



CITY OF TACOMA
Citywide

ADDENDUM NO.1

DATE: March 4, 2021

REVISIONS TO:

Request for Proposals Specification No. CT20-0278F
Citywide Fencing

NOTICE TO ALL BIDDERS:

This addendum is issued to clarify, revise, add to or delete from, the original specification documents for the above project. This addendum, as integrated with the original specification documents, shall form the specification documents. The noted revisions shall take precedence over previously issued specification documents and shall become part of this contract.

REVISIONS TO THE SUBMITTAL DEADLINE:

The submittal deadline remains Tuesday, March 16, 2021.

REVISIONS TO THE SPECIFICATIONS:

This specification is updated to include the attached as an additional Technical Specification (Appendix D). Materials and methods bid for this specification must adhere to these requirements.

Section 02832 - Chain Link Fences and Gates

NOTE: Acknowledge receipt of this addendum by initialing the corresponding space as indicated on the signature page. Vendors who have already submitted their bid/proposal may contact the Purchasing Division at 253-502-8468 and request return of their bid/proposal for acknowledgment and re-submittal. Or, a letter acknowledging receipt of this addendum may be submitted in an envelope marked Request for Bids Specification No. CT20-0278F Addendum No. 1. The City reserves the right to reject any and all bids, including, in certain circumstances, for failure to appropriately acknowledge this addendum.

Technical Specifications

SECTION 02832 – CHAIN LINK FENCES AND GATES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fence framework, vinyl fabric and accessories.
- B. Excavation for post bases, concrete foundation for posts and gates, and center drop for gates.
- C. Manual gates and related hardware.
- D. Grounding system for fence and gates.

1.2 REFERENCES

A. INSTALLATION (GENERAL)

Security fencing and gates shall be installed in accordance with the following:

ASTM F567-14a Standard Practice for Installation of Chain-Link Fence

B. MATERIALS

Fencing materials shall comply with the following ASTM standards:

ASTM A116	Zinc-Coated (Galvanized) Steel Woven Wire Fence Fabric
ASTM A121-07	Standard Specification for Metallic-Coated Carbon Steel Barbed Wire
ASTM A123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153	Zinc-Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A392-11a	Standard Specification for Zinc-Coated Steel Chain-Link Fence Fabric
ASTM A446	Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality
ASTM A569	Steel, Carbon (0.15-Percent Maximum), Hot-Rolled Steel and Strip Commercial Quality
ASTM A626-14	Standard Specification for Fence Fittings
ASTM A669-92	Standard Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence (Withdrawn 1995)
ASTM A780	Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
ASTM A817-07	Standard Specification for Metallic-Coated Steel Wire for Chain-Link Fence Fabric and Marcellled Tension Wire
ASTM A824-01	Standard Specification for Metallic-Coated Steel Marcellled Tension Wire for Use With Chain-Link Fence
ASTM C94	Ready-Mixed Concrete

ASTM F552-08 Standard Terminology Relating to Chain Link-Fencing
ASTM F567-14a Standard Practice for Installation of Chain-Link Fencing
ASTM F626-14 Standard Specification for Fence Fitting
ASTM F669 Standard Specification for Strength Requirements of Metal Posts and Rails for Industrial Chain Link Fence (Withdrawn 1995 and Superseded - Refer to ASTM F1043)
ASTM F900-05 Standard Specification for Industrial and Commercial Swing Gates
ASTM F934-96 Standard Specification for Standard Colors for Polymer-Coated Chain-Link Fence Materials
ASTM F1043-10 Standard Specification for Strength and Protective Coatings on Steel Industrial Fence Framework
ASTM F1083-13 Standard Specification for Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures
ASTM F1184-05 Standard Specifications for Industrial and Commercial Horizontal Slide Gates
ASTM F1553 Guide for Specifying Industrial & Commercial Chain-Link Fence
ASTM F2200 Standard Specifications for Automated Vehicular Gate Construction
Chain Link Fence Manufacturers Institute (CLFMI) Security Fencing Recommendations
Chain Link Fence Manufacturers Institute (CLFMI) Product Manual
International Building Code (IBC), 2012 International Building Code
United States Department of Justice – Civil Rights Division, 2010 ADA Standards for Accessible Design
United States Department of Justice – Civil Rights Division, Guidance on the 2010 ADA Standards for Accessible Design

1.3 SYSTEM DESCRIPTION

A. FENCE HEIGHTS

7-feet nominal and 1-foot of barbed wire OR Top of fabric at 7-feet 0-inches above grade plus 1-foot 0-inches buried below grade and one (1) foot barbed wire at top of fence.

B. LINE POST SPACING

At intervals not exceeding ten (10) feet, for 2-inch mesh fences and eight (8) feet for 1/2-inch mesh fences, unless otherwise specified.

C. FENCE POST AND RAIL STRENGTH

Conform to ASTM F669 heavy industrial fence, light industrial fence quality. (Withdrawn 1995 and Superseded - Refer to ASTM F1043)

1.4 SUBMITTALS FOR REVIEW

A. SUBMITTALS AND SHOP DRAWINGS

Submittals shall be submitted as required in Section 1300 - Submittals and Shop Drawings.

B. PRODUCT DATA

Provide data on fabric, posts, accessories, fittings and hardware.

C. SHOP DRAWINGS

Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, and schedule of components.

D. SAMPLES

Submit two (2) samples of fence, vinyl fencing fabric, in size illustrating construction and colored finish.

1.5 QUALITY ASSURANCE

Perform work in accordance with Standard Specifications for Road, Bridge and Municipal Construction as modified herein.

1.6 QUALIFICATIONS

Company specializing in manufacturing the products specified in this section with minimum three (3) years documented experience.

PART 2 PRODUCTS

2.1 MATERIALS AND COMPONENTS

A. MATERIALS

All materials shall be new, unless otherwise approved in writing. All components shall be in accordance with Chain Link Fence Manufacturers Institute (CLFMI). Materials not specifically covered herein by detailed specifications shall be of standard commercial quality. Supplier shall furnish test and manufacturer's certificates of materials on all items furnished, as requested by the City. All fencing material shall meet or exceed ASTM standards.

The base material for the manufacturer of steel pipes used for posts, braces, top rails and gate frames shall conform to the requirements of ASTM F-1083.

All metallic elements exposed to weather to be either hot-dipped galvanized or stainless steel. **NOTE:** Zinc plating is not an acceptable corrosion protection method.

B. POSTS

All fence posts, fabric, and accessories, except where otherwise noted, shall be hot-dipped galvanized after fabrication. Coatings for all posts, top rail, and other accessories shall weigh no less than 1.8 ounces per square foot of surface and shall conform to ASTM specifications for Hardware ASTM A123 and A153, and for Pipe ASTM A120.

C. TRUSS ROD

Diagonal truss rod shall be 3/8-inch diameter galvanized steel rod with tighteners and with ends fabricated to fit hardware. No bending or threading of rod after galvanizing.

D. FABRIC

Fence fabric shall be either 2-inch x 9 gauge or 1/2-inch x 9 gauge woven diamond mesh, chain link of medium-high carbon-grade steel wire. The top and bottom salvages of the fabric shall have a twisted and barbed finish for greater security protection. The barbing shall be done by cutting the wire at an angle, producing sharp points. The total height of the fabric shall be either 84-inches or 96-inches plus or minus 3/4-inch. Fabric shall be supplied with a galvanized steel bottom tension wire, seven (7) gauge spring steel.

Coating for fabric shall weigh not less than 2.0 ounces per square foot of surface and shall conform to ASTM A392 and shall withstand 12 one-minute dips by the Preece copper sulphate method of testing as outlined in ASTM A239.

E. LINE POSTS

Line posts shall be standard commercial grade steel pipe, either 2-3/8 inch O.D., weighing 3.65 pounds per lineal foot, or 4-1/2 inch O.D., weighing 10.79 pounds per lineal foot; or an approved equal or better.

F. TERMINAL AND CORNER POST

All end, corner, and pull posts shall be standard commercial grade steel pipe 2-7/8 inch O.D., weighing 5.79 pounds per lineal foot, or 4 1/2-inch O.D. Schedule 40 pipe, weighing 10.79 pounds per lineal foot; or an approved equal or better.

G. GATE POSTS AND FRAME

Gate posts and frames shall be Schedule 40 and sized as shown on drawings.

H. TOP, CENTER AND BOTTOM TENSION RAIL

The top, center and bottom tension rails shall be 1-5/8-inch O.D., pipe section, 2.27 pounds per foot or equivalent provided with suitable couplings approximately every 20 feet. Couplings to be outside sleeve type and at least 6-inches long; one (1) coupling in every five (5) to have a heavy spring or similar device to take up expansion and contraction of the top rail. Top, center and bottom rails to pass through base of line post tops and form a continuous brace from end-to-end of each length of fence. Top, center and bottom rails to be securely fastened to terminal posts by suitable pressed steel connections.

I. BRACING

Terminal posts shall be rigidly braced with 1-5/8-inch O.D. galvanized pipe weighing 2.27 pounds per lineal foot. These braces shall be placed midway between the grade line and the top rail, and shall extend from the terminal post to the first adjacent line post.

Braces shall be firmly attached to the posts with pressed steel fittings and shall be diagonally trussed from the base of the terminal post to the first line post by means of 3/8-inch diameter rod, complete with tightener or turnbuckle. All truss rod ends shall be of a threaded type - field bending of ends will not be permitted.

J. BARBED WIRE

Each strand of barbed wire shall consist of two (2) line wires 0.098-inch diameter (12-1/2 gauge W&M) twisted, with four (4) point barbs 0.080-inch diameter spaced not less than 3-inches nor more than 5-inches apart. There shall be six (6) continuous strands of barbed wire.

Barbed wire shall be 6061-T95 aluminum alloy or galvanized steel.

K. FABRIC TIES

Fence fabric shall be fastened to line posts and top rail with L & C Enterprises' minimesh twist ties. Fabric shall be fastened to tension wire with L & C Enterprises' easy twist tension wire ties at 24-inches O.C.

L. EXTENSION ARMS

Arms on line posts for attachment of barbed wire above the fence fabric shall be made of pressed steel or other approved material with a base shaped to fit the top of the line posts being used. Bolt/peen, screw/security head or riveted barbed wire arms. Tack weld all bolts.

Arms for end and corner posts shall be made of malleable iron. Each arm shall carry a minimum of three (3) strands of barbed wire. Arms shall be a non-climbable with a "V" shape double arm with six (6) strands of barbed wire, and be designed so that the top strand of barbed wire is a minimum of 12-inches above the fabric.

M. MISCELLANEOUS FITTINGS

All the fittings used in the construction of the fence shall be malleable, cast iron or pressed steel and shall be hot-dipped galvanized, except where otherwise noted in these specifications.

PART 3 EXECUTION

The fence and gates shall be erected in accordance with the Standard Specifications for Road, Bridge and Municipal Construction, except as modified herein.

3.1 SETTING POSTS

All posts shall be set as indicated on drawings furnished by Tacoma Power, when work is ordered or as directed by the engineer.

In ordinary ground, holes for line posts shall be a minimum of 12-inches in diameter and holes for gate and corner posts shall be a minimum of 18-inch diameter. Very soft, wet ground shall require holes of larger diameter.

The line posts adjacent to the terminal posts, which are the brace posts, shall be set exactly at the spacing required to make the horizontal braces fit properly. Corner posts shall be placed when the line of the fence changes direction 20 or more degrees.

Terminal posts shall have equal spacing not to exceed 10-feet for 2-inch mesh fences and eight (8) feet for 1/2-inch mesh fences.

It shall be the contractor's responsibility that all posts are plumb and on-line before the concrete has set and remain plumb and on-line during the curing of the concrete.

3.2 CONCRETE

Concrete shall consist of an approved Portland cement, fine aggregate, coarse aggregate, and water mixed to produce at least a minimum ultimate compressive strength of 3000 psi at 28 days. Rebar/reinforcement required as shown on drawings.

3.3 ATTACHING FABRIC

Stretcher bars shall be threaded through, and loops of each section of fabric tied to corner, gate and pull posts with stretcher bar bands spaced not more than 14-inches on centers. The top most tie shall be as near the top of the fabric as possible, the lowest tie as near the bottom as possible.

The fabric shall be tied to the top tension rail with fabric ties spaced not more than 12-inches on center.

The barbed ends of the barbed top fabric shall be dressed approximately 1-inch above the top tension rail. Each barb shall be straightened as needed so that they present an unbroken line above the top wire.

The bottom of the fabric shall extend to within a minimum of 2-inches of the ground line or 12-inches below final grade and be backfilled.

3.4 ATTACHING BARBED WIRE

On line posts, the barbed wire shall be placed in the slots provided in the extension arms and wither pinned in place or securely tied.

3.5 BOLT HEADS

All bolt heads shall be turned to the outside of the fence. All bolts shall be tack welded.

3.6 BOTTOM TENSION WIRE

The bottom tension wire shall be placed between the fabric and posts and the fabric shall be attached to the tension wire on a maximum of 24-inch intervals with easy twist wire ties.

3.7 GATE CONSTRUCTION AND INSTALLATION

The end members of the swing gate frames shall extend 12-inches above the top horizontal member of the frame and shall be fitted to carry three (3) or six (6) strands of barbed wire as ordered.

Gate frame corner fittings, if used, shall be malleable iron or pressed steel and shall be riveted. If gate frames are of welded construction, they shall be hot-dip galvanized after fabrication. All gate frames shall be rigidly braced to prevent sagging, buckling, or weaving. All open ends of pipe members in the gate frames shall be fitted with a pipe plug.

Fabric for gates shall be as specified for the fence.

Swing gate hinges shall be of the type designated to allow the gate a minimum of 180 degree swing (90 degrees in and 90 degrees out from the closed position) and be fitted such that the gate cannot be lifted off them and open only in the direction shown on the drawings. The lower hinge shall be the ball-and-socket type or approved equal of heavy construction to relieve strain on the upper hinges.

Where directed, the contractor shall install gate latches as supplied by Tacoma Power; otherwise, all gates shall be provided with latches of the double-locking type and shall have padlock attachment. Latches shall be installed as shown on bid documents. See drawings for catch details.

One (1) gate of the double-swing gates shall be provided with a slotted cleanable type center gate rest and plunger attachment, allowing it to be securely closed while the other is opened.

A plunger rod stop shall be field welded to the gate latch assembly to prevent the plunger rod from disengagement when the gate is locked. Plunger rod stop shall be 3-3/8-inches x 1-1/2-inch and shall be field placed and welded so as to prevent binding with the gate latch assembly.

All miscellaneous fittings, except as noted, used in the construction of swing gates shall be malleable iron, cast iron, or pressed steel, and shall be hot-dip galvanized after fabrication. All rivets used shall be 6053-T61 aluminum.

In setting gate posts, the post must be set at the spacing as recommended by the manufacturer, and the tops of gate posts at each gate must be at the same elevation regardless of the grade at the ground line.

It shall be the contractor's responsibility that all posts are plumb and on-line before the concrete has set and remain plumb and on-line during the curing of the concrete.

The catch on gate posts shall engage the open gate automatically requiring no hand operation. Gates shall be installed so they are in good alignment and swing and latch properly. Gate hinges shall be adjusted so that gate swings inward or outward 90 degrees or more and are in-line.

3.8 GROUNDING

Excavate and backfill for grounding systems as ordered. Grounding wire and hardware will be installed by Tacoma Power. Grounding connections shall be protected during backfill.

Connections damaged during backfill will be replaced at the contractor's expense. Submit method for protection of grounding system during backfill at the preconstruction conference.

3.9 CLEARING AND GRUBBING FENCE LINES

Clearing and grubbing shall be done when directed by the engineer. All clearing and grubbing shall be done by hand, unless otherwise authorized in writing. The width for clearing and grubbing shall be as needed for installation of new fence, but shall be a minimum of 3-feet in width.

END OF SECTION
