

2007/04/16

**ADDENDUM NO. 2  
TO  
CONTRACT DOCUMENTS AND SPECIFICATIONS  
FOR  
LINCOLN WASTEWATER SYSTEM  
NORTHEAST SALT CREEK BASIN TRUNK SEWER**

**Specification No. 07-117  
HDR Project No. 44333  
City Project No. 701291**

**DATE OF ISSUE: April 16, 2007**

**TO: PROSPECTIVE BIDDERS AND OTHER INTERESTED PARTIES**

**THE BIDDING AND CONTRACT DOCUMENTS AND SPECIFICATIONS, INCLUDING THE CONTRACT DRAWINGS, ARE HEREBY MODIFIED BY THE FOLLOWING ITEMS:**

**CHANGES TO SPECIFICATIONS**

**AD-1 Item 1    TABLE OF CONTENTS**

A. Page Table of Contents-2:

- 1. INSERT "DIVISION 15 – MECHANICAL  
15115 WATER CONTROL GATES"

AND

INSERT attached Specification SECTION 15115 – WATER CONTROL GATES as an amendment to the specifications.

**AD-1 Item 2    SECTION 02600 – PIPE AND PIPE FITTINGS: BASIC REQUIREMENTS**

A. Page 02600-2:

- 1. ADD "RCP" to the table of Allowable Sewer Pipe Materials for 36" – Installed by Trenching, 36" – Installed by Direct Jacking, 36" – Installed by Microtunneling, and 36" – Installed within Casing Using Dry.

**AD-1 Item 3    SECTION 02725 – DRY AUGERED CASED UNDERCROSSINGS**

A. Page 02725-2:

- 2. DELETE 2.1 A. 1. a. "Casing pipe must be a minimum of 0.344" thickness, 48" in diameter for all approved pipe materials excluding reinforced concrete pipe. The casing pipe must be a minimum of 0.375" thickness, 54" in diameter for a RCP carrier pipe." as revised per Addendum No. 1

and

INSERT 2.1 A. 1. a. "Casing pipe must be a minimum of 0.344" thickness, 48" in diameter for all approved pipe materials excluding reinforced concrete pipe and vitrified clay pipe. The casing pipe must be a minimum of 0.375" thickness, 54" in diameter for RCP or VCP carrier pipe."

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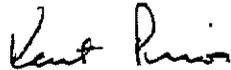
### CHANGES TO DRAWINGS

No Changes to Drawings per Addendum No. 2

ALL ITEMS IN CONFLICT WITH THE ADDENDA ARE HEREBY DELETED.

THIS ADDENDUM IS MADE PART OF THE BIDDING AND CONTRACT DOCUMENTS AND SHALL BE NOTED ON THE PROPOSAL.

HDR ENGINEERING, INC.



Kent Prior, P.E.



2007/04/16

## SECTION 15115 WATER CONTROL GATES

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
  - 1. Slide (fabricated) gates-Heavy Duty Copolymer.
- B. Related Sections include but are not necessarily limited to:
  - 1. Division 0 - Bidding Requirements, Contract Forms, and Conditions of the Contract.
  - 2. Division 1 - General Requirements.

#### 1.2 QUALITY ASSURANCE

- A. Referenced Standards:
  - 1. ASTM International (ASTM):
    - a. A276, Standard Specification for Stainless Steel Bars and Shapes.

#### 1.3 SUBMITTALS

- A. Shop Drawings:
  - 1. See Section 01340 for requirements for the mechanics and administration of the submittal process.
  - 2. Product technical data including:
    - a. Acknowledgment that products submitted meet the requirements of standards referenced.
- B. Operation and Maintenance Manuals:
  - 1. See Section 01340 for requirements for:
    - a. The mechanics and administration of the submittal process.
    - b. The content of Operation and Maintenance Manuals.

### PART 2 - PRODUCTS

#### 2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with the Contract Documents, the following manufacturers are acceptable:
  - 1. Water slide gates:
    - a. Plasti-Fab or approved equal.
- B. Submit request for substitution in accordance with Specification Section 01640.

#### 2.2 SLIDE GATES

- A. General:
  - 1. Self-contained slide gates with operators in accordance with the configuration noted in the gate schedule or shown on the Contract Drawings.
  - 2. Maximum leakage rate: Not to exceed 0.1 gpm per foot of seat perimeter with water at top of gate slide and operating in seating position.
- B. Material:
  - 1. Gates, Guides, Guide Rails: FRP (Fiberglass Reinforced Polyester)
  - 2. Frame, cross bars, and head rails: ASTM 276, Type 304 Stainless Steel

3. Anchor bolts: ASTM 276, Type 304 Stainless Steel
4. Stems and stem couplings: ASTM 276, Type 304 Stainless Steel

**C. Fabrication:**

1. Frame and guides:
  - a. Rigid, welded gate frame and guides: Composed of the guide rails, cross bars, and headrails, with a clear opening the same size as the waterway, unless otherwise specified, minimum material thickness 1/4 IN.
  - b. Flatback, spigotback, or embedded type as shown on Contract Drawings.
  - c. Construct guides incorporating a dual slot design.
    - 1) The primary slot will accept the plate of the slide (disc).
    - 2) The secondary slot will be sufficiently wide to accept the reinforcing ribs of the disc.
  - d. Design guides for maximum rigidity: Weight not less than 9 LBS per foot.
  - e. Guides of sufficient length to support two-thirds the height of the slide, when the gate is fully open.
  - f. Provide guides of sufficient strength so that no further reinforcing will be required.
  - g. Design gates with J-seals at the side attached to frame.
  - h. Design weir gates or downward opening gates with J-seal attached to bottom frame.
  - i. Design bottom frame member as a minimum of 3 IN of material bearing against slide for weir or downward opening gates.
  - j. Utilize J-seals and resilient seats of synthetic rubber conforming to AWWA C501.
2. Slide (disc):
  - a. 1/4 IN thick minimum Plate reinforced slide with structural shapes welded to the plate.
  - b. Slide cover maximum deflection: 1/360 of the span of the gate under maximum head.
  - c. Extend reinforcing ribs to guides so that the seating surface of the guide is reinforced.
  - d. Stem connection of either clevis type, with structural members welded to slide and a bolt to act as pivot pin, or a threaded and bolted (or keyed) thrust nut supported in welded nut pocket.
  - e. Pocket and yoke of gate capable of taking at least twice the rated thrust output of the operator at 40 LBS pull.
    - 1) Slide material same as frame and guides.
3. Stem:
  - a. Of suitable length and ample strength for the intended service.
  - b. Stem diameter capable of withstanding twice the rated output of the operator at 40 LB pull, and supported such that L/r ratio for unsupported part of the stem shall not exceed 200.

## 2.3 FRP SLIDE GATES

**A. General:**

1. Self-contained slide gates with operators in accordance with the configuration noted in the gate schedule or shown on the Contract Drawings.
2. Maximum leakage rate: Not to exceed 0.1 gpm per foot of seat perimeter with water on top of gate and operating in seating position.

**B. Material:**

1. Gate: Fiberglass Reinforced Polyester (FRP).
2. Frame, guide rails, cross bars, and head rails: Fiberglass Reinforced Polyester (FRP).
3. Seals:
  - a. Neoprene, 55-65 Shore A Durometer.
  - b. Clamping bars and fasteners: ASTM A276, Type 304.
4. Anchor bolts: Stainless steel: ASTM A276, Type 304.
5. Stems and stem couplings: Stainless steel: ASTM A276, Type 304.

**C. Fabrication:**

1. Frame and guides:
  - a. Guides shall be styled for wall mounting.

- b. Design gates with hollow bulb J-seals.
- c. Design gates with flush bottom seal.
- 2. Gates:
  - a. Each gate shall be individually molded to the exact dimensions specified.
  - b. Gates shall be of solid FRP and shall have a minimum thickness of 1 IN.
  - c. Gates shall be suitably reinforced to withstand the maximum head with a deflection of less than 1/360 of the gate width, or ¼ IN whichever is less.
  - d. Surface of the gate shall be free of exposed reinforcing fibers.
  - e. Structural reinforcing shall be utilized to attain the necessary stiffness to meet the deflection requirements and shall be encapsulated with a laminate not less than ¼ IN on each side to prevent permeation of water.
  - f. Gates having reinforcing members bolted or bonded to flat sheet stock will not be acceptable.
- 3. Lifts and operators:
  - a. Each gate shall be furnished with a square nut operator.
  - b. Geared operators are not acceptable.
  - c. Each gate shall be furnished with a floor box for stem nut operation.
    - 1) The floor box shall be of heavy cast iron construction with locking cover.
    - 2) The floor box shall include an oil seal assembly to prevent icing from interfering with the gate operation.
- 4. Operating stems:
  - a. Each sluice gate shall be furnished with a non-rising operating stem.
  - b. The stem shall attach to the gate with a 304 stainless steel mounting bracket.
  - c. Stem guides shall be provided as required for the operation of the gate.

**2.4 GATE OPERATORS AND LIFTS**

- A. General:
  - 1. Provide lifts in accordance with AWWA C501 or as modified in these Specifications.
  - 2. Provide all lifts with clear butyrate plastic stem cover with Mylar open-close indicator.
- B. Manual Operators:
  - 1. Centerline of wrench nut as indicated on the Drawings.
  - 2. Maximum effort of 40 LBS on crank or handwheel shall operate gate after unseating gate from wedges bored upon seating head specified.

**2.5 ALL GATES, VALVES, OPERATORS AND LIFTS**

- A. Provide gates, including lift, designed with a minimum factor of safety of 5.
  - 1. Provide rising stems on all gates.

**PART 3 - EXECUTION**

**3.1 FIELD QUALITY CONTROL**

- A. Installation Check and Startup:
  - 1. Employ and pay for services of the equipment manufacturer's field service representative(s) fully commissioned and authorized by manufacturers to do the following:
  - 2. Inspect equipment covered by these Specifications.
  - 3. Supervise adjustments, calibrations and installation checks and full commissioning.
  - 4. Perform basic operational checks.
  - 5. Provide Owner with a written statement that manufacturer's equipment has been installed properly, lubricated, and calibrated and is ready for operation by the Owner.
- B. Field Leakage Test for Sluice Gate: Test gate under design seating head and adjust to maximum leakage of 0.1 gpm per foot of seating perimeter.

**3.2 SCHEDULE**

A. The following is a schedule of the water control gates required:

ID#	TYPE	SIZE WxH	SEAT	UNSEAT	TYPE LIFT	CLOSURE
			HD-FT	HD-FT		
SG-101	Slide	30 IN x 60 IN	5	5	Wrench Nut, Floor Box	FB
SG-102	Slide	30 IN x 60 IN	5	5	Wrench Nut, Floor Box	FB
SG-103	Slide	30 IN x 60 IN	5	5	Wrench Nut, Floor Box	FB

Abbreviations:

FB - Flush Bottom

Dn Op - Downward Opening

**END OF SECTION**