TO: **MAYOR AND CITY COUNCIL**

FROM: **NICOLE MILLER, LIBRARY DIRECTOR**

SUBJECT: **LIBRARY CONTSTRUCTION ISSUES**

MEETING DATE: **September 18, 2018**

BACKGROUND

The Library building was constructed in 2012 by Bossardt Corporation, which is now Wenck Construction. There have been multiple reported issues concerning construction since shortly after the opening the library building. Initially, Bossardt/Wenck made some efforts to remediate the problems, but the problems have remained. The main problems that have been noted and reported are water intrusion, paint discoloration, and carpet fraying.

In 2017, SEH hired an independent third-party consultant to review the ongoing water intrusion. The consultant found that the water intrusion is a result of deficiencies of contractor's execution of the building design, and not the design itself. The consultant also offered remedial recommendations.

Regarding the paint discoloration, SEH reached out to Wenck in 2017 and 2018 for remediation. SEH identified the building specs that were not followed to result in the discoloration. Wenck responded that they would do nothing.

Similarly, the carpeting soon showed signs of fraying along the edges and tufting at the seams. Again, SEH reached out to Wenck about the installation flaws and noted that the Mohawk carpet carries a lifetime warranty. Again, Wenck responded that they would do nothing.

Full reports from SEH and Inspec are available to see how specs were ignored or not met during construction, SEH attempts at remediation, and record of Wenck Construction's refusal to remediate the problems. The Library Board has been fully apprised of the reports.

REQUESTED COUNCIL ACTION

The Library Board asks that the City Attorney review the reports and advise the City on legal courses of action.

Building a Better World for All of Us®

August 27, 2018

RE: Cannon Falls Library
Summary Status of Building Issues
Cannon Falls, MN

Ms. Nicole Miller
City of Cannon Falls
918 River Road
Cannon Falls, MN 55009

Dear Nicole:

This letter has been generated to outline the current status of specific building issues that have been brought to our attention regarding the Cannon Falls Library Building located at 306 West Mill Street in Cannon Falls. The building was constructed in 2012 by Bossardt Corporation, which is now part of Wenck Construction.

Water Intrusion

After documented instances of water entering into the building through the exterior building wall and subsequent efforts by the contractor to provide a remedial solution, SEH hired Inspec in September 2017 as an independent third-party consultant to document existing conditions, review and evaluate deficiencies in the exterior wall, identify the cause of the water infiltration, and to provide remedial recommendations. Inspec's findings have been outlined in the Water Intrusion Assessment Report dated December 14, 2017.

As part of Inspec's assessment study, followup water testing was conducted on May 2, 2018, to determine whether the window assemblies were a contributing factor to the water infiltration. The findings from the followup testing were issued on August 3, 2018 as a Supplement to the Water Intrusion Assessment Report.

The Water Intrusion Assessment Report and the followup Supplemental Report have been attached for reference.

Inspec's assessment report outlines identified breaches in caulking, flashing, and waterproofing membrane that have allowed incidental moisture to get into the wall assembly and into the interior of the building. The followup water testing showed that while there was some intrusion of water through the window assembly, it is not believed to be a contributing factor to the water infiltration into the building.

The supplemental report indicates Inspec's opinion that the cause of the water infiltration is various flaws in the execution of the design by the Contractor, and not of the design itself. Remedial recommendations are provided in both the original and supplemental reports.

Wall Paint Systems

It has previously been noted by Library Staff that the quality of the paint installation on the gypsum board walls is questionable. There are very clear differences in sheen and discoloration in the painting of the

gypsum board surfaces throughout the building - you can clearly see all of the jointing preparation that was done between the gypsum board wall panels.

SEH had previously reached out to Wenck on this issue in 2017 and again in 2018 with the following notes:

- The discoloration/sheen difference seen on the walls would be evidence of not properly preparing the substrate for painting.
- The most likely cause is not providing the correct primer and finish coats as specified in the Project Manual (see below).
    - Surface preparation, priming and finishing for exposed surfaces is the responsibility of the Contractor per the Painting Specification Article 1.01 B.
    - Warranty information in the Painting Specification requires a minimum 5-year manufacturer's written warranty on the installed paint systems.
    - Prime Coats: Apply a prime coat of material and an additional re-coat application where evidence of suction spots or unsealed areas in first coat appears per Painting Specification Articles 3.05 H. and 3.05 J.
- The Contractor is to apply a minimum of (1) coat of primer and (2) finish coats in order to achieve the desired thickness (referred to as DFT) and finish.

The painting specification with pertinent items highlighted has been attached for reference.

When you see the installation and the visual telegraphing through the paint system it is evident that a proper installation was not provided by the Contractor. Wenck was directed to address this issue and to provide a proper solution to correct the deficiencies and to bring the installation into compliance with the Project Specifications. They were also asked to provide the proposed course of action to address this issue. Wenck's response was a refusal to provide corrective efforts to address the paint installation.

Carpet Installation

It has also been previously noted by Library Staff that the quality of the carpet installation is questionable. In addition to edge fraying issues at the transition to floor tile, there is also additional edge fraying at some of the general seams within the field of the carpet. In 2017 a transition strip was provided at the transition to the floor tile as a remedial solution to conceal the issue.

SEH had previously reached out to Wenck on this issue in 2017 and again in 2018 with the following notes:

- Edge fraying has been evidenced in the carpet along the edges against the floor tile, as well as within some of the general seams within the carpet field.
- The most likely cause is not installing the proper seam/edge sealer to the cut edge in the field.
- Installing the correct seam/edge sealer ensures that all edges trimmed are protected from "edge ravel"
- Edges of carpet must be secured at transitions to other flooring, either by top-type molding, or if installed flush against a vertical surface, edges must be secured with seam sealer. If molding is provided it must be installed tight to the top of each flooring material.
- The Carpeting Specification calls for the following:
    - Article 3.03 calls for the Contractor to install carpet in accordance with CRI 104 (Carpet & Rug Institute).
    - CRI 104 calls out to apply a bead of seam sealer to the cut edge covering the thickness of the primary and secondary backing to protect from edge ravel.
    - The manufacturers installation guide also calls out for all seams to be sealed with seam/ edge sealer to protect from edge ravel.
    - Warranty information in the Carpet Specification requires a lifetime manufacturer's warranty against carpet wear and edge ravel.

The carpet specification with pertinent items highlighted has been attached for reference.

When you see the seaming issues in the carpet installation it is evident that a proper installation was not provided by the Contractor. Wenck was directed to address this issue and to provide a proper solution to correct the deficiencies and to bring the installation into compliance with the Project Specifications. They were also asked to provide the proposed course of action to address this issue. Wenck's response was a refusal to provide corrective efforts to address the carpet installation.

SEH has reached out to the carpet manufacturer (Mohawk) to address this issue and the response received has indicated that the issue has been caused by a deficient carpet installation, and is not the result of deterioration/wear of the carpet product itself.

Please let me know if you would like to discuss the outstanding issues in greater detail.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.

Scott A. Blank, AIA, NCARB

Director of Architecture, Planning,
and Landscape Architecture – Central Region

Enclosures:
Water Intrusion Assessment Report
Water Intrusion Supplemental Report
Painting Specification 09 91 00
Carpet Specification 09 68 00

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SECTION 09 91 00

PAINTING

PART 1 GENERAL

1.01 SUMMARY

A. Provide:
1. Paint:
    a. Exterior Substrates:
        1) Lintels
            a) Steel
            b) Metal
            c) Doors and frames
    b. Interior Substrates:
        1) Concrete and masonry.
        2) Concrete masonry units.
        3) Precast concrete.
        4) Concrete panels, gypsum drywall, and plaster.
        5) Wood and hardboard.
        6) Ferrous and zinc-coated metal.
            a) Interior lintels at alternate veneer wall.
        7) Steel decking, structural steel, and overhead metal.
2. Stain:
    a. Exterior.
    b. Interior.

B. Perform the following:
1. Surface preparation, priming, and finish coats for exposed surfaces and items including bare and primed mechanical and electrical equipment as scheduled or considered standard practice.
2. In remodeled areas, paint items or areas indicated on the Drawings.

C. Do not paint the following:
1. Prefinished items, except as noted.
2. Concealed spaces, except as noted.
3. Labels:
    a. Code requirements such as UL, FM.
    b. Equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections:
1. Section 03 30 00 - Cast-in-Place Concrete
2. Section 04 20 00 - Unit Masonry Assemblies
3. Section 05 12 00 - Structural Steel Framing
4. Section 05 50 00 - Metal Fabrications
5. Section 06 10 00 - Rough Carpentry
6. Section 06 40 23 - Interior Architectural Woodwork
7. Section 07 84 00 - Firestopping
8. Section 08 11 13 - Hollow Metal Doors and Frames (Commercial)
9. Section 08 14 00 - Wood Doors
10. Section 09 29 00 - Gypsum Board

E. Alternates: Refer to Section 01 23 00.
1. Alternate #1 - Fireplace
2. Alternate #2 - Stone Veneer Behind Circulation Desk
3. Alternate #5 - Free-hanging Acoustical Ceiling

1.02 REFERENCES

A. ASTM:
1. D16 - Standard Definitions of Terms
2. D2047 - Slip Resistance of Coated Flooring Surfaces
3. D3450 - Washability of Interior Architectural Coatings

B. Master Painters Institute (MPI): www.paintinfo.com
1. Evaluation of Exterior Systems
2. Evaluation of Interior Systems
3. Surface Preparation

C. Painting and Decorating Contractors of America (PDCA) P5 - Sample Procedures for Paint and Other Decorative Coating Systems

D. Society for Protective Coatings (SSPC):
1. SP 1 - Solvent Cleaning
2. SP 13 - Surface Preparation of Concrete

1.03 DEFINITIONS

A. DFT: Dry Film Thickness

B. Minimum VS: Minimum Volume Solids

C. Sheen: Standard coating terms defined in ASTM D16 apply.

D. VOC: Volatile Organic Compound

1.04 SUBMITTALS

A. Refer to Section 01 33 00.

B. Product Data:
   1. Submit manufacturer's current Product Data including specifications, handling, storage and installation instructions, and maintenance recommendations.
   2. Provide schedule detailing the following:
      a. Specific products to be used for each coat, identified by manufacturer's catalog number and general classification.
      b. Cross reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
      c. Data pages for all products listed. Highlight the following:
         1) Type of resin.
         2) Dry film thickness.
         3) Volume solids.
         4) Units of sheen.
         5) VOC levels and MSDS.
         6) Other performance or descriptive data specified.

C. Samples:
   1. Color Selection:
      a. Submit manufacturer's standard color draw downs with Product Data for initial selection.
      b. Label each card with:
         1) Job name.
         2) Date.
         3) Product name and number.
         4) Color number stated in color schedule.
         5) Name, address, phone number of supplying company.
   2. Color and Texture Verification Samples:
      a. Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate.
      b. "Step" each separate coat, including blockfillers and primers.
      c. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.
      d. Submit samples on the following substrates for Architect's review of color and texture only:
         1) Dryfall ceiling finish product color sample to be submitted if Alternate is accepted.
         2) Painted wood: Provide two 12-inch by 12-inch samples of each color and material on hardboard.
         3) Stained or natural wood: Provide two 4-inch by 8-inch samples of natural and stained wood finish on actual wood surfaces.
         4) Ferrous metal: Provide two 4-inch square samples of flat metal and two 8-inch-long samples of solid metal for each color and finish.

1.05 QUALITY ASSURANCE

A. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

B. Qualifications:
   1. Manufacturer: 5 years experience in the manufacture of coating systems.
   2. Applicator: 3 years experience in commercial application of coating systems.

C. Regulatory Requirements:
   1. Paint, stain, and wood preservative finishes and related materials are regarded as hazardous products and are subject to regulations for disposal.
   2. Products shall comply with the United States Clean Air Act for maximum VOC content.
   3. Comply with local Code requirements and authorities having jurisdiction for flame spread and smoke developed ratings of paints and coatings.

4. Conform to requirements of local authorities having jurisdiction in regard to the storage, mixing, application, and disposal of all paint and related waste materials.
5. All materials, preparation, and workmanship shall conform to requirements of the latest edition of the Architectural Paint Specification Manual by MPI.

1.06 ENVIRONMENTAL/PROJECT REQUIREMENTS

A. Job Conditions:
1. Paint: Apply only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 degrees F and 95 degrees F.
2. Do not apply paint in snow, rain, fog, or mist, when the relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
3. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.07 WARRANTY

A. Provide minimum 5-year manufacturer's written warranty.

1.08 MAINTENANCE

A. Provide set of properly labeled draw downs for future reorder of paint.

B. Provide not less than 1 quart for each paint and color used on site for Owner touch-up.

PART 2 PRODUCTS

2.01 MANUFACTURER

A. Paint:
1. Standard of Quality: Design is based on products of *Sherwin-Williams Company* (S-W), except as noted.
2. Other Acceptable Manufacturers: Subject to compliance with requirements, acceptable manufacturers are:
   a. Dutch Boy Paints, Cleveland OH.
   b. PPG Industries, Pittsburgh Paints www.ppg.com
   c. Diamond Vogel www.diamondvogel.com
   d. Manufacturer of comparable products submitted in compliance with Section 01 25 13.

B. Stain
1. Standard of Quality: is based on products of Sherwin-Williams Company (S-W), except as noted.
2. Other Acceptable Manufacturers: Subject to compliance with requirements, acceptable manufacturers are:
   a. Cabot, Newburyport, MA.
   b. Minwax Company, Upper Saddle NJ.

2.02 MATERIALS GENERAL

A. Material Compatibility: Provide blockfillers, primers, finish coat materials and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality:
1. Provide manufacturer's best quality trade sale paint material of the various coating types specified.
2. Paint containers not displaying manufacturer's product identification will not be acceptable.
3. Paint shall be ready-mixed and pre-tinted.
4. Colors: As indicated in the schedule at the end of this section.

2.03 MISCELLANEOUS PRODUCTS NOT IN SCHEDULE

A. Wood Fillers:
1. Wood filler paste.
2. Wood knots: As recommended in writing by topcoat manufacturer.

B. Sealers:
   1. Interior Latex Primer/Sealer.
   2. Interior Alkyd Primer/Sealer.
   3. S-W: Wood Classics Sanding Sealer.

C. Varnish:
   1. Interior varnish, satin.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work. Maximum acceptable moisture content of substrates:
   1. Concrete: 12 percent.
   2. Masonry (clay and CMU): 12 percent.
   3. Wood: 12 percent.
   4. Plaster: 12 percent.
   5. Gypsum Board: 12 percent.

B. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

C. Coordination of Work:
   1. Steel surfaces with less than 1.0 meter clear working access may necessitate applying material to inaccessible surfaces prior to erection of the finished steel members, either at the point of fabrication or on-site.
   2. Review other sections in which primers are provided to ensure compatibility of total systems for various substrates.
   3. On request of the Architect, furnish information on characteristics of finish materials to ensure use of compatible primers.
   4. Notify the Architect of problems anticipated using the materials specified.
   5. Commencement of installation signifies acceptance of surface conditions.

D. Factory-Primed Materials:
   1. Supplier shall disclose to the general contractor and to the painting contractor any pre-treatment and temporary coatings which have been applied.
   2. Manufacturer/supplier shall provide certification that the specified surface preparation and priming has been performed.
   3. Galvanized Metal:
      a. Remove pre-treatment and temporary coatings at no extra cost to painting contractor.
      b. *Caution:* Most factory-applied primers do not meet MPI standards. Additional priming and/or top coating on site cannot rectify this condition.

3.02 PROTECTION

A. Protect work of other trades and property of Owner against paint damage and overspray.

B. Sealants at expansion joints shall be masked prior to application of coating system.

C. Warning Signs: Provide “wet paint” signs to protect newly painted finishes.

D. Comply with requirements in “MPI Architectural Painting Specification Manual” for paint products indicated.

3.03 SURFACE PREPARATION

A. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted.
   1. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
   2. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

B. Cleaning General:
   1. Clean substrates of dust, dirt, grease, mildew, or other substances that could impair the bond of the various coatings according to manufacturer’s written instructions for each particular substrate condition and as specified.
   2. Schedule cleaning and painting so dust and other contaminants from the

cleaning process will not fall on wet, newly painted surfaces.
3. Provide barrier coats over incompatible primers or remove and re-prime.

C. Cementitious Substrates:
1. Comply with SSPC-SP13.
2. Prepare concrete, and concrete masonry block, surfaces to be painted.
3. Determine alkalinity and moisture content of surfaces by performing appropriate tests.
   a. Perform pH test prior to application of coating system to ensure pH is within acceptable levels.
   b. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application.
   c. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
4. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents.
5. Roughen as required to remove glaze.
6. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
7. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.

D. Gypsum Drywall Substrate:
1. Surface to be clean and dry.
2. Set and spackle nail heads, sand smooth, remove dust.
3. Spackle exterior surfaces with exterior grade compounds.

E. Wood:
1. Prime, stain, or seal scheduled wood immediately upon delivery.
2. Scrape and clean knots, and apply coat of knot sealer before applying primer.
3. Sand surfaces that will be exposed to view, and dust off.
4. Prime edges, ends, faces, undersides, and backsides of wood.
5. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler.
6. Sand smooth when dried.
7. When transparent finish is required, backprime with spar varnish.

F. Ferrous Metal Substrates:
1. Clean non-galvanized ferrous-metal surfaces that have not been shop coated.
2. Remove oil, grease, dirt, loose mill scale, and other foreign substances.
3. Surface shall be free of all visible rust.
4. Use solvent or mechanical cleaning methods that comply with recommendations of the SSPC.
5. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

G. Galvanized Surfaces:
1. Clean per SSPC-SP1.
2. Use non-petroleum-based solvents so surface is free of oil and surface contaminants.
3. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

3.04 PAINT PREPARATION

A. Mixing:
1. Carefully mix and prepare paint materials in accordance with manufacturer's directions.
2. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
3. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material.
4. Remove film and, if necessary, strain material before using.
5. Use only thinners approved by the paint manufacturer, and only within recommended limits.

B. Tinting:
1. Tint each coat progressively lighter to enable confirmation of number of coats.
2. Prime tint metal surfaces gray.

3.05 APPLICATION

A. General:
1. Apply paint in accordance with manufacturer's directions.

2. Use applicators and techniques best suited for substrate and type of material being applied.
3. Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

B. Multiple Coats:
1. The number of coats and film thickness required is the same regardless of the application method.
2. Do not apply succeeding coats until the previous coat has cured as recommended by manufacturer.
3. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
4. Sand between applications where sanding is required to produce an even smooth surface in accordance with manufacturer's directions.

C. Tolerances:
1. Match approved samples for color, texture, and coverage.
2. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance.
3. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

D. Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate. Provide a total dry film thickness (DFT) of the entire system as recommended by manufacturer.

E. Extent of Work:
1. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
2. Paint surfaces behind movable equipment and furniture and wall-mounted items same as similar exposed surfaces.
3. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
4. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
5. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
6. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
7. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
8. Sand lightly between each succeeding enamel or varnish coat.

F. Mechanical and Electrical Work:
1. Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces including, but not limited to:
   a. Uninsulated metal piping.
   b. Uninsulated plastic piping.
   c. Pipe hangers and supports.
   d. Tanks that do not have factory-applied final finishes.
   e. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
   f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
   g. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
   h. Switchgear.
   i. Panelboards.
   j. Electrical equipment indicated to have a factory-primed finish for field painting.

G. Blockfillers: Apply blockfillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

H. Prime Coats:
1. Before application of finish coats, apply a prime coat of material as recommended by manufacturer to material that is required to be painted or finished and has not been prime coated by others.
2. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

I. Stipple Enamel Finish:
1. Roll and redistribute paint to an even and fine texture.
2. Leave no evidence of rolling such as laps, irregularity in texture, skid marks, or other surface imperfections.

J. Pigmented (Opaque) Finishes:
1. Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage.
2. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

K. Transparent (Clear) Finishes:
1. Use multiple coats to produce a glass-smooth surface film of even luster.
2. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
3. Provide satin finish for final coats.

3.06 FIELD QUALITY CONTROL

A. Owner reserves the right to invoke the following procedure at any time and as often as Owner deems necessary during the period when paints are being applied:
1. Owner will engage the services of a qualified testing agency to sample paint materials being used.
2. Samples of material delivered to Site will be taken, identified, sealed and certified in presence of Contractor.
3. Testing agency will perform tests for compliance of paint materials with product requirements.
4. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements.
5. Contractor shall remove noncomplying paint materials from Site, pay for testing, and repaint surfaces painted with rejected materials.
6. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the 2 paints are incompatible.

3.07 CLEANING, ADJUSTING, AND PROTECTION

A. At the end of each workday, remove empty cans, rags, rubbish, wash water, solvents, and other discarded paint materials from the Site.

B. Do not clean painting equipment with free draining water. Retain cleaning water and filter out sediments to reduce contaminants entering waterways, drain systems, or into the ground.

C. Clean glass and paint-spattered surfaces by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

D. Remove, refinish, or repaint Work not in compliance with specified requirements.

E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

F. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.08 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal and Zinc-Coated Metals (exposed structural, ornamental and metal handrails):
   1. Primer coat: Rust-inhibitive waterborne self-cross-linking acrylic primer.
      a. Minimum DFT: 2.0 mils (over iron and steel).
      b. Minimum VS: 39 percent.
      c. S-W: Pro-Cryl Universal Primer B66.
   2. 2-component acrylic polyurethane high gloss:
      a. 1 finish coat.
      b. Minimum DFT: 4.0 mils.
      c. Minimum VS: 57 percent.
      d. Sheen: 30 to 50 units at 60 degrees.
      e. S-W: Acrolon 218 HS Acrylic Polyurethane Semigloss B65.

3.09 INTERIOR PAINT SCHEDULE

A. Gypsum Board:
   1. Walls:
      a. Primer: Vinyl acrylic:
         1) Minimum DFT: 1.1 mils.
         2) Minimum VS: 26 percent.
         3) S-W: PrepRite 200 Latex Wall Primer B28W200.
      b. Low-luster, acrylic-latex, interior enamel for normal exposure:
         1) 2 finish coats.
         2) Minimum DFT: 1.6 mils per coat.
         3) Minimum VS: 37 percent.
         4) Sheen: 10 to 20 units at 85 degrees.
         5) S-W: ProMar 200 Latex Satin B20W, 1200 Series.
      c. Low-luster, ambient cured, acrylic, interior enamel for high traffic areas:
         1) 2 finish coats.
         2) Minimum DFT: 2.5 mils per coat.
         3) Minimum VS: 35 percent.
         4) Performance Requirements: ASTM D3363 Pencil Hardness test minimum 2B.
         5) Sheen: 10 to 20 units at 85 degrees.
         6) S-W: ProIndustrial)VOC Acrylic Satin, B66-660 Series.
   2. Ceilings:
      a. Primer: Latex-based, interior primer.
         1) Minimum DFT: 1.1 mils.
         2) Minimum VS: 26 percent.
         3) S-W: PrepRite 200 Latex Wall Primer B28W200.
      b. Flat, vinyl acrylic interior paint.
         1) 2 finish coats.
         2) Minimum DFT: 1.2 mils per coat.
         3) Minimum VS: 37 percent.
         4) Sheen: 0 to 5 units at 85 degrees.
         5) S-W: ProMar 400 Flat Latex B30W400 Series.
   3. Unconditioned spaces and mechanical rooms:
      a. Primer: Latex-based, interior primer.
         1) Minimum DFT: 1.1 mils.
         2) Minimum VS: 26 percent.
         3) S-W: Prep Rite 200 Latex Wall Primer B28W200.
      b. Semi-gloss, acrylic-latex, interior enamel.
         1) 2 finish coats.
         2) Minimum DFT: 2.6 mils.
         3) Minimum VS: 36 percent.
         4) Sheen: 35 to 55 units at 60 degrees.
         5) S-W: Metalatex Semi-Gloss

B. Woodwork and Hardboard: (New, interior wood surfaces)
   1. Match stain and finish over wood surfaces.
   2. Undercoat: Alkyd or acrylic-latex-based interior wood undercoater, as recommended by manufacturer for this substrate.
      a. Minimum DFT: 1.6 mils.
      b. Minimum VS: 39 percent.
      c. S-W: Premium Wall and Wood Primer B28W8101.

C. Ferrous and Zinc-Coated Metal:
   1. Primer: Quick-drying, rust-inhibitive, waterborne, self-cross-linking acrylic primer:
      a. Minimum DFT: 2.0 mils.
      b. Minimum VS: 39.
      c. S-W: Pro-Cryl Universal Primer B66.
   2. Semi-gloss, alkyd-enamel odorless finish:
      a. 2 finish coats.

b. Minimum DFT: 3.4 mils.
c. Minimum VS: 43 percent.
d. Sheen: 40 to 50 units at 60 degrees.
e. S-W: ProMar Alkyd Semi-Gloss B34W200 Series.

D. Metal Ceiling; Exposed Overhead Metal (Structural Steel, Joists, Decks):
1. See Alternate #5.
2. Waterborne flat acrylic dryfall.
a. 1 finish coat.
b. Minimum DFT: 3.0 mils.
c. Minimum VS: 40 percent.
d. Sheen: 0 to 5 units at 85 degrees.
e. S-W: Waterborne Acrylic Dryfall B42W1.
f. Color: to match free-hanging acoustical panels, Olive Green color.

E. Colors: Contractor to assume that the Owner will select from Manufacturer's Standard and Premium paint colors.
1. Owner will select five to seven colors for interior painting of walls and trim. These colors may be of a deeper hue which will require tinting the primer.

3.10 INTERIOR STAIN SCHEDULE

A. New Interior Woodwork:
1. Alkyd-based:
a. Stain coat: VOC compliant wiping stain:
1) Transparent Finish: S-W Wood Classics Interior Oil Stain A49, 200 Series.
b. 2 finish coats: Alkyd-based or polyurethane satin varnish, as recommended by manufacturer:
1) Minimum DFT: 0.8 mils per coat.
2) Minimum VS: 24 percent.
3) Sheen: 25 to 30 units at 60 degrees.
4) S-W: Wood Classics Polyurethane Varnish A67F1.
2. Waterborne, Satin-Varnish Finish:
a. Stain Coat: Waterborne, oil, interior wood stain applied at spreading rate recommended by manufacturer:
1) S-W: Wood Classics Oil Stain A49.
b. 2 finish coats: Waterborne, varnish finish applied at spreading rate recommended by manufacturer:
1) Polyurethane Varnish Satin A68F90.

B. Color: Stain color will be selected from manufacturer's standard and premium.
1. Color is to match existing bookshelves.

END OF SECTION

SECTION 09 68 00

CARPETING

PART 1 GENERAL

1.01 SUMMARY

A. Provide:
   1. Carpet:
      a. Tile.
      b. Broadloom.
      c. Walk-off matt.
      d. Base.
   2. Carpet accessories.
      a. Transition Molding

B. Related Sections:
   1. Section 09 65 16 - Resilient Sheet Flooring

1.02 REFERENCES

A. American Association of Textile Chemists and Colorists (AATCC):
   1. 16 - Colorfastness to Light
   2. 24 - Resistance to Insects
   3. 134 - Electrostatic Propensity of Carpet

B. ASTM:
   1. D1335 - Standard Test for Tuft Bind
   2. D2646 - Dry Breaking Strength of Textile Floor Coverings
   3. D2859 - Ignition Characteristics of Textile Floor Coverings
   4. D3936 - Tests for Delamination
   5. D5116 - VOC Content
   6. E648 - Flammability (radiant panel)
   7. E662 - Smoke Density

C. Carpet and Rug Institute (CRI) 104 - Standard for installation of commercial textile floor covering materials

1.03 SUBMITTALS

A. Refer to Section 01 33 00.

B. Product Data: Submit manufacturer's current Product Data including specifications, handling, storage and installation instructions, and maintenance recommendations.

C. Provide technical data for mastic/adhesive.

D. Shop Drawings: Show the following:
   1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet.
   2. Carpet type, color, and dye lot.
   3. Locations where dye lot changes occur.
   4. Seam locations, types, and methods.
   5. Type of subfloor.
      a. Identify if in-floor heating system is in place at subfloor.
   6. Type of installation.
   7. Pattern type, repeat size, location, direction, and starting point.
   8. Pile direction.
   9. Type, color, and location of insets and borders.
   10. Transition details to other flooring materials.

E. Samples:
   1. Initial Color Selection: Submit manufacturer's standard color samples for each type of product with Product Data and Shop Drawings.

1.04 QUALITY ASSURANCE

A. Single Source Responsibility: Provide carpet units made of components of standard construction furnished by 1 manufacturer as coordinated assemblies.

B. Qualifications:
   1. Manufacturer: 5 years experience in the manufacture of carpet, with 6 projects of similar size, scope and type of which 3 have been in successful use for 3 years or longer.
   2. Contractor: 3 years experience in the installation of carpet.
   3. Personnel: For actual installation of carpet, use personnel skilled in work required, completely familiar with manufacturer's recommended methods

of installation, thoroughly familiar with requirements of Work.

C. Certifications: Provide to Architect, certification of installer from manufacturer of carpet.

D. Alkalinity and Moisture Test. Complete Alkalinity and Moisture test within 48 hours of beginning work.
   1. Provide Architect written results of both tests prior to beginning installation of any carpet.

1.05 PROJECT CONDITIONS

A. Existing Conditions: Drawings do not purport to show actual field dimensions, but are intended only to establish location and scope of Work. Field-verify dimensions and assume full responsibility for their accuracy.

B. Environmental Limitations: Do not install carpet until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

C. Do not install carpet over concrete slabs until slabs have cured, are sufficiently dry to bond with adhesive, and have pH range recommended by carpet manufacturer.

D. Where demountable partitions or other items are indicated for installation on top of carpet, install carpet before installing these items.

E. Carpet Tile Temperature Requirements: Floor and room temperature to be between 65 degrees and 95 degrees F. Humidity to be between 10 and 65 percent for 24 hours prior to and during installation. Maintain conditions minimum of 48 hours after installation.

1.06 WARRANTY

A. Provide non-prorated replacement warranty for the following:
   1. Stain Removal: 10 years.
   2. Wear: Lifetime.
   3. Edge Ravel: Lifetime.
   4. Delamination: Lifetime.
   5. Tuft Bind: Lifetime.
   6. Color Fastness to Light: 10 years.
   7. Color Fastness to Atmospheric Contaminants: 5 years.

B. Warranty does not include deterioration or failure of carpet due to unusual traffic, failure of substrate, vandalism, or abuse.

1.07 MAINTENANCE

A. Extra Materials:
   1. Provide for maintenance purposes, quantity equal to 2 percent (5 square yards minimum) of CPT-1, CPT-2, and CPT-3 material installed.
   2. Furnish from same production run as materials installed.
   3. Maximum 40 percent of additional material may be scrap material not less than 2 feet in any dimension; carpet tiles to be full, uncut.
   4. Wrap carpet for long term storage; mark each roll or tile carton to indicate material, color of each type of material installed.
   5. Deliver and store where directed by Owner.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Standard of Quality: design is based on products of *Bigelow Commercial*, Atlanta, GA. www.bigelowcommercial.com

B. Acceptable Manufacturers: Subject to compliance with specified requirements, acceptable manufacturers and products are:
   1. Mannington Commercial, Calhoun GA. www.manningtoncommercial.com
   2. Bolyu, Adairsville, GA. www.bolyu.com
   3. Manufacturer of comparable products submitted in compliance with Section 01 25 13.

2.02 MATERIALS

A. Carpet:
1. Finish: The choice of colors and patterns to be selected by Architect is a consideration for approval of substitutions.
2. VOC Limits: Provide carpet that complies with the following limits for VOC content when tested according to ASTM D 5116:
   a. Total VOCs: 0.5 mg/sq. m x h.
   b. 4-PC (4-Phenylcyclohexene): 0.05 mg/sq. m x h.
   c. Formaldehyde: 0.05 mg/sq. m x h.
   d. Styrene: 0.4 mg/sq. m x h.
3. Observe dye lot guidelines.
4. Carpet Tile: Minimize sequence separation of pallet numbers in a given area.
5. Provide following carpets for types, locations indicated on Drawings. Colors as indicated herein.

B. Carpet Types:
1. Carpet Type “CPT-1”:
   a. Type: Broadloom
   b. Pattern: *Artist*
   c. Color: Socrates.
2. Carpet Type “CPT-2”:
   a. Carpet tile installation format: quarter turn. Verify with Architect for final confirmation.
   b. Pattern: *CEO*
   c. Color: Socrates 7879
3. Carpet Type “CPT-3” Walk-Off Matt:
   a. Type: Modular tile.
   b. Manufacturer: Matts Inc.
   c. Product: Calypso Series
   d. Color: To be selected from Manufacturer’s standard colors.
4. Carpet Type: “Carpet Base”
   a. Type: Broadloom
   b. Manufacturer: Bigelow
   c. Product: *Spectrum V30*
   d. Color: : To be selected from Manufacturer’s standard colors
   e. Size: Four (4) inch (height).
   f. Edge: Factory serged.

C. Transition Moldings:
1. Where carpet abuts dissimilar flooring and no recess is indicated, provide vinyl edge molding, submitted in compliance with Section 01 25 13.
2. Color to be as selected by Architect.

D. Accessory Materials:
1. Adhesive: Waterproof adhesive as recommended by carpet manufacturer for specific carpet, substrate, and location.
2. Latex Underlayment: As recommended by carpet manufacturer.
3. Miscellaneous: Provide other materials not specifically described but required for complete, proper installation, as recommended by manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Work of Other Trades: Prior to commencing work, carefully inspect, with installer present, and verify that work is complete to point where this installation may properly commence.

B. Verification of Conditions:
1. Verify that carpeting may be installed in accordance with original design, pertinent codes and regulations, and pertinent portions of referenced standards.
2. Include moisture and alkalinity testing as appropriate.
3. Test alkalinity level of concrete. If over 9 pH, mop floor with 8 ounces of vinegar to 1 gallon of water to remove it, then apply manufacturer-recommended sealant.
4. Conduct moisture test. Maximum reading is 3 pounds per 1,000 square feet per 24 hours. For higher readings, consult manufacturer’s technical service.
5. Check floor’s porosity. If water is absorbed rapidly, seal floor with manufacturer’s recommended sealant.

C. Discrepancies: Immediately notify Architect. Do not proceed with installation in areas of discrepancy until fully resolved.

3.02 PREPARATION

A. Protection: Protect installed work and materials of other trades.

B. Surface Preparation:
1. Verify that surfaces to receive carpet are thoroughly cured, dry, broom clean, free of dirt, grease, oil, paint, wax, mortar, plaster droppings; free of dust.
2. Level cracks, holes, voids, trowel marks, grout lines, and protrusions to provide smooth and level floor surface.
3. Prime concrete according to adhesive manufacturer's recommendations.
4. Feather irregularities or minor floor level variations between new and existing construction with accepted underlayment material.
5. Bring any areas where this technique will not bring satisfactory results to Architect's attention.

3.03 INSTALLATION

A. General Requirements for Broadloom Carpet:
1. Install in accordance with CRI 104.
2. Install in as long lengths as possible to hold cross seams to minimum.
3. Install in each area so that grain is in one direction, with joints straight, with pieces butted tightly together and pattern properly matched.
4. Whenever practical, install with seams perpendicular to exterior windows.

B. Installation of Tile Modules:
1. Follow carpet manufacturer recommendations about application, squareness, and location of working chalk lines precisely.
2. Comply with CRI 104, Section 14.
3. Install on 90-degree formats, with corners aligned according to manufacturer specifications.
4. Snugly join modules. Check modules for correct firmness of joint.
5. To ensure proper spacing, measure the distance covered by 11 modules (10 joints) installed on the floor with no visible gaps, peaks, or overlaps. Comply with manufacturer's specifications for proper distance.
6. Do not trap yarn between modules.

C. Adhesive:
1. Verify compatibility of carpet adhesive with paint, concrete sealer, or other agents affecting adhesive performance before installing any carpet.
2. Install carpet with adhesive and spread rate strictly according to manufacturer's recommended procedure.
3. Spread method: Full spread.
4. Allow proper open time for adhesive to develop proper tack.
5. Provide same spread rate on semi-smooth or rough surfaces.
6. Do not use excessive adhesive, immediately remove adhesive from the pile face or serging.

D. Solid Color Carpet Installation:
1. Fit carpet neatly to walls, columns, casework, equipment, adjacent finish flooring.
2. Roll carpet may be repositioned with a knee-kicker, but do not stretch carpet.
3. Carpet Tile:
   a. Measure area to find best starting point, utilizing a maximum size perimeter tile.
   b. Corners shall be flat to ensure proper fit.
   c. Install modules snugly, do not over-tighten tiles.
4. Extend into closets.
5. Roll with light roller to remove air bubbles, so that installation is smooth and free of wrinkles and bubbles.

E. Pattern Carpet Installation:
1. Dry lay and measure pattern repeat of each roll.
2. Start installation in the middle of the space.
3. Install longest pattern repeat first.
4. Power stretch subsequent drops to match pattern.
5. Stretch carpet to align pattern.
6. Use knee kickers only to position carpet.
7. Use steamer to soften backing for better workability.
8. Match carpet by determining matching points and cut off both selvage edge and pattern overage.

9. Stay-nail aligned pattern to hold in place until adhesive sets.
10. Pull back carpet to the stay nails and spread the adhesive.
11. Roll completed installation with a 50- to 75-pound roller in both length and width to allow proper adhesive penetration to carpet back.

F. Knap: All carpet must run same direction.

G. Seams:
1. Carpet knap shall match on each side of seam or tile; form strictly according to carpet manufacturer's instructions with seams at door openings centered under door.
2. Do not extend seams perpendicular to door openings through opening.
3. Use seam roller to blend and enhance seams.

H. Holes for Electrical Outlets:
1. Accurately locate holes for floor mounted electrical outlets.
2. Coordinate location with work of other trades.
3. Cut holes neatly so that edges of carpet will be covered by outlet trim.

I. Cove Base:
1. Install after all carpet flooring has been laid.
2. Base shall be continuous, with seaming at corners of room or at door frames.
3. Exposed base edge shall be factory serged.
4. Apply multipurpose adhesive to center of cove base and apply to wall. Fit neatly to walls and columns.

J. Molding: Install where carpet meets other finish floor materials using crane aluminum drive anchors in 1/8 inch holes. Concrete nails or adhesive will not be acceptable.

3.04 INDOOR AIR QUALITY

A. Clean old carpet prior to removal.

B. Clean area under old carpet thoroughly after removal.

C. Pre-ventilate Carpet. Unroll and air out carpet in a well-ventilated, uninhabited space prior to installation.

D. Adhesives and Seam Sealants:
1. Dry Adhesive: Peel and stick
2. Wet Adhesive: Maximum VOC levels: 50 grams/liter
3. Seam Sealants: Maximum VOC levels: 50 grams/liter.
4. Do not use seam sealants containing 1,1,1-trichloroethane or toluene.

E. Provide maximum ventilation during installation.

F. Isolate area of installation from rest of building.

G. Clean new carpet thoroughly with a high-efficiency particulate air (HEPA) filtration vacuum.

3.05 RESTORATION/PROTECTION

A. Perform the following operations immediately after installing carpet:
1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.
2. Remove yarns that protrude from carpet surface.
3. Vacuum carpet using commercial machine with face-beater element.
4. Use materials, procedures recommended or furnished by manufacturer.

B. Replace defective carpet; provide corrections/repair to seams. Replace tiles in original position and pile direction.

C. Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

3.06 CLEANING

A. Site: Do not allow accumulation of scraps, debris arising from Work of this Section.

Maintain premises in neat, orderly condition.

B. System: Clean exposed surfaces of carpet, including removing adhesives from the surface, using materials and methods recommended by manufacturer.

3.07 MANUALS

A. Maintenance Instructions: Subcontractor to provide Construction Manager with the following for inclusion in the Owner's Operation and Maintenance Manuals:
   1. Maintenance and Care Instructions.
   2. Recommended Maintenance Program.
   3. Warranty Requirements.

END OF SECTION

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Water Intrusion Assessment Report

Cannon Falls Public Library
Cannon Falls, Minnesota

Prepared for:
SEH Architects
Vadnais Heights, Minnesota

December 14, 2017

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PROJECT: Water Intrusion Assessment Report
Cannon Falls Public Library
Cannon Falls, Minnesota

DATE: December, 14, 2017
FILE NO.: 214348

REPORTED TO:
SEH, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110

Attn: Mr. Scott Blank

COPIES TO:
SEH, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110

Attn: Mr. Greg Anderson

WATER INTRUSION ASSESSMENT REPORT

Table of Contents

Attachments: Photos 1 through 42
Existing Condition Detail A
Existing Condition Detail B
Original Detail A14/A502

A. CONTEXT

1. Property Description

The Cannon Falls Public Library is a one-story, slab-on-grade building with masonry veneer located at 306 West Mill Street, Cannon Falls, Minnesota (photo 1).

2. Problem Issues

There has been repeated water intrusion at the base of the southeast exterior wall ever since the spring of 2013 (photos 2-4). It has been reported to us that the intrusion usually only occurs during and after a hard rain event. Previous repair attempts have been made based on leak investigations, however the infiltrating persists.

B. PROCEDURE

All information and opinions expressed by Inspec within this report are based solely on the following:

1. Review Existing Documentation: We reviewed the following documents and reports.

   a. AET Geotechnical Report, December 27, 2011
   b. SEH, Inc. existing drawings, April 30, 2012 (only sheets A101, A501-A504, and S300)
   c. Waterproofing submittals reviewed by SEH, June 14, 2012
   d. Protection Board submittals reviewed by SEH, July 3, 2012
   e. Memo from Keystone to Bossardt Construction, June 14, 2013
   f. AET Site Visit Report, March 11, 2014
   g. AET Water Infiltration Report, March 18, 2014
   h. Email from Shane Butler (Bossardt) to Dave (Serice), March 20, 2014
   i. Letter from Bossardt Corp. to Serice Construction, March 25, 2014
   j. AET Final Water Infiltration Report, May 15, 2014

2. Informal Interviews:

On September 21, 2017, we visited the site with Scott Blank and Greg Anderson of SEH and informally interviewed site personnel with regard to water intrusion frequency, location, and other related matters.

3. Non-destructive Observations:

During our September 21, 2017, site visit, we made non-destructive observations and documented same with photos.

4. Destructive Measures:

   With the assistance of a contractor (Swanson-Youngdale), we performed two destructive test openings at the southeast exterior wall where Grids 8 and H intersect. One opening exposed the lower ledge waterproofing, and the other one directly above exposed the brick veneer through-wall flashing (photo 5).

5. Water Testing:

   Water testing was not possible due to the ambient temperatures at the time of the second site visit. However, such testing is recommended for the spring of 2018. See paragraph E. below.

C. EXISTING CONDITIONS AND DEFICIENCIES

For all existing conditions, observed deficiencies, and suspected deficiencies, please refer to the attached Existing Condition Details A and B. Note that all such deficiencies are in red text.

D. EVALUATION AND CONCLUSIONS

When trying to determine the cause(s) for the water intrusion, we observed no one "smoking gun". Instead, we have documented a number of deficiencies, both actual and suspected, which collectively most likely account for the water problems at this building location. These deficiencies fall into two general categories.

1. How incidental moisture enters the wall system:

   Items 1 through 5, 8, and 9 of attached Existing Condition Detail A are examples of deficiencies that allow incidental moisture into the wall system. These items in and of themselves, are not the cause of the moisture entry into the building interior, because through-wall flashings are intended to redirect this moisture back out of the building. Since moisture was observed in the wall cavity which had bypassed the through-wall flashing (Item 6), it is reasonable to assume that this through-wall flashing has failed to some degree.

2. How wall system moisture circumvents the flashings and moisture barriers to enter the building interior:

   Items 7, 10, 11, and 15 through 18 of attached Existing Condition Details A and B identify ways in which water within the wall system could circumvent the water barriers. Item 15, in particular, is evidence that water is somehow getting past the waterproofing membrane. Once water is past these barriers, it accumulates inside and below the metal stud track system, which acts like a conduit within which water can migrate to a number of locations inside the building.

E. REMEDIAL RECOMMENDATIONS

Inspec recommends the following remedial measures between Grids 7.5 and G. Anything beyond the following narrative such as drawings and specifications is beyond the scope of this project; however, if such services are required, Inspec can provide those as well.

1. Remove all CMU, sill stone, and three courses of brick veneer, and install new waterproofing and through-wall flashing in such a way as to assure uninterrupted watertight continuity. We recommend not using a self-adhering asphaltic membrane, but instead using a reinforced polymer-gel waterproofing system. The same through-wall flashing product above the sill stone can be repeated provided it is lapped over and tied into the polymer-gel system.

2. If the window water testing in the spring of 2018 reveals that the flashing under the sill frame is contributing to the water intrusion, then this flashing should be replaced as well, which means temporarily removing the entire storefront window. The design of this flashing should also be tied into the polymer gel system below for uninterrupted watertight continuity.

3. A "kick-out" flashing should be installed where the sill stone meets grade around the building corner to prevent high volumes of water from entering the wall cavity. See Item 4 of attached Detail A.

F. REMARKS

This report is a summary of our assessment of the water intrusion at the Cannon Falls Library. If you have any questions regarding this report, please contact our office.

INSPEC

By: _____
David Campbell, AIA, RWC, GRP
Associate/Senior Architect/Registered Waterproofing Consultant

DC/bap

Attachments: Photos 1 through 42
Existing Condition Detail A
Existing Condition Detail B
Original Detail A14/A502

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

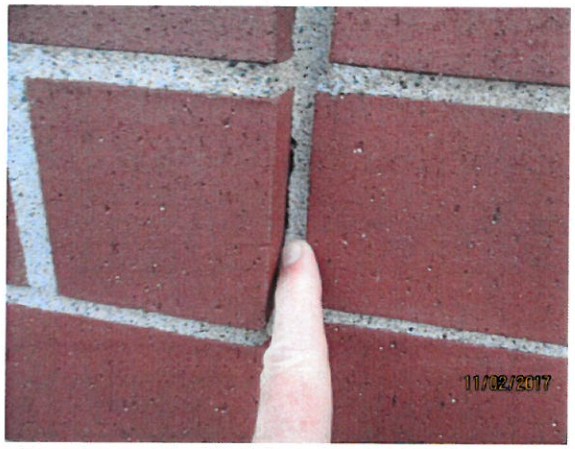


Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

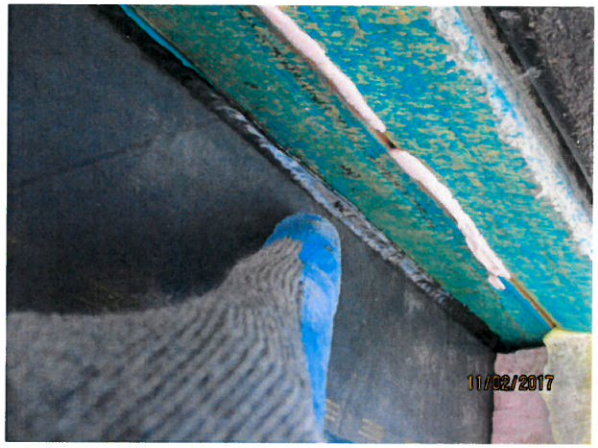


Photo 15

Photo 16

Photo 17

Photo 18

Photo 19

Photo 20

Photo 21

Photo 22

Photo 23

Photo 24

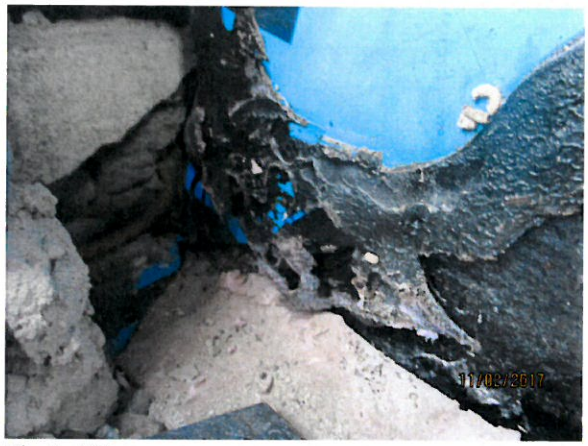


Photo 25

Photo 26

Photo 27

Photo 28

Photo 29

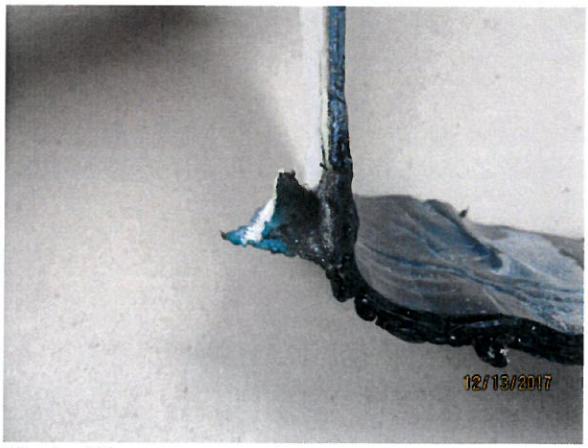


Photo 30

Photo 31

Photo 32

Photo 33

Photo 34

Photo 35

Photo 36

Photo 37

Photo 38

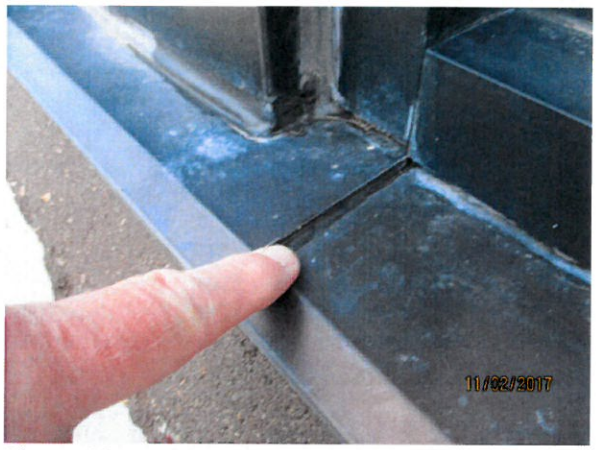


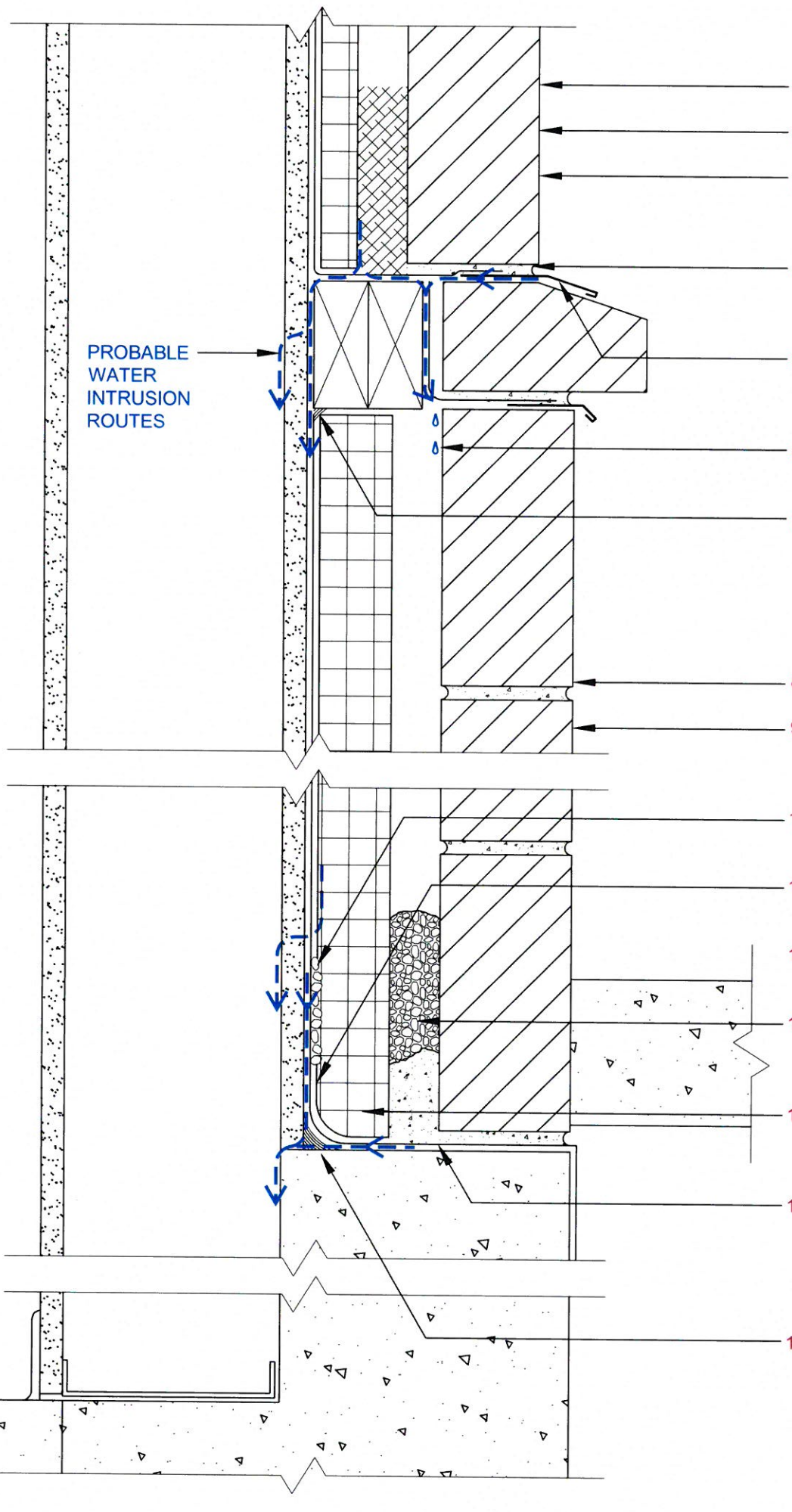
Photo 39

Photo 40

Photo 41

Photo 42

NOTE:
ALL ACTUAL OR SUSPECTED DEFICIENCIES ARE IN RED TEXT.



1. OPEN MORTAR JOINTS (PHOTOS 7 & 9)
2. OPEN SEALANT JOINTS (PHOTO 10)
3. HEAD JOINT WEEPS ARE RAISED UP AND BLOCKED OFF BY SLOP MORTAR INHIBITING DRAINAGE (PHOTO 6)
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A EXISTING CONDITION AT BRICK VENEER

3" = 1'-0"

Client:
SEH, INC.

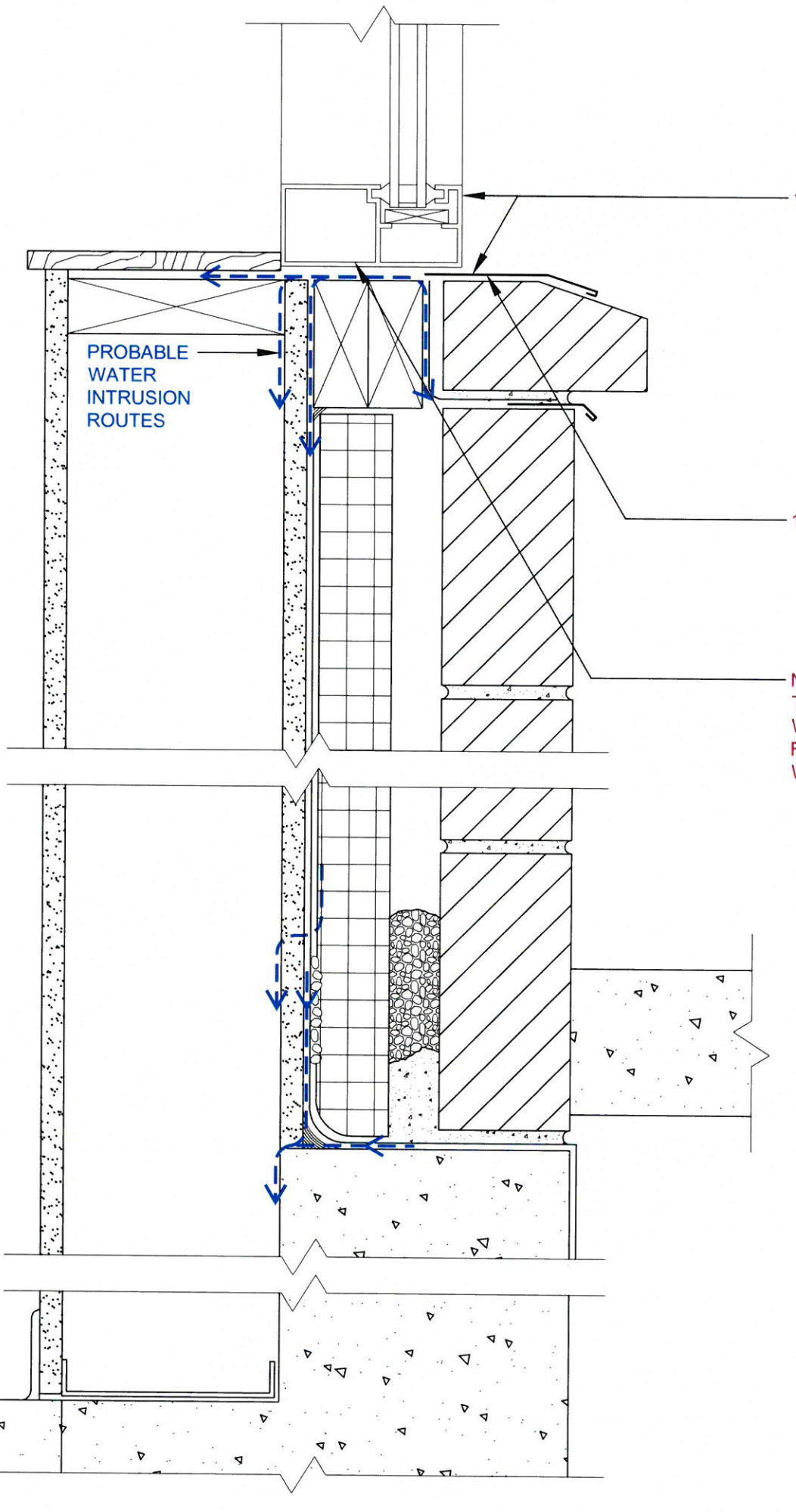
Project title:
WATER INTRUSION ASSESSMENT
CANNON FALLS LIBRARY
CANNON FALLS, MN

DATE:	12/14/17
CLIENT PROJECT No.:	000000
INSPEC PROJECT No.:	214348
PROJECT MGR:	DC
DRAWN BY:	KB
CHECKED BY:	DC

Sheet No.:

INSPEC
5801 Duluth Street
Minneapolis, MN
55422
Ph. 763-546-3434

NOTE:
ALL ACTUAL OR SUSPECTED DEFICIENCIES ARE IN RED TEXT.



17. THE STOREFRONT WINDOW FRAME JOINERY IS NOT DESIGNED TO BE WATER TIGHT (PHOTOS 31 & 32), REQUIRING THAT THE WATER DRAIN OUT BETWEEN THE BOTTOM OF THE SILL FRAME AND THE SHEET METAL FLASHING (PHOTOS 33 & 34). HOWEVER, SINCE THE SHEET METAL IS BACK SLOPED SLIGHTLY TOWARD THE WINDOW (PHOTOS 35, 36 & 37), DRAINING WATER IS INSTEAD DIRECTED UNDER THE FRAME AND POSSIBLY THROUGH ANCHORAGE PENETRATIONS OF THE FLASHING

18. THERE ARE OPEN SEAMS IN THE WINDOW SILL SHEET METAL FLASHING (PHOTOS 38 & 39)

NOTE:
THE EXACT EXISTING CONDITION OF THE WATERPROOF FLASHING UNDER THE SILL FRAME CANNOT BE DETERMINED UNLESS THE WINDOW IS REMOVED.

B

EXISTING CONDITION AT WINDOW

3" = 1'-0"

Client:
SEH, INC.

Project title:
WATER INTRUSION ASSESSMENT
CANNON FALLS LIBRARY
CANNON FALLS, MN

DATE:	12/14/17
CLIENT PROJECT No.:	000000
INSPEC PROJECT No.:	214348
PROJECT MGR:	DC
DRAWN BY:	KB
CHECKED BY:	DC

Sheet No.:

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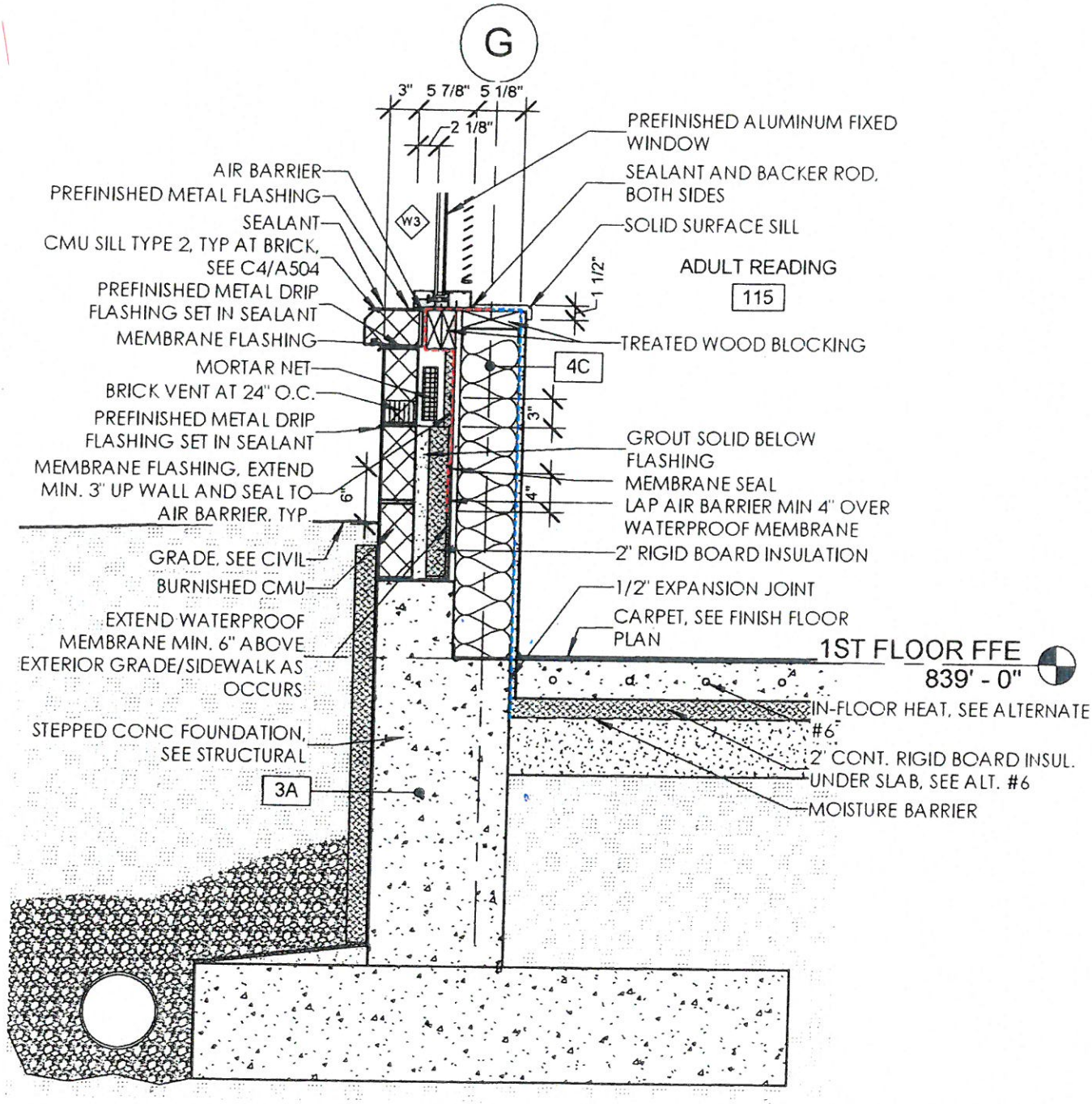

A14 / A502 WALL BASE DETAIL AT ADULT READING

3/4" = 1'-0"

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PROJECT: Water Intrusion Assessment Report Supplement
Cannon Falls Public Library
Cannon Falls, Minnesota

DATE: August 3, 2018

FILE NO.: 214348

REPORTED TO:
SEH, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110

Attn: Mr. Scott Blank

COPIES TO:
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St. Paul, MN 55110

Attn: Mr. Greg Anderson

WATER INTRUSION ASSESSMENT REPORT – SUPPLIMENT

This is a supplement to Inspec's Water Intrusion Assessment Report dated December 14, 2017. In that report, we recommended that additional water testing be performed on the window in order to determine the extent to which the window sill and frame was contributing to the water intrusion. At the time of the report, winter conditions prevented such testing. On May 2, 2018, we performed the water test on the one window occurring above the area of water intrusion.

A. PROCEEDURE

Step 1: Using a spray bar, we first sprayed water into the horizontal joint between the window sill frame and the sheet metal flashing which extends under the window sill, while at the same time preventing water from entering the wall below the window. The duration of spray was 45 minutes (photos 1 and 2).

Step 2: We moved the spray bar up and focused the spray on the sill frame of the window. The duration of spray was 30 minutes (photo 3).

Step 3: We moved the spray bar up and focused the spray on the upper horizontal frame. The duration of spray was 30 minutes (photo 4).

B. FINDINGS

At no time during the spray testing were we able to recreate water intrusion through the building wall into the building interior. This was verified by observing the existing wall openings inside the building and by feeling for wet carpet along the base of the wall. This means that neither the flashing under the window frame nor the window itself is contributing to the water intrusion into the building interior at the floor level.

However, during our Step 2 spraying, we observed water ponded on top of the interior sill frame (photo 5). We suspect that this indicates a failure of the "zone dam" within the window frame itself.

Without further destructive inspection of the window it is impossible to say for sure. However, we can say that with confidence that this "zone dam" failure is not contributing to the building wall water intrusion below.

After having reviewed the Architect's construction drawings, having performed destructive inspection openings at the water intrusion locations (see December 14, 2017 Report), and having conducted extensive water testing, it is Inspec's opinion that the cause of the water intrusion is the result of various flaws in the execution of the design and not of the design itself. See our December 14, 2017 Report for documentation of all observed construction flaws.

C. REMEDIAL RECOMMENDATIONS

1. For further recommendations we recommend that either a representative of the window manufacturer or a window contractor who understands curtain wall windows review this report supplement (especially photo 5) to determine what the window repair entails. Does the entire window have to be removed before it is repaired/replaced, or merely frame components.

2. We refer you to Inspec's remedial recommendations E. 1, 2, and 3 of our December 14, 2017, report. If it is determined that the window does not have to be completely removed as part of the sill frame leak fix, then E. 2 can be omitted from those recommendations. For your convenience, we have included below recommendations E. 1, 2, and 3 verbatim from our earlier report.

Inspec recommends the following remedial measures between Grids 7.5 and G. Anything beyond the following narrative such as drawings and specifications is beyond the scope of this project; however, if such services are required, Inspec can provide those as well.

1. Remove all CMU, sill stone, and three courses of brick veneer, and install new waterproofing and through-wall flashing in such a way as to assure uninterrupted watertight continuity. We recommend not using a self-adhering asphaltic membrane, but instead using a reinforced polymer-gel waterproofing system. The same through-wall flashing product above the sill stone can be repeated provided it is lapped over and tied into the polymer-gel system.

2. If the window water testing in the spring of 2018 reveals that the flashing under the sill frame is contributing to the water intrusion, then this flashing should be replaced as well, which means temporarily removing the entire storefront window. The design of this flashing should also be tied into the polymer gel system below for uninterrupted watertight continuity.

3. A "kick-out" flashing should be installed where the sill stone meets grade around the building corner to prevent high volumes of water from entering the wall cavity. See Item 4 of attached Detail A.

D. REMARKS

This report is a summary of our supplemental assessment of the water intrusion at the Cannon Falls Library. If you have any questions regarding this report, please contact our office. If you would like a proposal for remedial design and bid document services please call me and we can discuss.

INSPEC

By: _____
David Campbell, AIA, RWC, GRP
Associate/Senior Architect/Registered Waterproofing Consultant

DC/bap

Attachments: Photos 1 through 5

Photo 1

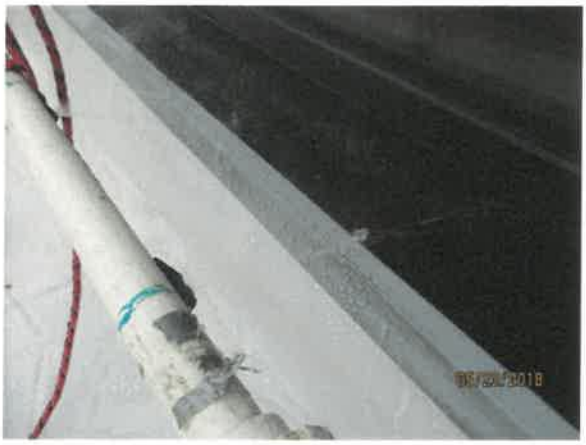

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6