AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
J	1 | 9

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO.(If applicable)
0005	19-Aug-2016	W81G6753364421	

6. ISSUED BY	CODE	7. ADMINISTERED BY (If other than item 6)	CODE
CONTRACTING DIVISION USACE - ST. PAUL 180 5TH STREET E SUITE 700 ST. PAUL MN 55101-1678	W912ES	**See Item 6**	

8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)		
	X	9A. AMENDMENT OF SOLICITATION NO. W912ES-16-R-0002
	X	9B. DATED (SEE ITEM 11) 11-Jul-2016
		10A. MOD. OF CONTRACT/ORDER NO.
		10B. DATED (SEE ITEM 13)
CODE / FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer [X] is extended, [ ] is not extended.

Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

[ ] A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

[ ] B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).

[ ] C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

[ ] D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

See the Block 14 Continuation Page/Summary of Changes section for the purpose of this amendment.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) TEL: EMAIL:	
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	16C. DATE SIGNED 19-Aug-2016

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:
AMENDMENT 5
The purpose of this amendment is as follows:

1. Extend the solicitation closing due date and time to 2pm Central Time on 09/01/2016.

The following changes are made to the specifications:

2. SECTION 03 30 00.00 10 CAST-IN-PLACE CONCRETE
   2.2.2 Fly Ash
   REPLACE
   Conform fly ash to ASTM C618, Class F, except that the maximum allowable loss on ignition cannot exceed 6 percent. If pozzolan is used, it must never be less than 35 percent by weight of the total cementitious material. Report the chemical analysis of the fly ash in accordance with ASTM C311/C311M. Evaluate and classify fly ash in accordance with ASTM D5759.
   WITH
   Fly ash shall conform to ASTM C618, Class F, except that the maximum allowable loss on ignition cannot exceed 6 percent. If used, replacement of cement with Fly Ash Class F shall be between 20 and 40 percent by mass of cementitious material. Report the chemical analysis of the fly ash in accordance with ASTM C311/C311M. Evaluate and classify fly ash in accordance with ASTM D5759.

3. SECTION 03 30 00.00 10 CAST-IN-PLACE CONCRETE
   2.2.4 Slag Cement
   REPLACE
   ASTM C989/C989M, Grade 100. Slag content must be a minimum of 50 percent by weight of cementitious material. Submit test results in accordance with ASTM C989/C989M for slag cement. Submit test results performed within 6 months of submittal date.
   WITH
   Slag Cement shall conform to C989/C989M, Grade 100. If used, replacement of cement with slag cement shall be between 30 and 50 percent by mass of cementitious material. Submit test results in accordance with ASTM C989/C989M for slag cement. All test results shall have been performed within 6 months of submittal date.

4. SECTION 03 70 00 MASS CONCRETE
   1.6.1.1 Aggregates
   ADD
   If the Contractor proposes to use aggregates from a source not listed, suitable samples for quality evaluation consisting of not less than 700 pounds of coarse aggregate and 300 pounds of fine aggregates shall be taken in accordance with ASTM D 75/D 75M and delivered to a laboratory as directed by the Contracting Officer. The government will be responsible for the cost of testing and the contractor will be responsible for the cost of sampling and transporting the material. A maximum of 120 calendar days will be required to complete evaluation of the aggregate once delivered to the laboratory.

5. SECTION 03 70 00 MASS CONCRETE
2.1.2 Minimum Concrete Compressive Strength
REPLACE THE HEADER OF THE FIRST COLUMN
Cast In Place (CIP), Structure Element
WITH
Structure Element

6. SECTION 03 70 00 MASS CONCRETE
2.1.2 Minimum Concrete Compressive Strength
REPLACE THE SECOND ROW OF THE FIRST COLUMN
-Piers (interior
WITH
-Piers (interior mass)

7. SECTION 03 70 00 MASS CONCRETE
2.2.7 Proportioning Responsibility
REPLACE THE FIRST PARAGRAPH
The Contractor shall be responsible for developing mixture proportions and performing the thermal analysis of the mix design(s). Some mixtures, especially those containing higher amounts of pozzolans, may have slow strength gain which may impact form design and form removal time.
WITH
The Contractor shall be responsible for developing an optimum mixture design with special considerations to reduce or control the heat of hydration and the resulting temperature rise to avoid damaging the concrete through excessive temperatures and temperature differences. Some mixtures, especially those containing higher amounts of pozzolans, may have slow strength gain which may impact form design and form removal time.

8. SECTION 03 70 00 MASS CONCRETE
2.2.9 Mass Concrete Mixture Testing Requirements
REMOVE
The requirement for conducting the ring test ASTM C 1581, from the Mass Concrete Mixture Testing Requirements Table.

9. SECTION 03 70 00 MASS CONCRETE
2.2.10 Thermal Analysis and Thermal Control Plan(s)
REPLACE
The foundation slabs (Control Structure and stilling basin), piers, abutments, and walls (stilling basin, dam walls, and bridge piers) shall require a thermal analysis and thermal control plan to ensure that a maximum concrete temperature of 160° F and a maximum temperature differential of 35°F (or 50°F if limestone aggregate is used) are not exceeded. The thermal analysis, thermal control plan, and the adiabatic heat rise of the proposed mix designs shall be submitted at least 30 days in advance of the anticipated date of concrete placement. A Level 2 thermal analysis, as specified in ETL 1110-2-542 (dated 30 May 97) shall be performed on the following elements: control structure foundation slabs, dam wall foundation slabs, control structure piers and abutments, stilling basin walls, the dam walls, and bridge piers. The thermal analysis shall include all assumptions and all calculations made. If a proprietary software is used, the submittal shall include a description of the program including all calculations, equations assumptions, material properties, etc. A complete list of all input and output from the program shall be included. The thermal control plan shall state the anticipated temperatures and temperature differentials. It shall address the corrective measures that will be taken if these become excessive. It shall address the maximum concrete placement temperature allowed based on the thermal analysis, the concrete mix, and the thermal controls to

be used. The thermal control plan shall include all methods, materials, and equipment the contractor intends to use to control the maximum concrete temperature and temperature differential including the timing of application and removal of the controls. The plan shall also include the temperature monitoring that will be performed.

WITH

The foundation slabs (Control Structure and stilling basin), piers, abutments, and walls (stilling basin, dam walls, and bridge piers) shall require a thermal analysis and thermal control plan. The maximum allowable temperature and maximum temperature differential shall be determined by the Thermal Analysis and Thermal Control Plan, and shall not exceed 160°F and 35°F, respectively. The maximum placement temperature shall also be determined by the Thermal Analysis and Thermal Control Plan. The thermal analysis, thermal control plan, and the adiabatic heat rise of the proposed mix designs shall be submitted at least 30 days in advance of the anticipated date of concrete placement. A Level 2 thermal analysis, as specified in ETL 1110-2-542 (dated 30 May 97) shall be performed on the following elements: control structure foundation slabs, dam wall foundation slabs, control structure piers and abutments, stilling basin walls, the dam walls, and bridge piers. The thermal analysis shall include all assumptions and all calculations made. If a proprietary software is used, the submittal shall include a description of the program including all calculations, equations assumptions, material properties, etc. A complete list of all input and output from the program shall be included. The thermal control plan shall state the anticipated temperatures and temperature differentials. It shall address the corrective measures that will be taken if these become excessive. It shall address the maximum concrete placement temperature allowed based on the thermal analysis, the concrete mix, and the thermal controls to be used. The thermal control plan shall include all methods, materials, and equipment the contractor intends to use to control the maximum concrete temperature and temperature differential including the timing of application and removal of the controls. The plan shall also include the temperature monitoring that will be performed.

10. SECTION 03 70 00 MASS CONCRETE
    2.2.12 Trial Concrete Mixture Proportioning

    ADD TO THE BEGINNING OF THE PARAGRAPH

    The contractor shall conduct a minimum of three (3) trial mixture proportions. The contractor shall develop an optimum mixture design with the right combination of materials that will reduce the amount of tensile stresses and the heat of hydration that could potentially lead to cracking. The trial mixtures shall include but are not limited to the conditions and testing requirements listed in this paragraph and paragraph Mass Concrete Mixture Testing Requirements.

11. SECTION 03 70 00 MASS CONCRETE
    2.2.12 Trial Concrete Mixture Proportioning

    ADD TO THE END OF THE PARAGRAPH

    The contractor shall submit the combination of materials that will produce concrete to meet the requirements of the structure with respect to workability, dimensional stability and freedom from cracking, low temperature rise, adequate strength, durability and low permeability to the government for approval.

12. SECTION 03 70 00 MASS CONCRETE
    2.4.1.1 Portland Cement

    REPLACE

    a. Portland cement shall conform to ASTM C150/C150M, Type 2, low-alkali, including false-set requirement or as otherwise approved. Cement with a Blaine Fineness of four hundred (400) square meters per kilogram will be considered a Type III cement. In lieu of low-alkali cement, the Contractor may use a combination of portland cement that does not meet the low-alkali requirement with a pozzolan or slag provided the following requirement is met. The expansion of the proposed combination shall be equal to or less than the expansion of a low-alkali cement meeting the requirements of this paragraph when tested in general conformance with ASTM C441. The expansion tests shall be run concurrently at an independent

laboratory that is nationally recognized to perform such tests. The Government reserves the right to confirm the test results and to adjust the percentage of pozzolan or slag in the combination to suit other requirements. White Portland cement shall meet these requirements except that it may be Type I, Type II, or Type III low alkali.

WITH

a. Portland cement shall conform to ASTM C150/C150M, Type 2, low-alkali, including false-set requirement or as otherwise approved. Cement with a Blaine Fineness of four hundred (400) square meters per kilogram will be considered a Type III cement. In lieu of low-alkali cement, the Contractor may use a combination of portland cement that does not meet the low-alkali requirement with a pozzolan or slag provided the following requirement is met. The expansion of the proposed combination shall be equal to or less than the expansion of a low-alkali cement meeting the requirements of this paragraph when tested in general conformance with ASTM C441. The expansion tests shall be run concurrently at an independent laboratory that is nationally recognized to perform such tests. The Government reserves the right to confirm the test results to ensure the low-alkali requirement is met. If the alkali requirements are not met the Government may provide adjustments for the percentage of pozzolan or slag in the combination to ensure these requirements are met.

13. SECTION 03 70 00 MASS CONCRETE
2.4.2.3.1 Fine Aggregate

REPLACE THE TABLE WITH THE ONE BELOW.

SIEVE DESIGNATION U.S. STANDARD SQUARE MESH	PERMISSIBLE LIMITS PERCENT BY MASS, PASSING
3/8 inch	100
No. 4	95 - 100
No. 8	80 - 95
No. 16	50 -85
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10
No. 200	0 - 5

14. SECTION 03 70 00 MASS CONCRETE
3.2.1.2 Transporting by Pump

REPLACE

The nominal maximum-size coarse aggregate will not be reduced or mixture proportions changed to accommodate a pump except as specifically determined appropriate. The distance and height to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contamination of concrete in place. After each operation the equipment shall be thoroughly cleaned and flushing water shall be wasted outside the forms.

WITH

The nominal maximum-size coarse aggregate shall not be reduced or mixture proportions changed to accommodate a pump. The distance and height to be pumped shall not exceed limits recommended by the pump manufacturer. The concrete shall be supplied to the pump continuously. When pumping is completed, concrete remaining in the pipeline shall be ejected without contaminating the concrete in place. After each operation the equipment shall be thoroughly cleaned and flushing water shall be properly disposed of outside the forms.

15. SECTION 03 70 00 MASS CONCRETE
3.2.2.3 Cold Weather Placing
REPLACE
Concrete shall not be placed without an approved Cold Weather Plan submittal when the concrete is likely to be subjected to freezing temperatures before the expiration of the curing period. Heating of the mixing water or aggregates will be required to regulate the concrete-placing temperatures. The placing temperature of the concrete shall be as recommended in ACI 306R, Table 5.1, with the temperature of the concrete measured in accordance with ASTM 064/C1064M. Air and form temperature in contact with concrete shall be above 50 degrees F prior to placing concrete and maintained for the first 3 days, and at a temperature above 32 degrees F for the remainder of the specified curing period. Thermometers shall be installed at such locations in accordance with paragraph "Temperature Monitoring". During the period of protection removal, heat shall be shut down and insulation or tents shall be removed in a systematic schedule such that the temperature differential between the air and concrete surface does not exceed 25 degrees F. Exhaust fumes from combustion heating units shall be vented to the outside of the enclosure.
WITH
Concrete shall not be placed without an approved Cold Weather Plan. Special temperature control is required for all mass concrete elements as determined by the thermal analysis, when the average daily ambient temperature drops below 40°F for three successive days. The maximum allowable temperature and the required placing temperature shall be determined by the Thermal Analysis and Thermal Control Plan, with the temperature of the concrete measured in accordance with ASTM C1064/C1064M. Heating of the mixing water and/or aggregates may be required to regulate the concrete-placing temperatures. The materials shall be heated in such a manner that they will be free from ice, snow, and frozen lumps before entering the mixer. Air and form temperature in contact with concrete shall be above 50 degrees F prior to placing concrete and maintained for the first 3 days, and at a temperature above 32 degrees F for the remainder of the specified curing period. Thermometers shall be installed at such locations in accordance with paragraph "Temperature Monitoring". During the period of protection removal, heat shall be shut down and insulation or tents shall be removed in a systematic schedule such that the temperature differential between the air and concrete surface does not exceed 25 degrees F. Exhaust fumes from combustion heating units shall be vented to the outside of the enclosure. Submit methods and equipment for review and comments 60 days in advance of anticipated date required for use.

16. SECTION 03 70 00 MASS CONCRETE
3.2.2.4 Special Temperature-Controlled Concrete
REPLACE
Special temperature control is applicable to concrete in the following structures: Foundation Slab; Piers; and Abutments. Regardless of requirements specified above, the concrete shall have a temperature of not more than 55 degrees F and not less than 40 degrees F when measured at least 20 minutes after mixing. Heating of the mixing water or aggregates will not be permitted until the temperature of the concrete has decreased to 45 degrees F. The materials shall be heated in such a manner that they will be free from ice, snow, and frozen lumps before entering the mixer. Submit methods and equipment for review and comment 60 days in advance of anticipated date required for use, when special temperature controls are required. Base placement temperature and post cooling on the results of the thermal analysis.
WITH
Refer to 3.2.2.3 Cold Weather Placing

17. SECTION 03 70 00 MASS CONCRETE
3.4.8 Special Temperature Controlled Concrete Protection
REPLACE
Anything defined as Mass Concrete, per the Thermal Analysis, requires a special treatment to ensure that maximum temperature (160 F) and the temperature difference (35 F or 50 F if limestone aggregate is used)

are not exceeded. Special treatment may involve the use of a different concrete mix design (with reduced equivalent cement content), precooling of the concrete, the use of surface insulation and/or the use of internal cooling pipes. A thermal control plan for the placement must be developed and submitted for approval prior to the concrete placement. The thermal control plan shall provide information regarding how temperature monitoring will be verified through the use of temperature sensors in the concrete.

WITH

Anything defined as Mass Concrete, per the Thermal Analysis, requires a special treatment to ensure that maximum temperature and maximum temperature differential as determined by the Thermal Analysis are not exceeded. Special treatment may involve the use of a different concrete mix design (with reduced equivalent cement content), precooling of the concrete, the use of surface insulation and/or the use of internal cooling pipes. A thermal control plan for the placement must be developed and submitted for approval prior to the concrete placement. The thermal control plan shall provide information regarding how temperature monitoring will be verified through the use of temperature sensors in the concrete.

18. SECTION 03 75 10 POST COOLING OF MASS CONCRETE

2.1.1 Cooling Coils, Couplers, Tees, Caps and Nipples

REPLACE

The pipe or tubing and fittings to be embedded in concrete required for the temperature control systems shall be cut, bent, fabricated, and coupled on site. The pipe or tubing shall be 1-inch-outside-diameter metal pipe or tubing with a wall thickness of not less than 0.057 inch. The pipe or tubing shall be capable of being bent cold through 90 degrees to a 12-inch radius, measured along the axis of the pipe or tubing, without splitting, breaking, cracking, or flattening to such an extent as to restrict flow through the pipe or tubing. The lengths of pipe or tubing may be joined together with expansion-type couplings. Pipe caps shall be type II and pipe couplings shall be type I, all in accordance with ASME B16.3. Pipe nipples shall be type A, wrought iron or steel, in accordance with ASTM A 733. Pipe caps and nipples used for surface connections shall be galvanized. Each surface connection shall have a metal tag attached there to identifying its purpose and use. All pipe or tubing shall be clean and free from scale, inside and outside, and shall be so maintained by the Contractor until it is embedded in the concrete.

WITH

The pipe or tubing and fittings to be embedded in concrete required for the temperature control systems shall be cut, bent, fabricated, and coupled on site. The pipe or tubing shall be a black iron pipe or a crosslinked HDPE (high density polyethylene) polymer tubing. If used the crosslinked HDPE (high density polyethylene) polymer tubing shall be suited for the climatic and placing conditions of the project. The expansion type couplings, pipe caps, pipe couplings, and pipe nipples shall be of the same material. Each surface connection shall have a metal tag attached there to identifying its purpose and use. All pipe or tubing shall be clean and free from scale, inside and outside, and shall be so maintained by the Contractor until it is embedded in the concrete.

19. SECTION 35 20 16.46
TAINTER GATES AND ANCHORAGES

1.1 REFERENCES

ADD

PTI/ASBI M50.3-12 (June 2012)
Guide Specification for Grouted Post-Tensioning

20. SECTION 35 20 16.46 TAINTER GATES AND ANCHORAGES

2.4.4 Embed Ducts

REPLACE

Ducts for trunnion and trunnion girder anchorage shall be PVC schedule 40 pipe ASTM D1785 Class 200 Pipe and ASTM D2241. Ducts shall be flexible enough to conform to the bar profile and strong enough to maintain their shape without deforming, sagging, or collapsing during concrete placement and vibration. The inside diameter of the ducts shall be at least 1/4-inch larger than the diameter of a single bar placed in the ducts. Design ducts for watertight connections with all fittings. Galvanized ducts will not be permitted.

WITH

Ducts for trunnion and trunnion girder anchorage shall be high density polyethylene (HDPE) Meeting the requirements of "Guide to Specification for Grouted Post Tensioning" PTI/ASBI M50.3-12 Ducts shall be flexible enough to conform to the bar profile and strong enough to maintain their shape without deforming, sagging, or collapsing during concrete placement and vibration. The inside diameter of the ducts shall be at least 1/4-inch larger than the diameter of a single bar placed in the ducts. Design ducts for watertight connections with all fittings. Galvanized ducts shall not be permitted.

21. SECTION 35 20 16.46 TAINTER GATES AND ANCHORAGES

REPLACE

2.4.7 Grout Tubing

All plastic grout tubing shall be high density polyethylene 0.06" wall. Grout tubes shall have an inside diameter adequate to enable the grout to be pumped readily and without blockage to the bottom of the drill hole. The tubing shall be able to withstand the expected grout pressure. Post grout tubes shall be strong enough to withstand the post grouting pressure.

WITH

2.4.7 Grout Tubing, Valves and Plugs

All plastic grout tubing, valves and plugs shall be high density polyethylene meeting the requirements of PTI/ASBI M-50.3-12. Grout tubes for inlets and outlets shall have a minimum 3/8" inside diameter. Tubes shall allow the grout to be pumped readily and without blockage to the bottom of the drill hole. The tubing shall be able to withstand the expected grout pressure. Post grout tubes shall be strong enough to withstand the post grouting pressure.

22. The following list of 17 drawings (identified by sheet ID number) are revised herein and attached in one full size set and one half size set entitled as follows:

W912ES-16-R-0002_PLANS_FULL_AMEND0005.pdf
W912ES-16-R-0002_PLANS_HALF_AMEND0005.pdf

S-403

S-405

S-523

SB103

SB104

SB105

SB107

SB108

SB109

SB110

SB111

SB113

SB114

ST401

EP601

ES110

ES111

All other terms and conditions remain unchanged.

SECTION 00010 - SOLICITATION CONTRACT FORM

The required response date/time has changed from 25-Aug-2016 01:00 PM to 01-Sep-2016 02:00 PM.

(End of Summary of Changes)