

Project Manual for:
County of Marquette
Courthouse Stair Replacement
Marquette, Michigan

Issued:
March 14, 2024
For Construction

Project Number:
2332

Prepared By:



420 Rail Street
Negaunee, MI 49866
906-475-6616
WWW.NDW.US

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Not Used

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Not Used

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Not Used

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Not Used

End of Section

**Section 00 11 16
Invitation to Bid**

Notice is given hereby that

County of Marquette

will accept bids from qualified contractors for construction of:

Courthouse Stair Replacement

according to Drawings and Specifications prepared by:

Northern Design Works
420 Rail Street
Negaunee, MI 49866

Including, but not limited to: Replacement of two exterior concrete stairs and installation of snow melt system in south stair.

Sealed bids will be received at the Resource Management / Development Department, 234 W. Baraga Avenue, Marquette, Michigan, until 10:00 AM local time, April 11, 2024. At that time, bids will be publicly opened. Bids received after the date and time specified may be returned to the bidder, unopened.

Bids will be taken on a lump sum basis as defined on the bid form. Bids shall be accompanied by bid security equal to 5% of the bid amount.

100% surety bonds for performance and payment of labor and materials are required.

Bid documents may be examined at the following locations:

Resource Management and Development
Marquette County Courthouse
234 W. Baraga Avenue
Marquette, MI 49855

Northern Design Works
420 Rail Street
Negaunee, MI 49866

Marquette Builders Exchange

Iron Mountain Builders Exchange

Builders Exchange of Northwest Michigan

Delta County Builders Exchange

Bid documents are available from the office of the architect, upon payment of \$50. Partial sets will not be issued. Electronic versions of the documents are available via e-mail at no cost.

Contractors are requested to notify the architect of their interest in the project, so they can be placed on the plan holders list.

The owner reserves the right to reject any or all bids and to waive irregularity in the bidding or the bidding process and accept the bid that is most advantageous to the owner.

Dated: March 14, 2024

by: County of Marquette

End of Section

Section 00 21 00 Instructions to Bidders

PART 1 - General

1.1 Summary

- A. Section includes:
 - 1. Pre-bid conference.
 - 2. Bidder representations.
 - 3. Bid submission.
 - 4. Contract time.
 - 5. Bidding documents.
 - 6. Inquiries and addenda.
 - 7. Product substitutions.
 - 8. Site examination.
 - 9. Bidder qualifications.
 - 10. Subcontractors and suppliers.
 - 11. Submission procedure.
 - 12. Permits and Fees.
 - 13. Rejection of bids.
 - 14. Security deposit.
 - 15. Performance assurance.
 - 16. Acceptance of bid.
 - 17. Correction or withdrawal of bids.
 - 18. Form of agreement between owner and contractor.
- B. Related documents:
 - 1. Section 00 11 16 – Invitation to Bid.
 - 2. Section 00 41 00 – Bid Form.
 - 3. Section 00 73 00 – Supplementary Conditions.

1.2 Pre-Bid Conference

- A. A pre-bid conference will be held at the Baraga Avenue entrance of the Marquette County Courthouse, on March 21, 2024, at 10:00 AM local time. This meeting is not mandatory, however prospective bidders are strongly encouraged to attend.

1.3 Bidder Representations

- A. By submitting a Bid, the Bidder represents that:
 - 1. The bidder has examined and understands the bidding documents.
 - 2. The Bid is made in compliance with the bidding documents.
 - 3. The bidder has examined the site in accordance with ‘Site Examination’ below.
 - 4. The bid is based on the materials, equipment, and systems required by the bidding documents without exception.
 - 5. The Bid is based solely on the information contained in the bidding documents, including addenda, and the bidder has not relied on any verbal statement from the Owner or Architect in the preparation of the Bid.

1.4 Bid Submission

- A. Refer to Section 00 11 16 – Invitation to Bid for bid date, time, and location.

- B. Bids received after the date and time stated above may be returned to the bidder unopened.
 - C. Amendments to submitted bids will be permitted when received in writing prior to bid closing and when endorsed by the same party or parties who signed and sealed the bid.
- 1.5 Contract Time
- A. The Work is to be substantially complete by October 15, 2024.
- 1.6 Bidding Documents
- A. Refer to Section 00 11 16 – Invitation to Bid for information on document availability.
 - B. Bidding Documents are made available only for the purpose of obtaining bids on this Project. Their use does not grant a license for other purposes.
 - C. Bidders shall use complete sets of bidding documents in the preparation of their Bid. Neither the Owner nor the Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of bidding documents.
- 1.7 Inquiries and Addenda
- A. Direct questions in writing to the office of the Architect.
 - B. Verbal answers are not binding on any party and bidders shall not rely on them.
 - C. Submit questions not less than four (4) days before bid date. Replies will be made by Addenda when required.
 - D. Addenda will be issued at least two (2) days before bid date, unless addenda include a revision in bid date. Addenda will be issued to all plan holders who have notified the Architect of their interest in bidding the project and to all plan rooms known to the Architect to have sets on file.
 - E. Costs for all addenda shall be included in the Bid.
 - F. Each bidder shall verify their receipt of all addenda before submitting a Bid and shall note receipt of addenda where indicated on bid form.
- 1.8 Product Substitutions
- A. The materials, products, and equipment described in the bid documents establish a standard or required function, dimension, appearance, and quality to be met by any proposed substitution.
 - B. Where bidding documents stipulate particular Products and substitutions are allowed, Bidders may submit requests for substitutions in writing no later than seven (7) days prior to bid date. With each substitution request provide enough information for Architect to determine acceptability of proposed products. Requests without sufficient information will be rejected without review.
 - C. Approved substitutions will be identified by addenda.
 - D. Claims by the bidder after the bid date for an addition to the Contract Time or Contract Sum because of changes in the Work necessitated by substitutions will not be considered.
- 1.9 Site Examination
- A. All contractors will be responsible for reviewing the existing site conditions prior to bidding. Each bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the work is to be performed and shall include in his bid a sum to cover the cost of items necessary to perform the work as set forth in the contract documents. No allowance will be made to a bidder because of lack of

such examination. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

- B. The pre-bid conference described above is the only opportunity for prospective bidders to visit the site.

1.10 Bidder Qualifications

- A. To demonstrate qualifications to perform the Work of this Project, Bidders may be requested to submit written evidence of financial position, previous experience, current commitments, licensure, and current and past legal disputes related to project performance. All such information will be treated as confidential by the Architect and Owner and used for purposes of evaluating contractor qualifications only.

1.11 Subcontractors and Suppliers

- A. Bidder shall state proposed sub-contractors where requested on the bid form. Failure to do so may be cause for rejection of a bid.
- B. The Owner reserves the right to reject proposed sub-contractors or suppliers for reasonable cause.
- C. Refer to AIA document A201-2017, article 5 of General Conditions.

1.12 Submission Procedure

- A. Bidders are solely responsible for delivery of Bids in manner and time described.
- B. Submit two copies of executed offer on Bid Form provided, signed by an authorized individual, with bid security as noted in Section 00 11 16 – Invitation to Bid, in a sealed envelope. Label the envelope with the bidder's name, project name, and 'sealed bid'.
- C. Bids will not be accepted in facsimile, phone, electronically transmitted, or verbal format.
- D. A bid summary will be available to bidders after bids are received and reviewed.

1.13 Permits and Fees

- A. The Bid shall include all applicable fees and permit costs required by authorities having jurisdiction over the project unless noted otherwise in these specifications.

1.14 Rejection of Bids

- A. Bids that do not meet the requirements stated above, are un-signed, or illegible may be rejected by the Owner.

1.15 Security Deposit

- A. Refer to Section 00 11 16 – Invitation to Bid, for amount of bid security required.
- B. Security may be in one of the following forms:
 - 1. Certified check in the name of the Owner.
 - 2. Bid bond on AIA document A310 – Bid Bond or surety standard form. Bond shall be endorsed in the name of the Owner as obligee, signed and sealed by principal (Contractor) and surety.
- C. Security deposit of accepted bidder will be returned after execution of contract and submittal of any required bonds.
- D. After a bid has been accepted, security deposit will be returned to other bidders.

1.16 Performance Assurance

- A. The accepted bidder shall provide a performance and payment bond as described in 00 73 00 – Supplementary Conditions. The cost of such bond shall be included in the contract sum.

1.17 Acceptance of Bid

- A. The Owner reserves the right to accept or reject any offer, with or without cause and to waive any informalities or irregularities in the bidding process.
 - B. If the lowest bid exceeds the project budget, the Owner reserves the right to negotiate scope changes, and contract sum adjustments, with the lowest bidder.
 - C. After acceptance of the bidder by the Owner, the Architect will issue, on behalf of the Owner, a letter of award. The bidder shall then cooperate with the Owner, with technical and practical advice from the Architect, to prepare and execute a contract within the time stated on the bid form.
- 1.18 Correction or Withdrawal of Bid
- A. Bidders may withdraw their bids by written request at any time before bid closing. The written request shall not reveal the amount of the bid.
 - B. After the bid closing, corrections may be made to bids where the error resulted from mathematical or clerical errors and the correct information is readily apparent from the information on the bid form.
 - C. Bidders may be allowed to withdraw their bid after bid closing, without penalty, for serious mistakes of fact given that:
 - 1. The mistake is objectively provable.
 - 2. The mistake is large enough to present a material detriment to the bidder.
 - D. Bidders will not be allowed to withdraw their bid after bid closing for mistakes of judgment. Bidders which do not execute a contract in such a situation will forfeit their bid security as damages to the Owner as stated on the bid form.
- 1.19 Form of agreement between Owner and Contractor
- A. The form of agreement shall be AIA document A101 – Standard Form of Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum, 2017 edition.
 - B. AIA document A201 – General Conditions of the Contract for Construction, 2017 edition, is included by reference herein.
 - 1. Refer to Section 00 73 00 – Supplementary Conditions for modifications to the General Conditions.
 - C. Copies of these documents may be obtained from the office of the Architect.

End of Section

**Section 00 41 00
Bid Form**

PART 1 - General

1.1 Project Information

- A. To: County of Marquette, hereinafter called 'Owner'.
- B. Project: Courthouse Stair Replacement
- C. Date: April 11, 2024

1.2 Contractor Information

- A. Submitted by:

(Hereinafter called 'Bidder')

(Address)

(Address)

(Phone number and e-mail)

1.3 Bid

- A. Base Bid

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Northern Design Works for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

(Dollars)

(\$ _____) in lawful money of the United State of America

- B. Contract Time

If this bid is accepted, we will achieve Substantial Completion by October 15, 2024.

- C. Bid Acceptance

This offer shall be open to acceptance and irrevocable for thirty (30) days from the Bid Date.

If the Owner accepts the Bid within the time stated above, we will:

1. Execute the Agreement within seven (7) days of receipt of Notice of Award.
2. Furnish the required bonds, as described in Section 00 73 00 – Supplementary Conditions, within seven (7) days of receipt of Notice of Award.
3. Commence work within seven (7) days of Notice to Proceed.

If this bid is accepted within the time stated, and we fail to commence the Work, the security deposit shall be forfeited as damages to the Owner by reason of our failure,

limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit will be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

D. Addenda

The following addenda have been received. The modifications to the Bid Documents have been noted and all costs are included in the Bid Sum.

1. Addenda numbers _____

E. Sub-Contractors

The following work will be performed by Sub-Contractors and coordinated by the Contractor. Failure to list sub-contractors at bid time may be a cause for rejection of the bid. (indicate portion of work and sub-contractor name, attach additional sheet if needed):

F. Voluntary Alternates

The Contract Sum proposed by the undersigned on the Bid Form is for the work as shown on the Drawings, described in the Specifications and otherwise defined in the Contract Documents. However, the undersigned proposes the following Voluntary Alternates for the Owner's consideration. Should the Owner accept any or all of the proposed substitutions, the bidders proposed Contract sum would be reduced by the amount shown (indicate specified product or material, proposed substitute, and reduction in Sum):

G. Bid Form Signatures

(Authorized Signature(s))

(Printed name(s) and title(s))

(Type of organization – Corporation, partnership, etc.)

Affix corporate seal, additional signatures required to give authority to bind corporation, or additional signatures for a joint venture or partnership as appropriate.

End of Section

Section 00 73 00 Supplementary Conditions

PART 1 - General

- 1.1 Summary
 - A. This document includes Supplementary Conditions to the General Conditions of the Contract for Construction.
- 1.2 Related Documents
 - A. Section 00 21 00 – Instructions to Bidders: Reference to Agreement and General Conditions.
- 1.3 Supplementary Conditions:
 - A. These Supplementary Conditions modify the General Conditions of the Contract for Construction, AIA Document A201-2017, and other provisions of the Contract Documents as indicated below. All provisions that are not so modified remain in full force and effect.
 - B. The terms used in these Supplementary Conditions that are defined in the General Conditions of the Contract for Construction, AIA Document A201-2017, have the meanings assigned to them in the General Conditions.

Article 1.1 Basic Definitions

Add the following:

1.1.9 Miscellaneous Definitions

- A. The term 'product' includes materials, systems, and equipment.
- B. The term "provide" includes furnishing and installing a product, complete in place, tested and approved.
- C. The term "building code," and the term "code," refer to regulations of governmental agencies having jurisdiction.
- D. The terms "approved," "required," and "as directed" refer to and indicate the work or materials that may be approved, required, or directed by the Architect acting as the agent of the Owner.
- E. The term "similar" means in its general sense and not necessarily identical.
- F. The terms "shown," "indicated," "detailed," "noted," "scheduled," and terms of similar import, refer to requirements contained in the Contract Documents.

Article 3.10 Contractor's Construction Schedules

Add the following to 3.10.3:

In planning the construction schedule within the agreed contract time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. The Architect will consider those weather delays attributable to abnormal weather conditions only.

Add the following to 3.10.3:

When the contract time has been extended, as provided under this Paragraph, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative or similar costs.

Article 3.14 Cutting and Patching

Add the following:

3.14.3 Each Subcontractor shall do all fitting of their own work as required to make its several components fit together or to receive the work of other Contractors. Holes cut in exterior walls or roofs for installation of mechanical or electrical equipment shall be waterproofed by the Contractor responsible for such installation.

Article 9 Payments and Completion

Add the following to 9.3.1:

The form of application for payment shall be AIA Documents G702, "Application and Certificate for Payment," supported by continuation sheet or sheets G703 as approved by the Owner.

Add the following:

9.6.8 Retainage: Progress payments shall include that portion of the Contract Sum properly allocable to completed Work and stored materials, less Retainage of ten percent (10%).

Article 11 Insurance and Bonds

Add the following to 11.1.2:

Insurance coverage shall conform to the attached County of Marquette requirements.

Substitute the following for 11.4.1:

11.4.1 The Contractors shall furnish a Performance Bond in an amount equal to One Hundred Percent (100%) of the Contract and, also a Labor and Material Payment Bond in the amount of not less than One Hundred Percent (100%) of the Contract Sum or in a penal sum not less than that prescribed by State, Federal, Territorial, or Local Law, as security for payment of persons performing the Labor on the Project under this Contract and furnishing material in connection with this Contract. The Performance and Material Payment Bond may be in one or separate instruments and shall be delivered to the Owner not later than the date of execution of the Contract. Bonds shall be submitted on AIA document A312 or surety's standard form.

End of Section

ADDENDUM TO CONTRACT

INDEMNIFICATION

To the fullest permitted by law, the Contractor shall indemnify, defend, and hold harmless the County of Marquette, its officers, agents, employees, elected and appointed officials, and volunteers from and against any and all claims, losses or liability, including attorney's fees, arising from injury or death to persons or damage to property occasioned by any act, omission or failure of the Contractor, its subcontractors, and any of its officers, agents, employees, and volunteers in performing the work required by this contract. The Contractor's obligation under this provision shall not be limited in any way by any terms of this contract, or the insurance limits. In order to assure a source of funding to meet this indemnification obligation, the Contractor shall, at its sole cost and expense, obtain and maintain the following described insurance coverages:

LIABILITY INSURANCE

The Contractor shall procure and maintain for the duration of the contract, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, employees, volunteers, or subcontractors.

INSURANCE REQUIREMENTS

The insurance coverage required shall be at least as broad as:

1. Commercial General Liability ("occurrence" form).
2. Automobile Liability, "any auto".
3. Workers' Compensation insurance as required by the laws of the state of Michigan and Employer's Liability insurance.

LIMITS OF INSURANCE

The Contractor shall maintain limits on said policy of no less than:

1. Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury, and property damage.
2. Automobile Liability: \$500,000 combined single limit per accident for bodily injury and property damage.
3. Worker's Compensation and Employer's Liability: Shall be those limits as required by the Worker's Disability Compensation Act for the state of Michigan and Employer's Liability limits of \$500,000 per occurrence.

DEDUCTIBLES

Any deductibles or self-insured retentions must be declared to and approved by the County.

OTHER INSURANCE PROVISIONS

The policies are to contain, or be endorsed to contain, the following provisions:

1. Commercial General Liability and Automobile Liability Coverages:

- a. The County, its officers, agents, employees, elected and appointed officials, and volunteers shall be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the Contractor; products and completed operations of the Contractor; premises owned, occupied or used by the Contractor, or automobiles owned, leased, hired or borrowed by the Contractor. The coverage shall contain no special limitations on the scope of protection afforded to the County, its officers, agents, employees, elected and appointed officials, and volunteers.
- b. The Contractor's insurance coverage shall be primary insurance as respects the County, its officers, agents, employees, elected and appointed officials, and volunteers. Any insurance or self-insurance maintained by the County, its officers, agents, employees, elected and appointed officials, and volunteers shall be excess of the Contractor's insurance and shall not contribute to it.
- c. Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the County, its officers, agents, employees, elected and appointed officials, and volunteers.
- d. The Contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

2. All Coverages:

- a. Contractor hereby releases County from any claim for recovery for any loss or damage which is insured under valid and collectible insurance policies to the extent of any recovery collectible under such insurance. It is further agreed that this waiver shall apply only when permitted by the applicable policy of insurance.
- b. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, cancelled by either party, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the County.

ACCEPTABILITY OF INSURERS

Unless otherwise approved by the County, insurers must be identified as authorized and eligible by the Michigan Insurance Bureau. In addition, insurance is to be placed with insurers with a Best's rating of A or better.

CERTIFICATES/ENDORSEMENTS OF INSURANCE

Contractor shall furnish the County with certificates of insurance and with any and all original endorsements affecting coverage required by this contract. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by the County before work commences. The County reserves the right to require complete, certified copies of all required insurance policies, at any time.

Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

The said certificates and endorsements shall be forwarded with the contract number to the individual identified below:

CONTRACT NUMBER _____

James A. Kent, Risk Manager
234 West Baraga Avenue
Marquette, MI 49855
(906) 225-8165 or Fax (906) 225-8155

ACCEPTANCE OF CERTIFICATE

Acceptance of any certificate(s) and/or endorsement(s) of insurance by the County does not waive the insurance requirements provided in the foregoing paragraphs. Should the County sustain any loss or be required to pay any claim as a result of the Contractor's failure to obtain or maintain insurance as is required by this contract, the Contractor shall indemnify the County for any such loss. This indemnification shall occur regardless of whether or not the County has accepted any certificate(s) and/or endorsement(s) of insurance provided by the Contractor or its carrier.

ADDITIONAL INSURED ENDORSEMENT

It is understood and agreed that the County of Marquette shall be Additional Insureds, which shall include all elected and appointed officials, all employees, agents, and volunteers, all boards, commissions and/or authorities and their board members, employees, and volunteers.

This coverage shall be primary to the Additional Insureds, and not contributing with any other insurance or similar protection available to the Additional Insureds, whether said other available coverage be primary, contributing or excess.

Section 00 73 43
Wage Rate Requirements

PART 1 - General

- 1.1 Summary
 - A. Document Includes:
 - 1. Prevailing wage rates.
 - B. Related Sections:
 - 1. Section 00 73 00 – Supplementary Conditions.
- 1.2 Minimum Wages
 - A. All bids over \$50,000 shall incorporate the attached federal wage rates, GENERAL DECISION: MI20240135, modification 0, 01/05/2024.

End of Section
(Attached information follows)

General Decision Number: MI20240135 01/05/2024

Superseded General Decision Number: MI20230135

State: Michigan

Construction Type: Building

County: Marquette County in Michigan.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658.

Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered	. Executive Order 14026
into on or after January 30,	generally applies to the
2022, or the contract is	contract.
renewed or extended (e.g., an	. The contractor must pay
option is exercised) on or	all covered workers at
after January 30, 2022:	least \$17.20 per hour (or
	the applicable wage rate
	listed on this wage
	determination, if it is

Floor Layer - Carpet).....\$ 30.16 22.01

ENGI0324-031 05/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Crane operator, main boom & jib 120' or longer.....	\$ 39.01	25.00
Crane operator, main boom & jib 140' or longer.....	\$ 39.83	25.00
Crane operator, main boom & jib 220' or longer.....	\$ 40.12	25.00
GROUP 1.....	\$ 35.71	25.00
GROUP 2.....	\$ 32.46	25.00
GROUP 3.....	\$ 31.28	12.50

Premium rate: main boom and jib 300 feet or longer is \$1.50 per hour above the 220 ft. boom and jib rate. Main boom and jib 400 feet or longer is \$3.00 per hour above the 220 ft. boom and jib rate.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

- GROUP 1: backhoe, bulldozer; crane, front end loader, excavator, paver, roller, and scraper (self-propelled and tractor drawn)
- GROUP 2: fork truck
- GROUP 3: oiler

IRON0008-008 06/01/2022

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL		
Contracts \$10,000,000 or greater.....	\$ 32.83	27.95
Contracts less than		

\$10,000,000.....\$ 32.83 27.95

Paid Holidays: New Year's Day, Memorial Day, July 4th,
Labor
Day, Thanksgiving Day & Christmas Day.

LABO1329-005 05/01/2023

	Rates	Fringes
LABORER		
Common or General; Mason		
Tender - Brick; Mason		
Tender - Cement/Concrete;		
and Sandblaster.....	\$ 31.99	12.95
Pipelayer.....	\$ 30.09	12.95

PAIN1011-001 06/02/2019

	Rates	Fringes
PAINTER (Insulator Foam Only)....	\$ 27.54	13.33

PLAS0016-037 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 20.17	10.13

PLUM0111-002 05/27/2022

	Rates	Fringes
PIPEFITTER (Excludes HVAC		
Pipe & System Installation).....	\$ 39.54	26.83
PIPEFITTER (HVAC Pipe		
Installation Only).....	\$ 36.39	26.25
PLUMBER (Excluding HVAC Pipe		
& System Installation).....	\$ 34.48	25.18

ROOF0149-014 05/01/2021

	Rates	Fringes
ROOFER.....	\$ 26.50	15.95

SHEE0007-006 07/01/2023

	Rates	Fringes
SHEET METAL WORKER (Excluding HVAC Duct & System Installation).....	\$ 32.74	29.85
SHEET METAL WORKER (HVAC Duct & System Installation).....	\$ 27.24	29.85

SUMI2011-060 02/14/2011

	Rates	Fringes
GLAZIER.....	\$ 17.50	2.27
LABORER: Landscape & Irrigation.....	\$ 14.25 **	0.00
OPERATOR: Grader/Blade.....	\$ 24.04	6.03
OPERATOR: Tractor.....	\$ 19.60	7.31
PAINTER: Brush, Roller and Spray.....	\$ 17.81	2.87
TRUCK DRIVER: Flatbed Truck.....	\$ 17.44	4.51

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number,

005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate

that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this

initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

Section 01 11 00 Summary of the Work

PART 1 - General

1.1 The Work

- A. The project includes all material, labor, tools, equipment, field engineering, and transportation necessary to complete all work as identified in the Drawings and further defined in these Specifications. This includes all items not specifically mentioned, but incidental to the work to provide a complete and operational product.
- B. The Work includes:
 - 1. Base Bid: Removal and replacement of two exterior concrete stairs.
Installation of snow melt system in south stair.
- C. The Owner may contract for other work concurrent with this contract.

1.2 Work Sequence

- A. Construct Work to accommodate Owner's occupancy requirements during construction period, coordinate construction schedule and operations with Owner.

1.3 Owner Occupancy

- A. The Owner will occupy the premises during the entire period of construction for the conduct of normal operations.
- B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

End of Section

Section 01 20 00 Price and Payment Procedures

PART 1 - General

- 1.1 Section Includes
 - A. Schedule of Values
 - B. Applications for Payment
 - C. Requests for Information
 - D. Contract Modification Procedures
 - E. Defect Assessment
- 1.2 Schedule of Values
 - A. Submit printed schedule on AIA form G703 – Continuation Sheet for G702. Contractor’s standard form will be considered if similar to above.
 - B. Submit two copies of schedule of values to Architect within 15 days after date of Owner-Contractor Agreement.
 - C. Format: Identify each line item with title. Include mobilization and bonds and insurance as line items.
 - D. Include in each line item allowances specified in this section.
 - E. Revise schedule to include approved Change Orders with each Application for Payment.
- 1.3 Applications for Payment
 - A. Submit each application on AIA form G702 – Application and Certificate for Payment and G703 – Continuation Sheet for G702. Contractor forms in the same format are acceptable.
 - B. Content and Format: Utilize schedule of values for listing items in application for payment.
 - C. Payment Period: Submit at intervals as specified in the Agreement.
- 1.4 Requests for Information
 - A. Requests for Information (RFI) shall be used to:
 - 1. Request information and/or clarification related to the plans, specifications, or contract requirements.
 - 2. Request approval for minor deviations from contract requirements that do not involve any time or cost adjustment.
 - 3. Obtain directions on how to proceed when there are conflicting contract requirements.
 - B. RFI shall be submitted by the Contractor to the Architect on the Contractor’s standard RFI form. RFI’s shall be numbered sequentially and shall include:
 - 1. RFI number.
 - 2. Date.
 - 3. Identification of the construction deficiency or Contract document clarification requested.
 - 4. Reference to Specification and paragraph numbers, drawing numbers and drawing reference.
 - 5. Impact this clarification will have on schedule (number of days) and project costs (if any).

- C. If a change in the Contract Time and/or Contract Sum are required, a Change Order will be issued by the Architect for signatures of parties as provided for in the Conditions of the Contract.
- 1.5 Contract Modification Procedures
- A. The Architect will advise of minor changes in the Work, not involving adjustment to Contract Sum or Contract Time by issuing supplemental instructions.
 - B. The Architect may issue a Bulletin, including a detailed description of proposed change. The Contractor shall promptly prepare and submit a fixed price quotation for the proposed change, including any adjustment in the Contract Time. Provide full documentation to support price quotation.
 - C. Contractor may propose changes by submitting a request for change to the Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum and Contract Time with full documentation.
 - D. Stipulated Sum Change Order: Based on a Bulletin and the Contractor's price quotation, or Contractor's request for change.
 - 1. Change Orders will be prepared on the Architect's standard form.
 - 2. Architect will issue Change Orders for signatures of parties as provided for in the Conditions of the Contract.
 - E. Construction Change Directive: Architect may issue directive, on AIA form G713 – Construction Change Directive, signed by Owner, instructing Contractor to proceed with change in the Work. The change will subsequently be included in a Change Order. The document will describe changes in the Work, and designate a method for determining any change in Contract Sum or Contract Time. Promptly execute change.
 - F. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum.
 - 2. Promptly revise project schedules to reflect change in Contract Time and resubmit.
 - 3. Promptly enter change in project record documents.
- 1.6 Defect Assessment
- A. Replace the Work, or portion of the Work, not conforming to specified requirements.
 - B. If, in the opinion of the Architect, it is not practical to remove and replace the non-conforming work, the Architect will direct appropriate remedy or adjust payment.
 - C. At the Owner's discretion, defective work may remain and an appropriate adjustment be made in payment.
 - D. Authority of Architect to assess defects and identify payment adjustments is final.
 - E. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as un-acceptable before or after placement.
 - 3. Products placed beyond lines and levels of required Work.
 - 4. Products remaining on hand after completion of Work.
 - 5. Loading, hauling, and disposing of rejected products.

PART 2 - Products – Not Used

End of Section

Section 01 33 00 Submittal Procedures

PART 1 - General

1.1 Summary

- A. Section includes samples, test reports, certificates, shop drawings and manufacturers' literature and data.
- B. Submit for approval, all of the items specifically mentioned under the separate sections of the specification, with information sufficient to evidence full compliance with contract requirements. Materials, fabricated articles and the like to be installed in permanent work shall equal those of approved submittals. After an item has been approved, no change in brand or make will be permitted unless:
 - 1. Satisfactory written evidence is presented to, and approved by the Architect, that manufacturer cannot make scheduled delivery of approved item or;
 - 2. Item delivered has been rejected and substitution of a suitable item is an urgent necessity or;
 - 3. Other conditions become apparent which indicates approval of such substitute item to be in best interest of the Owner.
- C. The Architect may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections.
- D. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.
- E. Forward submittals in sufficient time to permit proper consideration and approval action. Time submission to assure adequate lead time for procurement of contract required items. Delays attributable to untimely and rejected submittals will not serve as a basis for extending contract time for completion.

1.2 Submittals

- A. Provide transmittal form with each submittal including:
 - 1. Contractor name
 - 2. Date of submittal
 - 3. Project title
 - 4. Section number of the specification section by which submittal is required.
 - 5. Description of submittal
 - 6. Submittal number
 - 7. When submittal is a re-submission, add alphabetic suffix on submittal number. For example, submittal 1 would become 1A to indicate re-submission.
- B. Provide submittals other than physical samples in electronic format submitted via e-mail to the Architect. Electronic submittals should include transmittal form as part of the submittal. Electronic files must be of sufficient quality that all information is legible. Electronic format shall be in PDF, unless otherwise specified or coordinated with the Architect.
- C. When submittals cannot be submitted in electronic format provide four copies.
- D. Samples should be submitted in the quantity specified in each specification requesting the samples.
- E. Submit two copies of Operations and Maintenance Data at completion of work for review and approval.

- 1.3 Quality Assurance
 - A. The contractor shall review all submittals before submission for compliance with the contract documents.
 - B. Submittals which have not been reviewed and certified as compliant with the project requirements by the Contractor will be rejected.
- 1.4 Scheduling
 - A. Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time.
 - B. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential re-submittal.
 - C. Allow 10 business days for review of submittals in the construction schedule.

PART 2 - Products - Not Used

PART 3 - Execution - Not Used

End of Section

Section 01 45 00 Quality Control

PART 1 - General

1.1 Summary

- A. This section specifies materials testing activities and inspection services required during project construction to be provided by a testing laboratory retained by the Contractor.
- B. Related Sections:
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 03 30 00 – Cast in Place Concrete

1.2 References

- A. AISC – Specification for Structural Joints Using ASTM A325 or A490 Bolts.
- B. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
- C. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- D. ASTM C138 - Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete.
- E. ASTM C143 - Standard Test Method for Slump of Hydraulic-Cement Concrete.
- F. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
- G. ASTM C173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
- H. ASTM C567 - Standard Test Method for Determining Density of Structural Lightweight Concrete.
- I. ASTM C1064 - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete.
- J. ASTM D698 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft³ (600 kN-m/m³)).
- K. ASTM D1188 - Standard Test Method for Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Coated Samples.
- L. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
- M. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- N. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- O. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
- P. ASTM E164 - Standard Practice for Contact Ultrasonic Testing of Weldments.
- Q. ASTM E605 - Standard Test Methods for Thickness and Density of Sprayed Fire-Resistive Material (SFRM) Applied to Structural Members.
- R. ASTM E709 - Standard Guide for Magnetic Particle Testing.
- S. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers.
- T. AWS D1.1 – Structural Welding Code - Steel

1.3 Requirements

- A. Inspection and Testing: Testing laboratory shall inspect materials and workmanship and perform tests described herein. When it appears materials furnished, or work performed by Contractor fail to meet construction contract requirements, Testing Laboratory shall direct attention of Architect to such failure.
- B. Written Reports: Submit test reports in accordance with section 01 33 00 – Submittal Procedures.
- C. Verbal Reports: Give verbal notification to Architect immediately of any irregularity.

PART 2 - Products (Not Used)

PART 3 - Execution

3.1 Concrete:

- A. Field Inspection and Materials Testing:
 - 1. Take concrete samples at point of placement in accordance with ASTM C172. Mold and cure compression test cylinders in accordance with ASTM C31. Make at least three cylinders for each 50 cubic yards or less of each concrete type, and at least three cylinders for any one day's pour for each concrete type. After good concrete quality control has been established and maintained as determined by the Architect make three cylinders for each 100 cubic yards or less of each concrete type, and at least three cylinders from any one day's pour for each concrete type. Label each cylinder with an identification number. Architect may require additional cylinders to be molded and cured under job conditions.
 - 2. Perform slump tests in accordance with ASTM C143. Test the first truck each day, and every time test cylinders are made. Test pumped concrete at the hopper and at the discharge end of the hose at the beginning of each day's pumping operations to determine change in slump.
 - 3. Determine the air content of concrete per ASTM C173. For concrete required to be air-entrained, test the first truck and every 25 cubic yards thereafter each day. For concrete not required to be air-entrained, test every 80 m³ 100 cubic yards at random. For pumped concrete, initially test concrete at both the hopper and the discharge end of the hose to determine change in air content.
 - 4. If slump or air content fall outside specified limits, make another test immediately from another portion of same batch.
 - 5. Perform unit weight tests in compliance with ASTM C138 for normal weight concrete. Test the first truck and each time cylinders are made.
 - 6. Notify laboratory technician at batch plant of mix irregularities and request materials and proportioning check.
 - 7. Environmental Conditions: Determine the temperature per ASTM C1064 for each truckload of concrete during hot weather and cold weather concreting operations:
 - 8. When ambient air temperature falls below 40 degrees F, record maximum and minimum air temperatures in each 24 hour period; record air temperature inside protective enclosure; record minimum temperature of surface of hardened concrete.
 - 9. When ambient air temperature rises above 85 degrees F, record maximum and minimum air temperature in each 24 hour period; record minimum

- relative humidity; record maximum wind velocity; record maximum temperature of surface of hardened concrete.
10. Inspect the reinforcing steel placement, including bar size, bar spacing, top and bottom concrete cover, proper tie into the chairs, and grade of steel prior to concrete placement. Submit detailed report of observations.
 11. Observe conveying, placement, and consolidation of concrete for conformance to specifications.
 12. Observe concrete mixing:
 - a. Monitor and record amount of water added at project site.
 - b. Observe minimum and maximum mixing times.
- B. Laboratory Tests of Field Samples:
1. Test compression test cylinders for strength in accordance with ASTM C39. For each test series, test one cylinder at 7 days and one cylinder at 28 days. Use remaining cylinder as a spare tested as directed by Architect. Compile laboratory test reports as follows: Compressive strength test shall be result of one cylinder, except when one cylinder shows evidence of improper sampling, molding or testing, in which case it shall be discarded and strength of spare cylinder shall be used.
 2. Furnish certified compression test reports in accordance with Section 01 33 00 – Submittal Procedures. In test report, indicate the following information:
 - a. Cylinder identification number and date cast.
 - b. Specific location at which test samples were taken.
 - c. Type of concrete, slump, and percent air.
 - d. Compressive strength of concrete in MPa (psi).
 - e. Weight of lightweight structural concrete
 - f. Weather conditions during placing.
 - g. Temperature of concrete in each test cylinder when test cylinder was molded.
 - h. Maximum and minimum ambient temperature during placing.
 - i. Ambient temperature when concrete sample in test cylinder was taken.
 - j. Date delivered to laboratory and date tested.

End of Section

Section 01 50 00 Temporary Facilities and Controls

PART 1 - General

- 1.1 Section Includes
 - A. Temporary Utilities
 - 1. Temporary electricity.
 - 2. Temporary lighting for construction purposes.
 - 3. Temporary water service.
 - 4. Temporary sanitary facilities.
 - B. Construction Facilities
 - 1. Fire Extinguishers.
 - 2. Vehicular access and parking.
 - 3. Progress cleaning and waste removal.
 - 4. Project identification.
 - C. Temporary Controls
 - 1. Barriers.
 - 2. Security.
 - 3. Water control.
 - 4. Dust control.
 - 5. Erosion and sediment control.
 - 6. Pest control.
 - 7. Pollution control.
 - 8. Smoking.
 - 9. Removal of temporary utilities, facilities, and controls.
- 1.2 Temporary Electricity
 - A. Owner will pay cost of energy used. Exercise measures to conserve energy. Utilize Owner's existing power service.
 - B. Provide flexible power cords as required for portable tools and equipment.
 - C. Permanent convenience receptacles may be used during construction.
- 1.3 Temporary Lighting for Construction Purposes
 - A. Provide and maintain adequate lighting for construction operations.
 - B. Maintain lighting and provide routine repairs.
 - C. Permanent building lighting may be used during construction.
- 1.4 Temporary Water Service
 - A. Owner will pay for cost of temporary water. Exercise measures to conserve water. Utilize Owner's existing water system, extend and supplement with temporary devices as needed to maintain specified conditions for construction operations.
 - B. Provide temporary pipe insulation and heat tape as required to prevent freezing.
- 1.5 Temporary Sanitary Facilities
 - A. Provide and maintain required facilities in a sanitary condition. Use of existing facilities is not permitted. Provide facilities at time of project mobilization.
- 1.6 Fire Extinguishers
 - A. Provide at least one 4A:10B-C rated portable fire extinguisher at each floor which is under construction.

- B. Locate fire extinguishers at stairs if applicable.
 - C. Provide an additional fire extinguisher at each area where flammable or combustible liquids are stored, used, and dispensed.
 - D. Provide fire extinguishers at each temporary office or storage shed on site.
- 1.7 Vehicular Access and Parking
- A. Location as directed by Owner.
 - B. Provide unimpeded access for emergency vehicles.
 - C. Provide and maintain access to fire hydrants and control valves free of obstructions.
 - D. When site space is not adequate, provide additional off-site parking.
 - E. Use of existing on-site streets and driveways for construction vehicles is permitted. Tracked vehicles are not allowed on paved areas.
 - F. Do not allow heavy vehicles or construction equipment in parking areas.
- 1.8 Progress Cleaning and Waste Removal
- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
 - B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other enclosed or remote spaces prior to enclosing spaces.
 - C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
 - D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose of off-site.
- 1.9 Project Identification
- A. No signs are permitted without Owner permission, except those required by law.
- 1.10 Barriers
- A. Provide barriers to prevent un-authorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.
 - B. Provide protection for plants designated to remain. Replace damaged plants.
 - C. Protect non-owned vehicles, stored materials, site, and structures from damage.
- 1.11 Security
- A. Security Program:
 1. Protect Work from theft, vandalism, and unauthorized entry.
 2. Initiate program in coordination with Owner's existing security measures at project mobilization.
 - B. Entry Control:
 1. Owner will control entrance of persons and vehicles related to Owner's operations.
 2. Coordinate access of Owner's personnel to site with Owner's security forces.
- 1.12 Water Control
- A. Grade site to drain. Maintain excavations free from water.
 - B. Protect site from damage due to puddling or running water.
- 1.13 Dust Control
- A. Execute Work by methods to minimize raising dust from construction operations.
 - B. Provide positive means to prevent dispersion of air-borne dust.
- 1.14 Erosion and Sediment Control
- A. Plan and execute construction by methods to control surface drainage from cuts, fills, borrow and waste disposal areas. Prevent erosion and sedimentation.

- B. Minimize surface area of bare soil exposed at one time.
 - C. Provide temporary measures to prevent water flow.
 - D. Periodically inspect earthwork to detect evidence of erosion and sedimentation and promptly apply corrective measures.
 - E. Comply with applicable notification, permitting, and control measures required by authority having jurisdiction.
- 1.15 Pest and Rodent Control
- A. Provide methods, means, and facilities to prevent pests and rodents from entering facility.
- 1.16 Pollution Control
- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
 - B. Comply with pollution and environmental control requirements of authorities having jurisdiction.
- 1.17 Smoking
- A. Smoking is not permitted in this facility.
- 1.18 Removal of Temporary Utilities, Facilities, and Controls
- A. Remove temporary utilities, equipment, facilities, and materials prior to final inspection.
 - B. Remove underground installations.
 - C. Clean and repair damage caused by temporary installations or use of temporary work.
 - D. Restore existing and new facilities used during construction to original or specified condition.

PART 2 - Products – Not Used

PART 3 - Execution – Not Used

End of Section

Section 01 70 00 Execution and Closeout Requirements

PART 1 - General

1.1 Summary

- A. Section includes:
 - 1. Closeout procedures.
 - 2. Final cleaning.
 - 3. Starting of systems.
 - 4. Demonstration and instructions.
 - 5. Testing, adjusting and balancing.
 - 6. Protecting installed construction.
 - 7. Project record documents.
 - 8. Operation and maintenance data.
 - 9. Spare parts and maintenance products.
 - 10. Product warranties.

1.2 Closeout Procedures

- A. Submit notification that Work is complete in accordance with Contract Documents and ready for Architect's review.
- B. Provide submittals to Architect required by authorities having jurisdiction.
- C. Upon completion of all punch list items, submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- D. Include with final Application for Payment the Contractor's lien waiver, conditional on receipt of final payment.
- E. Owner will occupy all of building as specified in Section 01 11 00 – Summary of the Work.

1.3 Final Cleaning

- A. Execute final cleaning prior to final project assessment.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
- D. Clean or replace filters of operating equipment.
- E. Clean debris from roofs, gutters, downspouts, and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.
- G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 Starting of Systems

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect seven days prior to start-up of each item.
- C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.

- 1.5 Demonstration and Instructions
 - A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
 - B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
 - C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
 - D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at equipment location.
 - E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
 - F. Required instruction time for each item of equipment and system is specified in individual sections.

- 1.6 Testing, Adjusting, and Balancing
 - A. Contractor will employ and pay for services of independent firm to perform testing, adjusting, and balancing.
 - B. Independent firm will perform services.
 - C. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents.

- 1.7 Protecting Installed Construction
 - A. Protect installed Work and provide special protection where specified in individual specification sections.
 - B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
 - C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
 - D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
 - E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
 - F. Prohibit traffic from landscaped areas.

- 1.8 Project Record Documents
 - A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
 - B. Ensure entries are complete and accurate, enabling future reference by Owner.
 - C. Store record documents separate from documents used for construction.
 - D. Record information concurrent with construction progress, not less than weekly.
 - E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.

2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.
- F. Record Drawings [and Shop Drawings]: Legibly mark each item to record actual construction including:
 1. Measured depths of foundations in relation to finish [first] [main] floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.
- G. Submit documents to Architect with final Application for Payment.

1.9 Operation and Maintenance Data

- A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, binders with durable covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
- C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
 2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Warranties.

1.10 Spare Parts and Maintenance Products

- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed by Owner.

1.11 Product Warranties

- A. Obtain warranties executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
- B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
- C. Verify documents are in proper form and contain full information.
- D. Co-execute submittals when required.
- E. Include Table of Contents and assemble in binder with durable cover.
- F. Submit with final Application for Payment.

PART 2 - Products

2.1 Not Used

PART 3 - Execution

3.1 Not Used

End of Section

Section 02 41 19

Selective Structure Demolition

PART 1 - General

- 1.1 Summary
 - A. Section includes removal of designated building equipment and fixtures; removal of designated construction; dismantling, cutting, and alterations for completion of the Work; disposal of materials to be removed; storage of materials to be re-installed; capping and identification of utilities; salvaged items; and protection of work to remain.
- 1.2 Closeout Submittals
 - A. Project Record Documents: Accurately record actual locations of capped utilities and sub-surface obstructions.
- 1.3 Scheduling
 - A. Schedule work to coincide with new construction.
- 1.4 Project Conditions
 - A. Conduct demolition to minimize interference with adjacent and occupied building areas and prevent dust migration into occupied spaces.
 - B. Maintain building security and protected ingress and egress at all times. Note maintenance of required exits, which may be adjacent to or contained within the construction activity.
 - C. Cease operations immediately when structure appears to be in danger and notify Owner and Architect. Do not resume operations until directed.

PART 2 - Products – Not Used

PART 3 - Execution

- 3.1 Preparation
 - A. Erect and maintain temporary safeguards, including warning signs, barricades, and similar measures for protection of the public, Owner, Contractor's employees, and existing improvements to remain.
 - B. Erect and maintain weatherproof enclosures for exterior openings.
 - C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued occupancy.
 - D. Protect existing materials and existing improvements not indicated to be altered.
 - E. Prevent movement of structure; provide temporary bracing and shoring required to ensure safety of existing structure.
 - F. Notify affected utility companies before beginning work and comply with their requirements.
 - G. Mark location and termination of utilities.
 - H. Provide appropriate temporary signage including signage for exit or building egress.
- 3.2 Demolition
 - A. Disconnect, remove, cap, and identify designated utilities within demolition areas.
 - B. Demolish in orderly and careful manner. Protect existing foundation, supporting structural members, and adjacent surfaces.

- C. Remove demolished materials from site unless specifically noted otherwise. Do not burn or bury materials on site.
- D. All demolished equipment and materials become property of the Contractor unless claimed by the Owner. The Contractor shall contact the Owner and establish components that will be salvaged and turned over to the Owner prior to commencement of demolition. Demolished equipment and materials not claimed by the Owner shall be disposed of by the Contractor. All costs for removal, handling, transportation, and disposal shall be included in the bid.
- E. Relics, antiques, and similar objects remain the property of the Owner. Notify the Architect prior to removal and obtain acceptance of method of removal.
- F. Remove materials as work progresses. Upon completion of the Work, leave areas in clean condition.
- G. Upon completion of Work, remove all temporary construction.

End of Section

Section 03 30 00 Cast in Place Concrete

PART 1 - General

1.1 Summary

- A. Section includes formwork, shoring, bracing, and anchorage; concrete reinforcement and accessories; and cast in place concrete.
- B. Related Sections:
 - 1. Section 01 45 00: Quality Control – Field sampling and testing of concrete.
 - 2. Division 23: HVAC items to be embedded in concrete.
 - 3. Division 26: Electrical items to be embedded in concrete.

1.2 References

- A. ACI 301 (American Concrete Institute) - Standard Specification for Structural Concrete for Buildings.
- B. ACI 302 (American Concrete Institute) - Guide for Concrete Floor and Slab Construction.
- C. ACI 304R (American Concrete Institute) - Guide for Measuring, Mixing, Transporting and Placing Concrete.
- D. ACI 305R (American Concrete Institute) - Hot Weather Concreting.
- E. ACI 306.1 (American Concrete Institute) - Standard Specification for Cold Weather Concreting.
- F. ACI 308 (American Concrete Institute) - Standard Practice for Curing Concrete.
- G. ACI 318 (American Concrete Institute) - Building Code Requirements for Structural Concrete and Commentary.
- H. ACI 355.2 (American Concrete Institute) - Qualification of Post-Installed Mechanical Anchors in Concrete
- I. ACI 355.4 (American Concrete Institute) - Qualification of Post-Installed Adhesive Anchors in Concrete
- J. ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement.
- K. ASTM A185 - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
- L. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.
- M. ASTM C33 - Concrete Aggregates.
- N. ASTM C94 - Ready-Mixed Concrete.
- O. ASTM C150 - Portland Cement.
- P. ASTM C260 - Air Entraining Admixtures for Concrete.
- Q. ASTM C494 - Chemicals Admixtures for Concrete.
- R. ASTM C618 - Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Portland Cement Concrete.
- S. ASTM C1116/C1116M - Standard Specification for Fiber-Reinforced Concrete.
- T. ASTM D994 - Preformed Expansion Joint Filler for Concrete (Bituminous Type).
- U. ASTM D1190 - Concrete Joint Sealer, Hot-Poured Elastic Type.
- V. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- W. CRSI (Concrete Reinforcing Steel Institute) - Manual of Practice.
- X. CRSI (Concrete Reinforcing Steel Institute) - Placing Reinforcing Bars.

- 1.3 Design Requirements
 - A. Design, engineer and construct formwork, shoring and bracing to conform to design and code requirements; resultant concrete to conform to required shape, line and dimension.
- 1.4 Submittals
 - A. Mix Design: Submit concrete mix design to Architect for approval before placing any concrete. The concrete to be used shall conform to the approved design mix. The use of additives not present in the design mix is prohibited.
 - B. Test Report for Concrete Mix Designs: Trial mixes including water, cement, fly ash, concrete mix ingredients, and admixtures.
 - C. Submit reports for all required testing and inspections.
- 1.5 Closeout Submittals
 - A. Project Record Documents: Accurately record actual locations of embedded utilities and components concealed from view in finished construction.
- 1.6 Quality Assurance
 - A. Perform Work in accordance with ACI 301.
 - B. Conform to ACI 305R when concreting during hot weather.
 - C. Conform to ACI 306.1 when concreting during cold weather.
 - D. Conform to CRSI Manual of Standard Practice and CRSI Placing Reinforcing Bars for reinforcement fabrication and placement.
 - E. In the ACI publications, consider advisory provisions mandatory, as though the word "shall" had been substituted for "should" wherever "should" appears.
 - F. For conflicts in the provisions of the ACI publications, ACI 301 shall govern. For any conflicts between the ACI publications and this specification, this specification shall govern.

PART 2 - Products

- 2.1 Form Materials
 - A. Form Materials: At discretion of Contractor.
- 2.2 Reinforcement Materials
 - A. Reinforcing Steel: ASTM A615, 60 ksi yield grade billet steel deformed bars; uncoated finish.
 - B. Welded Wire Fabric: ASTM A185.
- 2.3 Concrete Materials
 - A. Cement: ASTM C150, normal-Type 1 Portland, grey color.
 - B. Fine and Coarse Aggregates:
 - 1. Coarse aggregate shall be ASTM C33 size 57 or 67 or MDOT 6A or 17A, unless noted otherwise.
 - 2. Coarse aggregate for applied topping, encasement of steel columns, and metal pan stair fill shall be ASTM C33 size 7.
 - 3. Maximum size of coarse aggregates not more than one fifth of narrowest dimension between sides of forms, one third of depth of slabs, nor three fourth of minimum clear spacing between reinforcing bars.
 - 4. Fine aggregate shall meet the requirements of ASTM C33 or MDOT 2NS.
 - C. Water: Clean and not detrimental to concrete.
- 2.4 Admixtures

- A. Air Entrainment: ASTM C260.
 - B. Chemical: ASTM C494.
 - C. Fly Ash: ASTM C618.
- 2.5 Accessories
- A. Joint Filler: ASTM D994; Asphalt impregnated fiberboard or felt, 1/4 inch thick or ASTM D1752; Closed cell foam, resiliency recovery of 95 percent if not compressed more than 50 percent of original thickness.
- 2.6 Concrete Mix
- A. Mix concrete in accordance with ACI 301. Deliver concrete in accordance with ASTM C94.
 - B. Provide concrete to the following criteria:
 - 1. Slump: 4 inches
 - 2. Slabs on grade:
 - a. Concrete strength (7 day): 2000 PSI
 - b. Concrete strength (28 day): 4000 PSI
 - 3. Add air entraining agent to concrete mix for work exposed to freezing in accordance with ACI 318 requirements for severe exposure. Air content shall be 6 percent \pm 1.5 percent.
 - 4. Calcium Chloride admixtures are not allowed.
 - 5. Use set retarding admixtures during hot weather only when approved.
 - 6. Use accelerating admixtures in cold weather only when approved. Use of admixtures will not relax cold weather placement requirements.

PART 3 - Execution

- 3.1 Formwork Execution
- A. Verify lines, levels, and measurement before proceeding with formwork.
 - B. Align form joints.
 - C. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings which may be affected by agent.
 - D. Coordinate work of other Sections in forming and setting openings, slots, recesses, chases, sleeves, anchors and other inserts.
- 3.2 Reinforcement Execution
- A. Place, support, and secure reinforcement against displacement. Do not deviate from required position.
 - B. Do not displace or damage vapor retarder.
 - C. Provide for minimum concrete cover over reinforcement as follows:
 - 1. Interior face of walls: 1".
 - 2. Exterior face of walls: 2".
 - 3. Footings and other structural concrete deposited against ground: 3".
 - 4. Formed concrete permanently exposed to earth or water: 2".
- 3.3 Placing Concrete
- A. Place concrete in accordance with ACI 301 and ACI 318.
 - B. Notify Architect minimum 24 hours prior to commencement of operations.
 - C. Ensure reinforcement, inserts, and embedded parts are not disturbed during concrete placement.
 - D. Separate slabs on grade from vertical surfaces with joint filler.

- E. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
 - F. Place concrete continuously between predetermined expansion, control, and construction joints.
 - G. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.
- 3.4 Existing Work
- A. Where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.
 - B. Prepare previously placed concrete by cleaning with a steel brush and apply bonding agent in accordance with manufacturer's instructions.
- 3.5 Concrete Finishing
- A. Provide formed concrete surfaces to be left exposed with smooth rubbed finish.
 - B. Steel trowel surfaces which are indicated to be exposed.
- 3.6 Curing and Protection
- A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- 3.7 Field Quality Control
- A. Section 01 45 00 – Quality Control: Testing Services.
 - B. Field testing will be performed in accordance with ACI 301 and under provisions of Section 01 45 00. Provide free access to Work and cooperate with appointed firm.
 - C. Tests of cement and aggregates may be performed to ensure conformance with specified requirements.
 - D. Minimum Number of Strength Tests Per Day: This number shall be no less than:
 - 1. Once per day, nor less than,
 - 2. Once for each 150 cubic yards of concrete placed, nor less than,
 - 3. Once for each 5000 square feet of surface area of slabs or walls placed.
 - E. Minimum Number of Strength Tests Per Project: This number shall be no less than:
 - 1. Five strength tests from five randomly selected batches or from each batch if fewer than five batches.
 - F. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete it represents.
 - G. One slump test will be taken for each set of test cylinders taken.
 - H. One air content test will be made for each set of test cylinders taken.
- 3.8 Patching
- A. Allow Architect to inspect concrete surfaces immediately upon removal of forms.
 - B. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify Architect upon discovery.
 - C. Patch imperfections as directed by Architect and in accordance with ACI 301.
- 3.9 Defective Concrete
- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
 - B. Repair or replacement of defective concrete will be determined by Architect.

- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

End of Section

Section 05 70 00 Decorative Metal

PART 1 - General

- 1.1 Summary
 - A. Section Includes:
 - 1. Bronze handrail fabrications.
 - B. Related Sections:
 - 1. Section 07 92 00 - Joint Sealers.
- 1.2 References
 - A. ASTM D16 – Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- 1.3 Submittals
 - A. Shop Drawings: Show fabrication details and connections to adjacent Work.
 - B. Product Data: Catalog sheets, specifications, and installation instructions as applicable.
- 1.4 Delivery, Storage, and Handling
 - A. Coordinate delivery of items to be built into other Work to avoid delay. Furnish templates as required for accurate location of Work.
 - B. Protect metal finishes from surface contamination, staining, scratching, abrasion, and other physical damage when handling and during installation.
- 1.5 Project / Site Conditions
 - A. Verify field measurements prior to fabrication.

PART 2 - Products

- 2.1 Bronze Materials
 - A. Materials: ASTM B455 Copper Development Association alloy C38500.
 - B. Finish: Natural Medium Satin Finish: M32-M34.
- 2.2 Components:
 - A. Basis of design is Julius Blum & Co. Inc. products noted below.
 - 1. Substitutions: Section 00 21 00 – Instructions to Bidders.
 - B. Handrail Moulding: Model 4530 – 2 ¼" wide.
 - C. Posts: Model 131 – 1" diameter top with 1 ½" square bottom. Provide part number 269 flange at base.
 - D. Lambs Tongue Casting: Model 4530-S.
- 2.3 Miscellaneous Materials
 - A. Welding Electrodes and Filler Metal: Type and alloy to match metal to be welded for color, strength, and compatibility.
 - B. Brazing Materials: AWS A5.8; type required for materials being joined.
 - C. Fasteners: Metal, alloy, and finish to match metal to be fastened, unless otherwise indicated.
 - 1. Use countersunk Phillips flat heads for exposed fasteners, unless otherwise indicated.
 - 2. Use countersunk tamper-resistant flat heads for exposed fasteners, unless otherwise indicated.

3. Secure in concrete and masonry with approved non-ferrous anchors or expansion shields.
- D. Anchors and Inserts: Furnish devices as approved and required for installation in other work.
1. Use non-ferrous, cadmium-coated or hot-dip galvanized for exterior installations.
- E. Shrink-Resistant Grout (Non-Staining): Factory-packaged, non-ferrous mortar grouting compound. Minimum yield strength of 7,000 psi (48 MPa) at 28 days.
- 2.4 Fabrication
- A. General:
1. Fabricate items of material, size, and dimensions indicated. Preassemble items in shop to the greatest extent possible. Design components to allow for expansion and contraction for a minimum ambient temperature range of 100 degrees F.
 2. Form metal work to required shapes and sizes, with true lines, angles and curves. Provide necessary rebates, lugs, brackets, flanges, fasteners, and anchors for assembly and installation. Use concealed fasteners where possible.
 3. Provide welds behind finished surfaces without distortion or discoloration on exposed side. Clean and dress welds on exposed and contact surfaces.
 4. Mill joints to tight, hairline fit. Cope or miter corners. Form joints exposed to weather to exclude water penetration.
 5. Where cutting, welding, and grinding are required for proper shop fitting and jointing, restore finishes to eliminate evidence of such corrective work.
 6. Furnish sound castings, free of warp and defects which impair strength or appearance. Mill joints to close fit. Finish exposed surfaces smooth, with sharp, well-defined lines and arises.
 7. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component. Use exposed fastenings only where concealed fastenings are not possible
- B. Railings
1. Ease corners of square and rectangular tube to approximately 1/16 inch radius.
 2. Provide brackets, flanges, anchors, and other accessories required for joining and securing rails and posts. Use materials of same type as railing system finished to match when exposed, unless otherwise indicated.
 3. Fabrication: Prepare rails and posts for joining together by means of post brackets, secured with concealed fasteners. Join rails with splice connectors designed to draw rails together. Splice rails only at center of post brackets. Provide corner bends where rails change direction. Cap ends of rails not attached to other construction. Cap open ends of posts.
 4. Where posts are required to be set in sleeves, furnish galvanized steel tube sleeves with closed steel plate bottom at least 1 inch wider than sleeve. Sleeves shall be minimum 6 inches long, sized so that inside diameter is not less than 1/2 inch greater than outside dimension of post, unless otherwise indicated or required. Provide cover flange, secured to post, to conceal anchorage joint.
 5. Where posts are required to be drilled in, furnish concealed expansion anchors and post inserts, unless otherwise indicated.

6. Where posts are required to be secured to steel surfaces, furnish fascia mounting flanges and threaded fasteners.
7. Where posts are required to be secured to vertical concrete surfaces, furnish wedge or slotted type inserts, fascia brackets and threaded fasteners.
8. Where posts are required to be secured to vertical concrete surfaces, furnish manufacturer's recommended standard fascia mounting system for type railing shown.
9. Where posts and/or rails are terminated with flanges, prepare flanges for securing with three 1/4 inch diameter machine screws secured in non-ferrous expansion shields or with toggle bolts where fastenings occur in cavity of masonry.

PART 3 - Execution

3.1 Examination

- A. Verify field conditions are acceptable and are ready to receive Work.

3.2 Preparation

- A. Supply items required to be cast into concrete or embedded in masonry with setting templates to appropriate sections.
- B. Apply protective backing paint to metals in contact with cementitious materials or dissimilar metals.

3.3 Installation

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Anchor fabrications by setting in sleeves. Align and plumb fabrications. Fill space between fabrication and sleeve with grout. Conceal sleeve with escutcheon as indicated on Drawings.
- C. Conceal bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.
- D. Assemble fabrications with tight, hairline joints.
- E. Exercise care when installing components so as not to damage finish surfaces. Touch up as required to repair damaged finishes.

3.4 Cleaning

- A. Remove protective material from shop finished surfaces.
- B. Remove excess sealant from ornamental metals.
- C. Wash down surfaces with solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

3.5 Protection of Finished Work

- A. Protect finished Work from damage.

End of Section

Section 07 21 13

Rigid Foam Board Insulation

PART 1 - General

- 1.1 Summary
 - A. Section includes board insulation at underside of concrete slabs].
- 1.2 References
 - A. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
 - B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- 1.3 Submittals
 - A. Product Data: Submit data on product characteristics, performance criteria, limitations, and adhesives.
- 1.4 Environmental Requirements
 - A. Do not install adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 - Products

- 2.1 Components
 - A. Extruded Polystyrene Insulation: ASTM C578 cellular type, conforming to the following:
 - 1. Board Thickness: As shown on drawings.
 - 2. Thermal Resistance: R of 5.0 per inch at 75 degrees F.
 - 3. Compressive Strength: Minimum 25 psi.
 - 4. Board Edges: Square edges.
 - 5. Flame/Smoke Properties: Flame spread 5, smoke developed 45-175, in accordance with ASTM E84.
- 2.2 Accessories
 - A. Adhesive: Type recommended by insulation fastener manufacturer for application.

PART 3 - Execution

- 3.1 Examination
 - A. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.
 - B. Verify substrate surface is flat, free of honeycomb, fins, irregularities, materials or substances affecting adhesive bond.
- 3.2 Installation – Under Concrete Slabs
 - A. Place insulation under slabs on grade after base for slab has been compacted.
 - B. Cut and fit insulation tight to protrusions or interruptions to insulation plane.
 - C. Prevent insulation from being displaced or damaged while placing slab.
- 3.3 Protection of Installed Construction
 - A. Do not permit work to be damaged prior to covering insulation.

End of Section

Section 07 92 00 Joint Sealants

PART 1 - General

- 1.1 Summary
 - A. Section includes sealants, joint backing, and accessories.
- 1.2 References
 - A. ASTM C834 – Latex Sealing Compounds.
 - B. ASTM C919 – Practice for Use of Sealants in Acoustical Applications.
 - C. ASTM C920 – Elastomeric Joint Sealants.
 - D. ASTM C1193 – Guide for Use of Joint Sealants.
 - E. ASTM D1056 – Flexible Cellular Materials – Sponge or Expanded Rubber.
 - F. ASTM D1565 – Flexible Cellular Materials – Vinyl Chloride Polymers and Co-Polymers (Open Cell Foam).
 - G. ASTM D1667 – Flexible Cellular Materials – Vinyl Chloride Polymers and Co-Polymers (Closed Cell Foam).
 - H. ASTM D2628 – Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.
- 1.3 Submittals
 - A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
 - B. Manufacturer’s Installation Instructions: Submit special procedures, surface preparation, and perimeter conditions requiring special attention.
 - C. Warranty: Include coverage for installed sealants and accessories failing to achieve airtight seal, watertight seal, exhibiting loss of adhesion or cohesion, and sealants which do not cure.
- 1.4 Environmental Requirements
 - A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.
- 1.5 Coordination
 - A. Coordinate sealant installation with work of sections referencing this section.

PART 2 - Products

- 2.1 Joint Sealers:
 - A. High Performance General Purpose Exterior (Non-traffic) Sealant: Polyurethane, ASTM C920, Grade NS, Class 25, Uses NT, M, A, and O, Type S or M (single or multi-component):
 - 1. Color: Colors as selected from manufacturer’s standard colors to match adjoining surfaces.
 - 2. Applications: Use for:
 - a. Control, expansion, and soft joints in masonry.
 - b. Joints between concrete and other materials.
 - c. Joints between metal frames and other materials.
 - d. Other exterior non-traffic joints for which no other sealant is specified.

- B. General Purpose Traffic Bearing Sealant: Polyurethane, ASTM C920, Grade P, Class 25, Use T, Type S or M (single or multi-component):
 - 1. Color: Colors as selected from manufacturer's standard colors to match adjoining surfaces.
 - 2. Applications: Use for exterior and interior pedestrian and vehicular traffic bearing joints.

2.2 Accessories

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer, compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant, oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - Execution

3.1 Examination

- A. Verify substrate surfaces and joint openings are ready to receive work.
- B. Verify joint backing and release tapes are compatible with sealant.

3.2 Preparation

- A. Remove loose materials and foreign matter impairing adhesion of sealant.
- B. Clean and prime joints.
- C. Perform preparation in accordance with ASTM C1193.
- D. Protect elements surrounding work of this section from damage or disfiguration. Apply non-staining masking tape to face of surfaces adjacent to joints.

3.3 Installation

- A. Perform installation in accordance with ASTM C1193.
- B. Perform acoustical sealant application work in accordance with ASTM C919.
- C. Measure joint dimensions and size joint backers to achieve the following, unless otherwise specified by the manufacturer's installation directions:
 - 1. Width / depth ration of 2:1.
 - 2. Neck dimension no greater than 1/2 of joint width.
 - 3. Surface bond area on each side not less than 75 percent of joint width.
- D. Install bond breaker at bottom of joint where backing is not used to prevent three-sided adhesion.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature range. Consult sealant manufacturer when sealant cannot be applied within this range.
- G. Tool exposed joints to form smooth and uniform beds, with slightly concave surface conforming to joint configuration per Figure 5A in ASTM C1193.
- H. Remove masking tape immediately after tooling of sealant and before sealant face starts to "skin" over. Remove any excess sealant from adjacent surfaces of joint, leaving the working in a clean finished condition.
- I. Finish paving or floor joints flush unless joint is otherwise detailed.

3.4 Cleaning

- A. Clean adjacent soiled surfaces.

3.5 Protection of Installed Construction

- A. Protect sealants until cured.
- B. Any sealants that become contaminated before they have cured shall be removed and replaced.

End of Section

Section 31 20 00 Earthwork

PART 1 - General

- 1.1 Summary
 - A. This section specifies the requirements for furnishing all equipment, materials, labor and techniques for earthwork including excavation, fill, backfill and site restoration utilizing fertilizer, seed and/or sod.
- 1.2 References
 - A. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))
 - B. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - C. Michigan Department of Transportation – Standard Specifications for Construction.
- 1.3 Definitions
 - A. Backfill: Soil material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
 - B. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
 - C. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
 - D. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.
 - E. Fill: Soil materials used to raise existing grades.
 - F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
 - G. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
 - H. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
 - I. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
- 1.4 Project Conditions

- A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

PART 2 - Products

2.1 Soil Materials

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 1 ½ inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Granular fill material, MDOT class II / III.
- E. Structural Fill: Granular fill material, MDOT class II / III.
- F. Bedding Course: MDOT IIIA granular fill material.

PART 3 - Execution

3.1 Preparation

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 Excavation - General

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

3.3 Excavation for Structures

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 - 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
- B. Excavations at Edges of Tree- and Plant-Protection Zones:
 - 1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break,

tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

- 3.4 Excavation for Walks and Pavements
 - A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.
- 3.5 Excavation for Utility Trenches
 - A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 - B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 6 inches higher than top of pipe or conduit unless otherwise indicated.
 - 1. Clearance: As indicated on plans.
 - C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, 3 inches deeper elsewhere, to allow for bedding course.
 - D. Trenches in Tree- and Plant-Protection Zones:
 - 1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
 - 2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
- 3.6 Unauthorized Excavation
 - A. Unauthorized Excavation: Consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Engineer.
 - 1. Fill unauthorized excavations as directed by Engineer.
- 3.7 Storage of Soil Materials
 - A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
- 3.8 Utility Trench Backfill
 - A. Place backfill on subgrades free of mud, frost, snow, or ice.
 - B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
 - C. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 6 inches over the pipe or conduit.
 - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
 - D. Place and compact final backfill of satisfactory soil to final subgrade elevation.

- E. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.
- 3.9 Compaction of Backfills and Fills
- A. Place backfill and fill soil materials in layers not more than 12 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
 - B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
 - C. Compact soil materials to not less than the following percentages of maximum dry density according to ASTM D 698:
 - 1. Under pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - 3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent under paved areas and 85 percent under unpaved areas.
- 3.10 Grading
- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1/2 inch.
 - 3. Pavements: Plus or minus 1/2 inch.
- 3.11 Subbase and Base Courses Under Pavements and Walks
- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
 - B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
 - 1. Shape subbase course and base course to required crown elevations and cross-slope grades.
 - 2. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 - 3. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry density according to ASTM D 698.
- 3.12 Drainage Course Under Concrete Slabs-On-Grade
- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
 - B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
 - 1. Place drainage course that exceeds 8 inches in compacted thickness in layers of equal thickness.

2. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.13 Protection

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.14 Restoration:

- A. General: Harrow and till to a depth of 4 inches, new or existing lawn areas to remain, which are disturbed during construction. Establish existing or design grades by dragging or similar operations. Do not carry out lawn areas earthwork out when the soil is wet so that the tilth of the soil will be destroyed.
- B. Finished Grading: Begin finish grading after rough grading has had sufficient time for settlement. Scarify subgrade surface in lawn areas to a depth of 4 inches. Apply topsoil so that after normal compaction, dragging and raking operations (to bring surface to indicated finish grades) there will be a minimum of 4 inches of topsoil over all lawn areas; make smooth, even surface and true grades, which will not allow water to stand at any point. Shape top and bottom of banks to form reverse curves in section; make junctions with undisturbed areas to conform to existing topography.
- C. Fertilizing: Incorporate fertilizer into the soil to a depth of 4 inches at a rate of 25 pounds per 1000 square feet.
- D. Seeding: Seed at a rate of 4 pounds per 1000 square feet and accomplished only during periods when uniform distribution may be assured. Lightly rake seed into bed immediately after seeding. Roll seeded area immediately with a roller not to exceed 150 pounds per foot of roller width.
- E. Sodding: Topsoil shall be firmed by rolling and during periods of high temperature the topsoil shall be watered lightly immediately prior to laying sod. Sod strips shall be tightly butted at the ends and staggered in a running bond fashion. Placement on slopes shall be from the bottom to top of slope with sod strips running across slope. Secure sodded slopes by pegging or other approved methods. Roll sodded area with a roller not to exceed 150 pounds per foot of the roller width to improve contact of sod with the soil.
- F. Watering: The Owner is responsible for having adequate water available at the site. As sodding is completed in any one section, the entire sodded area shall be thoroughly irrigated by the contractor, to a sufficient depth, that the underside of the new sod pad and soil, immediately below sod, is thoroughly wet. Owner will be responsible for sod after installation and acceptance.

3.15 Disposal of Surplus and Waste Materials

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

End of Section