

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. 125mm 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)

Sopraly Traffic Cap (Soprema Inc.) → Cap_Membrane

Sopraly Base 520 (Soprema Inc.) → Base_Membrane

Sopraly 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