

Drawing Analysis Results

AI Analysis Summary

Plan View: R2.0 (page 2)

Scale: 1:75

- roof_drains: 1
- scuppers: 2
- mechanical_units: 2
- sleeper_curbs: 5
- vent_hoods: 2
- gas_penetrations: 1
- electrical_penetrations: 2

Detail refs: 1/R3.2, 5/R3.1, 4/R3.0, 5/R3.0, 2/R3.2, 4/R3.1, 6/R3.0, 2/R3.0, 1/R3.0, 3/R3.0

Details: R2.1 (page 3)

1 - SECTION #3 - ROOF SLOPE PLAN [field_assembly] - measured in: sqft

- 1. 2.4m WIDE TAPER PACKAGE AT 2% SLOPE → Polyisocyanurate_ISO_Insulation (Tapered insulation package around perimeter as noted on plan)

Details: R3.0 (page 4)

Detail 1 - TYPICAL PROTECTED ROOF ASSEMBLY - NO TAPERED PACKAGE [field_assembly] - measured in: sqft

- 1. New Roof Base Sheet → Base_Membrane (On existing membrane/deck)
- 2. Roof Cap Sheet → Cap_Membrane
- 3. 10mm Drainage Mat → Drainage_Board
- 4. 75mm Extruded Polystyrene Insulation (XPS) → XPS_Insulation
- 5. Filter Fabric → Drainage_Board (Layer above insulation)
- 6. Gravel Ballast → Drainage_Board (Max 100mm depth)

Detail 2 - TYPICAL PROTECTED ROOF ASSEMBLY - WITH TAPERED INSULATION [field_assembly] - measured in: sqft

- 1. Tapered Insulation Package → Polyisocyanurate_ISO_Insulation (Adhered with adhesive ribbons)
- 2. Adhesive Ribbons → Adhesive (300mm O/C)
- 3. Combination Board Base Sheet and 6.4mm Asphalt Core Board → Fiberboard_Insulation (Adhered with adhesive)
- 4. Roof Cap Sheet → Cap_Membrane
- 5. 10mm Drainage Mat → Drainage_Board

- 6. 75mm Extruded Polystyrene Insulation (XPS) → XPS_Insulation
- 7. Filter Fabric → Drainage_Board
- 8. Gravel Ballast → Drainage_Board (Max 100mm depth)

Detail 3 - TYPICAL ROOF DRAIN INSERT WATERPROOFING DETAIL [drain] - measured in: each

- 1. Mineral Wool Insulation → Batt_Insulation (Fill void with mineral wool)
- 2. New Drain Insert → Roof_Drain (Set in sealant)
- 3. Fleece Reinforced Alsan RS Membrane → Fleece_Reinforcement_Fabric (Liquid applied flashing around drain)
- 4. Perimeter Sealant → Sealant_General (Set drain into sealant)

Detail 4 - ROOF AREA DIVIDER CURB WITH EXPANSION JOINT [expansion_joint] - measured in: linear_ft

- 1. 25mm Polyisocyanurate Insulation → Polyisocyanurate_ISO_Insulation (New insulation at curb)
- 2. Dimensional Lumber → Wood_Blocking_Lumber (To accommodate new insulation)
- 3. 13mm Plywood Sheathing → Plywood_Sheathing (New sheathing)
- 4. Mineral Wool → Batt_Insulation (Infill joint)
- 5. Base and Cap Sheet Membrane → Cap_Membrane (Leave loop at joint)
- 6. 24ga Pre-finished Steel Counter Flashing → Flashing_General (Steel counter flashing)
- 7. 24ga Pre-finished Metal Cap Flashing → Flashing_General (Metal cap flashing)

Detail 5 - TYPICAL CONCRETE PANEL DETAIL [parapet] - measured in: linear_ft

- 1. Vapour Barrier → Vapour_Barrier_Membrane (New vapour barrier at transition)
- 2. Foam Backer Rod → Sealant_General (Below air/vapour barrier)
- 3. Firestop Sealant → Sealant_General (Between pipe and sheet metal)
- 4. 26ga Galvanized Steel Metal L Shape → Flashing_General (Fasten to deck/pre-cast)
- 5. Base and Cap Sheet Membrane → Cap_Membrane (Transition from top of curb to wall)
- 6. 25mm Cont. Clamping Bar → Flashing_General (Terminate membrane)
- 7. Fasteners → Fasteners (38mm Hex Head Screws / Pin Bolts)

Detail 6 - TYPICAL GAS PENETRATION [penetration_gas] - measured in: each

- 1. Dimensional Lumber and Plywood Curb → Wood_Blocking_Lumber (Around penetration)
- 2. Mineral Wool Insulation → Batt_Insulation (Fill entire cavity)
- 3. 13mm Plywood Sheathing → Plywood_Sheathing (Cover studs)
- 4. Self-Adhered Base Sheet → Base_Membrane (Around curb)
- 5. Fleece Reinforced Liquid Applied Flashing → Fleece_Reinforcement_Fabric (Around penetration)
- 6. 24ga Pre-finished Steel Cover Flashing → Flashing_General (One piece metal sleeve)
- 7. 24ga Pre-finished Steel Counter Flashing → Flashing_General (Finish tight to insulation)
- 8. New Rubber Blocking → Wood_Blocking_Lumber (Below gas line to match existing)

Details: R3.1 (page 5)

Detail 1 - MECHANICAL SLEEPER CURB DETAIL [sleeper_curb] - measured in: linear_ft

- 1. Wood Blocking → Wood_Blocking_Lumber (Install new wood blocking as required)
- 2. 13mm Plywood Sheathing → Plywood_Sheathing (New 13mm Plywood Sheathing)
- 3. Base and Cap Sheet → SBS_2Ply_Modified_Bitumen (New Base and Cap Sheet installed up under existing mechanical unit frame)
- 4. Fleece Reinforced PMMA → Fleece_Reinforcement_Fabric (Apply fleece reinforced PMMA membrane at existing seams)
- 5. Sealant → Sealant_General (Apply sealant bead at leading edge)
- 6. 24ga Pre-finished Steel Flashing → Flashing_General (New 24ga pre-finished steel flashing)
- 7. 22ga Pre-finished Steel Cap Flashing → Flashing_General (New 22ga pre-finished steel cap flashing, face fastened)
- 8. 24ga Galvanized Steel Strapping → Flashing_General (Install 24ga galvanized steel strapping)
- 9. Hex Head Fasteners → Fasteners (Four 50mm Hex Head #14 fasteners with rubberized gasket)

Detail 2 - LARGE OPENING COVER [opening_cover] - measured in: each

- 1. 38x38x6.4 Steel Angle → Flashing_General (Steel angle on edge, space at 450 o/c)
- 2. 3mm Steel Plate Cover → Coated_Metal_Sheet (Utilize reinforced plate steel if opening > 400mm)
- 3. Tapcon Phillips Head Fasteners → Fasteners (Tapcon Phillips Head, min 8 per opening)

Detail 3 - SMALL OPENING COVER [opening_cover] - measured in: each

- 1. 3mm Steel Plate Cover → Coated_Metal_Sheet (Max opening 400x400)
- 2. Tapcon Phillips Head Fasteners → Fasteners (Tapcon Phillips Head, 4 per countersunk plate)

Detail 4 - MECHANICAL UNIT TRANSITION DETAIL - TYPE 1 [mechanical_curb] - measured in: linear_ft

- 1. Base and Cap Sheet → SBS_2Ply_Modified_Bitumen (New Base and Cap Sheet installed up under existing mechanical unit frame)
- 2. Fleece Reinforced PMMA → Fleece_Reinforcement_Fabric (Apply fleece reinforced PMMA membrane at existing seams)
- 3. Sealant → Sealant_General (Apply sealant bead at leading edge)
- 4. 24ga Pre-finished Steel Flashing → Flashing_General (New 24ga pre-finished steel flashing)
- 5. Hex Head Fasteners → Fasteners (Fasten @ 300mm O/C with hex head 50mm concrete screws)

Detail 5 - MECHANICAL UNIT TRANSITION DETAIL - TYPE 2 [mechanical_curb] - measured in: linear_ft

- 1. Fleece Reinforced PMMA → Fleece_Reinforcement_Fabric (Apply fleece reinforced PMMA membrane at existing seams)
- 2. 24ga Pre-finished Steel Counter Flashing → Flashing_General (New 24ga pre-finished steel counter flashing)
- 3. Hex Head Fasteners → Fasteners (Fasten @ 300mm O/C with hex head 50mm concrete screws)

Detail 6 - TYPICAL MECHANICAL CURB [mechanical_curb] - measured in: linear_ft

- 1. Dimensional Lumber → Wood_Blocking_Lumber (New dimensional lumber as required)
- 2. Asphaltic Core Board / Gypsum Sheathing → Gypsum_Fiber_Coverboard (6mm Asphaltic Core Board or 12mm Gypsum Sheathing)
- 3. Base Membrane → SBS_Membrane (Return base membrane over curb)
- 4. 24ga Pre-finished Steel Counter Flashing → Flashing_General (New 24ga pre-finished steel counter flashing)
- 5. Self Tapping Screws → Screws (Self tapping #8 flat head or pan head screws)
- 6. Neoprene Gasket → EPDM_Accessory (With 50mm plates C/W Neoprene Gasket)

Details: R3.2 (page 6)

Detail 2 - ROOF TO CURTAIN WALL DETAIL [curtain_wall] - measured in: linear_ft

- 1. NEW 12.5mm PLYWOOD ON EXTERIOR → Plywood_Sheathing (12.5mm thickness)
- 2. NEW SOPREMA 1100HT SELF-ADHERED MEMBRANE CURTAIN WALL SHOULDER → Base_Membrane (Self-adhered high temp membrane)
- 3. FILL GAPS WITH MINERAL WOOL INSULATION → Batt_Insulation (Mineral wool)
- 4. NEW 26GA METAL BREAKSHAPE TO TRANSITION FROM CURB TO CURTAIN WALL FRAMING → Flashing_General (26GA metal)
- 5. NEW DRIP FLASHING → Flashing_General (At curtain wall)
- 6. NEW 24GA PRE-FINISHED STEEL COUNTER FLASHING → Flashing_General (24GA, finish tight to insulation below ballast)

Detail 1 - TYPICAL PARAPET DETAIL [parapet] - measured in: linear_ft

- 1. NEW 12.5mm PLYWOOD SHEATHING → Plywood_Sheathing (On interior face of parapet wall)
- 2. 50mm PIN BOLTS → Fasteners (Fastening plywood to concrete)
- 3. NEW DIMENSIONAL LUMBER AND WOOD BLOCKING → Wood_Blocking_Lumber (Build up parapet, slope 5% min)
- 4. HEX HEAD #8 CONCRETE SCREWS → Screws (Fastening blocking to concrete)
- 5. CONTINUOUS 22GA GALV. STEEL CLIP → Flashing_General (Continuous cleat on exterior face)
- 6. 50mm #8 PAN HEAD SCREWS → Screws (Fastening clip)
- 7. 24GA PREFINISHED STEEL CAP FLASHING → Flashing_General (Standing seam at corners, S-Lock joints)
- 8. 50mm #12 HEX HEAD CONCRETE SCREWS → Screws (Face fasten cap flashing interior)
- 9. 24GA PRE-FINISHED STEEL COUNTER FLASHING → Flashing_General (Max 2.4m lengths, S-locks on vertical joints)

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 49)

Sloped/Tapered Insulation → XPS_Insulation

SBS Membrane (Soprema) → SBS_Membrane
Flashings (Soprema) → Flashing_General

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 50)

Tapered Insulation → Polyisocyanurate_ISO_Insulation
Base Sheet Membrane → Base_Membrane
Cap Sheet Membrane → Cap_Membrane
Solvent-based Adhesive → Adhesive
Protective Material (Heavy Canvas) → Flashing_General

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 51)

Plywood sheets → Plywood_Sheathing
Rolled base sheet membranes → Base_Membrane
Modified bituminous membrane → SBS_Membrane

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 52)

Tapered Polyisocyanurate Insulation → Polyisocyanurate_ISO_Insulation
Low rise foam adhesive → Adhesive
SBS Modified Bitumen Membrane → SBS_Membrane
Cap Sheet Flashing/Stripping (Torch Grade) → Cap_Membrane

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 53)

Sopraply Traffic Cap (Soprema Inc.) → Cap_Membrane
Sopraply Base 520 (Soprema Inc.) → Base_Membrane
Sopraply Stick Duo (Soprema Inc.) → Base_Membrane
2:1 Soprasmart Board (Soprema Inc.) → Base_Membrane
Sopradrain EcoVent (Soprema) → Drainage_Board
Sopra-XPS 40 (Soprema) → XPS_Insulation
Filter Fabric → Drainage_Board

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 54)

Filter Fabric / Mat (Soprafiltre by Soprema Inc., Fabrene V.I.E. by Fabrene Inc., Fabroc 400 by Hydrotech Membrane Corporation) → Fleece_Reinforcement_Fabric

Roof Ballast (Gravel) → Walkway_Pads

Self-Adhering Membrane (Perm-A-Barrier Wall Membrane by Grace, Sopraseal Stick 1100T by Soprema, Blueskin SA LT by Henry) → Vapour_Barrier_Membrane

Paver Pedestals (Shim/Plate) → Walkway_Pads

Paver Separation Tabs (BJ Spacer Tabs 3mm by BlackJack) → Clips

Adjustable Paver Pedestals (Paver Pedestal 6X by PAVE-EL or approved alternative) → Walkway_Pads

Adhesives → Adhesive

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 55)

Alsan RS 230 Flash (Soprema) → Flashing_General

Reinforcing fleece (Soprema) → Fleece_Reinforcement_Fabric

Asphalt Primer (Manufacturer's standard) → Primer

Torch applied base sheet → Base_Membrane

Torch applied cap sheet → Cap_Membrane

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 56)

Two-ply Membrane Stripping (SBS) → SBS_Membrane

Propane Torch → Equipment_Torch

Securement Strips (Termination Bar) → Flashing_General

Fasteners → Fasteners

Self-adhered membrane → SBS_Membrane

Primer → Primer

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 57)

Modified Bitumen Membrane (Reinforcement Ply) → SBS_Membrane

Mastic → Mastic

Clamping Bar (Galvanized metal or Aluminium) → Flashing_General

Corrosion Resistant Fasteners → Fasteners

Joint Sealant → Sealant_General

Drainage Course → Drainage_Board

Adhesive → Adhesive

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 58)

Insulation Boards → XPS_Insulation

Filter Fabric (Ballast Sheet) → Fleece_Reinforcement_Fabric

Stone Ballast → None

Paving Slabs → Walkway_Pads

Paver Levelling Pads → Walkway_Pads

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 59)

Pavers / Slabs → Walkway_Pads

Base Sheet Flashing Material → Base_Membrane

Cap Sheet → Cap_Membrane

Roof Drain Clamping Ring → Roof_Drain

Water Cut-offs → Mastic

Mineral Granules → Cap_Membrane

Spec: 07 52 01 - INVERTED MODIFIED BITUMEN ROOFING (page 60)

Modified Bitumen Membrane → SBS_Membrane

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 61)

Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated Steel Sheet → Coated_Metal_Sheet

55% Aluminum-Zinc Alloy-Coated Steel Sheet → Coated_Metal_Sheet

Metal Flashing (General) → Flashing_General

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 62)

G90 Galvanized Steel Sheet (Carbon Steel) → Coated_Metal_Sheet

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 63)

Prefinished steel → Coated_Metal_Sheet

Cleats and Starter Strips → Flashing_General

Washers → Fasteners

Touch-Up Paint → Coating_Paint

Zinc-rich paint → Coating_Paint

Fasteners → Screws

Aluminum Flashings → Flashing_General

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 64)

Sealant → Sealant_General

Metal Flashing → Flashing_General

Saddle Flashing → Flashing_General

Shop Paint → Coating_Paint

Cold formed C-shaped steel studs → Parapet_Flashing_Detail

U-shaped runner track → Parapet_Flashing_Detail

Clip angles → Clips

Bridging → Parapet_Flashing_Detail

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 65)

Power-Driven Fasteners (Smack Pins) → Fasteners

Self-tapping and self-drilling screws → Screws

Sheet metal screws → Screws

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 66)

Metal Counter Flashing → Flashing_General

Lead wedge or friction fit pins → Fasteners

Caulk → Sealant_General

Fasteners → Fasteners

Continuous metal starter strips → Flashing_General

Metal Cleats → Clips

Cap Flashings → Flashing_General

Spec: 07 62 00 - METAL FLASHING AND TRIM (page 67)

Screws → Screws

Fasteners (Metal Stud System Anchors) → Fasteners

Powder Actuated Fasteners → Fasteners

Spec: 07 92 00 - BUILDING ENVELOPE SEALANTS (page 68)

Elastomeric Joint Sealant → Sealant_General

Spec: 07 92 00 - BUILDING ENVELOPE SEALANTS (page 69)

Joint Cleaner → Sealant_General

Primers → Primer

Joint Back-Up (Extruded Tubing) → Sealant_General

Joint Back-Up (Closed Cell Foam) → Sealant_General

Joint Back-Up (Solid Rod) → Sealant_General

Bond Breaker → Tape

Vent/Weeping Tubes → Sealant_General

Spec: 07 92 00 - BUILDING ENVELOPE SEALANTS (page 70)

One-component polyurethane sealant (Category 1) (Dymonic 100 by Tremco Ltd. / MasterSeal NP1 by BASF) → Sealant_General

Primer (As recommended by sealant manufacturer) → Primer

Spec: 07 92 00 - BUILDING ENVELOPE SEALANTS (page 71)

Joint back-up → Sealant_General

Primer → Primer

Bond breaker tape → Tape

Interior splines → Sealant_General

Sealant (Category 1) → Sealant_General

Spec: 07 92 00 - BUILDING ENVELOPE SEALANTS (page 72)

Sealant → Sealant_General

Masking Tape → Tape

Detail-Based Quantity Takeoff (AI-Analyzed)

| | | | |
|------------|-----------|-----------------|--------------|
| ROOF AREA | PERIMETER | PARAPET | PENETRATIONS |
| 4,900 sqft | 280 LF | 165 LF x 0.0 ft | 12 |

1 - SECTION #3 - ROOF SLOPE PLAN [field_assembly] (ref: R2.1)

Measured in: sqft | Base value: 4,900.0 | Detail cost: \$14,699.94

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|---|----------------------|------------|-------------|
| 2.4m WIDE TAPER PACKAGE AT 2% SLOPE (Tapered insulation package around perimeter as noted on plan) | 337 sheet (4'x4') | \$43.62 | \$14,699.94 |

Detail 1 - TYPICAL PROTECTED ROOF ASSEMBLY - NO TAPERED PACKAGE [field_assembly] (ref: R3.0)

Measured in: sqft | Base value: 4,900.0 | Detail cost: \$58,277.98

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|------------------|------------|-------------|
| New Roof Base Sheet (On existing membrane/deck) | 54 roll | \$193.85 | \$10,467.90 |
| Roof Cap Sheet | 63 roll | \$216.95 | \$13,667.85 |
| 10mm Drainage Mat | 18 roll (6'x50') | \$410.53 | \$7,389.54 |

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|-------------------|------------|-------------|
| 75mm Extruded Polystyrene Insulation (XPS) | 337 sheet (2'x8') | \$35.53 | \$11,973.61 |
| Filter Fabric (Layer above insulation) | 18 roll (6'x50') | \$410.53 | \$7,389.54 |
| Gravel Ballast (Max 100mm depth) | 18 roll (6'x50') | \$410.53 | \$7,389.54 |

Detail 2 - TYPICAL PROTECTED ROOF ASSEMBLY - WITH TAPERED INSULATION

[field_assembly] (ref: R3.0)

Measured in: sqft | Base value: 4,900.0 | Detail cost: \$99,109.05

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|----------------------|------------|-------------|
| Tapered Insulation Package (Adhered with adhesive ribbons) | 337 sheet (4'x4') | \$43.62 | \$14,699.94 |
| Adhesive Ribbons (300mm O/C) | 27 pail | \$735.19 | \$19,850.13 |
| Combination Board Base Sheet and 6.4mm Asphalt Core Board (Adhered with adhesive) | 674 sheet (2'x4') | \$24.85 | \$16,748.90 |
| Roof Cap Sheet | 63 roll | \$216.95 | \$13,667.85 |
| 10mm Drainage Mat | 18 roll (6'x50') | \$410.53 | \$7,389.54 |
| 75mm Extruded Polystyrene Insulation (XPS) | 337 sheet (2'x8') | \$35.53 | \$11,973.61 |
| Filter Fabric | 18 roll (6'x50') | \$410.53 | \$7,389.54 |
| Gravel Ballast (Max 100mm depth) | 18 roll (6'x50') | \$410.53 | \$7,389.54 |

Detail 3 - TYPICAL ROOF DRAIN INSERT WATERPROOFING DETAIL [drain] (ref: R3.0)

Measured in: each | Base value: 1 | Detail cost: \$1,496.22

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|---|----------|------------|------------|
| Mineral Wool Insulation (Fill void with mineral wool) | 1 bundle | \$91.90 | \$91.90 |
| New Drain Insert (Set in sealant) | 1 EA | \$181.77 | \$181.77 |
| Fleece Reinforced Alsan RS Membrane (Liquid applied flashing around drain) | 1 roll | \$1,192.69 | \$1,192.69 |
| Perimeter Sealant (Set drain into sealant) | 1 tube | \$29.86 | \$29.86 |

Detail 4 - ROOF AREA DIVIDER CURB WITH EXPANSION JOINT [expansion_joint] (ref: R3.0)

Measured in: linear_ft | Base value: 280.0 | Detail cost: \$15,839.79

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|------------------|------------|------------|
| 25mm Polyisocyanurate Insulation (New insulation at curb) | 20 sheet (4'x4') | \$43.62 | \$872.40 |
| Dimensional Lumber (To accommodate new insulation) | 39 8ft piece | \$16.59 | \$647.01 |
| 13mm Plywood Sheathing (New sheathing) | 39 4'x8' sheet | \$48.74 | \$1,900.86 |
| Mineral Wool (Infill joint) | 8 bundle | \$91.90 | \$735.20 |
| Base and Cap Sheet Membrane (Leave loop at joint) | 4 roll | \$216.95 | \$867.80 |
| 24ga Pre-finished Steel Counter Flashing (Steel counter flashing) | 31 10ft piece | \$174.46 | \$5,408.26 |

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|---------------|------------|------------|
| 24ga Pre-finished Metal Cap Flashing (Metal cap flashing) | 31 10ft piece | \$174.46 | \$5,408.26 |

Detail 5 - TYPICAL CONCRETE PANEL DETAIL [parapet] (ref: R3.0)

Measured in: linear_ft | Base value: 165.0 | Detail cost: \$8,946.71

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|---------------|------------|------------|
| Vapour Barrier (New vapour barrier at transition) | 1 roll | \$173.66 | \$173.66 |
| Foam Backer Rod (Below air/vapour barrier) | 10 tube | \$29.86 | \$298.60 |
| Firestop Sealant (Between pipe and sheet metal) | 10 tube | \$29.86 | \$298.60 |
| 26ga Galvanized Steel Metal L Shape (Fasten to deck/pre-cast) | 19 10ft piece | \$174.46 | \$3,314.74 |
| Base and Cap Sheet Membrane (Transition from top of curb to wall) | 3 roll | \$216.95 | \$650.85 |
| 25mm Cont. Clamping Bar (Terminate membrane) | 19 10ft piece | \$174.46 | \$3,314.74 |
| Fasteners (38mm Hex Head Screws / Pin Bolts) | 2 box (1M) | \$447.76 | \$895.52 |

Detail 6 - TYPICAL GAS PENETRATION [penetration_gas] (ref: R3.0)

Measured in: each | Base value: 1 | Detail cost: \$1,909.28

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|---------------|------------|------------|
| Dimensional Lumber and Plywood Curb (Around penetration) | 1 8ft piece | \$16.59 | \$16.59 |
| Mineral Wool Insulation (Fill entire cavity) | 1 bundle | \$91.90 | \$91.90 |
| 13mm Plywood Sheathing (Cover studs) | 1 4'x8' sheet | \$48.74 | \$48.74 |
| Self-Adhered Base Sheet (Around curb) | 1 roll | \$193.85 | \$193.85 |
| Fleece Reinforced Liquid Applied Flashing (Around penetration) | 1 roll | \$1,192.69 | \$1,192.69 |
| 24ga Pre-finished Steel Cover Flashing (One piece metal sleeve) | 1 10ft piece | \$174.46 | \$174.46 |
| 24ga Pre-finished Steel Counter Flashing (Finish tight to insulation) | 1 10ft piece | \$174.46 | \$174.46 |
| New Rubber Blocking (Below gas line to match existing) | 1 8ft piece | \$16.59 | \$16.59 |

Detail 1 - MECHANICAL SLEEPER CURB DETAIL [sleeper_curb] (ref: R3.1)

Measured in: linear_ft | Base value: 5 | Detail cost: \$2,294.02

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|---------------|------------|-----------|
| Wood Blocking (Install new wood blocking as required) | 1 8ft piece | \$16.59 | \$16.59 |
| 13mm Plywood Sheathing (New 13mm Plywood Sheathing) | 1 4'x8' sheet | \$48.74 | \$48.74 |
| Base and Cap Sheet (New Base and Cap Sheet installed up under existing mechanical unit frame) | 5 EA | \$7.00 | \$35.00 |

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|---|--------------|------------|------------|
| Fleece Reinforced PMMA (Apply fleece reinforced PMMA membrane at existing seams) | 1 roll | \$1,192.69 | \$1,192.69 |
| Sealant (Apply sealant bead at leading edge) | 1 tube | \$29.86 | \$29.86 |
| 24ga Pre-finished Steel Flashing (New 24ga pre-finished steel flashing) | 1 10ft piece | \$174.46 | \$174.46 |
| 22ga Pre-finished Steel Cap Flashing (New 22ga pre-finished steel cap flashing, face fastened) | 1 10ft piece | \$174.46 | \$174.46 |
| 24ga Galvanized Steel Strapping (Install 24ga galvanized steel strapping) | 1 10ft piece | \$174.46 | \$174.46 |
| Hex Head Fasteners (Four 50mm Hex Head #14 fasteners with rubberized gasket) | 1 box (1M) | \$447.76 | \$447.76 |

Detail 2 - LARGE OPENING COVER [opening_cover] (ref: R3.1)

Measured in: each | Base value: 2 | Detail cost: \$2,410.66

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|------------------|------------|------------|
| 38x38x6.4 Steel Angle (Steel angle on edge, space at 450 o/c) | 2 10ft piece | \$174.46 | \$348.92 |
| 3mm Steel Plate Cover (Utilize reinforced plate steel if opening > 400mm) | 2 sheet (4'x10') | \$583.11 | \$1,166.22 |
| Tapcon Phillips Head Fasteners (Tapcon Phillips Head, min 8 per opening) | 2 box (1M) | \$447.76 | \$895.52 |

Detail 3 - SMALL OPENING COVER [opening_cover] (ref: R3.1)

Measured in: each | Base value: 2 | Detail cost: \$2,061.74

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|---|------------------|------------|------------|
| 3mm Steel Plate Cover (Max opening 400x400) | 2 sheet (4'x10') | \$583.11 | \$1,166.22 |
| Tapcon Phillips Head Fasteners (Tapcon Phillips Head, 4 per countersunk plate) | 2 box (1M) | \$447.76 | \$895.52 |

Detail 4 - MECHANICAL UNIT TRANSITION DETAIL - TYPE 1 [mechanical_curb] (ref: R3.1)

Measured in: linear_ft | Base value: 2 | Detail cost: \$1,858.77

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|--------------|------------|------------|
| Base and Cap Sheet (New Base and Cap Sheet installed up under existing mechanical unit frame) | 2 EA | \$7.00 | \$14.00 |
| Fleece Reinforced PMMA (Apply fleece reinforced PMMA membrane at existing seams) | 1 roll | \$1,192.69 | \$1,192.69 |
| Sealant (Apply sealant bead at leading edge) | 1 tube | \$29.86 | \$29.86 |
| 24ga Pre-finished Steel Flashing (New 24ga pre-finished steel flashing) | 1 10ft piece | \$174.46 | \$174.46 |
| Hex Head Fasteners (Fasten @ 300mm O/C with hex head 50mm concrete screws) | 1 box (1M) | \$447.76 | \$447.76 |

Detail 5 - MECHANICAL UNIT TRANSITION DETAIL - TYPE 2 [mechanical_curb] (ref: R3.1)

Measured in: linear_ft | Base value: 2 | Detail cost: \$1,814.91

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|--------------|------------|------------|
| Fleece Reinforced PMMA (Apply fleece reinforced PMMA membrane at existing seams) | 1 roll | \$1,192.69 | \$1,192.69 |
| 24ga Pre-finished Steel Counter Flashing (New 24ga pre-finished steel counter flashing) | 1 10ft piece | \$174.46 | \$174.46 |
| Hex Head Fasteners (Fasten @ 300mm O/C with hex head 50mm concrete screws) | 1 box (1M) | \$447.76 | \$447.76 |

Detail 6 - TYPICAL MECHANICAL CURB [mechanical_curb] (ref: R3.1)

Measured in: linear_ft | Base value: 2 | Detail cost: \$957.62

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|-----------------|------------|-----------|
| Dimensional Lumber (New dimensional lumber as required) | 1 8ft piece | \$16.59 | \$16.59 |
| Asphaltic Core Board / Gypsum Sheathing (6mm Asphaltic Core Board or 12mm Gypsum Sheathing) | 1 sheet (4'x8') | \$29.62 | \$29.62 |
| Base Membrane (Return base membrane over curb) | 1 roll | \$298.00 | \$298.00 |
| 24ga Pre-finished Steel Counter Flashing (New 24ga pre-finished steel counter flashing) | 1 10ft piece | \$174.46 | \$174.46 |
| Self Tapping Screws (Self tapping #8 flat head or pan head screws) | 1 box | \$39.96 | \$39.96 |
| Neoprene Gasket (With 50mm plates C/W Neoprene Gasket) | 1 roll | \$398.99 | \$398.99 |

Detail 2 - ROOF TO CURTAIN WALL DETAIL [curtain_wall] (ref: R3.2)

Measured in: linear_ft | Base value: 165.0 | Detail cost: \$11,912.44

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|---|----------------|------------|------------|
| NEW 12.5mm PLYWOOD ON EXTERIOR (12.5mm thickness) | 23 4'x8' sheet | \$48.74 | \$1,121.02 |
| NEW SOPREMA 1100HT SELF-ADHERED MEMBRANE CURTAIN WALL SHOULDER (Self-adhered high temp membrane) | 2 roll | \$193.85 | \$387.70 |
| FILL GAPS WITH MINERAL WOOL INSULATION (Mineral wool) | 5 bundle | \$91.90 | \$459.50 |
| NEW 26GA METAL BREAKSHAPE TO TRANSITION FROM CURB TO CURTAIN WALL FRAMING (26GA metal) | 19 10ft piece | \$174.46 | \$3,314.74 |
| NEW DRIP FLASHING (At curtain wall) | 19 10ft piece | \$174.46 | \$3,314.74 |
| NEW 24GA PRE-FINISHED STEEL COUNTER FLASHING (24GA, finish tight to insulation below ballast) | 19 10ft piece | \$174.46 | \$3,314.74 |

Detail 1 - TYPICAL PARAPET DETAIL [parapet] (ref: R3.2)

Measured in: linear_ft | Base value: 165.0 | Detail cost: \$12,582.09

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|----------------|------------|------------|
| NEW 12.5mm PLYWOOD SHEATHING (On interior face of parapet wall) | 23 4'x8' sheet | \$48.74 | \$1,121.02 |
| 50mm PIN BOLTS (Fastening plywood to concrete) | 2 box (1M) | \$447.76 | \$895.52 |
| NEW DIMENSIONAL LUMBER AND WOOD BLOCKING (Build up parapet, slope 5% min) | 23 8ft piece | \$16.59 | \$381.57 |
| HEX HEAD #8 CONCRETE SCREWS (Fastening blocking to concrete) | 2 box | \$39.96 | \$79.92 |

| MATERIAL | QTY | UNIT PRICE | LINE COST |
|--|---------------|------------|------------|
| CONTINUOUS 22GA GALV. STEEL CLIP (Continuous cleat on exterior face) | 19 10ft piece | \$174.46 | \$3,314.74 |
| 50mm #8 PAN HEAD SCREWS (Fastening clip) | 2 box | \$39.96 | \$79.92 |
| 24GA PREFINISHED STEEL CAP FLASHING (Standing seam at corners, S-Lock joints) | 19 10ft piece | \$174.46 | \$3,314.74 |
| 50mm #12 HEX HEAD CONCRETE SCREWS (Face fasten cap flashing interior) | 2 box | \$39.96 | \$79.92 |
| 24GA PRE-FINISHED STEEL COUNTER FLASHING (Max 2.4m lengths, S-locks on vertical joints) | 19 10ft piece | \$174.46 | \$3,314.74 |

Estimate Summary

| | |
|----------------------------|--------------|
| Total Material Cost | \$236,171.22 |
| General Requirements (10%) | \$23,617.12 |
| Labour + Material (1.65x) | \$389,682.51 |

Total Project Estimate

\$413,299.63

\$84.35 / sqft

Standard Estimate (for comparison)

Standard Total Estimate

\$188,269.83