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## EXTERIOR BUILDING MAINTENANCE

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### The Willows

Strata LMS1389  
1103 & 1121 Howie Avenue  
Coquitlam, BC

Project # CAL-1167

### CONSULTANTS

Calysta Consulting  
702 - 30711 Simpson Rd.  
Abbotsford, B.C., V2T 6Y7  
Phone: (604)854-8222

### OWNER'S REPRESENTATIVE

Mr. Ken Thompson  
Pacific Quorum Properties Inc.  
430 - 1200 W. 73<sup>rd</sup> Avenue  
Vancouver, BC V6P 6G5  
Phone: 604-685-3828

Tender Closing: *May 21st 2010*

At: 2:00 pm Local Time

### SUBMIT TENDERS TO:

Pacific Quorum Properties Inc.

Mandatory Site Meeting: *May 13<sup>th</sup> 2010*

At: 11:00 am Local Time

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## 1 INVITATION

### 1.1 Tender Call

- .1 Offers signed under seal, executed, and dated, together with supporting documentation will be received by the Owner, before 2:00 p.m. local time on: \_\_\_\_\_, at the office of the:

OWNERS' REPRESENTATIVE: Pacific Quorum  
Properties Inc., 430 – 1200 W. 73<sup>rd</sup> Avenue, Vancouver,  
BC V6P 6G5  
Attention: Mr. Ken Thompson

- .2 Offers submitted after the Tender Closing will be returned to the bidder unopened.
- .3 Offers will be opened \_\_\_\_\_ immediately after the time for receipt of tenders. 
- .4 Amendments to a submitted offer will be permitted if received in writing prior to Tender closing and if endorsed by the same party or parties who signed and sealed the offer.
- .5 Oral or telephonic bids, proposals or modifications will not be considered.

### 1.2 Intent

- .1 The intent of this Tender call is to obtain an offer to perform work to complete exterior building maintenance for balconies, siding and waterproofing to **The Willows., 1103 & 1121 Howie Ave., Coquitlam, BC** for a Stipulated Price remuneration, in accordance with the Contract Documents.
- .2 The project will be staged over 2 years time, one elevation at a time.

### 1.3 Contract Documents Identification

- .1 The Contract Documents are identified as Project Number CAL-1167 as prepared by: Calysta Consulting, 702 – 30711 Simpson Rd., Abbotsford, BC V2T 6Y7

## 2 CONTRACT/ TENDER DOCUMENTS

### 2.1 Definitions

- .1 Contract Documents: Defined in CCDC No. 2 Definitions with General Conditions.
- .2 Consultant: Calysta Consulting, 702 – 30711 Simpson Rd., Abbotsford, BC V2T 6Y7, Phone: 604-854-8222
- .3 Tender Documents: Contract Documents supplemented with Instructions to Bidders, Tender Form, Tender securities and Tender Supplementary Forms identified herein.
- .4 Tender: Act of submitting an offer under seal.

### 2.2 Availability

- .1 Tender Documents may be obtained at the office of OWNERS' REPRESENTATIVE: Pacific Quorum Properties Inc., 430 – 1200 w. 73<sup>rd</sup> Ave., Vancouver, BC V6P 6G5.
- .2 One set of Tender Documents can be obtained free of charge by contract bidders only, at the offices of Pacific Quorum Properties Inc.
- .3 Tender Documents are made available only for the purpose of obtaining offers for this project. Their issue does not confer a license or grant for other purposes.

### 2.3 Examination

- .1 Tender Documents may be viewed at the offices of: OWNER: Strata LMS 1389, c/o Pacific Quorum Properties Inc., 430 – 1200 W. 73<sup>rd</sup> Ave., Vancouver, BC V6P 6G5, Attn: Mr. Ken Thompson.
- .2 Upon receipt of Tender Documents verify documents are complete; notify the Owner should documents be incomplete.
- .3 Immediately notify the Owners' Representative upon finding discrepancies or omissions in the Tender Documents.

## 2.4 Queries/ Addenda

- .1 Direct questions to: Pacific Quorum Properties Inc..  
Tel: 604-685-3828 Attn: Mr. Ken Thompson.
- .2 Addenda may be issued during the Tender period. All addenda become part of the Contract Documents. Include costs in the Tender price.
- .3 Verbal answers are only binding when confirmed by written addenda.
- .4 Clarifications requested by bidders must be in writing not less than seven days before date set for receipt of bids. The reply will be made in the form of an addendum, a copy of which will be forwarded to known general contract bidders.

## 2.5 Product/ System Options

- .1 When a request to substitute a product is made, the Owner may approve the substitution as an alternate and will issue an Addenda to known bidders. If an item is approved as an alternate, bidders may use that item in place of the specified item.
- .2 Where tender documents stipulate a particular product, alternates will be considered by the Owners' Representative up to 5 days prior to receipt of Tenders.
- .3 In submission of alternates to products specified, bidders shall include in their bid, any changes required in the Work to accommodate such alternates. A later claim by the bidder for an addition to the Contract Price because of changes in work necessitated by use of alternates shall not be considered.

## 3 SITE ASSESSMENT

### 3.1 Site Examination

- .1 Visit the project site and surrounding properties before submitting a bid.
- .2 A mandatory site visit will be required to qualify for the Tender. The Verification of Conditions Form must be properly filled out and included with the submittal of Tender.

- .3 A visit to the project site has been arranged for bidders as follows:

Date:

Time: 11:00 am

Place: 1103 Howie Ave., Coquitlam, BC

#### 4 QUALIFICATIONS

##### 4.1 Pre - Qualification

- .1 Bids will be accepted only from those Contractors who are to carry on business in the Province of British Columbia and who have qualified tradesmen;

The contractor must be able to supply the warranties as specified.

##### 4.2 Subcontractors

- .1 The Owner (as further described in the General Conditions) reserves the right to reject a proposed subcontractor for reasonable cause.
- .2 Refer to CCDC No. 2-GC3.8 of General Conditions.

#### 5 TENDER SUBMISSION

##### 5.1 Tender Ineligibility

- .1 Tenders that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, will be considered informal.
- .2 Tender Forms and enclosures which are improperly prepared will be declared informal.
- .4 Informal tenders will not be considered.

5.2 Submissions

- .1 Bidders shall be solely responsible for the delivery of their Tenders in the manner and time prescribed.
- .2 Submit one copy of the executed Tender on the forms provided, signed and corporate sealed in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- .3 A summary of submitted Tenders will be made upon request to bidders following Tender opening.

6 TENDER ENCLOSURES/REQUIREMENTS

6.2 Performance Assurance

- .1 The accepted bidder shall provide Performance and Labour and Materials Payment Bonds, each in the amount of Fifty Percent of the contract price on SSDC Documents 221 and 222 (1994) prior to commencing the work.
- .2 Include the cost of bonds in the Tender price.
- .3 Performance Assurance is not required on bids under \$150,000.

OR COMPARABLE  
INSURANCE  
BONDING

25%



STAGED

6.2 Tender Form Requirements

- .1 The bidder, in submitting the Tender, agrees to complete the Work by the date indicated in the Contract Documents, but may suggest a revision to the Contract Time.

6.3 Tender Signing

- .1 The Tender shall be signed under seal by the bidder.
- .2 Sole Proprietorship: Signature of sole proprietor in the presence of a witness who shall also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
- .3 Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" against each signature. Affix seal against each signature.
- .4 Limited Company: Signature of all duly authorised signing officers in their normal signatures. Insert the officer's capacity in which the signing officer acts against each signature. Affix the Corporate seal. If the tender is signed by officials other than the President and Secretary of the company or the President-Secretary-Treasurer of the company, a copy of the by-law resolution of the Board of Directors authorising them to do so must also be submitted with the tender in the tender envelope.
- .5 If the bidder is a joint venture, each party to the joint venture shall execute the Tender under seal in the manner appropriate to such party.

6.4 Appendices to Tender Form

- .1 Appendix "A" - Contract Documents: Include a complete listing of all documents and information issued by which the Tender price was derived. Complete listing as scheduled.
- .2 Appendix "B" - Subcontractors: Include the names of all Subcontractors and the portion of the Work the bidder will require them to perform.
- .3 Appendix "C" - Unit Prices: Cost per unit of work as specified.
- .4 Appendix 'D' – Alternative Prices: Not included in this contract.



- .5 Appendix 'E' – Separate Prices: Not included in this contract
- .6 Verification of Conditions.

## PART 7 OFFER ACCEPTANCE/REJECTION

### 7.1 Duration of Offer

- .1 Tenders shall remain open to acceptance and shall be irrevocable for a period of ninety (90) days after the bid closing date.

### 7.2 Acceptance of Offer

- .1 The Owner reserves the right to accept or reject any or all offers and to accept any offer it considers advantageous. The lowest or any offer may not necessarily be accepted.
- .2 After acceptance by the Owner, the Owner will issue to the successful bidder, a written Tender Acceptance.



- .4 Prior to commencing Work, deliver to the Owner, the following:
  - .1 Certificates of Insurance requested by the Contract Documents.
  - .2 Performance and Labour and Materials Payments Bonds.
  - .3 Certificate of good standing with Worker's Compensation Board.
  - .4 Name of the repair materials to be used and the name of the manufacturer.

- END OF SECTION -

# Stipulated price bid

Project: EXTERIOR BUILDING MAINTENANCE

Strata LMS 1389 -- The Willows  
1103 & 1121 Howie Ave.  
Coquitlam, BC

Project No: CAL-1167

**STIPULATED PRICE BID**

**Project Number:** CAL 1167

**Project:** EXTERIOR BILDING MAINTENANCE

**Located At:** 1103 & 1121 Howie Ave., Coquitlam, BC

**Submitted To:** Strata LMS 1389 – The Willows  
Owner

**Bidder:** \_\_\_\_\_

**Legal Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **Province:** \_\_\_\_\_ **Postal Code:** \_\_\_\_\_

**Bid Price**

Having examined the Bid Documents as listed in Appendix "A" to this Stipulated Price Bid, and Addenda No. - to No. - inclusive, all as issued by:

**Pacific quorum Properties Inc.**, 430 – 1200 w. 73<sup>rd</sup> Ave., Vancouver, BC V6P 6G5  
(Consultant)

and having visited the Place of the Work; we hereby offer to enter into a Contract to perform the Work required by the Bid Documents for the stipulated price of: \_\_\_\_\_

\_\_\_\_\_ Dollars

(\$ \_\_\_\_\_) in Canadian funds, which price excludes Value Added Taxes.

**Interest**

Should either part fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest at **Four** percent (4%) per annum above the bank rate on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The bank rate shall be the rate established by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to the chartered banks.

## Declarations

We hereby declare that:

- (a) We agree to perform the Work in compliance with the required completion schedules stated in the Bid Documents, or if no schedule is stated, to attain Substantial Performance of the Work within 6 weeks from commencement of the Work;
- (b) no person, firm or corporation other than the undersigned has any interest in the Bid or in the proposed Contract for which this Bid is made;
- (c) this Bid is open to acceptance for a period of 90 days from the date of bid closing.

## Signatures

SIGNED AND SUBMITTED for and on behalf of:

\_\_\_\_\_  
*name of bidder*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

**Witness**

\_\_\_\_\_  
*signature*

\_\_\_\_\_  
*name and title of person signing*

Date: \_\_\_\_\_

N.B. Where legal jurisdiction or Owner requirement calls for:

- (a) proof of authority to execute this Bid; attach such proof of authority in the form of a certified copy of a resolution naming the representative(s) authorized to sign this Bid for and on behalf of the Corporation or Partnership; or
- (b) the affixing of a corporate seal, this Bid should be properly sealed.

Project Number: CAL-1167

Project: EXTERIOR BUILDING MAINTENANCE -- The Willows  
1102 & 1121 Howie Ave.  
Coquitlam, BC

Bidder: \_\_\_\_\_

#### LIST OF BID DOCUMENTS

The following is the list or description of the Bid Documents referred to in the Bid for the above named Project:

- . Agreement Form Between Owner and Contractor
- . Definitions
- . The General Conditions of the Stipulated Price Contract

		Pages
DIVISION 00		
00100	Instructions to Bidders	8
	Bid Forms:	
	CCDC #10	3
	Appendix 'A'	1
	Appendix 'B'	1
	Appendix 'C'	1
	Appendix 'D' (not applicable)	1
	Appendix 'E' (not applicable)	1
	Verification of Conditions	1
	Agreement Forms:	
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	CCDC #2	2
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DIVISION 01		
01001	General Requirements	8
DIVISION 02		
02060	Demolition	2
DIVISION 06		
06101	Rough Carpentry	3
DIVISION 07		
07460	Fibre Cement Siding	3
07512	PVC Balcony Deck Membrane	4
07620	Metal Flashing & Trim	4
07900	Sealants	3
DIVISION 08		
08530	Vinyl Windows & Doors	15



Project Number: CAL-1167

**Project:** EXTERIOR BUILDING MAINTENANCE-- The Willows  
 1103 & 1121 Howie Ave.  
 Coquitlam, BC

**Bidder:** \_\_\_\_\_

## LIST OF UNIT PRICES

The following are our Unit Prices for the units of work listed hereunder. The Unit Prices apply to performing the units of work only during the time scheduled for such work in the project schedule. These prices do **NOT** include Value Added Taxes.

Unit of Work	Unit Price (\$)	
	Addition	Deletion
1. 2 x 4 studs, 1 unit = 1 lin. ft.	\$ /lin. ft.	
2. 2 x 10 joists, 1 unit = 1 lin. ft.	\$ /lin.ft.	
3. 3/8" plywood sheathing, 1 unit = 1 sq. ft.	\$ /sq. ft.	

*(If Appendix 'C' is not used, put 'Not Applicable' and initial the bottom of the page)*

Appendix 'D' to Stipulated Price Bid

Project Number: CAL-1167

**Project:** EXTERIOR BUILDING MAINTENANCE – The Willows  
1103 & 1121 Howie Ave.  
Coquitlam, BC

**Bidder:** \_\_\_\_\_

**ALTERNATIVE PRICES**

The following are prices for the alternative work listed hereunder. Such alternative work and amounts are not included in our Bid Price. These prices for the alternative work do **NOT** include Value Added Taxes.

Description of Alternative Work	Effect on Stipulated Price (\$)	
	Addition	Deletion
NOT APPLICABLE		

*(If Appendix 'D' is not used, put 'Not Applicable' and initial the bottom of the page)*



Project Number: CAL-1167

Project: EXTERIOR BUILDING MAINTENANCE – The Willows  
1103 & 1121 Howie Ave.  
Coquitlam, BC

Bidder: \_\_\_\_\_

**SEPARATE PRICES**

The following are our Separate Prices for the work listed hereunder. Such work and amounts are not included in our Bid Price. The Separate Prices do **NOT** include Value Added Taxes.

Description of Separate Price Work	Separate Price Amount \$
NOT APPLICABLE	

*(If Appendix 'E' is not used, put 'Not Applicable' and initial the bottom of the page)*

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EXTERIOR BUILDING MAINTENANCE

The Willows

1103 & 1121 Howie Ave.

Coquitlam, BC

Project No. CAL-1167

Verification of Conditions

2010.02.19

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VERIFICATION OF CONDITIONS

The following is to be filled out, signed by the appropriate persons and included with submittal of Tender.

The Contractor's Representative has familiarized himself with the work to be done; job site conditions; verified measurements; access to the areas, etc.

DATE OF INSPECTION:

\_\_\_\_\_

CONSTRUCTION COMPANY NAME:

\_\_\_\_\_

SIGNATURE OF  
COMPANY REPRESENTATIVE:

\_\_\_\_\_

OWNER'S REPRESENTATIVE:

\_\_\_\_\_

1 Summary of Work

- .1 Requirements Include:
  - .1 Title: **Exterior Building Maintenance**, Strata LMS 1389 – the Willows, 1103 & 1121 Howie Ave., Coquitlam,, BC.
  - .2 Description of work: Furnish all labour, materials and plant necessary to perform the demolition and disposal, surface preparation, siding replacement, and all related work as specified herein.
  - .3 Contract method: Stipulated Price, CCDC No. 2 (1994).
- .2 **The work is to be done in stages over a two (2) year period.** Each face of each building will be considered as one stage. The work generally consists of removing and replacing the wood siding with a rainscreen cement board cladding system; removing & replacing windows; installing new sill membranes & head flashings; replacing deteriorated framing & sheathing; replacing damaged insulation; replacing all balcony membranes; repairing any structural issues that exist on balcony areas; installing new balcony railings; installing new floor drains and liquid applied membrane to patios; installing sealants; repairing sloped metal roofing:

DEMOLITION & CARPENTRY

- .1 Remove all rotten or damaged sheathing, framing, balcony joists and dispose as per Section 02060 – *Demolition* of these specifications. Replace with new. Provide Unit Prices in Appendix 'C'
- .2 Remove wood cladding and dispose.

SIDING

- .1 Remove all wood siding & dispose as per Section 02060 – *Demolition* of these specifications.
- .2 Install new Rainscreen wall assembly using Hardiplank for the cladding material.

WINDOWS

- .1 Remove all windows and patio doors and dispose. Install new vinyl windows and doors.

CAULKING

- .1 Install new caulking at all window & door frames.
- .2 Install caulking at all cladding corners.
- .3 Ensure all surfaces that are to receive new caulking are primed adequately as per Section 07900 – *Sealants* of these specifications.
- .4 Ensure all caulking joints have a proper 3-point adhesion (if a joint is not present then apply a heel bead).
- .5 Ensure all joints and seals are properly tooled with clean, straight lines. Sloppy workmanship will be rejected.

FLASHINGS

- .1 Remove head flashings on windows, and re-install providing positive slope and end dams. Repair any rot as per Carpentry Section.

BALCONIES

- .1 Remove existing membrane, replace any plywood decking where moisture content exceeds 15%, remove & replace any rotted balcony joists. Provide Unit Prices in Appendix 'C'. Balconies with newer membranes will not require replacement.
- .2 Remove balcony walls and install aluminum front-mounted railings. The railing supplier is to provide railing shop drawings, signed and sealed by a professional engineer.

PLAZA DECK WATERPROOFING

- .1 Remove base flashings and concrete 12" away from wall.
- .2 Remove existing failed waterproofing to clean substrate.
- .3 Cut a ¼" deep groove 8" from wall
- .4 Apply new waterproofing membrane on the deck and wall including protection board.
- .5 Re-install concrete or pavers.

2 Project Co-ordination

- .1 Co-ordinate progress of the Work, progress schedules, submittals, use of site, temporary utilities, construction facilities, and closeout procedures.

- .2 Maintain on site at all times during construction in a clean, dry and legible condition, one copy of:
  - .1 Contract Drawings.
  - .2 Specifications.
  - .3 Addenda.
  - .4 Change Orders and other modifications to the Contract.
  - .5 Reviewed shop drawings, product data, and samples.
  - .6 Field test records.
  - .7 Inspection certificates.
  - .8 Manufacturer's certificates.
- .3 The Contractor carrying out the outlined repairs agrees to the following conditions.
  - .1 The contractor is to furnish a crew on site consisting of a minimum of (4) four qualified tradesmen during all phases of the work excluding Section 07620 *Metal Flashing and Trim* and Section 07900 *Sealants*.
    - .1 The minimum ratio of qualified Journeymen to Apprentices/Labourers on site is to be (1) one Journeyman to (2) two apprentices/Labourers. The minimum ratio of Apprentices to Labourers is to be (1) one Apprentice to (1) one Labourer.
    - .2 Technical Qualifications (TQ) with 5 years direct experience will be considered equivalent to journeyman, and 5 years direct experience equivalent to an Apprentice.

### 3 Cutting and Patching

- .1 Approvals
  - .1 Submit written request in advance of cutting or alteration which affects:
    - .1 Structural integrity of any element of Project.
    - .2 Integrity of weather-exposed or moisture-resistant elements.
    - .3 Efficiency, maintenance, or safety of any operational element.
    - .4 Visual qualities of sight-exposed elements.
    - .5 Work of Owner or separate contractor.
- .2 Inspection
  - .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

- .2 After uncovering, inspect conditions affecting performance of work.
  - .3 Beginning of cutting or patching means acceptance of existing conditions.
- .3 Execution
  - .1 Perform cutting, fitting, and patching to complete the Work.
  - .2 Remove and replace defective and non-conforming work.
  - .3 Perform work to avoid damage to other work.
  - .4 Prepare proper surfaces to receive patching and finishing.
  - .5 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.
  - .6 Restore work with new products in accordance with Contract Documents.
  - .7 Fit work watertight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
  - .8 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.
- .4 Samples
  - .1 Submit for review, samples in duplicate as requested in respective specification Sections.
  - .2 Deliver samples prepaid to Consultant's business address.

#### 4 Schedule

- .1 Schedules Required.
  - .1 Construction Progress Schedule.
  - .2 Submittal Schedule for Shop Drawings, Product Data and Samples.
  - .3 Cash Allowance Schedule for purchasing products.
- .2 Format
  - .1 Format for listings: Chronological order of start of each item of work.
- .3 Submission
  - .1 Submit initial schedules within 7 days after award of Contract.
  - .2 Consultant will review schedule and return reviewed copy within 7 days after receipt.

- .3 Resubmit finalized schedule within 7 days after return of reviewed copy.
- .4 Notify the consultant in writing of any delays to the project completion.

5 Quality Control

- .1 Inspection
  - .1 Refer to GC2.3.
  - .2 Inspection will be carried out by CALYSTA CONSULTING. Cost of inspection service is to be paid by the Owner directly, and not to be included in this Contract.
  - .3 Advise CALYSTA CONSULTING of start of work, a minimum of 2 days/48 hours prior to commencement of work.
  - .4 Any work completed by the Contractor without proper advisement to CALYSTA CONSULTING of commencement of work, for any phase of the work, shall be rejected, removed and replaced.
  - .5 Each phase of the work is to be approved in writing by the Inspector and all deficiencies are to be corrected before proceeding to the next phase of application.

6 Construction Facilities and Temporary Controls

- .1 Installation/Removal
  - .1 Provide construction facilities and temporary controls in order to execute work expeditiously.
  - .2 Remove from site all such work after use.
- .2 Hoarding
  - .1 Erect hoarding as necessary to protect public, workers, public and private property from injury or damage.
- .3 Weather Enclosures/Temporary Membranes
  - .1 Provide weather tight closures to openings, tops of shafts and other openings in roofs.
- .4 Dust
  - .1 Localize dust generating activities, protect workers, finished areas of Work and public.
- .5 Sanitary Facilities
  - .1 No interior access to the building will be permitted. Sanitary facilities must be provided by Contractor.

- .6 Temporary Power
  - .1 Owner will provide temporary power required during construction for temporary lighting and operating of power tools, to maximum supply of [120] volts [30] amps.
- .7 Fire Protection
  - .1 Provide and maintain on each roof area where open flame is used, a 10 lb. Fully charged fire extinguisher, 'ABC' Type, during performance of Work.
- .8 Equipment/Tool/Materials Storage
  - .1 Provide and maintain, in clean and orderly condition, storage of tools, equipment and materials. Materials to be kept covered and protected from the weather.
  - .2 Locate materials on site in manner to cause least interference with work activities.
- .9 Project Cleanliness
  - .1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.
  - .2 Remove waste material and debris from site [and deposit in waste container] at end of each working day.
  - .3 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

## 7 Material and Equipment

- .1 Storage, Handling and Protection
  - .1 Handle and store Products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
  - .2 Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact.
  - .3 Store products subject to damage from weather in weatherproof enclosures.
- .2 Manufacturer's Instructions
  - .1 Unless otherwise indicated in specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures



provided with Products. Obtain written instructions directly from manufacturers.

- .2 Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.
- .3 Improper installation of erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and reinstallation at no increase in Contract Price.

.3 Workmanship

- .1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
- .2 Do not employ any unfit person or anyone unskilled in their required duties.
- .3 Decisions as to quality or fitness of workmanship in cases of dispute rest solely with Consultant, whose decision is final.
- .4 Contractor shall employ workmen that have a history of applying products specified.
- .5 Contractor shall have manufacturer's approved applicator status prior to bidding this project.

8 Project Closeout

.1 Documents

- .1 Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers, and manufacturers.
- .2 Submit material prior to final Application for Payment.
- .3 Provide warranties and bonds fully executed and notarized.
- .4 Execute transition of Performance and labour and Materials Payment Bonds to warranty period requirements.
- .5 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.
- .6 Consultant will issue a final change order reflecting approved adjustments to Contract Price not previously made.

- .2 Inspection/Takeover Procedures
  - .1 Prior to application for certificate of Substantial Performance, carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition for occupancy. Notify Owner in writing, of satisfactory completion of the Work and request an inspection.
  - .2 During Owner inspection, a list of deficiencies and defects will be tabulated. Correct same.
- .3 When Owner considers deficiencies and defects have been corrected and it meets the requirements of Contract has been performed, make application for certificate of Substantial Performance.

-END OF SECTION-

**PART 1 – GENERAL**

1.1 Existing Conditions

- .1 Take over all areas to be repaired based on their condition at time of examination prior to project commencement.

1.2 Protection

- .1 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, adjacent grades and parts of existing building to remain. Make good damage and be liable for injury caused by demolition.
- .2 Prevent debris from blocking surface drainage systems which must remain in operation.

**PART 2 - PRODUCTS**

2.1 Materials

- .1 Not applicable.

**PART 3 - EXECUTION**

3.1 Work

- .1 Dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.
- .2 All demolished material is to be carefully contained and removed by prefabricated chute and is to empty directly into dumpster.
- .3 Demolished materials to be deposited in containers and removed from site as soon as possible. Container locations to be in pre-approved areas only. Keep general areas clean at frequent intervals. Check with Property Manager to establish set up areas. Comply with Fire Marshall's requirements for set up.
- .4 Carefully remove materials, store, protect and re-install any items interfering with work, using qualified tradesmen.

3.2 Safety Code

- .1 Unless otherwise specified, carry out demolition work in accordance with "Safety Measures at Construction and Demolition Sites", Part 8, NBC 1995.

3.3 Demolition

- .1 Demolish items as indicated.
- .2 Remove existing equipment, services, and obstacles where required for re-finishing or making good of existing surfaces, and replace as work progresses.
- .3 Remove and Dispose of:
  - .1 All wood rot in addition to the criteria listed in Section 01001 – *General Requirements*.
  - .2 All deteriorated flashings and accessories.
  - .3 All existing cladding.
  - .4 All existing windows.
  - .5 Balcony membranes.
  - .6 Rotted balcony rail caps.
- .4 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors from exterior elements at all times.

- END OF SECTION -

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## **PART 1 - GENERAL**

### **1.1 Related Work**

- |    |                          |               |
|----|--------------------------|---------------|
| .1 | General Requirements:    | Section 01001 |
| .2 | Demolition:              | Section 02060 |
| .3 | Fibre Cement Siding:     | Section 07460 |
| .4 | Metal Flashing and Trim: | Section 07620 |

### **1.2 Source Quality Control**

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.

### **1.3 Unit Price**

- .1 Provide a unit price for replacing any rotten balcony framing, sheathing, posts, etc. as specified in Appendix 'C'.

## **PART 2 - PRODUCTS**

### **2.1 Lumber Material**

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
  - .1 CSA 0141-05, "*Softwood Lumber*".
  - .2 NLGA *Standard Grading Rules for Canadian Lumber*, 2004.
- .2 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:
  - .1 Board sizes: "Standard" or better grade.
  - .2 Dimension sizes: "Standard" light framing or better grade.
  - .3 Post and timbers sizes: "Standard" or better grade.

### **2.2 Panel Materials**

- .1 Douglas fir plywood (DFP): to CSA 0121-08, "*Douglas Fir Plywood*", standard construction.
- .2 Canadian softwood plywood (CSP): to CSA 0151-09, "*Canadian Softwood Plywood*", standard construction.

2.3 Fasteners

- .1 Nails and spikes: to CSA B111-1974(R2003), "*Wire Nails, Spikes and Staples*".
- .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.
- .4 Galvanizing: to CSA G164-M92 (R2003), "*Hot Dip Galvanizing of Irregularly Shaped Articles*", use galvanized fasteners for exterior work and pressure preservative treated lumber.

**PART 3 - EXECUTION**

3.1 Construction

- .1 Comply with requirements of the latest edition of the B.C. Building Code Part 9, supplemented by the following paragraphs.

3.2 Existing Damage

- .1 Remove and replace any rotten or damaged framing siding or sheathing.
  - .1 Consultant must be made aware of amounts of framing & sheathing repair on a daily basis or extras to the contract will not be allowed.
  - .2 Check moisture contents of balcony plywood. Remove and replace all plywood with moisture contents 15% or higher.

3.3 Furring and Blocking

- .1 Install furring and blocking as required to space-out and support metal flashings, insulation stops, facings, fascia, and other work as required.
- .2 Align and plumb faces of furring and blocking to tolerance of 1:600.

3.4 Nailing Strips, Grounds and Rough Bucks

- .1 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

3.5 Curbs, Fascia Backing

- .1 Not applicable.

3.6 Fasteners

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

-END OF SECTION-

**PART 1 - GENERAL**

1.1 Related Work

- .1 Liquid Applied Deck Coating                      Section 07570
- .2 Sealants    Section 07900

1.2 Description of Work

- .1 Provide all labour, material, equipment & supervision to prepare and apply cold-applied waterproofing membrane system.

1.3 Qualifications

- .1 Contractor performing waterproofing work shall demonstrate the following qualifications:
  - .1 Written certification from the system manufacturer that he is presently licensed applicator.
  - .2 Three years directly applicable experience, minimum.

1.4 Delivery, Storage And Handling

- .1 Deliver and store all materials in original wrapping and containers with manufacturer's seals and labels intact. Protect materials from all types of damage, per manufacturer's instructions.

1.5 Protection

- .1 Provide and maintain all legal and necessary guards, railings and warning signs during the execution of the work to fully protect all persons and owners from loss, damage, death or injury through the neglect or carelessness of the contractor or the handling of equipment. Ensure that employees have WHMIS training for materials being handled on site and that material safety data sheets for all materials being used are available for use and inspection on site.

1.6 Field Review

- .1 Provide adequate notice to the consultant to ensure that he has the opportunity to delineate repair areas with the contractor and to review all prepared areas prior application of waterproofing membrane.

1.7 Project Conditions

- .1 Ensure that substrate surfaces are dry, and ambient air temperatures are 5° C to 30° C at application time and remain above 5° C for at least 24 hours after application. Ensure that frost or frozen surfaces are thawed and dry.



- .2 Do not apply coatings if snow, rain, fog and mist is anticipated within 12 hours after application. Allow surfaces to attain temperature and conditions specified before proceeding with coating application.
- .3 Do not apply over sealant joints, control joints, or other materials that will be affected by solvent.
- .4 Avoid application when inclement weather is present or imminent.
- .5 Do not apply membrane to reinforcing bars or to wet or contaminated surfaces.

## **PART 2 - PRODUCTS**

### 2.1 Elastomeric Waterproofing Membrane

- .1 One-component, moisture-curing, bitumen-modified polyurethane, elastomeric waterproofing membrane for exterior below-grade, between slab applications or cavity wall construction.
  - .1 For horizontal applications: Sonneborn HLM5000 SL or approved equal.
  - .2 For vertical application: Sonneborn HLM 5000 T (trowel grade) or approved equal.

### 2.2 Accessories

- .1 Protection board: 6 mm protection board such as Sonneborn Protection Course II. Rigid insulation is acceptable protection board.

### 2.3 Drainage Mat

- .1 Sonoshield DBS Drain Board System or approved equal.

## **PART 3 - EXECUTION**

### 3.1 Preparation

- .1 Mechanically remove existing membrane from concrete surface. ICRI-CSP 4 – 6 is an acceptable profile.
- .2 Seal dynamic cracks in concrete.
- .3 Patch voids and deep depressions in substrate with appropriate patching material before applying waterproofing membrane.

- .4 Before applying waterproofing membrane, dam drains and drain openings.
- .5 Carefully work material over irregular concrete to avoid pinholes and holidays.
- .6 Remove dust, dirt and other contaminants just before or during applications. Ensure surfaces are dry at time of application.

### 3.2 Prestripping

- .1 Before applying final membrane, seal joints, cracks and openings around protrusions by caulking or prestripping with a preliminary coating of waterproofing membrane applied with trowel or stiff bristled brush. Allow drying overnight before applying final membrane.
- .2 When final membrane is applied, verify overall thickness over joints and cracks, at coves, and around penetrations of approximately 100 wet mils (2.5 mm) on standard system, or approximately 200 wet mils on high build system.
- .3 Static joints and cracks: Fill joints and cracks less than 1/16 inch (1.6 mm) by prestripping. Apply material so it both fills and overlaps joint or crack to 100 mm width on each side.
- .4 Working or expansion joints: Seal joints over 1/8 inch (3 mm) with joint sealant. Rout moving joints less than 1/8 inch (3mm) to 1/8 inch (3 mm) minimum and fill with joint sealant. Prevent waterproofing membrane from adhering to joint sealant, which could cause sealant or membrane failure, by applying coat of wax or Teflon tape over cured sealant and then prestripping.
- .5 Metal: Clean metal to bright metal by wire brush or sandblast. Prime with quality rust-inhibiting metal primer before application of waterproofing membrane.
- .6 Vent, drain pipe, and post penetrations:
  - .1 Clean metal surfaces to bright metal and prime with quality rust-inhibiting metal primer. Remove dust, debris and other contaminants from voids. Seal with appropriate joint sealers.
  - .2 Seal openings exceeding 1/8 inch (3 mm) with joint sealant. Next, prestripe to 100 mm minimum width on base slab and continue up penetration to height of top-coarse wearing

surface.

### 3.3 Application – Standard System

- .1 For horizontal applications, empty contents of pail and spread immediately to ensure workability. Best results are obtained by marking off 125 square foot (11.6 square m) areas and evenly spreading contents of pail with rubber-edged notched squeegee. Repeat above procedure until entire surface is covered.
- .2 For vertical applications, apply by trowel, or spray at rate of 25 square feet per gallon (0.6 square m per L). Best results are obtained by marking off 125 square foot (11.6 m) areas and evenly applying contents of pail.
- .3 Verify applied thickness with wet mil gauge as work progresses.

### 3.4 Installation of Protection Course

- .1 Install tightly butted protection board as soon as possible following cure of membrane. Protect membrane from traffic before placement of protection board. Ensure waterproofing membrane has cured before installation of topping.
- .2 Where sand or soil is to be applied over the 6 mm protection board, cover butt joints with flexible tape.

### 3.5 Curing

- .1 Appreciable properties develop within 24 to 48 hours at 25° C and 50% relative humidity. Protect waterproofing membrane from traffic during curing.
- .2 Drainage and protection: For protection during backfill and where hydrostatic pressure is anticipated, use appropriate drain board system.

### 3.4 Field Quality Control

- .1 Site tests: Test integrity of cured membrane on horizontal surface by damming entire area and flooding with water to minimum depth of 50 mm. Allow water to stand for 24 – 48 hours. Visually inspect bottom surface for water penetration. If repairs are necessary, drain area and allow drying before reapplying waterproofing membrane. After reapplication, test area again for membrane integrity. Repeat procedure until no leaks appear in membrane.

3.5 Cleaning and Protection

- .1 Remove temporary coverings and protection from adjacent work areas. Clean up areas not to be coated of over-spray and droppings. Remove construction debris from project site.

- END OF SECTION -

## **PART 1 - GENERAL**

### **1.1 Related Work**

- .1 Rough Carpentry                      Section 06101
- .2 Metal Flashings & Trim              Section 07620

### **1.2 Description**

- .1 The work of this Section includes the installation of fibre cement lap siding panels to specified exterior walls as indicated on the drawings and in the specifications including trim, moulding and accessories.

### **1.3 Submittals**

- .1 Product Data: manufacturer's data sheets on each product to be used including:
  - .1 Preparation instructions and recommendations.
  - .2 Storage and handling requirements and recommendations.
  - .3 Installation methods.
- .2 Shop Drawings: Submit shop drawings in accordance with Section 01001.
- .3 Selection samples: for each finish product specified, two complete sets of colour chips representing manufacturer's full range of available colours and patterns.
- .4 Verification samples: For each finish product selected, two samples, minimum size 4 by 6 inches (100 x 150 mm) representing actual product, colour and patterns.

### **1.4 Delivery, Storage & Handling**

- .1 Store products in manufacturer's unopened packaging until ready for installation.
- .2 Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- .3 Store and dispose of solvent-based materials, and

materials used with solvent based materials, in accordance with requirements of local authorities having jurisdiction.

1.5 Project Conditions

- .1 Maintain environmental conditions (temperature, humidity and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

**PART 2 - PRODUCTS**

2.1 Materials

- .1 Fibre Cement Cladding/Siding: lap siding horizontal rectangular profile 63@ 114mm (4.2") exposure, max. length 3660 mm (12'). Colour to be specified by owners.
  - .1 Acceptable material: Hardiplank lap siding, 63@ 114mm (4.2") exposure, smooth finish.
- .2 Fasteners:
  - .1 BLIND NAIL:
    - .1 Siding nail (0.089" shank x 0.221" HD x 2" long)
    - .3 Roofing nail [11 ga] (0.121" shank x 0.371" HD x 1.25" L)
  - .2 FACE NAIL: (All Lap Products)
    - .1 Corrosion Resistant Nails (galvanized or stainless steel) 6d (0.118" shank x 0.267" HD x 2" long)
    - .2 Siding nail (0.089" shank x 0.221" HD x 2" long)
- .3 Caulking: Use high quality paintable urethane based caulking that conforms to ASTM C834 or ASTM C920 to seal all butt joints.

### **PART 3 - EXECUTION**

#### **3.1 Installation**

- .1 Install siding panels and accessories according to manufacturer's written instructions.

#### **3.2 Finishing**

- .1 Finish unprimed siding with a minimum of one coat high quality, alkali resistant primer and one coat of either 100 percent acrylic or latex or oil based, exterior grade topcoat or two coats high quality alkali resistant 100 percent acrylic or latex exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.
- .2 Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

- END OF SECTION -

## **PART 1 - GENERAL**

### **1.1 Related Work**

- |    |                         |               |
|----|-------------------------|---------------|
| .1 | Demolition              | Section 02060 |
| .2 | Rough Carpentry         | Section 06101 |
| .3 | Metal Flashings & Trim: | Section 07620 |
| .4 | Sealants                | Section 07900 |

### **1.2 Reference Standards**

- .1 Do work in accordance with applicable manufacturer's standards and specifications.

### **1.3 Quality Assurance**

- .1 Applicators shall have been trained and certified by the manufacturer for installation of its products.
- .2 Prior to commencement of the work, the consultant, the contractor, the waterproofing subcontractor, and the manufacturer shall meet on site to review materials, details and schedule.

### **1.4 Submittals**

- .1 Upon notice of award the contractor is to submit the name of the manufacturer and the material to the Consultant for approval to ensure compliance with the described standards.
- .2 No change to the original Contract Price will be allowed for upgrading materials to meet the specified standards.
- .3 Colour samples of materials are to be submitted to the consultant for approval.

### **1.5 Warranties**

- .1 Upon completion of the contract, the contractor shall provide a non-prorated five (5) year Labour and Material Warranty for the full value of the contract stating that the waterproofing membrane is to remain leak proof for a 5-year period, starting from the date of final inspection, and that all deficient waterproof membrane and components will be replaced at no cost to the owner. This warranty is to be issued on company letterhead, signed and notarized



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by all the officers of the company. Any cost attached to this is to be included in the contract price.

- .2 Subcontractors to supply written warranties upon completion of the project.

## **PART 2 - PRODUCTS**

### **2.1 Materials**

- .1 Membrane must be certified by either C.C.M.C., I.T.S. (Intertek Testing Services/Warnock Hersey), or I.C.B.O. (International Conference of Building Officials), or another testing service acceptable to the consultant.
- .2 PVC Membrane:
  - .1 Polyvinyl chloride (PVC) sheet membrane with a vinyl back and reinforced with a polyester fabric net.
  - .2 Thickness to be minimum 60 mils over living space and 40 mils over un-insulated balcony deck areas.
  - .3 Width to be 72".
  - .4 Approved materials: Dec-K-ing Roofseal, or approved equivalent.
  - .5 Colour to be selected by owner from manufacturer's complete range of colours.

### **2.2 Accessories**

- .1 Adhesives, sealants, joint filler as approved by the manufacturer.
- .2 Deck edge flashing to be 26 gauge minimum zinc coated complete with factory applied PVC on exposed surfaces.
- .3 Drains and scuppers to be PVC dipped.

## **PART 3 - EXECUTION**

### **3.1 Scope of Work**

- .1 Balconies: New vinyl membrane is to be installed over new plywood sloped to drain.

3.2 Workmanship

- .1 Apply membrane over clean, dry and smooth surfaces in accordance with the manufacturer's instructions and specifications.

3.3 Preparation

- .1 Fill all joints, knots, holes and imperfections in the plywood substrate with compatible filler prior to membrane application. Ensure the filler is completely dry before adhesive applications.

3.3 Membrane Application

- .1 Install vinyl in continuous sheets with no seams.
- .2 Membrane to extend 8" up adjacent wall and 8" past, above and below flashing terminations.
- .3 Adhesive to be applied in accordance with manufacturer's specifications. Particular attention shall be given not to apply adhesives to any area to be heat welded.
- .4 Adhere membrane to achieve a smooth surface, free of any bubbles, wrinkles or imperfections.
- .5 Seams to include ¾" minimum overlap and to be heat welded in 2 passes.
- .6 Membrane to be heat welded to flashings, drains and scuppers.
- .7 All inside corners to be folded and not cut.
- .8 Install a continuous fastening bar located at the top edge of the membrane to secure the membrane and prevent slippage. Screws through retaining bar must be installed at 300 mm (12") o.c. unless approved otherwise.

3.4 Sheet Metal Flashing

- .1 Upon completion of membrane installation, install new 26 gauge prefinished sheet metal flashing on all vertical surfaces with PVC membrane.

3.5 Protection

- .1 Protect completed membrane from construction traffic with light plywood or satisfactory substitute.

3.6 Cleaning

- .1 Clean area and remove all debris upon job completion.
- .2 Subcontractor to supply cleaning and maintenance instructions.

- END OF SECTION -

**PART 1 - GENERAL**

**1.1 Work Included**

- .1 Provide all labour, materials, equipment and supervision to prepare the concrete decks and vertical surfaces, detail all cracks and joints, patch perimeter and voids and install a traffic deck coating system to areas designated.
- .2 Crack detailing to include crack face surface preparation and installation of a flexible waterproof sealant.

**1.2 Related Sections**

- |    |                             |               |
|----|-----------------------------|---------------|
| .1 | Fluid Applied Waterproofing | Section 07140 |
| .2 | Sealants                    | Section 07900 |

**1.3 Reference Standards**

- .1 ASTM C957-87 Standard specification for high-solids content, cold liquid-applied elastomeric waterproofing membrane with integral wearing surface.
- .2 ASTM D412-87 Standard test methods for rubber properties in tension.
- .3 ASTM D4541-89 Standard test method for pull-off strength of coatings using portable adhesion testers.

**1.4 Site Examination**

- .1 Bidders shall visit the site and examine the slab surfaces to receive coating. Bid shall include all costs of surface preparation and patching of rough surfaces. No extras for surface preparation or additional coating material will be entertained after bid closing.

**1.5 Performance Requirements**

- .1 The deck coating system shall satisfy the following requirements for the duration of the warranty:
  - .1 The system shall be totally waterproof, flexible and thermally compatible with the substrate under applicable service conditions.

- .2 The system shall not allow moisture penetration at termination details, drains, upturns or splices.
- .3 The system shall remain resistant under its intended use, wet or dry.
- .4 The system shall exhibit zero chloride permeability when tested in accordance with AASHTO T-227 test procedure for the rapid determination of the chloride permeability of concrete.
- .5 The system shall withstand active cyclical crack movements to a maximum of 1.5 mm and remain waterproof.
- .6 Adhesion of the coating, primer, or surface patching to the concrete substrate shall meet or exceed 1.0 MPa.
- .7 Adhesion of all layers of the system to each other shall meet or exceed 1.0 MPa.
- .8 The system shall not debond, crack or wear excessively. Loss of aggregate in any area will constitute failure.
- .9 The coating system shall not support combustion.

#### 1.6 Submittals

- .1 The system manufacturer shall submit certificates confirming the following:
  - .1 Balcony coating system Applicator is presently a licensed Applicator of the Deck Coating system.
  - .2 Applicator has installed a minimum of 500 m<sup>2</sup> of the system.
  - .3 That a minimum of 7500 sq. m of the system has been installed on structures of similar exposure and has performed satisfactorily.
  - .4 The system will meet the warranty requirements as specified in this section.
- .2 Applicator shall submit a letter certifying that all areas and surfaces were inspected and found satisfactory to receive the coating materials, as per the system manufacturer's requirements. Application of coating shall imply acceptance of surfaces. Any existing conditions not specified, which may affect the bonding or performance of the membrane shall be

brought to the attention of the Consultant, in writing, for resolution prior to installation of coating materials.

- .3 Bidders shall submit a 300mm x 300mm product sample indicating proposed surface finish and material thickness to be obtained on each specific application under the Contract with Bid. These samples will represent the quality of finish of completed installation.
- .4 Contractor shall provide maintenance instructions for finished surfaces prior to Substantial Performance (3 copies).

1.7 Traffic Deck Coating Acceptance

- .1 If the traffic deck coating system fails to achieve the minimum adhesion requirement as specified in Paragraph 3.5.5., the following shall apply:
  - .1 If the average of the adhesion tests is between 0.80 MPa and 0.99 MPa with no test less than 0.75 MPa, 50% of the traffic coating system price in the contract shall be withheld until system meets the minimum adhesion requirements as specified in Paragraph 3.5.5. Contractor is to pay for all testing and all costs incurred by the Owner, including Consultant's fees to prove conformance with specifications.
  - .2 If the average of the adhesion tests is less than 0.79 MPa, 100% of the traffic coating system price in the contract shall be withheld until the system meets the minimum adhesion requirements as specified in Paragraph 3.5.5. If the traffic coating system fails to conform to the requirements in Paragraph 3.5.5, the system shall be removed and replaced. All costs incurred by the Owner, including Consultant's fees, to accommodate the removal and replacement of the traffic deck coating system will be the responsibility of the Contractor.

## **PART 2 - PRODUCTS**

### **2.1 Deck coating**

- .1 The following systems are accepted based on pre-qualifications. Equivalent systems will be considered up to three days prior to tender closing.
- .2 All products used shall be aliphatic based and not degrade prematurely under exposure to sunlight (i.e. UV resistant).
- .3 Notwithstanding the pre-qualification of these systems, all systems must be bid based on the minimum criteria identified in these documents.
  - .1 SONNEBORN SONOGUARD Two-part aliphatic polyurethane, liquid applied, chemically cured with aggregate. Grey in colour.
  - .2 NEOGARD AUTO-GARD 3/2 B Odourless version only used with odourless primer.
  - .3 ADVANCED COATING TECHNOLOGY  
QUALIDECK: Two part polyurethane, liquid applied, chemically cured with graded aggregate. Grey in colour.

### **2.2 Base Coat and Wear Course Thickness**

- .1 Minimum dry film thickness of membrane base coat and strip seal to be as follows:

	mils	(mm)
.1 Sonneborn	30	(0.76)
.2 Neogard Auto-Gard 3/2	30	(0.76)
.3 Qualideck	30	(0.76)
- .2 Minimum dry film thickness of traffic coating wearcoarses, and aggregate loading shall be as follows:

	Strip Seal	Heavy
Wear Exposure -		
Minimum Thickness -	mils (mm)	mils (mm)
Aggregate Loading -	kg/sq.m.	kg/sq.m.
.1 Sonneborne	20 (0.51)	25 (0.64)
	1.70	1.0
.2 Neogard	20 (0.51)	25 (0.64)
	1.70	1.0

.3	Qualideck	20 (0.51) 0.70	25 (0.64) 1.0
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2.3 Surface Patch Materials

- .1 Products used to patch rough surfaces shall be 100% solids epoxy and shall contain no additives or fillers in resin. Coating material may be used to fill rough areas if approved by manufacturer.

**PART 3 B EXECUTION**

3.1 Environmental Requirements

- .1 Do not install coating when ambient air temperature or substrate temperature is less than 10 degrees C.
- .2 Maintain air temperatures and substrate base temperature of installation area above 10 degrees C for 12 hours before, during, and 72 hours after installation, or until materials have adequately cured.
- .3 Protect materials from moisture damage or dust contamination until adequately cured.
- .4 All working conditions shall meet the requirements of the Workers= Compensation Board of British Columbia Health and Safety Regulations. Application procedures that result in toxic fumes or flammable solvent collecting or endangering workmen or building occupants are not permitted.

3.2 Preparation

- .1 All guards, bollards, cages, etc., shall be removed and re-installed as required for application of coatings to slab surfaces unless otherwise noted on drawings.
- ..2 Preparation of deck and vertical surfaces is to be in strict accordance with the system manufacturer's recommendations, including preparation and smoothing of rough surfaces, detailing of slab cracks, joints and voids as required.



- .3 Minimum standard of deck cleaning shall be power blast, sandblast, or equal, leaving slab surfaces free of all laitance.
- .4 Minimum standard of vertical surface cleaning shall be wire brush.
- .5 Surfaces shall be cleaned of all grease and oil with an emulsifier where required.
- .6 All rough surfaces, vertical amplitude exceeding 40 mils (1.0 mm), must be ground and/or filled to provide a smooth surface.
- .7 Saw cut cracks or joints shall be straight sided and follow the extent of crack. Do not overcut beyond actual extent of crack.
- .8 Fill saw cut cracks and joints with approved sealant materials flush with slab surface. Application to be in strict conformance to manufacturer's recommendations.
- .9 Install a continuous 20 mm fillet bead of compatible caulking at the base of vertical surfaces receiving coating, prior to application of traffic coating basecoat.
- .10 Provide double application of membrane at all vertical surfaces and at cracks and joints up to 1.6 mm wide. Joints greater than 1.6 mm wide to be specially detailed. Submit details to Consultant for review.
- .11 The coating shall be turned up all vertical surfaces a minimum of 100 mm. Mask top of upturn to ensure neat straight finish to coating. All vertical surface irregularities to be patched prior to coating application.
- .12 No primer or first coat shall be applied until the surface preparation has been inspected and accepted in writing by a representative of the system manufacturer, as per Item 1.6.2.

- .13 Paint and finishes damaged by Contractor must be repaired to match existing.

### 3.3 Installation

- .1 Material quantities and placement procedures are to be strictly monitored. Perimeters of areas to receive a typical material batch or container volume are to be clearly marked prior to application to ensure uniform thickness of material
- .2 Finished surfaces shall be of uniform appearance, with no variations in light reflection, surface roughness, or ridging in sloped areas. Profiles shall be such that flow to drains is not impeded.
- .3 Ensure environmental and site conditions as recommended by the membrane manufacturer, are suitable for installation of work of this section.
- .4 Wear course aggregate type, size and distribution to be in strict conformance with manufacturer's requirements.

### 3.4 Flood Testing

- .1 Finished system to be flood tested by Contractor at the Contractor's expense, prior to Substantial completion of the Contract. Consultant and Owner at his discretion to be present during testing.
- .2 Maintain surfaces continuously wet for at least one hour.
- .3 Repair leaks and re-test.

### 3.5 Inspection and Testing

- .1 Testing to be conducted by a testing agency designated by the Consultant. Unless otherwise noted, the Owner will pay costs of inspection and testing described in this section.
- .2 Contractor shall inform Consultant 24 hours in advance of work to be performed under this section.

- .3 To confirm base coat thickness, Consultant to perform cut tests. Number of tests to be based on 1 test per 50 sq. meters of membrane, minimum.
- .4 To confirm wear course thickness and to evaluate bonding of coating to substrate, and/or coating to wear course, adhesion tests shall be performed. Number of test shall be based on 1 test per 200 sq. meters of coating, minimum. Adhesion of the coating layers to each other and to the substrate shall exceed 1.0 MPa. The average of all tests must exceed 1.0 MPa with no test less than 0.90 MPa.
- .5 Additional tests may be performed at the discretion of the Consultant to confirm in-situ material thickness and bond.
- .6 Contractor to repair waterproof system at test locations at no extra cost.

- END OF SECTION -

## PART 1 - GENERAL

### 1.1 Related Work

- |    |                       |               |
|----|-----------------------|---------------|
| .1 | General Requirements: | Section 01001 |
| .2 | Rough Carpentry:      | Section 06101 |
| .3 | Fibre Cement Siding   | Section 07460 |
| .4 | Vinyl Windows & Doors | Section 08530 |
| .5 | Sealants:             | Section 07900 |

### 1.2 Samples

- .1 Submit duplicate 50 x 50 mm samples of each type of sheet metal material, colour and finish in accordance with Section 01001, *General Requirements*.

## PART 2 - PRODUCTS

### 2.1 Prefinished Steel Sheet

- .1 0.457 mm (26 Ga.) base metal thickness, Z275 designation zinc coated steel conforming to ASTM Specification A-663/A653M-09a "Standard Specification for Steel Sheet Zinc-coated (Galvanized) or Zinc-iron Alloy-coated (Galvannealed) by the Hot Dip Process", Grade "A" with Stelco/Dofasco 5000 Series coating. Colour as selected by Consultant from manufacturer's standard range.

### 2.2 Galvanized Steel Sheet

- .1 0.457 mm (26 Ga.) base metal thickness, Z275 designation zinc coated steel conforming to ASTM Specification A-653 "Standard Specification for Steel Sheet Zinc coated (Galvanized) or Zinc-iron Alloy-coated (Galvannealed) by the Hot Dip Process", Grade "A".

### 2.3 Accessories

- .1 Isolation coating: alkali resistant Bituminous paint.
- .2 Plastic cement: to CGSB 37-GP-5Ma, "Cement, Plastic, Cutback Asphalt".
- .3 Paint products: as listed in Master Painters and Decorators Association (MPDA) Manual - Approved Products Listing.

- .4 Sealants: in accordance with Section 07900, *Sealants*, colour selected by Consultant.
- .5 Cleats: of same material and temper as sheet metal, minimum 100 mm wide. Thickness 0.61 mm.
- .6 Fasteners: of same material as sheet metal, to CSA B111-1974 (R2003), "*Wire Nails, Spikes and Staples*", ring thread, flat head roofing nails of length and thickness suitable for metal flashing application.
- .7 Washers: of same material as sheet metal, 1 mm thick with rubber packings.
- .8 Solder: to ASTM B32-08 50% tin and 50% lead.
- .9 Flux: rosin, cut hydrochloric acid, or commercial preparation suitable for materials to be soldered.
- .10 Touch-up paint: as recommended by metal flashing and trim manufacture.

#### 2.4 Fabrication

- .1 Fabricate metal flashings and other sheet metal work in accordance with applicable RCABC specifications.
- .2 Form pieces in 2400 mm (8') maximum lengths. Make allowance for expansion at joints.
- .3 Hem exposed edges on underside 12 mm. Mitre and seal corners with sealant.
- .4 Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

#### 2.5 Metal Flashings

- .1 Form flashings, copings and fascias to profiles indicated of 0.457 mm thick pre-finished, galvanized steel.

**PART 3 - EXECUTION**

3.1 Installation

- .1 Install all flashings to base, wall, cap, etc. and other sheet metal work in accordance with RCABC standards or as otherwise specified.
- .2 Use concealed fastenings except where approved before installation.
- .3 Lock end joints and caulk internally with sealant.
- .4 Provide fully caulked standing seams at all cap flashing joints 200 mm or wider.
- .5 Install flashings to profiles indicated or formed to details and accurate to size, 2400 mm maximum lengths.
- .6 Hem all exposed edges 12 mm to form a drip edge.
- .7 Provide a positive slope to wall exterior for all head type flashings.
- .8 Allow for expansion and contraction in all metal fabrications.
- .9 Provide metal clip to all cap flashings spaced at maximum of 600 mm o.c.
- .10 Install surface mounted reglets true and level, and caulk top of reglet with sealant.
- .11 Maintain a positive watershed throughout. Insert metal flashing under cap flashing and behind other substrates minimum of 38 mm to form weather tight junction.
- .12 Securely fasten metal to masonry, concrete or cladding using pre-drilled 22 x 5 mm dia. Zamac pins. Fully caulk metal/grout interface.
- .13 Metal flashings below membrane may be lapped at joints and utilize exposed fasteners.

- .14 All outside perimeter cap flashings are to completely cover all fascias or otherwise extend 25 mm past deck level.
- .15 At locations where vertical metal parapet flashing spans vertical heights of more than 12", V-break all flashings to provide additional rigidity and prevent "oil-canning".

### 3.2 Painting

- .1 In accordance with CGSB 85-GP-16M, "*Painting Galvanized Steel*".
  - .1 Prime galvanized steel prior to painting.
- .2 Paint System:
  - .1 1 coat to CGSB 1-GP-121M, "*Coating, Vinyl, Pre-treatment, for Metals (Vinyl Wash Primer)*", to new galvanized flashings.
  - .2 2 coats to CGSB 1-GP-28M, "*Paint, Exterior, Alkyd, House*".

- END OF SECTION -

## **PART 1 - GENERAL**

### **1.1 Related Work**

- |    |                          |               |
|----|--------------------------|---------------|
| .1 | Metal Flashing and Trim: | Section 07620 |
| .2 | Fibre Cement Siding      | Section 07460 |
| .3 | Vinyl Windows and Doors  | Section 08530 |
| .4 | Paint                    | Section 09900 |

### **1.2 Samples**

- .1 Submit duplicate samples of each type of material and colour to be used in accordance with Section 01001, General Requirements.

### **1.3 Environmental Conditions**

- .1 Sealant and substrate materials to be minimum 5°C.
- .2 Should it become necessary to apply sealants below 5°C, consult sealant manufacturer and follow their recommendations.

## **PART 2 - PRODUCTS**

### **2.1 Materials**

- .1 Primers: type recommended by sealant manufacturer.
- .2 Joint fillers:
  - .1 General: compatible with primers and sealants, oversized 30 to 50%.
  - .2 Polyethylene, urethane, neoprene or vinyl: extruded closed cell foam, Shore A hardness 20, tensile strength 140 to 200 kPa.
- .3 Sealants:
  - .1 Sealants for vertical and horizontal non-traffic bearing joints, to table 1, CGSB 19-GP-23, "Guide for Selection of Sealants on a Use Basis":
    - .1 Low temperature range, wet conditions, movement range to 25%: CAN2-19.13-M82, "Sealing Compound, One Component, Elastomeric, Chemical Curing".
    - .2 Approved Products: Tremco Dymeric, Sikaflex 2CNS, Sternson RC2, or approved equivalent.



- .4 Colour of sealants: As selected by Consultant from manufacturer's standard range.
- .5 Joint cleaner: xylol, methylethyleketon or non-corrosive type recommended by sealant manufacturer and compatible with joint forming materials.

### **PART 3 - EXECUTION**

#### **3.1 Preparation**

- .1 Remove dust, paint, loose mortar and other foreign matter. Dry joint surfaces.
- .2 Remove rust, mill scale and coatings from ferrous metals by wire brush or grinding.
- .3 Remove oil, grease and other coatings from non-ferrous metals with joint cleaner.
- .4 Examine joint sizes and correct to achieve depth ratio 1/2 of joint width with minimum width and depth of 6 mm, maximum width 25 mm. "V-Groove" joints are not permitted.
- .5 Install joint filler to achieve correct joint depth.
- .6 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .7 Apply bond breaker tape where required to manufacturer's instructions.
- .8 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

#### **3.2 Application**

- .1 Apply sealants, primers, joint fillers and bond breakers to manufacturer's instructions. Apply sealant using gun with proper size nozzle. Use sufficient pressure to fill voids and joints solid. Superficial pointing with skin bead is not acceptable.
- .2 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities. Neatly tool surface to a slight concave joint.

- .3 Apply sealant to joints between window or door frames to adjacent building components, around perimeter of every external opening and where indicated.
- .4 Slope top of caulking to positive water shed at gum-lip flashings, if applicable.
- .5 Clean adjacent surfaces immediately and leave work neat and clean. Remove excess sealant and droppings using recommended cleaners as work progresses. Remove masking after tooling of joints.

- END OF SECTION -

**PART 1 - GENERAL**

1.1 Related Work

- |    |                          |               |
|----|--------------------------|---------------|
| .1 | General Requirements     | Section 01001 |
| .2 | Demolition               | Section 02060 |
| .3 | Metal Flashings and Trim | Section 07620 |
| .4 | Sealants                 | Section 07900 |

1.2 Scope

- .1 Supply and install vinyl windows to match existing size and configuration, under the specific direction of the Consultant.
- .2 Provide prices for individual windows on Appendix "D" - Separate Prices.

1.3 Section Includes

- .1 The work of this Section includes, but is not limited to, the supply and installation of:
  - .1 Vinyl window framing for fixed light areas, including operable sash mounted to or within window framing members, complete with hardware and related components.
  - .2 Exterior matching sills, trims and flashings in contact with the windows, where shown on the drawings.
  - .3 Anchors, brackets and attachment devices.
  - .4 Glass and glazing materials as noted below
  - .5 Perimeter caulking and internal sealant required to produce a finished, weather tight installation.
  - .6 Insect screens.
  - .7 Proof of compliance with design and performance requirements, including copies of test reports, calculations, CWDMA product labels, or other appropriate documentation.
  - .8 Supply and install prototype unit on building site.

1.4 References

- .1 Building Codes:
  - .1 British Columbia Building Code (BCBC)
  - .2 National Building Code of Canada (NBCC)
- .2 Product Evaluation Standards
  - .1 CAN/CSA-A440-00, "Windows"
  - .2 CSA-A440.1-00, "User Selection Guide to CSA Standard CAN/CSA-A440-00, "Windows".
  - .3 CSA-A440.2-09 "Fenestration Energy Performance"
  - .4 CSA-A453-95 (R2000), "Energy Performance Evaluation of Swinging Doors"
- .3 Installation Standards
  - .1 CSA-A440.4-00, "Window and Door Installation"
- .4 Manuals of Recommended Practice
  - .1 IGMAC "Glazing Recommendations for Sealed Insulating Glass Units"
- .5 Laboratory Test Methods
  - .1 ASTM E 283-04, "Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls and Doors"
  - .2 ASTM E 330-02 "Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference"
  - .3 ASTM E 331-00 (R2009), "Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference"
  - .4 ASTM E 547-08, "Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Cyclic Static Air Pressure Difference"
- .6 Field Test Methods
  - .1 ASTM E 783-02, "Field Measurement of Air Leakage through Installed Exterior Windows and Doors"
  - .2 ASTM E 1105-00 (R2008) "Field Determination of Water Penetration of Installed Exterior Curtain Walls and Doors, by Uniform or Cyclic Static Air Pressure Difference"

.3 AAMA 1503-09, "Voluntary Test Method for thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections"

.7 Finishing Standards

.1 AAMA/WFMA/CSA 101/I.S.2/A440.08, "North American Fenestration Standard"

1.5 Design and Performance Requirements

.1 Windows: Comply with the following (CAN/CAS-A440-00) performance requirements:

For Floor Levels 1-4:

.1 Air tightness:

Operable sash: A3 rating

Non-operable sash: Fixed rating

.2 Water tightness: B 3 rating

.3 Wind Load Resistance: C 3 rating

.2 Swing Doors: comply with the following CAN/CSA-A440 performance requirements:

For Floor Levels 1-4:

.1 Air tightness: A 3 rating

.2 Water tightness: B 3 rating

.3 Energy Ratings: to be determined according to CSA-A440.2 and CSA-A453:

.1 Windows: ER -18

.2 Sliding Doors: ER-18

.3 Swing Doors: ER - 18

.4 Structural Design

.1 Design glass according to CAN/CGSB-12.20-M89.

.2 Allow for deflection of building structure. Ensure no structural loads are imposed on windows (sliding doors) (Swing doors.)

1.6 Submittals

- .1 Submit all documentation and samples for review by Consultants at one time, prior to fabricating window (and door) products.
- .2 Product Data
  - .1 Catalogue details for vinyl windows and sliding (swing) doors illustrating profiles, dimensions, and performance features.
  - .2 Installation instructions as required by CAN/CSA-A440-00.
- .3 Quality Control Documents
  - .1 Submit CCMC evaluation numbers or copies of test reports and calculations, to establish that the products assembled by this manufacturer comply with the specified (CAN/CSA-A440-00) (CAN/CGSB-82.1-M89) performance ratings.
  - .2 Submit copies of test reports to establish that the products assembled by this manufacturer comply with the air leakage and water penetration performance requirements.
  - .3 Submit test reports to establish that the products assembled by this manufacturer comply with the condensation resistance criteria.
  - .4 Submit test reports or calculations to establish that the products assembled by this manufacturer comply with the energy performance criteria.
  - .5 Submit letter from insulating glass fabricator stating current IGMAC compliance number and identify the types of edge construction covered by that number.
  - .6 Submit letter from (glazing contractor) (product manufacturer) confirming that all products will be supplied and installed according to the descriptive and performance requirements of this specification. Identify any specified requirements that are in error or cannot be legitimately be met, and provide alternatives, which meet the intent of the specification for the Consultant's approval.

.4 Shop Drawings

- .1 Show scale elevations, sections, dimensions, and quantity of units. Indicate rough opening requirements and maximum tolerance of adjacent construction.
- .2 Provide full size details of all perimeter and interface conditions. Show relationship to other work, including attachment of flashings, air and water barriers, and location of caulking. Show extrusion profiles and engagement of glass and infill materials.
- .3 Show methods of structural reinforcement and attachment to building, including provisions for thermal movement and building movements. Identify all structural fasteners.
- .4 Schedule glass types and sealant, location of isolation coatings, and any other information required to indicate compliance with contract documents.
- .5 Submit shop drawings under seal of Registered Professional Engineers.

.5 Samples

- .1 Submit color samples of specified finishes.
- .2 Submit samples of materials requested without cost to the owner (vinyl, glass, fasteners, frame sections, hardware).
- .3 Submit samples window (specify size and configuration).

.6 Maintenance Data

- .1 Submit data for maintenance and cleaning of vinyl finishes.
- .2 Submit data for cleaning of glass.
- .3 Submit data for maintenance of door and window operating hardware.

1.7 Quality Assurance

- .1 Submit all documentation specified to show that all products meet or exceed the requirements of this specification.
- .2 Glass and glazing work under this section to conform to IGMAC "Glazing Recommendations for Sealed Insulating Glass Units".

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- .3 Sealed insulating unit manufacturer to be a member in good standing of IGMAC, and be prepared to submit evidence of current membership to the Consultants on demand.
- .4 Window manufacturer and installation contractor to be a member in good standing of the Glazing Contractors Association of British Columbia, and have a minimum of five years uninterrupted experience in successfully carrying out projects of similar size. Contractor to document past experience on request.
- .5 Laboratory test reports to be prepared by qualified independent testing laboratories accredited by the Standards Council of Canada.
- .6 Energy performance calculations to be submitted under the seal of a qualified Registered Professional Engineer.
- .7 Engage a Registered Professional Engineer licensed to practice in the province of British Columbia to:
  - .1 Design the window (sliding door) (swing door) system, including glass and glazing, to meet the specified structural performance criteria or, at a minimum, the requirements of the (BCBC) (NBCC).
  - .2 Supervise the preparation of shop and erection drawings.
  - .3 Field review fabrication and installation of the products to ensure they comply with those drawings and the specified structural performance criteria.
  - .4 The cost of the above engineering and field reviews to be included as part of the cost for work under this section.

#### 1.8 Delivery, Storage and Handling

- .1 Deliver, store and handle materials so as to avoid damage, following the recommendations contained in AAMA publication CW-10, "Care and Handling of Architectural Aluminum from Shop to Site.
- .2 Keep handling to a minimum. Do not move the materials except as needed for installation.
- .3 Store materials inside when possible, in a clean well drained area free of dust and corrosive fumes. Keep water away from stored assemblies.



- .4 Stack frames vertically on edge so that water cannot accumulate on or within materials. Use wood, cork, or plastic shims between components to provide for water drainage and air circulation.
- .5 Contractor to provide designated interior storage in a clean dry area free of dust and corrosive fumes. If interior storage cannot be provided, cover materials with tarpaulins or plastic hung on frames so as to provide air circulation and prevent contaminants from contacting aluminum or glass.

#### 1.9 Protection

- .1 Contractor to take all precautions necessary to protect materials, before and after installation, from lime mortar, water run-off from concrete or copper, careless handling of tools, weld spatter, acids, roofing tar, solvents, abrasive cleaners, and other items that could damage the glass surfaces and vinyl finishes. Do not rely on use of protective plastic films to protect materials.

#### 1.10 Site Conditions

- .1 Do not install any vinyl work or glazing until all nearby welding, grinding, sandblasting, waterproofing, mortar work and acid etching are complete.
- .2 Report to the Consultant in writing any defects in existing work, or unsatisfactory site conditions. Start no work until conditions are satisfactory. Starting work shall imply acceptance of existing conditions and surfaces.
- .3 Glaze with compounds, sealant, or tapes only when glazing surfaces are at temperatures recommended by the tape of sealant manufacturer, and when the substrates are free of moisture.
- .4 When temperature of glazing surfaces is below that recommended by sealant manufacturer, obtain Consultant's approval for glazing methods and protective measures, which are to be used under these conditions.

1.11 Scheduling/Coordination

- .1 Schedule activities such as welding, sandblasting and grinding of steel or concrete, mortar work, acid etching and any other work harmful to vinyl finishes or glass, to be completed before start of vinyl and glass installation.
- .2 When such activities must be carried out in the vicinity of stored or installed vinyl work or glass, provide hoarding or other suitable protection recommended by (glazing contractor) (window installer).
- .3 Coordinate the installation of anchors and structural connections with the appropriate Sections.
- .4 Coordinate work with related trades to ensure rough openings, structural supports, curbing, and flashing are installed correctly to complement the work of this section.

1.12 Warranties

- .1 Windows to be free from defects in material and workmanship, and continue to perform satisfactorily for a period of one year from the date of Substantial Performance of the Work.
  - .1 Satisfactory performance means compliance with the performance criteria and the testing and construction standards of this specification, and with the reviewed shop drawings. This includes the performance of finishes, hardware, glass and glazing materials, structural attachment, sealant and flashing.
  - 2 Correct all deficiencies which appear during the warranty period, including removal and replacement of failed sealed insulating units, at no cost to the owner.
- .2 Provide manufacturer's standard warranty stating that the sealed insulating units will be free from material defects obstructing vision for a period of five years from the date of substantial completion. Contractor to obtain, on behalf of the owner, copies of standard product warranties in excess of one year, from the respective manufacturers.

**PART 2 PRODUCTS**

**2.1 Materials**

- .1 All materials to meet the minimum design and material specifications of CAN/CSA-A440 (and CAN/CGSB-82.1)
- .2 Glass and Glazing
  - .1 To match existing type.
- .3 All glass products used to meet minimum requirements of (CAN/CSA-A440) (CAN/CGSB-82.1)

**2.2 Materials**

- .1 All materials used internally or externally to be corrosion resistant, non-staining, non-bleeding, and compatible with adjoining materials.
- .2 Hardware
  - .1 All components of corrosion resistant material compatible with vinyl.
- .3 Anchors and fasteners
  - .1 Exposed fasteners and anchors: 300 series stainless steel or nickel plated brass.
  - .2 Concealed fasteners and anchors: cadmium plated steel, zinc plated steel, or stainless steel.
  - .3 Concealed anchors may also be of carbon steel, painted after fabrication with zinc chromate or other primers not containing lead.
- .4 Sealant
  - .1 Sealant within vinyl framing: as recommended by framing manufacturer.
  - .2 Sealant between vinyl framing and adjacent construction: provide joint sealant, primers and packing materials, which comply with the requirements of Section 07900.
- .5 Glazing Materials
  - .1 Exterior and interior glazing gaskets or tapes: manufacturer's standard, as used in assemblies tested to meet performance criteria for air infiltration and water penetration.
  - .2 Glass setting blocks and edge blocks: neoprene, EPDM or silicone with a 80-90  $\pm$  5 Shore A durometer hardness. Block material to be

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compatible with sealed unit edge sealant. Setting blocks for sealed units with silicone edge seals must be silicone.

.6 Glass and Glazing

- .1 Type as scheduled on Architectural drawings.
- .2 Glass thickness and heat strengthening to be determined according to CAN/CGSB-12.20-M89. Thickness and heat treatment of clear glass may be adjusted to suit structural requirements. Thickness of tinted glass to be uniform throughout the building.
- .3 Sealed-insulating units to comply with CAN/CGSB-12.8-M90, and unit manufacturer to be IGMAC certified.

2.3 Systems Description

- .1 Windows to be of pressure equalized rainscreen construction.
- .2 Window and door framing to be of nailing flange type.
- .3 Operable sash to be horizontal siding (hopper) (other) type.
- .4 Provide insect screens.
- .5 Provide perimeter air barrier (membrane) (caulking) continuous with building air barrier system as shown on architectural drawings. When flexible membrane is used for the air seal, window installer to ensure it is fully sealed to adjacent air seal materials provided by others, and suitably adhered to window framing.

2.4 Fabrication

- .1 Assemble windows and doors to ensure neat, weather tight construction.
- .2 Fabricate units square and true with a maximum tolerance of 3 mm for units with a diagonal measurement under 1800mm, and 6mm for units with a diagonal measurement over 1800mm.
- .3 Mechanical fasteners, welded components, flashings, and hardware must not bridge thermal barrier unless units

tested for thermal performance or condensation resistance had the same thermal bridges .

- .4 Conceal fasteners whenever possible.

## 2.5 Finishes

- .1 Finish exposed areas of flashings and trim to match finish of vinyl window framing. Hardware to have manufacturer's standard finish.
- .2 All exposed surfaces to be free of visible defects and scratches.
- .3 Finishing products (factory built products):
  - .1 Thermosetting enamel coating meeting requirements of (CAN/CSA-A440) (CAN/CGSB-82.1): Color to match existing.
  - .2 Anodized coating meeting requirements of (CAN/CSA-A440) (CAN/CGSB-82.1): Color to match existing
- .4 Finishing products (commercial products):
  - .1 Thermosetting enamel coating meeting the requirements of AAMA 603.8: Color to match existing
  - .2 Thermosetting fluoropolymer two coat meeting the requirements of AAMA 605.2: Color to match existing.
  - .3 Clear anodizing coating, AAMA Class II.
  - .4 (champagne, bronze or black) colored anodizing coating, AAMA class I.

## 2.6 Accepted Products

- .1 Vinyl Windows – Starline
- .2 Reference to these products does not relieve the manufacturer of responsibility to comply fully with all specified performance criteria.
- .3 Or pre-approved alternative. Approval of alternates to be confirmed in advance of bid closing by addendum only.

## **PART 3 EXECUTION**

### 3.1 Workmanship

- .1 Windows to be installed by tradesman which are knowledgeable, skilled in their trade and able to demonstrate the same.

### 3.2 Openings, Lines and Grades

- .1 Provide rough openings in the sizes indicated in the contract documents.

### 3.3 Inspection

- .1 Verify that openings are dimensionally within allowable tolerances, in accordance with reviewed shop drawings, plumb, level, clean, and provide a solid anchoring surface.
- .2 Take site dimensions before fabrication. Ensure fabricated work will fit openings and that allowance is made for deflection of structure and that required clearance to other work will be maintained.
- .3 Ensure all flashings built in or provided by others will integrate with the work of this section to divert all moisture to the exterior.
- .4 Do not begin to install windows (doors) until all conditions are satisfactory.

### 3.4 Installation

- .1 Install windows to CSA-A440.4.
- .2 Comply with reviewed shop drawings and manufacturer's written instructions and recommendations.
- .3 Install framing in prepared openings level, square and true, and in relation to established lines and grades shown on reviewed shop and erection drawings.
- .4 Secure work to allow for anticipated movements of the building structure and thermal movements within the aluminum framing system, without failure of sealant or compromising performance of the window system.
- .5 Conceal all fasteners except where unavoidable for structural anchorage or application of hardware.

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- .6 Set vinyl sills in full bead of caulking, dammed at ends and level in their length, with minimum 5% slope to exterior. Plastic sills that allow water to pond against framing or caulking will not be accepted.
- .7 Fill voids between vinyl frame and surrounding construction with insulation.
- .8 Coordinate installation of hardware components requiring electrical power.
- .9 Install glass and glazing materials as scheduled on the reviewed shop drawings and to the requirements of (this specification)
- .10 Handle and install glass to prevent edge damage. Use rolling block to rotate large units. Do not install glass showing edge damage.
- .11 Caulk joints between vinyl framing and surrounding materials in accordance with the requirements of this specification, Section 07900.
- .12 Follow sealant manufacturer's recommendations for proper joint design, including use of joint filler, primers, and bond breakers, as required to suit job site conditions. Ensure all surfaces to be sealed are clean and free of dust and construction debris.

### 3.5 Erection Tolerances

- .1 Provided specified tolerances in surrounding work allow, and clearances on reviewed shop drawings are maintained, erect vinyl framing to the following tolerances:
  - .1 Maximum variation from plane or location shown on reviewed shop drawings to be 3mm in 3000mm of length (1/8" in 10"), or 13mm (1/2") in any total length.
  - .2 Maximum offset from true alignment between two identical members abutting end to end in line to be 1.6 mm (1/16).
  - .3 Square: maximum difference in length of diagonals to be 3mm (1/8").
  - .4 Corner offset: maximum offset from true alignment at glazing pocket corner joints to be 0.8mm (1/32").

.5 Bow: 1.6mm (1/16") in 1200mm (4") of length.

### 3.6 Field Quality Control

- .1 Conduct on-site tests for (air), (water) infiltration with window manufacturer's representative present if requested by Consultant. Owner's representative will select unit(s) to be tested. Owner will pay for testing requested ordered by the Consultant and is extra to the base contract price.
- .2 The installed performance of the windows (sliding doors) (swing doors), (including) (excluding) the connections to other building components, to conform to: (CAN/CSA-A440-00) performance requirements:
  - .1 Air tightness: A3 rating
  - .2 Water tightness: B3 rating
  - .3 Wind Load Resistance: C3 rating
- .3 Correct deficiencies in unit(s) which fail(s) to meet specified requirements, and all units having similar deficiencies. Defective units to be re-tested. Deficiencies to become punch list items to be checked and corrected or the entire project.
- .4 Costs for successful tests (original test) will be paid by the owners. Cost for all unsuccessful test (re-tests), and for all repair work to defective units, to be paid by the responsible contractor.
- .5 Testing agency to be selected by the Consultant together with the product manufacturer, and be employed by the contractor.



3.7 Protection

- .1 Contractor to protect installed work from damage caused by grinding and polishing compounds, plaster, cement, lime, acid or other contaminants, and the work or activities of other trades.
- .2 Install protective cover to vinyl work and glazing where there is a high risk of damage. Use heavy Kraft paper or non-staining, non-hardening plastic films.
- .3 Consult with product manufacturer and installer to determine appropriate protective measures.

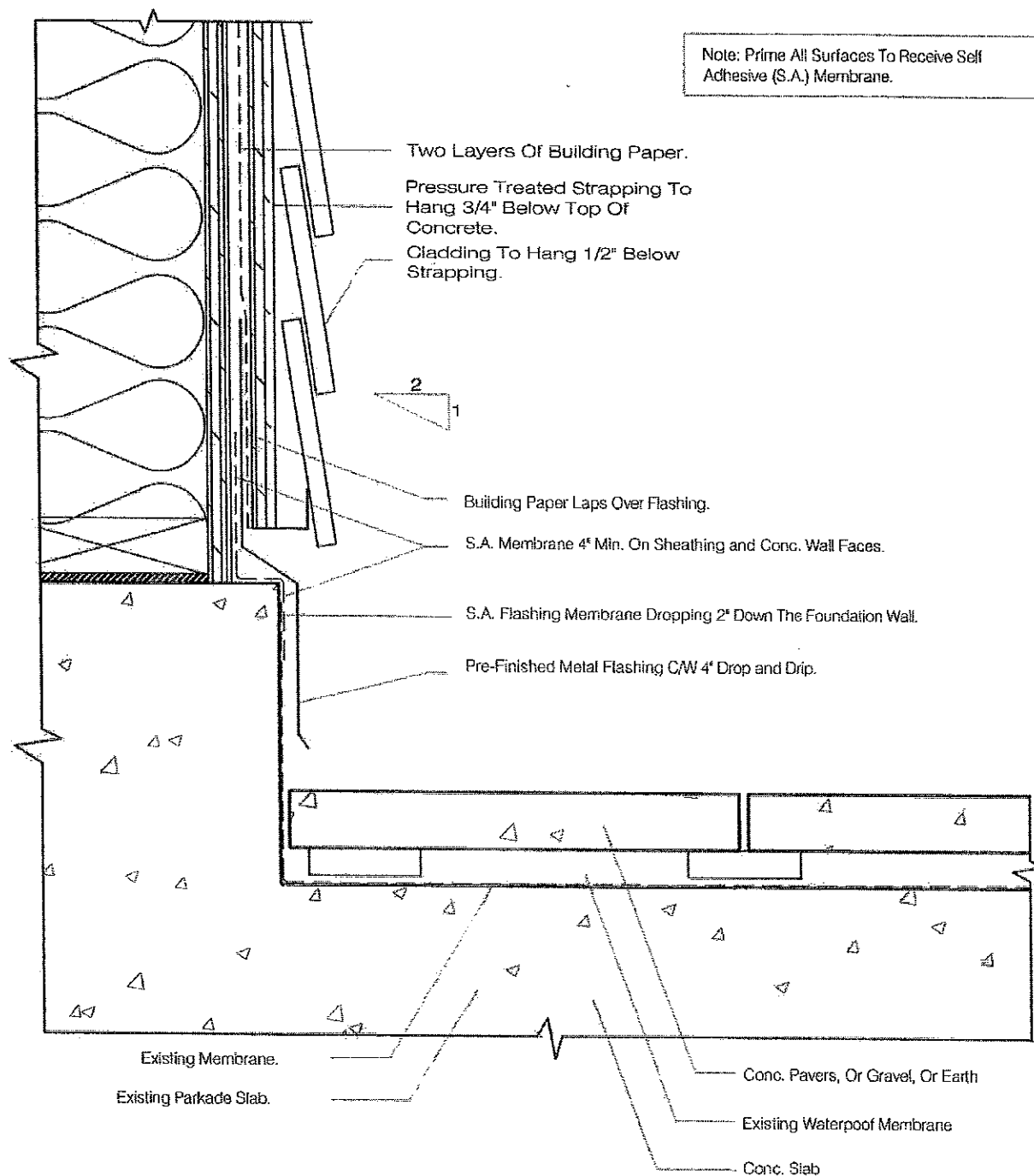
3.8 Adjustments

- .1 Adjust operating vents, doors and hardware to operate smoothly and fit tightly when closed and locked, and be properly aligned with frames and with each other.

3.9 Cleaning

- .1 Remove all protective materials from metalwork and glazing. Remove all labels, and deposits which, affect appearance or operation.
- .2 Clean vinyl work and glass according to instructions provided by glazing contractor or product manufacturer.
- .3 Glass
  - .1 Clean glass surfaces according to instructions provided by glass fabricator or window/door manufacturer.
  - .2 Glass cleaning solutions to conform to CAN/CGSB-2.55.
- .4 Do not use vigorous cleaning methods. Avoid scratching glass or vinyl finish. Contractor to be responsible for damage resulting from the use of other cleaning methods.

- END OF SECTION-



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Footing Over Suspended Slab  
Flashing Detail

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR

CH'D:

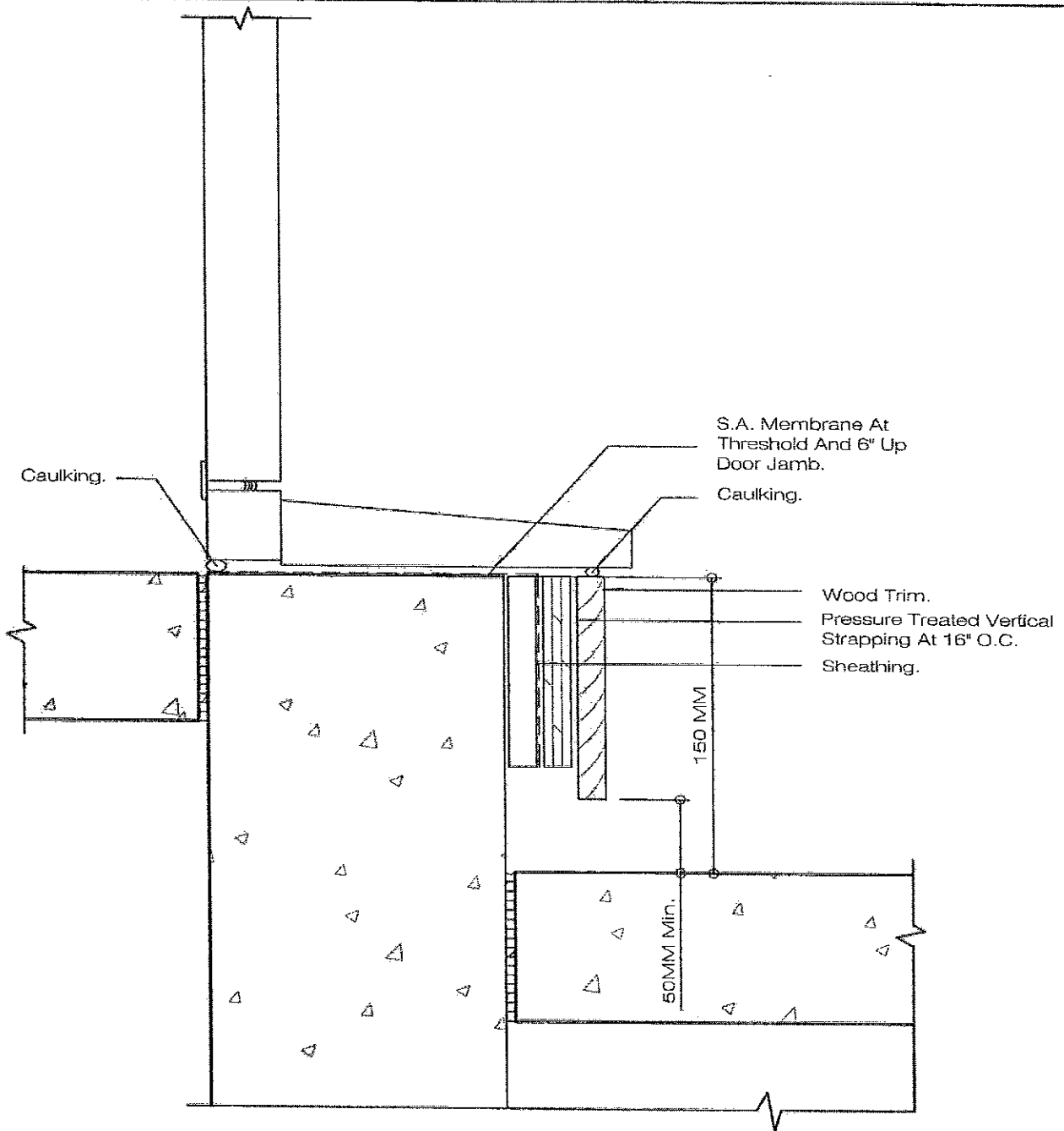
PROJECT:

Cal- 1389

SEAL:

DWG. NO.:

BE-01



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 calysta@shawbiz.ca

PROJECT:

The Willows  
 1103/1121 Howie Avenue  
 Coquitlam, BC

TITLE:

Section At Door Threshold

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR KR

CHK'D:

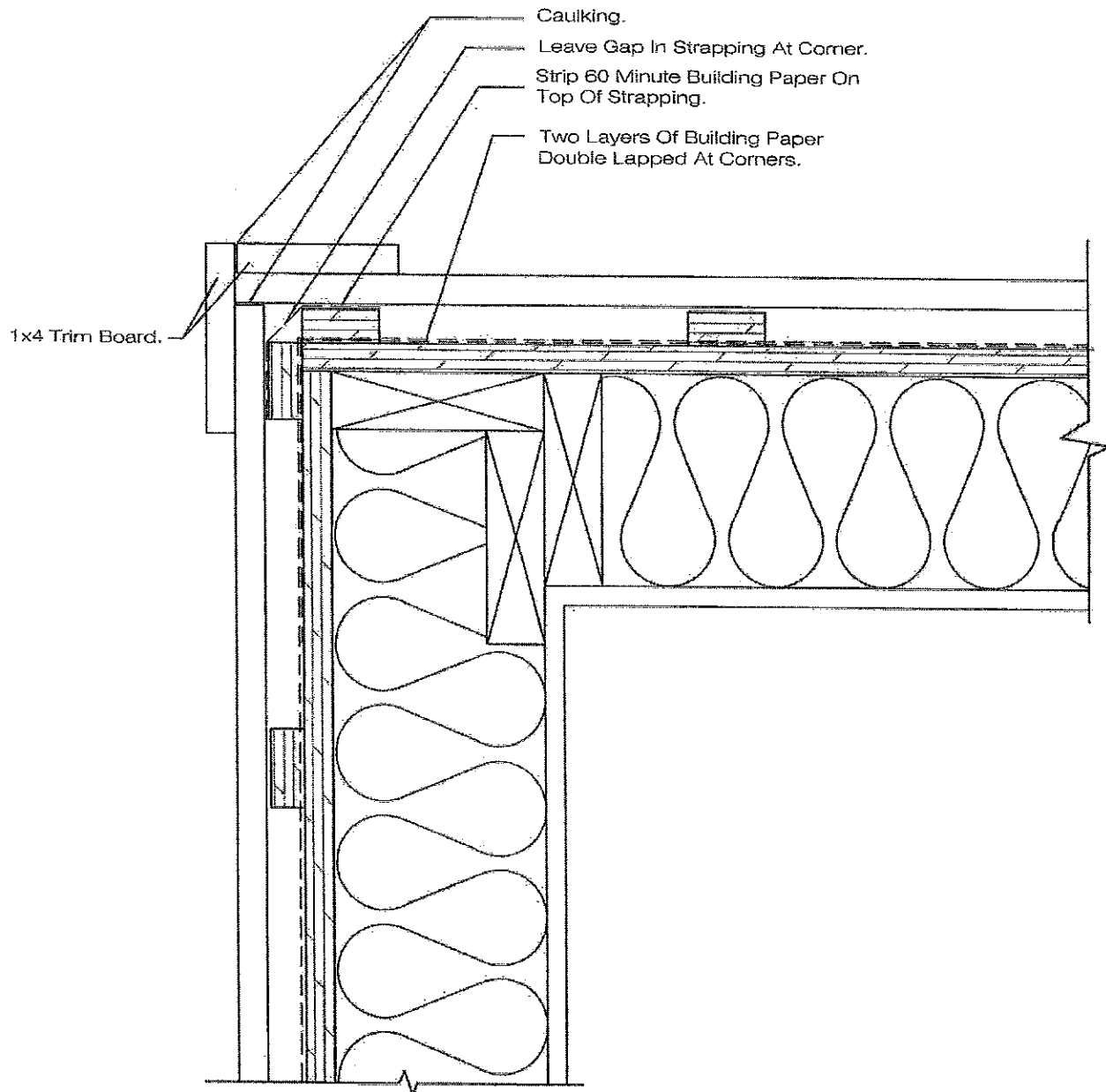
PROJECT:

Cal- 1389

SEAL:

OWG. NO.:

BE-02



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calysta@shawcoz.ca

PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Building Siding Typical Outside  
Corner Installation Guide

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR KR

CHD:

PROJECT:

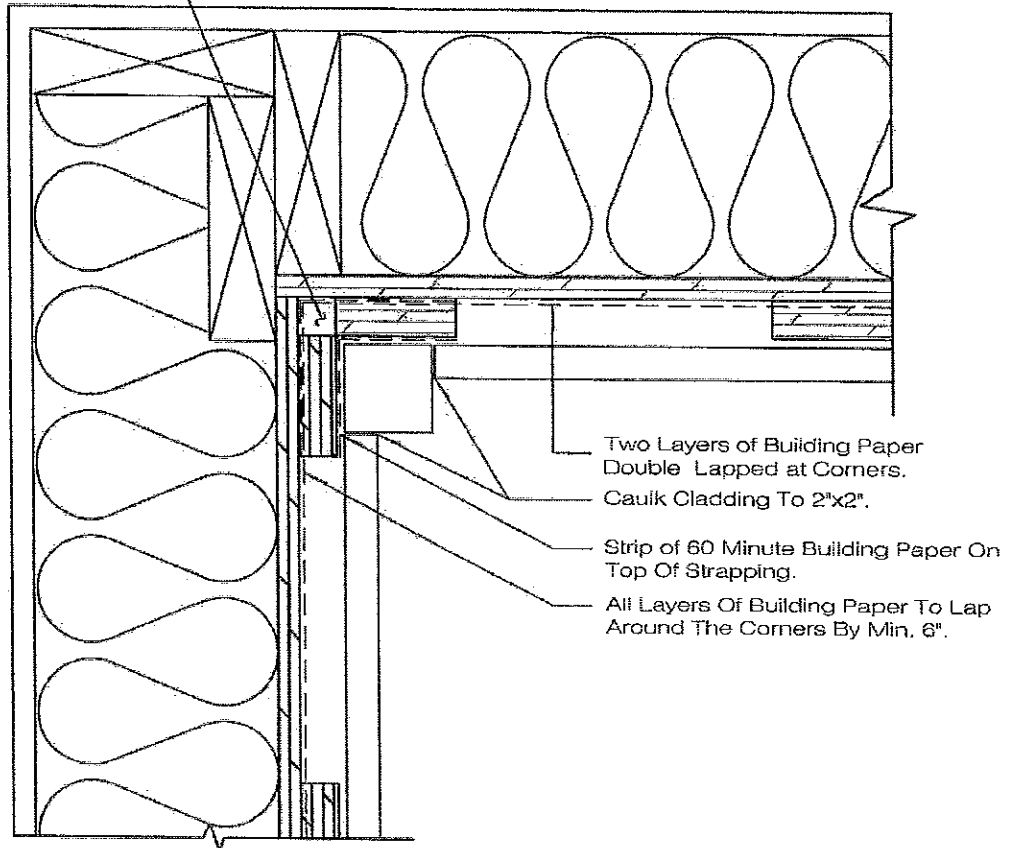
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SEAL:

DWG. NO.:

BE-03

Leave 10 MM. Gap In Corners.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Building Siding Typical Inside  
Corner Installation Guide

DATE:

March 1st, 2010

SCALE:

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CH'D:

PROJECT:

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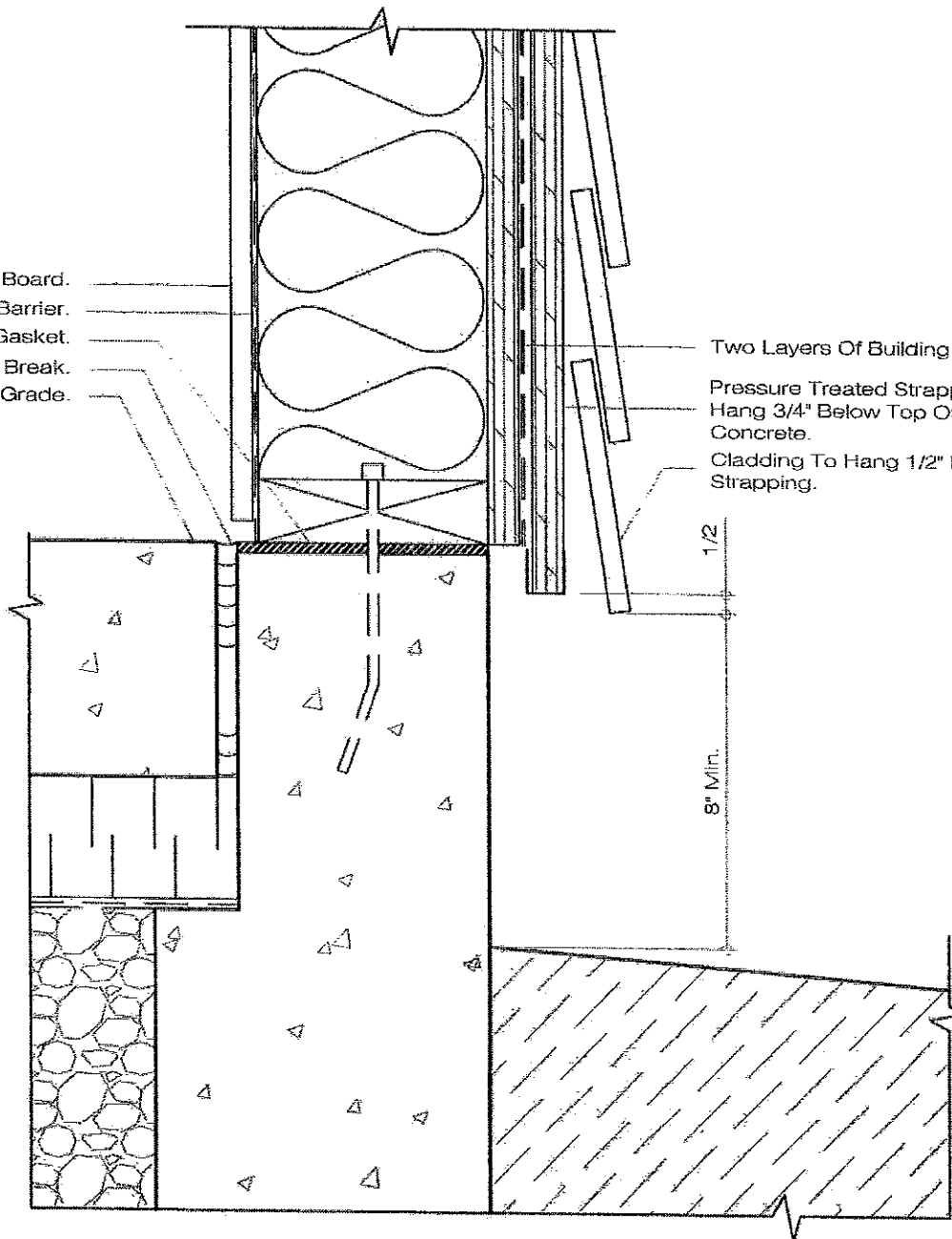
SEAL:

DWG. NO.:

BE-04

Gypsum Wall Board.  
 Vapour Barrier.  
 Sill Gasket.  
 Thermal Break.  
 Slab On Grade.

Two Layers Of Building Paper.  
 Pressure Treated Strapping To  
 Hang 3/4" Below Top Of  
 Concrete.  
 Cladding To Hang 1/2" Below  
 Strapping.



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PROJECT:

The Willows  
 1103/1121 Howie Avenue  
 Coquitlam, BC

TITLE:

Base Of Wall Detail

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

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CHD:

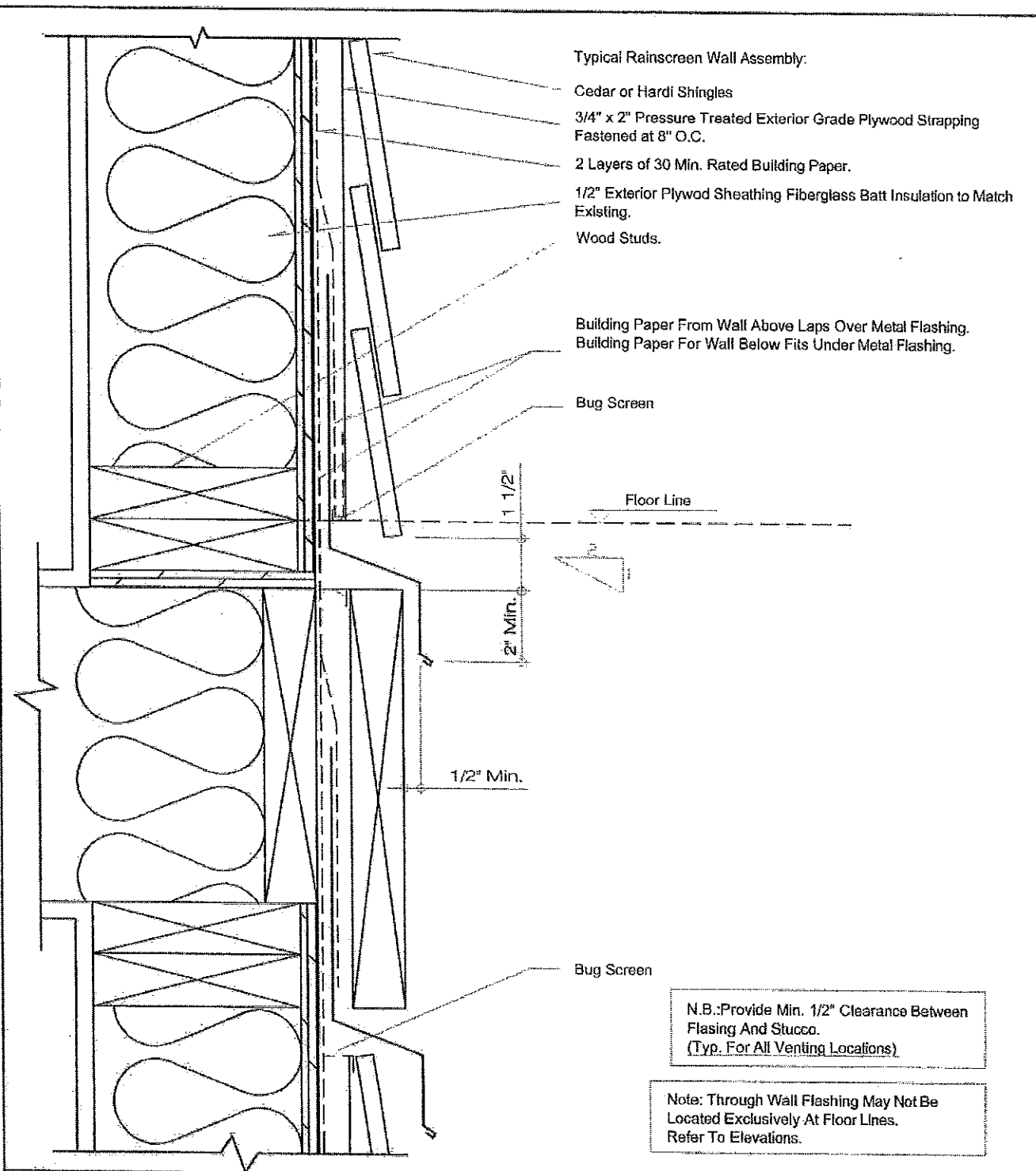
PROJECT:

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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Band Board Detail

DATE:

March 1st, 2010

SCALE:

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DRAWN BY:

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CH'D:

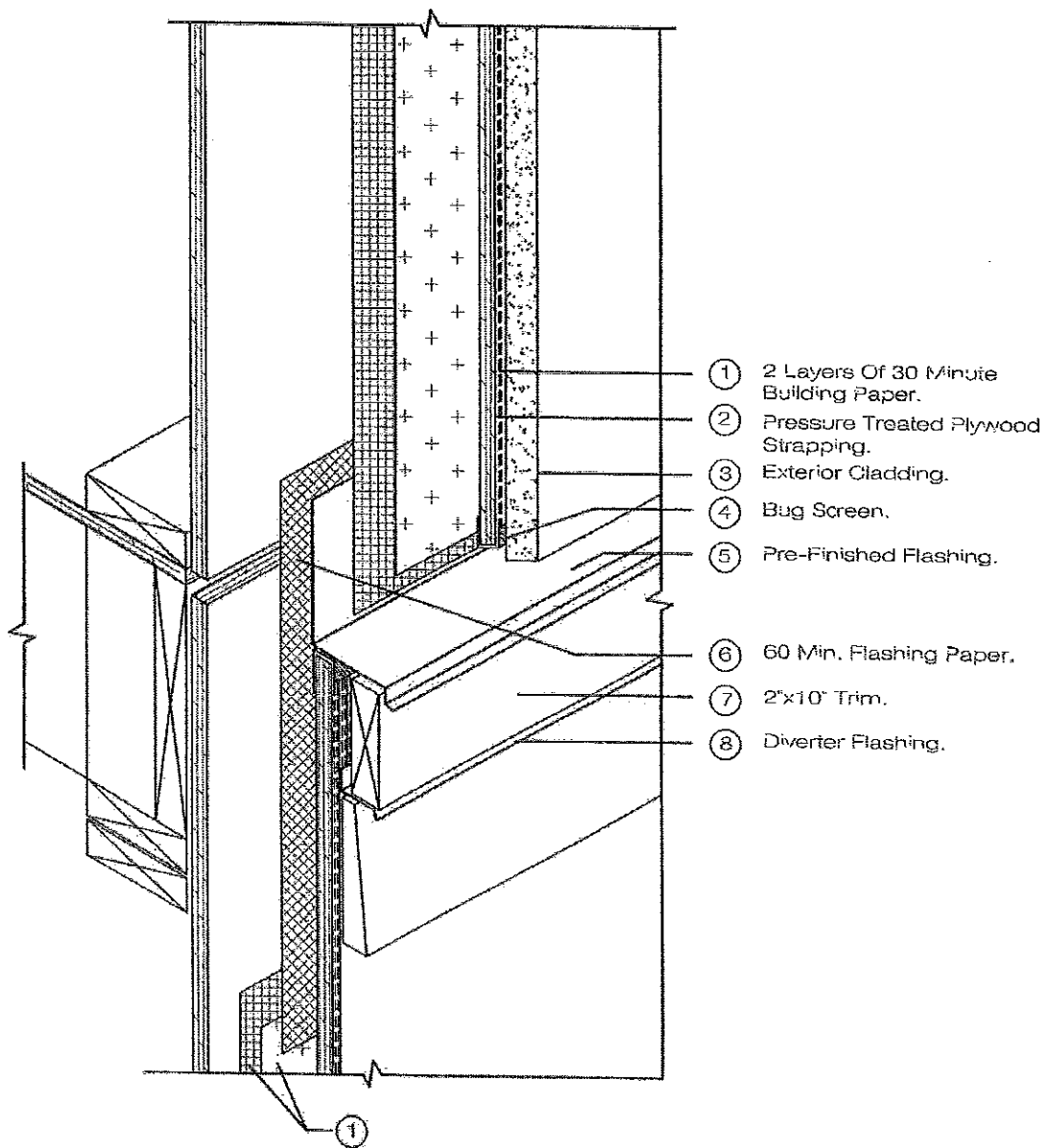
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SEAL:

DWG. NO.:

BE-06



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Through Wall Flashing  
And Band Board

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR

CHD:

PROJECT:

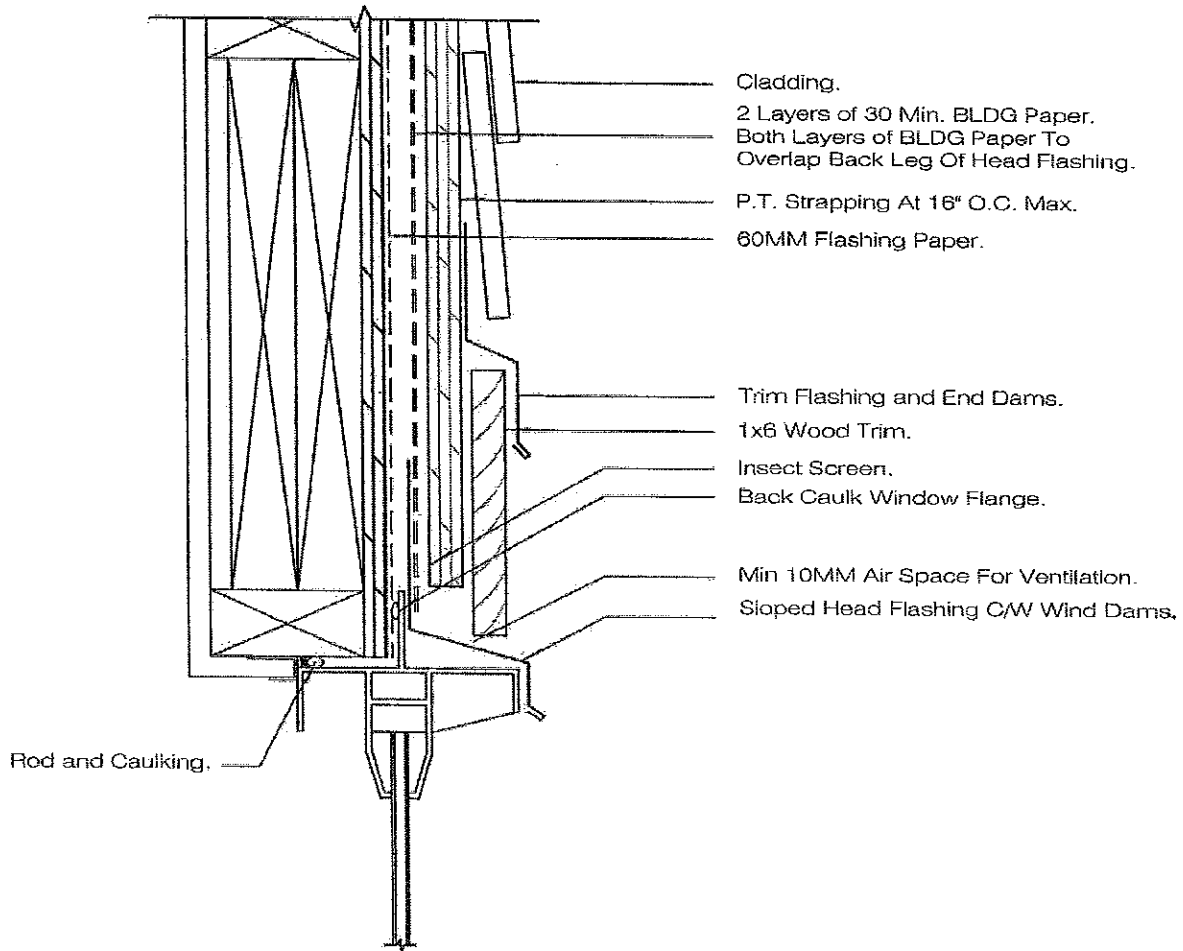
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SEAL:

DWG. NO.:

BE-07





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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Vertical Section At Window Header

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR

CHD:

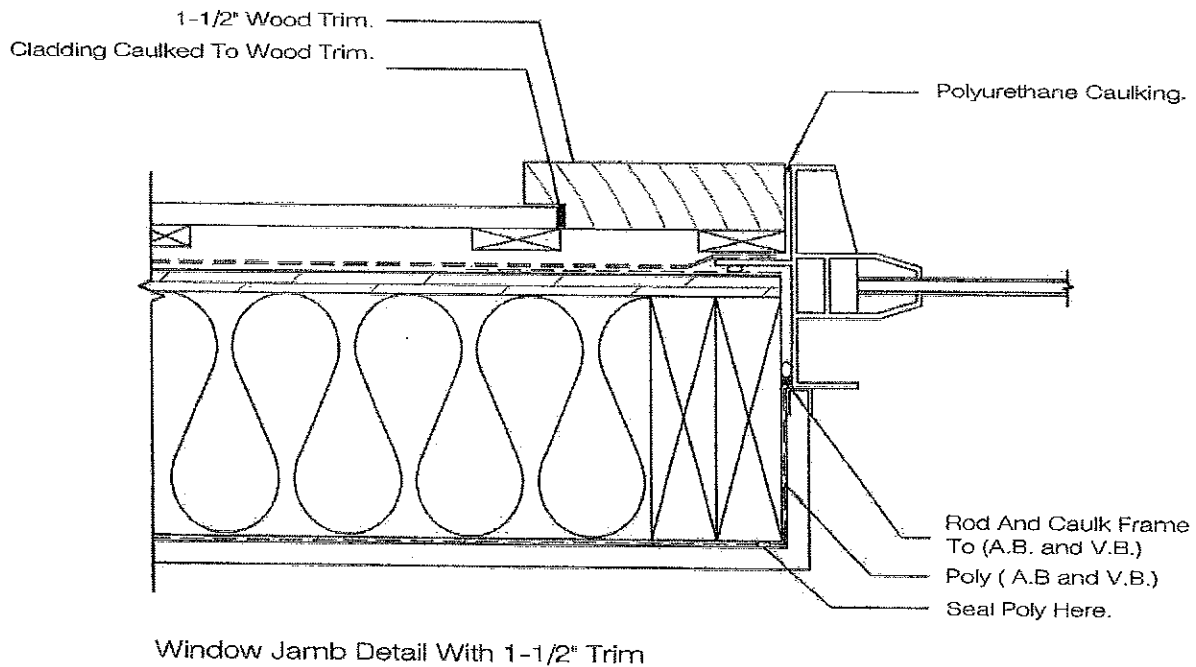
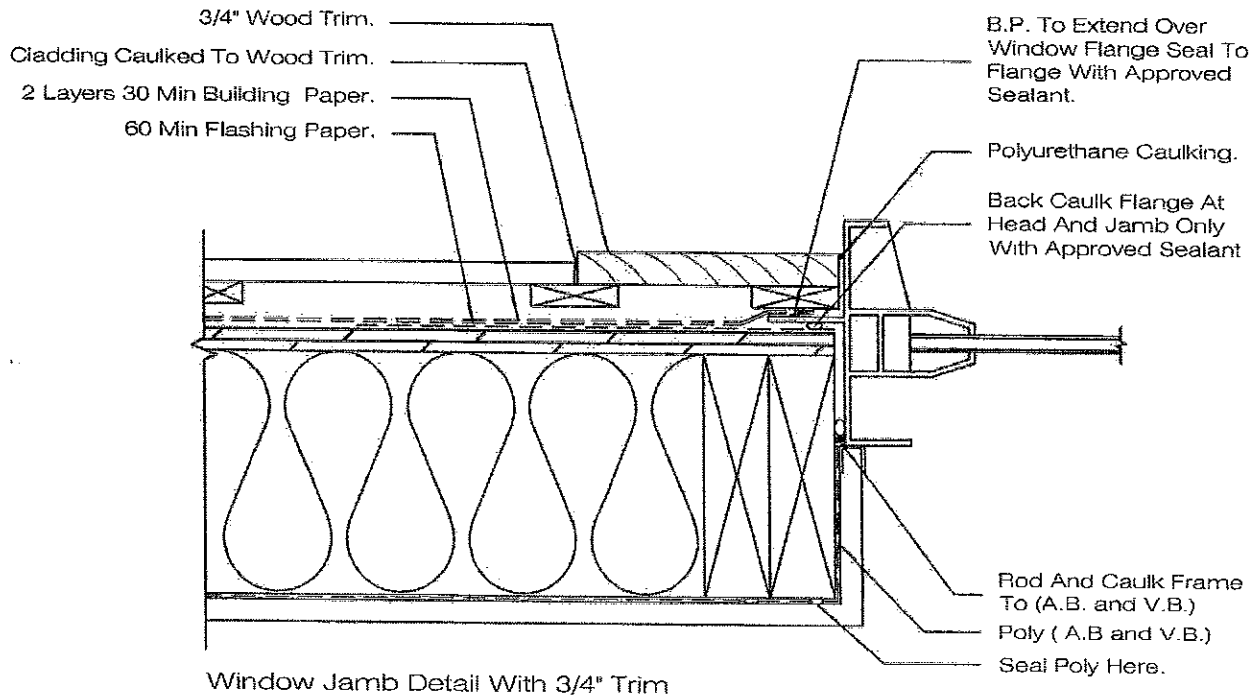
PROJECT:


Cal- 1389

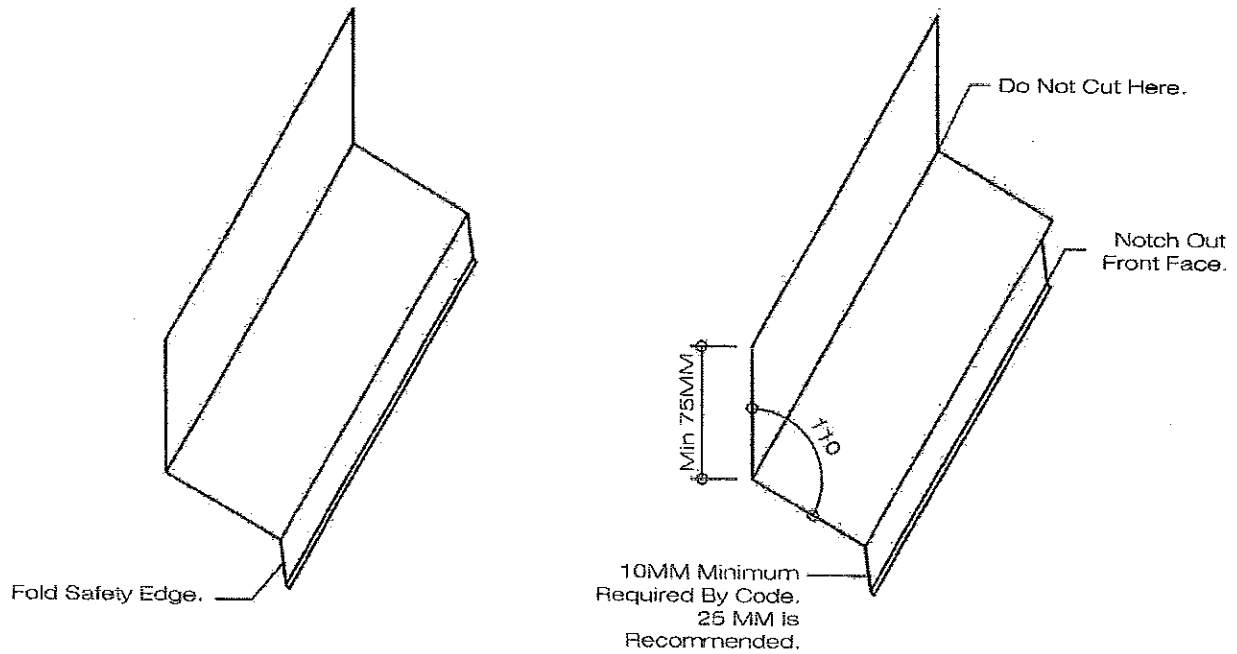
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DWG. NO.:

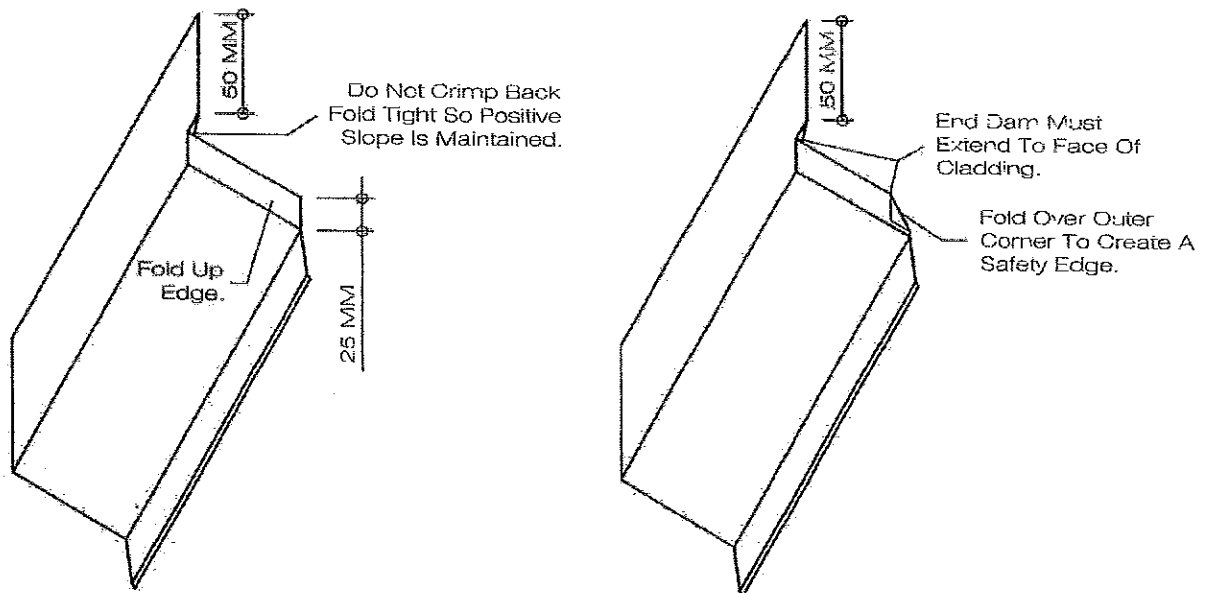
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 702-30711 Simpson Rd. Abbotsford, BC, V2T 8Y7 Toll Free: 1.866.711.8222 Bus: 604.854.8222 Fax: 604.854.9111 calysta@shawbiz.ca	PROJECT:	The Willows 1103/1121 Howie Avenue Coquitlam, BC	DATE: March 1st, 2010	SEAL:
	TITLE:  Plan Section At Window Jamb		SCALE: N.T.S.	
			DRAWN BY: KR KR	
			CHD:	
			PROJECT: Cal- 1389	DWG. NO.: BE-09



Step 1



Step 2

Step 3



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calysta@shawbiz.ca

PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Window Head Flashing Detail With  
End Dams Per. 9.27.3.8 of the BCBC

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR

CHD:

PROJECT:

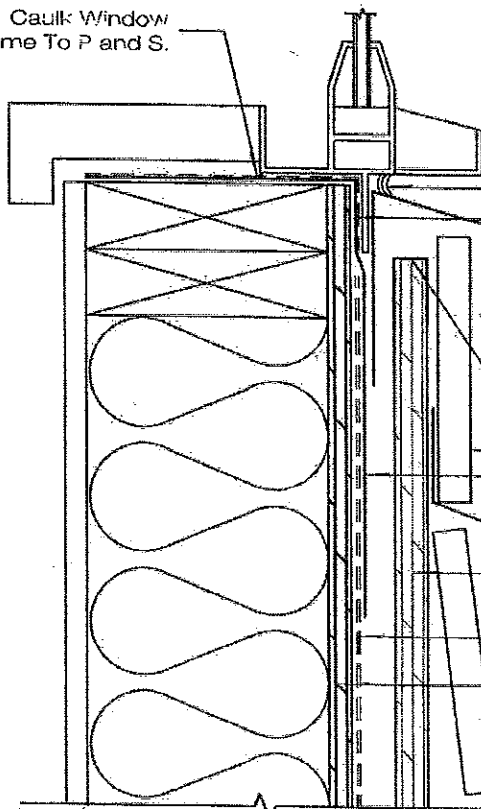
Cal- 1389

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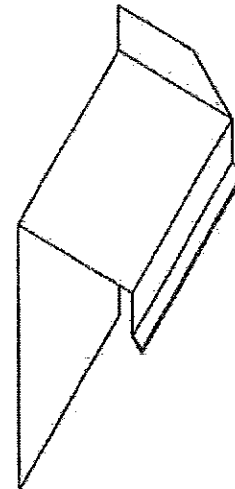
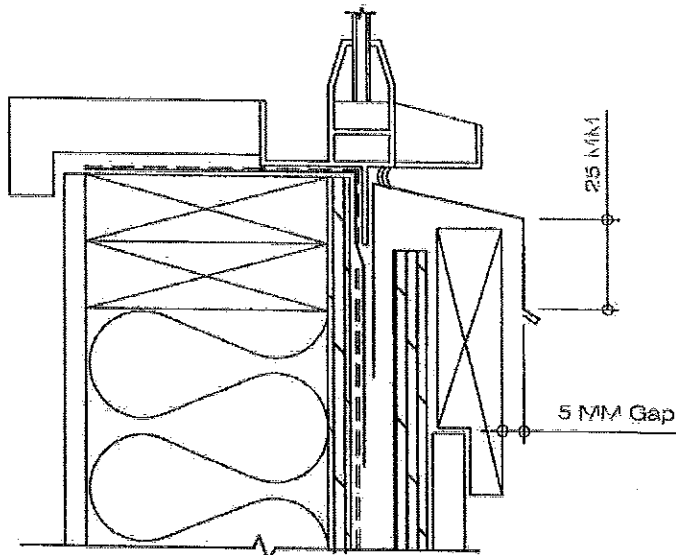
DWG. NO.:

BE-10

Caulk Window  
Frame To P and S.



- Polyurethane Caulking.
- Peel And Stick Membrane.
- Sill Flashing W/ 110 Degree Slope  
And Dams, and 1/2" Safety Edge As  
Per 9.27.3.8 (5) Of the BCBC.
- 5MM Gap As Per 9.27. 3.8.(4e) Of The BCBC.
- Bug Screen.
- Trim Board.
- 12" Flashing Paper.
- P.T. Strapping at 16" O.C Max.
- Flashing On Top Of Strapping.
- Two Layers Of 30 Min. Building Paper.
- Wall Sheathing.
- Exterior Cladding.



Alternate - 2x6 Trim With 25MM Min. Notch  
In Bottom Per 9.27.3.8 (2a) Of The BCBC.

Sill Flashing With End Dam. All Dims.  
Similar To Head Flashing.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Vertical Section At Window Sill  
(Flange Window With Trim)

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

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CHD:

PROJECT:

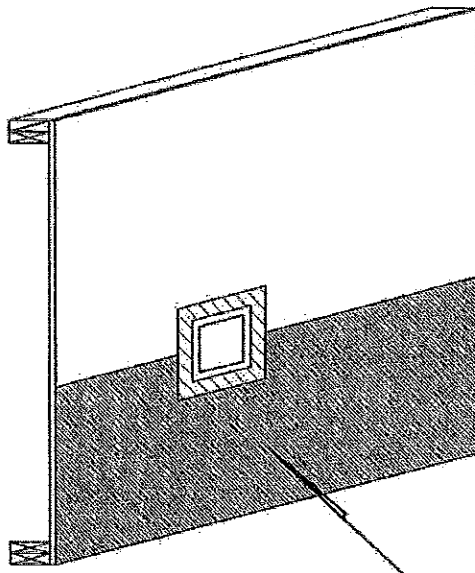
Cal- 1389

SEAL:

DWG. NO.:

BE-11

## All Electrical Boxes Must Have Gaskets and Flanges.



Attach the flanged box on the wall with a piece of strapping behind the flange.  
Apply polyurethane caulking to the flange of the box.

Cut a hole 1" smaller in both directions than the size of the opening of the box in the middle of a 12"x12" square of EPDM rubber roofing membrane.

Stretch the membrane over the opening of the box and seal it to the flange.

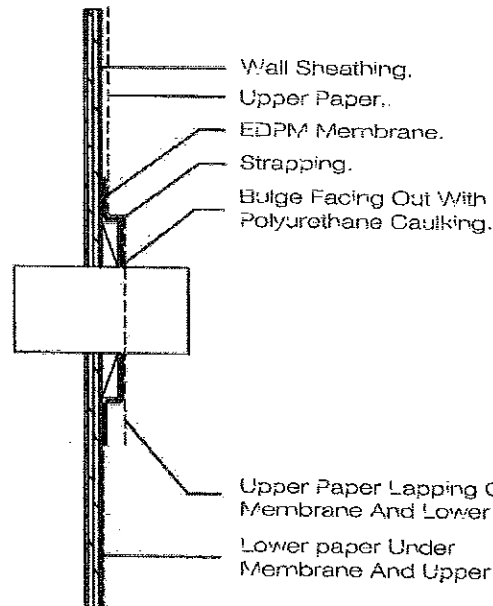
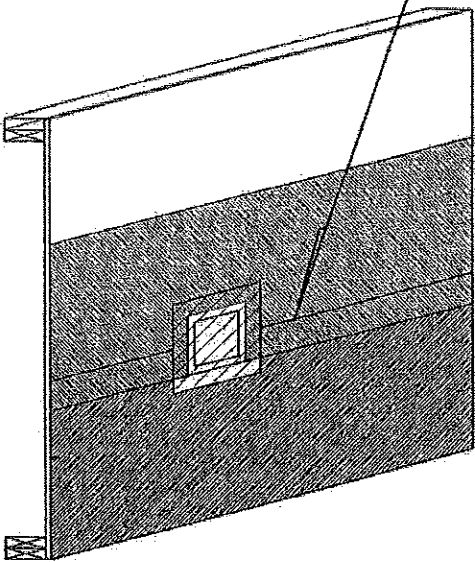
Please Note: It MUST be a tight fit.

Staple only the top of the membrane to the wall. Apply the lower paper under the membrane and the upper paper over the membrane by at least 4" as shown.

Trim out the electrical box at the cladding line with an approved vinyl trim kit.

Lower Paper Under the EPDM Membrane.

Upper Paper Lapped Over The Membrane And The Lower Paper by 4" Min.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Electrical Box Installation Guide

DATE:

March 1st, 2010

SCALE:

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DRAWN BY:

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CH'D:

PROJECT:

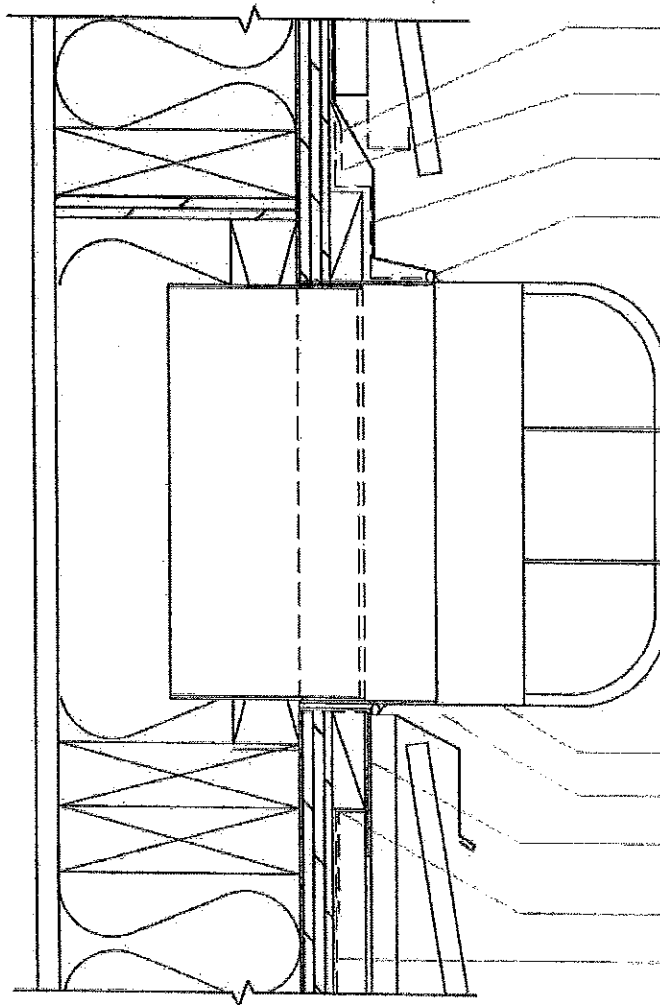
Cal- 1389

SEAL:

DWG. NO.:

BE-12

# Typical Rainscreen Wall Assembly



Building Paper Laps Over S.A. Membrane.

N.B.: Hold Stapping 1" Up From T/O Blocking to Allow Cavity Above Vent To Drain To Sides.

Install New S.A. Membrane Over Vent Flange and Blocking At Side and Top Only.

Caulking.



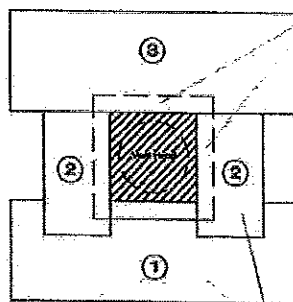
Luminaire

Rod AndCaulking.

N.B.: Provide Solid Blocked 'Frame' To Exact Size Of Vent Flange.

Install New S.A. Membrane Under Vent Flange and over Blocking At Bottom Side Only. Lap Over Building Paper.

Building Paper



Vent Flange Over Solid Blocked Frame.

## S.A. Membrane Application Sequence:

- ① Under Vent Flange at Base Only
- ② Over Vent Flanges at Sides.
- ③ Over Vent Flange at Top.

N.B.: Provide Min. 1/2" Clearance Between Flashing And Stucco (Typ. For All Venting Locations)

Note: Prime All Surfaces To Receive Self Adhesive (S.A.) Membrane.

S.A. Membrane.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Exterior Luminaire Installation Detail

DATE:

March 1st, 2010

SCALE:

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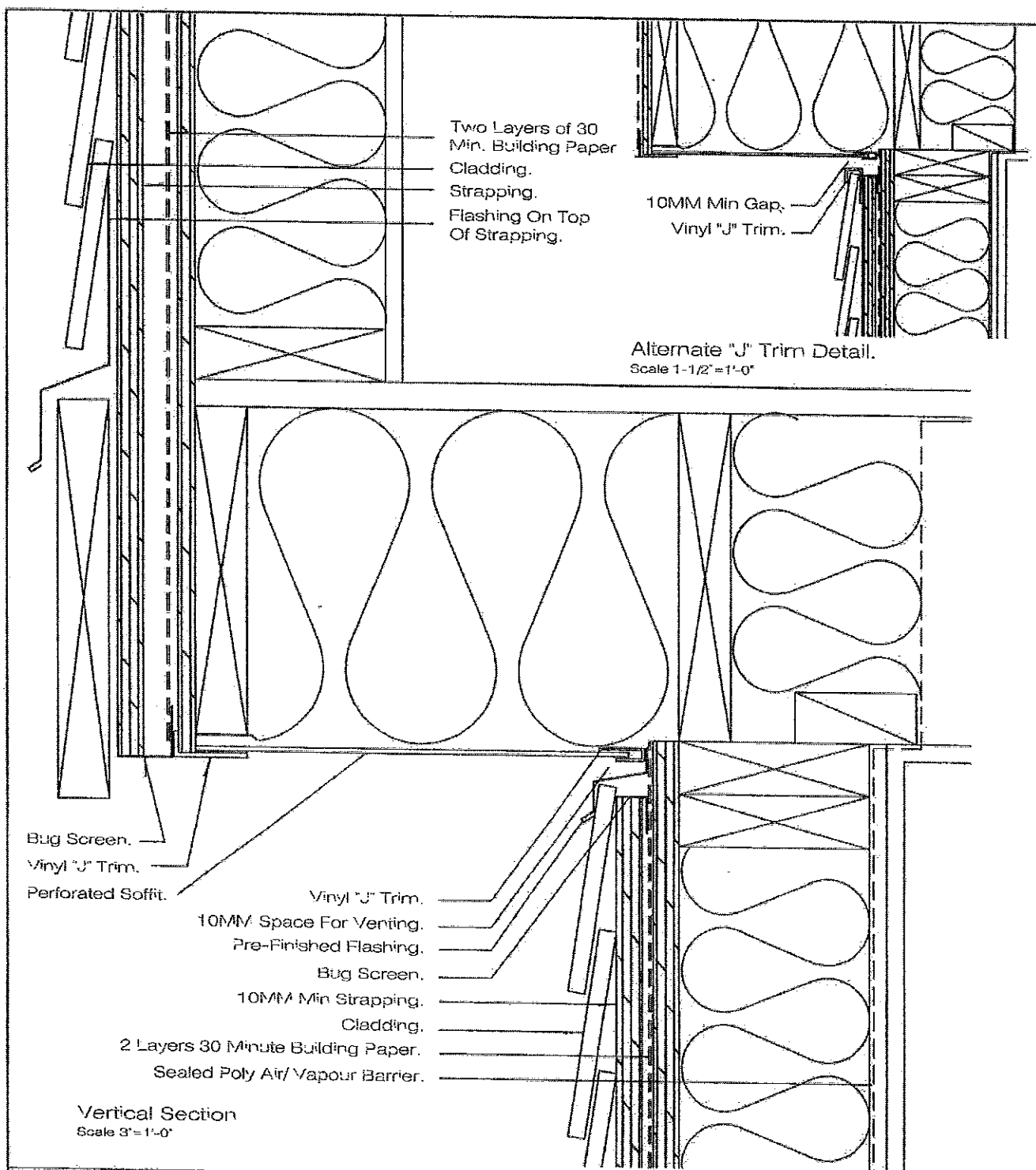
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PROJECT:

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DWG. NO.:

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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Connection At Top And Bottom Of  
Wall At Cantilever

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR KR

CHD:

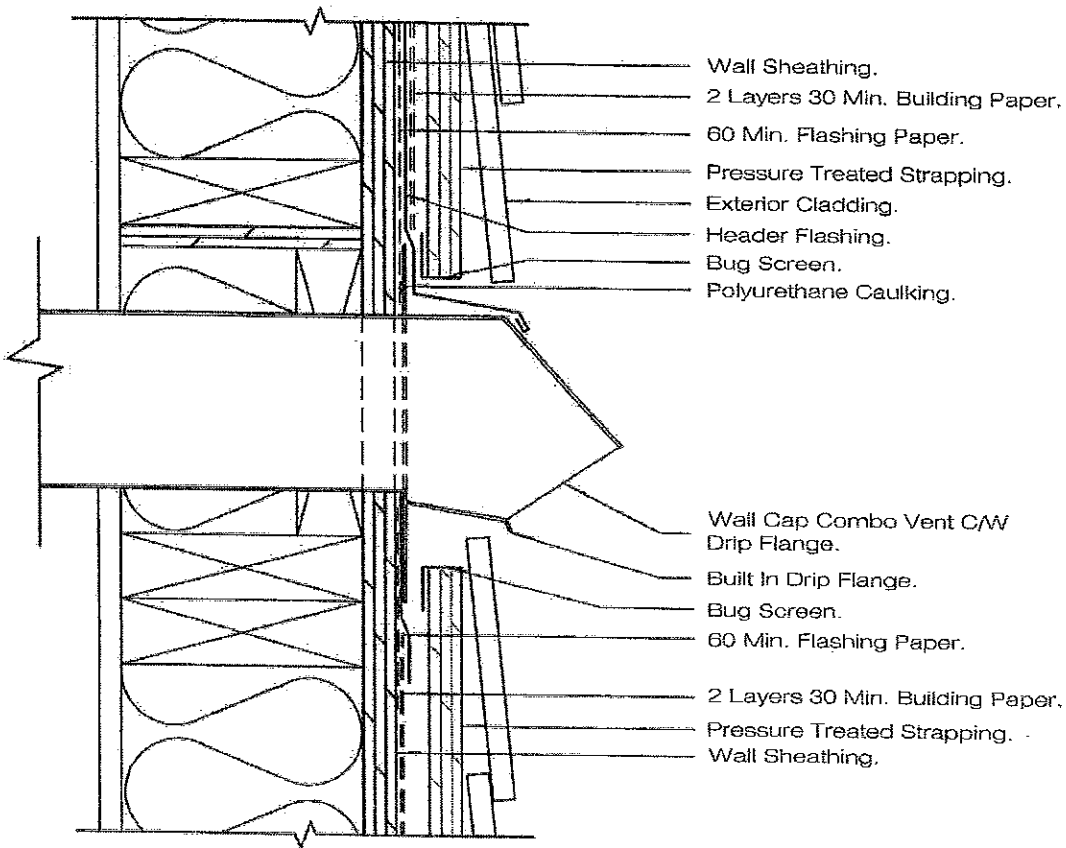
PROJECT:

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SEAL:

DWG. NO.:

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PROJECT:

The Willows  
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 Coquitlam, BC

TITLE:

Vent Cap Installation Guide

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

KR

CHECK:

PROJECT:

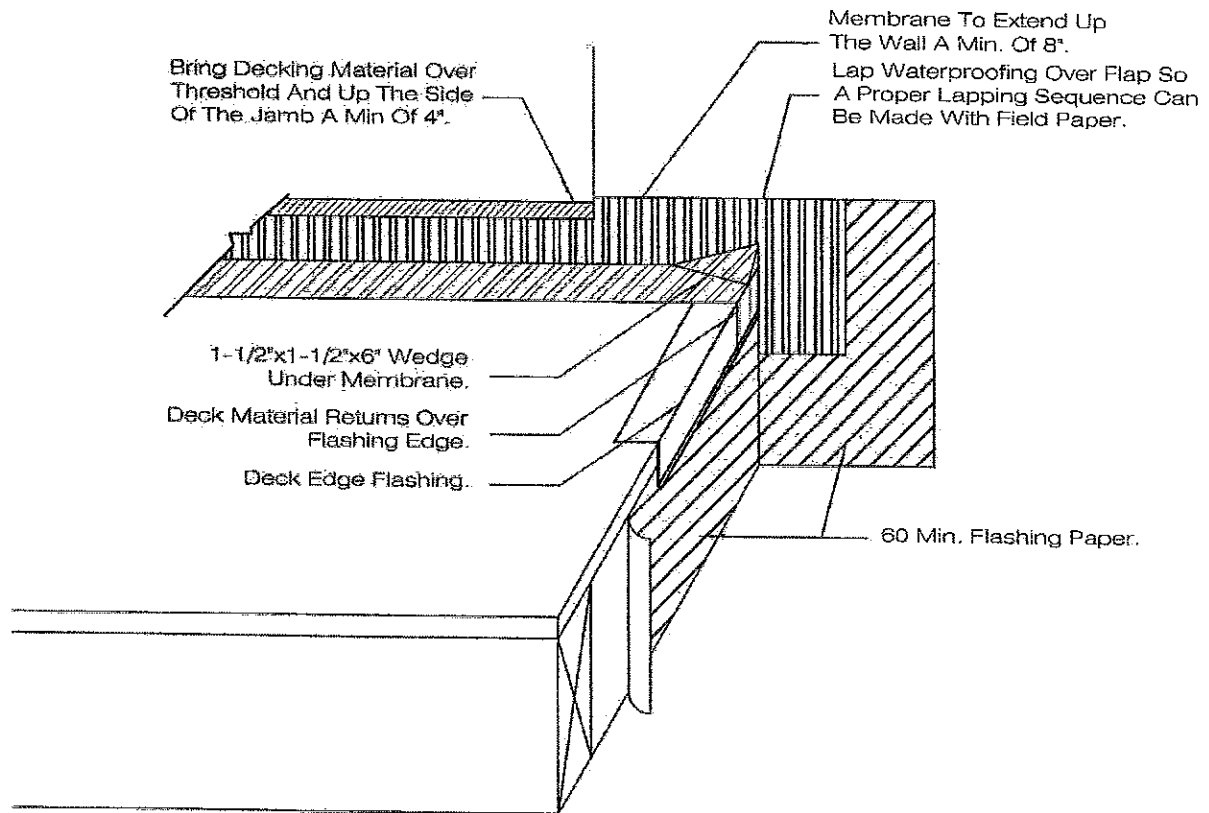
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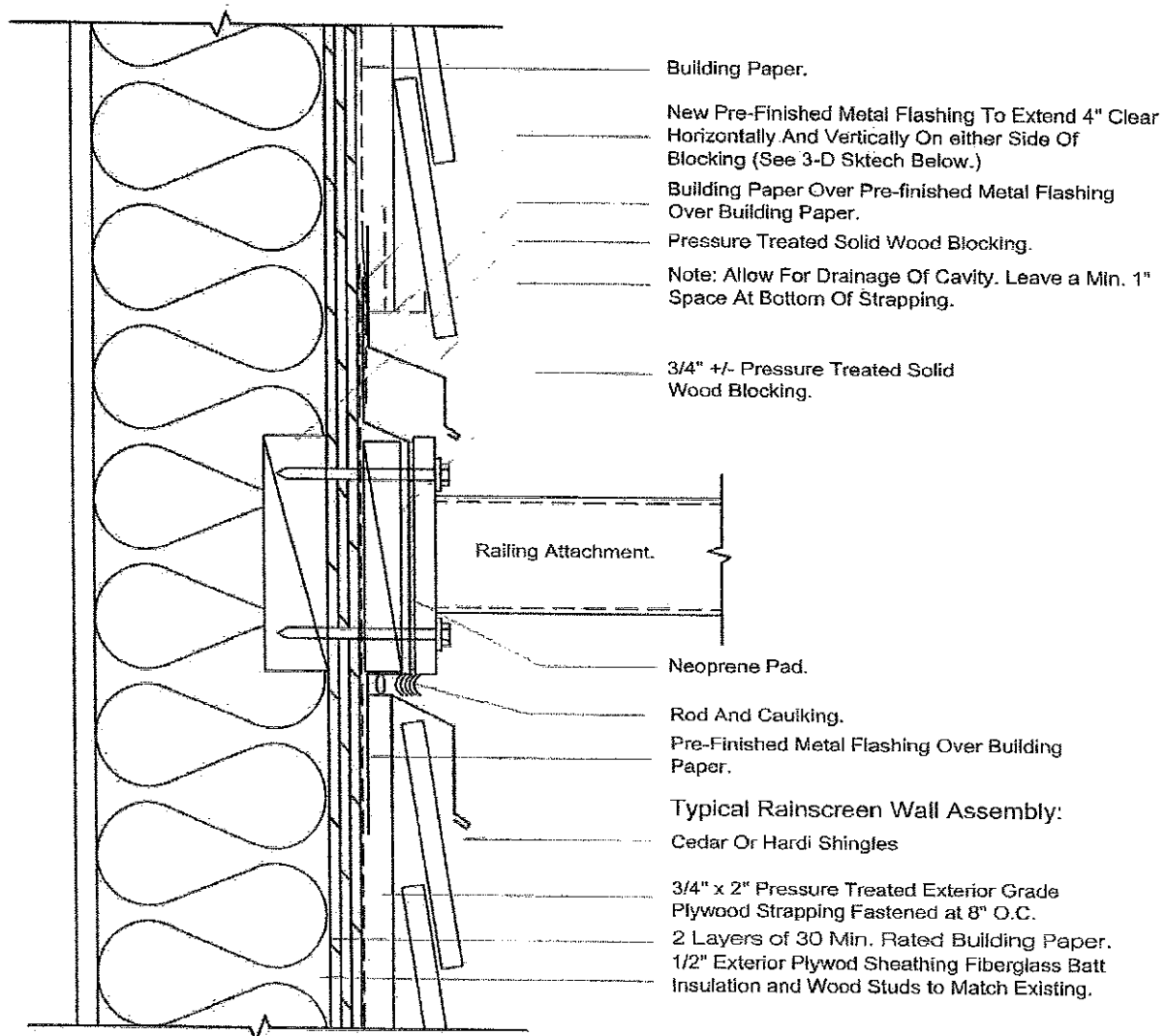
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 <p>702-80711 Simpson Rd. Abbotsford, BC, V2T 6Y7 Toll Free: 1.866.711.8222 Bus: 604.854.8222 Fax: 604.854.8111 calysta@shawbiz.ca</p>	PROJECT:	The Willows 1103/1121 Howie Avenue Coquitlam, BC		DATE:	March 1st, 2010	SEAL:
	TITLE:	Deck And Wall Interface Installation Guide		SCALE:	N.T.S.	
				DRAWN BY:	KR KR	
				CHD:		
				PROJECT:	Cal- 1389	DWG. NO.: BE-17



Note: This Detail SIM To Railing Attachment At Columns.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Exterior Handrail Installation Detail

DATE:

March 1st, 2010

SCALE:

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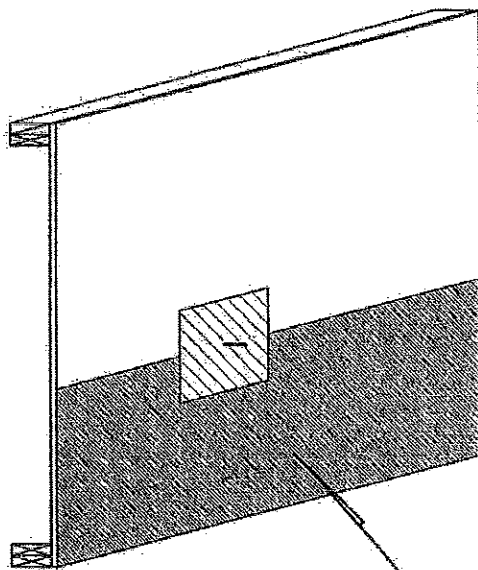
PROJECT:

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SEAL:

DWG. NO.:

BE-18



Drill or punch (Do Not Cut with a Knife) A 1/4" Ø hole in the middle of a 12"x12" square of EPDM rubber roofing membrane and push the pipe through it.

Please Note: It MUST make a tight fit.

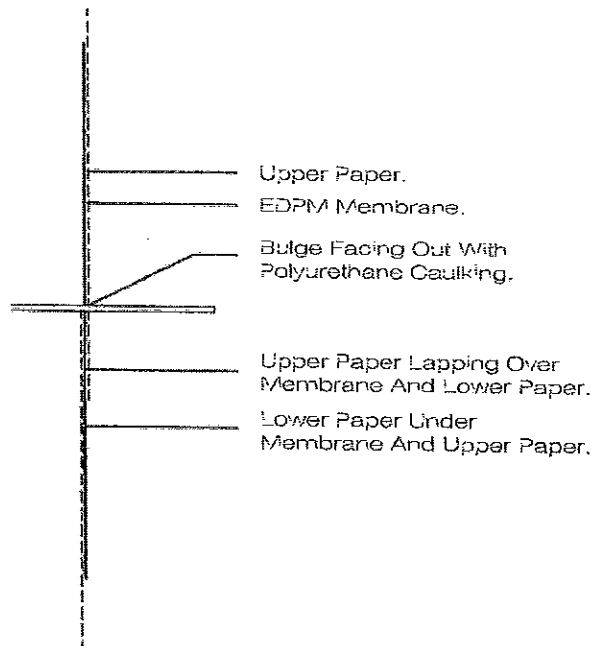
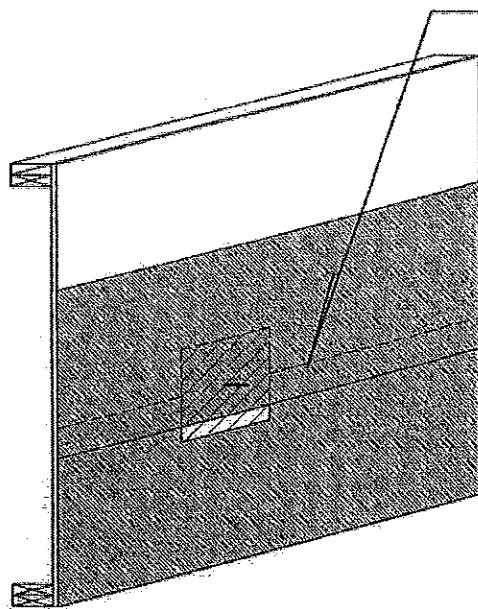
Place the pipe in the wall and staple only the top of the membrane to the wall sheathing. Solder the pipe into the plumbing system at the inside of the wall. Take care not to heat the EPDM membrane.

When applying the building paper, pull the bottom of the EPDM membrane outwards and then push it back along the pipe so it bulges OUT NOT IN at the pipe. Seal the membrane to the pipe with polyurethane caulking.

Apply the lower paper under the membrane and the upper paper over the membrane as shown. Be sure that the upper paper laps over the joint between the lower paper and the membrane by at least 4" as shown.

Lower Paper Under the EPDM Membrane.

Upper Paper Lapped Over The Membrane and The Lower Paper by 4" Min.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Hose Bib Installation Guide

DATE:

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SCALE:

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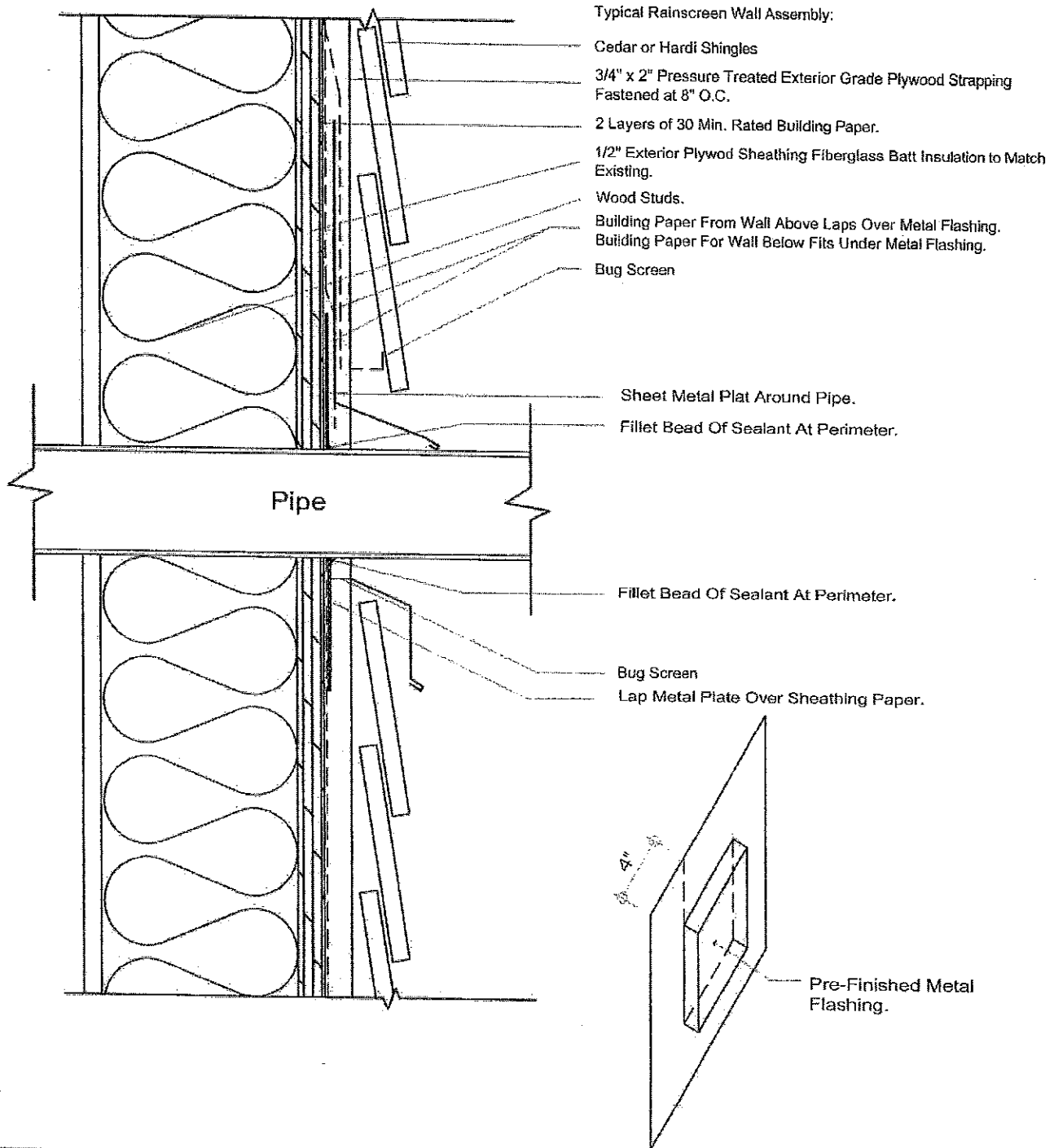
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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Through Wall Penetration Detail

DATE:

March 1st, 2010

SCALE:

N.T.S.

DRAWN BY:

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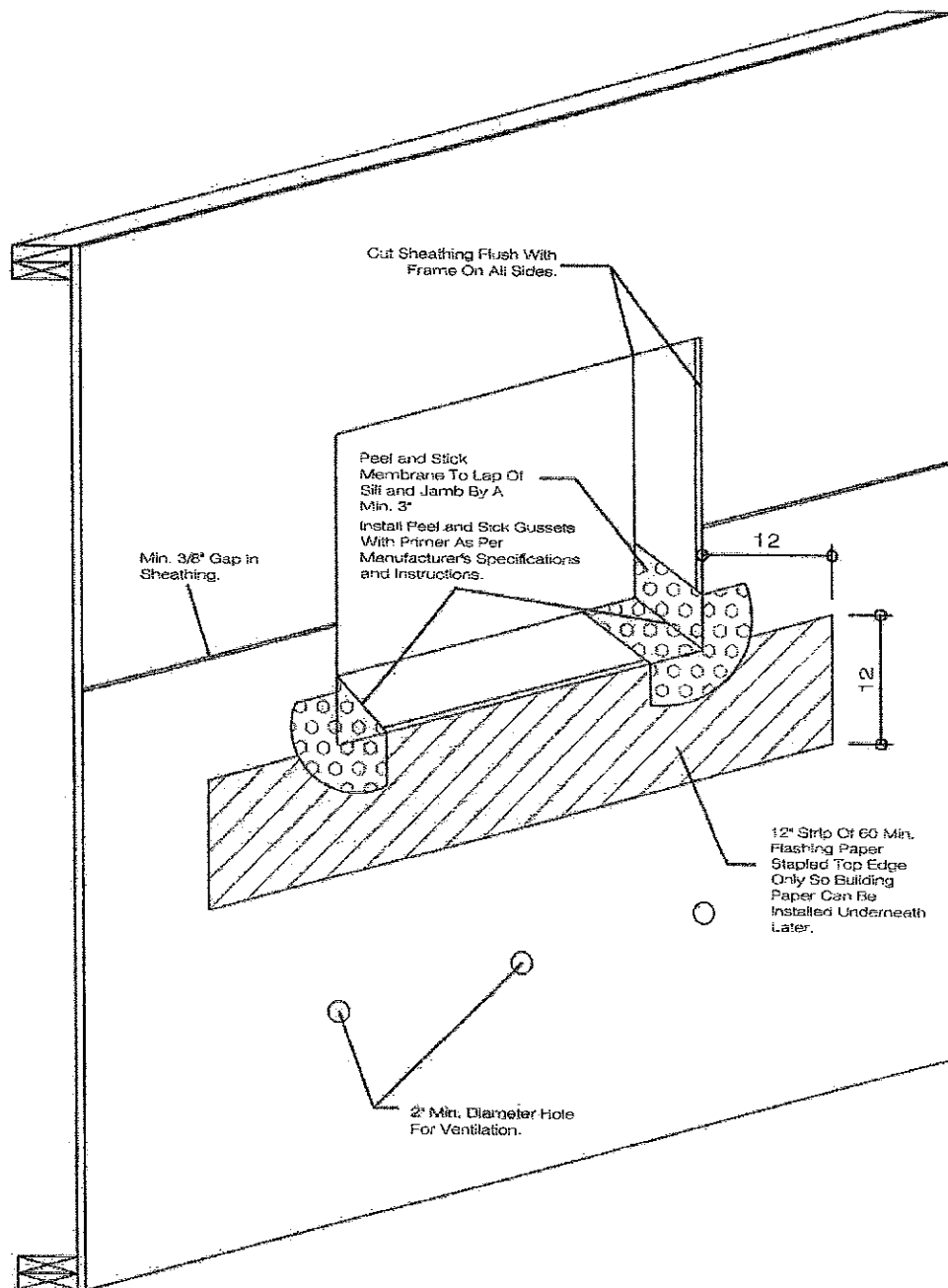
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SEAL:

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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Sill Flashing And Gusset  
Installation Guide

DATE:

March 1st, 2010

SCALE:

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CH'D:

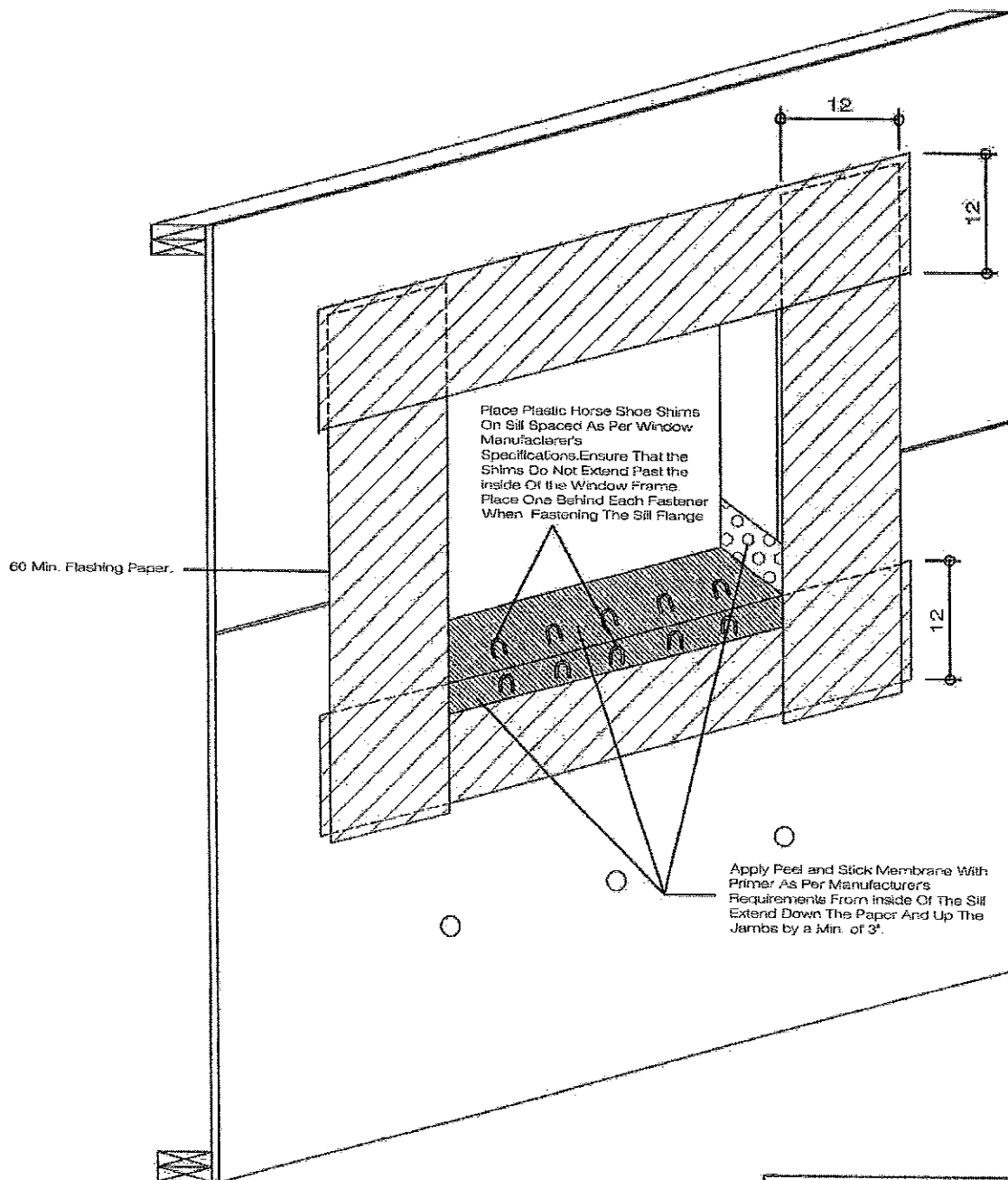
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SEAL:

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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Peel And Stick Membrane And  
Flashing Paper Installation Guide

DATE:

March 1st, 2010

SCALE:

N.T.S.

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CHD:

PROJECT:

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SEAL:

DWG. NO.:

BE-22

Apply A Generous Bead Of Polyurethane Caulking ( Or Approved Alternate) To The Building Paper 3/4" Out From The Rough Opening On The Jamb And Header Area Only.

Insert Horseshoe Shim Under Each Nail In The Sill Range Only.

Fasten Window As Per Manufacturer's Instructions

Note: DO NOT Caulk The Sill To Accommodate For Drainage.



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PROJECT:

The Willows  
1103/1121 Howie Avenue  
Coquitlam, BC

TITLE:

Window Installation Guide

DATE:

March 1st, 2010

SCALE:

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CH'D:

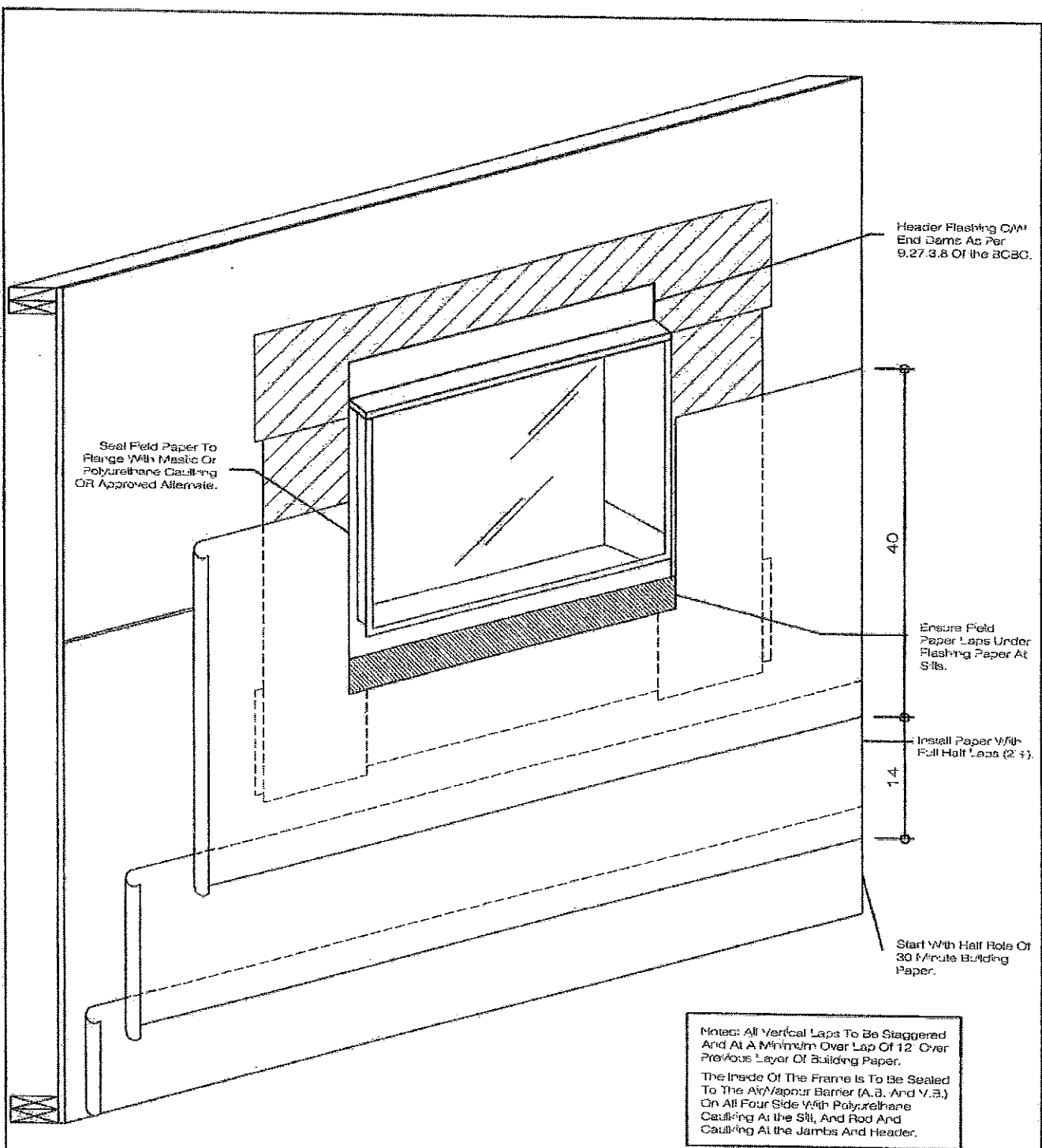
PROJECT:

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SEAL:

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PROJECT:

The Willows  
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Coquitlam, BC

TITLE:

Building Paper Installation Guide

DATE:

March 1st, 2010

SCALE:

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DRAWN BY:

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CHKD:

PROJECT:

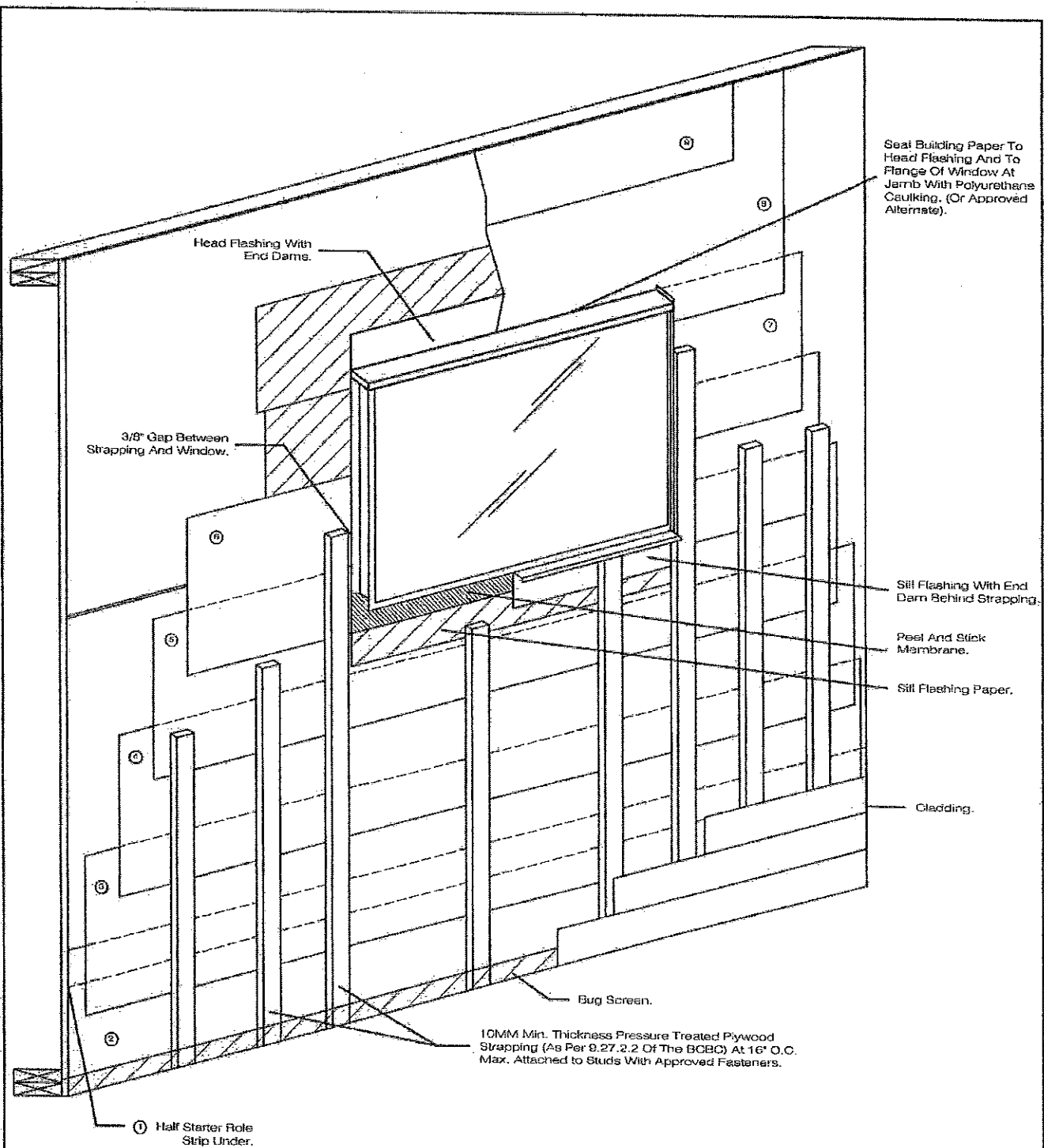
Cal- 1389

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PROJECT:

The Willows  
 1103/1121 Howie Avenue  
 Coquitlam, BC

TITLE:

Building Paper And Strapping  
 Installation Guide

DATE:

March 1st, 2010

SCALE:

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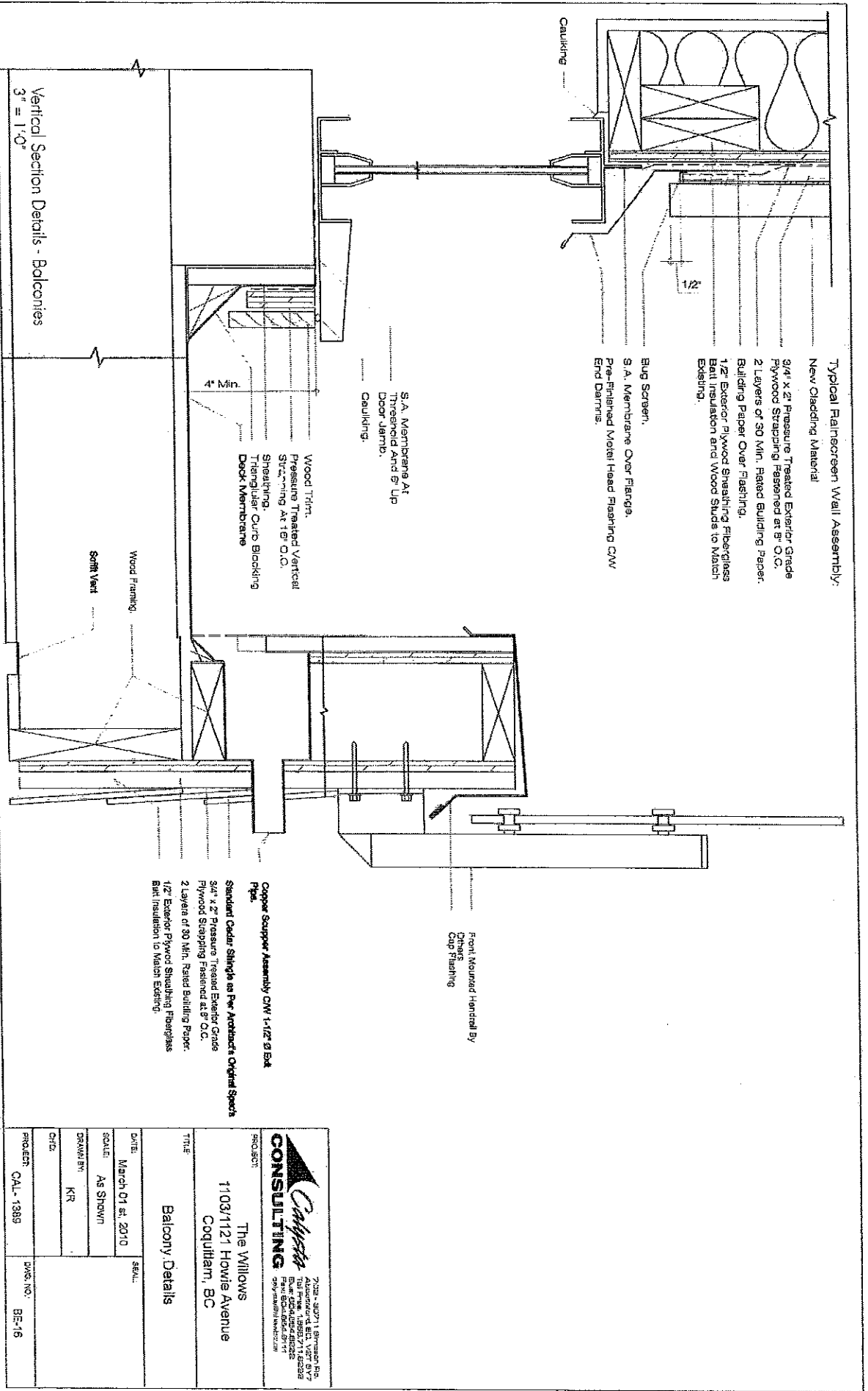
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DWG. NO.:

BE-25



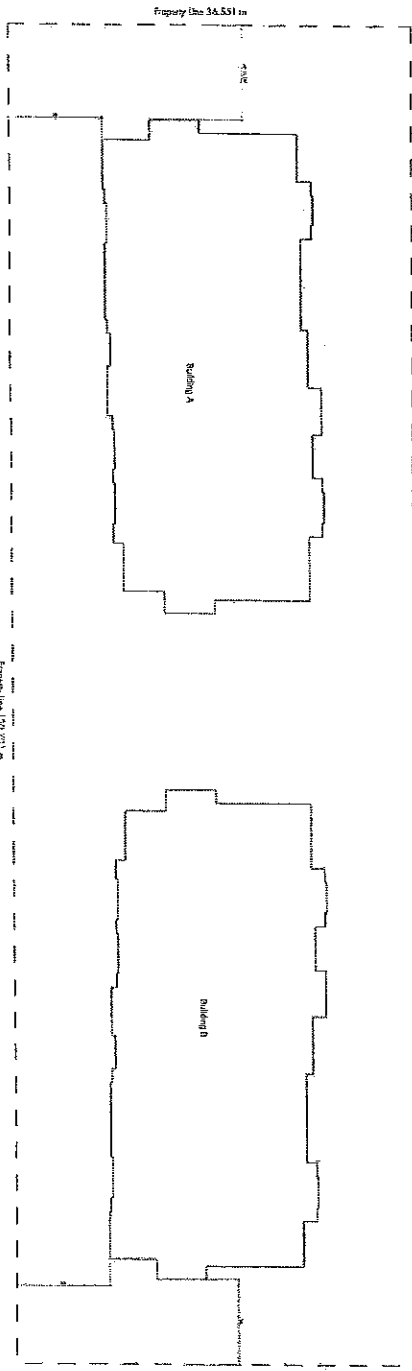
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 1103/1121 Howe Avenue  
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PROJECT	CAL-1385	DWG. NO.	BE-16
DATE	March 01 st, 2010	SCALE	As Shown
DRAWN BY	KR	CHECK	
TITLE	Balcony Details		

Site Plan  
Scale 1/16" = 1'-0"



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