# SPECIFICATIONS AND CONTRACT DOCUMENTS

ALABAMA PORT AUTHORITY

**Doug Otto, Director & CEO**

**Kay Ivey, Governor of Alabama**

**ISSUED BY**

**Engineering Services Department**

# BID DOCUMENTS

## INDEX

# INVITATION TO BID

Sealed bid proposals will be received via courier to the Alabama Port Authority (APA), 1400 Alabama State Docks Blvd, Room 216, Administration Building, Mobile, AL 36602 by 1:30pm on Thursday, 5/21/26. Sealed bid proposals can also be hand delivered from 1:45pm to 2:00pm on Thursday, 5/21/26 to the Alabama Port Authority in the International Trade Center building, 250 North Water Street, 1st floor – Killian Room, Mobile, AL. Faxed or electronically submitted bids will not be accepted. ATTENDANCE TO THE BID OPENING IS NOT MANDATORY.

**Terminal Railway Operations Training Center Expansion**
**MOBILE, ALABAMA**

The work consists principally of providing bonds, labor, materials, equipment, and supervision necessary for the renovation of a 1,500 SF office at the Alabama Port Authority's Terminal Railway Operations Building in Mobile, Alabama. All areas of the APA Terminal Railway Operations Building are un-restricted access facilities.

For additional project contractual information, please contact the APA Project Manager, Matthew Thomas, PE at Matthew.Thomas@alports.com or 251-441-7242. For technical information, please contact the CMG Engineers, Inc. Project Manager, John Glover, at jglover@cmg-a.com. Please copy Matthew.Thomas@alports.com on all emails.

A **MANDATORY** Pre-Bid Meeting is scheduled for Wednesday, 5/6/26 at 8:00 am at the site: Terminal Railway Operations Building, 126 Industrial Canal Road, Mobile, Alabama, 36602.

All Contractors submitting bids are to carefully examine the site of the proposed work and thoroughly review the contract requirements prior to submission of a bid proposal. Each Bidder shall satisfy oneself as to the character, quality, and quantities of work to be performed, and as to the requirements of the proposed Contract. The submission of a proposal shall be proof that the bidding Contractor has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed Contract. All bidding Contractors must hold a current license from the State Licensing Board for General Contractors, Montgomery, Alabama with a classification being **BC-Building Construction or BCU4: Building Construction under Four Stories.**

The Alabama Port Authority **will utilize its sales tax exemption status on this project.**
The Contractor will be responsible for the purchase of all materials and will be required to apply for a sales and use tax certificate of exemption upon contract award.

Bids will be publicly opened at 2:00pm on Thursday, 5/21/26 at the Alabama Port Authority in the International Trade Center building, 250 North Water Street, 1st floor – Killian Room, Mobile, Alabama. The right is reserved, as the interest of the Alabama Port Authority may require, to reject any and all bids and to waive informalities in bids received.

A Guarantee will be required with each bid as follows: (5%) percent of the amount bid, but in no event more than Ten Thousand ($10,000) Dollars, shall be furnished in the form of a certified check or bid bond payable to the Alabama Port Authority. Performance and Payment bonds will be required at the signing of the contract in an amount not less than One Hundred (100%) percent of the contract price.

No bid will be considered unless the bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this work in accordance with all applicable laws of the State of Alabama. This shall include evidence of holding a current license as required from the State Licensing Board for General Contractors, Montgomery, Alabama. Also, non-residents of the State must show evidence of having qualified with the Secretary of State to do business in Alabama.

The Contractor shall comply with all Federal and State laws, local ordinances and regulations, and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. The Contractor will agree to comply with the safety rules, standards and regulations of the Federal Occupational Safety and Health Administration (OSHA) applicable to each of its operations, and to those established and recommended safety standards inherent in the industry.

The Contractor will be required to complete the work under the Contract within 300 calendar days after receipt of a “Notice to Proceed”. Work will start and the Contractor will be required to furnish proof of purchase of materials within 10 calendar days after receipt of notice to proceed. Insofar as practical, the order of work will be as scheduled by the Contractor and approved by the APA Project Manager. The Contractor is required to submit a schedule detailing the sequence of work and time frame for Contractor’s activities within 10 calendar days of receipt of the Notice to Proceed. Contractor’s attention is directed to the fact that the facility’s cargo handling operation is a priority item, therefore, close coordination with Terminal Railway Operations and the project manager is required. All work shall be according to these specifications and all reference documents.

The Contractor shall place a competent superintendent on the Project who shall have experience in the work being performed under the Contract. The assigned superintendent shall have the responsibility for the day-to-day operations of the work and shall remain on the Project site while the work under the Contract is being performed. It is the responsibility of the Contractor to become familiar with all conditions affecting the nature and manner of the work.

Time is an essential element in the contract. As the prosecution of the work will inconvenience the tenant and interfere with business, it is important that the work be pressed vigorously to completion. Also, the cost to the Alabama State Port Authority of the administration of the contract, supervision, inspection and engineering will be increased as the time occupied in the work is lengthened. Therefore, exclusive of Sundays and national holidays, for each day that the work remains incomplete after the time specified, an amount of $500.00 shall be paid by the contractor to the Alabama State Port Authority as liquidated damages for the loss sustained by the State because of failure of the contractor to complete the work within the specified time.

Subsequent to the final acceptance of this project by the Engineer, the following requirements must be satisfied by the Contractor before final payment can be made.

a) The Contractor must execute copies of CONTRACTOR'S AFFIDAVIT OF PAYMENT OF CLAIMS AND DEBTS on the form furnished by the Engineer.
b) The Contractor must have their surety execute copies of CONSENT OF SURETY TO FINAL PAYMENT on the form furnished by the Engineer.
c) The Contractor must furnish a letter on their letterhead acknowledging that acceptance of final payment by the Contractor constitutes a waiver of all claims, present or future, in connection with this project.
d) The Contractor must furnish a written guarantee on their letterhead covering all defects in material and workmanship for a period of one (1) year commencing on the date of final acceptance.
e) If any purchased items have been incorporated in the work, the Contractor must furnish a letter on their letterhead assigning those warranties to the OWNER. Copies of said warranties shall be bound in one binder and submitted along with the letter assignment.

**IMPORTANT NOTICE TO CONTRACTORS REGARDING EMPLOYMENT PRACTICES:** Effective October 1, 2011, the Beason-Hammon Alabama Taxpayer and Citizen Protection Act ("the Act") requires that any business entity contracting with or providing any grant or incentives to the state, including the Alabama Port Authority, certify compliance with the Act. All Contractors must certify such compliance by executing the enclosed "Certificate of Compliance" and returning it to the Alabama Port Authority with your proposal. In addition, the company shall submit with their proposal evidence that the company is enrolled in the E-Verify system. The following E-Verify website link is provided for convenience: http://www.dhs.gov/files/programs/gc_1185221678150.shtm.

# INSTRUCTIONS TO BIDDERS

## 1.0 ADDENDA AND INTERPRETATIONS

All questions about the meaning or intent of the Contract Documents shall be submitted to the Engineer. Replies will be issued by Addenda emailed to all parties recorded as having received the bidding documents. All addenda so issued shall become part of the Contract Documents. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect. Deadline for submitting questions is 4pm on Thursday, 5/14/26.

## 2.0 SUBMISSION OF PROPOSALS

Before submitting his proposal, the Contractor shall comply with the following:

a) The Proposals, including the acknowledgement of addenda, shall be filled in ink on the form provided herein and all blank spaces in the form shall be fully filled. The signature shall be in long hand and the complete form shall be without interlineations, alteration or erasure.

b) If the Bidder is a corporation organized in a state other than Alabama, attach to the Proposal a certificate from the Secretary of State showing that the Corporation is qualified to transact business in Alabama.

c) Attach a certified check or Bid Bond in the amount of 5% of the Proposal, but not more than $10,000 made payable to the Alabama Port Authority.

d) Attach a copy of the State Contractor's License to Proposal.

e) Certificate of Compliance with the Beason-Hammon Alabama Taxpayer and Citizen Protection Act (see page I-9)

One copy of Item (a) through (e) should be placed in a sealed envelope with the **bidder's name, Contractor's license number, the project name and number, and the time and date of bid opening shown on the outside.**

Proposal of:

Address:

Date:

To: STATE OF ALABAMA, Alabama Port Authority, Mobile, Alabama

Gentlemen:

The undersigned, as Bidder, hereby declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the plans and specifications for the work and contractual documents relative thereto, and has read all Special Provisions and Specifications furnished; and that he has satisfied himself relative to all aspects of the work to be performed and especially to those factors affecting cost, progress, or performance.

The Bidder proposes and agrees, if this bid is accepted, to contract with the Owner in the form of contract specified, to furnish all necessary materials, equipment, tools, apparatus, means of transportation, labor and incidentals to perform in a satisfactory manner, the work described in the Contract Specifications and Drawings for the Alabama Port Authority, for the prices listed below to complete:

**Terminal Railway Operations Training Center Expansion**
**MOBILE, ALABAMA**

In full and complete accordance with the shown, noted, described and reasonable intended requirements of the plans, specifications and contract documents to the full and entire satisfaction of the Owner with a definite understanding that no money will be allowed for extra work except as set forth in the attached contract documents.

It is agreed that the description under each item, being briefly stated, implies, although it does not mention, all incidentals and that the prices stated are intended to cover all such work materials and incidentals as constitute Bidder's obligation as described in the specifications and any details not specifically mentioned, but evidently included in the contract shall be compensated for the item which most logically includes it.

Bidder agrees that he will commence the work within the time allotted by the Contract Documents with an adequate force, plant, and equipment and that the work will be completed within 300 calendar days after receipt of Notice to Proceed.

Bidder accepts the provisions of the Contract Documents as to liquidated damages in the event of failure to complete the work.

The Bidder further agrees that, in case of failure on his part to execute the Contract and required bonds within ten (10) calendar days from the date written notice of award if mailed or otherwise delivered to the Bidder, the certified check or bid bond accompanying this bid and the monies payable thereon shall be paid into the funds of the Owner not as penalty, but as a liquidation of a reasonable portion of the damages incurred by the Owner due to the Bidder's failure to execute the Contract.

# SCHEDULE OF PRICES

| ITEM | DESCRIPTION | QUANTITY | UNIT PRICE | AMOUNT |
|---|---|---|---|---|
| 1.0 | General Construction Requirements | 1 LS | Lump Sum | $ |
| 1.1 | Mobilization | 1 LS | Lump Sum | $ |
| 1.2 | Demobilization | 1 LS | Lump Sum | $ |
| 2.0 | ***Structural Steel*** | | | |
| 2.1 | Metal Building Walls | 1 LS | Lump Sum | $ |
| 2.2 | Concrete Slab – Polished, Stained and Sealed | 1 LS | Lump Sum | $ |
| 3.0 | ***Building Addition/Renovation*** | | | |
| 3.1 | New Office Addition – interior walls, doors and finishes | LS | Lump Sum | $ |
| 4.0 | ***Electrical Components and Systems*** | | | |
| 4.1 | Office Area | LS | Lump Sum | $ |
| | **Total Base Bid** | | **$** | |

(1) This is a Lump Sum Bid for the work as shown on the drawings and as specified. The quantity under each item may be increased, decreased, or deleted after award of Contract in accordance with provisions of the Contract Documents. The Unit Prices are for adjustment only.
(2) Total Base Bid shall be the sum of Items 1.0 – 4.1. All optional items to be included in the contract shall be approved by the Owner.
(3) The general construction requirements should include insurances, taxes, overhead profit and all other miscellaneous construction activities involved with the specific construction phase including in the drawings or specifications.

**NOTES:**

1. Authority reserves the right to refuse to issue a proposal form or a contract to a prospective bidder for any of the following reasons:
    a) Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contract in force with the Authority.
    b) Contractor default under previous Contract with the Authority.
    c) Proposal withdrawal or Bid Bond forfeiture on previous project with the Authority.
    d) Unsatisfactory work on previous contract with the Authority.
    e) Lack of competency, past experience, adequate machinery or lack of personnel.
2. Authority may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish all such information and data for this purpose as the Authority may request. The Authority reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Authority that such bidder is properly qualified to carry out the obligations of the Contract.
3. The Owner may terminate the contract, or any portion thereof, for just cause by written notice to the Contractor. If the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed or started. No claims for loss of anticipated profits will be considered.
4. If the Contractor to whom this contract is awarded does not provide adequate service or workmanship, ASPA reserves the right to cancel the contract and re-bid this work excluding that Contractor from consideration.

I, the undersigned bidder, hereby acknowledge receipt of the following addenda:

ADDENDUM NO._____

ADDENDUM NO._____

ADDENDUM NO._____

ADDENDUM NO._____

**Contractor's Signature:**

**Contractor Company**_____

_____ _____ _____

**Name** **Title** **Date**

# BID BOND

**KNOW ALL MEN BY THESE PRESENTS**, that we, undersigned, _____

_____ as Principal, and _____ as Surety, are hereby held and bound unto The Alabama Port Authority as **OWNER** in the Penal sum of _____ for the payment of which will and truly be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed, the _____ day of _____, 2026.

The Condition of the above obligation is such that whereas the Principal has submitted to the Alabama Port Authority a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the *2026 Terminal Railway Operations Training Center Expansion in Mobile, Alabama, Project No.: 11651, Task No.: 2*

**NOW, THEREFORE,**

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the form of Contract attached hereto (Properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the panel amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its **BOND** shall in no way be impaired or affected by any extension of time within which the **OWNER** may accept such BID; and said Surety does hereby waive notice of any such extension.

**IN WITNESS WHEREOF**, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

| | |
|---|---|
| Principal | |
| Surety | |
| By | |

State of _____

County of _____

**CERTIFICATE OF COMPLIANCE WITH THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535, as amended by Act 2012-491)**

DATE: _____

RE Contract/Grant/Incentive (describe by number or subject):
_____by and between
_____ (Contractor/Grantee) and
_____ (State Agency, Department or Public Entity)

The undersigned hereby certifies to the State of Alabama as follows:

1. The undersigned holds the position of _____ with the Contractor/Grantee named above, and is authorized to provide representations set out in this Certificate as the official and binding act of that entity, and has knowledge of the provisions of THE BEASON-HAMMON ALABAMA TAXPAYER AND CITIZEN PROTECTION ACT (ACT 2011-535 of the Alabama Legislature, as amended by Act 2012-491) which is described herein as "the Act".
2. Using the following definitions from Section 3 of the Act, select and initial either (a) or (b), below, to describe the Contractor/Grantee's business structure.

   BUSINESS ENTITY. Any person or group of persons employing one or more persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or livelihood, whether for profit or not for profit. "Business entity" shall include, but not be limited to the following:

   *a.* Self-employed individuals, business entities filing articles of incorporation, partnerships, limited partnerships, limited liability companies, foreign corporations, foreign limited partnerships, foreign limited liability companies authorized to transact business in this state, business trusts, and any business entity that registers with the Secretary of State.

   *b.* Any business entity that possesses a business license, permit, certificate, approval, registration, charter, or similar form of authorization issued by the state, any business entity that is exempt by law from obtaining such a business license and any business entity that is operating unlawfully without a business license.

   EMPLOYER. Any person, firm, corporation, partnership, joint stock association, agent, manager, representative, foreman, or other person having control or custody of any employment, place of employment, or of any employee, including any person or entity employing any person for hire within the State of Alabama, including a public employer. This term shall not include the occupant of a household contracting with another person to perform casual domestic labor within the household.

   ____ *(a)* The Contractor/Grantee is a business entity or employer as those terms are defined in Section 3 of the Act.
   ____ *(b)* The Contractor/Grantee is not a business entity or employer as those terms are defined in Section 3 of the Act.

3. As of the date of this Certificate, Contractor/Grantee does not knowingly employ an unauthorized alien within the State of Alabama and hereafter it will not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama;
4. Contractor/Grantee is enrolled in E-Verify unless it is not eligible to enroll because of the rules of that program or other factors beyond its control.

Certified this _____ day of _____ 20 _____

_____
Name of Contractor/Grantee/Recipient

By: _____

Its _____

The above Certification was signed in my presence by the person whose name appears above, on this _____ day of _____ 20_____.

WITNESS:

_____

_____
Printed Name of Witness

# CONTRACT DOCUMENTS

## INDEX

## PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS:

That: _____
(Name of Contractor)

_____
(Address of Contractor)

_____
(City, State, Zip)

I, a(n) _____(state of domicile)_____ corporation, hereinafter called Principal, and

_____
(Name of Surety)

_____
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto the Alabama Port Authority hereinafter called OWNER, in the penal sum of _____ DOLLARS, ($ _____) (100% of the Contract Amount) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20 __, a copy of which is hereto attached and made a part hereof for the construction of:

**Terminal Railway Operations Training Center Expansion**

**MOBILE, ALABAMA**

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may insure in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract of the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____, 20___.

ATTEST:

_____
Principal

_____ _____(s)
(Principal) Secretary
(SEAL)

_____ _____
(Witness as to Principal) (Address)

_____ _____
Surety

ATTEST:

_____
(Surety) Secretary
(SEAL)

_____ BY: _____
Witness as to Surety Attorney-in-fact

_____ _____
(Address) (Address)

_____ _____

***NOTE: Date of BOND must not be prior to date of CONTRACT.***
***If CONTRACTOR is Partnership, all partners should execute BOND.***

## LABOR AND MATERIAL BOND

KNOW ALL MEN BY THESE PRESENTS:

That: _____
(Name of Contractor)
_____
(Address of Contractor)
_____
(City, State, Zip)

I, a(n) _____ corporation, hereinafter called Principal, and
(State of Domicile)

_____
(Name of Surety)
_____
(Address of Surety)
_____
(City, State, Zip)

hereinafter called Surety, are held and firmly bound unto the Alabama Port Authority hereinafter called OWNER, in the penal sum of _____ DOLLARS, ($ _____) (100% of the Contract Amount) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that, the Principal entered into a certain contract with the OWNER, dated the _____ day of _____, 20 __, a copy of which is hereto attached and made a part hereof for the construction of:

**Terminal Railway Operations Training Center Expansion**

**MOBILE, ALABAMA**

NOW, THEREFORE, if the Principal shall promptly make payments to all persons, firms, SUBCONTRACTORS, and corporations furnishing materials or performing labor in the prosecution of the WORK provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, fuel, repairs on machinery, equipment and tools, consumer or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration, or addition to the terms of the contract of the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration, or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed this _____ day of _____, 20____.

ATTEST:

_____
Principal

_____
(Principal) Secretary

BY: _____(s)

(SEAL)

_____
Witness as to Surety Principal

_____
(Address)

_____
(Address)

_____

_____

_____
Surety

ATTEST:

_____
Witness as to Surety

BY: _____
Attorney-In-Fact

_____
(Address)

_____
(Address)

_____

_____

***NOTE: Date of BOND must not be prior to date of CONTRACT.***
***If CONTRACTOR is Partnership, all partners should execute BOND.***

## ACKNOWLEDGEMENT FOR CHANGE ORDERS

**TO:** ALABAMA PORT AUTHORITY

**RE:** Terminal Railway Operations Training Center Expansion

Gentlemen:

In order to avoid the necessity of extensive amendment to the referenced Contract, the undersigned hereby acknowledges that the following conditions are those for which change orders are allowed under the Bid law:

1. Unusual and difficult circumstances which arise during the course of the execution of the Contract which could not have been reasonably foreseen.

2. Where competitive bidding for the new work will be to the serious detriment of the Owner.

3. Emergencies arising during the course of work.

4. Changes or alterations provided for in the original bid and original Contract.

5. If for any reason the Contractor deems that additional compensation is due him for work or materials not clearly provided in the Contract, plans, or specifications or previously authorized as extra work, he shall notify the Engineer in writing of his intention to claim such additional compensation before he begins the work on which he bases his claim. Any claim for payment of extra work that is not covered by written agreement shall be rejected by the OWNER."

_____ BY: _____

CONTRACTOR

_____ _____

DATE TITLE

## CONTRACT

THIS AGREEMENT, made and executed on this _____ day of the month of _____, Two Thousand and _____ (20___), by and between The Alabama Port Authority, and _____, domiciled in the state of , Party of the Second Part, and hereinafter designated as "CONTRACTOR," WITNESSETH, that in consideration of the covenants and agreements herein contained, to be performed by the parties hereto and of the payments hereinafter agreed to be made, it is mutually agreed as follows:

The CONTRACTOR shall and will provide and furnish all equipment and labor, and perform the work required to build, construct, and complete in a thorough and workmanlike manner, to the satisfaction of the Alabama Port Authority:

**Project Name: 2026 Terminal Railway Operations Training Center Expansion**
**Project #: 11651 Task 02**

Hereinafter called the project, for the base Contract price of _____ _____ DOLLARS, ($_____) and all extra work in connection therewith, and in accordance with plans, specifications, and Proposal, which are made a part thereof as fully as is set out herein, and hereby becomes a part of this Contract.

It is agreed and understood that the Alabama Port Authority shall pay, and the Contractor shall receive, the full compensation for the work performed in accordance with the Specifications.

The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date Contract time will be charged. The Contractor shall begin the work to be performed under the Contract within ten (10) days of the date set by the Engineer in the written notice to proceed, but in any event the Contractor shall notify the Engineer at least 24 hours in advance of the time actual construction operations will begin. The Contractor will complete the entire project within 300 calendar days after receipt of Notice to Proceed. The time stated for final completion shall include final clean-up of all work sites.

This contract shall become effective immediately upon, and as of the date all necessary parties hereto have approached and signed the same.

By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

IN WITNESS WHEREOF, the parties of these presents have executed this Agreement in the year and day first above written.

WITNESS: Alabama Port Authority

_____ BY: _____

WITNESS: Contractor Party of the Second Part

_____ BY: _____

**CONTRACT DOCUMENTS**

**DIVISION V**
**INDEX**

DIVISION 1 – GENERAL REQUIREMENTS

1.0 DESCRIPTION OF THE WORK

1.1 The work consists of, but is not limited to, furnishing of all labor, tools, equipment, materials, services, transportation and supervision necessary to complete the following items: concrete slab, concrete pads, structural steel, electrical, interior finishes and all other incidentals as shown on the respective design drawings and as further specified herein.

2.0 WORK INCLUDED

2.1 Site Improvements

2.1.1 Contractor shall clean up, regrade, dress up the area after construction.

2.1.2 Contractor shall keep site clean and accessible during the project.

2.2 Furnish and Install Building Enclosure

2.2.1 Furnish and install structural steel to enclose the first floor of the building as shown on plans.

2.2.2 Furnish and install concrete floor slab on top of existing concrete foundations and slabs for first floor enclosure as shown on plans.

2.2.3 Furnish and install electrical service.

2.2.4 Furnish and install new office finishes.

2.2.5 Mechanical equipment and installation under separate contract.

## 3 REFERENCE DOCUMENTS

Latest edition of the following:

| | |
|---|---|
| ASHTO | American Association of State Highway and Transportation Officials |
| ACI | American Concrete Institute |
| AGC | Associated General Contractors of America |
| AI | Asphalt Institute |
| AIA | American Institute of Architects |
| AISC | American Institute of Steel Construction |
| ANSI | American National Standards Institute |
| ASTM | American Society for Testing and Materials |
| AWS | American Welding Society |
| CRSI | Concrete Reinforcing Steel Institute |
| NEC | National Electric Code |
| NEMA | National Electrical Manufacturer's Association |
| OSHA | Occupational Safety and Health Administration |
| PCA | Portland Cement Association |
| SBCCI | Standard Building Code |
| UL | Underwriters' Laboratories, Inc. |

## 4.0 COOPERATION AND COORDINATION WITH OWNER

4.1 Contractor shall be responsible for providing any required temporary barricades or fencing for protection of adjacent property and the construction area.

4.2 The Contractor is responsible for the coordination and protection of his work until acceptance by the Owner.

5.0 CONSTRUCTION AREA

5.1 The Contractor shall provide lights, barricades and warning signs, as necessary, to protect the required construction area. Contractor shall coordinate, with the Owner and his representatives, the area required for Construction purposes. An area for Contractor's field office and/or material storage shall be coordinated with Owner.

6.0 SHOP DRAWINGS

6.1 Shop drawings shall be submitted, as required, for Owner's review. The first submittal of the shop drawings will be the only time allowed by Owner for approval within the time schedule of the work, unless directed otherwise. Rejection and resubmittal of shop drawings due to Contractor error will not extend the completion date of the work. Resubmittal of shop drawings will be required until all corrections have been made.

6.2 The review of these drawings will not relieve the Contractor from responsibility or implemented deviations from drawings or specifications during his fabrication process; nor from the responsibility for errors in all types of shop drawings furnished by him.

7.0 MATERIALS AND WORKMANSHIP

7.1 All materials will be new, unless salvaged material is specified to be used, and the new materials shall be of the best quality of their respective kinds.

7.2 Where a specified manufacturer's name and/or number is mentioned herein or indicated on the drawings in connection with manufactured articles, materials or items of equipment, it shall be considered to set a standard for any requested substitute by the Contractor. However, it is intended that the exact item, service and/or material shall be provided.

7.3 Items of reputable manufacturers other than those names herein may be used if they are approved by the Owner prior to installation or use during the project.

7.4 In connection with the use of any alternate item approved, it shall be the Contractor's responsibility to see that any such items meet all space requirements, and that any alterations are properly made.

## 8.0 CONSTRUCTION PHASING

8.1 Timely completion is an essential element of this Contract. The Contractor's proposed Work Progress Schedule (to be delivered to the Owner at the Preconstruction Conference) shall be developed taking into account all factors, which will affect phasing, or performance of the work.

8.1.1 Scheduling, sequencing, procedures and performance of work shall comply with all provisions of the general conditions and technical specifications.

8.2 The Contractor shall submit a construction sequence, which provides for completion of all items, as outlined above.

8.3 As noted in the specifications, the Owner reserves the right to decrease the Scope of Work by removing any of the items outlined in the Schedule of Prices. The Scheduled completion dates would require adjustment, accordingly.

DIVISION 2 – NOT USED

DIVISION 3 – NOT USED

DIVISION 4 – CONCRETE

SECTION 4A – FORMWORK

1.0 SCOPE OF THE WORK

1.1 The work included under this section shall consist of furnishing all labor, tools, equipment, materials, and supervision necessary for the complete installation of all concrete formwork, all as specified herein and indicated on the drawings.

1.2 The work included, but is not limited to, the following:

1.2.1 Foundation formwork.

1.2.2 Ground slab formwork.

1.2.3 Removal of formwork.

2.0 APPLICABLE SPECIFICATIONS

2.1 The Contractor shall follow the practices and standards described in the latest editions of the following specifications, which are made a part of this Specification.

2.1.1 American Concrete Institute (ACI) 347 Recommended Practice for Concrete Formwork

3.0 FORM MATERIALS

3.1 Exposed Concrete

3.1.1 Form material for all exposed vertical surfaces shall be plywood forms, form lining, or steel forms with Owner approval, each as defined below.

a. Plywood forms shall be minimum 5/8” thickness, and not less than 5-ply, and especially cured moisture-resistant.

b. Form lining shall be fiberboard, not less that 3/16" thickness, or especially cured moisture resistant exterior plywood, not less than 3-ply or ¼ thickness, or plywood, minimum 5-ply, and minimum ¾" thickness for steel forms.

3.1.2 An attempt shall be made to eliminate as many small sections as possible. If steel forms are used, they shall not contain more than 6.0 linear feet of form joint per square yard of concrete.

3.2 Unexposed Concrete

3.2.1 Forms for concealed concrete shall be smooth and round undressed square-edge lumber of plywood, or other material that will produce equivalent finish.

3.2.2 If soil conditions are acceptable to the Owner and the soil condition will permit; excavations may be neat cut in the soil to accurate sizes as specified on the drawings. The sides of these excavations shall be lined with a waterproof paper.

3.3 Coatings

3.3.1 All contact surfaces shall be coated before the placement of any reinforcement, with non-staining colorless mineral oil, form lacquer, or other Owner approved non-staining form oil. The form oil shall be applied per manufacturer's specifications and shall be applied with a brush or spray so as to cover the form evenly without excess drip. Form coating material used to coat formwork to facilitate the removal thereof shall not bond with, or cause softening or permanent staining of the concrete surface.

3.3.2 Reused forms shall have nails withdrawn and contact surfaces thoroughly cleaned before re-use. Those, which have been coated, shall be given an additional application of the coating.

3.3.3 Plywood, previously mill-oiled, need not be re-oiled unless required by the Owner.

3.3.4 Pressed wood fiberboard shall not be oiled.

4.0 SPECIAL MEMBERS

4.1 Wood strip, blocking, molded members, etc., shall be placed in forms as required to produce finished surfaces shown on drawings or specified herein.

4.2 All exposed corners, vertical or horizontal, in concrete work shall be chamfered 1" x 1" unless otherwise shown on the drawings. Horizontal surfaces to be chamfered may be rounded with a steel concrete trowel at time of concrete placement if approved by Owner.

4.3 Form ties shall be factory-fabricated, removable or snap-off metal ties of design that will not allow deflection and will not spall concrete upon removal. Solid backing shall be provided for each tie. Ties shall be fitted with devices that will leave holes in the concrete surface not less than 3/8", no more than 1" in diameter, and not less than 1" deep.

4.4 Provide for installation of inserts, hangers, ties, anchor devices, anchor bolts, dowels, conduit or other embedded items required for other work. Properly locate in cooperation with other trades and secure in position before placement of concrete.

5.0 DESIGN

5.1 Forms shall be designed, constructed, and maintained so as to insure that after removal of forms the finished concrete will have true surfaces free of offset, waviness, or bulges and will conform accurately to the indicated shapes, dimensions, lines, elevations, and positions on the drawings.

5.2 Studs and wales shall be placed to prevent deflection of form material. Forms and joints shall be sufficiently tight to prevent leakage of grout and cement paste during placement of concrete. Joints in forms shall be arranged vertically and horizontally to conform to the pattern of the design. Juncture of formwork panels shall occur at architectural lines, vertical control joints, including alignment with masonry control joints and construction joints. Forms placed on successive units for continuous surfaces shall be fitted to accurate alignment to assure smooth completed surfaces free from irregularities. Temporary openings shall be arranged in wall forms and where otherwise required to facilitate cleaning and inspection.

6.0 REMOVAL

6.1 Removal of forms shall be in a manner to insure the complete safety of the structure and the concrete has had time to harden adequately.

6.2 Supporting forms or shoring shall not be removed until structural members have acquired sufficient strength to support safely their own weight and any construction and storage load to which they may be subjected. If a testing laboratory is involved, then forms shall be removed in accordance with requirements of the testing laboratory in regards to time and strength of concrete.

6.3 Forms used for curing shall not be removed before expiration of curing period unless specified otherwise.

6.4 Care shall be taken to avoid spalling the concrete surface or damaging concrete edges. Wedges or bars must not be inserted between forms and finished surfaces.

6.5 Tie-rods to be entirely removed from the wall shall be loosened 24 hours after concrete is placed, and form ties, except for a sufficient number to hold form in place, may be removed at that time. Ties wholly withdrawn from wall shall be pulled toward the face that will be concealed from view in the permanent work. Cutting ties back from face of wall will not be permitted.

6.6 Wood forms shall be completely removed in order that no material will be left for termite infestation.

6.7 Under normal conditions, the minimum period elapsing before forms may be removed shall be governed by the following schedule. Its use will not operate to relieve the Contractor of responsibility for the safety of the structure.

| | Elapsed Time (Days) |
|---|---|
| Side Forms: Footings | 1 |
| Side Forms: Columns and Beams | 7 |

Note: When temperature drops below 40°F. supports shall remain in place an additional time equal to period structure has been exposed to the low temperature.

SECTION 4B – CAST-IN-PLACE CONCRETE

1.0 SCOPE OF THE WORK

1.1 The work included under this section shall consist of furnishing all labor, tools, equipment, materials, services, and supervision necessary for the complete installation of all reinforced cast-in-place concrete, all specified herein and indicated on the drawings.

1.2 The work includes, but is not limited to, the following:

1.2.1 Concrete ground slabs.

1.2.2 The placing, curing, and finishing of all cast-in-place concrete, as indicated on the drawings and specified herein.

1.2.3 The setting of all reinforcing, inserts, anchor bolts, sleeves, blocks, and miscellaneous embedded items as indicated on the drawings, and specified herein.

2.0 APPLICABLE SPECIFICATIONS

2.1 The Contractor shall follow the practices and standards described in the latest edition of the following specifications, which are made a part of this Specification:

2.1.1 American Concrete Institute:

ACI 211 Recommended Practice for Selecting Proportions for Nominal Weight Concrete.

ACI 214 Recommended Practice for Evaluation of Compression Test Results of Field Concrete.

ACI 304 Recommended Practice for Measuring, Mixing, and Placing Concrete.

ACI 305 Recommended Practice for Cold Weather Concreting.

ACI 306 Recommended Practice for Hot Weather Concreting.

ACI 315 Manual of Standard Practice for Detailing Reinforced Concrete Structures.

ACI 318 Building Code Requirements for Reinforced Concrete.

ACI 347 Recommended Practice for Concrete Formwork.

2.1.2 Refer to ACI318 – "Building Code Requirements for Reinforced Concrete" for a complete listing of applicable specifications of the American Society for Testing and Materials (ASTM).

2.1.3 All applicable local and state codes and regulations.

2.1.4 Latest edition of OSHA Safety and Health Regulations.

2.1.5 In case of conflict between the referenced standards, the more stringent requirements shall govern.

3.0 CONCRETE MATERIALS

3.1 Standards of the American Society for Testing and Materials indicated in the following paragraphs shall be the latest editions.

3.2 Cement – Cement shall be Portland cement conforming to the requirements of ASTM C-150, Type 1, and be free from dirt and damp set. In the event field conditions require and the Owner approves, high early strength Portland Cement ASTM C-150, Type III, may be used.

3.3 Fine Aggregate: Fine Aggregate for normal weight concrete shall be clean sand, conforming to the requirements of ASTM C-33.

3.4 Coarse Aggregate: Coarse aggregate for normal weight concrete shall be crushed stone, gravel, or a combination of crushed stone and gravel, conforming to ASTM C-33, size number 67, ¾" to No. 4.

3.5 Water – Water shall be fresh clean, clear and free from oil, acid, alkali, organic material, and any other deleterious matter in injurious quantities.

3.6 Admixtures

3.6.1 Air-entraining materials shall conform to ASTM C-260 and shall be used in accordance with the manufacturer's recommendation. The Contractor shall submit the manufacturer's certificate of the chloride content of the admixture and whether or not chloride was added during its manufacture.

3.6.2 Water-reducing admixture, if used, shall be "Pozzolith, Normal Admixture", by Master Builders Company, Cleveland, Ohio, or Owner-approved equal, and shall be used in accordance with ASTM C-494. Testing for air content shall be in accordance with ASTM C-231.

3.6.3 Any other admixtures proposed shall be approved by the Owner in writing before using and shall conform to ASTM C-494. Calcium chloride shall not be used.

3.7 Bonding Material – Sikadur Hi-Mod", as manufactured by Sika Corporation, Lyndhurst, New Jersey, or Owner-approved equal shall be used as an epoxy bonding material to adhere new concrete to concrete having its initial set. Bonding material shall be used in any construction joints which are not detailed on the drawings and which are approved by the Owner. Construction joints detailed on the drawings do not require bonding.

3.8 Expansion Joint Filler – Preformed expansion joint filler, ½" thick, unless otherwise indicated, shall be non-extruding and resilient type conforming to ASTM D-994, ASTM D-1751, or ASTM D-1752, unless noted otherwise.

All expansion joints in base slabs on grade shall be fiber expansion joints as deep as the slab thickness and flush with the top of the slab meeting the requirements of ASTM D-1751. In joints exposed to the weather the joint filler shall be depressed ½" below the top of the slab and the depression filled with joint sealant.

3.9 Joint Sealer – Joint sealer shall be cold applied, elastomeric sealant, conforming to ASTM D-1850. Sealant shall be applied per manufacturer's specifications using their recommended primer.

3.10 Curing Compound – Liquid membrane-forming curing compound shall conform to ASTM C-309, Type 1-D (clear or translucent with fugitive dye), or Owner approved equal, and to the testing requirements of ASTM C-156.

3.11 Membrane Waterproofing or Vapor Barrier - Membrane waterproofing shall be polyethylene sheeting conforming to Commercial Standard CS-238, or ASTM C-171 Type

1, regular, not less than 0>006-inch (6 mils) nominal thickness. The sheeting is to be lapped not less that 12" with the top lap placed in the direction of the placing of the concrete and sealed in accordance with manufacturer's recommendations. The membrane shall be placed on all earth surfaces that are to receive concrete.

3.12 Curing-Sealing (Hardening) Compound – This compound shall be "Demicon Cur-Hard", as manufactured by Hausman Corporation, Chemical Division, P.O. Box 416, Toledo, Ohio, 43601, or Owner-approved equal solution of magnesium fluosilicate or sodium silicate (minimum of 35% of 42% Baume Sodium Silicate).

3.13 Grout

3.13.1 Epoxy grout shall be high strength epoxy grout, installed in strict accordance with manufacturer's recommendations. "Five Star Epoxy Grout", manufactured by U.S. Grout Corporation, Old Greenwich, Connecticut, or Owner-approved equal, is recommended.

3.13.2 Non-shrink grout shall be ready-to-use non-metallic aggregate product requiring addition of only water at site, and shall attain a minimum compressive strength of 5000 psi. "Five Star Grout" as manufactured by U.S. Grout Corporation, "Masterflow 928" as manufactured by Masterbuilders Company, or Owner-approved equal, is recommended.

3.14 Waterstops - Waterstops, except where otherwise indicated, shall be 6" polyvinyl chloride (PVC) with a center bulb and two end bulbs, or ribbed type with a center bulb. All PVC waterstops shall be manufactured from virgin materials. Dimensions of the waterstops shall not be less than 3/8" for web thickness and 5/8" for bulb diameter. Splicing of the PVC waterstops shall be done with a special thermostatically controlled splicer, furnished by the manufacturer, and shall be done strictly in accordance with the manufacturer's instructions.

## 4.0 CONCRETE MIX

4.1 Mix Design – The mix design shall produce concrete having a slump of not more than 3" for floor slabs and not more than 4" for all other work, and a minimum 28-day compressive strength of 4000 psi. Outside concrete shall have an air content of 4%, +1. The minimum content shall be 6 sacks (564 lbs.) of cement per cubic yard of concrete. The maximum water content shall not exceed 5 gallons per bag of cement.

5.0 PROPORTIONING CONCRETE

5.1 Control: The proportion of all materials entering into the concrete shall be determined from a design mix by an approved commercial testing laboratory. The Contractor shall provide all necessary equipment and plant to determine and control the actual amounts of material entering into each batch. The proportions will be changed whenever, in the opinion of the Engineer, such change is necessary in order to maintain the standard of quality required by these specifications.

5.2 Properties of Concrete: All concrete placed under this contract shall meet all of the requirements hereinafter specified.

5.2.1 Class: AA

5.2.2 Max. water per bag cement: 5.0 gallons

5.2.3 Min. bags of cement per cubic yard: 6

5.2.4 Min. compressive strength at 28 days: 4000 psi

5.2.5 Range in slump: 2" – 4"

5.2.6 Class "AA" concrete shall be "air entrained concrete" and the concrete shall have air content of 3.0% with a 0.5% tolerance as determined in accordance with specifications of ASTM C231. The testing for air content will be performed by an independent laboratory paid by the Owner. Class "AA" concrete shall be used for all major structures in the project.

6.0 CONCRETE PLACEMENT

6.1 The placing of all concrete shall be in accordance with the requirements of ACI Standard 304.

6.2 Concrete shall not be placed until all reinforcing bars, pipes, conduits, anchor bolts, and other embedded work has been inspected, approved, and definite instructions given by the Owner to proceed with the work.

6.3 Excessive water and debris shall be removed from forms and excavations before concrete is placed therein.

6.4 Before placing the concrete and reinforcing steel, the contact surfaces of all forms, unless otherwise directed, shall be thoroughly wetted with water or coated with approved form oil. The form oil shall be applied with a brush or spray so as to cover the form evenly without excess drip. Form coating material used to coat formwork to facilitate the removal thereof shall not cause softening or permanent staining of the concrete surface. Reused forms shall have the contact surfaces cleaned thoroughly; those, which have been coated, shall be given an additional application of the coating.

6.5 Unless otherwise noted on the drawings all vertical surfaces of the concrete work must be formed except that sides of spread footings may be neat cut in the soil if the soil conditions are acceptable to the Owner.

6.6 All concrete materials, reinforcement, forms fillers vapor barrier, and ground with which concrete is to come in contact shall be free from frost. No concrete shall be laid on frozen soil. When concrete is poured during freezing weather, adequate protection against frost action shall be approved by the Owner before any concreting is done.

6.7 Dropping of the concrete in excess of 4 feet, depositing in large quantities at any point and running or working it along the forms or any method tending to cause loss or segregation of the aggregates or separation or distortion of the forms will not be permitted. A tremie or other approved means shall be used for pouring where depth is in excess of 4 feet. Concrete shall be placed monolithically between construction joints indicated.

6.8 Between construction joints concreting shall be a continuous operation such that concrete is plastic at all times and flows readily into spaces between reinforcement. Fresh concrete shall not be placed on poured concrete sufficiently hardened to cause formation of seams or places of weakness. No concrete that has partially hardened or been contaminated by foreign material shall be used. If a section cannot be placed continuously or monolithically, construction joints shall be located at points indicated on the drawings or approved by the Owner. A minimum of 24 hours shall elapse between placements of concrete in adjacent pours.

6.9 Immediately after placing, concrete shall be consolidated by vibrating equipment supplemented by hand spading and rodding where vibrating is not feasible. Concrete shall be thoroughly worked around reinforcement and embedded fixtures and into corners of forms. Vibrators must be capable of maintaining a speed of not less that 8000 impulses per minute when submerged in concrete. Use of external form vibrators or tapping forms is not acceptable. Vibrators shall be inserted vertically (not dragged

horizontally) at such intervals as to insure uniform consolidation throughout the entire section of concrete being placed. The number of vibrators used shall be sufficient to consolidate the concrete properly. At least one standby vibrator shall be on hand at all times.

6.10 The methods and recommended practices described in AC Standard 305 shall be followed for cold weather concreting and ACI Standard 306 shall be followed for hot weather concreting.

6.11 All concrete shall finish to the lines and elevations shown on the drawings. All construction joints shall be keyed as indicated on the drawings. If the Contractor desires additional construction joints or different locations for the joints, he shall obtain written approval from the Owner for such changes.

6.12 Concrete shall not be carried in or transported through any aluminum items.

## 7.0 JOINTS

7.1 Construction joints shall be formed as indicated on the drawings and as directed by the Owner. Joints shall be made and located as to least impair the strength of the structure. The rate and method of placing concrete and the arrangement of joint bulkheads shall be such that the concrete between construction joints shall be placed in a continuous operation. When concreting is resumed, the surface of the concrete at all joints shall be thoroughly cleaned and all laitance removed. In addition, vertical joints shall be thoroughly wetted, but not saturated, and slushed with a coat of neat cement grout before placing new concrete. Reinforcing shall continue across joints unless otherwise shown. Keys and dowels shall be provided as indicated or as directed by the Owner.

7.2 In general, formed construction joints or keys shall be: in width one-third of the thickness of the concrete and, in depth, one-sixth the thickness of the concrete. All keys shall be continuous and none smaller than 2” in width and 2” in depth shall be used.

## 8.0 EMBEDDED ITEMS

8.1 The Contractor shall examine the drawings and specifications for other work to ascertain any conditions that may affect his work. In laying out his work, the Contractor shall make provisions for installation of all appurtenances.

8.2 The Contractor shall furnish and install all embedded items to include but not limited to inserts, anchors, anchor bolts for structural steel and any other miscellaneous metal as may be required for the installation and attachment of other work. The embedded items shall conform to the requirements of Section – Miscellaneous Metals. Such miscellaneous items shall be set accurately to template, built into the concrete plumb and maintained so during the pour by securely wiring as may be necessary. Bolts shall project from the face of the concrete the distance called for on the details or a sufficient distance to allow for the proper attachment intended. All threads shall be oiled and protected by waterproofing caps.

8.3 The Contractor shall provide such openings as are required for the passing of work through the concrete.

8.4 Great care shall be taken to keep such items embedded in the concrete and openings provided through the concrete at the proper locations. The concrete shall be thoroughly spaded and worked around and under such items so that there will be no voids.

9.0 GROUT

9.1 Cement grout, if required, shall be field mixed combination of cement, concrete sand and water approved by the Owner prior to placing. Minimum cement shall be eight bags of cement per cubic yard of finished mixture.

9.2 All column bases shall be grouted solid with high strength non-shrink grout, ready-mixed material requiring only mixing water at the jobsite. Non-shrink grout shall contain non-metallic aggregate as specified.

9.3 Before placing grout the surface shall be cleaned of all dirt, oil, grease, concrete laitance and all loose material shall be removed.

9.4 The grout shall be placed by whatever means are most practicable, depending on the type of equipment to be grouted. The grout shall completely fill the space to be grouted, be thoroughly compacted, and free of air pockets.

9.5 Unconfined areas of non-shrink grout surfaces shall be cut back flush with the base plate and coated with a plastic mortar consisting of one part Portland cement and two parts concrete sand.

10.0 CURING

10.1 All concrete shall be maintained above 50°F. in a moist condition and cured for a period of at least the first seven days after placing by one of the approved methods listed herein. If high-early strength concrete has been used, the curing period shall continue for minimum of three days. During the curing period no part of the concrete shall be permitted to become dry.

10.2 All concrete shall be cured in keeping with the methods listed below.

10.2.1 Ponding or continuous sprinkling with water.

10.2.2 Wet sand or absorptive burlap kept continuously wet.

10.2.3 Waterproof paper conforming to ASTM C171, or polyethylene film with edges lapped and sealed in such a manner as to prevent moisture escaping from the concrete.

10.2.4 Liquid curing compounds sprayed uniformly in a single coat on all surfaces immediately following the final finishing operation. Liquid curing compounds shall not be used on any surface against which additional concrete or other cementitious finishing materials are to be bonded nor on floor surfaces which receive liquid surface-hardening treatment.

10.2.5 Steel forms heated by the sun and all wood forms in contact with the concrete during the curing period shall be kept wet. If forms are to be removed during the curing period, one of the above curing materials or methods shall be employed immediately. Such curing shall be continued for the remainder of the curing period.

10.2.6 The methods and recommended practice for protecting and curing concrete as described in ACI 305, and ACI 306 shall be followed when the temperature of the surrounding air is below 40 F. or above 90 F. Air and concrete temperatures at times of placing are to be taken and reported on cylinder break forms. No dependence shall be placed on salt or other chemicals for the prevention of freezing.

10.2.7 Methods should be taken to protect the concrete from mechanical injury or by action of the elements until such time as the concrete is thoroughly set.

10.2.8 Projecting inserts, anchor bolts, etc., shall be protected from disturbances until the concrete has sufficiently set to hold such items immovable.

10.2.9 All concrete ground slabs, etc., shall be barricaded immediately after the surfaces are finished and no traffic, other than for curing purposes, shall be allowed on the surfaces until the concrete has obtained (by compressive strength test) 60% of its 28-day strength.

11.0 CONCRETE FINISHES

11.1 Standard Finish for Exposed Concrete Surfaces (Excluding Ground Slab)

11.1.1 As soon as the forms have been removed, the concrete surfaces to be left exposed shall be carefully examined and cavities, stone pockets, irregularities, honeycombing, tie holes, and other defects, which in the opinion of the Owner do not justify rejection of the work, shall be pointed with mortar before the concrete is thoroughly dry. The mortar mix for patching shall be determined by trial usually one part cement and two parts coarse sand to obtain a good color match with the concrete when both patch and concrete are cured and dry. The amount of mixing water shall be as little as consistent with the requirements of handling and placing the mortar.

11.1.2 Concrete surfaces, which are to be exposed in the finish construction, shall receive a “rubbed” finish. After the mortar pointing has set, the entire area shall be thoroughly covered with water by means of brush and rubbed with carborundum brick or other approved method to remove all blemishes and to provide a uniform finished appearance to blend in with surrounding concrete surfaces. After rubbed surfaces have dried wipe with burlap to remove any loose powder.

11.2 Smooth Monolithic Slab Finish

11.2.1 After the concrete has been screeded; the surface shall be floated with mechanical floats equipped with vibrators, only to the extent necessary to obliterate the screeding irregularities.

11.2.2 The slab shall be burnished, by steel troweling, to a hard, smooth and impervious surface. After the first troweling, allow the slab to stand until it has set sufficiently to finish hard and smooth, then apply a second steel troweling. In all cases, the slabs shall be troweled twice, and more often if necessary, to

produce the required surface texture. There shall be no evidence, after the slab is finished, of kneeboard impressions, trowel marks or chattered areas.

11.2.3 The sprinkling, shaking or applying in any form of dry cement on a prefinished concrete surface is prohibited.

11.2.4 Concrete ground slab shall be finished level unless noted otherwise with a tolerance of 1/8" in 10 ft. If variations greater than this exist, the Owner may direct the Contractor to grind the floor to bring the surface within the stated requirements. Patching of low spots shall not be permitted. Grinding shall be done as soon as possible, preferably within three days, but not until the concrete is sufficiently strong to prevent dislodging coarse aggregate particles.

11.2.5 Immediately after finishing, all grade and ground slabs shall receive a liquid curing and sealing compound conforming to ASTM C309, Type 1, clear or translucent. Surface preparation and application shall conform to manufacturer's specifications, but in no case shall application be greater than 350 sq. ft. per gallon. All slabs shall receive a second coat of curing and sealing compound just prior to acceptance of the concrete work.

12.0 INSPECTION AND TESTING

12.1 The materials and workmanship to be furnished under this specification shall be subject to inspection in the mill, shop, and field by the Owner.

12.2 Inspection and acceptance, or failure to inspect, shall in no way relieve the Contractor or the mill and shops from their responsibility to furnish materials and workmanship in accordance with contract requirements. When materials and/or workmanship do not conform to the specification requirements the Owner reserves the right to reject such material and/or workmanship at any time before final acceptance of the concrete work.

12.3 The Contractor shall make the necessary arrangements with the Owner-approved testing laboratory to facilitate concrete sampling and test.

12.4 An independent testing laboratory shall perform compressive strength tests, air entrainment tests and slump tests for each 50 cubic yards of concrete poured but not less than once for each day of concrete pouring. All tests shall be made at the expense of the Owner.

12.5 Compressive strength tests shall be conducted in accordance with ACI318, "Concrete Quality". Tests shall be made on four field specimens, one for testing at seven days and two for testing at 28 days. If the 28-day breaks are good, the fourth cylinder may be discarded. If the 28-day breaks are deficient, the fourth cylinder shall be broken as instructed.

12.6 Slump tests shall be made in accordance with ASTM C143 for each set of cylinders submitted to the laboratory.

12.7 Air entrainment tests shall be made in accordance with ASTM C138, C173, or C231 for each set of cylinders.

12.8 If the ultimate compressive strength of any cylinder falls below specified strength, an investigation shall be made to determine cause of decrease. If it is attributed to a change in materials, a new design of mix shall be made. If low strength and quality of the structure in question, the Owner may require, at no additional cost to the Owner, tests to be made on portions of the structure containing questionable concrete. Such tests shall include one or more of the following: (1) Impact (Swiss) hammer tests, (2) cored cylinder test per ASTM C42, or (3) load actual structure per ACI 318. In that portion of the structure, which contains defective concrete, the defective concrete shall be removed and replaced, or reinforced as directed by the Owner, at Contractor's expense, including cost of tests. If cored tests indicate that the concrete adequately meets the specified strength, the test results of test cylinders will be waived.

12.9 Reports of all test and control measures shall be submitted to the Owner in triplicate. Reports shall show the in-place location of concrete.

12.10 The minimum compressive strength of test cylinders shall be 4000 psi, unless noted otherwise

12.11 Record the atmospheric and concrete temperatures on all test reports.

13.0 CONCRETE DISPOSAL

13.1 The Contractor is prohibited from dumping, wasting, or discarding unacceptable or excess concrete or washing out concrete trucks within the property limits of the Owner (ASPA). All concrete shall be disposed of off site and shall be the contractors responsibility.

SECTION 4C – REINFORCING STEEL

1.0 SCOPE OF THE WORK

1.1 The work included under this section shall consist of furnishing all labor, tools equipment, materials, services, and supervision necessary for the complete installation of all reinforcing steel work, as indicated on the drawings and specified herein.

1.2 The items of work to be performed shall include, but are not limited to:

1.2.1 Foundation reinforcement.

1.2.2 Ground slab reinforcement.

1.2.3 Miscellaneous Concrete Structure Reinforcement.

2.0 APPLICABLE SPECIFICATIONS

2.1 The Contractor shall follow the practices and standards described in the latest editions of the following specifications, which are made a part of this Specification.

2.1.1 American Concrete Institute:

ACI318 – Building Code Requirements for Reinforced Concrete.

2.1.2 Refer to ACI 318 – "Building Code Requirements for Reinforced Concrete" for a complete listing of applicable specifications of the American Society for Testing and Materials (ASTM)

2.1.3 All applicable local and state codes and regulations.

2.1.4 Latest edition of OSHA Safety & Health Regulations.

2.1.5 In cases of conflict between the referenced standards, the more stringent requirements shall govern.

3.0 REINFORCING MATERIALS

3.1 Standards of the American Society for Testing and Materials indicated in the following paragraphs shall be the current editions.

3.2 All reinforcing steel shall be new, deformed billet steel bars conforming to ASTM A615. Grade of reinforcing steel shall be 60 ksi.

3.3 The Contractor shall include all spacers, chairs, bolsters, ties, and other devices necessary for proper placing, spacing, supporting and fastening reinforcement in place. When the legs of any support devices rest directly on formwork, which, after stripping, will expose the concrete to permanent view, these devices shall be zinc-coated after fabrication or provided with plastic button tips at the wire ends to prevent staining of the concrete by rust. Sand chairs shall be used to support reinforcing on earth surfaces.

4.0 SHOP DRAWINGS AND SUBMITTALS

4.1 Shop drawings, including placement diagrams, shall be prepared by the fabricator in accordance with the drawings and the standards in ACI 315, "Manual of Standard Practice for Detailing Reinforced Concrete". All dimensions and sizes of reinforcement on the drawings shall be strictly adhered to and shall not be changed without written approval of the Owner.

4.2 The Contractor shall submit to the Owner one sepia and three blue line copies of the steel lists and placing plans of all reinforcing steel used in the job.

5.0 INSTALLATION

5.1 Reinforcing steel bars stored at job shall be placed in racks or blocked up at least 18" above ground and kept dry by suitable cover.

5.2 Reinforcing steel bars shall be shop-bent as indicated on the fabrication drawings. Metal reinforcements shall not be bent or straightened in a manner that will injure or defect material. Reinforcement shall be cold bent to shapes shown on the drawings. The heating of reinforcement for bending will not be permitted. Bars with kinks or bends not shown on the drawings shall not be used.

Minimum pin bending diameter will be as follows:

| Bar Size | Minimum Pin Diameter (inch) |
|---|---|
| #3 | 1.1253 |
| #4 | 1.5 |
| #5 | 1.875 |
| #6 | 2.25 |
| #7 | 2.625 |
| #8 | 3.0 |
| #9 | 4.5 |
| #10 | 5.0 |
| #11 | 5.5 |
| #14 | 8.75 |
| #18 | 11.25 |

5.3 All reinforcement at the time concrete is placed, shall be clean new stock, free from defects, mill or rust scale, dirt, oil, dried concrete, or coatings that will reduce bond.

5.4 No heating, welding, or tack welding of reinforcing steel will be permitted.

5.5 Bars of single length shall be used in all cases, except where the length required is greater than stock length or where the Owner gives permission for shorter lengths. Necessary splices shown on the drawings shall be lapped sufficiently to develop the strength of the bars by bond. Splices shall not be made in beams, girders, and slabs at points of maximum bending moment nor shall adjacent bars be spliced at the same point, but staggered.

Wherever field conditions make it necessary to splice principal reinforcement otherwise than as shown on the drawings, the Owner shall decide character of a splice on basis of allowable bond stress and stress in reinforcement at splice.

The minimum lap splice shall be 12 inches.

| Bar Size | Minimum Lab Splice (inches) | |
|---|---|---|
| | Top Bars* | Other Bars |
| #3 | 13 | 12 |
| #4 | 17 | 12 |
| #5 | 21 | 15 |
| #6 | 27 | 20 |
| #7 | 37 | 27 |
| #8 | 49 | 35 |
| #9 | 62 | 44 |
| #10 | 78 | 56 |
| #11 | 96 | 69 |

* Top bars are defined as horizontal bars so placed that more than 12 inches to concrete is cast below the bar.

5.6 Reinforcement shall be accurately placed and secured against displacement by firmly wiring at all intersections and splices with not less that No. 18 U.S. Standard Gauge annealed wire, or by use of acceptable clipping devices.

5.7 Reinforcing in footings and slabs on earth shall be supported at proper level with pre-cast concrete blocks at no greater than 24” O.C.

5.8 Reinforcing other than that mentioned in Paragraph 5.7 shall be securely positioned at required distances from forms by means of metal spacers and chairs, or other accessories spaced in accordance with recommendation of the Concrete Reinforcing Steel Institute.

5.9 Unless otherwise indicated on drawings, steel reinforcement shall have a minimum protection of concrete as follows:

| | | Minimum Cover (inches) |
|---|---|---|
| (a) | Concrete cast against and permanently exposed to earth | 3 |
| (b) | Concrete exposed to earth or weather: | |
| | #6 through #18 bars | 2 |
| | #5 bar & smaller, welded wire fabric | 1 ½ |
| (c) | Concrete not exposed to weather or in contact with ground: | |
| | Slab, walls, joists: | |
| | #14 and #18 bars | 1 ½ |
| | #11 and smaller | ¾ |
| | Beams, columns, Primary reinforcement, | |
| | ties, stirrups, spirals | 1 ½ |

In all cases, thickness of concrete over reinforcement shall not be less than diameter of bars.

5.10 Exposed bars intended for bonding with future work shall be protected from corrosion by concrete or other adequate covering.

5.11 No reinforcing bars shall be forced or driven into concrete after the concrete has attained its initial set.

5.12 Corner bars shall be required at all corner intersections, unless noted otherwise on the drawings. These bars shall be #4 with a length of 2'-6" placed at 45° to the corner.

DIVISION 5 – METALS

SECTION 5A – STRUCTURAL METAL

1.0 SCOPE OF THE WORK

1.1 The work included under this section shall consist of furnishing all labor, tools, equipment, materials, services, and supervision necessary to fabricate, deliver, and erect complete, all structural steel indicated on the drawings as described in this Specification. Anchor bolts for structural steel shall be furnished and installed by the Contractor performing the concrete work as described in these specifications.

1.2 The work includes, but is not limited to, the following:

1.2.1 Fabrication, erection, galvanizing and testing of all structural metal.

1.2.2 The structural metal includes, but is not limited to the following:

a Beams

b. Base Plates

c. Sole Plates

d. Anchor Bolts

e. All connections and their component parts for the above

f. Grouting of Base Plates

2.0 APPLICABLE SPECIFICATION

2.1 The Contractor shall follow the practices and standards described in the latest edition of the following specifications, which are made a part of this Specification.

2.1.1 American Institute of Steel Construction (AISC):

a. Specification for the Design, Fabrication and Erection of Structural Steel for Buildings.

b. Code of Standard Practice for Steel Buildings and Bridges

c. Specification for Structural Joints Using ASTM A325 Bolts or A490 Bolts.

2.1.2 American Iron and Steel Institute: Specification for the Design of Cold-Formed Steel Structural Members

2.1.3 American National Standards Institute (ANSI):

B18.22.1 Plain Washers

B46.1 Surface Texture (Surface Roughness, Waviness, and Lay)

2.1.4 The American Society for Testing and Materials (ASTM):

ASTM A6 General Requirements for Delivery of Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use.

ASTM A36 Standard Specification for Structural Steel.

ASTM A307 Standard Specification for Low-Carbon Steel Externally & Internally Threaded Standard Fasteners

ASTM A325 Standard Specification for High-Strength Bolts for Structural Steel Joints, includes suitable nuts and plain hardened washers.

2.1.5 American Welding Society (AWS): D.1.1. – Structural Welding Code

2.1.6 All applicable local and state codes and regulations.

3.0 SUBMITTALS

3.1 Certificates of Compliance

3.1.1 Certificates of compliance shall be furnished for structural steel and for welder qualifications. Certified copies of mill test reports shall be furnished for structural steel. Certification that each welder is qualified in accordance with AWS Code D.1.1 shall be provided.

3.1.2 Test reports for high-strength bolts, nuts and washers, including chemical analysis, tensile strength tests, and hardness tests.

3.1.3 Specifications for primer paint, including manufacturer's data on chemical composition, adhesion of stray fireproofing, and dry film thickness per applied coat.

3.1.4 Specifications for non-shrink grout.

3.2 Shop Drawings

3.2.1 Shop drawings shall show all shop and erection details, including, but not limited to, cuts copes, cambers, connections, holes, bolts, and welds in structural steel. All welds, both shop and field shall be indicated by standard welding symbols in the AWS Code for Welding in Building Construction. Shop drawings shall not be complete without specific notations about painting, cleaning, grade of steel and type of welding electrodes. Shop drawings shall be checked and initialed as checked by the Contractor prior to submitting to Owner for review.

3.2.2 Material shall not be fabricated or delivered to the site before reviewed shop drawings have been returned to the Contractor.

4.0 QUALITY ASSURANCE

4.1 The materials and workmanship to be furnished under this specification shall be subject to inspection in the mill, shop, and field by the Owner.

4.2 Inspection and acceptance, or failure to inspect, shall in no way relieve the Contractor or the mill and shops from their responsibility to furnish materials and workmanship in accordance with contract requirements. When materials and/or workmanship do not conform to the specification requirements, the Owner reserves the right to reject such material and/or workmanship at any time before final acceptance of the structure.

4.3 The Contractor shall guarantee free access to the fabrication shop and the construction site for the purpose of inspecting the steel work or field connections. The Owner shall be allowed to observe the performance of the erection crew while the work is in progress, and ladders or temporary scaffolding shall be made available upon the request of the Owner for the purpose of inspecting any connections, which are difficult to reach.

4.4 Inspection of welding shall be in accordance with the AISC Specification for Buildings and high-strength steel shall be marked in accordance with the AISC Specification for Buildings.

4.5 The Owner shall be notified well in advance of start of shop work in order to schedule inspections if desired.

4.6 Joint welding procedures shall be prequalified or test in accordance with AWS qualification procedures.

4.7 Testing and Inspection Agency

4.7.1 The Owner will engage an independent testing and inspection agency to perform testing, to inspect and evaluate connections, and prepare test reports.

4.7.2 Deficiencies in the structural steel work identified by the testing and inspection agency will be corrected at no additional expense to the Owner. Subsequent tests to confirm the adequacy of corrected work will be at the Contractor's expense.

## 5.0 MATERIALS

All materials shall be new and shall conform to the respective specifications and other requirements listed below:

5.1 Structural steel shapes shall conform to ATMS A992 and plates shall conform to ASTM A572 Grade 50 unless otherwise specified by Engineer.

5.2 Hot-formed steel tubing shall conform to ASTM A501.

5.3 Cold-formed steel tubing shall conform to ASTM A500, Grade B.

5.4 Steel pipe shall conform to ASTM A53, Type E or S, Grade B.

5.5 Steel Castings shall conform to ASTM A27, Grade 65-35, medium strength carbon steel.

5.6 Unfinished threaded fasteners shall conform to ASTM A307, Grade A, regular low carbon steel bolts and nuts. Provide either hexagonal or square heads and butts, except use only hexagonal units for exposed connections.

5.7 High strength threaded fasteners shall conform to ASTM A325. Heavy hexagonal structural bolts, heavy hexagonal nuts, and plain hardened washers, shall be quenched and tempered medium-carbon steel.

5.8 Plain washers, other than those in contact with high-strength bolts shall conform to ANSI B18.22.1, Type B.

5.9 Welding Electrodes for manual shielded metal-arc welding shall conform to the #70XX series of the "Specification for Mild Steel Covered Arc-Welding Electrodes", AWS A5.1 or the "Specification for Low-Alloy Steel Covered Arc-Welding Electrodes".

5.10 Non-shrink grout will be prepackaged material requiring only the addition of water and complying with CRD-C 621. It shall be natural aggregate (non-metallic) type, and high strength (minimum 10,000 psi at 28-day cure).

## 6.0 DELIVERY AND STORAGE

6.1 Deliver all material to the job site properly piece-marked for identification and corresponding to the markings indicated on the shop drawings.

6.2 Structural material, either plain or fabricated, shall be stored above the ground upon platforms, skids, or other supports. Material shall be kept free from dirt, grease, and other foreign matter and shall be protected from corrosion. Material shall be adequately supported and protected to avoid bending, twisting, or otherwise damaging the member.

## 7.0 FABRICATION

7.1 All structural steel shall be in accordance with the lines, dimensions, grades, details and notes shown on the drawings and as specified herein.

7.2 Substitutions of sections or modifications of details, or both, and the reasons therefore, shall be submitted with the shop drawings for approval. Approved substitutions, modifications, and necessary changes in related portions or the work shall be coordinated by the Contractor and shall be accomplished at no additional cost to the Owner.

7.3 Structural steel sections shall be continuous in length. No splicing, welding, or joining pieces of short lengths shall be permitted without written approval of the Owner.

7.4 The Contractor shall be responsible for all errors of detailing, fabrication, and for the correct fitting of the structural members.

7.5 Fabrication shall be in accordance with Section 1.23 of the AISC Specifications for Buildings. Said Section 1.23 consists of the following headings:

1.23.1 Straightening Material

1.23.2 Oxygen Cutting

1.23.3 Planing of Edges

1.23.4 Riveted and Bolted Construction holes

1.23.5 Riveted and High Strength Bolted Construction – Assembling

1.23.6 Welded Construction

1.23.7 Finishing

1.23.8 Tolerances

7.6 Generally, camber requirements shall be in accordance with Section 1.19 of the AISC Specification for Buildings. Special camber requirements, if any, are shown on the drawings.

7.7 In general, connections shall be shop welded and field bolted. All welded connections shall be made with E-70 electrodes. All bolted connections shall be made with ¾" diameter A325 H.S. bolts, unless otherwise noted on the design drawings.

7.8 Welds shall be made only by welders who have qualified by tests as prescribed in the "Code for Welding in Building Construction" of the American Welding Society, to perform the type of work required.

7.9 The design of connections for any part of the structure not indicated on the design drawings shall be completed by the Contractor. Unless otherwise shown, all beam connections shall be a standard frame or seated connections as shown in Part 4 of the AISC Manual of Steel Construction. Unless greater reactions are indicated on the design

drawings, connections shall develop the full "T" distance of the beam web. End connections for bracing shall develop the loads shown on the design drawings or one-half the strength of the member in tension, whichever is greater.

8.0 CONNECTIONS

8.1 Where structural joints are made using high-strength bolts, hardened washers and nuts tightened to a high tension, the materials, methods of installation and tension control, type of wrenches to be used and inspection methods shall conform to specifications for "Structural Joints using ASTM A325 Bolts" as approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation, latest edition.

8.2 The contact surfaces, when assembled with bearing type bolts, shall be painted and all connections shall be free of scale, except tight mill scale, and shall also be free of burrs, oil, pits, and other defects, which would prevent solid seating of the parts.

8.3 The contact surfaces within friction type joints shall be free of oil, paint lacquer, or galvanizing. High-strength steel bolted connections, of the friction type, will be called for on the drawings when required.

8.4 Primary field connections shall be bolted, using ¾" dia. ASTM A325-X galvanized bolts, bearing type connection with threads excluded from shear plane, with one heavy hexagon structural nut and one galvanized plain, hardened washer, (U.N.O.).

8.5 Beam connections shall be furnished in accordance with Part 4 of the AISC Manual of Steel Construction, eighth edition, (U.N.O.). All material in the connection shall be sized to accommodate the shear values shown for ASTM A325 bolts, using values for bearing type bolts with threads excluded from shear plane.

8.6 Before erection of structural steel commences, the proposed method of tightening the high-strength steel bolts shall be submitted to the Owner for approval. Recommended method for tightening of all structural bolts shall be by the turn-of-nut method as specified in the AISC Steel Construction Manual under "Specification for Structural Joints Using ASTM A325 or A490 bolts".

8.7 Minimum field connections shall be two bolts at all diagonal angle bracing members, U.N.O. At all wide flange and channel members, the number of connectors shall be that which will develop the full "T" distance.

8.8 Open holes shall be 13/16" dia., (U.N.O.). All holes, both shop and field, shall be drilled, cut or punched, not burned.

8.9 Shop connections shall be welded or high strength bolted connections may be substituted if approved by the engineer. For manual ARC, welding electrodes shall conform to AWS A5.1 or A5.5, E70XX series.

8.10 All connections shall be sized to develop the load or number of bolts indicated on the drawings.

8.11 Erection bolts, clip angles and temporary fastening required for erection shall be furnished by the steel fabricator.

8.12 Minimum clip angle thickness shall be 3/8" (U.N.O.).

8.13 Bracing members meeting at a point shall have their gravity axes meeting at one point if practical; if not, provisions shall be made for bending stresses due to eccentricity.

8.14 Gusset plates shall be 3/8" thick, minimum (U.N.O.)

8.15 All cut, sheared, sawed or burned edges and corners of all structural members (beams, columns, clip angles, etc.) shall have the edges ground smooth so that a round corner exists.

8.16 All welds shall be uniform in size and shall be in accordance with the AISC Specification for Architecturally Exposed Structural Steel. Welds that do not represent a reasonable smooth surface will be ground.

8.17 No pinholes, slag, or burrs shall be left on welds or steel.

8.18 Copes on beams shall be rounded and not squared. Identification of steel by piece-mark shall be by external tag and not by welding on steel.

8.19 All holes shall be flush with face of steel.

9.0 COLUMN BASES AND BEARING PLATES

9.1 Base plates or bearing plates shall be provided under columns, beams, girders, and any other steel members resting on concrete or masonry work. Base and bearing plates may be attached or loose as shown on the drawings. Loose base plates, leveling plates, and bearing plates shall be delivered to the job site along with detailed setting plans for placing and grouting by others.

9.2 Column bases shall be finished in accordance with Section 1.21.3 of the AISC Specification for Building.

9.3 Columns shall be milled or saw-cut to provide full bearing.

9.4 Base and cap plates shall be straight and true.

10.0 GALVANIZING

Galvanizing, shall be in conformance with ASTM A123 zinc (hot galvanized) coatings on products fabricated from rolled, pressed, and forged steel shapes, plates bars, and strips.

11.0 PAINTING (Where Designated)

11.1 Surface Preparation

11.1.1 Surfaces of all steel shall be thoroughly cleaned prior to painting, removing rust, loose mill scale, dirt, oil, and grease in accordance with the Steel Structure Painting Council Surface Preparation Specification.

11.1.2 Clean Steel in accordance with SSPC procedures as follows: SSPC-SP-10, Near-White Blast Cleaning.

11.2 One or more shop coats of paint shall be applied to all steel surfaces within eight hours of final cleaning. On encased steel in concrete or mortar the initial 2" of embedded steel shall be painted.

11.3 Unless instructed otherwise, all paint coats shall be applied in the shop with any touch-up paint applied after installation of steel is complete.

11.4 Steel that receives a yellow topcoat shall always have all paint coats applied in the shop with touch-up in the field after complete installation of steel.

11.5 Paint System

11.5.1 All structural steel shall receive a shop coat of building manufacturer's standard shop painting system. Application equipment and process shall be as recommended by manufacturer.

11.5.2 Color of the final coat shall be as approved by Owner. Preceding coats shall vary slightly in shade of color.

11.6 An inspection of surface preparation and dry film thickness of shop prime coat may be made prior to acceptance of steel. Steel members found to be deficient in these requirements will be brought to acceptable condition prior to acceptance.

11.7 All painting, shop and field touch-up, shall be done by a qualified painter.

11.8 Do not paint the following surfaces:

11.8.1 Machined or milled surfaces, unless noted otherwise.

11.8.2 Surfaces adjacent to field welds.

11.8.3 Faying surfaces of bolted connections.

11.8.4 Other surfaces when specifically noted on drawings or schedules.

11.8.5 Areas of friction type connections.

11.9 All connection bolts and nuts and all anchor bolt connections shall be cleaned, primed with the red touch-up primer paint, and a topcoat of paint applied after final torqueing of connections is completed.

## 12.0 SHOP QUALITY CONTROL

### 12.1 Testing and Inspection

12.1.1 General: Provide access to the testing and inspection agency so that specified testing and inspection can be safely accomplished.

12.1.2 Shop bolted connections: Comply with testing and verification procedures in AISC Specification for Structural Joints, except test not less than 100 percent of bolts in each bolted connection.

12.1.3 Shop welded connections: Inspect and test shop-fabricated welds as follows:

a. Perform visual inspection of all welds.

b. Inspect 100 percent of full penetration welds, using test method as follows:

1. Ultrasonic Testing (ASTM E164).

c. Inspect 100 percent of fillet welds, using test method as follows:

1. Magnetic Particle Inspection (ASTM) E709).

13.0 ERECTION

13.1 The work shall be erected square, straight, and plumb and accurately fitted. Adequate temporary bracing shall be provided to insure stability during the construction period.

13.2 Erection of the structural steel shall be in accordance with Section 1.25 of the AISC Specification for Buildings. Said Section 1.25 consists of the following headings, amended herewith as noted:

1.25.1 Bracing

1.25.2 Adequacy of Temporary Connections

1.25.3 Alignment

1.25.4 Field Welding

1.25.5 Field Painting (Touch-up only)

13.3 Errors or perforations resulting from handling and transportation or improper fabrication that prevents the proper assembly and fitting of the steel shall be reported to the Owner and approval of the method of correction shall be obtained. Approved corrections shall be made at no additional cost to the Owner.

13.4 Before commencing work, the Contractor shall check all governing measurements at the building and the levels of all footings on which the work is to be erected and shall notify the Owner of any discrepancies.

13.5 The Erector shall maintain a complete up-to-date set of erection drawings at the job site and shall keep a daily record by piece number of all material delivered to the job site and all material erected.

13.6 For holes that are improperly aligned, corrections shall be by machine drilling new holes. No burning of holes will be allowed.

13.7 Connection joints shall be cleaned of all dirt and dust before assembly.

13.8 Lifting of structural members shall be done in such a manner as to preclude damage to paint.

13.9 All base plates will be grouted by Contractor. A qualified person, experienced in the application of the "5-Star Grout", as manufactured by U.S. GROUT CORPORATION, shall apply grout.

SECTION 5B – MISCELLANEOUS METALS

1.0 SCOPE OF THE WORK

1.1 The work included under this section shall consist of furnishing all labor, tools, equipment, materials, services and supervision necessary to fabricate, deliver and erect complete miscellaneous metal items including, but not necessarily limited to, the following:

1.1.1 All miscellaneous items.

1.2 The following miscellaneous items are specified under this section but are to be furnished and installed by the Contractor performing the concrete work as provided by these specifications.

1.2.1 Inserts and anchors

1.2.2 Anchor bolts

1.2.3 Any other miscellaneous items embedded in concrete.

2.0 APPLICABLE SPECIFICATIONS

2.1 The Contractor shall follow the practices and standard described in the latest edition of the following specifications, which are made a part of this Specification.

2.2 American Institute of Steel Construction (AISC): Manual of Steel Construction.

2.3 American National Standards Institute, Inc. (ANSI): A14.3 Safety Requirement for Fixed Ladders.

2.4 American Welding Society (AWS):

B3.0 Qualification Procedure.

D1.1 Structural Welding Code.

2.5 Occupational Safety and Health Standards (OSHA).

3.0 SHOP DRAWINGS

Shop drawings, along with catalog cuts, templates, and erection and installation details, as appropriate, for all miscellaneous metal items shall be submitted for approval in triplicate to the Owner. Submittals shall be complete in detail; shall indicate thickness, type, grade, class of metal, and dimensions; and shall show construction details, reinforcement, anchorage, and installation with relation to the building construction. All welds shall be indicated by standard welding symbols of the American Welding Society.

4.0 GALVANIZING

4.1 Unless noted otherwise, all items specified or noted on the drawings, shall be hot-dipped galvanized in accordance with ASTM A123. All damage due to cutting or field welding, shall be repaired with "Galvalloy", "Galvastick", or equal.

5.0 GENERAL

5.1 In addition to the items listed herein, all miscellaneous metal work required for proper completion of the project, except as specified under other sections, shall be provided in accordance with the drawings.

5.2 The Contractor shall coordinate the work under this section with that specified in other sections of these specifications in order that all necessary items are provided as required. Supplementary parts and materials necessary to complete each item, even though such work is not definitely shown or specified, shall be included. All miscellaneous bolts and anchors necessary for the completion of the work shall be furnished as part of this section of the specifications. Anchors not shown in detail on the drawings shall be such as to conform to the accepted practices of the trade and as approved by the Owner. All miscellaneous bolts and anchors, supporting members, braces framing members and connections necessary for completion of the miscellaneous metal work shall be provided as part of the work under this section of the specifications.

5.3 Items specified to be galvanized, when practicable and not indicated otherwise, shall be hot-dipped processed after fabrication. Galvanizing shall be in accordance with ASTM A123, A386, or A525 as applicable.

5.4 Inserts of suitable and approved type shall be furnished and installed where necessary for the support of equipment, apparatus, or other work.

5.5 Miscellaneous metal work shall be well formed to shape and size, with sharp lines and angles. Shearing and punching shall produce clean, true lines and surfaces. Permanent connections shall be welded, bolted, or riveted. Exposed surfaces shall have a smooth finish and sharp, well-defined lines and arises. Work shall be evenly sprung to curves. Joints shall be milled to a close fit. The necessary rebates, lugs, and brackets shall be provided so that the work can be assembled in a neat and substantial manner. Holes for bolts and screws shall be drilled or punched. Poor matching of holes shall be cause for rejection. Fastenings shall be concealed where practicable. Exposed fastenings shall be compatible materials, shall generally match in color and finish, and shall harmonize with the material to which fastenings are applied. Thickness of metal and details of assembly supports shall give ample strength and stiffness. Joints exposed to the weather shall be formed to exclude water. Welding to or on structural steel shall be in accordance with the Structural Welding Code of the American Welding Society. Welding shall be continuous along entire area of contact, except where tack welding is permitted. Tack welding shall not be permitted on exposed surfaces. All exposed welds shall be ground smooth. Surfaces to be welded shall be properly prepared. Each deposited layer of weld material shall be thoroughly cleaned before additional weld material is applied. All welds shall have complete fusion with the base metal and shall be of uniform thickness free from cracks, oxides, slag inclusions and gas pockets. Corner joints shall be coped or mitered, well formed, and in true alignment. Work shall be accurately set to establish lines and elevations and securely fastened in place. Work shall be executed and finished in accordance with approved drawings, cuts, details and samples.

6.0 DISSIMILAR METALS

Contractor shall take every precaution to prevent the occurrence of electrolytic action between dissimilar metals on all exterior work and on interior work exposed to moisture or high humidity. Copper products shall not be used in connection with aluminum work, nor shall aluminum be used in locations subject to drainage of copper compounds on the bare aluminum. Surfaces of ferrous metals in contact with aluminum shall be painted one coat of Zinc-chromate primer and one coat of aluminum-pigmented bituminous paint. Aluminum in contact with masonry or concrete shall be back painted with two coats of aluminum-pigmented bituminous paint. Stainless steel shall not have direct contact with carbon steel or zinc.

7.0 SEALING

It is intended that all work under this section shall be weather tight in every respect as required for good workmanship. All joint filling and sealing to this end shall be done in accordance with the standard practice for this class of work.

8.0 SAMPLES

Samples shall be full size, shall be taken from manufacturer's stock, and shall be complete as required for installation in the structure. After approval, samples may be installed in the work, provided each sample is clearly identified and its location recorded. One sample of any item shall be submitted for approval upon request by the Owner.

9.0 CERTIFICATION

Welding to or on structural steel or miscellaneous items of structural steel such as lintels shall be performed by certified welders qualified in accordance with procedures covered in AWS B3.0 using procedures and materials and equipment of the type required for the work. Verification of certified welders will be required if requested by Owner.

10.0 ANCHORAGE

10.1 Anchorage shall be provided where necessary for fastening miscellaneous metal items securely in place. Anchorage not otherwise specified or indicated, shall include slotted inserts, expansion shield, and power-driven fasteners when approved for concrete; toggle bolts and through bolts for masonry; machine and carriage bolts for steel; through bolts, lag bolts, and screws for wood. Slotted inserts shall be of types required to engage with the anchors and shall be approved by the Owner.

10.2 Anchor bolts shall have two heavy hex nuts and one plain-hardened flat washer, and shall all be ASTM A36 carbon steel.

11.0 MATERIALS

11.1 Structural steel members shall conform to the requirements of ASTM A572, Grade 50, unless otherwise specified.

11.2 Bolts and anchor bolts shall conform to the requirements of ASTM A36 or ASTM A325, unless otherwise specified.

11.3 All items specified or indicated to be galvanized shall be hot-dipped galvanized in accordance with ASTM A123.

11.4 Anchors and Bolts

Anchors and bolts, in addition to those indicated, shall be provided where necessary for securing the work in place. Sizes, types, and spacings of anchors and bolts not indicated or specified otherwise shall be as necessary for their purposes. Anchors and bolts in

contact with ferrous metal shall be of the same or approved metals compatible with the materials, which they adjoin except anchors into concrete, shall be stainless steel.

GRATINGS-BAR GRATINGS AND FLOOR PLATES

1.0 Unless otherwise noted, grating shall be galvanized standard rectangular pattern, welded steel grating, with 1" x $^{3}/_{16}$" bearing bars W/L spacing, and fastened to structural steel with galvanized clamps. The grating clips shall be manufactured by IKG Borden or equal specifically for the W/L spacing grating. The clips shall be installed in the manner and quantity as recommended by IKG Borden.

2.0 No penetration of steel will be allowed by grating galvanized clamp connectors.

3.0 No tack welding of grating will be allowed.

4.0 Each piece of grating shall be banded on all sides with galvanized flat bar of the same depth as the grating and 3/16" thickness.

5.0 Care shall be taken not to cut grating after galvanizing has been applied. If field modification of the grating is required, then the grating shall be tool cleaned as required by SSPC SP 1/2/3 after cutting. After surface preparation has been completed, "Spray-Galv." (Anchor Brand), as manufactured by Dynaflux Co., Cartersville, Ga., shall be applied as required per manufacturer's recommendations. Minimum dry film thickness to be 2.5 mils achieved in minimum of two applications.

6.0 If modification of in-place grating is required, and the modification falls on a structural member, then grating shall be removed for modification, modified as required, and replaced back into position. If removal of the grating is not possible, then torch cutting will be permitted with the following stipulations: the angle of the cutting torch shall be as close to parallel to the structural member below to avoid blistering or blackening of the paint below. After grating modification is complete, the grating shall be repaired in accordance with these specifications. The structural member below shall be touched-up as required.

7.0 All openings in grating greater than 6" diameter or 6" square shall be banded with continuous 3/16" flat bar and shall extend 4" above top of grating. Location of all openings through gratings shall be coordinated with the respective trade requiring the opening, prior to fabrication.

8.0 Floor Loadings

Live = 80 psf

| | | |
|---|---|---|
| Dead | = | 55 psf |
| Total | | 135 psf |

9.0 Deflections

9.1 Less than ¼ " under floor load (135 psf). The Contractor shall provide additional secondary structural members as grating supports for all spans greater than 48" center to center. The detailer shall include the additional members in the shop drawings for review and approval by the Engineer.

9.2 Gratings, where indicated, shall be removable or hinged and shall be arranged in sizes to be readily lifted. Frames to receive the gratings shall be fabricated of structural shapes by welding with exposed welds ground smooth. Both the frames and the gratings shall finish flush with the adjacent floors.

9.3 Grating shall be fabricated in panels of sizes suitable for delivery and installation, and shall be secured in place by bolted galvanized clips as approved or indicated on the design drawings.

9.4 All grating shall receive a hot-dip galvanized coating after fabrication.

9.5 Floor plate shall be commercial grade carbon steel with skid resistant raised pattern. The plate shall have a nominal thickness of ¼" and shall be reinforced with angles as shown on the drawings.

9.6 Floor plate shall be hot dipped galvanized after fabrication with angle stiffeners and flat bar bearing block.

DIVISION 6 – NOT USED

DIVISION 7 – THERMAL AND MOISTURE PROTECTION

SHEET METAL FLASHING AND TRIM

1.0 Vent Flashing. Vent pipes shall be flashed and made watertight at the roof with sheet lead weighing not less than 4 lbs./sq. ft. Flashing shall extend not less than 8" from the pipes in all directions, shall be extended to the tops of the vent piles, and shall be turned down into the pipes. Extreme care shall be taken to prevent rupturing flashing when turning it into pipe. The flashing shall be made to lay flat against inside of vent pipe to prevent stoppage of vent pipe.

2.0 Flashing at Curbs for Machinery, Ventilators, or Other Penetrations of Roof. Curbs shall be flashed and made watertight at the roof with 16 oz. copper.

3.0 Metal Counterflashing. Shall be 16 oz. copper.

JOINT SEALANTS

All caulking in exterior walls at window and door openings, etc., shall be Sikaflex 1-A. Caulking shall be backed with Ethafoam backer rod, ⅜" thick.

WATERPROOFING

1.0 Membrane Waterproofing. On below-grade walls and under-grade slabs, lay waterproof membrane composed of two plies of 15 lb. felt, each ply to be lapped 6" and each ply to be mopped completely with hot asphalt.

DOORS

SCOPE OF THE WORK

The work included under this section shall consist of furnishing all labor, tools, equipment, materials, and supervision necessary to complete installation of all doors, frames, and hardware specified herein and indicated on the drawings.

DOOR HARDWARE

1.0 Each door and frame shall be connected by three hinges. Hinges shall not bind or squeak and shall provide smooth operation.

2.0 Door knobs shall be centered approximately 3'-5 $^{3}/_{16}$" above finished floor.

3.0 Weatherstripping shall be $^{3}/_{16}$" polyurethane.

4.0 All hardware shall be stainless steel.

5.0 Locksets, passage, and strikes are to be furnished as per Owner's master keying system.

STEEL DOORS AND FRAMES

1.0 Hollow metal door frame shall be minimum 16 gauge steel with a standard frame profile 5¾" by 2" for jambs and heads. Frame shall be factory-assembled, with mitered head-corners, integral stops welded and ground smooth. Frame shall be reinforced, drilled, and tapped for hinges, strikes, closures, and brackets. Frame shall be accurately mortised for hardware. Three rubber mutes shall be furnished on the strike jamb of the frame. Jamb anchors are to be suitable for wall conditions. Frame shall be bonderized and painted one prime coat of rust-inhibitive paint standard with the manufacturer.

2.0 Hollow metal door shall be 1¾" thick of size indicated on the drawings. Door panels shall be minimum 16 gauge steel with polystyrene core. The hinge edge channel shall be minimum 14 gauge and the lock edge shall be minimum 14 gauge. Door shall be mortised and reinforced for hinges, die cut, and reinforced for hardware and closures. Door shall be rigid and neat in appearance, free from warp or buckle. Door shall have factory applied prime coat, baked on.

DIVISION 8 – NOT USED

DIVISION 9 – NOT USED

DIVISION 10 – NOT USED

DIVISION 11 – NOT USED

DIVISION 12 – NOT USED

DIVISION 13 – METAL BUILDING

1.0 SCOPE OF WORK

1.1 This division covers the requirements of the metal building system supplier/erector. Metal building components will be completely pre-engineered and supplied by the contractor with complete shop drawings, reactions, calculations, and anchor bolt design and layout. The metal building manufacturers will provide reactions to the engineer for foundation modifications as required. The drawings will bear the stamp of a registered structural engineer in the State of Alabama.

Erector shall have an established tract record, and shall have been in business for at least ten consecutive years.

Erector shall have certified welders, and must be fully insured and bondable.

Erector shall provide an affidavit of compliance that erection is accomplished in accordance with MBMA metal building manufacturer association and supplier standards.

All steel sections and welded plate members shall be designed in accordance with AISC standards.

1.2. The building addition will have structural girts, base angles, window framing and miscellaneous items as shown on the plans and as required for the complete building system. Light gauge end wall columns and/or rafters **shall** not be allowed.

1.3. Bay spacing will be 18'-6" and shall be verified by the contractor prior to component fabrication.

2.0 REFERENCES

ISC - Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design, 1989.

AISI - Specification for the Design of Cold-Formed Steel Structural Members 1996 Edition with 1999 Addendum.

ASTM A307 - Specification for Carbon Steel Bolts and Studs, 60 KSI Minimum Tensile Strength, 2000.

ASTM A325 - Specification for Structural Bolts, Steel, Heat Treated, 120/105 KSI Minimum Tensile Strength, 2000.

ASTM A792 - Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process, 1999.

AWS D1.1 - Structural Welding Code - Steel , 2000.

MBMA Metal Building Systems Manual, 2002.

SSPC - SP-2 - Specification for Hand Tool Cleaning, 1995

CMAA – Cranes Manufacturers Association of America – Specification No. 70 Revised 2000.

3.0 DESIGN REQUIREMENTS

3.1 The building components shall be designed by the manufacturer as a complete system. All components of the system shall be supplied or specified by the same manufacturer.

3.2 Design load application shall be in accordance with the International Building Code as adopted in the local building regulations.

3.3 The dead load shall be the weight of the metal building system as determined by the system manufacturer.

3.4 The collateral load shall be 5 psf or as shown on the drawings. The collateral load shall not be applied to the roof panels.

3.5 The building system shall be capable of supporting a minimum uniform live load of 20 psf, reducible to the extent allowed by the International Building Code.

3.6 The design wind speed for the metal building system shall be 159mph.

3.7 Deflections shall be limited as follows:

Primary Framing: L/240 for live load.

H/180 wind load.

Secondary Framing: L/240 for roof dead load + roof live load.

3.8 The building shall be designed for all load combinations of specific loads as dictated by the International Building Code and ASCE requirements.

3.9 Gutters and downspouts shall be designed to handle rainstorms exceeded only once in 10 years, with adequate provision for thermal expansion and contraction. Gutters and downspouts shall be designed, fabricated and erected to withstand a 159 MPH wind.

4.0 SUBMITTALS

Approval by the Engineer is required for the component design drawings and they shall bear the professional seal and signature of a licensed professional engineer registered in the State of Alabama. The building design shall conform to the requirements shown on the bid drawings and in this specification. The manufacturer shall be required to submit anchor bolt placement plan and column reactions in advance of the erection drawings.

5.0 QUALITY ASSURANCE

5.1 Structural steel members shall be designed and fabricated in accordance with AISC-Specification for Structural Steel Buildings.

5.2 Framing members shall be cleaned of loose rust, loose mill scale and other foreign matter and coated with the building manufacturer's standard primer.

6.0 QUALIFICATIONS

6.1 The company manufacturing the metal building system shall have a minimum of 10 years experience in the design and manufacture of steel building systems.

6.2 The erector shall have at least 10 years specialized experience in the erection of metal building systems. The erector shall have experienced employees and have the proper equipment to undertake a project of this size.

7.0 WARRANTY

7.1 The metal building system shall be warranted against material and workmanship deficiencies for a period of 10 years.

7.2 **NOT REQUIRED**-The panel manufacturer’s 20-year warranty shall be provided for the roof and wall panels. The roof panels, wall panels and trim shall be Galvalume or color with the color to be selected by the **OWNER** from manufacturer's standard colors.

8.0 ROOF SYSTEM-**NOT USED**

9.0 WALL SYSTEM

9.1 The exterior wall covering shall be 26 gage “PBR” profile panels with a minimum yield stress of 80,000 psi. The base steel shall be coated with high-strength Galvalume

produced to ASTM A792. The exterior surface will be precoated with a siliconized polyester finish to match existing colors.

9.2 Wall insulation shall be, if required, 3" fiberglass blanket type, faced with reinforced white vinyl.

9.3 Wall panel to secondary fasteners shall be self-drilling #12 x 1-¼" SS screws with a weather sealing washer, colored to match wall panels.

9.4 Side lap fasteners shall be #12 x ¾" SS pierce-point screws with a weather sealing washer, colored to match wall panels.

10.0 TRIM

Flashings, rake trim, eave trim, corner trim, window trim, door trim, caps and similar metal accessories shall be of the same material and finish as adjacent material, with the color to match the existing building colors.

11.0 METAL DOORS AND FRAMES

Doors and frames shall be designed by the manufacturer to meet the wind load criteria as specified, maximum wind speed 159 MPH.

12.0 ERECTION

12.1 GENERAL

Verify that the site conditions are in accordance with the provided site drawings. Verify that foundation is of the correct dimensions and properly squared. Verify that the placed anchor bolts are properly sized and in the correct positions. Report any unsatisfactory conditions to the Engineer and do not proceed until the unsatisfactory conditions have been corrected.

12.2 FRAMING

12.2.1 Erect framing in accordance with MBMA Metal Building Systems Manual, Common Industry Practices.

12.2.2 Erect the building frames true and level with vertical members plumb and bracing properly installed. Maintain the structural stability of frame during erection.

12.2.3 Any holes requiring enlargement to admit bolts must be reamed. Burned holes for bolted connections are not permitted without written approval by the building manufacturer.

12.2.4 The erector shall furnish temporary guys and bracing where needed for squaring, plumbing, and securing the structural framing against loads acting on the exposed framing during the erection operation. Bracing furnished by the manufacturer for the metal building system cannot be assumed to be adequate during erection and are not to be used to pull frames into plumb condition. The temporary guys and braces are the property of the erector, and the erector shall remove them immediately upon completion of erection.

12.2.5 The erector shall not field cut or modify any structural members without the prior approval of the metal building manufacturer.

12.2.6 After erection, the erector is required to clean and prime any welds, abrasions, and surfaces needing touch-up. The primer color is to match the primer used by the building manufacturer.

12.3 WALL AND ROOFING SYSTEMS

12.3.1 Install all wall and insulation in accordance with manufacturer's instructions and details.

12.3.2 Exercise care when cutting prefinished material to ensure that cuttings do not remain on finish surface.

12.3.3 Fasten cladding system to structural supports, using the proper fasteners, aligned level and plumb.

12.3.4 Set girts according the manufacturer’s drawings and bolt to appropriate clips or pre-drilled holes as designed by the building manufacturer.

12.3.5 Place roof panels at a right angle to the purlins and girts. Attach and plumb wall panels as shown on drawings. Maintain consistent coverage for entire length of the roof and each wall. Predrill the panels when possible. Panel end laps shall be a minimum of 6” on the roof. No laps will be permitted on the walls. Apply butyl panel side and end lap sealant between panel ends and side laps to provide watertight installation.

12.4 GUTTER, DOWNSPOUT, FLASHINGS AND TRIM-**NOT USED**

12.4.1 Install gutters and downspouts, flashings and trim in strict accordance with manufacturer's drawings, using proper sheet metal procedures.

12.4.2 Install downspouts to catch basins and storm drain piping.

12.5 TOLERANCES

All work shall be performed by experienced workmen in a workmanlike manner to published tolerances.

DIVISION 14 – NOT USED

DIVISION 15 - MECHANICAL – Under Separate Contract

SEE DRAWINGS AND OTHER SHEETS FOR NOTES/SPECS/DETAILS FOR THESE SECTIONS

DIVISION 16 - ELECTRICAL

SEE DRAWINGS AND OTHER SHEETS FOR NOTES/SPECS/DETAILS FOR THESE SECTIONS