



291-2006 ADDENDUM 6

NORTH END WATER POLLUTION CONTROL CENTRE CENTRATE NUTRIENT TREATMENT – NITROGEN REMOVAL FACILITY

URGENT

**PLEASE FORWARD THIS DOCUMENT TO
WHOEVER IS IN POSSESSION OF THE BID
OPPORTUNITY**

ISSUED: July 28, 2006
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**THIS ADDENDUM SHALL BE INCORPORATED
INTO THE BID OPPORTUNITY AND SHALL
FORM A PART OF THE CONTRACT
DOCUMENTS**

Template Version: A20050301

Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid Opportunity, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 10 of Form A: Bid may render your Bid non-responsive.

PART A – BID SUBMISSION

Replace: 291-2006 Bid Submission with 291-2006 Addendum 6 - Bid Submission. The following is a summary of changes incorporated in the replacement Bid Submission:

Form B (R3): Add Item 11

Form G (R1): Revise the date "October 18, 2006" to read "November 8, 2006".

PART B – BIDDING PROCEDURES

Revise: B2.1 to read: The Submission Deadline is 12:00 noon Winnipeg time, August 10, 2006.

Revise: B15.4 to read: Further to B15.1(b), the total Bid Price shall be the sum of the quantities multiplied by the unit prices for each item shown on Form B (R3): Prices.

Revise: B15.4.1 to read: If there is any discrepancy between the Total Bid Price written in figures, the Total Bid Price written in words and the sum of the quantities multiplied by the unit prices for each item, the sum of the quantities multiplied by the unit prices for each item shall take precedence.

PART E – SPECIFICATIONS

Section 01060 Revise Clause 1.1.1 to read: The City shall obtain and pay for the Building Permit and the Aboveground Flammable Materials Storage Tanks Permit. The Contractor shall obtain and pay for all other permits, licences, certificates, and governmental inspections required for the performance of the Work.

Section 01500 Add: Clause 1.35 Temporary Use of Existing Conveying Systems

- .1 The Contractor may use existing cranes, hoists, monorails, and hatches as required for the Work, provided the City is given 24 hours notice prior to such use.

- Section 02220 Revise: Clause 3.4.1 to read: Provide shoring, bracing, sheet piling, and related structural Work as required to prevent damage or undermining of the existing and new structures, excavations, and injury to personnel, specifically the existing roadways, railway embankments, fencing, and cabling on the Site. Submit Drawings and calculations sealed and signed by a qualified Professional Engineer registered in the Province of Manitoba for all shoring, bracing, sheet piling, and related structural Work used for the construction of this project. The Professional Engineer retained by the Contractor for sealing of the plans shall review the shoring at critical stages and certify in writing to the Contract Administrator that the related construction meets the requirements of his or her design.
- Section 02220 Add: Clause 3.6.1.4: Type 1, Type 2 and Suitable Excavated material can be placed as specified after Leakage Testing has been accepted by the Contract Administrator. Backfilling as specified can proceed prior to the installation of the pre-cast concrete double tees.
- Section 02220 Add: Clause 3.7.2: The thin layer of black, odorous material identified in the Geotechnical Report has been tested and is high in metals content and shall be separately disposed of at the Brady Road Landfill. The estimated amount of material is between 5,000 and 6,000 cubic metres. No tipping fees will be assessed for the disposal of this material. This unit price shall include loading, hauling and disposal as specified. The weight of the loads will be as measured by the City of Winnipeg at the Brady Road Landfill.
- Section 03100 Revise: Clause 2.4.3.2 to read: Below structural slabs of the Equalization tank, SBR 1 and SBR 2 tanks; Geo Void expanded polystyrene as manufactured by Plasti-Fab. Expanded polystyrene void form shall be sized to be structurally sufficient to support the weight of the wet concrete mix and construction loads until initial set under slabs. Maintain a minimum void of 300 mm.
- Section 03100 Revise: Clause 3.7.3 to read: Formliner shall be used on interior surfaces (liquid side) of concrete for liquid containing structures. It shall be installed in strict accordance with the manufacturer's instructions. The manufacturer's representative shall be on-site at the beginning of the formliner installation and as required to ensure recommended procedures are followed; a written report shall be submitted for each Site visit. Wrinkles or folding of the formliner during concrete placement will not be accepted.
- Section 03300 Add: Clause 2.3.10: The first layer of concrete to be placed against hardened concrete for Mix Type 1 shall be of quality specified and it shall be proportioned to have an excess of mortar and have a depth of approximately 150 mm.
- Section 03300 Add: Clause 3.2.18: The portion of concrete cast with excess mortar against hardened concrete shall be well vibrated.
- Section 03300 Delete: Clause 3.14.4
- Section 03300 Revise: Clause 3.16.6 to read: All potable water used for testing and re-testing shall be supplied as described in Section 01500 - Temporary Facilities.
- Section 03300 Revise: Clause 3.16.9 to read: Leakage test can be performed prior to the installation of the pre-cast concrete double tees.
- Section 03300 Add: Clause 3.16.10: Reference Section 02220 for acceptable backfilling sequence once the Leakage Test has been accepted by the Contract Administrator.

Section 03300 Revise: Table A, Mix Type 1 to read:

Mix Type	Portion of Structure	Min. Compressive Strength @ 28 Days (MPa)	Cement Type	Min. Cementing Material Content (kg/m ³)	Max. Water Cementing Material Ratio	Nominal Aggregate Size (mm)	Slump (mm)	Entrained Air Content (%)
1	Liquid retaining structural concrete or containment areas – structural slabs and walls. Grade beams, concrete beams and columns within liquid retaining areas. Class of exposure: C-1	35	50	335	0.40	20 to 5	Initial: 65 ±25 After inclusion of S.P.: 200 Max.	5 to 8 Before and after S.P. inclusion

S.P. denotes Super Plasticiser admixture required.

Section 03412 Revise: Clause 1.5.9.1 to read: At least two (2) cores will be taken by the Contract Administrator from hardened concrete for rapid chloride permeability of concrete in accordance with ASTM C1202, in conjunction with testing for rapid chloride permeability performed on cylinders cured in above zero temperatures.

Section 03412 Revise: Clause 1.5.9.2 to read: At least two (2) cores will be taken by the Contract Administrator from the hardened concrete for air content of hardened concrete in accordance with ASTM C457, in conjunction with testing for air content performed on cylinders of hardened concrete.

Section 03412 Revise: Clause 2.2.1.2 “maximum 6 percent by weight” to read “maximum 8 percent by weight”

Section 03412 Revise: Clause 2.2.1.3 to read: Rapid chloride permeability of concrete at 56 days determined in accordance with ASTM C1202 shall be equal to or less than 1000 coulombs, based on continuous curing of concrete at temperatures above zero.

Section 03412 Revise: Clause 2.2.1.4 “greater than 200 µm” to read “greater than 300 µm”

Section 05500 Add: Clause 2.3.13: Close and weatherproof all gaps, butt joints and connections exposed to the exterior environment. Grind all exposed welds flush with surface of welded members.

Section 05500 Add: Clause 2.3.14: Design and detail connections for steel so that corrosion potential is minimized. Cap and seal weld all exposed ends of HSS and Pipe sections.

Section 05500 Add: Clause 2.3.15: Provide perimeter banding of same size as bearing bars for grating.

Section 05500 Add: Clause 2.3.16: Provide banding of same size as bearing bars for all required openings through grating unless larger size is indicated on the Drawings. Contractor to coordinate location of openings prior to Shop Drawing submission.

Section 05500 Add: Clause 2.3.17: Match position of bearing bars and cross bars in adjacent panels to preserve a continuous appearance.

Section 05500 Add: Clause 2.3.18: Provide removable hold down clip style Type D complete with appurtenances for all grating. At locations where Type D clip is impractical, provide Type C clip. All clips as manufactured by Fisher & Ludlow.

- Section 05500 Add: Clause 2.3.19: Provide two (2) hold-down clips at each end of the panels if not detailed on the Drawings. Clip adjacent grating panels edges together at 1500 mm spacing to prevent differential vertical movement.
- Section 05530 Revise: Clause 1.2.1 to read: to CSA/CAN 3-S157/S157.1-05 Strength Design in Aluminum.
- Section 05530 Delete: Clause 1.2.3
- Section 05530 Revise: Clause 2.1.2 to read: Aluminum to CSA/CAN 3-S157/S157.1-05, 6061-T6 Aluminum alloy. All Aluminum shapes to be anodized in accordance with Aluminum Association Standard SSA-46, designation A41, clear (natural) coating, Architectural Class 1, 18 µM (0.7 mils). Structural design based on Alcan structural shapes.
- Section 05530 Revise: Clause 2.1.7 to read: Bituminous Paint: to MPI (Master Paint Institute) EXT 5.4D, without thinner.
- Section 06530 Revise: Clause 1.3.1.1.1 to read: Provide the Contract Administrator with data showing the characteristics of the materials to be used. This will be for resin (4.1.2), gel coat (4.1.4) and glass (4.1.6). The complete assembly shall conform to Class 'A' Type 1 U.L. Guidelines for classified flame spread rating of less than 25.
- Section 06530 Revise: Clause 2.3.6.1.1 to read: The air handling equipment within the SBR 1 and SBR 2 tank cells may subject the access cover to an internal negative pressure of 0.65 kPa less than atmospheric pressure or an internal positive of 0.05 kPa less than atmospheric pressure. The internal negative and positive pressures will not act simultaneously.
- Section 07465 Revise: Clause 2.1.2 to read: Prepainted with Colorite 10000 Series, one side. Colour to match prefinished metal cladding on existing adjacent buildings with approval by Contract Administrator.
- Section 07465 Revise: Clause 2.1.3 to read: Acceptable products: VICWEST profile CL 7040/CL 840.
- Section 09985 Delete: Clause 1.5.8
- Section 09985 Revise: Clause 2.2 "City" to read "Contract Administrator"
- Section 09985 Delete: Clause 2.4.3
- Section 09985 Revise: Clause 3.2.5 to read: Relative humidity of the concrete surface for Formula 10 is to conform to SSPC-SP13 Table 1 Severe Service, using the ASTM F 2170 test method except that the relative humidity is to be less than 50 percent after surface preparation.
- Section 09985 Revise: Clause 3.8.1 to read: Provide a five year warranty against delamination of the coating and coating system, delamination of the coating and coating system from the concrete substrate, defective coating and coating system application and defects in the coating and coating system.
- Section 11053 Revise: Clause 2.2.7 to read: For methanol piping and nitrogen piping systems provide CSA and ULC approved OPW stainless steel flexible connectors with convoluted stainless steel hose with 304 stainless steel wire braid.

Section 11055 Revise: Table CE/SA, JOINTS to read:

JOINTS					
LOCATION	SIZE (mm)	TYPE	SPACING	MATERIAL SPECIFICATION	REMARKS
Tunnels, Pumphouses	75 – 750	Grooved Joint	6 m	AWWA C606	Note 7
Buried, Below Structures	75 – 750	Groove Jt. or Bell/spigot	6 m	AWWA C606/C110	Note 7
Exterior, Submerged	75 – 750	Grooved Joint	6 m	AWWA C606	Note 7

Section 11055 Add: Table CE/SA, Note 7 to read: Provide joints at spacing to facilitate equipment/pipe disassembly or as per lengths provided, nominal 6 m spacing.

Section 11100 Revise: Clause 1.2.4 Revise to read: "Section 11125 specifies the supply and installation of electric and pneumatic control valves, complete with valve body, actuator, position indicator, and other ancillaries. Valve bodies for these products shall comply with the requirements as specified in Section 11105 and this Section.

Section 11105 Add:

BV03

GENERAL						
TYPE OF VALVE	SYMBOL	TYPE OF COMMODITY	OPERATING LIMITS		DESIGN LIMITS	
			PRESSURE (kPag)	TEMP. (°C)	PRESSURE (kPag)	TEMP. (°C)
Ball Valve	BV03	Liquid/Gas	600	0-60	1400	100
TYPICAL SERVICE						
MET, N2						
VALVE MATERIALS			VALVE DESCRIPTION			
ITEM	MATERIAL		Reference Document			
Body	Stainless Steel		Size Range		> or = 75 mm	
Ball	Stainless Steel		Rating		Class 150	
Seats	PTFE (Note 1)		Body/Valve Ends		Flanged	
Shaft	Stainless Steel (Note 3)		Pattern		Split Body,	
			Operator			
			Actuator			
			Lining			
			Coating			
NOTES						
1. Stainless steel seats for scum service. 2. See Section 11100. 3. Blowout-proof stem.						
ACCEPTABLE MANUFACTURERS						
Kitz		Watts		Velan		Crane
American Valve						

Section 11105 Add:

GV01

GENERAL						
TYPE OF VALVE	SYMBOL	TYPE OF COMMODITY	OPERATING LIMITS		DESIGN LIMITS	
			PRESSURE (kPag)	TEMP. (°C)	PRESSURE (kPag)	TEMP. (°C)
Knife Gate Valve	GV01	Liquid	600	5-30	850	50
TYPICAL SERVICE						
WAS						
VALVE MATERIALS			VALVE DESCRIPTION			
ITEM	MATERIAL	Reference Document				
Body	Cast Iron	Size Range		75 mm to 1000 mm		
Disc	Stainless Steel	Rating		Class 125		
Seats	Buna-N	Valve Ends		Lugged		
Seals	Buna-N	Type of Disc				
Shaft	Stainless Steel	Operator		RS, Bonnetless (Note 1, 2), Handwheel		
Wiper Ring	Reinforced PTFE	Actuator				
Pillars	Stainless Steel	Lining				
		Coating				
NOTES						
1. See Section 11100.						
2. Provide bonnet with stainless steel (304) stem extension for below grade and submerged services.						
ACCEPTABLE PRODUCTS						
DeZurik Series L	Fabri-Valve Fig. 37	Red Valve Series G	Orbinox Series 10			

Section 11055 Revise: FW "John Brooks: FullJet Square spray nozzle, ½ QJJA body, QHA18SQ tip" to read "Rain-Bird 2045 PJ Max Bird 25 psi"

Section 11050 Delete: Clause 1.7.3

Section 11055 Revise: AIR NOTES: "10" to read "7"

Section 11055 Revise: AIR NOTES: "11" to read "8"

Section 11055 Revise: TCE NOTES: "3." to read "1."

Section 11055 Revise: TCE NOTES: "4." to read "2."

Section 11125A Revise: Solenoid Valves to read:
C705-FV
C706-FV

- Section 11455 Add: Clause 2.14.11 Junction Panel
- .1 Each blower shall be supplied with a NEMA 4X junction panel in compliance with Division 17.
 - .2 Permanently mount the panel to the equipment base frame with the top of the panel approximately 1600 mm above floor level.
 - .3 Make the panel accessible for viewing/maintenance without interfering with, or requiring removal of the acoustic enclosure.
 - .4 Install and pre-wire all instrumentation, control devices, and cooling fan, and other equipment from the blower to terminal strips in the panel for connection by the City.
 - .5 Segregate control wiring, power wiring, and respective terminals into separate groups based on voltage and function.
 - .6 Two 120 VAC power circuits shall be provided to the panel for control power and the enclosure cooling fan, respectively.

Section 11455 Add: Clause 2.14.12: Where specified in the data sheet provide variable frequency drives in accordance with Section 16815.

Section 11455A Add: Accessories: Junction Panel

Section 11455B Add: Accessories: Junction Panel

Section 11531 Delete: Clause 2.3.3

Section 11715 Revise: Clause 2.4.12 to read: The silo shall be coated in accordance with Sections 11900 and 11901. Internal and external walls shall be primed. The silo roof and the full height of the silo and skirt shall be cladded and insulated. Side cladding shall be of 26 gauge pre-finished steel. The silo roof cladding shall be of 26 gauge galvanized steel sheet. Cladding colour to be as selected by the Contract Administrator. All insulation shall be of 50 mm rigid Styrofoam board. Galvanized steel flashings shall be installed for sidewall to roof connection and around silo accessories.

Section 11715 Add: Clause 2.11.10: At point of connection to potable water supply, provide 100 mm backflow preventer meeting requirements of Section 15010 1.27.5.9

Section 11715 Revise: Clause 2.13.1 to read: Silo skirting shall be insulated with 100 mm of rigid Styrofoam board between internal and external cladding.

Section 11715 Revise: Clause 2.13.2 to read: Silo skirting shall be properly flashed and sealed in order to facilitate proper drainage and prevent any moisture penetration to the insulation or insulated area. Skirt internal cladding shall be of 16 gauge galvanized steel. Colour to be as selected by the Contract Administrator.

Section 17700 Replace: Instrument Index (R1)

Replace: Section 17701

Section 11850 Revise: Clause 2.4.3 to read: Install dissolved oxygen analyzers (AE/AIT-185-1, AE/AIT-285-1) and pH analyzers (AE/AIT-185-2, AE/AIT-285-2) as supplied by Division 17.

Section 11852 Revise: Clause 2.3.1 to read: Provide weigh scale for gas cylinder

- .1 Force Flow Inc. Model 36-DR10K-HA4, 1000kg capacity electronic Chem/Drumm Scale, 925mm x 925mm Tuf-Coat Steel Platform, 4 shear beam load cell with 6.1 m cable and summing box complete with ramp, or accepted equal.
- .2 Force Flow Inc. Model SR1000-1, Solo 1000 Digital Indicator, LCD display, 4-20 mA, low weight alarm output, working temperature of 0 to 50°C, or accepted equal.

DRAWINGS

Replace: Drawing A1-01-R0 with Drawing A1-01-R1
Drawing A1-02-R0 with Drawing A1-02-R1
Drawing A1-04-R1 with Drawing A1-04-R2
Drawing A2-01-R1 with Drawing A2-01-R2
Drawing A3-01-R1 with Drawing A3-01-R2
Drawing A4-03-R0 with Drawing A4-03-R1
Drawing E2-01-R1 with Drawing E2-01-R2
Drawing E2-05-R2 with Drawing E2-05-R3
Drawing E3-02-R2 with Drawing E3-02-R3
Drawing I1-02-R0 with Drawing I1-02-R1
Drawing I1-04-R0 with Drawing I1-04-R1
Drawing I1-05-R0 with Drawing I1-05-R1
Drawing I2-03-R0 with Drawing I2-03-R1
Drawing M1-01-R1 with Drawing M1-01-R2
Drawing M1-03-R0 with Drawing M1-03-R1
Drawing M2-01-R1 with Drawing M2-01-R2
Drawing M4-04-R1 with Drawing M4-04-R2
Drawing P13-01-R1 with Drawing P13-01-R2
Drawing P13-02-R0 with Drawing P13-02-R1
Drawing P14-01-R0 with Drawing P14-01-R1
Drawing P14-02-R1 with Drawing P14-02-R2
Drawing P14-03-R1 with Drawing P14-03-R2
Drawing P17-01-R1 with Drawing P17-01-R2
Drawing P17-02-R0 with Drawing P17-02-R1
Drawing P19-01-R1 with Drawing P19-01-R2
Drawing P19-06-R1 with Drawing P19-06-R2
Drawing S0-02-R0 with Drawing S0-02-R1
Drawing S0-03-R0 with Drawing S0-03-R1
Drawing S1-01-R0 with Drawing S1-01-R1
Drawing S2-01-R0 with Drawing S2-01-R1
Drawing S2-02-R0 with Drawing S2-02-R1

Drawing S2-03-R1 with Drawing S2-03-R2

Drawing S3-01-R0 with Drawing S3-01-R1

Drawing S3-02-R0 with Drawing S3-02-R1

Drawing S3-04-R0 with Drawing S3-04-R1

Drawing S3-06-R0 with Drawing S3-06-R1

Drawing S3-09-R0 with Drawing S3-09-R1