Request for Proposal
18MCO537 STEEL FOR VETERANS MEMORIAL
Date Required: Thursday August 23, 2018
Time Required: 9:30am Local Time

INTRODUCTION:
Midland County, hereafter called County, invites sealed proposals from interested qualified Vendors, hereinafter called Vendors, to provide a steel structure for a Veterans Memorial Site. The following pages provide general information about the requirements and specifications for the package.

This request for proposal ("RFP") is part of a competitive procurement process which provides qualified vendors with a fair opportunity for their commodities and services to be considered, and to provide information concerning their expertise and experience in providing similar services to other customers. The RFP process provides a competitive negotiation platform, wherein price or cost is not the sole determinative factor. This process, designed to best serve the interests of the County, allows the County the flexibility to negotiate with interested, qualified Vendors (following designation by the Commissioners Court, one at a time) to arrive at a mutually agreeable relationship.

QUESTIONS:
If further information is required, please contact the Midland County Purchasing Department. All requests for information must be submitted in writing. Responses to all questions received will be sent to each Firm known to have copies of the Request for Qualifications. Requests for information may be faxed to 432-688-4914 or e-mailed to pur103@co.midland.tx.us. All questions should be submitted on or before 5:00pm on Wednesday August 15, 2018. Questions received after said date and time will not receive a response. Answers and clarifications which are considered to materially change the solicitation will be issued as written addenda to the original RFP and will be posted to the Midland County website at www.co.midland.tx.us. Solution providers are responsible for ensuring all answers to questions are reviewed prior to bid submittal and that all issued added are properly acknowledged with their submitted proposal response. Midland County will not be responsible for any verbal exchange between the vendor and an employee of Midland County.
COPIES AND RECEIPT:
Please submit one (1) original, three (3) copies, and an electronic copy on USB drive of the proposal. An executed copy of the Proposal Affidavit SIGNED AND NOTARIZED (Page 7) must be included in each submission. Please note that if no Proposal Affidavit is included, the response will be rejected. Midland County is exempt from all state and federal taxes. Tax exempt certificates are available upon request. Midland County is exempt from all state and federal taxes. Tax exempt certificates are available upon request.

All statements should be submitted in a sealed envelope, marked on the outside,

18MCO537 STEEL FOR VETERANS MEMORIAL

________________________
Company Name

Responses must be received by 9:30am Local Time on Thursday August 23, 2018. Late proposals will be rejected and returned without being opened. The clock in the Purchasing Agent’s office is the official time piece for this submission. If interested, Vendors may use mail or express systems to deliver their proposal to the Purchasing Department; they should insure that they are tendered to the carrier in plenty of time to reach the Purchasing Department by the time and date required. Facsimile transmitted proposals shall not be accepted.

SUBMISSION LOCATION: All bids which are mailed, shipped, delivered, etc. should be addressed as follows:

Midland County Purchasing Department
Midland County Courthouse
Attention: Kristy Engeldahl, Purchasing Agent
500 N. Loraine Street, Suite 1101
Midland, Texas 79701

DOCUMENTATION SUBMISSION:
The respondent must submit all required documentation. Failure to provide requested information may result in rejection of the statement.

ALTERATION OF PROPOSAL:
A proposal may be altered, modified or amended by a Vendor at any time, prior to the time and date set forth above as the submission deadline. Alterations, modifications or amendments to a proposal must be made in the offices of the Purchasing Department. Any interlineations, alteration or erasure made on a proposal before the submission deadline must be initialed by the signer of the proposal, guaranteeing authenticity. A proposal may not be altered, modified or amended after the submission deadline.

WITHDRAWAL:
A proposal may not be withdrawn or canceled by the respondent for a period of sixty (60) days following the date designated for the receipt of proposals, and respondent so agrees upon submittal of their proposal.
CONFLICT OF INTEREST:
No public official shall have interest in this contract, in accordance with Vernon's Texas Codes annotated Local Government Code Title 5, Subtitle C, Chapter 171. Firm is required to sign affidavit form included in proposal documents.

SILENCE OF SPECIFICATIONS:
The apparent silence of these specifications as to any detail of the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practices are to prevail. All interpretations of these specifications shall be made on the basis of this statement.

CONFIDENTIALITY:
Contents of the proposals will remain confidential until the contract is awarded. At that time the contents will be made public under the Texas Public Information Act; except for any portion of a proposal which has been clearly marked as a trade secret or proprietary data (the entire proposal may not be so marked). Proposals will be opened, and the name of the firm submitting the proposal read aloud, acknowledged, at 9:35am on Thursday August 23, 2018, in the Purchasing Department Conference Room located in the Midland County Courthouse, Suite 1101. All respondents or other interested parties are invited to attend the opening.

Vendors are hereby notified that the Owner strictly adheres to all statutes, court decisions, and opinions of the Texas Attorney General with respect to disclosure of public information.

ADDITIONAL INFORMATION AND DEMONSTRATION, NEGOTIATIONS:
Prior to award, selected Vendors may be asked to provide further information concerning their proposal, up to and including presentations/demonstrations. The Midland County Commissioners Court reserves the right to reject any and all proposals or waive formalities as deemed in the best interests of Midland County. The County may also enter into discussions and revisions of proposals after submission and before award for the purpose of obtaining the best and final offer, and to accept the proposal deemed most advantageous to Midland County.

This request for proposal (RFP) is part of a competitive procurement process which is designed to best serve the interests of the County in obtaining complicated commodities and/or services. It also provides interested Vendors with a fair opportunity for their goods and services to be considered. The RFP process is designed to be a competitive negotiation platform, where price is not required to be the sole determinative factor. Also, the County has the flexibility to negotiate with interested vendors (one at a time) to arrive at a mutually agreeable relationship. Negotiations will be arranged with vendors in a hierarchal order, starting with the vendor selected as the primary. If a contract cannot be negotiated, negotiations will, formally and in writing, end with that Vendor and proceed to move to the second vendor, and so forth until a contract is negotiated.
RIGHTS OF THE CONTRACTING AUTHORITY:
Midland County reserves the right to withdraw this RFP at any time and for any reason. Midland County also has the right to terminate its selection process at any time and to reject all responses, or all proposals. Receipt of the proposal materials by Midland County or submission of a proposal to Midland County confers no rights upon the vendor nor obligates Midland County in any manner.

All costs associated with the preparation or submittal of proposals shall be borne by the vendor, and no cost shall be sustained by Midland County.

ORAL COMMITMENT:
Vendors should clearly understand that any verbal representations made or assumed to be made during any discussions held between representatives of a vendor and any Midland County personnel or official are not binding on Midland County.

WAIVER OF CLAIMS:
Submission of a proposal indicates Vendor’s acceptance of the evaluation technique and Vendor’s recognition that some subjective judgments must be made by the County during the determination of qualification.

SELECTION CRITERIA:
Price is a primary consideration, however, it is not the only consideration to be used in the selection. The product and/or service to be provided is also of major importance. Midland County will require that the successful vendor provide a representative for all County related business, service, billing, installation, activation and termination of said service.

ORDINANCES AND PERMITS:
The Vendor agrees, during the performance of the work, to comply with all applicable Federal, State, or local code and ordinances.

INVOICES:
Invoices are to be mailed to P.O. Box 421, Midland, Texas 79702 and should cite the applicable Purchase Order Number. Any and all notices or other communications required or permitted by any contract awarded as a result of this RFP shall be served on or given to Midland County, in writing, by personal delivery to the Purchasing Agent of Midland County, Texas, or by deposit with the United States Mail, postage prepaid, registered or certified mail, return receipt requested, addressed to the Midland County Purchasing Agent 500 N. Loraine Suite 1101 Midland, TX 79701, or at such other address as may have been specified by written notice to Vendor.

INSURANCE:
The awarded Vendor will maintain such insurance as will protect the Vendor and the County from claims under the Workers' Compensation Acts, and any amendments thereof, and from any other claims for damages from personal injury, including death, which may arise from operations under this agreement, whether such operations be by themselves or by any sub-
contractor, or anyone directly or indirectly employed by either of them. Current Certificate of such insurance shall be furnished to Midland County and shall show all applicable coverage(s).

Other insurance requirements are:
- General Liability with a $1,000,000 per occurrence limit and $2,000,000 general aggregate. Coverage will not exclude work performed by subcontractors.
- Commercial Automobile Liability with a limit of no less than $1,000,000. The coverage will also extend liability to hired and non-owned autos.
- Workers’ Compensation with limit of $1,000,000 for Employers Liability.
- We also require a minimum umbrella (or follow form excess policy covering over general liability, auto liability and workers compensation) of no less than $2,000,000.

Midland County will require the selected Vendor to name Midland County as an additional for both the general liability and auto liability. A waiver of subrogation in favor of the County is required for the workers compensation. If the additional insured status or waiver of subrogation is not blanket, please send a copy of the actual endorsements prior to commencement of any work.

Midland County will require the selected Vendor to name Midland County as an additional named insured and provide a waiver of subrogation prior to making a contract.

INDEMNIFICATION:
The Vendor shall defend, indemnify and save whole and harmless the County and all its officers, agents and employees from and against any and all demands, claims, suits, or causes of action of any character, name, kind or description brought for, or on account of, arising out of or in connection with the Vendor’s performance or non-performance of any obligation of Vendor or any negligent act, misconduct or omission of the Vendor in the performance of its contractual obligations. The Vendor shall defend, indemnify, save, and hold harmless the County and its officers, agents, representatives and employees from and against any and all demands, claims, suits, or causes of action of any character, name, kind or description brought for, on account of, arising out of or in connection with Vendor's product or service.

STATUS OF INDEPENDENT CONTRACTOR:
Vendor shall be considered an independent contractor, for all purposes. Vendor will not at any time, directly or indirectly, act as an agent, servant, representative or employee of the County. Vendor will not take any action which is intended to create any commitments, duties, liabilities or obligations on behalf of the County, without prior written consent of the County.

PARTIAL INVALIDITY:
In the event any one or more of the provisions contained in this RFP or any contract resulting therefore, for any reason, be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision of this RFP or any contract resulting therefore and this RFP or the contract resulting therefore shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.
CONTRACT TERMINATION:
Non-performance of the Vendor/Contractor in terms of specifications or noncompliance with terms of this contract shall be basis for termination of the contract by the County. Termination in whole or in part, by the County may be made at its option and without prejudice to any other remedy to which it may be entitled at law or in equity, or elsewhere under this contract, by giving (60) sixty days written notice to the Contractor/Vendor with the understanding that all work being performed under this contract shall cease upon the date specified in such notice. The County shall not pay for work, equipment, services or supplies which are unsatisfactory. Contractor/Vendor may be given reasonable opportunity prior to termination to correct any deficiency. This, however, shall in no way be construed as negating the basis for termination for non-performance. The right to terminate the notice thereof is controlled by these proposal specifications and is not subject to being altered by contract.

LAW GOVERNING:
The parties under contract shall be subject to all Federal laws and regulations, and all rules and regulations of the State of Texas. The laws of the State of Texas shall govern the interpretation and application of the contract; regardless of where any disagreement over its terms should arise or any case of action arise.

REMEDIES:
The successful vendor and Midland County agree that both parties have all rights, duties, and remedies available as stated in the Uniform Commercial Code.

VENUE:
It is hereby agreed that the contract will be made in Midland, Midland County, Texas, and any dispute arising as a result of it shall be governed by the laws of the State of Texas for the purpose of any law suit, and the parties agree that such lawsuit shall be brought in Midland County, Texas.

FUNDING CONTINGENCY:
Any contract awarded pursuant to this RFP shall be contingent on sufficient funding and authority being made available in each fiscal period by the appropriate officials of Midland County. If sufficient funding or authority is not made available, the contract shall become null and void.

ASSIGNMENT:
The Contractor shall not sell, assign transfer or convey this contract in whole or in part, without the prior written consent of the County.

BUSINESS CHANGE DISCLOSURE:
The vendor shall immediately disclose any knowledge of a business change (i.e., name change, change in ownership, etc.) that will take place during the duration of this contract.
REQUIRED FORM
COMPANY AFFIDAVIT

The affiant, ___________________________ states with respect to this submission to County:

I (we) hereby certify that if the contract is awarded to our firm that no member or members of the governing body, elected official or officials, employee or employees of said County, or any person representing or purporting to represent the County, or any family member including spouse, parents, or children of said group, has received or has been promised, directly or indirectly, any financial benefit, by way of fee, commission, finder's fee or any other financial benefit on account of the act of awarding and/or executing a contract.

I hereby certify that I have full authority to bind the company and that I have personally reviewed the information contained in the RFP and this submission, and all attachments and appendices, and do hereby attest to the accuracy of all information contained in this submission, including all attachments and exhibits.

I acknowledge that any misrepresentation will result in immediate disqualification from any consideration in the submission process.

I further recognize that County reserves the right to make its award for any reason considered advantageous to the County. The company selected may be without respect to price or other factors.

Signature ___________________________ Date ___________________________

Name ___________________________ Phone ___________________________

Title ___________________________

Firm Name ___________________________

Type of business organization (corporation, LLC, partnership, proprietorship)

Address ___________________________

County, State, Zip ___________________________

Notary Seal Below
SPECIFICATION

PURPOSE:
It is Midland County’s intent to hire a vendor to provide, construct, and install a steel structure. The vendor will provide the labor, materials, equipment, services to install a steel framing structure.

SUBCONTRACTOR AND/OR SUPPLIER IDENTIFICATION:
Should the Bidder subcontract any work, the Bidder shall indicate below the name of each subcontractor and/or supplier the bidder will use in the performance of the contract. The Bidder shall specify the work to be performed by the subcontractor or the materials to be provided by the supplier. Any changes in subcontractor and/or supplier listed below shall require prior approval by the Purchasing Office.

SCOPE OF PROJECT:
The scope of this project is detailed in ATTACHMENT A, along with the drawings in ATTACHMENT B.

REFERENCES:
Please provide at least 2 references, preferably any local/state government clients that the company has provided granite needs.

EVALUATION PROCESS:
The County will award to the bidder that submits a bid which represents the “best value” to the County. The best value shall not be based solely upon price but the bid which receives the highest cumulative score for each of the evaluation factors delineated herein.
CRITERIA:

Introduction (Executive Summary): 1 page maximum

Tab 1 Previous Related Experience: (25 points, maximum)
  • Indicate experience with structural steel framing installation projects of same approximate size and type as the anticipated project.
  • Indicate whether Vendor has had contracts terminated prior to completion.

Tab 2 Identity and Location of Vendor: (5 points, maximum)
  • Indicate the exact legal name of Vendor, its type of legal organization, its State of organization, its mailing address, the office/business location of the Vendor from which the Project will be managed; and, address Vendor’s availability to the Project and the County.

Tab 3 Time: (20 points, maximum)
  • Indicate how long it will take to complete the project.

Tab 4 References: Include name, address, and phone number of contact (10 points, maximum)
  • Indicate (2 minimum) general references who can attest to the Vendor’s ability, and performance.

Tab 5 Cost: (40 points, maximum)
  • Cost of the overall project.
SECCTION 05 12 00

STRUCTURAL STEEL FRAMING

PART 1 – GENERAL

1.01 SCOPE

A. The work under this section includes labor, materials, equipment and services to provide structural steel framing installation as shown on the Drawings and specified herein.

B. Structural steel includes elements defined as “Structural Steel” by the AISC “Code of Standard Practice for Steel Buildings and Bridges” plus field installed shear stud connectors and dowel bar anchors. Included are the following topics:

1.02 RELATED WORK

A. Items furnished by this section but not installed:

1. Anchor rods
2. Anchor rod templates

1.03 REFERENCES (LATEST EDITIONS)

A. Referenced codes and standards shall be those currently adopted by the Building Code enforced by the jurisdiction in which the Project is located, as of the date of these Contract Documents. Where no Building Code is enforced, referenced codes and standards shall be the most current published by the respective code bodies, unless noted otherwise.

B. General Building Code

1. 2015 IBC
C. American Institute of Steel Construction (AISC)
   1. Specification for Structural Steel Buildings
   2. Code of Standard Practice for Steel Buildings and Bridges
   3. Manual of Steel Construction

D. Research Council on Structural Connections (RCSC)
   1. Specification for Structural Joints Using ASTM A325 or A490 Bolts

E. American Society for Testing and Materials (ASTM)
   1. ASTM standards as noted in short form throughout the specification text.

F. American Welding Society (AWS):
   1. AWS D1.1/D1.1M:2006 Structural Welding Code – Steel, except remove the following items from this reference:
      a. Section 7.5.5 in its entirety, including sub-sections, Table 7.2,
      b. Section 7.7.3, and other references to manual welding of shear stud connectors, headed concrete anchors, deformed bar concrete anchors and threaded base studs. Manual welding of these items is not permitted.
   2. AWS D1.3/D1.3M:2007 Structural Welding Code - Sheet Steel
   3. AWS A5.1/A5.1M:2006 Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding
   4. AWS A5.5/A5.5M:2006 Specification for Low-Alloy Steel Electrodes for Shielded Metal Arc Welding
   5. AWS A5.17/A5.17M-97 Specification for Carbon Steel Electrodes and Fluxes for Submerged Arc Welding

G. Steel Structures Painting Council (SSPC):
   1. SSPC-SP 1 Solvent Cleaning
   2. SSPC-SP 2 Hand Tool Cleaning
   3. SSCP-SP 3 Power Tool Cleaning
   4. SSPC-SP 6 Commercial Blast Cleaning
   5. SSPC-SP 10 Near-White Blast Cleaning

1.04 SUBMITTALS

A. Provide submittals in accordance with the requirements of Division 1.

B. Product Data: prepared for review and approval; include manufacturer’s data for each product where specific request is made in Part 2.

C. Shop Drawings: prepared for review and approval; include erection plans, setting diagrams, erection details showing work required for structural steel framing installation, type of steel, details of structural members including cuts, connections, camber, holes, and other modifications to base member. Indicate type, size and length of bolts, distinguishing between shop and field bolts, and identifying pre-tensioned (PT) and slip-critical (SC) bolts. Indicate welds with standard AWS symbols, distinguishing between shop and field welds, and identifying size, length and type of weld.
D. Test reports: prepared for review; include the result and evaluation of tests performed by a qualified testing agency on structural steel framing elements and on shear stud connectors and dowel bar anchors; applies to tests performed at the fabrication plant and at the jobsite.

E. Fabricator certifications: prepared for review; include documentation certifying that the structural steel fabricator meets the quality assurance requirements.

F. Erector certifications: prepared for review; include documentation certifying that the structural steel erector meets the quality assurance requirements.

G. Mill certifications of structural steel shapes: prepared for review when specifically requested by A/E; show heat number, chemical and mechanical properties and material test results of structural steel delivered to site.

H. Mill certifications of high strength bolts, nuts and washers: prepared for review when specifically requested by A/E; show chemical and mechanical properties, and bolt test results for fasteners delivered to site.

I. Welder Certifications: document that structural steel welders performing work on Project are currently certified for welds and welding positions utilized. Include welder and welding operator qualification test records, certifications.

1.05 QUALITY ASSURANCE

A. Comply with the applicable provisions of the specifications, standards and documents listed under References, except as modified by this specification.

B. Fabricator: Fabricator shall have a minimum of 5 years of continuous experience in the erection of similar structures.

C. Erector: Erector shall have a minimum of 5 years of continuous experience in the erection of similar structures.

D. Testing Agency: independent testing laboratory retained by the Owner and continuously engaged in testing similar that required for the Project for a period of not less than five years.

E. Welding: Qualify personnel and procedures according to AWS D1.1.

1.06 DELIVERY, STORAGE AND HANDLING

A. Handle materials to avoid bending, twisting or other damage resulting in permanent deformation.

B. Store materials to permit easy access for inspection and identification.

C. Store members off ground by placing on appropriate supports and spacers, adjusted to permit water to drain from parts. Protect members from rust, corrosion and deterioration.
D. Store fasteners in a protected place. Clean and re-lubricate bolts and nuts that become dirty or dry before use.

E. Do not store material on completed or partially completed structure in a manner that might overload, cause distortion, or damage material or supporting structure.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Rolled steel plates, shapes and bars, tubular steel and bolts shall be of domestic manufacture and be clean and free of rust and pitting.

B. W and WT shapes: ASTM A36/A36M-05 ksi)

C. Channels: ASTM A36/A36M-05

D. Angles: ASTM A36/A36M-05

E. HSS square and rectangular shapes: ASTM A500-03a Grade B

F. HSS round shapes: ASTM A500-03a, Grade B.

G. Pipe: ASTM A53/A53M-06a, Type E or S, Grade B

H. Plates: ASTM A36/A36M-05

I. High Strength Bolts: ASTM A325-06, Type 1 or ASTM A490-06, Type 1, as detailed

J. Anchor Bolts: ASTM F1554-04, Grade 36, Thread Class 2A

K. Standard Washers: ASTM F436-04, Type 1

L. Plate Washers: ASTM A36/A36M-05

M. Nuts for High Strength Bolts: ASTM A563, Type 1, Grade DH

N. Nuts for Anchor Bolts: ASTM A563, Type 1, Grade A

O. Twist-Off Tension-control Bolt Assemblies: ASTM F1852-05, Type 1, or ASTM F2280-06, Type 1 as detailed.

P. Threaded Rods: ASTM A36/36M-05

Q. Welding Electrodes: E70XX

R. Shear Studs
   1. Headed fusion welded shear connectors with proper ferrules and accessories especially designed to create composite deck action by mating of shear connectors, concrete deck, and supporting beam.
2. Shall be manufactured from cold drawn bar stock conforming to ASTM A108-03e1, Grades 1010 through 1020. Finished connectors shall meet the requirements of AWS D1.1, Type B. Acceptable products - S3L Shear Connector as manufactured by TRW Nelson

3. Studs shall be of uniform diameter, heads concentric and normal to shaft, and weld end chamfered and solid flux.

S. Headed concrete anchors: manufactured from cold drawn bar stock conforming to ASTM A108-03e1, Grades 1010 through 1020. Finished connectors shall meet the requirements of AWS D1.1, Type A or Type B. Acceptable products - H4L Shear Connector as manufactured by TRW Nelson

T. Deformed bar concrete anchors: ASTM A496/496M-05. Acceptable products - D2L as manufactured by TRW Nelson

U. Primer paint:
   1. Acceptable products for interior exposure:
      a. Series 88HS, Gray, as manufactured by Tnemec Inc.
      b. Interlac 393, Gray, as manufactured by International Paint Company
      c. Equal approved rust-inhibitive primer
   2. Acceptable products for exterior exposure:
      a. Series 90-97 Tnemec-Zinc as manufactured by Tnemec Inc.
      b. Interzinc 52 Zinc-Rich Epoxy Primer, Gray, as manufactured by International Paint Company

V. Grout for structural steel: Non-shrink, non-metallic, pre-mixed, factory-packaged grout conforming to ASTM C1107/C1107M-07.

2.02 DESIGN CRITERIA

A. Unless noted otherwise, steel to steel framing shall be designed for shear only, and shall use standard framed beam connections (double clip angles) meeting the requirements of the AISC Manual of Steel Construction. Connections shall be symmetrical about the beam web.

B. Single plate shear tab connections meeting the requirements of the AISC Manual of Steel Construction may be substituted for standard framed beam connections (double clip angles) if and only if one of the following conditions are met:
   1. Connection is detailed as a single plate shear tab
   2. Connections of beams to one side of a girder are matched by similar connections at similar spacing on the opposite side of the same girder.

C. Provide a minimum of two 3/4 inch diameter A325 or A490 bolts per connection.

D. Connection shall be designed as field bolted unless specifically noted otherwise

2.03 FABRICATION

A. GENERAL
   1. Fabricate and assemble in shop to the greatest extent possible. Fabricate in accordance with AISC “Code of Standard Practice for Steel Buildings and Bridges”
2. Fabricate items of structural steel according to approved Shop Drawings. Fabrication from Shop Drawings not approved by the Engineer is at the sole risk of the Fabricator.
3. Camber structural steel where noted. Where no camber is noted, beams shall be fabricated so that natural camber is upward in the erected condition.
4. Perform thermal cutting by machine. For cut edges to be welded, comply with AWS D1.1.
5. Combinations of bolts and welds on the same faying surface in the same connection are not permitted unless otherwise detailed.
6. Accurately finish ends of columns and other members transmitting bearing loads.
7. Required straightening of built-up sections shall be performed to minimize residual stresses.
8. Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members as shown on Structural Drawings or approved by Engineer.
9. Complete structural-steel assemblies before starting shop painting operations.
10. Properly mark materials for field assembly.

B. WELDS
1. Comply with AWS D1.1 for welding procedures, tolerances, appearance and quality of welds, and for methods used in correcting welding work. Use only welders qualified in accordance with AWS D1.1 and possessing current valid welding certifications for the welds being performed.
2. Minimum fillet weld size shall be as specified by AISC for the thickness of the thinner part joined, but in no case less than 3/16 inch.
3. Perform welding to minimize residual stress and external distortion of welded assembly.
4. Provide backing bars and run-off tabs for full penetration welds. Remove backing bars and run-off tabs after completion of welds.

C. BOLTS
1. Provide drilled or punched holes perpendicular to surface for shop and field bolted connections. Oversize or slotted holes shall not be used for connections unless specifically noted.
2. Shop bolted connections shall use high strength bolts and nuts, and shall be installed “snug tight” as defined by RCSC unless noted otherwise. Washers are required where the outer face of the joint slopes greater than 1:20 with respect to the axis of the bolt, or where a slotted hole occurs in an outer ply.
3. Twist-off tension-control bolt assemblies shall be used for connections designated as pre-tensioned or slip-critical, and may be used for other connections. Unless connection is designated as pre-tensioned (PT) or slip-critical (SC), bolts shall be tightened only to “snug tight” condition as defined by RCSC, and spline shall not be removed from bolt assembly.

D. SHEAR CONNECTORS, HEADED/DEFORMED BAR CONCRETE ANCHORS AND THREADED BASE STUDS
1. Remove paint on surfaces to receive connectors/anchors/studs.
2. Install in accordance with manufacturers’ recommendations using automatically timed welding equipment as furnished by TRW, Nelson Division. Hand operated shielded metal arc welding is not permitted.
3. Adjust equipment on trial installations until sound anchorages are obtained.
minimum of two successive trial installations for each type of anchor used shall be successfully welded and tested by visual inspection and by bending approximately 30 degrees before beginning production. Record settings used during successful installation, including date and time of test and name of installer. Trials shall be conducted by each installer. Trial installations shall not be used for production.

4. If there is a change in the power source, gun lift and plunge settings, welding lead length, current settings or time settings in excess of 5%, equipment shall be re-adjusted by conducting new trials.

5. Ferrules shall be removed after installation to facilitate inspection.

2.04 FINISHES

A. GALVANIZING

1. Steel designated to be galvanized, except for structural bolts, washers and nuts, shall be hot dip galvanized after fabrication in accordance with ASTM A123/A123M-02.

2. Galvanizing for structural bolts, washers and nuts shall conform to the following:
   a. Bolts conforming to ASTM A325 and associated washers and nuts shall be hot dip galvanized in accordance with ASTM A153/A153M-05. Nuts shall be lubricated after galvanizing. Bolts, washers and nuts shall be considered a fastener assembly, shall be provided by a single supplier, and shall be shipped together in the same shipping container.
   b. Bolt assemblies conforming to ASTM F1852-05 shall be mechanically galvanized in accordance with ASTM B695-04. Nuts shall be lubricated after galvanizing.
   c. Bolts conforming to ASTM A490 and associated washers and nuts, and bolt assemblies conforming to ASTM F2280-06 shall not be galvanized.

3. Galvanize components indicated and components exposed to the exterior whether indicated or not. For the purposes of this paragraph, components providing direct support for exterior cladding shall be considered exposed to the exterior.


B. PAINTING

1. After inspection and before shipping, clean steel work to be painted to remove oil, grease and similar contaminants complying with SSPC-SP 1. Further cleaning shall be in accordance with paint manufacturer’s requirements, but in no case less than the following:
   a. For interior members not exposed to view use SSPC-SP 2 or SSPC-SP 3
   b. For interior members exposed to view use SSPC-S10
   c. For exterior members exposed to atmosphere, and for faying surfaces of members at connections designated as slip-critical (SC) use SSPC-SP 6 or SSPC-SP 10

2. Shop paint structural steel except:
   a. Embedded portion of member further than 2 inches from surface of concrete or mortar in which it is embedded.
   b. Surfaces of members to receive field applied shear studs, dowel bar anchors, or similar welded attachments.
   c. Contact surfaces which are to be field welded.
   d. Faying surfaces of members where a slip-critical connection is required.
3. Apply structural steel primer paint in accordance with manufacturer's instructions, but in no case at a rate less than that which provides a uniform dry film thickness of 2.0 mils to 3.5 mils for interior unexposed steel or 2.5 mils to 3.5 mils for interior exposed and exterior steel.
4. Use painting methods which result in coverage of joints, corners, edges and exposed surfaces. Stripe paint corners, crevices, bolts, welds, and sharp edges. Stripe paint shall set to touch before applying primer coat.

2.05 SOURCE QUALITY CONTROL

A. GENERAL
1. Owner will engage an independent testing and inspection agency to perform shop tests and inspections and prepare test reports.
2. Cooperate with inspection and testing personnel to provide access at point of fabrication.
3. Maintain schedule which permits required visual inspection and non-destructive tests to be performed in groups. Notify testing agency 48 hours prior to performing operations which require inspecting or testing prior to proceeding.
4. Testing agency shall specifically state in a report whether individual test specimens comply with or deviate from requirements of the Contract Documents.
5. Correct deficiencies that inspections and test reports indicate do not comply with the Contract Documents. Bear costs for repair or replacement of work that has been rejected for non-conformance with the Contract Documents, including the cost of additional testing or retesting.

B. WELDS
1. Verify that welders performing work on the project are qualified according to AWS D1.1 for the welds being performed.
2. Visually inspect fillet and partial penetration welds for appropriate size, length and location. Perform appropriate non-destructive testing in accordance with AWS D1.1 on welds which appear defective.
3. Perform one of the following inspection procedures on full penetration welds:
   a. Magnetic Particle Inspection: ASTM E709. Perform on root pass and on finished weld. Presence of cracks or zones of incomplete fusion or penetration shall be cause for rejection of weld.
   b. Ultrasonic Inspection: ASTM E164.
   c. Radiographic Inspection: ASTM E94.

C. BOLTS
1. Visually inspect [connection for proper number, size and type of bolt, and for proper installation of hardened and plate washers.
2. Verify presence of visible lubricant on threads of galvanized bolts.
3. For bolted connections, inspection shall be made in accordance with the “Specification for Structural Joints Using ASTM A325 or A490 Bolts”, paragraph 9.1. Where twist-off tension-control bolt assemblies are utilized in bolted connections not specifically identified as pre-tensioned (PT) or slip critical (SC), verify that splines have not been removed. If splines have been removed, bolts shall be removed, discarded, and replaced with properly tightened bolts.
4. For bolts identified as pre-tensioned (PT), inspection shall be made in accordance with the “Specification for Structural Joints Using ASTM A325 or A490 Bolts”, paragraphs 9.1 and 9.2.3. Additional inspection in accordance with paragraph 9.3 shall be made for bolts identified as slip critical (SC).

D. SHEAR CONNECTORS, HEADED/DEFORMED BAR CONCRETE ANCHORS AND THREADED BASE STUDS
   1. Verify pre-production test records for installation of shear connectors, concrete anchors and threaded studs.
   2. A visual inspection shall be made of shear connectors and headed/deformed bar concrete anchors after installation. If visual inspection of a connector/anchor reveals that a sound weld and a 360 degree flash has not been obtained, the connector/anchor shall also be tested by bending a minimum of 15 degrees off vertical opposite to the missing weld/flash. If the connector/anchor does not become loose it shall be considered acceptable and shall be left in this position. Replace failing connectors/anchors.
   3. A visual inspection shall be made of threaded studs after installation. If visual inspection of a threaded stud reveals that a sound weld and a 360 degree flash has not been obtained for the threaded stud, the threaded stud shall be removed and replaced.

PART 3 – EXECUTION

3.01 EXAMINATION
   A. Verify elevations of concrete and masonry bearing surfaces, and locations of anchor rods, bearing plates and other embedments.
   B. Do not proceed with installation until conditions not in conformance with the Contract Documents have been corrected.

3.02 PREPARATION
   A. Provide temporary guy lines to achieve and maintain proper alignment of structure as erection proceeds.
   B. Provide temporary shores, braces, and other supports during erection, including connections of sufficient strength to bear imposed loads. Temporary supports may be removed when permanent members and bracing are in place, and final connections have been made.
   C. These requirements do not relieve the Contractor of the responsibility for means, methods, techniques, sequences and procedures of construction, including but not limited to temporary supports, shoring, forming to support imposed loads and other similar items.

3.03 ERECTION
   A. GENERAL
      1. Set structural steel accurately in locations and to elevations indicated, and in accordance with AISC “Code of Standard Practice for Steel Buildings and
2. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly.
3. Align and adjust members before permanently fastening.
4. Do not grout beneath column base plates until columns bearing on the base plates have been set and plumbed.
5. Maintain erection tolerances of structural steel within the limits established by the AISC “Code of Standard Practice for Steel Buildings and Bridges”.
6. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
   a. Do not splice members except where shown or specified.
   b. Do not enlarge unfair holes in members by burning or by use of drift pins. Ream holes that must be enlarged to admit bolts.
   c. Do not use gas cutting torches in the field to correct fabrication errors in structural framing.

B. WELDS
1. Comply with AWS D1.1 for welding procedures, tolerances, appearance and quality of welds, and for methods used in correcting welding work. Use only welders qualified in accordance with AWS D1.1 and possessing current valid welding certifications for the welds being performed.
2. Utilize field welds only where shown. Field welds shall not be used to replace bolted connections in whole or in part.
3. Minimum fillet weld size shall be as specified by AISC for the thickness of the thinner part joined, but in no case less than 3/16 inch.
4. Perform welding to minimize residual stress and external distortion of welded assembly.
5. Provide backing bars and run-off tabs for full penetration field welds. Remove where noted on drawings or required for inspection.

C. BOLTS
1. Fill bolt holes in connection with high strength bolts of the appropriate size and type.
2. Field bolted connections shall use high strength bolts and nuts, and shall be installed snug tight as defined by RCSC unless noted otherwise. Washers are required where the outer face of the joint slopes greater than 1:20 with respect to the axis of the bolt, or where a slotted hole occurs in an outer ply.
3. Twist-off tension-control bolt assemblies shall be used for connections designated as pre-tensioned or slip-critical, and may be used for other connections. Unless connection is designated as pre-tensioned (PT) or slip-critical (SC), bolts shall be tightened only to “snug tight” condition as defined by RCSC, and spline shall not be removed from bolt assembly.

D. SHEAR CONNECTORS, HEADED/DEFORMED BAR CONCRETE ANCHORS
1. Remove any paint on surfaces to receive connectors/anchors/studs.
2. Install in accordance with manufacturers’ recommendations using automatically timed welding equipment as furnished by TRW, Nelson Division. Hand operated shielded metal arc welding is not permitted.
3. Adjust equipment on trial installations until sound anchorages are obtained. A minimum of two successive trial installations shall be successfully welded and
tested by visual inspection and by bending approximately 30 degrees before beginning production. Record settings used during successful installation, including date and time of test and name of installer. Trials shall be conducted by each installer. Trial installations shall not be used for production.

4. If there is a change in the power source, gun lift and plunge settings, welding lead length, current settings or time settings in excess of 5%, equipment shall be re-adjusted by installing new trial connectors/anchors/studs.

5. Welding shall not be performed when the steel temperature is below 0o F.

6. If moisture, corrosion, scale, rust, or other materials are present on metal decking that impairs the installation, the installing contractor shall clean the decking as specified by AWS D1.1.

7. Moisture from rain, snow or condensation trapped between the deck and steel beam shall be removed by use of a heating torch prior to installation.

8. Ferrules shall be kept dry. Ferrules that are obviously moist or that have been exposed to moisture from dew, rain or snow, shall be discarded, or shall be dried in an oven at 250o F for two hours prior to use.

9. Ferrules shall be removed after installation to facilitate inspection.

3.04 REPAIR / RESTORATION

A. Repair damaged galvanized coatings on galvanized items with zinc rich galvanized repair paint in accordance with ASTM A780-01 and manufacturer's written instructions.

B. Immediately after installation clean, prepare, and prime or re-prime field connections, rust spots, and abraded surfaces of structural steel.

1. Clean and prepare surfaces by hand-tool cleaning to SSPC-SP 2, or power-tool cleaning to SSPC-SP 3.

2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.

3. Apply finish paint over dry primer to match adjacent surfaces.

3.05 FIELD QUALITY CONTROL

A. GENERAL

1. Owner will engage an independent testing and inspection agency to perform field tests and inspections and prepare test reports.

2. Cooperate with inspection and testing personnel to provide access to site.

3. Maintain schedule which permits required visual inspection and non-destructive tests to be performed in groups. Notify testing agency 48 hours prior to performing operations which require inspecting or testing prior to proceeding.

4. Testing agency shall specifically state in a report whether individual test specimens comply with or deviate from requirements of the Contract Documents.

5. Correct deficiencies that inspections and test reports indicate do not comply with the Contract Documents. Bear costs for repair or replacement of work that has been rejected for non-conformance with the Contract Documents, including the cost of additional testing or retesting.

B. WELDS

1. Verify that welders performing work on the project are qualified according to AWS D1.1 for the welds being performed.

2. Visually inspect fillet and partial penetration welds for appropriate size, length and location. Perform appropriate non-destructive testing in accordance with
AWS D1.1 on welds which appear defective.

3. Perform one of the following inspection procedures on full penetration welds:
   a. Magnetic Particle Inspection: ASTM E709. Perform on root pass and on finished weld. Presence of cracks or zones of incomplete fusion or penetration shall be cause for rejection of weld.
   b. Ultrasonic Inspection: ASTM E164.
   c. Radiographic Inspection: ASTM E94.

C. BOLTS
1. Visually inspect connection for proper number, size and type of bolt, and for proper installation of hardened and plate washers.
2. Verify presence of visible lubricant on threads of galvanized bolts.
3. For bolted connections, inspection shall be made in accordance with the “Specification for Structural Joints Using ASTM A325 or A490 Bolts”, paragraph 9.1. Where twist-off tension-control bolt assemblies are utilized in bolted connections not specifically identified as pre-tensioned (PT) or slip critical (SC), verify that splines have not been removed. If splines have been removed, bolts shall be removed, discarded, and replaced with properly tightened bolts.
4. For bolts identified as pre-tensioned (PT), inspection shall be made in accordance with the “Specification for Structural Joints Using ASTM A325 or A490 Bolts”, paragraphs 9.1 & 9.2.3. Additional inspection in accordance with paragraph 9.3 shall be made for bolts identified as slip critical (SC).

D. SHEAR CONNECTORS, HEADED/DEFORMED BAR CONCRETE ANCHORS
1. Verify pre-production test records for installation of shear connectors, concrete anchors and threaded studs.
2. Shear connectors shall be struck with a hammer. Those not producing a “clean” pinging sound indicative of a fully attached shear connector shall be bent 15 degrees off vertical towards the nearest support by striking with a hammer. If shear connector does not become loose and weld is not broken, it shall be considered acceptable, and shall be left in the bent position. Replace failing shear connectors and test as before.
3. A visual inspection shall be made of shear connectors and headed/deformed bar concrete anchors after installation. If visual inspection reveals that a sound weld and a 360 degree flash has not been obtained, the connector/anchor shall also be tested by bending a minimum of 15 degrees off vertical opposite to the missing weld/flash, irrespective of the results of the “ping” test required for shear connectors. If the connector/anchor does not become loose it shall be considered acceptable and shall be left in this position. Replace failing connectors/anchors and inspect as before.
4. A visual inspection shall be made of threaded studs after installation. If visual inspection of a threaded stud reveals that a sound weld and a 360 degree flash has not been obtained for the threaded stud, the threaded stud shall be removed and replaced.

END OF SECTION 05 12 00