sworn testimony by qualified experts and substantiated materials.
2. The Historic District Commission finds that the application is consistent with UDO §2.28.10(A)-(C), the Town of Southern Pines Historic District Design Guidelines, as well as the standards provided by the Department of the Interior, for the following reasons:
 - A. The Commission finds that the proposed replacement of the of the existing windows with new windows identical in appearance maintains the architectural character of the historic structure and does not adversely affect its contribution to the Local Historic District. The size, scale, proportions, pattern, and placement of fenestration are consistent with the original design, and the new materials are visually indistinguishable from the existing ones when viewed from the public right-of-way.
 - B. The Commission finds that the project will preserve the defining historic district features of the structure. No architectural elements that contribute to the historic significance of the building are proposed for removal or alteration beyond the necessary replacement of deteriorated window units, which will be replicated in form and detail.
 - C. The Commission further finds that the proposed work is compatible with the historic character of the building and the surrounding district and that it meets the intent and standards set forth in the Historic District Design Guidelines, Unified Development Ordinance, and The Secretary of the Interior’s Standards for Rehabilitation. The work is reasonably necessary for continued use of the property and has been designed in a manner that retains and preserves the building’s historic integrity.
3. Therefore, based on the evidence presented, the Commission finds that the proposed work meets the applicable standards. The Certificate of Appropriateness, as drafted and dated August 14, 2025, is incorporated herein and approved as the scope of work.

DRAFT CERTIFICATE OF APPROPRIATENESS – MAJOR WORK
Case Number: HD-17-25

Addresses of proposed work: 180 SW Broad Street, Southern Pines, NC 28387

The Town of Southern Pines Historic District Commission has reviewed the application submitted and approved a request for a *Certificate of Appropriateness – Major Work*, for Darren Johnson for the following scope of work:

1. The replacement of eight (8) windows with new materials:
 - Replacement windows to match the original units in design, color, dimensions, pane configuration, and overall appearance.

2. The replacement of twelve (12) windows with identical materials:
 - Replacement windows to match the original units in design, color, dimensions, pane configuration, overall appearance, and materials.
 - This shall include the replacement of one patio door, counted toward the total number of twelve existing vinyl windows.

No other exterior modifications are authorized under this Certificate.

All work shall be completed in accordance with the submitted application and supporting materials dated June 12, 2025, and incorporated into this Certificate by reference.

Please reference project file for project specifics and associated documentation.

This certificate is valid pursuant to the development approval timeframes described in UDO §2.8.1 (24 months from the date of approval). Please notify the Town of Southern Pines Planning Office when the work is complete **OR IF THE SCOPE OF WORK CHANGES IN ANY MANNER FROM WHAT IS STATED IN THIS CERTIFICATE. If you are unable to complete the above-approved project within the development approval timelines, please contact the Town of Southern Pines Planning Office at (910) 692-4003 regarding extension of the development approval timeline pursuant to UDO §2.8.2.**

Application for: **Certificate of Appropriateness
Major Work**

FOR OFFICE USE ONLY		Fee Paid: <input type="text" value="N/A"/>
Date Received: <input type="text"/>	Case No.: HD-	<input type="text" value="18-25"/>

Project Information:

Street Address:

PIN: Parcel ID:

Site Size: Zoning:

Applicant:

Name(s):

Email: Phone:

Mailing Address:

Authorized Agent, if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

Legal Property Owner(s), if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

TO THE TOWN OF SOUTHERN PINES HISTORIC DISTRICT COMMISSION:

I submit this application for a Certificate of Appropriateness – Major Work to make the following change(s) which may alter the exterior appearance of property within the Town of Southern Pines Historic District:

The replacement of all of the original windows with windows identical in appearance, but with new materials.

Date:



Applicant

Note: The attached Appointment of Agent form must be submitted if the Applicant is not the property owner.

TO SUBMIT THIS FORM

click here to e-mail [click here](#) or e-mail as attachment to plan@southernpines.net

Application for: **Certificate of Appropriateness
Major Work**

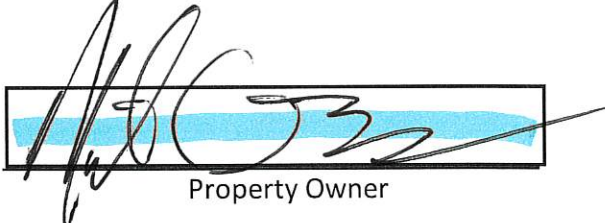
APPOINTMENT OF AGENT

The undersigned owner(s), hereby appoint(s) as the exclusive agent for the purpose of making an application to the Town of Southern Pines for a **Certificate of Appropriateness – Major Work** on the property described in the attached application. The owner(s) hereby agrees that this agent has the authority to act for and on behalf of the owner(s) as follows:

1. to submit an application and required supplemental materials;
2. to appear at public meetings and give representation and comments on behalf of the owner(s);
3. to accept conditions or recommendations made by the Town of Southern Pines Historic District Commission for the issuance of a **Certificate of Appropriateness – Major Work** on the subject property; and
4. to act on behalf of the owner(s) without limitations with regard to any and all things directly or indirectly connected with or arising out of any application for a **Certificate of Appropriateness – Major Work** under the Southern Pines Unified Development Ordinance.

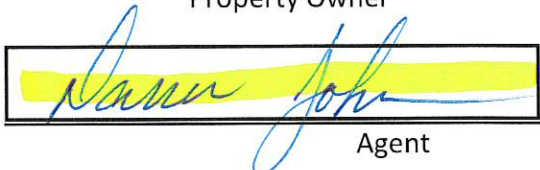
This Appointment of Agent shall remain in effect until final resolution of the attached application.

Date Signed



Property Owner

Property Owner



Agent

TO SUBMIT THIS FORM

click here to e-mail [or](#) e-mail as attachment to plan@southernpines.net

- (A) In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public right-of-way. The Commission shall not consider interior arrangement or use.
- (B) The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:
1. The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
 2. The setback and placement on a Lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
 3. Exterior construction materials, including texture and pattern.
 4. Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
 5. Roof shapes, forms and materials.
 6. Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
 7. General form and proportions of buildings and structures.
 8. Appurtenant fixtures and other features such as lighting.
 9. Structural conditions and soundness.
 10. Architectural scale.
 11. Secretary of the Interior Guidelines.
- (C) Prior to approving the application, the Commission shall make the following findings:
1. Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of material, design, dimensions, mass, scale, orientation, color and other applicable considerations;
 2. Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and
 3. Work is consistent with the adopted design guidelines for the historic district.

REQUIRED APPLICATION MATERIALS:

- Application fee** in the amount of **\$250.00**.
- Completed Application** for a Certificate of Appropriateness – Major Work signed by the applicant. Please do not leave anything blank and make sure all of the information provided is correct.
- Appointment of Agent**, if applicable, signed by the property owner(s) and the agent as evidence that the current property owner(s) approve(s) of the proposed work.
- List of Adjacent Property Owners:** Please list all properties that are that are within two hundred (200) feet of the outermost boundaries of the subject property (**not counting streets, railroads or other transportation corridors**). Attach additional pages if needed. No fewer than ten (10) property owners shall be notified by mail.
- Deed** copy to provide proof of ownership and property boundaries.
- Project description:** Please tell us what currently exists and what changes you are proposing. Please attach written descriptions, maps, illustrations/renderings, photographs, material samples, etc. as necessary.
- Written narrative:** Please address compliance with all of the criteria listed in **UDO §2.28.10 Criteria for a Certificate of Appropriateness – Major Work**. The Historic District Commission will determine if the application meets the established criteria for approval. The list of criteria is attached.
- Electronic copy (PDF) of all application materials** submitted to plan@southernpines.net.

PLEASE SUBMIT ONLY ONE (1) COMPLETE SET OF ALL MATERIALS.

REVIEW AND APPROVAL:

1. **Staff review:** Planning staff will review the application and notify the applicant if additional materials are needed. It is the applicant's responsibility to demonstrate compliance with applicable criteria.
2. **Public hearing:** The applicant is expected to attend a public hearing before the Historic District Commission at its regular monthly meeting. Please refer to the **Application Processing Timeline** to determine the hearing date.
3. **Issuance of Certificate of Appropriateness:** If the request is approved by the Historic District Commission, a Certificate of Appropriateness - Major Work setting forth any conditions of approval will be issued to the applicant. All construction associated with the project and/or the operation of the development must comply with the Certificate of Appropriateness.

PLANNING DEPARTMENT
TOWN OF SOUTHERN PINES
801 SE Service Road, Southern Pines, NC 28387
plan@southernpines.net (910) 692-4003 www.southernpines.net

FINANCE LOBBY
Arched windows

\$ 24,800

1311 S. Main St
Salisbury, NC 28144
(704) 637-0700



PROPOSAL

January 07, 2025
Rep, Rodney Spicer
(704) 637-0700



Prepared For:

Darren Johnson
Southern pines
801 S. E. Service Rd.
Southern Pines NC 28387

ABOUT US

We Don't Cut Corners and we Have A Firm, No-Pressure Sales Policy—In Writing.

As a local, family-owned business that started in 1978, we have listened to our client's feedback over the last 45 years, and have designed our process to be straightforward and upfront. We have a firm, no-pressure sales policy, and treat our clients as we want to be treated. We believe that every job is different so we tailor everything to your needs, home, and your budget all while prioritizing quality products and workmanship. We have longstanding direct relationships with some of the best brands in the industry, offering a wide selection of styles, designs, and materials at affordable prices.

WHAT WE DO

Enclosures

Our enclosures are a great way to add additional living space while maintaining the appearance of your home in Salisbury.

Patio Covers

If you want to cover your patio but don't want to invest in a full new patio room, then our patio covers are just what you need in Salisbury.

Doors

Our selection of new doors offers the efficiency, durability, and strength you need for your home in Salisbury.

Windows

Installing replacement windows is one of the best things you can do to improve the energy efficiency of your Salisbury home.

Home Improvement

Our customers know that they can expect the high level of workmanship they deserve from us during every home improvement project in Salisbury.

Siding

If your home is lacking the curb appeal that it once had, you may find that updated landscaping only does so much to help the actual appearance of your home.

TESTIMONIALS

Joe M.

The installers paid attention to detail, and could not have been more polite or respectful of home and property. They were more concerned with the process of doing the job properly versus hurry up and get done.

Their focus was on the construction process and not production. Truly professional people that take pride in their work. I would highly recommend Speaks Custom Windows to anyone wanting to improve their home.

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Mike M.

Tom was extremely helpful and informative. Josh and Billy were talented installers, paid attention to detail, and could not have been more polite or respectful of home and property. JOB WELL DONE!!

Speaks Custom Window, Seller, hereby sells and finishes, and Buyer hereby buys, upon the terms and conditions set forth below and on the reverse hereof, the following materials to be installed on Buyer's property at the above listed job location. All labor to be performed according to Seller's quality specifications.

Additional Information

- Measurements shown are estimates only. Actual measurements are determined by certified measurement technicians.
- Any furniture must be moved at least 5 feet away from windows to be replaced.
- All Pets must be secured during installation.
- Driveway shall remain clear during date of installation.
- Removal and reinstallation of alarm components will be the responsibility of homeowner.



PROPOSAL

1311 S. Main Street
Salisbury, NC 28144
704.637.0700

• <https://speakscustomwindow.com> •

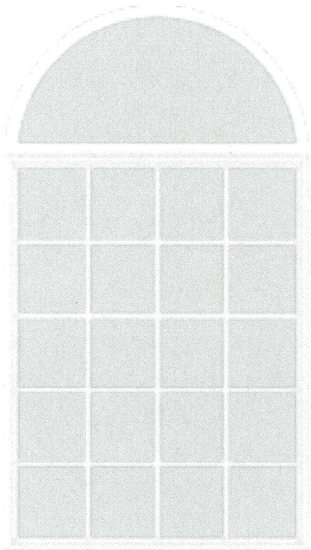
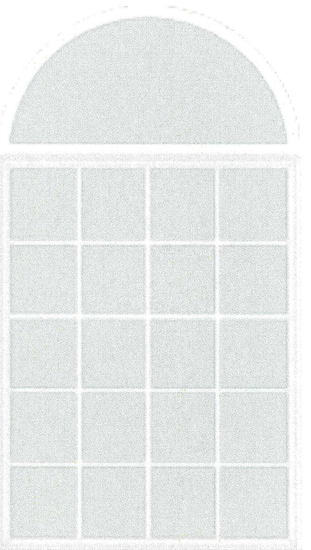
Customer Information

Darren Johnson
Southern pines
801 S. E. Service Rd.
Southern Pines NC 28387

Ext. 6240: 910-692-6240
djohnson@southernpines.net

Date: 01/07/2025
Rep: Rodney Spicer
rodney@speakscustomwindow.com

ProVia

 <p>Inside View</p>	 <p>Outside View</p>	<p>Aspect Window - AP500 Series</p> <ul style="list-style-type: none"> -White -Opening Size: 51" x 92" -Two Down - Custom Mullion Location(s) -Mull 1: 25 1/4" From Top -Factory Mullled -Sill Extender 	<p>Quantity</p> <p>8</p> <p>12698394</p>
		<p>Window B1 - CT - Circle Top</p> <ul style="list-style-type: none"> -Unit Size: 50 1/2" x 25 1/4" -Picture Frame Profile -ComforTech DLA -3/4" IG Thickness -Double Strength Glass -Custom Contoured Grid - 0V x 0H -Decralite Grids (with Bumpers) -Snow Mist White Grids -Production Code: SB <p>Window A1 - 509 - Picture Window</p> <ul style="list-style-type: none"> -Unit Size: 50 1/2" x 66 1/4" -ComforTech DLA -Triple Strength Glass -1" IG Thickness -Colonial Contoured Grid - 3V x 4H -White Grids 	
<p>Location</p>			<p>Other</p>
<p>Additional Details</p>			<p>Finance building front</p>

Additional Details

Take out old wood windows. Repair any frame damage. Install new virgin vinyl windows with internal grids. All: Double pane, argon gas insulated, Low E, super spacers, and screens (in operable windows). Speaks will haul away and dispose of old windows and construction debris.

No interest finance options available

Please feel free to contact me with any questions

Rodney Spicer
336-267-5453

Payment Options

Total Contract Amount	\$24,800.00
Deposit	\$12,400.00

Deposit Form of Payment

Check

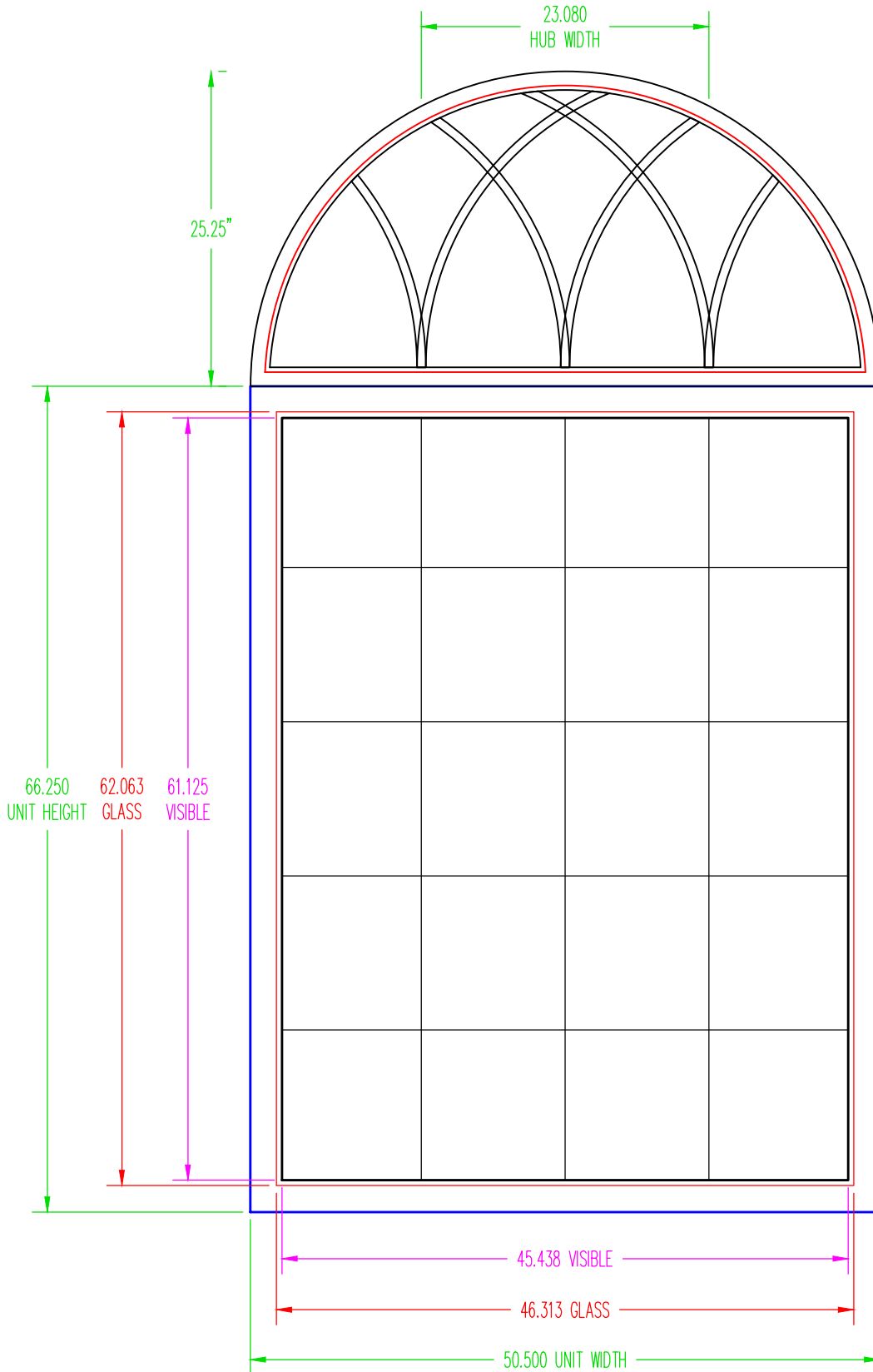
Balance Due

\$12,400.00

Balance Form of Payment

Check

IGU *CUSTOM GOTHIC GRIDS
(DECALITE)
LINE .004



509 3V4H
LINE .005



*Complete FINANCE
Including SLIDING Door
IN TEST OFFICE*

\$52,438

1311 S. Main St
Salisbury, NC 28144
(704) 637-0700

PROPOSAL

January 07, 2025
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(704) 637-0700



Prepared For:

Darren Johnson
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PROPOSAL

1311 S. Main Street
Salisbury, NC 28144
704.637.0700

• <https://speakscustomwindow.com> •

Customer Information

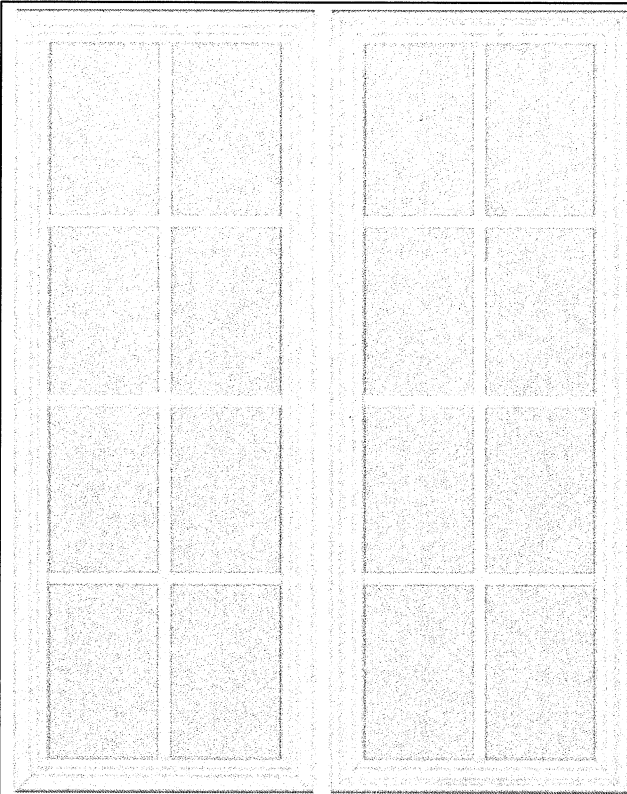
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djohnson@southernpines.net

Date: 01/07/2025
Rep: Rodney Spicer
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ProVia

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<p>Location</p> <p>Additional Details</p>		<p>Other</p> <p>Finance building front</p>



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 20" x 52"
- Unit Size: 19 1/2" x 51 1/2"
- Sill Extender
- ComforTech DLA
- Single Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 1V x 3H
- White Grids

Quantity

1

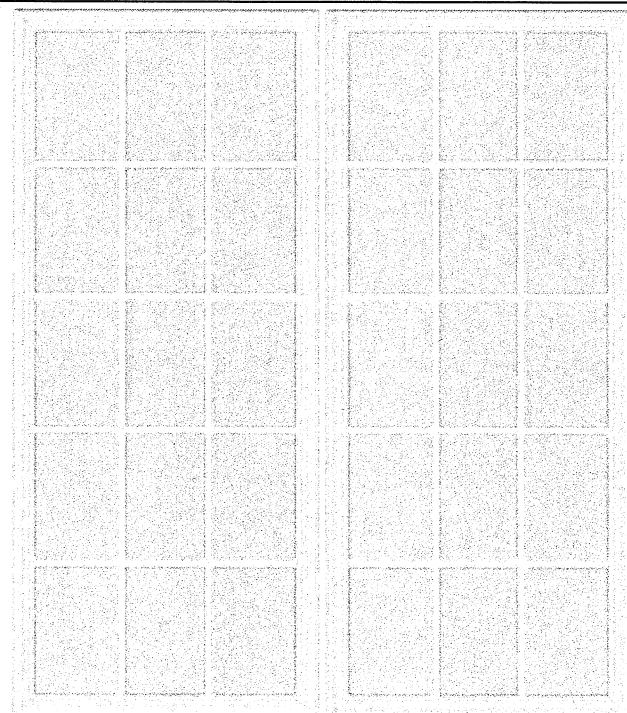
12730481

Location

Office

Additional Details

1



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 31 1/2" x 73 1/2"
- Unit Size: 31" x 73"
- Sill Extender
- ComforTech DLA
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 4H
- White Grids

Quantity

3

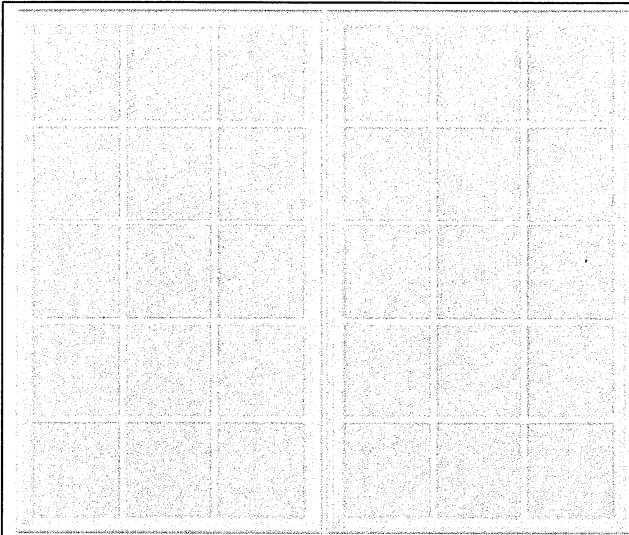
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Location

Office

Additional Details

2



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 44" x 76"
- Unit Size: 43 1/2" x 75 1/2"
- Sill Extender
- ComforTech DLA
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 4H
- White Grids

Quantity

1

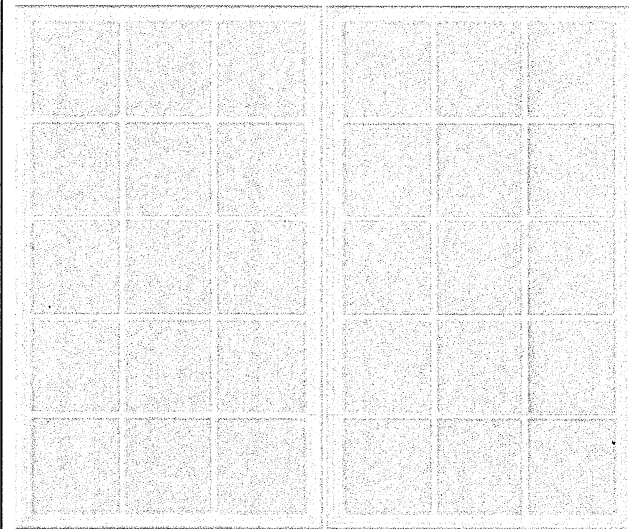
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Location

Office

Additional Details

3



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 44" x 76"
- Unit Size: 43 1/2" x 75 1/2"
- Sill Extender
- ComforTech DLA
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 4H
- White Grids

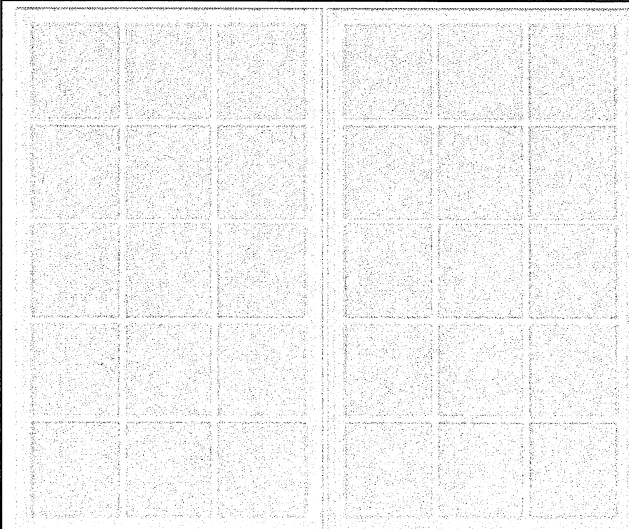
Quantity

1

12730481

Location

Kitchen



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 44" x 76"
- Unit Size: 43 1/2" x 75 1/2"
- Sill Extender
- ComforTech DLA
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 4H
- White Grids

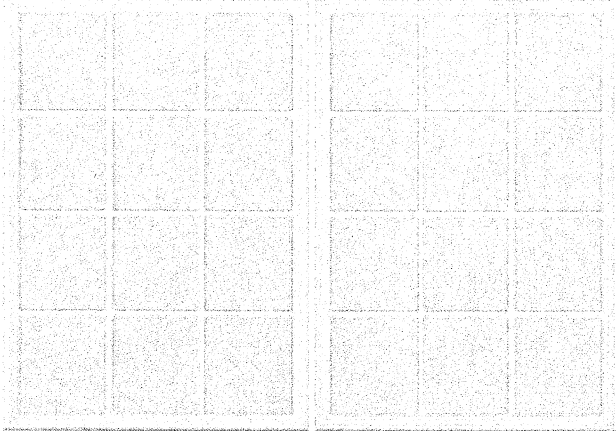
Quantity

1

12730481

Location Office

Additional Details 4



Inside View

Outside View

Aspect Window - AP500 Series

- 509 - Picture Window
- White
- Opening Size: 44" x 63"
- Unit Size: 43 1/2" x 62 1/2"
- Sill Extender
- ComforTech DLA
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 3H
- White Grids

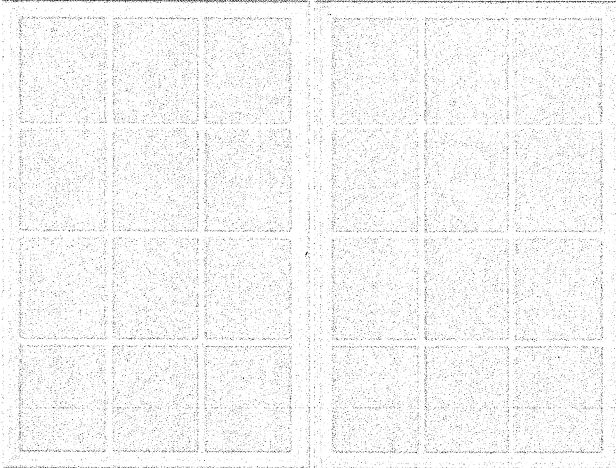
Quantity

1

12730481

Location Office

Additional Details 5



Inside View

Outside View

Endure Window - EN600 Series

- 609 - Picture Window
- White
- Opening Size: 40" x 62"
- Unit Size: 39 1/2" x 61 1/2"
- Graphite Foam Insulation
- Sill Extender
- ComforTech DLA-UV
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 3H
- White Grids

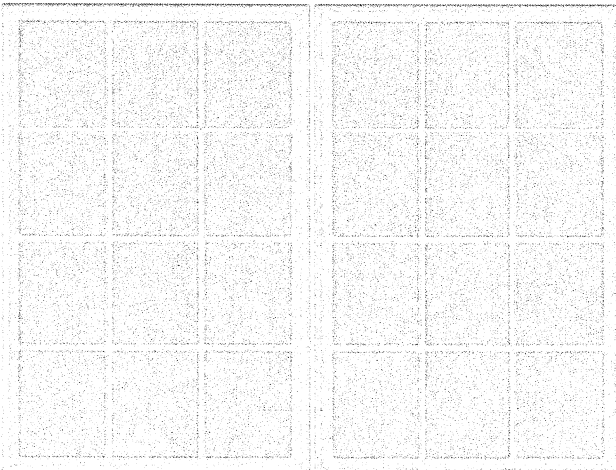
Quantity

1

12730481

Location Office

Additional Details 6



Inside View

Outside View

Endure Window - EN600 Series

- 609 - Picture Window
- White
- Opening Size: 40" x 62"
- Unit Size: 39 1/2" x 61 1/2"
- Graphite Foam Insulation
- Sill Extender
- ComforTech DLA-UV
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 3H
- White Grids

Quantity

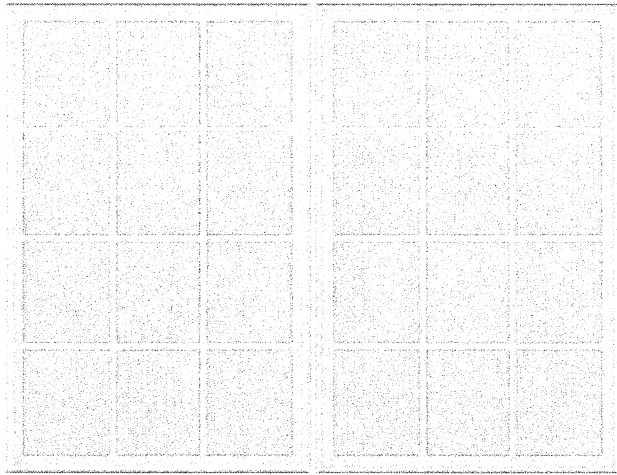
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12730481

Location Office

Additional Details

7



Inside View

Outside View

Endure Window - EN600 Series

- 609 - Picture Window
- White
- Opening Size: 40" x 62"
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- Graphite Foam Insulation
- Sill Extender
- ComforTech DLA-UV
- Double Strength Glass
- 3/4" IG Thickness
- Colonial (Standard) Contoured Grid - 2V x 3H
- White Grids

Quantity

1

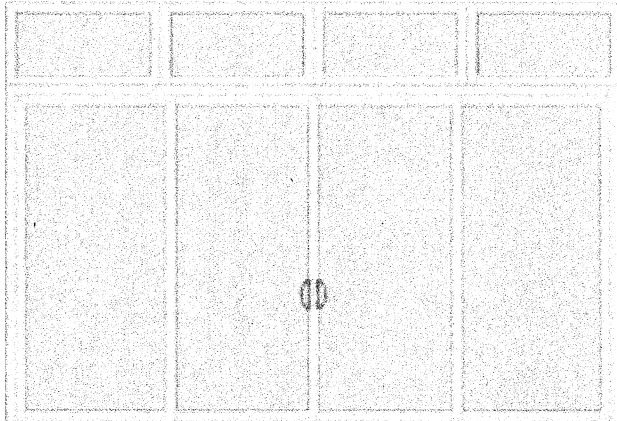
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Location

Office

Additional Details

8



Inside View

Outside View

Aspect AP5400 Series Multi-Lite Patio Door

- Overall Unit Size: 144 7/8" x 101 1/2"
- White Inside/Outside
- Classic White Handleset
- Top Hung Screen with BetterVue Screen Mesh
- Ship Knocked Down (KD)
- Mullion Kit
- Mullion Reinforcement
- Footlock (White)
- Transom Not Factory Mullled
- Glass for Entire Unit:
- ComforTech DLA
- Double Strength Glass (Tempered)

Quantity

1

12730481

5414 4-Lite Patio Door

- Standard Size: 146" x 82" (Fullsize)
- Center Doors Operable
- Unit Size: 144 7/8" x 81 1/2"

Transom

- Unit Size: 36 1/8" x 19 3/8"

Transom

- Unit Size: 36 1/4" x 19 3/8"

Transom

- Unit Size: 36 1/4" x 19 3/8"

Transom

- Unit Size: 36 1/4" x 19 3/8"

Location

Office

Additional Details

8

Additional Details

Take out old wood windows. Repair any frame damage. Install new virgin vinyl windows with internal grids. All: Double pane, argon gas insulated, Low E, super spacers, and screens (in operable windows). Speaks will haul away and dispose of old windows and construction debris.

No interest finance options available

This quote reflects a \$150 per window discount on the 8 large windows in front if we do the whole building

Please feel free to contact me with any questions

Rodney Spicer
336-267-5453

Payment Options

Total Contract Amount	\$52,438.00
Deposit	\$26,219.00
Deposit Form of Payment	Check
Balance Due	\$26,219.00
Balance Form of Payment	Check

16 PRESERVATION BRIEFS

The Use of Substitute Materials on Historic Building Exteriors

John Sandor, David Trayte, and Amy Elizabeth Uebel



National Park Service
U.S. Department of the Interior
Technical Preservation Services

The *Secretary of the Interior's Standards for Rehabilitation* generally require that deteriorated distinctive architectural features of a historic property be repaired rather than replaced. Standard 6 of the *Standards for Rehabilitation* further states that when replacement of a distinctive feature is necessary, the new feature must “match the old in composition, design, color, texture, and other visual properties, and, *where possible, materials*” (emphasis added). While the use of matching materials to replace historic ones is always preferred under the *Standards for Rehabilitation*, the Standards also purposely recognize that flexibility may sometimes be needed when it comes to new and replacement materials as part of a historic rehabilitation project. Substitute materials that closely match the visual and physical properties of historic materials can be successfully used on many rehabilitation projects in ways that are consistent with the Standards.

The flexibility inherent in the *Standards for Rehabilitation* must always be balanced with the preservation of the historic character and the historic integrity of a building, of which historic materials are an important aspect. Any replacement work reduces the historic integrity of a building to some degree, which can undermine the historic character of the property over time. With limited exceptions, replacement should only be considered when damage or deterioration is too severe to make repair feasible. When needed replacement is made with a material that matches the historic material, the impact on integrity can be minimal, especially when only a small amount of new material is needed. When a substitute material is used for the replacement, the loss in integrity can sometimes, although not always, be greater than that of a matching material. Also, whether historic or substitute material, there is a point where the amount of replacement can become excessive and the building's historic integrity is diminished to an unacceptable degree, regardless of the material used—that is, a loss of authenticity and the physical features and characteristics closely associated with the property's historic significance.

The term *substitute materials* is used to describe building materials that have the potential to match the appearance, physical properties, and related attributes of historic materials well enough to make them alternatives for use in current preservation practice when historic materials require replacement.

Compelling reasons to use a substitute material instead of the historic material include the unavailability or poor performance of the historic material, or environmental pressures or code-driven requirements that necessitate a change in material. When using a substitute material for replacement it is critical that it match the historic material in all of its visual and physical properties to preserve the historic character of the building and minimize the impact on its integrity.

Substitute materials can be cost-effective, permit the accurate visual duplication of historic materials, and provide improved durability. While the behavior of traditional, historic materials is generally well understood, the behavior of newer materials can be less established and sometimes less predictable. Substitute materials are most successful when the properties of both the original material and the substitute are thoroughly understood by all those involved in the design and construction process. The architect must be adept at the selection of substitute materials and their incorporation into architectural plans and specifications. The contractor or tradesperson in the field must also be experienced with their use.

This Preservation Brief provides general guidance on the use of substitute materials as replacement materials for distinctive features on the exterior of historic buildings. Due to the ever-evolving product market for construction materials, this Brief does not provide specifications for substitute materials. This guidance should be used in conjunction with qualified professionals who are knowledgeable in current construction and historic preservation practices.

This Brief includes a discussion of the appropriate use of substitute materials and provides a path for decision-making in their use. In considering the use of substitute materials, such issues as the deterioration or failure of the historic building component and material must be understood. The existing component's physical and visual properties, profile, surface texture, dimensions, and performance should be identified to establish the basis for evaluating a possible replacement material. The physical and visual properties of the various substitute materials available should also be assessed and compared to the original material for their physical and visual compatibility. Lastly, the suitability of a given substitute replacement material should be determined based on how well the material matches both the physical and visual properties of the existing material as well as any specific performance or application needs. The Brief's descriptions of common substitute materials are not meant to be comprehensive, and, as the performance history of newer materials continues to grow and new materials are developed, available options will change, and our understanding of current material performance will continue to evolve.

Historical Use of Substitute Materials

The tradition of using affordable and common materials in imitation of more expensive and less available materials is a long one. At Mount Vernon, for example, George Washington used wood painted with sand-impregnated paint to imitate rusticated stone. This technique, along with scoring stucco into block patterns, was common in Colonial America to imitate stone.

Nineteenth-century technology made a variety of materials readily available and widely used that were not only able to imitate traditional materials but were also cheaper to fabricate and easier to use. Traditionally, carved stone units were individually worked. Molded or cast materials greatly increased efficiency in creating repetitive elements. Cement-based products such as cast stone could provide convincing imitations of natural stone with carefully chosen aggregates and cements and was typically a commercially manufactured product. It could be tooled like natural stone, though that could reduce much of the cost advantage. These carefully-crafted cementitious products were widely used as trim elements for masonry structures or as the face material for an entire building. At the other end of the spectrum, mail-order catalogs provided a wide variety of forms for molding concrete that were merely evocative of natural stone and did little to match its appearance. Concrete masonry units could be fabricated locally and on site, avoiding expensive quarrying and shipping costs.

Offering similar efficiencies as cast stone for reproducing repetitive and even complex decorative shapes, terra cotta could mimic the surface characteristics of stone with various textures and glazes. It was popular in the late nine-

teenth and early twentieth centuries for details on stone or brick buildings as well as for the entire skin of large and elaborately detailed buildings.

Cast iron was also used to imitate stone, often with very decorative profiles, for a variety of architectural features ranging from window hoods to columns, piers, balustrades, and even whole façades. Cast iron offered its own set of efficiencies including cost, fabrication time, and weight, but required a painted finish.

While cast stone, terra cotta, and cast iron offered efficiencies over quarried and, particularly, carved stone, they were not cheap or impermanent materials. Less costly, but also less durable, stamped or brake-formed sheet metal, typically galvanized, could also be used instead of masonry for cornices, window hoods, roofing tiles, and even entire building façades.

Substitute Materials and Applying the Standards for Rehabilitation

The *Standards for Rehabilitation* are focused on preserving the important and distinctive character-defining features of a historic property (Standards 2 and 6), and they are to be applied in a reasonable manner, taking into account economic and technical feasibility ([36 CFR 67.7](#) and [36 CFR 68](#)). The Standards have an inherent flexibility that facilitates their application to diverse projects, historic properties, and conditions. They are to be applied on a "cumulative-effect" basis, when the overall effect of all work in the context of the specific conditions of the property and the project is consistent with the property's historic character.

The *Standards for Rehabilitation* require that the replacement of a distinctive feature match the old in physical and visual properties. While the use of matching materials is always preferred, the Standards purposely allow for the use of substitute materials when the use of original materials is not reasonably possible, such as in consideration of economic and technical feasibility or in new construction. They also provide additional flexibility in the treatment of secondary, less distinctive features that are less important in defining the historic character of the property. The *Standards for Rehabilitation* recognize that flexibility is appropriate to facilitate "a compatible use for a property ... while preserving those portions or features which convey its historical, cultural, or architectural values" (definition of "Rehabilitation," [36 CFR 67.2\(b\)](#)).

Examples of Historical Use of Substitute Materials



Figure 2a. Casting concrete blocks to mimic quarried stone was a popular late 19th- to mid 20th-century technique. Concrete masonry units could be completed by local craftsman, saving time and shipping costs. Photo: John Sandor, NPS.



Figure 2b. The 19th century also produced a variety of metal products used to imitate other materials. Across the country, cast iron was used in storefronts to imitate stone. Photo: John Sandor, NPS.



Figure 2c. Stucco has been used to imitate a number of building materials for many centuries. Seen here, stucco was applied to a brick structure and scored to represent a stone façade. Photo: John Sandor, NPS.

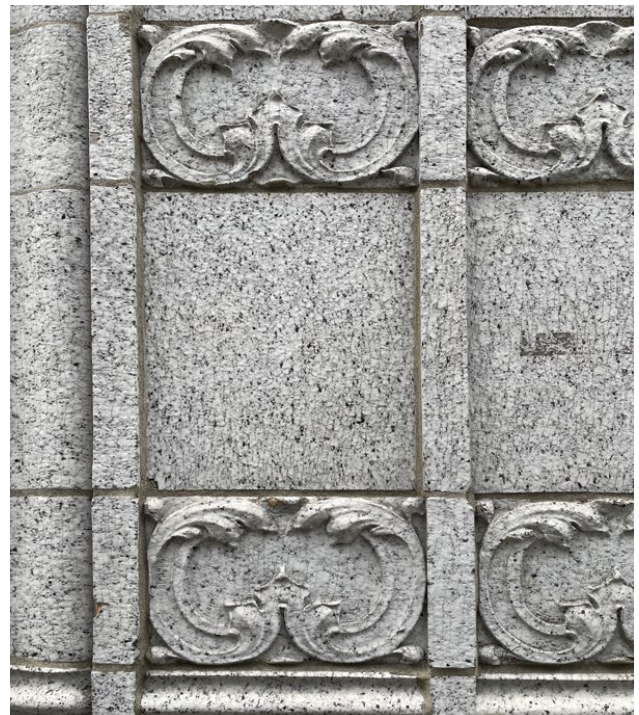


Figure 2d. Terra cotta gained popularity in the late 19th century as a cheap and lightweight alternative to stone. Glazing techniques allowed the blocks to imitate a variety of natural stone materials. Photo: John Sandor, NPS.

These examples of one material used to imitate another, more often in initial construction than for later repair and replacement purposes, are referred to as *imitative materials* in the *Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings*, updated in 2017, that accompany the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. These imitative materials, while evoking other materials, usually had distinctive qualities of their own and were not always a very close match in appearance to the historic material they were meant to imitate.

Many of the traditional materials discussed above are still available and used to replace damaged or missing original features, both to replace matching historic materials and sometimes as substitute materials. Because of their extensive use over time and their known physical and chemical properties, cast stone, cast iron, and terra cotta are well understood substitute materials. This continued usage and familiarity means their installation requirements and service life are well established, which in turn makes it easier to determine when and how to use these traditional materials as substitutes for a deteriorated material. However, innovation in replacement materials continues, and new products (many of them consisting of synthetic materials) are continually introduced. These non-traditional products are an increasing part of both the new construction and rehabilitation industries. Some materials, like glass fiber reinforced polymers, glass fiber reinforced concrete, or fiber cement, have been in use long enough for an accurate prediction of their service life and performance. Other newer, non-traditional materials may be too new to have established performance records, thus, understanding their material properties is critical, and their use should be approached with more caution.

When to Consider Using Substitute Materials in Preservation Projects

According to the *Standards for Rehabilitation*, deterioration should generally be addressed through repair if in repairable condition. Repair can entail a variety of treatments that retain the unit of building material and remove and patch or replace only the damaged portion. This approach can be done with traditional methods and materials such as a dutchman, where like-kind material is precisely inserted into wood or stone, or it may employ other materials such as epoxies for wood repair or cementitious compounds for masonry. As long as the repair methods are sound and do not damage or accelerate the deterioration of the historic material, repairs are generally preferable to replacement of an entire element. More complex manufactured products, typical of more recent historic materials (as well as a lot of modern building materials generally), may be more difficult to repair, if they can be repaired at all.

There are situations, however, when the level of deterioration makes localized repairs infeasible and entire fea-



Figure 3: Incremental repair is best done using in-kind material to minimize differences in the performance characteristics that could negatively affect the overall assembly. Photo: NPS.

tures or units of historic material must be replaced. While achieving an effective match of all of the visual qualities of a material can be challenging, even when replacement is in kind, it can be even more challenging when the replacement is a substitute material. A good visual match is not the only consideration when a substitute material is to be used for incremental replacement within a larger assembly of historic material. When an individual siding board or a single block of ashlar is being replaced, it is usually best achieved with the original material. Introduction of a different material into an intact assembly requires that its inherent properties, such as expansion and contraction, moisture resistance, or permeability, be thoroughly considered relative to those of the surrounding historic materials to avoid causing damage.



Figure 4. While occasionally used to imitate other materials such as wood or slate shingle, many asbestos shingles and siding materials had their own distinct shape and profile. No longer manufactured today, alternative materials must be found to replace these materials when they are distinctive features on a historic structure. Drawing: Association for Preservation Technology, Building Technology Heritage Library.

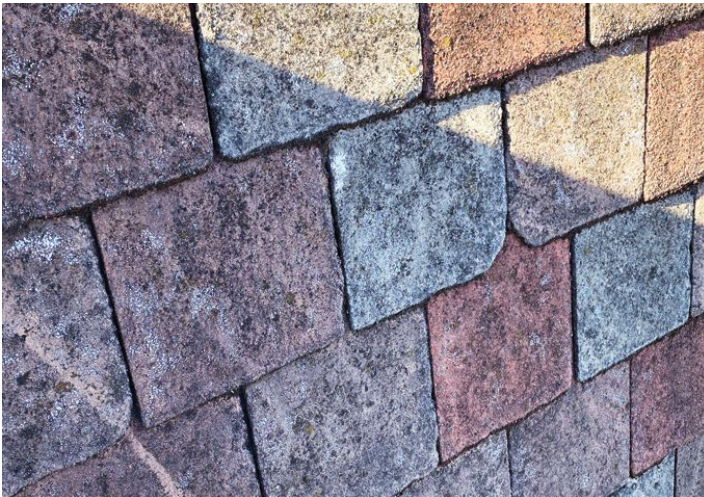


Figure 5. (Left) Asbestos shingles were often used as a substitute for traditional slate roof shingles. The historic asbestos roof on this rehabilitation project had reached the end of its lifespan and required complete replacement. (Right) Given the limited replacement materials available to match the historic asbestos shingles, utilizing natural slate was determined to be the best visual match for the original shingles and design intent in this instance. Photos: Crosskey Architects.

Circumstances in which the use of substitute materials may generally be considered appropriate, taking into consideration technical and economic feasibility reasons, include: the unavailability of historic materials; the unavailability of skilled artisans or historic craft techniques; inadequate durability of the original materials; the replacement of a secondary feature; construction of a new addition; the reconstruction of a missing feature; code-required performance; and for enhanced resilience and sustainability:

- **Unavailability of historic material.** A common reason for using substitute materials is the difficulty in finding a good match using the historic material (particularly a problem for masonry materials where the color and texture are derived from the material itself). This may be due to the actual unavailability of the material or to protracted delivery dates, particularly if the material cannot be sourced domestically. It is not uncommon for a local quarry that is no longer in operation to have been the source of an original stone. If another quarry cannot supply a satisfactory match, a substitute material such as dry-tamp cast stone or textured precast concrete may be an appropriate alternative, if care is taken to ensure that the detail, color, and texture of the original stone are matched. Even when the color is successfully matched, the appearance of a cementitious product may diverge from that of the historic stone as the substitute material ages.

Many manufactured materials that were used historically on buildings are no longer made. Terne-plated steel, which was the material most typically used for painted standing-seam or flat-seam roofing, is no longer made. However, because it was always painted, other metals including galvanized steel or copper can generally be substituted if painted. When the historic material needing to be replaced is a manufactured product developed as an imitation of

a natural material, which was the case with asbestos shingles meant to imitate slate, the natural material may now be an appropriate substitute material to consider for the manufactured one that is no longer produced.

- **Unavailability of skilled artisans or historic craft techniques.** These two issues can complicate any preservation or rehabilitation project. This is particularly true for intricate ornamental work, such as carved wood, carved stone, wrought iron, or cast iron. While skilled craftsmen may not be as difficult to find as they once were, there can still be limitations geographically, even in finding less specialized skills, and particularly if a project is small. Technical advances have allowed some stone or wood carvers to take advantage of computerized equipment, but complex designs will likely still require hand work. It may also be possible to mimic a carved element using a material that can be cast in a mold, adding significant efficiency where an historic element survives from which a mold can be made. Options for casting include aluminum, cast stone, fiberglass, glass fiber reinforced concretes, and terra cotta, but not all carved elements can be duplicated by a casting, and mold-making and casting still require skilled craftsmen.
- **Inadequate durability of the original material.** Some historic building materials were of inherently poor quality or were not durable. In other cases, one material was naturally incompatible with other materials on the building, causing staining or galvanic corrosion. Examples of poor-quality materials are very soft sandstones, which eroded quickly, and brownstone, which is vulnerable to delamination. In some cases, more durable natural stones may be visually similar enough to stand in for these soft stones but cast stone or another material may be needed to achieve an appropriate match.

The ready availability of manufactured ornamental wood features fed a nineteenth-century taste for decorative architectural details that were often used on the exterior of buildings with little concern for how they would be affected by moisture or maintained. Even old-growth wood from decay-resistant species often could not prevent features with severe exposure from eventually needing to be replaced. Today's available commercial supplies of lumber no longer provide the denser, more decay-resistant wood of old-growth forests, so even careful matching to species, which is not always possible, will not yield a replacement equal in performance to the historic material. Old-growth wood is likely to be very expensive, if it can be found, and may not be available from a sustainable, environmentally responsible source. When features with severe exposure need to be replaced or reproduced, substitute materials that are less susceptible to decay can have a longer life, and when the feature is painted, as exterior wood features generally are, the visual effect of a substitute material can be minimal.

- **Replacement of a secondary feature.** When it is necessary to replace a less distinctive, secondary feature that is less important in defining the historic character of the property, there is more flexibility in how it can be replaced. While it may be less important to find an exact match in materials when replacing



Figure 6. The dramatic difference in the number of growth rings between old-growth wood and wood that was recently harvested from second- or third-growth forests is indicative of the diminished dimensional stability and durability of most lumber currently available. Photo: Zachary Dettmore.

such a feature, the retention of the overall historic character should still guide selection of an appropriate replacement material. For example, replacing secondary features such as those with limited visibility (e.g., siding materials on a rear elevation) may permit replacement materials that are similar in appearance or character without having to be a perfect match.

- **Construction of a new addition.** The *Standards* require that new additions to historic buildings and related new construction be differentiated from the old as well as be compatible with the historic character of the property and its site and environment. Using materials that evoke, without matching, the historic material can be an effective means of achieving the needed balance between compatibility and



Figure 7. A new addition replaced non-historic construction on the rear elevation of this building. Fiber cement gives the addition a compatible appearance without replicating the exposure for thickness of the historic siding. Photo: Ward Architecture + Preservation.

differentiation for new additions and new construction. Even if differentiation is achieved through design rather than materials, there generally is no basis for requiring the use of matching historic materials for new additions and new construction as part of a rehabilitation project.

- **Reconstruction of a missing feature.**

Many buildings lose significant features over the course of their lives for reasons such as those previously discussed. When a missing feature is to be reconstructed, the importance of matching the original material may be less important to the effect replacing the missing feature may have on the overall historic character and appearance of the building. Though replacement of missing features must be substantiated by documentary, physical, or pictorial evidence, in many cases the authenticity of the material may be secondary to the overall visual qualities. The use of a more cost-effective substitute material for the construction of a missing feature can often be an important factor in the feasibility of undertaking such work.

- **Code-required performance.**

Modern building codes are regularly amended to require higher performance levels for new and existing buildings in such areas as life safety, seismic retrofits, and accessibility. Rehabilitation projects often trigger compliance with code requirements that were not in place when a building was constructed. Although building codes may often allow for the retention of historic materials and assemblies, substitute materials can offer an alternative in situations when the historic materials are non-compliant and cannot otherwise be reasonably retained. In these instances, a change in material may be appropriate to meet code requirements, while in other instances selecting the optimal code compliance method for the project may achieve code-compliant solutions that also allow for the preservation of a building's historic materials and finishes.

For example, fire codes may require increased resistance to flame spread for buildings within dense urban environments where building proximity and separation between buildings is a concern. Some substitute materials are non-combustible, have good ratings for flame spread, and can provide an alternative to help meet

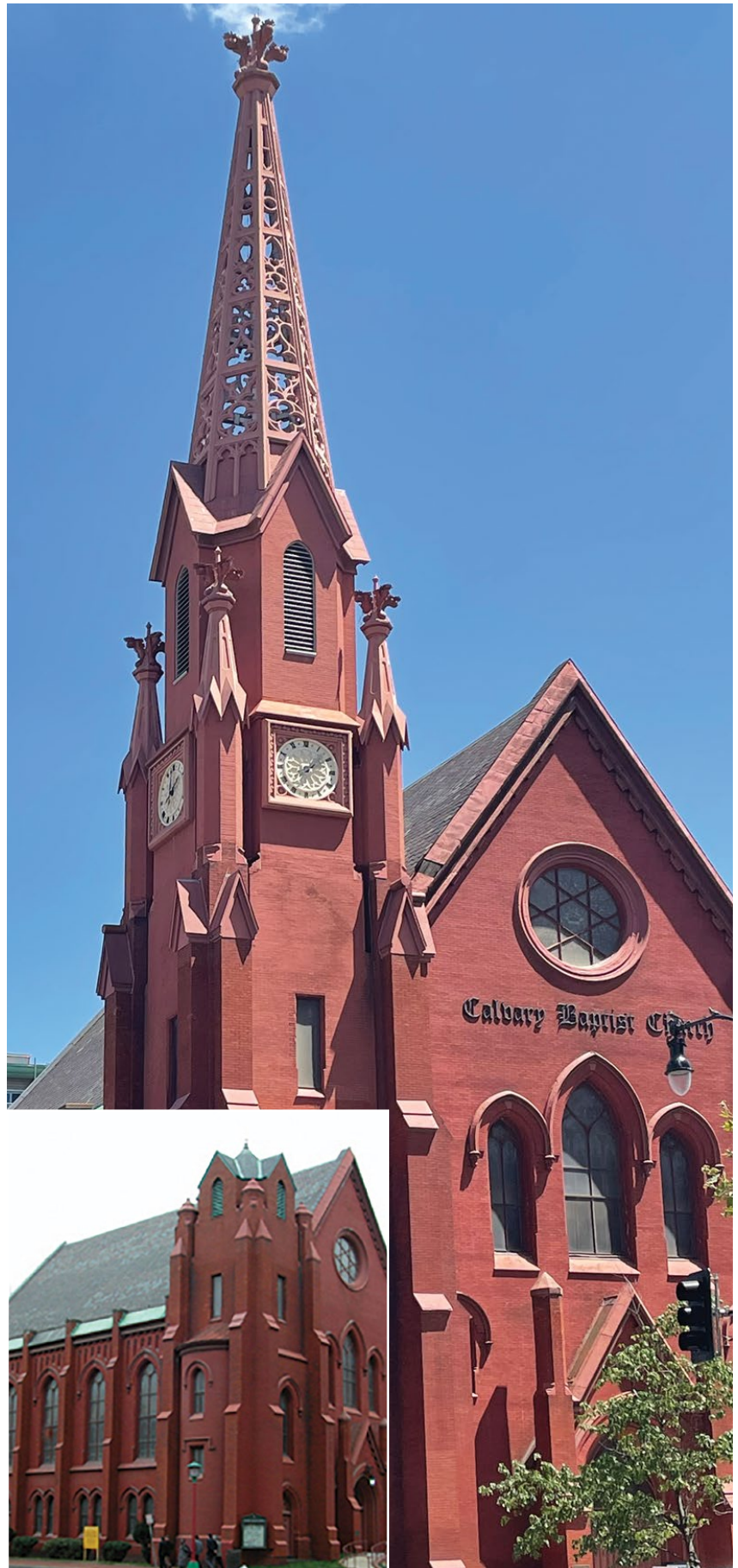


Figure 8. A long-missing cast-iron steeple was reconstructed in aluminum and fiber-reinforced polymer (FRP). Photo: John Sandor, NPS, Inset: Quinn Evans.

fire code requirements. Depending on the building component and the material, however, a substitute material may not resist fire any better than the historic material. In addressing code issues, all feasible alternatives should be considered to minimize the impact on the historic character of the building while still meeting code requirements.

With specific provisions in building code related to issues such as seismic hazards, the choice of materials for features inherently unstable in a seismic event can be a key part of a code-compliant retrofit solution. Elements at risk of falling such as parapets, finials, and overhanging cornices may be made safe by anchoring them to new structural frames. However, for some heavy masonry features, especially where there is deterioration or the feature is difficult to effectively brace, adequately anchoring the existing feature may not prove feasible. In such cases removing and replacing these features with lighter-weight replicas that incorporate a resilient structural framework can help preserve the historic character of the building while improving life safety performance.

- **Enhanced resilience and sustainability.** Wildfires, earthquakes, floods, hurricanes, and other extreme weather events put historic buildings and their occupants at risk and may require adaptive treatments that are more invasive than might be accepted in other circumstances, including related to the use of substitute materials. In these contexts, it is still necessary to try to minimize impacts on a building's historic character as much as possible while still adapting it to be more resilient. Widespread wildfires, for example, have increased demand for fire resistant materials for the exterior building envelope. Flood events may necessitate the replacement of historic materials that have been damaged or inundated with hazardous substances in contaminated floodwaters. When undertaking repairs in such circumstances, substitute materials may offer greater resilience to anticipated future exposure to natural hazard risks.

Similarly, efforts to improve energy efficiency and performance may include the use of substitute materials as replacement components when modifications to building assemblies are required and the historic materials cannot be preserved. When evaluating substitute materials in the context of sustainability objectives, factors such as the environmental impact of production, the full life cycle of products, and the embodied carbon of the materials already in place should be carefully analyzed. There may be more sustainable choices for a replacement material, including the use of more traditional materials in place of manufactured products that may consist of non-renewable resources or hazardous materials. While some synthetic substitute materials are made from recycled materials or are otherwise sustainably produced, many are not repairable, salvageable, or recyclable themselves, and

they may have shorter lifespans to their historic material counterparts. When either greater resilience or sustainability is a factor, all feasible alternatives should be considered in finding a balanced approach that maintains historic character while meeting resilience and sustainability goals.

Substitute Materials and Economic Feasibility

Economic feasibility is inevitably a concern when choosing a material for any part of a project, whether a historic or substitute material, but it should not be the sole determinant factor at the expense of maintaining the



Figure 9. Previously bricked-in openings below the flood line were reopened and new aluminum windows installed with cellular PVC trim detailed to hold back moderate flood waters and survive exposure to water. Photo: John Sandor, NPS.

historic character and historic integrity of a building. Other factors may prompt the consideration of a substitute material, such as the cost of maintaining the historic material, because it is comparatively difficult or costly to reach or access, or the frequency of required maintenance the historic material needs. Additionally, where in-kind replacement material is found to be prohibitively expensive, it may be reasonable to consider a substitute that offers an alternative and is a good physical and visual match. Not all substitute materials are, however, cost-effective replacements. Long-term durability and maintainability are other factors that should be considered in conjunction with initial cost.

Maintenance of a material, particularly where accessibility is difficult or expensive, can be an important part of a

cost evaluation. Maintenance costs should not be considered without also considering life-cycle expenses. While some substitute materials may offer reduced initial costs, they may be as or more costly than traditional materials to maintain over time. For example, many substitute materials are not readily repairable, necessitating full replacement when damaged. The cost to replace a material or assembly at the end of its lifespan may also be greater than the accumulated incremental expense to maintain the historic material, particularly if it is a more traditional, repairable material. Maintenance cost should never be the sole reason for replacing a historic material that is not deteriorated.

Criteria for the Appropriate Use of Substitute Materials

Substitute materials must meet three basic criteria to be considered: they must be compatible with the historic materials in appearance; their physical properties must be similar to those of the historic materials, or the materials must be installed in a manner that tolerates differences; and they must meet certain basic performance expectations over an extended period of time.

- **Matching the Appearance of the Historic Material**

Any material's appearance varies depending on the nature of the material and how it is used. Some historic materials, such as wood and ferrous metals, were typically painted, making the color of the substitute unimportant, though the texture of the surface, which telegraphs through a paint layer, is still an important consideration. Texture can be a large part of distinguishing a material formed by hand from one that is machine-made. Many historic materials, such as most building stones, are used without any coating, making the color, pattern, and reflectivity, as well as surface texture, dependent on the material itself. Matching the color and surface

characteristics of a historic natural material with a man-made substitute can often be quite difficult.

When the color and surface characteristics of an existing material are important, cleaning the material should be the starting point for evaluating a potential matching material. In situations where there are subtle variations in color and texture within the original material, the substitute material should be similarly varied so that it is not conspicuous by its uniformity. If a material is custom fabricated, a sufficient number of samples should be supplied to permit on-site comparison of color, texture, detailing, and other critical visual qualities. For a manufactured product with preset choices of color or texture, it may be necessary to look at samples from more than one manufacturer to find the best match. Similarly, prefabricated products, such as roofing slate, may offer limited, if any, choice of unit size, which can be a critical factor for achieving a good match. A substitute material should not be used to replace distinctive, character-defining materials and features if an adequate match in design and appearance is not possible.

As all exposed materials are subject to ultraviolet degradation, samples of a new material, particularly when custom formulated, should be prepared during the early planning phases to allow for evaluation of the effects of weathering on color stability. When that is not possible, or if a prefabricated product is used, the fabricator or manufacturer may be able to identify regional locations where equivalent products have been installed long enough ago to get a better sense of how the material weathers and performs.

While a perfect match is the desired goal for replacing distinctive features, it is not always possible, even when the same matching material is chosen for the replacement. When any compromise



Figure 10. Polymer slates offer a choice of shapes but not sizes, limiting their ability to achieve a good visual match for some historic slate. With the size of the polymer slates (right) being nearly twice that of the historic slates (left), the scale of the entire feature is incompatibly altered. The molded edges of this material, which contribute to its ability to replicate slate, would be lost if each shingle was resized by cutting. Photo: John Sandor, NPS.



Figure 11. The thickness of the wood siding on the front (left) creates a deeper shadow line than is achieved with the fiber cement siding used on the side (right) elevation. While the exposure can be adjusted, fiber cement siding is not available in a matching thickness. Photo: John Sandor, NPS.

must be made in the precision of the match, it is wise to consider the vantage point from which the material will be seen. Sometimes what seems important at close range, such as variations in the texture of a surface, may be secondary to other aspects of the material when viewed from some distance. The closer a feature is to the viewer, the more closely the material and craftsmanship should match the original. An on-site mock-up using a sample of the proposed material can help evaluate whether it is an adequate visual match.

- **Matching the Physical Properties of the Historic Material**

Carefully chosen substitute materials can often closely match the appearance of historic materials, but their physical properties may differ greatly. These differences are most critical when incrementally replacing components of a larger assembly that retains significant historic material. The chemical composition of the material (e.g., the presence of acids, alkalis, salts, or metals) should be evaluated to ensure that the replacement materials will be compatible with the adjacent historic materials. Materials that will cause galvanic corrosion or other chemical reactions must be isolated from one another.

The thermal- and moisture-driven expansion and contraction coefficients of each adjacent material must be within narrow limits or be accommodated



Figure 12. Cellulose composite materials, like wood, expand and contract with moisture. Here it was used to reconstruct a missing storefront. Unlike solid wood that is dimensionally stable parallel to the grain, this composite moves equally in all dimensions, resulting in gaps that were not adequately anticipated in the design. Photo: John Sandor, NPS.

by carefully designed joints and fasteners. Joints can play a role both in accommodating movement of materials as well as in managing moisture, either to keep it from entering the enclosure assembly or to let it escape from the building envelope, or both. Because some synthetic materials are less permeable to moisture than more traditional materials, installations must take into account the potential to trap moisture and cause deterioration of historic and new materials. An assembly incorporating new and historic materials should be designed so that if material failures occur, the failures occur within the new material rather than the historic one.

During installation, surface preparation is critical to ensure proper attachment. Deteriorated underlying material must be removed or stabilized. Non-corrosive anchoring devices or fasteners that are designed to carry the new material and to withstand wind, rain, snow, and other destructive elements should be used. Since physical failures often result from poor anchorage or improper installation techniques, a structural engineer should be included in planning any major project. For readily available, off-the-shelf materials, manufacturers' recommendations for attachment and spacing should be followed.

Nearly all substitute materials have some properties that are different from the historic materials they may replace. Even when substitute materials are isolated from historic materials and features, it is important to understand the substitute materials' properties in order to use them successfully.

- **Performance of the Material Over Time**

When more traditional materials are used to replace damaged historic materials and features, their performance is predictable in most cases. An exception may be modern wood that has durability and other prop-

erties different than those of historic wood from old-growth forests. Many of the materials used as substitutes have been in use long enough to provide some idea of how they perform over time. Other material may only have test results from accelerated weathering. The length of manufacturer warranties may be an indicator of expected durability and lifespan. Warranties only predict a manufacturer's expectation of a product's performance and are no guarantee that the manufacturers will still be in business at the time needed to stand behind them. Just as new manufacturers emerge with new materials, others disappear. Where possible, projects involving substitute materials in similar installations and exposures should be examined before selecting a new, less-tested material. It is unrealistic to expect a substitute material, which can be quite different in composition than the historic material, not to age differently.

Even traditional materials will not perform well if not used or detailed appropriately, and experienced architects, engineers, fabricators, and installers rely on their professional knowledge and experience to ensure proper installation and techniques when working with familiar materials. This is just one of many reasons that using the original materials for needed replacement is usually the best choice. Some of the materials now available as substitutes have properties that differ greatly from the traditional materials they may be used to replace. It is critical to the successful performance of substitute materials that everyone involved in the selection, design, and installation fully understands the material's properties, especially how it is different than the material it is replacing, and how that will affect the surrounding materials and building systems.

Many traditional building materials can be repaired either with traditional methods and materials or with more modern conservation techniques using substances like epoxies. However, many modern substitute materials (particularly synthetic ones) are not as easily repaired, if repairable at all, as their more traditional counterparts. Confirming that a material is repairable may be important for those used, e.g., where impact or significant wear or abrasion is likely.

Finally, it is critical that the substitute materials be documented as part of the historical record of the building so that proper care and maintenance of all of the building materials continue, ensuring the continued life of the historic building.

Choosing an Appropriate Substitute Material

Once all reasonable options for repair and replacement in kind have been considered and sufficient justification for substitute materials has been established, the choice among the variety of substitute materials currently available must be made. Rapidly developing technologies allow a wide variety of materials to choose from that are intended to mimic historic materials. Many of the materials that were historically used as substitutes for more traditional historic materials have themselves become historic, and some of these early substitutes continue to be reasonable options as substitute materials today. No substitute material will exactly match the historic material in all aspects, but many are able to adequately match the appearance and relevant physical attributes to make for a potential substitute. If a substitute material is not



Figure 13. Cast stone was used to effectively replace individual blocks of sandstone. Both the original (left) and the substitute material (right) retain similar physical and visible properties. Having weathered for over 30 years, some erosion of the binder has revealed quartz grains of the aggregate (inset), but it is only noticeable upon close inspection. Photo: John Sandor, NPS.

an adequate physical and visual match given the specific conditions of the building and the project, then it should not be used to replace distinctive, character-defining materials and features.

Listed below are various building components or features and the substitute materials which may, in some circumstances, be considered for use as possible replacement materials in a historic rehabilitation project consistent with the *Standards for Rehabilitation*. This list includes different substitute material options available today for these building features and poses questions that should be asked and considered when choosing between the original material and various types of substitute materials. This is followed by a list of some of the more commonly used, currently available materials that may have some applications as substitute materials and the properties of each that affect their suitability for use as substitutes. This list should not be read as an endorsement of any of these materials, generally, or their appropriateness for use as a substitute material, but it serves as a reminder that the successful use of any building material requires a careful consideration of its properties relative to where and how it will be used.

Considering Substitute Materials

Considering the use of a substitute material should begin with the following questions about the conditions and location where it will be used:

- Will the significance or visibility of the historic feature require a very precise match?
- Is the entire feature being replaced or just a component of it?
- Are pre-existing conditions contributing to the failure of the existing material, and, if so, how will they be addressed/corrected?
- Is the need for replacement due to inherent deficiencies of the original material?
- Will the material need to resist any environmental hazards such as flooding or fire?

Historic Features and Substitute Materials

Historic Building Features

	Masonry Stone, terra cotta	Architectural Metals Cast & wrought iron, steel, pressed metal	Siding Wood, asbestos	Roofing Wood shingle, slate, tile	Decking Tongue and groove & square edge wood	Molding / Trim Wood
Aluminum	●	●	●			●
Cast Stone & Precast Concrete	●			●		
Fiber Reinforced Concretes	●					
Glass Fiber Reinforced Polymers	●	●				
Fiber Cement			●	●		●
Mineral / Polymer Composite			●	●	●	●
Cellulose Fiber / Polymer Composite			●	●	●	●
Non-composite Polymers		●			●	●
Cellular PVC			●		●	●

Potential Substitute Materials

The above chart lists materials that are sometimes used as substitutes for replacement of historic building features. Even within a given category, all materials may not be equally suitable as a substitute replacement material for the actual historic material or feature. Any substitute material should be selected based on its specific physical and visual characteristics, conditions, and intended application consistent with the Secretary of the Interior's Standards for Rehabilitation.

Historic Building Features: Criteria for selecting an appropriate replacement material

Masonry

FEATURES: corbels, brackets, balusters, cornices, window and door surrounds, friezes, wall surfaces, horizontal surfaces, incidental ornament, columns

HISTORIC MATERIALS: terra cotta, cast stone, stone, concrete

POTENTIAL SUBSTITUTES: cast stone, pre-cast concrete, GFRC, GFRP, non-composite polymers (polyurethane), cast or stamped metal

Questions to ask about the replacement material:

- Can it serve a structural function?
- How is the material affected by moisture?
- Can the material survive flooding and be reused?
- Can it reproduce the surface texture of the original?
- Is its shrinkage in curing low enough to allow it to be molded from existing stones?
- Can matching color be achieved without a coating and with UV stability?
- Can an adequate match of the surface (color and texture) be achieved with a coating?
- Is a coating required?
- If it is not self-supporting, is it lightweight enough to be supported by an underlying framework?
- Can multiple original units be replicated with a single replacement piece?
- Where thermal movement is different from the original material, how will joints accommodate?
- Is the material combustible?

Architectural Metals

FEATURES: pilasters, door and window surrounds, cornices, incidental ornament, columns, spandrels, ceilings, sheathing, roofing

HISTORIC MATERIALS: cast and wrought iron, steel, bronze, lead, aluminum, and stamped steel (usually galvanized or terne-coated)

POTENTIAL SUBSTITUTES: GFRP, aluminum, non-composite polymer (polyurethane), GFRC, metallic/polymer composite

Questions to ask about the replacement material:

- Will the replacement material serve a structural or cosmetic role?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- If part of an assembly of mixed materials, how will any expansion and contraction of the dissimilar materials be accommodated?
- Will the replacement material increase deterioration of the historic or surrounding elements, for instance due to galvanic corrosion, moisture entrapment, jacking of original material, off-gassing creating a corrosive environment, or poor original design of the historic material?
- How will the replacement material mimic the surface color/patination of the original material?
- If a coating is needed, what preparation is needed, and what is its durability or service life of the finish?
- What attachment and support systems are necessary?
- If the original element is structural, but the new material is not, how can supplemental structure be introduced to support the new?



Figure 14. Surface texture is an important aspect in matching the appearance of a historic material, especially when a material is viewed at close range. As seen in these two images, many of the substitute materials produced for siding and trim have an embossed wood grain, making them incompatible for replacing historic wood that was typically planed to a smooth surface. Some substitute products are available with a smooth surface as well. Photos: John Sandor, NPS.

Siding

FEATURES: clapboard, tongue-and-groove or shiplap siding, board and batten, shingles

HISTORIC MATERIALS: wood and asbestos

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, fiber cement, mineral/polymer composite

Questions to ask about the replacement material:

- What are the widths, lengths, profiles, thicknesses, and textures available?
- What, if any, are the finishing requirements, and/or is it available factory-finished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- Does it absorb moisture and, if so, to what effect?
- Can the material survive flooding and be reused?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- What characteristics can affect its handling (e.g., weight, flexibility, brittleness)?
- Does it have specific fastening requirements?
- Is it susceptible to insect damage?
- What is its impact resistance?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?

Roofing

HISTORIC MATERIALS: wood shingle, slate shingle, asbestos shingle, clay tile, concrete tile, metal

POTENTIAL SUBSTITUTES: fiber cement, mineral/polymer composite, wood fiber/polymer composite, pre-cast concrete, metal

Questions to ask about the replacement material:

- What sizes and shapes are available?
- What are color choices?
- What is the color stability of the new material, and how will it age/weather?
- What is the impact resistance?
- What is its flame spread rating?
- What are the installation requirements of the new material?
- Can the feature being replaced be custom-produced if ready-made ones of the new material are not an accurate match?
- What is the expected lifespan and/or warranty?

Decking

FEATURES: tongue-and-groove, square-edge flooring

HISTORIC MATERIALS: wood

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, mineral/polymer composite, non-composite polymers (solid PVC)

Questions to ask about the replacement material:

- What are the widths, lengths, and textures available?
- Is it site painted or prefinished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- What dimensional span does its strength allow?
- Does it absorb water, and if so, to what effect?
- Can the material survive flooding and be reused?
- Does it require a drainage plane, or can it be installed atop a membrane?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- Is it susceptible to insect damage?
- Is it impact resistant?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?

Molding / Trim

FEATURES: run moldings, flat boards, casings, cornice, frieze, railings, balustrade, columns

HISTORIC MATERIALS: wood, metal

POTENTIAL SUBSTITUTES: cellular PVC, wood fiber/polymer composite, mineral/polymer composite, non-composite polymer (polyurethane), GFRP, sheet metal

Questions to ask about the replacement material:

- What are the widths, lengths, and textures available?
- What, if any, are the finishing requirements and/or is it available factory-finished?
- How well does it hold paint, and can prefinished surfaces be renewed?
- What tools are needed to cut it, and can it be machined?
- Does it absorb moisture, and if so, to what effect?
- Can the material survive flooding and be reused?
- Will it expand and contract with temperature change enough to require special accommodation in its installation?
- What characteristics can affect its handling (e.g., weight, flexibility, brittleness)?
- Does it have specific fastening requirements?
- Is it susceptible to insect damage?
- What is its impact resistance?
- Does it have a flame spread rating?
- What is the expected lifespan and/or warranty?



Figure 15. Tongue-and-groove porch flooring is manufactured in several different substitute materials. Each type has different properties, though most are more moisture-resistant than wood. The prefinished product shown can be painted when worn, but repainting is not recommended for some product choices. Photo: Oak Alley Foundation.

Potential Substitute Materials: Matching properties and performance needs

Physical Composition and Properties

After assessing different material options based on the intended application, the appropriateness of a substitute material should also be considered in context of the material's physical composition, associated properties, and necessary visual match.

Aluminum

MATERIAL: Aluminum is a highly corrosion-resistant alloy that can be cast, wrought, or extruded. Molten aluminum is cast into permanent (metal) molds or one-time sand molds forming cast aluminum. Extruded aluminum is formed by passing heated aluminum through a die which produces the desired form. Wrought aluminum is worked using the heated metal and then bending, stamping, and otherwise shaping the metal. If not self-supporting, aluminum elements are generally screwed or bolted to a structural frame. Aluminum can be welded, but more often sections, particularly extruded ones, are mechanically connected.

PROPERTIES:

- Isotropic
- Lightweight
- Thermal movement greater than cast iron or wood
- Corrosion-resistant, but direct contact with other metals may trigger galvanic corrosion
- Lower structural strength than iron or steel
- Ductile - less brittle than cast iron
- Non-combustible
- Retains high definition through molding process and produces crisp profiles through extrusion
- Can be given a durable metallic finish through anodization. Surface etching required for paint adhesion
- Can be machined into a large variety of shapes/ dimensions



Figure 16. Aluminum is a highly corrosion-resistant metal that is commonly used as a substitute material for cast iron. Aluminum can be a more affordable and lightweight alternative to cast iron that retains a similar texture, shape, and maintenance cycle. Photo: NPS.



Figure 17. The balustrade consists of multiple prior campaigns of using cast stone to replace the natural stone. The effective match for the surface texture and color of the original stone allowed individual elements to be incrementally replaced only when they had failed, thus retaining the maximum amount of original material as long as possible. Photo: EverGreene Architectural Arts.

Cast Stone & Precast Concrete

MATERIAL: A cement lime and aggregate mixture that is dry-tamped into a mold is generally referred to as cast stone. Cast stone is one of the original substitute materials. Its longevity has proved that the material ages compatibly with stone. A wet mix of cement and aggregate poured into molds also has a long history of being used to produce concrete masonry units mimicking stone and roofing tiles mimicking clay tile. Both methods have minimal shrinkage during curing, though they employ different curing and finishing techniques. Both can include reinforcing bars and anchorage devices installed during fabrication. The dry-tamp fabrication method is especially effective at producing an outer surface with the appearance of stone.

PROPERTIES:

- Isotropic
- Weight equivalent to stone
- Expansion/contraction similar to stone
- Water absorption may differ from that of any particular stone
- Can be structural
- Non-combustible
- Vapor-permeable
- May achieve a wide range of color and surface textures by varying mix, but use of pigments may reduce UV stability
- Can be coated
- May be tooled to match the appearance of tooled stone
- Repairs similarly to stone



Figure 18. Missing historic terra cotta spandrel panels on all floor levels were recreated utilizing glass fiber reinforced concrete (GFRC) replacements. New spandrels were fabricated as individual components and attached with metal clips between historic terra cotta piers. Photo: Kris Frail, Dewberry.

Fiber Reinforced Concretes (GFRC, CFRC)

MATERIAL: Fiber reinforced concretes are lightweight concrete compounds modified with additives and reinforced with alkaline resistant glass fibers (GFRC), or less frequently carbon fibers (CFRC). They are generally fabricated as thin-shelled panels and applied to a separate structural frame or anchorage system. GFRC is typically sprayed into forms, although it can be poured, and anchoring devices are included in the fabrication. The color is derived from the natural aggregates and, if necessary, a small percentage of added pigments. Because of its low shrinkage in curing, it can be produced using molds taken directly from the building.

PROPERTIES:

- Isotropic
- Lighter weight than solid masonry
- Expansion/contraction similar to stone
- No load bearing capacity, so underlying framework must be used to accommodate any loads
- Material can be fire-rated
- Vapor-permeable
- Can be produced in larger sections efficiently reproducing repetitive elements or features that were originally made up of small individual units
- Large range of colors achievable by varying aggregates, but when pigments are needed UV stability may be reduced
- May be left uncoated or may be painted



Figure 19. A new, lightweight fiber reinforced polymer is attached to a new metal armature to replicate damaged and missing elements of a terra cotta cornice. Photo: Quinn Evans.

Glass Fiber Reinforced Polymers (FRP, Fiberglass)

MATERIAL: Fiberglass is the most well-known of the FRP products generally produced as a thin, rigid, laminate shell formed by pouring a polyester or epoxy resin gelcoat into a mold. When tack-free, layers of chopped glass or glass fabric are added along with additional resins. The surface gel coat can be pigmented or painted. Reinforcing rods and attachment devices can be added when necessary. Because of its low shrinkage in curing, it can be produced using molds taken directly from the building. Rather than being produced as standard components, FRP is custom fabricated for individual applications.

PROPERTIES

- Isotropic
- Lighter weight than masonry, similar to sheet metal
- More thermally driven expansion than masonry or metals
- No load bearing capacity, so underlying framework must be used to accommodate any loads
- High strength to weight ratio
- Flammable
- Not vapor-permeable
- Can be produced in larger sections efficiently reproducing repetitive elements or features that were originally made up of small individual units
- May be difficult to match false joints in multi-unit assemblies to actual joints that need to accommodate movement
- Color can be incorporated into the surface gel-coat, or the surface may be coated



Figure 20. Cement board was used to replace a non-historic infill and mimics the configuration of a typical vehicular door of the period.
Photos: Historic Augusta.

Fiber Cement

MATERIAL: Fiber cement products are made from fiber, sand that is ground to a powder, cement, and proprietary additives to reduce moisture absorption. The fiber used in roof products is glass fiber alone, whereas siding and trim board products are primarily wood fiber. The material is formed with a smooth or textured surface, cut to standard sizes of panels, boards, or shingles, and cured in an autoclave. Roofing material has integral color, but board and siding products are produced with a primer, if not fully factory finished. Most siding and trim boards are embossed with a wood grain on one surface and are smooth on the other, the smooth side being the appropriate surface to imitate planed wood.

PROPERTIES:

- Products are minimally orthotropic
- Heavier and more brittle than wood, limiting available lengths
- Very little thermal- and no moisture-driven movement
- Low water absorption, but not recommended for ground or roof contact
- Class A flame spread
- Resists insect damage
- Available in limited thicknesses and widths
- Not machinable, but may be cut with special carbide blades; cutting requires dust collection and personal protective equipment
- Cut edges require sealing
- Available unfinished, primed, or prefinished, and must be painted (with latex paint)
- 15-year limited warranty typical



Figure 21. A mineral polymer composite siding was available in the profile very similar to the historic siding. The replacement siding was used where the original material was almost completely missing beneath a more modern covering. Areas where the original wood were largely intact were replaced with matching wood to sustain more of the material integrity of the building. Photo: Belk Architecture.

Mineral / Polymer Composite

MATERIAL: Calcium carbonate or fly ash are mineral ingredients held in a matrix of various polymers to produce materials formed or molded into a number of building products. Additives found in some of the roofing products include pigments and UV stabilizers. Some use a substantial portion of recycled material. Different combinations yield products with different properties, each formulated for a specific building component. When the material is fly ash with some glass fibers bound in a matrix of polyurethane, it is identified as polyash. Siding, trim, bead board, and deck products are primed or prefinished, whereas roof products have integral color.

PROPERTIES:

Fly ash (siding and trim)

- Isotropic
- Heavier and more brittle than wood, and lacking structural capacity
- Little thermal or moisture-driven movement
- Sufficiently low water absorption to permit ground contact
- Class C flame spread
- Resists insect damage
- Available in limited thicknesses and widths
- Machinable with carbide tools blades; requires dust collection
- Cut edges do not require sealing

- Must be painted
- 30-year limited warranty typical

Calcium carbonate or recycled rubber (roofing)

- Isotropic
- More thermally-driven movement than slate or wood
- Little to no moisture absorption
- As shingles: lighter and more flexible than slate
- As tongue-and-groove decking: heavier and harder than wood
- Not vulnerable to insect damage
- Available in limited dimensions
- As shingles: Class 4 impact resistance, and flame spread ratings ranging from Class A to Class C depending on the specific product
- As shingles: integral color, that may be subject to fading
- As tongue-and-groove decking: prefinished with non-renewable finish, and can be cut with woodworking tools
- 50-year limited warranties on roofing products typical

Cellulose Fiber / Polymer Composite

MATERIAL: Wood strands or fibers are coated with resin for moisture resistance and zinc-borate for insect and fungal-decay resistance, then consolidated under heated pressure. Solid composite core boards are cut from sheets of material, then factory-primed or finished. Resulting siding and trim board products can be referred to as engineered wood, fiber board, or hardboard. Products may be embossed with a wood grain or have a smooth finish, the smooth side being the appropriate surface to imitate planed wood. Siding, trim, and tongue-and-groove decking with a slightly different properties are produced by extruding polyvinyl chloride (PVC) combined with non-wood cellulose. Roofing shingles are molded from fine wood fibers, color additives, and UV stabilizers bound with polypropylene or polyethylene (thermoplastics).

PROPERTIES:

Predominantly Cellulose (siding, trim and decking)

- Minimal thermal movement
- Resistant to moisture-driven movement
- Lighter and more flexible than solid wood, but lacks structural capacity
- Rice hull cellulose: can span typical floor-framing spacing as decking
- Low water absorption (for wood, no ground or roof contact)
- Class A or Class C flame spread
- Resists insect damage
- Available in limited dimensions
- Machinable with woodworking tools
- Wood cellulose: Cut edges must be sealed and may need additional surface prep for finish; must be painted if unfinished or primed, also available prefinished
- Rice hull cellulose: Accepts stain/paint, but no finish required
- 30–50 year limited warranty, depending on manufacturer

Predominantly Polymer (roofing)

- Minimal thermal movement
- Little to no moisture absorption
- Lighter and more flexible than slate
- Class 4 impact-resistance
- Class A flame spread
- Available in limited shingle size
- 50-year limited warranty typical



Figure 22. A porch was reconstructed using posts fabricated on site from a smooth-surface cellulose/polymer composite material. Though the face of the posts are painted, the lack of paint on the bottom at the cut ends is not consistent with manufacturers' recommendations. This treatment will allow moisture to be absorbed, shortening the life of the new replacement feature. Photo: John Sandor, NPS.



Figure 23. 3-D printing using various polymers is occasionally used to replicate missing metal or wood features. This new application is continually being refined, but the application can be successful when a painted, lightweight feature needs to be replicated. Photo: NPS.

Non-composite Polymers

MATERIALS: The main two polymer materials used without significant other components are polyurethane and polyvinyl chloride (PVC). Polyurethane millwork is constructed of urethane foam created by mixing isocyanate and resin. The polyurethane mixture is kept under pressure in a mold as it expands to any desired shape. These molded products have a closed-cell, foamed core with a denser surface skin. Polyurethane products can have exterior applications but are more often used for interior features. Polyvinyl chloride (PVC) in a solid extruded form is another polymer that can have architectural application as tongue-and-groove decking. Various polymers formed using 3-D printing are also being explored as replacements for painted metal or wood ornamental features.

PROPERTIES: Each of the two groupings has distinct physical properties

Urethane Foam (moldings and decorative elements)

- Lightweight and flexible, but lacking structural capacity
- More thermally-driven movement than wood or stone, but less than cellular PVC
- Does not absorb water
- Flammable
- Resists insect damage
- Can be cut with standard woodworking tools
- Adhesive and mechanical fasteners both recommended for installation

- Supplied primed and must be painted (latex paint)
- Lifetime limited warranty typical

Solid PVC (flooring)

- Isotropic
- Heavier and less flexible than wood
- Minimal thermal movement
- Does not absorb water
- Strength to span typical floor-framing spacing
- Impact-resistance greater than wood
- Class A flame spread
- No insect susceptibility
- Good paint adhesion, but also available prefinished
- 20-year warranty typical

Cellular Polyvinyl Chloride (PVC)

MATERIAL: Varying amounts of calcium carbonate and a foaming agent are added to melted PVC before passing through an injection die and then a calibrator to produce the shape and size of the finished product. Cellular PVC is produced as sheets, boards, and moldings. Differences in the specifics of the equipment and the rate of cooling create two varieties of product, with distinct properties. One is known as free-foam, having a fairly consistent structure throughout its section, and the other is identified as Celuka, having a skin that is denser than its core. This primarily affects the ease with which the product can be milled and shaped. The material is white and needs no applied finish. When produced for decking the material has a colored and textured wear layer over the PVC core.

PROPERTIES

- Isotropic
 - Lighter and more flexible than wood
 - Less strong than wood (in tension and shear), but can span typical floor- framing spacing as decking
 - More impact-resistance than wood
 - Negligible water absorption; no moisture-driven movement, unlike wood
 - Subject to thermal expansion and contraction significantly greater than wood, though the thermal movement is less for the same dimension than the cross-grain moisture-driven movement of wood
- For longer pieces, thermal movement requires manufacturer's specifications to be followed for attachment, and inclusion of expansion joints when installed at low temperature (joints should be glued)
 - Class A flame spread
 - Resists insect damage
 - Machinable with woodworking tools, though cut edges may need additional surface prep for finish
 - Good paint adhesion; if painted, high light reflectance (HLV) is recommended to minimize heat driven expansion
 - 25–30-year limited warranty, depending on manufacturer



Figure 24. Cellular PVC when painted can be used to replace deteriorated wood features. This beadboard set in a wood frame was not historically designed to shed water effectively and had deteriorated. Cellular PVC was able to match the appearance of the wood details, while its properties were well matched to the shady location, painted finish, and limited size and configuration within the overall assembly; thus, it should provide a long-lasting solution for this application. Photo: Jennifer Balson Alvarez, NPS.

Acknowledgements

John Sandor, Architectural Historian, David Trayte, Historical Architect, and Amy Elizabeth Uebel, Architectural Historian, Technical Preservation Services, National Park Service, revised *Preservation Brief 16: The Use of Substitute Materials on Historic Building Exteriors*, originally written by Sharon C. Park, FAIA, FAPT, and published in 1988. The revised Brief contains expanded and updated information as well as new color photographs describing the general issues and application of substitute materials on historic buildings.

The authors wish to thank the following: Peyton Hall, FAIA, Principal Architect Emeritus, Historic Resources Group, Mary Jablonski, President, Jablonski Building Conservation, Inc., Thomas Jester, FAIA, FAPT, LEED AP, Principal, Quinn Evans, Sharon Park, FAIA, FAPT, Associate Director Emerita, Smithsonian Institution, Debra Slaton, Principal, Wiss, Janney, Elstner Associates, Inc., for their guidance and review of this revision; and to Brian Goeken, Chief of Technical Preservation Services, National Park Service, and Jo Ellen Hensley, Elizabeth Tune, and Jennifer Oeschger, Technical Preservation Services, National Park Service, for their help in the editing of the publication. Illustrations not specifically credited are from National Park Service files. Front cover image: Installation of a new roof feature on a ca.1895 commercial building. The dome was constructed of fiber-reinforced polymer to replicate the missing original feature in Aurora, Illinois, 2023. Photo: Kelsey Cozens/JH Real Estate Partners LLC.

This publication has been prepared pursuant to the National Historic Preservation Act of 1966, as amended, which directs the Secretary of the Interior to develop and make available information concerning historic properties. This publication is available from the Technical Preservation Services website at <http://www.nps.gov/tps/> or hard copies may be purchased from the Government Printing Offices at the U.S. Government Bookstore at <https://bookstore.gpo.gov/>. Comments about this publication should be addressed to Technical Preservation Services, National Park Service, 1849 C Street, NW, Mail Stop 7243, Washington, DC 20240, or by email to NPS_TPS@nps.gov.

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Agenda Item

To: Historic District Commission
From: Mason Mattox, Planner II
Subject: HD-19-25 (Downtown Park)
Date: August 14, 2025

I. SUMMARY OF APPLICATION REQUEST:

Darren Johnson, Facilities Superintendent for the Town of Southern Pines, is requesting a Certificate of Appropriateness – Major Work to replace seven (7) 50-foot light poles adjacent to the existing tennis courts in the Town of Southern Pines Downtown Park.

II. APPLICATION CONTINUANCE AND REVISIONS

The public evidentiary hearing for Application HD-19-25 was called to order on July 10, 2025, with six members of the Historic District Commission present. The oath was administered to all individuals intending to provide testimony. Planning staff entered the Staff Report dated July 10, 2025, as Exhibit A, followed by staff's presentation from the same date, which was entered as Exhibit B.

Following deliberation, the Commission voted to continue the application for one month, citing concerns regarding the proposed height of the lighting fixtures. The applicant acknowledged these concerns and agreed to address them prior to the continued hearing.

Since the July 10 hearing, the applicant has contacted the lighting manufacturer to inquire about the possibility of reducing the proposed pole height. The manufacturer responded by reaffirming that 50-foot poles are necessary to prevent light spill beyond the immediate area of the tennis courts. This staff report, and, where applicable, its attachments include clarifications and are documented herein.

III. SITE INFORMATION:

A. Physical Address

SW Broad Street
Southern Pines, NC 28387

B. Property Owner

The Town of Southern Pines
125 SE Broad Street
Southern Pines, NC 28387

C. Applicant & Authorized Agent

Darren Johnson, Facilities Superintendent, Town of Southern Pines
Authorized by Mike Cameron, Assistant Town-Manager, Town of Southern Pines

D. Zoning of Property

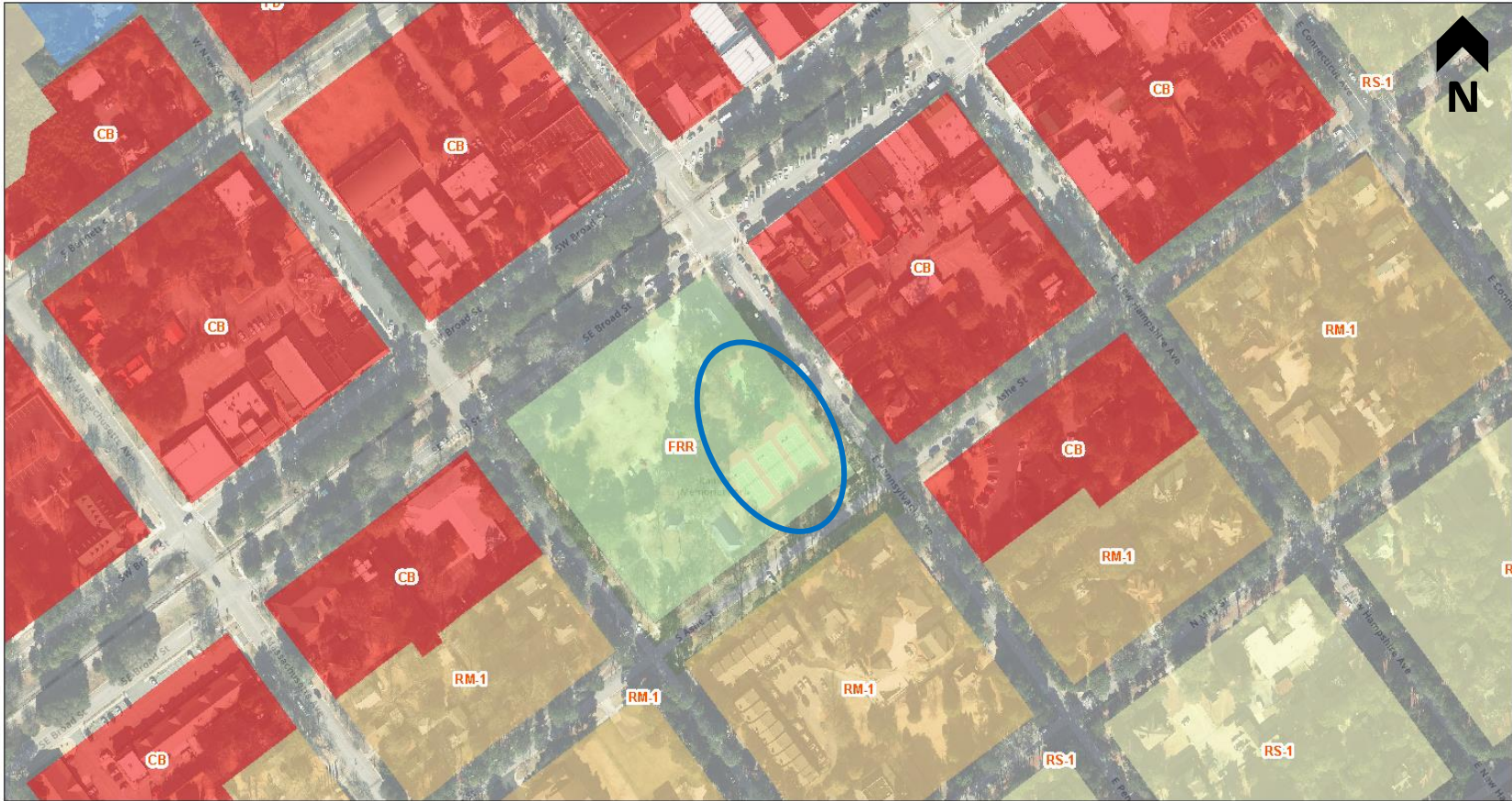
The subject property is presently zoned Facilities Resource and Recreation (FRR) and is located within the Town’s Local Historic District.



South Ashe Street – “View of Tennis Courts from S. Ashe Street.” Google Maps, retrieved June 30, 2025.

Figure 1: Vicinity & Zoning Map (Subject Property is Circled in Blue)

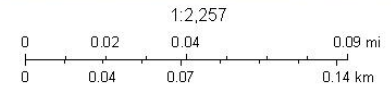
125 SE Broad Street & Downtown Park



7/1/2025, 11:06:20 AM

Zoning Text
 All Zoning Over Aerial
 CB, Central Business
 CB-CD, Central Business Conditional District

FRR, Facilities Resources Recreation
 OS, Office Services
 PD, Planned Development
 RM-1, Residential Single & Multi-Family
 RM-2, Residential Single & Multi-Family
 RS-1, Residential Single Family



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community. Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland,

Source: TOSP Planning Mapping Site
 The Town of Southern Pines, its agents and employees make NO warranty as to the correctness or accuracy of the information set forth on this media whether express or implied.

Figure 2: Historic District Map (Subject Property is Circled in Blue)



Figure 3: Existing Court Locations

Aerial view of Downtown Park's four existing tennis courts. Google Maps, retrieved June 30, 2025.

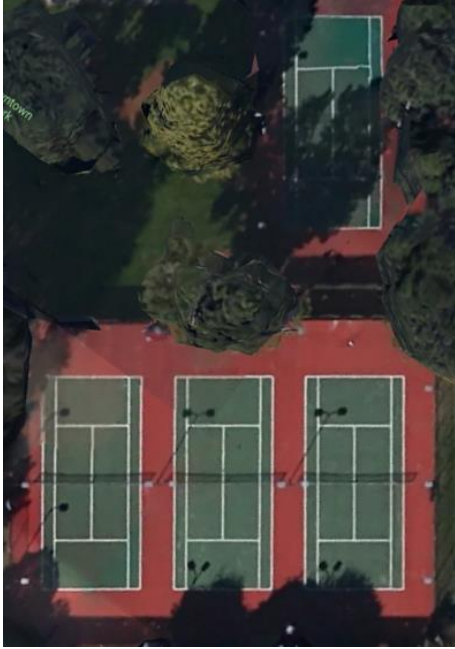


Figure 4: Proposed Lighting Additions

The replacement of seven (7) 50-foot light poles adjacent to the existing tennis courts. New locations displayed in yellow circles:



Figure 5: Existing light fixture in Downtown Park to remain, similar in design to the proposed. (Photo provided by staff)



Figure 6: Proposed light pole rendering, displaying five fixtures.

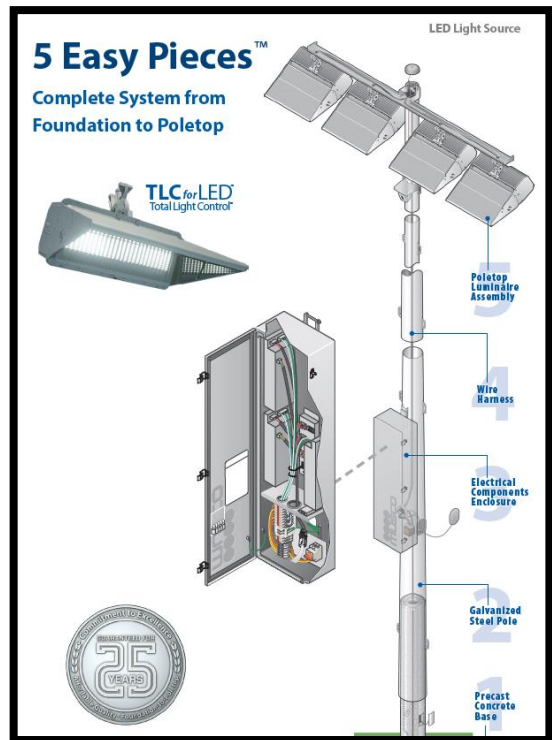


Figure 7: One of several existing light poles adjacent to the tennis courts to be replaced.
(Photo provided by staff)



Figure 8: Location of North-west tennis court in relation to Town Administration Building.
(Photo provided by staff)



Figure 9: Renderings and Profiles of Proposed Light Poles with Two, Three, and Five Fixtures

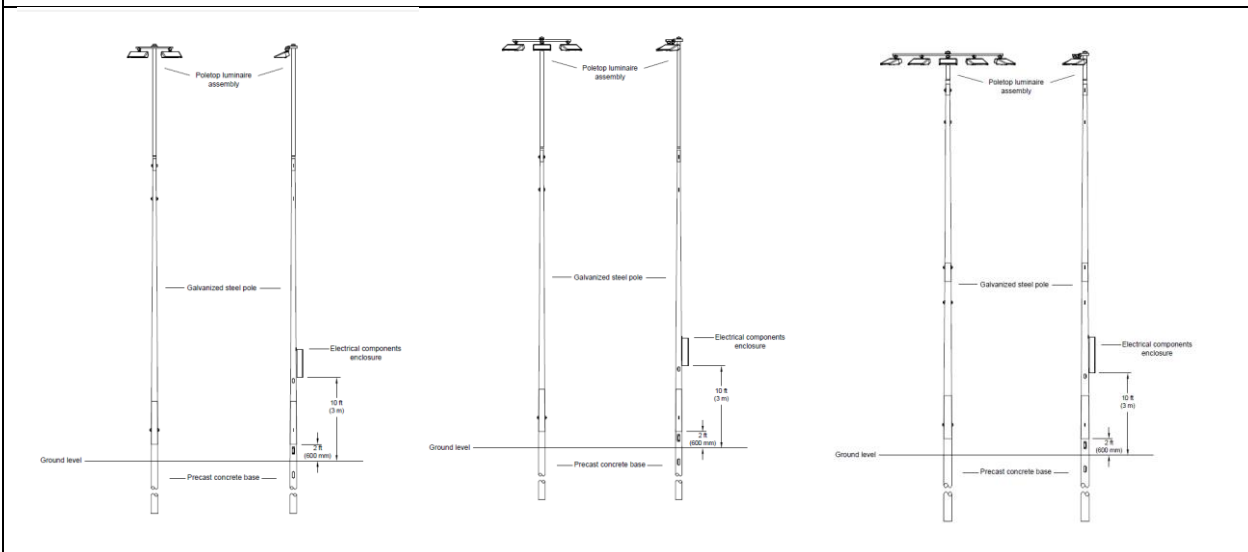


Figure 10: Tennis Court Lighting with 50' Poles, Riverdale Ridge High School, Thornton, Colorado.



Riverdale Ridge High School, Thornton, Colorado, USA

From the Manufacturer:

The [proposed] poles are 50ft to provide the optimal aiming angles and eliminate offsite glare. Proper aiming angles provide smooth uniformity and improve playability. Eliminating spill and glare is environment friendly and good for the neighborhood. I've attached some tennis photos showing the light directed on the courts with no spill offsite.

IV. STAFF REVIEW:

1. Application Processing and Public Notice

1. Application submitted: June 18, 2025
2. Notice of Public Hearing:
 - Posted On-site: June 24, 2025
 - Mailed: June 23, 2025
 - Internet: June 23, 2025
3. HDC Evidentiary Hearing: Thursday, July 10, 2025
4. HDC Evidentiary Hearing (Continued): Thursday, August 14, 2025

2. Application Materials

A complete application has been submitted including renderings, fixture specifications, and site diagrams illustrating the proposed location and appearance of the seven new light poles. Renderings show a mix of two-, three-, and five-fixture configurations mounted atop 50-foot poles to be installed around the existing tennis courts. All materials are enclosed as attachments to this staff report.

3. Criteria for Review

Each criterion is listed below in bold, and *italicized* staff comments follow.

Section 2.28 Certificate of Appropriateness – Major Work.

2.28.10. Criteria

- A. In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural Significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public Right-of-Way. The Commission shall not consider interior arrangement or use.**

Planning staff have reviewed the application in relation to the historical context of the Downtown Park and the surrounding district. While the tennis courts themselves are not historic, they are located immediately adjacent to the Town's Administration Building, a contributing and architecturally significant structure in the Local Historic District. In reviewing the proposed replacement of modern lighting infrastructure in this highly visible location, staff have given special attention to scale, placement, reversibility, and public benefit. The proposed lighting supports the continued community use of the tennis courts by allowing this portion of the park to remain open after dark. This enhances both recreational access and public safety after dark. These are not historic goals, but they are consistent with the evolving civic role of Downtown Park as an active and accessible public space.

B. The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:

- 1) The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
Although the proposed light poles are 50 feet tall, they are slender in form and functionally spaced. Their height, while prominent, does not result in bulk or visual obstruction when viewed in context with surrounding structures.
- 2) The setback and placement on lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
Staff find this factor inapplicable, as no buildings or permanent structures are being proposed. The poles are set back within the bounds of the tennis courts.
- 3) Exterior construction materials, including texture and pattern.
The poles are constructed of powder-coated metal, which is not historic in material but is common and appropriate for municipal lighting infrastructure. The design is modern, and the matte finish is subdued in appearance.
- 4) Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
Staff find this factor inapplicable, as the proposed improvements are not buildings and do not include architectural detailing associated with buildings.
- 5) Roof shapes, forms and materials.
Staff find this factor inapplicable because additional roofing or modifications to roofing is not proposed with the application.
- 6) Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
Staff find this factor inapplicable as additional fenestration or modifications to fenestration is not proposed with the application.
- 7) General form and proportions of buildings and structures.
While the poles represent vertical structures, their narrow profile and spacing mitigate their overall presence. The open nature of the site and distance from the Administration Building allow for separation between the historic structure and the modern elements.

8) Appurtenant fixtures and other features such as lighting.
The replacement lighting within the view of a historic structure is a concern. However, staff find that the fixtures, while modern in appearance, are reversible and limited in their intrusion. They are clearly associated with a defined recreational use and are not placed in immediate proximity to the Administration Building's historic façade.

9) Structural conditions and soundness.
Staff find this factor inapplicable because no existing structures are being modified.

10) Architectural scale.
Although the poles are taller than the surrounding structures, their scale is appropriate to the open setting of the park and the recreational use they serve. They do not impose on nearby historic architecture in terms of massing or footprint, and they are not situated in close visual competition with the Town's Administration Building.

11) Secretary of the Interior Guidelines.

The Standards (Department of the Interior regulations, 36, CFR 67) pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and the interior, related landscape features and the building's site and environment as well as attached, adjacent, or related new construction. The Standards are to be applied to specific rehabilitation projects in a reasonable manner, taking into consideration economic and technical feasibility.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive

feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

The proposed light poles meet these standards. They do not damage, conceal, or compete with the historic character of the adjacent Town Administration Building. Their design is clearly modern but appropriately restrained, with functional justification tied to active use and public safety. Should conditions or use change in the future, the poles can be removed without permanent alteration to the park or surrounding historic environment.

C. Prior to approving the application, the Commission shall make the following findings:

- 1) Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of material, design, dimensions, mass, scale, orientation, color and other applicable considerations;

The proposed light poles are compatible and appropriate in the context of the site. They are located within a recreational area and do not obscure or alter the defining characteristics of the adjacent historic structure. While the materials and design are modern, the scale and placement respect the open nature of the park and preserve the visual prominence of the Town's Administration Building.

- 2) Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and

No character-defining features would be altered or removed, and the proposed light poles would be placed at a distance that avoids visual or physical impact to the adjacent historic structure.

- 3) Work is consistent with the adopted design guidelines for the historic district.

The project meets the Town's Historic District Design Guidelines by ensuring that the proposed lighting remains distinguishable from historic features, is appropriately scaled and sited for its recreational context, and avoids damaging or obscuring any character-defining elements of nearby historic structures. The new fixtures are compatible with the civic landscape and fulfill a contemporary use in a manner that does not diminish the integrity of the overall district.

4. Outside Agency Comments

This application was reviewed at the July 01, 2025 Technical Review Committee (TRC) Meeting with no comments from Fire or Public Works. Any comments received after completion of this staff report will be shared during the evidentiary hearing.

5. Staff Recommendation

Planning staff recommend approval of the Certificate of Appropriateness – Major Work for the installation of seven (7) 50-foot light poles adjacent to the existing tennis courts in Downtown Park. While the fixtures are contemporary and located near the historic Town Administration Building, their placement does not obscure or alter any contributing features. The poles support expanded public use and safety by providing more illumination to the tennis courts, and their installation is reversible. The proposal meets the criteria of UDO Section 2.28.10 and aligns with the Secretary of the Interior's Standards and the Town's adopted Historic District Design Guidelines.

V. ATTACHMENTS:

1. Draft Findings of Fact and COA
2. Application

VI. HISTORIC DISTRICT COMMISSION ACTION

UDO Section 2.28.4(A) states that the Historic District Commission shall approve, approve with conditions, or deny an application for a COA Major Works based on the criteria

established in UDO Section 2.28.20. To either approve or deny a *Certificate of Appropriateness – Major Work* application, the Historic District Commission must make findings of fact and conclusions to the applicable standards. The Historic District Commission shall first vote on whether the application is complete and the facts submitted are relevant to the case. The Historic District Commission shall then vote on whether the application complies with the Criteria for a Certificate of Appropriateness, including the Principles and Guidelines of the Historic District. Staff has prepared Draft Findings of Fact for the Commission’s consideration which can be found below. The Commission may discuss, amend and/or adopt these Findings of Fact.

I move to:

1. Adopt **Attachment 1** of the staff report, as drafted as Findings of Fact regarding proposed Certificate of Appropriateness – Major Work HD-19-25

-OR-

2. Adopt **Attachment 1** of the staff report as Findings of Fact regarding the proposed Certificate of Appropriateness – Major Work, with the following changes:

Therefore, I move to:

1. Approve HD-19-25

- OR -

2. Approve HD-19-25 with the following conditions of approval:

-OR-

3. Deny HD-19-25, based on the following:

FINDINGS OF FACT
Case Number: HD-19-25

1. The Historic District Commission finds that the application is complete and that the facts submitted are relevant to the case because the request for a Certificate of Appropriateness (COA) Major Work approval has met the specified submittal requirements as outlined in the Town of Southern Pines Unified Development Ordinance (UDO) Appendices. The applicants have submitted adequate evidence addressing the criteria for a COA Major Work, including images, and relevant documentation. The evidence provided includes sworn testimony by qualified experts and substantiated materials.
2. The Historic District Commission finds that the application is consistent with UDO §2.28.10(A)-(C), the Town of Southern Pines Historic District Design Guidelines, as well as the standards provided by the Department of the Interior, for the following reasons:
 - A. The Commission finds that the installation of seven (7) 50-foot light poles adjacent to the existing tennis courts will not adversely affect the character of the Downtown Local Historic District or the adjacent Town Administration Building. The light poles are modern in design and their placement respects the open landscape of the park. The improvements are functionally and visually associated with a recreational use and maintain the visibility and integrity of nearby historic architecture.
 - B. The Commission Finds that no character-defining historic features or contributing elements will be removed, damaged, or obscured. The proposed light poles are freestanding and located at a respectful distance from contributing structures. The installation is fully reversible and does not entail structural attachment or alteration to the existing historic character of the area.
 - C. The Commission further finds that the proposed work is consistent with the Historic District Design Guidelines, the applicable provisions of the Unified Development Ordinance, and the Secretary of the Interior's Standards for Rehabilitation. The project differentiates new from old, is appropriate in scale and placement, and maintains the essential character of the park and adjacent historic environment while enhancing public use and safety.
3. Therefore, based on the evidence presented, the Commission finds that the proposed work meets the applicable standards. The Certificate of Appropriateness, as drafted and dated August 14, 2025, is incorporated herein and approved as the scope of work.

DRAFT CERTIFICATE OF APPROPRIATENESS – MAJOR WORK
Case Number: HD-19-25

Addresses of proposed work: 180 SW Broad Street, Southern Pines, NC 28387

The Town of Southern Pines Historic District Commission has reviewed the application submitted and approved a request for a *Certificate of Appropriateness – Major Work*, for Darren Johnson for the following scope of work:

1. Installation of seven (7) new 5-foot light poles adjacent to the existing tennis courts in Downtown Park:
 - Fixtures will include a mixture of two-, three-, and five-head configurations as shown in submitted renderings and diagrams.
 - Poles are to be powder-coated metal in a subdued matte finish.
 - Poles are to be installed at the locations identified in the submitted plan.
 - No other modifications or attachments to historic structures are authorized under this Certificate.

All work shall be completed in accordance with the submitted application and supporting materials dated June 12, 2025, and incorporated into this Certificate by reference.

Please reference project file for project specifics and associated documentation.

This certificate is valid pursuant to the development approval timeframes described in UDO §2.8.1 (24 months from the date of approval). Please notify the Town of Southern Pines Planning Office when the work is complete **OR IF THE SCOPE OF WORK CHANGES IN ANY MANNER FROM WHAT IS STATED IN THIS CERTIFICATE. If you are unable to complete the above-approved project within the development approval timelines, please contact the Town of Southern Pines Planning Office at (910) 692-4003 regarding extension of the development approval timeline pursuant to UDO §2.8.2.**

Application for: **Certificate of Appropriateness
Major Work**

FOR OFFICE USE ONLY		Fee Paid: <input type="text" value="N/A"/>
Date Received: <input type="text"/>	Case No.: HD-	<input type="text" value="19-25"/>

Project Information:

Street Address:

PIN: Parcel ID:

Site Size: Zoning:

Applicant:

Name(s):

Email: Phone:

Mailing Address:

Authorized Agent, if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

Legal Property Owner(s), if different from Applicant:

Name(s):

Email: Phone:

Mailing Address:

Application for: **Certificate of Appropriateness
Major Work**

TO THE TOWN OF SOUTHERN PINES HISTORIC DISTRICT COMMISSION:

I submit this application for a Certificate of Appropriateness – Major Work to make the following change(s) which may alter the exterior appearance of property within the Town of Southern Pines Historic District:

The addition of seven 50' light poles adjacent to Downtown Park's four tennis courts.

Date:

06-18-2025



Applicant

Note: The attached Appointment of Agent form must be submitted if the Applicant is not the property owner.

TO SUBMIT THIS FORM

click here to e-mail [or e-mail as attachment to plan@southernpines.net](mailto:plan@southernpines.net)

Application for: Certificate of Appropriateness Major Work

APPOINTMENT OF AGENT

The undersigned owner(s), hereby appoint(s) as the exclusive agent for the purpose of making an application to the Town of Southern Pines for a **Certificate of Appropriateness – Major Work** on the property described in the attached application. The owner(s) hereby agrees that this agent has the authority to act for and on behalf of the owner(s) as follows:

1. to submit an application and required supplemental materials;
2. to appear at public meetings and give representation and comments on behalf of the owner(s);
3. to accept conditions or recommendations made by the Town of Southern Pines Historic District Commission for the issuance of a **Certificate of Appropriateness – Major Work** on the subject property; and
4. to act on behalf of the owner(s) without limitations with regard to any and all things directly or indirectly connected with or arising out of any application for a **Certificate of Appropriateness – Major Work** under the Southern Pines Unified Development Ordinance.

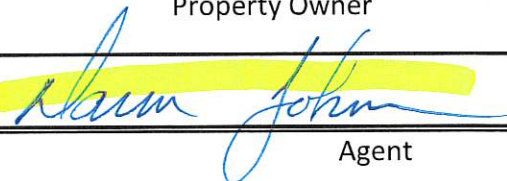
This Appointment of Agent shall remain in effect until final resolution of the attached application.

Date Signed



Property Owner

Property Owner



Agent

TO SUBMIT THIS FORM

click here to e-mail [or](#) e-mail as attachment to plan@southernpines.net

- (A) In considering an application for a Certificate of Appropriateness, the Commission shall take into account the historical and/or architectural significance under consideration and the exterior form and appearance of any proposed additions or modifications to that structure that are visible from a public right-of-way. The Commission shall not consider interior arrangement or use.
- (B) The Commission shall consider the following factors when determining whether the application is or is not congruous with the historic aspects of the Historic District:
1. The height of the building in relation to the average height of the nearest adjacent and opposite buildings.
 2. The setback and placement on a Lot of the building in relation to the average setback and placement of the nearest adjacent and opposite buildings.
 3. Exterior construction materials, including texture and pattern.
 4. Architectural detailing, such as lintels, cornices, brick bond and foundation materials.
 5. Roof shapes, forms and materials.
 6. Proportion, shape, positioning and location, pattern and size of any elements of fenestration.
 7. General form and proportions of buildings and structures.
 8. Appurtenant fixtures and other features such as lighting.
 9. Structural conditions and soundness.
 10. Architectural scale.
 11. Secretary of the Interior Guidelines.
- (C) Prior to approving the application, the Commission shall make the following findings:
1. Work is compatible and appropriate in preserving, retaining, repairing, or restoring the defining historic character of a property and the district. Specifically, the work is considered compatible and appropriate in terms of material, design, dimensions, mass, scale, orientation, color and other applicable considerations;
 2. Work does not damage or remove significant character defining features of the building and will not adversely affect its contribution to the larger historic district; and
 3. Work is consistent with the adopted design guidelines for the historic district.

REQUIRED APPLICATION MATERIALS:

- Application fee** in the amount of **\$250.00**.
- Completed Application** for a Certificate of Appropriateness – Major Work signed by the applicant. Please do not leave anything blank and make sure all of the information provided is correct.
- Appointment of Agent**, if applicable, signed by the property owner(s) and the agent as evidence that the current property owner(s) approve(s) of the proposed work.
- List of Adjacent Property Owners:** Please list all properties that are that are within two hundred (200) feet of the outermost boundaries of the subject property (**not counting streets, railroads or other transportation corridors**). Attach additional pages if needed. No fewer than ten (10) property owners shall be notified by mail.
- Deed** copy to provide proof of ownership and property boundaries.
- Project description:** Please tell us what currently exists and what changes you are proposing. Please attach written descriptions, maps, illustrations/renderings, photographs, material samples, etc. as necessary.
- Written narrative:** Please address compliance with all of the criteria listed in **UDO §2.28.10 Criteria for a Certificate of Appropriateness – Major Work**. The Historic District Commission will determine if the application meets the established criteria for approval. The list of criteria is attached.
- Electronic copy (PDF) of all application materials** submitted to plan@southernpines.net.

PLEASE SUBMIT ONLY ONE (1) COMPLETE SET OF ALL MATERIALS.

REVIEW AND APPROVAL:

1. **Staff review:** Planning staff will review the application and notify the applicant if additional materials are needed. It is the applicant’s responsibility to demonstrate compliance with applicable criteria.
2. **Public hearing:** The applicant is expected to attend a public hearing before the Historic District Commission at its regular monthly meeting. Please refer to the **Application Processing Timeline** to determine the hearing date.
3. **Issuance of Certificate of Appropriateness:** If the request is approved by the Historic District Commission, a Certificate of Appropriateness - Major Work setting forth any conditions of approval will be issued to the applicant. All construction associated with the project and/or the operation of the development must comply with the Certificate of Appropriateness.

PLANNING DEPARTMENT
TOWN OF SOUTHERN PINES
801 SE Service Road, Southern Pines, NC 28387
plan@southernpines.net (910) 692-4003 www.southernpines.net



Temple TX ISD, Temple, Texas, USA



Riverdale Ridge High School, Thornton, Colorado, USA



Indian Wells Tennis Garden, Indian Wells, California, USA



Mt. San Antonio College, Walnut, California, USA

Southern Pines Downtown Tennis Southern Pines, NC



Sales Representative: Brad Marolf · Designed By: Joe Nicholson · Design No.: 179686 · June 02, 2025

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Southern Pines Downtown Tennis

Southern Pines, NC

LIGHTING SYSTEM

Structure/Fixture Summary

Structure ID	Structure Height	Fkr. Attachment Ht.	Fixture Qty	Fixture Type	Design Load	Circuit
T1-13	50'	50'	3	TLC-LED-550	1.05 kW	A
T1	50'	50'	2	TLC-LED-550	1.05 kW	A
15-17	50'	50'	2	TLC-LED-550	1.05 kW	B
			20	TLC-LED-550	10.54 kW	

* Fixtures in this design have dimmed output values to meet design specific needs.

Circuit Summary

Circuit	Description	Design Load	Fixture Qty
A	Tennis 1-3	6.21 kW	12
B	Tennis 4	4.22 kW	8

Fixture Type Summary

Type	Source	Avg. Wattage	Avg. Lumens	LB	LB	Quantity
TLC-LED-550	LED 5700K-75 CRI	527W	66,717	>120,000	>120,000	12
TLC-LED-550	LED 5700K-75 CRI	527W	62,104	>120,000	>120,000	8

Single Fixture Amperage Draw Chart

Driver Specifications (50 min power factor)	Line Amperage Per Fixture (min draw)	Line Amperage Per Fixture	Line Amperage Per Fixture
Single Phase Voltage	208 (60)	2.70 (60)	3.47 (60)
TLC-LED-550	3.2 (60)	2.4 (60)	1.9 (60)
			1.8 (60)
			1.4 (60)

* Amp draw based on 100% fixture output, consult design specific datasheet for adjusted amperage draw chart

Light Level Summary

Grid Name	Calculation Metric	Ave	Min	Max	Min/Max	Ave/Min	Circuits	Fixture Qty
Tennis 1-3	Horizontal Illuminance	33.65	27.02	39.60	1.47	1.25	A	12
Tennis 4	Horizontal Illuminance	40.87	32.65	51.00	1.56	1.25	B	8

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Chart for the "Musco Control System Summary" for electrical sizing

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



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ENGINEERED DESIGN By: Joe Nicholson • File #179686A • 02-Jun-25

PROJECT SUMMARY

Southern Pines Downtown Tennis

Southern Pines, NC

Grid Summary

Number Tennis: 1-3
 Size: 3 Court - 12' Spacing
 Spacing: 20.0' x 20.0'
 Height: 3.0' above grade

Illumination Summary

MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	30
Scan Average:	33.65
Maximum:	39.60
Minimum:	27.00
Avg/Min:	1.25
Guaranteed Max/Min:	2.5
UG (adjacent):	0.00
UG (adjacent):	0.76
UG (adjacent):	0.00
UG (adjacent):	0.00
No. of Points:	45
Applied Circuits:	A
No. of Fixtures:	12
Total Load:	6.32 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

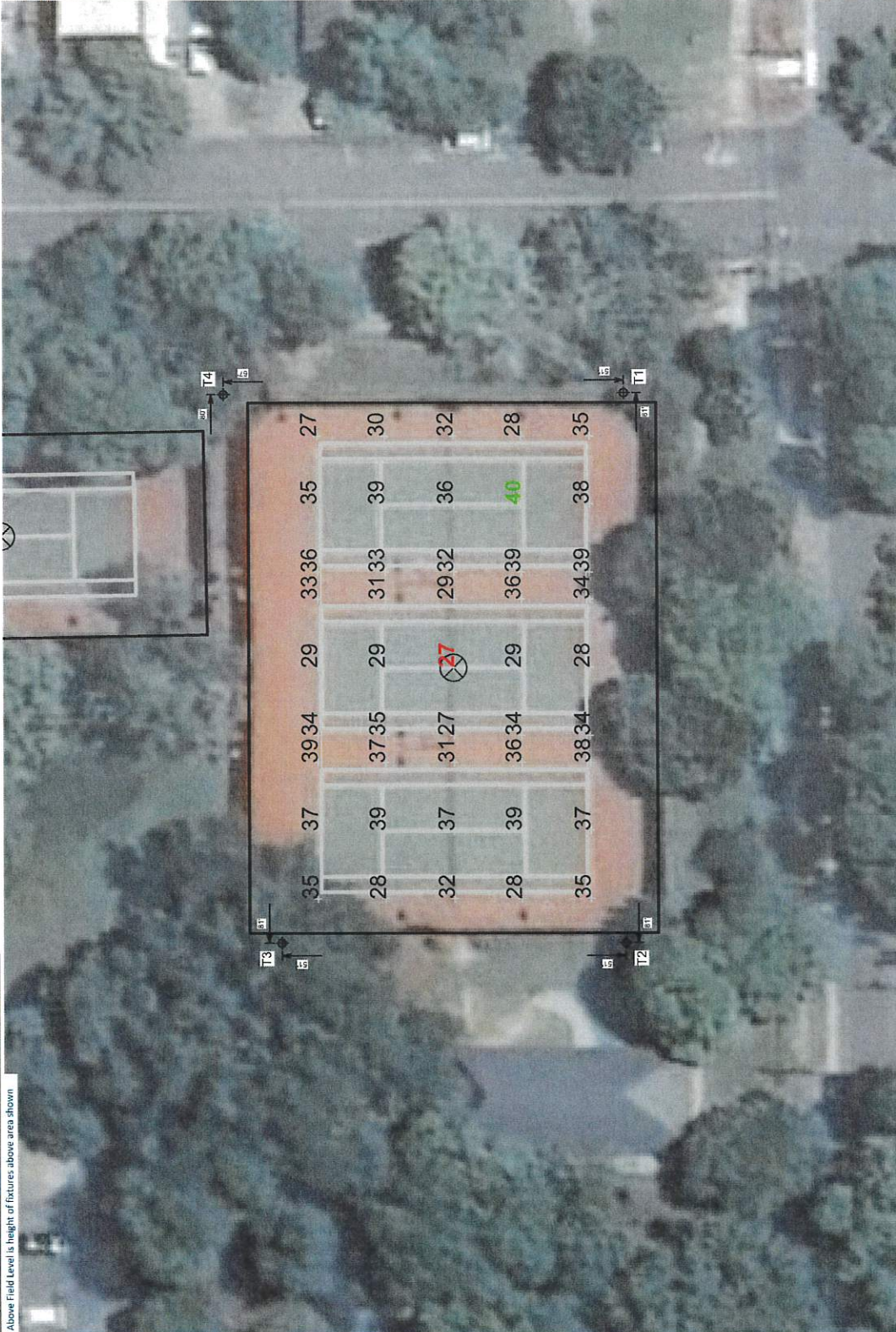
Electrical System Requirements: Refer to Amperage Requirements for the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

QTY	STRUCTURE #	SIZE	MOUNT HEIGHT	FIXTURE TYPE	FIXTURES	
					ENTRANCE	GRID
3	1113	50'	50'	TLC-LED-550	3	0
1	14	50'	50'	TLC-LED-550	5	2
Totals:					14	12

Above Field Level is height of fixtures above area shown



Pole location(s) ⊕ dimensions are relative to O.U. reference point(s) ⊗



ENGINEERED DESIGN By: Joe Nicholson • File #179686A • 07-Jun-25



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ILLUMINATION SUMMARY

Southern Pines Downtown Tennis

Grid Summary

Name: Tennis 4
 Size: 1 Court - 12' Spacing
 Spacing: 20' 0" x 20' 0"
 Height: 3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES	
Entire Grid	
Guaranteed Average:	30.87
Standard Deviation:	51.00
Maximum:	51.00
Minimum:	32.65
Avg/Min:	1.25
Guaranteed Max/Min:	2.5
UG (adjacent pts):	0.00
CU:	0.49
No. of Points:	15
FIXTURE INFORMATION	
Height:	8
No. of Fixtures:	8
Total Load:	4.72 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) (X) dimensions are relative to 0.0 reference point(s) (X)

Equipment List for Areas Shown

CITY	STRUCTURE ID	SIZE	GRADE ELEVATION	ABOVE FIELD LEVEL	FIXTURE TYPE	FIXTURES			
						THIS GRID	OTY/POLE	OTHER GRID	
1	T4	50'	-	50'	TLC-LED-550	5	2	3	
3	T5-T7	50'	-	50'	TLC-LED-550	2	2	0	
4	Totals						11	8	3

Above Field level is height of fixtures above area shown

SCALE IN FEET 1 : 30
 0 30' 60'
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ILLUMINATION SUMMARY

Southern Pines Downtown Tennis

Equipment Layout

INCLUDES:

- Tennis 1-3
 - Tennis 4
- Electrical System Requirements: Refer to Amperage Summary for the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Equipment List For Areas Shown

QTY	STRUCTURE		FIXTURES
	FIXTURE ID	SIZE	
3	T1-T3	50'	TLC-LED-550 3
1	T4	50'	TLC-LED-550 1
3	T5-T7	50'	TLC-LED-550 2
7	Totals		20

Above Global Level is height of fixtures above design (0.00)

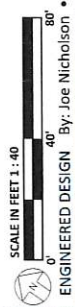
Single Fixture Amperage Draw Chart

Driver Specifications (50 min power factor)	Line Amperage Per Fixture					
	208	240	277	347	380	480
Single Phase Voltage	(60)	(60)	(60)	(60)	(60)	(60)
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	1.4

* Amp draw based on 100% fixture output, consult design specific datasheet for adjusted amperage draw chart



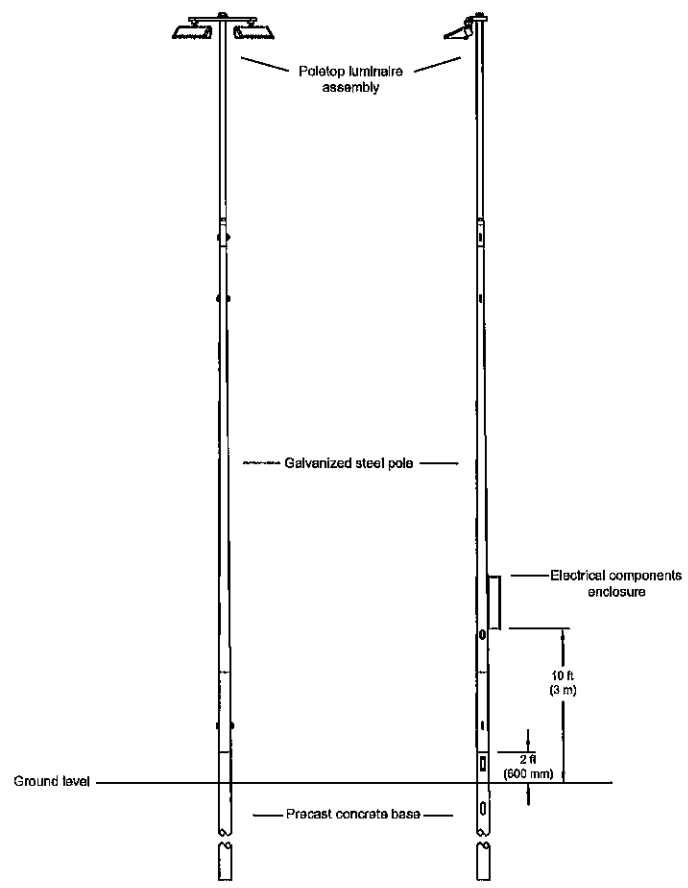
Pole location(s) ⊕ dimensions are relative to O.D. reference points ⊗



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EQUIPMENT LAYOUT

Musco Lighting is the registered provider of Musco Lighting, LLC
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 is a registered provider of Musco Lighting, LLC products and services.



POLE(S): T5-T7
 Musco 50FT Light-Structure System™ pole
 TLC for LED™ luminaires
 (2) TLC-LED-550

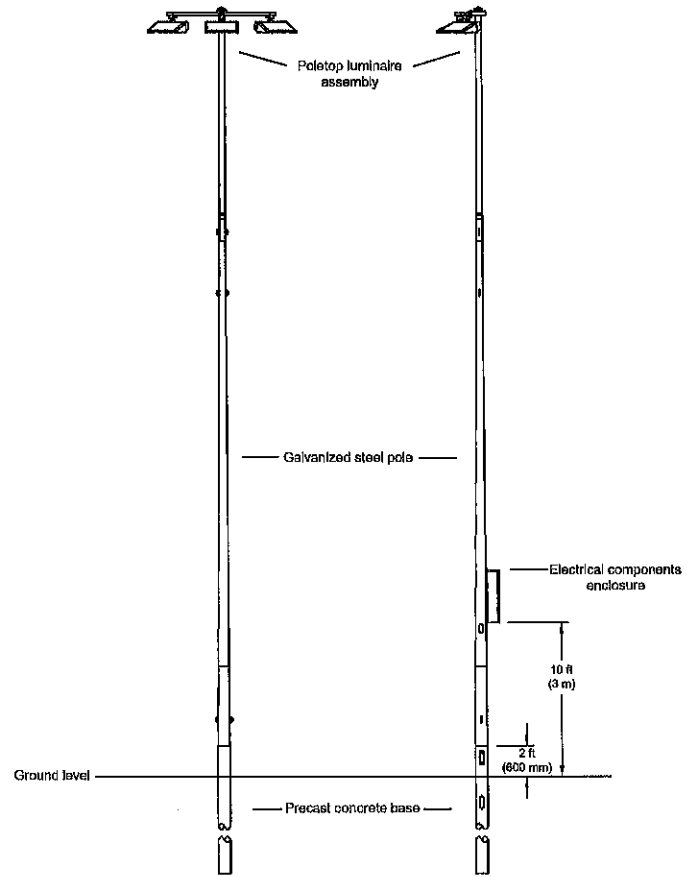
PROJECT NUMBER:
 179686
 DRAWN BY:
 J. Nicholson
 SCALE:
 NTS
 DATE:
 06/02/2025
 DRAWING NUMBER:
 179686P1
 5 OF 5 SHEETS

DATE:	BY:	R.L.	REVISIONS:

MUSCO
Lighting
 CORPORATE OFFICE:
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 +1-641-673-0411

Southern Pines Downtown Tennis
 Southern Pines NC
 Pole Configuration Drawing **B**

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POLE(S): T1-T3
 Musco 50FT Light-Structure System™ pole
 TLC for LED™ luminaires
 (3) TLC-LED-550

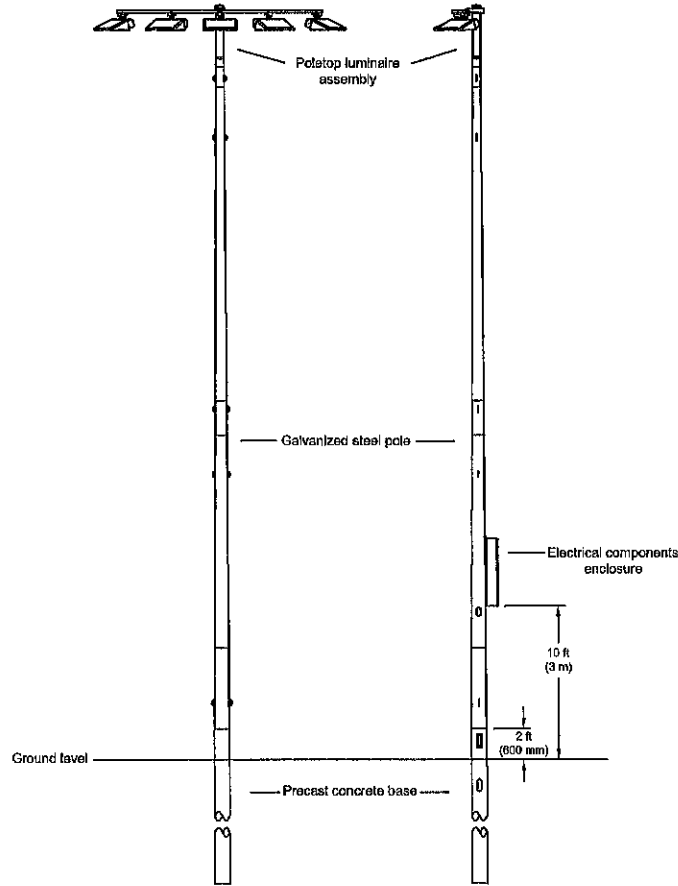
DATE: 09/02/2023
 DRAWN BY: J. Nicholson
 CHECKED BY: NTS
 PROJECT NUMBER: 179686
 ORDER NUMBER: 179686BP1

DATE	BY:	R.L.	REVISIONS:

MUSCO Lighting
 CORPORATE OFFICE:
 P.O. Box 805
 100 1st Avenue West
 Oak Grove, Iowa 52377
 +1-800-825-6020
 +1-841-673-0411

Southern Pines Downtown Tennis
 Southern Pines NC
 Pole Configuration Drawing

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POLE(S): T4

Musco 50FT Light-Structure System™ pole
 TLC for LED™ luminaires
 (5) TLC-LED-550

DATE:	BY:	R.L.	REVISIONS:

DATE:	BY:	R.L.	REVISIONS:


MUSCO
 Lighting

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Southern Pines Downtown Tennis
 Southern Pines NC
 Pole Configuration Drawing **B**