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189 Prince William Street
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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 Government Services Canada- Bid
Receiving / Réception des soumissions
189 Prince William Street
Room 421
Saint John
New Bruns
E2L 2B9

Title - Sujet Const.Svcs, Westmorland Inst, N.B.	
Solicitation No. - N° de l'invitation EC016-132714/A	Amendment No. - N° modif. 019
Client Reference No. - N° de référence du client R.043939.001	Date 2013-02-08
GETS Reference No. - N° de référence de SEAG PW-\$PWB-020-3192	
File No. - N° de dossier PWB-2-35125 (020)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-02-12	Time Zone Fuseau horaire Atlantic Standard Time AST
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: Donovan, Janine PWB	Buyer Id - Id de l'acheteur pwb020
Telephone No. - N° de téléphone (506) 636-5347 ()	FAX No. - N° de FAX (506) 636-4376
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
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

This Tender Amendment No. Nineteen (19) is raised to include the following Addendum No. Nineteen (19).

The following Addendum to the tender is effective immediately. This addendum shall form part of the contract documents.

All other terms and conditions remain the same.

Addendum No. 19.

1. SOLICITATION AMENDMENT NO. 7

1. Specification, Item 1, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*):

1. Section 01 11 00 - SUMMARY OF WORK: ADD Paragraph 1.1.1.2

"Priming and finish painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces, but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule."

2. Specification, Item 25, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*):

25. Section 09 91 23 - INTERIOR PAINTING: ADD Paragraph 1.4.4

"Priming and finish painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces. Schedule and coordinate work performed by the Owner to not cause delays in the Work."

2. SOLICITATION AMENDMENT NO. 12

1. Question and Answers, Q3 & A3, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*):

Q3: During the site meeting representatives from Public Works indicated that Corcan would be responsible for some work. Could you please provide a detailed list of the work Corcan will be undertaking?

A3: The following items are not in contact, by CSC:

-
1. Landscape areas (as indicated on drawing C200) to be covered with 100mm of topsoil and seeded with grass.
 2. Priming and finish painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces. Schedule and coordinate work performed by the Owner to not cause delays in the Work (refer to Addendum 7)
2. Question and Answers, Q20 & A20, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*)::
- Q20: Addendum #7 Item 1 states the owner own forces will be painting gypsum board drywall walls, ceilings and metal door and frames. Will the owner be performing all of the painting, if not please state what needs to be painted the contractor.
- A20: Priming and finish painting of all interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces, but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule.
3. Question and Answers, Q27 & A27, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*)::
- Q27: The room finish schedule indicates Paint finish PT as not in contract. There an interior Painting spec and an Exterior painting spec but nothing is indicated on the drawings to be painting. Please clarify what needs to be painted?
- A27: Refer to Addendum 7
4. Question and Answers, Q2 & A2, **REMOVE** the following (*refer to Q/A 24 of this Addendum*): :
- Q2: Please indicate the type of fill required at the inside and outside of the foundation walls and at the underside of the slab on grade?
- A2: Refer to Geotechnical Report Addendum 2
3. **SOLICITATION AMENDMENT NO. 15**

1. Question and Answers, Q2 & A2, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*)::

Q2: Who's responsible for painting masonry, structural steel and any exterior painting?

A2: Priming and finish painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces. Schedule and coordinate work performed by the Owner to not cause delays in the Work (refer to Addendum 7). All other painting by Contractor.

4. **SOLICITATION AMENDMENT NO. 16**

1. Question and Answers, Q1 & A1, **REMOVE** the following (*refer to Item Nos. 5.5 and 5.6 as well as Q/A 1, 2 and 3 of this Addendum*)::

Q1: Who's responsible for painting masonry, structural steel and any exterior painting?

A1: Priming and finish painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces. Schedule and coordinate work performed by the Owner to not cause delays in the Work (refer to Addendum 7). All other painting by Contractor. For further clarification, the concrete block wall along gridline B will not be painted. We do not have any exterior painting except for bollards.

5. **SPECIFICATION**

The following documents accompany and form part of this Addendum:

1. Section 03 35 00 - CONCRETE FINISHING: NEW SECTION
2. Section 05 31 00 - STEEL DECK: REPLACE SECTION
3. Section 09 96 23 - GRAFFITI-RESISTANT COATINGS: NEW SECTION
4. Section 00 01 11 - SPECIFICATION INDEX: ADD following to SPECIFICATION INDEX

Section No.	DESCRIPTION	NO. OF PAGES
04 05 00	COMMON WORK RESULTS FOR MASONRY	4

5. Section 01 11 00 - SUMMARY OF WORK: ADD Paragraph 1.1.1.2

"Painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces except for priming of steel doors and frames (refer to Sections 09 91 13 and 09 91 23) but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule."

6. Section 09 91 23 - INTERIOR PAINTING: ADD Paragraph 1.4.4

"Painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces except for priming of steel doors and frames. Schedule and coordinate work performed by the Owner to not cause delays in the Work."

7. Section 08 36 13 - SECTIONAL OVERHEAD DOORS: Revise Paragraph 2.2.1:

"Door sections: 50 mm thickness thermally broken steel - polyurethane-steel sandwich construction."

8. Section 07 81 00 - APPLIED FIREPROOFING: Add Paragraph 2.1.2:

"Thermal Barrier: As supplied by SFRM manufacturer; spray applied mixture, ULC Listed or UL Certified for use in Canada, for use as a 15-minute thermal barrier for protection of foam plastics."

9. Section 07 81 00 - APPLIED FIREPROOFING: Add Paragraph 3.3.6:

"Apply thermal barrier to protect spray foam insulation in the Type F3 Mezzanine Floor Assembly between gridlines 7 and 8 and gridlines A and A.3."

10. Section 01 52 00 - CONSTRUCTION FACILITIES: Add Paragraph 1.9.1.1:

"Where the contractor requires the protection of the construction site after hours, on weekends and holidays, the contractor must make arrangements with the Canadian Corps of Commissionaires to provide such protection. The cost of this protection is to be paid by the contractor. The number of commissionaires required would be at the discretion of the contractor."

6. DRAWINGS

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1. Drawing 1/A900 - Washroom Plans and Interior Elevations: Revise Files 117 to Files 113, Revise Janitor 117 to Janitor 114, Revise WC 120 to WC 119.
 2. Drawing 1/A900 - Washroom Plans and Interior Elevations: Drawing 1/A900 to be coordinated with drawing 2/M100. Floor Drains to be added to centre of Rooms 114 (Janitor), 115 (Staff WC), 116 (Staff WC), and 119 (WC). Graphics/notes to indicate slope in concrete floor to drain.
 3. Drawing 3/A900 - Washroom Plans and Interior Elevations: Revise drawing title 'JANITOR ROOM 117 ELEVATIONS' to read 'JANITOR ROOM 114 ELEVATIONS'
 4. Drawing 4/A900 - Washroom Plans and Interior Elevations: Revise drawing title 'TYPICAL STAFF WASHROOM ELEVATIONS' to read 'MAIN ENTRANCE ELEVATIONS'
 5. Drawing 5/A900 - Washroom Plans and Interior Elevations: Correct error in numbering elevations from "ELEVATION 1, ELEVATION 2, ELEVATION 2, ELEVATION 3, ELEVATION 4" to "ELEVATION 1, ELEVATION 2, ELEVATION 3, ELEVATION 4, ELEVATION 5"
 6. Drawing 3/A300 -South Elevation: Material tag 4 (ALUMINIUM PANELS) identifying the area under the Overhead Bay Doors to be removed. The exposed area under loading dock is exposed concrete.
 7. Drawing A802 - Miscellaneous Metals: Detail drawing to be added of TYPICAL BOLLARD: 200mm diam. CONCRETE FILLED HEAVY STEEL PIPE (GALVANIZED), 2700mm total length - (2) 50mm WIDE REFLECTIVE TAPE STRIPS near top of pipe - SEMISPHERICAL CEMENT/CONCRETE CAP. Pipe to be placed in a concrete footing approximately 800mm X 700mm. Bottom of footing to be 1800mm below grade. Bottom of pipe to be 1500mm below grade (+/-300mm above bottom of footing, +/-400mm below top of footing) with 1200mm of pipe above grade. COMPACTED GRANULAR FILL. Refer to specification Section 05 50 00, 2.11.
 8. Drawing 8/A600 - Section Details: Add notes describing Continuous Angle (L64 x 76 x 6.4) Long Leg Vertical, splices to be complete penetration welds. Weld the heel and toe of continuous angle in the field with a 50mm long 6mm fillet weld at each embedded angle location.

7. REQUEST FOR ALTERNATES

Section 08 36 13 - SECTIONAL OVERHEAD DOORS, paragraph 2.1.1: "Upwardor Thermalex TX500" will be approved as an alternate.

8. QUESTIONS AND ANSWERS

Q1: During the site meeting representatives from Public Works indicated that Corcan would be responsible for some work. Could you please provide a detailed list of the work Corcan will be undertaking?

A1: The following items are not in contact, by CSC:

1. Landscape areas (as indicated on drawing C200) to be covered with 100mm of topsoil and seeded with grass.
2. Painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces except for priming of steel doors and frames (refer to Sections 09 91 13 and 09 91 23) but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule.

Q2: Who's responsible for painting masonry, structural steel and any exterior painting?

A2: Painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces except for priming of steel doors and frames (refer to Sections 09 91 13 and 09 91 23) but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule. All other painting by Contractor. Exterior painting includes bollards and steel doors.

Q3: Addendum #7 Item 1 states the owner own forces will be painting gypsum board drywall walls, ceilings and metal door and frames. Will the owner be performing all of the painting, if not please state what needs to be painted the contractor.

A3: Painting of interior gypsum board walls and ceilings and metal doors and frames will be performed by the Owner's own forces except for priming of steel doors and frames (refer to Sections 09 91 13 and 09 91 23) but only after the Contractor has achieved Interim Certificate of Completion. Coordinate the work of the Owner with the construction progress schedule. All other painting by Contractor.

Q4: Stair stringers are identified as C76x305. This is an odd size which is not readily available, please confirm if this is correct.

A4: The final design of the stairs is to be provided by the Contractor's fabricator per Section 05 51 29.2.1. The shop drawings will show final component sizes and be certified by a registered professional engineer per paragraph 1.3.3. Components sizes shown on the Drawings should be considered minimum sizes and confirmed by engineered design.

Q5: The size of the stair grating is not identified.

A5: The final design of the stairs is to be provided by the Contractor's fabricator per Section 05 51 29.2.1. The shop drawings will show final component sizes and be certified by a registered professional engineer per paragraph 1.3.3. Components sizes shown on the Drawings should be considered minimum sizes and confirmed by engineered design.

Q6: The size of the wide flange beam for landing support is not identified.

A6: The final design of the stairs is to be provided by the Contractor's fabricator per Section 05 51 29.2.1. The shop drawings will show final component sizes and be certified by a registered professional engineer per paragraph 1.3.3. Components sizes shown on the Drawings should be considered minimum sizes and confirmed by engineered design.

Q7: Columns supporting the long mezzanine between Grid Lines A and B - do we fireproof them?

A7: Fireproof columns supporting mezzanine between gridlines A and B with intumescent fireproofing.

Q8: Columns tightly concealed in drywall - do we fireproof them?

A8: Fireproof columns tightly and completely concealed in drywall using drywall.

Q9: Inclined bracings that were supposed to be protected with Intumescent, yet concealed in drywall?

A9: The bracing is exposed at the corridor in some locations. In this instance, the bracing will be protected with intumescent.

Q10: Cementitious Fireproofing to be concealed between the structure and the Urethane foam - Medium Density - Gypsum or Portland Cement Version? In other words, 5MD or 7GP?

A10: Refer to Specification section 07 81 00.2.1.1: Spray applied cementitious with FRR 45 min and medium density.

Q11: There is drain tile around the perimeter foundation wall but no mention of damp proofing of the foundation wall. Should the foundation wall have a membrane? If so, please specify type.

A11: No damp proofing required at perimeter foundation wall.

Q12: Note #1 on finish schedule states "...first course each floor to receive anti-graffiti coating". There is no block wall on the mezzanine level and does "first course" indicate a 200mm high strip along the base of the wall. Please clarify and specify product to use.

A12: The application of the anti-graffiti coating is intended to function as a baseboard would to protect the first course of the concrete block wall. Spec section added by Addendum.

Q13: There is a section listed in the table of contents which I do not see in the body of the specification - Section 03 35 00 Concrete Finishing. Does this Section exist or is it only missing in our copy?

A13: Section added by Addendum

Q14: Re Question 25 Addendum #16 - the query asks about "SC sealed concrete" called up on the Finish Schedule, and the answer says per the "Structural Specification." What does structural specification mean, a note on the structural drawings or a specific section in the spec? Further to the original question:

- a) Note #2 on Page 1 of 4 of the Room Finish Schedule states "All concrete floors to include floor hardening treatment. Refer to specification'. Where in the specification is it specified?
- b) Is the SC Sealed Concrete the same treatment as the Floor Hardening Treatment?

A14: Specification Section 03 35 00 - CONCRETE FINISHING (added by addendum) specifies a cure and seal product to be used on all floors plus a floor hardener for exposed floors.

Q15: I noted in Adendum 16 that the dock seals and dock lights were deleted. The question that was posed regarding dock seals in adendum 15 was answered with regard to weather seals around door which are two completely different items. Is it a mistake that the dock seals (vinyl covered foam pads around door which make a seal with the truck) were deleted or does Corcan plan to add them after the fact?

A15: Dock seals were removed intentionally. To clarify Addendum 15, Question 1. Q1: Loading dock Equipment indicates a dock seal and dock bumpers at each side of the dock lever while the drawings indicate a continuous dock bumper and no dock seal please clarify. A1: Weather seal around doors not required. Bumper at loading dock required. 'Weather seals' as per overhead door assembly as per manufacturer are NOT deleted. The 'dock seals' (vinyl covered foam pads around door which make a seal with the truck) have been deleted as the size of the door (approx. 16'x16') does not accommodate a continuous seal. Dock bumpers are required.

Q16: We have calculated the decline of the approach to be 39750 mm at end of retaining wall to 40650mm at building = 900 mm difference over 13500 mm distance

900

13500 = .07 x 100 = 7% grade. (please advise if my math is incorrect and it is a lesser or greater grade than this)

A16: Please refer to Drawing 2/C200 for slopes.

Q17: With regards to the schedule, the duration of the project is listed as 40weeks, but I do not see a start date. Can the successful contractor wait until spring to begin foundation work, or are you expecting the contractor to start immediately following award.

A17: The 40 weeks begins at the date of award. The contractor may choose to break ground in the spring but the building still has to be completed in the specified time frame of 40 weeks.

Q18: Are there any specific qualifications of the security personnel referred to in 01 52 00. Is 1 security guard acceptable for nights and weekends.

A18: Security is optional as there will be a fence compound around the site. Refer to Section 01 52 00 - Construction Facilities: The following as Paragraph 1.9.1.1: "Where the contractor requires the protection of the construction site after hours, on weekends and holidays, the contractor must make arrangements with the Canadian Corps of Commissionaires to provide such

protection. The cost of this protection is to be paid by the contractor. The number of commissionaires required would be at the discretion of the contractor.

Q19: Please clarify if the the Embedded angle around the perimeter of the foundation wall is continuous. Note 1 on S301 reads "L102x102x6.4 x 125 lg at 900 c/c max c/w 2-12mm dia 152 lg studs at 60mm c/c" Is the 125 mm referring to the length of the angle, meaning a 125mm long angle at 900mm c/c? ?

A19: The embedded angle as per Note 1 on S301 is not continuous. It is a series of discrete 125 mm long angles located around the perimeter of the exterior building envelope, spacing as per Note 1 and as illustrated on drawings.

Q20: Please clarify exterior signage material. Is this acrylic?

A20: Exterior building lettering is specified as "Aluminum" at Section 10 14 00.2.4.

Q21: Detail 9/A600 at overhead door header shows aluminum trim, but the jamb detail 1/A700 shows metal trim to match cladding. Is this header trim to be composite aluminum panel, or is this intended to be metal trim to match cladding?

A21: The 9/A600 detail is a composite aluminum panel that matches the window system above it, while at 1/A700 it is a metal trim to match the cladding and it is located on the overhead door jambs all the way up and around the header of the windows above the overhead doors, as shown on elevation 3/A300.

Q22: Detail 5/A600 also shows aluminum trim above the upper windows. Is this a composite aluminum panel, or is this intended to be metal trim to match the cladding.

A22: Composite aluminum panel

Q23: Elevation 3/A300 shows aluminum panels at the foundation wall at loading dock. Is this correct, or is this to be exposed concrete?

A23: This area is exposed concrete.

Q24: Please indicate the type of fill required at the inside and outside of the foundation walls and at the underside of the slab on grade?

A24: Refer to Geotechnical Report (Addendum 4) - letter report from Fundy Engineering, dated May 14 2012, which states the type of fill and the compaction effort for the underside of the slab on grade.

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Concrete reinforcing: Section 03 20 00
- .2 Cast-in-place concrete: Section 03 30 00
- .3 Joint sealants: Section 07 92 00

1.2 REFERENCES

- .1 CSA International
 - .1 CSA A23.1-09/A23.2-09, Concrete Materials and Methods of Concrete Construction/Methods of Test for Concrete.
 - .2 Do concrete floor finishing to CSA A23.1 except where specified otherwise.

Part 2 Products

2.1 MATERIALS

- .1 Concrete materials and reinforcement: in accordance with Sections 03 20 00 and 03 30 00.
- .2 Concrete curing compound to be high solids, water based curing and sealing compound to ASTM C309-03. Concrete curing compound shall be compatible with asphalt based adhesives. Unless specified elsewhere herein, apply curing compound to manufacturer's written instructions.
- .3 Non-Metallic Floor Hardener: premixed abrasion resistant hardener.
 - .1 Hardness: 6.5 Moh's Scale. Particle shape: rough, angular. Compressive strength 70 MPa at 28 days (ASTM C-109-80). Acceptable manufacturers: Sternson Ltd., Master Builders Co. Ltd. Acceptable materials: Colorplete and Colorcron or an approved equivalent.
- .4 Additives, admixtures, hardeners, curing compounds and sealers are to be compatible.
- .5 Joint fillers: see Section 03 10 00.
- .6 Joint sealants: see Section 03 10 00.

Part 3 Execution

3.1 WORKMANSHIP

- .1 Steel trowel concrete slabs to be left exposed or to receive carpeting, resilient flooring and applied floor finishes.

- .2 Concrete slabs to receive toppings, quarry tile, ceramic tile, terrazzo, to be screeded off to true lines and levels shown and left ready to receive finish. Depress slabs to accommodate finish.
- .3 Where floor drains occur, floors to be level around walls and have a minimum 10 mm per metre uniform pitch to drains from a 3 m radius around drains or to walls unless indicated otherwise.
- .4 Slope portions of slabs as indicated on the drawings.
- .5 Ensure formwork and embedded metal parts are not disturbed or displaced during the finishing operation.

3.2 PLAIN FLOOR FINISHES

- .1 Consolidate concrete by vibrating to force coarse aggregate into concrete mix and then screed.
- .2 Float surface with wood or metal floats or with power finishing machine and bring surface to true grade.
- .3 Steel trowel to smooth and even surface in accordance with CSA A23.1, Class A.
- .4 Follow with second steel trowelling to produce smooth burnished surface to within 8 mm tolerance when measured in any direction using a 3 m straight edge.
- .5 Sprinkling of dry cement or dry cement and sand mixture over concrete surfaces is not acceptable.
- .6 Saw cut control joints in slabs-on-grade within 12 hours after finishing. Use 5 mm thick blade, cutting to 1/3 of slab thickness or as shown on drawings. Control joints to be located as shown on the drawings. Fill joints with sealant. Saw cut crack control joints to CSA A23.1.
- .7 All concrete slabs shall be cured as follows:

Method 1 - If air temperature is between 5°C and 26°C, apply curing compound in strict accordance with manufacturer's instructions at the rate of 7 square meters per litre.

Method 2 - If air temperature is 27°C or above, cure the slab by continuous wet curing for a minimum of 5 days. Cover slab with a burlap or non-woven geotextile fabric immediately after finishing of concrete. Water shall not be allowed to drip, flow, or puddle on the concrete slab. Equipment and materials necessary for water curing shall be on site and ready for use prior to concrete placement. Following the 5 days of wet curing and immediately after surface water is removed, apply curing compound in strict accordance with manufacturer's instructions at the rate of 7 square meters per litre.

(Note: Method 2 may be used in place of Method 1)

- .8 After curing and when concrete is dry, seal all slab floor joints at junction with vertical surfaces with joint sealant.

3.3 HARDENED FLOOR FINISH

- .1 All exposed floors to receive hardener.
- .2 A trained service technician from the manufacturers of the concrete floor hardeners shall be on site during the initial period of installation of hardened concrete floors.
- .3 Finish concrete floors as per Paragraph 3.2.
- .4 Apply floor hardener at a rate of 5 kg/m² in accordance with manufacturer's written instructions.
- .5 Apply first shake of aggregate (3 kg/m²) after floating.
- .6 Float first shake and apply second shake at right angles to first.
- .7 Float second shake to produce medium textured non-slip finish.
- .8 Apply additional floating to produce medium textured non-slip finish.
- .9 On interior slabs, flat steel trowel to produce a fine textured non-slip finish and burnish trowel to within 1 mm tolerance when measured in any direction using 1 m straight edge.
- .10 Saw cut control joints as specified.
- .11 Apply curing compound in accordance with manufacturer's recommendations at the rate of 7 m²/l.

3.4 EXTERIOR PADS

- .1 Float and trowel concrete walkways as per Clause 3.2.
- .2 Immediately after floating, give surface a uniform broom finish to produce regular corrugations not exceeding 2mm deep, by drawing broom in direction normal to center line.
- .3 Provide edging as indicated with 10mm radius edging tool.
- .4 All exterior slabs, stairs, steps, etc., shall be protected with two applications of commercial-grade boiled linseed oil mixed with varsol. The first application shall be a mixture of equal parts of oil and varsol applied on a dry surface at a rate of 10 m² per litre. The second application shall be from one half to full strength oil applied at a rate of 15 m² per litre after the first treatment has been absorbed.
- .5 All exterior concrete to be cured by continuous wet curing for a minimum of 7 days.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- | | | |
|----|---------------------------------|------------------|
| .1 | General requirements: | Division 1 |
| .2 | Cast-in-place concrete: | Section 03 30 00 |
| .3 | Structural steel for buildings: | Section 05 12 23 |
| .4 | Steel joist framing: | Section 05 21 00 |

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM A653/A653M-11, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
 - .2 ASTM A924/A924M-10a, Standard Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot-Dip Process.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating.
- .3 CSA International
 - .1 CSA S16-09, Design of Steel Structures.
 - .2 CAN/CSA S136-07, North American Specification for the Design of Cold Formed Steel Structural Members.
 - .3 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel Structures.
 - .4 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).
- .4 Canadian Sheet Steel Building Institute (CSSBI)
 - .1 CSSBI 10M-08, Standard for Steel Roof Deck.
 - .2 CSSBI 12M-08, Standard for Composite Steel Deck.
- .5 Design, fabrication and erection to CSA S16 and CAN/CSA-S136.
- .6 Steel decking work to Canadian Sheet Steel Building Institute Standards for Steel Roof Deck and Steel Floor Deck except where specified otherwise.
- .7 Welding to CSA W59 except where specified otherwise.

1.3 DESIGN CRITERIA

- .1 Structural design of steel decking shall be in accordance with the requirements of Canadian Sheet Steel Building Institute Standards for

Floor and Roof Decking. Loads shown on the drawings are specified loads.

- .2 Steel decking shall safely carry indicated dead and live loads without exceeding maximum working stress of 144 MPa.
- .3 Deflection under live load only shall not exceed 1/360th of span.
- .4 Floor deck to be concrete composite with a total slab thickness of 150 mm.
- .5 Refer to the drawings for depths and minimum gauges.

1.4 SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Division 1.
- .2 Clearly indicate decking plan, profile, dimensions, core thickness, anchorage, spans, supports, projections, openings, and reinforcement details and accessories.
- .3 Shop drawings shall clearly indicate the roof slopes, high points and low points and the deck shall be properly detailed, designed and fabricated to consider roof slopes.
- .4 Every drawing submitted shall bear the signature and stamp of a qualified professional engineer registered in the Province of New Brunswick.
- .5 Indicate details of temporary shoring of steel deck such as location, time and duration of placement and removal of shoring.
- .6 All shop drawings and material lists are to contain a blank area measuring 70 mm high by 100 mm long located near the bottom right hand corner of the drawing or page. This area is to be reserved for the Engineer's review stamp.

Part 2 Products

2.1 MATERIALS

- .1 Metal: to ASTM A653/A653M galvanized steel sheet to ASTM A924/A924M, Grade A structural quality. Maximum working stress 144 MPa. Zinc thickness to Z275.
- .2 Pre-moulded closures: closed cell foam rubber, profiled to deck corrugations, 25 mm thick.
- .3 Use of scrap metal, end and side pieces, etc., is not permitted.
- .4 Cover plates, cell closures and flashing: galvanized steel sheet with minimum steel core thickness of 1.22 mm.
- .5 Closures to external walls: pre-moulded type.

- .6 Primer: zinc rich, ready mix primer to CGSB-1.181.
- .7 Stiffened sheet metal angle floor pour stops to be designed by manufacturer to suit overhang.
- .8 Welding shall conform to CSA W59 except where specified otherwise. All welds shall be given a protective coat of zinc rich primer.

2.2 TYPES OF DECKING

- .1 Roof deck: 0.91 mm minimum core thickness, 38 mm deep profile, non-cellular, overlapping side laps with flutes on 152 mm centers, maximum distance between upper flanges to be 67 mm.
- .2 Floor deck: 0.91 mm minimum core thickness, 76 mm deep profile, non-cellular, ribbed faces for concrete bond, upright flute profile, overlapping side laps. Flutes to be on 305 mm or 406 mm centers. Average rib width distance to be not less than twice the deck height.

Part 3 Execution

3.1 ERECTION

- .1 Erection of the steel deck shall be performed by the erection forces of the manufacturer or his approved agents and to his instructions.
- .2 Steel deck shall be placed on the supporting steel framework and adjusted to final position before being permanently fastened. Each unit shall be brought to proper bearing.
- .3 All steel deck shall be welded as follows, except where noted otherwise. All welding shall be done by competent, experienced welding mechanics. All welds shall be given a protective coat of approved paint primer, promptly upon completion.
- .4 Roof deck units shall be welded to supporting members at 150 mm centers in each direction, including both sides of sidelap joints. Roof deck shall also be welded at each intermediate deck support (IDS) with 2 welds and at other locations shown on the drawings and noted in the specifications.
- .5 All sidelaps of roof deck shall be mechanically connected at 250 mm centers.
- .6 Floor units shall be welded to supporting members at 300 mm centers in each direction, including both sides of sidelap joints. Floor units shall also be welded with 2 welds per flute at ends of deck along the building perimeter and along interior openings. At braced bays, floor deck shall be welded at 150 mm centers or with 2 welds per flute. Provide additional welds as shown on the drawings and noted in the specifications.

- .7 All sidelaps of floor deck to be mechanically connected at 600 mm centers.
- .8 Roof and floor deck units shall be lapped at ends not less than 100 mm.
- .9 All deck welds shall be 20 mm diameter fusion welds.
- .10 Supply and install sheet steel cover plates to cover gaps where units abut or change direction and at high and low roof points. Fasten to each side at 150 mm centers (minimum) using #12 screws.
- .11 Supply, install and weld in position sheet metal flashing to close between floor unit and columns.
- .12 Supply and install stiffened galvanized sheet metal angles (min. 12 Ga.), floor thickness x 200 mm minimum at the perimeter of all floor decking and at deck openings as forming for the concrete floors unless noted otherwise.
- .13 Deck shall be fabricated and installed so that it fits the roof slopes indicated on the drawings.
- .14 All deck to span 3 spans minimum unless detailed otherwise.
- .15 Contractor is responsible for additional temporary/permanent support of metal decking, metal edge forms, etc. as required to keep material in proper position during construction.

3.2 CLOSURES

- .1 Provide sheet metal closures as required to contain concrete.
- .2 Where metal decking rests on exterior walls, fill web spaces with neoprene closures.
- .3 Attach metal cell closures and metal flashing at locations required to contain poured concrete.
- .4 Where decking is parallel to steel beams and is terminated at the edges of the beam top flange, install channel or Z closure strips between the beam flange and any top flute which is cut.

3.3 OPENINGS

- .1 Install 64x64x6.4 mm steel angles, perpendicular to flutes, welded to 3 flutes each side of opening for deck openings from 150 mm to 300 mm size. No reinforcement required for openings cut in deck which are smaller than 150 mm square.
- .2 For deck openings over 300 mm, reinforce in accordance with structural steel framing details (Section 05 21 00).

3.4 SUPPORT AT COLUMNS

- .1 Install 75x75x6 mm steel angles on face of steel columns where required to support deck.

3.5 COORDINATION

- .1 Coordinate the extent of metal deck with the architectural drawings and verify requirements of other trades for dimensioning and detailing of roof and floor openings.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Sacrificial graffiti-resistant coating applied to masonry surfaces.

1.2 REFERENCES

- .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
- .2 ASTM D2369, Standard Test Method for Volatile Content of Coatings.

1.3 SYSTEM DESCRIPTION

- .1 Applied coating formulated to resist staining from spray paints, crayons and ink without changing the appearance, colour or sheen of treated surfaces.
- .2 Graffiti is removed from protected surfaces by high-pressure hot water washing. The coating must be reapplied to restore the graffiti barrier.

1.4 SUBMITTALS FOR INFORMATION

- .1 Submit in accordance with Section 01 33 00.
- .2 Installation Data: Manufacturer's special installation requirements indicating special procedures and conditions requiring special attention; cautionary procedures required during application.
- .3 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience and approved by the manufacturer.

1.6 MOCK-UP

- .1 Refer to Section 01 45 00.

- .2 Provide one full size sample of each unit scheduled to receive coating.
- .3 Apply coating to each sample in accordance with manufacturer's written instructions.
- .4 Test graffiti-resistance of coating by spraying samples with black aerosol spray paint followed by manufacturer's recommended removal procedures to determine minimum dry film thickness required to resist staining.
- .5 Record number of coats and dry film thickness of final coating application for each unit.
- .6 Submit written results to Departmental Representative.

1.7 DELIVERY, STORAGE, AND PROTECTION

- .1 Protect coating liquid from freezing.

1.8 ENVIRONMENTAL REQUIREMENTS

- .1 Do not apply coating when ambient and surface temperatures are outside manufacturer's range of application temperatures.

Part 2 Products

2.1 MATERIALS

- .1 Graffiti-Resistant Coating: Purpose-made, colourless, water-based sacrificial coating for control of graffiti on masonry, stone and concrete surfaces.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify joint sealants are installed and cured.
- .2 Verify surfaces to be coated are dry, clean, and free of efflorescence, oil, or other matter detrimental to application of coating.

3.2 PREPARATION

- .1 Delay work until masonry mortar is cured a minimum of 60 days.
- .2 Remove loose particles and foreign matter.
- .3 Remove oil or foreign substance with a chemical solvent which will not affect coating.

- .4 Scrub and rinse surfaces with water and let dry.

3.3 APPLICATION

- .1 Apply coating to dry film thickness determined by mock-up testing, and to manufacturer's written instructions using airless spray equipment.
- .2 Avoid flooding the surface or creating heavy rundowns.
- .3 Allow treatment to penetrate. Remove build-up using damp brush or roller.

3.4 PROTECTION OF FINISHED AND ADJACENT WORK

- .1 Protect adjacent surfaces not scheduled to receive coating.
- .2 Protect landscaping, property and vehicles.
- .3 If applied to unscheduled surfaces, remove immediately by a method instructed by coating manufacturer.

END OF SECTION