

BOARD OF WATER COMMISSIONERS
DENVER, COLORADO

ADDENDUM NO. 1

TO THE CONTRACT DOCUMENTS

FOOTHILLS CHAIN & FLIGHT EQUIPMENT REPLACEMENT

CONTRACT 12750A

May 19, 2010

TO ALL PLAN-HOLDERS:

This Addendum No. 1 consists of Pages AD1-1 to AD1-7. The following changes, additions, and/or deletions are hereby made part of the Contract Documents for the Foothills Chain & Flight Equipment Replacement, Contract 12750A, dated April, 2010, as fully and completely as if the same were fully set forth therein:

SPECIFICATIONS:

1. **SECTION 01 32 16 – COST LOADED SCHEDULE, PART 1-GENERAL, SUBPARAGRAPH 1.2.D.1, PAGE 1:**

DELETE: 1. To be submitted with the project bid.

SUBSTITUTE: 1. To be submitted prior to the Notice to Proceed.
2. **SECTION 01 33 00 – SUBMITTAL PROCEDURES, PART 1-GENERAL, SUBPARAGRAPH 1.1.B.2, PAGE 1:**

DELETE: 2. SECTION 01 32 16.01 – PROGRESS SCHEDULES

SUBSTITUTE: 2. SECTION 01 32 16 – COST LOADED SCHEDULE
3. **SECTION 01 33 00 – SUBMITTAL PROCEDURES, PART 1-GENERAL, SUBPARAGRAPH 1.4.D, PAGE 3:**

DELETE: D. Progress Reports and Quantity Charts: As specified in SECTION 01 32 16.01.

SUBSTITUTE: D. Progress Reports and Quantity Charts: As specified in SECTION 01 32 16.
4. **SECTION 01 33 00 – SUBMITTAL PROCEDURES, PART 1-GENERAL, SUBPARAGRAPH 1.4.E.1, PAGE 3:**

DELETE: 1. Progress Schedules: Refer to SECTION 01 32 16.01.

SUBSTITUTE: 1. Cost Loaded Schedule: Refer to SECTION 01 32 16.
5. **SECTION 09 90 00 – PAINTING AND COATING, PART 3-EXECUTION, SUBPARAGRAPH 3.9.B, PAGE 9:**

DELETE: B. System No. 5 Interior and Exterior Exposed Metal. Use on the following items or areas:

(BOARD OF WATER COMMISSIONERS)
(FOOTHILLS CHAIN & FLIGHT)
(EQUIPMENT REPLACEMENT)
(12750A) AD1-1

SUBSTITUTE: B. System No. 1 Submerged Metal – Potable and Finished Water:
Use on the following items or areas:

**6. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 1-
GENERAL, SUBPARAGRAPH 1.4.B.1, PAGE 2:**

DELETE: 1. Provide the resume (name, formal education and experience) for a Certified Millwright proposed to supervise and certify the installation of the chain and flight equipment. A minimum of five years experience on similar project is required.

SUBSTITUTE: 1. Provide the resume (name, formal education and experience) for the CONTRACTOR's Superintendent proposed to supervise and certify the installation of the chain and flight equipment. A minimum of five years experience on similar projects is required.

**SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 1-
GENERAL, SUBPARAGRAPH 1.7.A.3.e.2), PAGE 5:**

DELETE: 2) If any collector chain strands have elongated due to wear or stretch, more than 1.5 percent of total strand length, as determined by links removed to bring sedimentation basin into proper adjustment, complete strand is to be replaced.

SUBSTITUTE: 2) If any collector chain strands have elongated due to wear, more than 1.5 percent of total strand length, as determined by links removed to bring sedimentation basin into proper adjustment, complete strand is to be replaced.

**7. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-
PRODUCTS, SUBPARAGRAPH 2.2.A.1.e, PAGE 6:**

DELETE: e. Minimum moment of inertia along the major axis of 20 inches to the fourth power and 2.7 inches to the fourth power along the minor axis.
f. Minimum modulus of elasticity of 3,500,000 pounds per square inch (psi).
g. Maximum water absorption no greater than 0.5 percent after 24 hours immersion in accordance with ASTM D 570.

SUBSTITUTE: e. Minimum moment of inertia along the major axis of 17 inches to the fourth power and 2.0 inches to the fourth power along the minor axis.
f. Minimum modulus of elasticity of 3,000,000 pounds per square inch (psi).
g. Maximum water absorption no greater than 0.6 percent after 24 hours immersion in accordance with ASTM D 570.

8. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.A.3.a.2), PAGE 7:**

DELETE: 2) Alternative B – Cast nylon 6 with minimum tensile strength of 12,000 pounds per square inch and ASTM D 785 Rockwell hardness of R110.

SUBSTITUTE: 2) Alternative B – Cast nylon 6/6 with minimum tensile strength of 12,000 pounds per square inch and ASTM D 785 Rockwell hardness of R110.

9. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.A.3.e, PAGE 7:**

DELETE: e. Shoe fasteners shall be 3/8-inch diameter Type 316 stainless steel hexagon head bolts, hexagon nuts, flat washers, and lock washers.

SUBSTITUTE: e. Shoe fasteners shall be 3/8-inch diameter Type 316 stainless steel hexagon head bolts, hexagon nuts, flat washers, and lock washers or lock nuts.

10. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.B.5.c, PAGE 7:**

DELETE: c. Minimum Diameter: 7/8 inch.

SUBSTITUTE: c. Minimum Diameter: 3/4 inch.

11. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.C.1.d, PAGE 8:**

ADD: d. Material: One of the following:
1) Material: Polyurethane having Durometer hardness of not less than D 80 determined in accordance with ASTM D 2240 and a water absorption rate not to exceed 1.3% as determined in accordance with ASTM D 570.
2) Material: Cast nylon-6 with a Rockwell hardness of R110 determined in accordance with ASTM D 785 and a water absorption rate not to exceed 0.6% at 24-hour immersion as determined in accordance with ASTM D 570.
3) Material: Hub, Glass filled polymer with removable Ultra-high molecular weight polyethylene (UHMW-PE) with tensile strength of 2,277 – 3,553 psi and ASTM D 2240 hardness of 68 Rockwell R segmental rims.

12. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.C.2.a, PAGE 8:**

DELETE: a. Material: Polyurethane having Durometer hardness of not less than D 80 determined in accordance with ASTM D 2240 and a water absorption rate not to exceed 1.3% as determined in accordance with ASTM D 570.

13. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.C.3.a, PAGE 8:

DELETE: a. Material: Cast nylon-6 with a Rockwell hardness of R110 determined in accordance with ASTM D 785 and a water absorption rate not to exceed 0.6% at 24-hour immersion as determined in accordance with ASTM D 570.

14. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.C.4.a, PAGE 8:

DELETE: a. Material: Hub, Glass filled polymer with removable Ultra-high molecular weight polyethylene (UHMW-PE) with tensile strength of 2,277 – 3,553 psi and ASTM D 2240 hardness of 68 Rockwell R segmental rims.

15. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.1.a, PAGE 10:

DELETE: a. Shafts shall be cold rolled carbon steel and epoxy coated with an ANSI/NSF 61 approved coating in accordance with SECTION 09 90 00.

SUBSTITUTE: a. Shafts shall be cold rolled carbon steel and epoxy coated in the field with an ANSI/NSF 61 approved coating in accordance with SECTION 09 90 00.

16. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.G.1, PAGE 11:

DELETE: 1. Material: Epoxy coated (ANSI/NSF 61) carbon steel angle measuring not less than 3 inches by 3 inches by 3/8-inch thick.

SUBSTITUTE: 1. Material: Factory epoxy prime coated (ANSI/NSF 61) carbon steel angle measuring not less than 3 inches by 3 inches by 3/8-inch thick. Field finish epoxy coating (ANSI/NSF 61) in accordance with SECTION 09 90 00.

17. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.H.4.a, PAGE 12:

DELETE: a. Material: Cast nylon 6 solid construction.

SUBSTITUTE: a. Material: Nylon 6/6 solid construction.

18. SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.I.3, PAGE 12:

DELETE: 3. Wear strips shall have a minimum 4 predrilled slotted counter bored holes for mounting in each 10 foot section.

SUBSTITUTE: 3. Wear strips shall have a minimum 4 predrilled holes (including at least 3 slotted counter bored holes) for mounting in each 10 foot section.

19. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.I.5.a, PAGE 12:**

DELETE: a. Screws: Machine self tapping type, 1/4 inch by 20 by 7/8 inch long with slotted pan head.

SUBSTITUTE: a. Screws: 316 stainless steel, 1/4 inch by 20 by 7/8 inch long with slotted pan head.

20. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.I.6.c, PAGE 12:**

ADD: c. Option 3: Mounting to existing steel rail: Field weld dished washers to existing steel floor rails.

21. **SECTION 44 42 63 – RECTANGULAR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.J.2, PAGE 12:**

DELETE: 2. Alternative A:

SUBSTITUTE: 2. Alternatives A and C:

22. **SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 1-PRODUCTS, SUBPARAGRAPH 1.3.A.2, PAGE 1:**

DELETE: 2. Two longitudinal collectors are driven in combination by each output gear reducer and motor drive units. There are 2 existing motor drive units for each basin. The nominal length of drive chain for each motor drive units is 60 feet.

3. Each basin includes one existing chain driven helical screw cross collector. The nominal length of drive chain for each motor helical screw cross collector drive units is 100 feet.

SUBSTITUTE: 2. Two longitudinal collectors are driven in combination by each output gear reducer and motor drive units. There are 2 existing motor drive units for each basin. The nominal length of drive chain for each motor drive units is 65 feet.

3. Each basin includes one existing chain driven helical screw cross collector. The nominal length of drive chain for each motor helical screw cross collector drive units is 90 feet.

23. **SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 1-GENERAL, SUBPARAGRAPH 1.8.A, PAGE 3:**

DELETE: A. Obtain and submit from the manufacture a list of suggested spare parts for each piece of equipment.

1. After approval of the spare parts list, furnish spare parts suitably packaged, identified with the equipment number, and labeled. Furnish the name address, and telephone number of the nearest distributor for equipment.

2. All spare parts are intended for use by the OWNER, only, after expiration of the warranty period. Any spare parts which the ENGINEER permits the CONTRACTOR to use for startup activities shall be replaced by the CONTRACTOR prior to the OWNER's acceptance of beneficial use of the equipment.

a. During the term of this Contract the CONTRACTOR shall notify the ENGINEER in writing about any manufacturer's modification of the approved spare parts, such as part number, interchangeability, model change or others. If the ENGINEER determines that the modified parts are no longer applicable to the supplied equipment, the CONTRACTOR at its expense shall provide applicable spare parts.

B. Together with the manufacturer's suggested spare parts the CONTRACTOR shall furnish 20 feet of collector chain.

SUBSTITUTE:

A. All spare parts are intended for use by the OWNER, only, after expiration of the warranty period. Any spare parts which the ENGINEER permits the CONTRACTOR to use for startup activities shall be replaced by the CONTRACTOR prior to the OWNER's acceptance of beneficial use of the equipment.

B. The CONTRACTOR shall furnish 20 feet of drive chain.

24. SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 2-PRODUCTS, SUBPARAGRAPH 2.2.A, PAGE 4:

ADD: 8. Drive chain shall be protected with food grade lubricant for shipment and handling.

25. SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 3-EXECUTION, SUBPARAGRAPH 3.3., PAGE 4:

ADD: F. Drive chain must not be installed with a non-ANSI/NSF 61 approved coating. Any coatings other than food grade lubricant must be removed prior to installation.

26. SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 3-EXECUTION, SUBPARAGRAPH 3.4.A.2, PAGE 5:

ADD: 2. Chain Proof Load Testing: At ENGINEER's discretion, 5 strands consisting of 6 pitches each, including flight attachment link, will be randomly selected by ENGINEER from chain shipped to project site for 5,000 pound proof load testing, by independent testing laboratory.

SUBSTITUTE: 2. Chain Proof Load Testing: At ENGINEER's discretion, 5 strands consisting of 6 pitches each, will be randomly selected by ENGINEER from chain shipped to project site for 10,000 pound proof load testing, by independent testing laboratory.

27. SECTION 44 42 64 – DRIVE CHAIN FOR CHAIN AND FLIGHT SLUDGE COLLECTOR, PART 3-EXECUTION, SUBPARAGRAPH 3.4.B.1.a, PAGE 5:

DELETE: a. Sample fail proof load testing, additional 5 strands will be selected and subjected to test procedures.

SUBSTITUTE: a. Sample fail proof load testing, additional 2 strands will be selected and subjected to test procedures.

DRAWINGS:

1. DRAWING M-9:

DELETE: Drawing M-9

SUBSTITUTE: Attached Drawing M-9

2. DRAWING M-10:

DELETE: Drawing M-10

SUBSTITUTE: Attached Drawing M-10

3. DRAWING S-1, NOTES 2:

DELETE: 2. ALL MATERIALS SHALL BE ANSI/NSF 61 APPROVED OR BE COATED WITH AN ANSI/NSF 61 APPROVED COATING.

SUBSTITUTE: 2. ALL MATERIALS SHALL BE ANSI/NSF 61 APPROVED.

All Bidders shall acknowledge receipt and acceptance of this Addendum No. 1 in the space provided on the Bid Form.



Mark Van Nostrand
Engineering Manager
Denver Board of Water Commissioners

(BOARD OF WATER COMMISSIONERS)
(FOOTHILLS CHAIN & FLIGHT)
(EQUIPMENT REPLACEMENT)
(12750A)

