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Public Works and Government Services Canada
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Edmonton
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**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet Waterton Visitor Centre Project	
Solicitation No. - N° de l'invitation 5P427-180003/A	Amendment No. - N° modif. 004
Client Reference No. - N° de référence du client 5P427-180003	Date 2019-03-12
GETS Reference No. - N° de référence de SEAG PW-\$PWU-183-11576	
File No. - N° de dossier PWU-8-41260 (183)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-03-20	Time Zone Fuseau horaire Mountain Standard Time MST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Tikhonovitch (RPC), Alex	Buyer Id - Id de l'acheteur pwu183
Telephone No. - N° de téléphone (780) 901-7940 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
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Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

ADDENDUM #3

The contents of this addendum are as follows:

- 1.0 General Content
- 2.0 Architectural Related Content
- 3.0 Structural Related Content
- 4.0 Mechanical Related Content
- 5.0 Interpretive Related Content

1.0 GENERAL CONTENT

1.1 QUESTIONS & ANSWERS

Q21: Does the park have a location for excess fill to be disposed of? Or contractors responsibility?

A29: It is the contractor's responsibility to determine location for excess fill. All wastes must be disposed outside of the Park.

Q22: What are the existing structures and sidewalks that have been removed? Will the Tennis Court fencing will be removed by GC or others – is it concrete or asphalt?

A30: On-site structures have been removed excepting as per drawing C100 issued under Addendum #3. The Tennis Court will be remaining on site, as indicated in the bidder's conference outlined in Addendum #1. It is the contractor's responsibility to determine existing surfaces that are being removed.

Q23: Existing trees: If there are any trees existing for removal will Parks remove and store?

A24: Existing tree removal to be per drawing C100, issued under Addendum #2. It is the Contractor's responsibility to protect existing trees remaining.

Q24: Is the contractor or owner responsible for quality control on the project?

A24: Refer to section for 01 45 00 Quality Control that is included within this addendum.

Q25: What does it take to get a business license and permit to work in the National Park?

A23: All contractors and subcontractors require business licenses to work on the project – bidders are to contact the Municipal Officer, Realty Services at waterton.info@pc.gc.ca or 403-859-5117.

Q26: Can the Contractor bring tools and materials in from the USA?

A26: The successful bidder can supply materials from the USA, but may be subject to duty and tariffs. It is the responsibility of the Contractor to obtain all required documentation from the Canada Border Services Agency to complete the work under the Contract. The Contractor is responsible for all associated fees (duties, tariffs, permits, etc.) required for them to complete the work and meet the requirements outlined in the contract.

Q27: What is the intent to have the building shell closed in by Sept 2019 (5 months from May) as shown in Summary of Work 1.7 Milestone dates?

A27: The intent of having the building shell closed by end of September 2019 in anticipation of the high winds exhibited in October as outlined in the Bidder's Conference meeting notes in Addendum #1. Having the building closed by this time will allow the contractor to manage the site more effectively and it will be easier to conduct the work throughout the winter.

Q28: What is the contract type – is it a CCDC 2008 contract?

A28: Government of Canada does not use CCDC contracts. Please refer to page 8 "Contract Documents (CD)".

1.2 SPECIFICATIONS

1.2.1 Section 01 45 00 Quality Control

Delete section in its entirety.

Replace with associated Section 01 45 00 Quality Assurance and Quality Control.

2.0 ARCHITECTURAL RELATED CONTENT

2.1 QUESTIONS & ANSWERS

Q29: Elevation legend 3a shows exposed fasteners and details in drawing A07-06 show “fasteners, typ. (also exposed fastening). Specs Section 074245 item 2.1.3.3 shows “hidden type”. Please confirm whether an exposed or hidden fastening is to be used for legend 3a.

A29: The intent of the contract documents is to have **all** exposed exterior gluelam beams and girts covered on all exposed sides, with composite high pressure laminate panels, “plate type” **exposed fasteners**. All high pressure laminate panels “pan type”, **hidden fasteners** are located on vertical wall surfaces.

Q30: If a concealed fastening is to be used, a 10mm thick is required as per manufacturer. Specs Section 074245 item 2.1.2.1 shows 6mm thick and wall assemblies show 6mm thick as well. Please confirm thickness.

A30: Panel thicknesses are specific to manufacturer. 6mm is the minimal.

Q31: No colours indicated for elevation Legend 3a and 3b, please confirm colours.

A31: All 3a and 3b material colours to be Montreux Sunglow Exterior NW07/ST by Trespa Meteon or approved equal.

Q32: Specification Section 07 48 13 show Cascadia thermal clips - the only phenolic wall assemblies that show thermal clips are ecf08 and esd03 which are found along Gridline Ab/Ac. However section details 11 & 12/A06-03 do not show any thermal clips, only sub-girts. Please clarify.

A32: Construction assemblies carry thermal clips in a number of assemblies other than ecf08 and esd03. For other locations other than grid lines Ab/Ac, see elevations. Details 11 and 12 on sheet A07-10 show construction in an isolated location. Thermal clips are still a requirement in these wall locations as per construction assembly tag.

Q33: For phenolic panels to glulam beams (refer to section L/A06-05 and A06-01) at Building A, we could not find a section detail for these beams, and whether the phenolic panels are to both sides, top and bottom. Please clarify.

A33: See typical details 8 and 9 on A07-04 for all exterior exposed gluelam surfaces in all buildings.

Q34: For Building B (wall section E & F/A06-04) are these phenolic panels? Structural framing plan S2.2 & S2.3 show steel beams and not glulam beams. Please clarify and provide section details for Building C as well if any.

A34: All exterior exposed steel beam is to have composite high pressure laminate panel cladding to all exposed sides. This is typical of buildings A, B and C. See Detail 4 on A07-04 for Buildings B and C cladding.

Q35: Exterior elevations A5-01 & A05-02: 3b Composite HP Laminate Panel System c/w hidden clips is not possible as the product listed are only fire rated (per spec) when exposed fasteners are used. Please advise if the fire rating is to be maintained or if the hidden clip system is to be used.

A35: Composite HP Laminate Panel System fire rating will not be enforced, for exposed fastener construction.

Q36: Is the current Geotechnical report available? Please provide.

A36: The geotechnical report can be found in Volume 3 of the specifications.

Q37: Drawing A07-05 and A07-10 show Air Vapour Barrier but no water proofing. There seems to be no apparent waterproofing detail for the concrete foundation. Is there a waterproofing requirement? Please provide a detail.

A37: Foundation waterproofing is not a requirement.

Q38: In the Visitor Centre Building, the architectural plans show the sprinkler pipe to be drilled vertically thru the glulam beam. Please advise that this work will be completed by the general contract not the fire protection sub-contractor.

A38: It is the General Contractor's responsibility to delineate division of labour.

Q39: In Section 08 11 16 the door hardware overlaps the spec., which is to govern....item 2.4 in this section or the door hardware groups under 08 71 00 Hardware Schedule

A39: It Door hardware groups under 08 71 00 is to govern.

Q40: In Section 08 11 16 confirm the finish is to match Kawneer #40 Bronze Anodized. I do not see an exterior finish schedule.

A40: #40 Dark Bronze is the correct finish.

Q41: In Section 08 11 16, Item 2.5 indicates to supply all interior frames from “Storefront” extrusions. Drawing A08-02 and corresponding details indicate C/wall extrusions – which is correct?

A41: Drawings to govern.

Q42: In Section 08 11 16, Item 2.6.3 indicate if shop applied strippable protective coating is required.

A42: Strippable protective coating is a requirement.

Q43: In Section 08 44 13 is protective coating required?

A43: Protective coating is a requirement.

Q44: In Section 08 44 13 “STC 45” appears to be unachievable. Is this required?

A44: A STC rating of 45 will not be enforced.

Q45: Operable windows: Do the manually operated window receive standard hardware or the Bronzecraft “Mec Line” hardware listed in Section 08 75 00 2.1?

A45: Bronzecraft Mec Line is required.

Q46: In Section 08 44 13 2.4.10 Finishes: Please advise color of Class 2 finish. Is it #40 Bronze Anodized?

A46: #40 Dark Bronze is the correct finish.

Q47: In Section 084413 Glazed Aluminum C/Walls. Protective Coating. Shop Apply strippable protective coating....Is this req'd?

A47: Protective coating is a requirement.

Q48: Section 088050 Glazing: Drawing A08-08 Detail #2 shows ceramic frit pattern. The specifications do not appear to call this up? If req'd; does the grid pattern need to line up from one sealed unit to another?

A48: Ceramic fits are required to align from one unit to unit.

Q49: Section 08 80 50 Glazing: Are the sealed units tinted?

A49: Tinting is not a requirement.

Q50: Section 08 80 50 Glazing: 3.6 Decorative Films – is the extent as per the interior finish schedule?

A50: Decorative film extent is as per the tender drawings.

Q51: Section 10 51 13 lists the 4 lockers for this project generically without a supplier being listed. However, the finish schedule lists a manufacturer name and specific colour.

A51: Colour will be chosen from manufacturer's standard colour chart.

Q52: Is FSC Certified Lumber required for glulam? The LEED scorecard status shows that it is both “pending” and “no”.

A52: FSC certification for gluelam beams will not be a requirement.

Q53: If you are looking for FSC Certified Lumber, please indicate the amount (%) and if we should price it as part of our base bid or as a separate price?

A53: FSC lumber certification will not be a requirement.

Q54: For the glulam members, what coating will be shop applied and how many coatings will be shop applied?

A54: Shop applied finishes will not be a requirement.

Q55: On S1.1, under Glued Laminated Construction”, item 20 indicates a “shop primer” finish and item 21 indicates a “hot dip galvanize” finish for fabricated steel. Can you please clarify which steel finish will be used?

A55: See specification addendum item below.

Q56: The minimum skylight slope is 20 degrees for Kawneer aluminum with sealed unit. Should this be priced with an acrylic dome?

A56: Slope to be increased.

2.2 SPECIFICATIONS

2.2.1 Section 01 45 00 Quality Control

1.2.1: Delete entirely and replace with the following: "Qualified Independent Inspection/Testing Agencies will be engaged by Contractor and approved by the Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Contractor.

1.2.2: Delete entirely and replace with the following: "All tests, independent inspections, mock-ups and other quality control procedures specified in specification Sections are at the Contractor's expense unless indicated otherwise."

2.2.2 Section 06 20 00 Finish Carpentry

1.4.2: Replace the words "Departmental Representative" with "Contractor".

1.4.3: Replace the words "Departmental Representative" with "Contractor".

2.2.3 Section 06 40 00 Architectural Woodwork

1.5.2: Replace the words "Departmental Representative" with "Contractor".

1.5.2.3: Replace the words "Departmental Representative" with "Contractor".

2.2.4 Section 07 52 00 Modified Bituminous Roofing Membrane

3.18.1.1 Replace the word "designated" with "approved"

3.18.1.2 Replace the words "Departmental Representative" with "Contractor".

3.18.1.3 Delete line

3.18.1.4 Delete line

2.2.5 Section 08 44 13 Glazed Aluminum Curtain Walls

2.3.6.1 Replace the words "526 Isoport" with "Glassvent UT".

2.3.6.3 Delete line

2.2.6 Section 09 99 90 Room Finish Schedule

Notes: Add Note 39: Interior gluelam exposed steel connectors to be painted to match Kawneer #40 Dark Bronze. Submit draw down samples for Departmental Representative review prior to finishing.

2.3 DRAWINGS

2.3.1 Drawing A06-06

Building Section T

Revise details 1/A07-06 to detail 11/- as per associate sketch drawing ASK-23

2.3.2 Drawing A07-12

Detail 6: Leader "Aluminum Composite Panel System" to read "**Composite High Pressure Laminate Panel**"

2.3.3 Drawing A07-14

Details 5 and 6:

Delete details in their entirety.

Substitute: Sketch details ASK-22 and ASK-21.

3.0 STRUCTURAL RELATED CONTENT

3.1 QUESTIONS AND ANSWERS

Q57: Please clarify what is the reinforcing required in the 100 Slab on grade (building A) page S2.0 and also in the 90 concrete on 38 metal deck (building A) page S2.1?

A57: S2.0 slab on grade has no reinforcing. S2.1 90mm slab on 38 decking has WWM. Refer to clarifications within this addendum in the specifications.

3.2 SPECIFICATIONS

3.2.1 Section 03 20 00 Concrete Reinforcing

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for inspection and testing of concrete reinforcing and check conformance with applicable Standards and Contract documents.**

Section 3.5, lines .2 through .9; Replace 'Departmental Representative' and 'Agency' with '**Contractor**'

3.2.2 Section 03 30 00 Cast-in-Place Concrete

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for a qualified inspection agency to carry out inspection and testing of concrete and concrete materials and check conformance with applicable Standards and Contract documents**

Section 3.5, lines .2 through .12; Replace 'Departmental Representative' with '**Contractor**'

3.2.3 Section 05 12 23 Structural Steel for Buildings

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for a qualified inspection and testing agency (certified to CSA W178.1 & 2) to carry out inspection and testing of all structural steel.**

Section 3.5, lines .2 and .3; Replace 'Departmental Representative' with '**Contractor**'

3.2.4 Section 05 21 00 Steel Joist Framing

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for a qualified inspection and testing agency (certified to CSA W178.1 & 2) to carry out inspection and testing of all steel joists**

Section 3.5, add line .2; **Additional requirements as per Section 05 12 23 shall be satisfied.**

3.2.5 Section 05 21 00 Steel Decking

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for a qualified inspection and testing agency (certified to CSA W178.1 & 2) to carry out inspection and testing of steel decks and check conformance with Contract documents and reviewed shop drawings.**

3.2.6 Section 05 41 00 Structural Metal Stud Framing

Section 3.5, Line .2 Replace 'Departmental Representative' with '**Contractor**'

3.2.7 Section 06 18 00 Glue-Laminated Construction

Section 2.3, line .6

Delete: 'Galvanize all connections and fastenings.'

Add: '**Galvanize all connections and fastenings exposed to directly to weather.**'

Delete: Section 3.5, Line .1

Add: Line .1: **The Contractor shall procure and pay for a qualified agency to carry out inspection and testing of glue laminated members and connections.**

Section 3.5, line .3; Replace 'Departmental Representative' with '**Contractor**'

3.3 STRUCTURAL DRAWINGS

3.3.1 Drawing S1.5; Typical Details

Delete Sections 7 and 10.

3.3.2 Drawing S1.6; Typical Details

Delete; '8 dia. X TO SUIT TAPCON C/W MIN. 140 EMBED @ 400

Add; **16 dia. HILTI KB-TZ ANCHOR @ 125 RECESS FLUSH WITH FACE OF CLT (DEPTH NOT TO EXCEED FIRST LAYER) MIN 110 EMBED IN CONC. WALL**

3.3.3 Drawing S1.9; Schedules

Delete Joists J2 and J3 on OWSJ Schedule.

3.3.4 Drawing S2.1; Main floor Slab Plan

In Building A 90 thick concrete slab on 38 metal deck; Add **152x152xMW9.1xMW9.1 WWM Central.**

3.3.5 Drawing S2.3; Roof Framing Plan

Replace in its entirety drawing S2.3, with attached S2.3 issue number 7.

Add sketches SK-04, SSK-05, SSK-06, SSK-07, SSK-08 and SSK-09 referenced and clouded on the revised S2.3 v7.

4.0 **MECHANICAL RELATED CONTENT**

4.1 **SPECIFICATIONS**

Q58: Specification Section 21 13 13: 2.4.2.8 Indicate that Side Outlet tees using rubber gasketed fittings are not permitted. Please confirm if the following fittings are allowed from the following website (<https://static.victaulic.com/assets/uploads/literature/11.02.pdf>)

A58: Product not allowed.

Q59: Please clarify whom would be responsible for drilling, sleeving and notching of wood structural beams for installations of Fire Sprinkler piping? In our opinion, as the wood beams are structural, this should be part of the Structural contractor's scope of work.

A59: Penetrations through the structural beams are not by the mechanical contractor. It is the General Contractor's responsibility to delineate division of labour.

Q60: We would like to clarify that the Electrical contractor is to only supply and install conduit and wire for the Exhibit Drawings/Package.

A60: Because of the integrated approach of the design, we encourage all parties to treat all the drawings and specification as one package and not think of them as a base building drawing package and exhibit drawings package. The AV contractor and the Electrical contractor are both under the General Contractor, it is up to the General Contractor to determine the various scopes of work, division of labour and where they intersect.

Q61: Please indicate the locations of the Siamese Fire Department Connections required for Building B and Building C, which must be located 3m-15m from the principal entrance and 45m unobstructed from a Fire Hydrant.

A61: The provided code review indicated Buildings B and C.

5.0 INTERPRETIVE RELATED CONTENT

5.1 QUESTIONS & ANSWERS

Q62: Appendix B “Exhibitry: Does any of the glass, aluminum & films from this appendix fall under the scope of Specification Sections 08 80 50, 08 11 16, and 08 44 13?

A62: Because of the integrated approach of the design, we encourage all parties to treat all the drawings and specification as one package and not think of them as a base building drawing package and exhibit drawings package. It is inevitably up to the General Contractor to determine the various scopes of work, division of labour and where they intersect.

Q63: In regards to the AV & LX drawings and specs, could the AVC Audio visual Contractor provide a Bill of materials so that we can price the correct speaker, wiring, DMX cabling and connectors?

A63: The Audio visual Contractor is under the General Contractor and this question should be directed to them.

Q64: In reference to the new addenda and drawing X1.01. Is the hydraulic ram referring to a gas strut to support the door opening and support door in the held open position? Please clarify.

A64: Due to the anticipated weight of the door, the purpose of the hydraulic ram is to assist the operator when opening the door. It will also hold the door open to allow staff to change out content without having to hold it open themselves. Attached is a sample of an acceptable mechanism that would work for lift-up application of a heavy door. Final selection of hydraulic ram will be the responsibility of the General Contractor based on weight and finished fabrication method of the cabinet.

5.2 ADDENDUM

5.2.1 Interpretive Addendum #3

- Appendix F Graphic Schedule: Revise: Description of GP-009. Change “foam core” to “sintra”
- Appendix F Graphic Schedule: Delete: Description of GP-007. “All live edges to be protected”, delete.

**GENERAL
RELATED ITEMS**

PART 1 GENERAL

1.1 DEFINITIONS

.1 Quality Assurance:

- .1 Quality assurance consists of that “part of quality management focused on providing confidence that quality requirements will be fulfilled.” The confidence provided by quality assurance is twofold—internally to management and externally to customers, government agencies, regulators, certifiers, and third parties.
- .2 Within the context of this project, the Contractor shall undertake all necessary quality assurance measures to ensure that the quality, materials, workmanship and final product will meet the requirements of these specifications, the drawings and all applicable codes, regulations and standards to the satisfaction of the Department Representative.
The Department Representative may but shall not be obligated to engage third party professionals to provide independent quality assurance and / or quality control review, testing, reporting and recommendations for the exclusive benefit of the Department Representative, of which the Contractor shall not rely upon or have entitlement to.

.2 Quality Control:

- .1 Quality control is that part of quality management focused on fulfilling quality requirements and providing proof of conformance.
- .2 Within the context of this project, the Contractor is responsible for fulfilling all quality control requirements necessary to ensure that all materials, workmanship and final product meet the requirements of these specifications, the drawings and all applicable codes, regulations and standards, including the obligation to provide professionally certified and fully documented proof of compliance. The burden of proof shall be the Contractor’s responsibility.
- .3 Work shall be considered deficient until conformance is confirmed and proven by quality control testing and reporting. The adequacy of such proof shall be to the satisfaction of the Department Representative.
- .4 Quality Control work may include but not be limited to testing and surveying to determine conformance. Any such quality control survey work must be carried out under the supervision of a Professional Engineer or Alberta Land Surveyor who shall take responsibility for all such work.
- .5 Quality control conformance certifications for each component of the project shall be provided by a Professional Engineer qualified in the discipline that applies to the component of the project that is being certified. For example, electrical testing results and certification must be provided by an Electrical Engineer.

1.2 CONTRACTOR RESPONSIBILITY FOR QUALITY CONTROL

- .1 All costs required to ensure quality control and demonstrate compliance shall be borne by the Contractor and shall be included and incidental to the other pay item. No separate payment will be made for this item.
- .2 Within 2 weeks (14 days) of Award, the Contractor shall submit a Quality Control Plan which will outline the testing submission plan to each component of the project. The Contractor shall have their professional sub-consultant to analysis the infrastructure to be constructed verses the testing criteria outlined in these specifications and drawings and prepare a list of all testing for quality control and assurance for the project. Categories includes for Sanitary Sewer, Water Mains, Campsite Service, Roads, Pathways, Electrical Distribution and Lightings, Buildings etc., including the type and quantity.

- .3 The Contractor shall submit a monthly tracking report to identify testing completed, any failure issues and retests and tests that remain to be completed for the entire project. This tracking report shall compare and show tracking of the initial submitted plan and the actual.
- .4 It is the Contractor's responsibility to carry out adequate quality control, inspections, and testing to ensure that the work is in conformance with the Contract Documents and its associated costs, and provide documented proof of conformance.
- .5 The Departmental Representative may authorize a qualified professional to have additional Quality Control testing be done or seek the advice of a qualified professional regarding quality control and / or quality assurance matters. The Contractor shall not rely on the testing that may be carried out by the Independent Survey or Testing Agency for quality assurance by the any professional working on behalf of the Department; the intention of testing is for determination by the Departmental Representative of satisfactory completed work for Progress Payment or acceptance by the Departmental Representative. These additional testing costs or professional consultation will be borne by the Departmental Representative.
- .6 The Contractor shall be responsible to ensure that all of the necessary quantity and types of testing is completed and testing results are provided in a timely manner which does not delay construction and provide the Departmental Representative with sufficient time to review the results prior to when subsequent or adjacent works must be commenced. The Contractor shall issue no claims for extra cost due to any time spent by the Departmental Representative reviewing testing results and reporting.
- .7 In the event that any test results fail, the onus shall be on the Contractor to highlight the failed results immediately to the attention of the Departmental Representative, along with the Contractor's action plan to remedy the deficiency.
- .8 If any work is found to be deficient, the Contractor shall be responsible for all the costs of any re-testing and re-work, including the removal and replacement of any overlying or adjacent work that may be necessary to remedy any underlying or adjacent work. The Contractor shall also be responsible for any costs related to any delays or standby time related to the Contractor's obligation to meet the requirements of this section including but not limited to providing proof of conformance to the satisfaction of the Departmental Representative.
- .9 The onus will be upon the contractor to demonstrate to the Departmental Representative that the materials and workmanship are in compliance with the Specifications and good practice. If additional testing is required in order to satisfy this requirement, the Contractor shall promptly provide the additional testing and re-testing at the expense of the Contractor.

1.3 DEPARTMENT SUPPLIED MATERIALS

- .1 If under this project any materials are provided or made available by the Departmental Representative for the use of the Contractor on this project, the Contractor shall retain full responsibility for all quality control testing and reporting as would be necessary as if the Contractor had supplied the same materials.
- .2 In the event that any materials supplied or made available by the Departmental Representative are found to be non-compliant, the Contractor shall immediately notify the Departmental Representative and provide the Departmental Representative with a mitigation plan and cost estimate of such mitigation.

1.4 QUALITY CONTROL TESTING BY THE CONTRACTOR

- .1 The Contractor shall retain the services of a testing agency under supervision of a registered professional engineer, and pay the cost of testing services for quality control, including , but not limited to, the following:

Specification	Type of Test	Testing frequency	Remarks
Aggregate	Sieve Analysis	A minimum of one sieve analysis per 500 tonnes of aggregate supplied to a jobsite is required. The aggregate may be sampled from stockpile at the job site or the gravel pit / crusher site. (one sieve per 300 tonnes shipped from crusher to site)	
Hot Mix Asphalt Concrete		Minimum of one sample for asphalt cement content and mix gradation per 500 tonnes of mix production, and a minimum of two complete test samples per day of production exceeding 500 tonnes per mix type.	
Grading	Density	One field density test for each 2000 m ² of compacted lift, or approved alternate frequency, according to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A.	
Trench and Backfill	Density	1. For trenches greater than 15m in length: A minimum of 2 density tests per 600 mm of trench depth per 100 m of trench length. All tests shall be representative of the entire length, width and depth of trench backfill, including areas around catchbasins, manholes, valves and service connections. The engineer or a qualified geotechnical representative may require additional testing as deemed necessary. 2. For trenches less and 15 m in length: A minimum of 3 density tests evenly spaced through the depth and length of the trench or as directed by the engineer.	
Subgrade	Density	Minimum of one field density test for each 1000 m ² of compacted subgrade lift, or approved alternate frequency, according to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A.	
Granular Base Course	Density	Minimum of one field density test on a compacted granular lift for each 1500 m ² of road, 1000 m ² of alley, or 500 m ² of walk, monolithic walk, curb ramp, alley crossing, commercial crossing, private crossing or median or island strip. Compacted lift thickness of granular course shall not exceed 150mm.	
Structural Fill	Density	Minimum of one field density test for each 2 000 m ² of compacted lift, or approved alternate frequency, according to ASTM D1556, ASTM D2167, or ASTM D2922 for comparison with a maximum density determined according to ASTM D698 Method A.	

Specification	Type of Test	Testing frequency	Remarks
Hot Mix Asphalt Paving	Thickness Cement content and Density Rutting Tensile Strength Ratio (TSR)	Take a minimum of one core per 1000 m ² of hot-mix asphalt pavement and determine the thickness of the mat, for each stage of paving. Determine Maximum Theoretical Density (MTD) and asphalt cement content at a minimum of one test for every 250 tonnes produced, or a day's production, whichever is less. Obtain one core from compacted mat placed from same load from which specimen was obtained and test for density. Obtain one core from compacted mat representing 1000 m ² and test for density. Minimum frequency of one test for every 5000 tonnes of hot-mix produced. Minimum frequency of one test for every 5000 tonnes of hot-mix produced.	
Concrete curb/gutter/walks/slabs	Thickness	One or more sets of cores from suspect concrete pavement, each set comprising of 3 cores whose average thickness represents not more than 500 m ² of concrete pavement.	

Portland Cement Concrete for curb/gutter/walks/slabs	Slump	Between 10% and 90% points of discharge of a concrete load with every strength test and as required by the Departmental Representative.	
	Air Content	Between 10% and 90% points of discharge of a concrete load with every strength test and as required by the Departmental Representative.	
	Air Void	Sample: a 100mm diameter core drilled from hardened concrete.	
Cast-in-Place Concrete (Building floors, foundations, etc.)	Strength	Not less than one strength test for each 60m ³ of concrete or fraction thereof, for each class of concrete produced in any one day from each individual plant/supplier.	
	Slump	Slump of concrete shall be made in conjunction with each strength test.	
	Air Content	During construction start-up, every load or batch of concrete shall be tested until such time as satisfactory control of the air content has been established. Air content tests taken with the test cylinders will be sufficient once satisfactory control has been established.	
Unshrinkable Fill (Fillcrete)	Strength	Not less than one strength test shall be made from samples from each 100m ³ of concrete placed, and in no case shall there be less than one test from each day's pour.	
	Slump	Each strength test shall consist of three test cylinders, one tested at 7 days and two at 28 days. All test cylinders representing concrete placed after September 30 shall be tested at 7 days.	
	Air Content	Between 10% and 90% points of discharge of a fillcrete load with every strength test and as required by the Departmental Representative.	
	Strength	Between 10% and 90% points of discharge of a fillcrete load with every strength test and as required by the Departmental Representative.	
	Slump	Not less than one strength test per day per supplier, or as required by the Departmental Representative.	
	Air Content		

Sewers	Sieve Analysis Density	Pipe Zone Material Contractor shall perform as many tests as are necessary to ensure that the work conforms to the requirements of the contract to the satisfaction of the Departmental Representative. Under no circumstances shall the frequency of testing be less than 1 density test per MH to MH section.	
Electrical Distribution and Street Lighting		Work in Progress	

- .2 The Contractor shall provide all labour, materials and equipment, and shall perform all tests, for linings, coatings, pressure tests, leakage tests, infiltration tests, disinfection, and all other tests specified under the various sections of the specifications, including all documentation, reporting and professional certification of conformance.

1.5 INSPECTION AND TESTING OF WORK

- .1 Work included: From time to time during progress of the work, the Departmental Representative may require that Quality Control Testing be performed to determine that materials and workmanship provided for the work meet the specified requirements.
- .2 Related Work Specified Elsewhere: Requirements for testing may be described in various sections of these specifications. Where no testing requirements are described, but the Departmental Representative decides that testing is required, the Departmental Representative may require testing to be performed under current pertinent standards for testing.

1.6 INDEPENDENT PROFESSIONAL QUALITY CONTROL

- .1 All costs required to ensure and demonstrate quality and conformance shall be borne by the Contractor and shall be included in other related unit price and lump sum bid. No separate payment will be made for this item.
- .2 The Contractor will appoint a professional independent Geotechnical Engineering and Testing firm and other appropriately qualified professionals with a suitable Laboratory and other necessary testing equipment and fully qualified to perform whatever Quality Control Testing as stipulated in these specifications plus any additional testing that is deemed necessary by the Departmental Representative to confirm the compliance of the work within the Contract Documents. For items such as ESC Consulting, Electrical Testing, Hazmat inspections, etc., the Contractor shall engage the services of a fully qualified professional permitted to practice at the project location.
- .3 Departmental Representative will not pay for or reimburse Contractor for any services related to testing of the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 The Contractor's responsibility for Quality Control of the Work under these specifications.
- .4 Where tests by designated testing laboratory reveal work not in accordance with Contract requirements, the Contractor shall pay costs for additional tests and documented proof of conformance as Departmental Representative may require to verify acceptability of corrected work.
- .5 Where tests are called prematurely or the testing laboratory is delayed by the Contractor, the Contractor shall pay all additional costs incurred.
The Contractor shall be responsible for the ordering, coordination, scheduling and locating related to testing. The Contractor shall not be entitled to submit any claims for the cost of delays or standby time that may be caused by the need for testing or any independent testing that may be deemed necessary by the Departmental Representative.

- .6 The Contractor will appoint an independent Survey firm to perform required Quality conformance surveys if it is deemed necessary by the Departmental Representative to confirm compliance of the work within the Contract Documents.
- .7 If the independent survey firm reveals work not in accordance with Contract requirements, the Contractor shall pay costs for the survey and the costs for correcting the work.

1.7 LABORATORIES/AGENCIES

- .1 Independent Testing Agencies shall provide proof of professional accreditation for performing such work within the jurisdiction of the project location and will be subject to the approval of the Departmental Representative for the purpose of testing portions of the work. Costs of such services will be included in other related unit price and lump sum bid and incidental to the project. No separate payment will be made for this item.
- .2 The cost of transportation (including shipping charges) shall be borne by the Contractor and shall be included in other related unit price and lump sum bid and incidental to the project. No separate payment will be made for this item.
- .3 The Contractor shall pay the full cost of all testing and reporting required for the approval of materials such as pipe, aggregates, and fittings and all other materials, workmanship and product, including professional certification of compliance.

1.8 ACCESS TO WORK AND PLANT

- .1 Allow the Testing Agencies access to all portions of work on site and manufacturing and fabrication plants, as may be necessary to carry out their work. Cooperate to provide reasonable facilities for such access.

1.9 PROCEDURES FOR INSPECTION AND TESTING

- .1 If work is designated for special tests, inspections, or approvals in the Contract Documents, or by the Departmental Representative's instructions or the laws or ordinances of the Place of the Work, give the Independent Testing Agency timely notice requesting inspection. Inspection by the Independent Testing Agency will be made promptly. Arrange for inspections by other authorities and give the Departmental Representative timely notice of the date and time.
- .2 Submit necessary samples and/or materials required for testing, as specifically requested in the Specifications. Submit with reasonable promptness and in an orderly sequence, so as to cause no delay in Work.
- .3 Provide workers and facilities to obtain and handle samples and/or materials on-site. Provide sufficient space to facilitate the storage and curing of test samples.
- .4 If defects are revealed during testing, the appointed agency will request additional testing to ascertain full degree of defects. Correct defects and irregularities as advised by the Departmental Representative.
- .5 The Contractor shall correct defects and irregularities and pay all costs for all additional testing, necessary to demonstrate that any work where original tests failed have been corrected.

- .6 The Contractor's independent testing firm shall provide professionally certified asphalt mix design 30 days prior to any paving and provide calculation of any deficiency penalty amounts to the Departmental Representative for review. The Departmental Representative will not provide any approval of asphalt mix designs. The Contractor's engineer shall retain professional responsibility for the adequacy and performance of the mix design.

1.10 COVERED WORK

- .1 If the Contractor covers or permits to be covered work that has been designated for inspections or approvals before they are made, uncover such work, have the inspections or tests satisfactorily completed, and make good such work.
- .2 The Departmental Representative may order any part of the work to be examined if such work is suspected to be not in accordance with the Contract Documents. If, upon examination, such work is found not in accordance with the Contract Documents, correct such work and pay for cost of examination and correction. Although such work may be found in accordance with the Contract Documents, the Contractor shall pay the cost of examination and replacement.

1.11 REJECTED WORK

- .1 Defective work, whether the result of poor workmanship, use of defective products or damage through carelessness or other acts of omission of the Contractor, and whether incorporated in the work or not, which has been rejected by the Departmental Representative as failing to conform to the Contract Documents shall be removed promptly from the work and replaced or re-executed by the Contractor in accordance with the Contract Documents at the Contractor's expense.
- .2 Other work destroyed or damaged by such removals, replacement or re-execution shall be made good promptly at the Contractor's expense.
- .3 In the case where any rejected work requires removal and replacement which involves materials provided or made available to the Contractor by the Departmental Representative, the Contractor shall provide replacement materials at no cost to the Departmental Representative.

1.12 REPORTS

- .1 Submit one compiled pdf of inspection and test reports promptly to the Departmental Representative for all requested Quality Control Testing as requested by the Departmental Representative.
- .2 Submit a monthly testing summary report to the Departmental Representative.
- .3 Submit a complete testing and compliance certification report prior to approval of substantial completion.

1.13 TESTS AND DESIGNS

- .1 Furnish to the Departmental Representative test results and mix designs as specifically requested in the Specifications.

The cost of test results and mix design shall be borne by the Contractor.

1.14 PENALTY CALCULATIONS

- .1 The Contractor's professional engineer shall prepare all asphalt and concrete penalty calculations and provide them to the Departmental Representative for review prior to submission of those quantities for payment. Where test results indicate a "remove and replace" situation, the Contractor's Engineer shall immediately notify the Departmental Representative when the results are known.

1.15 REFERENCE STANDARDS

- .1 Within the test of the Specifications, reference may be made to the following standards:

ACI	- American Concrete Institute
AISC	- American Institute of Steel Construction
ANSI	- American National Standards Institute
ASTM	- American Society of Testing and Materials
AWWA	- American Water Works Association
CAN	- National Standard of Canada
CEC	- Canadian Electric Code (published by CSA)
CGA	- Canadian Gas Association
CGSB	- Canadian Government Specification Board
CISC	- Canadian Institute of Steel Construction
CLA	- Canadian Lumberman's Association CPCA
	- Canadian Painting Contractors
Association CPCI	- Canadian Prestressed
Concrete Institute CRCA	- Canadian
Roofing Contractors Association CSA	-
Canadian Standards Association	
DIN	- Deutsches Institut Normung
EEMAC	- Electrical and Electronic Manufacturer's Association of Canada
EIB	- Electrical Inspection Branch
FMEC	- Factory Manual Engineering Corporation IEEE
	- Institute of Electrical and Electronic Engineers
IPCEA	- Insulated Power Cable Engineers
Association	
NAAMM	- National Association of Architectural Metal Manufacturers
NACE	- National Association of Corrosion Engineers
NBC	- National Building Code
NEMA	- National Electrical Manufacturers Association
NFPA	- National Fire Protection Association
NWTI	- National Wood Tank Institute of the USA TTMAC
	- Terrazzo, Tile and Marble Association of Canada
ULC	- Underwriters Laboratories of Canada

Conform to the latest version of such standards available at the time of bidding, in whole or in part, as specified.

In the event that any standards reference is discovered to be missing from the above list, then the applicable standards reference that must be met by the Contractor shall be determined by the Departmental Representative.

- .2 If there are questions as to whether any product of system is in conformance with applicable standards, the Departmental Representative reserves the right to have such products or systems tested to prove or disprove conformance with the Contract Documents, or by the Contractor in the event of non-conformance.

PART 2 PRODUCTS

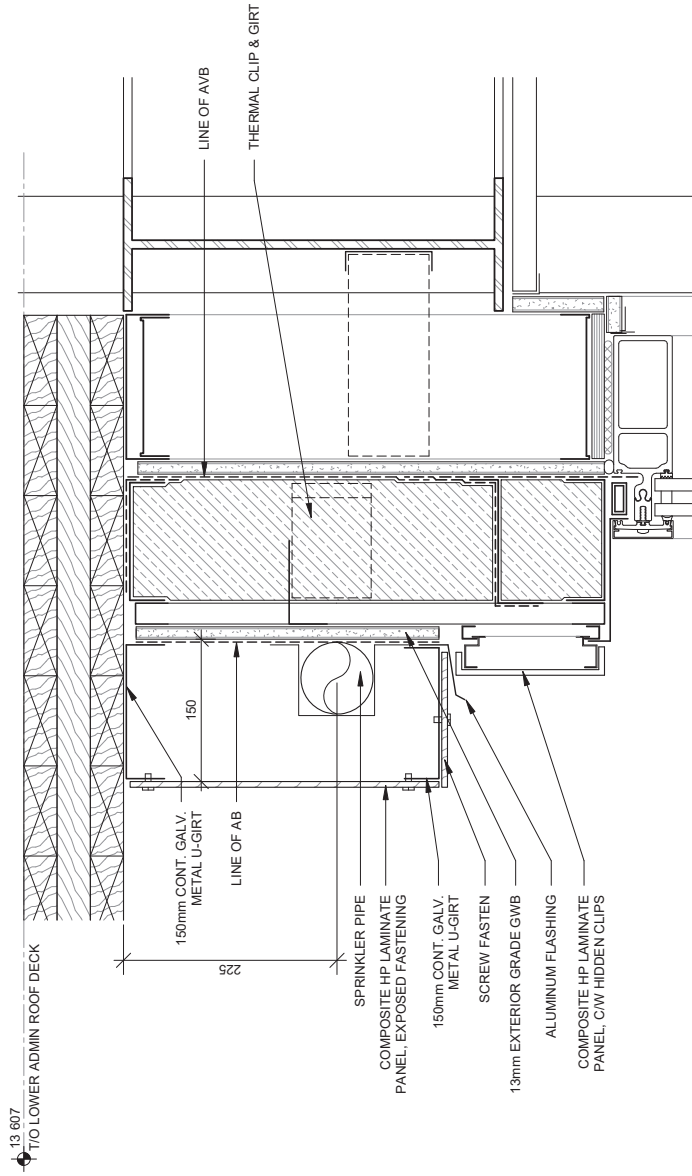
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PART 3 EXECUTION

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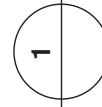
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**ARCHITECTURAL
RELATED ITEMS**

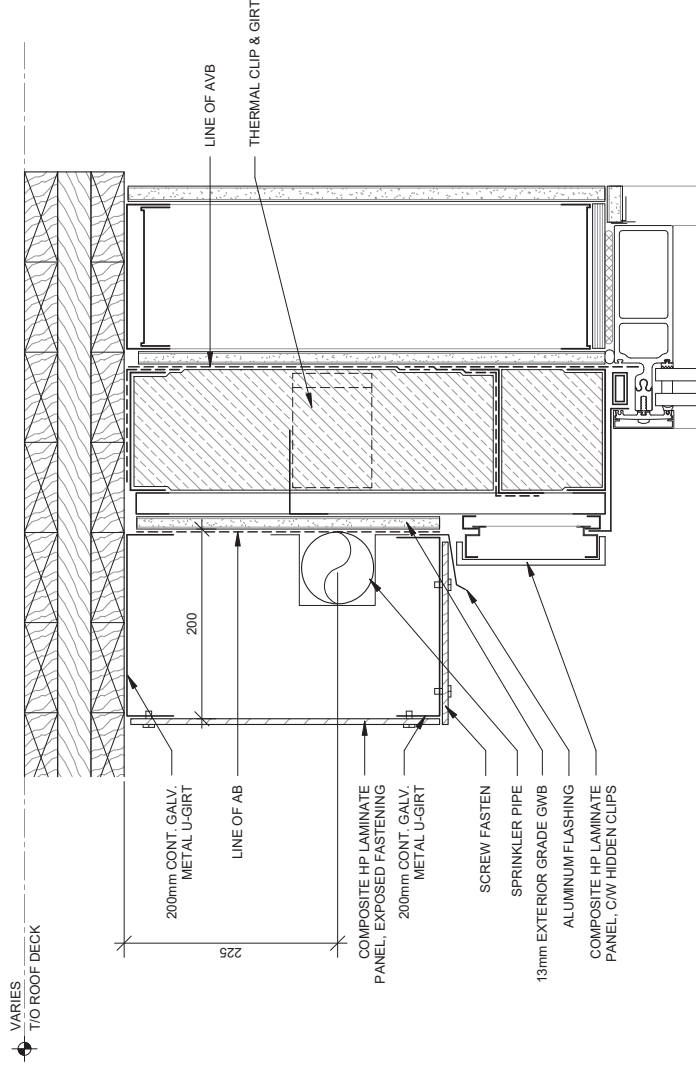


DETAIL

HP COMP. PANEL - WALL SHROUD
1 : 5

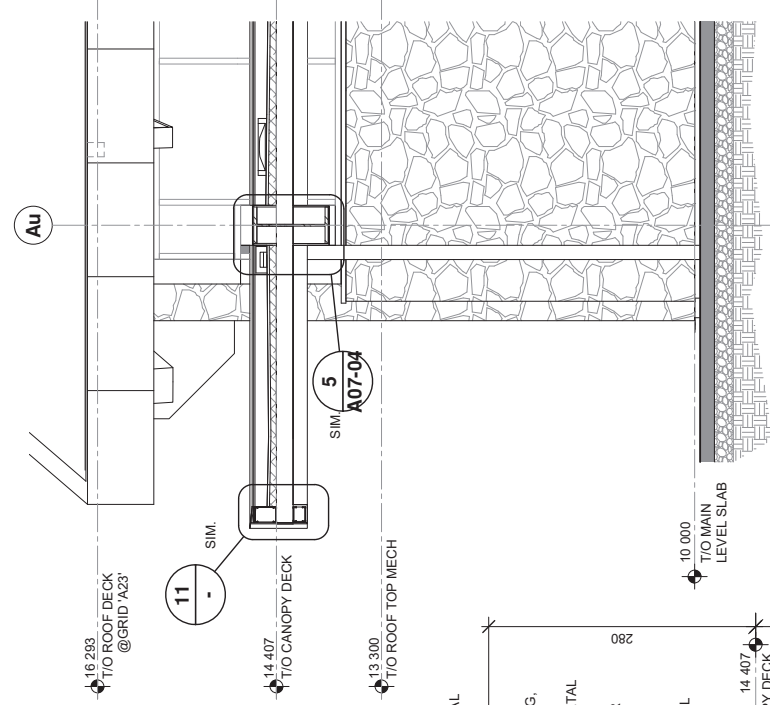


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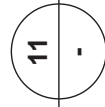
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BUILDING SECTION

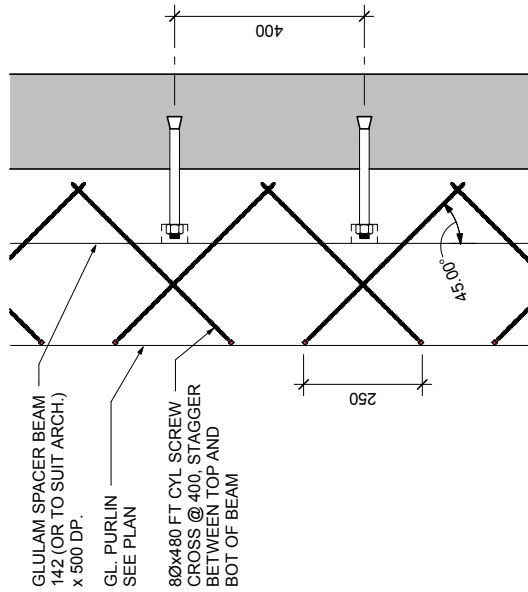
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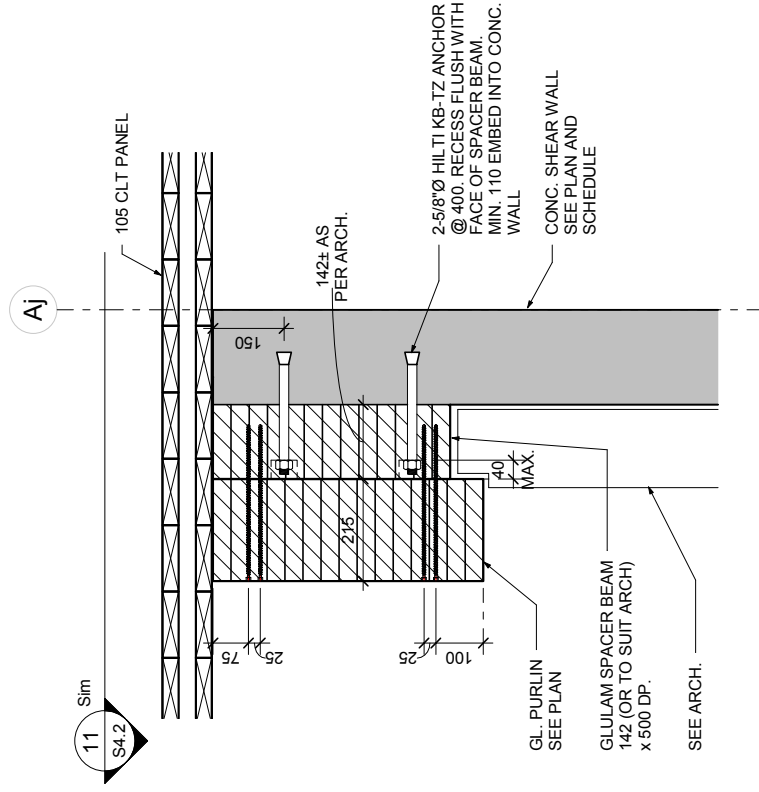
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**STRUCTURAL
RELATED ITEMS**




11
S4.2

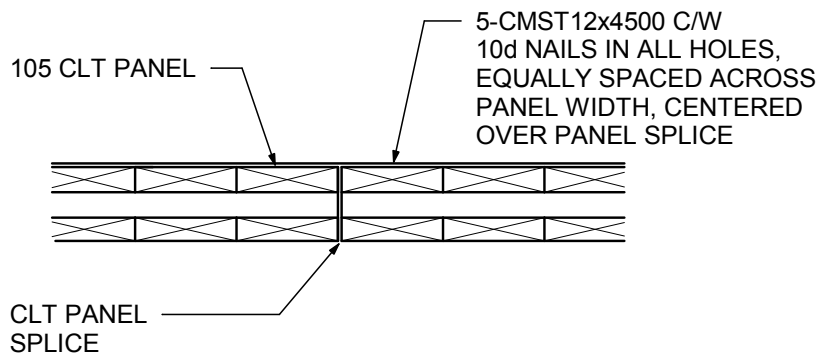
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10
S4.2

1 : 10

	Drawing CONN. TO CONC. WALL ON GL. AJ	Project WATERTON VISITOR CENTRE	Project No.	28739	Sketch SSK-04
			Date	2018.03.08	
	Rev. STRUCTURAL ADDENDUM #3	Report	Scale	1 : 10	




* APPLIES TO PANELS ON GRIDLINES: A1-A2
A13
A17

REVISE DETAIL TO 2-CMST12x4500 STRAPS
APPLICABLE TO PANELS ON GRIDLINE: Bh

13
S1.6

TYPICAL CLT PANEL
TO PANEL BUTT SPLICE

1 : 10

 ISL Engineering and Land Services	Drawing	Project	Project No.	Sketch
	CLT PANEL TO PANEL BUTT JOINT	WATERTON VISITOR CENTRE	26739	SSK-05
	Rev. STRUCTURAL ADDENDUM #3	Report	2019.03.08	
			Scale	1 : 10

105 CLT PANEL

CONC. SHEAR WALL
BEYOND. SEE PLAN
AND SCHEDULE

GL. PURLIN
SEE PLAN

CONC. SHEAR WALL
NOTCHED AROUND
BEAM

GL. BEAM
SEE PLAN

KNIFE PL. 16 C/W
2-19Ø A307 THRU
BOLTS, CBORE
C/W WOOD PLUGS

PL. 19x250x365
C/W 2-16Øx150 LG.
NELSON STUDS

5

S4.3

1 : 10



Engineering
and Land Services

Drawing

SECTION @ GL.
A14/Av

Rev. STRUCTURAL ADDENDUM #3

Project

WATERTON VISITOR
CENTRE

Report

Project No.

26739

Date


2019.03.08

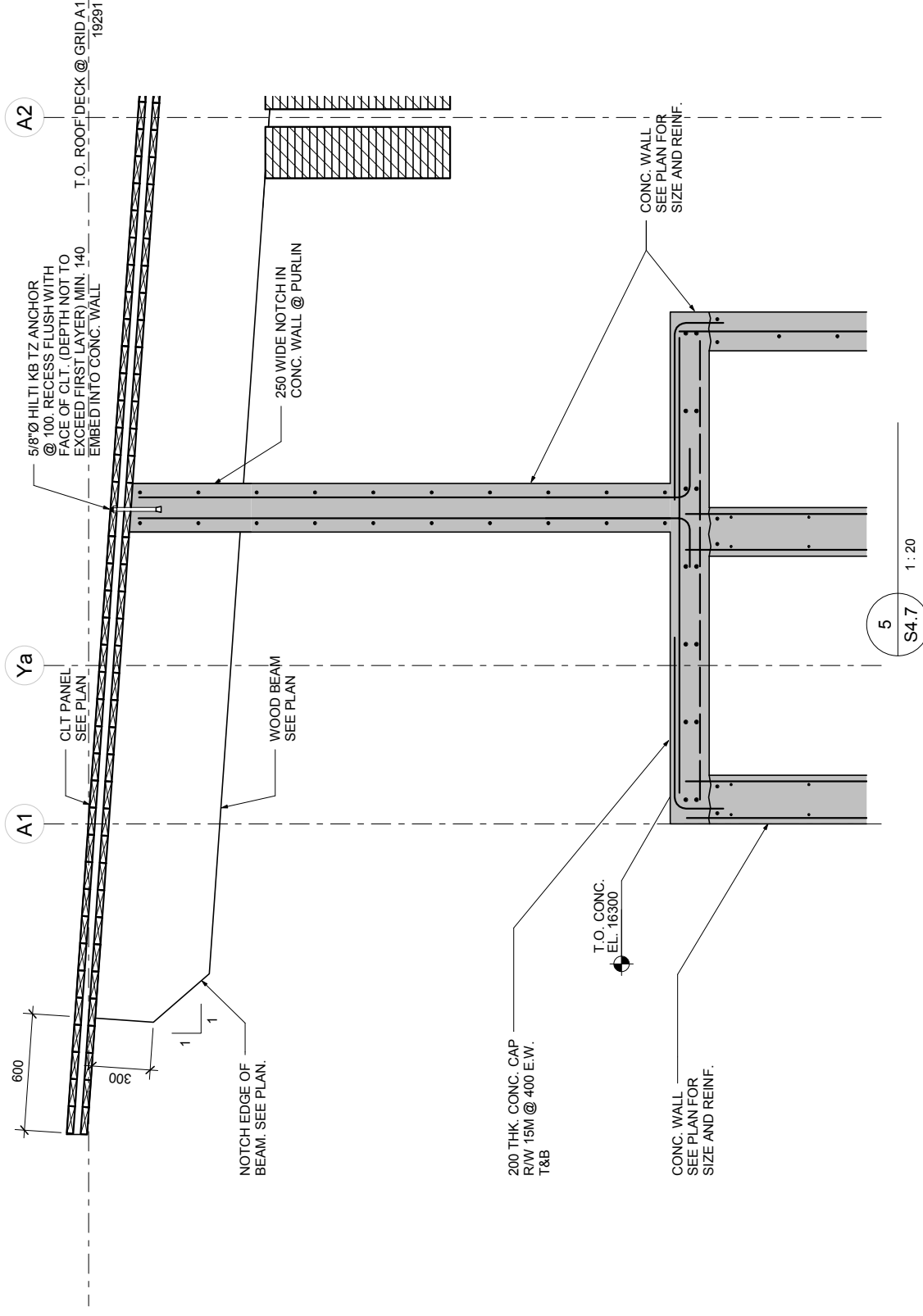
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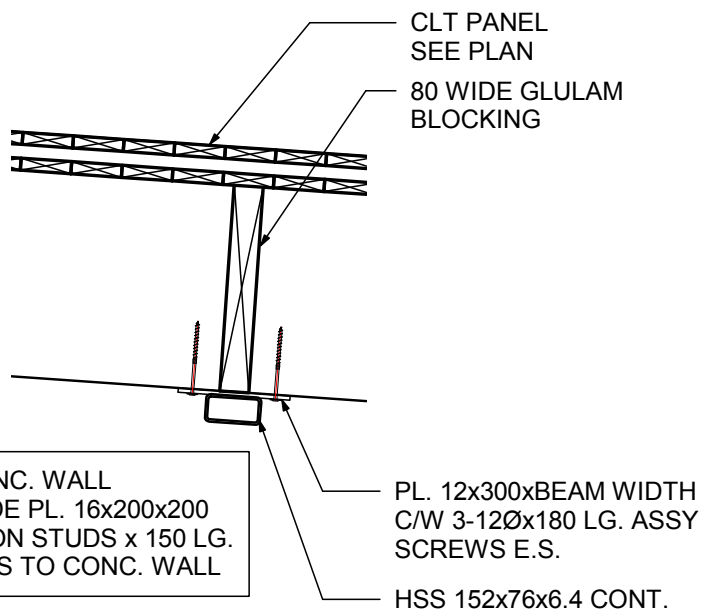
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SSK-06


 Engineering and Land Services	Drawing SECTIONS AT GL. A20/Av	Project WATERTON VISITOR CENTRE	Project No. 26739	Sketch <div style="font-size: 2em; font-weight: bold;">SSK-07</div>
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	Drawing	SECTION 5/S4.7	Project	Project No.		Sketch
				28/7/39		
		Rev. STRUCTURAL ADDENDUM #3	Report	Date	2019/03/08	SSK-08
				Scale	1:20	



6
S4.7 1 : 20

 Engineering and Land Services	Drawing	Project	Project No.	Sketch
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	Rev. STRUCTURAL ADDENDUM #3	Report	Date 2019.03.08	
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