

General Info

Actions 

Electronic signature required

Deadline

07/30/2026 11:30 AM EDT

Advertised

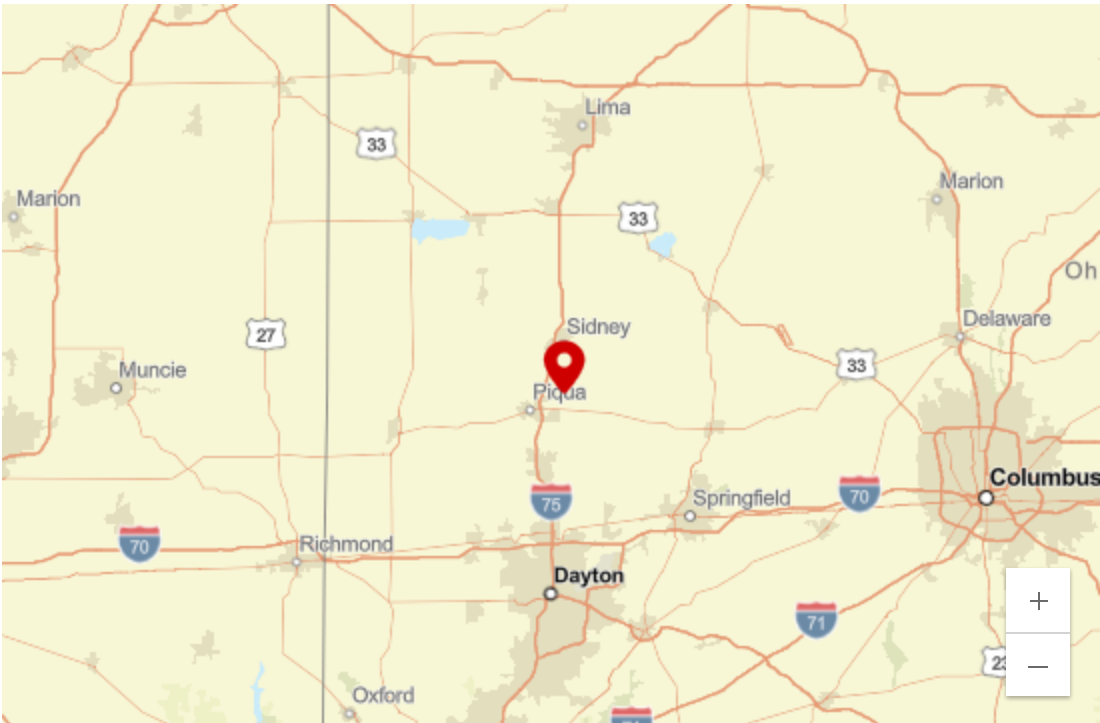
07/10/2026 01:44 PM EDT

Business Name

City of Sidney

Location(s)

14833 Sidney Plattsville Rd, Sidney, Ohio, 45365



Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, NPS, USFWS

Powered by Esri

Number

26-20 Sidney Airport New Equipment Hanger

Description

26-20 Sidney Airport New Equipment Hanger

The project is for an approximately 3,900 s.f. one-story, metal building of type IIB construction, group S-1 occupancy. The project involves all site work including asphalt driveways, concrete walks, and lawn seeding; building materials which include but are not limited to concrete foundations and slab, pre-manufactured metal building, hydraulic door, overhead doors, hollow metal doors in hollow metal frames; HVAC units and system; and electrical fixtures and system.

A Non-Mandatory Pre-Bid Meeting will be held onsite at the Sidney City Airport, 14833 Sidney-Plattsville Road, Sidney, Ohio at 9:30 a.m. on Tuesday, July 21, 2026. A walk-through of the site will be offered during the pre-bid meeting.

State of Ohio Prevailing Wage Rates apply.

Estimate: \$502,000

Allows zero unit prices and labor

No

Allows negative unit prices and labor

No



Solicitation Summary

AI generated | Quality may vary

This is an airport hangar construction project for Sidney Airport. Requires 10% bid bond, 100% performance bond, prevailing wage compliance, and electronic bid submission through Bid Express.

Work Types

New Construction Building



Q & A

Deadline

07/27/2026 01:00 PM EDT

Remarks

Any and all questions regarding the referenced project must be submitted through the Bid Express website no later than Monday, July 27, 2026 at 1:00 p.m. (EST). Questions submitted outside of Bid Express will not be answered.

ATTACHMENT LIST

Legal Notice 26-20 (386 KB)

Instruction to Bidders (92.4 KB)

Contract Security & Insurance (91.1 KB)

General Provisions (140 KB)

NonCollusion Affidavit (23.7 KB)

Disclosure of Personal Property Tax (29.6 KB)

Bid Guarantee & Contract Bond (105 KB)

Plans (5.23 MB)
11 X 17; 22 sheets

Construction Standards & Drawings

SPECIFICATIONS

DIVISION 1 (1.13 MB)
General Requirements

DIVISION 2 (16 KB)
Existing Conditions

DIVISION 3 (18 KB)
Concrete

DIVISION 4 (40.8 KB)
Masonry

DIVISION 5 (15.6 KB)
Metals

DIVISION 7 (28.1 KB)
Thermal and Moisture Protection

DIVISION 8 (63.5 KB)

Openings

DIVISION 9 (21.9 KB)

Finishes

DIVISION 10 (20.1 KB)

Specialties

DIVISION 13 (85.8 KB)

Premanufactured Metal Building Systems

DIVISION 22 (1.44 MB)

Plumbing (refer to Mechanical Drawings)

DIVISION 23 (2.45 MB)

HVAC (refer to Mechanical Drawings)

DIVISION 26 (1.94 MB)

Electrical (refer to Electrical Drawings)

DIVISION 31 (77.2 KB)

Earthwork

DIVISION 32 (133 KB)

Exterior Improvements

PROPOSAL

For: **26-20 Sidney Airport New Equipment Hanger**

To: The City of Sidney, OH

The undersigned bidder has carefully examined the site of the proposed work, the schedule of current State prevailing wage rates, and the form of the Contract, the General Conditions, the Specifications, and the Plans for **26-20 Sidney Airport New Equipment Hanger** as described and referred to in the Legal Notice and Instructions to Bidders.

The bidder agrees to provide all bonding, mobilization/demobilization, labor, supervision, materials, transportation, tools, supplies, equipment, and appurtenances necessary as required in the Specifications, General Provisions, and Plans for the Bid Form total as shown in the Bid Form section.

All work shall be done under the direction of the City Public Works Director or designee of the City for the lump sum price stated in the Bid Form and this price will be accepted as full compensation for all bonding, mobilization/demobilization, labor, supervision, materials, transportation, tools, supplies, equipment, and appurtenances furnished.

The undersigned bidder understands that the quantities shown are approximate and are subject to increase or decrease at the unit price stated unless otherwise agreed upon by City and modified by change order.

The undersigned bidder states that he/she/they is/are the only person(s) interested in the bid and agrees that shall all or any bids be accepted, to enter into a prescribed contract within seven (7) business days of the written Notice of Award for the faithful performance of the labor and furnishing of tools, machinery, equipment, and materials in such bid as accepted and to fully complete the said work as follows:

- Substantial completion of the project shall be on or before **April 30, 2027**.
- Final completion of the project and readiness for final payment shall be on or before **May 14, 2027**.

If the above completion dates are not met, liquidated damages shall be applied against the appropriate contract total as follows:

- Substantial Completion: **Two Hundred Fifty Dollars and No Cents (\$250.00)** per day beyond the substantial completion date.
- Final Completion: **Five Hundred Dollars and No Cents (\$500.00)** per day beyond the final completion date.

☐ **Addenda: If I submit this bid electronically, I hereby acknowledge that all requirements included in the hard copy proposals, addenda, amendments, plans, standard specifications, and supplemental specifications are incorporated in this bid and contract**

*

BID FORM

Line No.	Ref Item No.	Description	Approx. Qty.	Unit Of Measure	Unit Cos
1	SPEC	All bonding, mobilization/demobilization, labor, supervision, materials, transportation, tools, supplies, equipment, and appurtenances necessary for the construction & assembly of an approximately 3,900 sf, one-story, metal building of type IIB construction, group S-1 occupancy including all site work (asphalt driveways, concrete walks, & seeding); building materials which include but are not limited to concrete foundations and slab, pre-manufactured metal building, hydraulic door, overhead doors, hollow metal doors in hollow metal frames; HVAC units and system; and electrical fixtures and system as	1.00	LUMP	

Line No.	Ref Item No.	Description	Approx. Qty.	Unit Of Measure	Unit Cos
		indicated in the plans and specifications .			

BID FORM CONTINUED

THE CITY OF SIDNEY, OH RESERVES THE RIGHT TO REJECT ANY OR ALL BIDS, TO WAIVE ANY INFORMALITY IN BIDS OR TO ACCEPT IN WHOLE OR IN PART SUCH BIDS AS MAY BE DEEMED IN THE BEST INTEREST OF CITY OF SIDNEY, OH. THIS FORM MUST BE SIGNED BY AN AUTHORIZED COMPANY REPRESENTATIVE.

Company Name:*

Representative Name and Title:*

Address:*

Telephone:*



IF THE BIDDER IS: An Individual

 Optional: Vendor is not required to complete.

By:*

Name:*

doing business as:*

Business Address:*

Phone No:*

Fax Number:

**Federal I.D.
Number:***

Email:*

IF THE BIDDER IS: An Partnership

 Optional: Vendor is not required to complete.

(Partnership Name):*

(State of Formation of Partnership):*

By:*

Name:*

Attach evidence of authority to sign at the bottom of the solicitation in the Required Document List.

Business Address:*

Phone No:*

Fax No:

**Federal I.D.
Number:***

Email:*

IF BIDDER IS: A Corporation

 Optional: Vendor is not required to complete.

(Corporation Name):*

(State of
Incorporation):*

By:*

Name:*

Title:*

Business Address:*

Phone No:*

Fax No:

Federal I.D.
Number:*

Email:*

QUESTIONNAIRE: MUNICIPAL
INCOME TAX - CITY OF SIDNEY

The following information will aid us in preparing forms for your use under the Sidney Income Tax Ordinance A-316. Please answer questions fully and return this Questionnaire to the Department of Taxation and Revenues, Municipal Building, Sidney, Ohio. Your compliance with this request within five days will be greatly appreciated.

1. Please select your type of business:*

Choices...

Indicate "other" (or "N/A" if not applicable):

*

2. Federal Identification Number:*

Soc. Security Number (or "N/A" if not
applicable):*

3. Give home address of owner (s) or all partners if a partnership (click the "+" to make additional entries or type "N/A" if not applicable):

Name:*

Address:*

Telephone:*

4. Name of Corporation (type "N/A" if not applicable):*

5. Business Address:*

6. Mailing Address:*

7. Are there now or will there be employees subject to City of Sidney Tax?:*

Approximate Number:*

Choices...

8. Date business activities started in Sidney:*

9. Nature of business:*

10. Accounting Period:

Calendar Year:*

Fiscal Year Ending (state month):*

NOTE: A FISCAL YEAR ENDING CAN ONLY BE USED WHEN YOUR ACCOUNTANT PERIOD AS USED ON YOUR FEDERAL RETURN DOES NOT END ON DECEMBER 31

11. Do you Own:*

Choices...

If Rent or Lease, from whom? (type "N/A" if not applicable):

Name & Address:*

12. Name and address of person or organization in charge of books or records:

Name & Address:*

Please complete the Subcontractor information in the table section below.

Thank you for your cooperation.

Department of Tax & Revenues Municipal Building, Sidney, OH 45365

SUBCONTRACTOR INFORMATION -
As bidder, if I opt out of completing,
I am stating that no subcontractors
will be used while working in the
City or that subcontractors have
yet to be determined but will be
provided to the City prior to project
commencement.

Name

Address:

Fed Id/Ss#

Amount



Only vendors are able to add rows.

SUBCONTRACTOR INFORMATION - Continued

Signed:*

Date:*

PLEASE STATE THE ADDRESS LOCATION OF WORK LOCATION WITHIN THE CITY:*

CERTIFICATION OF COMPLIANCE WITH SECTION 3517.13 OF THE OHIO REVISED CODE

1. I am duly authorized to make the statements contained herein on behalf of:*

2. The Contracting Entity is a/an (select one):*

Choices...

If corporation,
enter State
otherwise, type
"N/A":*

3. I hereby affirm that the Contracting Entity and each of the individuals specified in **C. 3517.13(I)(3)** (with respect to non-corporate entities and labor organizations) or **R.C. 3517.13(J)(3)** (with respect to corporations) are in full compliance with the political contribution limitations set forth in R.C. 3517.13 and as per adopted amendment in House Bill 119, regarding City officials of Sidney, Ohio.

4. I understand that a false representation on this certification constitutes a felony of the fifth degree pursuant to R.C. 3517.13(AA) and 3517.992(R)(3).

By:*

Title:*

BID BOND

Bid Guaranty Check or Bid Guaranty Bond is to be in the amount of 10% of the bid and must include the City of Sidney, Ohio as Obligee.
Certified check must be issued by a solvent bank and made payable to the City of Sidney.

Confirmation

Confirmation*

Choices...

REQUIRED BID BOND DOCUMENTS LIST

Name	Omission Terms
Bid Guaranty Check Original Bid Guaranty Check must be delivered to the City of Sidney so that it is received withi...	I am providing a Bid Guaranty Bond.
Bid Guaranty Bond Original Bid Guaranty Bond must be delivered to the City of Sidney so that it is received withi...	I am providing a Bid Guaranty Check.

2 Required Documents

REQUIRED DOCUMENTS LIST

Name	Omission Terms
Non-Collusion Affidavit A notarized copy must be attached and included with bid submission.	
Disclosure of Personal Property Taxes A notarized copy must be attached and included with bid submission.	

2 Required Documents

PREVAILING WAGES

PW Threshold 2026 (143 KB)

[PW Contractor Responsibilities](#) (377 KB)

[PW Instructions for Certified Payroll Report](#) (35.9 KB)

[PW Certified Payroll Report](#) (19.8 KB)

[PW Affidavit Of Contractor Compliance](#) (45.1 KB)

[PW Notification to Employee](#) (58 KB)

[PW Fringe Benefits](#) (49.7 KB)

[Payroll Dates](#) (33.7 KB)

[Prevailing Wage Rates](#)

[Shelby County, Building Construction](#)

BID GUARANTY AND CONTRACT BOND
(Section 153.571 Ohio Revised Code)

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

_____ as Principal

(Name and Address of Bidder)

and _____

(Name and Address of Surety)

as Surety, are hereby held and firmly bound unto the **City of Sidney, 201 W. Poplar Street,**

Sidney, OH 45365 as Oblige in the penal sum of the dollar amount of the bid submitted by the

Principal to the Oblige on the _____ day of _____, 20_____ to undertake the

project known as _____

The penal sum referred to herein shall be the dollar amount of the Principal's bid to the Oblige, incorporating any additive or deductive alternate bids made by the Principal on the date referred to above to the Oblige, which are accepted by the Oblige. In no case shall the penal sum exceed the amount of _____ dollars. *(If the foregoing blank is not filled in, the penal sum will be the full amount of the Principal's bid, including alternates. Alternatively, if the blank is filled in, the amount stated must not be less than the full amount of the bid including alternates, in dollars and cents. A percentage is not acceptable.)* For the payment of the penal sum well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that whereas the above named Principal has submitted a bid for the above referenced project.

NOW, THEREFORE, if the Oblige accepts the bid of the Principal and the Principal fails to enter into a proper contract in accordance with the bid, plans, details, specifications, and bills of material; and in the event the Principal pays to the Oblige the difference not to exceed ten percent (10%) of the penalty hereof between the amount specified in the bid and such larger amount for which the Oblige may in good faith contract with the next lowest bidder to perform the work covered by the bid; or in the event the Oblige does not award the contract to the next lowest bidder and resubmits the project for bidding, the Principal pays to the Oblige the difference not to exceed ten percent (10%) of the penalty hereof between the amount specified in the bid, or the costs, in connection with the resubmission, of printing new contract documents, required advertising, and printing and mailing notices to prospective bidders, whichever is less, then this obligation shall be null and void, otherwise to remain in full force and effect. If the Oblige accepts the bid of the Principal and the Principal within ten (10) days after the awarding of the contract enters into a proper contract in accordance with the bid, plans, details, specifications, and bills of material, which said contract is made a part of this bond the same as though set forth herein; and

Now also, if the said Principal shall well and faithfully do and perform the things agreed by Principal to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materials suppliers, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materials supplier or laborer having a just claim, as well as for the Oblige herein; then this obligation shall be void; otherwise the same shall remain in full force and

effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

THE SAID Surety hereby stipulates and agrees that no modifications, omissions, or additions, in or to the terms of the said contract or in or to the plans or specifications thereof shall in any way affect the obligations of said Surety on its bond and does hereby waive notice of any such modifications, omissions, or additions to the terms of the contract or in or to the plans and specifications.

WITNESS of hands SIGNED AND SEALED, the parties hereto have caused this instrument to be executed by their respective authorized officers this _____ day of _____, 20_____.

PRINCIPAL

Company name

By: _____
Signature

Witness

Name and Title

SURETY

SEAL

Surety's name and seal

By: _____
Signature

Name and Title

SURETY AGENT'S ADDRESS:

Construction Standards & Drawings

Engineering Standards

- [Design Criteria \(PDF\)](#)
- [Table of Contents](#)
- [Access Management Standards \(PDF\)](#)
- [Forward \(PDF\)](#)

300 – Roadways

- [300-1 Street Classifications and Recommended \(PDF\)](#)
- [300-2 Typical Sections and Asphalt \(PDF\)](#)
- [300-3 Street Design Standards \(PDF\)](#)
- [300-4 Temporary Dead-End Streets \(PDF\)](#)
- [300-5 Concrete Curb Details \(PDF\)](#)
- [300-6 Commercial and Industrial \(PDF\)](#)
- [300-7 Residential Drive Approach \(PDF\)](#)
- [300-8 Residential Drive Approach and Concrete \(PDF\)](#)
- [300-9 Curb Ramps \(PDF\)](#)
- [300-10 Concrete Sidewalk Detail \(PDF\)](#)
- [300-11 Guidelines for Replacement of Sidewalks \(PDF\)](#)
- [300-13 Miscellaneous Roadway Notes \(PDF\)](#)
- [300-14 Alley and Parking Lot Detail \(PDF\)](#)
- [300-15 Public Right-of-Way Opening \(PDF\)](#)
- [300-16 Street Improvement Conditions \(PDF\)](#)
- [300-17 Streetscape Brick with Asphalt Laying Course Typical Sections \(PDF\)](#)
- [300-18 Streetscape Brick Specifications \(PDF\)](#)
- [300-19 Vision Clearance on Corners \(PDF\)](#)
- [300-20 Traffic Control Devices Stationary Operations in One Lane \(PDF\)](#)
- [300-21 Typical Pavement Restoration Detail \(PDF\)](#)
- [300-22 Replacement Criteria for Curb and](#)

- [300-12 Asphalt Overlay and Monument \(PDF\)](#)

[Gutter \(PDF\)](#)

- [300-23 Replacement Criteria for Curb and Gutter \(PDF\)](#)
- [300-24 Single Left Turn Lane Intersection Detail \(PDF\)](#)

500 – General

- [500-1 Public Right-of-Way Street Lighting and Private Site Development Lighting \(PDF\)](#)
- [500-2 General Notes \(PDF\)](#)
- [500-3 Low Strength Mortar Backfill and Boring Jacking \(PDF\)](#)
- [500-4 Casing Pipe Detail \(PDF\)](#)

- [500-5 Demolition Permit Regulations \(PDF\)](#)
- [500-6 Sanitation Enclosure Detail \(PDF\)](#)
- [500-7 Site Design - Queue Lengths and Drive Thru Lanes \(PDF\)](#)

600 – Storm Drainage

- [600-1 Type 1 Catch Basin \(PDF\)](#)
- [600-2 Type 2-2-B Catch Basin \(PDF\)](#)
- [600-3 Yard Drain \(PDF\)](#)
- [600-4 Type a Catch Basin in Kind for Repair Maintenance Only as Directed by the City \(PDF\)](#)
- [600-5 Type 3 Storm Manhole \(PDF\)](#)
- [600-6 Type 3 Storm Manhole Details \(PDF\)](#)
- [600-7 Full-Height Headwall \(PDF\)](#)
- [600-8 Half-Height Headwall \(PDF\)](#)

- [600-9 Storm Sewer Trench Detail \(PDF\)](#)
- [600-10 Detention Retention Basin Details \(PDF\)](#)
- [600-11 Miscellaneous Storm Notes \(PDF\)](#)
- [600-12 Erosion Control Notes \(PDF\)](#)
- [600-13 Straw Or Hay Bales Temporary Erosion Control \(PDF\)](#)
- [600-14 Temporary Erosion Control \(PDF\)](#)
- [600-15 Repair of Existing Field Tile Or Storm Pipe Detail \(PDF\)](#)
- [600-16 Storm Lateral](#)

[Detail \(PDF\)](#)

800 – Water Distribution

- [800-1 Fire Hydrant \(PDF\)](#)
- [800-2 Restraining Joints and Tapping Sleeve for Water Mains \(PDF\)](#)
- [800-3 Concrete Blocking for Water Mains \(PDF\)](#)
- [800-4 Water Main Trench Detail \(PDF\)](#)
- [800-5 Water Main Material and Testing \(PDF\)](#)
- [800-6 Miscellaneous Water Notes \(PDF\)](#)
- [800-7 Water Main Service Connection \(PDF\)](#)
- [800-8 Meter Pit Installation \(PDF\)](#)
- [800-9 1 Inch To 3 Inches Compound Meter With Bypass \(PDF\)](#)
- [800-10 4 Inch Compound Meter With Bypass \(PDF\)](#)
- [800-11 Typical Larger Meter Layout In Building \(PDF\)](#)
- [800-12 4 Inch and Larger Water Main Service Connection \(Domestic\) \(PDF\)](#)
- [800-13 Limited Area Sprinkler System Detail \(PDF\)](#)
- [800-14 Combination Fire and Domestic In Building \(PDF\)](#)
- [800-15 Reduced Pressure Detector Assembly \(PDF\)](#)
- [800-16 Double Detector Check Valve Assembly Detail \(PDF\)](#)
- [800-17 Standard Installation for Irrigation Meters and Backflow Preventer \(PDF\)](#)
- [800-18 Irrigation Details \(PDF\)](#)
- [800-19 Fire Line Details \(PDF\)](#)
- [800-20 Fire Line Details and Notes \(PDF\)](#)
- [800-21 Fire Line Details and Notes \(PDF\)](#)
- [800-22 Tracer Wire for Water Main Pipe Detail \(PDF\)](#)

900 – Sanitary Sewers

- [900-1 Type 3 Sanitary Manhole \(PDF\)](#)
- [900-2 Type D Sanitary Drop Manhole \(PDF\)](#)
- [900-3 Sanitary Drop on](#)
- [900-10 Building Connection Detail \(PDF\)](#)
- [900-11 Sanitary Sewer Testing Notes \(PDF\)](#)
- [900-12 Miscellaneous Sanitary Sewer Notes](#)

- | | |
|--|---|
| <u>Existing Manhole (PDF)</u> | <u>(PDF)</u> |
| ◦ <u>900-4-Miscellaneous Sanitary Manhole Details (PDF)</u> | ◦ <u>900-13 Service Connection Location Reference (PDF)</u> |
| ◦ <u>900-5 Sanitary Sewer Trench Detail (PDF)</u> | ◦ <u>900-14 Service Connection Location Reference (Building In Place)_(PDF)</u> |
| ◦ <u>900-6 Repair of Existing Sanitary Sewer Pipe Detail (PDF)</u> | ◦ <u>900-15 Sewage Combination Air Valve Chamber (PDF)</u> |
| ◦ <u>900-7 Service Riser and Service Lateral New Construction Only_(PDF)</u> | ◦ <u>900-16 Sanitary Sewer Televising Standards (PDF)</u> |
| ◦ <u>900-8 Sanitary Sewer Saddle Details (PDF)</u> | ◦ <u>900-17 Private Sanitary Sewer Cleanout Detail (PDF)</u> |
| ◦ <u>900-9 Sanitary Sewer Cleanout Detail (PDF)</u> | |

CONTRACT SECURITY & INSURANCE

Contract Security - The Contractor shall furnish a surety bond in an amount at least equal to one hundred percent (100%) of the contract price as security for the faithful performance of this contract and for the payment of all persons performing labor and furnishing materials in connection with this contract.

Insurance Requirements – Contractors shall procure and maintain for the duration of the contract, and for three years thereafter, 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 Contractor, their agents, representatives, employees or subcontractors.

Minimum Scope of Insurance - Coverage types shall include and be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products-completed operations, with limits no less than \$2,000,000 per occurrence for bodily injury, personal & advertising injury, and property damage. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO for CG 25 03 or CG 25 04) or the general aggregate limit shall be twice the required occurrence limit.
2. **Automobile Liability:** Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), or if Contractor has no owned autos, hired (Code 8), and non-owned autos (Code 9), with limits no less than \$1,000,000 per accident for bodily injury and property damage.
3. **Workers’ Compensation** insurance as required by the State of Ohio, and Employers’ Liability insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease. If coverage is through the Ohio Bureau of Workers’ Compensation, Employer’s Liability coverage must be endorsed on the Commercial General Liability policy.
4. **Builder’s Risk** (Course of Construction) insurance utilizing an “All Risk” (Special Perils) coverage form, with limits no less than the completed value of the project and no coinsurance penalty provisions.
 - a. Such coverage shall **name the City of Sidney as Additional Insured and Loss Payee** as its interests may appear.
 - b. Builder’s Risk Insurance will not be required for contracts for improvement of streets, installation of water mains and sewer lines, and other jobs of like nature.
 - c. At the option of the City, Builder’s Risk Insurance may be waived if the project does not involve new or major reconstruction.
 - d. When Builder’s Risk Insurance is not required, at the option of the City, the Contractor may be required to obtain a Property Installation Floater that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at the Entity’s site.
5. **Professional Liability** (if Design/Build), with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. “Claims Made” coverage is permissible.

6. **Contractors' Pollution Legal Liability** and/or Asbestos Legal Liability and/or Errors and Omissions (if project involves environmental hazards) with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate. "Claims Made" coverage is permissible.

If the Contractor maintains higher limits than the minimum shown above, the City requires and shall be entitled to coverage for the higher limits maintained by the Contractor. Any available proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the City.

Contractor's and Subcontractor's Insurance - The Contractor shall not commence work under this Contract until they have obtained the insurance required herein, nor shall the Contract permit any Subcontractor to commence work on their subcontract until the insurance required of the Subcontractor has been so obtained. Contractors shall require and verify that all subcontractors or anyone performing work for the City maintain insurance meeting all of the requirements stated herein including the requirement to name the City, its officials, agents, employees and volunteers as Additional Insureds on Commercial General Liability coverage for both ongoing operations and completed operations beyond project completion date. For CGL coverage, Subcontractor's shall provide coverage with a format at least as broad as CG 20 38 04 13.

Other Insurance Provisions - The policies are to contain or be endorsed to contain, the following provisions:

1. **Additional Insured:** "The City of Sidney, its officials, agents, employees and volunteers" shall be named as Additional Insureds on the Commercial General Liability and Automobile Liability policies as respects liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor.
 - a. To provide appropriate Additional Insured coverage for general liability, including liability arising out of the products-completed operations hazard, Contractor agrees to use the following endorsement(s), or similar endorsements providing equal or broader Additional Insured coverage:
 - i. ISO Form CG 20 10 11 85, OR if later revisions are used;
 - ii. ISO Form CG 20 10 10 01, CG 20 26 10 01, CG 20 33 10 01, or CG 20 38 10 01
AND ISO Form CG 20 37 10 01.
2. **Primary Coverage:** For claims related to this project, the Contractor's insurance coverage shall be primary as respects the City, its officials, agents, employees and volunteers. Any insurance or self-insurance maintained by the City, its officials, agents, employees and volunteers shall be excess of Contractor's insurance and shall not contribute with it.

Umbrella or Excess Liability – Contractor may satisfy the minimum liability limits required above for Commercial General Liability or Business Auto Liability under an Umbrella or Excess Liability policy. Contractor agrees to endorse the City as an Additional Insured on the Umbrella or Excess Liability policy, unless the Certificate of Insurance states the Umbrella or Excess Liability policy provides coverage on a "Follow Form" basis.

Claims Made Policies - If any coverage required is written on a claims-made coverage form:

1. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of contract work.

3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work.
4. A copy of the claims reporting requirements must be submitted to the Entity for review.
5. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

Deductibles and Self-Insured Retentions – Any deductibles or self-insured retentions must be declared to and approved by the City. At the City's option, either: the Contractor shall cause the insurer to reduce or eliminate such deductibles or self-insured retention as respects the City, its officials, agents, employees and volunteers; or the Contractor shall procure a bond guaranteeing payment of losses and related investigation, claim administration and defense expenses.

Waiver of Subrogation – Contractor hereby grants to the City a waiver of any right to subrogation which any insurer of said Contractor may acquire against the City by virtue of the payment of any loss under such insurance. Contractor agrees to secure endorsements necessary to affect this waiver of subrogation, but this provision applies regardless of whether or not the City has received a waiver of subrogation endorsement from the Contractor or its insurer.

Acceptability of Insurers – Insurance is to be placed with insurers with a current A.M. Best rating of no less than A:VII, unless otherwise acceptable to the City.

Verification of Coverage - The Contractor shall furnish the City with **Certificates of Insurance** and amendatory endorsements, or copies of the applicable insurance language, effecting coverage required herein and a copy of the Declarations and Endorsements page of the CGL policy listing all policy endorsements. All certificates and endorsements shall be received by the City before work commences. However, failure to obtain the required documents prior to the beginning of work shall not waive the Contractor's obligation to provide them. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

Certificate of Insurance – The certificate of insurance shall contain the following language evidencing compliance with the requirements herein: "The City of Sidney, its officials, agents, employees, and volunteers are Additional Insureds. Coverage shall be primary to the Additional Insureds and not contributing with any other insurance or similar protection available to the Additional Insureds whether other available coverage be primary, contributing, or excess."

The Contractor and Subcontractors shall furnish the City with one (1) unaltered copy of the official certificate of the Ohio Industrial Commission indicating that he has paid the premiums required under the Ohio Workers' Compensation Act evidencing that these workers are covered by Workers' Compensation during the Contract term. If the Contractor is legally permitted and qualified to be a self-insurer, such self-insurer shall furnish proof of such status to the City.

Non-renewal, Cancellation, or Material Change of Coverage. Each insurance policy required above shall state that coverage shall not be cancelled, except with notice to the City. If the Contractor receives a non-renewal or cancellation notice from an insurance carrier providing coverage required herein, or receives notice that coverage no longer complies with the requirements herein, **Contractor agrees to notify the City** by fax or email within five (5) business days with a copy of the non-renewal or cancellation notice, or written explanation of how coverage is no longer in compliance. The Contractor shall cease operations on the occurrence of any such non-renewal, cancellation, or material change and shall not resume operations until insurance is in force that complies with these requirements.

Retainage - The Contractor further agrees that to the extent that money is due the Contractor by virtue of this contract as shall be considered necessary in the judgment of the City, may be retained by the City to protect itself against said loss until such claims, suits or judgments shall have been settled or discharged and/or evidence to that effect shall have been furnished to the satisfaction of the City.

Special Risks or Circumstances – City reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

STATE OF OHIO)
COUNTY OF SHELBY) SS:

TITLE

services and supplies for the City of Sidney, Ohio, involving the competitive bid process.

A copy of the statement shall also be incorporated into the contract, and no payment shall be made with respect to any contract to which this section applies unless such statement has been so incorporated as part thereof.

My Commission expires _____

DIVISION 10: SPECIALTIES:

FIRE EXTINGUISHERS

1. NFPA COMPLIANCE: FABRICATE AND LABEL FIRE EXTINGUISHERS TO COMPLY WITH NFPA 10, "PORTABLE FIRE EXTINGUISHERS."
2. FIRE EXTINGUISHERS: LISTED AND LABELED FOR TYPE, RATING, AND CLASSIFICATION BY AN INDEPENDENT TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION
3. WARRANTY PERIOD: FIVE YEARS FROM DATE OF SUBSTANTIAL COMPLETION
4. INSTRUCTION LABELS: INCLUDE PICTORIAL MARKING SYSTEM COMPLYING WITH NFPA 10, APPENDIX
5. MANUFACTURERS: : SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS FROM ONE OF THE FOLLOWING:
 - a. J. L. INDUSTRIES, INC.; A DIVISION OF ACTIVAR CONSTRUCTION PRODUCTS GROUP.
 - b. LARSEN'S MANUFACTURING COMPANY.
 - c. POTTER ROEMER LLC
6. MOUNTING BRACKETS: MANUFACTURER'S STANDARD GALVANIZED STEEL, DESIGNED TO SECURE FIRE EXTINGUISHER TO WALL OR STRUCTURE, OF SIZES REQUIRED FOR TYPES AND CAPACITIES OF FIRE EXTINGUISHERS INDICATED, WITH PLATED OR RED BAKED-ENAMEL FINISH
7. IDENTIFICATION: LETTERING COMPLYING WITH AUTHORITIES HAVING JURISDICTION FOR LETTER STYLE, SIZE, SPACING, AND LOCATION. LOCATE AS INDICATED BY ARCHITECT.
8. INSTALLATION:
 - a. EXAMINE FIRE EXTINGUISHERS FOR PROPER CHARGING AND TAGGING
 - b. REMOVE AND REPLACE DAMAGED, DEFECTIVE, OR UNDERCHARGED FIRE EXTINGUISHERS
 - c. INSTALL FIRE EXTINGUISHERS AND MOUNTING BRACKETS IN LOCATIONS INDICATED AND IN COMPLIANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION
 - d. MOUNTING BRACKETS: 54 INCHES ABOVE FINISHED FLOOR TO TOP OF FIRE EXTINGUISHER. FASTEN MOUNTING BRACKETS TO SURFACES, SQUARE AND PLUMB, AT LOCATIONS INDICATED

DIVISION 13: PREMANUFACTURED METAL BUILDING SYSTEMS

GENERAL

SECTION INCLUDES:

- 1. STRUCTURAL-STEEL FRAMING.
- 2. METAL ROOF PANELS.
- 3. METAL WALL PANELS.
- 4. THERMAL INSULATION.
- 5. ACCESSORIES.

ACTION SUBMITTALS

SHOP DRAWINGS: INDICATE COMPONENTS BY OTHERS. INCLUDE FULL BUILDING PLAN, ELEVATIONS, SECTIONS, DETAILS AND ATTACHMENTS TO OTHER WORK.

DELEGATED-DESIGN SUBMITTAL: FOR METAL BUILDING SYSTEMS.

- 1. INCLUDE ANALYSIS DATA INDICATING COMPLIANCE WITH PERFORMANCE REQUIREMENTS AND DESIGN DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

INFORMATIONAL SUBMITTALS

LETTER OF DESIGN CERTIFICATION: SIGNED AND SEALED BY A QUALIFIED PROFESSIONAL ENGINEER. INCLUDE THE FOLLOWING:

- 1. NAME AND LOCATION OF PROJECT.
- 2. ORDER NUMBER.
- 3. NAME OF MANUFACTURER.
- 4. NAME OF CONTRACTOR.
- 5. BUILDING DIMENSIONS INCLUDING WIDTH, LENGTH, HEIGHT, AND ROOF SLOPE.
- 6. INDICATE COMPLIANCE WITH AISC STANDARDS FOR HOT-ROLLED STEEL AND AISI STANDARDS FOR COLD-ROLLED STEEL, INCLUDING EDITION DATES OF EACH STANDARD.
- 7. GOVERNING BUILDING CODE AND YEAR OF EDITION.
- 8. DESIGN LOADS: INCLUDE DEAD LOAD, ROOF LIVE LOAD, COLLATERAL LOADS, ROOF SNOW LOAD, DEFLECTION, WIND LOADS/SPEEDS AND EXPOSURE, SEISMIC DESIGN CATEGORY OR EFFECTIVE PEAK VELOCITY-RELATED ACCELERATION/PEAK ACCELERATION, AND AUXILIARY LOADS (CRANES).
- 9. LOAD COMBINATIONS: INDICATE THAT LOADS WERE APPLIED ACTING SIMULTANEOUSLY WITH CONCENTRATED LOADS, ACCORDING TO GOVERNING BUILDING CODE.
- 10. BUILDING-USE CATEGORY: INDICATE CATEGORY OF BUILDING USE AND ITS EFFECT ON LOAD IMPORTANCE FACTORS.

QUALITY ASSURANCE

MANUFACTURER QUALIFICATIONS: A QUALIFIED MANUFACTURER.

- 1. ENGINEERING RESPONSIBILITY: PREPARATION OF COMPREHENSIVE ENGINEERING ANALYSIS AND SHOP DRAWINGS BY A PROFESSIONAL ENGINEER WHO IS LEGALLY QUALIFIED TO PRACTICE IN JURISDICTION WHERE PROJECT IS LOCATED.

WARRANTY

SPECIAL WARRANTY ON METAL PANEL FINISHES: MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE METAL PANELS THAT SHOW EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.

- 1. FINISH WARRANTY PERIOD: 25 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

SPECIAL WEATHERTIGHTNESS WARRANTY FOR STANDING-SEAM METAL ROOF PANELS: MANUFACTURER AGREES TO REPAIR OR REPLACE STANDING-SEAM METAL ROOF PANEL ASSEMBLIES THAT LEAK OR OTHERWISE FAIL TO REMAIN WEATHERTIGHT WITHIN SPECIFIED WARRANTY PERIOD

WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

PRODUCTS

SOURCE LIMITATIONS

OBTAIN METAL BUILDING SYSTEM COMPONENTS, INCLUDING PRIMARY AND SECONDARY FRAMING AND METAL PANEL ASSEMBLIES, FROM A SINGLE SOURCE MANUFACTURER.

MANUFACTURERS

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRE-ENGINEERED METAL BUILDING SYSTEM AS MANUFACTURED BY **RENEGADE STEEL BUILDINGS, INC.** 2151 HOMER ROAD, COMMERCE, GA (sales@renegadebuildings.com, 877-363-4223) OR EQUIVALENT PRODUCT BY ONE OF THE FOLLOWING:

- 1. CHIEF BUILDINGS: CHIEF INDUSTRIES, INC.
- 2. MID-WEST STEEL BUILDING COMPANY; AN NCI COMPANY.
- 3. NUCOR BUILDING SYSTEMS.
- 4. VARCO PRUDEN BUILDINGS
- 5. AMERICAN BUILDINGS

PERFORMANCE REQUIREMENTS

DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER TO DESIGN METAL BUILDING SYSTEM.

STRUCTURAL PERFORMANCE: METAL BUILDING SYSTEMS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO PROCEDURES IN MBMA'S "METAL BUILDING SYSTEMS MANUAL."

- 1. DESIGN LOADS: AS INDICATED ON STRUCTURAL DRAWINGS.
- 2. BUILDING CODE: DESIGN SHALL BE IN ACCORDANCE WITH THE 2024 OHIO BUILDING CODE.
- 3. DEFLECTION AND DRIFT LIMITS: DESIGN METAL BUILDING SYSTEM ASSEMBLIES TO WITHSTAND SERVICEABILITY DESIGN LOADS WITHOUT EXCEEDING DEFLECTIONS AND DRIFT LIMITS RECOMMENDED IN AISC "DESIGN GUIDE NO. 3: SERVICEABILITY DESIGN CONSIDERATION FOR STEEL BUILDINGS".
- 4. DEFLECTION AND DRIFT LIMITS: NO GREATER THAN THE FOLLOWING:
 - a. PURLINS AND RAFTERS: VERTICAL DEFLECTION OF 1/180 OF THE SPAN.
 - b. PRIMARY FRAMING: HORIZONTAL DEFLECTION OF 1/60 OF THE HEIGHT.
 - c. GIRTS: HORIZONTAL DEFLECTION OF 1/90 OF THE SPAN.
 - d. METAL ROOF PANELS: VERTICAL DEFLECTION OF 1/60 OF THE SPAN.
 - e. METAL WALL PANELS: HORIZONTAL DEFLECTION OF 1/60 OF THE SPAN.
 - f. DESIGN SECONDARY-FRAMING SYSTEM TO ACCOMMODATE DEFLECTION OF PRIMARY FRAMING AND CONSTRUCTION TOLERANCES, AND TO MAINTAIN CLEARANCES AT OPENINGS.
 - g. LATERAL DRIFT: MAXIMUM OF 1/60 OF THE BUILDING HEIGHT.

SEISMIC PERFORMANCE: METAL BUILDING SYSTEM SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7 AND/OR PERFORMANCE CRITERIA ON STRUCTURAL DRAWINGS/NOTES.

THERMAL MOVEMENTS: ALLOW FOR THERMAL MOVEMENTS FROM AMBIENT AND SURFACE TEMPERATURE CHANGES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, FAILURE OF JOINT SEALANTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE CALCULATIONS ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.

- 1. TEMPERATURE CHANGE: 120 DEG F (67 DEG C), AMBIENT; 180 DEG F, MATERIAL SURFACES.

STRUCTURAL PERFORMANCE FOR METAL ROOF AND WALL PANELS: PROVIDE METAL PANEL SYSTEMS CAPABLE OF WITHSTANDING THE EFFECTS OF THE FOLLOWING LOADS, BASED ON TESTING ACCORDING TO ASTM E 1592:

- 1. WIND LOADS: AS INDICATED ON DRAWINGS.

WATER PENETRATION FOR METAL ROOF PANELS: NO WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E1646 AT TEST-PRESSURE DIFFERENCE OF 6.24 LBS/SF.

WATER PENETRATION FOR METAL WALL PANELS: NO WATER PENETRATION WHEN TESTED IN ACCORDANCE WITH ASTM E331 AT TEST-PRESSURE DIFFERENCE OF 6.24 LBS/SF.

WIND-UPLIFT RESISTANCE: PROVIDE METAL ROOF PANEL ASSEMBLIES THAT COMPLY WITH UL 580 FOR WIND-UPLIFT-RESISTANCE CALSS INDICATED.

1. UPLIFT RATING: UL 90.

THERMAL PERFORMANCE FOR OPAQUE ELEMENTS: PROVIDE THE FOLLOWING MINIMUM R-VALUES WHEN TESTED ACCORDING TO ASTM C 1363 OR ASTM C 518 AND IN COMPLIANCE WITH ASHRAE 90.1 LATEST EDITION REQUIRED PER OBC:

1. ROOF R-VALUE: R-40 (R-28.0 CAVITY + R-12.0 CONTINUOUS).
2. WALLS R-VALUE: R-40 (R-28.0 CAVITY + R-12.0 CONTINUOUS).

STRUCTURAL-STEEL FRAMING

STRUCTURAL STEEL: COMPLY WITH AISC 360, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."

BOLTED CONNECTIONS: COMPLY WITH RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS."

COLD-FORMED STEEL: COMPLY WITH AISI'S "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS" FOR DESIGN REQUIREMENTS AND ALLOWABLE STRESSES.

PRIMARY FRAMING: MANUFACTURER'S STANDARD RIGID CLEAR SPAN SOLID-MEMBER FRAMING SYSTEM WITHOUT INTERIOR COLUMNS.

1. FRAME CONFIGURATION: AS INDICATED ON DRAWINGS.

END-WALL FRAMING: MANUFACTURER'S STANDARD FOR BUILDINGS NOT REQUIRED TO BE EXPANDABLE.

SECONDARY FRAMING: MANUFACTURER'S STANDARD PURLINS AND JOISTS AND EXTERIOR-FRAMED (BYPASS) GIRTS.

ANCHOR BOLTS: HEADED ANCHOR RODS AS INDICATED IN ANCHOR ROD PLAN FOR ATTACHMENT OF METAL BUILDING TO FOUNDATION. REFER ALSO TO STRUCTURAL FOUNDATION DRAWINGS.

METAL ROOF PANELS

EXPOSED-FASTENER RIBBED METAL ROOF PANEL IN MANUFACTURER'S STANDARD ROLLED FORMED PROFILE.

1. ZINC-COATED OR ALUMINUM-ZINC ALLOY-COATED SHEET STEEL 0.018-INCH (26 GA.) NOMINAL UNCOATED STEEL THICKNESS.
2. ONE PIECE LENGTHS AND ENDLAPS, WHEN REQUIRED SHALL BE 8" AND OCCUR AT A PURLIN.
3. EXTERIOR FINISH: TWO-COAT PVDF IN COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE.
4. CONCEALED FINISH: APPLY PRETREATMENT AND MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR PPOLYESTER BACKER FINISH.

METAL WALL PANELS

EXPOSED-FASTENER METAL PANELS IN MANUFACTURER'S STANDARD ROLLED FORMED PROFILE COVERING A NET COVERAGE OF 36".

1. ZINC-COATED OR ALUMINUM-ZINC ALLOY-COATED SHEET STEEL 0.018-INCH (26 GA.) NOMINAL UNCOATED STEEL THICKNESS. PREPAINTED BY THE COIL-COATING PROCESS TO COMPLY WITH ASTM A755/A755M.
2. EXTERIOR FINISH: TWO-COAT PVDF IN COLOR AS SELECTED BY ARCHITECT FROM MANUFACTURERS FULL RANGE.
3. CONCEALED FINISH: APPLY PRETREATMENT AND MANUFACTURER'S STANDARD WHITE OR LIGHT-COLORED ACRYLIC OR PPOLYESTER BACKER FINISH.
4. PANELS SHALL BE ONE PIECE FROM BASE TO EAVE.

THERMAL INSULATION SYSTEM

BASIS-OF-DESIGN PRODUCT: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ENERGY SAVER DOUBLE LAYER WALL INSULATION SYSTEM AS MANUFACTURED BY **SILVERCOTE**, 25 LOGUE COURT, GREENVILLE, SC 29615 (info@silvercote.com).

WALL INSULATION SYSTEM INCLUDES THE FOLLOWING:

1. WOVEN HPDE SCRIM FABRIC
 - a. COATING; 2.0 MIL THICK
 - b. COLOR; WHITE/GRAY
 - c. WEIGHT; 4.4 OZ/YD2
 - d. THICKNESS; NOMINAL 9 MIL, ASTM D1777
2. METAL STRAPPING USED TO SUPPORT SCRIM FABRIC
 - a. HOT DIPPED GALVANIZED STEEL, GRADE 60, ZINC COATED PER ASTM A653
 - b. MIN. 0.022" X 1"
 - c. COLOR; WHITE
3. CAVITY INSULATION
 - a. MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - b. UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
4. EXTERIOR INSULATION
 - a. MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - b. FACED: ALUMINUM FOIL FACED AND PERFORATED.
 - c. PERMEANCE ASTM E96 >10 PERM, PROCEDURE A.
 - d. ASTM E84 FLAME SPREAD 5, SMOKE DEVELOPED 0

ROOF INSULATION SYSTEM INCLUDES THE FOLLOWING:

1. WOVEN HPDE SCRIM FABRIC
 - a. COATING; 2.0 MIL THICK
 - b. COLOR; WHITE/GRAY
 - c. WEIGHT; 4.4 OZ/YD2
 - d. THICKNESS; NOMINAL 9 MIL, ASTM D1777
2. METAL STRAPPING USED TO SUPPORT SCRIM FABRIC
 - a. HOT DIPPED GALVANIZED STEEL, GRADE 60, ZINC COATED PER ASTM A653
 - b. MIN. 0.022" X 1"
 - c. COLOR; WHITE
3. CAVITY INSULATION
 - a. MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - b. UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS.
4. EXTERIOR INSULATION
 - a. MINERAL-FIBER-BLANKET INSULATION: ASTM C665, CONSISTING OF FIBERS MANUFACTURED FROM GLASS, SLAGWOOL, OR ROCK WOOL.
 - b. UNFACED: TYPE 1 PASSING ASTM E 136 FOR COMBUSTION CHARACTERISTICS

INSULATION ACCESSORIES: MANUFACTURER'S STANDARD SEALANT, HANGERS, FASTENERS, CLIPS, TAPE & ADHESIVE, ETC. AS REQUIRED FOR A COMPLETE INSTALLATION.

BUILDING ACCESSORIES

GENERAL: PROVIDE ACCESSORIES AS STANDARD WITH METAL BUILDING SYSTEM MANUFACTURER AND AS SPECIFIED. FABRICATE AND FINISH ACCESSORIES AT THE FACTORY TO GREATEST EXTENT POSSIBLE, BY MANUFACTURER'S STANDARD PROCEDURES AND PROCESSES. COMPLY WITH INDICATED PROFILES AND WITH DIMENSIONAL AND STRUCTURAL REQUIREMENTS.

1. FORM EXPOSED SHEET METAL ACCESSORIES THAT ARE WITHOUT EXCESSIVE OIL-CANNING, BUCKLING, AND TOOL MARKS AND THAT ARE TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS.

ROOF PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE METAL ROOF PANEL ASSEMBLY INCLUDING COPINGS, FASCIAE, CORNER UNITS, RIDGE CLOSURES, CLIPS,

SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL ROOF PANELS UNLESS OTHERWISE INDICATED.

WALL PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE METAL WALL PANEL ASSEMBLY INCLUDING COPINGS, FASCIAE, MULLIONS, SILLS, CORNER UNITS, CLIPS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL WALL PANELS UNLESS OTHERWISE INDICATED.

FLASHING AND TRIM: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.017-INCH (26 GA) NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING; FINISHED TO MATCH ADJACENT METAL PANELS.

GUTTERS: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.018 NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING; FINISHED TO MATCH ROOF FASCIA AND RAKE TRIM. MATCH PROFILE OF GABLE TRIM, COMPLETE WITH END PIECES, OUTLET TUBES, AND OTHER SPECIAL PIECES AS REQUIRED. FABRICATE IN MINIMUM 10-FOOT- (3-M-) LONG SECTIONS, SIZED ACCORDING TO SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL."

1. GUTTER SUPPORTS: FABRICATED FROM SAME MATERIAL AND FINISH AS GUTTERS.

DOWNSPOUTS: ALUMINUM-ZINC ALLOY-COATED STEEL SHEET, 0.024-INCH (0.61-MM) NOMINAL UNCOATED STEEL THICKNESS, PREPAINTED WITH COIL COATING; FINISHED TO MATCH METAL WALL PANELS. FABRICATE IN MINIMUM 10-FOOT LONG SECTIONS, COMPLETE WITH FORMED ELBOWS AND OFFSETS.

1. MOUNTING STRAPS: FABRICATED FROM SAME MATERIAL AND FINISH AS GUTTERS.

EXECUTION

ERECTION OF STRUCTURAL FRAMING

ERECT METAL BUILDING SYSTEM ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND DRAWINGS.

DO NOT FIELD CUT, DRILL, OR ALTER STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL FROM METAL BUILDING SYSTEM MANUFACTURER'S PROFESSIONAL ENGINEER.

SET STRUCTURAL FRAMING ACCURATELY IN LOCATIONS AND TO ELEVATIONS INDICATED, ACCORDING TO AISC SPECIFICATIONS REFERENCED IN THIS SECTION. MAINTAIN STRUCTURAL STABILITY OF FRAME DURING ERECTION.

BASE AND BEARING PLATES: CLEAN CONCRETE- AND MASONRY-BEARING SURFACES OF BOND-REDUCING MATERIALS AND ROUGHEN SURFACES PRIOR TO SETTING PLATES. CLEAN BOTTOM SURFACE OF PLATES.

1. SET PLATES FOR STRUCTURAL MEMBERS ON WEDGES, SHIMS, OR SETTING NUTS AS REQUIRED.
2. TIGHTEN ANCHOR RODS AFTER SUPPORTED MEMBERS HAVE BEEN POSITIONED AND PLUMBED. DO NOT REMOVE WEDGES OR SHIMS BUT, IF PROTRUDING, CUT OFF FLUSH WITH EDGE OF PLATE BEFORE PACKING WITH GROUT.
3. PROMPTLY PACK GROUT SOLIDLY BETWEEN BEARING SURFACES AND PLATES SO NO VOIDS REMAIN. NEATLY FINISH EXPOSED SURFACES; PROTECT GROUT AND ALLOW TO CURE. COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR SHRINKAGE-RESISTANT GROUTS.

ALIGN AND ADJUST STRUCTURAL FRAMING BEFORE PERMANENTLY FASTENING. BEFORE ASSEMBLY, CLEAN BEARING SURFACES AND OTHER SURFACES THAT WILL BE IN PERMANENT CONTACT WITH FRAMING. PERFORM NECESSARY ADJUSTMENTS TO COMPENSATE FOR DISCREPANCIES IN ELEVATIONS AND ALIGNMENT.

1. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF STRUCTURE.
2. OF ERECTION AND MEAN TEMPERATURE WHEN STRUCTURE WILL BE COMPLETED AND IN SERVICE.

PRIMARY FRAMING AND END WALLS: ERECT FRAMING LEVEL, PLUMB, RIGID, SECURE, AND TRUE TO LINE. LEVEL BASEPLATES TO A TRUE EVEN PLANE WITH FULL BEARING TO SUPPORTING STRUCTURES, SET WITH DOUBLE-NUTTED ANCHOR BOLTS. USE GROUT TO OBTAIN UNIFORM BEARING AND TO MAINTAIN A LEVEL BASE-LINE ELEVATION. MOIST-CURE GROUT FOR NOT LESS THAN SEVEN DAYS AFTER PLACEMENT.

1. MAKE FIELD CONNECTIONS USING HIGH-STRENGTH BOLTS INSTALLED ACCORDING TO RCSC'S "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" FOR BOLT TYPE AND JOINT TYPE SPECIFIED.
 - a. JOINT TYPE: SNUG TIGHTENED OR PRETENSIONED AS REQUIRED BY MANUFACTURER.

SECONDARY FRAMING: ERECT FRAMING LEVEL, PLUMB, RIGID, SECURE, AND TRUE TO LINE. FIELD BOLT SECONDARY FRAMING TO CLIPS ATTACHED TO PRIMARY FRAMING.

1. PROVIDE RAKE OR GABLE PURLINS WITH TIGHT-FITTING CLOSURE CHANNELS AND FASCIAE.
2. LOCATE AND SPACE WALL GIRTS TO SUIT OPENINGS SUCH AS DOORS AND WINDOWS.
3. PROVIDE SUPPLEMENTAL FRAMING AT ENTIRE PERIMETER OF OPENINGS, INCLUDING DOORS, WINDOWS, VENTILATORS, AND OTHER PENETRATIONS OF ROOF AND WALLS.

BRACING: INSTALL BRACING IN ROOF AND SIDEWALLS WHERE INDICATED ON ERECTION DRAWINGS.

1. TIGHTEN ROD AND CABLE BRACING TO AVOID SAG.
2. LOCATE INTERIOR END-BAY BRACING ONLY WHERE INDICATED.

FRAMING FOR OPENINGS: PROVIDE SHAPES OF PROPER DESIGN AND SIZE TO REINFORCE OPENINGS AND TO CARRY LOADS AND VIBRATIONS IMPOSED, INCLUDING EQUIPMENT FURNISHED UNDER MECHANICAL AND ELECTRICAL WORK. SECURELY ATTACH TO STRUCTURAL FRAMING.

ERECTION TOLERANCES: MAINTAIN ERECTION TOLERANCES OF STRUCTURAL FRAMING WITHIN AISC 303.

METAL PANEL INSTALLATION, GENERAL

GENERAL: ANCHOR METAL PANELS AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT.

1. FIELD CUT METAL PANELS AS REQUIRED FOR DOORS, WINDOWS, AND OTHER OPENINGS. CUT OPENINGS AS SMALL AS POSSIBLE, NEATLY TO SIZE REQUIRED, AND WITHOUT DAMAGE TO ADJACENT METAL PANEL FINISHES.
 - a. FIELD CUTTING OF METAL PANELS BY TORCH IS NOT PERMITTED UNLESS APPROVED IN WRITING BY MANUFACTURER.
2. INSTALL METAL PANELS PERPENDICULAR TO STRUCTURAL SUPPORTS UNLESS OTHERWISE INDICATED.
3. FLASH AND SEAL METAL PANELS WITH WEATHER CLOSURES AT PERIMETER OF OPENINGS AND SIMILAR ELEMENTS. FASTEN WITH SELF-TAPPING SCREWS.
4. LOCATE AND SPACE FASTENINGS IN UNIFORM VERTICAL AND HORIZONTAL ALIGNMENT.
5. LOCATE METAL PANEL SPLICES OVER STRUCTURAL SUPPORTS WITH END LAPS IN ALIGNMENT.
6. LAP METAL FLASHING OVER METAL PANELS TO ALLOW MOISTURE TO RUN OVER AND OFF THE MATERIAL

LAP-SEAM METAL PANELS: INSTALL SCREW FASTENERS USING POWER TOOLS WITH CONTROLLED TORQUE ADJUSTED TO COMPRESS EPDM WASHERS TIGHTLY WITHOUT DAMAGE TO WASHERS, SCREW THREADS, OR METAL PANELS. INSTALL SCREWS IN PREDRILLED HOLES.

1. ARRANGE AND NEST SIDE-LAP JOINTS SO PREVAILING WINDS BLOW OVER, NOT INTO, LAPPED JOINTS. LAP RIBBED OR FLUTED SHEETS ONE FULL RIB CORRUGATION. APPLY METAL PANELS AND ASSOCIATED ITEMS FOR NEAT AND WEATHERTIGHT ENCLOSURE. AVOID "PANEL CREEP" OR APPLICATION NOT TRUE TO LINE.

METAL PROTECTION: WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH CORROSION-RESISTANT COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY METAL ROOF PANEL MANUFACTURER.

JOINT SEALERS: INSTALL GASKETS, JOINT FILLERS, AND SEALANTS WHERE INDICATED AND WHERE REQUIRED FOR WEATHERPROOF PERFORMANCE OF METAL PANEL ASSEMBLIES. PROVIDE TYPES OF GASKETS, FILLERS, AND SEALANTS INDICATED; OR, IF NOT INDICATED, PROVIDE TYPES RECOMMENDED BY METAL PANEL MANUFACTURER.

1. SEAL METAL PANEL END LAPS WITH DOUBLE BEADS OF TAPE OR SEALANT THE FULL WIDTH OF PANEL. SEAL SIDE JOINTS WHERE RECOMMENDED BY METAL PANEL MANUFACTURER.
2. PREPARE JOINTS AND APPLY SEALANTS TO COMPLY WITH REQUIREMENTS IN SECTION 079200 "JOINT SEALANTS."

METAL ROOF PANEL INSTALLATION

GENERAL: PROVIDE METAL ROOF PANELS OF FULL LENGTH FROM EAVE TO RIDGE UNLESS OTHERWISE INDICATED OR RESTRICTED BY SHIPPING LIMITATIONS.

1. INSTALL RIDGE CAPS AS METAL ROOF PANEL WORK PROCEEDS.
2. FLASH AND SEAL METAL ROOF PANELS WITH WEATHER CLOSURES AT EAVES AND RAKES. FASTEN WITH SELF-TAPPING SCREWS.

STANDING-SEAM METAL ROOF PANELS: FASTEN METAL ROOF PANELS TO SUPPORTS WITH CONCEALED CLIPS AT EACH STANDING-SEAM JOINT, AT LOCATION AND SPACING AND WITH FASTENERS RECOMMENDED BY MANUFACTURER.

1. INSTALL CLIPS TO SUPPORTS WITH SELF-DRILLING OR SELF-TAPPING FASTENERS.
2. INSTALL PRESSURE PLATES AT LOCATIONS INDICATED IN MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
3. SEAMED JOINT: CRIMP STANDING SEAMS WITH MANUFACTURER-APPROVED MOTORIZED SEAMER TOOL SO THAT CLIP, METAL ROOF PANEL, AND FACTORY-APPLIED SEALANT ARE COMPLETELY ENGAGED.
4. RIGIDLY FASTEN EAVE END OF METAL ROOF PANELS AND ALLOW RIDGE END FREE MOVEMENT FOR THERMAL EXPANSION AND CONTRACTION. PREDRILL PANELS FOR FASTENERS.
5. PROVIDE METAL CLOSURES AT EACH SIDE OF RIDGE CAPS.

METAL WALL PANEL INSTALLATION

GENERAL: INSTALL METAL WALL PANELS IN ORIENTATION, SIZES, AND LOCATIONS INDICATED ON DRAWINGS. INSTALL PANELS PERPENDICULAR TO GIRTS, EXTENDING FULL HEIGHT OF BUILDING, UNLESS OTHERWISE INDICATED. ANCHOR METAL WALL PANELS AND OTHER COMPONENTS OF THE WORK SECURELY IN PLACE, WITH PROVISIONS FOR THERMAL AND STRUCTURAL MOVEMENT.

1. UNLESS OTHERWISE INDICATED, BEGIN METAL PANEL INSTALLATION AT CORNERS WITH CENTER OF RIB LINED UP WITH LINE OF FRAMING.
2. SHIM OR OTHERWISE PLUMB SUBSTRATES RECEIVING METAL WALL PANELS.
3. WHEN TWO ROWS OF METAL PANELS ARE REQUIRED, LAP PANELS 4 INCHES (102 MM) MINIMUM.
4. WHEN BUILDING HEIGHT REQUIRES TWO ROWS OF METAL PANELS AT GABLE ENDS, ALIGN LAP OF GABLE PANELS OVER METAL WALL PANELS AT EAVE HEIGHT.
5. RIGIDLY FASTEN BASE END OF METAL WALL PANELS AND ALLOW EAVE END FREE MOVEMENT FOR THERMAL EXPANSION AND CONTRACTION. PREDRILL PANELS.
6. FLASH AND SEAL METAL WALL PANELS WITH WEATHER CLOSURES AT EAVES AND RAKES, AND AT PERIMETER OF ALL OPENINGS. FASTEN WITH SELF-TAPPING SCREWS.
7. INSTALL SCREW FASTENERS IN PREDRILLED HOLES.
8. INSTALL FLASHING AND TRIM AS METAL WALL PANEL WORK PROCEEDS.
9. APPLY ELASTOMERIC SEALANT CONTINUOUSLY BETWEEN METAL BASE CHANNEL (SILL ANGLE) AND CONCRETE, AND ELSEWHERE AS INDICATED ON DRAWINGS; IF NOT INDICATED, AS NECESSARY FOR WATERPROOFING.
10. ALIGN BOTTOM OF METAL WALL PANELS AND FASTEN WITH BLIND RIVETS, BOLTS, OR SELF-DRILLING OR SELF-TAPPING SCREWS.
11. PROVIDE WEATHERPROOF ESCUTCHEONS FOR PIPE AND CONDUIT PENETRATING EXTERIOR WALLS.

METAL WALL PANELS: INSTALL METAL WALL PANELS ON EXTERIOR SIDE OF GIRTS. ATTACH METAL WALL PANELS TO SUPPORTS WITH FASTENERS AS RECOMMENDED BY MANUFACTURER.

THERMAL INSULATION INSTALLATION

GENERAL: INSTALL INSULATION CONCURRENTLY WITH METAL PANEL INSTALLATION, IN THICKNESS INDICATED TO COVER ENTIRE SURFACE, ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. SET VAPOR-RETARDER TOWARD WARM SIDE OF CONSTRUCTION UNLESS OTHERWISE INDICATED. DO NOT OBSTRUCT VENTILATION SPACES EXCEPT FOR FIRESTOPPING.
2. TAPE JOINTS AND RUPTURES IN VAPOR RETARDER AND SEAL EACH CONTINUOUS AREA TO THE SURROUNDING CONSTRUCTION TO ENSURE AIRTIGHT INSTALLATION.
3. INSTALL INSULATION BLANKETS STRAIGHT AND TRUE IN ONE-PIECE LENGTHS.

BLANKET ROOF INSULATION:

1. SCRIM FABRIC SUPPORT BANDING: INSTALL BANDING PERPENDICULAR AND PARALELL TO BUILDING FRAMING AT SPACINGS AS RECOMMENDED BY INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. ATTACH TO STRUCTURE USING RECOMMENDED CLIPS AND FASTENERS
2. INSTALL INSULATION SUPPORT SCRIM FABRIC OVER BANDING PER INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS. PULL FABRIC TO BE SMOOTH AND SQUARE TO THE STRUCTURE AND FASTEN WITH RECOMMENDED ADHESIVE AND FASTENERS.
3. INSTALL UNFACED BLANKET INSULATION ON TOP OF SCRIM FABRIC TO COMPLETELY FILL CAVITY BETWEEN PURLINS.
4. INSTALL SECOND (TOP) LAYER OF UNFACED BLANKET INSULATION OVER LOWER LAYER AND PERPENDICULAR TO PURLINS, CREATING A THERMAL BREAK BELOW METAL ROOF PANELS.
5. INSTALL ROOF PANELS PER MANUFACTURER'S INSTRUCTIONS.

BLANKET WALL INSULATION:

1. FROM OUTSIDE. INSTALL INSULATION HANGERS AS REQUIRED.
2. HANG EXTERIOR LAYER OF PERFORATED FOIL-FACED INSULATION WITH FACING TO THE OUTSIDE. TRIM 6" INSULATION FROM THE BOTTOM AND WRAP FACING AROUND TO THE INSIDE.
3. INSTALL WALL SHEETING PER MANUFACTURER'S INSTRUCTIONS.
4. FROM INSIDE, INSTALL UNFACED BLANKET INSULATION BETWEEN GIRTS FILLING ENTIRE CAVITY.
5. INSTALL SCRIM FABRIC PER INSULATION SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS WITH RECOMMENDED ADHESIVE AND FASTENERS. PULL FABRIC TO BE SMOOTH AND SQUARE TO THE STRUCTURE.
6. INSTALL METAL BANDING AND FASTEN TO STRUCTURE.

ACCESSORY INSTALLATION

GENERAL: INSTALL ACCESSORIES WITH POSITIVE ANCHORAGE TO BUILDING WITH WEATHERTIGHT MOUNTING. PROVIDE FOR THERMAL EXPANSION. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER COMPONENTS.

1. INSTALL COMPONENTS REQUIRED FOR A COMPLETE METAL ROOF PANEL ASSEMBLY, INCLUDING TRIM, COPINGS, RIDGE CLOSURES, SEAM COVERS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS.
2. INSTALL COMPONENTS FOR A COMPLETE METAL WALL PANEL ASSEMBLY, INCLUDING TRIM, COPINGS, CORNERS, SEAM COVERS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS.
3. WHERE DISSIMILAR METALS CONTACT EACH OTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC ACTION BY PAINTING CONTACT SURFACES WITH CORROSION-RESISTANT COATING, BY APPLYING RUBBERIZED-ASPHALT UNDERLAYMENT TO EACH CONTACT SURFACE, OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY MANUFACTURER.

FLASHING AND TRIM: COMPLY WITH PERFORMANCE REQUIREMENTS, MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL." PROVIDE CONCEALED FASTENERS WHERE POSSIBLE AND SET UNITS TRUE TO LINE

AND LEVEL. INSTALL WORK WITH LAPS, JOINTS, AND SEAMS THAT WILL BE PERMANENTLY WATERTIGHT AND WEATHER RESISTANT.

1. INSTALL EXPOSED FLASHING AND TRIM THAT IS WITHOUT EXCESSIVE OIL-CANNING, BUCKLING, AND TOOL MARKS AND THAT IS TRUE TO LINE AND LEVELS INDICATED, WITH EXPOSED EDGES FOLDED BACK TO FORM HEMS. INSTALL SHEET METAL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERPROOF AND WEATHER-RESISTANT PERFORMANCE.
2. EXPANSION PROVISIONS: PROVIDE FOR THERMAL EXPANSION OF EXPOSED FLASHING AND TRIM. SPACE MOVEMENT JOINTS AT A MAXIMUM OF 10 FEET (3 M) WITH NO JOINTS ALLOWED WITHIN 24 INCHES (600 MM) OF CORNER OR INTERSECTION. WHERE LAPPED OR BAYONET-TYPE EXPANSION PROVISIONS CANNOT BE USED OR WOULD NOT BE SUFFICIENTLY WEATHER RESISTANT AND WATERPROOF, FORM EXPANSION JOINTS OF INTERMESHING HOOKED FLANGES, NOT LESS THAN 1 INCH (25 MM) DEEP, FILLED WITH MASTIC SEALANT (CONCEALED WITHIN JOINTS).

GUTTERS: JOIN SECTIONS WITH RIVETED-AND-SOLDERED OR LAPPED-AND-SEALED JOINTS. ATTACH GUTTERS TO EAVE WITH GUTTER HANGERS SPACED AS REQUIRED FOR GUTTER SIZE, BUT NOT MORE THAN 36 INCHES (914 MM) O.C. USING MANUFACTURER'S STANDARD FASTENERS. PROVIDE END CLOSURES AND SEAL WATERTIGHT WITH SEALANT. PROVIDE FOR THERMAL EXPANSION.

DOWNSPOUTS: JOIN SECTIONS WITH 1-1/2-INCH (38-MM) TELESCOPING JOINTS. PROVIDE FASTENERS DESIGNED TO HOLD DOWNSPOUTS SECURELY 1 INCH (25 MM) AWAY FROM WALLS; LOCATE FASTENERS AT TOP AND BOTTOM AND AT APPROXIMATELY 60 INCHES (1524 MM) O.C. IN BETWEEN.

1. PROVIDE SPLASHBLOCKS AT DOWNSPOUT OUTLETS.

PIPE FLASHING: FORM FLASHING AROUND PIPE PENETRATION AND METAL ROOF PANELS. FASTEN AND SEAL TO PANEL AS RECOMMENDED BY MANUFACTURER.

FIELD QUALITY CONTROL

SPECIAL INSPECTIONS: OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM FIELD QUALITY CONTROL SPECIAL INSPECTIONS AND TO SUBMIT REPORTS.

DIVISION 2: EXISTING CONDITIONS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE WORKSPACE AND FIRE SAFETY DURING DEMOLITION AND NEW CONSTRUCTION ACTIVITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ALL CONSTRUCTION DEBRIS. REMOVE ANY EXISTING DEBRIS LEFT FROM DEMOLITION WORK BY OTHERS.

IT IS SOLEY THE CONTRACTOR(S) RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCES AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING CONSTRUCTION, INCLUDING THE ADDITION OF SHORING, SHEATHING, TEMPORARY ENCLOSURES, ETC. IT IS THE CONTRACTOR(S) SOLE RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY AND CONSTRUCTION REGULATIONS, ORDINANCES, AND CODES DURING THE COURSE OF CONSTRUCTION.

DIVISION 22: PLUMBING

REFER TO MECHANICAL DRAWINGS (PLAN SHEETS M1.1 & M2.1)

DIVISION 23: HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

REFER TO MECHANICAL DRAWINGS (PLAN SHEETS M1.1 & M2.1)

DIVISION 26: ELECTRICAL

REFER TO ELECTRICAL DRAWINGS (PLAN SHEETS E0.1, E0.2 & E1.1)

DIVISION 3: CONCRETE

STRUCTURAL DRAWING SPECIFICATIONS TAKE PRECEDENCE OVER THESE DRAWINGS AND SPECIFICATIONS.

PERFORM ALL WORK NECESSARY TO COMPLETE THE CONCRETE WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN. THIS WORK SHALL INCLUDE GROUTING, FORM WORK, INSTALLING WIRE MESH AND REINFORCING STEEL, FINISHING OF CONCRETE, ETC. FURNISH AND INSTALL ALL PREMOLDED EXPANSION/ISOLATION JOINT FILLERS, AND ALL NECESSARY MATERIALS AND LABOR FOR A COMPLETE INSTALLATION.

EXTERIOR WALKS, CURBS AND DRIVE APRONS SHALL BE COVERED UNDER SPECIFICATIONS LISTED ON SITE PLAN DRAWINGS.

ANY EXISTING SIDEWALKS OR CURBS DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE REPLACED OR RESTORED BY THE CONTRACTOR.

REFER TO STRUCTURAL DRAWINGS FOR GRANULAR FILL UNDER ALL CONCRETE SLABS ON GRADE.

FORMS: PLYWOOD PATENTED TYPE, STEEL FACED.

ACCESSORIES: CHAIRS, TIES, ETC., SHALL BE GALVANIZED.

CURING COMPOUND: "CHEM HARD" BY L&M CONSTRUCTIONS CHEMICALS, INC. OR ARCHITECT APPROVED EQUAL. (VERIFY THAT ANY CURING COMPOUND AND DUST SEALER USED IS COMPATIBLE WITH ALL FLOORING MATERIAL AND ADHESIVES (CARPET, VCT, TILE, ETC.)) APPLICATION PER MANUFACTURER'S REQUIREMENTS.

1. ALL INTERIOR SLABS SHALL HAVE A SPRAY APPLIED CURING COMPOUND AND DUST SEALER.

CONCRETE TRUCKS SHALL WASH-DOWN ONLY IN DESIGNATED AREAS.

FORMS, EXTRA MATERIALS, ETC., SHALL BE REMOVED FROM SITE WITHIN TWO DAYS AFTER CONCRETE WORK IS COMPLETED.

REFER TO STRUCTURAL DRAWINGS FOR CONCRETE COMPRESSIVE STRENGTH REQUIREMENTS.

DIVISION 31: EARTHWORK

SITE CLEARING

MATERIAL OWNERSHIP

EXCEPT FOR STRIPPED TOPSOIL AND OTHER MATERIALS INDICATED TO BE STOCKPILED OR OTHERWISE REMAIN OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.

SUBMITTALS

EXISTING CONDITIONS: DOCUMENTATION OF EXISTING CONDITIONS, ADJOINING CONSTRUCTION, AND PREVIOUS SITE IMPROVEMENTS THAT ESTABLISHES PRECONSTRUCTION CONDITIONS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY SITE CLEARING.

RECORD DRAWINGS: IDENTIFYING AND ACCURATELY SHOWING LOCATIONS OF CAPPED UTILITIES AND OTHER SUBSURFACE STRUCTURAL, ELECTRICAL, AND MECHANICAL CONDITIONS.

PROJECT CONDITIONS

TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.

1. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM OWNER AND AUTHORITIES HAVING JURISDICTION.
2. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS IF REQUIRED BY OWNER OR AUTHORITIES HAVING JURISDICTION.

UTILITY LOCATOR SERVICE: NOTIFY OUPS FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.

DO NOT COMMENCE SITE-CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL AND PLANT-PROTECTION MEASURES ARE IN PLACE.

TOPSOIL REPLACEMENT: PERFORM ONLY WHEN THE TOPSOIL IS DRY OR SLIGHTLY MOIST.

EXECUTION

PREPARATION

PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.

LOCATE AND CLEARLY IDENTIFY VEGETATION TO REMAIN.

PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION.

1. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.

TEMPORARY EROSION AND SEDIMENTATION CONTROL

PROVIDE TEMPORARY EROSION- AND SEDIMENTATION-CONTROL MEASURES TO PREVENT SOIL EROSION AND DISCHARGE OF SOIL-BEARING WATER RUNOFF OR AIRBORNE DUST TO ADJACENT PROPERTIES AND WALKWAYS, ACCORDING TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.

VERIFY THAT FLOWS OF WATER REDIRECTED FROM CONSTRUCTION AREAS OR GENERATED BY CONSTRUCTION ACTIVITY DO NOT ENTER OR CROSS PROTECTION ZONES.

INSPECT, REPAIR, AND MAINTAIN EROSION- AND SEDIMENTATION-CONTROL MEASURES DURING CONSTRUCTION UNTIL PERMANENT VEGETATION HAS BEEN ESTABLISHED.

REMOVE EROSION AND SEDIMENTATION CONTROLS AND RESTORE AND STABILIZE AREAS DISTURBED DURING REMOVAL.

EXISTING UTILITIES

INTERRUPTING EXISTING UTILITIES: DO NOT INTERRUPT EXISTING UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES ACCORDING TO REQUIREMENTS INDICATED:

NOTIFY ARCHITECT NOT LESS THAN TWO DAYS IN ADVANCE OF PROPOSED UTILITY INTERRUPTIONS.

CLEARING AND GRUBBING

REMOVE OBSTRUCTIONS TO PERMIT INSTALLATION OF NEW CONSTRUCTION.

STRIPPING

REMOVE SUBSOIL AND NON-SOIL MATERIALS IN AREAS NECESSARY FOR ACCEPTABLE CONSTRUCTION SUBBASE IN BUILDING AND PAVED AREAS.

SITE IMPROVEMENTS

REMOVE EXISTING ABOVE AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND NECESSARY TO FACILITATE NEW CONSTRUCTION.

DISPOSAL OF SURPLUS AND WASTE MATERIALS

REMOVE UNSUITABLE AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.

EARTH MOVING

RELATED DOCUMENTS

ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS; LATEST EDITION

SUMMARY

SECTION INCLUDES:

1. PREPARING SUBGRADES FOR SLABS-ON-GRADE, WALKS, AND PAVEMENTS.
2. EXCAVATING AND BACKFILLING FOR BUILDINGS AND STRUCTURES.
3. SUBBASE AND DRAINAGE COURSE FOR CONCRETE SLABS-ON-GRADE.
4. SUBBASE COURSE FOR CONCRETE WALKS AND PAVEMENTS.
5. SUBBASE COURSE AND BASE COURSE FOR ASPHALT PAVING.
6. EXCAVATING AND BACKFILLING TRENCHES FOR UTILITIES AND PITS FOR BURIED UTILITY STRUCTURES.

SOIL MATERIALS

1. 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 2 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.
2. 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.
 - a. UNSATISFACTORY SOILS ALSO INCLUDE SATISFACTORY SOILS NOT MAINTAINED WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AT TIME OF COMPACTION.
3. SUBBASE COURSE OR ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE, ODOT ITEM 304.
4. BASE COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 95 PERCENT PASSING A 1-1/2-INCH SIEVE AND NOT MORE THAN 8 PERCENT PASSING A NO. 200 SIEVE, ODOT ITEM 304.
5. BEDDING COURSE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; EXCEPT WITH 100 PERCENT PASSING A 1-INCH SIEVE AND NOT MORE THAN 8 PERCENT PASSING A NO. 200 SIEVE.

6. FILTER MATERIAL: NARROWLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, OR CRUSHED STONE AND NATURAL SAND; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 67; WITH 100 PERCENT PASSING A 1-INCH SIEVE AND 0 TO 5 PERCENT PASSING A NO. 4 SIEVE
7. SAND: ASTM C 33; FINE AGGREGATE.
8. IMPERVIOUS FILL: CLAYEY GRAVEL AND SAND MIXTURE CAPABLE OF COMPACTING TO A DENSE STATE.

ACCESSORIES

DETECTABLE WARNING TAPE: ACID- AND ALKALI-RESISTANT, POLYETHYLENE FILM WARNING TAPE MANUFACTURED FOR MARKING AND IDENTIFYING UNDERGROUND UTILITIES, A MINIMUM OF 6 INCHES WIDE AND 4 MILS THICK, CONTINUOUSLY INSCRIBED WITH A DESCRIPTION OF THE UTILITY, WITH METALLIC CORE ENCASED IN A PROTECTIVE JACKET FOR CORROSION PROTECTION, DETECTABLE BY METAL DETECTOR WHEN TAPE IS BURIED UP TO 30 INCHES DEEP; COLORED PER ITEM C BELOW:

TAPE COLOR DESIGNATIONS

1. RED: ELECTRIC.
2. YELLOW: GAS, OIL, STEAM, AND DANGEROUS MATERIALS.
3. ORANGE: TELEPHONE AND OTHER COMMUNICATIONS.
4. BLUE: WATER SYSTEMS.
5. GREEN: SEWER SYSTEMS.

PREPARATION

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.

PROTECT AND MAINTAIN EROSION AND SEDIMENTATION CONTROLS DURING EARTH MOVING OPERATIONS.

EXCAVATION, GENERAL

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 PER EXCAVATION DIMENSIONS BELOW.

CLASSIFIED EXCAVATION: EXCAVATE TO SUBGRADE ELEVATIONS. MATERIAL TO BE EXCAVATED WILL BE CLASSIFIED AS EARTH AND ROCK. DO NOT EXCAVATE ROCK UNTIL IT HAS BEEN CLASSIFIED AND CROSS SECTIONED BY ARCHITECT. THE CONTRACT SUM WILL BE ADJUSTED FOR ROCK EXCAVATION ACCORDING TO UNIT PRICES INCLUDED IN THE CONTRACT DOCUMENTS. CHANGES IN THE CONTRACT TIME MAY BE AUTHORIZED FOR ROCK EXCAVATION.

1. EARTH EXCAVATION INCLUDES EXCAVATING PAVEMENTS AND OBSTRUCTIONS VISIBLE ON SURFACE; UNDERGROUND STRUCTURES, UTILITIES, AND OTHER ITEMS INDICATED TO BE REMOVED; TOGETHER WITH SOIL, BOULDERS, AND OTHER MATERIALS NOT CLASSIFIED AS ROCK OR UNAUTHORIZED EXCAVATION.
 - a. INTERMITTENT DRILLING, RAM HAMMERING, OR RIPPING OF MATERIAL NOT CLASSIFIED AS ROCK EXCAVATION IS EARTH EXCAVATION.
2. ROCK EXCAVATION INCLUDES REMOVAL AND DISPOSAL OF ROCK. REMOVE ROCK TO LINES AND SUBGRADE ELEVATIONS INDICATED TO PERMIT INSTALLATION OF PERMANENT CONSTRUCTION WITHOUT EXCEEDING THE EXCAVATION DIMENSIONS.

EXCAVATION DIMENSIONS:

1. 12 INCHES OUTSIDE OF CONCRETE FORMS.
2. 6 INCHES BENEATH BOTTOM OF CONCRETE SLABS-ON-GRADE.
3. 6 INCHES BENEATH PIPE IN TRENCHES, AND THE GREATER OF 24 INCHES WIDER THAN PIPE OR 42 INCHES WIDE.

EXCAVATION FOR STRUCTURES

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.

EXCAVATION FOR WALKS AND PAVEMENTS

EXCAVATE SURFACES UNDER WALKS AND PAVEMENTS TO INDICATED LINES, CROSS SECTIONS, ELEVATIONS, AND SUBGRADES.

EXCAVATION FOR UTILITY TRENCHES

COMPLY WITH THE LATEST EDITION OF THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 611 PIPE CULVERTS, SEWERS, DRAINS, AND DRAINAGE STRUCTURES.

CONDUIT UNDER PAVEMENT: REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS ITEM 611.02, TYPE B CONDUITS.

CONDUIT NOT UNDER PAVEMENT: REFER TO THE OHIO DEPARTMENT OF TRANSPORTATION MATERIAL SPECIFICATIONS ITEM 611.02, TYPE C CONDUITS.

EXCAVATE TRENCHES TO INDICATED GRADIENTS, LINES, DEPTHS, AND ELEVATIONS. BEYOND BUILDING PERIMETER, EXCAVATE TRENCHES TO ALLOW INSTALLATION OF TOP OF PIPE BELOW FROST LINE.

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 12 INCHES HIGHER THAN TOP OF PIPE OR CONDUIT UNLESS OTHERWISE INDICATED.

1. CLEARANCE: 12 INCHES EACH SIDE OF PIPE OR CONDUIT OR AS INDICATED.

TRENCH BOTTOMS: EXCAVATE TRENCHES 4 INCHES DEEPER THAN BOTTOM OF PIPE AND CONDUIT ELEVATIONS TO ALLOW FOR BEDDING COURSE. HAND-EXCAVATE DEEPER FOR BELLS OF PIPE.

1. EXCAVATE TRENCHES 6 INCHES DEEPER THAN ELEVATION REQUIRED IN ROCK OR OTHER UNYIELDING BEARING MATERIAL TO ALLOW FOR BEDDING COURSE.

NOTIFY ARCHITECT WHEN EXCAVATIONS HAVE REACHED REQUIRED SUBGRADE.

AUTHORIZED ADDITIONAL EXCAVATION AND REPLACEMENT MATERIAL WILL BE PAID FOR ACCORDING TO CONTRACT PROVISIONS FOR UNIT PRICES.

RECONSTRUCT SUBGRADES DAMAGED BY FREEZING TEMPERATURES, FROST, RAIN, ACCUMULATED WATER, OR CONSTRUCTION ACTIVITIES, AS DIRECTED BY ARCHITECT, WITHOUT ADDITIONAL COMPENSATION.

UNAUTHORIZED EXCAVATION

FILL UNAUTHORIZED EXCAVATION UNDER FOUNDATIONS OR WALL FOOTINGS BY EXTENDING BOTTOM ELEVATION OF CONCRETE FOUNDATION OR FOOTING TO EXCAVATION BOTTOM, WITHOUT ALTERING TOP ELEVATION. LEAN CONCRETE FILL, WITH 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI, MAY BE USED WHEN APPROVED BY ARCHITECT.

STORAGE OF SOIL MATERIALS

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.

BACKFILL

PLACE AND COMPACT BACKFILL IN EXCAVATIONS PROMPTLY, BUT NOT BEFORE COMPLETING THE FOLLOWING:

1. CONSTRUCTION BELOW FINISH GRADE INCLUDING, WHERE APPLICABLE, SUBDRAINAGE, DAMPPROOFING, WATERPROOFING, AND PERIMETER INSULATION.

2. SURVEYING LOCATIONS OF UNDERGROUND UTILITIES FOR RECORD DOCUMENTS.
3. TESTING AND INSPECTING UNDERGROUND UTILITIES.
4. REMOVING CONCRETE FORMWORK.
5. REMOVING TRASH AND DEBRIS.
6. REMOVING TEMPORARY SHORING AND BRACING, AND SHEETING.
7. INSTALLING PERMANENT OR TEMPORARY HORIZONTAL BRACING ON HORIZONTALLY SUPPORTED WALLS.

PLACE BACKFILL ON SUBGRADES FREE OF MUD, FROST, SNOW, OR ICE.

UTILITY TRENCH BACKFILL

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.

TRENCHES UNDER FOOTINGS: BACKFILL TRENCHES EXCAVATED UNDER FOOTINGS AND WITHIN 18 INCHES OF BOTTOM OF FOOTINGS WITH SATISFACTORY SOIL; FILL WITH CONCRETE TO ELEVATION OF BOTTOM OF FOOTINGS. CONCRETE IS SPECIFIED IN DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE."

TRENCHES UNDER ROADWAYS: PROVIDE 4-INCH THICK, CONCRETE-BASE SLAB SUPPORT FOR PIPING OR CONDUIT LESS THAN 30 INCHES BELOW SURFACE OF ROADWAYS. AFTER INSTALLING AND TESTING, COMPLETELY ENCASE PIPING OR CONDUIT IN A MINIMUM OF 4 INCHES OF CONCRETE BEFORE BACKFILLING OR PLACING ROADWAY SUBBASE COURSE. CONCRETE IS SPECIFIED IN DIVISION 03 SECTION "CAST-IN-PLACE CONCRETE".

BACKFILL VOIDS WITH SATISFACTORY SOIL WHILE REMOVING SHORING AND BRACING.

PLACE AND COMPACT INITIAL BACKFILL OF SUBBASE MATERIAL, FREE OF PARTICLES LARGER THAN 1 INCH IN ANY DIMENSION, TO A HEIGHT OF 12 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.

PLACE AND COMPACT FINAL BACKFILL OF SATISFACTORY SOIL TO FINAL SUBGRADE ELEVATION.

INSTALL WARNING TAPE DIRECTLY ABOVE UTILITIES, 6 INCHES BELOW SUBGRADE UNDER PAVEMENTS AND SLABS , AND 12 INCHES BELOW FINISHED GRADE ELSEWHERE.

BEDDING COURSE AND BACKFILL FOR ALL METALLIC PIPING SHALL BE NATURAL WASHED STONE MATERIAL. CRUSHED LIMESTONE MATERIAL IS NOT PERMITTED DUE TO POTENTIAL ADVERSE REACTIONS WITH THE PIPING.

STONE AGGREGATE FILL

ODOT ITEM 204, SUBGRADE COMPACTION

1. FOR ALL PAVED AREAS: AFTER SITE CLEARING AND PRIOR TO ANY FILL OR AGGREGATE PLACEMENT, ALL EXPOSED SURFACES SHOULD BE PROOF ROLLED WITH AN APPROVED LOADED, TANDEM AXLE TRUCK TO EVALUATE FOR SOIL STABILITY AND TO VERIFY THAT A RELATIVELY UNYIELDING SURFACE IS ACHIEVED. SOFT OR LOOSE SOILS, IF ENCOUNTERED, SHOULD BE DISKED, DRIED AND RECOMPACTED OR UNDERCUT AND REPLACED WITH COMPACTED ENGINEERED FILL OR OTHERWISE AS DIRECTED BY THE SOILS ENGINEER.
2. IN THE EVENT THAT EXCESSIVE RUTTING OR DEFLECTIONS OCCUR DURING PROOF ROLLING OPERATIONS, YIELDING SOILS SHOULD BE ADDRESSED AS NOTED IN THE SITE GEOTECHNICAL REPORT OR AS DIRECTED BY THE SOILS ENGINEER.
3. ALL AREAS TO RECEIVE PAVEMENT SHALL BE COMPACTED AS NOTED IN ODOT ITEM 204. OWNER'S REPRESENTATIVE SHALL REQUIRE PROOF ROLLING OF SUBGRADE PRIOR TO INSTALLATION OF BASE MATERIAL. PROOF ROLLING SHALL CONSIST OF DRIVING OVER THE SUBGRADE WITH A LOADED TANDEM DUMP TRUCK AS DIRECTED BY THE OWNER'S REPRESENTATIVE UNTIL NO DEFLECTION OR TIRE INDENTATION IN THE SUBGRADE IS PRESENT. ALL PROOF ROLLING PROCEDURES AND ANY NECESSARY CORRECTIVE MEASURES WILL BE THE COMPLETE RESPONSIBILITY OF THE SITE CONTRACTOR.
4. PAYMENT FOR ITEM 204 SUBGRADE COMPACTION FOR ALL OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE LUMP SUM BID PRICE AND SHALL INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO COMPLETE THIS ITEM OF WORK.

IF ARCHITECT DETERMINES THAT UNSATISFACTORY SOIL IS PRESENT, CONTINUE EXCAVATION AND REPLACE WITH COMPACTED BACKFILL OR FILL MATERIAL AS DIRECTED.

PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH A PNEUMATIC-TIRED AND LOADED 10-WHEEL, TANDEM-AXLE DUMP TRUCK WEIGHING NOT LESS THAN 20 TONS TO IDENTIFY SOFT POCKETS AND AREAS OF EXCESS YIELDING. PROOF ROLLING AT ASPHALT PAVEMENT SUBGRADES SHALL MEET THE REQUIREMENTS OF ODOT ITEM 204.06. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES. IF UNSATISFACTORY CONDITIONS EXIST, REPLACE WITH COMPACTED BACKFILL OR FILL AS DIRECTED.

PLOW, SCARIFY, BENCH, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO FILL MATERIAL WILL BOND WITH EXISTING MATERIAL.

PLACE AND COMPACT FILL MATERIAL IN LAYERS TO REQUIRED ELEVATIONS AS FOLLOWS:

1. UNDER GRASS AND PLANTED AREAS, USE SATISFACTORY SOIL MATERIAL.
2. UNDER WALKS AND PAVEMENTS, USE SATISFACTORY SOIL MATERIAL.
3. UNDER STEPS AND RAMPS, USE SUBBASE COURSE , ODOT ITEM 304.
4. UNDER BUILDING SLABS, USE SUBBASE COURSE, ODOT ITEM 304.
5. UNDER FOOTINGS AND FOUNDATIONS, USE SUBBASE COURSE, ODOT ITEM 304.

SOIL MOISTURE CONTROL

UNIFORMLY MOISTEN OR AERATE SUBGRADE AND EACH SUBSEQUENT FILL OR BACKFILL SOIL LAYER BEFORE COMPACTION TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT.

1. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, OTHERWISE SATISFACTORY SOIL MATERIAL THAT EXCEEDS OPTIMUM MOISTURE CONTENT BY 2 PERCENT AND IS TOO WET TO COMPACT TO SPECIFIED DRY UNIT WEIGHT.

COMPACTION OF SOIL BACKFILLS AND FILLS

GEOTECHNICAL ENGINEER AND/OR THEIR REPRESENTATIVE BE PRESENT DURING EARTHWORK OPERATIONS AND PAVEMENT INSTALLATION TO OBSERVE THE FIELD CONDITIONS WITH RESPECT TO THE DESIGN ASSUMPTIONS AND SPECIFICATIONS.

PLACE BACKFILL AND FILL SOIL MATERIALS IN LAYERS NOT MORE THAN 8 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.

PLACE BACKFILL AND FILL SOIL MATERIALS EVENLY ON ALL SIDES OF STRUCTURES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE.

COMPACT SOIL MATERIALS TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698:

1. PAVEMENTS:
 - a. COMPACT TOP 12 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 100 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY. COMPACTION SHALL COMPLY WITH ODOT ITEM 204 AND PER GEOTECHNICAL REPORT.
 - b. THE AGGREGATE BASE SHOULD COMPLY WITH THE GRADATION REQUIREMENTS OF ODOT ITEM 304 DENSE-GRADED AGGREGATE. IT SHOULD BE COMPACTED TO 98 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 (STANDARD PROCTOR).
2. FOUNDATIONS, BUILDING SLABS AND STEPS: COMPACT TOP 12 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 100 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
3. LAWN, UNPAVED AREAS, AND BORROW PIT: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 95 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
4. WALKWAYS: COMPACT TOP 6 INCHES OF SUBGRADE AND EACH 8 INCH LAYER OF BACKFILL OR FILL MATERIAL TO 98 PERCENT STANDARD PROCTOR MAXIMUM DRY DENSITY.
5. UNDERGROUND UTILITIES: PROVIDE THE PRECEDING REQUIREMENTS FOR THE RESPECTIVE UTILITY LOCATION(S).
6. UTILITY PIPING AND CONDUITS:

- a. BEDDING SHALL BEGIN BY PLACING 4 TO 6 INCH BEDDING OF THE APPROVED BACKFILL MATERIAL AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THE WIDTH OF THE BEDDING SHALL BE THE DIAMETER OF THE PIPE PLUS 2 FEET.
 - b. HAUNCHING SHALL CONSIST OF PLACING THE APPROVED BACKFILL MATERIAL TO THE SPRING LINE OF THE PIPE AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THIS LIFT SHALL NOT EXCEED 9 INCHES LOOSE. THE PIPE BEDDING AND FLOW LINE SHALL NOT BE DISTURBED AS A RESULT OF THE HAUNCHING OPERATION.
 - c. INITIAL BACKFILL SHALL CONSIST OF PLACING THE APPROVED BACKFILL MATERIAL TO THE TOP OF THE PIPE AND COMPACTING TO 90 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY. THIS LIFT SHALL NOT EXCEED 9 INCHES LOOSE. CRUSHED OR BUCKLED PIPE AS A RESULT OF THE BACKFILLING OPERATIONS WILL BE REMOVED AND REPLACED WITH NO ADDITIONAL PAYMENT.
 - d. INITIAL BACKFILL SHALL CONTINUE IN 6 INCH LIFTS WITH THE APPROVAL BACKFILL MATERIAL TO A DEPTH OF 12 INCHES ABOVE THE PIPE.
7. FINISH BACKFILLING OF THE TRENCH SHALL CONSIST OF PLACING THE APPROVED BACKFILL OR MATERIAL FROM THE TRENCH EXCAVATION IN 6 INCH LIFTS TO THE GRADE OF THE TRENCH. FINISH BACKFILLING WITHIN PAVED AREAS SHALL CONTINUE TO THE BASE OF THE COMPACTED AGGREGATE WITH THE APPROVED BACKFILL MATERIAL.

GRADING

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.

1. PROVIDE A SMOOTH TRANSITION BETWEEN ADJACENT EXISTING GRADES AND NEW GRADES.
2. CUT OUT SOFT SPOTS, FILL LOW SPOTS, AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED SURFACE TOLERANCES.

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 INCH.
3. PAVEMENTS: PLUS OR MINUS 1/2 INCH.

GRADING INSIDE BUILDING LINES: FINISH SUBGRADE TO A TOLERANCE OF 1/2 INCH WHEN TESTED WITH A 10-FOOT STRAIGHTEDGE.

SUBBASE COURSES UNDER DRIVES AND WALKS

THIS ITEM OF WORK SHALL CONSIST OF THE WORK AS DESCRIBED IN OHIO DEPARTMENT OF TRANSPORTATION ITEM 304 AGGREGATE BASE, EXCEPT AS HEREIN MODIFIED. THIS ITEM SHALL ALSO INCLUDE SATURATING THE AGGREGATE BASE WITH WATER DURING PLACEMENT OF EACH LIFT PRIOR TO COMPACTION.

ON PREPARED SUBGRADE, PLACE SUBBASE COURSE AND BASE COURSE UNDER DRIVES AND WALKS AS FOLLOWS:

1. PLACE SUBBASE COURSE MATERIAL OVER SUBGRADE AND SHAPE TO REQUIRED CROWN ELEVATIONS AND CROSS-SLOPE GRADES.
2. PLACE SUBBASE COURSE 6 INCHES OR LESS IN COMPACTED THICKNESS IN A SINGLE LAYER.
3. 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.
4. 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 UNIT WEIGHT ACCORDING TO ASTM D 1557.

SUBBASE COURSE UNDER CONCRETE SLABS-ON-GRADE

ON PREPARED SUBGRADE, PLACE SUBBASE COURSE AND DRAINAGE COURSE UNDER CAST-IN-PLACE CONCRETE SLABS-ON-GRADE AS FOLLOWS:

1. PLACE SUBBASE COURSE TO COMPACTED THICKNESS AS INDICATED. COMPACTED THICKNESS SHALL BE 4" MINIMUM IF THICKNESS IS NOT INDICATED.
2. COMPACT SUBBASE COURSE AT OPTIMUM MOISTURE CONTENT, TO NOT LESS THAN 95% OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 1557.
3. CONSOLIDATE USING ROLLER OR VIBRATORY COMPACTOR UNTIL IT WILL REMAIN STABLE UNDER CONSTRUCTION TRAFFIC. WHEELS OF CONSTRUCTION VEHICLES SHALL NOT PENETRATE THE DRAINAGE COURSE MORE THAN 1/2" WHEN DRIVEN ACROSS THE SURFACE.

FIELD QUALITY CONTROL

SPECIAL INSPECTIONS: OWNER WILL ENGAGE A QUALIFIED SPECIAL INSPECTOR TO PERFORM THE FOLLOWING SPECIAL INSPECTIONS:

1. DETERMINE PRIOR TO PLACEMENT OF FILL THAT SITE HAS BEEN PREPARED IN COMPLIANCE WITH REQUIREMENTS AND MAXIMUM LIFT THICKNESS COMPLY WITH REQUIREMENTS.

TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM TESTS AND INSPECTIONS.

ALLOW TESTING AGENCY TO INSPECT AND TEST SUBGRADES AND EACH FILL OR BACKFILL LAYER. PROCEED WITH SUBSEQUENT EARTH MOVING ONLY AFTER TEST RESULTS FOR PREVIOUSLY COMPLETED WORK COMPLY WITH REQUIREMENTS.

FOOTING SUBGRADE: AT FOOTING SUBGRADES, AT LEAST ONE TEST OF EACH SOIL STRATUM WILL BE PERFORMED TO VERIFY DESIGN BEARING CAPACITIES. SUBSEQUENT VERIFICATION AND APPROVAL OF OTHER FOOTING SUBGRADES MAY BE BASED ON A VISUAL COMPARISON OF SUBGRADE WITH TESTED SUBGRADE WHEN APPROVED BY ARCHITECT.

WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL MATERIALS TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.

PROTECTION

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.

WHERE SETTLING OCCURS BEFORE PROJECT CORRECTION PERIOD ELAPSES, REMOVE FINISHED SURFACING, BACKFILL WITH ADDITIONAL SOIL MATERIAL, COMPACT, AND RECONSTRUCT SURFACING.

DIVISION 32: EXTERIOR IMPROVEMENTS

CONCRETE PAVING

THIS SECTION INCLUDES EXTERIOR CEMENT CONCRETE PAVEMENT FOR WALKWAYS & SIDEWALKS.

SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF MANUFACTURED MATERIAL AND PRODUCT INDICATED.

DESIGN MIXTURES: FOR EACH CONCRETE PAVEMENT MIXTURE. INCLUDE ALTERNATE MIXTURE DESIGNS WHEN CHARACTERISTICS OF MATERIALS, PROJECT CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT ADJUSTMENTS.

QUALITY ASSURANCE

MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT.

1. MANUFACTURER CERTIFIED ACCORDING TO NRMCA'S "CERTIFICATION OF READY MIXED CONCRETE PRODUCTION FACILITIES."

FORMS

FORM MATERIALS: PLYWOOD, METAL, METAL-FRAMED PLYWOOD, OR OTHER APPROVED PANEL-TYPE MATERIALS TO PROVIDE FULL-DEPTH, CONTINUOUS, STRAIGHT, SMOOTH EXPOSED SURFACES.

FORM-RELEASE AGENT: COMMERCIALLY FORMULATED FORM-RELEASE AGENT THAT WILL NOT BOND WITH, STAIN, OR ADVERSELY AFFECT CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT TREATMENTS OF CONCRETE SURFACES.

STEEL REINFORCEMENT

PLAIN-STEEL WELDED WIRE REINFORCEMENT: ASTM A 185, FABRICATED FROM AS-DRAWN STEEL WIRE INTO FLAT SHEETS.

REINFORCING BARS: ASTM A 615/A 615M, GRADE 60; DEFORMED.

BAR SUPPORTS: BOLSTERS, CHAIRS, SPACERS, AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCING BARS, WELDED WIRE REINFORCEMENT, AND DOWELS IN PLACE. MANUFACTURE BAR SUPPORTS ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE" FROM STEEL WIRE, PLASTIC, OR PRECAST CONCRETE OF GREATER COMPRESSIVE STRENGTH THAN CONCRETE, AND AS FOLLOWS:

1. EQUIP WIRE BAR SUPPORTS WITH SAND PLATES OR HORIZONTAL RUNNERS WHERE BASE MATERIAL WILL NOT SUPPORT CHAIR LEGS.

CONCRETE MATERIALS

CEMENTITIOUS MATERIAL: USE ONE OF THE FOLLOWING CEMENTITIOUS MATERIALS, OF THE SAME TYPE, BRAND, AND SOURCE THROUGHOUT THE PROJECT:

1. PORTLAND CEMENT: ASTM C 150, TYPE I:

NORMAL-WEIGHT AGGREGATES: ASTM C 33, COARSE AGGREGATE, UNIFORMLY GRADED. PROVIDE AGGREGATES FROM A SINGLE SOURCE.

1. MAXIMUM COARSE-AGGREGATE SIZE: 3/4 INCH NOMINAL.
2. FINE AGGREGATE: FREE OF MATERIALS WITH DELETERIOUS REACTIVITY TO ALKALI IN CEMENT.

WATER: ASTM C 94/C 94M.

AIR-ENTRAINING ADMIXTURE: ASTM C 260.

CURING MATERIALS

ABSORPTIVE COVER: AASHTO M 182, CLASS 2, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 9 OZ./SQ. YD. DRY.

MOISTURE-RETAINING COVER: ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET.

WATER: POTABLE.

CLEAR WATERBORNE MEMBRANE-FORMING CURING COMPOUND: ASTM C 309, TYPE 1, CLASS B.

RELATED MATERIALS

EXPANSION- AND ISOLATION-JOINT-FILLER STRIPS: ASTM D 1751, ASPHALT-SATURATED CELLULOSIC FIBER OR ASTM D 1752, CORK OR SELF-EXPANDING CORK.

BONDING AGENT: ASTM C 1059, TYPE II, NON-REDISPERSIBLE, ACRYLIC EMULSION OR STYRENE BUTADIENE.

COLD-APPLIED JOINT SEALANTS

SINGLE-COMPONENT, SELF-LEVELING, SILICONE JOINT SEALANT FOR CONCRETE: ASTM D 5893, TYPE SL.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
 - a. CRAFTCO INC., AN ERGON COMPANY; ROADSaver SILICONE SL.
 - b. DOW CORNING CORPORATION; 890-SL.
 - c. PECORA CORPORATION; 300 SL.

MULTI-COMPONENT, POURABLE, TRAFFIC-GRADE, MODIFIED-URETHANE JOINT SEALANT FOR CONCRETE: ASTM C 920, TYPE M, GRADE P, CLASS 25, FOR USE T.

1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
 - a. PECORA CORPORATION; DYNATROL II-SL.
 - b. SIKA CORPORATION. CONSTRUCTION PRODUCTS DIVISION; SIKAFLEX - 2C SL.
 - c. TREMCO INCORPORATED; VULKEM 445SSL.

JOINT-SEALANT BACKER MATERIALS

GENERAL: PROVIDE JOINT-SEALANT BACKER MATERIALS THAT ARE NONSTAINING; ARE COMPATIBLE WITH JOINT SUBSTRATES, SEALANTS, PRIMERS, AND OTHER JOINT FILLERS.

ROUND BACKER RODS FOR COLD- AND HOT-APPLIED JOINT SEALANTS: ASTM D 5249, TYPE 1, OF DIAMETER AND DENSITY REQUIRED TO CONTROL SEALANT DEPTH AND PREVENT BOTTOM-SIDE ADHESION OF SEALANT.

CONCRETE MIXTURES

PREPARE DESIGN MIXTURES, PROPORTIONED ACCORDING TO ACI 301, FOR EACH TYPE AND STRENGTH OF NORMAL-WEIGHT CONCRETE DETERMINED BY EITHER LABORATORY TRIAL MIXES OR FIELD EXPERIENCE.

1. USE A QUALIFIED INDEPENDENT TESTING AGENCY FOR PREPARING AND REPORTING PROPOSED CONCRETE MIXTURE DESIGNS FOR THE TRIAL BATCH METHOD.

PROPORTION MIXTURES TO PROVIDE NORMAL-WEIGHT CONCRETE WITH THE FOLLOWING PROPERTIES:

1. COMPRESSIVE STRENGTH (28 DAYS): 4000 PSI.
2. MAXIMUM WATER-CEMENTITIOUS MATERIALS RATIO AT POINT OF PLACEMENT: 0.50.
3. SLUMP LIMIT: 4 INCHES.

ADD AIR-ENTRAINING ADMIXTURE AT MANUFACTURER'S PRESCRIBED RATE TO RESULT IN NORMAL-WEIGHT CONCRETE AT POINT OF PLACEMENT HAVING AN AIR CONTENT AS FOLLOWS:

1. AIR CONTENT: 6 PERCENT PLUS OR MINUS 1.5 PERCENT FOR 3/4-INCH NOMINAL MAXIMUM AGGREGATE SIZE

CHEMICAL ADMIXTURES: USE ADMIXTURES ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

1. USE WATER-REDUCING AND RETARDING ADMIXTURE WHEN REQUIRED BY HIGH TEMPERATURES, LOW HUMIDITY, OR OTHER ADVERSE PLACEMENT CONDITIONS.

CONCRETE MIXING

READY-MIXED CONCRETE: MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE ACCORDING TO ASTM C 94/C 94M AND ASTM C 1116. FURNISH BATCH CERTIFICATES FOR EACH BATCH DISCHARGED AND USED IN THE WORK.

1. WHEN AIR TEMPERATURE IS BETWEEN 85 DEG F AND 90 DEG F, REDUCE MIXING AND DELIVERY TIME FROM 1-1/2 HOURS TO 75 MINUTES; WHEN AIR TEMPERATURE IS ABOVE 90 DEG F, REDUCE MIXING AND DELIVERY TIME TO 60 MINUTES.

PREPARATION

REMOVE LOOSE MATERIAL FROM COMPACTED SUBBASE SURFACE IMMEDIATELY BEFORE PLACING CONCRETE.

STEEL REINFORCEMENT

GENERAL: COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE" FOR FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT.

JOINTS

CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.

1. CONTINUE STEEL REINFORCEMENT ACROSS CONSTRUCTION JOINTS, UNLESS OTHERWISE INDICATED. DO NOT CONTINUE REINFORCEMENT THROUGH SIDES OF PAVEMENT STRIPS, UNLESS OTHERWISE INDICATED.
2. PROVIDE TIE BARS AT SIDES OF PAVEMENT STRIPS WHERE INDICATED.
3. BUTT JOINTS: USE BONDING AGENT AT JOINT LOCATIONS WHERE FRESH CONCRETE IS PLACED AGAINST HARDENED OR PARTIALLY HARDENED CONCRETE SURFACES.
4. DOWELED JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR ASPHALT-COAT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.

ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.

1. LOCATE EXPANSION JOINTS AT INTERVALS OF 50 FEET, UNLESS OTHERWISE INDICATED.
2. EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT.
3. TERMINATE JOINT FILLER NOT LESS THAN 1/2 INCH OR MORE THAN 1 INCH BELOW FINISHED SURFACE IF JOINT SEALANT IS INDICATED.
4. PLACE TOP OF JOINT FILLER FLUSH WITH FINISHED CONCRETE SURFACE IF JOINT SEALANT IS NOT INDICATED.
5. FURNISH JOINT FILLERS IN ONE-PIECE LENGTHS. WHERE MORE THAN ONE LENGTH IS REQUIRED, LACE OR CLIP JOINT-FILLER SECTIONS TOGETHER.

CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS, AS FOLLOWS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT:

1. GROOVED JOINTS: FORM CONTRACTION JOINTS AFTER INITIAL FLOATING BY GROOVING AND FINISHING EACH EDGE OF JOINT WITH GROOVING TOOL TO A 3/8-INCH RADIUS. REPEAT GROOVING OF CONTRACTION JOINTS AFTER APPLYING SURFACE FINISHES.
2. DOWELED CONTRACTION JOINTS: INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR ASPHALT COAT ONE-HALF OF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.

EDGING: AFTER INITIAL FLOATING, TOOL EDGES OF PAVING, GUTTERS, CURBS, WALKWAYS AND JOINTS IN CONCRETE WITH AN EDGING TOOL TO A 3/8-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES.

CONCRETE PLACEMENT

COMPLY WITH ACI 301 REQUIREMENTS FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE.

DO NOT ADD WATER TO CONCRETE DURING DELIVERY OR AT PROJECT SITE.

DO NOT ADD WATER TO FRESH CONCRETE AFTER TESTING.

CONSOLIDATE CONCRETE ACCORDING TO ACI 301 BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND SPADING, RODDING, OR TAMPING.

1. CONSOLIDATE CONCRETE ALONG FACE OF FORMS AND ADJACENT TO TRANSVERSE JOINTS WITH AN INTERNAL VIBRATOR. KEEP VIBRATOR AWAY FROM JOINT ASSEMBLIES, REINFORCEMENT, OR SIDE FORMS. USE ONLY SQUARE-FACED SHOVELS FOR HAND SPREADING AND CONSOLIDATION. CONSOLIDATE WITH CARE TO PREVENT DISLOCATING REINFORCEMENT, DOWELS, AND JOINT DEVICES.

SCREED PAVEMENT SURFACES WITH A STRAIGHTEDGE AND STRIKE OFF.

COMMENCE INITIAL FLOATING USING BULL FLOATS OR DARBIES TO IMPART AN OPEN TEXTURED AND UNIFORM SURFACE PLANE BEFORE EXCESS MOISTURE OR BLEED WATER APPEARS ON THE SURFACE. DO NOT FURTHER DISTURB CONCRETE SURFACES BEFORE BEGINNING FINISHING OPERATIONS OR SPREADING SURFACE TREATMENTS.

COLD-WEATHER PLACEMENT: COMPLY WITH ACI 306.1. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES.

HOT-WEATHER PLACEMENT: COMPLY WITH ACI 301 WHEN HOT-WEATHER CONDITIONS EXIST.

FLOAT FINISHING

GENERAL: DO NOT ADD WATER TO CONCRETE SURFACES DURING FINISHING OPERATIONS.

FLOAT FINISH: BEGIN THE SECOND FLOATING OPERATION WHEN BLEED-WATER SHEEN HAS DISAPPEARED AND CONCRETE SURFACE HAS STIFFENED SUFFICIENTLY TO PERMIT OPERATIONS. FLOAT SURFACE WITH POWER-DRIVEN FLOATS, OR BY HAND FLOATING IF AREA IS SMALL OR INACCESSIBLE TO POWER UNITS. FINISH SURFACES TO TRUE PLANES. CUT DOWN HIGH SPOTS AND FILL LOW SPOTS. REFLOAT SURFACE IMMEDIATELY TO UNIFORM GRANULAR TEXTURE.

1. MEDIUM-TO-COARSE-TEXTURED BROOM FINISH: PROVIDE A COARSE FINISH BY STRIATING FLOAT-FINISHED CONCRETE SURFACE 1/16 TO 1/8 INCH DEEP WITH A STIFF-BRISTLED BROOM, PERPENDICULAR TO LINE OF TRAFFIC.

CONCRETE PROTECTION AND CURING

GENERAL: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES.

EVAPORATION RETARDER: APPLY EVAPORATION RETARDER TO CONCRETE SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE MOISTURE LOSS APPROACHING 0.2 LB/SQ. FT. X H BEFORE AND DURING FINISHING OPERATIONS. APPLY ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AFTER PLACING, SCREEDING, AND BULL FLOATING OR DARBYING CONCRETE, BUT BEFORE FLOAT FINISHING.

BEGIN CURING AFTER FINISHING CONCRETE BUT NOT BEFORE FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.

CURING METHODS: CURE CONCRETE BY MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, CURING COMPOUND, OR A COMBINATION OF THESE AS FOLLOWS:

1. MOIST CURING: KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH THE FOLLOWING MATERIALS:
 - a. WATER.
 - b. CONTINUOUS WATER-FOG SPRAY.
 - c. ABSORPTIVE COVER, WATER SATURATED AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES WITH 12-INCH LAP OVER ADJACENT ABSORPTIVE COVERS.
2. CURING COMPOUND: APPLY UNIFORMLY IN CONTINUOUS OPERATION BY POWER SPRAY OR ROLLER ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. RECOAT AREAS SUBJECTED TO HEAVY RAINFALL WITHIN THREE HOURS AFTER INITIAL APPLICATION. MAINTAIN CONTINUITY OF COATING AND REPAIR DAMAGE DURING CURING PERIOD.

INSTALLATION OF JOINT SEALANTS

JOINT-SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED AND WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.

INSTALL JOINT-SEALANT BACKINGS OF KIND INDICATED TO SUPPORT JOINT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE UNIFORM CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.

INSTALL JOINT SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:

1. PLACE JOINT SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. COMPLETELY FILL RECESSES IN EACH JOINT CONFIGURATION.

TOOLING OF NONSAG JOINT SEALANTS: IMMEDIATELY AFTER JOINT-SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO THE FOLLOWING REQUIREMENTS TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO

ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT:

- 1. REMOVE EXCESS JOINT SEALANT FROM SURFACES ADJACENT TO JOINTS.
- 2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY JOINT-SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.

CLEANING

CLEAN OFF EXCESS JOINT SEALANT OR SEALANT SMEARS ADJACENT TO JOINTS AS THE WORK PROGRESSES, BY METHODS AND WITH CLEANING MATERIALS APPROVED IN WRITING BY MANUFACTURERS OF JOINT SEALANTS AND OF PRODUCTS IN WHICH JOINTS OCCUR.

PROTECT JOINT SEALANTS, DURING AND AFTER CURING PERIOD, FROM CONTACT WITH CONTAMINATING SUBSTANCES AND FROM DAMAGE RESULTING FROM CONSTRUCTION OPERATIONS OR OTHER CAUSES SO SEALANTS ARE WITHOUT DETERIORATION OR DAMAGE AT TIME OF SUBSTANTIAL COMPLETION

PAVEMENT TOLERANCES

COMPLY WITH TOLERANCES OF ACI 117 AND AS FOLLOWS:

- 1. ELEVATION: 1/4 INCH.
- 2. THICKNESS: PLUS 3/8 INCH, MINUS 1/4 INCH.
- 3. SURFACE: GAP BELOW 10-FOOT- LONG, UNLEVELED STRAIGHTEDGE NOT TO EXCEED 1/4 INCH.
- 4. JOINT WIDTH: PLUS 1/8 INCH, NO MINUS.

FIELD QUALITY CONTROL

TESTING AGENCY: OWNER WILL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND PREPARE TEST REPORTS.

TESTING SERVICES: TESTING OF COMPOSITE SAMPLES OF FRESH CONCRETE OBTAINED ACCORDING TO ASTM C 172 SHALL BE PERFORMED ACCORDING TO THE FOLLOWING REQUIREMENTS:

- 1. TESTING FREQUENCY: OBTAIN AT LEAST 1 COMPOSITE SAMPLE FOR EACH 5000 SQ. FT. OR FRACTION THEREOF OF EACH CONCRETE MIX PLACED EACH DAY.
 - a. WHEN FREQUENCY OF TESTING WILL PROVIDE FEWER THAN FIVE COMPRESSIVE-STRENGTH TESTS FOR EACH CONCRETE MIXTURE, TESTING SHALL BE CONDUCTED FROM AT LEAST FIVE RANDOMLY SELECTED BATCHES OR FROM EACH BATCH IF FEWER THAN FIVE ARE USED.
- 2. SLUMP: ASTM C 143/C 143M; ONE TEST AT POINT OF PLACEMENT FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY’S POUR OF EACH CONCRETE MIX. PERFORM ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY APPEARS TO CHANGE.
- 3. AIR CONTENT: ASTM C 231, PRESSURE METHOD; ONE TEST FOR EACH COMPOSITE SAMPLE, BUT NOT LESS THAN ONE TEST FOR EACH DAY’S POUR OF EACH CONCRETE MIX.
- 4. CONCRETE TEMPERATURE: ASTM C 1064; ONE TEST HOURLY WHEN AIR TEMPERATURE IS 40 DEG F AND BELOW AND WHEN 80 DEG F AND ABOVE, AND ONE TEST FOR EACH COMPOSITE SAMPLE.
- 5. COMPRESSION TEST SPECIMENS: ASTM C 31/C 31M; CAST AND LABORATORY CURE ONE SET OF THREE STANDARD CYLINDER SPECIMENS FOR EACH COMPOSITE SAMPLE.
- 6. COMPRESSIVE-STRENGTH TESTS: ASTM C 39/C 39M; TEST 1 SPECIMEN AT 7 DAYS AND 2 SPECIMENS AT 28 DAYS.
 - a. A COMPRESSIVE-STRENGTH TEST SHALL BE THE AVERAGE COMPRESSIVE STRENGTH FROM 2 SPECIMENS OBTAINED FROM SAME COMPOSITE SAMPLE AND TESTED AT 28 DAYS.

STRENGTH OF EACH CONCRETE MIX WILL BE SATISFACTORY IF AVERAGE OF ANY 3 CONSECUTIVE COMPRESSIVE-STRENGTH TESTS EQUALS OR EXCEEDS SPECIFIED COMPRESSIVE STRENGTH AND NO COMPRESSIVE-STRENGTH TEST VALUE FALLS BELOW SPECIFIED COMPRESSIVE STRENGTH BY MORE THAN 500 PSI.

TEST RESULTS SHALL BE REPORTED IN WRITING TO ARCHITECT, CONCRETE MANUFACTURER, AND CONTRACTOR WITHIN 48 HOURS OF TESTING. REPORTS OF COMPRESSIVE-STRENGTH TESTS SHALL CONTAIN PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AND INSPECTING AGENCY, LOCATION OF CONCRETE BATCH IN WORK, DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, CONCRETE MIXTURE PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH, AND TYPE OF BREAK FOR BOTH 7- AND 28-DAY TESTS.

ADDITIONAL TESTS: TESTING AND INSPECTING AGENCY SHALL MAKE ADDITIONAL TESTS OF CONCRETE WHEN TEST RESULTS INDICATE THAT SLUMP, AIR ENTRAINMENT, COMPRESSIVE STRENGTHS, OR OTHER REQUIREMENTS HAVE NOT BEEN MET, AS DIRECTED BY ARCHITECT.

REMOVE AND REPLACE CONCRETE PAVEMENT WHERE TEST RESULTS INDICATE THAT IT DOES NOT COMPLY WITH SPECIFIED REQUIREMENTS.

ADDITIONAL TESTING AND INSPECTING, AT CONTRACTOR'S EXPENSE, WILL BE PERFORMED TO DETERMINE COMPLIANCE OF REPLACED OR ADDITIONAL WORK WITH SPECIFIED REQUIREMENTS.

REPAIRS AND PROTECTION

REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.

PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 14 DAYS AFTER PLACEMENT. WHEN CONSTRUCTION TRAFFIC IS PERMITTED, MAINTAIN PAVEMENT AS CLEAN AS POSSIBLE BY REMOVING SURFACE STAINS AND SPILLAGE OF MATERIALS AS THEY OCCUR.

MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL.

CONCRETE FINISH SCHEDULE

CONCRETE FINISH SCHEDULE	
ITEM	FINISH
LEAN CONCRETE FILL AT SOFT SOILS OR OVER EXCAVATIONS	N/A
EXTERIOR WALKS, STOOPS, STEPS, APRONS, AND CURBS, AND EXTERIOR CONCRETE NOT OTHERWISE INDICATED	MEDIUM-TO-COARSE-TEXTURED BROOM FINISH
EXTERIOR FORMED CONCRETE EXPOSED TO VIEW NOT OTHERWISE INDICATED	FINE BROOM FINISH

TURF AND GRASSES

INFORMATIONAL SUBMITTALS

CERTIFICATION OF GRASS SEED: FROM SEED VENDOR FOR EACH GRASS-SEED MONOSTAND OR MIXTURE STATING THE BOTANICAL AND COMMON NAME, PERCENTAGE BY WEIGHT OF EACH SPECIES AND VARIETY, AND PERCENTAGE OF PURITY, GERMINATION, AND WEED SEED. INCLUDE THE YEAR OF PRODUCTION AND DATE OF PACKAGING.

QUALITY ASSURANCE

PESTICIDE APPLICATOR: STATE LICENSED, COMMERCIAL.

PROJECT CONDITIONS

PLANTING RESTRICTIONS: PLANT DURING ONE OF THE FOLLOWING PERIODS. COORDINATE PLANTING PERIODS WITH INITIAL MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF PLANTING COMPLETION.

- 1. SPRING PLANTING: MARCH 15 THROUGH MAY 15
- 2. FALL PLANTING: AUGUST 15 THROUGH OCTOBER 15

WEATHER LIMITATIONS: PROCEED WITH PLANTING ONLY WHEN EXISTING AND FORECASTED WEATHER CONDITIONS PERMIT PLANTING TO BE PERFORMED WHEN BENEFICIAL AND OPTIMUM RESULTS MAY BE OBTAINED. APPLY PRODUCTS DURING FAVORABLE WEATHER CONDITIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

MAINTENANCE SERVICE

INITIAL TURF MAINTENANCE SERVICE: PROVIDE FULL MAINTENANCE BY SKILLED EMPLOYEES OF LANDSCAPE INSTALLER. MAINTAIN AS REQUIRED IN PART 3. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE TURF IS ESTABLISHED BUT FOR NOT LESS THAN 60 DAYS FROM DATE OF PLANTING COMPLETION.

SEED

GRASS SEED: FRESH, CLEAN, DRY, NEW-CROP SEED COMPLYING WITH AOSA'S "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCES.

SEED SPECIES: STATE-CERTIFIED SEED OF GRASS SPECIES AS FOLLOWS

SEED SPECIES: DO NOT USE ANNUAL RYEGRASS, ZOYSIAGRASS, KENTUCKY31 FESCUE OR ANNUAL BLUEGRASS. SEED OF GRASS SPECIES AS FOLLOWS, WITH NOT LESS THAN 95 PERCENT GERMINATION, NOT LESS THAN 85 PERCENT PURE SEED, AND NOT MORE THAN 0.5 PERCENT WEED SEED:

1. SUN AND PARTIAL SHADE: PROPORTIONED BY WEIGHT AS FOLLOWS:
 - a. 30% ESCALANTE TALL FESCUE (FESTUCA ARUNDINACEA VAR. 'ESCALANTE')
 - b. 25% RAPTOR TALL FESCUE (FESTUCA ARUNDINACEA VAR 'RAPTOR')
 - c. 25% PATAGONIA TALL FESCUE (FESTUCA ARUNDINACEA VAR 'PATAGONIA')
 - d. 15% ARTIC GREEN PERENNIAL RYEGRASS (LOLIUM PERENNE VAR. 'ARTIC GREEN')
 - e. 5% BLUE SAPPHIRE KENTUCKY BLUEGRASS (POA PRATENSIS VAR. 'BLUE SAPPHIRE')

INORGANIC SOIL AMENDMENTS

LIME: APPLY GROUND AGRICULTURAL LIMESTONE IF NECESSARY, AT THE RATE DETERMINED BY CONTRACTOR'S SOIL TESTS TO ADJUST PH OF TOPSOIL AT NO LESS THAN 6.5.

ORGANIC SOIL AMENDMENTS

COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, PH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH ¾ INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECI-SIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS; AND AS FOLLOWS:

1. ORGANIC MATTER CONTENT: 50-60 PERCENT OF DRY WEIGHT.

SPHAGNUM PEAT: PARTIALLY DECOMPOSED SPHAGNUM PEAT MOSS, FINELY DIVIDED OR OF GRANULAR TEXTURE, WITH A PH RANGE OF 3.4 TO 4.8.

WOOD DERIVATIVES: DECOMPOSED, NITROGEN-TREATED SAWDUST, GROUND BARK, OR WOOD WASTE; OF UNIFORM TEXTURE AND FREE OF CHIPS, STONES, STICKS, SOIL, OR TOXIC MATERIALS.

MANURE: WELL-ROTTED, UNLEACHED, STABLE OR CATTLE MANURE CONTAINING NOT MORE THAN 25 PERCENT BY VOLUME OF STRAW, SAWDUST, OR OTHER BEDDING MATERIALS; FREE OF TOXIC SUBSTANCES, STONES, STICKS, SOIL, WEED SEED, AND MATERIAL HARMFUL TO PLANT GROWTH.

FERTILIZERS

COMMERCIAL FERTILIZER: COMMERCIAL-GRADE COMPLETE FERTILIZER OF NEUTRAL CHARACTER, CONSISTING OF FAST- AND SLOW-RELEASE NITROGEN, 50 PERCENT DERIVED FROM NATURAL ORGANIC SOURCES OF UREA FORMALDEHYDE, PHOSPHOROUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION:

1. COMPOSITION: [1 LB/1000 SQ. FT., 4 PERCENT OF ACTUAL NITROGEN, 4 PERCENT PHOSPHOROUS, AND 2 PERCENT POTASSIUM, BY WEIGHT.
2. COMPOSITION: NITROGEN, PHOSPHOROUS, AND POTASSIUM IN AMOUNTS RECOMMENDED IN SOIL REPORTS FROM A QUALIFIED SOIL-TESTING LABORATORY

SLOW-RELEASE FERTILIZER: GRANULAR OR PELLETTED FERTILIZER CONSISTING OF 50 PERCENT WATER-INSOLUBLE NITROGEN, PHOSPHORUS, AND POTASSIUM IN THE FOLLOWING COMPOSITION:

1. COMPOSITION: 20 PERCENT NITROGEN, 10 PERCENT PHOSPHOROUS, AND 10 PERCENT POTASSIUM, BY WEIGHT.
2. COMPOSITION: NITROGEN, PHOSPHOROUS, AND POTASSIUM IN AMOUNTS RECOMMENDED IN SOIL REPORTS FROM A QUALIFIED SOIL-TESTING LABORATORY.

PLANTING SOILS

TOPSOIL: ASTM D 5268 TOPSOIL, WITH PH RANGE OF 5.5 TO 7, A MINIMUM OF 6 PERCENT ORGANIC MATERIAL CONTENT; FREE OF STONES ¾ INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH. MIX ASTM D 5268 TOPSOIL WITH SOIL AMENDMENTS AND FERTILIZERS, AS NEEDED TO PRODUCE PLANTING SOIL.

PLANTING SOIL: EXISTING, NATIVE SURFACE TOPSOIL FORMED UNDER NATURAL CONDITIONS WITH THE DUFF LAYER RETAINED DURING EXCAVATION PROCESS AND STOCKPILED ON-SITE. VERIFY SUITABILITY OF NATIVE SURFACE TOPSOIL TO PRODUCE VIABLE PLANTING SOIL. CLEAN SOIL OF ROOTS, PLANTS, SOD, STONES, CLAY LUMPS, AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH.

1. SUPPLEMENT WITH ANOTHER PLANTING SOIL WHEN QUANTITIES ARE INSUFFICIENT.
2. MIX EXISTING, NATIVE SURFACE TOPSOIL WITH SOIL AMENDMENTS AND FERTILIZERS IN TO PRODUCE PLANTING SOIL.

PLANTING SOIL: EXISTING, IN-PLACE SURFACE SOIL. VERIFY SUITABILITY OF EXISTING SURFACE SOIL TO PRODUCE VIABLE PLANTING SOIL. REMOVE STONES, ROOTS, PLANTS, SOD, CLODS, CLAY LUMPS, POCKETS OF COARSE SAND, CONCRETE SLURRY, CONCRETE LAYERS OR CHUNKS, CEMENT, PLASTER, BUILDING DEBRIS, AND OTHER EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH. IF NECESSARY, MIX SURFACE SOIL WITH THE SOIL AMENDMENTS TO PRODUCE PLANTING SOIL.

PLANTING SOIL: IMPORTED TOPSOIL OR MANUFACTURED TOPSOIL FROM OFF-SITE SOURCES. OBTAIN TOPSOIL DISPLACED FROM NATURALLY WELL-DRAINED CONSTRUCTION OR MINING SITES WHERE TOPSOIL OCCURS AT LEAST 4 INCHES DEEP AND FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER MATERIALS SUCH AS ROOTS, PLANTS, SOD, CLODS, CLAY LUMPS, CONCRETE SLURRY OR CHUNKS, FREE FROM CHEMICALS AND OTHER NON ORGANIC OR EXTRANEIOUS MATERIALS HARMFUL TO PLANT GROWTH; FREE OF OBNOXIOUS WEEDS AND WITH SUFFICIENT STRUCTURE TO GIVE GOOD TILTH AND AERATION.

PESTICIDES

GENERAL: PESTICIDE, REGISTERED AND APPROVED BY THE EPA, ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND OF TYPE RECOMMENDED BY MANUFACTURER FOR EACH SPECIFIC PROBLEM AND AS REQUIRED FOR PROJECT CONDITIONS AND APPLICATION.

PRE-EMERGENT HERBICIDE (SELECTIVE AND NON-SELECTIVE): EFFECTIVE FOR CONTROLLING THE GERMINATION OR GROWTH OF WEEDS WITHIN PLANTED AREAS AT THE SOIL LEVEL DIRECTLY BELOW THE MULCH LAYER.

POST-EMERGENT HERBICIDE (SELECTIVE AND NON-SELECTIVE): EFFECTIVE FOR CONTROLLING WEED GROWTH THAT HAS ALREADY GERMINATED.

EROSION-CONTROL MATERIALS

EROSION-CONTROL BLANKETS: BIODEGRADABLE WOOD EXCELSIOR, STRAW, OR COCONUT-FIBER MAT ENCLOSED IN A PHOTODEGRADABLE PLASTIC MESH. INCLUDE MANUFACTURER'S RECOMMENDED STEEL WIRE STAPLES, 6 INCHES (150 MM) LONG.

EROSION-CONTROL FIBER MESH: BIODEGRADABLE BURLAP OR SPUN-COIR MESH, A MINIMUM OF 0.92 LB/SQ. YD., WITH 50 TO 65 PERCENT OPEN AREA. INCLUDE MANUFACTURER'S RECOMMENDED STEEL WIRE STAPLES, 6 INCHES LONG.

EXAMINATION

EXAMINE AREAS TO BE PLANTED FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE.

1. VERIFY THAT NO FOREIGN OR DELETERIOUS MATERIAL HAS BEEN DEPOSITED IN SOIL WITHIN A PLANTING AREA.
2. DO NOT MIX OR PLACE SOILS AND SOIL AMENDMENTS IN FROZEN, WET, OR MUDDY CONDITIONS AND DO NOT PREPARE SOILS UNTIL THE MOISTURE CONTENT REACHES ACCEPTABLE LEVELS TO ATTAIN THE REQUIRED RESULTS.
3. UNIFORMLY MOISTEN EXCESSIVELY DRY SOIL THAT IS NOT WORKABLE AND WHICH IS TOO DUSTY.

PREPARATION

PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES, TREES, SHRUBS, AND PLANTINGS FROM DAMAGE CAUSED BY PLANTING OPERATIONS. PROTECT GRADE STAKES SET BY OTHERS UNTIL DIRECTED TO REMOVE THEM.

TURF AREA PREPARATION

BEFORE PLANTING, OBTAIN ARCHITECT'S ACCEPTANCE OF FINISH GRADING; RESTORE PLANTING AREAS IF ERODED OR OTHERWISE DISTURBED AFTER FINISH GRADING.

LIMIT TURF SUBGRADE PREPARATION TO AREAS TO BE PLANTED.

NEWLY GRADED SUBGRADES: LOOSEN SUBGRADE TO A MINIMUM DEPTH OF 4 INCHES.

1. SPREAD TOPSOIL, APPLY SOIL AMENDMENTS AND FERTILIZER ON SURFACE, AND THOROUGHLY BLEND PLANTING SOIL.
 - a. DELAY MIXING FERTILIZER WITH PLANTING SOIL IF PLANTING WILL NOT PROCEED WITHIN A FEW DAYS.
 - b. MIX LIME WITH DRY SOIL BEFORE MIXING FERTILIZER.
2. SPREAD TOPSOIL TO A DEPTH OF 4 INCHES BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER LIGHT ROLLING AND NATURAL SETTLEMENT.
 - a. SPREAD APPROXIMATELY 1/2 THE THICKNESS OF PLANTING SOIL OVER LOOSENED SUBGRADE. MIX THOROUGHLY INTO TOP 2 INCHES OF SUBGRADE. SPREAD REMAINDER OF PLANTING SOIL.
 - b. REDUCE ELEVATION OF PLANTING SOIL TO ALLOW FOR SOIL THICKNESS OF TURF.

FINISH GRADING: GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS 1/2 INCH OF FINISH ELEVATION. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISH GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE.

MOISTEN PREPARED AREA BEFORE PLANTING IF SOIL IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL.

SEEDING

SOW SEED WITH SPREADER OR SEEDING MACHINE. DO NOT BROADCAST OR DROP SEED WHEN WIND VELOCITY EXCEEDS 5 MPH (8 KM/H). MOISTEN PREPARED AREA BEFORE PLANTING IF SURFACE IS DRY. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE PLANTING. DO NOT CREATE MUDDY SOIL.

1. EVENLY DISTRIBUTE SEED BY SOWING EQUAL QUANTITIES IN TWO DIRECTIONS AT RIGHT ANGLES TO EACH OTHER.
2. DO NOT USE WET SEED OR SEED THAT IS MOLDY OR OTHERWISE DAMAGED.
3. DO NOT SEED AGAINST EXISTING TREES. LIMIT EXTENT OF SEED TO OUTSIDE EDGE OF PLANTING SAUCER.

SOW SEED AT A TOTAL RATE OF 3 TO 4 LB/1000 SQ. FT.

RAKE SEED LIGHTLY INTO TOP 1/4 INCH OF SOIL, ROLL LIGHTLY, AND WATER WITH FINE SPRAY.

PROTECT SEEDED AREAS WITH SLOPES EXCEEDING 1:4 WITH EROSION-CONTROL BLANKETS STAPLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

PROTECT SEEDED AREAS WITH SLOPES NOT EXCEEDING 1:4 BY SPREADING STRAW MULCH. SPREAD UNIFORMLY TO FORM A CONTINUOUS BLANKET 1-1/2 INCHES IN LOOSE THICKNESS OVER SEEDED AREAS. SPREAD BY HAND, BLOWER, OR OTHER SUITABLE EQUIPMENT.

1. ANCHOR STRAW MULCH BY CRIMPING INTO SOIL WITH SUITABLE MECHANICAL EQUIPMENT.

HYDROSEEDING

MIX SPECIFIED SEED, FERTILIZER, AND FIBER MULCH IN WATER, USING EQUIPMENT SPECIFICALLY DESIGNED FOR HYDROSEED APPLICATION. CONTINUE MIXING UNTIL UNIFORMLY BLENDED INTO HOMOGENEOUS SLURRY SUITABLE FOR HYDRAULIC APPLICATION. THIS SLURRY SHALL THEN BE UNIFORMLY APPLIED TO THE PREPARED SEED BED.

TURF MAINTENANCE

GENERAL: MAINTAIN AND ESTABLISH TURF BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND PERFORMING OTHER OPERATIONS AS REQUIRED TO ESTABLISH HEALTHY, VIABLE TURF. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH TURF. PROVIDE MATERIALS AND INSTALLATION THE SAME AS THOSE USED IN THE ORIGINAL INSTALLATION.

MOW TURF AS SOON AS TOP GROWTH IS TALL ENOUGH TO CUT. REPEAT MOWING TO MAINTAIN SPECIFIED HEIGHT WITHOUT CUTTING MORE THAN 1/3 OF GRASS HEIGHT. REMOVE NO MORE THAN 1/3 OF GRASS-LEAF GROWTH IN INITIAL OR SUBSEQUENT MOWINGS. DO NOT DELAY MOWING UNTIL GRASS BLADES BEND OVER AND BECOME MATTED. DO NOT MOW WHEN GRASS IS WET. SCHEDULE INITIAL AND SUBSEQUENT MOWINGS TO MAINTAIN 2 1/2" GRASS HEIGHT.

TURF POST-FERTILIZATION: APPLY FERTILIZER AFTER INITIAL MOWING AND WHEN GRASS IS DRY.

1. USE FERTILIZER THAT WILL PROVIDE ACTUAL NITROGEN OF AT LEAST 1 LB/1000 SQ. FT. (BUT NO MORE THAN 1-1/2 LB/1000 SQ. FT.) TO TURF AREA

SATISFACTORY TURF

TURF INSTALLATIONS SHALL MEET THE FOLLOWING CRITERIA AS DETERMINED BY ARCHITECT:

1. SATISFACTORY SEEDED TURF: AT END OF MAINTENANCE PERIOD, A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90 PERCENT OVER ANY 10 SQ. FT. AND BARE SPOTS NOT EXCEEDING 5 BY 5 INCHES.

USE SPECIFIED MATERIALS TO REESTABLISH TURF THAT DOES NOT COMPLY WITH REQUIREMENTS AND CONTINUE MAINTENANCE UNTIL TURF IS SATISFACTORY.

PESTICIDE APPLICATION

APPLY PESTICIDES AND OTHER CHEMICAL PRODUCTS AND BIOLOGICAL CONTROL AGENTS IN ACCORDANCE WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S OPERATIONS AND OTHERS IN PROXIMITY TO THE WORK. NOTIFY OWNER BEFORE EACH APPLICATION IS PERFORMED.

POST-EMERGENT HERBICIDES (SELECTIVE AND NON-SELECTIVE): APPLY ONLY AS NECESSARY TO TREAT ALREADY-GERMINATED WEEDS AND IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

CLEANUP AND PROTECTION

PROMPTLY REMOVE SOIL AND DEBRIS CREATED BY TURF WORK FROM PAVED AREAS. CLEAN WHEELS OF VEHICLES BEFORE LEAVING SITE TO AVOID TRACKING SOIL ONTO ROADS, WALKS, OR OTHER PAVED AREAS.

ERECT TEMPORARY FENCING OR BARRICADES AND WARNING SIGNS AS REQUIRED TO PROTECT NEWLY PLANTED AREAS FROM TRAFFIC. MAINTAIN FENCING AND BARRICADES THROUGHOUT INITIAL MAINTENANCE PERIOD AND REMOVE AFTER PLANTINGS ARE ESTABLISHED.

REMOVE NONDEGRADABLE EROSION-CONTROL MEASURES AFTER GRASS ESTABLISHMENT PERIOD.

DIVISION 04: UNIT MASONRY

GENERAL

ACTION SUBMITTALS

PRODUCT DATA: FOR EACH TYPE OF PRODUCT.

SHOP DRAWINGS: FOR THE FOLLOWING:

1. MASONRY UNITS: INDICATE SIZES, PROFILES, COURSING, AND LOCATIONS OF SPECIAL SHAPES.
2. REINFORCING STEEL: INDICATE BENDING, LAP LENGTHS, AND PLACEMENT OF UNIT MASONRY REINFORCING BARS. COMPLY WITH ACI 315R. INDICATE ELEVATIONS OF REINFORCED WALLS.

MIX DESIGNS: FOR EACH TYPE OF MORTAR AND GROUT. INCLUDE DESCRIPTION OF TYPE AND PROPORTIONS OF INGREDIENTS.

1. INCLUDE TEST REPORTS FOR MORTAR MIXES REQUIRED TO COMPLY WITH PROPERTY SPECIFICATION. TEST IN ACCORDANCE WITH ASTM C109/C109M FOR COMPRESSIVE STRENGTH, ASTM C1506 FOR WATER RETENTION, AND ASTM C91/C91M FOR AIR CONTENT.
2. INCLUDE TEST REPORTS, IN ACCORDANCE WITH ASTM C1019, FOR GROUT MIXES REQUIRED TO COMPLY WITH COMPRESSIVE STRENGTH REQUIREMENT.

DELIVERY, STORAGE, AND HANDLING

STORE MASONRY UNITS ON ELEVATED PLATFORMS IN A DRY LOCATION. IF UNITS ARE NOT STORED IN AN ENCLOSED LOCATION, COVER TOPS AND SIDES OF STACKS WITH WATERPROOF SHEETING, SECURELY TIED. IF UNITS BECOME WET, DO NOT INSTALL UNTIL THEY ARE DRY.

DELIVER PREBLENDED, DRY MORTAR MIX IN MOISTURE-RESISTANT CONTAINERS. STORE PREBLENDED, DRY MORTAR MIX IN DELIVERY CONTAINERS ON ELEVATED PLATFORMS IN A DRY LOCATION OR IN COVERED WEATHERPROOF DISPENSING SILOS.

STORE MASONRY ACCESSORIES, INCLUDING METAL ITEMS, TO PREVENT CORROSION AND ACCUMULATION OF DIRT AND OIL.

FIELD CONDITIONS

COLD-WEATHER REQUIREMENTS: DO NOT USE FROZEN MATERIALS OR MATERIALS MIXED OR COATED WITH ICE OR FROST. DO NOT BUILD ON FROZEN SUBSTRATES. REMOVE AND REPLACE UNIT MASONRY DAMAGED BY FROST OR BY FREEZING CONDITIONS. COMPLY WITH COLD-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN TMS 602.

HOT-WEATHER REQUIREMENTS: COMPLY WITH HOT-WEATHER CONSTRUCTION REQUIREMENTS CONTAINED IN TMS 602.

PRODUCTS

CONCRETE MASONRY UNITS

MASONRY STANDARD: COMPLY WITH TMS 602,

SHAPES: PROVIDE SHAPES INDICATED AND AS FOLLOWS, WITH EXPOSED SURFACES MATCHING EXPOSED FACES OF ADJACENT UNITS UNLESS OTHERWISE INDICATED.

INTEGRAL WATER REPELLENT: PROVIDE UNITS MADE WITH INTEGRAL WATER REPELLENT FOR EXPOSED UNITS AND BELOW GRADE UNITS.

1. DESCRIPTION: LIQUID POLYMERIC, INTEGRAL WATER-REPELLENT ADMIXTURE THAT DOES NOT REDUCE FLEXURAL BOND STRENGTH. UNITS MADE WITH INTEGRAL WATER REPELLENT, WHEN TESTED IN ACCORDANCE WITH ASTM E514/E514M AS A WALL ASSEMBLY MADE WITH MORTAR CONTAINING INTEGRAL WATER-REPELLENT MANUFACTURER'S MORTAR ADDITIVE, WHEN TESTED PERIOD EXTENDING TO 24 HOURS, WILL SHOW NO SIGNS OF WATER OR LEAKS ON THE BACK OF TEST SPECIMEN.

CMUS: ASTM C90, NORMAL WEIGHT.

UNIT COMPRESSIVE STRENGTH: PROVIDE UNITS WITH MINIMUM AVERAGE NET-AREA COMPRESSIVE STRENGTH OF 2150 PSI.

FIRE-RESISTANCE RATINGS: COMPLY WITH REQUIREMENTS FOR FIRE-RESISTANCE-RATED ASSEMBLY DESIGNS INDICATED.

1. WHERE FIRE-RESISTANCE-RATED CONSTRUCTION IS INDICATED, UNITS ARE LISED BY UL OR A QUALIFIED TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.

MORTAR AND GROUT MATERIALS:

PREBLENDED DRY MORTAR MIX: PACKAGED BLEND MADE FROM PORTLAND CEMENT AND HYDRATED LIME, MASONRY CEMENT OR MORTAR CEMENT, SAND, WATER REPELLENTS, AND ADMIXTURES AND COMPLYING WITH ASTM C1714/C1714M.

1. PREBLENDED DRY PORTLAND CEMENT MORTAR MIX:
 - a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - 1) AMERIMIX IS A TRADEMARK OF BONSAI AMERICAN, AN OLDCASTLE COMPANY
 - 2) SPEC MIX, LLC
2. PREBLENDED DRY MASONRY CEMENT MORTAR MIX:
 - a. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY THE FOLLOWING:
 - 1) AMERIMIX IS A TRADEMARK OF BONSAI AMERICAN, AN OLDCASTLE COMPANY
 - 2) SPEC MIX, LLC

AGGREGATE FOR MORTAR: ASTM C144.

AGGREGATE FOR GROUT: ASTM C404

COLD-WEATHER ADMIXTURE: NONCHLORIDE, NONCORROSIVE, ACCELERATING ADMIXTURE COMPLYING WITH ASTM C494/C494M, TYPE C, AND RECOMMENDED BY MANUFACTURER FOR USE IN MASONRY MORTAR OF COMPOSITION INDICATED.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - a. BASF
 - b. EUCLID CHEMICAL COMPANY (THE); A SUBSIDIARY OF RPM INTERNATIONAL, INC.
 - c. GCP APPLIED TECHNOLOGIES INC.

WATER-REPELLENT ADMIXTURE: LIQUID WATER-REPELLENT MORTAR ADMIXTURE INTENDED FOR USE WITH CMUS CONTAINING INTEGRAL WATER REPELLENT FROM SAME MANUFACTURER.

1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - a. EUCLID CHEMICAL COMPANY (THE); A SUBSIDIARY OF RPM INTERNATIONAL, INC.
 - b. GCP APPLIED TECHNOLOGIES INC.
 - c. MASTER BUILDERS SOLUTIONS; BRAND OF MBCC GROUP

WATER: POTABLE.

GROUT FOR UNIT MASONRY: COMPLY WITH ASTM C476.

1. USE GROUT OF TYPE INDICATED OR, IF NOT OTHERWISE INDICATED, OF TYPE (FINE OR COARSE) THAT WILL COMPLY WITH TMS 602 FOR DIMENSIONS OF GROUT SPACES AND POUR HEIGHT.
2. PROPORTION GROUT IN ACCORDANCE WITH ASTM C476, TABLE 1 OR PARAGRAPH 4.2.1.2 FOR SPECIFIED 28-DAY COMPRESSIVE STRENGTH INDICATED, BUT NOT LESS THAN 2000 PSI.
3. PROVIDE GROUT WITH A SLUMP OF 8 TO 11 INCHES AS MEASURED IN ACCORDANCE WITH ASTM C143/C143M.

REINFORCEMENT

1. UNCOATED-STEEL REINFORCING BARS: ASTM A615/A615M OR ASTM A996/A996M, GRADE 60.
2. REINFORCING BAR POSITIONERS: WIRE UNITS DESIGNED TO FIT INTO MORTAR BED JOINTS SPANNING MASONRY UNIT CELLS AND TO HOLD REINFORCING BARS IN CENTER OF CELLS. UNITS ARE FORMED FROM 0.148-INCH STEEL WIRE, HOT-DIP GALVANIZED AFTER FABRICATION. PROVIDE UNITS DESIGNED FOR NUMBER OF BARS INDICATED.
3. MASONRY-JOINT REINFORCEMENT, GENERAL: ASTM A951/A951M.
 - a. HOT-DIP GALVANIZED CARBON STEEL.
 - b. WIRE SIZE 0.148-INCH DIAMETER.
 - c. SPACING OF CROSS RODS, TABS, AND CROSS TIES: NOT MORE THAN 16 INCHES O.C.
4. BASIS-OF-DESIGN PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE HOHMANN & BARNARD, INC. #220 LADDER MESH

EXECUTION

INSTALLATION, GENERAL

FOR DIMENSIONS IN CROSS SECTION OR ELEVATION, DO NOT VARY BY MORE THAN PLUS 1/2 INCH OR MINUS 1/4 INCH.

FOR LOCATION OF ELEMENTS IN PLAN, DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/2 INCH.

FOR LOCATION OF ELEMENTS IN ELEVATION, DO NOT VARY FROM THAT INDICATED BY MORE THAN PLUS OR MINUS 1/4 INCH IN A STORY HEIGHT OR 1/2 INCH TOTAL.

LINES AND LEVELS:

FOR BED JOINTS AND TOP SURFACES OF BEARING WALLS, DO NOT VARY FROM LEVEL BY MORE THAN 1/4 INCH IN 10 FT., OR 1/2-INCH MAXIMUM.

FOR VERTICAL LINES AND SURFACES, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FT., 3/8 INCH IN 20 FT., OR 1/2-INCH MAXIMUM.

FOR LINES AND SURFACES, DO NOT VARY FROM STRAIGHT BY MORE THAN 1/4 INCH IN 10 FT., 3/8 INCH IN 20 FT., OR 1/2-INCH MAXIMUM.

FOR VERTICAL ALIGNMENT OF EXPOSED HEAD JOINTS, DO NOT VARY FROM PLUMB BY MORE THAN 1/4 INCH IN 10 FT., OR 1/2-INCH MAXIMUM.

FOR FACES OF ADJACENT EXPOSED MASONRY UNITS, DO NOT VARY FROM FLUSH ALIGNMENT BY MORE THAN 1/16 INCH EXCEPT DUE TO WARPAGE OF MASONRY UNITS WITHIN TOLERANCES SPECIFIED FOR WARPAGE OF UNITS.

JOINTS:

FOR BED JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS OR MINUS 1/8 INCH, WITH A MAXIMUM THICKNESS LIMITED TO 1/2 INCH.

FOR EXPOSED BED JOINTS, DO NOT VARY FROM BED-JOINT THICKNESS OF ADJACENT COURSES BY MORE THAN 1/8 INCH.

FOR HEAD AND COLLAR JOINTS, DO NOT VARY FROM THICKNESS INDICATED BY MORE THAN PLUS 3/8 INCH OR MINUS 1/4 INCH.

LAYING MASONRY WALLS

LAY OUT WALLS IN ADVANCE FOR ACCURATE SPACING OF SURFACE BOND PATTERNS WITH UNIFORM JOINT THICKNESSES

BOND PATTERN FOR EXPOSED MASONRY; LAY EXPOSED MASONRY IN RUNNING BOND; DO NOT USE UNITS WITH LESS-THAN-NOMINAL 4-INCH HORIZONTAL FACE DIMENSIONS AT CORNERS OR JAMBS.

FILL CORES IN HOLLOW CMUS WITH GROUT.

MORTAR BEDDING AND JOINTING

BED FACE SHELLS IN MORTAR AND MAKE HEAD JOINTS OF DEPTH EQUAL TO BED JOINTS.

BED WEBS IN MORTAR IN ALL COURSES OF PIERS, COLUMNS, AND PILASTERS.

BED WEBS IN MORTAR IN GROUTED MASONRY, INCLUDING STARTING COURSE ON FOOTINGS.

FULLY BED ENTIRE UNITS, INCLUDING AREAS UNDER CELLS, AT STARTING COURSE ON FOOTINGS.

FULLY BED UNITS AND FILL CELLS WITH MORTAR AT ANCHORS AND TIES AS NEEDED TO FULLY EMBED ANCHORS AND TIES IN MORTAR.

TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, USING A JOINTER LARGER THAN JOINT THICKNESS UNLESS OTHERWISE INDICATED.

MASONRY-JOINT REINFORCEMENT

INSTALL ENTIRE LENGTH OF LONGITUDINAL SIDE RODS IN MORTAR WITH A MINIMUM COVER OF 5/8 INCH ON EXTERIOR SIDE OF WALLS, 1/2 INCH ELSEWHERE. LAP REINFORCEMENT A MINIMUM OF 6 INCHES.

SPACE REINFORCEMENT NOT MORE THAN 16 INCHES O.C.

SPACE REINFORCEMENT NOT MORE THAN 8 INCHES O.C. IN FOUNDATION WALLS AND PARAPET WALLS.

PROVIDE REINFORCEMENT NOT MORE THAN 8 INCHES ABOVE AND BELOW WALL OPENINGS AND EXTENDING 12 INCHES BEYOND OPENINGS IN ADDITION TO CONTINUOUS REINFORCEMENT.

INTERRUPT JOINT REINFORCEMENT AT CONTROL AND EXPANSION JOINTS UNLESS OTHERWISE INDICATED.

PROVIDE CONTINUITY AT WALL INTERSECTIONS BY USING PREFABRICATED T-SHAPED UNITS.

PROVIDE CONTINUITY AT CORNERS BY USING PREFABRICATED L-SHAPED UNITS.

CUT AND BEND REINFORCING UNITS AS DIRECTED BY MANUFACTURER FOR CONTINUITY AT RETURNS, OFFSETS, COLUMN FIREPROOFING, PIPE ENCLOSURES, AND OTHER SPECIAL CONDITIONS.

ANCHORING MASONRY TO CONCRETE

ANCHOR MASONRY WITH ANCHORS EMBEDDED IN MASONRY JOINTS AND ATTACHED TO STRUCTURE.

SPACE ANCHORS AS INDICATED, BUT NOT MORE THAN 24 INCHES O.C. VERTICALLY AND 36 INCHES O.C. HORIZONTALLY.

REINFORCED UNIT MASONRY

PLACING REINFORCEMENT: COMPLY WITH REQUIREMENTS IN TMS 602.

GROUTING: DO NOT PLACE GROUT UNTIL ENTIRE HEIGHT OF MASONRY TO BE GROUTED HAS ATTAINED ENOUGH STRENGTH TO RESIST GROUT PRESSURE.

COMPLY WITH REQUIREMENTS IN TMS 602 FOR CLEANOUTS AND FOR GROUT PLACEMENT, INCLUDING MINIMUM GROUT SPACE AND MAXIMUM POUR HEIGHT.

LIMIT HEIGHT OF VERTICAL GROUT POURS TO NOT MORE THAN 60 INCHES.

END OF SECTION 04 2000

DIVISION 5: STRUCTURAL STEEL

REFER TO STRUCTURAL DRAWINGS FOR STEEL REQUIRED FOR FOUNDATIONS

REFER TO DIVISION 13 FOR STRUCTURAL STEEL REQUIREMENTS FOR PRE-ENGINEERED METAL BUILDING

STEEL PRIME PAINT: SSPC 15-68T-TYPE 1.

DIVISION 7: MOISTURE AND THERMAL PROTECTION

JOINT SEALANTS

1. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
2. CLEAN JOINT SURFACES IMMEDIATELY BEFORE INSTALLATION OF SEALANT.
3. PROVIDE POLYETHYLENE FOAM OR BUTYL BACKER ROD OF PROPER THICKNESS WHEN REQUIRED. CAULK ALL JOINTS FORMED BY ANY TWO DIFFERING MATERIALS
4. SILICONE (HIGH PERFORMANCE), S, NS, 100/50, NT: SINGLE-COMPONENT, NONSAG, PLUS 100 PERCENT AND MINUS 50 PERCENT MOVEMENT CAPABILITY, NONTRAFFIC-USE, NEUTRAL-CURING SILICONE JOINT SEALANT; ASTM C920, TYPE S, GRADE NS, CLASS 100/50, USE NT
 - a. PROVIDE ONE OF THE FOLLOWING:
 1. TREMCO; SPECTRUM 1
 2. PECORA; 890NST
 3. SIKA; SIKASIL WS-290
 - b. USE AT EXTERIOR OR INTERIOR JOINTS BETWEEN METAL PANELS, METAL TRIM, BETWEEN METAL PANELS OR TRIM AND CONCRETE, PERIMETER JOINTS OF METAL FRAMES IN WALLS AND OTHER HIGH MOVEMENT JOINTS.
5. URETHANE, S, NS, 35, NT: SINGLE-COMPONENT, NONSAG, PLUS 35 PERCENT AND MINUS 35 PERCENT MOVEMENT CAPABILITY NONTRAFFIC-USE, URETHANE JOINT SEALANT; ASTM C920, TYPE S, GRADE NS, CLASS 35, USE NT. PAINTABLE.
 - a. PROVIDE ONE OF THE FOLLOWING:
 1. TREMCO; DYMONIC 100
 2. SIKA CORPORATION; SIKAFLEX 1A
 3. PRECORA CORPORATION; DYNATROL I-XL
 - b. USE AT EXTERIOR OR INTERIOR JOINTS IN VERTICAL SURFACES OF CONCRETE AND MASONRY.
6. REFER TO DIVISION 32 FOR SEALANTS IN CONCRETE SLABS ON GRADE.

EXTERIOR WALLS AND ROOF

1. REFER TO DIVISION 13 FOR ROOF AND WALL THERMAL INSULATION THAT IS PART OF THE PRE-ENGINEERED METAL BUILDING ASSEMBLY.

PERIMETER FOUNDATION INSULATION: 2" R=10 STYROFOAM RIGID INSULATION BOARD.

1. QUALITY ASSURANCE:
 - a. SURFACE-BURNING CHARACTERISTICS: AS DETERMINED BY TESTING IDENTICAL PRODUCTS ACCORDING TO ASTM E 84 BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS
2. MANUFACTURERS:
 - a. DIVERSIFOAM PRODUCTS.
 - b. DOW CHEMICAL COMPANY.
 - c. OWENS CORNING.
 - d. PACTIV BUILDING PRODUCTS DIVISION.

AUXILIARY INSULATING MATERIALS:

1. ADHESIVE FOR BONDING INSULATION: PRODUCT WITH DEMONSTRATED CAPABILITY TO BOND INSULATION SECURELY TO SUBSTRATES INDICATED WITHOUT DAMAGING INSULATION AND SUBSTRATES.

VAPOR RETARDER:

1. PERFORMANCE REQUIREMENTS:

- a. CONFORM TO ASTM E1745 "STANDARD SPECIFICATION FOR PLASTIC WATER VAPOR RETARDERS USED IN CONTACT WITH SOIL OR GRANULAR FILL UNDER CONCRETE SLABS", CLASS A.
 - b. 15-MIL MINIMUM THICKNESS.
 - c. WATER VAPOR PERMEANCE LESS THAN OR EQUAL TO 0.02 PERMS TESTED BY ASTM E 96.
 - d. PUNCTURE RESISTANCE GREATER THAN OR EQUAL TO 3,000 GRAMS TESTED BY ASTM D 1709.
 - e. TENSILE STRENGTH GREATER THAN OR EQUAL TO 65 LBF/IN TESTED BY ASTM E 154, SEC. 9.
 - f. CHEMICAL RESISTANCE "UNAFFECTED" TESTED BY ASTM E 154
2. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE MATERIALS FROM ONE OF THE FOLLOWING:
 - a. RAVEN INDUSTRIES.
 - b. REEF INDUSTRIES, INC.
 - c. STEGO INDUSTRIES, LLC.
 - d. W.R. MEADOWS, INC.
3. AUXILIARY MATERIALS RECOMMENDED:
 - a. VAPOR BARRIER SEAM TAPE PRODUCTS - MANUFACTURER'S STANDARD ALL-WEATHER ADHESIVE SEAM TAPE MEETING ALL ASTM E 1745 "CLASS A" VAPOR RETARDER SPECIFICATIONS.
 - b. VAPOR PROOFING MASTIC PRODUCTS - MANUFACTURER'S STANDARD VAPOR PROOFING MASTIC WITH WATER VAPOR PERMEANCE LESS THAN OR EQUAL TO 0.30 PERMS AS TESTED BY ASTM E 96
 - c. VAPOR BARRIER PIPE BOOT/PATCHING MEMBRANE PRODUCTS - MANUFACTURER'S STANDARD ALL-WEATHER ADHESIVE PIPE BOOT/PATCHING MEMBRANE THAT IS AN ALL-WEATHER ADHESIVE BACKED MEMBRANE MEETING ALL ASTM E 1745 "CLASS A" VAPOR RETARDER SPECIFICATIONS (MUST BE A FACTORY INSTALLED ADHESIVE).
4. PREPARE SURFACES IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
5. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ASTM E 1643-98:

DIVISION 8: DOORS, WINDOWS, GLASS, GLAZING AND FINISH HARDWARE:

MAN DOORS:

1. EXTRA HEAVY DUTY STEEL DOORS AND FRAMES: ANSI/SDI A250.8, LEVEL 3: ANSI/SDI A250.4, LEVEL A.
2. DOORS: METTALLIC-COATED STEEL SHEET WITH MINIMUM THICKNESS OF 0.053 INCH WITH MIN A40 COATING. INSULATED CORE MEETING MANUFACTURER'S STANDARD AND ASTM C 1363. PROVIDE WEEP-HOLE OPENINGS IN BOTTOM OF EXTERIOR DOORS TO PERMIT MOISTURE TO ESCAPE. SEAL JOINTS IN TOP EDGES OF DOORS AGAINST WATER PENETRATION.
3. FRAMES: METTALLIC-COATED STEEL SHEET WITH MINIMUM THICKNESS OF 0.067 INCH WITH MIN A40 COATING. FULL PROFILED WELDED W/ MITERED OR COPED CORNERS. WELD FLUSH FACE JOINTS CONTINUOUSLY; GRIND, FILL, DRESS, AND MAKE SMOOTH, FLUSH, AND INVISIBLE.
4. JAMB ANCHORS: STUD-WALL TYPE, DESIGNED TO ENGAGE STUD, WELDED TO BACK OF FRAMES; NOT LESS THAN 16 GA. (3) PER JAMB.
5. FLOOR ANCHORS: FORMED FROM SAME MATERIAL AS FRAMES, NOT LESS THAN 14 GA. ON MONOLITHIC CONCRETE SLABS: CLIP-TYPE ANCHORS, WITH TWO HOLES TO RECEIVE FASTENERS.
6. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - a. CECO DOOR; AADG, INC.; ASSA ABLOY
 - b. CURRIES, AADG, INC.; ASSA ABLOY GROUP
 - c. STEELCRAFT; ALLEGION.

OVERHEAD DOORS:

1. PERFORMANCE:
 - a. OVERHEAD DOORS SHALL MEET THE METAL BUILDING WIND LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
 - b. DEFLECTION OF DOOR IN HORIZONTAL POSITION (OPEN) SHALL NOT EXCEED 1/120 OF THE DOOR WIDTH.
 - c. MEET OR EXCEED ASTM E 1886 AND ASTM E 1996 IMPACT RESISTANCE.
 - d. MEET STANDARDS ESTABLISHED BY ANSI/DASMA 102.
 - e. THERMAL PERFORMANCE: MIN. U-FACTOR 0.094
 - f. MEET OR EXCEED IECC 2021 REQUIREMENTS FOR MAXIMUM RATE OF CFM/FT² OF 0.04.
2. STEEL SECTIONAL DOORS FOR MANUAL OPERATION:
 - a. CHAIN HOIST.
 - b. STEEL SECTIONS: ZINC-COATED (GALVANIZED) STEEL SHEET WITH G60 ZINC COATING.
 - c. EXTERIOR-FACE, STEEL SHEET THICKNESS: 0.018-INCH NOMINAL COATED THICKNESS. (26 GA)
 - d. SURFACE: MANUFACTURER'S STANDARD, STUCCO EMBOSSED.
 - e. SECTION THICKNESS: 2 INCHES.
 - f. INSULATE INTERIOR OF STEEL SECTIONS WITH DOOR MANUFACTURER'S STANDARD CFC-FREE POLYURETHANE INSULATION, FOAMED IN PLACE TO COMPLETELY FILL INTERIOR OF SECTION AND PRESSURE BONDED TO FACE SHEETS TO PREVENT DELAMINATION UNDER WIND LOAD, AND WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, ACCORDING TO ASTM E 84. ENCLOSE INSULATION COMPLETELY WITHIN STEEL SECTIONS THAT INCORPORATE THE INTERIOR FACING MATERIAL, WITH NO EXPOSED INSULATION.
 - g. INTERIOR FACING MATERIAL: ZINC-COATED (GALVANIZED), COLD-ROLLED, COMMERCIAL STEEL (CS) SHEET, COMPLYING WITH ASTM A 653/A 653M, WITH 0.018-INCH THICKNESS (26 GA)
 - h. COUNTERBALANCE SYSTEM: AIRCRAFT-TYPE GLAV. STEEL LIFTING CABLES W/ MIN. SAFETY FACTOR OF 6. TORSION SPRINGS ON CONTINUOUS BALL-BEARING CROSS-HEADER SHAFT.
 - i. SPRING OPERATION CYCLES: NOT LESS THAN 20,000.

- j. TRACK: HOT-DIPPED GALVANIZED STEEL, ASTM A-653. ROOF PITCH TRACK CONFIGURATION. TWO-INCH TRACK ROLLERS WITH HARDENED STEEL BEARINGS.
 - k. HARDWARE: HOT-DIPPED GALV. STEEL, 14 GA. MIN.
 - l. WEATHERSEALS: FITTED TO BOTTOM AND TOP AND AROUND ENTIRE PERIMETER OF DOOR.
 - m. LOCKING DEVICES: EQUIP DOOR WITH LOCKING DEVICE ASSEMBLY. CREMONE TYPE, BOTH JAMB SIDES, LOCKING BARS, OPERABLE FROM INSIDE AND OUTSIDE, WITH CYLINDERS.
3. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
- a. CLOPAY BUILDING PRODUCTS; A GRIFFON COMPANY.
 - b. OVERHEAD DOOR CORPORATION.
 - c. WAYNE-DALTON CORP.
 - d. HAAS DOOR

DOOR HARDWARE: THE HARDWARE SETS REPRESENT THE DESIGN INTENT AND DIRECTION OF THE OWNER AND ARCHITECT. THEY ARE A GUIDELINE ONLY AND SHOULD NOT BE CONSIDERED A DETAILED HARDWARE SCHEDULE. DISCREPANCIES, CONFLICTING HARDWARE AND MISSING ITEMS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT WITH CORRECTIONS MADE PRIOR TO THE BIDDING PROCESS. OMITTED ITEMS NOT INCLUDED IN A HARDWARE SET SHOULD BE SCHEDULED WITH THE APPROPRIATE ADDITIONAL HARDWARE REQUIRED FOR PROPER APPLICATION AND FUNCTIONALITY.

- 1. STANDARD WARRANTY PERIOD: ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION, UNLESS OTHERWISE INDICATED.
- 2. SPECIAL WARRANTY PERIODS:
 - a. TEN YEARS FOR MORTISE LOCKS AND LATCHES.
 - b. TEN YEARS FOR EXIT HARDWARE.
 - c. TWENTY-FIVE YEARS FOR MANUAL SURFACE DOOR CLOSERS

Set 01 - Exterior Doors

3	Hinges	TA2714	630	McKinney
1	Lockset (Classroom)	45H7R 15H S1	630	Best Locking System
1	Interchangeable Core	1CX-7X32X1	630	Best Locking System
1	Closer	8900 Push Side	689	Dorma
1	Jamb Weather Strip	135 NB		National Guard Products
1	Strike Jamb Weather Strip	700 NB		National Guard Products
1	Head Weather Strip	700 NB		National Guard Products
1	Door Sweep	200 NA		National Guard Products
1	Saddle Threshold	425	AL	National Guard Products

Set 02 - Hanger Door

BY DOOR SUPPLIER

Set 03 - Overhead Door

BY DOOR SUPPLIER

SECTION 08 3400 CUSTOM DESIGNED SINGLE PANEL HYDRAULIC DOORS

PART 1 GENERAL

1.1 SUBMITTALS

- A. PRODUCT DATA:
 - 1. MANUFACTURER'S DATA SHEETS ON EACH PRODUCT TO BE USED.
 - 2. PREPARATION INSTRUCTIONS AND RECOMMENDATIONS.
 - 3. STORAGE AND HANDLING REQUIREMENTS AND RECOMMENDATIONS.
 - 4. TYPICAL INSTALLATION METHODS.
- B. SHOP DRAWINGS: INCLUDE DETAILS OF MATERIALS, CONSTRUCTION, AND FINISH. INCLUDE RELATIONSHIP WITH ADJACENT CONSTRUCTION.
- C. DELEGATED-DESIGN: FOR SYSTEMS INDICATED BY A REGISTERED PROFESSIONAL ENGINEER, CERTIFIED AND LICENSED IN THE STATE OR MUNICIPALITY THE PROJECT IS LOCATED.
 - 1. DETAILS OF FABRICATION OF COMPONENTS.
 - 2. SIGNED AND SEALED DESIGN CALCULATIONS FOR SYSTEMS INDICATED USED TO DETERMINE LOAD CARRYING CAPACITIES.
 - 3. ANALYSIS DATA: SIGNED AND SEALED.
 - 4. SIZING METHODS AND CALCULATIONS: SIGNED AND SEALED.

1.2 QUALITY ASSURANCE

- A. MANUFACTURER QUALIFICATIONS: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH A MINIMUM OF FIVE YEARS' DOCUMENTED EXPERIENCE.
- B. INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM TWO YEARS DOCUMENTED EXPERIENCE WITH PROJECTS OF SIMILAR SCOPE AND COMPLEXITY.

1.3 DELEGATED DESIGN

- A. ENGAGE A QUALIFIED PROFESSIONAL ENGINEER, AS DEFINED IN SECTION 014000 - QUALITY REQUIREMENTS.
 - 1. MUST BE LICENSED IN STATE OR MUNICIPALITY THE PROJECT IS LOCATED.
 - 2. COMPLY WITH PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. STORE AND HANDLE IN STRICT COMPLIANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.
- B. PROTECT FROM DAMAGE DUE TO WEATHER, EXCESSIVE TEMPERATURE, AND CONSTRUCTION OPERATIONS.

1.5 PROJECT CONDITIONS

- A. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY, AND VENTILATION) WITHIN LIMITS RECOMMENDED BY MANUFACTURER FOR OPTIMUM RESULTS. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S RECOMMENDED LIMITS.

1.6 WARRANTY

- A. MANUFACTURER'S STANDARD LIMITED WARRANTY INCLUDING SEVEN (7) YEAR WARRANTY ON MATERIALS AND WORKMANSHIP OF THE DOOR STRUCTURE AND THREE (3) YEAR WARRANTY ON ELECTRICAL AND HYDRAULIC COMPONENTS.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. BASIS-OF DESIGN MANUFACTURER: POWERLIFT DOORS:

305 4TH ST., SUITE B
BROOKINGS, SD 57006
TOLL FREE TEL: 844-275-9351
EMAIL:REQUEST INFO
(INFO@POWERLIFTDOORS.COM);WEB:[HTTP://WWW.POWERLIFTDOORS.COM](http://WWW.POWERLIFTDOORS.COM)

2.2 PERFORMANCE AND DESIGN REQUIREMENTS

- A. THE CUSTOM HYDRAULIC DOOR DESIGN IS TO COMPLY WITH RELEVANT IBC, NEC, AND NFPA STANDARDS AND RELEVANT LOCAL CODES GOVERNED BY AUTHORITIES HAVING JURISDICTION AT THE PROJECT LOCATION. WHERE STANDARDS AND LOCAL CODES DIFFER, THE STRICTER IS TO APPLY.
- B. TYPICAL HYDRAULIC DOOR REACTION DESIGN PARAMETERS:
 - 1. WIND LOAD:
 - a. WIND SPEED: AS INDICATED ON DRAWINGS.
 - b. WIND EXPOSURE: C.
 - c. RISK CATEGORY: I.
 - 2. DOOR FINAL CLEAR OPENING SIZE: AS INDICATED ON DRAWINGS.
 - 3. DOOR MANUFACTURER TO PROVIDE SPECIFIC DOOR REACTION DESIGN PARAMETERS INCLUDING ALL ANTICIPATED CLADDING AND INSULATION UPON AWARD OF CONTRACT.

2.3 HYDRAULIC DOORS

- A. BASIS OF DESIGN: POWERLIFT HYDRAULIC DOOR AS DESIGNED AND FURNISHED BY A LICENSED POWERLIFT MANUFACTURING LOCATION.
 - 1. CONSTRUCTION OF PANEL AND FRAME SECTIONS:
 - a. FRAMING:
 - 1) STRUCTURAL STEEL TUBING: ASTM A500 MINIMUM.
 - 2) STRUCTURAL STEEL FLATS, BARS, AND ANGLES: ASTM A36 MINIMUM.
 - 3) HINGE PINS: ASTM 1144 STRESS PROOF OR AISI 4140 HEAT TREATED.
 - b. FRAMES: STRUCTURAL STEEL TUBING AND OTHER STRUCTURAL STEEL SHAPES.
 - 1) DESIGN TO SAME LOADING REQUIREMENTS FOR LIVE, DEAD AND WIND LOADS AS THE SURROUNDING CONSTRUCTION.
 - 2) MAXIMUM SPACING:
 - a) BETWEEN VERTICAL MEMBERS: 96 INCHES (2438 MM).
 - b) BETWEEN HORIZONTAL MEMBERS: 48 INCHES (1219 MM).
 - c. PANEL FRAME: FACTORY-WELDED AT ALL JOINTS AND CONNECTIONS, WITH SMOOTH WELDS MINIMUM 1/4 INCH (6 MM) THICK.
 - 2. HINGES: SILENT, GREASELESS, EFFICIENT, WITH ZERO MAINTENANCE.
 - a. PERMANENT BRONZE BUSHINGS: TEFLON IMPREGNATED PROVIDING A GREASELESS SOLUTION TO HINGE LUBRICATION.
 - b. HINGE PIN: YIELD STRENGTH: 100,000 PSI (689475.7 KPA).
 - 3. FACTORY-SUPPLIED UPPER WEATHER STRIPPING: SHIPPED WITH FRAME AND DOOR PANEL FOR FIELD-INSTALL.
 - 4. FACTORY-SUPPLIED LOWER WEATHER STRIPPING: INSTALLED ON DOOR PANEL BEFORE INSTALLATION.
 - 5. HYDRAULIC DOORS: OPERATED BY HYDRAULIC CYLINDERS MECHANICALLY FASTENED TO SWINGING DOOR LEAF AND MANUFACTURER'S DOOR FRAME.
 - 6. TWO HYDRAULIC CYLINDERS: OPEN AND CLOSE HYDRAULIC DOOR. DESIGNED TO CARRY REQUIRED LOADS DURING OPERATION, OPEN POSITION, AND CLOSED POSITION.
 - a. INTERNAL STOPS: INSTALLED TO PREVENT OVER-EXTENSION OF CYLINDERS, RESTRICTING SYSTEM FROM OPENING OR CLOSING BEYOND ITS LIMITS.
 - b. EQUIPPED WITH RESTRICTORS TO CONTROL OIL FLOW ON THE DOWN CYCLE.
 - 7. HYDRAULIC POWER UNIT:
 - a. POWER: 5 HP.
 - 1) 230 VAC SINGLE-PHASE: REQUIRES 40 AMP BREAKER.
 - 2) MOMENTARY TOGGLE STYLE SWITCH:
 - a) PUSH IN DESIRED DIRECTION ACCORDING TO LABELS; RAISE OR LOWER.

- b) SWITCH REQUIRES CONSTANT PRESSURE TO OPERATE.
 - c) WHEN PRESSURE ON SWITCH IS RELEASED, PUMP OPERATION STOPS CAUSING DOOR TO STOP AND STAY AT DOOR'S PRESENT POSITION.
 - b. ELECTRIC MOTOR AND PUMP ARE COMBINED INTO ONE SELF-CONTAINED UNIT LOCATED ADJACENT TO THE DOOR.
 - 1) FASTENED TO FRAMING: FOUR, 1/4 INCH (6 MM) LAGS.
 - c. ELECTRICAL POWER CONNECTIONS TO THE PUMP UNIT AND FINAL HOOK-UP BY OTHERS.
 - d. PRE-WIRED AND FACTORY TESTED.
 - e. HYDRAULIC OIL: ISO 32 OR ISO 22.
 - 8. ALTERNATIVE HYDRAULICS: TO ALLOW FOR DOOR OPERATION WHEN ELECTRICAL PUMP HAS LOST POWER.
- B. FINISHES:
- 1. SYSTEM FRAMES AND PANELS: CLEANED AND PAINTED WITH DIRECT TO METAL PAINT.
 - 2. EXTERIOR: METAL PANEL TO MATCH BUILDING CLADDING BY METAL BUILDING SUPPLIER.
 - 3. INTERIOR: METAL PANEL BY METAL BUILDING SUPPLIER. PAINTED WHITE.

PART 3 EXECUTION

3.1 EXAMINATION

- A. EXAMINE SUBSTRATES AND CONDITION WITH BUILDING ERECTOR PRESENT FOR COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
- B. PROCEED WITH ERECTION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

3.2 PREPARATION

- A. BUILDING ROUGH OPENING JAMBS AND HEADER TO BE PLUMB AND LEVEL WITHIN 1/4 INCH FROM END TO END.
- B. FOUNDATION BELOW DOOR TO BE LEVEL AND FLAT WITHIN 1/2 INCH (13 MM) VARIATION ACROSS DOOR OPENING.

3.3 INSTALLATION

- A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, APPROVED SUBMITTALS, AND IN PROPER RELATIONSHIP WITH ADJACENT CONSTRUCTION.
 - 1. INSTALLATION OF CUSTOM DESIGNED HYDRAULIC DOOR COMPLETED BY LICENSED DOOR MANUFACTURER PERSONNEL ONLY.
 - 2. STEEL ROUGH OPENING: DOOR FRAME STITCH WELDED TO BUILDING JAMB AND HEADER.

3.4 CLEANING AND PROTECTION

- A. CLEAN PRODUCTS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- B. TOUCH-UP, REPAIR OR REPLACE DAMAGED PRODUCTS OR FINISHES BEFORE SUBSTANTIAL COMPLETION.

END OF SECTION

DIVISION 9: FINISHES:

INTERIOR PAINTING WORK:

1. THIS SECTION INCLUDES SURFACE PREPARATION AND APPLICATION OF PAINT SYSTEMS ON THE FOLLOWING SUBSTRATES:
 - a. GALVANIZED STEEL
 1. GALVANIZED-METAL SUBSTRATES: REMOVE GREASE AND OIL RESIDUE FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS TO PRODUCE CLEAN, LIGHTLY ETCHED SURFACES THAT PROMOTE ADHESION OF SUBSEQUENTLY APPLIED PAINTS.
 - b. STEEL
 1. SHOP-PRIMED STEEL SUBSTRATES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS OF SHOP PAINT, AND PAINT EXPOSED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PRIMING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PRIMED SURFACES
 2. STEEL SUBSTRATES: REMOVE RUST AND LOOSE MILL SCALE
 - c. CONCRETE
 1. CONCRETE MASONRY SUBSTRATES: REMOVE EFFLORESCENCE AND CHALK. DO NOT PAINT SURFACES IF MOISTURE CONTENT OR ALKALINITY OF SURFACES TO BE PAINTED EXCEEDS THAT PERMITTED IN MANUFACTURER'S WRITTEN INSTRUCTIONS
2. ACCEPTABLE PAINT MANUFACTURERS: (ALL PAINTS MUST BE FROM A SINGLE MANUFACTURER).
 - a. SHERWIN WILLIAMS COMPANY (THE)
 - b. BENJAMIN MOORE & CO.
 - c. ICI PAINTS
 - d. PPG PAINTS
 - e. OTHER MANUFACTURERS IF APPROVED BY ARCHITECT.
3. PAINT COLORS SHALL BE SELECTED BY THE OWNER.
4. MAINTENANCE MATERIAL SUBMITTALS:
 - a. FURNISH EXTRA MATERIALS, FROM THE SAME PRODUCT RUN, THAT MATCH PRODUCTS INSTALLED AND THAT ARE PACKAGED WITH PROTECTIVE COVERING FOR STORAGE AND IDENTIFIED WITH LABELS DESCRIBING CONTENTS. 5% BUT NOT LESS THAN 1 GAL. OF EACH MATERIAL AND/OR COLOR APPLIED.
5. PAINT APPLICATION
 - a. PAINT TO COVER ALL SURFACES TO BE PAINTED. THERE SHALL BE NO BLOTCHES, ROLLER MARKS, BRUSH MARKS, OR BLEED THROUGHES.
 - b. AS A MINIMUM ALL SURFACES TO BE PAINTED SHALL RECEIVE ONE PRIME COAT AND TWO FINISHED COATS
 - c. PROVIDE MATERIALS FOR USE WITHIN EACH PAINT SYSTEM THAT ARE COMPATIBLE WITH ONE ANOTHER AND SUBSTRATES INDICATED, UNDER CONDITIONS OF SERVICE AND APPLICATION AS DEMONSTRATED BY MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE
 - d. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED, AND THESE COATINGS SHALL MAINTAIN THEIR FILM INTEGRITY THROUGHOUT THE ENTIRE WARRANTY PERIOD.
 - e. PROVIDE COATINGS SPECIFICALLY COMPOUNDED BY MANUFACTURER FOR ELECTROSTATIC SPRAY APPLICATION. WHERE PRIMERS ARE INDICATED OR REQUIRED, PROVIDE ONLY PRIMERS THAT ARE APPROVED BY MANUFACTURER FOR USE WITH FINISH COATING MATERIALS

GENERAL PROVISIONS

Definitions - Wherever the word "Owner" occurs herein, it shall be taken to mean THE CITY OF SIDNEY, OHIO.

Wherever the word "Public Works Director" occurs herein, it shall be taken to mean CITY PUBLIC WORKS DIRECTOR OF SIDNEY, OHIO.

Wherever the word "Contractor" occurs herein, it shall be taken to mean the party entering into the Contract for the performance of the work herein required, and the duly authorized representative of said party, or the agent appointed to the act for said party in the performance of the work.

The word "Inspector" when used in this contract shall be held to mean the person appointed by the Public Works Director to inspect the materials used and work performed under this contract.

The word "Days" when used in this contract shall be held to mean calendar days unless otherwise specified.

Work to be Done - The Contractor shall furnish as their own proper cost and expense all management, labor, tools, forms, equipment, appliances, machinery, transportation and materials of whatever nature, necessary or proper for the work in hand and shall perform and complete within the time limit specified, all of the work indicated or implied by the plans, profiles, drawings, specifications or estimated quantities prepared for this improvement, including the removal of surplus or condemned materials and the thorough cleaning of the site of the work and the structures built.

In no case will any work in excess of such requirements be paid for unless ordered in writing by the Owner as hereinafter specified.

All work shall be of the best quality throughout, and shall be so done as to meet the approval of the Engineer.

Public Works Director's Duties and Authority - The Public Works Director shall have authority to appoint such assistants and inspectors as may be necessary to represent them in their absence from the work; they shall keep the Public Works Director informed as to the progress of the work, the character of the materials furnished and the manner in which the work is being done; they shall call the attention of the Contractor to any infringement upon the plans or specifications; they shall have the authority to reject defective materials and to suspend any work which is being improperly done, subject to the final decision of the Engineer.

The Public Works Director shall in all cases determine the amount, quality, acceptability, and fitness of the several kinds of work and materials which are to be paid for under this contract; and shall in all cases decide every question which may arise relative to the fulfillment of this contract on the part of the Contractor. In so doing, to prevent disputes and litigation, they shall render fair and impartial decisions and such decisions shall be binding upon the parties hereto. The Public Works Director shall prepare all estimates of material furnished and work done upon which the Contractor is to be paid, which estimate shall be final and conclusive except as herein otherwise provided, and such an estimate or estimates shall be a condition precedent to the right of the Contractor to receive any money under this contract.

The Public Works Director shall make all necessary explanations to the meaning and intention of the specifications, shall give all orders and directions contemplated therein or thereby and in every case in which a difficult or unforeseen condition shall arise in the performance of the work required by this Contract, and shall decide on and adjust any differences or conflicts which may arise between the Contractor and other contractors or the Owner.

If at any time before the commencement of or during the process of the work, the Public Works Director is of the opinion that the materials, appliances or equipment used or to be used are insufficient for securing the quality of work required or the required rate of progress, they may order the Contractor to increase their quantity or efficiency and improve their character and the Contractors shall conform to such order, but the failure of the Public Works Director to give such order shall not be so construed as to release the Contractor from their obligations to secure the quality of work or the rate of progress required.

Drawings and Specifications - The drawings and specifications for this improvement are intended to be explanatory of and supplementary to each other, and are intended to indicate and provide for the construction of the various related parts of the improvement in a complete and connected manner using only the best materials and workmanship throughout. Should any detail be omitted, any discrepancies or errors appear or misunderstandings arise, in or with respect to such drawings and specifications, the additions, corrections or explanations necessary to provide for the construction in accordance with such intent shall be made by the Engineer, and in such additions, corrections and explanations shall be final and binding upon the Contractor whose obligations hereunder shall require the construction in the manner aforesaid.

The latest revision of the "State of Ohio, Dept. Of Transportation Construction and Material Specifications" and City of Sidney Specifications shall govern this project subject to the exceptions, additions and modifications listed herein and on the plans. Exceptions to the foregoing will be subject to the Public Works Director's approval.

The information regarding location of underground structures, character or excavation and the like, as shown on plans and profiles, is obtained from the best data available, but the accuracy of such information is not guaranteed by the Owner.

Time and Order of Doing Work - The Contractor shall commence work within ten (10) days after the execution of the contract, at such point or points as the Public Works Director may approve and shall carry on the various parts of the work in such order of procedure as the Public Works Director may require.

The Contractor shall submit, for the Owner's review and approval, a schedule of proposed operations. The Contractors' schedule shall be complete and shall show in detail the manner in which they propose to complete the work on this contract. This schedule shall be reviewed and updated, when necessary as the work progresses.

The Public Works Director shall have the power to direct the order and sequence of the work, which in general shall be to coordinate the construction of the several parts of the work to a successful completion as rapidly as possible. If at any time before the commencement or during the progress of the work the materials and appliances used or to be used appear to the Public Works Director as insufficient or improper for securing the quality of work required, or the required rate of progress, they may order the Contractor to increase efficiency or to improve their character and the Contractor shall conform to such order, but the failure of the Public Works Director to demand any increase of such efficiency or any improvement shall not release the Contractor from their obligation to secure the quality of work or the rate of progress specified.

If in the opinion of the Owner it is necessary or advisable that certain portions of the work be done immediately, the Contractor, upon written order, shall proceed with such work without delay. Should they fail to proceed, the Owner may do or cause to be done, such work, and the cost of the same will be deducted from any money due or to become due the Contractor under this contract.

If at any time the Public Works Director considers it impractical to start or to continue performance of the work or any portion thereof (whether or not for reasons for which either party is responsible or for any reasons beyond the control of the Owner), the Public Works Director shall have authority to suspend performance until such time they may believe it feasible or desirable to proceed. However, should such action suspending the work be taken, the Public Works Director shall take all appropriate steps to minimize the duration of the suspension of the work. The Contractor shall to be entitled for compensation for resultant unavoidable expenses to them because of the suspension.

The rate of progress shall be such as to complete the entire work contemplated within the time limit specified in the proposal. In case the work is not completed within the time limit aforesaid, the Contractor shall forfeit to the Owner, not as a penalty, but as liquidated damages caused by the failure to complete the work, the total amount of the cost to the Owner of engineering and inspection caused and done on this work after the expiration of the aforesaid time limit and until the completion and acceptance of the work.

The amount of such liquidated damages shall be determined by the Public Works Director and such amounts shall be deducted by the Owner from the partial or final estimates to be allowed the Contractor.

The amount of the engineering charges to be retained by the Owner as a part of the liquidated damages and applied against the Contract total shall be as referenced in the proposal and as indicated in the Contract for each calendar day after the expiration of the time limit specified in the proposal for substantial completion, excepting Sundays and legal holidays unless work was actually performed on said Sundays and holidays until work is substantially complete.

After substantial completion, if Contractor fails to complete remaining work within time limits specified in the proposal for full completion and readiness for final payment, the amount of the engineering charges to be retained by the Owner as a part of the liquidated damages and applied against the Contract total shall be as referenced in the proposal and as indicated in the Contract for each calendar day after the expiration of the time limit specified in the proposal, excepting Sundays and legal holidays unless work was actually performed on said Sundays and holidays until work is fully complete and ready for final payment.

Extension of Time – The Owner reserves the right to extend the time of completion for cause which they deem sufficient but such extension of time shall to be deemed a waiver, said Owner of any rights provided for under this contract, and shall not operate to release any bondsman from any of their obligations under the bond. No extension of time will be made for ordinary delays and hindrances incident to construction work of this character whether growing out of delays in securing materials or workmen or otherwise.

The Owner reserves the right to suspend work upon all or any part of this improvement for the purpose of doing anything thought necessary or for any other reason, and for such period as they may deem necessary, and the Contractor shall not be entitled to any damages on account of suspension, but the time of completion shall, if necessary, be extended by as many days as such delay lasts. Upon such suspension the Contractor shall pile up all materials in a neat manner, provide properly for storm drainage, pedestrian and vehicular traffic and provide means for properly protecting the work and the public from injury or damage.

Hours of Work – The work in general shall be done during the hours of daylight, 7:00 a.m. to 5:00 p.m., Monday thru Friday and no work will be permitted on Sunday's except as is necessary for the proper care and protection of the work already performed or except in case of emergency and then only with the permission of the Engineer.

During freezing, stormy or inclement weather, no work shall be done except such as can be done satisfactorily and in a manner to secure first-class construction throughout.

Changes in Amounts or Work - The quantities of work to be done, as given in the Estimated Quantities, are approximate only. The Owner shall have the power to alter, vary, increase or diminish the quantities of work to be done, either after or before the commencement of construction. If such change involves the omission of any material or work called for by the original plans or specifications, the Contractor shall have no right to any claim for damage or loss of profit growing out of such omission. If any such change involves additional material or labor upon which the price is fixed in the Contract that price shall govern. Any such change shall in no way violate this contract, or affect any of the obligations hereunder. In like manner the Owner may, without affecting this contract, require the Contractor to furnish materials or to do work for which no price is given; in such case, it shall be arranged for as provided hereafter under the heading "Extra Work". If changes which are made result in increased or diminished expense in doing work on items the prices of which are fixed in this contract, the Public Works Director shall determine an equitable adjustment of such price, basing their determination on the contract prices, and after notifying both parties of his determination, it shall be final and binding on the parties hereto.

Claims and Damages - If the Contractor claims compensation for any damages sustained or for extra work done they shall within one week after such damage is sustained or such work is done, make a written statement of the Public Works Director of the nature of the damage sustained or of the work done, together with an itemized statement of the compensation claimed therefore; such statement shall be a condition precedent to the right of the Contractor to receive any such compensation or to bring to recover for such damage or work.

Examination of Work - The Owner and the Engineer, their agents and employees, shall at all times have the rights of entrance upon the work and the premises occupied by the Contractor, and the Contractor shall provide safe and proper facilities for permitting such entrance. Other Contractors for the Owner for all purposes required by their contracts, shall have the similar right of entrance. The Public Works Director shall be furnished with all reasonable facilities for ascertaining that the materials and work are in accordance with the requirement and intention of the specifications and contract, even to the extent of uncovering or removing portions of finished work.

Inspection - The Engineer, assistants and agents, shall have at all times immediate access to all sources from which materials are being obtained for this contract and shall have full facilities for inspecting and testing same. The Contractor shall give definite information at any time as to the places from which, or persons from whom any material is being or will be procured. No material of any kind shall be incorporated in any part of the work under this contract until it has been inspected by the Public Works Director or the assistants and has been approved by them. All materials to be used may be subjected to such tests as the Public Works Director may require to assure that such materials conform in all respects, to the requirements of the specifications, or that they are equal in quality to samples submitted by the Contractor. All testing to be done at Contractors' expense. All materials which do not conform with such requirements shall be rejected, and the Contractor shall remove such rejected materials from the vicinity of the work within twenty-four (24) hours thereafter. No pipe sewers shall be laid or concrete placed except during the

presence of the Public Works Director or an Inspector. All forms for concrete work shall be inspected and approved by the Public Works Director or inspector, prior to placing of concrete.

The inspection of the work and materials by the Engineer, the assistants or inspectors, is intended to aid the Contractor in accomplishing the fulfillment of the duties and obligations under the contract, but such inspection shall not relieve the Contractor from the contract obligations.

Defective work shall be made good, and unsuitable materials may be rejected, notwithstanding that such work and materials have been previously inspected by the Public Works Director and accepted or estimated for payment. If the work or any part thereof is found, at any time before the acceptance of the whole work, to be defective or to contain defective materials, the Contractor shall make good such defects under the direction of the Engineer.

Upon being attached to or incorporated in the work affixed in or to the soil, all materials shall become the property of the Owner, and thereafter the Contractor shall have no right of property therein unless they be afterward rejected by the Engineer.

Extra Work – Extra Work is any work in connection with the execution and completion of the contract for which no price is included in the contract, and the doing of which is not reasonably included in the contract, or caused by the unforeseen contingency not contemplated by the contract. The Public Works Director shall have the right to require the Contractor to perform extra work or to supply materials of a class not provided for, but the Contractor shall not furnish any such work or material unless they have first been ordered to do so by the Engineer. The price to be paid for such work or materials shall be determined by the Public Works Director and such price shall be final and binding upon both.

Duties of Contractors – The Contractor shall give their personal attention and supervision continuously to the faithful prosecution of the work, shall keep the same under their personal control, and shall not assign by power or attorney or otherwise, no sublet the work or any part thereof, without the previous written consent of the Owner, and shall not, either legally or equitably, assign any of the monies payable under this agreement, or their claim thereto unless by and with the like consent of the Owner.

In case of the absence of the Contractor from the work or any major part thereof, they shall have a competent English speaking representative, superintendent or foreman on such or part thereof, who shall follow without delay all inspections of the Public Works Director or the assistants in regard to the prosecution and completion of the work or any or all parts thereof, in conformity with this contract, and who shall have full authority to supply men, material, and labor as required.

If deemed necessary by the Engineer, the Contractor shall provide a field office, suitably located and of ample size and accommodations, from which the Public Works Director's work as well as the Contractor's work may and shall be handled. The Contractor shall keep a full set of plans and specifications on the work at all times.

It shall be the duty of the Contractor to cooperate with property owners, owners of public utilities, and with other contractors of the Owner in such manner and to such extent as the Public Works Director may determine, to the end that the interests of the Owner and the public may be best conserved and protected, and that there may be no damage and as little inconvenience as possible resulting from operations hereunder to such property owners or property, to the transaction of business and to other work.

Lines and Grades – All work under this Contract shall be built in accordance with the lines and grades shown on the plans or as altered or modified by authority of the Engineer.

The Contractor shall furnish such materials and render such assistance as may be required by the Public Works Director to establish a base line and a governing benchmark for construction purposes. It shall be the responsibility of the Contractor to protect and preserve in their original location and condition all stakes or other reference point marks set by the Public Works Director for the purposes of establishing a base line, and all benchmarks set by the Public Works Director for the purpose of establishing the elevations. In case of destruction of the same by the Contractor, they shall be charged with the resulting expense of replacing them and shall be responsible for any mistakes which may be caused by the loss or disturbance of such stakes or the reference point marks and benchmarks.

The Public Works Director will establish basic reference lines and benchmarks, from which the Contractor shall make their own surveys and establish their own grades.

Rules and Regulations - The Contractor shall keep themselves fully informed of and comply with all current laws, statutes, ordinances, rules and regulations, whether of national, state or local force, which in any way affect the conduct of the work to be done, the materials to be used, the persons engaged or employed on the work, or property rights; they shall at all times observe and comply and see that all of their employees and agents observe and comply with such laws, statutes, ordinances, rules and regulations' and furthermore, the Contractor shall protect and indemnify the Owner and their officers and agents against any such laws, statutes, ordinances, rules and regulations, whether by themselves or by their employees or agents.

In connection with the foregoing particular attention is called to laws and regulations dealing with worker's compensation, employer's liability, labor laws, explosives, boilers, natural water courses, sanitation and Ohio Manual of Uniform Traffic Control Devices.

Sanitary Provisions - The Contractor shall cause to be constructed in such manner and at such points as the Public Works Director may require, necessary sanitary conveniences for the use of employees on the work. They shall be properly secluded from public observation, shall be maintained sanitary and inoffensive at all times, and their use shall be strictly enforced. The Contractor shall provide an ample supply of pure drinking water for employees at all times, and the source of such supply shall be subject at all times to the approval of the Engineer.

Contractor's Liabilities - The Contractor agrees, in contracting hereunder, to assume all responsibility for the work, and all liabilities arising by virtue of the prosecution of such work or in connection therewith, in accordance with the terms and provision herein given.

Indemnify/Hold Harmless Provision - To the fullest extent permitted by law, the Contractor hereby agrees to defend, indemnify and hold harmless the City, its officials, agents and employees, against all injuries, death loss, damages, claims, patent claims, suits, liabilities, judgments, cost and expenses, which may in anyway accrue against the municipality, its officials, agents and employees, arising in whole or in part of in consequence of the performance of this work by the Contractor, its employees, or subcontractors, or which may in anyway result therefore, except that arising out of the sole legal cause of the municipality, its agents or employees. The Contractor shall, at its own expense, appear, defend and pay all charges of attorneys and all costs and other expenses arising therefore or incurred in connections therewith, and if any judgment shall be rendered against the City, its officials, agents and employees, in any such action, the Contractor

shall, at its own expense, satisfy and discharge the same. Contractor expressly understands and agrees that any performance bond or insurance policies required by this Contract or otherwise provided by the Contractor, shall in no way limit the responsibility to indemnify, keep and save employees herein provided.

The Contractor shall assume the duty to give written notice of prospective operations to the owner or owners of any and all gas, sewer, water or other pipes or conduits, poles, wires or other fixtures related thereto, fences, buildings, railway tracks or other public or private property which may be endangered or affected by such operations to allow such owner or owners ample time to protect their property and whether or not such property is protected by such owner or owners, the Contractor shall assume all risk of damage thereto, and shall make good at their own expense, and to the owner's satisfaction, any property damage by their operations, in connection therewith or as a result thereof.

The Contractor shall, at their own expense, furnish, erect and maintain such barricades, fences, red lights, in conformance with the Ohio Manual of Uniform Control Devices, and watchmen as may be necessary therefore, and shall properly protect all persons, animals and property against injury or damage which might result as a consequence of this work. They assume hereby all liability for injury to the work or any portion thereof which may be occasioned by any action of the elements or from any other cause and shall replace or rebuild to the satisfaction of the Public Works Director any and all portions of the work which may be so injured. They shall furnish suitable housing for materials to be used and shall protect all materials and finished or unfinished work until such materials are used, and until the work is finished and accepted.

The Contractor agrees, in contracting for this work, that they have investigated, studied and verified the plans and specifications, the circumstances and conditions under which labor and materials must be supplied and the work prosecuted and completed, and has made due allowance therefore as well as for inaccuracy of boring and any unforeseen difficulties in the performance of the work hereunder. They further agree that they will not claim, and hereby waives all rights to damages or additional recompense, over or above the price bid, for unforeseen difficulties or hindrances which may arise, other than those which may be expressly specified herein.

The Contractor shall be responsible for the safety and sufficiency of the methods, appliances and plant used in prosecuting the work, and shall be liable for any or all claims arising from any lack thereof.

During the progress of the work, the Contractor shall make such provisions for vehicular and pedestrian traffic on the streets, roads or other ways that may be affected by their operations, as may be ordered by the Owner or Engineer.

Street or road intersections may be blocked but one-half at a time, unless other arrangements are made, and the Contractor shall lay and maintain temporary driveways, bridges and crossings such as in the opinion of the Public Works Director are necessary to reasonably accommodate the public. In the event of the Contractor's refusal or failure to comply with these provisions, the Owner may with or without notice cause the same to be done and deduct the cost of such work from any monies due or to become due the Contractor under this contract, but the performance of such work by the Owner or at their instance shall serve in no way to release the Contractor from any of their general or particular liabilities for the safety of the public or the work.

Access of Fire, Police and ambulance vehicles to property abutting and adjacent to the work shall be maintained whether or not permission has been granted to restrict other traffic. The Contractor shall inform the Fire and Police Department twenty-four (24) hours in advance when they are going to block or barricade a street or thoroughfare. The Contractor will also notify the Fire and Police Departments immediately when the barricades are removed.

The Contractor shall apply water or dust palliative, or both for the alleviation or prevention of dust nuisance caused by their operations. Dust control operations shall be performed by the Contractor at the time ordered by the Engineer, but failure of the Public Works Director to issue such order will not relieve the Contractor of this responsibility. No direct payment will be made for any such work performed or material used to control dust under this contract unless specifically paid for under Item #616.

The Contractor shall protect and maintain in complete operation, all subsurface structures encountered in the prosecution of the work, unless permission for their removal or relocation is given.

The Public Works Director may require any abandoned sewers, drains or other subsurface structures within the limits of the excavation to be removed, but such removal shall not be paid for separately, being included in the price bid for the excavation or for other items which include the excavation.

The Contractor shall remove and replace any surface structures encountered in the work or shall maintain them at their own expense and in such manner as to provide for the safety of the public and the structures.

No act of the Public Works Director or the assistants or inspectors shall operate as a waiver of any provisions of the contract, nor shall any waiver of any breach of this contract operate as a waiver of any other or subsequent breach. Any and all remedies provided in this contract shall be taken and construed as cumulative, that is, in addition to each and every other remedy herein provided. The mention of any specific duty or liability of the Contractor in any part of the specifications or contract shall not be construed as a limitation or restriction upon any general liability or duty imposed upon the Contractor by said specifications and contract. Should any part of the work be sublet by the Contractor, such action shall in no way release said Contractor from any liability or obligation hereunder, but they shall be responsible for the complete fulfillment of the provisions of this Contract the same as though no subcontract existed.

Injunctions – If legal obstructions to the prosecution of the work arise, the delay shall operate to extend the time for the completion of the part or parts of the work so obstructed for the length of time the obstruction continues and no longer, but no damages shall be claimed by or allowed the Contractor for any such delay.

Right-of-Way – Wherever it is required as a part of the contract to perform work within the limits of private property, or in the right-of-way, such work shall be done in conformity with all agreements between the Owner, the Contractor and such owners, and whether or not such a condition be part of the agreement, care shall be taken to avoid injury to the premises entered, which premises shall be left in a neat and orderly condition by the removal of rubbish and the grading of surplus materials and the restoration of said property to the same general conditions as at the time of entry for work to be performed under this contract.

Use of Completed Portions of Work – At any time during the progress of the work, the Owner may, by written notice to the Contractor, take over and utilize the whole or any part of any waterline, sewer, drain, etc., which has been completed, giving if desired, permits to tap and connect with the same. In such event the Contractor will be relieved from the maintenance of such part as may be used except as provided under the heading of "Guaranty."

Employees – The Contractor shall employ only competent and skillful workmen to do the work. Incompetent, careless or disorderly workmen or foremen will not be permitted on the work, and any such workmen shall be discharged immediately by the Contractor upon complaint of the Engineer, and shall not be re-employed on this contract without the Public Works Director's consent.

The Contractor will be expected, and hereby agrees to hire and employ, so far as is practicable, qualified persons who are resident of the City or adjoining communities. However, this requirement is not applicable to employees identified by the Contractor as key personnel.

The Contractor agrees that neither they nor their subcontractors will discriminate against any employee or applicant for employment, to be employed in the performance of this Contract, with respect to their hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of their race, color, religion, national origin or ancestry. Breach of this covenant shall be regarded as a material breach of the Contract.

Materials – All materials used in the work shall be of the best quality unless notations on the plans or specifications provide otherwise, and shall conform in all respects to the requirements of the specifications. No materials shall be used unless they have been examined and approved by the Public Works Director or the inspector. In case any material is rejected, the Contractor shall remove such material from the site of the work within twenty-four (24) hours, and shall not again submit it or any part of it for inspection. The Contractor shall at once remove, upon the order of the Engineer, any defective materials or work which may have been placed in the improvement, even though such materials or work have previously been approved through oversight or error by the Engineer, and shall replace the same with acceptable materials and workmanship.

Payments to Contractor – Partial payments will be made as the work progresses at the end of each calendar month, or as soon thereafter as practicable, on estimates made and approved by the Engineer. In preparing estimates the material delivered on the site and preparatory work done may be taken into consideration.

In making such partial payments, there shall be retained ten (10) percent on the estimated amount until final completion and acceptance of all work covered by the Contract. The interest earned on all contract retainage shall accrue to the sole benefit of the City.

Provided, however, that the Engineer, at any time after fifty (50) percent of the work has been completed, if they find satisfactory progress is being made, may make any of the remaining partial payments in full. All material and work covered by partial payments made shall thereupon become the sole property of the Owner, but this provision shall not be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or this restoration of any damaged work, or as a waiver of the right of the Owner to required fulfillment of all the terms of the contract. Prior to the Owner making any payment, the Contractor shall complete the Contractor's Affidavit for current estimates.

Guaranty and Maintenance of Work – The Contractor, for the work herein specified, in consideration of the process bid and to be received therefore, guarantees that the workmanship and material furnished under the specifications and used in said work, are first-class in all respects, and are of such kind, quality and amount that for a period of one (1) year after completion and final acceptance thereof by the Owner, the work shall require no repairs or renewals on account of defects in workmanship or material.

There shall be retained by the Owner from the amount due upon the contract, a deferred payment in an amount equal to two percent (2%) of the total final contract price of the improvement, which amount will be retained for one year after the completion and final acceptance of the improvement as a guaranty upon the party of the Contractor that the workmanship and materials furnished therefore are first-class and as above provided, and that the improvement is and will remain in good and sound condition for and during the one year period from and after its completion and acceptance. In lieu of the two percent (2%), the City will accept a Maintenance and Guarantee Bond or letter of credit in the amount of ten percent (10%) of the contract price.

In case the Contractor shall make, or cause to be made at their own expense, any and all repairs and renewals which may become necessary under and by virtue of this contract guaranty, and shall leave said improvement in good and sound condition satisfactory to the Owner and Public Works Director at the expiration of the guarantee period, then at the expiration of such period, the amount retained as a guaranty, and less any and all necessary expense which may have been incurred by the Owner in connection with the maintenance of the improvement and restoration of roads and streets, shall be paid to the Contractor as full payment for any balance due under this contract for said improvement.

If during the said guaranty period, the improvement shall in the opinion of the Public Works Director or the Owner, require any repairs or renewals which in their judgment are necessitated by reason or settlement of foundation, structure, backfill or other defective workmanship or materials, the Contractor shall forthwith upon notification by the Public Works Director or the Owner of the necessity for such repairs or renewals, make such repairs or renewals at their own cost and expenses. Should the Contractor fail to make such repairs or renewals within a reasonable time after notification as hereinbefore provided, or to start such work within one week after such notification, the Owner may cause such work to be done, either by contract or otherwise, and the entire cost and expense thereof shall be paid and deducted from the amount retained as a guaranty. Should such cost and expense exceed the amount retained or remaining in the guaranty fund, the Contractor or their sureties shall pay the amount of such excess to the Owner.

Completion or Abandonment of Work – If the work to be done under this contract shall be abandoned by the Contractor, or if this contract or any part thereof shall be assigned or the work sublet by them without the previous written consent of the Owner, or if at any time any employee of the Owner shall become directly or indirectly interested in this contract or in furnishing the supplies or performing the work thereunder, or in any portion of the profit thereof, or if at any time the Contractor shall become insolvent or bankrupt, or if at any time the Owner shall be of the opinion that the performance of the contract is unnecessarily or unreasonably delayed, or that the contractor is willfully violating any of the provision of this contract, or if the work be not fully completed within the time named in this contract, then and in such case the Owner may notify the Contractor to discontinue the work or such part thereof as may be designed, and the Owner may thereupon, according to law, enter upon and take possession of the work or part thereof, complete, or cause the same to be completed, and charge the entire expense of completing the work or part thereof to the Contractor and for such completion that Owner for itself or for its contractor may take possession of and use or cause to be used, any materials, machinery or tools of every description provided by the Contractor for the purpose of their work, and may procure or cause to be procured other materials, machinery or tools or the completion of the work and the cost and expense thereof charged to the Contractor.

All expenses, including those of reletting incurred and charged under these clauses, or by virtue of this contract, shall be deducted and paid by the Owner out of any monies then due or to become due the

Contractor under and by virtue of this contract or any part thereof. In case such expense shall exceed the amount which would have been payable under the contract if the same had been completed by the Contractor, the Contractor or their sureties shall pay the amount of such excess to the Owner, but should such expense be less than the amount payable under this contract had the same been completed by the Contractor, they shall receive the difference after deducting the amount retained as hereinafter specified, but shall not be entitled to damages for not being allowed to complete the work themselves.

The Contractor, if required at any item by the Owner, shall furnish said Owner with satisfactory evidence that all persons who have done work or furnished materials for the Contractor of the work on this improvement, or have suffered damage in connection therewith, have been fully paid or secured. Upon completion of the work, the Contractor shall furnish the Owner with a Contractor's Affidavit prior to receiving final payment or other evidence required as proof thereof, that all persons having had lawful claims for work or materials furnished or damages incurred by reason of this improvement have been fully paid or secured in case such evidence be not furnished as provided, such amount as the Owner shall consider necessary to meet such lawful claims shall be retained by the Owner from the monies otherwise due said contractor under this contract, until the aforesaid claims have been fully satisfied by the Contractor, or in case of failure of the Contractor to do so, the Owner shall use such amounts to satisfy such claims.

The approval of the final estimate for the work by the Owner shall constitute the acceptance of the completed work.

Last Payment to Terminate Liability of Owner – No person or corporation, other than that of the signer of this contract as Contractor, has now any interest hereunder, and no claim shall be made or be valid, and neither the Owner nor their agents shall be liable for, or have to pay any money, except as provided in the section "Guaranty and Maintenance of Work." The acceptance by the Contractor of the last payment made as aforesaid shall operate as and shall be a release to the

Owner and agents thereof, from any and all claims and any liability to the Contractor for anything done or furnished for, or relating to the work, or for any act or neglect of the Owner or of any person relating to or affecting the work, except the claim against the Owner for the remainder, if any there be, of the amount kept or retained as provided in the section, "Guaranty and Maintenance of Work."

Measurements - No extra or customary measurement of any kind, unless specifically noted, shall be allowed in measuring the work under these specifications, but the length area solid contents or number only shall be considered as the basis for payment as hereinafter specified.

Where the computation of areas or volumes by exact geometric methods is unduly laborious or refined, the planimeter shall be held an instrument of precision and may be used in the determination of quantities upon which payments are based.

The measurements of the Public Works Director as to the amount of work done shall be final and conclusive.

Payments shall be made upon the work done within the lines prescribed by the drawings or specifications and in accordance with the unit prices for the items under which the work is done.

Prices - The Owner shall pay and the Contractor shall receive the prices herein stipulated as full compensation for everything furnished and done by the Contractor under this contract, including all

incidental work required but not specifically mentioned and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the weather, floods or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work as herein specified, and for well and faithful completion of the work, and the whole thereof, as herein provided together with the remedying of all defects developing during the period for which work is guaranteed.

Changes Not to Affect Unit Prices - The contract drawings indicate the probable layout of the work, but it is expressly understood that the location of pipelines may be altered and connections may be changed as made necessary from time to time in the opinion of the Public Works Director and such alterations and changes shall be made without affecting the unit prices bid for the work.

Change of Location of Pipes, Drains Etc. - Whenever it becomes necessary in the opinion of the Public Works Director to change the location of any water pipe, sewer, drain or other structure uncovered by the excavation and not otherwise provided for in these specifications, the Contractor shall do the whole or such portion of the work of making such changes as the Public Works Director may direct, as provided for under "Extra Work."

Termination for Breach - In the event that any of the provisions of this contract are violated by the Contractor or by any of their subcontractors, the Owner may serve written notice upon the Contractor and the surety of its intention to terminate the contract, such notices to contain the reasons for such intention to terminate the contract, and unless within ten (10) days after serving of such notice upon the Contractor, such violation shall cease and satisfactory arrangement for correction be made, the Contractor shall upon the expiration of said ten (10) days, cease and terminate. In the event of any such termination, the Owner shall immediately serve notice thereof upon the surety and the Contractor, and the surety shall have the right to take over and perform the contract, provided, however, that if the surety does not commence performance thereof within thirty (30) days from the date of the mailing to such surety of notice of termination, the Owner may take over the work and prosecute the same to completion by contract for the account and at the expense of the Contractor, and the Contractor and their surety shall be liable to the Owner for any excess cost occasioned the Owner thereby, and in such event the Owner may take possession of and utilize in completing the work such materials, appliances and plant as may be on the site of the work, and necessary therefore.

Owner's Right to Withhold Certain Amounts and Make Application Thereof - Upon non-payment by the Contractor for a period of ten (10) days after due date of just claims for labor due under this contract or upon non-payment by the Contractor for a period of thirty (30) days after due date of just claims for materials furnished under this contract, the Owner deems necessary in order to pay such just overdue claims, and the Owner is hereby authorized by the Contractor to act as such agent and to apply such retained amounts to the payment of such claims.

Notice and Service Thereof - Notice shall mean written notice. Written notice shall be deemed to have been duly served when delivered in person to the person firm or corporation for whom intended, or to their or its duly authorized officer, agent or representative or when delivered at the last know business address of such person, firm or corporation, or when enclosed in a postage prepaid wrapper or envelope addressed to such person, firm or corporation at their or its last know business address and sent by registered mail with return receipt requested.

Assignment of Contract - The Contractor shall not assign this contract or any part hereof without the approval of the Owner, nor without the consent of surety unless the surety has waived its right to notice of assignment. All assignments of funds are subject to the prior lien for services rendered or materials supplied for the performance of the work called for in this contract in favor of all persons, firms or corporations rendering such services or supplying such materials.

Subcontracting - The Contractor shall not subcontract any work to be performed or any materials to be furnished in the performance of this contract without the written consent of the Owner. If the Contractor shall sublet any part of this contract, the Contractor shall be as fully responsible to the Owner for the acts and omissions of their Subcontractor, and of the persons either directly or indirectly employed by their Subcontractor, as they are for the acts and omissions of person directly employed by themselves.

Or Equal Clause - Wherever the contract documents a particular brand, make of material, device or equipment is shown or specified, such brand, make of material, device or equipment is to be regarded merely as a standard and such trade name shall be followed by "or equal." If two or more brands, makes of material, devices or equipment are shown or specified, each is to be regarded as the equal of the other. Any other brand, make of material, device or equipment which, in the opinion of the Engineer, is the recognized equal of that specified, considering quality, workmanship and economy of operation, and is suitable for the purpose intended, will be accepted. All materials and workmanship shall in every respect be in accordance with what, in the opinion of the Engineer, is the best modern practice, and wherever the plans, drawings, specifications or other contract documents, or the directions of the Public Works Director admit of doubt as to what is permissible and/or fail to note the quality of materials and workmanship in conformity with the best modern practice is to be followed.

Effective Date of Contract - Subject to the applicable provisions of law, this contract shall be in full force and effective as a contract from and after the date when a fully executed and approved counterpart hereof is delivered to the Contractor.

If any time after execution and approval of this contract and the performance bond required by the Contract Document of the City of Sidney, Ohio. The City shall deem any of the sureties upon such bond to be unsatisfactory, or if for any reason such bond shall cease to be adequate security for the City of Sidney, Ohio, Contractor shall within seven (7) days after notice of the City of Sidney, Ohio, so to do, furnish a new or additional bond in the form and amount, signed by such sureties as shall be satisfactory to the City of Sidney, Ohio. No further payment shall be deemed due or shall any further payment be made to the Contractor unless and until such new or additional bond shall be furnished and approved. The premium on such bonds shall be paid by the Contractor.

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and this contract shall be read and enforced as though it were included herein, and if through mere mistakes or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party hereto, the contract shall forthwith be physically amended to make such insertions. It shall be the sole responsibility of the Contractor to keep and maintain the construction site in a safe and orderly manner. The Contractor shall at their expense provide for such safety equipment as is needed for compliance with the existing Occupational Safety and Health Act (OSHA). Penalties for violations of the Safety Act shall be the full responsibility of the Contractor.

Taxes – The Contractor shall be required to register with the City of Sidney Income Tax Department prior to the signing of the Contract.

Explosives and Blasting – All blasting and the storing and handling of explosives shall be done in all respects as prescribed in local and state requirements governing such work.

When necessary to resort to blasting and when permitted, the Contractor shall fully protect all completed work as well as any existing overhead, surface or sub-surface structures and they shall be responsible and liable for any damage done to persons, structures or to other public or private property by reason of blasting operations. Where blasting is employed, detonation shall be done electrically.

All blasting shall be done within a safe and reasonable distance of completed or partly completed water main or other structures. Blasting shall be done only during daylight hours, and if necessary or desirable, shall be limited as directed to certain daylight hours. Suitable provision shall be made by the Contractor to prevent the scattering of broken rock, earth, stone or other material during the blasting operations. If, in the opinion of the Engineer, the amount of explosives used in any one blast is excessive and dangerous to adjoining property or workmen employed on the work, the charges shall be reduced as directed. Blasting shall not be done, except with the express permission of the Engineer.

OSHA COMPLIANCE

The Contractor shall have at least one trained safety person on the job at all times. This person shall be directly responsible to assure and document that all applicable OSHA regulations are complied with at all times. Documentation of the safety person's training, that is acceptable, is required.

OSHA compliance areas will include, but not be limited to, confined spaces, personal protection equipment, trench shoring, gas test, etc.

The Contractor must keep and complete all record keeping throughout the project. Two complete legible copies of the records shall be delivered to the Public Works Director's office and approved before the final payment is made. Copies of the weekly reports shall be given to the inspector each work week throughout the job for review.

INSTRUCTIONS TO BIDDERS

Bids must be submitted electronically using the Bid Express service. Plans, Specifications, and Bid forms will be available through the Bid Express website at www.bidexpress.com. All electronic bidders must register with Bid Express in order to submit a Bid (please allow time for processing). Registration with Bid Express is free. Contractors and/or Subcontractors can view and download information free of charge. In order to submit an electronic bid, the Bidder will need to pay a non-refundable per Bid fee or a monthly non-refundable subscription fee for unlimited bid.

No withdrawal or modification of a proposal will be permitted after the scheduled time for receipt of bids.

Bidders offering proposals for the furnishing and placing of any material, may be required, prior to the award of the contract, to submit such materials for testing. All materials to be furnished and tests made at the expense of the bidder.

Bidders are cautioned to examine the site of the proposed work before submitting a proposal, and the submission of a proposal will be deemed an acknowledgment that this had been done, and that the drawings, specifications, and form of contract have been carefully examined and are fully understood.

Prospective bidders are advised that the Owner does not guarantee the existence, nonexistence, or location of any subsurface structures, nor the character of any subsurface materials shown on the Contract drawings. The indications of such structures and of such materials on the drawings are based on the best data available, but should not be regarded as conclusive.

The successful Bidder must be prepared to furnish satisfactory evidence that they possesses the necessary ability, facilities, and financial resources to do the class of work required.

All proposals shall be accompanied by a bond in the sum of at least ten percent (10%) of the Bid to the satisfaction of the City Manager or by a certified check made payable to the City of Sidney in the sum of at least ten percent (10%) of the Bid on a solvent bank, as a guarantee that if the Bid is accepted, a Contract will be entered into and its performance properly secured within seven (7) working days after written notification of acceptance has been given.

When a Bidder bids on alternate types of construction, only one certified check or bond of the amount fixed in the legal notice will be required.

When a proposal is accepted, and within seven (7) days thereafter, the Bidder whose proposal is so accepted will be required to enter into a Contract in the form hereto attached and give a bond in the sum equal to one hundred percent (100%) of the proposal, executed by an authorized surety, guaranty or trust company, or companies, to the satisfaction of the Owner.

If the Bid is made by a firm or partnership, the name and place of residence of each member of the firm or partnership must be given. If made by a corporation, the person signing shall state under the laws of what state the corporation was chartered and the name and title of officer or officers, having authority under the by-laws to sign contracts. Anyone signing a proposal as agent must file with it legal evidence of their authority to do so.

Two proposals from a firm, corporation, or association under different names will not be considered.

Reasonable grounds for supposing that any Bidder is interested in more than one proposal for this work will be cause for rejection of all proposals in which they are interested.

Any or all proposals will be rejected if there are reasonable grounds for supposing that there is collusion among bidders, and all participants in such collusion will not receive further recognition as bidders for this work.

The Owner reserves the right before any award of the Contract is made to require of any Bidder to whom it may make an award of the principal contract, a non-collusion affidavit.

The City reserves the right to reject any or all bids and to award the Contract to the lowest and best bidder. The City reserves the right to waive any informality or irregularity discovered in any Bid, which in the City's judgment best serves their interest. The City reserves the right to award any, all, or a combination of Bid items, if applicable.

For Bid submission in a form other than electronic (if permitted), in the situation where an extension of a unit price is found to be incorrect, the stated unit price and correct extension will govern. In the event of a discrepancy between the written and numeral values, the written value shall take precedence.

Attention of the bidders is called to the special instructions which are included in the proposed Contract documents, and to the special requirement, for prevailing wage rates, if applicable, and hours of employment.

The successful Bidder will be required to register with the City of Sidney Income Tax Department prior to the signing of this contract. The successful Bidder will also be responsible to attend a preconstruction meeting with the City prior to starting work.

ATTENTION IS CALLED TO THE FACT AS SET FORTH IN THE PROPOSAL, THAT THE CONTRACT MUST BE COMPLETED WITHIN THE TIME SET OR LIQUIDATED DAMAGES WILL BE ASSESSED AND DEDUCTED FROM AMOUNT OTHERWISE DUE THE CONTRACTOR FOR SUCH IMPROVEMENT.

No Bidder may withdraw their Bid for a period of thirty (30) days after the date of the opening thereof.

Assignment of this Contract or any part thereof or of any funds to be received thereafter, by the Contractor, will be subject to the approval of the Owner. Such assignment shall contain a clause to the effect that it is agreed that the funds to be paid the assignee under the assignment, are subject to the prior lien for services rendered, of materials supplied for the performance of the work called for in said Contract, in favor of all persons, firms or corporations rendering such services or supply such materials.

The successful Bidder shall furnish a financial statement, list of equipment and personnel and references indicating their qualifications, if requested, to the satisfaction of the City of Sidney, Ohio.

Bidders are required to inform themselves fully of the conditions relating to construction and labor under which the work will be performed, and the Contractor must employ so far as possible, such means and methods in the carrying out of the work as will not cause any interruption or interference with any other Contractor.

Any interpretation of the proposed documents will be made only by Addendum duly issued, and a copy of such Addendum will be delivered to each person receiving a set of such documents. The City of Sidney will not be responsible for any other explanations or interpretations of the proposed documents.

WAGE SCALE - The minimum wage to be paid to all laborers and workmen on this Contract shall not be less than the prevailing wage schedule attached hereto or as said schedule may be modified from time to time during the life of the Contract by the Department of Industrial Relations in accordance with Chapter 4115, Ohio Revised Code.

This Contract requires the payment of the total of the "Basic Hourly Rates" plus the "Fringe Benefits Payments" for each classification of laborer or workman; and that the contractor (for themselves and their subcontractors) shall submit a certified copy of the complete payroll within three weeks after each pay date which shall exhibit for each employee paid, any wages, their name, current address, social security number, number of hours worked during each day of the pay period and the total for each week, their hourly rate of pay, their job classification, fringe benefits and deductions from their wages. The payroll certification shall recite that the payroll is correct and complete and that the wage rates shown as paid are not less than those required by the contract.

As a requisite for payment of any current estimate, the contractor will be required to sign the Contractor's Affidavit - Current Estimates form provided and have the same properly notarized.

As a requisite for payment of the final estimate, the contractor will be required to sign the Contractor's Affidavit form provided and have the same properly notarized.

The contractor for the "General Construction" shall commence work under their Contract and have the work fully complete and ready for final payment on or before the date indicated on the Bid Proposal.

The City of Sidney is exempt from sales tax on materials and equipment to be incorporated in the Work. Such taxes shall not be included in the bid.

Note: Contractors must complete the following forms as part of their electronic Bid Express Bid submission to be considered responsive:

- ☐ Bid Proposal including Bid Form, Bid Bond, and Bidder Type (Individual, partnership, or Corp.)
- ☐ Certificate of Compliance with section 3517.13 of the Ohio Revised Code
- ☐ Questionnaire – Municipal Income Tax
- ☐ Subcontractor Information

Note: Contractors must attach a PDF copy of the following forms as part of their electronic Bid Express Bid submission to be considered responsive:

- ☐ Bid Guaranty, either check from solvent bank or Bid Bond. If project is to be awarded, an original will be required and requested.
- ☐ Non-Collusion Affidavit
- ☐ Disclosure of Personal Property Taxes
- ☐ Addendum Acknowledgment(s), if applicable

LEGAL NOTICE

CITY OF SIDNEY

26-20 SIDNEY AIRPORT NEW EQUIPMENT HANGER

Bids will be received for the 26-20 Sidney Airport New Equipment Hanger project by the City of Sidney electronically through Bid Express until **11:30 a.m. (EST) on Thursday, July 30, 2026**, at which time they will be electronically opened and reviewed.

Plans, Specifications, and bid forms will be available through the Bid Express website at www.bidexpress.com. All electronic bidders must register with Bid Express in order to submit a bid (please allow time for processing). Registration with Bid Express is free. Contractors and/or Subcontractors can view and download information free of charge. In order to submit an electronic bid, the bidder will need to pay a per bid fee or a monthly subscription fee for unlimited bids. We encourage bidders to familiarize themselves with the Bid Express service in advance.

If the bidder experiences difficulties with the electronic bidding service, please contact the Bid Express support team (1-888-352-2439, M-F 7am-8pm EST or support@bidexpress.com) at least 72 hours prior to the bid opening.

The project is for an approximately 3,900 s.f. one-story, metal building of type IIB construction, group S-1 occupancy. The project involves all site work including asphalt driveways, concrete walks, and lawn seeding; building materials which include but are not limited to concrete foundations and slab, pre-manufactured metal building, hydraulic door, overhead doors, hollow metal doors in hollow metal frames; HVAC units and system; and electrical fixtures and system.

A **Non-Mandatory Pre-Bid Meeting** will be held onsite at the Sidney City Airport, 14833 Sidney-Plattsville Road, Sidney, Ohio at **9:30 a.m. on Tuesday, July 21, 2026**. A walk-through of the site will be offered during the pre-bid meeting.

Any and all questions regarding the referenced project must be submitted through the Bid Express website no later than **1:00 p.m. (EST) on Monday, July 27, 2026**. Questions submitted outside of Bid Express will not be answered.

The Contractor shall be required to pay not less than the minimum wage rates established by the Department of Industrial Relations of the State of Ohio for Building Construction.

No bidder may withdraw his bid within sixty (60) days after the actual date of the opening thereof. The City of Sidney reserves the right to waive any irregularities, to reject any or all bids, and to award the contract to the bidder deemed to be in the best interest of the City of Sidney.



Jenny Wagner, Purchasing Agent



Jon Crusey, City Manager

Advertise: July 8, 2026

NON-COLLUSION AFFIDAVIT

State of _____)
County of _____) ss

_____, being first duly sworn, deposes and says that they are
_____ (sole owner, a partner, president, secretary, etc.) of
_____ the party
making the foregoing bid; that such bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation; that such bid is genuine and not collusive or sham; that said bidder has not directly or indirectly colluded, conspired, connived or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that said bidder has not in any manner, directly or indirectly, sought by agreement, communication or conference with anyone to fix the bid price of said bidder or of any other bidder, or to fix any overhead, profit, or cost element of such bid price; or of that of any other bidder, or to secure any advantage against the public body awarding the contract or anyone interested in the proposed contract; that all statements contained in such bid are true; and, further, that said bidder has not, directly or indirectly, submitted their bid price or any breakdown thereof or in the contents thereof, or divulged information or data relative thereto, or paid and will not pay any fee in connection therewith; to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, or to any other individual except to such person or persons as have a partnership or other financial interest with said bidder in their general business.

Signed:

Title

Subscribed and sworn to before me this _____ day of _____, _____.

Seal of Notary

Notary Public

My Commission expires _____

**PAYROLL DATES
PREVAILING WAGE LAW**

Instructions to the Contract/Subcontractor:
Please read the following and provide the required information noted on this form. This document must be submitted to the Prevailing Wage Coordinator prior to construction commencement.

_____ (Contractor/Subcontractor) will begin performance under
Contract for the _____ (Project) on
_____ (Start Date) and will conclude work on project _____ (end date, if known).

In accordance with Ohio Revised Code 4115.071(C), listing of payroll dates, I hereby submit the following schedule of dates that my company is required to pay prevailing wages to its employees while on this project.

Day Pay Period Starts: _____ Day Pay Period Ends: _____

Day or Week Employees are Paid: _____

I acknowledge that I am required by Ohio Revised Code 4115.071(C) to submit a copy of my company's certified payroll reports for this project to the City of Sidney's Prevailing Wage Coordinator within 2 weeks of the initial pay date listed above. I further acknowledge that I am responsible to collect and submit my Subcontractor's prevailing wage documents including certified payroll reports in accordance with the law.

Company name

Prevailing Wage Coordinator (printed name)

Address

Prevailing Wage Coordinator email address

City, State, Zip

Prevailing Wage Coordinator phone number



Affidavit of Compliance

PREVAILING WAGES

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that the wages paid to all employees of

(Company Name)

for all hours worked on the

(Project name and location)

project, during the period from _____ to _____ are in
(Project Dates)

compliance with prevailing wage requirements of Chapter 4115 of the Ohio Revised Code. I further
certify that no rebates or deductions have been or will be made, directly or indirectly, from any wages
paid in connection with this project, other than those provided by law.

(Signature of Officer or Agent)

Sworn to and subscribed in my presence this _____ day of _____,
20_____.

(Notary Public)

The above affidavit must be executed and sworn to by the officer or agent of the contractor or subcontractor who supervises the payment of employees. This affidavit must be submitted to the owner (public authority) before the surety is released or final payment due under the terms of the contract is made.

CERTIFIED PAYROLL REPORT

Employer Name & Address		Name of General / Prime Contractor				Project Name & Location					Contracting Public Authority City of Sidney				
Check if subcontractor ☐		Week Ending				Payroll # Page ____ of ____					Project Number				

1. Employee Name, Address and Social Security Number	2. Work Class	3. Hours Worked - Day & Date	4. Project Total Hrs	5. Base Rate	6. Project Gross	7. Fringes: Cash ☐ Approved Plans ☐ Cash & Approved Plans ☐	8. Total Hours All Jobs	9. Total Gross All Jobs	10. Taxes Withheld	11. Other Deducts	12. NET Paid
		5 5 5 5 5 5 5 3 4 5 6 7 8 9				H&W Pens Vac App Other					
		OT									
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Date _____ My signature on this form signifies that I pay, or supervise the payment of the employee shown above. I am certifying: 1) That during the pay period reported on this form, all hours worked on this project have been paid at the appropriate prevailing wage rate for the class of work done. 2) That the fringe benefits have been paid as indicated above. 3) That no rebates or diductions have been or will be made, directly or indirectly from the total wages earned, other than permissible deductions as defined in the Ohio Revised Code Chapter 4115. 4) That apprentices are registered with the U. S. Department of Labor, Bureau of Apprenticeship and Training. The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution.

Name and Title _____

Signature _____



Department of Commerce

Division of Industrial Compliance

Bureau of Wage and Hour Administration
6606 Tussing Road - PO Box 4009
Reynoldsburg, OH 43068-9009
Phone 614-644-2239 | Fax 614-728-8639
TTY/TDD 800-750-0750
www.com.ohio.gov

An Equal Opportunity Employer and Service Provider

John R. Kasich, Governor
Andre T. Porter, Director

PREVAILING WAGE CONTRACTOR RESPONSIBILITIES

This is a summary of prevailing wage contractors' responsibilities. For more detailed information please refer to Chapter 4115 of the Ohio Revised Code

General Information

Ohio's prevailing wage laws apply to all public improvements financed in whole or in part by public funds when the total overall project cost is fairly estimated to be more than \$250,000 for new construction or \$75,000 for reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting.

Ohio's prevailing wage laws apply to all public improvements financed in whole or in part by public funds when the total overall project cost is fairly estimated to be more than \$84,314 for new construction that involves roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction or \$25,261 for reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting of a public improvement that involves roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction.

- a) Thresholds are to be adjusted biennially by the Administrator of Ohio Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Wage and Hour Administration
- b) Biennial adjustments to threshold levels are made according to the Price Deflator for Construction Index, United States Department of Commerce, Bureau of the Census*, but may not increase or decrease more than 3% for any year

Penalties for violation

Violators are to be assessed the wages owed, plus a penalty of 100% of the wages owed.

Intentional Violations

If an intentional violation is determined to have occurred, the contractor is prohibited from contracting directly or indirectly with any public authority for the construction of a public improvement. Intentional violation means "a willful, knowing, or deliberate disregard for any provision" of the prevailing wage law and includes but is not limited to the following actions:

- Intentional failure to submit payroll reports as required, or knowingly submitting false or erroneous reports.
- Intentional misclassification of employees for the purpose of reducing wages.
- Intentional misclassification of employees as independent contractors or as apprentices.
- Intentional failure to pay the prevailing wage.
- Intentional failure to comply with the allowable ratio of apprentices to skilled workers as required by the regulations established by Ohio Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Wage and Hour Administration.
- Intentionally employing an officer, of a contractor or subcontractor, that is known to be prohibited from contracting, directly or indirectly, with a public authority.

Responsibilities

- A. Pay the prevailing rate of wages as shown in the wage rate schedules issued by the Ohio Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Wage and Hour Administration, for the classification of work being performed.
 1. Wage rate schedules include all modifications, corrections, escalations, or reductions to wage rates issued for the project.

2. Overtime must be paid at time and one-half the employee's base hourly rate. Fringe benefits are paid at straight time rate for all hours including overtime.
 3. Prevailing wages must be paid in full without any deduction for food, lodging, transportation, use of tools, etc.; unless, the employee has voluntarily consented to these deductions in writing. The public authority and the Director of Ohio Department of Commerce, Division of Industrial Compliance and Labor, Bureau of Wage and Hour Administration - must approve these deductions as fair and reasonable. Consent and approval must be obtained before starting the project.
- B. Use of Apprentices and Helpers cannot exceed the ratios permitted in the wage rate schedules.
1. Apprentices must be registered with the U.S. Department of Labor Bureau of Apprenticeship and Training.
 2. Contractors must provide the Prevailing Wage Coordinator a copy of the Apprenticeship Agreement for each apprentice on the project.
- C. Keep full and accurate payroll records available for inspection by any authorized representative of the Ohio Department of Commerce, Division of Industrial Compliance, and Labor, Bureau of Wage and Hour Administration or the contracting public authority, including the Prevailing Wage Coordinator. Records should include but are not limited to:
1. Time cards, time sheets, daily work records, etc.
 2. Payroll ledger/journals and canceled checks/check register.
 3. Fringe benefit records must include program, address, account number, & canceled checks.
 4. Records made in connection with the public improvement must not be removed from the State for one year following the completion of the project.
 5. Out-of-State Corporations must submit to the Ohio Secretary of State the full name and address of their Statutory Agent in Ohio.
- D. Prevailing Wage Rate Schedule must be posted on the job site where it is accessible to all employees.
- E. Prior to submitting the initial payroll report, supply the Prevailing Wage Coordinator with your project dates to schedule reporting of your payrolls.
- F. Supply the Prevailing Wage Coordinator a list of all subcontractors including the name, address, and telephone number for each.
1. **Contractors are responsible for their subcontractors' compliance with requirements of Chapter 4115 of the Ohio Revised Code.**
- G. Before employees start work on the project, supply them with written notification of their job classification, prevailing wage rate, fringe benefit amounts, and the name of the Prevailing Wage Coordinator for the project. A copy of the completed signed notification should be submitted to Prevailing Wage Coordinator.
- H. Supply all subcontractors with the Prevailing Wage Rates and changes.
- I. Submit certified payrolls within two (2) weeks after the initial pay period. Payrolls must include the following information:
1. Employees' names, addresses, and social security numbers.
 - (a) Corporate officers/owners/partners and any salaried personnel who do physical work on the project are considered employees. All rate and reporting requirements are applicable to these individuals.
 2. Employees' work classification.
 - (a) Be specific about the laborers and/or operators (Group)
 - (b) For all apprentices, show level/year and percent of journeyman's rate
 3. Hours worked on the project for each employee.

- (a) The number of hours worked in each day and the total number of hours worked each week.
 - 4. Hourly rate for each employee.
 - (a) The minimum rate paid must be the wage rate for the appropriate classification. The Department's Wage Rate Schedule sets this rate.
 - (b) All overtime worked is to be paid at time and one-half for all hours worked more than forty (40) per week.
 - 5. Where fringes are paid into a bona fide plan instead of cash, list each benefit and amount per hour paid to program for each employee.
 - (a) When the amount contributed to the fringe benefit plan and the total number of hours worked by the employee on all projects for the year are documented, the hourly amount is calculated by dividing the total contribution of the employer by the total number of hours worked by the employee.
 - (b) When the amount contributed to the fringe benefit is documented but not the total hours worked, the hourly amount is calculated by **dividing the total yearly contribution by 2080**.
 - 6. Gross amount earned on all projects during the pay period.
 - 7. Total deductions from employee's wages.
 - 8. Net amount paid.
- J. The reports shall be certified by the contractor, subcontractor, or duly appointed agent stating that the payroll is correct and complete; and that the wage rates shown are not less than those required by the O.R.C. 4115.
- K. Provide a Final Affidavit to the Prevailing Wage Coordinator upon the completion of the project.

FRINGE BENEFITS

PLEASE COMPLETE THIS FORM AND RETURN TO THE PREVAILING WAGE COORDINATOR AT THE ADDRESS BELOW:

PROJECT NAME: _____

CONTRACTOR/SUBCONTRACTOR'S NAME: _____

ADDRESS: _____

☐ FRINGE BENEFITS ARE ALL PAID IN CASH TO THE EMPLOYEE.

☐ FRINGE BENEFITS ARE PAID IN CASH AND TO THE BENEFIT PROGRAM(S) LISTED BELOW.

☐ FRINGE BENEFITS ARE ALL PAID TO THE FOLLOWING BENEFIT PROGRAMS:

HEALTH & WELFARE PLAN: _____

ADDRESS _____

PENSION PLAN: _____

ADDRESS _____

MISC. PLAN: _____

ADDRESS _____

APPRENTICESHIP PROGRAM: _____

COMPANY IS ☐ UNION ☐ NON-UNION

GENERAL CONTRACTOR MUST FORWARD A BLANK FORM TO EACH SUBCONTRACTOR ON THE PROJECT FOR COMPLETION. RETURN ALL FORMS PRIOR TO PROJECT COMMENCEMENT TO:

PREVAILING WAGE COORDINATOR: **LORI WERLING**
lwerling@sidneyoh.com 937-498-8142
CITY OF SIDNEY, 201 W POPLAR STREET, SIDNEY, OH 45365

INSTRUCTIONS FOR PREPARING CERTIFIED PAYROLL REPORTS

General

Contractors and subcontractors are required by law to submit certified payroll reports for work on projects covered by Ohio's Prevailing Wage Law. This form meets the reporting requirements established by Ohio Revised Code Chapter 4115. The use of this form is not mandatory, employers may submit their own forms provided that all of the required information is included. This form may be reproduced, or additional copies obtained from:

Ohio Department of Commerce Division of Industrial Compliance and Labor Bureau of Wage & Hour Administration 6606 Tussing Rd. P. O. Box 4009 Reynoldsburg, OH 43068-9009 Phone: (614) 644-2239

Certified Payroll Heading

Employer name and address: Company's full name and address. Indicate if the company is a subcontractor, if so list the name of the General or Prime. Project: Name and location of the project, including county. Contracting Public Authority: Name and address of the contracting public authority. Week Ending: Month, day, and year for last day of reporting period. Payroll #: Indicates first, second, third, etc. payroll filed by the company for the project. Page indicator: number of pages included in the report. Project Number: Determined by the public authority. If there is no number leave blank.

Information by Column

1. Employee Name, Address and Social Security number: This information must be provided for all employees that perform physical labor on the project. Corporate officers, partners, and salaried employees are considered employees and must be paid the prevailing rate. Individual sole proprietors do not have to pay themselves prevailing rate but must report their hours on the project.
2. Work Class: List classification of work actually performed by employee. If unsure of work classification, consult the Ohio department of Commerce, Wage and Hour Bureau. Employees working more than one classification should have separate line entries for each classification. Indicate what year/level for Apprentices. Be specific when using laborer and operator classifications; for example, Backhoe Operator or Asphalt Laborer.
3. Hours Worked, Day & Date: In the first row of column 3 enter days of pay period example; M T W TH F S S. The second row is for the date that corresponds with each day for the pay period. In the employee information section enter the number of hours worked on the prevailing wage project and which day the hours were worked. Separate rows are labeled for (ST) straight time hours and (OT) overtime hours. All hours worked after 40, must be paid at the appropriate overtime rate.
4. Project Total Hours: Total the hours entered for pay period.
5. Base Rate: Enter actual rate per hour paid to the employee. The overtime hourly rate is time and one-half the base rate listed in the prevailing wage schedule plus fringe benefits at straight time rate. The prevailing wage schedule lists the base rate plus fringe benefit amounts. These amounts added

together equal the total prevailing wage rate. Employers must pay this total amount in one of three ways.

- Total rate may be paid in entirety in the base rate to the employee; in which case, the cash designation will be checked for fringe benefits.
 - Total rate may be paid as listed in prevailing wage rate schedule with total fringe amounts paid approved plans.
 - Total rate may be paid with a combination of base rate and fringe payments to approved plans in amounts other than those listed in schedule.
6. Project Gross: Enter total gross wages earned on the project for straight time and overtime. Project hours X base rate should equal project gross.
7. Fringes: If fringe benefits are paid in the hourly base rate, indicate this by marking the cash space. If fringe benefits are paid to approved plans as listed in the prevailing wage rate schedule, mark the space Approved Plans. If fringe benefits are paid partially in the base rate and partially to approved plans, mark the space Cash & Approved plans. List the hourly amount paid to approved plans for each fringe. If payments are not made on a per hour basis, calculate the hourly fringe credit by dividing the yearly employer contribution by the lesser of: hours actually worked in the year (these must be documented) or 2080. Fringe benefits include: Employer's share of health insurance, life insurance, retirement plan, bonus/profit sharing, sick pay, holiday pay, personal leave, vacation, and education/training programs.
8. Total Hours All Jobs: Total all hours worked during the pay period including non-prevailing wage jobs.
9. Total Gross All Jobs: Gross amount earned in the pay period for all hours worked.
10. Self explanatory.
11. Self explanatory.
12. Self explanatory.

PREVAILING WAGE NOTIFICATION TO EMPLOYEE

Project Name:				Job Number:	
Contractor:					
Contractor Prevailing Wage Contact:				Email:	
Project Location:					
Jobsite posting of prevailing wage rates located:					
Prevailing Wage Coordinator			Employee		
Name: Lori Werling, City of Sidney			Name:		
Street: 201 W. Poplar Street			Street:		
City/State/Zip: Sidney, OH 45365			City/State/Zip:		
Phone: 937-498-8142			Phone:		
Email: lwerling@sidneyoh.com			Email:		
You will be performing work on this project as classified below. You will be paid the appropriate rate for the type of work you are performing.					
Classification	Prevailing Wage Rate Total Package	Fringe Benefit Total	Hourly Base Rate	OT Base Rate (as applicable) Hourly x 1.5	Double* Base Rate (as applicable) Hourly x 2
Hourly fringe benefits paid on your behalf by this company.					
Fringe Benefit	Amount	Fringe Benefit	Amount		
Health Insurance		Vacation			
Life Insurance		Holiday			
Pension		Bonus			
Other		Other			
Other		Other			
Contractor's Signature:				Date:	
Employee's Signature:				Date:	

**Double time is optional and not required for prevailing wage.*

PREVAILING WAGE THRESHOLD LEVELS

IMPORTANT NOTICE

Before advertising for bids, contracting, or undertaking construction with its own forces, to construct a public improvement, the Public Authority shall have the Ohio Department of Commerce-Division of Industrial Compliance, Bureau of Wage and Hour Administration determine the prevailing rates of wages for workers employed on the public improvement. The wage determination must be included in the project specifications and printed on the bidding blanks where work is done by contract.

“New” construction threshold for Building Construction:	\$250,000
--	------------------

“Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting” threshold level for Building Construction:	\$75,000
--	-----------------

As of January 1, 2026:

“New” construction that involves roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction threshold level has been adjusted to:	\$101,201
--	------------------

“Reconstruction, enlargement, alteration, repair, remodeling, renovation, or painting” that involves roads, streets, alleys, sewers, ditches and other works connected to road or bridge construction threshold level has been adjusted to:	\$30,320
--	-----------------

A) Thresholds are to be adjusted biennially by the Director of the Ohio Department of Commerce.
B) Biennial adjustments to threshold levels are made according to the Building Cost for Skilled Labor Index published by McGraw-Hill's Engineering News-Record, but may not increase or decrease more than 3% for any year.

If there are questions concerning this notification, please contact:

Bureau of Wage and Hour Administration

6606 Tussing Road, PO Box 4009

Reynoldsburg, Ohio 43068-9009

Phone: 614-644-2239

Fax: 614-728-8639

www.com.ohio.gov



View Prevailing Wage Rates

This site lists the active commercial prevailing wage rates for all construction trades in every jurisdiction in Ohio. These rates apply to commercial construction and reconstruction projects covered by the [Ohio Revised Code 4115](#).

You must have an OHID to access the wage rates. If you need to register, you can do so from the site's main page. If you already registered but cannot log in, email [Wage and Hour](#) for password recovery assistance.

LAUNCH 

View Prevailing Wage Rates

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project, including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. RFIs.
 - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

1.2 DEFINITIONS

- A. RFI: Request for Information. Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
- B. Prepare memoranda for distribution to each party involved, outlining special

procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1.5 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Architect will return without response those RFIs submitted to Architect by other entities controlled by Contractor.
 - 2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Owner name.
 - 3. Owner's Project number.
 - 4. Name of Architect.
 - 5. Architect's Project number.
 - 6. Date.
 - 7. Name of Contractor.
 - 8. RFI number, numbered sequentially.
 - 9. RFI subject.
 - 10. Specification Section number and title and related paragraphs, as appropriate.
 - 11. Drawing number and detail references, as appropriate.
 - 12. Field dimensions and conditions, as appropriate.
 - 13. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 14. Contractor's signature.
 - 15. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
 - 1. Attachments shall be electronic files in PDF format.
- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow not less than 10 days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 - 1. The following Contractor-generated RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.

- d. Requests for coordination information already indicated in the Contract Documents.
 - e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or inaccurately prepared RFIs.
- 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt by Architect of additional information.
- 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 5 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly or as new items are generated. Include the following:
 - 1. Project name.
 - 2. Name and address of Contractor.
 - 3. Name and address of Architect and Construction Manager.
 - 4. RFI number, including RFIs that were returned without action or withdrawn.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
 - 7. Date Architect's response was received.
 - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.6 DIGITAL PROJECT MANAGEMENT PROCEDURES

- A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.
 - 1. Digital data files may be used by Contractor in preparing coordination drawings, Shop Drawings, and Project Record Drawings.
 - 2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
 - 3. Digital Drawing Software Program: Contract Drawings are available in DXF, DWG, or PDF formats.
 - 4. Contractor shall execute a data licensing agreement in the form of Agreement included in Project Manual.
 - a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement included in this Project Manual.

- B. PDF Document Preparation: Where PDFs are required to be submitted to Architect, prepare as follows:

1. Assemble complete submittal package into a single indexed file, incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
3. Certifications: Where digitally submitted certificates and certifications are required, provide a digital signature with digital certificate on where indicated.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of seven days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

- B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity when required by other Sections and when required for coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
2. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
3. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 45 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at regular intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting, where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Submittal schedule requirements.
2. Administrative and procedural requirements for submittals.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.3 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 2. Initial Submittal Schedule: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 3. Final Submittal Schedule: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule as required to reflect changes in current status and timing for submittals.
 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.

- c. Submittal Category: Action; informational.
- d. Name of subcontractor.
- e. Description of the Work covered.
- f. Scheduled date for Architect's final release or approval.

1.4 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
 - 1. Project name.
 - 2. Date.
 - 3. Name of Architect.
 - 4. Name of Contractor.
 - 5. Name of firm or entity that prepared submittal.
 - 6. Names of subcontractor, manufacturer, and supplier.
 - 7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier and alphanumeric suffix for resubmittals.
 - 8. Category and type of submittal.
 - 9. Submittal purpose and description.
 - 10. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
 - 11. Drawing number and detail references, as appropriate.
 - 12. Indication of full or partial submittal.
 - 13. Location(s) where product is to be installed, as appropriate.
 - 14. Other necessary identification.
 - 15. Remarks.
 - 16. Signature of transmitter.
- B. Options: Identify options requiring selection by Architect.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Architect on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. Electronic Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.
 - 1. **Highlight or otherwise note specific items to be reviewed.**

1.5 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Email: Prepare submittals as PDF package and transmit to Architect by sending via email. Include PDF transmittal form. Include information in email subject line

as requested by Architect.

- a. Architect will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
2. Paper: Prepare submittals in paper form and deliver to Architect.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections, so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow not less than ten days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow not less than 10 days for review of each resubmittal.
 4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow not less than 15 days for initial review of each submittal.
 - a. Submittals requiring sequential review include but may not be limited to the following: Structural, Fire Protection, Plumbing, Electrical, HVAC, Technology.
- D. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block, and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with approval notation from Architect's

action stamp.

- E. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

1.6 SUBMITTAL REQUIREMENTS

- A. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are unsuitable for use, submit as Shop Drawings, not as Product Data.
 - 2. **Mark each copy of each submittal to show which products and options are applicable.**
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - i. Physical Samples as required for color selection or verification.
 - 4. Submit Product Data before Shop Drawings, and before or concurrently with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.

2. Paper Sheet Size: When it is not practical to provide electronic submittals, except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 - a. Three opaque copies of each submittal. Architect will retain two copies; remainder will be returned.
- C. Samples: Submit Samples for review of type, color, pattern, and texture for a check of these characteristics with other materials.
 1. Transmit Samples that contain multiple, related components, such as accessories together in one submittal package.
 2. Identification: Permanently attach label on unexposed side of Samples that includes the following:
 - a. Project name and submittal number.
 - b. Generic description of Sample.
 - c. Product name and name of manufacturer.
 - d. Sample source.
 - e. Number and title of applicable Specification Section.
 - f. Specification paragraph number and generic name of each item.
 3. Samples for Initial Selection: Submit physical samples or manufacturer's original color charts consisting of units or sections of units, showing the full range of colors, textures, and patterns available. Color charts printed from Manufacturer's web site are not acceptable.
 - a. Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- E. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- F. Certificates:
 1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.
 2. Installer Certificates: Submit written statements on manufacturer's letterhead,

certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead, certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
4. Material Certificates: Submit written statements on manufacturer's letterhead, certifying that material complies with requirements in the Contract Documents.
5. Product Certificates: Submit written statements on manufacturer's letterhead, certifying that product complies with requirements in the Contract Documents.
6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of AWS B2.1/B2.1M on AWS forms. Include names of firms and personnel certified.

G. Test and Research Reports:

1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for substrate preparation and primers required.
2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - a. Name of evaluation organization.
 - b. Date of evaluation.
 - c. Time period when report is in effect.
 - d. Product and manufacturers' names.
 - e. Description of product.
 - f. Test procedures and results.
 - g. Limitations of use.

1.7 DELEGATED DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and one paper copy of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.8 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. **Mark with approval stamp before submitting to Architect.**
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
 - 1. Architect will not review submittals received from Contractor that do not have Contractor's review and approval.

1.9 ARCHITECT'S REVIEW

- A. Action Submittals: Architect will review each submittal, indicate corrections or revisions required, and return.
 - 1. PDF Submittals: Architect will indicate, via markup on each submittal, the appropriate action, as follows:
 - a. No Exceptions Taken: Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.
 - b. Note Markings/Confirm: Work covered by the submittal may proceed provided it complies with both Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on

- that compliance.
 - c. Note Markings/Resubmit: Do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise or prepare a new submittal according to Architect's notations and correction.
 - d. Rejected: Do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.
- 2. Paper Submittals: Architect will electronically scan and stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Architect will return without review submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Architect without action.

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.2 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced," unless otherwise further described, means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests and Inspections: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, subcontractor, or sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
 - 1. Use of trade-specific terminology in referring to a Work result does not require that certain construction activities specified apply exclusively to specific trade(s).
- D. Mockups: Physical assemblies of portions of the Work constructed to establish the standard by which the Work will be judged. Mockups are not Samples.
 - 1. Mockups are used for one or more of the following:
 - a. Verify selections made under Sample submittals.
 - b. Demonstrate aesthetic effects.

- c. Demonstrate the qualities of products and workmanship.
 - d. Demonstrate successful installation of interfaces between components and systems.
 - e. Perform preconstruction testing to determine system performance.
- 2. Product Mockups: Mockups that may include multiple products, materials, or systems specified in a single Section.
- 3. In-Place Mockups: Mockups constructed on-site in their actual final location as part of permanent construction.
- E. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria. Unless otherwise indicated, copies of reports of tests or inspections performed for other than the Project do not meet this definition.
- F. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) in accordance with 29 CFR 1910.7, by a testing agency accredited in accordance with NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- G. Source Quality-Control Tests and Inspections: Tests and inspections that are performed at the source (e.g., plant, mill, factory, or shop).
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. The term "testing laboratory" has the same meaning as the term "testing agency."
- I. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work, to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- J. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work, to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Architect.

1.3 DELEGATED DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated Design Services Statement: Submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the

products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.4 CONFLICTING REQUIREMENTS

- A. **Conflicting Standards and Other Requirements:** If compliance with two or more standards or requirements is specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, inform the Architect regarding the conflict and obtain clarification prior to proceeding with the Work. Refer conflicting requirements that are different, but apparently equal, to Architect for clarification before proceeding.
- B. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified is the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. **Contractor's Statement of Responsibility:** When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
 - 1. Primary wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- B. **Testing Agency Qualifications:** For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- C. **Schedule of Tests and Inspections:** Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.
- D. **Reports:** Prepare and submit certified written reports and documents as specified.
- E. **Permits, Licenses, and Certificates:** For Owner's record, submit copies of permits,

licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, telephone number, and email address of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample-taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement of whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed

- performance complies with requirements.
- 4. Statement of whether conditions, products, and installation will affect warranty.
- 5. Other required items indicated in individual Specification Sections.

1.7 QUALITY ASSURANCE

- A. Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that is similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities be performed by entities who are recognized experts in those operations. Specialists will satisfy qualification requirements indicated and engage in the activities indicated.
 - 1. Requirements of authorities having jurisdiction supersede requirements for specialists.
- G. Testing and Inspecting Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented in accordance with ASTM E329, and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized

representative of manufacturer who is trained and approved by manufacturer to inspect, demonstrate, repair, and perform service on installations of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups of size indicated.
 2. Build mockups in location indicated or, if not indicated, as directed by Architect.
 3. Notify Architect at least three days in advance of dates and times when mockups will be constructed.
 4. Employ supervisory personnel who will oversee mockup construction. Employ workers who will be employed to perform same tasks during the construction at Project.
 5. Demonstrate the proposed range of aesthetic effects and workmanship.
 6. Obtain Architect's approval of mockups before starting corresponding Work, fabrication, or construction.
 7. Promptly correct unsatisfactory conditions noted by Architect's preliminary review, to the satisfaction of the Architect, before completion of final mockup.
 8. Approval of mockups by the Architect does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 9. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 10. Demolish and remove mockups when directed unless otherwise indicated.

1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspection they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by Work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Engage a qualified testing agency or Manufacturer's quality control field services to perform quality-control services.

- a. Contractor will not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 3. Notify testing agencies at least 48 hours in advance of time when Work that requires testing or inspection will be performed.
 4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections, and state in each report whether tested and inspected Work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform duties of Contractor.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Contractor's Associated Requirements and Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.

5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspection equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents as a component of Contractor's quality-control plan. Coordinate and submit concurrently with Contractor's Construction Schedule. Update and submit with each Application for Payment.
1. Schedule Contents: Include tests, inspections, and quality-control services, including Contractor- and Owner-retained services, commissioning activities, and other Project-required services paid for by other entities.
 2. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
1. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 3. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 4. Interpreting tests and inspections and stating in each report whether tested and inspected Work complies with or deviates from the Contract Documents.
 5. Retesting and reinspecting corrected Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's and authorities' having jurisdiction reference during normal working hours.
1. Submit log at Project closeout as part of Project Record Documents.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample-taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. Installation, removal, and use charges for temporary facilities to be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Architect, testing agencies, and authorities having jurisdiction.
- B. Sewer Service: **Owner will pay** sewer-service use charges for sewer usage by all entities for construction operations.
- C. Water Service: **Owner will pay** water-service use charges for water used by all entities for construction operations.
- D. Electric Power Service: **Owner will pay** electric-power-service use charges for electricity used by all entities for construction operations.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- C. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
 - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing

- water-damaged Work.
- 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- 3. Indicate methods to be used to avoid trapping water in finished work.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum **2-inch, 0.148-inch**- thick, galvanized-steel, chain-link fabric fencing; minimum **6 feet** high with galvanized-steel pipe posts; minimum **2-3/8-inch**- OD line posts and **2-7/8-inch**- OD corner and pull posts.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, **10-mil** minimum thickness, with flame-spread rating of 15 or less in accordance with ASTM E84 and passing NFPA 701 Test Method 2.
- C. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

- A. Field Offices:
 - 1. Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
 - 1. Furniture required for Project-site documents, including file cabinets, plan tables, plan racks, and bookcases.
 - 2. Conference room of sufficient size to accommodate meetings of 12 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs,

- and **4-foot-** square tack and marker boards.
- 3. Drinking water.
- 4. Heating and cooling equipment necessary to maintain a uniform indoor temperature of **68 to 72 deg F**.
- 5. Lighting fixtures capable of maintaining average illumination of **20 fc** at desk height.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating, Cooling, and Dehumidifying Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures."

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
- C. Water Service:
 1. Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- F. Electric Power Service:
 1. Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- H. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install WiFi cell phone access equipment .
- I. Electronic Communication Service: Provide secure WiFi wireless connection to internet with provisions for access by Architect and Owner.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Comply with the following:
 1. Provide construction for temporary field offices, shops, and sheds located within construction area or within **30 feet** of building lines that is noncombustible in accordance with ASTM E136. Comply with NFPA 241.
 2. Maintain support facilities until Architect schedules Substantial Completion

inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

- B. Temporary Use of Planned Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
 - 1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - 2. Prepare subgrade and install subbase and base for temporary roads and paved areas in accordance with Section 312000 "Earth Moving."
 - 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 - 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course in accordance with Section 321216 "Asphalt Paving."
- C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- E. Storage and Staging: Use designated areas of Project site for storage and staging needs.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as indicated.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touch up signs, so they are legible at all times.

H. Waste Disposal Facilities:

1. Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

J. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

K. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Temporary Erosion and Sedimentation Control:

1. Comply with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent and requirements specified in Section 311000 "Site Clearing."

D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

E. Tree and Plant Protection:

1. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Pest Control: Engage pest-control service to recommend practices to minimize

attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals, so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.

- G. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
 - 1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

- A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 - 1. Protect porous materials from water damage.
 - 2. Protect stored and installed material from flowing or standing water.
 - 3. Keep porous and organic materials from coming into prolonged contact with concrete.

4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard and replace stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.
- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

3.7 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of

Contractor. Owner reserves right to take possession of Project identification signs.

2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 015723 - TEMPORARY STORM WATER POLLUTION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Temporary stormwater pollution controls.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, and earthwork subcontractor.
2. Review requirements of the SWPPP, including permitting process, worker training, and inspection and maintenance requirements.

1.3 INFORMATIONAL SUBMITTALS

- A. Stormwater Pollution Prevention Plan (SWPP): Within 15 days of date established for commencement of the Work, submit completed SWPPP.
- B. EPA authorization under the EPA's "2017 Construction General Permit (CGP)."
- C. Stormwater Pollution Prevention (SWPP) Training Log: For each individual performing Work under the SWPPP.
- D. Inspection reports.

1.4 QUALITY ASSURANCE

- A. Stormwater Pollution Prevention Plan (SWPPP) Coordinator: Experienced individual or firm with a record of successful water pollution control management coordination of projects with similar requirements.
1. SWPPP Coordinator shall complete and finalize the SWPPP form.
 2. SWPPP Coordinator shall be responsible for inspections and maintaining of all requirements of the SWPPP.
- B. Installers: Trained as indicated in the SWPPP.

PART 2 - PRODUCTS

2.1 TEMPORARY STORMWATER POLLUTION CONTROLS

- A. Provide temporary stormwater pollution controls as required by the SWPPP.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with all best management practices, general requirements, performance requirements, reporting requirements, and all other requirements included in the SWPPP.
- B. Locate stormwater pollution controls in accordance with the SWPPP.
- C. Conduct construction as required to comply with the SWPPP and that minimize possible contamination or pollution or other undesirable effects.
 - 1. Inspect, repair, and maintain SWPPP controls during construction.
 - a. Inspect all SWPPP controls not less than every seven days, and after each occurrence of a storm event, as outlined in the SWPPP.
- D. Remove SWPPP controls at completion of construction and restore and stabilize areas disturbed during construction.

END OF SECTION 015723

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. The Work of This Section Includes: Administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Salvaged items or items reused from other projects are not considered new products. Items that are manufactured or fabricated to include recycled content materials are considered new products unless otherwise indicated.
 - 3. Comparable Product: Product by named manufacturer that is demonstrated and approved through the comparable product submittal process described in "Comparable Products" Article, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a single manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation. Published attributes and characteristics of basis-of-design product establish salient characteristics of products.
 - 1. Evaluating Comparable Products: In addition to the basis-of-design product description, product attributes and characteristics may be listed to establish the significant qualities related to type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other special features and requirements for purposes of evaluating comparable products of additional manufacturers named in the specification. Manufacturer's published attributes and characteristics of basis-of-design product also establish salient characteristics of products for purposes of evaluating comparable products.
- C. Subject to Compliance with Requirements: Where the phrase "Subject to compliance with requirements" introduces a product selection procedure in an individual

Specification Section, provide products qualified under the specified product procedure. In the event that a named product or product by a named manufacturer does not meet the other requirements of the specifications, select another named product or product from another named manufacturer that does meet the requirements of the specifications; submit a comparable product request or substitution request, if applicable.

- D. Comparable Product Request Submittal: An action submittal requesting consideration of a comparable product, including the following information:
 - 1. Identification of basis-of-design product or fabrication or installation method to be replaced, including Specification Section number and title and Drawing numbers and titles.
 - 2. Data indicating compliance with the requirements specified in "Comparable Products" Article.
- E. Basis-of-Design Product Specification Submittal: An action submittal complying with requirements in Section 013300 "Submittal Procedures."
- F. Substitution: Refer to Section 012500 "Substitution Procedures" for definition and limitations on substitutions.

1.3 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
- B. Identification of Products: Except for required labels and operating data, do not attach or imprint manufacturer or product names or trademarks on exposed surfaces of products or equipment that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on a concealed surface, or, where required for observation following installation, on a visually accessible surface that is inconspicuous.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service- or power-operated equipment. Locate on a visually accessible but inconspicuous surface. Include information essential for operation, including the following:
 - a. Name of product and manufacturer.
 - b. Model and serial number.
 - c. Capacity.
 - d. Speed.
 - e. Ratings.
 - 3. See individual identification Sections in Divisions 21, 22, 23, and 26 for additional equipment identification requirements.

1.4 COORDINATION

- A. Modify or adjust affected work as necessary to integrate work of approved comparable products and approved substitutions.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products, using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and that products are undamaged and properly protected.
- C. Storage:
 - 1. Provide a secure location and enclosure at Project site for storage of materials and equipment.
 - 2. Store products to allow for inspection and measurement of quantity or counting of units.
 - 3. Store materials in a manner that will not endanger Project structure.
 - 4. Store products that are subject to damage by the elements under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation and with adequate protection from wind.
 - 5. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 7. Protect stored products from damage and liquids from freezing.
 - 8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections are to be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written standard warranty form furnished by individual manufacturer for a particular product and issued in the name of Owner or endorsed by manufacturer to Owner.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner and issued in the name of Owner or endorsed by manufacturer to Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included in the Project Manual, prepare a written document, using indicated form properly executed.
 3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties meeting requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
 - a. Submit additional documentation required by Architect in order to establish equivalency of proposed products. Unless otherwise indicated, evaluation of "or equal" product status is by Architect, whose determination is final.
- B. Product Selection Procedures:
1. Sole Product: Where Specifications name a single manufacturer and product,

provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.

- a. Sole product may be indicated by the phrase "Subject to compliance with requirements, provide the following."
2. Sole Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 - a. Sole manufacturer/source may be indicated by the phrase "Subject to compliance with requirements, provide products by the following."
3. Limited List of Products: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of products may be indicated by the phrase "Subject to compliance with requirements, provide one of the following."
4. Non-Limited List of Products: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed or an unnamed product that complies with requirements.
 - a. Non-limited list of products is indicated by the phrase "Subject to compliance with requirements, available products that may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of an unnamed product is not considered a substitution, if the product complies with requirements.
5. Limited List of Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - a. Limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, provide products by one of the following."
6. Non-Limited List of Manufacturers: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed or a product by an unnamed manufacturer that complies with requirements.
 - a. Non-limited list of manufacturers is indicated by the phrase "Subject to compliance with requirements, available manufacturers whose products may be incorporated in the Work include, but are not limited to, the following."
 - b. Provision of products of an unnamed manufacturer is not considered a substitution, if the product complies with requirements.

7. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications may additionally indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
 - a. For approval of products by unnamed manufacturers, comply with requirements in Section 012500 "Substitution Procedures" for substitutions for convenience.
- C. Visual Matching Specification: Where Specifications require the phrase "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or a similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items. Where Specifications include the phrase "as selected by Architect from manufacturer's standard range" or similar phrase, Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that does not include premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration of Comparable Products: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with the following requirements:
 1. Evidence that proposed product does not require revisions to the Contract Documents, is consistent with the Contract Documents, will produce the indicated results, and is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those of the named basis-of-design product. Significant product qualities include attributes such as type, function, in-service performance and physical properties, weight, dimension, durability, visual characteristics, and other specific features and requirements.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects, with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

- B. Architect's Action on Comparable Products Submittal: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for a comparable product. Architect will notify Contractor of approval or rejection of proposed comparable product within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - 1. Architect's Approval of Submittal: Marked with approval notation from Architect's action stamp. See Section 013300 "Submittal Procedures."
 - 2. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- C. Submittal Requirements, Two-Step Process: Approval by Architect of Contractor's request for use of comparable product is not intended to satisfy other submittal requirements. Comply with specified submittal requirements.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work, including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering.
 - 3. Installation.
 - 4. Coordination of Owner's portion of the Work.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.

1.2 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Comply with requirements specified in other Sections.
- B. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of

connection of sanitary sewer, storm sewer, gas service piping, and water-service piping; underground electrical services; and other utilities.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- B. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance with requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks and existing conditions. If discrepancies are discovered, notify Architect promptly.
- B. Engage a land surveyor or professional engineer experienced in laying out the Work, using the following accepted surveying practices:
 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of lines and levels to which they must comply.
 5. Check the location, level and plumb, of every major element as the Work progresses.
 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures,

building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces, unless otherwise indicated on Drawings.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until

Substantial Completion.

- D. Conduct construction operations, so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on-site and placement in permanent locations.
- F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the Work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

3.6 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, in accordance with regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
- B. Site: Maintain Project site free of waste materials and debris.

- C. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces in accordance with written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.8 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.9 CORRECTION OF THE WORK

- A. Repair or remove and replace damaged, defective, or nonconforming Work. Restore damaged substrates and finishes.
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.
- C. Restore permanent facilities used during construction to their specified condition.
- D. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- E. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- F. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. The Work of this Section includes administrative and procedural requirements for the following:
 - 1. Recycling nonhazardous construction waste.
 - 2. Disposing of nonhazardous construction waste.

1.2 DEFINITIONS

- A. CMU: Concrete masonry units.
- B. Construction Waste: Building, structure, and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- C. Disposal: Removal of demolition or construction waste and subsequent salvage, sale, recycling, or deposit in landfill, incinerator acceptable to authorities having jurisdiction, or designated spoil areas on Owner's property.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

1.3 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition and construction waste becomes property of Contractor.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with transportation and disposal regulations of authorities having jurisdiction.
- B. Waste Management Conference(s): Conduct conference(s) at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 - 1. Review procedures for periodic waste collection and transportation to recycling

- and disposal facilities.
- 2. Review waste management requirements for each trade.

1.5 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan in accordance with requirements in this Section. Plan must include provisions for waste identification, and waste reduction.
- B. Waste Identification: Indicate anticipated types and quantities of construction waste generated by the Work.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation and handling and transportation procedures.
 - 1. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 3. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials.
 - 1. Construction Waste:
 - a. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Plastic sheet and film.
 - 4) Polystyrene packaging.
 - 5) Wood crates.
 - 6) Wood pallets.
 - 7) Plastic pails.
 - b. Construction Office Waste: Regardless of salvage/recycle goal indicated in

"General" Paragraph above, salvage or recycle 100 percent of the following construction office waste materials:

- 1) Paper.
- 2) Aluminum cans.
- 3) Glass containers.

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during entire duration of the Contract.
 1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged and recycled.
 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials to accrue to Contractor.
- C. Preparation of Waste: Prepare and maintain recyclable waste materials in accordance with recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- D. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to maximum extent practical in accordance with approved construction waste management plan.
 1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination, and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor as often as required to prevent overfilling bins.

3.3 DISPOSAL OF WASTE

- A. Except for items or materials to be recycled, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Unless otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning:
 1. Do not burn waste materials.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final Completion procedures.
 - 3. List of incomplete items.
 - 4. Submittal of Project warranties.
 - 5. Final cleaning.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items required by other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's "punch list"), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having

- jurisdiction, permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including Project Record Documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number.
 5. Submit testing, adjusting, and balancing records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 3. Complete startup and testing of systems and equipment.
 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 017900 "Demonstration and Training."
 6. Advise Owner of changeover in utility services.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements.
 10. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining Final Completion, complete the following:
 - 1. Submit a final Application for Payment in accordance with Section 012900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list will state that each item has been completed or otherwise resolved for acceptance.
 - 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
 - 1. Submit on digital media acceptable to Architect.
- D. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- E. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are not planted, mulched, or paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free

condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- g. Remove debris and surface dust from limited-access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- h. Clean flooring, removing debris, dirt, and staining; clean in accordance with manufacturer's instructions.
- i. Vacuum and mop concrete.
- j. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean in accordance with manufacturer's instructions if visible soil or stains remain.
- k. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
- l. Remove labels that are not permanent.
- m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- n. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- o. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- p. Clean ducts, blowers, and coils if units were operated without filters during construction of that display contamination with particulate matter on inspection.
- q. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
- r. Clean strainers.
- s. Leave Project clean and ready for occupancy.

C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

D. Construction Waste Disposal: Comply with waste-disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 CORRECTION OF THE WORK

- A. Complete repair and restoration operations required by "Correction of the Work" Article in Section 017300 "Execution" before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes: Administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory manuals.
 - 2. Emergency manuals.
 - 3. Systems and equipment operation manuals.
 - 4. Systems and equipment maintenance manuals.
 - 5. Product maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operation and maintenance manuals in the following format:
 - 1. Submit on digital media acceptable to Architect. Enable reviewer comments on draft submittals.
 - 2. Submit one paper copy. Architect will return one copy.
- C. Initial Manual Submittal: Submit draft copy of each manual in final form at least 30 days before final inspections and before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.
- D. Final Manual Submittal: Submit each manual in final form within 30 days of the date the Draft copy was reviewed. Architect will return copy with comments or approve as submitted.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments.
- E. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.3 FORMAT OF OPERATION AND MAINTENANCE MANUALS

- A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
 - 4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
 - 5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

1.4 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual to contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.

4. Date of submittal.
 5. Name and contact information for Contractor.
 6. Name and contact information for Construction Manager.
 7. Name and contact information for Architect.
 8. Name and contact information for Commissioning Authority.
 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 10. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation in accordance with ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

1.5 EMERGENCY MANUALS

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Content: Organize manual into a separate section for each of the following:
1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.

8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
 1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

1.6 SYSTEMS AND EQUIPMENT OPERATION MANUALS

- A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.
 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 2. Performance and design criteria if Contractor has delegated design responsibility.
 3. Operating standards.
 4. Operating procedures.
 5. Operating logs.
 6. Wiring diagrams.
 7. Control diagrams.
 8. Piped system diagrams.
 9. Precautions against improper use.
 10. License requirements including inspection and renewal dates.
- C. Descriptions: Include the following:
 1. Product name and model number. Use designations for products indicated on Contract Documents.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.

5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.7 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

- D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

- J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

- 1. Do not use original project record documents as part of maintenance manuals.

1.8 PRODUCT MAINTENANCE MANUALS

- A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- D. Product Information: Include the following, as applicable:
 - 1. Product name and model number.
 - 2. Manufacturer's name.
 - 3. Color, pattern, and texture.
 - 4. Material and chemical composition.
 - 5. Reordering information for specially manufactured products.
- E. Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 1. Inspection procedures.
 - 2. Types of cleaning agents to be used and methods of cleaning.
 - 3. List of cleaning agents and methods of cleaning detrimental to product.
 - 4. Schedule for routine cleaning and maintenance.
 - 5. Repair instructions.
- F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

NEW EQUIPMENT HANGER
SIDNEY AIRPORT CITY OF SIDNEY, 2511

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ARCHITECTS / ENGINEERS

PART 2 - PRODUCTS (Not Used)
PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record specifications.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for general closeout procedures.
 - 2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Final Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned Record Prints.
- B. Record Specifications: Submit PDF electronic file of scanned marked-up Specifications and one paper copies of marked-up Project's Specifications, including addenda and Contract modifications.

1.3 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.

- c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding photographic documentation.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Electronic File: Scanned copy of full sized Record Drawings in PDF format.
 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

1.4 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders and Record Drawings where applicable.
- B. Format: Submit record specifications as a marked-up paper copy, and scanned PDF electronic file(s) of marked-up paper copy of Specifications.

1.5 MAINTENANCE OF RECORD DOCUMENTS

- A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839