AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
	1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0004	15 Feb 2002		

6. ISSUED BY CODE

District Engineer
U.S. Army Engineer District, Philadelphia
Wanamaker Building, 100 Penn Square East
Philadelphia, PA 19107-3390

7. ADMINISTERED BY *(If other than Item 6)* CODE

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE FACILITY CODE

(√)	
X	9A. AMENDMENT OF SOLICITATION NO. DACW61-02-R-0007
	9B. DATED *(SEE ITEM 11)* 03 Jan 2002
	10A. MODIFICATION OF CONTRACTS/ORDER NO.
	10B. DATED *(SEE ITEM 13)*

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers 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 0 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)*

ALTERATION OF THE LIFT BRIDGE, PHILADELPHIA NAVAL BUSINESS CENTER, PHILADELPHIA, PA

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.)*

THIS AMENDMENT DOES NOT EXTEND THE FEBRUARY 28, 2002 DATE FOR RECEIPT OF PROPOSALS.

See changes attached.

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)*	
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

SF 30 CONTINUATION SHEET

14. DESCRIPTION OF AMENDMENT:

a. TECHNICAL SPECIFICATIONS:

(1) Section 01270 – MEASUREMENT AND PAYMENT: - Please delete 01270-Pages 25 and 26 in their entirety and substitute the revised pages of the same number, annotated Amendment No. 0004, attached hereto.

(2) Section 01330 – SUBMITTAL PROCEDURES: - Please delete the Submittal Register Sheet for Section 15015 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(3) Section 01500 – TEMPORARY CONSTRUCTION FACILITIES: - Please delete 01500-Pages 4 to 7 in their entirety and substitute the revised pages of the same number, annotated Amendment No. 0004, attached hereto.

(4) Section 01780 – CLOSEOUT SUBMITTALS: - Please delete 01780-Page 3 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(5) Section 02457 – ROUND TIMBER PILES: - Please delete 02457-Page 2 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(6) Section 05120 – STRUCTURAL STEEL: - Please delete 05120-Page 5 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(7) Section 05500 – MISCELLANEOUS METAL: - Please delete 05500-Page 4 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(8) Section 06100 – ROUGH CARPENTRY: - Please delete 06100-Pages 3 to 5 in their entirety and substitute the revised pages of the same number, annotated Amendment No. 0004, attached hereto.

(9) Section 09900 – PAINTING, GENERAL: - Please delete 09900-Page 17 in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

(10) Section 15014 – OPERATING MACHINERY: - Please delete 15014-Pages 29 and 30 in their entirety and substitute the revised pages of the same number, annotated Amendment No. 0004, attached hereto.

(11) Section 15015 – WIRE ROPES AND SPAN BALANCING: - Please delete 15015-Pages 4, 5, 9, and 14 in their entirety and substitute the revised pages of the same number, annotated Amendment No. 0004, attached hereto.

(12) Section 16100 – BRIDGE CONTROL SYSTEM: - Please delete 16100-Page 27, in its entirety and substitute the revised page of the same number, annotated Amendment No. 0004, attached hereto.

b. CONTRACT DRAWINGS:

(1) Please delete Drawing Numbers S-015, S-084, S-085, S-086, S-091, M-015, and M-023 in their entirety and substitute the revised sheets, of the same Drawing Numbers, with a revision date of 30 January 2002, attached hereto.

(2) Please delete Drawing Numbers E-009, E-051, and E-053 in their entirety and substitute the revised sheets, of the same Drawing Numbers, with a revision date of 14 February 2002, attached hereto.

c. Please indicate receipt of this amendment on Standard Form 1442 (SOLICITATION, OFFER, AND AWARD) as Amendment No. 0004. Failure to acknowledge all amendments may be cause for rejection of the bid.

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1.5.62.2 Measurement (DELETED)

1.5.62.3 Unit of Measure (DELETED)

1.5.63 Item 63 Clean Soil Disposal Off-Site

1.5.63.1 Payment

Payment will be made for costs associated with the disposal of soil from approach excavation that is not suitable for use as backfill for this project. Contractor-furnished disposal area(s) away from Government Property at a regulated disposal site. The cost of all labor, material, and equipment necessary to perform the work is included in the unit price bid for this item.

1.5.63.2 Measurement

The total quantity of excavated material for which payment will be made will be the theoretical quantity between the ground surface as determined by a survey and the grade and slope of the theoretical cross sections indicated dependent upon soil analysis. No allowance will be made for overdepth excavation or for the removal of any material outside the required slope lines unless authorized.

1.5.63.3 Unit of Measure

Unit of measure: cubic yard.

1.5.64 Item 64 Asbestos Removal

1.5.64.1 Payment

Payment will be made for costs associated with operations necessary for collecting the asbestos material from the machinery rooms at the top of each tower, from the Operator House and the Electrical Room, from the abandoned steam line on the South Approach, and from the small existing building on the North Approach. The asbestos areas shall be separately contained and sealed to the outside except for an entrance/exit. The removed asbestos shall be collected and sealed for disposal. ***The portion of the abandoned steam line at the South Abutment to be cut and capped shall be removed under this payment item.*** The cost of all labor, material, and equipment necessary to perform the work is included in the lump sum price bid for this item.

1.5.64.2 Unit of Measure

Unit of measure: lump sum.

1.5.64.3 Partial Payment

a. Whenever the asbestos is completely removed from either Machinery House, 25% of the amount bid for this item will be paid.

b. Whenever the asbestos is completely removed from the Operator House and Electrical Room, 35% of the amount bid for this item will be paid.

c. Whenever the ***portion of the abandoned steam line containing asbestos is completely removed***, 5% of the amount bid for this item will be paid.

d. Whenever the asbestos is completely removed from the abandoned building, 10% of the amount bid for this item will be paid.

1.5.65 Item 65 Asbestos Waste Disposal

1.5.65.1 Payment

Payment will be made for costs associated with the disposal of the asbestos waste collected under other payment items. ***The cut steam line pipe at the South Abutment shall be disposed of with the asbestos waste.*** The cost of all labor, material, and equipment necessary to perform the work is included in the unit price bid for this item.

1.5.65.2 ***Unit of Measure***

Unit of measure: lump sum.

1.5.65.3 ***Partial Payment***

There will be no partial payments for this item. Payment will be made when asbestos disposal is completed.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

SUBMITTAL REGISTER
(ER 415 1-10)

CONTRACT NO.

TITLE AND LOCATION
Alter Lift Bridge at P Naval Business Cntr

CONTRACTOR

SPECIFICATION SECTION
15015

ACTIVITY NO a.	TRANS-MITTAL NO. b.	ITEM NO c.	SPECIFICATION PARAGRAPH NUMBER d.	DESCRIPTION OF ITEM SUBMITTED e.	TYPE OF SUBMITTAL: DATA f.	DRAWINGS g.	INSTRUCTIONS h.	SCHEDULES i.	STATEMENTS j.	REPORTS k.	CERTIFICATES l.	SAMPLES m.	RECORDS n.	O&M MANUALS o.	CLASSIFICATION: INFORMATION ONLY p.	CLASSIFICATION: GOVERNMENT APPROVED q.	REVIEWER r.	CONTRACTOR SCHEDULE DATES: SUBMIT s.	CONTRACTOR SCHEDULE DATES: APPROVAL NEEDED BY t.	CONTRACTOR SCHEDULE DATES: MATERIAL NEEDED BY u.	CONTRACTOR ACTION: CODE v.	CONTRACTOR ACTION: DATE w.	CONTRACTOR ACTION: SUBMIT TO GOVERN-MENT x.	GOVERNMENT ACTION: CODE y.	GOVERNMENT ACTION: DATE z.	REMARKS aa.
			1.3	Standard Items							X					X										
			1.3	Installation, Operation, Maintenance							X					X										
				and Lubrication Manuals																						
			1.3	Fabricated Items		X										X										
			1.3	Shop Drawings		X										X										
			1.3	Assembly and Erection Drawings		X										X										
			1.3	Approval Process		X										X										
			3.2	Lift Span Balancing	X											X										

Amendment No. 0004

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The Contractor shall construct a temporary 6 foot high chain link fence around trailers and materials. The fence shall include plastic strip inserts, colored green, so that visibility through the fence is obstructed. Fence posts may be driven, in lieu of concrete bases, where soil conditions permit. Trailers, materials, or equipment shall not be placed or stored outside the fenced area unless such trailers, materials, or equipment are assigned a separate and distinct storage area by the Contracting Officer away from the vicinity of the construction site but within the military boundaries. Trailers, equipment, or materials shall not be open to public view with the exception of those items which are in support of ongoing work on any given day. Materials shall not be stockpiled outside the fence in preparation for the next day's work. Mobile equipment, such as tractors, wheeled lifting equipment, cranes, trucks, and like equipment, shall be parked within the fenced area at the end of each work day.

1.6.3 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.6.4 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting Officer, require exterior painting or maintenance will not be allowed on the military property.

1.6.5 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.6.6 New Building **(DELETED)**

1.6.7 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

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1.7 GOVERNMENT FIELD OFFICE

1.7.1 Resident Engineer's Office

The Contractor shall provide the Government Resident Engineer with an office, approximately 1000 square feet in floor area, located where directed and providing space heat, electric light and power, and toilet facilities consisting of one lavatory and one water closet complete with connections to water and sewer mains. A mail slot in the door or a lockable mail box mounted on the surface of the door shall be provided. At completion of the project, the office shall remain the property of the Contractor and shall be removed from the site. Utilities shall be connected and disconnected in accordance with local codes and to the satisfaction of the Contracting Officer.

1.7.2 Trailer-Type Mobile Office

The Contractor may, at its option, furnish and maintain a trailer-type mobile office acceptable to the Contracting Officer and providing as a minimum the facilities specified above. The trailer shall be securely anchored to the ground at all four corners to guard against movement during high winds.

1.7.3 Office Equipment

The following office equipment shall be provided by the Contractor for the Government field office trailer:

a. Two decks having 60-inch by 30-inch top, with lockable drawers and two swivel chairs,

b. One 4-foot by 12-foot conference table with twelve chairs,

c. Two telephone sets, separate lines with different numbers, and one telephone answering machine, plus one fax telephone line and one computer telephone line,

d. Two letter-size, four-drawer, filing cabinets,

e. Shelf set, two shelves high, each measuring 12-inch deep by 3-feet long, one per desk,

f. Five waste baskets,

g. Electric water cooler,

h. Vertical filing plan rack for two sets of 28-inch by 40-inch plans each rack,

i. Copier, Konica Model 3290 desk top copier, or approved equal, including adequate supplies and service agreement,

j. Fax machine, Xerox Model N58, or approved equal, including adequate supplies and service agreement,

k. Two 30-inch by 60-inch tables,

l. One pull-down screen,

m. Two dry-erase boards, each at 30-inch x 42-inch,

n. One computer printer, Hewlett Packard (HP) LaserJet 5, or approved equal, including adequate supplies and service agreement,

o. Office supplies,

p. The latest model computer, 2 each, with the following components as a minimum:

1. Intel Pentium III,

2. Processor speed of 500 MHz minimum,

3. 64MB SDRAM minimum,

4. 7.5GB hard drive minimum,

5. 6X DVD-ROM drive,

6. 3-1/2" drive,

7. 17" color monitor,

8. Windows 2000.

1.8 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.9 TEMPORARY PROJECT SAFETY FENCING

As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be a high visibility orange colored, high density polyethylene grid or approved equal, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.10 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.11 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

-- End of Section --

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h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. Systems designed or enhanced by the Contractor, such as electrical controls and mechanical systems.

j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Circle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

All final as-built drawings shall be produced in AutoCad 2000. Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing

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Descriptions of all pile driving equipment to be employed in the work, prior to commencement of pile installations. This shall include details of the pile hammer, power plant, leads, cushion material, and helmet.

SD-04 Drawings

Timber Piles; GA.

Drawings, including shop and erection details, collars, and shoes as required, prior to commencing the work or ordering materials.

SD-18 Records

Pile Driving; GA.

A complete and accurate record of each driven pile within 3 days of completion of driving. The record shall indicate the pile location (as driven), diameter, driven length, embedded length, final elevations of tip and top, collars, shoes, locations, blows required for each foot of penetration throughout the entire length of the pile and for the final 6 inches of penetration, and the total driving time. The record shall also include the type and size of the hammer used, the rate of operation, and the type and dimensions of driving helmet and pile cushion used. Any unusual conditions encountered during pile installation shall be recorded and immediately reported to the Contracting Officer.

1.4 EXPERIENCE

The work shall be performed by a firm specializing in the specified foundation system and having experience installing the specified foundation system under similar subsurface conditions.

1.5 SUBSURFACE DATA

Subsurface soil data logs are shown on the drawings.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Pressure Treated Piles

Pressure treated piles shall be Douglas fir or Southern pine, clean-peeled, conforming to ASTM D 25. Piles shall be in one piece. Splices will not be permitted.

2.1.1.1 Marine Piling

Preservative treatment of piles exposed to seawater shall be in accordance with ASTM D 1760, Table ***5*** **(DELETED).**

2.1.2 Untreated Piles

Untreated piles will not be permitted

2.1.3 Pile Shoes

Pile shoes, where required as indicated on the drawings, shall be

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2.1.1 Carbon Grade Steel

Carbon grade steel shall conform to ASTM A 36/A 36M.

2.1.2 High-Strength Low-Alloy Steel

High-strength low-alloy steel shall conform to ASTM A 572/A 572M, Grade 50.

2.1.3 Corrosion-Resistant High-Strength Low-Alloy Steel

Corrosion-resistant steel shall conform to ASTM A 588/A 588M. Each clearance gauge sign shall be manufactured from one plate. This steel may be substituted for High Strength Low-Alloy at no additional cost to the Government.

2.1.4 Carbon and High-Strength Low-Alloy Steel

Carbon and high-strength low-alloy steel for main load carrying members for bridges shall conform to ASTM A 709/A 709M, of the various grades indicated on the drawings, and members requiring CVN testing, as indicated.

2.1.5 Structural Shapes for Use in Building Framing

Wide flange shapes in accordance with ASTM A 992/A 992M shall be used where indicated on the drawings. Other shapes of structural steel shall be in accordance with ASTM A 36/A 36M, which includes other ASTM Standards that are included with the general reference to ASTM A 36/A 36M.

2.2 HIGH STRENGTH BOLTS AND NUTS

High strength bolts shall conform to ASTM A 325, Type 1 with carbon steel nuts conforming to ASTM A 563, Grade DH. All high strength bolts, nuts and washers shall be galvanized by the mechanical method, in accordance with ASTM B 695.

2.3 CARBON STEEL BOLTS AND NUTS

Carbon steel bolts shall conform to ASTM A 307, Grade A with carbon steel nuts conforming to ASTM A 563, Grade A.

2.4 ANCHOR BOLTS

Anchor bolts shall conform to ***either ASTM A 307 or*** ASTM F 1554 of the grade indicated on the drawings. All anchor bolts, nuts, and washers shall be hot-dip galvanized in accordance with ***ASTM A 153***.

2.5 NUTS DIMENSIONAL STYLE

Carbon steel nuts shall be Heavy Hex style when used with ASTM A 307 bolts, ASTM A 325 bolts, or ASTM F 1554 anchor bolts. Exterior nut surfaces shall be free of factory-applied lubricant before field painting. Galvanized fasteners need not be prime painted. However, a "wash-coat" shall be applied if required by the paint manufacturer.

2.6 WASHERS

Plain washers shall conform to ASTM F 844. Hardened washers shall be used with all high strength bolts and shall conform to ASTM F 436. Load indicator washers conforming to ASTM F 959 may be used in addition to

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necessary bolts and other fastenings as indicated. Structural steel shall conform to ASTM A 36/A 36M. Stairs and accessories shall be galvanized. Gratings for treads and landings shall conform to NAAMM MBG 531. Grating treads shall have slip-resistant nosings.

2.4 FLOOR GRATINGS AND FRAMES

One inch open grid walkway grating as shown on the plans shall be carbon steel grating with 1" x 3/16" bearing bars at 1 3/16" on centers and rectangular cross bars at 4" on centers welded to the bearing bars at each intersection. Edges shall be banded with bars 1/4 inch less in height than bearing bars for grating sizes above 3/4 inch. Banding bars shall be flush with the top of bearing grating. Frames shall be of welded steel construction finished to match the grating. Floor gratings and frames shall be galvanized after fabrication. ***Grating shall be attached to the structural supports with galvanized saddle clips and self-tapping fasteners.***

2.5 FLOOR PLATES **(DELETED)**

2.6 BRIDGE GRID FLOORING

2.6.1 Materials

The steel grid bridge flooring shall meet the requirements for the construction of steel grid floors, as contained in the 16th edition of the AASHTO Standard Specifications for Highway Bridges, Division II, Chapter 12 and all subsequent Interim Specifications, except as modified herein.

All materials shall meet the requirements referred to below:

Steel Grid Bearing Bars, Supplemental Bars, Diagonal Bars, Cross Bars and Trim Bars (for the roadway grid flooring)	ASTM A 36/A 36M
Galvanizing	ASTM A 123 and ASTM A 153
Galvanizing Repair	ASTM A 780

2.6.2 Fabrication

The steel grid shall be fabricated in units that are the width of the various portions of the bridge deck, as indicated on the drawings. The length of the grid unit in the longitudinal direction of the bridge shall be as shown on the drawings or at the convenience of the grid manufacturer, as approved by the Contracting Officer. The grid units shall be fabricated to conform to the roadway surface indicated on the contract drawings.

The entire assembly for each welded grid section for the various widths of the bridge deck shall be securely welded at all intersections of steel grid bearing bars, supplemental bars, diagonal bars and cross bars. A puddle-type of weld shall be used to deposit weld filler metal at each intersection of grid bards. The weld metal shall fasten the bars to the adjacent bars. The grid will be visually inspected and any loose bars shall be rewelded at the Contractor's expense.

All shop welding and assembly shall be completed prior to galvanizing.

The bearing bars and supplemental bars shall be intersected at right angles

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Lumber and material sizes shall conform to requirements of the rules or standards under which produced. Unless otherwise specified, lumber shall be surfaced on four sides. Unless otherwise specified, sizes indicated are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced.

2.1.3 Treatment

Exposed areas of treated wood that are cut or drilled after treatment shall receive a field treatment in accordance with AWPA M4. Except as specified for all-heart material of the previously mentioned species, the following items shall be treated:

a. Wood members in contact with or within 18 inches of soil.

b. Wood members in contact with water.

c. Wood members exposed to the weather .

d. Wood members in contact with concrete that is in contact with soil or water or that is exposed to weather.

2.1.3.1 Lumber and Timbers

Lumber and timbers shall be treated in accordance with AWPA C2 with waterborne preservatives listed in AWPA P5 to a retention level as follows:

a. 0.25 pcf intended for above ground use.

b. 0.40 pcf intended for ground contact **(DELETED)**.

c. 2.50 pcf intended for channel water exposure.

2.1.4 Moisture Content

At the time lumber and other materials are delivered and when installed in the work their moisture content shall be as follows:

a. Treated and untreated Lumber: 4 inches or less, nominal thickness, 19 percent maximum. 5 inches or more, nominal thickness, 23 percent maximum in a 3 inch perimeter of the timber cross section.

b. Materials Other Than Lumber: In accordance with standard under which product is produced.

2.1.5 Structural Wood Members

Species and grades shall be as listed in AF&PA T01. Structural lumber used in fabrication structural members for engineered uses, shall have allowable design values of 1500 psi in bending; 1000 psi in tension parallel to the grain; 350 psi in compression perpendicular to the grain; 900 psi in compression parallel to the grain; 200 psi in horizontal shear; and a modulus of elasticity of 1,500,000 psi. Design of members and fastenings shall conform to AITC TC Manual. Other stress graded or dimensioned items such as blocking, carriages, and studs shall be standard or No. 2 grade.

2.2 ACCESSORIES AND NAILS

Markings shall identify both the strength grade and the manufacturer. Accessories and nails shall conform to the following:

2.2.1 Anchor Bolts

ASTM A 307, size as indicated, complete with nuts and washers.

2.2.2 Bolts: Lag, Toggle, and Miscellaneous Bolts and Screws

Type, size, and finish best suited for intended use. Finish options include zinc compounds.

2.2.3 Nails

ASTM F 547, size and type best suited for purpose. In general, 8-penny or larger nails shall be used for nailing through 1 inch thick lumber 2 inch thick lumber; 16-penny or larger nails shall be used for nailing through 2 inch thick lumber. Nails used with treated lumber shall be galvanized. Nailing shall be in accordance with the recommended nailing schedule contained in AF&PA T01. Where detailed nailing requirements are not specified, nail size and spacing shall be sufficient to develop an adequate strength for the connection. The connection's strength shall be verified against the nail capacity tables in AF&PA T01. Reasonable judgement backed by experience shall ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector shall be used.

2.2.4 Timber Connectors

Unless otherwise specified, timber connectors shall be in accordance with AITC TC Manual.

2.2.5 Galvanized Hardware

All hardware shall be galvanized in accordance with ASTM A 153.

2.2.6 Stainless Steel Hardware

Stainless steel bolts and nuts shall conform to ASTM A 193/A 193M and ASTM A 194/A 194M (Type 304), respectively.

PART 3 EXECUTION

3.1 INSTALLATION OF FRAMING

3.1.1 General

General framing shall be in accordance with AF&PA T11.Members shall be closely fitted, accurately set to required lines and levels, and rigidly secured in place.

3.1.2 Structural Members

Members shall be adequately braced before erection. Members shall be aligned and all connections completed before removal of bracing. Individually wrapped members shall be unwrapped only after adequate protection by a cover has been provided. Scratches and abrasions of factory-applied sealer shall be treated with two brush coats of the same sealer used at the factory.

3.1.3 Curved Fender Timbers

The end sections of each fender consist of long radius curves. The exterior line of walers shall be factory bent to fit the radius of the curved end sections. The vertical sheeting timbers do not require curvature.

3.2 INSTALLATION OF MISCELLANEOUS WOOD MEMBERS

3.2.1 Bridging

Wood bridging shall have ends accurately bevel-cut to afford firm contact and shall be nailed at each end with two nails. Metal bridging shall be installed as recommended by the manufacturer. The lower ends of bridging shall be driven up tight and secured after subflooring or roof sheathing has been laid and partition framing installed.

3.2.2 Corner Bracing

Corner bracing shall be installed when required by type of sheathing used or when siding, other than panel siding, is applied directly to studs. Corner bracing shall be let into the exterior surfaces of the studs at an angle of approximately 45 degrees, shall extend completely over wall plates, and shall be secured at each bearing with two nails.

3.2.3 Blocking

Blocking shall be provided as necessary for application of sheathing and other materials or building items. Blocking shall be cut to fit between framing members and rigidly nailed thereto.

3.2.4 Nailers and Nailing Strips

Nailers shall be provided as necessary for the attachment of finish materials. Stacked nailers shall be assembled with spikes or nails spaced not more than 18 inches on center and staggered. Beginning and ending nails shall not be more than 6 inches for nailer end. Ends of stacked nailers shall be offset approximately 12 inches in long runs and alternated at corners. Anchors shall extend through the entire thickness of the nailer. Strips shall be run in lengths as long as practicable, butt jointed, cut into wood framing members when necessary, and rigidly secured in place.

3.2.5 Framing for Buildings

The Operator House and Electrical Room and interior of the Machinery Houses shall be framed with standard grade interior framing lumber. No treatment is necessary.

3.3 INSTALLATION OF TIMBER CONNECTORS

Installation of timber connectors shall conform to applicable requirements of AF&PA T01.

-- End of Section --

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EXTERIOR PAINTING SCHEDULE

Surface	First Coat	Second Coat	Third Coat
Wood	CID A-A-2336A	Tie Coat and/or SSPC Paint 22	SSPC Paint 36
Ferrous metal			
New structural steel	SSPC Paint 20 Type I	SSPC Paint 22	SSPC Paint 36
Existing structural steel	SSPC Paint 20 Type II	SSPC Paint 22	SSPC Paint 36
Machinery	***SSPC Paint 20 Type I***	SSPC Paint 22	SSPC Paint 36
Clearance gauge	SSPC Paint 20 Type I	SSPC Paint 22	SSPC Paint 36
Galvanized metal			
Doors	galvanized prep coat	SSPC Paint 22	SSPC Paint 36

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openings/closings.

3.4 PAINTING

Cleaning and painting of machinery surfaces **(DELETED)** shall be included on the shop drawings. Factory painted machinery items shall be **(DELETED)** cleaned and repainted with the designated paint system for movable and stationary components. ***Refer to Section 09900 PAINTING, GENERAL for painting materials and requirements for the three-coat paint system.***

Before application of paint in the shop, surfaces which require painting shall be cleaned of all chips, burrs, dirt, rust scale, sand, grease, and other extraneous materials by employing methods such as chipping, grinding, wire brushing, solvents, compressed air, and sandblasting. Existing machinery components that are salvaged for reuse are assumed to have lead paint. Refer to Section 13281, LEAD HAZARD CONTROL ACTIVITIES, for the procedures to be followed for containment, cleaning, collection, and disposal of removed paint waste. Contact surfaces for other machinery components and wire ropes shall be protected from damage during cleaning operations.

After cleaning, surfaces requiring paint shall be painted with the prime coat and the bearing or sliding surfaces will be coated with protective lubricants as required above and approved by the Engineer. Nameplates shall be clean and free of paint.

Machinery surfaces shall be given one prime coat in the shop, **(DELETED)** one intermediate coat after machinery and equipment have been installed and a final high gloss finish coat after completion of operating tests. Color for the final coat will be Federal Safety Orange ANSI Z 53.1 for all moving parts including shafts, couplings, sides of pinion and rack, gears, and brake wheels. Bearing and lubricated surfaces shall not be painted. Color for the final coat of stationary parts shall conform to Fed. Std. 595B #24449.

After the machinery items have been installed in final position on the bridge, all surfaces which require paint shall be cleaned of grease, oil, and loose materials by the use of solvents and compressed air, and all damaged shop prime coated surfaces shall be touched up with the same paint coating. The Contractor shall take special care to avoid painting of machinery bearing and sliding surfaces and to mask and protect from paint all nameplates, legend plates, and escutcheons mounted on machinery.

After completion of the operating tests and acceptance of the machinery, all oil, grease, dirt, and other foreign matter shall again be cleaned from exposed machinery surfaces. The exposed surfaces shall then be given a ***final*** coat, which shall color-code the machinery to identify fixed and moving parts as indicated above.

Paint for the final field coat shall be brush applied and shall be compatible with the previous coat and shall be a high-gloss machinery enamel, resistant to weathering and abrasion, conforming to the requirements of the Safety Color Code for Marking Physical Hazards, ANSI Z 53.1. **(DELETED)** The brand and colors shall be submitted to the Engineer for approval. The Contractor shall place a cautionary sign in the Operator's House and at the entrance to the machinery area of each tower which shall explain the color code. Details of the sign including text, dimensions, mounting locations, and materials shall be submitted to the Engineer for approval.

3.5 LUBRICATION

During installation, the Contractor shall lubricate all rotating and sliding parts of the machinery, and fill all gear reducers, pillow block housings and flexible couplings with lubricants indicated on the approved charts. All lubricants that will be listed on the lubrication charts shall be approved for use in each proprietary unit by the manufacturer thereof. The Contractor shall furnish an additional supply for future maintenance use to include 25 pounds of each type of grease and 15 gallons of each type of oil.

After erection is complete, the Contractor shall make a thorough inspection to ensure that all gears are clean and free of obstruction, that all parts are aligned as closely as practicable without actual operation, and that all bolts are properly tightened. All gear housings shall be filled to the proper level, and all rotating and sliding parts shall be supplied with lubricants.

3.6 CONTRACTOR SUPERVISED LIFT SPAN OPERATION AND TRAINING

Provide a minimum of two men to supervise the operation of the bridge for a period of 14 calendar days (24 hours a day) after the lift span is completely operable; and for an additional 14-day period (24 hours a day), provide one man. These men shall be able to operate the bridge, to supervise its operation, and to make any adjustments or corrections that may be required in the mechanical or electrical equipment of the bridge. They shall instruct and qualify the employees of the City of Philadelphia in the operation and maintenance of the bridge. Any adjustments or corrections required during the two 14-day periods shall be at no additional cost.

detailed thereon, and each drawing shall be identified by the complete project name and number. Shop drawings shall include the following information:

(1) Reference to the standard material specifications for each item.

(2) The surface finish of machined surfaces and tolerances for each dimension for which a specific fit is required. A general tolerance block shall be used to define the tolerances of all other dimensions. Fits and finishes shall be as defined in paragraph 6.5.1 of AREMA Manual for Railway Engineering, Chapter 15, Part 6, or as specified by the manufacturer, whichever is more rigorous.

(3) Quantity required. Note that quantities shall be for the entire bridge.

(4) Heat treatment or specific hardness requirements where applicable.

(5) All proprietary items shall be shown in outline on shop drawings which shall also indicate the method and sequence to be employed in assembly of bridge machinery and installation of necessary utilities support and service facilities. Shop drawings shall show all external dimensions and clearances necessary for installation and operation of each item of machinery in the bridge. For all items listed or described in this section, the Contractor shall furnish complete assembly diagrams showing each part contained within the item and the manufacturer's part number assigned to each part. The diagrams shall be sufficient to enable complete disassembly and reassembly of the item covered. In the event that any part is modified in any manner from the way it is described or delivered by its original manufacturer, the Contractor shall deliver a drawing which details each modification and the part shall be assigned a unique part number to preclude the supply of replacement parts not modified in similar fashion. The assembly drawings of each item shall, in addition to identifying and describing each internal part, contain:

(a) dimensions of all principal elements within the item;

(b) certified external dimensions affecting interfaces or installations;

(c) gross weight;

d) capacity and normal operating ratings;

(e) details of all turned bolts used to mount the machinery to its supports.

(6) Machinery Data. The Contractor shall furnish complete data on the design and construction of any unit furnished as part of the machinery under this Contract, including material specifications, cross-section assembly drawings, detail drawings, and dimensions of principal elements.

(7) Shop Bills of Materials. Complete shop bills of materials shall be included for all machinery parts. If the bills are not shown on the shop drawings, prints of the bills shall be furnished for approval in the same manner as specified for the drawings. The computed weight of each piece of machinery shall be stated on the shop drawing upon which

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it is detailed.

Assembly and Erection Drawings;GA.

Complete assembly and erection drawings shall be furnished. These drawings shall give identifying marks and essential dimensions for locating each part of assembled unit with respect to the bridge or foundation.

Approval Process;GA.

Shop drawings which have not been approved or require correction shall be resubmitted until such time as they are acceptable to the Engineer, and such procedure shall not be considered a cause for delay. The Contractor shall bear all costs or damages which may result from the ordering or fabrication of any materials prior to the acceptance of the shop drawings. As a means of expediting delivery prior to acceptance of the shop drawings, the Contractor may request in writing from the Engineer approval to order raw materials of the correct type for later fabrication from accepted shop drawings. Such approval by the Engineer shall be in writing. After acceptance of the shop drawings, the Contractor shall supply the Engineer with additional copies of the accepted drawings as may be required.

SD-01 Data

Lift Span Balancing; GA.

Initial and final balance procedures and calculations.

1.4 QUALITY CONTROL

1.4.1 Source Quality Control

1.4.1.1 Inspection and Testing

Materials and fabrication procedures are subject to inspection and testing in the mill, shop and field by the Engineer. Such inspections and tests will not relieve the Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.

1.4.1.2 Verification of Dimensions

All details shown on the Contract Drawings are typical and apply to similar conditions unless otherwise indicated. All dimensions and details shall be verified at the site before proceeding with any work and to avoid causing subsequent delay in work.

The Engineer shall be notified immediately for clarification whenever any portion of work is not clearly or accurately defined.

1.4.1.3 Certified Test Reports

As used herein, certified test reports refer to reports of tests conducted on previously manufactured materials or equipment identical to that proposed for use.

1.4.1.4 Factory Tests

As used herein, factory tests refer to tests required to be performed on

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15, Part 6.

2.1.8 New Rope Sockets

New rope sockets shall be provided as indicated in the contract plans. Magnetic particle inspect and ultrasonic inspect each socket. Sockets shall be selected at random for testing, which shall be in accordance with the provisions of this specification, and in accordance with AREMA Manual Article 15.6.6.11. Assemble in accordance with provisions in AREMA Manual.

2.1.9 Existing Anchor and Splay Rope Castings.

Rope castings shall be tested for internal defects using the applicable examination method prescribed under Supplementary Requirements of ASTM A 781 Inspection of each rope casting is also covered below.

2.2 DETAILS AND WORKMANSHIP

2.2.1 Wire Ropes.

All wire ropes shall be made of Extra Improved Plow Steel and shall be 6 x 25 filler wire construction with polypropylene core. The wire ropes shall be preformed. Each strand shall consist of 19 main wires and 6 filler wires fabricated in one operation, with all wires interlocking. There shall be four sizes of wire in each strand, 12 outer wires of one size, 6 filler wires of one size, 6 inner wires of one size, and a core wire.

Wire rope shall be made by one manufacturer whose facilities and experience have been approved by the Engineer. Ropes shall be laid in accordance with the best practice. Every effort shall be made to obtain ropes of uniform physical properties. The ropes shall be fabricated in the greatest length practicable, and shall be cut from ropes manufactured with one setting of one stranding machine, and one setting of one closing machine. The wire ropes shall be manufactured by Paulsen Wire Rope, or approved alternate.

The actual diameter of the wire rope shall be defined as the diameter of the circumscribed circle. The actual diameter of the rope, measured with the rope under a tension equal to 12.5 percent of its ultimate tensile strength, shall not be less than its nominal diameter, and not more than 1/8" in excess of its nominal diameter.

a. Lay. All wire ropes shall be right regular lay. The maximum length of the rope lay shall not exceed 7-1/2 times the nominal rope diameter.

b. Lubrication During Fabrication. The polypropylene cores shall be pre-lubricated by the cordage manufacturer. All portions of the wire rope shall be lubricated during fabrication with a lubricant containing a rust inhibitor.

c. Splices. NO splicing of the ropes or individual strands will be permitted.

d. Wire- Physical Properties. The wire from which the wire ropes are to be made shall be tested in the presence of an inspector designated by the Engineer. Excepting that the filler wires may be made to the

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required, a new series of tests shall be performed on the span and the above process repeated until the balance condition is acceptable. All testing, data analysis, and weight adjustments shall be carefully documented and formally submitted. ***Testing shall include detailed written procedures for determining initial and final balance conditions. Data analysis shall include intermediate and final balance calculations.***

3.2.4 Adjustment

The Contractor shall make final adjustment of all elements of the spans to ensure that they function as described in the drawings and specifications. All adjustments shall be made at a time when temperature of the structure is uniform and the wind is calm. With all permanent items installed on the lift span, withdraw span locks in preparation to raise the bridge. Observe any discrepancies in elevation over the total bridge. Operate span sufficiently to determine how to place shims in order to eliminate discrepancy.

3.2.5 Final Balance

The final balance condition of the span shall be determined by the Engineer using the strain gage method. Strain gages shall be mounted on the floating shafts that are coupled to the pinion shafts. The gages shall be installed and wired to cancel the effects of bending and produce strain readings due purely to torsion. Prior to testing, all torque in the instrumented shafts shall be relieved to provide a true zero benchmark. Permanent recordings shall be made of the strain output versus height of span opening for a minimum of three complete opening and closing cycles for each of the instrumented shafts. Data analysis including existing balance condition of the span and required weight adjustments, if any, shall be provided within eight hours of running the tests. The Contractor shall be responsible for all labor and material necessary to produce acceptable balance as directed by the Engineer within four hours of receiving weight adjustment values and locations. If weight changes are required, a new series of tests shall be performed on the span and the above process repeated until the balance condition is acceptable. All testing, data analysis, and weight adjustments shall be carefully documented and formally submitted.

3.2.6 Tolerance

Acceptable tolerance on the balance condition during construction shall be defined as follows:

> ***Downward reaction at each corner lift span bearing shall be between 4000 and 12500 pounds with the span in the fully closed position.***

Acceptable tolerance on the ***final*** balance condition shall be defined as follows:

> Downward reaction at each corner lift span bearing shall be between 4750 and 5250 pounds with the span in the fully closed position.

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hardware to make up a complete system. The system shall operate on 120 volts AC. The system shall be a Gai-Tronics model 700 series or equal.

2.3.1.2 Indoor Wall Stations

Indoor wall stations shall consist of a handset with nonmoveable electronic hookswitch and noise cancelling microphone, a handset amplifier, and a speaker amplifier. All components shall be housed in a dust-tight, 16 gauge cold-rolled steel enclosure finished with textured polyurethane paint. Each unit shall be equipped with captive screws and provided with gaskets for extra protection against dust and moisture.

2.3.1.3 Speaker Amplifiers

Speakers amplifiers shall consist of a handset amplifier, and a speaker amplifier. All components shall be housed in a dust-tight, 16 gauge cold-rolled steel enclosure finished with textured polyurethane paint. Speaker amplifiers mounted outdoors shall be housed in a NEMA 4 cast aluminum box with gasketed aluminum cover plate and stainless steel screws.

2.3.1.4 Speakers

Indoor speakers shall be 8 ohm, 10 watt, capable of producing a sound level of 98 DB at 3 feet. Speaker shall be housed in a slope front baffle, walnut finish cabinet with built in volume control.

Outdoor speakers shall be direct radiating horn equipped with a built in driver. Horn shall be rated 8 ohm, and shall be capable of producing a sound level of 106 DB at 3 feet. Horn assembly shall be constructed of U.V. resistant, weatherproof, high-impact, glass-reinforced polyester. Horn shall be equipped with two integral ¾" conduit entries and terminal block for wire termination.

2.3.2 Fire Alarm System

The fire alarm system shall consist of a U.L. listed, ***5*** zone fire alarm control panel, compatible with two-wire ionization smoke detectors, photoelectric smoke detectors, and horn.

The control panel shall possess common alarm and trouble contacts, LED indication for trouble and alarm conditions for each zone and AC power and battery trouble LED indication. The unit shall be provided complete with battery charger, 6 AH gel cell battery, power supply/motherboard, two dual circuit class "B" zone initiating boards, and one single circuit class "B" indicating board. All components shall be housed in a heavy duty steel cabinet and shall operate on 120 volts AC.

Ionization smoke detectors shall be U.L. listed, 2-wire, having a dual chamber unipolar type ionization sensor with a normal sensitivity of 1.5% ft as measured in a U.L. listed smoke box. The detector shall be provided with a mounting bracket for direct surface mounting or shall be designed for mounting on a 4 inch octagon box. The detector shall be provided with an latching LED for visual indication. The detector shall be capable of withstanding wind velocities of up to 2500 feet per minute without alarming.

The fire alarm horn shall be U.L. listed, constructed of die cast zinc with red hammertone finish with alclad aircraft aluminum alloy diaphragm, and reed type horn. Horn shall operate at 24 volts DC and shall generate a sound level of 90 DBA at 10 feet. Unit shall be equipped with a type VALS

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