



February 27, 2024

ADDENDUM NO. 2

TO PROSPECTIVE BIDDERS UNDER RFQ NO. 2402, "BIXLER YARD SECURITY FENCING"

Notice is hereby given that RFQ No. 2402 of the East Bay Municipal Utility District has been revised as set forth below:

1. Due to inconclusive details primarily regarding vinyl coating, **attached Specification Section 32 31 13 is hereby incorporated** into this RFQ and its specifications.

THIS ADDENDUM LETTER MUST BE SUBMITTED WITH THE BID

Thank you for your cooperation.

A handwritten signature in black ink, appearing to read 'Kelley K. Smith', is written over a horizontal line.

Kelley K. Smith
Manager of Purchasing

SECTION 32 31 13

FENCES AND GATES

PART 1: GENERAL

1.1 SUMMARY

A. Work Included

1. This section covers the work necessary to provide fences and gates as shown on the drawings.
2. Coordination with the supplier of the motorized gate operators specified in Section 32 31 11 for proper installation and operation of the motorized gate operators.
3. Coordination with the supplier of the access control system specified in Section 28 10 00 for proper installation and operation of the security control panels, door control modules, card readers, intercoms, Knox boxes, and key override switches to provide integrated vehicle and man entry gates.

1.2 REFERENCES

A. ASTM International

1. ASTM A392: Zinc-Coated Steel Chain-Link Fence Fabric.
2. ASTM A653/A653M: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
3. ASTM A824: Metallic-Coated Steel Marcellled Tension Wire for Use with Chain-Link.
4. ASTM C33: Concrete Aggregates.
5. ASTM C150: Portland Cement.
6. ASTM F567: Standard Practice for Installation of Chain-Link Fence.
7. ASTM F626: Fence Fittings.
8. ASTM F668: Polyvinyl Chloride (PVC)-Coated Steel Chain-Link Fence.
9. ASTM F900: Industrial and Commercial Swing Gates.
10. ASTM F934: Standard Colors for Polymer-Coated Chain-Link Fence Material.
11. ASTM F1043: Strength and Protective Coatings on Metal Industrial Chain-Link Fence Framework.
12. ASTM F1083: Pipe, Steel, Hot-Dipped Zinc-Coated (Galvanized) Welded, for Fence Structures.
13. ASTM F1184: Industrial and Commercial Horizontal Slide Gates.
14. ASTM F1345: Zinc 5-Percent Aluminum-Mischmetal Alloy-Coated Steel Chain-Link Fence Fabric.
15. ASTM F1664: Polyvinyl Chloride (PVC) and Other Conforming Organic Polymer-Coated Steel Tension Wire Used with Chain-Link Fence.

1.3 RELATED SECTIONS

- A. Section 28 10 00 – Access Control.
- B. Section 32 31 11 – Gate Operators.

1.4 SUBMITTALS

- A. Submittals shall be made in accordance with Section 01 33 00 submittal procedures.
- B. The fence supplier shall furnish submittals for approval as outlined below:
 - 1. Product data
 - 2. Warranty
 - 3. Instruction manuals
 - 4. As-built documents and Operations and Maintenance (O&M) manuals
 - 5. Certified factory test results
 - 6. Field test reports
- C. Shop Drawings: All features of the design, materials, fabrication, and layout of fence and gate(s) shall be completely described and illustrated.
 - 1. Submit drawings showing construction (mounting) details and dimensions of motorized gate operators and entry and exit safety loops and pedestals.

1.5 QUALITY ASSURANCE

- A. Manufacturer Experience: 5 years' experience manufacturing fence components.
- B. Installer Experience: 5 years' experience installing fence components on similar projects in accordance with ASTM F567.
- C. Material Source: Fence, framework, gates, fittings, fasteners, and accessories shall be obtained from single source.
- D. Tolerances: ASTM current specifications and tolerances shall apply and supersede any conflicting tolerance.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Materials shall be delivered to project site with manufacturers' tags and labels intact.
- B. Storage: Gates shall be stored in a manner to prevent warping. Chain-link fabric material shall be kept rolled until ready for installation. Materials shall be stored off the ground to protect against oxidation caused by ground contact.
- C. Handling: Handling shall be conducted in a manner to prevent damage during loading and unloading of components.

1.7 PROJECT CONDITIONS

- A. Alignment: Fence alignment and grade conditions shall be verified; repairs to grade shall be made.
- B. Low-Area Crossings: Areas shall be closed when fence fabric and panel crosses depression or ditch.

1.8 WARRANTY

- A. Fabric, Panels, and Posts: Manufacturer's standard warranty shall cover fence fabric, panels, posts, and gates against failure and rust from normal use for period of 5 years from date of installation.
- B. Gates: Manufacturer's standard warranty shall cover gates for 5 years from date of installation. Failure is defined as defects in manufacturing that prevent the gate from operating in a normal manner.

PART 2: PRODUCTS

2.1 CHAIN-LINK FENCE AND GATES

- A. General: Galvanized steel or galvanized steel with PVC coating as specified on the drawings.
 - 1. Galvanized – hot-dip galvanized:
 - a. Fabric: ASTM A392, Class 2 – 2.0 ounces per square foot minimum zinc coating.
 - b. Posts: ASTM F1083, 1.8 ounces per square foot minimum.
 - 2. Polymer Coating
 - a. Material: ASTM F668, Class 2b, fused and adhered to metallic-coated steel wire.
 - b. Bonding Method: ASTM F1043, thermally bonded, free of pinholes, bubbles, or voids, or rough or blistered surfaces.
 - c. Thickness:
 - 1) Fabric: 7-mils minimum.
 - 2) Tension Wire and Ties: 7-mils minimum.
 - 3) Posts, Rails, Braces, Gate Frames, and Accessories: 10 to 15 mils for PVC or polyolefin and 3 mils for polyester.
 - 4) Gates: 10 to 15 mils.
 - d. Color: ASTM F934, uniform, as specified on the drawings.
 - e. Finish: Shop-apply polymer coating to fence components. Field-apply finish to nuts and bolts.

B. Fence Fabric: ASTM A392.

1. Height: 2.1 meters.
2. Mesh Size: 1 inch, helically wound and woven.
3. Wire Gauge:
 - a. 9 gauge for 1 inch mesh
4. Selvage
 - a. Fabric 6 feet and over in height: knuckled top and twisted bottom.
5. Fence Framing Materials
 - a. Type I Pipe
 - 1) Steel Pipe: ASTM F1083, Group IA, Schedule 40, Regular Grade.
 - 2) Coating: ASTM F1083, 1.8 ounce per square foot zinc-coated (galvanized) steel interior and exterior.
 - b. Type II Pipe
 - 1) Steel Pipe: ASTM F1043, Group IC, Schedule 40.
 - 2) External Protective Coating: ASTM F1043, Type B, 0.9 ounces per square foot minimum hot-dip zinc coating plus a chromate conversion and a clear polymer coating.
 - 3) Internal Coating: ASTM F1043 Type D, 81 percent nominal zinc pigmented coating minimum 3 mils thick or Type B, minimum 0.9 ounces per square foot zinc.

C. Rails and Braces

	Type I Round	Type II Round
Outside Diameter (inches)	1.660	1.660
Wall Thickness (inches)	0.140	0.111
Weight (pounds per foot)	2.27	1.84

D. Posts

1. Terminal Posts (Including End, Corner, and Pull Posts):

Fabric Height	Type I Round			Type II Round		
	OD (in)	Weight (lbs/ft)	Wall Thk. (in)	OD (in)	Weight (lbs/ft)	Wall Thk. (in)
6'0" or less	2.500	3.65	0.154	2.500	3.12	0.130
Over 6'0" to 8'0"	2.875	5.80	0.203	2.875	4.64	0.160
Over 8'0" to 10'0"	3.500	.758	0.216	3.500	5.71	0.160

Fabric Height	Type I Round			Type II Round		
	OD (in)	Weight (lbs/ft)	Wall Thk. (in)	OD (in)	Weight (lbs/ft)	Wall Thk. (in)
Over 10'0" to 12'0"	4.000	9.12	0.226	4.000	6.57	0.160
Over 12'0" to 14'0"	4.500	10.80	0.237	4.500	10.07	0.220
Over 14'0"	Submit strength calculations from manufacturer.					

2. Line Posts

Fabric Height	Type I Round			Type II Round		
	OD (in)	Weight (lbs/ft)	Wall Thk. (in)	OD (in)	Weight (lbs/ft)	Wall Thk. (in)
6'0" or less	2.000	2.72	0.145	2.000	2.28	0.120
Over 6'0" to 8'0"	2.375	3.65	0.154	2.375	3.12	0.130
Over 8'0" to 10'0"	2.875	5.80	0.203	2.875	4.64	0.160
Over 10'0" to 12'0"	3.500	7.58	0.216	3.500	5.71	0.160
Over 12'0" to 14'0"	4.000	9.12	0.226	4.000	6.57	0.160
Over 14'0"	Submit strength calculations from manufacturer.					

3. Swing Gate Posts

	Gate Leaf Single-Swing			
	6' or Less	6' to 12'	12' to 19'	19' to 23'
Outside Diameter (inches)	2.875	4.00	6.625	8.625
Weight (pounds per foot)	5.79	9.11	18.97	28.55

4. Cantilever Slide Gate Posts

	Gate Opening	
	Less Than 31'	31' and Over
Number of Posts	1 Pair (2)	2 Pair (4)
Outside Diameter (inches)	4.00	4.00
Weight (pounds per foot)	9.11	9.11

E. Miscellaneous Fittings and Hardware

1. General: ASTM F626; provide items to complete fence system.
 - a. Provide items to complete fence system.
 - b. Match fittings and hardware to materials of construction for posts and fabric.

- c. Match coatings for items to fence system specified.
- 2. Post Tops and Caps: ASTM F626.
 - a. Provide one weathertight cap for each post closure post.
 - b. When top rail is specified, provide line post loop tops to secure top rail.
- 3. Top Rail and Brace Rail Ends: ASTM F626 suitable for connection to terminal post.
- 4. Top Rail Sleeves: Provide 7-inch steel expansion sleeve per ASTM F626 with spring to allow for expansion and contraction.
- 5. Tension Wire
 - a. Steel: ASTM A824, Type II, zinc-coated (galvanized) steel wire, 7-gauge, 0.177-inch-diameter wire having a minimum breaking strength of 8670 N. Class 4, 75,000 psi.
 - b. Polymer-Coated Steel Tension Wire: ASTM F1664, core wire gauge 7 (0.177 inch). Match coating class and color to chain-link fabric.
- 6. Tension/Stretcher Bars and Stretcher Bar Bands
 - a. Bars: ASTM F626, steel, one-piece, $\frac{3}{16}$ -inch by $\frac{3}{4}$ -inch minimum, full height of fabric minus 2 inches. Provide tension (stretcher) bars where chain-link fabric is secured to terminal post.
 - b. Bands: Steel, suitable to connect to post.
- 7. Truss Rods: ASTM F626, steel rods, $\frac{5}{16}$ -inch-diameter with pressed steel tightener.
- 8. Polymer Coated Color Fittings: ASTM F626, polymer coating 0.006-inch minimum, fused and adhered. Match material and color to fence system.
- 9. Wire Ties and Hog Rings: ASTM F626.
 - a. Wire: 9-gauge steel wire.
 - b. Hog Rings: 9-gauge aluminum alloy.
 - c. Coating: Match coating, class, and color to chain-link fabric.
- 10. Barbed Wire Arms:
 - a. Steel or malleable iron having sufficient strength to withstand a weight of 250 lbs. applied at the outer strand of barbed wire.
 - b. Installed at a 45 degree angle to the ground with 3 strands of barbed wire per side of V-arm.
- 11. Barbed Wire:
 - a. Two twisted strands of 12-1/2 gage line wire .
 - b. 14 gage aluminum barbs, not more than 5" apart.

F. Swing Gates

1. Standard: ASTM F900, one-piece unit.
2. Material: Zinc-coated steel (ASTM F1043 or ASTM F1083). Match fence post material.
3. Framework: 1.9-inch outside diameter pipe or 2-inch by 2-inch tubing, minimum. Design structurally to support weight of gate without warping or sagging. Polymer-coated gate frames and gateposts; match the coating type and color to that specified for the fence framework.
4. Bracing: Provide internal bracing for rigidity. Use same material as frame. Join frame by continuous welding. Welded joints protected by applying zinc-rich paint in accordance with ASTM Practice A780.
5. Fabric: Match height and type as fence. Install fabric with hook bolts and tension bars at four sides at not more than 12 inches on center.
6. Posts: See Section 2.1.C for pipe type. See Section 2.1.E.3 for gate post sizes.
7. Latch: Double latch with drop rod, plunger, and gate stop, suitable for padlock.
8. Keeper: Steel, mechanical locking device.
9. Double Gates: Provide galvanized drop rod with center gate stop pipe or receiver to secure inactive leaf in the closed position. Provide galvanized pressed-steel locking latch, requiring one padlock for locking both gate leaves, accessible from either side.

G. Miscellaneous

1. Do not use gate frame as rotating hinge element.
2. Furnish gates complete with necessary fittings and hardware.
3. Provide non-lift-off-type hinges permitting 180-degree swing, capable of supporting gate leaf and allowing opening and closing without binding.
4. Moveable parts such as hinges, latches, keeper, and drop rods to be field-coated using liquid polymer touchup paint provided by manufacturer.
5. All gate hinge hardware shall be welded to fence post to prevent gates from shifting over time.

2.2 GATE OPERATION

- A. Chain-link swing gates shall be manually operated.

2.3 FENCE SYSTEM FOUNDATIONS

- A. Cement: American Portland, ASTM C150, Type I.

B. Aggregate

1. Fine Aggregate: Natural sand meeting ASTM C33.
2. Coarse Aggregate: Clean, crushed stone or gravel, ASTM C33, gradation No. 67.

- C. Water: Potable.
- D. Concrete Strength: 20.7 MPa at 28 days, minimum.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Verify areas to receive fencing are completed to final grades and elevations.
- B. Ensure property line and legal boundaries of work are clearly established.

3.2 PREPARATORY WORK

- A. Contact utility locator service to confirm location of existing utilities and rights-of-way.
- B. Prior to erection of fence, clear surface irregularities.
- C. Provide clearing and grading for fence alignment located through areas not cleared.
- D. Coordinate and obtain approval to remove growing and live trees in conflict with fence alignment.
- E. Coordinate with underground utility drawings of onsite utilities prior to fence post and guard post installation. Field verify underground utility locations where possible.
- F. Relocate fence alignment to clear conflicts as directed.

3.3 CHAIN-LINK FENCE AND GATE INSTALLATION

- A. General: Install chain-link fence in accordance with ASTM F567, manufacturer's recommendations, and approved shop drawings.
- B. Posts
 - 1. Post Distance
 - a. Line Posts: 10-foot maximum spacing. Provide line post equally spaced for each section of fence.
 - b. Brace Posts: 500-foot maximum spacing and at abrupt vertical changes in grade.
 - c. Alignment Deflection: Install brace or corner posts where fence line deflects 30 degrees or more.
 - 2. Post Hole Excavation
 - a. Depth:
 - 1) Corner, Brace, Terminal, and Gate Posts: 3.5 feet minimum.
 - 2) Line Posts: 3 feet minimum.
 - b. Hole Diameter: 10 inches minimum or 3 inches greater than outside diameter of pipe (whichever is greater).
 - 3. Plumb: Set post plumb, true to line and grade. Allow 10 inches clear between bottom of posthole and bottom of post.

4. Concrete Fill: Place concrete in continuous pour, tamped for consolidation, and crowned to shed water.
5. Concrete Cure: Allow concrete foundations to cure 48 hours before attaching fabric.
6. Diagonal Bracing: Install horizontal (middle) and diagonal bracing at corner, gate, terminal, brace posts, and abrupt vertical changes in grade.

C. Fence

1. Brace Rail and Truss Rod: Install horizontal pipe bracing at mid-height of fence on each side of terminal or intermediate brace posts. Attach with fittings. Install diagonal truss rods.
2. Top Tension Wire: Install by weaving through fabric and securing to fabric with hog ring or wire clip. Attach hog ring or wire clip to fabric at 24-inch intervals.
3. Bottom Tension Wire: Install by weaving through fabric and securing to fabric with hog ring or wire clip. Attach hog ring or wire clip to fabric at 24-inch intervals.
4. Brace Assemblies: Install so posts are plumb when diagonal rod is under proper tension.
5. Stretcher Bars: Thread through or clamp to fabric 4 inches on center, and secure to posts with metal bands spaced 16 inches on center.
6. Fabric: Leave approximately 2 inches between finish grade and bottom selvage. Pull fabric taut and tie to posts, rails, and tension wires. Install fabric on outside of fence and anchor to framework so that fabric remains in tension after pulling force is released.
7. Tie Wires: Use U-shaped wire, which conforms to diameter of pipe to which attached, clasp pipe and fabric firmly with ends twisted at least two full turns. Bend ends of wire to minimize hazard to person or clothing.

D. Electrical Grounding

1. Grounding of the fence is not the responsibility of the fence contractor and is not included in the fencing scope of work for this contract.
2. Coordinate work with grounding contractor for needed access to the work areas.

E. Low Area Crossings: Close areas when fence fabric crosses depression or ditch with galvanized T12 deformed rebar at 4 inches on center driven 3 feet into ground and tied to inside of fence fabric or as indicated on the drawings.

F. Gates:

1. Install gates plumb, level, and secure.
2. Attach hardware to prevent unauthorized removal. Install nuts and hardware bolts on side of fence opposite fabric side. Peen ends of bolts or score threads to prevent removal of nuts.
3. Provide full opening without interference.

4. Install ground-set items in concrete for anchorage as recommended by fence manufacturer.
5. Adjust hardware for smooth operation and lubricate.
6. Provide grounding bond strap between gate and fence.
7. Locks for gates are not provided and installed by this section. Hinges shall be welded to post per Section 2.1G.5.

G. Field Coating

1. Galvanized: Repair damaged coatings in shop or during field erection by recoating with hot-applied repair galvanizing compound applied per manufacturer's recommendation.
2. Polymer Application: Field-apply polymer coating provided by the fence coating system manufacturer to nuts and bolts, scratched or damaged areas, and moveable parts in accordance with manufacturer's recommendations.

END OF SECTION