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Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

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

Note: There is a Bid Depository requirement.

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 -
Pacific Region
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British C
V6Z 0B9

| | |
|---|--|
| Title - Sujet Construction Services | |
| Solicitation No. - N° de l'invitation EZ899-152249/A | Amendment No. - N° modif. 006 |
| Client Reference No. - N° de référence du client | Date 2015-04-22 |
| GETS Reference No. - N° de référence de SEAG PW-\$PWY-019-7491 | |
| File No. - N° de dossier PWY-4-37355 (019) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-04-30 | Time Zone Fuseau horaire Pacific Daylight Saving Time PDT |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Ngan, Ken (PWY) | Buyer Id - Id de l'acheteur pwy019 |
| Telephone No. - N° de téléphone (604) 658-2755 () | FAX No. - N° de FAX (604) 775-6633 |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CBSA - Pleasant Camp Port of Entry - Pleasant Camp, BC | |

Instructions: See Herein

Instructions: Voir aux présentes

| | |
|--|--|
| Delivery Required - Livraison exigée | Delivery Offered - Livraison proposée |
| Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur | |
| 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 |

Solicitation No. - N° de l'invitation

EZ899-152249/A

Client Ref. No. - N° de réf. du client

Amd. No. - N° de la modif.

006

File No. - N° du dossier

PWY-4-37355

Buyer ID - Id de l'acheteur

pw019

CCC No./N° CCC - FMS No/ N° VME

Please find following Addendum No. 3.

All other terms and conditions remain unchanged.

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
Professional and Technical Services, Real Property Services Branch, Pacific Region

Project No. R.0171363.001

Addendum #003

Tender A – Pleasant Camp Port of Entry

2015-04-22

Pleasant Camp, British Columbia

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The following changes in the tender documents are effective immediately. This addendum will form part of the Contract documents.

1. Clarifications:

The following are responses to queries submitted during the tendering period:

1. Addendum 001, item 2 – Permits: Electrical Permits: The BC safety authority has jurisdiction on electrical permit and the process is that a qualified electrician must obtain the permit and then fill out a declaration form that everything will be completed to applicable Codes. Ref: <http://safetyauthority.ca/permits-approvals/installation-permits/electrical>. In addition, the Contractor, is required to submit to the Departmental Representative any necessary Letters of Assurance in accordance British Columbia Building Code, where they are responsible for design i.e. seismic installation, or structural connections.
2. Hazmat Abatement: Abatement includes the following buildings only: Garage, House #9, generator building, fuel tank vault and water tank. Existing Port of Entry Building and Maintenance Building are not included in work.
3. The water well shown on drawing A101 north of the maintenance building will be serviced in mid to late May, 2015. The Contractor is requested to keep this area clear of construction equipment and avoid work in this area until the well service work is completed.
4. As per Section 02 61 00.02 Item 1.1.17 a Qualified Professional is defined as: *a person working for the Contractor who is registered in the relevant jurisdiction with his or her appropriate professional association, acts under that professional association's code of ethics, and is subject to disciplinary action by that professional association, and through suitable education, experience, accreditation and knowledge can be reasonably relied on to provide advice within their area of expertise*. It is additionally noted that where Qualified Professional is indicated within the requirements outlined in the following Sections: 02 61 00.02 Item 1.4.4 (Import Fill Material Quality); Section 31 23 33.01 Items 1.4.6 (Excavation and Backfilling Plan), 1.4.7.2, .3 and .4 (Monitoring and Testing Results), 1.5.7 (Quality Assurance), 3.11 (Backfill Types and Compaction – Remediation), and 3.12 (Backfilling), that this Qualified Professional is specifically referring to a geotechnical engineer that is registered in the Province of BC with APEGBC and paid for by the contractor.
5. Question: The General instructions 01 11 55 (page 5) 1.11.2. indicates that the Remediation work is Phased and that (.1)Phase 1 is Area 1, (.2) Phase 2 is Area 2, (.3) Phase 3 is Area 3 and that Phases 2 and 3 will only be done if time and budget permit. This contrary to the tender form which indicates the remediation is areas 1 & 2. On A101, I find reference to Areas 1 & 2 but no reference to Area 3
Response: Soil remediation is referenced on drawings SR-001 to SR-003 and not A101. The Phasing for Remediation is to be Area 1, followed by Area 2 until funding exhausted. Should there be additional budget remaining once Areas 1 and 2 have been remediated, we will then proceed into Areas 3 and/or 4 and chase contamination until the budget is exhausted. Reference Section 02 61 00.02 Soil Remediation – the process is explained in further detail.
6. Question: Please confirm the fuel currently in the onsite fuel oil tank is suitable for reuse in the new tank.

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- Response: It is anticipated that the fuel will be suitable for re-use, however, per Section 23 11 00, 1.1, the Contractor is to transfer clean fuel and remove and dispose of up to 250 L of tank bottom sludge and waste fuel. Per 1.6, the Contractor is also required to submit a work plan with proposed methods for removal and disposal of fuel tanks and piping. It is usual that fuel that is being re-used would be filtered during transfer into new tanks.
7. Question: Please provide details of the steel stairs and platform as shown on the fuel storage plan F-003.
- Response: Reference project specification Appendix D.
8. Question: Please confirm if a CSO is mandatory on this project.
9. Response: PWGSC does not have a mandatory requirement for a certified Construction Safety Officer to be employed on site. Paragraph 7 of Section 013533 Health and Safety Requirements states that a Health and Safety Coordinator is required. This paragraph is consistent with Section 118 Coordination of Multiple-Employer Workplaces of the Workers Compensation Act.
10. Question: Please provide the dimension from GL A and C to the edge of the soffits.
- Response: Typical overhang = 610mm.
11. Question: Please confirm the roof elevation of the existing adjacent building (Geodetic)
- Response: Contractor to verify height on site.
12. Question: Please confirm if all walls in the electrical room require fire rated plywood to 8ft – only GW3 and GW2 call for it however there are electrical and telecom panels on the majority of the walls.
- Response: Fire rating at rated wall assemblies accomplished with the Type 'X' GWB. Plywood only required for electrical equipment backboard. Paint ply, all sides, with white intumescent paint.
13. Question: Please can you confirm a Bilco double entry access door (as attached) to a suitable alternative then the design as per detail 2&3 on A602
- Response: Bilco access hatch as provided is acceptable. Ensure door meets manufacturer requirements for single / double leaf as the door shown on drawing A602 is 1800mm x 1800mm. Contractor to ensure support structure is adequate for installation of alternative access hatch.
14. Question: Clarify the specs for the floor finishes.
- Response: Clear, solvent-based sealer. Finish: colourless, abrasion-resistant, waterproof, medium sheen. Acceptable Product: Sikafloor-3S.
15. Question: Confirm poly thickness to underslab – assembly F1 calls for 6 mil while specs call for 10 mil.
- Response: 10 mil
16. Question: Fencing for the new building at pleasant camp: the drawings show some angle brackets for the corners but I don't see anything for securing the rest of the posts to the concrete floor or to the steel roof framing. If possible, could you please clarify this?
- Response: The chainlink fence posts can be secured to the concrete floor with a surface mounted metal baseplate c/w fasteners into the concrete. At the roof the brackets are similar to the clips shown on detail 13/A601.
17. Question: Provide detail of gutter and downpipes per 1/A601 and specs.
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| | Response: | Delete reference to gutter and downspout |
| 18. | Question: | Can you provide a detail or description for how the chain link fence posts are meant to be fastened to the roof structure? |
| 19. | Response: | The attachment will be similar to the detail 13-A601. Mounting brackets, at locations shown on 1-A402, to be welded to underside of I-beam rafter along gridline 8. Those to be attached to plates/brackets welded to top rail of fence. |
| 20. | Question: | Please provide details of the steel stairs and platform as shown on the fuel storage plan F-003. |
| | Response: | Reference project specification Appendix D. |
| 21. | Question: | Please confirm if a CSO is mandatory on this project. |
| | Response: | PWGSC does not have a mandatory requirement for a certified Construction Safety Officer to be employed on site. Paragraph 7 of Section 013533 Health and Safety Requirements states that a Health and Safety Coordinator is required. This paragraph is consistent with Section 118 Coordination of Multiple-Employer Workplaces of the Workers Compensation Act. |
| 22. | Question: | Please provide the dimension from GL A and C to the edge of the soffits. |
| | Response: | Typical overhang = 610mm. |
| 23. | Question: | Please confirm the roof elevation of the existing adjacent building (Geodetic) |
| | Response: | Contractor to verify height on site. |
| 24. | Question: | Please confirm if all walls in the electrical room require fire rated plywood to 8ft – only GW3 and GW2 call for it however there are electrical and telecom panels on the majority of the walls. |
| | Response: | Fire rating at rated wall assemblies accomplished with the Type 'X' GWB. Plywood only required for electrical equipment backboard. Paint ply, all sides, with white intumescent paint. |
| 25. | Question: | Please can you confirm a Bilco double entry access door (as attached) to a suitable alternative then the design as per detail 2&3 on A602 |
| | Response: | Bilco access hatch as provided is acceptable. Ensure door meets manufacturer requirements for single / double leaf as the door shown on drawing A602 is 1800mm x 1800mm. Contractor to ensure support structure is adequate for installation of alternative access hatch. |
| 26. | Question: | Clarify the specs for the floor finishes. |
| | Response: | Clear, solvent-based sealer. Finish: colourless, abrasion-resistant, waterproof, medium sheen. Acceptable Product: Sikafloor-3S. |
| 27. | Question: | Confirm poly thickness to underslab – assembly F1 calls for 6 mil while specs call for 10 mil. |
| | Response: | 10 mil |
| 28. | Question: | Fencing for the new building at pleasant camp: the drawings show some angle brackets for the corners but I don't see anything for securing the rest of the posts to the concrete floor or to the steel roof framing. If possible, could you please clarify this? |
| | Response: | The chainlink fence posts can be secured to the concrete floor with a surface mounted metal baseplate c/w fasteners into the concrete. At the roof the brackets are similar to the clips shown on detail 13/A601. |
| 29. | Question: | Provide detail of gutter and downpipes per 1/A601 and specs. |
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|-----|-----------|---|
| | Response: | Delete reference to gutter and downspout |
| 30. | Question: | Can you provide a detail or description for how the chain link fence posts are meant to be fastened to the roof structure? |
| | Response: | The attachment will be similar to the detail 13-A601. Mounting brackets, at locations shown on 1-A402, to be welded to underside of I-beam rafter along gridline 8. Those to be attached to plates/brackets welded to top rail of fence. |
| 31. | Question: | Detail 6/A601 shows pressure treated plywood over rigid insulation on the foundation. Perhaps concrete-faced insulation would be more durable over the long term? |
| | Response: | Both materials have been used up in this area and in our experience we find that the PT plywood performs better over the long term. |
| 32. | Question: | Drawing G003 shows an existing 22,700L fuel tank. On drawing A101, in the same spot on the site, a note says "Existing 14,575L fuel oil tank to be emptied and removed...". Which is correct? |
| | Response: | 22,700 existing tank is correct |
| 33. | Question: | One of our truss suppliers has mentioned that the wood roof trusses need to be at 305mm (12") centers, not 406mm per structural. Also the wood bearing plate on the steel beam needs to be 2x8 not 2x6 as per structural. Could you please confirm if this is correct? |
| | Response: | 406mm spacing is suitable for this installation. We cannot use 2X8 because the flange of the beam B3 is only 140mm wide. |
| 34. | Question: | Could you confirm the required excavation depth for the raw water supply and treated water supply lines? |
| | Response: | per details 7/M102, 2/E303 and 4/E303 depth of pipe to be 900mm. Total excavation depth = 1025mm. |
| 35. | Question: | Please provide specification / details for Peel and stick air vapor barrier to be applied to the face of the drywall in the water treatment room GW4 and GW6 |
| | Response: | Product specs: self-adhesive air/vapour barrier membrane consisting of an SBS rubberized Asphalt compound which is integrally laminated to a blue cross-laminated polyethylene film. The membrane is specifically designed to be self-adhered to a prepared substrate. Installation: lap edges 75mm along walls and along concrete curb. Wall finish to be primed prior to installation of peel and stick membrane. |
| 36. | Question: | Provide specs for expansion joints per 2,3/A601 |
| | Response: | Roof-to-roof bellow expansion joint: roof expansion joint, is a dual-seal, double-flanged, extruded thermoplastic rubber purpose-designed system for sealing expansion joints in roofs. For gaps between 50-100mm wide, allowing for expansion of 125mm. Material: Nitrile-Rubber-Plasticized (NPVC), adhered to roof membrane. Acceptable product: RoofJoint by Emseal. Model # RJ-0400-NP. Black. |
| 37. | Question: | Please confirm the ceiling type and framing in the Chlorine room (1/A301) |
| | Response: | Ceiling assembly: 19mm plywood 184mm joists at 406mm o/c 12.7mm G1S ply primed and painted as per walls (at room interior) |
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2. Amend/revise the specifications as follows:

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|----------------------------|---|
| 1. <u>Section 13 50 20</u> | .1 Add 1.5. 1.5 References: Section 23 05 00 Mechanical Common Work Results .2 Article 2.4.12.2.5. Change to read. Constant volume pump. .3 Clause 2.1.4. Add: .4 Water treatment skid to be CSA listed and NSF approved. Water treatment plant to be design for high seismic zone and complete with seismic restraint system as required. |
| 2. <u>Section 22 07 19</u> | Add specification for THERMAL INSULATION FOR PIPING (attached) |
| 3. <u>Section 22 13 18</u> | <u>DWV PIPING - PLASTIC</u> Revise paragraph 3.1.1.1 to read: 1. DWV vent through roof: for min 1500 mm <u>within heated space</u> and up through roof. |
| 4. <u>Section 22 42 01</u> | <u>PLUMBING SPECIALTIES AND ACCESSORIES</u> Add subsection 2.7 Heated Hose: 1. Thermostatically Controlled Cold Weather Water Hose, tested to -41 degrees C, ULc listed and CSA approved, suitable for potable water 2. Length: 15m 3. Diameter: 16mm 4. Power: 120volts, 60 hertz, 3 prong cord 5. Couplings: Grounded Nickel Plated Brass Female and Male Threaded Couplings 6. Accessories: Protective Bend Restrictors at both ends, Abrasion Resistant Cover |
| 5. <u>Section 22 42 01</u> | <u>PLUMBING SPECIALTIES AND ACCESSORIES</u> Add subsection 2.8 RV Dump Hatch: 2. Foot actuated sanitary tank hatch threaded onto tank pumpout pipe 3. Diameter: 100mm 4. Material: Coated ductile iron body, zinc cap |
| 6. <u>Section 22 36 01</u> | Add new Sanitary Tank specification (attached) |
| 7. <u>Section 23 05 00</u> | <u>MECHANICAL COMMON WORK RESULTS</u> Revise Subsection 1.1.1 to read: This section covers items common to all sections of mechanical including divisions 13, 22, and 23. Work in Division 13, 22 and 23 will |
-

include all drawings and all sections of the specifications that form the Contract Documents, including all addenda, and including Division 01 and Division 00, whether defined in Division 13, 22 and 23 or elsewhere, or whether defined in mechanical drawings or elsewhere.

8. Section 23 09 33

ELECTRIC AND ELECTRONIC CONTROLS

Add the following subsections:

2.7 WIRING, CONDUIT, TERMINATION BOXES

.1 To requirements of Division 26.

3.3 ELECTRICAL GENERAL

- .1 All wiring to be in conduit. Wiring, conduit connections and fittings to be as per the requirements of Division 26.
- .2 Provide lamocoid identifiers on all control panels and main junction boxes serving control wiring. Provide identification on conduit to identify conduits containing control system wiring. Identification to be to section 23 05 53 - Identification.
- .3 Fully enclose or properly guard electrical wiring, terminal blocks, all high voltage above 70 V contacts and mark to prevent accidental injury.

3.4 SPECIAL SUPPORTS

- .1 Provide all special steelwork as required for installation of work at no additional cost.

3.5 ACCEPTANCE TESTS

- .1 Upon completion of installation perform operational test of entire system under direction of Engineer. Acceptance test to occur in conjunction with system start-up and commissioning. Control Contactor representative to be present during acceptance tests to co-ordinate testing and control connections to building systems.
 - .2 Provide at least one technical personnel capable of adjusting field hardware and devices.
 - .3 Purpose: to demonstrate that control system functions in accordance with all contract requirements.
 - .4 Tests to include:
 - .1 Demonstration of correct operation of all controlled devices.
 - .2 Demonstration of operation of all sequences and alarms as per design control logic.
 - .3 Testing and calibration all devices.
 - .4 Testing and calibration of each controller using calibrated instruments.
 - .6 System is accepted if:
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.1 Control system and devices operate as per intent of specifications and drawings to the satisfaction of the Departmental Representative.

.7 Correct all defects when they occur and before resuming test.

.9 Section 26 24 02

Article 2.8. Delete items 2.8.1, 2.8.3, 2.8.4, 2.8.5, 2.8.6.

.10 Section 23 11 00

Clause 1.1.1, add;

- The portion of the generator fuel supply and return tubing that runs along the floor shall be protected by an expanded metal galvanized steel grating cover with bolting tabs attached to provide clearance for the piping. See attached sketch SKM-005.

3. Amend/revise the drawings as follows:

1. Drawing M002, plan 2 (South): add RV pad and services as shown on attached sketch SKM-004 including:
 - a. 19mm diameter insulated heat traced RV water service as specified in 22 11 13 Facility Water Distribution Piping
 - b. Buried septic tank and RV dump as specified herein
 2. Drawing E301: Replace schedule for Panel B with the attached as shown on drawing SKE-401.
 3. Drawing E301: Referring to detail 4/E301, delete breaker in Panel A associated with P-1.1.
 4. Drawing E203: Referring to detail 1/E203, delete CMS associated with P-1.1. This pump will now be supplied from a starter on the water treatment plant skid. Provide branch circuit from this location to well pump.
 5. Drawing E203: Detail 1/E203, change breaker sizes for FRN-1 & FRN-2 from 1P15 to 1P25.
 6. Drawing E301: Detail 4/E301, change breaker sizes for FRN-1 & FRN-2 from 1P15 to 1P25.
 7. Add electrical services to proposed new RV Pad as described on attached drawing SKM-004.
 8. Provide power and control electrical services to the proposed new water treatment plant and associated accessories as described on attached drawing SKE-401.
 9. Panel K to be as described on attached SKE-401.
 10. Drawing S-001: Add following notes regarding Structural details for new RV pad
Slab on grade for RV:
 1. Size 5000X15000mm
 2. Depth: 152mm
 3. Reinforcement: 15M @ 300mm o/c each way mid slab
 4. Concrete mix: see Control Concrete chart on S-001 "Apron"
 5. Control joint layout: provide saw cut joint every 5.0m
 6. Control joint detail: see detail 5&6/S-503
 7. Subgrade layers:
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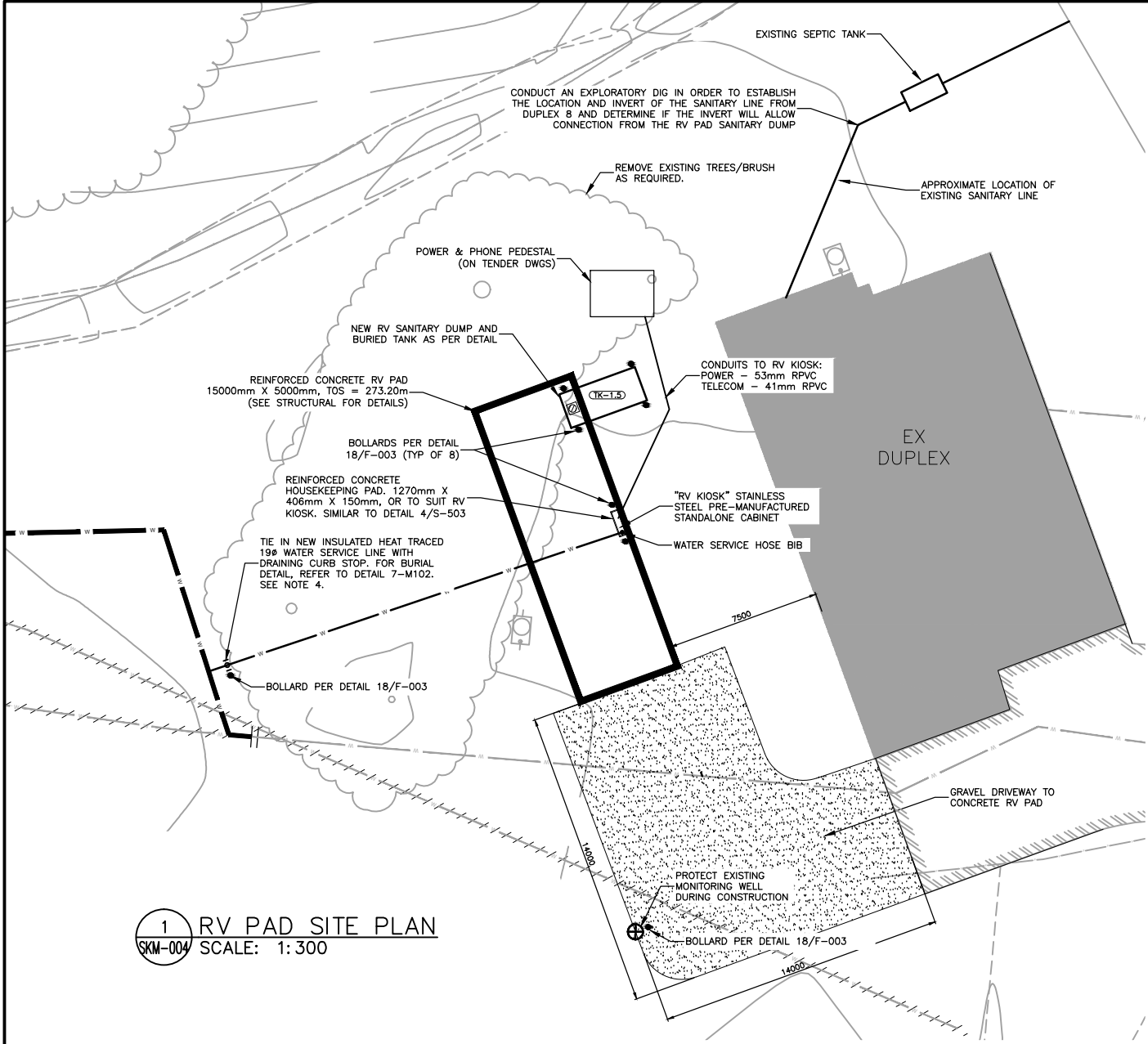
Page 8

- a. Provide 6 mil polyethylene vapour retarder under slab, see note#11 under Cast-in-Place Reinforced Concrete on S-001
- b. Min. 300mm 20mm crushed basecourse gravel compact to min. 98% SPMDD, the fill shall extend 610mm beyond the slab.
- c. Recompect existing to min. 98% SPMDD
8. The final grade shall be sloped away from the slab min. 4%
9. For 152mm deep housekeeping pad see - detail 4/S-503
11. Drawing M002 – South Site Plan. Contractor to complete exploratory hand excavation as soon as possible at house 7/8 to locate invert depth of sanitary service from the duplex. Provide information to the Departmental Representative.
12. Drawing M501, detail 3: extend insulation through attic and for minimum 1500mm inside heated building

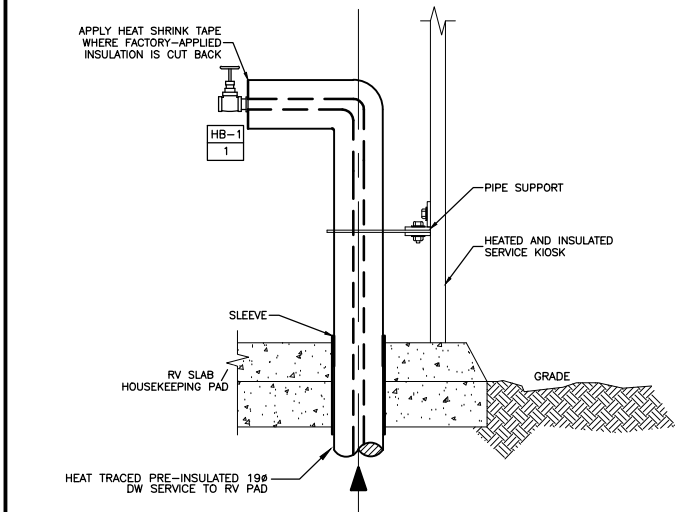
4. Attachments:

1. SKM-004 – Mechanical/Electrical/Civil sketch showing RV Pad Site Plan and Details, 1 page
2. SKM-005 – Grate Cover and Supports for AboveGround Tubing, 1 page
3. SKE-401 – Water Treatment Plant Electrical, 1 page
4. Specification 22 36 01 Sanitary Tank, 1pg.
5. Specification 22 07 19 THERMAL INSULATION FOR PIPING, 4pgs.

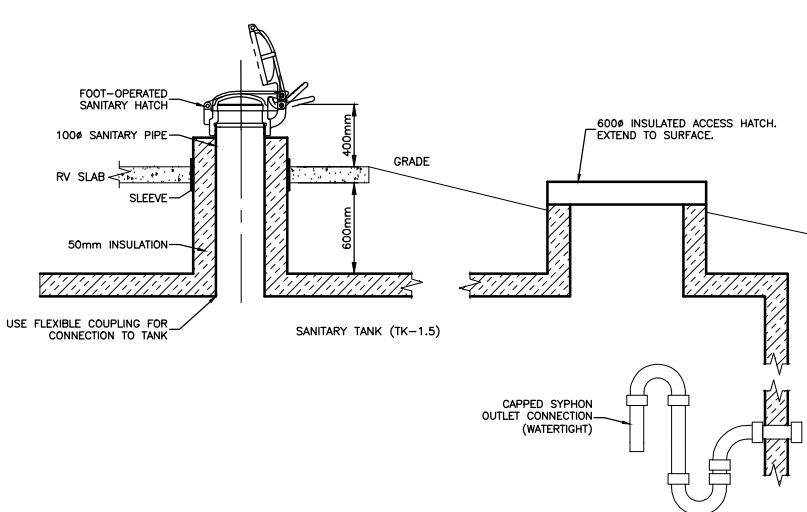
END OF ADDENDUM



1 RV PAD SITE PLAN
SKM-004 SCALE: 1:300



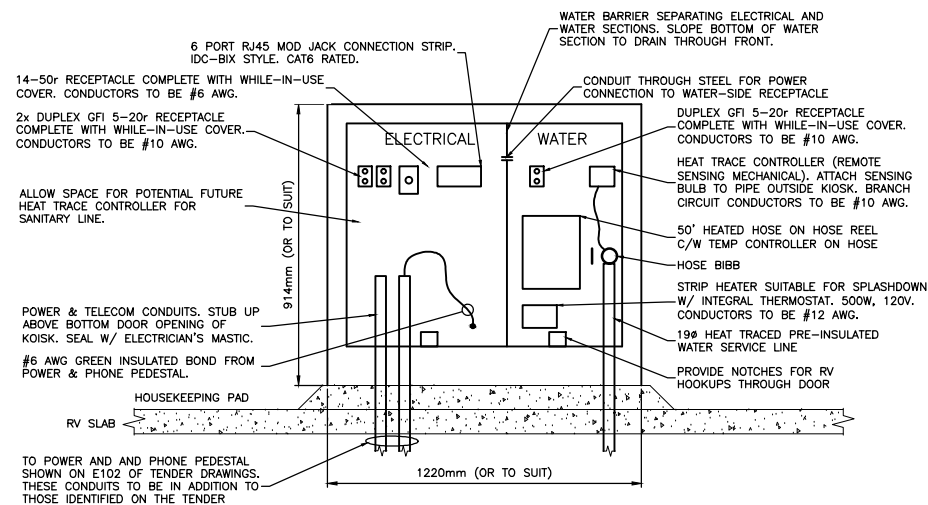
2 RV WATER SERVICE ELEVATION DETAIL
SKM-004 SCALE: NTS



3 RV SANITARY DUMP ELEVATION DETAIL
SKM-004 SCALE: NTS

NOTES

- PARTIAL PLAN. FOR CONTINUATION, SEE M102.
- RV KIOSK TO BE STANDALONE STAINLESS STEEL CABINET INSULATED TO R12. ACCEPTABLE PRODUCT "NEMA ENCLOSURES" AS PER ATTACHED PRODUCT CUT SHEET. CABINET TO INCLUDE FULL DEPTH CENTER DIVIDER AND SLOPED DRAIN PAN ON RIGHT SIDE OF CABINET TO ELIMINATE ANY SPILLAGE. REFER TO DIVISION 26 SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS. CONTRACTOR TO SIZE CABINET TO SUIT.
- WATER SERVICE LINE TO BE HEAT TRACED 19mm HDPE WITH 50mm FACTORY-APPLIED INSULATION. HEAT SHRINK AND FOAM-IN-PLACE ALL JOINTS.
- PROVIDE SELF-REGULATING HEATING CABLE THROUGHOUT LENGTH OF RV PAD WATER SERVICE LINE.
- GRAVEL DRIVEWAY TO BE 20mm ROAD CRUSH, COMPACTED TO 95% SPD, MIN DEPTH OF 200mm. INSTALL IN LIFTS NOT TO EXCEED 200mm. GRADE TO DRAIN ADEQUATELY AND TIE IN TO EXISTING. APPROX VOLUME OF FILL: 50m³.



4 RV KIOSK ELEVATION DETAIL
SKM-004 SCALE: NTS

REAL PROPERTY SERVICES
Western Region
SERVICES IMMOBILIERS
Région de l'ouest



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| 0 | ISSUED FOR TENDER ADDENDUM | 15.04.21 |
| Revision | Description | Date |

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|--|
| Client |
| CANADA BORDER SERVICES AGENCY |

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| Project title |
| PLEASANT CAMP PORT OF ENTRY TENDER A SITE SERVICES BUILDING |

| |
|---------------|
| Drawn by |
| T.Heal |

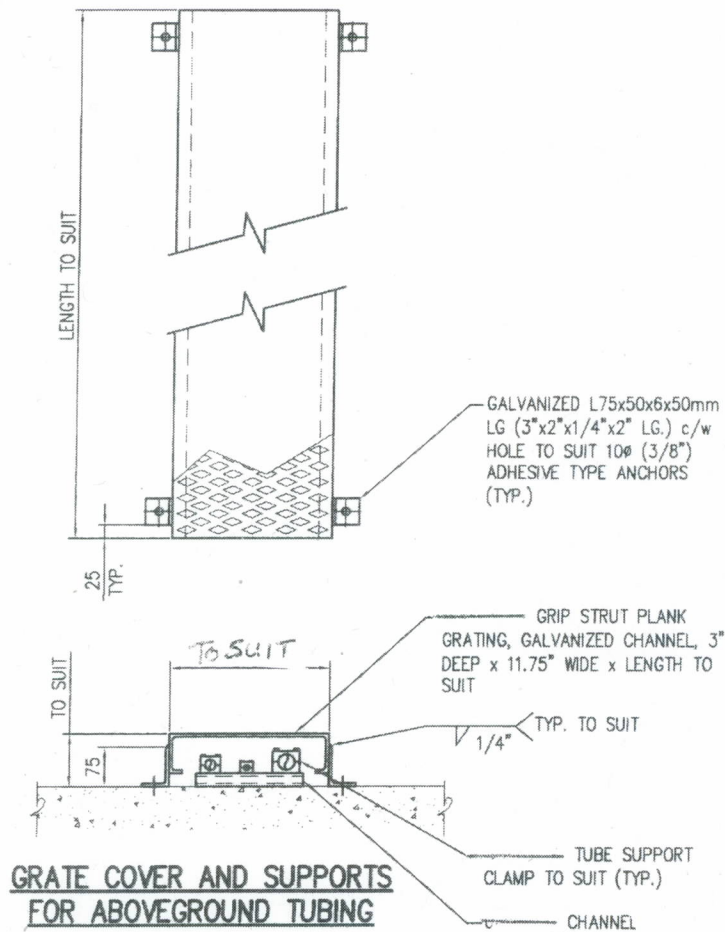
| |
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| Designed by |
| S. Birrell / R. Savoie |

| |
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| Approved by |
| |

| |
|-----------------------|
| PWGSC Project Manager |
| |

| |
|---|
| Drawing title |
| RV PAD SITE PLAN AND DETAILS |

| | | |
|---------------------|----------------|----------|
| Project no. | Sheet | Revision |
| R.071363.001 | SKM-004 | 0 |



PROJECT: PLEASANT CAMP PORT OF ENTRY
TENDER A.

SKETCH: SKM-05

DATE: April 15, 2015

ISSUED WITH ADDENDUM 003

| EQUIPMENT | LOCATION | HP | TOTAL LOAD (kW) | VOLTS | PHASE | FLA | FEEDER | SOURCE |
|---|--------------------------|---------------------|-----------------|-------|-------|-----|-----------------------------------|---------|
| WATER TREATMENT CONTROL PANEL (WTP-PNL) | WATER TREATMENT ROOM 100 | 1x5 1x3 2x1.5 | 11.00 | 208 | 3 | N/A | 4 #3 CU R90 + #6 BOND IN 41mm EMT | PANEL B |

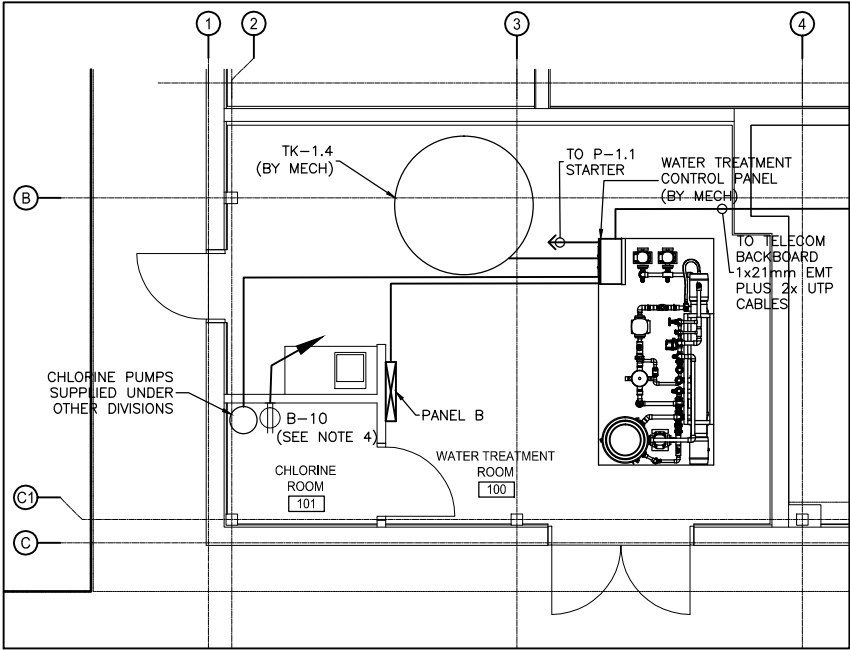
- NOTES:
- EQUIPMENT SCHEDULE IS FOR ESTIMATING PURPOSES ONLY. CONFIRM ALL MOTOR FULL LOAD CURRENTS WITH NAMEPLATES AND SIZE MOTOR DISCONNECTS, BREAKERS, FUSES, FEEDERS AND OVERLOADS ACCORDINGLY.
 - COORDINATE ALL INFORMATION WITH RELEVANT DISCIPLINES INCLUDING MECHANICAL AND FUEL OIL.
 - ALL CONTROL TO BE PROVIDED BY MECHANICAL WITH WATER TREATMENT EQUIPMENT.
 - CONDUIT TO P-1.1 TO BE:
 - EMT WITHIN BUILDING
 - RPVC UNDER SLAB/GROUND
 - RGS THROUGH SPLASH PAD SLAB AND UP TO WELL HEAD

2 WTP FEEDER SCHEDULE
SKE-401 SCALE: NTS

| EQUIPMENT | FROM | TO | CONDUIT |
|--|-----------------------|---|---------|
| WATER TREATMENT CONTROLS | WATER TREATMENT PANEL | TELECOM BACKBOARD | 21mm |
| CHLORINE PUMP CONTROL & LEVEL SWITCH | WATER TREATMENT PANEL | CHLORINE PUMPS | 21mm |
| TREATED WATER HOLDING TANK (TK-1.4) | WATER TREATMENT PANEL | TK-1.4 | 21mm |
| ANTISCALANT DOSING SYSTEM TANK CONTROL | WATER TREATMENT PANEL | TK-101 TO BE LOCATED ADJACENT TO WATER TREATMENT SKID. COORDINATE LOCATION ON SITE. | 21mm |
| CHLORINE DOSING SYSTEM | WATER TREATMENT PANEL | TK-201 LEVEL SENSOR | 35mm |
| WELL PUMP | WATER TREATMENT PANEL | P-1.1 NEW WELL PUMP STARTER | 21mm |

- NOTES:
- COORDINATE FINAL LOCATIONS ON SITE & WITH MECHANICAL/PROCESS DRAWINGS.

4 WTP CONTROLS CONDUIT SCHEDULE
SKE-401 SCALE: NTS



- NOTES:
- REFER TO TENDER DRAWINGS FOR RECEPTACLE AND LIGHTING LAYOUTS.
 - CONFIRM CONTROL PANEL IS INTERNALLY FUSED PRIOR TO INSTALLATION.
 - REFER TO 2/E401 AND 4/E401 FOR CONDUIT AND CONDUCTOR DETAILS
 - RECEPTACLE TO BE IN CORROSION-PROOF, NON-METALLIC WEATHERPROOF HOUSING

1 WTP ELECTRICAL PLAN
SKE-401 SCALE: NTS

| PANEL B | | | | | | | | | | |
|-----------------|------|-------|------|------|-------------------------------|----------------------|-------|-----------|-----|-------|
| CIRC. | BRKR | WATTS | | | DESCRIPTION | DESCRIPTION | WATTS | | | CIRC. |
| | | A | B | C | | | A | B | C | |
| 1 | 2P30 | 1500 | | | DHWH-1 | EF-1 | 125 | | | 2 |
| 3 | | | 1500 | | BASEBOARD HEATER | | | 1450 | | 4 |
| 5 | 2P15 | | | 560 | P-1.2 (FUTURE) | P-1.3 (FUTURE) | | | 560 | 6 |
| 7 | | 560 | | | | | 560 | | | 8 |
| 9 | 1P15 | | 300 | | MECHANICAL CONTROL | CHLORINE PUMPS | | 35 | | 10 |
| 11 | 1P15 | | | 900 | WATER TREATMENT PLUGS | CHLORINE ROOM PLUGS | | | 150 | 12 |
| 13 | 1P15 | 375 | | | WATER TREATMENT LIGHTS | CHLORINE ROOM LIGHTS | 75 | | | 14 |
| 15 | | | 3400 | | | SPARE | | | | 16 |
| 17 | 3P80 | | | 3400 | WATER TREATMENT CONTROL PANEL | SPARE | | | | 18 |
| 19 | | 3400 | | | | SPARE | | | | 20 |
| 21 | | | | | SPACE | SPACE | | | | 22 |
| 23 | | | | | SPACE | SPACE | | | | 24 |
| 25 | | | | | SPACE | SPACE | | | | 26 |
| 27 | | | | | SPACE | SPACE | | | | 28 |
| 29 | | | | | SPACE | SPACE | | | | 30 |
| 31 | | | | | SPACE | SPACE | | | | 32 |
| 33 | | | | | SPACE | SPACE | | | | 34 |
| 35 | | | | | SPACE | SPACE | | | | 36 |
| 37 | | | | | SPACE | SPACE | | | | 38 |
| 39 | | | | | SPACE | SPACE | | | | 40 |
| 41 | | | | | SPACE | SPACE | | | | 42 |
| TOTAL | | 5835 | 5200 | 4860 | | | 760 | 1485 | 710 | TOTAL |
| PHASE A TOTAL = | | 6595 | | | | | | | | |
| PHASE B TOTAL = | | 6685 | | | | | | | | |
| PHASE C TOTAL = | | 5570 | | | | | | | | |
| PANEL TOTAL = | | 18850 | | | @ 120/208 VOLTS 3 PHASE | | | 52.3 AMPS | | |

- NOTES:
- THIS SCHEDULE REPLACES THE PANEL B SCHEDULE ON DRAWING E301, REV 0, ISSUED FOR TENDER, 15/02/02

3 REVISED PANEL B SCHEDULE
SKE-401 SCALE: NTS

| PANEL: K | | | | | | | | | | | |
|-----------------|-------|-------|------|---------------------------|-------------------------|---|-------|----------------|------|-------|-------|
| VOLTS: 120/208 | | | | LOCATION: RESIDENCE KIOSK | | | | BUSS: 400 AMPS | | | |
| PHASE: 3 | | | | FEEDER: AS PER SINGLELINE | | | | MTG: SURFACE | | | |
| WIRE: 4 | | | | | | | | | | | |
| CIRC. | BRKR | WATTS | | | DESCRIPTION | DESCRIPTION | WATTS | | | BRKR | CIRC. |
| | | A | B | C | | | A | B | C | | |
| 1 | 3P150 | 2350 | | | RESIDENCES 1/2 | 5-20R RECEPTACLE - RV KIOSK - GFI | 500 | | | 1P20 | 2 |
| 3 | | | 2350 | | | 5-20R RECEPTACLE - RV KIOSK - GFI | | 500 | | 1P20 | 4 |
| 5 | | | | 2350 | | UNDERGROUND HEAT TRACE - GFI | | | 500 | 1P20 | 6 |
| 7 | 3P150 | 2350 | | | RESIDENCES 3/4 | HEATED HOSE RECEPTACLE | 100 | | | 1P15 | 8 |
| 9 | | | 2350 | | | RV POWER RECEPTACLE (14-50R) | | 2000 | | 2P50 | 10 |
| 11 | | | | 2350 | | | | | 2000 | | |
| 13 | 3P150 | 2350 | | | RESIDENCES 5/6 | RV KIOSK HEATER (WET SIDE) | 300 | | | 1P15 | 14 |
| 15 | | | 2350 | | | RESIDENCE UTILITY PEDESTAL LIGHT AND HEATER | | 900 | | 1P15 | 16 |
| 17 | | | | 2350 | | RESIDENCE UTILITY PEDESTAL RECEPTACLE | | | 500 | 1P15 | 18 |
| 19 | 3P150 | 2350 | | | RESIDENCES 7/8 | SPARE | 0 | | | 1P15 | 20 |
| 21 | | | 2350 | | | SPARE | | 0 | | 1P15 | 22 |
| 23 | | | | 2350 | | SPACE | | | | | 24 |
| 25 | 1P15 | 0 | | | SPARE | SPACE | | | | 26 | |
| 27 | 1P15 | | | | SPARE | SPACE | | | | 28 | |
| 29 | 1P15 | | | | SPARE | SPACE | | | | 30 | |
| 31 | | | | | SPACE | SPACE | | | | 32 | |
| 33 | | | | | SPACE | SPACE | | | | 34 | |
| 35 | | | | | SPACE | SPACE | | | | 36 | |
| 37 | | | | | SPACE | SPACE | | | | 38 | |
| 39 | | | | | SPACE | SPACE | | | | 40 | |
| 41 | | | | | SPACE | SPACE | | | | 42 | |
| TOTAL | | 9400 | 9400 | 9400 | | | 900 | 3400 | 3000 | TOTAL | |
| PHASE A TOTAL = | | 10300 | | | | | | | | | |
| PHASE B TOTAL = | | 12800 | | | | | | | | | |
| PHASE C TOTAL = | | 12400 | | | | | | | | | |
| PANEL TOTAL = | | 35500 | | | @ 120/208 VOLTS 3 PHASE | | | 98.5 AMPS | | | |
| REMARKS | | | | | | | | | | | |

5 PANEL K SCHEDULE
SKE-401 SCALE: NTS

1 General

1.1 REFERENCES

- .1 CSA B66 Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks

1.2 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures
- .2 Indicate dimensions, capacities, fabrication details, connection details, pressure ratings, finishes and mounting details.
- .3 Factory Test Report: Upon completion of the tank the manufacturer's inspection report is to be supplied for each tank.
 - a. Hydrostatic test: fill tank to brim full capacity for a minimum of four hours and conduct a visual inspection of leaks.
- .3 Shop drawings to be complete with registered Professional Engineer's seal affixed verifying design of tanks.

1.3 MAINTENANCE DATA

- .1 Provide maintenance data for incorporation into manual specified in Section 01 33 00 - Submittals.

2 Products

2.1 SANITARY TANK TK-1.5

- .1 Construction: Prefabricated CSA approved fiberglass or polyethylene septic tank suitable for 2130mm burial and pumpout application.
- .2 Type: Dual compartment, syphon.
- .3 Syphon pipe diameter: 75mm, capped watertight.
- .4 Capacity: 7,050 litres.
- .5 Tank to be complete with:
 - 1. One 100mm pumpout terminated with foot activated RV dump hatch
 - 2. One 600mm pumpout/access terminated with a cap
- .6 Tank to be insulated with 50mm spray-on polyurethane foam insulation.
- .7 Markings: The tank shall be marked to identify the product, date (month and year) of manufacture, capacity and serial number.
- .8 Warranty: Two years on material and workmanship.

3 Execution

3.1 INSTALLATION

- .1 Install as per manufacturers recommendations.
- .2 Install level and secure and make all necessary connections.
- .3 Provide compacted sand with minimum 300mm on all sides. Do not backfill until written permission has been provided by the Departmental Representative.
- .4 The sanitary tank shall be buried to provide at least 1.2 m (4 ft) of earth cover.
- .5 After installation, the syphon tank, and connecting pipes shall be tested for leakage. The syphon shall be tested for proper operation. No leakage is permitted.
- .6 SET-BACK DISTANCES tanks shall not be less than:
 - 1.5 m (5 ft) from a parcel boundary or from any building;
 - 5.0 m (16 ft) from the edge of any road or driveway;
 - 15.0 m (50 ft) from any source of potable water, or natural boundary or high water level of any surface water body;
 - 9.0 m (30 ft) from a buried water storage tank; and

- 60.0 m (200 ft) from any community well
- .7 In high water-table areas, tanks shall be anchored by the following methods:
 - By use of concrete slab under the tank and anchor straps (preferred method). In case of a vertical tank, an anti-floatation flange must be installed on tank. OR
 - By use of ground anchors and anchor straps
- .8 Anchoring shall be engineered on the basis of tank size, ground cover, water-table elevation, and calculated uplift force on the empty tanks. Anchoring shall be accomplished in such a manner that anchor straps are hand tight and are designed and applied so that they do not damage the tank. Tanks shall not be in direct contact with concrete but shall be separated by at least 300mm of bedding material (pea gravel).

END OF SECTION

General

1.1 REFERENCES

- .1 ASTM C 411-97, Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
- .2 CAN/ULC-S102-M88, Surface Burning Characteristics of Building Materials and Assemblies.
- .3 ANSI/NFPA 90A-1999, Air Conditioning and Ventilating Systems, Installation of.
- .4 CAN/CGSB-51.9-92, Thermal Insulation, Mineral Fibre, Sleeving for Piping and Round Ducting.
- .5 CAN/CGSB-51.12-95, Cement, Thermal Insulating and Finishing.
- .6 CGSB 51-GP-52Ma, Vapour Barrier Jacket and Facing Material for Pipe, Duct and Equipment Thermal Insulation.
- .7 ASTM C 335-95, Test Method for Steady-State Heat Transfer Properties of Horizontal Pipe Insulations.

1.2 SUBMITTALS

- .1 Submit shop drawings in accordance with Section 01300 - Submittals.
- .2 Submit for approval manufacturer's catalogue literature related to installation, fabrication for pipe, fittings, valves and jointing recommendations.
- .3 Provide shop drawings as follows:
 - .1 Insulation.
 - .2 Removable Insulation Enclosures.

1.3 DEFINITIONS

- .1 For purposes of this section:
 - .1 "CONCEALED" - insulated mechanical services and equipment in hung ceilings non-accessible chases and furred spaces.
 - .2 "EXPOSED" - will mean "not concealed" as defined herein.
 - .3 "DW" - refers to RAW, TREATED, DHW & DCW piping.

2 Products

2.1 FIRE AND SMOKE RATING

- .1 In accordance with CAN/ULC-S102:
- .2 All components of insulation system to have maximum flame spread rating of 25 and maximum smoke developed rating of 50 in accordance with ASTM E 84-01, Test Method for Surface Burning Characteristics of Building Materials and CAN/ULC-S102.

2.2 TYPE A-2 INSULATION

- .1 50mm thick rigid polyurethane foam, factory applied closed cell urethane insulation.
- .2 Density: (ASTM D 1622) 35 to 46 kg/m³ (2.2 to 3.0 lbs/ft³).
- .3 Closed cell content: (ASTM D 2856) 90%, minimum.
- .4 Water absorption: (ASTM C272) 4.0% by volume.
- .5 Thermal conductivity: (ASTM C518) 0,020 to 0,026 W/m OC
- .6 Jacket: 22 Ga, galvanized metal Spiwrap System
- .7 Acceptable product: Urecon UIP Spiwrap System.

2.3 TYPE A-3 INSULATION

- .1 TIAC Code A-3: Rigid molded formaldehyde free mineral fibre piping insulation with factory applied vapour retarder jacket to CAN/CGSB-51.9-92 and CGSB SI-GP-52M.
- .3 Materials:
 - .1 Insulation: molded, heavy density one piece, inorganic glass fiber bonded with thermosetting resin.

- .2 Jacket: white kraft paper bonded to aluminum foil and reinforced with glass fibers. 3. Lap seal: self adhesive.
- .3 Temperature range: -29degC to 537degC
- .2 Thermal Conductivity "k" shall not exceed 0.031 W/m. deg.C at 24 deg.C mean temperature when tested in accordance with ASTM C 335-95.
- .3 Surface Burning Characteristics:
 - .1 To STM E84-98e, Test Method for Surface Burning Characteristics of Building Materials and ANSI/NFPA 255-2000, Burning Characteristics of Building Materials and CAN/ULC-S102-M88.
 - .2 UL Classified.
 - .3 Flame spread=25 as plain insulation or composite basis.
 - .4 Smoke developed=50 as plain insulation or composite basis.
- .4 Vapour Transmission:
 - .1 To ASTM E 96-00e1, Standard Test Methods for Water Vapor Transmission of Materials.
 - .2 Maximum: 0.02 perms.
- .5 Resistance to Fungi and Bacteria:
 - .1 ASTM listed to not promote growth of fungi or bacteria.
- .6 Acceptable product: Knauf Fiberglass Pipe Insulation.

2.4 CEMENT

- .1 Thermal insulating and finish to CAN/CGSB-51.12-95 low VOC to the current content limits of SCAQMD Rule #1168.

2.5 A2 JACKETS

- .1 Metal:
 - .1 20 Gauge Galvanized sheet metal.
 - .2 Pipe Joints: All metal overlaps to extend overlap by 50mm and field positioned in such a way to shed water.

2.6 A3 JACKETS

- .1 Polyvinyl Chloride (PVC):
 - .1 One piece premoulded PVC jacketing to AC774.1K82 with 25 flame and 50 smoke rating to ASTM E 84-01.
 - .2 Gloss finish, UV resistant, premoulded for fitting applications, jacket for straight pipe runs.
 - .3 Temperature rating: max insulation surface temperature 60degC.
 - .4 Secure with PVC tape with manufactured supplied rivets. Tape only is not acceptable.
 - .5 Acceptable material: Knauf Proto LoSmoke Fitting and Covers.

2.7 INSULATION SECUREMENTS

- .1 Tape: ULC listed, self-adhesive, aluminum, plain, 50 mm wide minimum.
- .2 Contact adhesive: Quick setting, asbestos free, low VOC to the current content limits of SCAQMD Rule #1168.
- .3 Tie wire: 1.5 mm diameter stainless steel.
- .4 Bands: Aluminum, 19 mm wide, 0.5 mm thick.

2.8 INDOOR VAPOUR RETARDER FINISH

- .1 Vinyl emulsion type acrylic, compatible with insulation low VOC to the current content limits of SCAQMD Rule #1168.

3 Execution

3.1 PRE- INSTALLATION REQUIREMENT

- .1 Pressure testing of piping systems and adjacent equipment to be complete, witnessed and certified.
- .2 Surfaces to be clean, dry, free from foreign material.

3.2 INSTALLATION (GENERAL)

- .1 Install in accordance with TIAC National Standards and the requirements of ANSI/NFPA 90A-1999 and ANSI/NFPA 90B-1999.
- .2 Install all insulation systems including minimum insulation thicknesses to the most stringent requirements of the National Energy Code for Buildings-2011 unless otherwise noted in the insulation schedule.
- .3 Apply materials in accordance with manufacturer's instructions and this specification.
- .4 Seal and finish exposed ends as follows:
 - .1 PVC Jacketed insulation: PVC jacket termination.
 - .2 Unfinished insulation: tape.
 - .3 Where insulation not provided at valves, fitting and trim delete insulation and finish away from studs and nuts to permit use of tools without damage to insulation.
- .5 Use two layers with staggered joints when required nominal wall thickness exceeds 75 mm.
- .6 Maintain uninterrupted continuity and integrity of vapour retarder jacket and finishes.

3.3 CONCEALED BALL VALVES

- .1 Concealed ball valves: insulate all concealed ball valves using specified pipe insulation continuous over valve. Core out insulation as required to suit valve body dimensions or provide one size larger pipe insulation.

3.4 PIPING

- .1 Insulate piping for full length as per insulation schedule except as noted.
- .2 Where insulation not provided at valves, fitting and trim delete insulation and finish away from studs and nuts to permit use of tools without damage to insulation.
- .3 Fastenings-Type A3: secure insulation by tape at each end and centre of each section, but not greater than 900 mm on centres.
- .4 Elastomeric Insulation: to remain dry, overlap to manufacturer's instructions. Joints tight and sealed properly.

3.5 FINISHES

- .1 PVC:
 - .1 Provide where specified.
 - .2 Provide min 25mm overlap.
 - .3 Secure using flexible PVC tape and manufactured. approved rivets. Do not stretch final 50mm of tape.
- .2 Metal
 - .1 Provide where specified
 - .2 Provide min 25mm overlap.
 - .3 Secure using self tapping sheet metal screws.
 - .4 Caulk all joints. Joints to be in underside of pipe.

3.6 PROTECTION OF INSULATION DURING CONSTRUCTION

- .1 Insulation is to be protected from moisture damage during all stages of construction.
- .2 Where insulation is damaged due to moisture damage either prior to installation, during or subsequent to installation up to and including final inspection replace damaged

insulation to the satisfaction of the Departmental Representative.

3.7 PIPING INSULATION SCHEDULES

.1 Schedule:

| Application (mm) | Insulation | Thickness | Jacket Type |
|---|------------|-----------|-------------|
| Water Well WW-1 Exterior Casing All Pipe | A2 | 50 | Metal |
| Rigid DW (hot & cold) Piping(Concealed) | | | |
| Runouts & pipe 50dia and less | A3 | 25 | N/A |
| 65dia and greater | A3 | 38 | N/A |
| Rigid DW (hot & cold) Piping(Exposed) | | | |
| Runouts & pipe 50dia and less | A3 | 25 | PVC |
| 65dia and greater | A3 | 38 | PVC |
| DWV Vent (concealed) | A2 | 25 | N/A |
| DWV Vent (exposed) | A2 | 25 | Metal |